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# FIELD, GEOCHRONOLOGIC, AND GEOCHEMICAL CONSTRAINTS ON LATE PRECAMBRIAN TO EARLY PALEOZOIC TERRANE ACCRETION IN THE SOUTHERN APPALACHIAN BLUE RIDGE PROVINCE

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THESIS

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A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Arts and Sciences
at the University of Kentucky

By

Emma Anne Larkin

Lexington, Kentucky

Director: Dr. David P. Moecher, Professor of Geology

Lexington, Kentucky

2016

ABSTRACT OF THESIS

# FIELD, GEOCHRONOLOGIC, AND GEOCHEMICAL CONSTRAINTS ON LATE PRECAMBRIAN TO EARLY PALEOZOIC TERRANE ACCRETION IN THE SOUTHERN APPALACHIAN BLUE RIDGE PROVINCE

Xenolith-bearing orthogneiss of Amazonian affinity discovered in the Dellwood quadrangle in the Blue Ridge basement complex represents the oldest crustal component of the southern Appalachians (1.33 – 1.37 Ga: Quinn, 2012). New U-Pb zircon ages for migmatitic paragneiss of the Cartoogechaye terrane exposed in the Dellwood quadrangle reveal two unique detrital zircon age signatures that indicate either a local eastern Laurentian margin source or an exotic source. Detailed mapping, whole rock geochemistry, and U-Pb zircon geochronology were conducted to determine whether this exotic crustal component extends farther south into the Hazelwood 7.5" quadrangle. Lithological similarities exist between paragneisses in the Dellwood quadrangle and those in the Hazelwood quadrangle. However, the increase in proportion of leucosome and polyphase folding prevent direct correlation of lithologies between the areas. Whole rock major element compositions overlap the composition of basement orthogneisses. Zircon ages of six paragneiss samples reveal multiple detrital zircon age modes that are dominated by two Grenville modes at ~1050 and 1150 Ma. Minor zircon populations exist at ~450 – 480, 700 – 900, and 1300 – 1500 Ma. Age distributions and compositional trends are evidence that the protolith of the paragneiss in the Hazelwood quadrangle was Neoproterozoic rift sediments with a dominant Laurentian margin source.

KEYWORDS: Blue Ridge Provence, Grenville Basement, Hazelwood Quadrangle, Cartoogechaye Terrane, Detrital Zircon Geochronology

Emma A. Larkin

July 26, 2016

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# CHAPTER I. INTRODUCTION

Laurentia, like all the major cratons, was assembled from Archean granite gneiss and greenstone terranes, Paleoproterozoic mobile belts that stitched together the Archean terranes, and late Proterozoic to Phanerozoic orogens/terranes that added varying amounts of new or recycled crust to the Laurentian margin (Hoffman, 1999; Whitmeyer and Karlstrom, 2007). The ultimate origin and timing of the assembly of all the crustal components comprising the major cratons is a fundamental question regarding evolution of Earth's lithosphere. Previous interpretations have suggested that eastern Laurentian crustal assembly involved episodic accretion of tectonostratigraphic terranes, including many considered exotic, from the Mesoproterozoic to the end of the Paleozoic (Sinha et al., 1996; Loewy et al., 2003; Tohver et al., 2004; Fisher et al., 2010). However, many questions remain to be resolved regarding eastern Laurentian margin evolution, with respect to understanding crustal terranes that composed the Blue Ridge basement in the southern Appalachian orogen. Multiple periods of deformation and high-grade metamorphism have led to overprinting and pose a challenge for unraveling crustal evolution in the southern Appalachian Blue Ridge. Despite these complexities, integration of rigorous geologic mapping, petrology, geochemistry, and geochronology can be used to place constraints on the origin of crustal terranes and their assembly history.

The southern Appalachians are comprised of multiple tectonostratigraphic terranes that comprise a large composite thrust sheet (Figure 1.1; Hatcher et al., 2005; Thigpen et al., 2005). The terrane divisions include the western Blue Ridge, central Blue Ridge, eastern Blue Ridge, and the Mars Hill, Inner Piedmont, and Cat Square terranes

(Hatcher, 2005). This thesis will focus on the examining the provenance of the central Blue Ridge, specifically the Cartoogechaye terrane.

The Cartoogechaye terrane is an enigmatic package of lithologies that includes highly deformed and intensively metamorphosed sedimentary and igneous rocks within the central Blue Ridge. New U-Pb zircon age data from Quinn (2012) indicate that there are at least two unique detrital zircon age signatures of paragneisses within the Cartoogechaye, including suites that are both typical and atypical of Grenville rocks with Laurentian provenance (Figure 1.2). The atypical age spectra are similar to the Carvers Gap paragneiss in the Mars Hill terrane, which is interpreted to be derived from rocks of Amazonian crustal affinity (Aleinkoff, 2013). The Cartoogechaye terrane geochemical signatures (whole rock Sm-Nd, and feldspar Pb systematics) and U-Pb zircon ages of some of the basement orthogneisses are similar to the southwestern Amazon craton in Brazil (Figure 1.3; Quinn, 2012). The complexity and heterogeneous nature of the detritus that contributed to the formation of the Cartoogechaye terrane requires further investigation of the extent of exotic metasedimentary units in order to produce a meaningful tectonic model of Proterozoic terrane amalgamation.

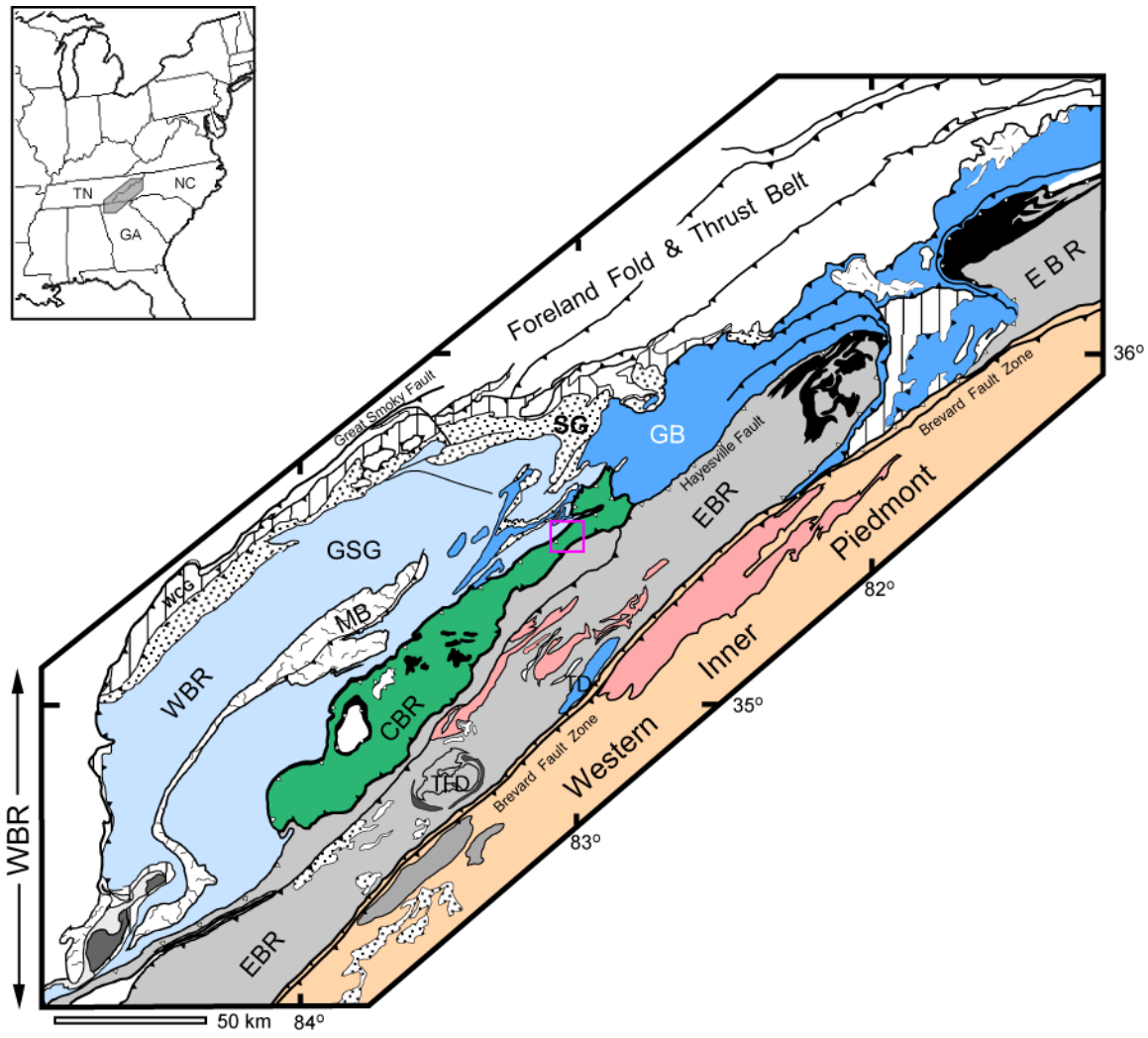


Figure 1.1: Generalized geologic map of the southern Appalachians, showing major terranes, plutonic rocks, and faults (after Moecher et al., 2011, modified from Rankin et al., 1990). Pink rectangle outlines the study area. WBR- western Blue Ridge; CBR- central Blue Ridge; EBR-eastern Blue Ridge; GB-Grenville Basement orthogneiss; GSG and GS- Great Smoky Group and Snowbird Group metasediments; MB-Murphy Belt; TD- Toxaway dome; TFD- Tallulah Falls dome; WCG-Walden Creek Group; white-Paleozoic strata; black- mafic and ultramafic metamorphic rocks, pink-Paleozoic granites.

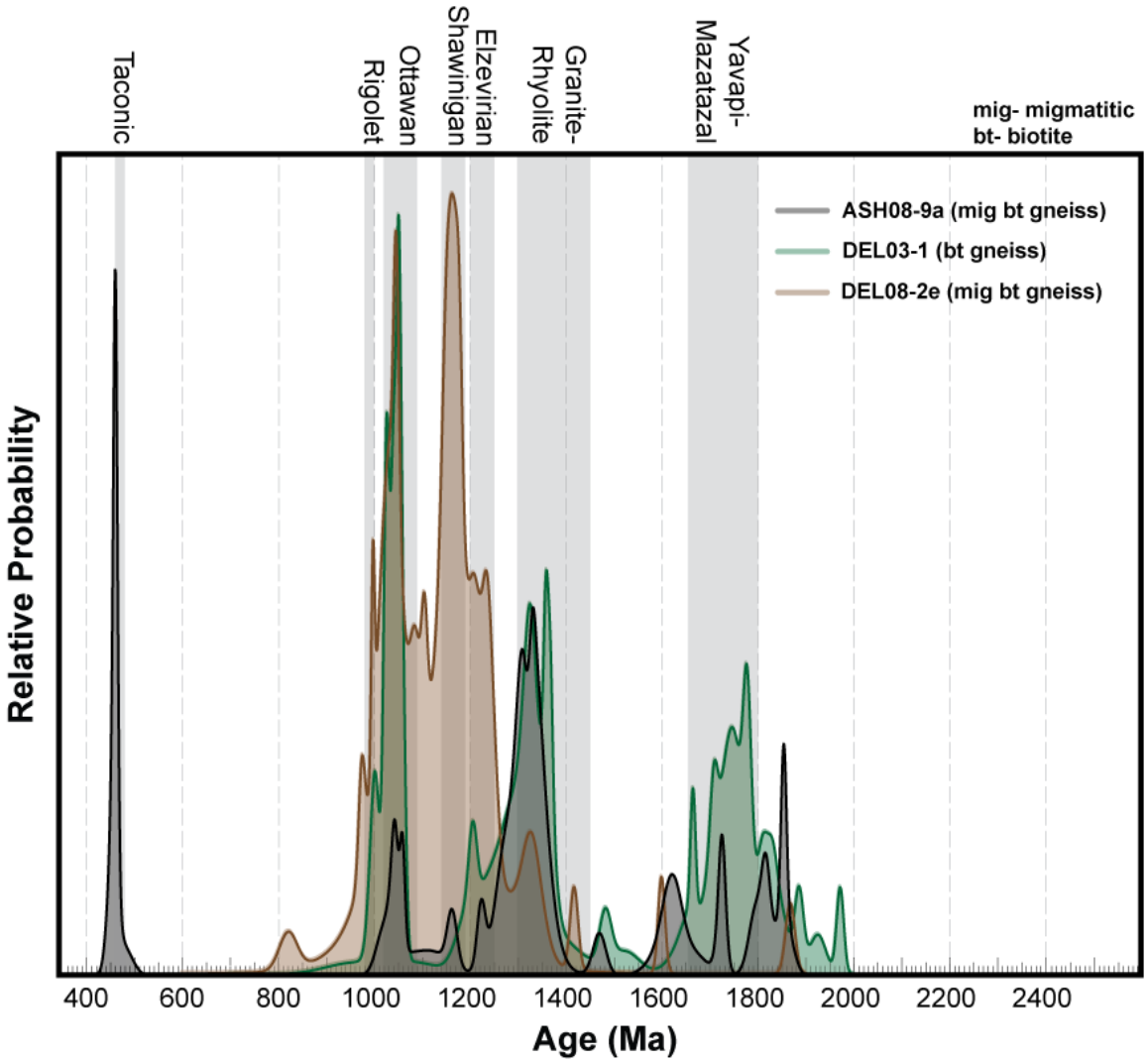


Figure 1.2: Probability density plots of zircon from three biotite gneiss samples from the Dellwood 7.5"quadrangle (data from Quinn, 2012). Sample DEL08-2e (brown) has an age spectrum that exemplifies a Grenville zircon signature. Samples ASH08-9a (gray) and DEL03-1 (green) have age spectra that are atypical of Grenville sourced rocks suggesting an exotic or mixed protolith. A Grenville zircon signature will typically have age modes that represent the orogenic phases of the Grenville orogeny, in particular, the Shawinigan (ca. 1150 Ma) and Ottowan (ca. 1050 Ma) phases. An exotic zircon signature is characterized by an abundance of Paleoproterozoic grains and a lack of at least one of the two main Grenville age modes. An age mode between 450 and 480 Ma is not indicative of either a Grenville or exotic protolith as it correlates with the Taconic orogeny. Gray shaded bars represent crust forming events. Timing of Paleoproterozoic orogenesis from Whitmeyer and Karlstrom, 2007. Timing of Mesoproterozoic orogenesis from Rivers, 2008; Hynes and Rivers, 2010. Timing of Paleozoic orogenesis from Hatcher, 2005; Moecher et al., 2011.

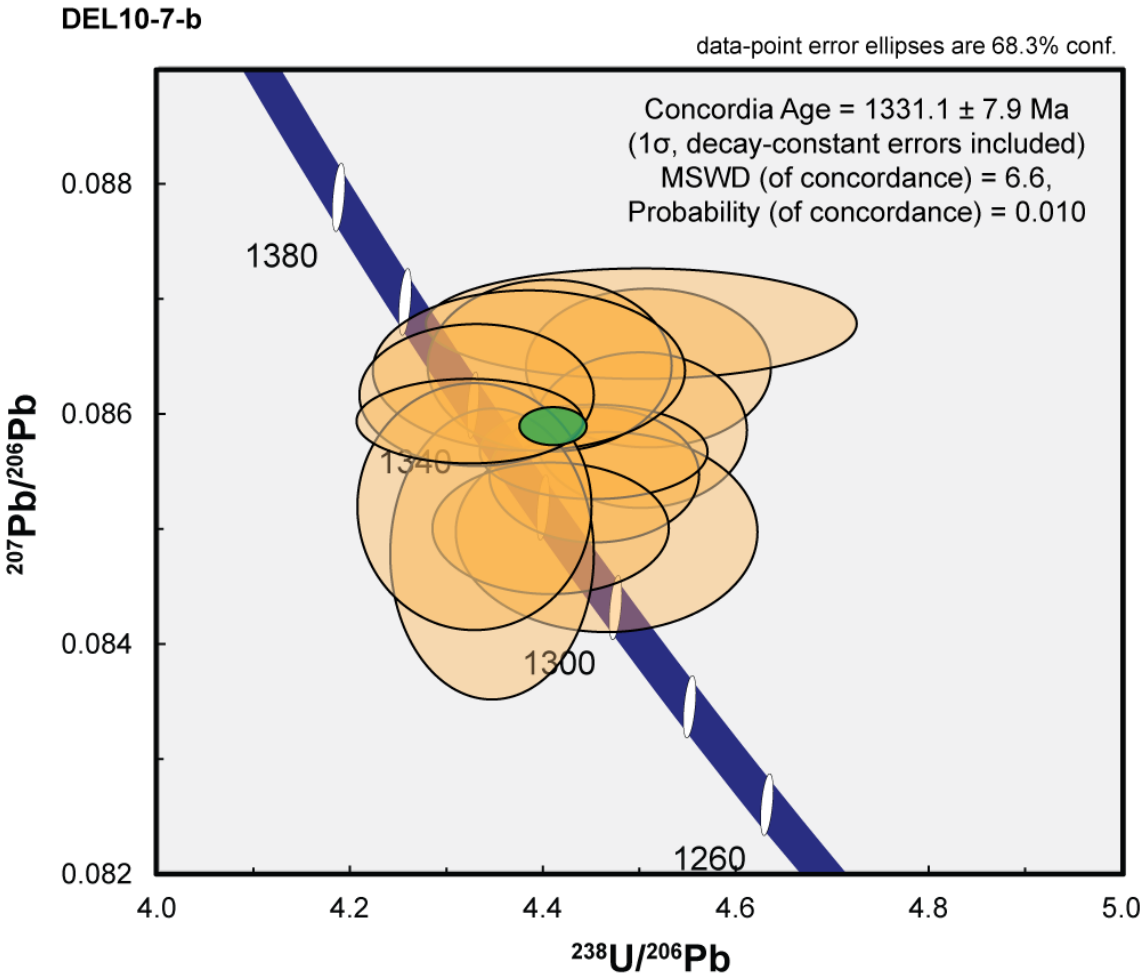


Figure 1.3: Tera-Wasserburg plot modified from Quinn, 2012 of U-Pb isotopic data for zircon from a hornblende orthogneiss sample collected in the Dellwood 7.5" quadrangle. A magmatic age of ~1330 indicates a crust forming event occurred prior to the Grenville orogeny. Feldspar Pb isotope data for this sample are most consistent with an Amazonian crustal affinity.

## Geologic Setting

The Blue Ridge terrane is a continuous northeast trending belt that extends from south-central Pennsylvania to northern Georgia. It experienced multiple compressional and extensional events from the Mesoproterozoic to the Permian (Figure 1.4). The earliest event, the Grenville Orogeny, involved diachronous collision of the eastern margin of Laurentia with Amazonia from 1090-980 Ma to produce the supercontinent Rodinia (Tohver et al., 2006; Rivers et al., 2008). The main stages of the Grenville orogeny include the Elzevirian, Shawinigan, Ottawan, and Rigolet (McLelland et al., 1996; Rivers, 2008; Figure 1.4). The Grenville orogeny produced large volumes of clastic sediments that were derived from the mountain chain and transported away from the orogen by a pan-continental river system (Rainbird et al., 2012).

Rifting and breakup of Rodinia occurred in two distinct pulses at 765-680 Ma and 620-550 Ma, with formation of intracratonic (Ocoee) and continental margin rift basins that formed the incipient Iapetus Ocean (Rankin et al., 1997; Tollo, 2004). Rifting was followed by development of a passive margin drift phase from the late Neoproterozoic to Lower Ordovician (Tollo, 2004). The drift phase was followed by a reversal in plate motion, leading to subduction of Iapetan oceanic crust and formation of the Taconic volcanic arc. Hatcher (2005) suggested that during the early stages of the Taconic orogeny, oceanic and arc assemblages were obducted onto the Laurentian margin and the central Blue Ridge was transported along the Haysville thrust fault into juxtaposition with the western Blue Ridge. However, Massey and Moecher (2005) suggest there is a lack of structural evidence to support the interpretation of a thrust contact between these two

terranes. Taconic orogenesis lasted from 480-450 Ma, with peak metamorphism at ca. 450-460 Ma (Moecher et al., 2004, 2011; Miller et al., 2006; Corrie and Kohn 2007).

Collision of the Laurentian margin with the Carolina superterrane between ca. 390-350 Ma resulted in the Neoacadian orogeny, which is primarily recorded in metamorphic zircon rim ages in migmatites and metaplutonic rocks of the eastern Blue Ridge, Inner Piedmont and Cat Square terranes (Bream et al., 2004; Hatcher, 2005; Merschat, 2009). However, within the western and central Blue Ridge terranes evidence of the Neoacadian orogeny is generally not observed.

The final collisional event, the Alleghanian orogeny, led to the present day configuration of the Appalachians and involved the collision of the Laurentian margin with the African plate at 325-265 Ma. This orogeny resulted in development of a foreland basin and fold-thrust belt during emplacement of the Appalachian hinterland along the Great Smoky thrust (Hatcher et al., 1989). In the Blue Ridge, evidence of the Alleghanian orogen includes retrograde greenschist facies metamorphism and localized retrograde ductile shear zones (Hatcher et al, 2005; Kunk et al., 2006).

***Western Blue Ridge***

The western Blue Ridge (WBR) is comprised of Neoproterozoic-Cambrian sedimentary rocks deposited in normal fault-bounded rift basins unconformably above Mesoproterozoic Grenvillian continental crust (King et al., 1958; Hadley and Goldsmith, 1963; Rankin, 1975). WBR Grenville basement paragneiss consists of migmatitic biotite gneiss and orthogneisses that consist predominatly of granitoid gneiss and augen gneiss (Southworth, et al. 2005, 2012). Other lithologies include hornblende-biotite gneiss, amphibolite, dunites and websterites, and isolated bodies of calc-silicate granofels. The

Neoproterozoic Ocoee Supergroup (OSG), which consists of a >10 km thick sequence of immature feldspathic metaclastic rocks, unconformably overlies the Grenville basement. The OSG is subdivided into the Snowbird, Great Smoky, and the Walden Creek Groups (King et al., 1958; Hadley and Goldsmith, 1963). The Cambrian Chilhowee Group, which stratigraphically overlies the OSG, consists of a dominantly passive margin clastic sequence that includes quartzite, shale, and siltstone. (Hatcher et al., 2005).

***Central Blue Ridge***

The central Blue Ridge (CBR) is a ductile fault bounded terrane separated from the adjacent terranes by the Hayesville fault to the northwest and the Soque River fault to the southeast. The CBR is divided into several sub-terranes that have been interpreted to represent a crystalline thrust stack located between the western and eastern Blue Ridge. The terrane divisions, from structurally highest to lowest, include the Cartoogechaye terrane, Cowrock, and Dahlonega gold belt (Hatcher, 2005).

The Cartoogechaye terrane is dominated by migmatitic biotite paragneiss (and orthogneiss?) with lesser amphibolite, dunite, and peridotite (Hadley and Nelson, 1971; Merchat, 2009). The biotite gneiss and amphibolite are interpreted to have been deposited as deepwater sedimentary and volcanic rocks on the distal Laurentian margin. The amphibolite, dunite, and peridotite are interpreted to be remnants of ophiolites (Hatcher, 2005). From U-Pb zircon dating of Cartoogechaye orthogneiss and mafic xenoliths, Quinn (2012) identified magmatic pulses at ca. 1130, 1180, and 1330 Ma. Merschat et al. (2010) present preliminary U-Pb zircon age data that imply the presence of Grenville basement orthogneiss (Trimont Ridge complex) in the Cartoogechaye terrane. The

amount of Grenville basement present in the Cartoogechaye is uncertain and remains to be tested.

The Cowrock terrane, the southernmost terrane, is exposed primarily in Georgia and subdivided into three formations: the Persimmon Creek Gneiss, Coleman River Formation, and Ridgepole Mountain Formation (Hatcher, 1979). Biotite schist and quartzite of the Ridgepole Mountain Formation overlay metasandstone and pelitic schist of the Coleman River Formation. The Persimmon Creek Gneiss, a ~468 Ma tonalitic pluton, intrudes into the Coleman River Formation (Hatcher, 1979; McDowell et al., 2002; Merschat, 2009).

The Dahlonega gold belt is exposed in a continuous northeast trending belt as well as in the Great Balsams Window (Figure 1.3). The Otto Formation of the Dahlonega gold belt, which is exposed in the Great Balsams window, consists of a siliciclastic sequence of immature metaclastic rocks interpreted as deepwater sedimentary deposits that are lithologically similar to and potentially temporally equivalent with the Copperhill Formation (Great Smoky Group) to the northwest. Merschat (2009) recognized an interlayered mafic component, which the study used to separate the Otto and Copperhill formations.

***Eastern Blue Ridge***

The eastern Blue Ridge, the structurally highest fault bounded Blue Ridge terrane, is comprised of the Neoproterozoic to Cambrian Ashe-Tallulah Falls Formation, Paleozoic plutons, and few Mesoproterozoic basement massifs (Hatcher et al., 2005). The Ashe-Tallulah Falls Formation, which consists of primarily metagraywacke, amphibolite, and mica schist, is interpreted as Laurentian affinity metaclastic rocks deposited

nonconformably on Grenvillian and oceanic crust (Bream, 2003; Bream et al. 2004; Hatcher et al., 2004). Paleozoic magmas intruded the Ashe-Tallalah Falls Formation in three phases during the Ordovician, Devonian, and Mississippian (Miller et al., 2006). Mesoproterozoic basement is exposed in the Tallulah Falls and Toxaway dome (Hatcher et al., 2004). The eastern Blue Ridge is not exposed in the study area, however, it has been suggested that the Cartoogechaye terrane contains rocks from the Tallulah Falls Formation (Hatcher, et al., 2003).

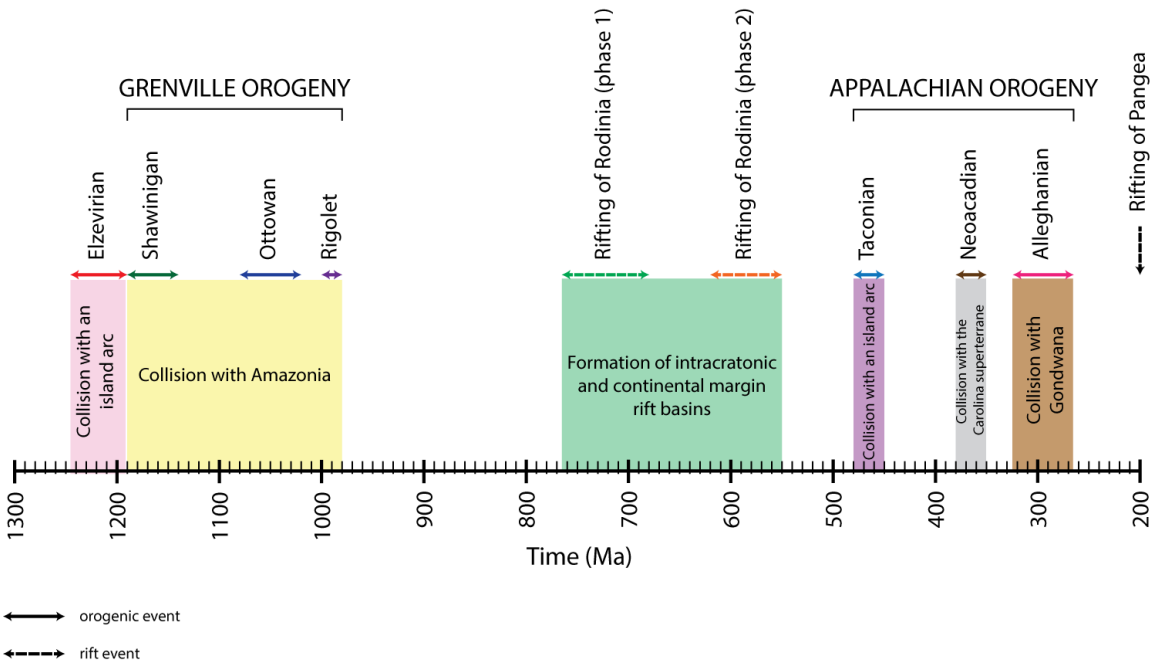


Figure 1.4: Timeline of crust-forming events in the southern Appalachians. Timing of Mesoproterozoic orogenesis from Rivers, 2008; Hynes and Rivers, 2010. Timing of Neoproterozoic rifting from Tollo, 2004. Timing of Paleozoic and Mesozoic orogenesis and rifting from Hatcher, 2005; Moecher et al., 2011.

**Purpose of Study**

Recent work by a number of other studies in the Dellwood (Chakraborty, 2010; Loughry, 2010; Anderson, 2011; Quinn, 2012) and Waynesville (Merschat, 2009) 7.5-minute quadrangles has refined the stratigraphic, geochronologic, and geochemical/isotopic signatures of western and central Blue Ridge units. The purpose of this study is to use these latter characteristics for comparison and correlation in the Hazelwood quadrangle, immediately south of the Dellwood quadrangle, in order to further test models of terrane accretion in the southern Blue Ridge. Previous geologic mapping of the Hazelwood study area was by Edelman (unpublished mapping) and Montes (1997). However, no previously published maps of the north half Hazelwood quadrangle were produced at a 1:24000 scale, therefore, the first task was to conduct bedrock mapping of the north half of the Hazelwood quadrangle (Plate 1) in order to test whether the lithologies exposed in the Dellwood quadrangle (immediately north of the Hazelwood quadrangle) extend farther south. Sampling of map units and geochemical analysis will permit assessment of unit provenance and evaluation of suspected Mesoproterozoic bedrock recycling. The second major task, zircon U-Pb geochronology, will permit further assessment of an igneous vs. sedimentary protolith for the migmatitic gneisses that dominate the bedrock in the study area. If the protolith is determined to be sedimentary, then the detrital zircon age distributions will provide constraints on provenance – either a Laurentian or an exotic (Amazonian: Loewy et al., 2003; Tohver et al., 2010) source.

# CHAPTER II. ANALYTICAL METHODS

## Geologic Mapping

Detailed 1:24,000-scale geologic mapping of the north half of the Hazelwood 7.5-minute quadrangle was conducted over a six month field season during the summer and winter of 2014. Outcrop locations were determined using Trimble Outdoors GPS software and a Holux GPS receiver coupled with a Dell Axim PDA running ArcPad®. Station numbers were assigned to each outcrop location to relate the field data and observations to the locations recorded via GPS. Thirty-five samples were collected and prepared for petrographic, geochronological, and geochemical analysis (Figure 2.1). When possible, samples were spatially oriented. A digital geologic map was created using ESRI Arcmap® and Adobe Illustrator®. The 2013 topographic base map was produced by the USGS.

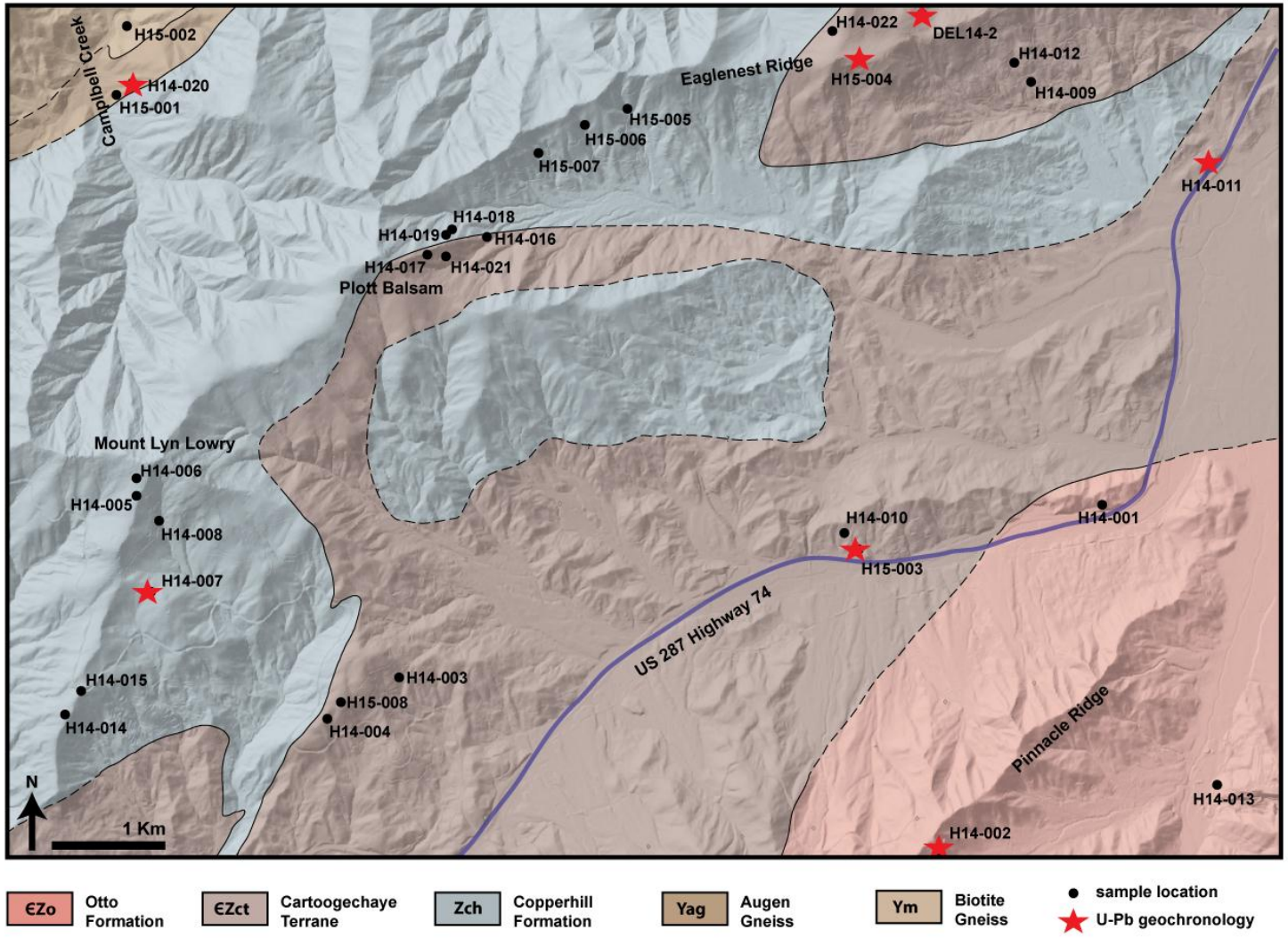


Figure 2.1:Simplified geologic map of the north half of the Hazelwood 7.5" quadrangle with sample locations. Red stars indicate samples collected for U-Pb zircon geochronology

**U-Pb Zircon Geochronology**

U-Pb zircon geochronology was carried out by laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) and secondary ion mass spectrometry (SIMS). Six paragneiss samples and one orthogneiss sample were selected as representative samples for analysis. The paragneiss samples were analyzed at the Arizona Laserchron Center on a Thermo Element2 multi-collector ICPMS. The orthogneiss sample was analyzed at the University of California Los Angeles (UCLA) on a CAMECA 1270 secondary ion microprobe.

Samples were prepared at the University of Kentucky. Approximately 1 kg of sample was crushed into gravel-sized fragments using a jaw crusher and then milled into a fine-grain sand using an iron disc mill. Between each sample, the equipment was cleaned with a vacuum, compressed air, and isopropyl alcohol. The samples were wet sieved using 250, 125, and 53 μm disposable plastic mesh. New mesh was used for each sample to avoid cross-contamination. The 125-250 and 53-125 μm aliquots were ultrasonically rinsed and dried in an oven. Heavy minerals were separated using acetylene tetrabromide (specific gravity = 2.96) and methylene iodide (SG = 3.32). Magnetic minerals were removed using a ceramic block magnet and a Frantz Isodynamic Magnetic Separator Model LB-1. Mineral separates were collected for 0.25, 0.5, and 1.0 Amp. Samples with remaining apatite were separated with a third heavy liquid separation of methylene iodide. Remaining pyrite was handpicked from each sample.

After sufficient zircons were separated (< ~10% impurities), detrital grains were mounted for LA-ICP-MS and the magmatic grains were mounted for SIMS. The zircons from the paragneiss samples were analyzed as detrital grains (i.e., large n) as the protolith

for many paragneisses are uncertain due to the high proportion of zircons related to migmatite formation in these samples. For these samples, a glass mounting tube from the Arizona Laserchron Center was attached to a ceramic tile with 2 inch wide 3M® double sided tape. A single sample was poured into the mounting tube and rotated to distribute the grains. Excess zircons were removed by holding the tile upside down over weighting paper. Standard grains from the Arizona Laserchron Center were mounted using forceps around the sample based on a diagram from the lab. The zircons from orthogneiss were analyzed as magmatic zircons. For this sample, grains were handpicked and placed on a ceramic tile with 2 inch wide 3M® double sided tape. For all samples, a 1 inch plastic mounting ring was placed around the zircons. An epoxy mount was created by combining 5 parts Buehler Epo-Thin® epoxy resin with 2 parts Buehler Epo-Thin® epoxy hardener. The resin and hardener were slowly mixed for 5 minutes and then placed in a Branson 2210 ultrasonic cleaner for 2 minutes. The epoxy mixture was poured into the mounting ring over the grains and left undisturbed to set for 24 hours. The mounts were removed from the plates and polished to expose the grain cores using 1200 grit sandpaper followed by 2000 grit sandpaper. The mount was polished with a 0.3µm alumina powder polish to remove scratches. The mount was then ultrasonically washed to remove excess polish.

For all paragneiss samples, backscatter electron (BSE) and cathodoluminescence (CL) images were collected at the University of Kentucky on the CAMECA sx50 electron probe microanalyzer. For the orthogneiss sample, BSE and CL images were collected at UCLA. BSE and CL images were used to identify internal zoning, metamorphic overgrowths, inherited cores, inclusions, and fractures in the zircon grains.

This information was used to guide spot locations for analysis and to interpret the meaning of the U-Pb age data.

Detrital zircons were analyzed at the Arizona Laserchron Center. Operating conditions of the LA-ICP-MS described by Gehrels et al. (2008) were used. Zircon standards Sri Lanka (~563 Ma), FC-1 (~1099 Ma), and R33 (~419 Ma) were analyzed every five grains. The standard grains define a probability density function with a normal distribution (Figure 2.2b). A single analysis has an analytical error (Figure 2.2a) associated with it that is related to the standard deviation of the mean of the six isotopic ratios measured for each spot. However, additional uncertainties, that combine to define the age population, can create outliers; therefore, the date for a single grain analyzed is merely an estimate of the true age of the population of grains which means multiple dates are required to determine a geologically meaningful age (Pullen et al., 2014).

Approximately 300 grains were analyzed for each sample. CL images, collected before analysis, were used to locate the cores of the grains. For each analysis, zircons were ablated with a Photon Machines Analyte G2 excimer laser equipped with a HelEx ablation cell using a spot diameter of 20 μm. The ablated material was transported in helium to the Element2 ICP-MS. The process involved 5 seconds of measuring peaks with a non-firing laser to collect background intensities followed by 10 seconds of measuring peaks with the laser firing. A 20 second delay between each sample was set to purge the system of ablated material and save the analysis file. Raw U-Th-Pb data reduction to calculate concentrations, isotope ratios, and ages for the unknowns was performed at the University of Arizona with a Python decoding routine and an excel

spreadsheet (E2agecalc). All Concordia, Tera-Wasserburg, weighted mean, and relative probability plots were created using Isoplot 3.60 (Ludwig, 2008).

For the orthogneiss sample (H14-020), the mount was coated with approximately 100Å of Au. Operating conditions of the SIMS are similar to those described by Hietpas et al. (2011). Zircon grains of standard AS3 (~1099 Ma: Paces and Miller, 1993) were analyzed to make a calibration curve for comparison with unknown analyses. The analyses were carried out using a primary $O^{-2}$ ion beam with a spot diameter of 15 µm. The sample chamber was flooded with oxygen to increase secondary ionization of $Pb^{+1}$. Each analysis consisted of 6 cycles yielding a run time of 6 min per analysis. Raw U-Th-Pb data reduction was performed using Isoplot (Ludwig, 1999).

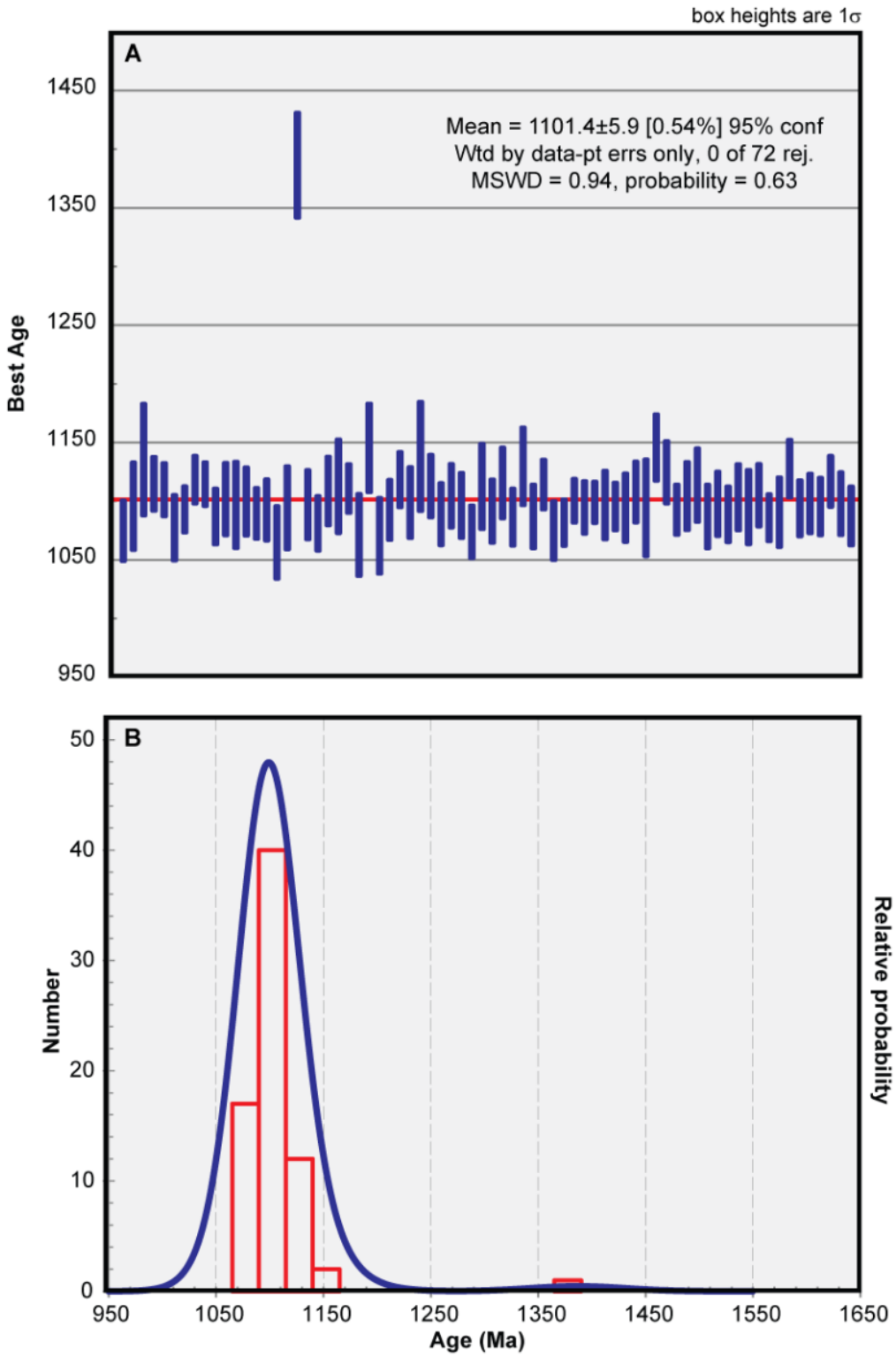


Figure 2.2: Age plots from standard FC-1. (A) Mean 'best age' plot. (B) Probability density plot. All analyses are by LA-ICP-MS. A single outlier at ~1385 Ma demonstrates analysis of an older zircon core. Therefore, when interpreting results of sample age spectra it is necessary to have more than one zircon age to define a significant population. The accepted age of FC-1 is 1099 ± 1 Ma (Paces and Miller, 1993).

**Whole Rock Geochemistry: X-ray Fluorescence**

Whole rock analysis of major, minor, and trace elements was carried out by X-ray fluorescence spectrometry (XRF). Ten representative gneiss samples were prepared and analyzed at the Kentucky Geologic Survey. Samples were washed and weathered surfaces were removed with a wire brush. Approximately 1 kg of sample was crushed into gravel-sized fragments using a jaw crusher. A portion of the sample was powdered using a 3-puck shatterbox with tungsten carbide steal grinding pucks to produce approximately 50 ml of fine powder. The jaw crusher and shatterbox chambers were cleaned between each sample with a vacuum, compressed air, and isopropyl.

Low dilution lithium tetraborate fused discs were prepared at the Kentucky Geologic Survey X-ray analytical lab. A mixture of 4.000 ± 0.001 g of sample and 8.000 ± 0.001 g of Fluxite® (90 $Li_2Br_4O_7$: 10 LiF) was placed in a platinum crucible and two drops of 5.8 M LiBr were added. Fused discs were made using a Katanax K1 Prime electric fluxer with a maximum temperature of 1080˚C. The fused discs were analyzed on a 4-kW Bruker S4 Pioneer wavelength dispersive X-ray fluorescence spectrometer. The elemental concentrations of the unknown samples were calculated using Spectra Plus®, which compares the X-ray intensities for each element with the intensities of standards. The standards used were from the USGS (DNC-1, BIR-1, W2a, BCR-2, BHVO-1, BHVO-2, AVG-2, G-2, STM-1, GSP-1), Irish Geologic Association (OU-3, OU-4, AMH-1, YG-1, KPT-1), Canadian Certified References Materials Project (MRG-1, SY-2, S-3), South African Reference Materials SARM 4, SARM 50), Centre de Recherches Pétrographiques et Géochimiques (BE-N) and Chinese National Standard (GBW 07105). Concentrations calculated by Spectrum Plus® for vanadium, uranium, thorium, and

gallium were anomalous and omitted from this study. One possible explanation for anomalous data is that elemental concentrations for these elements are too low for accurate analysis.

# CHAPTER III. FIELD OBSERVATIONS AND PETROGRAPHIC DESCRIPTIONS

## General Lithostratigraphy

### *Western Blue Ridge*

The western Blue Ridge in the Hazelwood quadrangle (Figure 3.1) consists of Grenville basement augen orthogneiss and variably migmatitic biotite paragneiss in contact with pelitic schist and metapsammite of the Copperhill Formation (Great Smoky Group). The Copperhill Formation is the dominant unit in the northwestern portion of the study area. Augen orthogneiss and migmatitic biotite paragneiss are only observed as the nose of the Campbell Creek anticline in the northwestern corner of the quadrangle. The augen orthogneiss mapped in Hazelwood quadrangle is spatially continuous with a band of the same unit in the basement complex of the Dellwood quadrangle (Hadley and Goldsmith, 1963).

Biotite gneiss (Ym) is light-gray to medium-gray, fine- to medium-grained, inequigranular to equigranular, and foliated (Figures 3.2-3.3). It consists of quartz, plagioclase, potassium feldspar, biotite, and muscovite. Augen orthogneiss (Yag) is light-gray to medium-gray, medium- to coarse-grained with megacrysts (augen) of microcline, inequigranular, massive to well-foliated, protomylonitic (Figure 3.4), and consists of quartz, microcline, plagioclase, biotite, epidote, and muscovite (Figure 3.5). Augen are comprised of potassium feldspar aggregates and are commonly wrapped by

biotite (Figure 3.6). The augen gneiss is exposed within the core of the Campbell Creek anticline.

The Copperhill Formation (Zch) consists of metapsammite to gneissic metapsammite and biotite-muscovite schist. Metapsammite is tan to light-gray, fine- to medium-grained, non-foliated to foliated, inequigranular to equigranular (Figure 3.7), and consists of quartz, plagioclase, biotite, muscovite, and garnet (Figure 3.8) and is commonly interlayered with pelitic schist with layer thickness ranging from 1 cm to 2 m. Biotite-muscovite schist is light-gray to dark-gray, rusty weathering, medium- to coarse-grained; well foliated, lepidoblastic, porphyroblastic (Figure 3.9), and consists of muscovite, biotite, quartz, plagioclase,KyS garnet, kyanite or sillimanite, and staurolite (Figures 3.10-3.13).

***Central Blue Ridge***

The central Blue Ridge in the Hazelwood quadrangle contains two distinct lithologies: Cartoogechaye gneiss and Otto Formation metaclastic rocks of the Dahlonega Gold Belt (Bream and Hatcher, 2002; Hatcher, 2005). The Cartoogechaye gneiss is exposed as a northeast trending belt extending across the entire map area. The Otto Formation is exposed in the southeastern corner of the map area (Figure 3.1). Lithologic similarities are common between the Otto formation and the psammitic meBimbers of the Copperhill Formation, however, correlation of the units in the southeastern portion to the Otto Formation is based on previous work to the southwest by Montes (1997) and to the east by Merschat (2009), both of which recognized amphibolite bodies enclosed by hornblende gneiss in the Otto Formation along strike, and thus distinguishing the Otto Formation from the Copperhill Formation.

The Cartoogechaye terrane gneiss (Ꞓzct) is a heterogeneous assemblage of dominantly migmatitic biotite gneiss and hornblende-biotite gneiss, with lesser amphibolite. Migmatitic biotite gneiss, which is the dominant unit in the study area, is medium- to dark-gray, medium- to coarse-grained, well-foliated (layered, with leucosomes), inequigranular, and locally porphyroblastic. It consists of quartz, plagioclase, biotite, potassium feldspar, muscovite, epidote, and garnet phorphyroblasts (Figures 3.14-3.21). Hornblende-biotite gneiss, which occurs as lenses in biotite gneiss, is a medium- to dark-gray, medium- to coarse-grained, foliated, inequigranular, and locally porphyroblastic unit. It consists of quartz, plagioclase, biotite, hornblende and garnet (Figure 3.24). Amphibolite is common, and occurs as as cm to m scale boudins, lenses, and layers in migmatitic biotite gneiss (Figure 3.22). Amphibolite is dark-gray, medium- to coarse-grained, and inequigranular and consists of plagioclase, hornblende, and garnet (Figure 3.23). The degree and style of migmatization is variable, but is the most conspicuous and characteristic aspect of Cartoogechaye rocks. Stromatic and schileren migmatite structures are common throughout the Cartoogechaye terrane. Agmatite structures, which involve leucosome and migmatitic biotite gneiss folded around lenses and blocks of amphibolite and biotite gneiss, are only observed in outcrops with amphibolite present.

The Otto Formation of the Dahlonega gold belt (ꞒZo) consists primarily of gneissic metapsammite and biotite schist. Gneissic metaspsammite is tan to medium-gray, fine- to medium-grained, equigranular, foliated, and locally migmatitic (Figure 3.25). Unit mineralogy consists of quartz, plagioclase, muscovite, biotite, potassium feldspar, and garnet. Gneissic metaspammite is commonly interlayered with peltic schist

and metasiltstone with layer thickness ranging from 1 cm to 2 m. Biotite schist is dark-gray, orange-yellow weathering, fine- to medium-grained, lepidoblastic, and porphyroblastic (Figure 3.26). It contains quartz, biotite, muscovite, garnet, and sillimanite (Figure 3.27).

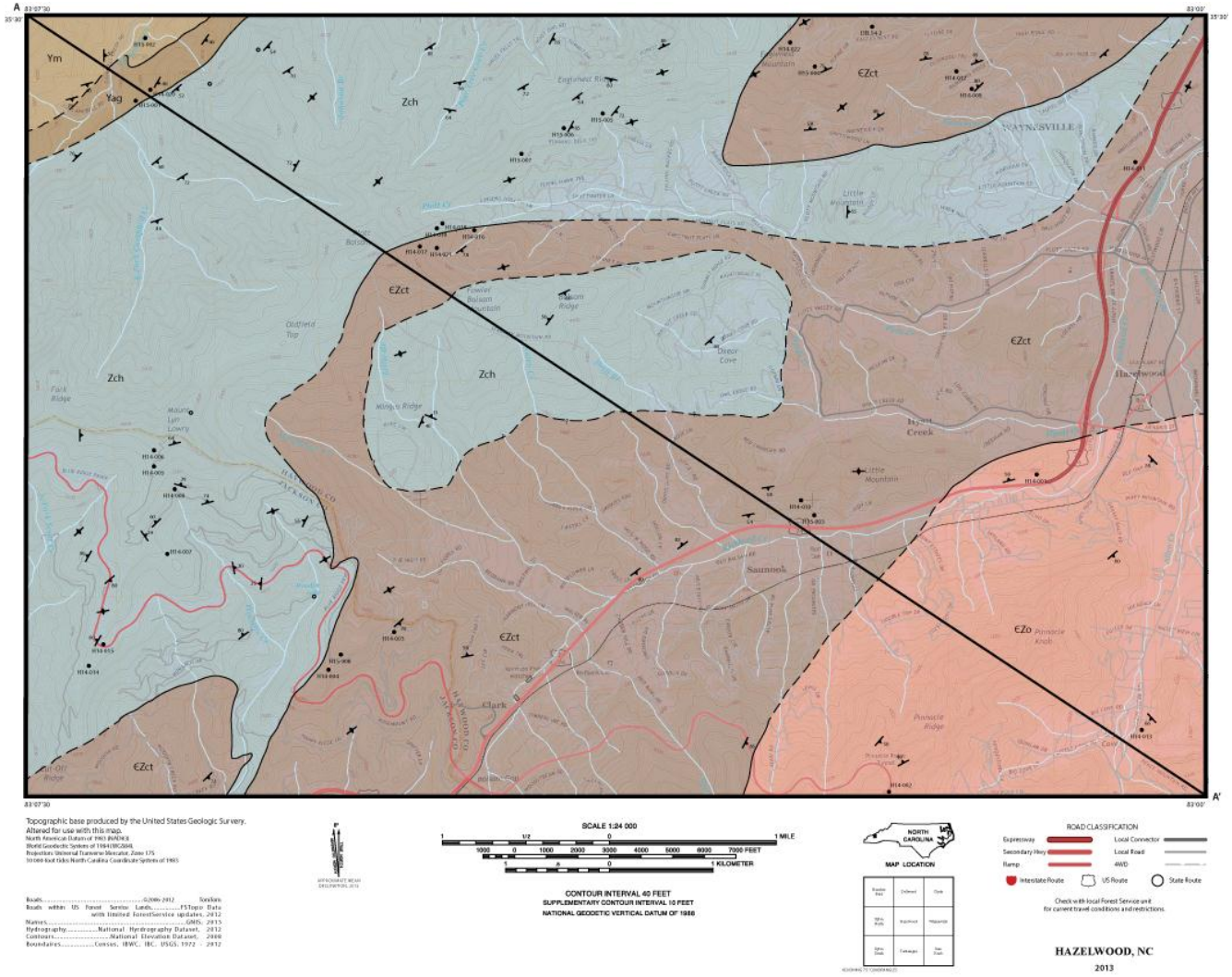


Figure 3.1: Geologic map of the Hazelwood 7.5" quadrangle, western North Carolina. Ym: migmatitic biotite gneiss; Yag: augen gneiss; Zch: Copperhill Formation; €Zct: Cartoogechaye terrane; €Zo: Otto Formation. A high resolution version of this map is available in file 1.

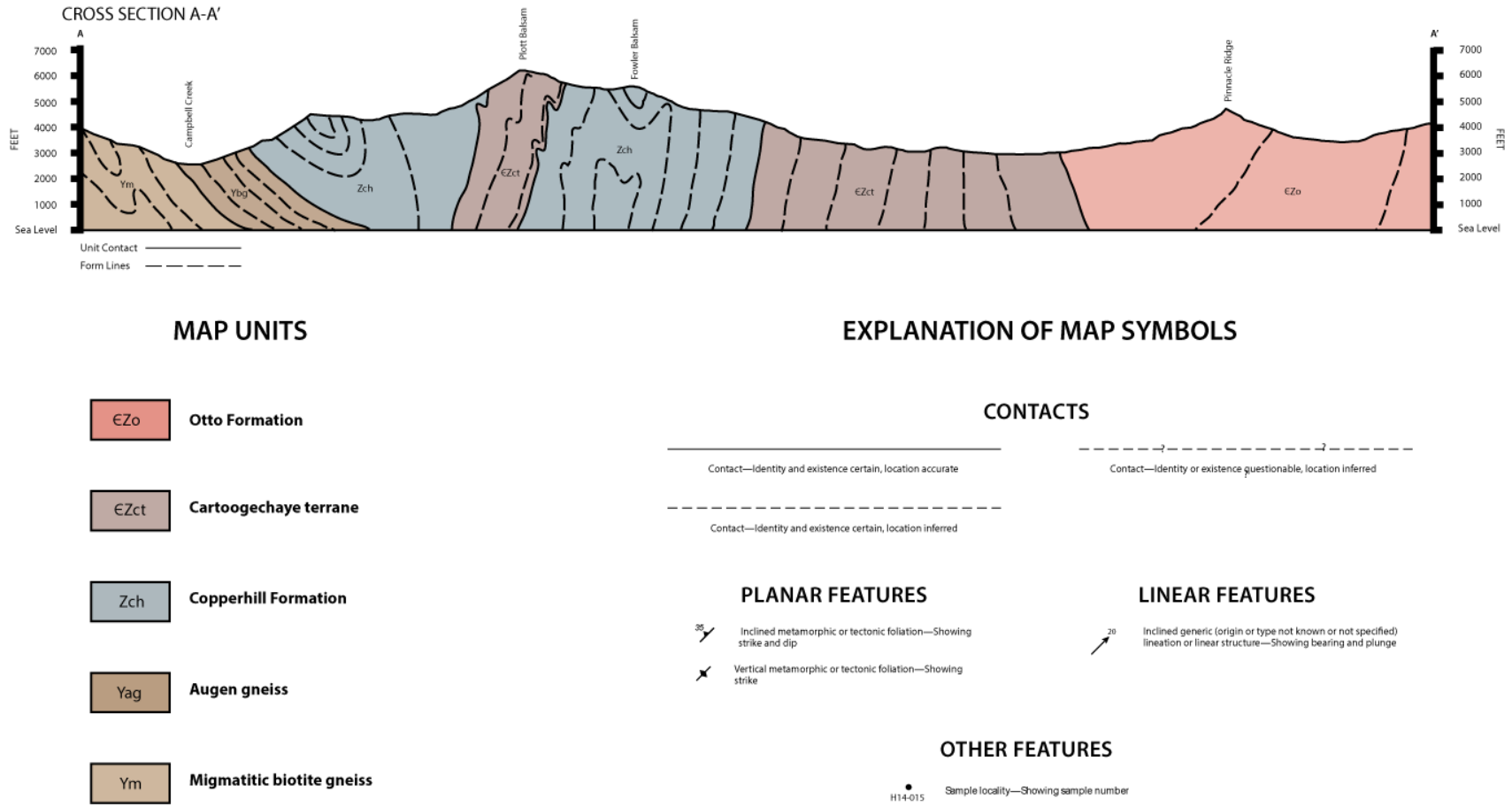


Figure 3.1: Continued. Cross-section and explanation for the geologic map of the Hazelwood 7.5" quadrangle.

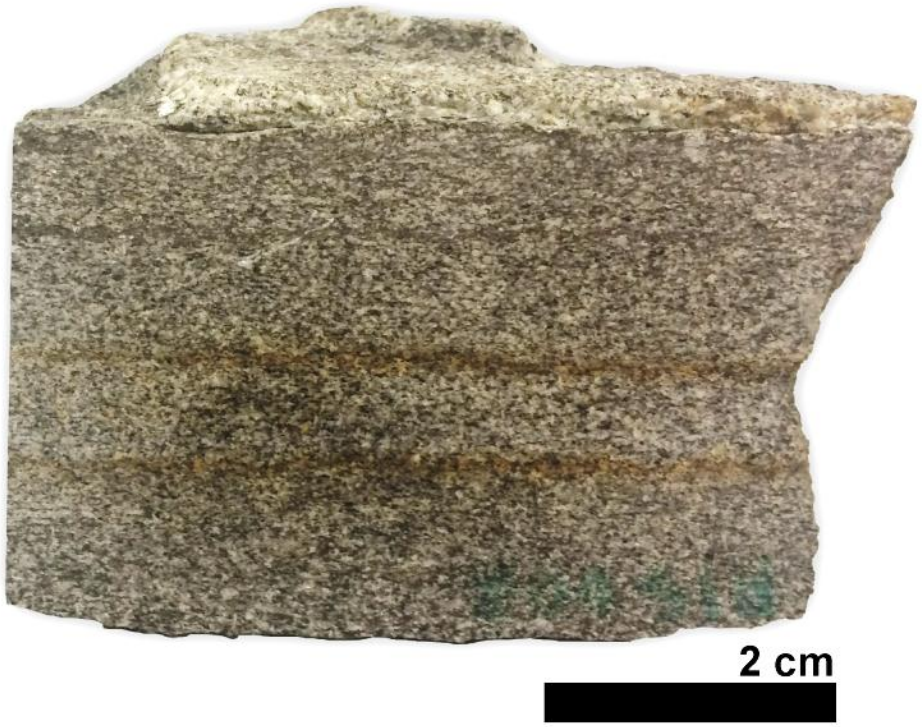


Figure 3.2: Photograph of hand sample of biotite gneiss sample H15-002. Collected in the rim of the Campbell Creek anticline.

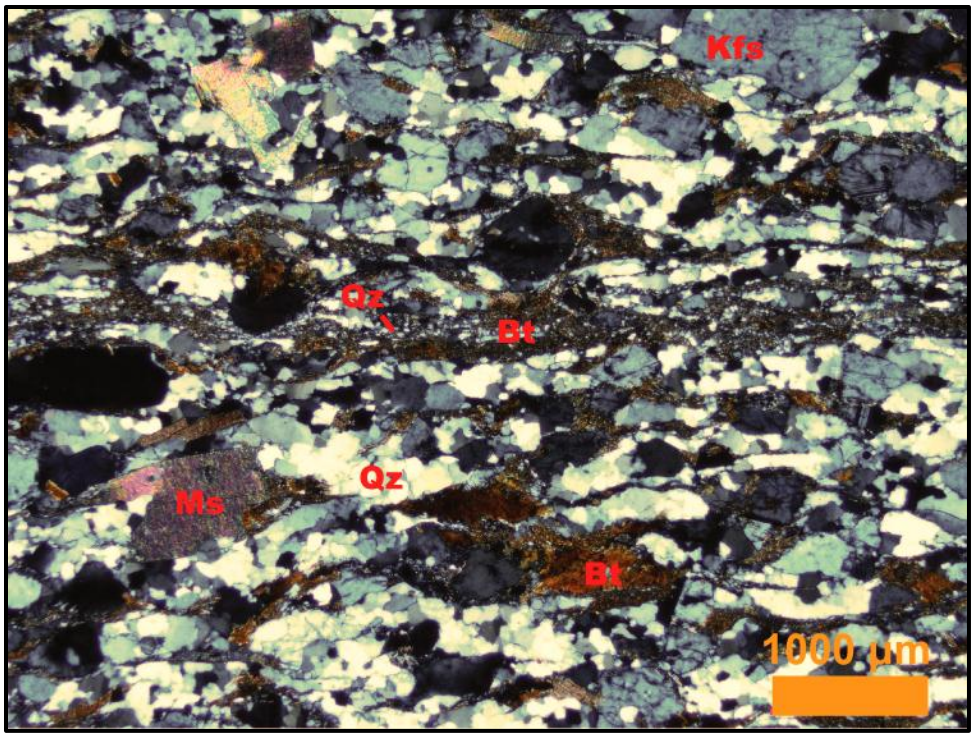


Figure 3.3: Photomicrograph in polarized light of biotite gneiss sample H15-002. Fine-grained biotite and recrystallized quartz define the dominant foliation.


Figure 3.4: Photograph of hand sample of augen gneiss sample H15-001 collected in the core of the Campbell Creek anticline.

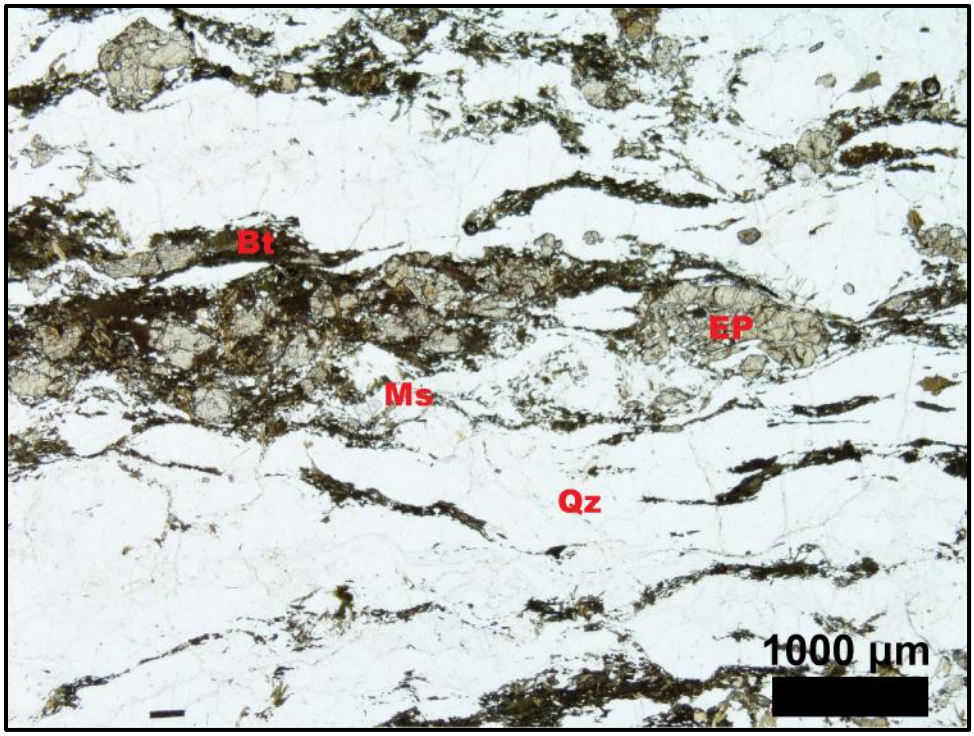


Figure 3.5: Photomicrograph of augen gneiss sample H15-001 annotated to show mineral assemblage and foliation defined by recrystallized biotite, epidote, and quartz.

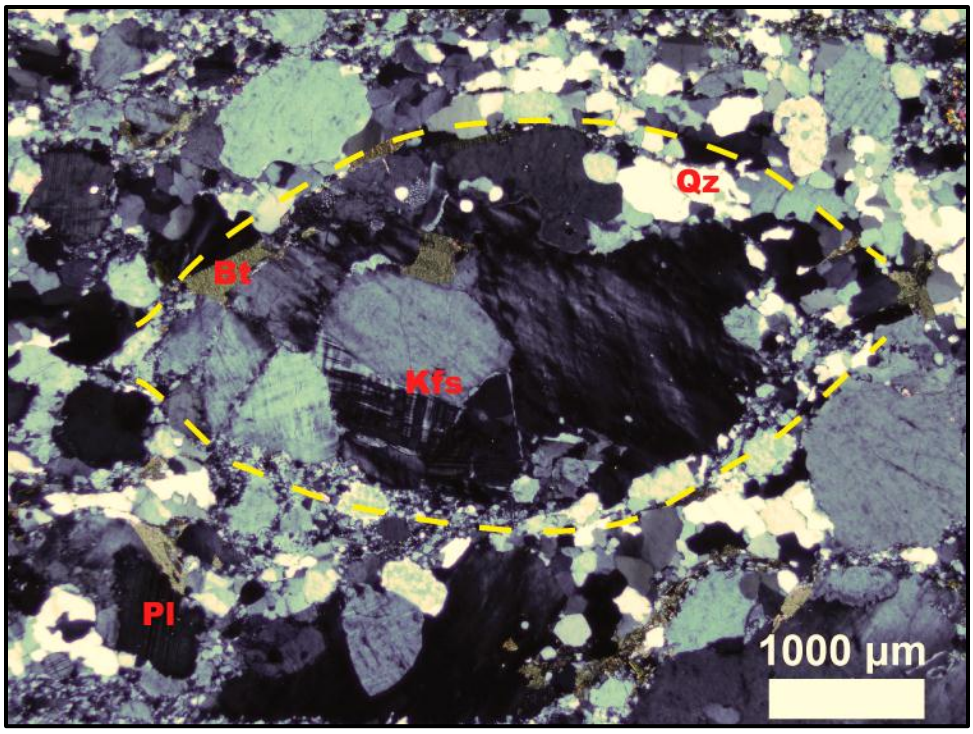


Figure 3.6: Photomicrograph (crossed polar) of augen gneiss sample H15-001 showing biotite grains wrapping around relict Kfs phenocryst recrystallized to porphyroclast (augen: yellow line).


Figure 3.7: Photograph of a hand sample of Copperhill metapsammite. Photograph taken at the location of sample H14-007.

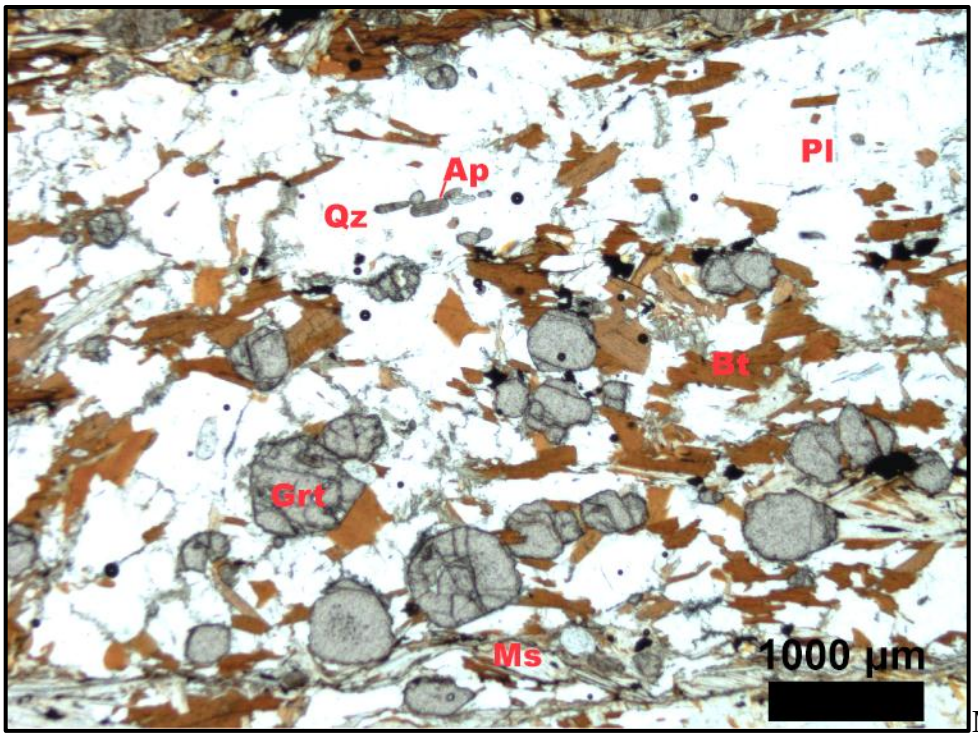

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Figure 3.8: Photomicrograph of Copperhill metapsammite sample H15-008 annotated to show mineral assemblage.


Figure 3.9: Photograph of hand sample of Copperhill biotite-muscovite schist sample H15-007 containing a deformed leucosome parallel to the foliation. Parallelism of cm-scale kyanite porphyroblasts, biotite and muscovite defines the dominant fabric.

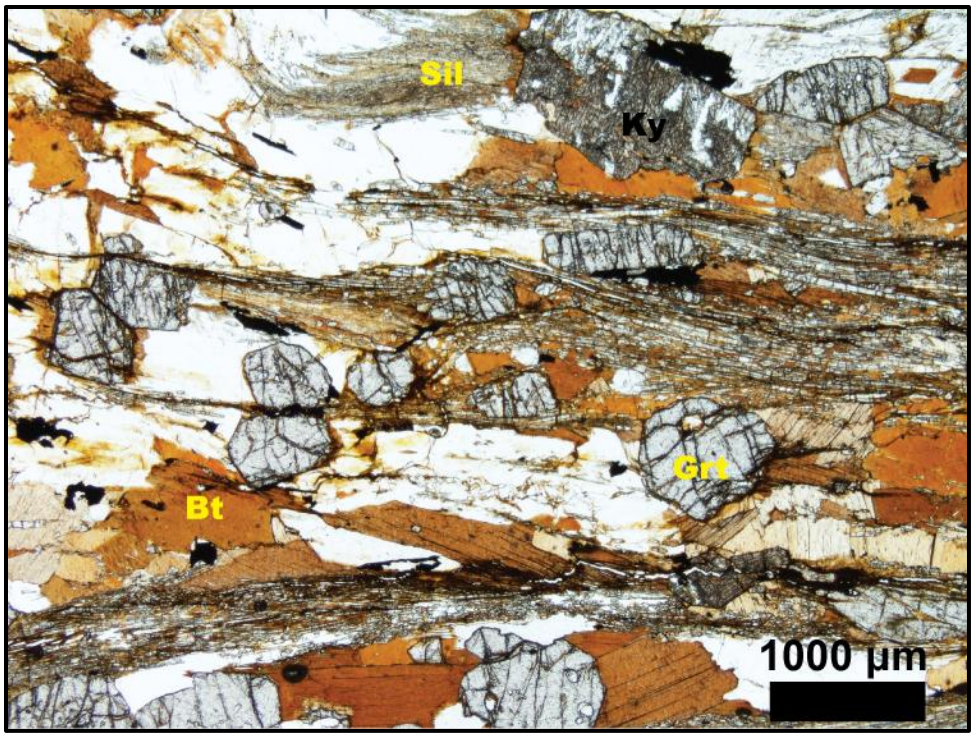


Figure 3.10: Photomicrograph of Copperhill biotite-muscovite schist sample H14-008 annotated to show mineral assemblage. Fibrous sillimanite is crystallizing at the grain boundary of kyanite and is interlayered with muscovite.

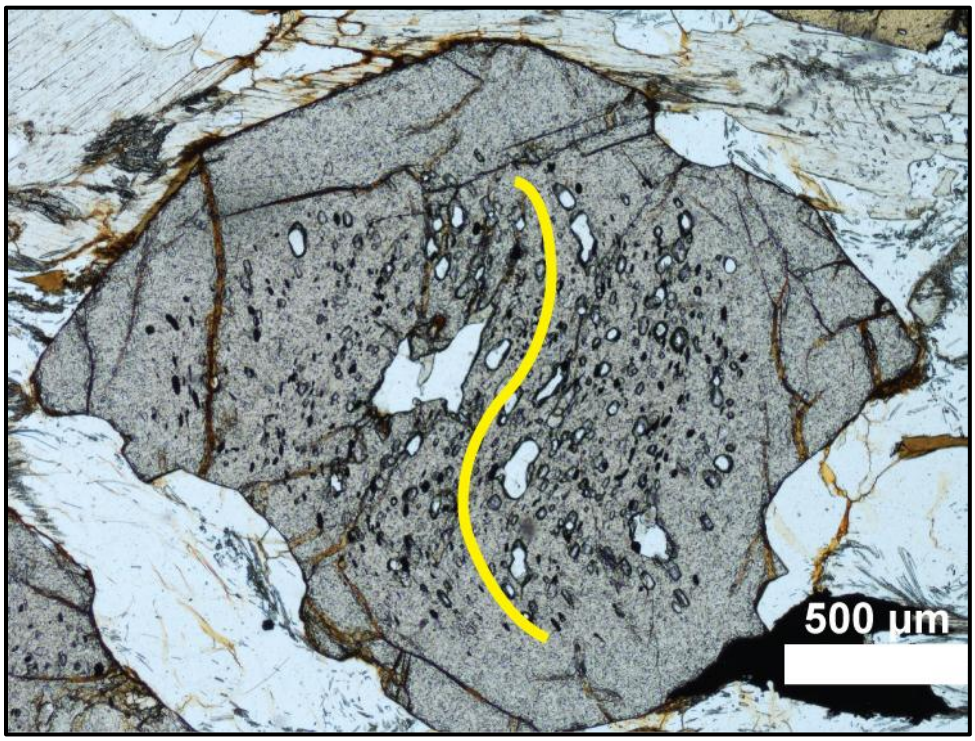


Figure 3.11: Photomicrograph of sigmoidal inclusion trail in subhedral, partly resorbed garnet from Copperhill biotite-muscovite schist sample H14-006.

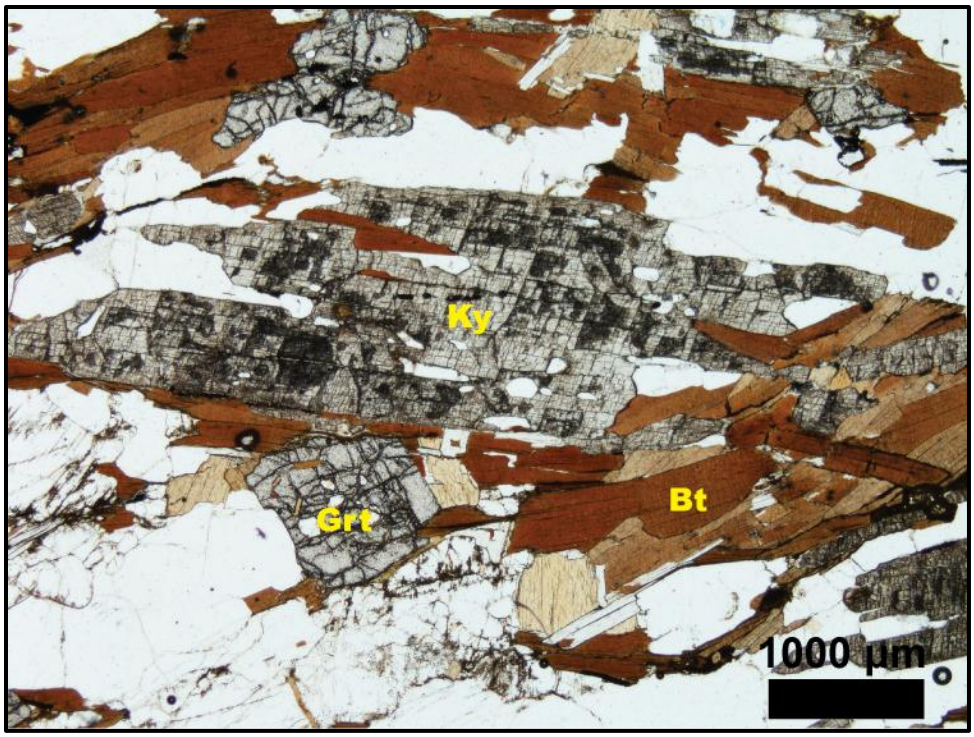


Figure 3.12: Photomicrograph of poikioblastic kyanite and garnet in Copperhill biotite-muscovite schist sample H15-007. Abundant pleochroic halos surround zircon inclusions in kyanite and biotite.

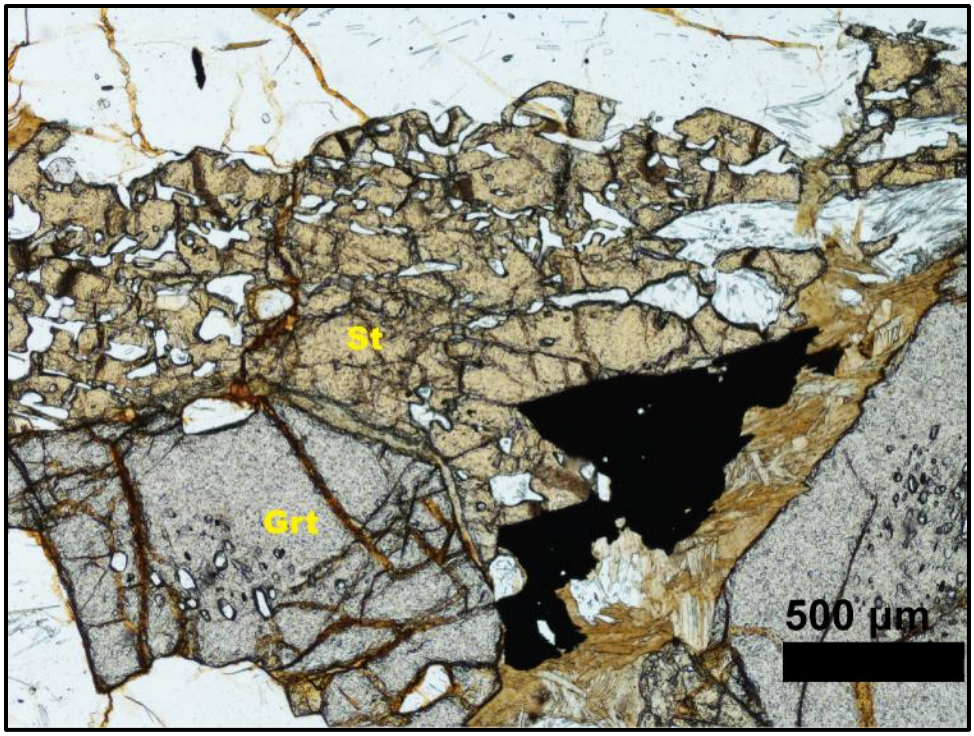


Figure 3.13: Photomicrograph of poikioblastic staurolite and garnet in biotite-muscovite schist sample H14-006. Intergrowth of sillimanite + biotite is crystalizing around the rim of the garnet. Staurolite partly envelops garnet.


Figure 3.14: Photograph of hand sample of Copperhill schist sample H15-009 showing retrograde muscovite pseudomorphs replacing kyanite.


Figure 3.15: Photograph of hand sample of Cartoogechaye biotite gneiss sample DEL14-2. Sample collected at the same location as DEL14-1.


Figure 3.16: Photograph of Cartoogechaye biotite gneiss sample H15-003.

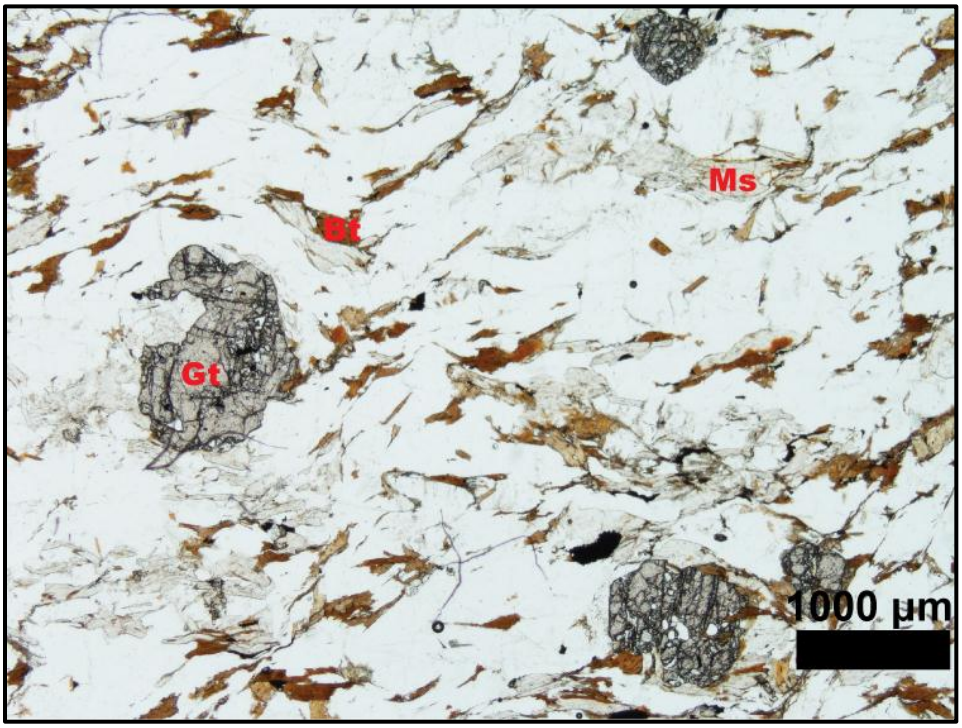


Figure 3.17: Photomicrograph of Cartoogechaye biotite gneiss sample DEL14-2 annotated to show mineral assemblage. Biotite and muscovite define the weak and folded foliation.


Figure 3.18: Photograph of hand sample of Cartoogechaye migmatitic biotite gneiss sample H14-003. Stromatic layering is continuous and folded.

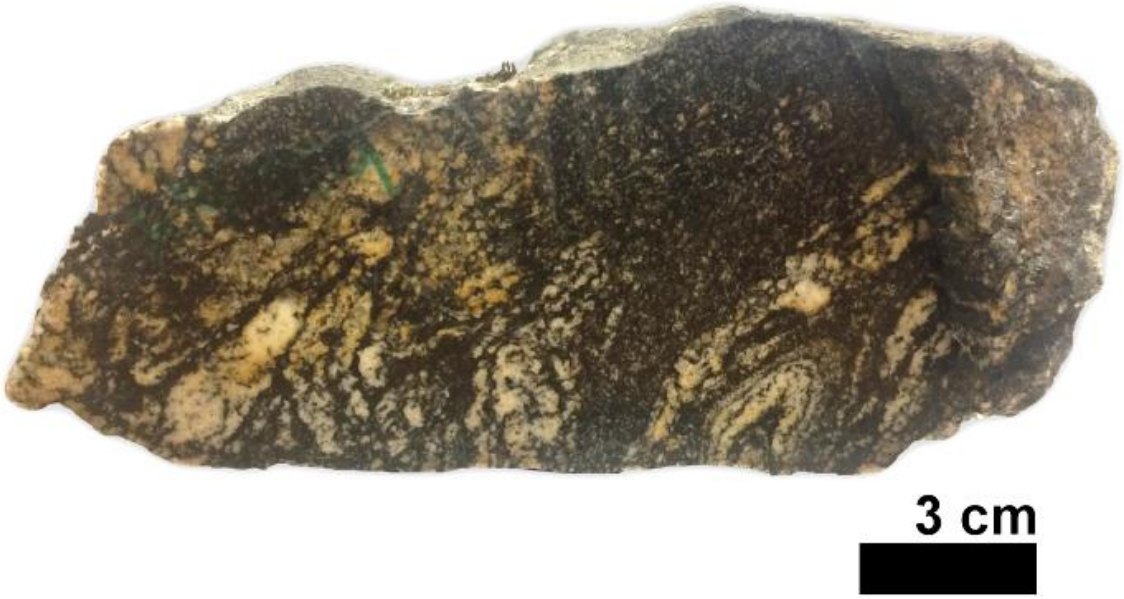


Figure 3.19: Photograph of hand sample of Cartoogechaye migmatitic biotite gneiss sample H14-009. Stromatic layering is irregularly folded with many folds appearing intrafolial.


Figure 3.20: Photograph of hand sample of Cartoogechaye migmatitic biotite gneiss sample H15-004. Stromatic layering is continuous and not folded at the scale of the hand sample.

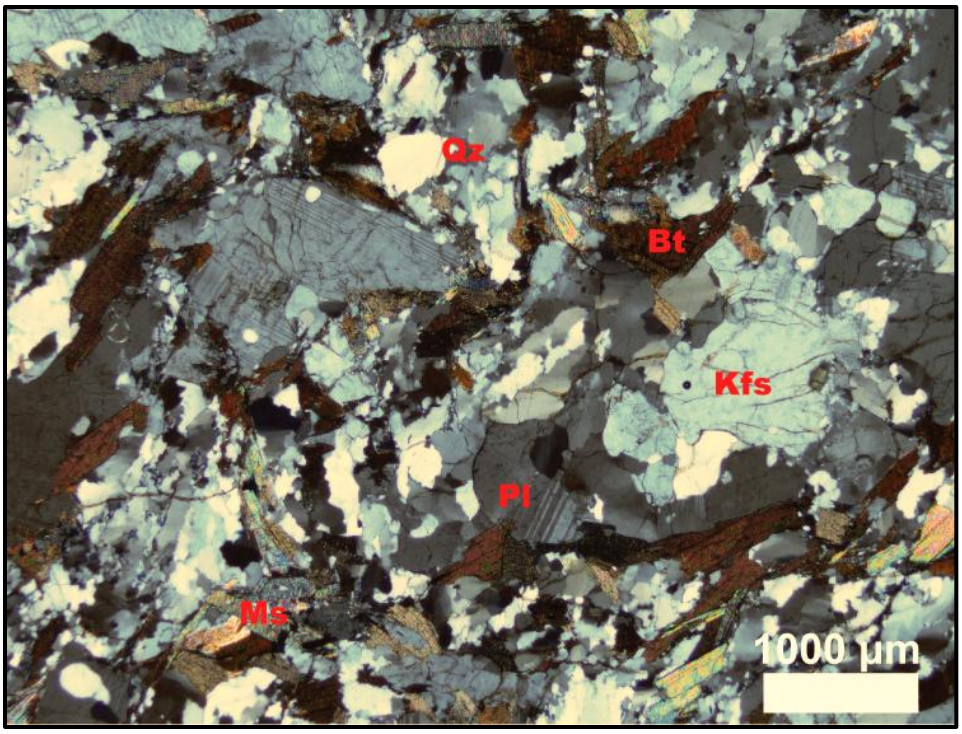


Figure 3.21: Photomicrograph in polarized light of Cartoogechaye migmatitic biotite gneiss sample H15-004 annotated to show mineral assemblage.


Figure 3.22: Photograph of hand sample of Cartoogechaye migmatitic hornblende-biotite gneiss sample H14-011. Migmatite structure is agmatitic with angular fragments of melanosome and garnet-rich amphibolite pods surrounded by feldspar leucosome.

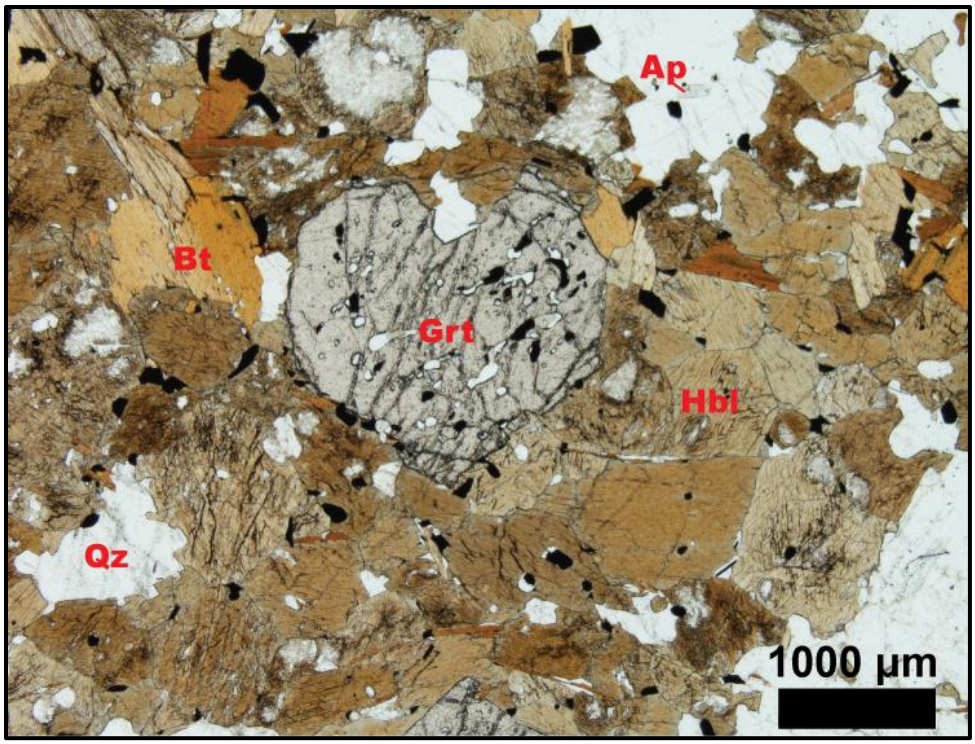


Figure 3.23: Photomicrograph of amphibolite pod in Cartoogechaye hornblende-biotite gneiss sample H14-011. Subhedral hornblende and biotite grains surround poikoblastic garnet.

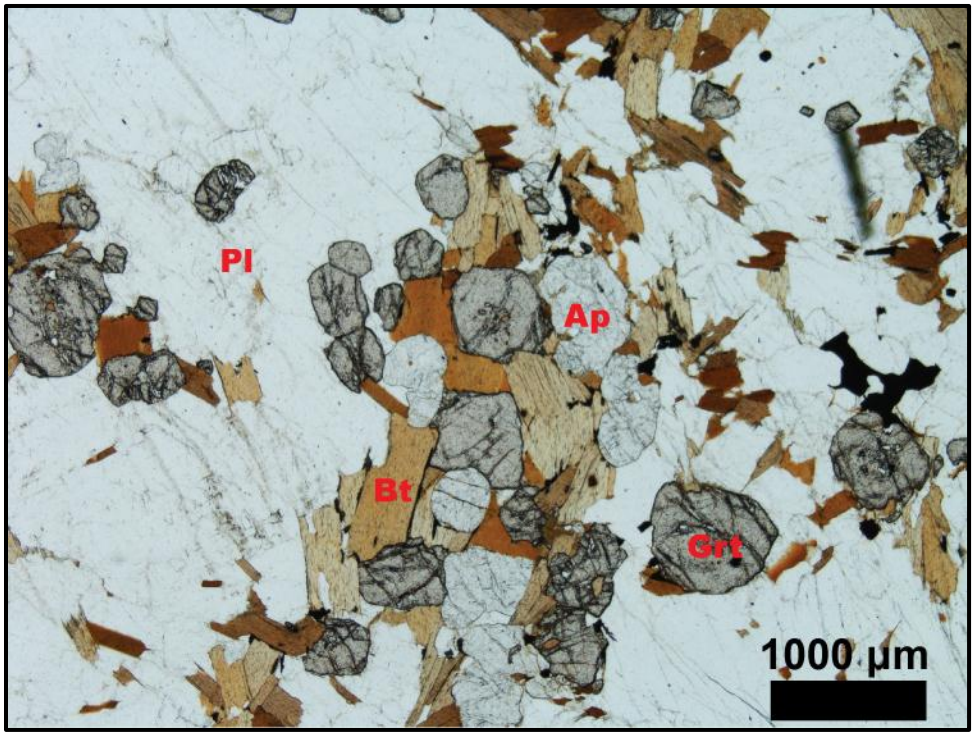


Figure 3.24: Photomicrograph of leucosome in Cartoogechaye hornblende-biotite gneiss sample H14-011. Biotite, garnet and apatite are surrounded by a plagioclase matrix.


Figure 3.25: Photograph of hand sample of Otto gneissic metapsammite. Sample collected at the same location as sample H14-002. Although primarily a metapsammite, the bulk composition was appropriate for generating leucosomes.


Figure 3.26: Photograph of hand sample of Otto biotite schist sample H14-001.

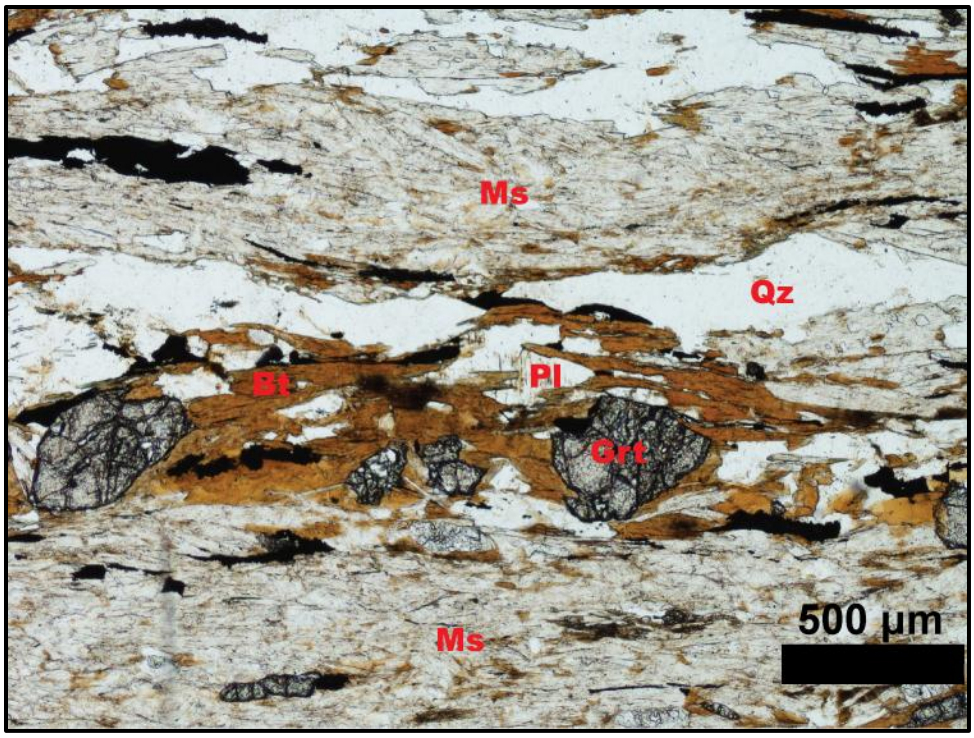


Figure 3.27: Photomicrograph of Otto biotite schist sample H14-001 annotated to show mineral assemblage. Layers of aligned muscovite and biotite define the dominant fabric.

**Structure**

The rocks in the Hazelwood quadrangle experienced at least four periods of Paleozoic deformation. The oldest period of deformation ($D_1$) is recognized by relict bed parallel foliation/schistosity ($S_1$) and isoclinal folds ($F_1$) preserved in amphibolite boudins (Figure 3.28). $S_1$ foliation is interpreted to be bed-parallel, based on evidence of $S_0$ from compositional layering in metapsammite observed to the east of the quadrangle.

The second period of deformation ($D_2$) is recognized by a penetrative foliation ($S_2$) that bounds intrafolial isoclinal folds ($F_2$). $S_2$ is the dominant foliation in the study area and overprints $S_1$. In thinn section, $S_2$ is defined by parallelism of muscovite, biotite, elongate quartz grains, and kyanite. $S_2$ foliation strikes NE and is steeply dipping to subvertical (Figure 3.29).

The third period of deformation ($D_3$) is recognized by open to isoclinal flexural flow folds ($F_3$) and the development of an axial plane cleavage (Figure 3.30). $F_3$ fold axes predominantly trend northeast. $S_3$ is defined by folded/kinked muscovite and dynamic recrystallization of quartz (Figure 3.31). Evidence of $S_3$ is limited to thin section observation.

The last period of deformation ($D_4$) is recognized by high angle brittle faults, localized shear zones, and drag folds ($F_4$) (Figure 3.32). Quartz veins and pegmatite intrusions are commonly observed in fault zones (Figure 3.33).

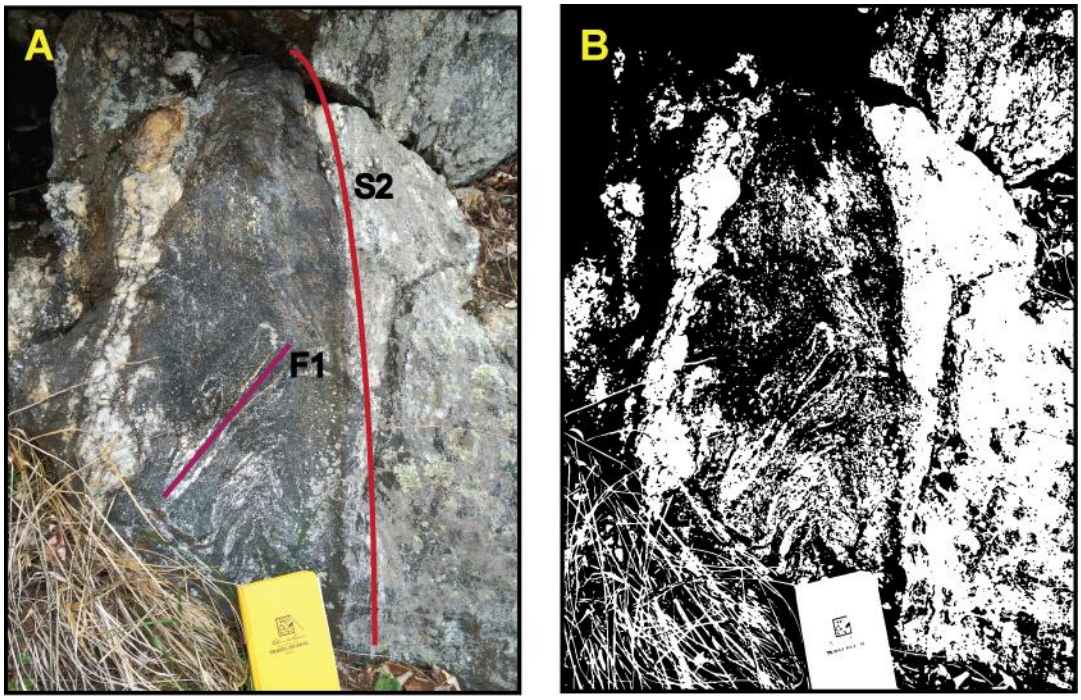


Figure 3.28: F1 isoclinal folds in amphibolite pod surrounded by vertical S2 foliation. (a) Photograph taken at Mount Lyn Lowry overlook on the Blue Ridge parkway. (b) Black and white image trace of photograph A.

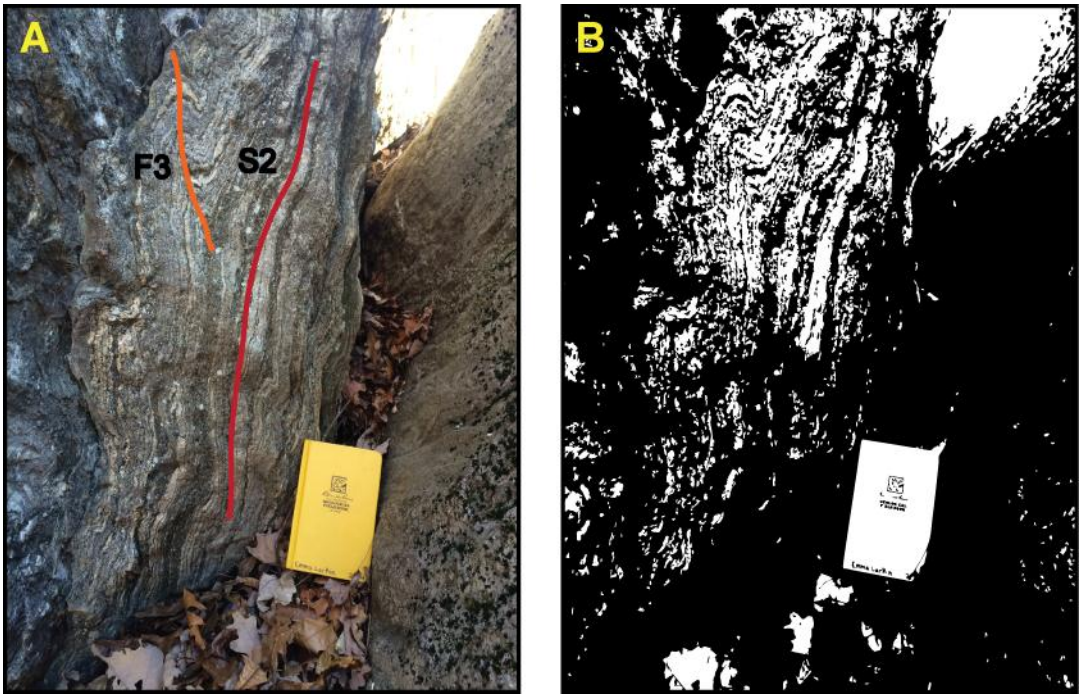


Figure 3.29: Vertical S2 foliation in migmatitic biotite gneiss. (a) Photograph taken on Rocky Knob Road. (b) Black and white image trace of photograph A.

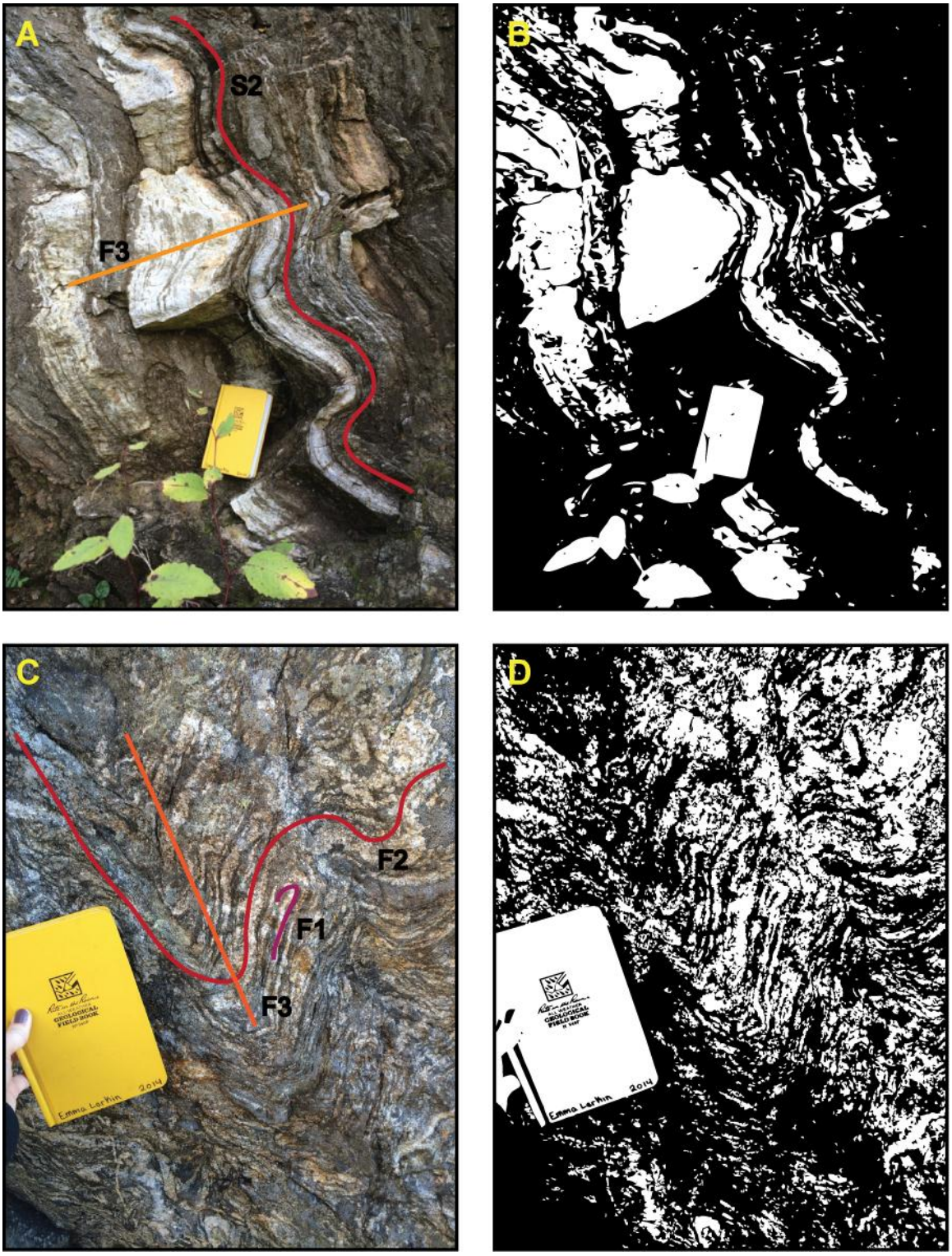


Figure 3.30: (a). Open F3 folding deforming subvertical S2 foliation. Photograph taken near the peak of Plott Balsam Mnt. (b) Black and white image trace of photograph A. (c) F1 isoclinal fold refolded by F2 isoclinal fold refolded by closed F3 fold. Photograph taken at end of Eagle Ridge Drive. (d) Black and white image trace of photograph C.

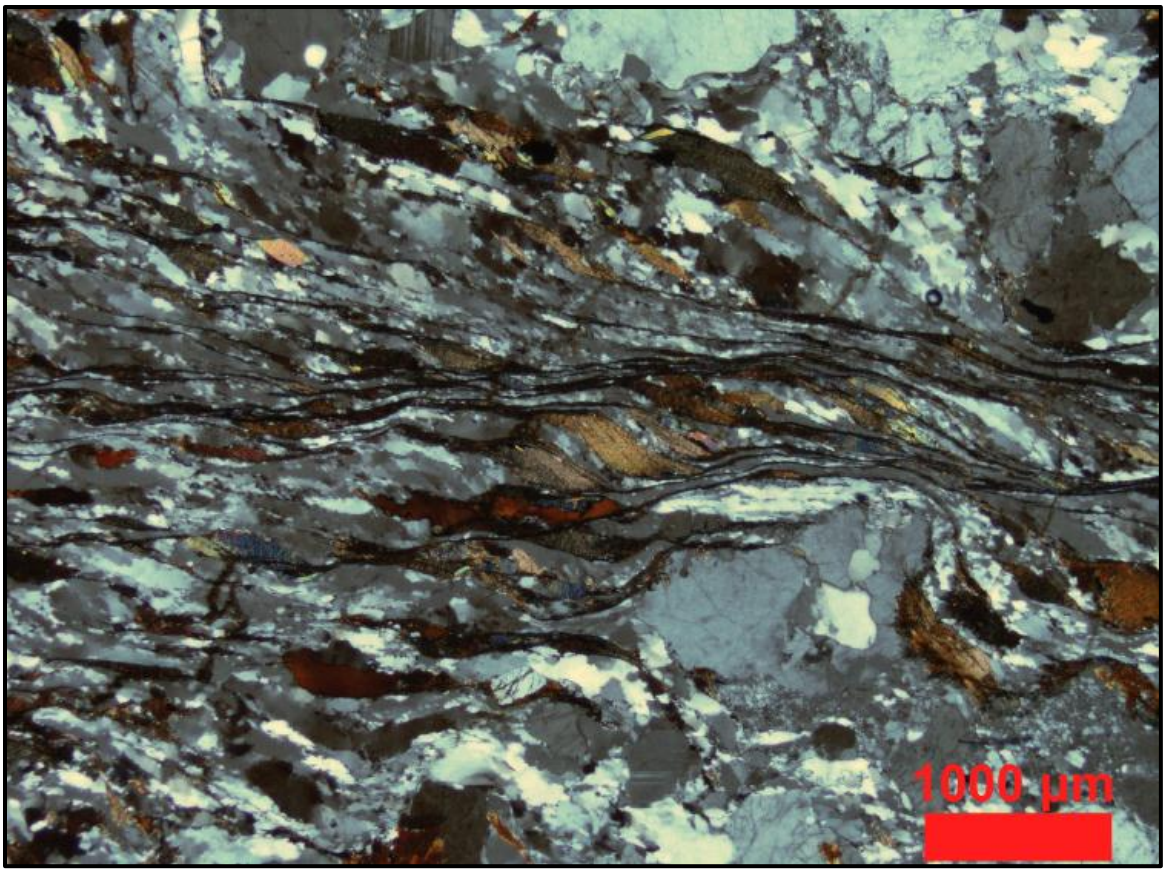


Figure 3.31: Photomicrograph of protomylonite sample H14-017. Dynamically recrystallized quartz and mica fish produce a shear band cleavage (S-C fabric).

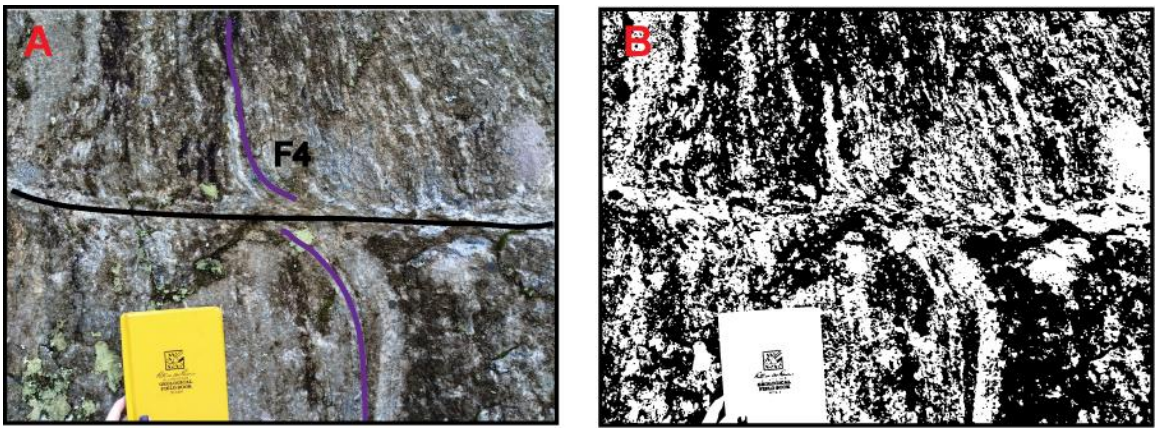


Figure 3.32: (a) Photograph of D4 drag folds. Photograph taken on OlliTrail. (b) Black and white image trace of photograph A.

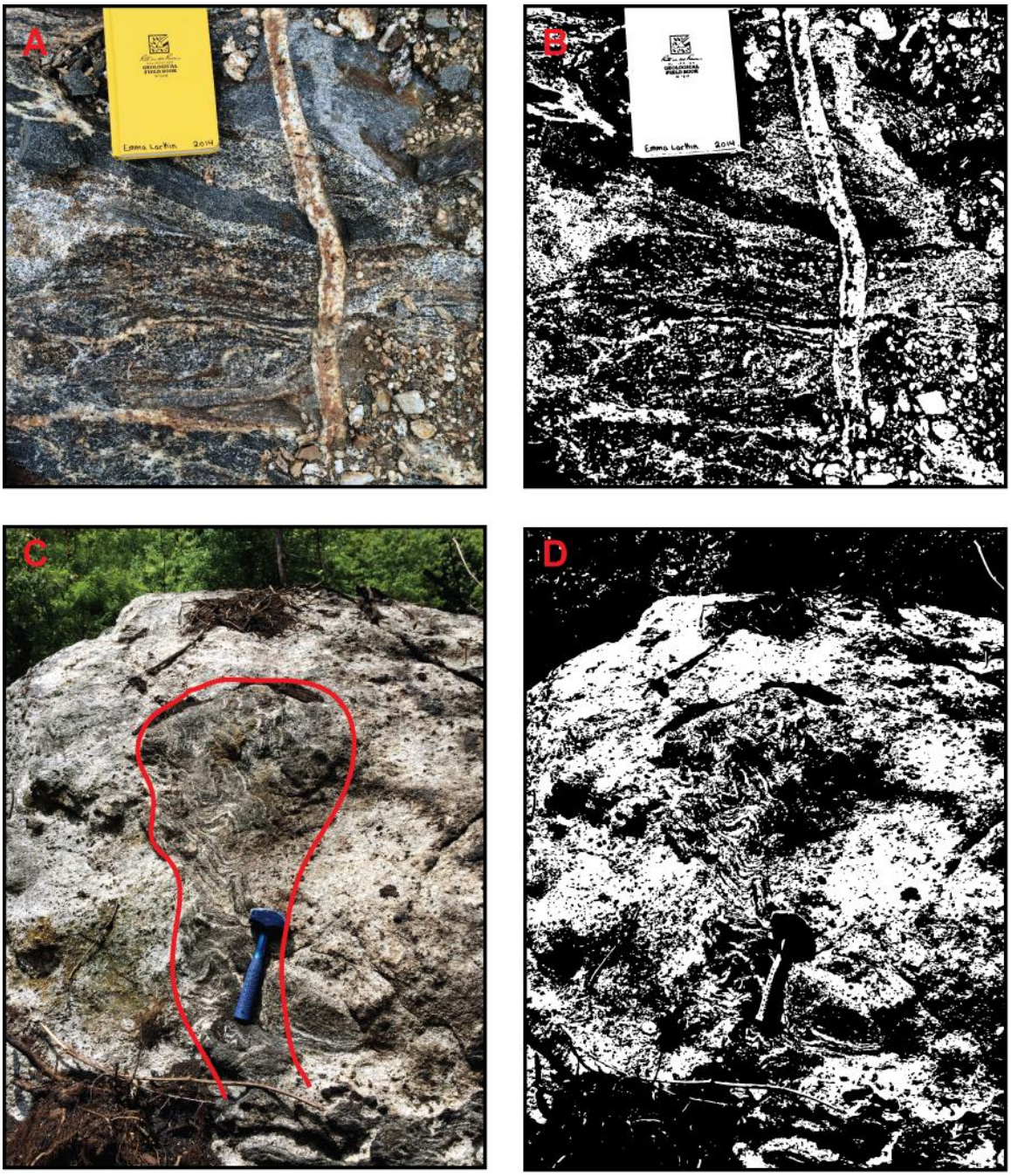


Figure 3.33: (a) Photograph of D4 veins. Photograph taken at sample location H14-011. (b) Black and white image trace of photograph A. (c) Inclusion of migmatitic biotite gneiss in D4 pegmatite. Photograph taken on Turkey Trail. (d) Black and white image trace of photograph C.

**Metamorphism**

Metamorphism in the Hazelwood quadrangle ranges from amphibolite to upper amphibolite facies (kyanite to sillimanite grade) and increases from the northwest to the southeast, as evidenced by kyanite porphyroblasts, fibrous mats of sillimanite replacing kyanite in the pelitic rocks (Figure 3.10), and increased proportion of leucosome in gneiss. The rocks in the western Blue Ridge reached amphibolite facies whereas the rocks in the Central Blue Ridge reached upper amphibolite facies. Peak metamorphism occurred during the Taconic orogeny (Moecher et al., 2004) and Alleganian retrograde metamorphism is indicated in the western and central Blue Ridge by replacement of garnet with biotite and chlorite as well as sericitization of kyanite (Figure 3.14).

## CHAPTER IV. RESULTS OF U-PB ZIRCON GEOCHRONOLOGY

Apparent cores of zircons separated from Cartoogechaye terrane (DEL14-1, H14-011, H15-003, and H15-004), Otto Formation (H14-002), and Copperhill Formation (H14-007) paragneiss were analyzed at the University of Arizona LaserChron Center on the Thermo Element2 multi-collector inductively coupled plasma-mass spectrometer. These analyses were used to identify zircon age populations that could correspond to several potential events, including: (1) the magmatic or metamorphic ages of source rocks, if the zircon grains are detrital or (2) timing of metamorphism/migmatization of the paragneiss if the zircon formed in a leucosome during high grade metamorphism. Additionally, if the grain is detrital, its age would serve as a constraint on the maximum age of deposition of the sedimentary protolith. Cores of magmatic zircon from an orthogneiss sample (H14-020) were analyzed at the University of California Los Angeles on the CAMECA 1270 ion microprobe to determine the age of crystallization of the

igneous protolith. A description of analytical procedures can be found in Chapter II. Geochronologic data are compiled in Appendices B-H. The "best ages" were determined from $^{206}Pb/^{238}U$ ages for grains less than 900 Ma and $^{206}Pb/^{207}Pb$ ages for grains greater than 900 Ma. This is because $^{206}Pb/^{238}U$ ages are more precise for younger systems and $^{206}Pb/^{207}Pb$ ages are more precise for older systems (Gehrels, 2008). Discordance is common among the zircons analyzed by LA-ICP-MS. This could be due to lead loss during prolonged heating, or lead loss during zircon recrystallization during high grade metamorphism. Apparent discordance could also result from laser spots falling on an age boundary. Probability density plots are based on zircons that are greater than 90% concordant. The implications of discordance for interpretation of ages are discussed later.

**Orthogneiss**

Orthogneiss sample H14-020 was collected from an outcrop of Augen gneiss in the core of the Campbell anticline (Figure 2.1). Zircons from this sample are subhedral with strong to weak oscillatory zoned cores and unzoned rims that range from 1-30 μm in thickness (Figure 4.1). Many zircons have fractures, inclusions, and metamict cores, which were intentionally avoided during selection of analysis spots. Nine cores of zircons from this sample were analyzed, which yielded ages that range from 1087 to 1232 Ma. A concordant age of 1147 ± 8 Ma is the proposed age of the magmatic cores, which is interpreted to represent the crystallization age of the protolith of the orthogneiss (Figure 4.2).

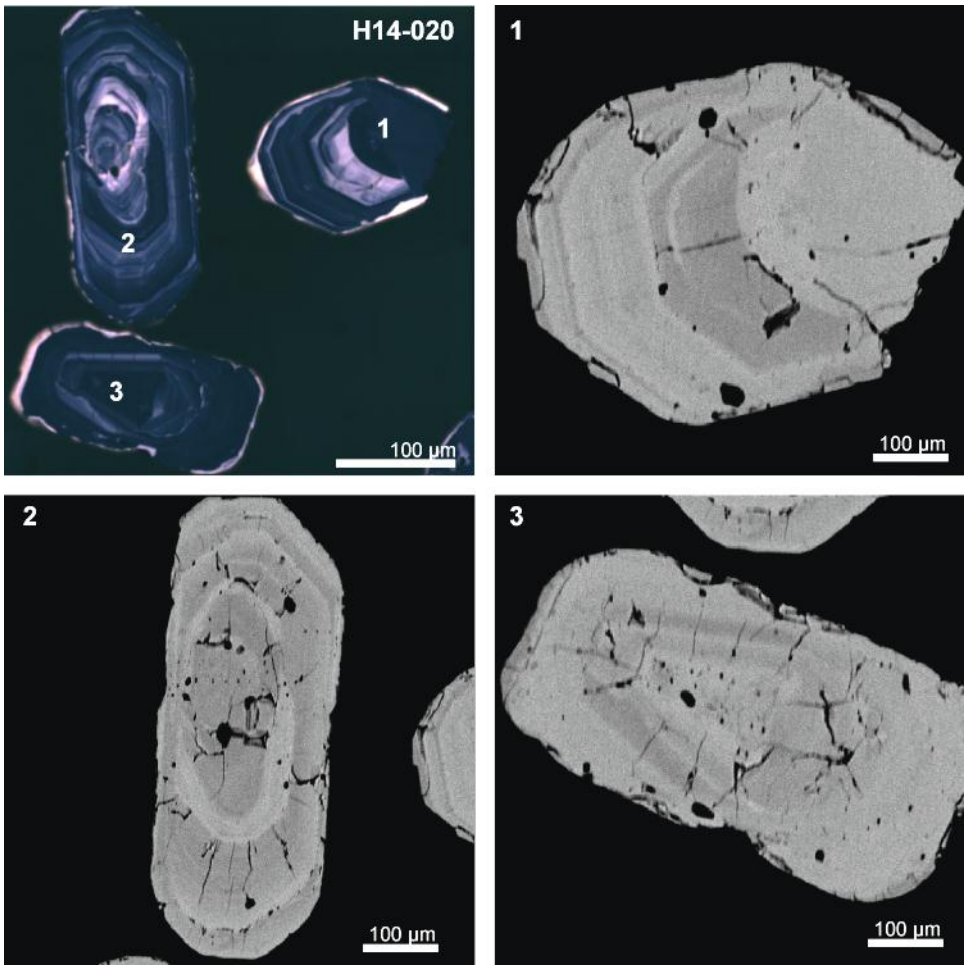


Figure 4.1: Cathodoluminescence (upper left) and back scatter electron images of grains 1-3 from H14-020 showing oscillatory (magmatic) zoning and distribution of inclusions. Grain 2 contains a xenocrystic core.

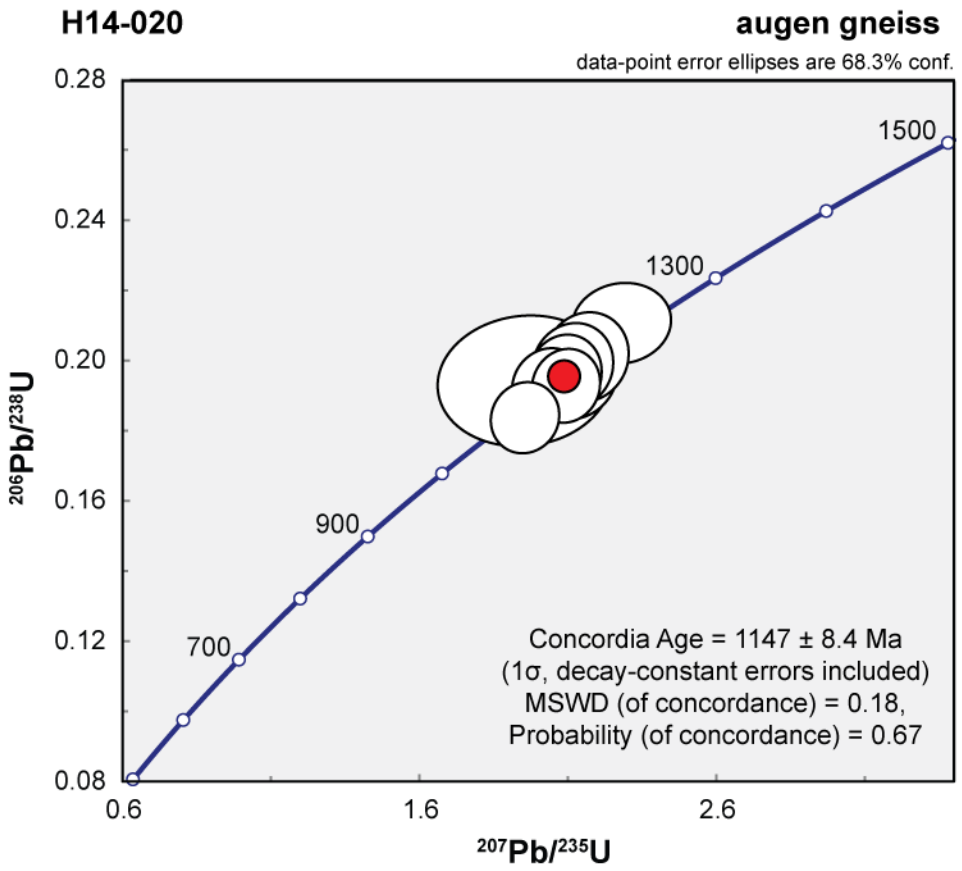


Figure 4.2: Concordia diagram from sample H14-020 zircon data. Analyses are by SIMS.

**Paragneiss**

Paragneiss samples were collected from representative outcrops within the Cartoogechaye terrane, Otto Formation, and Copperhill Formation for detrital zircon geochronology. Highly variable and complex zonation patterns are common in all of the samples. These zircons are primarily subhedral to anhedral, with oscillatory and/or sector zoned and unzoned cores. Few zircons cores contain metamict structures. Weakly zoned to unzoned rims that range from ~5-20 µm in thickness are common and consistent with metamorphic growth. BSE and Cl images (Figure 4.3) were used to avoid analysis of overlapping zones, metamict cores, and metamorphic rims.

***DEL14-1 (Cartoogechaye biotite gneiss):***

Cores of 308 zircons were analyzed in a sample of migmatitic biotite gneiss collected from the north side of Eaglesnest Ridge (Figure 2.1). 287 analyses are greater than 90% concordant. Concordant zircon ages range from approximately 995 Ma to 1688 Ma with two dominant Mesoproterozoic age populations at 1030 Ma and 1150-1200 Ma (Figure 4.4). Minor age populations include the Mesoproterozoic (1420 and 1510 Ma); Paleoproterozoic (1688 ± 21 Ma), single grain; and Neoproterozoic (724 Ma ± 9 Ma), single grain.

***H14-011 (Cartoogechaye migmatitic hornblende biotite gneiss):***

Cores of 314 zircons were analyzed in a sample of migmatitic hornblende biotite gneiss collected along US 287 Highway 74 (Figure 2.1). This sample had the lowest proportion of concordant grains with only 174 analyses being greater than 90% concordant. Concordant zircon ages range from approximately 442 Ma to 1734 Ma, with five distinct age populations (Figure 4.5) including: (1) Mesoproterozoic grains with age modes at 1025 Ma and 1150 Ma; (2) Mesoproterozoic grains with ages between approximately 1350 Ma and 1450 Ma; (3) Paleoproterozoic grains between approximately 1620 Ma and 1735 Ma are present; (4) Neoproterozoic grains between approximately 730 Ma and 875 Ma; (5) Paleozoic grains with a weighted mean age of 465 ± 2 Ma that comprise approximately 20% of this sample (Figure 4.6).

***H15-003 (Cartoogechaye migmatitic biotite gneiss):***

Cores of 300 zircons were analyzed in a sample of migmatitic biotite gneiss collected south of sample H14-011 along US Highway 74 (Figure 2.1). 258 analyses are greater than 90% concordant. Concordant zircon ages range from approximately 450 Ma

to 1252 Ma with two distinct age populations (Figure 4.7). The majority (~ 90%) of the zircons are Mesoproterozoic, with a peak at 1180 Ma. Although sample H15-003 contains zircons at ~1000 Ma, it is the only sample analyzed that does not exhibit the two distinct Mesoproterozoic age modes typical of Grenville zircons. In addition, it is the only Cartoogechaye gneiss sample that does not have Paleoproterozoic zircons. Paleozoic metamorphic zircons with peaks at 480 and 460 make up approximately 10% of this sample and are consistent with Taconic orogenesis. Many of the grains define a linear trend on the Tera-Wasserburg diagram between ca. 1150 and ca. 450 Ma (Figure 4.7).

***H15-004 (Cartoogechaye migmatitic felsic gneiss):***

Cores of 291 zircons were analyzed in a sample of migmatitic felsic gneiss collected on the peak of Eaglenest Mountain (Figure 2.1). 236 analyses are greater than 90% concordant and concordant zircon ages range from 457 Ma to 2077 Ma (Figure 4.8). Mesoproterozoic grains make up 90% of the sample, with age modes at 1040 Ma and 1100 Ma. Mesoproterozoic zircons ranging from approximately 1300-1580 Ma are also present and three Paleoproterozoic grains were analyzed at 1644 ± 18 Ma, 2076 ± 14 Ma, and 2077 ± 20 Ma. Neoproterozoic zircons define an age population with a peak at 680 Ma. Paleozoic zircon age populations are shown at 540 Ma and between 460 Ma and 480 Ma; this is the only sample in which zircons with greater than 90% concordance have ages at ~540 Ma.

***H14-007 (Copperhill Formation metapsammite)***

Apparent cores of 286 detrital zircons were analyzed in a sample of metapsammite collected on the south side of Mount Lyn Lowry (Figure 2.1) and 241 analyses were greater than 90% concordant. Ages range from 763 Ma to 1846 Ma (Figure

4.9), with the most abundant ages being Mesoproterozoic (1060 Ma, 1170 Ma, and 1440 Ma). Paleoproterozoic age populations have peaks at 1650 Ma, 1730 Ma, and 1840 Ma and a single Neoproterozoic age (763 ± 12 Ma) was also present. No Paleozoic metamorphic grains were recognized.

***H14-002 (Otto Formation gneissic metapsammite)***

Apparent cores of 251 detrital zircons were analyzed in a sample of metapsammite collected on Pinnacle Ridge (Cove Field Ridge overlook on the Blue Ridge parkway) (Figure 2.1) and 174 analyses are greater than 90% concordant. Concordant zircon ages range from approximately 434 Ma to 2519 Ma (Figure 4.10), with greater than 90% being Mesoproterozoic with age populations at 1020 Ma, 1150 Ma, and 1320 Ma. Minor age populations include a single Archean zircon (2519 ± 18 Ma), which represents the oldest age revealed in the study and two Neoproterozoic ages (~850 Ma). Paleozoic zircons with a weighted mean age of 454 ± 10 Ma make up approximately 20% of this sample (Figure 4.11).

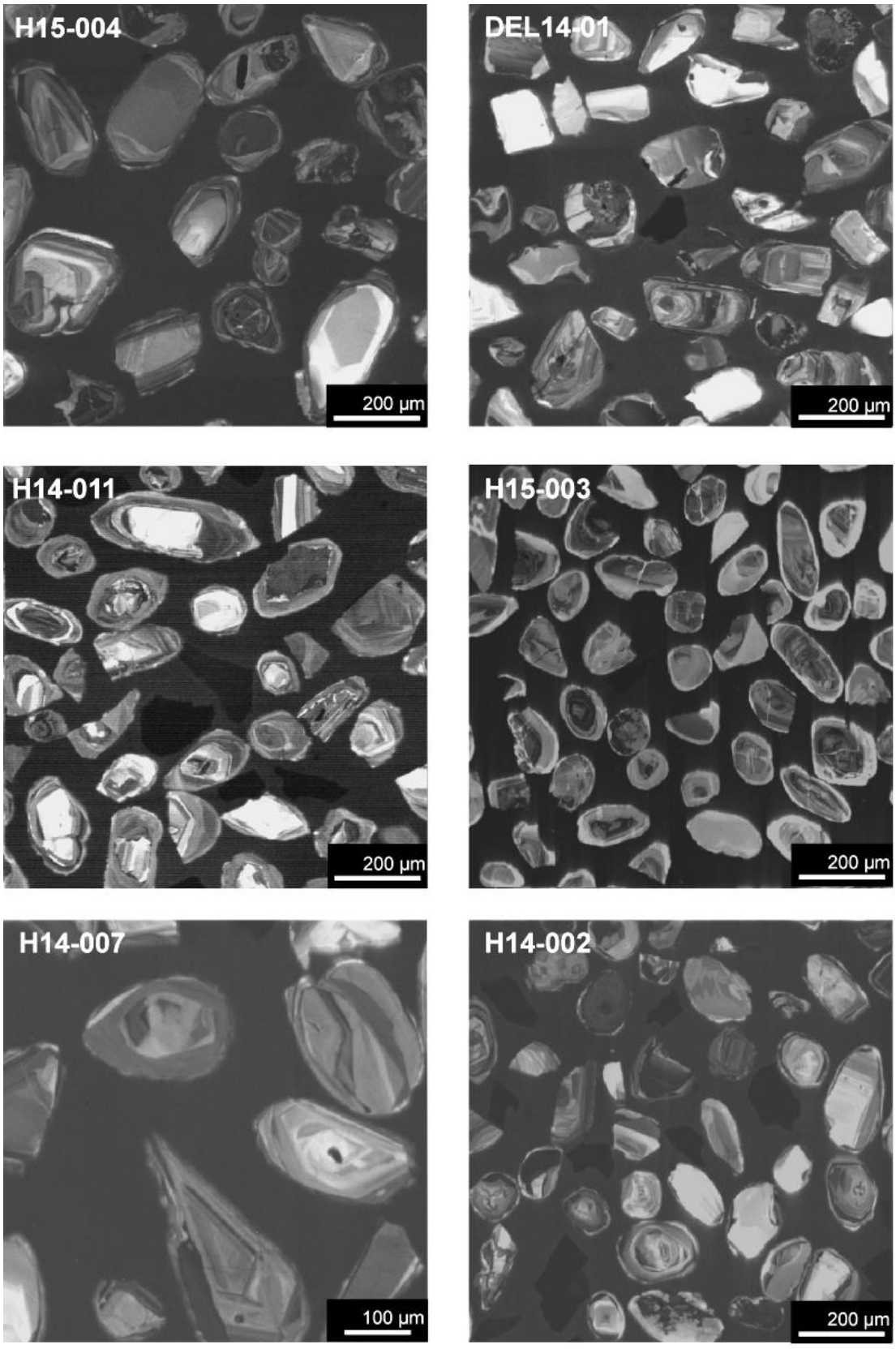


Figure 4.3: Cathodoluminescence images of representative sections of zircon mounts.

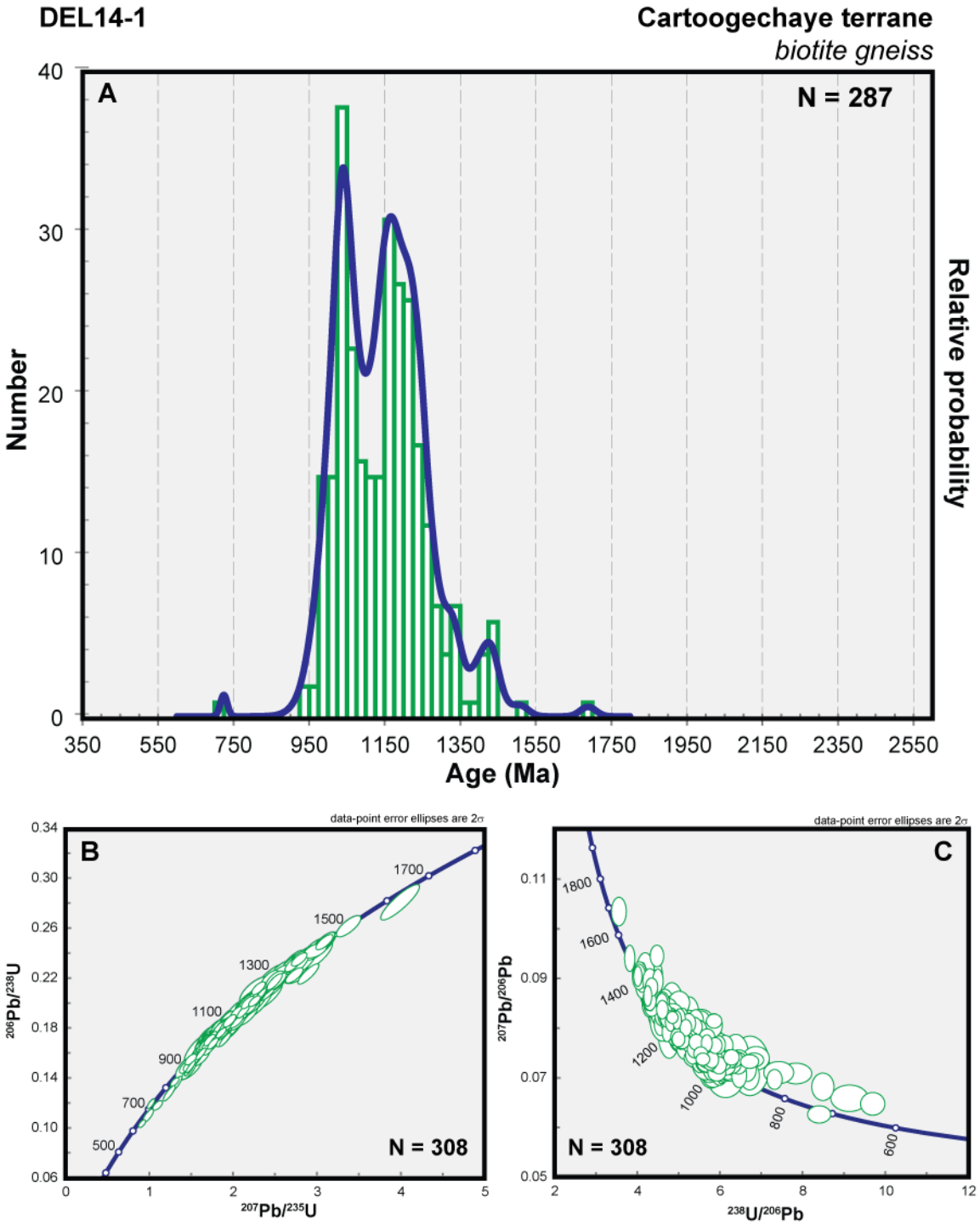


Figure 4.4: Results of LA-ICP-MS of zircon from sample DEL14-1. (a) Probability density plot of data with greater than 90% concordance. (b) Concordia diagram of all data. (c) Tera-Wasserburg diagram of all data.

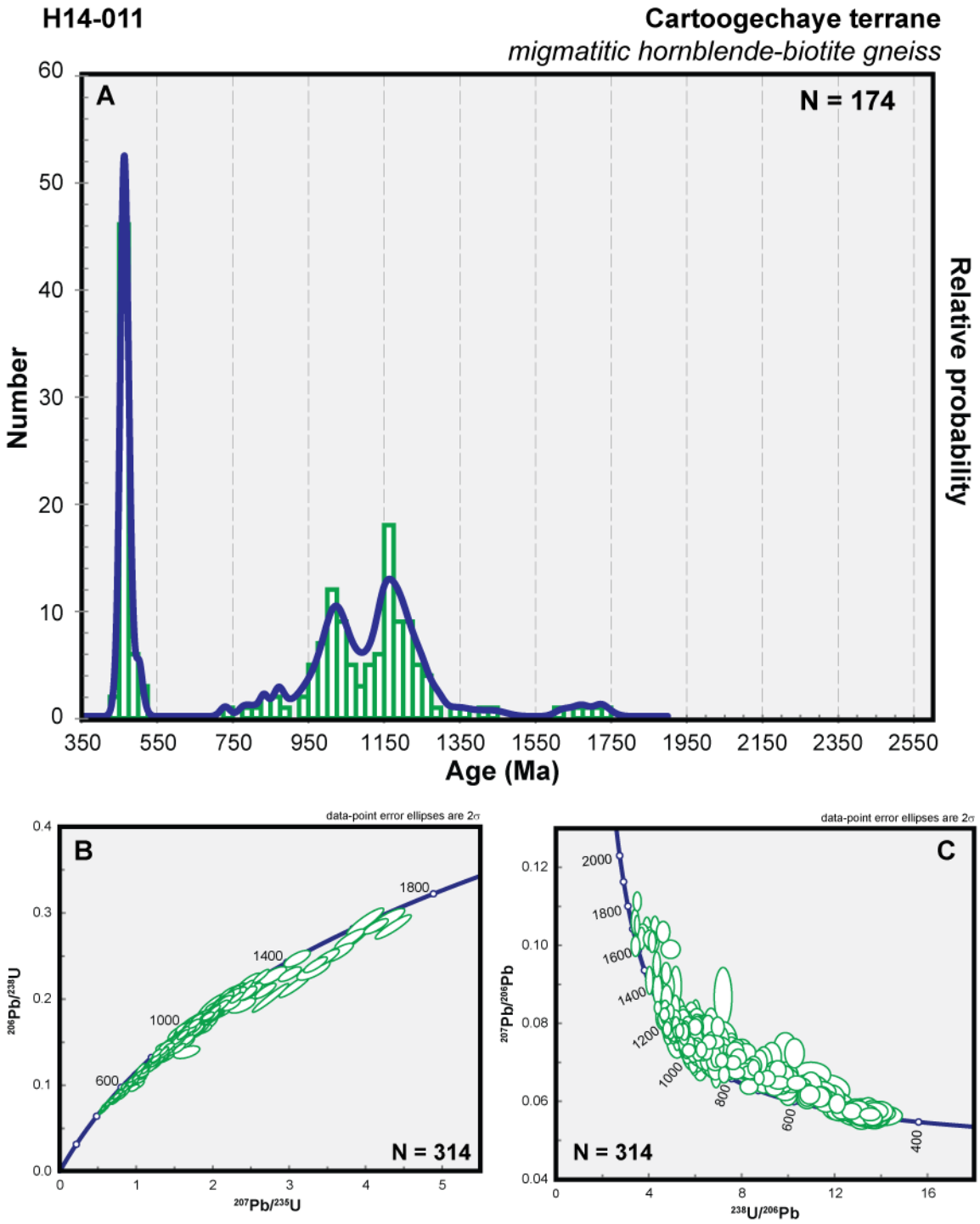


Figure 4.5: Results of LA-ICP-MS of zircon from sample H14-011. (a) Probability density plot of data with greater than 90% concordance. (b) Concordia diagram of all data. (c) Tera-Wasserburg diagram of all data.

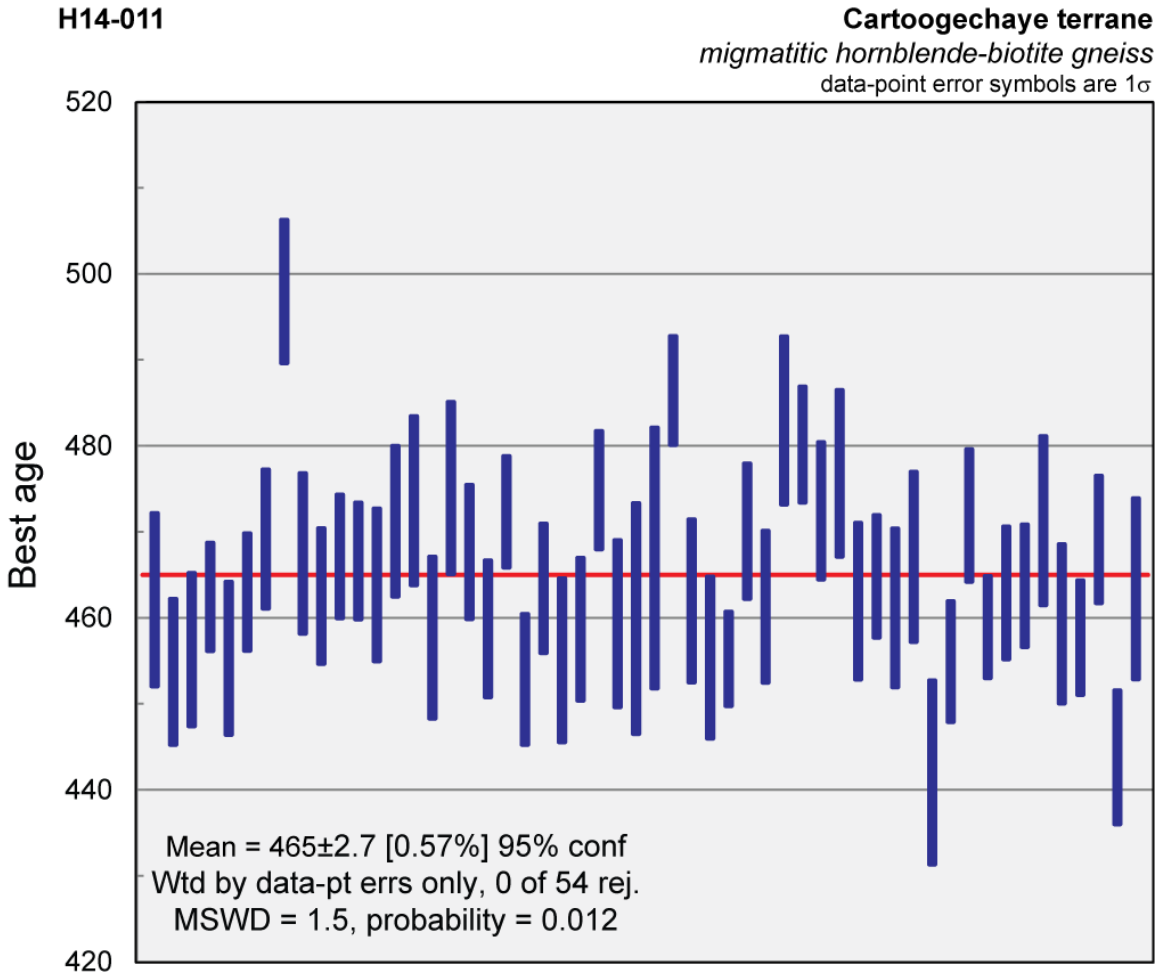


Figure 4.6: Mean 'best' age plot of data with ages under 500 Ma and greater than 90% concordance from sample H14-011. The mean 'best' age of 465±3 is the proposed age of Taconic metamorphism for the sample. It should be noted that this calculation of the mean age of metamorphism may be producing an apparent older age due to the presence of a shoulder off of the dominant Taconic peak seen in figure 4.5.

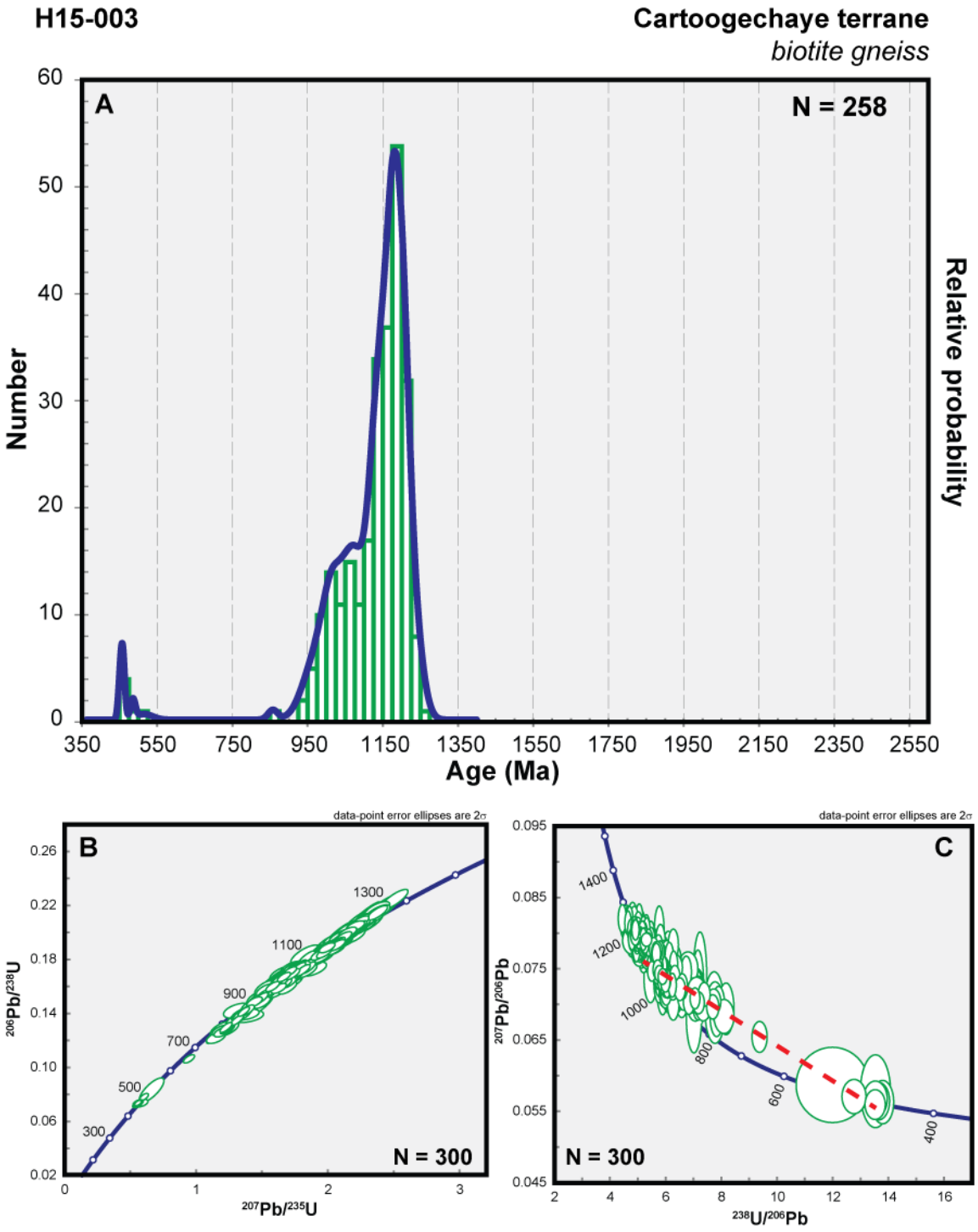


Figure 4.7: Results of LA-ICP-MS of zircon from sample H15-003. (a) Probability density plot of data with greater than 90% concordance. (b) Concordia diagram of all data. (c) Tera-Wasserburg diagram of all data. Red dashed line shows apparent linear trend between ca. 1150 and ca. 450 Ma.

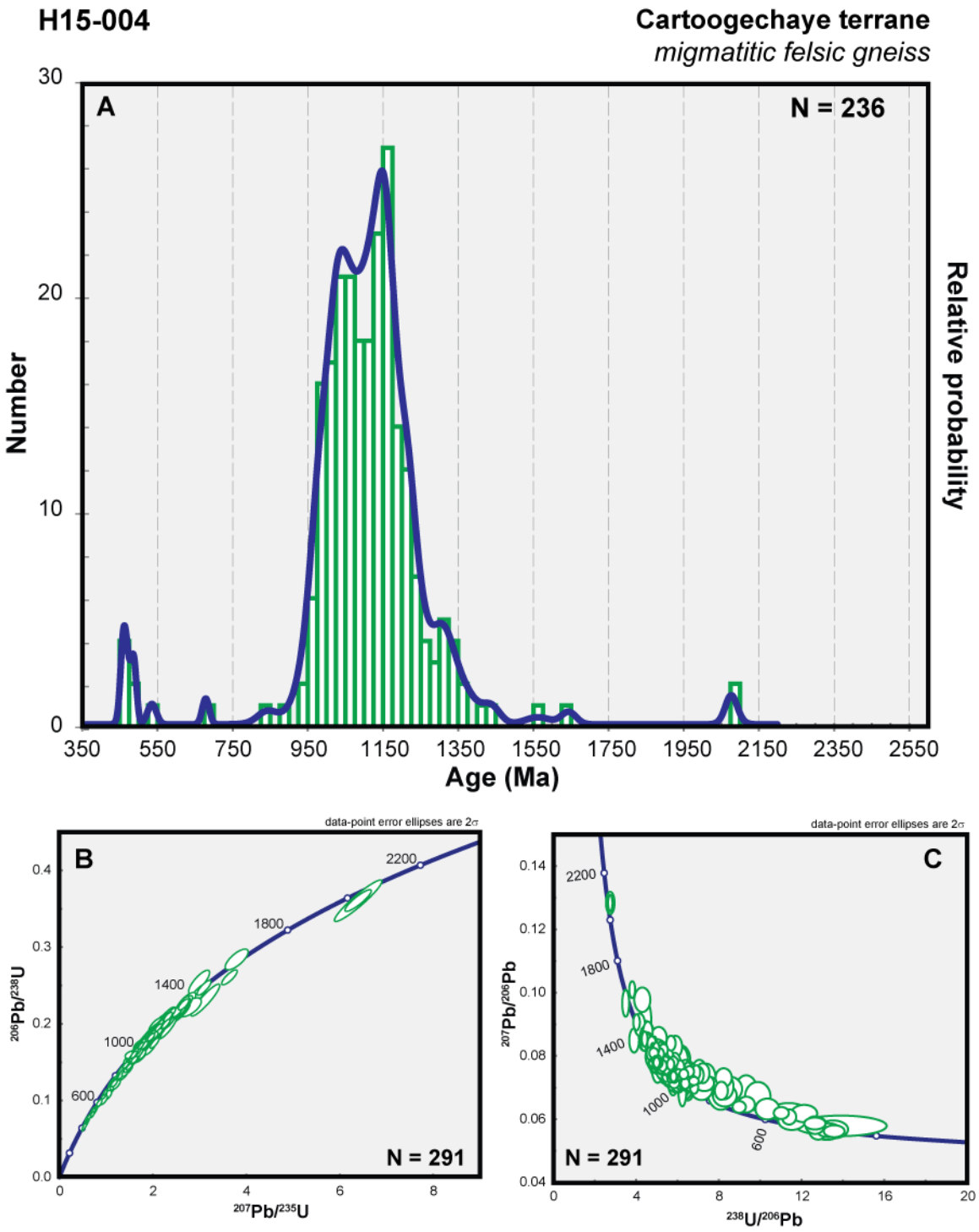


Figure 4.8: Results of LA-ICP-MS of zircon from sample H15-004. (a) Probability density plot of data with greater than 90% concordance. (b) Concordia diagram of all data. (c) Tera-Wasserburg diagram of all data.

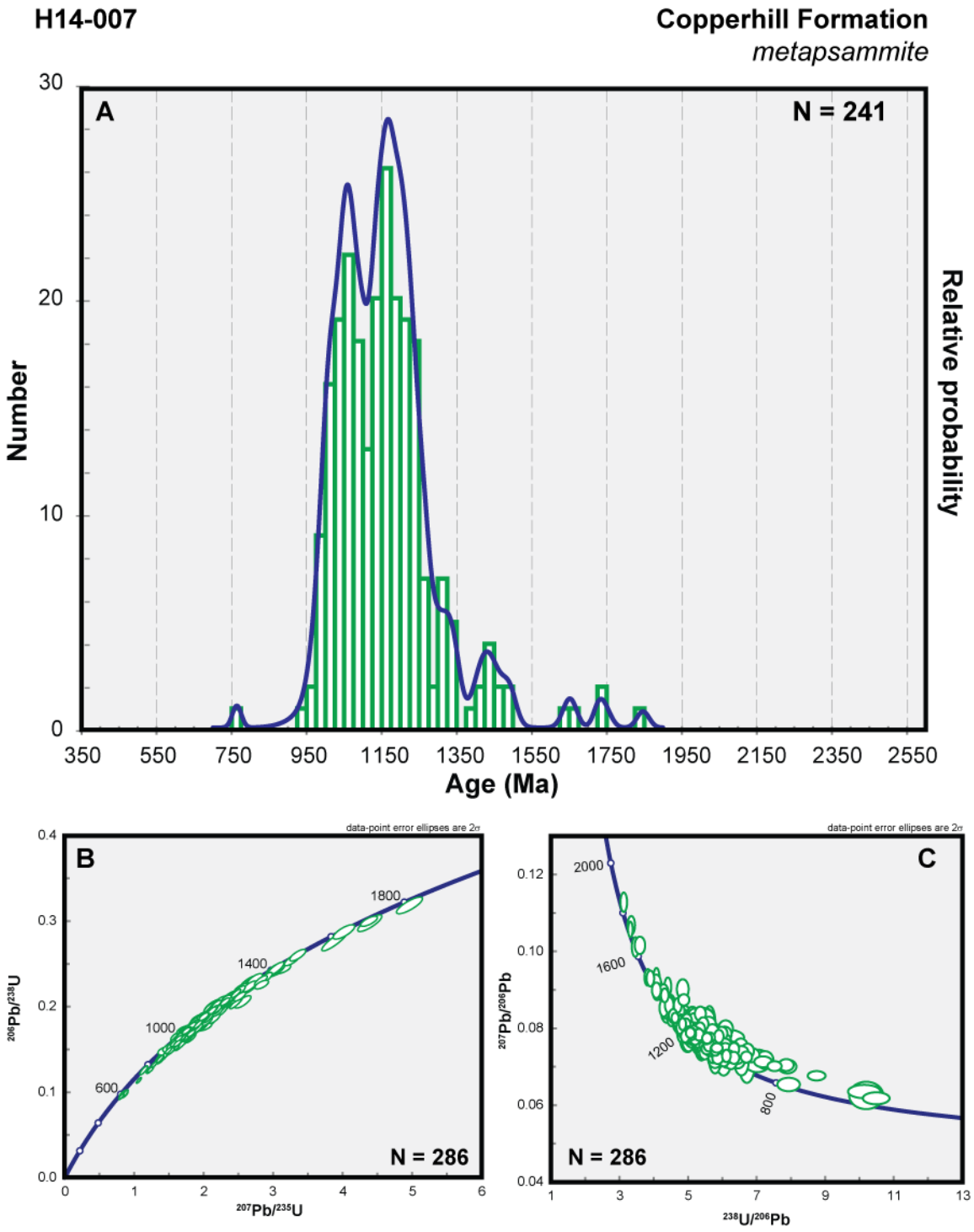


Figure 4.9: Results of LA-ICP-MS of zircon from sample H14-007. (a) Probability density plot of data with greater than 90% concordance. (b) Concordia diagram of all data. (c) Tera-Wasserburg diagram of all data.

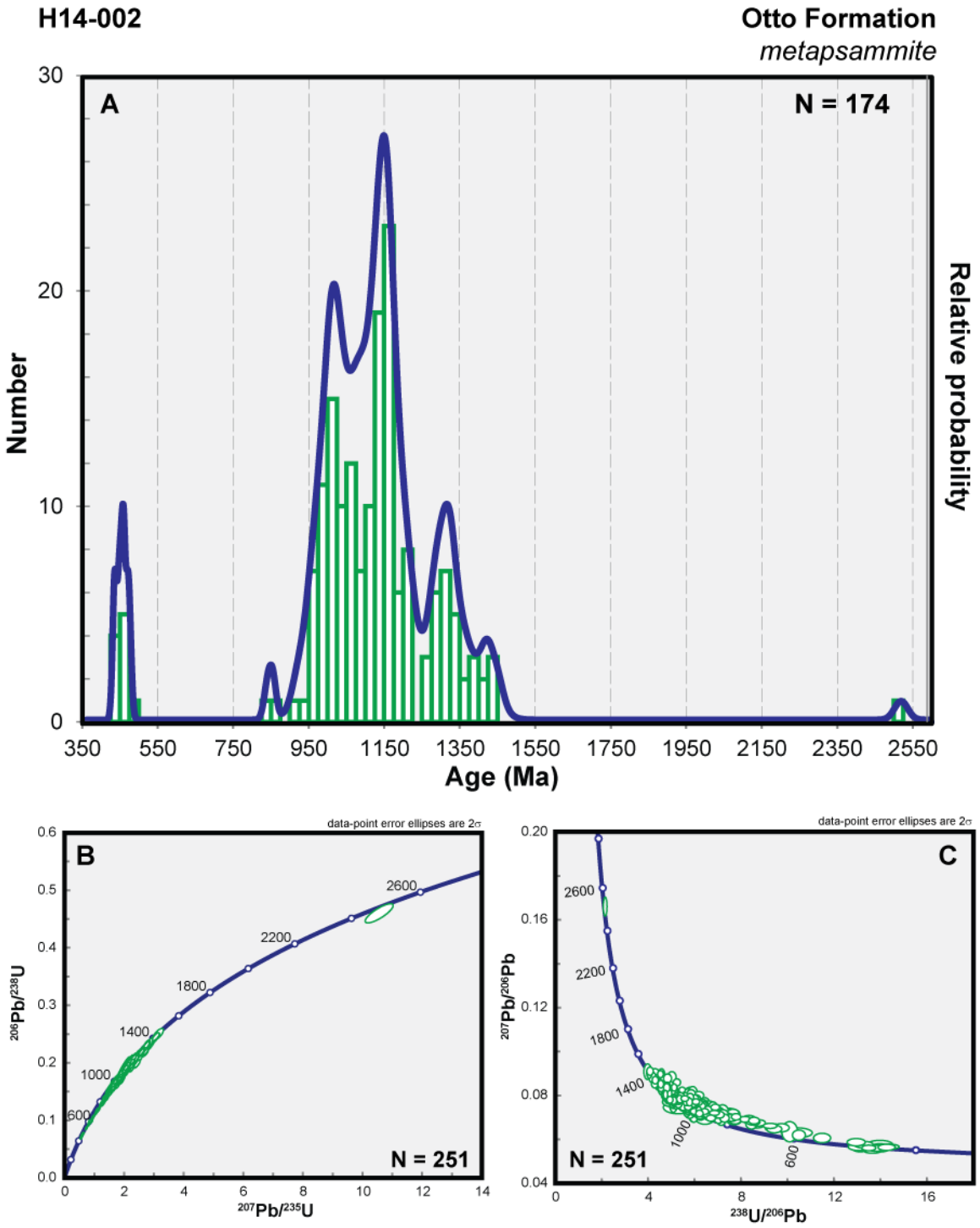


Figure 4.10: Results of LA-ICP-MS of zircon from sample H14-002. (a) Probability density plot of data with greater than 90% concordance. (b) Concordia diagram of all data. (c) Tera-Wasserburg diagram of all data.

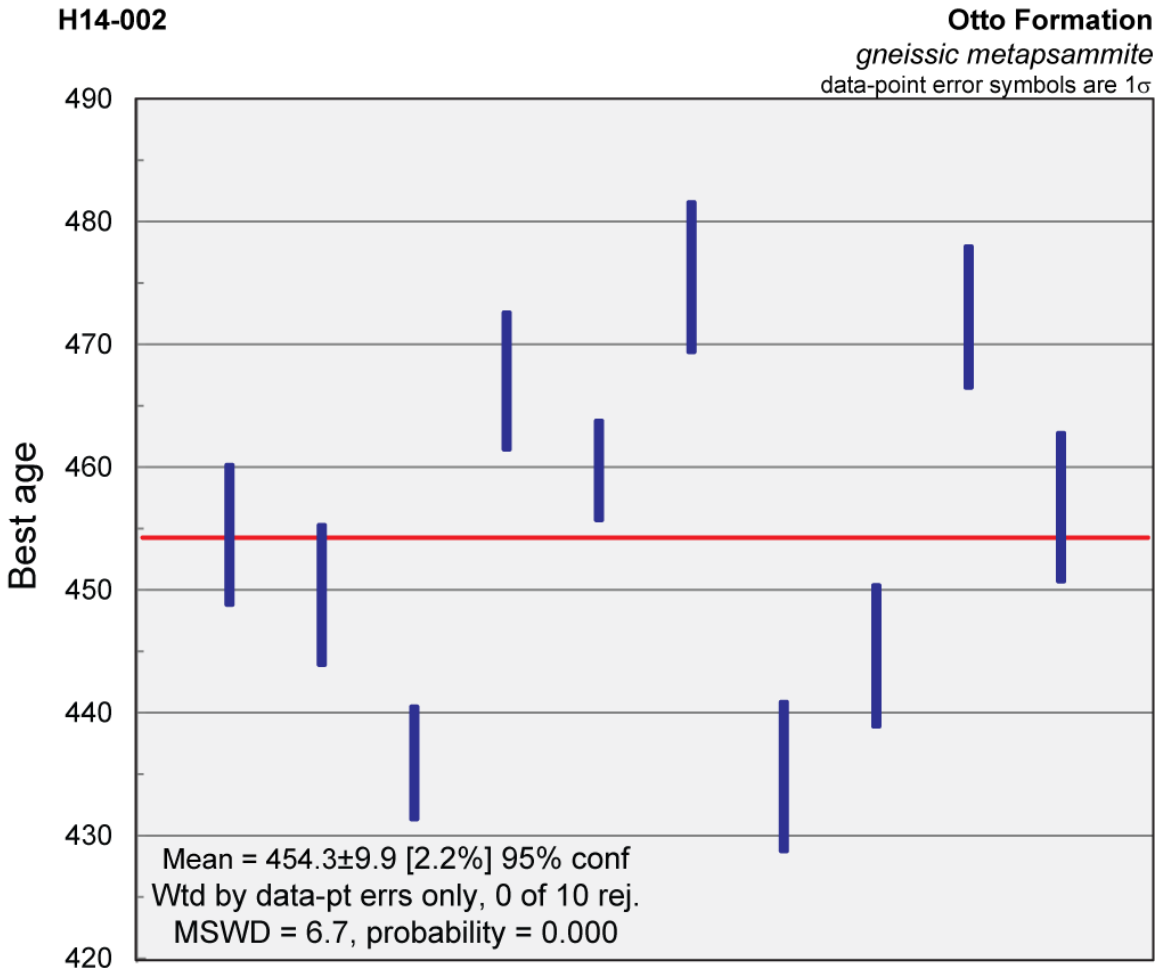


Figure 4.11: Mean 'best' age plot of data with ages under 500 Ma and greater than 90% concordance from sample from sample H14-002. The mean 'best' age of 454±10 is the proposed age of Taconic metamorphism for the sample.

**Discussion**

The basement lithologies include a Grenville orthogneiss (H14-020) that is ca. 1150 Ma in age. This unit correlates with the augen gneiss of Hadley and Goldsmith (1963) in the Dellwood quad, and is the same age as an augen gneiss that occurs in the center of the Dellwood quad (Quinn, 2012). No other occurrence of augen gneiss was observed in the study area, which may suggest that this occurrence is the southeasternmost extent of Grenville basement in the region. However, biotite gneiss sample H15-003 is dominated by a single age mode at ca. 1150 Ma, with minor age

modes at ca. 1050 and 450 Ma. This could indicate that the biotite gneiss could be a 1150 Ma orthogneiss that experienced Grenville (Ottowan) and Taconic metamorphism to produce the younger generations of zircon.

U-Pb detrital zircon geochronology for the Cartoogechaye, Copperhill, and Otto samples (DEL-14-1, H14-002, H14-007, H14-011, and H15-004) yield age spectra that are dominated by two Mesoproterozoic age modes at ca. 1050 and 1150 Ma, corresponding to Grenville magmatism and metamorphism (Figure 4.12). Zircon ages in the range 1200-1500 are less common but, along with the 1050 and 1150 age modes, are most similar to detrital zircon age spectra for the Ocoee Supergroup (e.g. Chakraborty, 2010). This supports the interpretation that the protoliths of the gneisses were clastic sedimentary rocks, and the dominant sediment source was local Laurentian Mesoproterozoic basement. Paleoproterozoic grains are rare, but are present in all of the samples, with the exception of sample H14-002 and H15-003. Archean grains were only present in sample H14-002 (Otto Formation). The grains older than 1500 Ma are interpreted to be inherited cores. Neoproterozoic grains ranging between 700 and 900 Ma are present in all of the paragneiss samples and are interpreted to represent the youngest magmatic ages. The youngest detrital zircon age obtained suggests deposition occurred in the Neoproterozoic at 700 and750 Ma. This is consistent with deposition in a Laurentian margin rift basin. An early Cambrian age of ~545 Ma is present in sample H15-004. Although this age mode is not common in the southern Appalachians, it is recognized as the final rift-related age in the northern Appalachians (Cawood, 2001).

All of the samples underwent Taconic metamorphism ca. ~450 Ma, however, only four samples include this population. This is likely due to the variable degree of

migmatitzation, increased grade of metamorphism to the southeast, and the dependence of zircon solubility on bulk composition. Sample H14-011 is the most migmatitic sample analyzed, has the largest population of Taconic zircons, and has the highest proportion of discordant grains. In this sample, 140 grains were discordant, out of the 314 analyzed grains, and over half yielded ages less than 800 Ma. The variations in this discordant age mode are illustrated in Figure 4.13, where an apparent Neoproterozoic age population decreases with an increasing limit of concordance. The effect of the Taconic is evident in all samples through zircon discordance along a line through 450 Ma, which is best illustrated on Tera-Wasserburg diagrams (Figure 4.7). For several samples, the discordant ages spread out along a line between the oldest zircon ages and ca. 450 Ma. This trend is consistent with Pb loss at ca. 450 Ma during upper amphibolite facies regional metamorphism (T ~ 700 – 750 $^{o}$C). Although the closure T for Pb diffusion in zircon is higher (ca. 900 $^{o}$C: Cherniak and Watson, 2001), some Pb loss could have occurred along fractures, inclusion boundaries, and cracks.

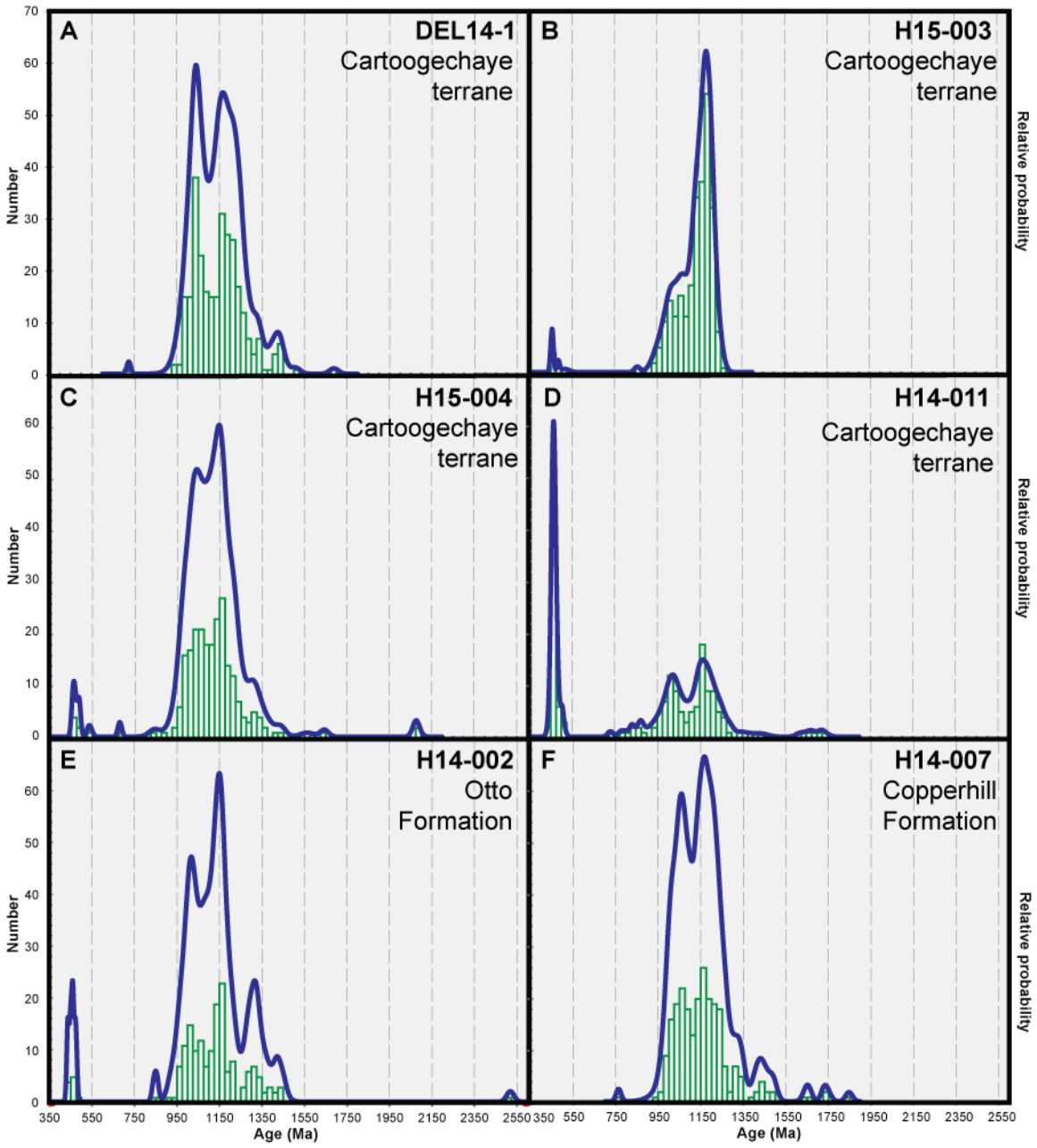


Figure 4.12: Probability density plots for all samples analyzed with LA-ICP-MS.

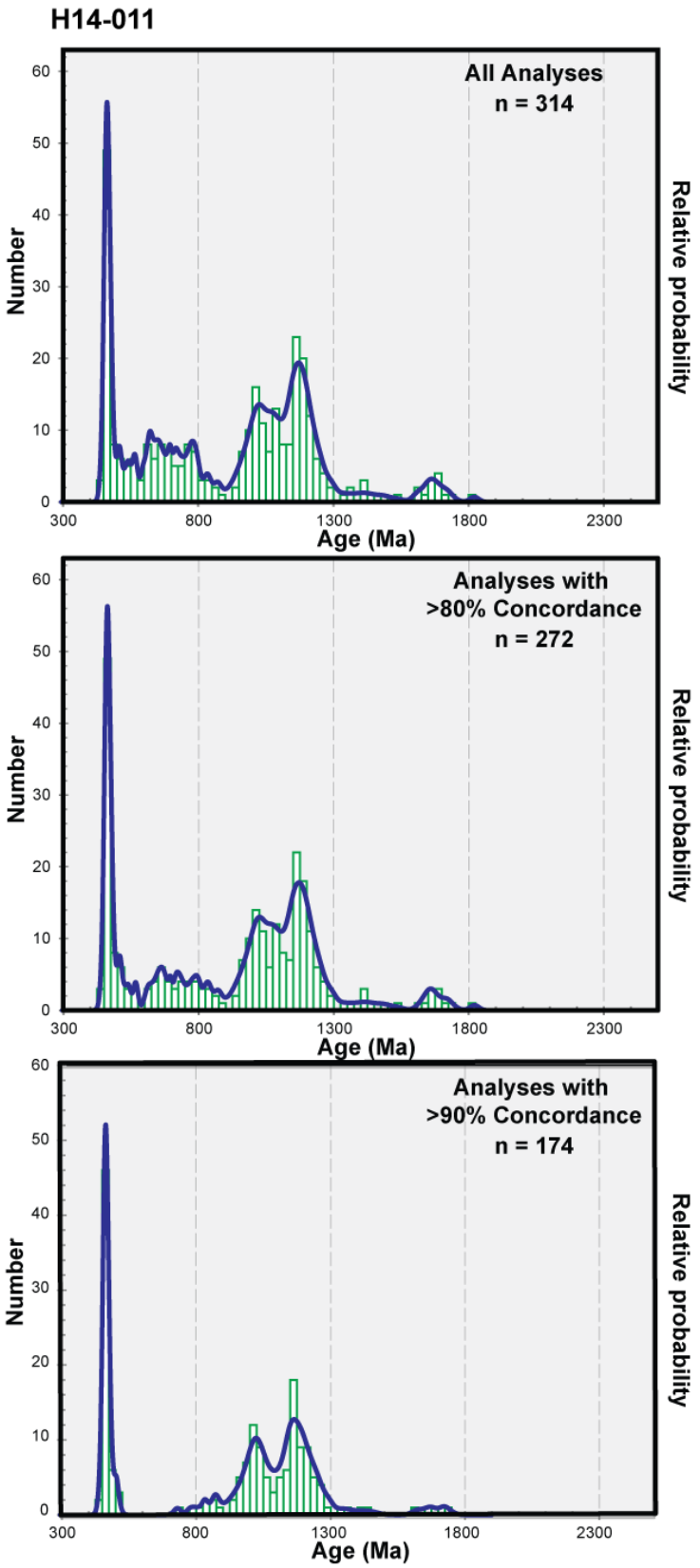


Figure 4.13: Probability density plots for H14-011 showing the variation in modes with concordance. The most abundant population of discordant ages range from ~500-800 Ma.

# CHAPTER V. RESULTS OF GEOCHEMISTRY

Whole rock major and trace element X-ray fluorescence (XRF) spectrometry was carried out on ten representative samples of migmatitic biotite paragneiss (DEL14-1,H14-009, H14-017, H14-021, and H15-004), migmatitic hornblende biotite paragneiss (H14-003 and H14-011), migmatitic felsic paragneiss (H15-004), augen orthogneiss (H14-020), and metapsammite (H14-007). These analyses were used to identify geochemical trends that are associated with the provenance of the paragneiss and to compare to geochemical data from previous studies (Loughry, 2010; Chakraborty, 2010; Quinn, 2012). A description of the analytical procedures can be found in Chapter II. Geochemical data are compiled in Appendix A.

The elemental compositions of these high grade gneisses reflect the heterogeneous nature of the rocks exposed in the Hazelwood quadrangle. The analyzed samples have concentrations of $SiO_2$ that range from 57 to 76 wt. %. Harker diagrams of major element oxides vs. $SiO_2$ show that in most samples potassium increases whereas aluminum, calcium, iron, magnesium, manganese, titanium, and phosphorus decrease with increasing silica content (Figure 5.1). No compositional relationship is noticeable between sodium and silica. On an AFM diagram, the samples define a calc-alkaline trend (Figure 5.2).

In order to evaluate the effect of weathering on the source rocks of the gneisses, the Chemical Index of Alteration (CIA) and the Plagioclase Index of Alteration (PIA) were calculated (Appendix A). These indices integrate bulk major element compositions into a single value that can be used to compare to a model value of a fresh, unweathered source rock (Price and Velbel, 2003). The CIA is used as a measure of the alteration of feldspars to clay and therefore based on the proportions of aluminum, calcium, sodium,

and potassium (Nesbitt and Young, 1982; Fedo et al., 1995). The CIA is calculated using molecular proportions and the equation: CIA = $[Al_2O_3/(Al_2O_3+CaO^*=Na_2O+K_2O] \times 100$, where CaO* is the amount incorporated into the silicate fraction of the rock (Nesbitt and Young, 1982). The CIA value for unaltered basalt should be between 30 and 45 whereas unaltered granites and granodiorites have CIA values that range between 45 and 55 (Nesbitt and Young, 1982). The CIA values for the gneisses in this study range from 58 to 68.

The PIA is used as an alternative to the CIA and was developed as a measure of plagioclase weathering to clays or to potassium feldspar (Fedo et al., 1995). It is based on the molecular proportions of aluminum, potassium, calcium, and sodium and is calculated through the equation: PIA = $[(Al_2O_3-K_2O)/(Al_2O_3+CaO^*+Na_2O-K_2O)] \times 100$, where CaO* is the amount incorporated into the silicate fraction of the rock (Fedo, 1995). The value of a fresh, unaltered rock should be 50 whereas a weathered rock will have values close to 100. The PIA calculated for the gneisses in this study range from 60 to 76.

**Discussion**

Paragneiss derived from first cycle volcanic and plutonic sediments typically have similar geochemical signatures to the source rocks (McLennan et. al., 1993). Loughry (2010) and Chakraborty (2010) analyzed the whole rock geochemistry of various basement rocks in the eastern Great Smoky Mountains and known sedimentary rocks derived from Grenville basement rocks (Ocoee Supergroup). The majority of the granitic metaplutonic rocks and Grenville affinity metasedimentary rocks exhibit a calc-alkaline trend, whereas most amphibolite is tholeiitic. An AFM diagram (Figure 5.3) comparing

data from this study to past data indicates that the geochemical signature of the paragneiss is consistent with that of Grenville basement rocks. This supports the interpretation that the gneisses in Hazelwood quadrangle are metamorphosed equivalents of immature, feldspathic, first cycle sediments derived from weathering of Grenville basement rocks. However, a whole rock geochemical signature of the exotic basement and related detritus (identified in Quinn, 2012) has yet to be determined conclusively, and therefore sediment input from an exotic source cannot be dismissed.

The indices of alteration (CIA and PIA) have values that suggest little alteration of the source rock of the paragneisses and of the basement orthogneiss. Chakraborty (2010) conducted a detailed geochemical study of the Ocoee Supergroup sedimentary rocks and established that, for the Ocoee rocks, the CIA values range from 50 to 72 and the PIA values range from 64 to 68. Additionally, the Grenville basement orthogneisses have CIA values that ranged from 51 to 64 and PIA values that ranged from 51 to 70 (Chakraborty, 2010). The similarity of the Grenville basement and the Ocoee Supergroup sedimentary rocks suggest that the sedimentary rocks are first cycle clastic sediments derived from the Grenville basement. The samples analyzed in this study have CIA values that range from 58 to 68 and PIA values that range from 60 to 76 (Appendix A), which further support the interpretation that the highly metamorphosed sedimentary rocks that make up the Cartoogechaye terrane are derived from a local Laurentian margin source.

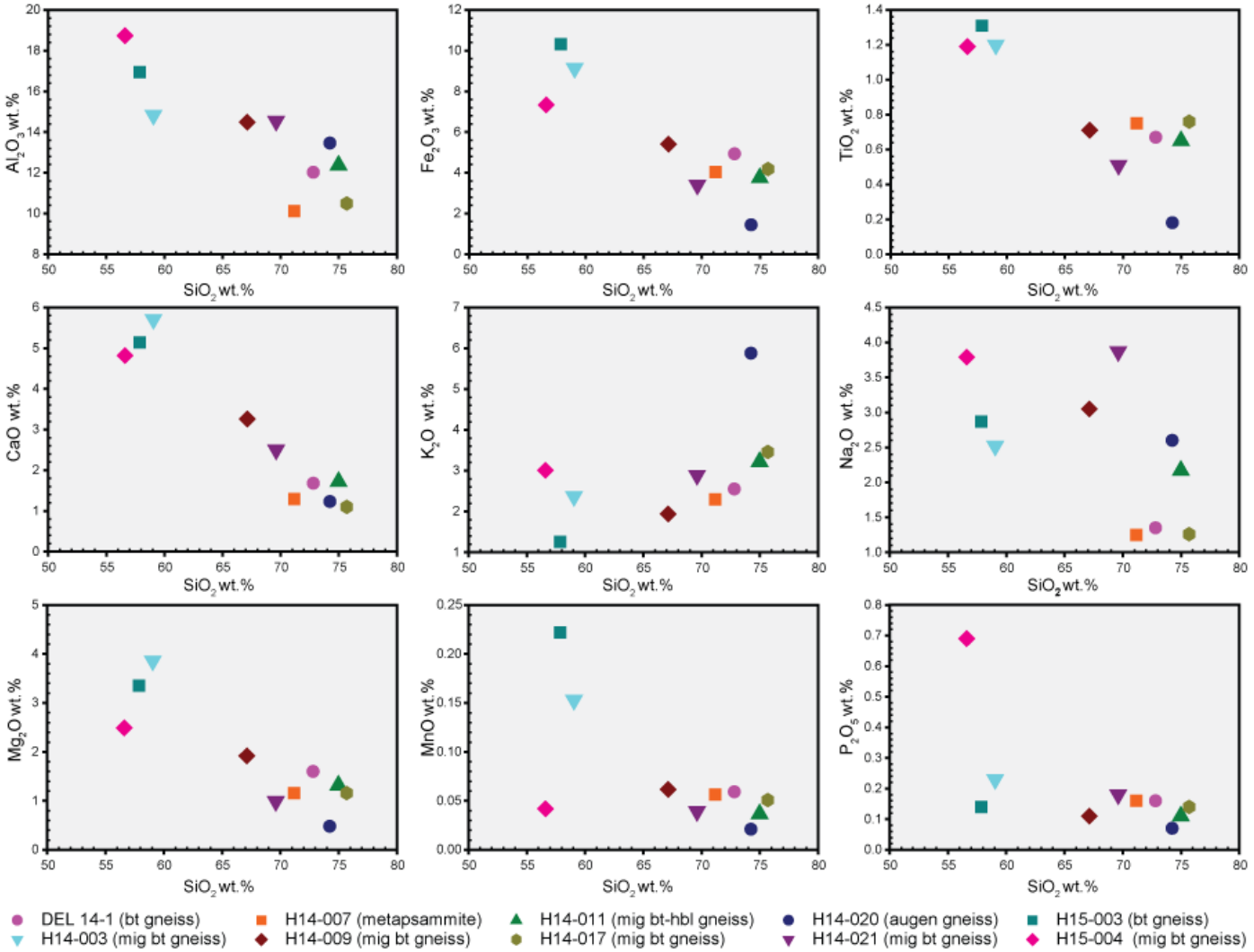


Figure 5.1: Harker variation diagrams for select samples in the study area. Cartoogechaye terrane: DEL14-1, H14-003, H14-009, H14-011, H14-017, H14-021, H15-003, and H15-004; Copperhill Formation: H14-007; and Augen gneiss: H14-020.

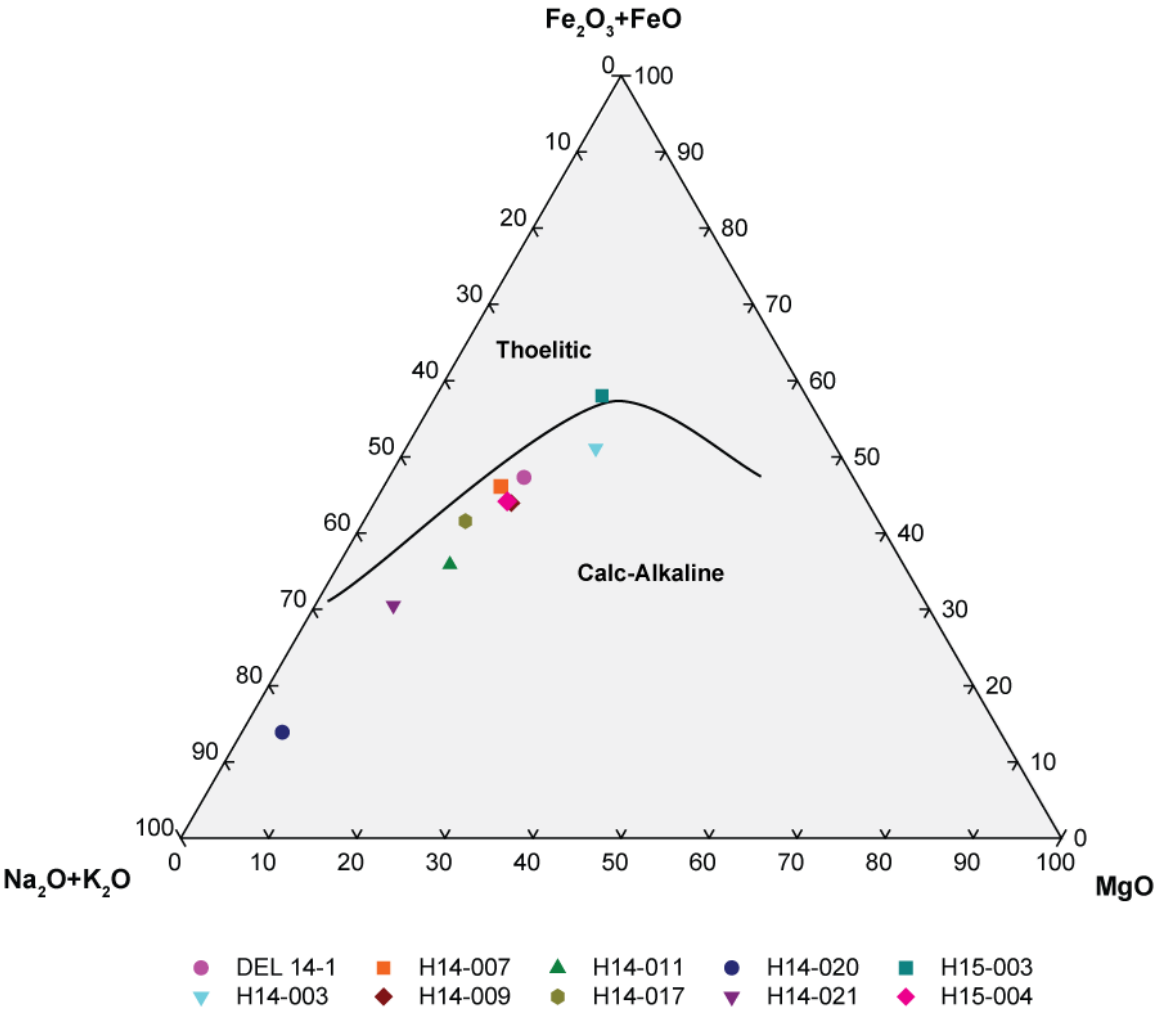


Figure 5.2: AFM diagram of select samples in the study area. Cartoogechaye terrane: DEL14-1, H14-003, H14-009, H14-011, H14-017, H14-021, H15-003, and H15-004; Copperhill Formation: H14-007; and Augen gneiss: H14-020.

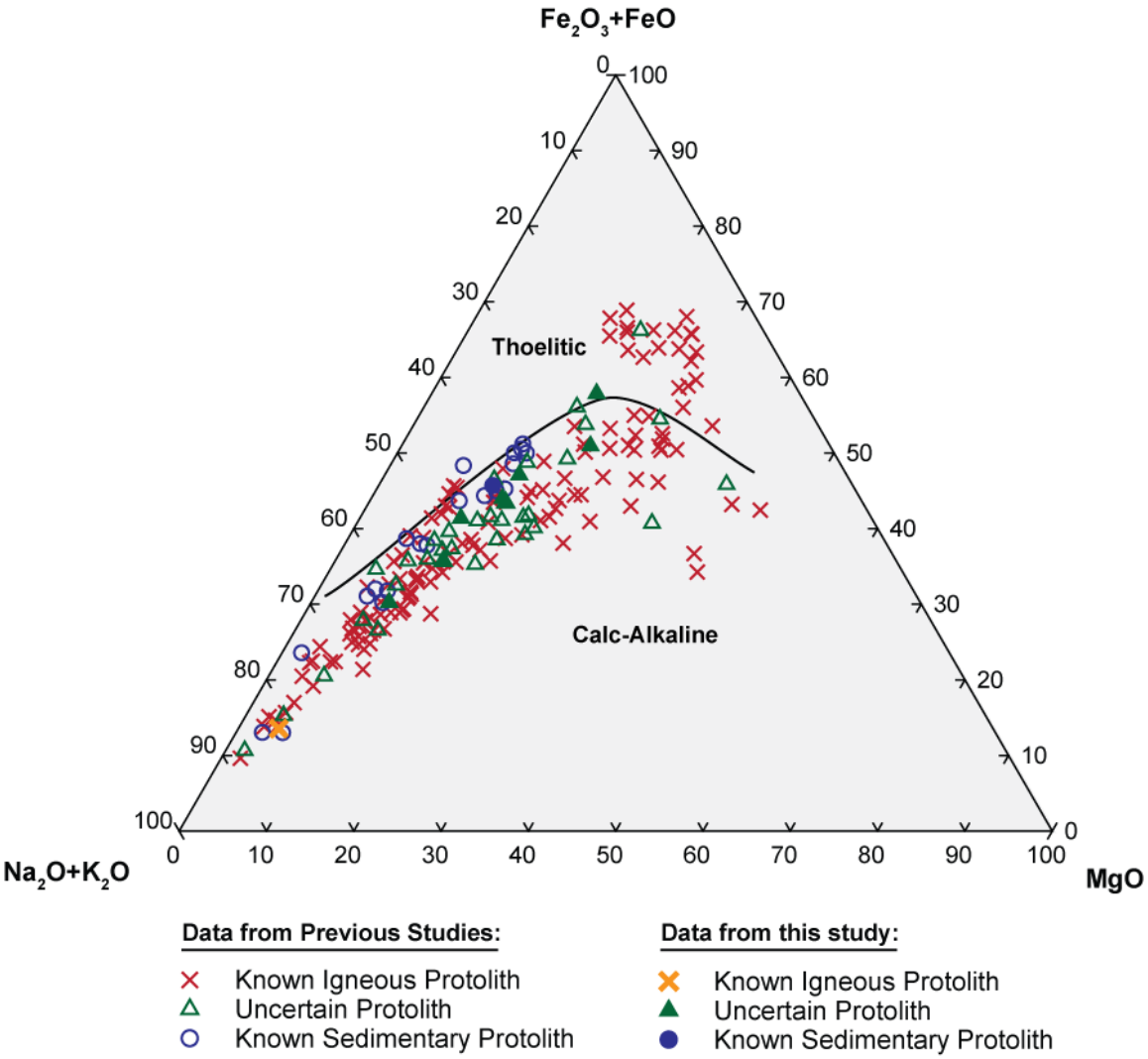


Figure 5.3: AFM diagram of geochemistry data from this study compared with geochemistry data from Chakraborty (2010), Loughry (2010), and Quinn (2012).

# CHAPTER VI. CONCLUSIONS

Highly deformed and intensively metamorphosed sedimentary and igneous rocks from the Cartoogechaye terrane, Ocoee Supergroup, and the Dahlonega gold belt were examined using field observations, U-Pb geochronology, and whole rock geochemistry to determine potential sources for the metasedimentary units. Derivation from a local eastern Laurentian margin basement source is a well-established interpretation for the provenance of the Ocoee Supergroup (Hadley and Goldsmith, 1963; Chakraborty, 2010). Quinn (2012) identified two unique detrital zircon age signatures for the Cartoogechaye terrane; one which suggests a dominately local Grenville source, similar to the Ocoee Supergroup, and another which is atypical of rocks with a Laurentian provenance. This thesis provides new data that give insight on the extent of the exotic signature within the Cartoogechaye terrane.

The northern half of the Hazelwood quadrangle is underlain primarily by migmatitic paragneisses of the Cartoogechaye terrane. Lithologically and geochemically, the gneisses are similar to the migmatitic biotite gneiss and migmatitic hornblende gneiss that are recognized to the north in the Dellwood quadrangle and are widespread within the basement complex of the eastern Great Smoky Mountains (Hadley and Goldsmith, 1963; Quinn, 2012). The biotite paragneiss from the Dellwood quadrangle appears to grade southward into a more deformed, leucosome-rich variety. However, the increased degree of migmatization and polyphase folding prevents direct correlation of the two lithologies. These complexities also inhibit the direct identification of the protolith as either igneous or sedimentary.

The Cartoogechaye migmatitic biotite gneiss has whole rock major element compositions that follow a calc-alkaline trend, which overlaps with the trend defined by

the basement orthogneisses from the Dellwood area (Loughry, 2010; Quinn,2012). This similarity could imply the protolith being: (1) igneous or (2) immature, first-cycle sediments with the composition of the source rock. Mafic garnet amphibolite pods and lenses entrained in the biotite gneiss must have a basaltic origin. Zircons extracted from four samples of biotite gneiss have variable morphologies. Samples DEL14-01, H14-011, H15-003, and H15-004 contain zircons with nonsymmetrical angular cores and zircons with rounded cores with variable amounts of fractures. Both euhedral and anhedral rims are present. The heterogeneity of the zircons is consistent with the interpretation that the biotite gneiss has a sedimentary protolith. U-Pb zircon data from all biotite gneiss samples reveal multiple age modes. The dominant and most common age modes, present in all but H15-003, are at ca. 1050 and 1150 Ma that corresponds, respectively, to the Ottowan and Shawinigan phases of the Grenville orogeny (Figure 6.1). These age spectra are consistent with a sedimentary protolith, because a plutonic protolith should exhibit a single age mode. Although older and younger zircons are present in these samples, the dominance of the two Grenville age modes indicate an eastern Larentian margin provenance. H15-003 is dominated by a single age mode at ca. 1150 Ma, however, grains with ages of 1050 are present. This suggests that biotite gneiss sample H15-003 could be either a meta-igneous rock that produced a new generation of zircon during 1150 Ma metamorphism or a meta-sedimentary rock produced from a single detrital source.

The Copperhill and Otto Formations have bulk compositions (pelite and psammite) and textural relationships that suggest a sedimentary origin, which is consistent with numerous previous studies of the Ocoee Supergroup (Hadley and Goldsmith, 1968; Chakraborty, 2012; Kelly, 2014). Therefore the zircons extracted from

the leucosome-poor (psammitic) units are the most likely to be detrital grains. The morphology of the zircons from the Copperhill and Ocoee samples supports a detrital interpretation with subangular and rounded cores that are enclosed in subhedral to anhedral rims. U-Pb zircon data reveal multiple age modes that confirm a sedimentary origin for these units. The zircon age distributions are very similar to Ocoee Supergroup units (Snowbird, Great Smoky, Walden Creek Groups: Chakraborty et al., 2012; Kelly 2014) in exhibiting the characteristic Grenville age doublet in addition to 1250 to 1350 Ma grains. These ages support the interpretation of an eastern Laurentian margin source.

None of the samples exhibit detrital zircon age spectra that are as non-Grenvillian as the two biotite paragneiss samples analyzed by Quinn (2012), from the Dellwood quadrangle (Figure 6.2b). Five of the six samples analyzed have age spectra that correlate well to the detrital age spectra of the Grenville affinity rocks identified by Quinn (2012) (Figure 6.2a). Additionally, the Cartoogechaye terrane biotite gneisses have age spectra that are similar to the Ocoee Supergroup detrital spectrum identified by Chakraborty (2010) (Figure 6.3). These U-Pb zircon age similarities along with field and geochemical observations support the model that the biotite gneiss represents Neoproterozoic Laurentian margin rift sediments that were derived primarily from local Mesoproterozoic Grenville basement. In addition, the similar age spectra of the Cartoogechaye terrane gneisses and the Otto Formation metapsammite to the Ocoee Supergroup may indicate that the central Blue Ridge is a contemporaneous, distal equivalent of the western Blue Ridge. Age distributions also support the middle Ordovician (Taconian) being the time of regional metamorphism and migmatization.

Discordance of zircon ages is common in all of the paragneiss samples analyzed and is an indicator of the complex tectonic history of the grains. The discordance of the grains makes provenance interpretations particularly challenging and it is important to determine the mechanism of discordance. Discordance can occur when the individual analysis spot of a zircon overlaps multiple age domains or when there is a disturbance in the U-Pb system (Gehrels, 2014). In the samples of paragneiss, lead loss appears to follow a linear trend between ca.1150 and 450 Ma (Figure 6.4). The unmetamorphosed lithologies from the Ocoee Supergroup, which are interpreted as having the same provenance as the samples in this study, have relatively concordant zircon ages (Chakraborty, 2010; Figure 6.5). This suggests that lead loss in the samples may be caused by Taconic regional metamorphism.

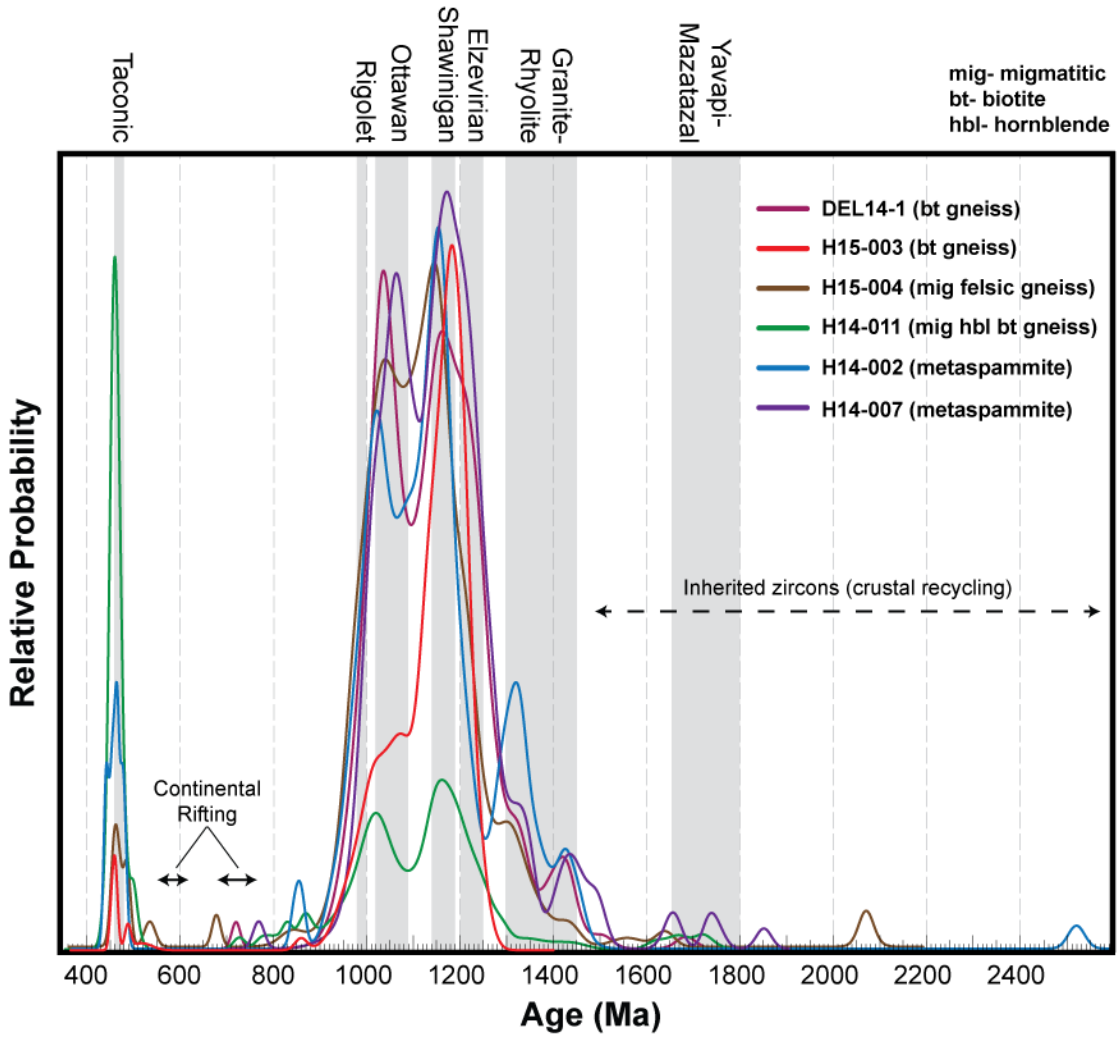


Figure 6.1: Probability density plots for all samples analyzed with LA-ICP-MS. Shaded bars represent zircon-producing orogenic events in the southern Appalachians. Solid arrows represent zircon producing rift events. Dashed arrow represents ages proposed to be a result of inheritance during crustal recycling. Gray shaded bars represent crust forming events. Timing of Paleoproterozoic orogenesis from Whitmeyer and Karlstrom, 2007. Timing of Mesoproterozoic orogenesis from Rivers, 2008; Hynes and Rivers, 2010. Timing of Neoproterozoic rifting from Tollo, 2004. Timing of Paleozoic orogenesis from Hatcher, 2005; Moecher et al., 2011.

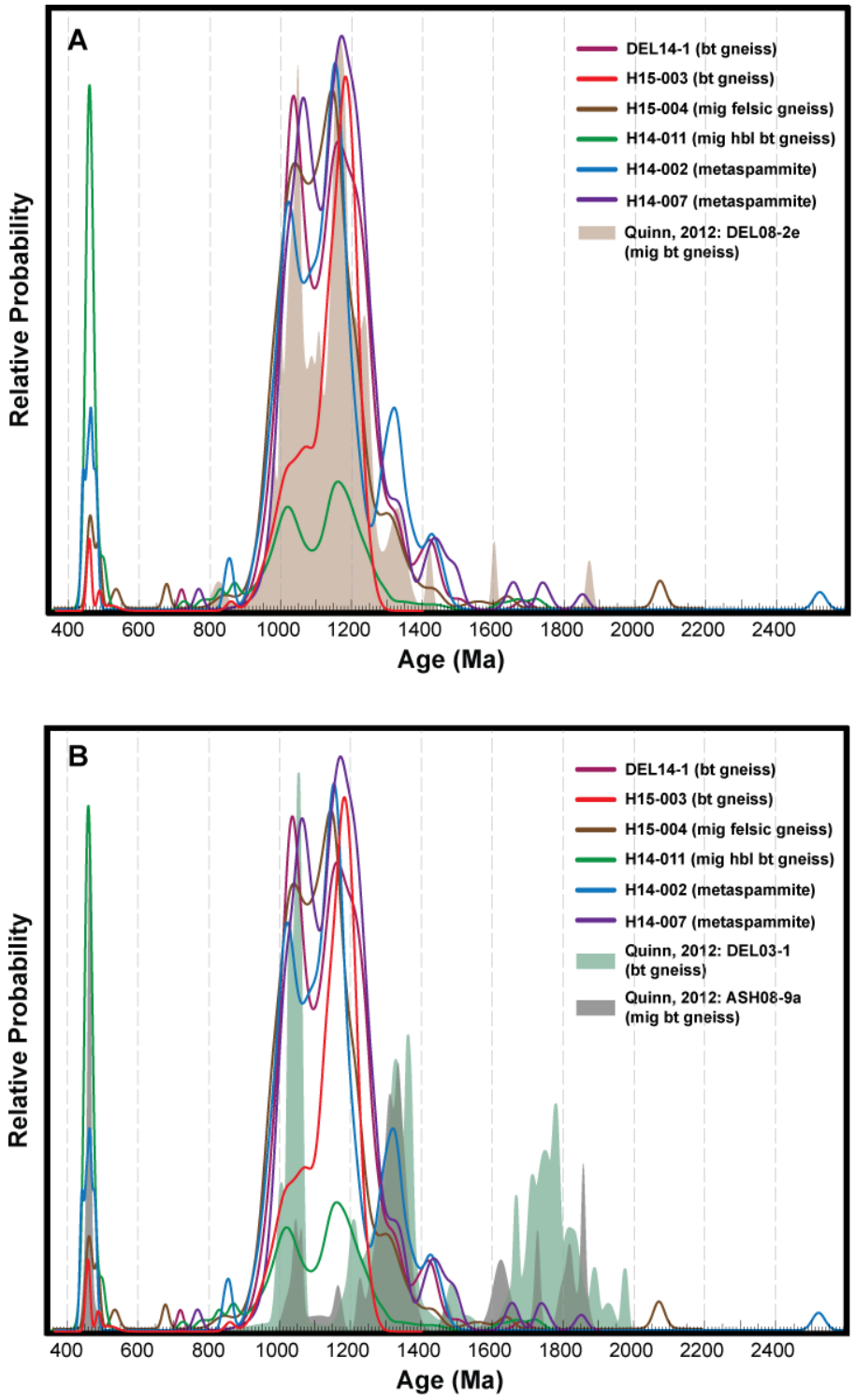


Figure 6.2: Probability density curves from this study (solid lines) compared to the Grenville detrital signature (top, shaded brown) and exotic detrital signature (bottom, shaded gray and green) from Quinn, 2012. Notice samples from this study have age spectra that are more similar to the Grenville detrital signature than the exotic detrital signatures. All samples with the exception of H15-003 differ from the Grenville signature due to ages younger than 800 Ma. Sample H15-003 differs from the Grenville signature due to the lack of a significant age population around ~1000 Ma

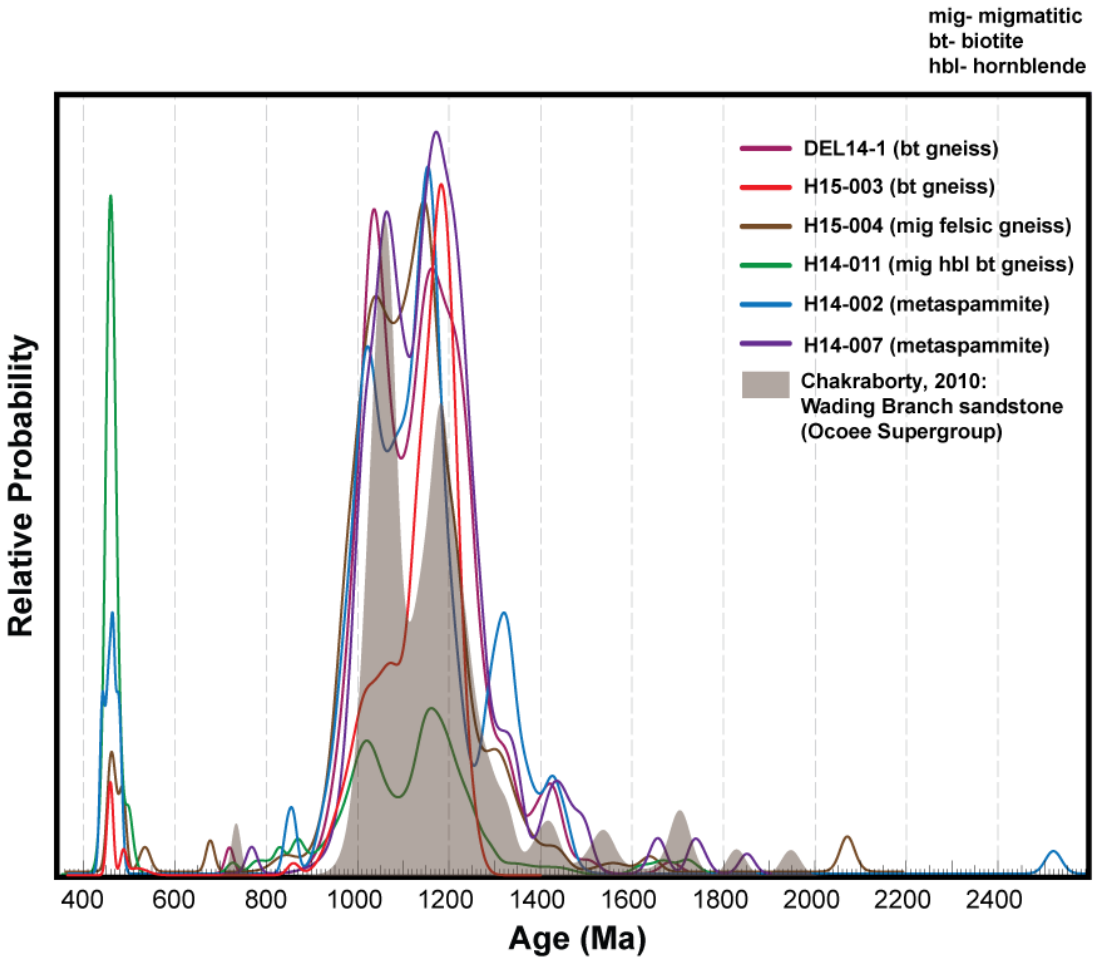


Figure 6.3: Probability density curves from this study (solid lines) compared to the detrital signature of the Wading Branch Ocoee Supergroup (shaded gray) from Chakraborty, 2010.

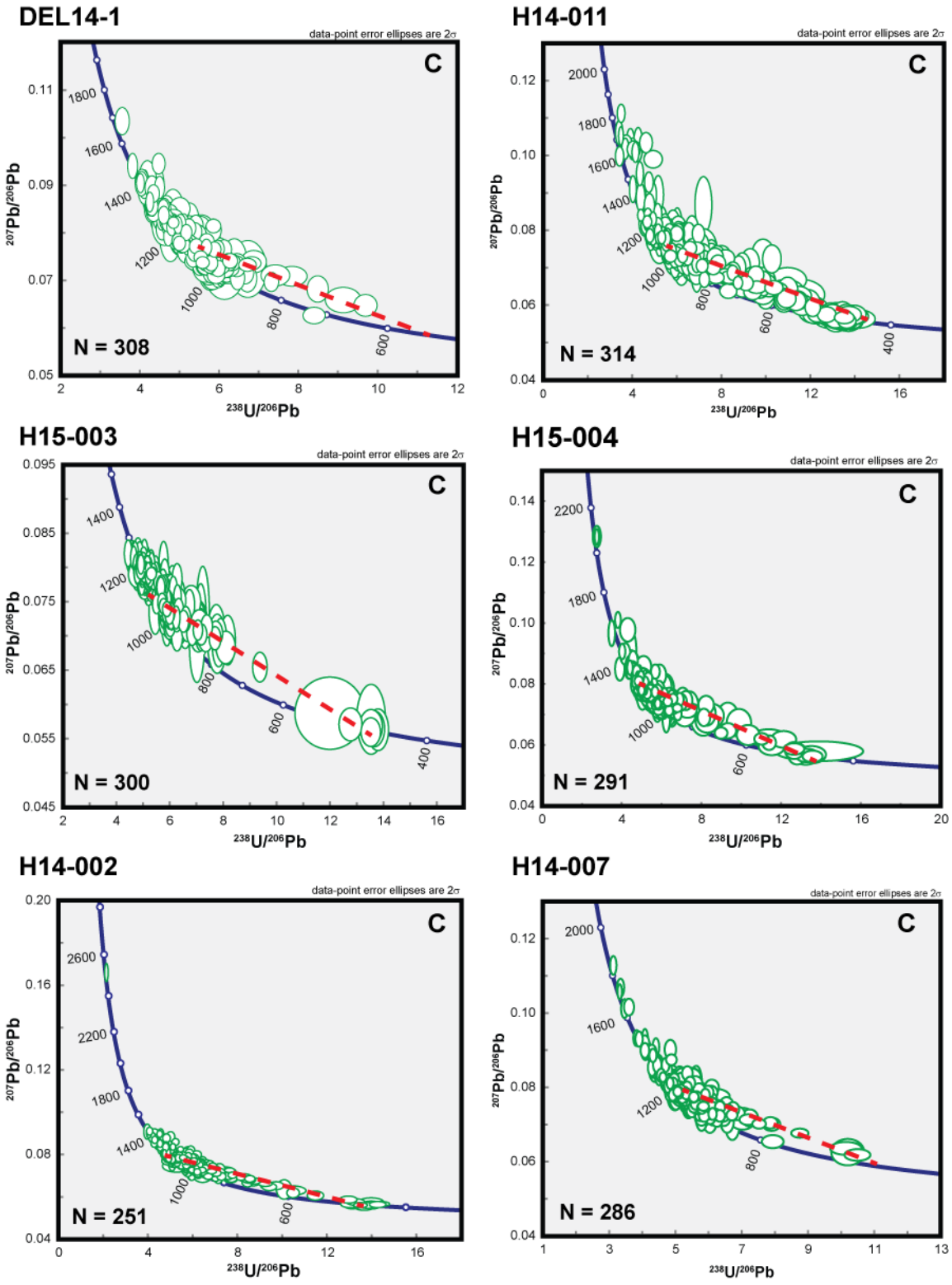


Figure 6.4: Tera-Wasserburg showing apparent linear trends of discordance in six samples of paragneiss analyzed in this study.

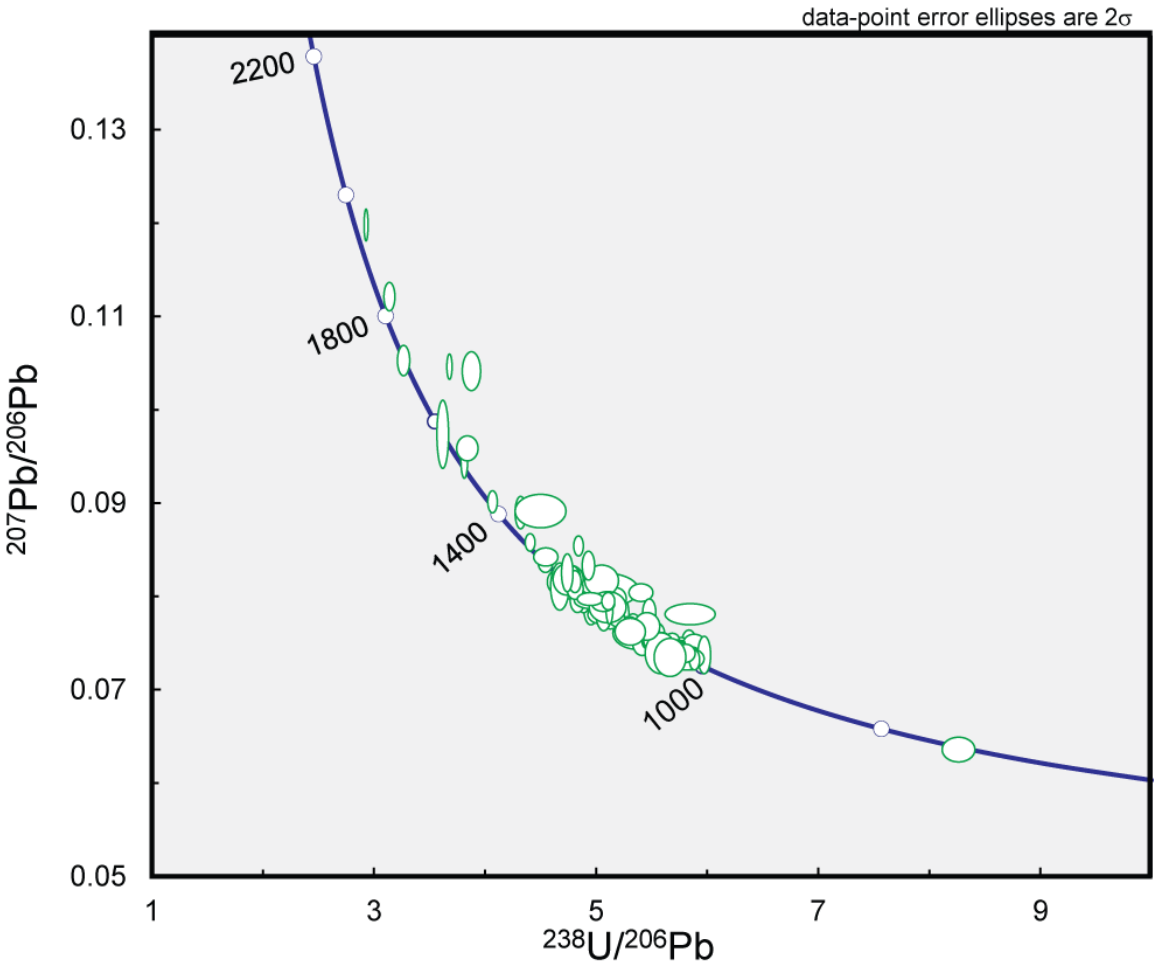


Figure 6.5: Tera-Wasserburg showing zircon analyses from the Wading Branch Formation of the Ocoee Supergroup from Chakraborty, 2010.

# APPENDICES

**Appendix A: Whole Rock X-Ray Fluorescence Spectrometric Analysis**

**Major-Minor**

| Sample | DEL14-1† | H14-003 | H14-007† | H14-009 | H14-011† | H14-017 | H14-020† | H14-021 | H15-003† | H15-004† |
|---|---|---|---|---|---|---|---|---|---|---|
| Map Unit | Ꞓzct | Ꞓzct | Zch | Ꞓzct | Ꞓzct | Ꞓzct | Ym | Zch | Ꞓzct | Ꞓzct |
| **SiO2 (wt.%)** | 72.81 | 59.05 | 78.04 | 67.13 | 74.98 | 75.68 | 74.24 | 69.61 | 57.86 | 56.6 |
| **TiO2 (wt. %)** | 0.67 | 1.2 | 0.70 | 0.71 | 0.65 | 0.76 | 0.18 | 0.51 | 1.31 | 1.19 |
| **Al2O3 (wt. %)** | 12.02 | 14.83 | 10.15 | 14.49 | 12.37 | 10.49 | 13.46 | 14.54 | 16.94 | 18.74 |
| **Fe2O3 (wt. %)** | 4.93 | 9.14 | 4.01 | 5.41 | 3.75 | 4.18 | 1.44 | 3.4 | 10.33 | 7.34 |
| **MgO (wt. %)** | 1.6 | 3.86 | 1.14 | 1.92 | 1.32 | 1.16 | 0.48 | 0.99 | 3.35 | 2.49 |
| **CaO (wt. %)** | 1.68 | 5.71 | 1.27 | 3.26 | 1.72 | 1.1 | 1.23 | 2.5 | 5.14 | 4.82 |
| **Na2O (wt. %)** | 1.35 | 2.52 | 1.27 | 3.05 | 2.17 | 1.26 | 2.6 | 3.87 | 2.87 | 3.79 |
| **K2O (wt. %)** | 2.55 | 2.37 | 2.33 | 1.94 | 3.22 | 3.46 | 5.88 | 2.89 | 1.26 | 3.01 |
| **P2O5 (wt. %)** | 0.16 | 0.23 | 0.15 | 0.11 | 0.11 | 0.14 | 0.07 | 0.18 | 0.14 | 0.69 |
| **MnO (wt. %)** | 0.06 | 0.15 | 0.06 | 0.06 | 0.04 | 0.05 | 0.02 | 0.04 | 0.22 | 0.04 |
| **LOI** | 0.89 | 1.75 | 1.10 | 0.76 | 0.69 | 1.10 | 0.67 | 0.74 | 0.90 | 0.68 |
| **CIA** | 68.30 | 58.32 | 67.58 | 63.72 | 63.50 | 64.32 | 58.09 | 61.09 | 64.63 | 61.73 |
| **PIA** | 75.76 | 60.22 | 75.48 | 66.54 | 70.17 | 74.87 | 66.43 | 64.65 | 66.19 | 64.63 |
| **Total** | 98.72 | 100.81 | 100.22 | 98.85 | 101.02 | 99.38 | 100.27 | 99.27 | 100.32 | 99.39 |

**Trace**

| Sample | DEL14-1† | H14-003 | H14-007† | H14-009 | H14-011† | H14-017 | H14-020† | H14-021 | H15-003† | H15-004† |
|---|---|---|---|---|---|---|---|---|---|---|
| Map Unit | Ꞓzct | Ꞓzct | Zch | Ꞓzct | Ꞓzct | Ꞓzct | Ym | Zch | Ꞓzct | Ꞓzct |
| **Pb (PPM)** | 13 | 10 | 13 | 12 | 17 | 15 | 19 | 12 | 7 | 12 |
| **Cu (PPM)** | 13 | 14 | 12 | 12 | 7 | <2 | 37 | 17 | 116 | 11 |
| **Co (PPM)** | 13 | 33 | 7 | 19 | 11 | 7 | <2 | 5 | 28 | 15 |
| **Ni (PPM)** | 30 | 55 | 24 | 40 | 20 | 23 | 9 | 17 | 47 | 18 |
| **Cr (PPM)** | 266 | 197 | 236 | 160 | 128 | 283 | 64 | 117 | 201 | 72 |
| **Ce (PPM)** | 119 | 85 | 89 | 82 | 80 | 101 | 39 | 194 | 82 | 225 |
| **V (PPM)*** | 37 | 64 | 34 | 49 | 48 | 39 | <5 | 17 | 60 | 79 |
| **La (PPM)** | 27 | 31 | 47 | 24 | 20 | 13 | 8 | 90 | 26 | 92 |
| **Ba (PPM)** | 839 | 706 | 598 | 821 | 994 | 938 | 1433 | 791 | 457 | 802 |
| **Nb (PPM)** | 24 | 15 | 17 | 11 | 10 | 17 | 8 | 30 | 15 | 9 |
| **Zr (PPM)** | 474 | 223 | 449 | 275 | 430 | 465 | 139 | 365 | 265 | 456 |
| **Y (PPM)** | 46 | 38 | 39 | 36 | 33 | 35 | 33 | 49 | 52 | 41 |
| **Sr (PPM)** | 212 | 410 | 169 | 548 | 298 | 220 | 581 | 556 | 230 | 717 |
| **Rb (PPM)** | 78 | 52 | 84 | 52 | 82 | 95 | 115 | 84 | 33 | 83 |
| **U (PPM)*** | 3 | <2 | 3 | 2 | 3 | 3 | 3 | 3 | <2 | 2 |
| **Th (PPM)*** | 19 | 12 | 13 | 20 | 16 | 19 | 11 | 43 | 11 | 26 |
| **Ga (PPM)*** | 18 | 19 | 18 | 19 | 17 | 16 | 16 | 20 | 19 | 25 |
| **Zn (PPM)** | 97 | 106 | 103 | 74 | 73 | 82 | 32 | 41 | 137 | 137 |

*Calculated † Dated samples

PPM V = 33.9733 + 3.91727*Intensity

PPM U = -5.26919 + 1.02804*Intensity

PPM Th = 18.3981 + 91.7536*Intensity

PPM Ga = 10.5428 + 86.4394*Intensity

**Appendix B: LA-ICPMS U-Pb Zircon Geochronology**

| H14-002 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-002 27May2015-Spot 2 | 505 | 71582 | 2.0 | 12.7244 | 1.3 | 1.9060 | 1.8 | 0.1759 | 1.3 | 0.72 | 1044.5 | 12.4 | 1083.2 | 12.0 | 1161.8 | 24.8 | 1161.8 | 24.8 | 89.9 |
| H14-002 27May2015-Spot 3 | 440 | 132639 | 1.3 | 11.6609 | 1.0 | 2.6853 | 1.7 | 0.2271 | 1.3 | 0.80 | 1319.3 | 15.8 | 1324.4 | 12.2 | 1332.7 | 19.1 | 1332.7 | 19.1 | 99.0 |
| H14-002 27May2015-Spot 4 | 88 | 68468 | 2.2 | 13.1060 | 1.1 | 1.9484 | 1.7 | 0.1852 | 1.3 | 0.77 | 1095.3 | 13.4 | 1097.9 | 11.5 | 1103.0 | 21.7 | 1103.0 | 21.7 | 99.3 |
| H14-002 27May2015-Spot 5 | 1515 | 131049 | 27.3 | 12.3715 | 1.0 | 1.8974 | 1.6 | 0.1703 | 1.3 | 0.80 | 1013.5 | 12.1 | 1080.2 | 10.7 | 1217.3 | 18.9 | 1217.3 | 18.9 | 83.3 |
| H14-002 27May2015-Spot 7 | 1133 | 53329 | 6.7 | 14.4460 | 0.8 | 1.1659 | 1.5 | 0.1222 | 1.3 | 0.87 | 743.0 | 9.3 | 784.7 | 8.3 | 905.4 | 15.5 | 743.0 | 9.3 | 82.1 |
| H14-002 27May2015-Spot 8 | 336 | 117668 | 2.4 | 11.0837 | 1.0 | 3.0563 | 1.5 | 0.2457 | 1.1 | 0.74 | 1416.2 | 14.4 | 1421.8 | 11.7 | 1430.2 | 19.7 | 1430.2 | 19.7 | 99.0 |
| H14-002 27May2015-Spot 9 | 321 | 102799 | 3.8 | 13.6228 | 1.1 | 1.6946 | 1.5 | 0.1674 | 1.0 | 0.69 | 997.9 | 9.6 | 1006.5 | 9.7 | 1025.2 | 22.2 | 1025.2 | 22.2 | 97.3 |
| H14-002 27May2015-Spot 10 | 346 | 58433 | 3.1 | 13.5937 | 1.1 | 1.7105 | 1.5 | 0.1686 | 1.1 | 0.71 | 1004.6 | 10.1 | 1012.5 | 9.8 | 1029.5 | 21.8 | 1029.5 | 21.8 | 97.6 |
| H14-002 27May2015-Spot 11 | 1381 | 264343 | 2.3 | 12.7674 | 0.9 | 1.9493 | 1.6 | 0.1805 | 1.4 | 0.84 | 1069.7 | 13.5 | 1098.2 | 10.9 | 1155.1 | 17.4 | 1155.1 | 17.4 | 92.6 |
| H14-002 27May2015-Spot 12 | 461 | 120803 | 2.5 | 11.2880 | 1.1 | 2.4221 | 1.8 | 0.1983 | 1.5 | 0.81 | 1166.2 | 15.8 | 1249.2 | 13.2 | 1395.3 | 20.9 | 1395.3 | 20.9 | 83.6 |
| H14-002 27May2015-Spot 13 | 1964 | 8293851 | 53.9 | 13.0041 | 0.7 | 1.7173 | 1.4 | 0.1620 | 1.2 | 0.85 | 967.7 | 10.8 | 1015.0 | 9.0 | 1118.6 | 14.6 | 1118.6 | 14.6 | 86.5 |
| H14-002 27May2015-Spot 14 | 192 | 123980 | 2.7 | 12.6134 | 1.0 | 2.1228 | 1.9 | 0.1942 | 1.6 | 0.84 | 1144.1 | 16.6 | 1156.2 | 13.0 | 1179.2 | 20.4 | 1179.2 | 20.4 | 97.0 |
| H14-002 27May2015-Spot 15 | 484 | 204043 | 3.4 | 12.7573 | 1.1 | 2.1214 | 1.6 | 0.1963 | 1.1 | 0.71 | 1155.3 | 12.0 | 1155.8 | 11.0 | 1156.7 | 22.1 | 1156.7 | 22.1 | 99.9 |
| H14-002 27May2015-Spot 16 | 844 | 116595 | 8.4 | 12.6182 | 0.9 | 1.8741 | 1.4 | 0.1715 | 1.1 | 0.76 | 1020.4 | 10.0 | 1072.0 | 9.3 | 1178.4 | 18.1 | 1178.4 | 18.1 | 86.6 |
| H14-002 27May2015-Spot 17 | 870 | 111592 | 5.0 | 13.8079 | 1.2 | 1.5430 | 2.2 | 0.1545 | 1.8 | 0.82 | 926.2 | 15.4 | 947.7 | 13.3 | 997.8 | 24.9 | 997.8 | 24.9 | 92.8 |
| H14-002 27May2015-Spot 18 | 283 | 123584 | 2.5 | 13.6294 | 0.8 | 1.5673 | 1.6 | 0.1549 | 1.3 | 0.84 | 928.5 | 11.4 | 957.3 | 9.7 | 1024.2 | 17.0 | 1024.2 | 17.0 | 90.7 |
| H14-002 27May2015-Spot 20 | 192 | 55727 | 3.8 | 13.6986 | 1.6 | 1.3928 | 2.1 | 0.1384 | 1.4 | 0.66 | 835.5 | 10.9 | 885.9 | 12.4 | 1013.9 | 32.0 | 1013.9 | 32.0 | 82.4 |
| H14-002 27May2015-Spot 21 | 315 | 86982 | 2.3 | 12.7580 | 0.9 | 2.0512 | 1.7 | 0.1898 | 1.5 | 0.84 | 1120.3 | 15.1 | 1132.7 | 11.9 | 1156.6 | 18.5 | 1156.6 | 18.5 | 96.9 |
| H14-002 27May2015-Spot 22 | 371 | 161265 | 14.9 | 13.4197 | 1.0 | 1.5403 | 1.7 | 0.1499 | 1.3 | 0.78 | 900.5 | 11.0 | 946.6 | 10.3 | 1055.5 | 21.0 | 1055.5 | 21.0 | 85.3 |
| H14-002 27May2015-Spot 23 | 271 | 170880 | 2.5 | 11.7885 | 1.0 | 2.5876 | 1.7 | 0.2212 | 1.4 | 0.81 | 1288.4 | 16.4 | 1297.1 | 12.8 | 1311.6 | 19.9 | 1311.6 | 19.9 | 98.2 |
| H14-002 27May2015-Spot 24 | 2153 | 3092542 | 2.7 | 14.5752 | 0.9 | 1.1021 | 1.4 | 0.1165 | 1.1 | 0.77 | 710.4 | 7.4 | 754.4 | 7.6 | 887.0 | 19.0 | 710.4 | 7.4 | 80.1 |
| H14-002 27May2015-Spot 25 | 429 | 153438 | 3.2 | 11.8465 | 1.1 | 2.3557 | 1.8 | 0.2024 | 1.5 | 0.79 | 1188.2 | 15.8 | 1229.3 | 13.1 | 1302.1 | 21.6 | 1302.1 | 21.6 | 91.3 |
| H14-002 27May2015-Spot 27 | 1206 | 490860 | 3.1 | 13.1007 | 0.8 | 1.7672 | 1.5 | 0.1679 | 1.2 | 0.84 | 1000.6 | 11.4 | 1033.5 | 9.6 | 1103.8 | 16.1 | 1103.8 | 16.1 | 90.7 |
| H14-002 27May2015-Spot 28 | 117 | 129216 | 2.9 | 11.9695 | 1.2 | 2.4404 | 1.8 | 0.2119 | 1.3 | 0.74 | 1238.7 | 14.9 | 1254.6 | 12.8 | 1282.0 | 23.1 | 1282.0 | 23.1 | 96.6 |
| H14-002 27May2015-Spot 29 | 346 | 137716 | 9.8 | 12.7776 | 0.9 | 1.8011 | 1.8 | 0.1669 | 1.6 | 0.86 | 995.1 | 14.6 | 1045.9 | 12.0 | 1153.5 | 18.5 | 1153.5 | 18.5 | 86.3 |
| H14-002 27May2015-Spot 30 | 675 | 195176 | 4.0 | 13.1185 | 0.9 | 1.9752 | 1.5 | 0.1879 | 1.2 | 0.79 | 1110.2 | 12.3 | 1107.1 | 10.3 | 1101.0 | 18.7 | 1101.0 | 18.7 | 100.8 |
| H14-002 27May2015-Spot 31 | 272 | 166362 | 3.4 | 13.7125 | 0.9 | 1.6858 | 1.6 | 0.1677 | 1.3 | 0.81 | 999.2 | 12.0 | 1003.2 | 10.2 | 1011.9 | 18.8 | 1011.9 | 18.8 | 98.7 |
| H14-002 27May2015-Spot 32 | 427 | 83649 | 2.1 | 12.6565 | 1.0 | 1.8418 | 1.8 | 0.1691 | 1.5 | 0.84 | 1006.9 | 14.4 | 1060.5 | 12.0 | 1172.4 | 19.4 | 1172.4 | 19.4 | 85.9 |
| H14-002 27May2015-Spot 33 | 111 | 29029 | 1.9 | 12.9430 | 1.6 | 2.0853 | 2.2 | 0.1957 | 1.5 | 0.67 | 1152.4 | 15.7 | 1144.0 | 15.2 | 1128.0 | 32.8 | 1128.0 | 32.8 | 102.2 |
| H14-002 27May2015-Spot 34 | 185 | 217539 | 3.1 | 12.3090 | 1.3 | 1.9198 | 2.2 | 0.1714 | 1.7 | 0.79 | 1019.8 | 16.0 | 1088.0 | 14.4 | 1227.3 | 26.2 | 1227.3 | 26.2 | 83.1 |
| H14-002 27May2015-Spot 35 | 918 | 1748692 | 3.8 | 14.5607 | 1.0 | 1.2202 | 1.6 | 0.1289 | 1.3 | 0.80 | 781.3 | 9.4 | 809.9 | 8.9 | 889.1 | 19.9 | 781.3 | 9.4 | 87.9 |
| H14-002 27May2015-Spot 36 | 685 | 50467 | 21.6 | 17.0039 | 1.2 | 0.6245 | 1.7 | 0.0770 | 1.2 | 0.73 | 478.3 | 5.7 | 492.6 | 6.6 | 560.1 | 25.3 | 478.3 | 5.7 | 85.4 |
| H14-002 27May2015-Spot 39 | 358 | 331330 | 3.8 | 12.6153 | 1.1 | 2.2612 | 1.9 | 0.2069 | 1.6 | 0.84 | 1212.2 | 17.9 | 1200.3 | 13.6 | 1178.9 | 20.8 | 1178.9 | 20.8 | 102.8 |
| H14-002 27May2015-Spot 40 | 356 | 54800 | 4.1 | 11.2654 | 1.6 | 2.6624 | 2.1 | 0.2175 | 1.4 | 0.65 | 1268.8 | 15.6 | 1318.1 | 15.5 | 1399.1 | 30.8 | 1399.1 | 30.8 | 90.7 |
| H14-002 27May2015-Spot 41 | 602 | 176483 | 2.4 | 13.2743 | 0.8 | 1.6455 | 1.4 | 0.1584 | 1.2 | 0.81 | 948.0 | 10.1 | 987.8 | 9.0 | 1077.4 | 16.7 | 1077.4 | 16.7 | 88.0 |
| H14-002 27May2015-Spot 42 | 613 | 167622 | 4.0 | 12.9135 | 0.9 | 1.9836 | 1.6 | 0.1858 | 1.3 | 0.83 | 1098.4 | 13.4 | 1109.9 | 10.8 | 1132.5 | 17.6 | 1132.5 | 17.6 | 97.0 |
| H14-002 27May2015-Spot 43 | 146 | 61988 | 2.4 | 12.7808 | 1.3 | 2.1019 | 1.9 | 0.1948 | 1.4 | 0.74 | 1147.5 | 15.1 | 1149.4 | 13.4 | 1153.0 | 26.0 | 1153.0 | 26.0 | 99.5 |
| H14-002 27May2015-Spot 44 | 697 | 224157 | 2.4 | 13.1975 | 1.0 | 1.7413 | 1.6 | 0.1667 | 1.2 | 0.77 | 993.8 | 11.4 | 1023.9 | 10.4 | 1089.0 | 20.7 | 1089.0 | 20.7 | 91.3 |
| H14-002 27May2015-Spot 45 | 429 | 217547 | 1.5 | 12.8615 | 1.1 | 2.0556 | 1.4 | 0.1918 | 0.9 | 0.66 | 1130.9 | 9.6 | 1134.2 | 9.6 | 1140.5 | 21.1 | 1140.5 | 21.1 | 99.2 |
| H14-002 27May2015-Spot 46 | 792 | 70438 | 4.1 | 12.7438 | 0.9 | 2.0076 | 1.4 | 0.1856 | 1.1 | 0.76 | 1097.3 | 10.8 | 1118.1 | 9.6 | 1158.8 | 18.3 | 1158.8 | 18.3 | 94.7 |
| H14-002 27May2015-Spot 47 | 161 | 76272 | 2.0 | 12.4693 | 1.5 | 2.1641 | 2.0 | 0.1957 | 1.3 | 0.63 | 1152.3 | 13.2 | 1169.6 | 13.7 | 1201.8 | 30.2 | 1201.8 | 30.2 | 95.9 |
| H14-002 27May2015-Spot 48 | 823 | 80696 | 3.5 | 13.6360 | 0.9 | 1.6283 | 1.5 | 0.1610 | 1.2 | 0.80 | 962.5 | 10.8 | 981.2 | 9.5 | 1023.2 | 18.4 | 1023.2 | 18.4 | 94.1 |
| H14-002 27May2015-Spot 49 | 517 | 43953 | 3.2 | 18.0035 | 1.3 | 0.5593 | 1.9 | 0.0730 | 1.3 | 0.70 | 454.4 | 5.8 | 451.1 | 6.8 | 434.2 | 29.9 | 454.4 | 5.8 | 104.7 |
| H14-002 27May2015-Spot 50 | 312 | 53711 | 3.0 | 12.5518 | 1.0 | 2.2825 | 1.6 | 0.2078 | 1.3 | 0.80 | 1217.0 | 14.4 | 1206.9 | 11.4 | 1188.8 | 19.2 | 1188.8 | 19.2 | 102.4 |
| H14-002 27May2015-Spot 51 | 45 | 37635 | 2.6 | 12.7618 | 1.4 | 2.1258 | 2.0 | 0.1968 | 1.4 | 0.71 | 1157.9 | 15.2 | 1157.2 | 14.0 | 1156.0 | 28.5 | 1156.0 | 28.5 | 100.2 |
| H14-002 27May2015-Spot 52 | 1023 | 164572 | 3.2 | 14.0247 | 0.9 | 1.3858 | 1.5 | 0.1410 | 1.2 | 0.81 | 850.1 | 9.4 | 882.9 | 8.6 | 966.1 | 17.6 | 966.1 | 17.6 | 88.0 |
| H14-002 27May2015-Spot 53 | 216 | 244208 | 3.3 | 13.9917 | 1.2 | 1.5775 | 1.8 | 0.1601 | 1.3 | 0.74 | 957.2 | 11.9 | 961.4 | 11.2 | 970.9 | 24.8 | 970.9 | 24.8 | 98.6 |
| H14-002 27May2015-Spot 54 | 163 | 89180 | 1.8 | 13.3100 | 1.0 | 1.8774 | 1.5 | 0.1812 | 1.1 | 0.73 | 1073.7 | 11.0 | 1073.2 | 10.1 | 1072.0 | 21.0 | 1072.0 | 21.0 | 100.2 |

**Appendix B: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-002 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-002 27May2015-Spot 55 | 134 | 67257 | 2.3 | 12.8891 | 1.5 | 1.9448 | 2.1 | 0.1818 | 1.5 | 0.72 | 1076.8 | 14.9 | 1096.7 | 14.1 | 1136.3 | 29.0 | 1136.3 | 29.0 | 94.8 |
| H14-002 27May2015-Spot 56 | 83 | 86716 | 1.8 | 12.4722 | 1.6 | 2.1835 | 2.7 | 0.1975 | 2.2 | 0.80 | 1161.9 | 22.9 | 1175.8 | 18.8 | 1201.4 | 32.0 | 1201.4 | 32.0 | 96.7 |
| H14-002 27May2015-Spot 57 | 846 | 150940 | 5.2 | 14.4584 | 1.1 | 1.1402 | 1.8 | 0.1196 | 1.5 | 0.81 | 728.1 | 10.2 | 772.6 | 10.0 | 903.6 | 22.5 | 728.1 | 10.2 | 80.6 |
| H14-002 27May2015-Spot 58 | 211 | 103850 | 2.1 | 13.5893 | 1.4 | 1.7733 | 2.0 | 0.1748 | 1.4 | 0.69 | 1038.4 | 13.0 | 1035.7 | 12.8 | 1030.2 | 29.0 | 1030.2 | 29.0 | 100.8 |
| H14-002 27May2015-Spot 59 | 394 | 191867 | 2.3 | 11.7169 | 0.8 | 2.6654 | 1.9 | 0.2265 | 1.7 | 0.90 | 1316.1 | 20.2 | 1318.9 | 13.9 | 1323.4 | 15.7 | 1323.4 | 15.7 | 99.5 |
| H14-002 27May2015-Spot 60 | 202 | 89286 | 2.2 | 13.3805 | 1.1 | 1.8400 | 1.8 | 0.1786 | 1.4 | 0.78 | 1059.1 | 13.4 | 1059.9 | 11.6 | 1061.4 | 22.5 | 1061.4 | 22.5 | 99.8 |
| H14-002 27May2015-Spot 61 | 408 | 113999 | 2.2 | 13.6889 | 1.1 | 1.6238 | 1.3 | 0.1612 | 0.8 | 0.60 | 963.5 | 7.2 | 979.5 | 8.4 | 1015.4 | 21.7 | 1015.4 | 21.7 | 94.9 |
| H14-002 27May2015-Spot 64 | 189 | 941796 | 1.7 | 12.2361 | 1.2 | 1.8967 | 1.8 | 0.1683 | 1.3 | 0.72 | 1002.8 | 11.8 | 1079.9 | 11.7 | 1238.9 | 23.8 | 1238.9 | 23.8 | 80.9 |
| H14-002 27May2015-Spot 65 | 488 | 55127 | 7.0 | 13.8155 | 1.1 | 1.6184 | 1.6 | 0.1622 | 1.1 | 0.72 | 968.8 | 10.1 | 977.4 | 9.8 | 996.7 | 22.2 | 996.7 | 22.2 | 97.2 |
| H14-002 27May2015-Spot 66 | 808 | 131773 | 4.7 | 14.2969 | 1.0 | 1.2651 | 1.5 | 0.1312 | 1.2 | 0.78 | 794.6 | 9.0 | 830.2 | 8.8 | 926.8 | 19.8 | 794.6 | 9.0 | 85.7 |
| H14-002 27May2015-Spot 67 | 257 | 118105 | 3.9 | 12.6553 | 1.1 | 2.0865 | 1.6 | 0.1915 | 1.2 | 0.72 | 1129.5 | 12.0 | 1144.4 | 11.1 | 1172.6 | 22.1 | 1172.6 | 22.1 | 96.3 |
| H14-002 27May2015-Spot 68 | 209 | 214722 | 2.2 | 13.8206 | 1.3 | 1.6111 | 1.8 | 0.1615 | 1.2 | 0.68 | 965.0 | 11.1 | 974.5 | 11.4 | 996.0 | 27.1 | 996.0 | 27.1 | 96.9 |
| H14-002 27May2015-Spot 69 | 716 | 109209 | 2.9 | 13.5513 | 1.1 | 1.6942 | 1.8 | 0.1665 | 1.4 | 0.79 | 992.9 | 13.1 | 1006.4 | 11.5 | 1035.8 | 22.4 | 1035.8 | 22.4 | 95.9 |
| H14-002 27May2015-Spot 72 | 97 | 118139 | 2.1 | 13.4058 | 1.7 | 1.6757 | 2.2 | 0.1629 | 1.3 | 0.59 | 973.0 | 11.7 | 999.4 | 13.8 | 1057.6 | 35.2 | 1057.6 | 35.2 | 92.0 |
| H14-002 27May2015-Spot 73 | 273 | 84229 | 2.2 | 13.0580 | 0.9 | 1.6580 | 1.6 | 0.1570 | 1.4 | 0.85 | 940.2 | 12.2 | 992.6 | 10.4 | 1110.3 | 17.5 | 1110.3 | 17.5 | 84.7 |
| H14-002 27May2015-Spot 74 | 1796 | 232921 | 4.7 | 12.8987 | 1.0 | 1.7258 | 1.8 | 0.1614 | 1.5 | 0.83 | 964.8 | 13.5 | 1018.2 | 11.6 | 1134.8 | 19.8 | 1134.8 | 19.8 | 85.0 |
| H14-002 27May2015-Spot 75 | 325 | 112857 | 3.9 | 12.7854 | 1.5 | 1.9571 | 3.1 | 0.1815 | 2.7 | 0.87 | 1075.0 | 26.3 | 1100.9 | 20.5 | 1152.3 | 29.8 | 1152.3 | 29.8 | 93.3 |
| H14-002 27May2015-Spot 76 | 567 | 100712 | 4.7 | 14.0893 | 1.0 | 1.3852 | 2.0 | 0.1415 | 1.7 | 0.86 | 853.4 | 13.8 | 882.7 | 11.9 | 956.7 | 21.1 | 956.7 | 21.1 | 89.2 |
| H14-002 27May2015-Spot 77 | 267 | 85921 | 2.8 | 11.8849 | 1.1 | 2.4196 | 1.8 | 0.2086 | 1.5 | 0.79 | 1221.1 | 16.2 | 1248.4 | 13.3 | 1295.8 | 22.1 | 1295.8 | 22.1 | 94.2 |
| H14-002 27May2015-Spot 78 | 207 | 157431 | 1.2 | 12.5079 | 1.1 | 2.1861 | 1.8 | 0.1983 | 1.4 | 0.78 | 1166.3 | 15.3 | 1176.6 | 12.7 | 1195.7 | 22.3 | 1195.7 | 22.3 | 97.5 |
| H14-002 27May2015-Spot 79 | 871 | 56558 | 2.7 | 12.9479 | 0.7 | 1.7511 | 1.3 | 0.1644 | 1.1 | 0.84 | 981.4 | 9.7 | 1027.6 | 8.2 | 1127.2 | 13.8 | 1127.2 | 13.8 | 87.1 |
| H14-002 27May2015-Spot 80 | 387 | 156353 | 1.1 | 12.7560 | 1.0 | 2.1614 | 1.7 | 0.2000 | 1.4 | 0.82 | 1175.1 | 15.2 | 1168.7 | 12.0 | 1156.9 | 19.8 | 1156.9 | 19.8 | 101.6 |
| H14-002 27May2015-Spot 81 | 143 | 48604 | 1.9 | 12.7677 | 1.4 | 2.1103 | 2.0 | 0.1954 | 1.4 | 0.69 | 1150.6 | 14.3 | 1152.2 | 13.6 | 1155.1 | 28.3 | 1155.1 | 28.3 | 99.6 |
| H14-002 27May2015-Spot 82 | 126 | 78174 | 3.1 | 13.9148 | 1.6 | 1.4019 | 2.1 | 0.1415 | 1.4 | 0.65 | 853.0 | 11.0 | 889.8 | 12.6 | 982.2 | 33.0 | 982.2 | 33.0 | 86.9 |
| H14-002 27May2015-Spot 83 | 2162 | 863689 | 62.7 | 12.7445 | 1.0 | 1.7954 | 1.6 | 0.1660 | 1.2 | 0.76 | 989.8 | 10.9 | 1043.8 | 10.1 | 1158.7 | 19.8 | 1158.7 | 19.8 | 85.4 |
| H14-002 27May2015-Spot 84 | 36 | 40403 | 1.5 | 12.7005 | 3.3 | 2.1246 | 3.7 | 0.1957 | 1.7 | 0.45 | 1152.2 | 17.5 | 1156.8 | 25.5 | 1165.5 | 65.5 | 1165.5 | 65.5 | 98.9 |
| H14-002 27May2015-Spot 86 | 364 | 85377 | 1.8 | 11.8807 | 1.0 | 2.3971 | 1.6 | 0.2066 | 1.2 | 0.79 | 1210.4 | 13.6 | 1241.7 | 11.2 | 1296.5 | 18.6 | 1296.5 | 18.6 | 93.4 |
| H14-002 27May2015-Spot 87 | 974 | 517527 | 22.7 | 14.1313 | 0.9 | 1.3313 | 1.8 | 0.1364 | 1.6 | 0.87 | 824.5 | 12.2 | 859.4 | 10.5 | 950.6 | 18.3 | 824.5 | 12.2 | 86.7 |
| H14-002 27May2015-Spot 91 | 315 | 106391 | 2.2 | 12.7903 | 1.0 | 2.0619 | 1.8 | 0.1913 | 1.5 | 0.81 | 1128.3 | 15.0 | 1136.3 | 12.2 | 1151.5 | 20.8 | 1151.5 | 20.8 | 98.0 |
| H14-002 27May2015-Spot 92 | 99 | 39353 | 4.5 | 12.6983 | 1.5 | 2.1318 | 2.1 | 0.1963 | 1.5 | 0.70 | 1155.6 | 15.6 | 1159.2 | 14.6 | 1165.9 | 30.0 | 1165.9 | 30.0 | 99.1 |
| H14-002 27May2015-Spot 93 | 444 | 227753 | 1.8 | 12.8440 | 1.0 | 2.0088 | 1.4 | 0.1871 | 1.0 | 0.72 | 1105.8 | 10.4 | 1118.5 | 9.6 | 1143.2 | 19.4 | 1143.2 | 19.4 | 96.7 |
| H14-002 27May2015-Spot 96 | 779 | 145606 | 5.2 | 17.8454 | 1.0 | 0.5581 | 1.6 | 0.0722 | 1.3 | 0.79 | 449.6 | 5.5 | 450.3 | 5.8 | 453.9 | 21.8 | 449.6 | 5.5 | 99.1 |
| H14-002 27May2015-Spot 98 | 217 | 112298 | 1.4 | 13.3934 | 1.6 | 1.9364 | 5.2 | 0.1881 | 4.9 | 0.95 | 1111.1 | 50.1 | 1093.8 | 34.5 | 1059.5 | 31.7 | 1059.5 | 31.7 | 104.9 |
| H14-002 27May2015-Spot 99 | 157 | 59931 | 5.0 | 16.1229 | 1.5 | 0.8130 | 1.9 | 0.0951 | 1.1 | 0.58 | 585.5 | 6.1 | 604.1 | 8.6 | 674.9 | 33.0 | 585.5 | 6.1 | 86.7 |
| H14-002 27May2015-Spot 100 | 574 | 119354 | 4.5 | 15.4378 | 1.1 | 0.9446 | 1.8 | 0.1058 | 1.4 | 0.79 | 648.1 | 8.7 | 675.3 | 8.7 | 767.1 | 22.7 | 648.1 | 8.7 | 84.5 |
| H14-002 27May2015-Spot 101 | 29 | 38728 | 2.9 | 11.0000 | 1.6 | 3.1345 | 2.3 | 0.2501 | 1.6 | 0.71 | 1438.8 | 20.8 | 1441.2 | 17.5 | 1444.7 | 30.3 | 1444.7 | 30.3 | 99.6 |
| H14-002 27May2015-Spot 102 | 371 | 171999 | 3.6 | 12.3554 | 0.9 | 2.3207 | 1.6 | 0.2080 | 1.3 | 0.81 | 1217.9 | 14.4 | 1218.6 | 11.3 | 1219.9 | 18.4 | 1219.9 | 18.4 | 99.8 |
| H14-002 27May2015-Spot 104 | 499 | 128607 | 4.2 | 13.3089 | 1.0 | 1.7035 | 1.8 | 0.1644 | 1.5 | 0.82 | 981.4 | 13.4 | 1009.8 | 11.5 | 1072.2 | 20.6 | 1072.2 | 20.6 | 91.5 |
| H14-002 27May2015-Spot 105 | 220 | 185984 | 6.3 | 13.2429 | 0.8 | 1.7812 | 2.1 | 0.1711 | 2.0 | 0.93 | 1018.1 | 18.5 | 1038.6 | 13.7 | 1082.2 | 15.5 | 1082.2 | 15.5 | 94.1 |
| H14-002 27May2015-Spot 106 | 661 | 206067 | 6.1 | 13.3733 | 1.1 | 1.6671 | 1.7 | 0.1617 | 1.3 | 0.75 | 966.2 | 11.4 | 996.1 | 10.7 | 1062.5 | 22.3 | 1062.5 | 22.3 | 90.9 |
| H14-002 27May2015-Spot 107 | 704 | 269272 | 2.2 | 12.4883 | 0.9 | 1.7807 | 1.7 | 0.1613 | 1.4 | 0.84 | 963.9 | 12.8 | 1038.4 | 11.0 | 1198.8 | 18.0 | 1198.8 | 18.0 | 80.4 |
| H14-002 27May2015-Spot 108 | 334 | 249741 | 2.6 | 14.3350 | 0.8 | 1.4309 | 1.5 | 0.1488 | 1.2 | 0.82 | 894.1 | 10.0 | 901.9 | 8.8 | 921.3 | 17.2 | 921.3 | 17.2 | 97.0 |
| H14-002 27May2015-Spot 109 | 530 | 211388 | 9.6 | 13.7661 | 0.9 | 1.5307 | 2.1 | 0.1528 | 1.9 | 0.91 | 916.8 | 16.1 | 942.8 | 12.8 | 1004.0 | 17.6 | 1004.0 | 17.6 | 91.3 |
| H14-002 27May2015-Spot 111 | 349 | 110133 | 9.0 | 15.8530 | 1.5 | 0.8341 | 3.0 | 0.0959 | 2.6 | 0.87 | 590.4 | 14.7 | 615.9 | 13.8 | 710.9 | 31.3 | 590.4 | 14.7 | 83.0 |
| H14-002 27May2015-Spot 112 | 1852 | 365033 | 8.0 | 13.2738 | 1.1 | 1.6199 | 1.5 | 0.1560 | 1.0 | 0.68 | 934.2 | 8.8 | 978.0 | 9.4 | 1077.5 | 22.1 | 1077.5 | 22.1 | 86.7 |
| H14-002 27May2015-Spot 113 | 484 | 964661 | 2.4 | 11.3871 | 0.9 | 2.4942 | 1.7 | 0.2060 | 1.5 | 0.84 | 1207.4 | 16.0 | 1270.4 | 12.6 | 1378.5 | 18.1 | 1378.5 | 18.1 | 87.6 |
| H14-002 27May2015-Spot 115 | 382 | 109037 | 3.0 | 13.3138 | 1.1 | 1.6601 | 1.8 | 0.1603 | 1.4 | 0.80 | 958.4 | 12.8 | 993.4 | 11.4 | 1071.5 | 21.8 | 1071.5 | 21.8 | 89.5 |
| H14-002 27May2015-Spot 117 | 48 | 38325 | 2.0 | 14.1140 | 2.2 | 1.5094 | 3.7 | 0.1545 | 2.9 | 0.79 | 926.2 | 25.1 | 934.2 | 22.5 | 953.2 | 46.0 | 953.2 | 46.0 | 97.2 |
| H14-002 27May2015-Spot 118 | 101 | 50524 | 1.8 | 13.6747 | 1.9 | 1.7364 | 2.6 | 0.1722 | 1.8 | 0.67 | 1024.3 | 16.6 | 1022.1 | 16.7 | 1017.5 | 38.9 | 1017.5 | 38.9 | 100.7 |

**Appendix B: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-002 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-002 27May2015-Spot 119 | 72 | 37304 | 3.4 | 12.9098 | 1.7 | 1.8848 | 2.3 | 0.1765 | 1.4 | 0.64 | 1047.7 | 14.0 | 1075.8 | 15.0 | 1133.1 | 34.8 | 1133.1 | 34.8 | 92.5 |
| H14-002 27May2015-Spot 121 | 541 | 264012 | 11.4 | 17.3356 | 1.4 | 0.5682 | 2.1 | 0.0714 | 1.6 | 0.76 | 444.8 | 7.0 | 456.8 | 7.9 | 517.8 | 30.5 | 444.8 | 7.0 | 85.9 |
| H14-002 27May2015-Spot 122 | 241 | 172037 | 3.2 | 11.9592 | 1.0 | 2.3103 | 1.9 | 0.2004 | 1.6 | 0.85 | 1177.4 | 17.7 | 1215.5 | 13.7 | 1283.7 | 19.9 | 1283.7 | 19.9 | 91.7 |
| H14-002 27May2015-Spot 123 | 194 | 184658 | 3.1 | 14.3342 | 1.4 | 1.3646 | 1.8 | 0.1419 | 1.1 | 0.62 | 855.2 | 8.9 | 873.8 | 10.5 | 921.4 | 28.8 | 855.2 | 8.9 | 92.8 |
| H14-002 27May2015-Spot 124 | 175 | 82497 | 1.4 | 12.4136 | 1.2 | 2.3409 | 1.8 | 0.2108 | 1.3 | 0.75 | 1232.8 | 15.1 | 1224.8 | 12.8 | 1210.7 | 23.4 | 1210.7 | 23.4 | 101.8 |
| H14-002 27May2015-Spot 125 | 202 | 228253 | 3.2 | 13.1193 | 1.1 | 1.7915 | 1.7 | 0.1705 | 1.3 | 0.75 | 1014.7 | 11.8 | 1042.4 | 10.9 | 1100.9 | 22.4 | 1100.9 | 22.4 | 92.2 |
| H14-002 27May2015-Spot 126 | 273 | 87198 | 6.9 | 13.8125 | 1.1 | 1.6468 | 1.7 | 0.1650 | 1.3 | 0.77 | 984.4 | 12.3 | 988.3 | 11.0 | 997.1 | 22.6 | 997.1 | 22.6 | 98.7 |
| H14-002 27May2015-Spot 128 | 62 | 35049 | 1.8 | 15.7229 | 2.9 | 0.8667 | 3.2 | 0.0988 | 1.4 | 0.42 | 607.5 | 7.9 | 633.8 | 15.3 | 728.4 | 62.3 | 607.5 | 7.9 | 83.4 |
| H14-002 27May2015-Spot 130 | 390 | 89239 | 2.1 | 11.9470 | 0.8 | 2.2431 | 1.3 | 0.1944 | 1.0 | 0.78 | 1144.9 | 10.2 | 1194.6 | 8.8 | 1285.6 | 15.4 | 1285.6 | 15.4 | 89.1 |
| H14-002 27May2015-Spot 131 | 148 | 43758 | 3.6 | 11.7068 | 1.4 | 2.6520 | 1.8 | 0.2252 | 1.2 | 0.65 | 1309.1 | 13.8 | 1315.2 | 13.3 | 1325.1 | 26.5 | 1325.1 | 26.5 | 98.8 |
| H14-002 27May2015-Spot 140 | 276 | 151962 | 10.9 | 14.0632 | 1.4 | 1.4071 | 2.6 | 0.1435 | 2.2 | 0.84 | 864.5 | 17.7 | 891.9 | 15.3 | 960.5 | 28.2 | 960.5 | 28.2 | 90.0 |
| H14-002 27May2015-Spot 141 | 1251 | 63072 | 26.1 | 17.3383 | 1.1 | 0.5977 | 1.7 | 0.0752 | 1.3 | 0.76 | 467.1 | 5.7 | 475.7 | 6.3 | 517.4 | 23.8 | 467.1 | 5.7 | 90.3 |
| H14-002 27May2015-Spot 142 | 560 | 67273 | 4.4 | 13.8491 | 1.0 | 1.5991 | 1.9 | 0.1606 | 1.6 | 0.84 | 960.2 | 13.9 | 969.9 | 11.6 | 991.8 | 20.5 | 991.8 | 20.5 | 96.8 |
| H14-002 27May2015-Spot 143 | 873 | 74647 | 3.2 | 13.2791 | 1.0 | 1.5232 | 1.4 | 0.1467 | 1.0 | 0.71 | 882.5 | 8.4 | 939.8 | 8.8 | 1076.7 | 20.4 | 1076.7 | 20.4 | 82.0 |
| H14-002 27May2015-Spot 144 | 97 | 61981 | 2.9 | 11.6673 | 1.2 | 2.6819 | 1.8 | 0.2269 | 1.3 | 0.72 | 1318.5 | 15.0 | 1323.5 | 13.0 | 1331.6 | 23.5 | 1331.6 | 23.5 | 99.0 |
| H14-002 27May2015-Spot 145 | 1362 | 220417 | 28.4 | 13.3851 | 0.8 | 1.4897 | 1.4 | 0.1446 | 1.1 | 0.83 | 870.7 | 9.2 | 926.2 | 8.3 | 1060.7 | 15.3 | 1060.7 | 15.3 | 82.1 |
| H14-002 27May2015-Spot 146 | 249 | 98794 | 7.8 | 12.9550 | 1.2 | 1.9017 | 1.9 | 0.1787 | 1.4 | 0.75 | 1059.8 | 14.0 | 1081.7 | 12.6 | 1126.1 | 24.8 | 1126.1 | 24.8 | 94.1 |
| H14-002 27May2015-Spot 147 | 441 | 165355 | 4.2 | 13.3460 | 1.0 | 1.5647 | 1.8 | 0.1515 | 1.5 | 0.83 | 909.1 | 12.9 | 956.3 | 11.4 | 1066.6 | 20.6 | 1066.6 | 20.6 | 85.2 |
| H14-002 27May2015-Spot 149 | 191 | 119471 | 9.6 | 13.9295 | 1.3 | 1.4028 | 2.0 | 0.1417 | 1.5 | 0.74 | 854.4 | 11.9 | 890.1 | 11.9 | 980.0 | 27.3 | 980.0 | 27.3 | 87.2 |
| H14-002 27May2015-Spot 150 | 412 | 178946 | 4.2 | 13.4729 | 1.4 | 1.7200 | 2.0 | 0.1681 | 1.5 | 0.74 | 1001.4 | 14.0 | 1016.0 | 13.0 | 1047.6 | 27.4 | 1047.6 | 27.4 | 95.6 |
| H14-002 27May2015-Spot 151 | 200 | 183571 | 8.2 | 13.3051 | 1.2 | 1.8780 | 1.8 | 0.1812 | 1.4 | 0.76 | 1073.6 | 13.6 | 1073.3 | 11.9 | 1072.8 | 23.4 | 1072.8 | 23.4 | 100.1 |
| H14-002 27May2015-Spot 152 | 185 | 122009 | 2.8 | 12.0656 | 1.5 | 2.2919 | 2.0 | 0.2006 | 1.3 | 0.65 | 1178.3 | 13.8 | 1209.8 | 13.9 | 1266.4 | 29.0 | 1266.4 | 29.0 | 93.0 |
| H14-002 27May2015-Spot 153 | 394 | 52942 | 4.4 | 13.6517 | 1.1 | 1.6365 | 1.8 | 0.1620 | 1.4 | 0.80 | 968.1 | 12.9 | 984.4 | 11.3 | 1020.9 | 21.5 | 1020.9 | 21.5 | 94.8 |
| H14-002 27May2015-Spot 154 | 136 | 108522 | 1.6 | 13.2377 | 1.3 | 1.8368 | 2.3 | 0.1763 | 1.9 | 0.82 | 1047.0 | 18.6 | 1058.7 | 15.4 | 1082.9 | 26.5 | 1082.9 | 26.5 | 96.7 |
| H14-002 27May2015-Spot 157 | 411 | 187517 | 1.8 | 13.2204 | 1.1 | 1.5678 | 1.7 | 0.1503 | 1.3 | 0.77 | 902.8 | 10.8 | 957.6 | 10.4 | 1085.6 | 21.3 | 1085.6 | 21.3 | 83.2 |
| H14-002 27May2015-Spot 158 | 42 | 47439 | 1.8 | 13.7983 | 2.6 | 1.6720 | 3.0 | 0.1673 | 1.6 | 0.52 | 997.3 | 14.7 | 997.9 | 19.3 | 999.2 | 52.7 | 999.2 | 52.7 | 99.8 |
| H14-002 27May2015-Spot 159 | 168 | 62481 | 1.9 | 12.9408 | 1.1 | 2.0370 | 1.7 | 0.1912 | 1.3 | 0.77 | 1127.8 | 13.3 | 1127.9 | 11.4 | 1128.3 | 21.3 | 1128.3 | 21.3 | 100.0 |
| H14-002 27May2015-Spot 160 | 196 | 54526 | 1.7 | 13.4341 | 1.6 | 1.6823 | 2.0 | 0.1639 | 1.2 | 0.58 | 978.5 | 10.5 | 1001.8 | 12.6 | 1053.4 | 32.5 | 1053.4 | 32.5 | 92.9 |
| H14-002 27May2015-Spot 161 | 1485 | 211684 | 5.2 | 14.2126 | 0.8 | 1.2417 | 1.4 | 0.1280 | 1.1 | 0.78 | 776.4 | 7.7 | 819.7 | 7.6 | 938.9 | 17.4 | 776.4 | 7.7 | 82.7 |
| H14-002 27May2015-Spot 162 | 1525 | 185046 | 15.3 | 13.9846 | 0.9 | 1.4703 | 1.8 | 0.1491 | 1.5 | 0.87 | 896.1 | 12.9 | 918.3 | 10.7 | 971.9 | 17.4 | 971.9 | 17.4 | 92.2 |
| H14-002 27May2015-Spot 164 | 101 | 98639 | 4.7 | 13.6646 | 1.7 | 1.6490 | 2.3 | 0.1634 | 1.6 | 0.69 | 975.8 | 14.3 | 989.2 | 14.5 | 1019.0 | 33.7 | 1019.0 | 33.7 | 95.8 |
| H14-002 27May2015-Spot 166 | 1169 | 653033 | 2.1 | 11.1344 | 0.7 | 2.7188 | 1.3 | 0.2196 | 1.1 | 0.84 | 1279.5 | 13.1 | 1333.6 | 10.0 | 1421.5 | 14.2 | 1421.5 | 14.2 | 90.0 |
| H14-002 27May2015-Spot 168 | 151 | 87366 | 2.1 | 12.4655 | 1.7 | 1.9237 | 2.0 | 0.1739 | 1.1 | 0.55 | 1033.7 | 10.7 | 1089.4 | 13.7 | 1202.4 | 33.8 | 1202.4 | 33.8 | 86.0 |
| H14-002 27May2015-Spot 169 | 148 | 37546 | 1.9 | 12.9772 | 0.9 | 1.8306 | 1.3 | 0.1723 | 0.9 | 0.70 | 1024.7 | 8.7 | 1056.5 | 8.6 | 1122.7 | 18.5 | 1122.7 | 18.5 | 91.3 |
| H14-002 27May2015-Spot 170 | 374 | 53175 | 2.0 | 12.4251 | 1.0 | 2.3261 | 1.3 | 0.2096 | 0.8 | 0.61 | 1226.8 | 8.6 | 1220.3 | 9.0 | 1208.9 | 19.6 | 1208.9 | 19.6 | 101.5 |
| H14-002 27May2015-Spot 171 | 979 | 60824 | 2.9 | 13.0358 | 1.1 | 1.8016 | 1.6 | 0.1703 | 1.1 | 0.72 | 1014.0 | 10.6 | 1046.1 | 10.3 | 1113.7 | 22.1 | 1113.7 | 22.1 | 91.0 |
| H14-002 27May2015-Spot 172 | 80 | 76447 | 1.1 | 13.3818 | 1.3 | 1.7190 | 1.7 | 0.1668 | 1.2 | 0.68 | 994.6 | 11.0 | 1015.6 | 11.2 | 1061.2 | 25.5 | 1061.2 | 25.5 | 93.7 |
| H14-002 27May2015-Spot 173 | 590 | 212515 | 7.4 | 13.4349 | 0.9 | 1.6169 | 1.7 | 0.1575 | 1.4 | 0.85 | 943.1 | 12.5 | 976.8 | 10.6 | 1053.3 | 18.1 | 1053.3 | 18.1 | 89.5 |
| H14-002 27May2015-Spot 174 | 306 | 113028 | 4.1 | 13.1461 | 1.0 | 1.6373 | 1.8 | 0.1561 | 1.5 | 0.83 | 935.1 | 13.2 | 984.7 | 11.5 | 1096.8 | 20.1 | 1096.8 | 20.1 | 85.3 |
| H14-002 27May2015-Spot 175 | 343 | 103805 | 3.6 | 13.3991 | 1.2 | 1.6202 | 1.8 | 0.1574 | 1.3 | 0.75 | 942.6 | 11.5 | 978.1 | 11.0 | 1058.6 | 23.3 | 1058.6 | 23.3 | 89.0 |
| H14-002 27May2015-Spot 176 | 98 | 54852 | 1.9 | 12.6940 | 1.4 | 1.9556 | 1.9 | 0.1800 | 1.3 | 0.68 | 1067.2 | 12.5 | 1100.4 | 12.7 | 1166.5 | 27.5 | 1166.5 | 27.5 | 91.5 |
| H14-002 27May2015-Spot 177 | 119 | 96097 | 1.2 | 13.5162 | 1.7 | 1.5775 | 2.2 | 0.1546 | 1.4 | 0.64 | 926.9 | 12.1 | 961.4 | 13.6 | 1041.0 | 34.2 | 1041.0 | 34.2 | 89.0 |
| H14-002 27May2015-Spot 179 | 150 | 96902 | 3.5 | 11.3238 | 1.1 | 2.8937 | 1.8 | 0.2377 | 1.5 | 0.79 | 1374.5 | 18.0 | 1380.3 | 13.9 | 1389.2 | 21.5 | 1389.2 | 21.5 | 98.9 |
| H14-002 27May2015-Spot 180 | 1289 | 57313 | 20.6 | 14.3373 | 1.0 | 1.3158 | 1.6 | 0.1368 | 1.1 | 0.74 | 826.7 | 8.9 | 852.7 | 8.9 | 921.0 | 21.5 | 826.7 | 8.9 | 89.8 |
| H14-002 27May2015-Spot 181 | 363 | 81386 | 4.4 | 13.8896 | 1.0 | 1.5509 | 1.8 | 0.1562 | 1.5 | 0.83 | 935.8 | 12.8 | 950.8 | 11.0 | 985.8 | 20.1 | 985.8 | 20.1 | 94.9 |
| H14-002 27May2015-Spot 182 | 909 | 110584 | 20.6 | 13.7440 | 0.7 | 1.5546 | 1.3 | 0.1550 | 1.1 | 0.83 | 928.7 | 9.7 | 952.3 | 8.3 | 1007.2 | 15.2 | 1007.2 | 15.2 | 92.2 |
| H14-002 27May2015-Spot 183 | 181 | 132386 | 3.1 | 12.7683 | 1.0 | 2.0372 | 2.2 | 0.1886 | 2.0 | 0.90 | 1114.1 | 20.3 | 1128.0 | 15.0 | 1155.0 | 19.2 | 1155.0 | 19.2 | 96.5 |
| H14-002 27May2015-Spot 184 | 56 | 48597 | 2.3 | 12.5149 | 1.6 | 2.2394 | 2.6 | 0.2033 | 2.1 | 0.80 | 1192.8 | 22.5 | 1193.5 | 18.2 | 1194.6 | 31.0 | 1194.6 | 31.0 | 99.8 |
| H14-002 27May2015-Spot 185 | 501 | 73659 | 2.9 | 11.4897 | 0.8 | 2.7711 | 1.5 | 0.2309 | 1.3 | 0.85 | 1339.3 | 15.4 | 1347.8 | 11.2 | 1361.2 | 15.4 | 1361.2 | 15.4 | 98.4 |

**Appendix B: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-002 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-002 27May2015-Spot 188 | 104 | 97020 | 1.6 | 11.7576 | 1.3 | 2.5976 | 1.7 | 0.2215 | 1.1 | 0.64 | 1289.8 | 12.8 | 1300.0 | 12.5 | 1316.7 | 25.2 | 1316.7 | 25.2 | 98.0 |
| H14-002 27May2015-Spot 189 | 885 | 331656 | 7.1 | 15.3145 | 1.1 | 0.9527 | 2.0 | 0.1058 | 1.7 | 0.83 | 648.4 | 10.2 | 679.5 | 9.9 | 783.9 | 23.6 | 648.4 | 10.2 | 82.7 |
| H14-002 27May2015-Spot 191 | 174 | 64356 | 3.6 | 11.3673 | 1.5 | 2.7155 | 2.7 | 0.2239 | 2.2 | 0.83 | 1302.3 | 25.9 | 1332.7 | 19.7 | 1381.8 | 28.7 | 1381.8 | 28.7 | 94.2 |
| H14-002 27May2015-Spot 192 | 229 | 101091 | 2.4 | 14.1294 | 1.1 | 1.4685 | 1.9 | 0.1505 | 1.5 | 0.81 | 903.7 | 12.8 | 917.5 | 11.3 | 950.9 | 22.7 | 950.9 | 22.7 | 95.0 |
| H14-002 27May2015-Spot 193 | 1390 | 62678 | 36.5 | 16.4769 | 1.4 | 0.7266 | 1.9 | 0.0868 | 1.3 | 0.67 | 536.8 | 6.7 | 554.6 | 8.3 | 628.3 | 31.0 | 536.8 | 6.7 | 85.4 |
| H14-002 27May2015-Spot 194 | 362 | 55358 | 1.3 | 11.9613 | 0.9 | 2.3910 | 1.5 | 0.2074 | 1.2 | 0.78 | 1215.1 | 13.0 | 1239.9 | 10.8 | 1283.3 | 18.5 | 1283.3 | 18.5 | 94.7 |
| H14-002 27May2015-Spot 195 | 924 | 99374 | 3.1 | 12.8919 | 0.8 | 1.8328 | 1.6 | 0.1714 | 1.4 | 0.87 | 1019.7 | 13.5 | 1057.3 | 10.8 | 1135.8 | 16.1 | 1135.8 | 16.1 | 89.8 |
| H14-002 27May2015-Spot 196 | 464 | 72972 | 6.2 | 13.9523 | 1.5 | 1.3262 | 3.2 | 0.1342 | 2.9 | 0.89 | 811.8 | 21.8 | 857.2 | 18.6 | 976.7 | 29.9 | 811.8 | 21.8 | 83.1 |
| H14-002 27May2015-Spot 197 | 1277 | 95027 | 31.4 | 17.7930 | 0.9 | 0.5728 | 1.3 | 0.0739 | 0.9 | 0.70 | 459.7 | 4.0 | 459.8 | 4.8 | 460.3 | 20.6 | 459.7 | 4.0 | 99.9 |
| H14-002 27May2015-Spot 198 | 668 | 255729 | 1.2 | 12.7076 | 0.7 | 1.9379 | 1.4 | 0.1786 | 1.2 | 0.87 | 1059.4 | 11.6 | 1094.3 | 9.1 | 1164.4 | 13.2 | 1164.4 | 13.2 | 91.0 |
| H14-002 27May2015-Spot 199 | 766 | 62582 | 14.0 | 17.6475 | 1.2 | 0.5981 | 1.8 | 0.0765 | 1.3 | 0.74 | 475.5 | 6.1 | 476.0 | 6.8 | 478.5 | 26.5 | 475.5 | 6.1 | 99.4 |
| H14-002 27May2015-Spot 200 | 781 | 53418 | 11.9 | 13.9115 | 0.9 | 1.5898 | 1.3 | 0.1604 | 1.0 | 0.76 | 959.0 | 9.1 | 966.2 | 8.4 | 982.7 | 17.7 | 982.7 | 17.7 | 97.6 |
| H14-002 27May2015-Spot 204 | 433 | 78596 | 5.1 | 12.5605 | 0.8 | 2.0238 | 1.5 | 0.1844 | 1.3 | 0.83 | 1090.8 | 12.8 | 1123.5 | 10.4 | 1187.5 | 16.7 | 1187.5 | 16.7 | 91.9 |
| H14-002 27May2015-Spot 207 | 477 | 213626 | 12.8 | 13.5666 | 0.9 | 1.4690 | 1.8 | 0.1445 | 1.5 | 0.86 | 870.3 | 12.6 | 917.7 | 10.8 | 1033.5 | 18.6 | 1033.5 | 18.6 | 84.2 |
| H14-002 27May2015-Spot 208 | 134 | 43817 | 2.8 | 12.8223 | 1.2 | 2.1075 | 1.5 | 0.1960 | 1.0 | 0.65 | 1153.7 | 10.6 | 1151.3 | 10.6 | 1146.6 | 23.1 | 1146.6 | 23.1 | 100.6 |
| H14-002 27May2015-Spot 222 | 213 | 228607 | 1.8 | 12.3462 | 1.0 | 2.2746 | 1.5 | 0.2037 | 1.1 | 0.73 | 1195.0 | 11.8 | 1204.4 | 10.5 | 1221.4 | 20.1 | 1221.4 | 20.1 | 97.8 |
| H14-002 27May2015-Spot 223 | 1796 | 68883 | 11.0 | 15.1003 | 0.7 | 0.9844 | 1.5 | 0.1078 | 1.3 | 0.88 | 660.0 | 8.3 | 695.9 | 7.6 | 813.5 | 15.1 | 660.0 | 8.3 | 81.1 |
| H14-002 27May2015-Spot 224 | 258 | 75020 | 2.9 | 12.7321 | 0.9 | 2.0463 | 1.8 | 0.1890 | 1.5 | 0.86 | 1115.7 | 15.4 | 1131.1 | 12.0 | 1160.6 | 18.0 | 1160.6 | 18.0 | 96.1 |
| H14-002 27May2015-Spot 225 | 243 | 81151 | 3.1 | 12.9590 | 0.9 | 1.8789 | 1.3 | 0.1766 | 1.0 | 0.74 | 1048.3 | 9.6 | 1073.7 | 8.9 | 1125.5 | 18.1 | 1125.5 | 18.1 | 93.1 |
| H14-002 27May2015-Spot 227 | 1180 | 434088 | 4.7 | 12.8293 | 1.1 | 1.8326 | 1.7 | 0.1705 | 1.4 | 0.79 | 1015.0 | 13.0 | 1057.2 | 11.4 | 1145.5 | 21.1 | 1145.5 | 21.1 | 88.6 |
| H14-002 27May2015-Spot 228 | 398 | 236787 | 2.7 | 11.7169 | 1.0 | 2.6250 | 1.7 | 0.2231 | 1.3 | 0.80 | 1298.1 | 15.8 | 1307.7 | 12.3 | 1323.4 | 19.2 | 1323.4 | 19.2 | 98.1 |
| H14-002 27May2015-Spot 229 | 531 | 100140 | 9.1 | 13.0618 | 1.0 | 1.7274 | 1.6 | 0.1636 | 1.2 | 0.76 | 977.0 | 10.9 | 1018.8 | 10.2 | 1109.7 | 20.4 | 1109.7 | 20.4 | 88.0 |
| H14-002 27May2015-Spot 230 | 348 | 79132 | 3.8 | 15.3030 | 1.2 | 0.9236 | 1.9 | 0.1025 | 1.4 | 0.78 | 629.1 | 8.6 | 664.3 | 9.0 | 785.5 | 24.4 | 629.1 | 8.6 | 80.1 |
| H14-002 27May2015-Spot 232 | 146 | 70017 | 3.5 | 11.4578 | 1.1 | 2.7668 | 1.9 | 0.2299 | 1.5 | 0.80 | 1334.1 | 18.3 | 1346.6 | 14.2 | 1366.6 | 22.0 | 1366.6 | 22.0 | 97.6 |
| H14-002 27May2015-Spot 233 | 360 | 93151 | 2.3 | 12.4597 | 1.2 | 2.1794 | 1.7 | 0.1969 | 1.2 | 0.72 | 1158.9 | 13.1 | 1174.5 | 12.0 | 1203.3 | 23.6 | 1203.3 | 23.6 | 96.3 |
| H14-002 27May2015-Spot 234 | 414 | 133778 | 3.8 | 13.6035 | 0.9 | 1.5382 | 1.5 | 0.1518 | 1.1 | 0.77 | 910.8 | 9.6 | 945.8 | 9.0 | 1028.0 | 18.9 | 1028.0 | 18.9 | 88.6 |
| H14-002 27May2015-Spot 237 | 249 | 66216 | 2.8 | 13.0958 | 1.0 | 1.7724 | 1.6 | 0.1683 | 1.3 | 0.80 | 1003.0 | 11.9 | 1035.4 | 10.4 | 1104.5 | 19.2 | 1104.5 | 19.2 | 90.8 |
| H14-002 27May2015-Spot 238 | 124 | 65441 | 8.5 | 12.4734 | 1.6 | 2.1270 | 2.8 | 0.1924 | 2.3 | 0.82 | 1134.5 | 24.4 | 1157.6 | 19.7 | 1201.2 | 31.9 | 1201.2 | 31.9 | 94.4 |
| H14-002 27May2015-Spot 239 | 60 | 45953 | 1.7 | 12.4592 | 1.5 | 1.9316 | 2.0 | 0.1745 | 1.4 | 0.70 | 1037.1 | 13.5 | 1092.1 | 13.6 | 1203.4 | 28.7 | 1203.4 | 28.7 | 86.2 |
| H14-002 27May2015-Spot 240 | 591 | 235443 | 3.1 | 13.9575 | 0.9 | 1.5024 | 1.6 | 0.1521 | 1.3 | 0.80 | 912.6 | 10.8 | 931.3 | 9.7 | 975.9 | 19.3 | 975.9 | 19.3 | 93.5 |
| H14-002 27May2015-Spot 242 | 813 | 202522 | 6.8 | 13.8601 | 0.7 | 1.4465 | 1.4 | 0.1454 | 1.3 | 0.89 | 875.2 | 10.4 | 908.4 | 8.6 | 990.2 | 13.3 | 990.2 | 13.3 | 88.4 |
| H14-002 27May2015-Spot 243 | 413 | 82401 | 3.1 | 12.7990 | 0.8 | 2.1712 | 1.4 | 0.2015 | 1.1 | 0.80 | 1183.6 | 11.8 | 1171.9 | 9.5 | 1150.2 | 16.5 | 1150.2 | 16.5 | 102.9 |
| H14-002 27May2015-Spot 244 | 2998 | 141434 | 25.9 | 17.6244 | 0.9 | 0.5458 | 1.7 | 0.0698 | 1.4 | 0.85 | 434.8 | 6.0 | 442.2 | 6.0 | 481.4 | 19.7 | 434.8 | 6.0 | 90.3 |
| H14-002 27May2015-Spot 245 | 689 | 74195 | 4.9 | 13.5761 | 0.9 | 1.6810 | 1.7 | 0.1655 | 1.4 | 0.82 | 987.4 | 12.6 | 1001.4 | 10.6 | 1032.1 | 19.1 | 1032.1 | 19.1 | 95.7 |
| H14-002 27May2015-Spot 247 | 263 | 76544 | 1.7 | 12.9434 | 1.1 | 1.8026 | 1.6 | 0.1692 | 1.1 | 0.70 | 1007.8 | 10.4 | 1046.4 | 10.4 | 1127.9 | 22.5 | 1127.9 | 22.5 | 89.3 |
| H14-002 27May2015-Spot 249 | 379 | 152079 | 3.7 | 12.7433 | 1.0 | 2.0969 | 1.6 | 0.1938 | 1.3 | 0.80 | 1141.9 | 13.5 | 1147.8 | 11.1 | 1158.8 | 19.2 | 1158.8 | 19.2 | 98.5 |
| H14-002 27May2015-Spot 250 | 1026 | 92782 | 4.5 | 13.6352 | 1.1 | 1.5609 | 2.0 | 0.1544 | 1.6 | 0.83 | 925.4 | 14.1 | 954.8 | 12.3 | 1023.3 | 22.6 | 1023.3 | 22.6 | 90.4 |
| H14-002 27May2015-Spot 252 | 475 | 175249 | 1.6 | 11.7291 | 0.9 | 2.5757 | 1.4 | 0.2191 | 1.1 | 0.79 | 1277.2 | 12.7 | 1293.8 | 10.2 | 1321.4 | 16.5 | 1321.4 | 16.5 | 96.7 |
| H14-002 27May2015-Spot 253 | 78 | 81419 | 3.3 | 12.6691 | 1.4 | 2.2293 | 1.9 | 0.2048 | 1.3 | 0.69 | 1201.3 | 14.3 | 1190.3 | 13.2 | 1170.4 | 27.0 | 1170.4 | 27.0 | 102.6 |
| H14-002 27May2015-Spot 254 | 1038 | 616530 | 4.8 | 13.5298 | 0.9 | 1.6407 | 1.9 | 0.1610 | 1.7 | 0.88 | 962.3 | 14.8 | 986.0 | 11.9 | 1039.0 | 18.4 | 1039.0 | 18.4 | 92.6 |
| H14-002 27May2015-Spot 259 | 766 | 107660 | 2.8 | 13.2826 | 1.0 | 1.8312 | 1.6 | 0.1764 | 1.3 | 0.77 | 1047.3 | 12.2 | 1056.7 | 10.7 | 1076.2 | 20.7 | 1076.2 | 20.7 | 97.3 |
| H14-002 27May2015-Spot 260 | 638 | 137437 | 2.4 | 13.6385 | 1.0 | 1.6506 | 1.5 | 0.1633 | 1.2 | 0.76 | 974.9 | 10.5 | 989.8 | 9.7 | 1022.8 | 20.2 | 1022.8 | 20.2 | 95.3 |
| H14-002 27May2015-Spot 263 | 190 | 71939 | 16.7 | 13.5753 | 1.3 | 1.6913 | 1.8 | 0.1665 | 1.3 | 0.71 | 992.9 | 11.5 | 1005.2 | 11.3 | 1032.2 | 25.3 | 1032.2 | 25.3 | 96.2 |
| H14-002 27May2015-Spot 264 | 428 | 202277 | 6.7 | 17.7729 | 1.4 | 0.5540 | 1.9 | 0.0714 | 1.3 | 0.69 | 444.6 | 5.6 | 447.6 | 6.8 | 462.9 | 30.4 | 444.6 | 5.6 | 96.1 |
| H14-002 27May2015-Spot 265 | 320 | 50879 | 5.0 | 12.1048 | 1.3 | 2.4191 | 2.5 | 0.2124 | 2.1 | 0.85 | 1241.5 | 23.9 | 1248.3 | 17.9 | 1260.1 | 25.7 | 1260.1 | 25.7 | 98.5 |
| H14-002 27May2015-Spot 267 | 1358 | 585213 | 11.2 | 12.9925 | 1.1 | 1.6442 | 1.7 | 0.1549 | 1.3 | 0.74 | 928.6 | 10.9 | 987.3 | 10.7 | 1120.4 | 22.7 | 1120.4 | 22.7 | 82.9 |
| H14-002 27May2015-Spot 268 | 276 | 148320 | 3.6 | 13.4637 | 1.1 | 1.7757 | 1.7 | 0.1734 | 1.3 | 0.77 | 1030.8 | 12.7 | 1036.6 | 11.2 | 1048.9 | 22.0 | 1048.9 | 22.0 | 98.3 |
| H14-002 27May2015-Spot 269 | 295 | 105200 | 1.9 | 14.5906 | 1.1 | 1.2220 | 1.9 | 0.1293 | 1.5 | 0.82 | 783.9 | 11.3 | 810.7 | 10.4 | 884.9 | 21.9 | 783.9 | 11.3 | 88.6 |
| H14-002 27May2015-Spot 270 | 154 | 149460 | 4.4 | 12.8816 | 1.0 | 2.0216 | 1.7 | 0.1889 | 1.4 | 0.79 | 1115.3 | 13.9 | 1122.8 | 11.6 | 1137.4 | 20.7 | 1137.4 | 20.7 | 98.1 |

**Appendix B: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-002 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-002 27May2015-Spot 272 | 243 | 145670 | 3.4 | 11.6086 | 1.0 | 2.7359 | 1.6 | 0.2303 | 1.2 | 0.77 | 1336.3 | 14.7 | 1338.3 | 11.7 | 1341.4 | 19.4 | 1341.4 | 19.4 | 99.6 |
| H14-002 27May2015-Spot 273 | 1313 | 186124 | 7.7 | 13.1818 | 0.8 | 1.7594 | 1.7 | 0.1682 | 1.5 | 0.87 | 1002.2 | 13.5 | 1030.6 | 10.9 | 1091.4 | 16.8 | 1091.4 | 16.8 | 91.8 |
| H14-002 27May2015-Spot 274 | 385 | 119836 | 8.7 | 13.6901 | 1.0 | 1.6393 | 1.5 | 0.1628 | 1.2 | 0.77 | 972.1 | 10.4 | 985.4 | 9.4 | 1015.2 | 19.4 | 1015.2 | 19.4 | 95.8 |
| H14-002 27May2015-Spot 275 | 252 | 135008 | 3.3 | 14.8851 | 1.5 | 1.0926 | 1.9 | 0.1180 | 1.2 | 0.63 | 718.8 | 8.1 | 749.8 | 10.0 | 843.4 | 30.6 | 718.8 | 8.1 | 85.2 |
| H14-002 27May2015-Spot 277 | 352 | 220286 | 5.6 | 13.7585 | 1.0 | 1.5838 | 1.7 | 0.1580 | 1.4 | 0.81 | 945.9 | 12.3 | 963.8 | 10.6 | 1005.1 | 20.1 | 1005.1 | 20.1 | 94.1 |
| H14-002 27May2015-Spot 278 | 611 | 164206 | 2.7 | 14.9126 | 1.1 | 1.0620 | 2.0 | 0.1149 | 1.7 | 0.84 | 700.9 | 11.3 | 734.8 | 10.6 | 839.5 | 22.7 | 700.9 | 11.3 | 83.5 |
| H14-002 27May2015-Spot 279 | 57 | 27004 | 1.5 | 13.9305 | 2.2 | 1.6517 | 2.6 | 0.1669 | 1.4 | 0.53 | 994.9 | 12.6 | 990.2 | 16.4 | 979.8 | 44.8 | 979.8 | 44.8 | 101.5 |
| H14-002 27May2015-Spot 280 | 1426 | 154176 | 9.1 | 13.9071 | 1.1 | 1.2913 | 1.8 | 0.1302 | 1.4 | 0.79 | 789.3 | 10.4 | 841.9 | 10.2 | 983.3 | 22.4 | 789.3 | 10.4 | 80.3 |
| H14-002 27May2015-Spot 282 | 228 | 70661 | 3.1 | 14.2020 | 1.3 | 1.4267 | 2.1 | 0.1470 | 1.7 | 0.80 | 883.9 | 14.0 | 900.2 | 12.6 | 940.4 | 25.8 | 940.4 | 25.8 | 94.0 |
| H14-002 27May2015-Spot 283 | 140 | 46190 | 2.0 | 14.3507 | 1.6 | 1.2572 | 2.2 | 0.1309 | 1.4 | 0.65 | 792.7 | 10.6 | 826.7 | 12.3 | 919.0 | 33.8 | 792.7 | 10.6 | 86.3 |
| H14-002 27May2015-Spot 287 | 615 | 75797 | 2.1 | 13.2123 | 1.0 | 1.7363 | 1.8 | 0.1664 | 1.5 | 0.84 | 992.2 | 13.9 | 1022.1 | 11.6 | 1086.8 | 19.6 | 1086.8 | 19.6 | 91.3 |
| H14-002 27May2015-Spot 289 | 84 | 37179 | 4.0 | 14.0577 | 1.3 | 1.5636 | 1.9 | 0.1594 | 1.3 | 0.71 | 953.6 | 11.8 | 955.9 | 11.7 | 961.3 | 27.3 | 961.3 | 27.3 | 99.2 |
| H14-002 27May2015-Spot 290 | 386 | 71904 | 3.2 | 13.3170 | 1.0 | 1.8741 | 1.9 | 0.1810 | 1.7 | 0.87 | 1072.5 | 16.7 | 1072.0 | 12.9 | 1071.0 | 19.4 | 1071.0 | 19.4 | 100.1 |
| H14-002 27May2015-Spot 292 | 115 | 54890 | 1.6 | 14.3870 | 1.8 | 1.3361 | 2.2 | 0.1394 | 1.2 | 0.56 | 841.4 | 9.6 | 861.5 | 12.7 | 913.8 | 37.3 | 841.4 | 9.6 | 92.1 |
| H14-002 27May2015-Spot 293 | 602 | 84658 | 1.8 | 12.7771 | 0.8 | 2.0324 | 1.7 | 0.1883 | 1.5 | 0.87 | 1112.4 | 15.0 | 1126.4 | 11.5 | 1153.6 | 16.7 | 1153.6 | 16.7 | 96.4 |
| H14-002 27May2015-Spot 294 | 125 | 96813 | 2.4 | 12.7260 | 1.8 | 1.9064 | 2.4 | 0.1760 | 1.6 | 0.68 | 1044.8 | 15.7 | 1083.3 | 15.9 | 1161.5 | 34.7 | 1161.5 | 34.7 | 90.0 |
| H14-002 27May2015-Spot 295 | 1091 | 498368 | 3.4 | 13.2836 | 0.9 | 1.6486 | 1.8 | 0.1588 | 1.5 | 0.86 | 950.2 | 13.6 | 989.0 | 11.4 | 1076.0 | 18.7 | 1076.0 | 18.7 | 88.3 |
| H14-002 27May2015-Spot 297 | 210 | 213991 | 1.9 | 12.8534 | 1.3 | 1.8611 | 1.9 | 0.1735 | 1.4 | 0.73 | 1031.3 | 13.3 | 1067.4 | 12.6 | 1141.8 | 26.0 | 1141.8 | 26.0 | 90.3 |
| H14-002 27May2015-Spot 299 | 84 | 27549 | 2.1 | 13.6568 | 1.5 | 1.7717 | 1.9 | 0.1755 | 1.2 | 0.62 | 1042.3 | 11.5 | 1035.2 | 12.6 | 1020.1 | 30.9 | 1020.1 | 30.9 | 102.2 |
| H14-002 27May2015-Spot 300 | 127 | 172098 | 1.9 | 6.0194 | 1.1 | 10.5454 | 1.8 | 0.4604 | 1.5 | 0.81 | 2441.2 | 30.1 | 2483.9 | 16.9 | 2519.0 | 17.8 | 2519.0 | 17.8 | 96.9 |
| H14-002 27May2015-Spot 302 | 317 | 83611 | 4.0 | 13.8575 | 1.3 | 1.5635 | 1.9 | 0.1571 | 1.5 | 0.76 | 940.9 | 12.8 | 955.9 | 12.0 | 990.6 | 25.7 | 990.6 | 25.7 | 95.0 |
| H14-002 27May2015-Spot 303 | 608 | 334553 | 2.0 | 12.5957 | 1.0 | 1.9522 | 1.6 | 0.1783 | 1.2 | 0.78 | 1057.9 | 12.0 | 1099.2 | 10.7 | 1182.0 | 19.7 | 1182.0 | 19.7 | 89.5 |
| H14-002 27May2015-Spot 304 | 166 | 83993 | 1.1 | 13.0436 | 1.5 | 2.0246 | 1.9 | 0.1915 | 1.3 | 0.64 | 1129.7 | 13.0 | 1123.8 | 13.2 | 1112.5 | 29.8 | 1112.5 | 29.8 | 101.5 |
| H14-002 27May2015-Spot 307 | 154 | 238739 | 3.5 | 13.4688 | 1.4 | 1.5346 | 1.8 | 0.1499 | 1.1 | 0.64 | 900.5 | 9.5 | 944.4 | 10.8 | 1048.2 | 27.3 | 1048.2 | 27.3 | 85.9 |
| H14-002 27May2015-Spot 308 | 209 | 55365 | 1.1 | 13.0289 | 1.0 | 2.0243 | 1.6 | 0.1913 | 1.3 | 0.81 | 1128.4 | 13.8 | 1123.7 | 11.2 | 1114.7 | 19.2 | 1114.7 | 19.2 | 101.2 |
| H14-002 27May2015-Spot 309 | 406 | 616941 | 1.9 | 12.8845 | 0.9 | 1.8698 | 1.4 | 0.1747 | 1.0 | 0.73 | 1038.1 | 9.6 | 1070.5 | 9.1 | 1137.0 | 18.8 | 1137.0 | 18.8 | 91.3 |
| H14-002 27May2015-Spot 310 | 288 | 199484 | 1.8 | 13.5949 | 1.3 | 1.4648 | 1.8 | 0.1444 | 1.3 | 0.72 | 869.7 | 10.6 | 916.0 | 10.9 | 1029.3 | 25.5 | 1029.3 | 25.5 | 84.5 |
| H14-002 27May2015-Spot 312 | 701 | 206343 | 5.5 | 14.7945 | 0.9 | 1.0620 | 1.6 | 0.1140 | 1.4 | 0.84 | 695.7 | 9.2 | 734.8 | 8.6 | 856.1 | 18.5 | 695.7 | 9.2 | 81.3 |
| H14-002 27May2015-Spot 313 | 96 | 42764 | 2.1 | 13.2622 | 1.4 | 1.7639 | 1.8 | 0.1697 | 1.2 | 0.66 | 1010.3 | 11.4 | 1032.3 | 11.9 | 1079.3 | 27.8 | 1079.3 | 27.8 | 93.6 |
| H14-002 27May2015-Spot 314 | 286 | 64261 | 2.5 | 13.0171 | 1.0 | 2.0359 | 1.8 | 0.1922 | 1.5 | 0.82 | 1133.3 | 15.7 | 1127.6 | 12.5 | 1116.6 | 20.7 | 1116.6 | 20.7 | 101.5 |
| H14-002 27May2015-Spot 315 | 225 | 158320 | 3.3 | 10.9696 | 0.8 | 3.0637 | 1.6 | 0.2437 | 1.4 | 0.86 | 1406.1 | 17.7 | 1423.7 | 12.5 | 1450.0 | 16.1 | 1450.0 | 16.1 | 97.0 |
| H14-002 27May2015-Spot 317 | 763 | 163319 | 31.7 | 12.7115 | 0.9 | 1.7877 | 1.7 | 0.1648 | 1.4 | 0.84 | 983.5 | 13.2 | 1041.0 | 11.1 | 1163.8 | 18.1 | 1163.8 | 18.1 | 84.5 |
| H14-002 27May2015-Spot 318 | 474 | 177496 | 15.4 | 13.4195 | 0.9 | 1.8453 | 1.8 | 0.1796 | 1.5 | 0.86 | 1064.8 | 14.9 | 1061.8 | 11.7 | 1055.6 | 18.3 | 1055.6 | 18.3 | 100.9 |
| H14-002 27May2015-Spot 319 | 725 | 219954 | 12.7 | 17.6431 | 1.6 | 0.5940 | 2.1 | 0.0760 | 1.3 | 0.61 | 472.2 | 5.7 | 473.4 | 7.8 | 479.1 | 36.1 | 472.2 | 5.7 | 98.6 |
| H14-002 27May2015-Spot 320 | 2186 | 1337333 | 8.1 | 13.7273 | 0.8 | 1.6664 | 1.5 | 0.1659 | 1.3 | 0.85 | 989.5 | 11.8 | 995.8 | 9.5 | 1009.7 | 15.9 | 1009.7 | 15.9 | 98.0 |
| H14-002 27May2015-Spot 322 | 304 | 60669 | 2.9 | 11.9136 | 1.0 | 2.5283 | 1.6 | 0.2185 | 1.2 | 0.77 | 1273.7 | 14.4 | 1280.2 | 11.7 | 1291.1 | 19.9 | 1291.1 | 19.9 | 98.7 |
| H14-002 27May2015-Spot 323 | 802 | 172427 | 2.1 | 12.1060 | 0.6 | 2.0758 | 1.2 | 0.1823 | 1.0 | 0.85 | 1079.3 | 10.1 | 1140.9 | 8.2 | 1259.9 | 12.2 | 1259.9 | 12.2 | 85.7 |
| H14-002 27May2015-Spot 325 | 310 | 143569 | 2.7 | 12.8594 | 0.9 | 2.0950 | 1.4 | 0.1954 | 1.1 | 0.76 | 1150.5 | 11.3 | 1147.2 | 9.7 | 1140.8 | 18.0 | 1140.8 | 18.0 | 100.8 |
| H14-002 27May2015-Spot 327 | 1316 | 489936 | 23.3 | 17.7157 | 0.9 | 0.5715 | 1.6 | 0.0734 | 1.4 | 0.84 | 456.8 | 6.0 | 459.0 | 6.0 | 470.0 | 19.8 | 456.8 | 6.0 | 97.2 |
| H14-002 27May2015-Spot 328 | 83 | 140820 | 3.4 | 12.8724 | 1.8 | 1.9936 | 2.9 | 0.1861 | 2.3 | 0.78 | 1100.3 | 22.8 | 1113.3 | 19.6 | 1138.9 | 36.4 | 1138.9 | 36.4 | 96.6 |
| H14-002 27May2015-Spot 329 | 2721 | 2203911 | 7.7 | 14.7069 | 0.9 | 1.0971 | 1.6 | 0.1170 | 1.4 | 0.85 | 713.4 | 9.5 | 752.0 | 8.7 | 868.4 | 17.8 | 713.4 | 9.5 | 82.2 |
| H14-002 27May2015-Spot 330 | 177 | 70840 | 2.5 | 12.9609 | 1.2 | 2.1064 | 3.5 | 0.1980 | 3.3 | 0.94 | 1164.6 | 35.1 | 1150.9 | 24.1 | 1125.2 | 23.6 | 1125.2 | 23.6 | 103.5 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 1 | 1009 | 93695 | 3.6 | 12.9842 | 1.0 | 1.9763 | 1.6 | 0.1861 | 1.3 | 0.79 | 1100.2 | 12.8 | 1107.4 | 10.8 | 1121.6 | 19.7 | 1121.6 | 19.7 | 98.1 |
| H14-007_27May2015-Spot 2 | 448 | 51389 | 13.0 | 13.4705 | 1.1 | 1.8017 | 1.7 | 0.1760 | 1.4 | 0.79 | 1045.2 | 13.2 | 1046.1 | 11.3 | 1047.9 | 21.4 | 1047.9 | 21.4 | 99.7 |
| H14-007_27May2015-Spot 3 | 382 | 239965 | 1.4 | 13.8000 | 1.0 | 1.6456 | 1.6 | 0.1647 | 1.2 | 0.77 | 982.9 | 11.3 | 987.9 | 10.2 | 999.0 | 21.0 | 999.0 | 21.0 | 98.4 |
| H14-007_27May2015-Spot 4 | 346 | 130684 | 1.5 | 13.3608 | 1.0 | 1.8863 | 1.6 | 0.1828 | 1.3 | 0.81 | 1082.2 | 13.2 | 1076.3 | 10.8 | 1064.4 | 19.2 | 1064.4 | 19.2 | 101.7 |
| H14-007_27May2015-Spot 5 | 151 | 50667 | 3.4 | 11.0513 | 1.1 | 3.0499 | 1.7 | 0.2445 | 1.2 | 0.73 | 1409.8 | 15.4 | 1420.2 | 12.8 | 1435.8 | 21.9 | 1435.8 | 21.9 | 98.2 |
| H14-007_27May2015-Spot 6 | 74 | 63130 | 3.2 | 12.9549 | 1.7 | 2.1181 | 2.3 | 0.1990 | 1.5 | 0.67 | 1170.0 | 16.3 | 1154.7 | 15.6 | 1126.1 | 33.3 | 1126.1 | 33.3 | 103.9 |
| H14-007_27May2015-Spot 7 | 294 | 187908 | 1.1 | 13.4837 | 1.3 | 1.8112 | 1.8 | 0.1771 | 1.2 | 0.67 | 1051.2 | 11.4 | 1049.5 | 11.5 | 1045.9 | 26.4 | 1045.9 | 26.4 | 100.5 |
| H14-007_27May2015-Spot 8 | 51 | 87419 | 3.6 | 12.9814 | 2.1 | 1.9847 | 2.6 | 0.1869 | 1.4 | 0.56 | 1104.4 | 14.6 | 1110.3 | 17.4 | 1122.1 | 42.7 | 1122.1 | 42.7 | 98.4 |
| H14-007_27May2015-Spot 10 | 52 | 36224 | 1.9 | 12.2547 | 1.3 | 2.3765 | 2.0 | 0.2112 | 1.5 | 0.74 | 1235.3 | 16.3 | 1235.5 | 14.1 | 1236.0 | 26.3 | 1236.0 | 26.3 | 99.9 |
| H14-007_27May2015-Spot 11 | 1067 | 56497 | 6.4 | 13.4259 | 0.8 | 1.6852 | 1.6 | 0.1641 | 1.4 | 0.87 | 979.5 | 12.4 | 1003.0 | 10.0 | 1054.6 | 15.9 | 1054.6 | 15.9 | 92.9 |
| H14-007_27May2015-Spot 12 | 318 | 142916 | 3.4 | 12.9523 | 1.2 | 2.0608 | 2.2 | 0.1936 | 1.9 | 0.85 | 1140.8 | 19.9 | 1135.9 | 15.3 | 1126.5 | 23.8 | 1126.5 | 23.8 | 101.3 |
| H14-007_27May2015-Spot 13 | 378 | 116973 | 3.9 | 12.9847 | 1.0 | 2.0233 | 1.6 | 0.1905 | 1.2 | 0.75 | 1124.3 | 12.1 | 1123.4 | 10.7 | 1121.6 | 20.8 | 1121.6 | 20.8 | 100.2 |
| H14-007_27May2015-Spot 14 | 386 | 193510 | 5.8 | 12.1963 | 0.9 | 2.2712 | 1.5 | 0.2009 | 1.2 | 0.81 | 1180.2 | 13.3 | 1203.4 | 10.8 | 1245.3 | 17.8 | 1245.3 | 17.8 | 94.8 |
| H14-007_27May2015-Spot 15 | 347 | 85466 | 2.6 | 13.5591 | 1.0 | 1.7250 | 1.7 | 0.1696 | 1.4 | 0.81 | 1010.1 | 13.2 | 1017.9 | 11.2 | 1034.6 | 20.6 | 1034.6 | 20.6 | 97.6 |
| H14-007_27May2015-Spot 16 | 119 | 70126 | 1.5 | 13.4096 | 1.5 | 1.8846 | 1.9 | 0.1833 | 1.2 | 0.63 | 1084.9 | 11.7 | 1075.7 | 12.4 | 1057.0 | 29.2 | 1057.0 | 29.2 | 102.6 |
| H14-007_27May2015-Spot 17 | 794 | 234432 | 6.1 | 13.3989 | 0.9 | 1.6188 | 1.3 | 0.1573 | 1.0 | 0.73 | 941.8 | 8.4 | 977.5 | 8.3 | 1058.7 | 18.1 | 1058.7 | 18.1 | 89.0 |
| H14-007_27May2015-Spot 18 | 175 | 147208 | 7.3 | 12.8601 | 1.3 | 2.0067 | 2.0 | 0.1872 | 1.5 | 0.76 | 1106.0 | 15.7 | 1117.8 | 13.7 | 1140.8 | 26.1 | 1140.8 | 26.1 | 97.0 |
| H14-007_27May2015-Spot 19 | 1049 | 241111 | 6.5 | 14.0171 | 0.8 | 1.3653 | 1.7 | 0.1388 | 1.5 | 0.87 | 837.9 | 11.6 | 874.2 | 9.9 | 967.2 | 16.7 | 967.2 | 16.7 | 86.6 |
| H14-007_27May2015-Spot 20 | 235 | 352515 | 2.3 | 12.4470 | 1.2 | 2.1246 | 1.7 | 0.1918 | 1.2 | 0.71 | 1131.1 | 12.6 | 1156.8 | 11.9 | 1205.4 | 24.1 | 1205.4 | 24.1 | 93.8 |
| H14-007_27May2015-Spot 22 | 862 | 176070 | 4.9 | 12.3141 | 0.9 | 1.9938 | 1.8 | 0.1781 | 1.5 | 0.85 | 1056.4 | 14.8 | 1113.4 | 12.1 | 1226.5 | 18.5 | 1226.5 | 18.5 | 86.1 |
| H14-007_27May2015-Spot 23 | 284 | 229954 | 5.8 | 12.0390 | 1.1 | 2.0871 | 2.4 | 0.1822 | 2.1 | 0.88 | 1079.2 | 20.5 | 1144.6 | 16.1 | 1270.7 | 21.9 | 1270.7 | 21.9 | 84.9 |
| H14-007_27May2015-Spot 24 | 65 | 62206 | 0.9 | 12.2798 | 1.3 | 2.3656 | 1.9 | 0.2107 | 1.4 | 0.73 | 1232.4 | 16.0 | 1232.3 | 13.9 | 1232.0 | 26.1 | 1232.0 | 26.1 | 100.0 |
| H14-007_27May2015-Spot 25 | 76 | 43542 | 2.3 | 13.7176 | 1.6 | 1.7377 | 2.2 | 0.1729 | 1.4 | 0.66 | 1028.0 | 13.5 | 1022.6 | 13.9 | 1011.1 | 33.0 | 1011.1 | 33.0 | 101.7 |
| H14-007_27May2015-Spot 26 | 600 | 474274 | 1.5 | 12.8040 | 1.0 | 1.9867 | 1.7 | 0.1845 | 1.4 | 0.80 | 1091.5 | 13.9 | 1111.0 | 11.7 | 1149.4 | 20.5 | 1149.4 | 20.5 | 95.0 |
| H14-007_27May2015-Spot 27 | 1775 | 69696 | 3.7 | 13.3181 | 0.8 | 1.6439 | 1.6 | 0.1588 | 1.3 | 0.85 | 950.0 | 11.7 | 987.2 | 9.9 | 1070.8 | 16.8 | 1070.8 | 16.8 | 88.7 |
| H14-007_27May2015-Spot 29 | 212 | 174609 | 2.5 | 12.2154 | 0.9 | 2.3912 | 1.5 | 0.2118 | 1.2 | 0.81 | 1238.6 | 13.3 | 1240.0 | 10.5 | 1242.2 | 17.0 | 1242.2 | 17.0 | 99.7 |
| H14-007_27May2015-Spot 30 | 366 | 199629 | 5.1 | 13.9461 | 0.9 | 1.6317 | 1.4 | 0.1650 | 1.0 | 0.75 | 984.7 | 9.4 | 982.5 | 8.6 | 977.6 | 18.3 | 977.6 | 18.3 | 100.7 |
| H14-007_27May2015-Spot 32 | 252 | 62864 | 1.0 | 13.7318 | 1.1 | 1.7458 | 1.5 | 0.1739 | 1.1 | 0.72 | 1033.4 | 10.4 | 1025.6 | 9.8 | 1009.0 | 21.4 | 1009.0 | 21.4 | 102.4 |
| H14-007_27May2015-Spot 33 | 279 | 54871 | 1.6 | 10.7486 | 0.9 | 3.2768 | 1.5 | 0.2554 | 1.2 | 0.79 | 1466.5 | 15.2 | 1475.6 | 11.4 | 1488.6 | 17.1 | 1488.6 | 17.1 | 98.5 |
| H14-007_27May2015-Spot 34 | 126 | 87067 | 2.0 | 12.5921 | 1.4 | 2.2024 | 1.9 | 0.2011 | 1.3 | 0.67 | 1181.4 | 14.1 | 1181.8 | 13.5 | 1182.5 | 28.2 | 1182.5 | 28.2 | 99.9 |
| H14-007_27May2015-Spot 35 | 545 | 118929 | 2.6 | 12.4816 | 0.9 | 1.9515 | 1.9 | 0.1767 | 1.6 | 0.87 | 1048.7 | 15.9 | 1099.0 | 12.7 | 1199.9 | 18.6 | 1199.9 | 18.6 | 87.4 |
| H14-007_27May2015-Spot 36 | 82 | 52878 | 7.7 | 11.8492 | 1.5 | 2.5814 | 2.2 | 0.2218 | 1.6 | 0.73 | 1291.6 | 19.1 | 1295.4 | 16.3 | 1301.6 | 29.5 | 1301.6 | 29.5 | 99.2 |
| H14-007_27May2015-Spot 37 | 172 | 504301 | 1.0 | 13.2657 | 1.2 | 1.7607 | 1.9 | 0.1694 | 1.4 | 0.75 | 1008.8 | 13.2 | 1031.1 | 12.1 | 1078.7 | 24.7 | 1078.7 | 24.7 | 93.5 |
| H14-007_27May2015-Spot 38 | 411 | 87008 | 1.8 | 12.6025 | 1.1 | 2.1609 | 1.7 | 0.1975 | 1.2 | 0.74 | 1161.9 | 13.1 | 1168.6 | 11.5 | 1180.9 | 21.9 | 1180.9 | 21.9 | 98.4 |
| H14-007_27May2015-Spot 39 | 150 | 63425 | 2.6 | 12.4117 | 1.2 | 2.1982 | 1.7 | 0.1979 | 1.2 | 0.70 | 1163.9 | 12.5 | 1180.5 | 11.7 | 1210.9 | 23.5 | 1210.9 | 23.5 | 96.1 |
| H14-007_27May2015-Spot 40 | 283 | 193837 | 2.2 | 13.2953 | 1.2 | 1.8945 | 1.8 | 0.1827 | 1.3 | 0.75 | 1081.6 | 13.1 | 1079.2 | 11.7 | 1074.3 | 23.5 | 1074.3 | 23.5 | 100.7 |
| H14-007_27May2015-Spot 41 | 418 | 125497 | 8.8 | 13.4133 | 0.9 | 1.8432 | 1.6 | 0.1793 | 1.3 | 0.83 | 1063.2 | 12.8 | 1061.0 | 10.3 | 1056.5 | 17.3 | 1056.5 | 17.3 | 100.6 |
| H14-007_27May2015-Spot 42 | 69 | 51818 | 3.1 | 12.2535 | 2.1 | 1.9944 | 2.4 | 0.1772 | 1.2 | 0.50 | 1051.9 | 11.9 | 1113.6 | 16.5 | 1236.2 | 41.4 | 1236.2 | 41.4 | 85.1 |
| H14-007_27May2015-Spot 43 | 795 | 95686 | 6.3 | 13.1302 | 1.0 | 1.8819 | 1.6 | 0.1792 | 1.3 | 0.79 | 1062.6 | 12.4 | 1074.7 | 10.7 | 1099.3 | 19.9 | 1099.3 | 19.9 | 96.7 |
| H14-007_27May2015-Spot 44 | 64 | 59127 | 1.6 | 12.3346 | 1.6 | 2.3373 | 2.0 | 0.2091 | 1.2 | 0.61 | 1224.0 | 13.5 | 1223.7 | 14.1 | 1223.2 | 30.9 | 1223.2 | 30.9 | 100.1 |
| H14-007_27May2015-Spot 45 | 356 | 128341 | 3.2 | 12.6196 | 0.8 | 2.1107 | 1.4 | 0.1932 | 1.1 | 0.81 | 1138.6 | 11.4 | 1152.3 | 9.4 | 1178.2 | 15.8 | 1178.2 | 15.8 | 96.6 |
| H14-007_27May2015-Spot 46 | 1787 | 1317617 | 16.4 | 12.5242 | 0.9 | 2.1355 | 1.8 | 0.1940 | 1.5 | 0.86 | 1142.9 | 16.1 | 1160.4 | 12.4 | 1193.2 | 18.1 | 1193.2 | 18.1 | 95.8 |
| H14-007_27May2015-Spot 47 | 173 | 161979 | 2.1 | 12.5259 | 1.2 | 2.1277 | 1.6 | 0.1933 | 1.2 | 0.71 | 1139.2 | 12.2 | 1157.8 | 11.3 | 1192.9 | 22.7 | 1192.9 | 22.7 | 95.5 |
| H14-007_27May2015-Spot 48 | 302 | 135701 | 3.1 | 13.4206 | 0.9 | 1.8237 | 1.4 | 0.1775 | 1.0 | 0.74 | 1053.4 | 9.9 | 1054.0 | 9.0 | 1055.4 | 18.8 | 1055.4 | 18.8 | 99.8 |
| H14-007_27May2015-Spot 50 | 77 | 34245 | 2.7 | 12.3989 | 1.4 | 2.2192 | 1.9 | 0.1996 | 1.3 | 0.69 | 1173.0 | 14.2 | 1187.1 | 13.4 | 1213.0 | 27.2 | 1213.0 | 27.2 | 96.7 |
| H14-007_27May2015-Spot 51 | 523 | 191649 | 2.6 | 12.6394 | 0.7 | 1.9085 | 1.9 | 0.1749 | 1.7 | 0.92 | 1039.3 | 16.5 | 1084.0 | 12.5 | 1175.1 | 14.8 | 1175.1 | 14.8 | 88.4 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 52 | 3830 | 135330 | 46.1 | 15.7234 | 1.1 | 0.8634 | 2.2 | 0.0985 | 1.9 | 0.87 | 605.4 | 11.0 | 632.0 | 10.4 | 728.4 | 23.5 | 605.4 | 11.0 | 83.1 |
| H14-007_27May2015-Spot 53 | 401 | 68214 | 2.0 | 12.7269 | 1.0 | 2.0667 | 1.5 | 0.1908 | 1.1 | 0.73 | 1125.5 | 11.0 | 1137.8 | 10.0 | 1161.4 | 20.0 | 1161.4 | 20.0 | 96.9 |
| H14-007_27May2015-Spot 54 | 174 | 90996 | 1.6 | 11.7131 | 1.1 | 2.7326 | 1.6 | 0.2321 | 1.2 | 0.74 | 1345.7 | 14.4 | 1337.4 | 12.0 | 1324.0 | 21.2 | 1324.0 | 21.2 | 101.6 |
| H14-007_27May2015-Spot 55 | 504 | 106680 | 2.5 | 12.5073 | 1.4 | 1.9816 | 1.8 | 0.1798 | 1.2 | 0.65 | 1065.6 | 11.7 | 1109.3 | 12.5 | 1195.8 | 27.8 | 1195.8 | 27.8 | 89.1 |
| H14-007_27May2015-Spot 56 | 412 | 120471 | 8.8 | 12.4854 | 1.0 | 2.0233 | 1.7 | 0.1832 | 1.4 | 0.81 | 1084.5 | 13.5 | 1123.4 | 11.4 | 1199.3 | 19.5 | 1199.3 | 19.5 | 90.4 |
| H14-007_27May2015-Spot 57 | 169 | 56102 | 1.4 | 14.0020 | 1.1 | 1.5717 | 1.6 | 0.1596 | 1.2 | 0.71 | 954.6 | 10.2 | 959.1 | 10.0 | 969.4 | 23.1 | 969.4 | 23.1 | 98.5 |
| H14-007_27May2015-Spot 58 | 170 | 57687 | 1.4 | 12.0155 | 0.9 | 2.5062 | 1.5 | 0.2184 | 1.1 | 0.79 | 1273.4 | 13.3 | 1273.8 | 10.6 | 1274.5 | 17.5 | 1274.5 | 17.5 | 99.9 |
| H14-007_27May2015-Spot 59 | 261 | 80763 | 3.0 | 12.2414 | 1.1 | 2.1824 | 1.5 | 0.1938 | 1.0 | 0.68 | 1141.7 | 10.9 | 1175.4 | 10.6 | 1238.1 | 21.9 | 1238.1 | 21.9 | 92.2 |
| H14-007_27May2015-Spot 60 | 930 | 99354 | 2.1 | 13.3025 | 1.2 | 1.8471 | 1.9 | 0.1782 | 1.5 | 0.79 | 1057.2 | 14.4 | 1062.4 | 12.3 | 1073.2 | 23.1 | 1073.2 | 23.1 | 98.5 |
| H14-007_27May2015-Spot 61 | 130 | 67820 | 3.0 | 11.5814 | 1.2 | 2.6626 | 1.7 | 0.2236 | 1.2 | 0.73 | 1301.1 | 14.7 | 1318.1 | 12.7 | 1345.9 | 22.8 | 1345.9 | 22.8 | 96.7 |
| H14-007_27May2015-Spot 62 | 57 | 139677 | 1.9 | 12.4892 | 1.4 | 2.2690 | 2.0 | 0.2055 | 1.4 | 0.70 | 1204.9 | 15.5 | 1202.7 | 14.2 | 1198.7 | 28.4 | 1198.7 | 28.4 | 100.5 |
| H14-007_27May2015-Spot 63 | 80 | 63886 | 2.1 | 12.3134 | 1.5 | 2.3056 | 2.0 | 0.2059 | 1.4 | 0.67 | 1207.0 | 15.0 | 1214.0 | 14.4 | 1226.6 | 29.6 | 1226.6 | 29.6 | 98.4 |
| H14-007_27May2015-Spot 64 | 113 | 101160 | 1.4 | 11.6077 | 1.3 | 2.7062 | 1.7 | 0.2278 | 1.2 | 0.66 | 1323.1 | 13.9 | 1330.1 | 13.0 | 1341.5 | 25.3 | 1341.5 | 25.3 | 98.6 |
| H14-007_27May2015-Spot 65 | 1371 | 200520 | 2.4 | 12.5006 | 0.8 | 2.0560 | 1.4 | 0.1864 | 1.1 | 0.80 | 1101.9 | 11.1 | 1134.3 | 9.4 | 1196.9 | 16.2 | 1196.9 | 16.2 | 92.1 |
| H14-007_27May2015-Spot 66 | 260 | 108613 | 1.0 | 13.6949 | 0.8 | 1.6870 | 1.4 | 0.1676 | 1.1 | 0.79 | 998.6 | 10.1 | 1003.6 | 8.8 | 1014.5 | 17.1 | 1014.5 | 17.1 | 98.4 |
| H14-007_27May2015-Spot 67 | 1146 | 64068 | 9.8 | 14.1835 | 0.9 | 1.2336 | 1.4 | 0.1269 | 1.1 | 0.78 | 770.2 | 8.1 | 816.0 | 8.1 | 943.1 | 18.5 | 770.2 | 8.1 | 81.7 |
| H14-007_27May2015-Spot 68 | 842 | 116255 | 2.0 | 13.4715 | 0.7 | 1.7094 | 1.6 | 0.1670 | 1.4 | 0.89 | 995.6 | 13.2 | 1012.0 | 10.3 | 1047.8 | 14.7 | 1047.8 | 14.7 | 95.0 |
| H14-007_27May2015-Spot 69 | 1291 | 133462 | 7.4 | 13.4830 | 1.1 | 1.5146 | 1.5 | 0.1481 | 1.1 | 0.73 | 890.4 | 9.3 | 936.3 | 9.4 | 1046.0 | 21.3 | 1046.0 | 21.3 | 85.1 |
| H14-007_27May2015-Spot 70 | 598 | 205049 | 2.4 | 12.8418 | 1.1 | 2.0938 | 1.6 | 0.1950 | 1.2 | 0.72 | 1148.5 | 12.3 | 1146.8 | 11.2 | 1143.6 | 22.5 | 1143.6 | 22.5 | 100.4 |
| H14-007_27May2015-Spot 71 | 139 | 170218 | 1.5 | 12.1157 | 1.7 | 2.3247 | 2.7 | 0.2043 | 2.1 | 0.78 | 1198.2 | 23.3 | 1219.8 | 19.3 | 1258.3 | 33.3 | 1258.3 | 33.3 | 95.2 |
| H14-007_27May2015-Spot 72 | 104 | 66534 | 1.6 | 13.4494 | 1.3 | 1.7920 | 1.7 | 0.1748 | 1.2 | 0.66 | 1038.5 | 11.0 | 1042.6 | 11.4 | 1051.1 | 26.4 | 1051.1 | 26.4 | 98.8 |
| H14-007_27May2015-Spot 73 | 370 | 236766 | 2.0 | 11.6222 | 0.9 | 2.5172 | 1.4 | 0.2122 | 1.0 | 0.74 | 1240.4 | 11.3 | 1277.0 | 9.8 | 1339.1 | 17.4 | 1339.1 | 17.4 | 92.6 |
| H14-007_27May2015-Spot 74 | 701 | 384545 | 3.7 | 12.5851 | 0.9 | 1.9146 | 1.5 | 0.1748 | 1.3 | 0.83 | 1038.3 | 12.2 | 1086.2 | 10.2 | 1183.6 | 17.0 | 1183.6 | 17.0 | 87.7 |
| H14-007_27May2015-Spot 75 | 56 | 44661 | 2.6 | 13.0086 | 1.6 | 2.0033 | 2.0 | 0.1890 | 1.2 | 0.61 | 1116.0 | 12.5 | 1116.6 | 13.6 | 1117.9 | 31.8 | 1117.9 | 31.8 | 99.8 |
| H14-007_27May2015-Spot 76 | 180 | 84476 | 3.0 | 11.8124 | 1.0 | 2.4464 | 1.5 | 0.2096 | 1.2 | 0.77 | 1226.6 | 13.2 | 1256.4 | 11.1 | 1307.7 | 19.0 | 1307.7 | 19.0 | 93.8 |
| H14-007_27May2015-Spot 77 | 153 | 106937 | 2.9 | 12.2687 | 1.1 | 2.3300 | 1.5 | 0.2073 | 1.0 | 0.70 | 1214.6 | 11.3 | 1221.5 | 10.4 | 1233.7 | 20.7 | 1233.7 | 20.7 | 98.4 |
| H14-007_27May2015-Spot 78 | 440 | 168543 | 2.3 | 13.3325 | 1.3 | 1.7554 | 1.9 | 0.1697 | 1.4 | 0.74 | 1010.7 | 12.8 | 1029.1 | 12.1 | 1068.6 | 25.4 | 1068.6 | 25.4 | 94.6 |
| H14-007_27May2015-Spot 79 | 161 | 85939 | 1.1 | 12.0915 | 0.8 | 2.3639 | 1.8 | 0.2073 | 1.6 | 0.89 | 1214.5 | 17.8 | 1231.8 | 12.9 | 1262.2 | 16.3 | 1262.2 | 16.3 | 96.2 |
| H14-007_27May2015-Spot 80 | 774 | 52447 | 3.7 | 12.7356 | 1.1 | 2.0719 | 1.5 | 0.1914 | 1.1 | 0.72 | 1128.8 | 11.4 | 1139.6 | 10.5 | 1160.0 | 21.0 | 1160.0 | 21.0 | 97.3 |
| H14-007_27May2015-Spot 81 | 829 | 81116 | 5.7 | 13.2052 | 0.8 | 1.8862 | 1.6 | 0.1806 | 1.4 | 0.86 | 1070.5 | 13.4 | 1076.2 | 10.6 | 1087.9 | 16.5 | 1087.9 | 16.5 | 98.4 |
| H14-007_27May2015-Spot 82 | 896 | 111961 | 4.8 | 12.8159 | 1.0 | 1.9320 | 1.8 | 0.1796 | 1.4 | 0.82 | 1064.7 | 14.2 | 1092.2 | 11.9 | 1147.6 | 20.3 | 1147.6 | 20.3 | 92.8 |
| H14-007_27May2015-Spot 83 | 59 | 96728 | 1.2 | 13.2505 | 1.8 | 1.7669 | 2.2 | 0.1698 | 1.3 | 0.58 | 1011.0 | 12.2 | 1033.4 | 14.6 | 1081.0 | 36.6 | 1081.0 | 36.6 | 93.5 |
| H14-007_27May2015-Spot 85 | 422 | 110745 | 2.6 | 12.5249 | 1.0 | 2.2008 | 1.8 | 0.1999 | 1.5 | 0.82 | 1174.9 | 15.7 | 1181.3 | 12.4 | 1193.1 | 19.9 | 1193.1 | 19.9 | 98.5 |
| H14-007_27May2015-Spot 86 | 320 | 137590 | 2.9 | 12.8556 | 0.9 | 2.0519 | 1.6 | 0.1913 | 1.3 | 0.81 | 1128.5 | 13.2 | 1132.9 | 10.7 | 1141.4 | 18.4 | 1141.4 | 18.4 | 98.9 |
| H14-007_27May2015-Spot 87 | 110 | 1950714 | 2.4 | 12.5031 | 1.5 | 2.1839 | 1.8 | 0.1980 | 1.1 | 0.61 | 1164.8 | 12.0 | 1175.9 | 12.8 | 1196.5 | 28.8 | 1196.5 | 28.8 | 97.4 |
| H14-007_27May2015-Spot 88 | 90 | 91119 | 2.2 | 12.4260 | 1.3 | 2.1705 | 1.7 | 0.1956 | 1.2 | 0.68 | 1151.7 | 12.5 | 1171.6 | 12.0 | 1208.7 | 24.8 | 1208.7 | 24.8 | 95.3 |
| H14-007_27May2015-Spot 89 | 155 | 195062 | 3.0 | 13.3046 | 1.2 | 1.5813 | 1.8 | 0.1526 | 1.3 | 0.73 | 915.4 | 11.1 | 962.9 | 11.1 | 1072.8 | 24.5 | 1072.8 | 24.5 | 85.3 |
| H14-007_27May2015-Spot 90 | 147 | 131926 | 2.3 | 12.1624 | 1.3 | 2.3701 | 1.6 | 0.2091 | 1.0 | 0.62 | 1223.8 | 11.3 | 1233.6 | 11.7 | 1250.8 | 25.3 | 1250.8 | 25.3 | 97.8 |
| H14-007_27May2015-Spot 91 | 299 | 226233 | 4.8 | 13.1826 | 1.1 | 1.9169 | 1.9 | 0.1833 | 1.5 | 0.79 | 1084.8 | 14.5 | 1087.0 | 12.4 | 1091.3 | 23.0 | 1091.3 | 23.0 | 99.4 |
| H14-007_27May2015-Spot 92 | 215 | 194205 | 2.5 | 12.5113 | 1.2 | 2.1501 | 1.6 | 0.1951 | 1.0 | 0.63 | 1149.0 | 10.3 | 1165.1 | 10.8 | 1195.2 | 24.0 | 1195.2 | 24.0 | 96.1 |
| H14-007_27May2015-Spot 93 | 104 | 253514 | 2.3 | 12.2830 | 1.3 | 2.2904 | 2.1 | 0.2040 | 1.6 | 0.78 | 1197.0 | 17.9 | 1209.3 | 14.8 | 1231.5 | 25.5 | 1231.5 | 25.5 | 97.2 |
| H14-007_27May2015-Spot 94 | 485 | 182627 | 2.4 | 10.8853 | 1.0 | 3.0992 | 1.7 | 0.2447 | 1.4 | 0.82 | 1411.0 | 17.5 | 1432.5 | 12.9 | 1464.6 | 18.4 | 1464.6 | 18.4 | 96.3 |
| H14-007_27May2015-Spot 95 | 161 | 229072 | 3.9 | 12.8306 | 1.3 | 1.9830 | 1.8 | 0.1845 | 1.3 | 0.73 | 1091.7 | 13.5 | 1109.7 | 12.5 | 1145.3 | 25.2 | 1145.3 | 25.2 | 95.3 |
| H14-007_27May2015-Spot 97 | 120 | 71468 | 1.3 | 13.0024 | 1.0 | 2.0004 | 1.4 | 0.1886 | 1.0 | 0.70 | 1114.0 | 9.8 | 1115.7 | 9.3 | 1118.8 | 19.7 | 1118.8 | 19.7 | 99.6 |
| H14-007_27May2015-Spot 99 | 676 | 205156 | 2.4 | 12.7911 | 1.0 | 2.0375 | 1.5 | 0.1890 | 1.1 | 0.75 | 1116.1 | 11.4 | 1128.1 | 10.1 | 1151.4 | 19.6 | 1151.4 | 19.6 | 96.9 |
| H14-007_27May2015-Spot 100 | 116 | 84595 | 1.0 | 12.6739 | 1.4 | 2.1794 | 1.9 | 0.2003 | 1.3 | 0.67 | 1177.1 | 13.5 | 1174.5 | 13.0 | 1169.7 | 27.3 | 1169.7 | 27.3 | 100.6 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 101 | 637 | 1372086 | 4.0 | 12.3432 | 1.0 | 2.2445 | 1.7 | 0.2009 | 1.4 | 0.81 | 1180.3 | 14.6 | 1195.1 | 11.8 | 1221.8 | 19.3 | 1221.8 | 19.3 | 96.6 |
| H14-007_27May2015-Spot 102 | 497 | 57880 | 4.7 | 12.6763 | 0.7 | 2.1402 | 1.3 | 0.1968 | 1.1 | 0.83 | 1157.9 | 11.2 | 1161.9 | 8.7 | 1169.3 | 13.8 | 1169.3 | 13.8 | 99.0 |
| H14-007_27May2015-Spot 103 | 38 | 85381 | 1.7 | 12.8456 | 2.1 | 2.1468 | 2.8 | 0.2000 | 1.9 | 0.67 | 1175.4 | 20.2 | 1164.0 | 19.5 | 1143.0 | 41.6 | 1143.0 | 41.6 | 102.8 |
| H14-007_27May2015-Spot 104 | 601 | 215979 | 7.1 | 13.4611 | 0.8 | 1.6656 | 1.5 | 0.1626 | 1.3 | 0.84 | 971.3 | 11.7 | 995.5 | 9.8 | 1049.3 | 16.9 | 1049.3 | 16.9 | 92.6 |
| H14-007_27May2015-Spot 105 | 296 | 56497 | 1.2 | 13.4429 | 1.0 | 1.8874 | 1.8 | 0.1840 | 1.4 | 0.81 | 1088.9 | 14.5 | 1076.7 | 11.8 | 1052.1 | 20.9 | 1052.1 | 20.9 | 103.5 |
| H14-007_27May2015-Spot 106 | 56 | 49653 | 2.5 | 14.2343 | 2.5 | 1.4393 | 2.9 | 0.1486 | 1.3 | 0.47 | 893.1 | 11.2 | 905.4 | 17.3 | 935.7 | 52.2 | 935.7 | 52.2 | 95.4 |
| H14-007_27May2015-Spot 107 | 89 | 77437 | 2.8 | 12.7157 | 1.3 | 2.0965 | 1.9 | 0.1933 | 1.4 | 0.73 | 1139.5 | 14.7 | 1147.7 | 13.3 | 1163.1 | 26.2 | 1163.1 | 26.2 | 98.0 |
| H14-007_27May2015-Spot 108 | 258 | 103957 | 3.8 | 12.8338 | 0.8 | 2.1799 | 1.3 | 0.2029 | 1.0 | 0.77 | 1190.9 | 10.8 | 1174.6 | 8.9 | 1144.8 | 16.1 | 1144.8 | 16.1 | 104.0 |
| H14-007_27May2015-Spot 109 | 133 | 86586 | 1.3 | 13.6933 | 1.1 | 1.7420 | 1.7 | 0.1730 | 1.2 | 0.74 | 1028.7 | 11.8 | 1024.2 | 10.8 | 1014.7 | 22.5 | 1014.7 | 22.5 | 101.4 |
| H14-007_27May2015-Spot 110 | 220 | 71868 | 1.0 | 12.2437 | 1.0 | 2.3395 | 1.4 | 0.2077 | 1.0 | 0.69 | 1216.8 | 10.8 | 1224.4 | 10.0 | 1237.7 | 19.8 | 1237.7 | 19.8 | 98.3 |
| H14-007_27May2015-Spot 111 | 336 | 53646 | 2.4 | 13.7276 | 1.0 | 1.6116 | 1.6 | 0.1605 | 1.3 | 0.79 | 959.3 | 11.4 | 974.7 | 10.1 | 1009.6 | 20.1 | 1009.6 | 20.1 | 95.0 |
| H14-007_27May2015-Spot 112 | 179 | 57742 | 3.6 | 12.1777 | 1.2 | 2.3357 | 1.8 | 0.2063 | 1.3 | 0.75 | 1209.0 | 14.7 | 1223.2 | 12.7 | 1248.3 | 23.1 | 1248.3 | 23.1 | 96.9 |
| H14-007_27May2015-Spot 114 | 771 | 474139 | 1.3 | 13.1164 | 0.6 | 1.8706 | 1.7 | 0.1780 | 1.6 | 0.93 | 1055.8 | 15.5 | 1070.8 | 11.3 | 1101.4 | 12.4 | 1101.4 | 12.4 | 95.9 |
| H14-007_27May2015-Spot 115 | 532 | 187240 | 5.4 | 13.5873 | 1.1 | 1.7108 | 2.0 | 0.1686 | 1.6 | 0.81 | 1004.3 | 14.8 | 1012.6 | 12.6 | 1030.4 | 23.2 | 1030.4 | 23.2 | 97.5 |
| H14-007_27May2015-Spot 116 | 517 | 57408 | 1.6 | 12.8612 | 1.1 | 1.9498 | 1.9 | 0.1819 | 1.5 | 0.79 | 1077.2 | 14.7 | 1098.4 | 12.5 | 1140.6 | 22.7 | 1140.6 | 22.7 | 94.4 |
| H14-007_27May2015-Spot 117 | 53 | 43114 | 1.9 | 13.3790 | 2.1 | 1.7989 | 2.5 | 0.1746 | 1.3 | 0.54 | 1037.2 | 12.8 | 1045.1 | 16.1 | 1061.6 | 41.7 | 1061.6 | 41.7 | 97.7 |
| H14-007_27May2015-Spot 118 | 705 | 144975 | 5.5 | 13.1717 | 1.1 | 1.7355 | 1.7 | 0.1658 | 1.3 | 0.77 | 988.9 | 11.7 | 1021.8 | 10.7 | 1093.0 | 21.1 | 1093.0 | 21.1 | 90.5 |
| H14-007_27May2015-Spot 119 | 292 | 57466 | 5.2 | 12.5513 | 0.9 | 2.2737 | 1.5 | 0.2070 | 1.2 | 0.80 | 1212.7 | 13.3 | 1204.1 | 10.5 | 1188.9 | 17.6 | 1188.9 | 17.6 | 102.0 |
| H14-007_27May2015-Spot 120 | 537 | 220775 | 4.2 | 13.2371 | 0.9 | 1.8905 | 1.5 | 0.1815 | 1.2 | 0.82 | 1075.2 | 11.9 | 1077.8 | 9.8 | 1083.0 | 17.1 | 1083.0 | 17.1 | 99.3 |
| H14-007_27May2015-Spot 121 | 304 | 245623 | 1.6 | 11.8334 | 1.1 | 2.5221 | 1.9 | 0.2165 | 1.5 | 0.80 | 1263.1 | 17.2 | 1278.4 | 13.7 | 1304.2 | 22.1 | 1304.2 | 22.1 | 96.8 |
| H14-007_27May2015-Spot 122 | 368 | 573030 | 2.2 | 12.9726 | 1.2 | 2.0099 | 1.8 | 0.1891 | 1.4 | 0.77 | 1116.5 | 14.3 | 1118.9 | 12.3 | 1123.4 | 23.2 | 1123.4 | 23.2 | 99.4 |
| H14-007_27May2015-Spot 123 | 235 | 118909 | 3.2 | 13.0922 | 1.2 | 1.9389 | 1.9 | 0.1841 | 1.5 | 0.78 | 1089.3 | 14.9 | 1094.6 | 12.8 | 1105.1 | 23.8 | 1105.1 | 23.8 | 98.6 |
| H14-007_27May2015-Spot 124 | 115 | 142195 | 2.2 | 13.3894 | 1.5 | 1.7248 | 1.9 | 0.1675 | 1.3 | 0.65 | 998.3 | 11.7 | 1017.8 | 12.5 | 1060.1 | 29.9 | 1060.1 | 29.9 | 94.2 |
| H14-007_27May2015-Spot 125 | 222 | 169515 | 2.3 | 12.4434 | 1.0 | 2.0842 | 1.7 | 0.1881 | 1.4 | 0.79 | 1111.1 | 13.9 | 1143.6 | 11.8 | 1205.9 | 20.6 | 1205.9 | 20.6 | 92.1 |
| H14-007_27May2015-Spot 126 | 279 | 572095 | 2.2 | 12.9151 | 0.9 | 2.0450 | 1.4 | 0.1915 | 1.1 | 0.79 | 1129.8 | 11.7 | 1130.6 | 9.8 | 1132.3 | 17.5 | 1132.3 | 17.5 | 99.8 |
| H14-007_27May2015-Spot 127 | 448 | 168643 | 2.7 | 12.6439 | 0.8 | 2.1546 | 1.4 | 0.1976 | 1.2 | 0.82 | 1162.3 | 12.4 | 1166.5 | 9.8 | 1174.4 | 15.9 | 1174.4 | 15.9 | 99.0 |
| H14-007_27May2015-Spot 128 | 352 | 56489 | 7.3 | 11.6365 | 1.4 | 2.6450 | 2.1 | 0.2232 | 1.6 | 0.75 | 1298.9 | 18.8 | 1313.2 | 15.7 | 1336.7 | 27.2 | 1336.7 | 27.2 | 97.2 |
| H14-007_27May2015-Spot 129 | 383 | 205738 | 5.7 | 12.0671 | 1.1 | 2.0756 | 2.3 | 0.1817 | 2.0 | 0.88 | 1076.0 | 20.3 | 1140.8 | 15.9 | 1266.1 | 21.7 | 1266.1 | 21.7 | 85.0 |
| H14-007_27May2015-Spot 130 | 127 | 57281 | 2.4 | 11.8429 | 1.4 | 2.6490 | 2.1 | 0.2275 | 1.6 | 0.75 | 1321.5 | 19.0 | 1314.4 | 15.7 | 1302.7 | 27.6 | 1302.7 | 27.6 | 101.4 |
| H14-007_27May2015-Spot 131 | 374 | 85738 | 2.1 | 13.9491 | 1.2 | 1.5272 | 1.7 | 0.1545 | 1.3 | 0.73 | 926.2 | 10.8 | 941.4 | 10.5 | 977.1 | 23.9 | 977.1 | 23.9 | 94.8 |
| H14-007_27May2015-Spot 133 | 90 | 58750 | 1.0 | 11.0788 | 1.2 | 2.5612 | 1.8 | 0.2058 | 1.4 | 0.78 | 1206.4 | 15.8 | 1289.6 | 13.5 | 1431.1 | 22.2 | 1431.1 | 22.2 | 84.3 |
| H14-007_27May2015-Spot 134 | 252 | 160456 | 2.3 | 13.4258 | 0.9 | 1.7677 | 1.3 | 0.1721 | 1.0 | 0.76 | 1023.8 | 9.5 | 1033.7 | 8.5 | 1054.6 | 17.2 | 1054.6 | 17.2 | 97.1 |
| H14-007_27May2015-Spot 135 | 49 | 30089 | 1.1 | 12.5101 | 1.5 | 2.1686 | 3.0 | 0.1968 | 2.6 | 0.86 | 1157.9 | 27.7 | 1171.0 | 21.0 | 1195.4 | 30.2 | 1195.4 | 30.2 | 96.9 |
| H14-007_27May2015-Spot 136 | 3174 | 267114 | 44.9 | 14.2430 | 0.7 | 1.2839 | 1.3 | 0.1326 | 1.1 | 0.83 | 802.8 | 8.3 | 838.6 | 7.6 | 934.5 | 15.2 | 802.8 | 8.3 | 85.9 |
| H14-007_27May2015-Spot 137 | 216 | 62633 | 1.3 | 12.0184 | 1.2 | 2.2320 | 1.9 | 0.1946 | 1.4 | 0.76 | 1146.0 | 14.8 | 1191.1 | 13.1 | 1274.1 | 23.8 | 1274.1 | 23.8 | 89.9 |
| H14-007_27May2015-Spot 138 | 1016 | 182998 | 2.5 | 12.8260 | 0.9 | 1.8167 | 1.3 | 0.1690 | 0.9 | 0.72 | 1006.6 | 8.7 | 1051.5 | 8.5 | 1146.0 | 17.7 | 1146.0 | 17.7 | 87.8 |
| H14-007_27May2015-Spot 139 | 778 | 157632 | 5.2 | 12.9090 | 0.7 | 1.9176 | 1.3 | 0.1795 | 1.0 | 0.82 | 1064.4 | 10.3 | 1087.2 | 8.5 | 1133.2 | 14.5 | 1133.2 | 14.5 | 93.9 |
| H14-007_27May2015-Spot 140 | 84 | 141887 | 1.0 | 13.0924 | 1.2 | 1.9096 | 1.9 | 0.1813 | 1.4 | 0.76 | 1074.2 | 14.2 | 1084.5 | 12.6 | 1105.0 | 24.6 | 1105.0 | 24.6 | 97.2 |
| H14-007_27May2015-Spot 141 | 189 | 80560 | 2.8 | 13.5840 | 0.9 | 1.8443 | 1.5 | 0.1817 | 1.1 | 0.78 | 1076.3 | 11.3 | 1061.4 | 9.6 | 1030.9 | 18.4 | 1030.9 | 18.4 | 104.4 |
| H14-007_27May2015-Spot 142 | 137 | 451615 | 3.4 | 13.7104 | 1.4 | 1.6711 | 1.9 | 0.1662 | 1.4 | 0.70 | 991.0 | 12.5 | 997.6 | 12.4 | 1012.2 | 28.2 | 1012.2 | 28.2 | 97.9 |
| H14-007_27May2015-Spot 143 | 493 | 292062 | 1.3 | 12.7244 | 0.8 | 2.1159 | 1.3 | 0.1953 | 1.0 | 0.77 | 1149.9 | 10.6 | 1154.0 | 9.0 | 1161.8 | 16.5 | 1161.8 | 16.5 | 99.0 |
| H14-007_27May2015-Spot 144 | 367 | 233562 | 1.6 | 9.8381 | 0.9 | 3.8835 | 1.9 | 0.2771 | 1.7 | 0.88 | 1576.7 | 24.1 | 1610.3 | 15.7 | 1654.4 | 16.9 | 1654.4 | 16.9 | 95.3 |
| H14-007_27May2015-Spot 145 | 333 | 85683 | 3.4 | 12.7253 | 1.0 | 2.1139 | 1.5 | 0.1951 | 1.1 | 0.74 | 1148.9 | 11.4 | 1153.3 | 10.0 | 1161.6 | 19.3 | 1161.6 | 19.3 | 98.9 |
| H14-007_27May2015-Spot 146 | 80 | 387731 | 2.4 | 12.4425 | 1.4 | 2.3048 | 1.9 | 0.2080 | 1.3 | 0.66 | 1218.1 | 13.9 | 1213.8 | 13.4 | 1206.1 | 28.0 | 1206.1 | 28.0 | 101.0 |
| H14-007_27May2015-Spot 148 | 203 | 239384 | 1.8 | 10.7159 | 0.9 | 3.3503 | 1.4 | 0.2604 | 1.1 | 0.75 | 1491.8 | 14.1 | 1492.9 | 11.0 | 1494.4 | 17.6 | 1494.4 | 17.6 | 99.8 |
| H14-007_27May2015-Spot 149 | 638 | 52677 | 4.2 | 13.4294 | 1.2 | 1.7787 | 1.6 | 0.1732 | 1.2 | 0.71 | 1030.0 | 11.1 | 1037.7 | 10.6 | 1054.1 | 23.2 | 1054.1 | 23.2 | 97.7 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 150 | 652 | 508318 | 11.4 | 12.9478 | 0.7 | 1.9186 | 1.4 | 0.1802 | 1.2 | 0.87 | 1067.9 | 12.2 | 1087.6 | 9.5 | 1127.2 | 13.8 | 1127.2 | 13.8 | 94.7 |
| H14-007_27May2015-Spot 151 | 27 | 21214 | 7.0 | 13.8184 | 2.6 | 1.6480 | 3.1 | 0.1652 | 1.6 | 0.53 | 985.4 | 15.0 | 988.8 | 19.4 | 996.3 | 52.7 | 996.3 | 52.7 | 98.9 |
| H14-007_27May2015-Spot 153 | 692 | 215893 | 25.2 | 13.3926 | 0.9 | 1.6867 | 1.4 | 0.1638 | 1.1 | 0.80 | 978.0 | 10.3 | 1003.5 | 9.1 | 1059.6 | 17.2 | 1059.6 | 17.2 | 92.3 |
| H14-007_27May2015-Spot 154 | 267 | 57515 | 4.3 | 12.4479 | 1.0 | 2.2259 | 1.5 | 0.2010 | 1.1 | 0.76 | 1180.5 | 12.4 | 1189.2 | 10.6 | 1205.2 | 19.2 | 1205.2 | 19.2 | 97.9 |
| H14-007_27May2015-Spot 155 | 415 | 467233 | 1.8 | 9.4533 | 0.8 | 4.3768 | 1.1 | 0.3001 | 0.8 | 0.72 | 1691.7 | 12.0 | 1708.0 | 9.3 | 1727.9 | 14.4 | 1727.9 | 14.4 | 97.9 |
| H14-007_27May2015-Spot 156 | 96 | 73255 | 2.0 | 12.6418 | 1.7 | 2.1591 | 2.1 | 0.1980 | 1.3 | 0.61 | 1164.4 | 13.7 | 1168.0 | 14.6 | 1174.7 | 33.0 | 1174.7 | 33.0 | 99.1 |
| H14-007_27May2015-Spot 158 | 578 | 244555 | 3.6 | 13.6208 | 1.2 | 1.7509 | 1.8 | 0.1730 | 1.4 | 0.77 | 1028.5 | 13.2 | 1027.5 | 11.7 | 1025.5 | 23.5 | 1025.5 | 23.5 | 100.3 |
| H14-007_27May2015-Spot 159 | 131 | 69333 | 2.6 | 12.9942 | 1.5 | 1.7762 | 2.0 | 0.1674 | 1.4 | 0.69 | 997.7 | 13.1 | 1036.8 | 13.3 | 1120.1 | 29.4 | 1120.1 | 29.4 | 89.1 |
| H14-007_27May2015-Spot 160 | 564 | 51680 | 8.2 | 12.3163 | 0.9 | 2.0510 | 1.4 | 0.1832 | 1.1 | 0.79 | 1084.5 | 11.2 | 1132.6 | 9.7 | 1226.1 | 17.2 | 1226.1 | 17.2 | 88.4 |
| H14-007_27May2015-Spot 161 | 90 | 106542 | 1.6 | 12.9105 | 1.5 | 1.9833 | 2.0 | 0.1857 | 1.4 | 0.68 | 1098.1 | 14.0 | 1109.9 | 13.8 | 1132.9 | 29.8 | 1132.9 | 29.8 | 96.9 |
| H14-007_27May2015-Spot 163 | 1299 | 123458 | 6.0 | 12.5195 | 1.4 | 2.1281 | 1.9 | 0.1932 | 1.2 | 0.67 | 1138.9 | 12.9 | 1158.0 | 12.8 | 1193.9 | 27.2 | 1193.9 | 27.2 | 95.4 |
| H14-007_27May2015-Spot 164 | 207 | 180576 | 3.6 | 13.6500 | 1.2 | 1.7429 | 1.9 | 0.1725 | 1.5 | 0.78 | 1026.1 | 14.1 | 1024.5 | 12.3 | 1021.1 | 24.3 | 1021.1 | 24.3 | 100.5 |
| H14-007_27May2015-Spot 165 | 467 | 121307 | 1.3 | 12.2778 | 1.1 | 2.3707 | 1.4 | 0.2111 | 1.0 | 0.67 | 1234.7 | 10.7 | 1233.8 | 10.2 | 1232.3 | 20.9 | 1232.3 | 20.9 | 100.2 |
| H14-007_27May2015-Spot 166 | 1125 | 256861 | 27.6 | 13.3279 | 0.9 | 1.6831 | 1.5 | 0.1627 | 1.2 | 0.80 | 971.7 | 10.6 | 1002.1 | 9.5 | 1069.3 | 18.1 | 1069.3 | 18.1 | 90.9 |
| H14-007_27May2015-Spot 167 | 143 | 34281 | 2.0 | 13.9695 | 1.7 | 1.4023 | 2.9 | 0.1421 | 2.3 | 0.81 | 856.4 | 18.5 | 889.9 | 16.9 | 974.1 | 34.1 | 974.1 | 34.1 | 87.9 |
| H14-007_27May2015-Spot 168 | 616 | 66143 | 3.2 | 11.0021 | 1.1 | 2.8324 | 1.4 | 0.2260 | 0.9 | 0.65 | 1313.6 | 10.9 | 1364.2 | 10.6 | 1444.3 | 20.5 | 1444.3 | 20.5 | 90.9 |
| H14-007_27May2015-Spot 169 | 887 | 75856 | 1.7 | 12.7005 | 0.8 | 2.0589 | 1.4 | 0.1897 | 1.2 | 0.84 | 1119.5 | 12.4 | 1135.3 | 9.9 | 1165.5 | 15.5 | 1165.5 | 15.5 | 96.1 |
| H14-007_27May2015-Spot 171 | 398 | 419444 | 3.2 | 13.8363 | 0.8 | 1.6944 | 1.4 | 0.1700 | 1.1 | 0.79 | 1012.3 | 10.2 | 1006.4 | 8.8 | 993.6 | 17.2 | 993.6 | 17.2 | 101.9 |
| H14-007_27May2015-Spot 172 | 902 | 245466 | 4.4 | 14.2636 | 1.0 | 1.2216 | 1.7 | 0.1264 | 1.4 | 0.79 | 767.1 | 9.8 | 810.5 | 9.6 | 931.5 | 21.3 | 767.1 | 9.8 | 82.4 |
| H14-007_27May2015-Spot 173 | 188 | 99036 | 4.9 | 12.7200 | 0.8 | 2.2027 | 1.6 | 0.2032 | 1.3 | 0.85 | 1192.5 | 14.3 | 1181.9 | 10.8 | 1162.5 | 16.2 | 1162.5 | 16.2 | 102.6 |
| H14-007_27May2015-Spot 174 | 253 | 162953 | 2.6 | 13.1355 | 1.3 | 1.8375 | 1.7 | 0.1750 | 1.1 | 0.64 | 1039.9 | 10.3 | 1059.0 | 11.0 | 1098.5 | 25.9 | 1098.5 | 25.9 | 94.7 |
| H14-007_27May2015-Spot 175 | 328 | 209590 | 3.0 | 13.5619 | 1.2 | 1.7249 | 1.8 | 0.1697 | 1.4 | 0.76 | 1010.3 | 12.9 | 1017.9 | 11.6 | 1034.2 | 23.6 | 1034.2 | 23.6 | 97.7 |
| H14-007_27May2015-Spot 176 | 806 | 64791 | 13.6 | 12.6991 | 0.9 | 1.8120 | 1.5 | 0.1669 | 1.2 | 0.79 | 994.9 | 10.9 | 1049.8 | 9.7 | 1165.7 | 17.9 | 1165.7 | 17.9 | 85.3 |
| H14-007_27May2015-Spot 177 | 352 | 114285 | 7.4 | 13.6813 | 1.1 | 1.7550 | 1.6 | 0.1741 | 1.3 | 0.76 | 1034.9 | 12.0 | 1029.0 | 10.6 | 1016.5 | 21.5 | 1016.5 | 21.5 | 101.8 |
| H14-007_27May2015-Spot 178 | 33 | 31113 | 1.0 | 13.6111 | 2.2 | 1.7262 | 2.7 | 0.1704 | 1.5 | 0.56 | 1014.3 | 14.2 | 1018.3 | 17.3 | 1026.9 | 44.9 | 1026.9 | 44.9 | 98.8 |
| H14-007_27May2015-Spot 179 | 222 | 135164 | 1.9 | 12.7659 | 1.0 | 2.1674 | 1.5 | 0.2007 | 1.0 | 0.71 | 1178.9 | 11.1 | 1170.7 | 10.1 | 1155.3 | 20.2 | 1155.3 | 20.2 | 102.0 |
| H14-007_27May2015-Spot 180 | 108 | 63403 | 2.0 | 12.7075 | 1.4 | 2.1692 | 2.0 | 0.1999 | 1.4 | 0.69 | 1174.9 | 14.8 | 1171.2 | 13.9 | 1164.4 | 28.6 | 1164.4 | 28.6 | 100.9 |
| H14-007_27May2015-Spot 181 | 114 | 76596 | 1.0 | 13.5852 | 1.2 | 1.7471 | 1.8 | 0.1721 | 1.4 | 0.76 | 1023.9 | 12.8 | 1026.1 | 11.5 | 1030.8 | 23.5 | 1030.8 | 23.5 | 99.3 |
| H14-007_27May2015-Spot 183 | 335 | 146187 | 1.3 | 11.6120 | 1.0 | 2.6588 | 1.5 | 0.2239 | 1.1 | 0.76 | 1302.6 | 13.5 | 1317.1 | 11.1 | 1340.8 | 19.1 | 1340.8 | 19.1 | 97.1 |
| H14-007_27May2015-Spot 184 | 336 | 164934 | 6.9 | 13.7728 | 1.0 | 1.5555 | 1.7 | 0.1554 | 1.4 | 0.80 | 931.1 | 12.1 | 952.7 | 10.8 | 1003.0 | 21.0 | 1003.0 | 21.0 | 92.8 |
| H14-007_27May2015-Spot 185 | 107 | 204209 | 2.1 | 13.7853 | 1.6 | 1.6304 | 2.0 | 0.1630 | 1.2 | 0.61 | 973.5 | 10.8 | 982.0 | 12.3 | 1001.1 | 31.5 | 1001.1 | 31.5 | 97.2 |
| H14-007_27May2015-Spot 186 | 127 | 943345 | 2.6 | 12.9221 | 1.1 | 2.0032 | 1.6 | 0.1877 | 1.1 | 0.70 | 1109.1 | 11.0 | 1116.6 | 10.5 | 1131.2 | 22.2 | 1131.2 | 22.2 | 98.0 |
| H14-007_27May2015-Spot 187 | 282 | 227854 | 2.3 | 13.3671 | 0.9 | 1.8528 | 1.4 | 0.1796 | 1.2 | 0.80 | 1064.9 | 11.3 | 1064.4 | 9.5 | 1063.4 | 17.1 | 1063.4 | 17.1 | 100.1 |
| H14-007_27May2015-Spot 188 | 197 | 164162 | 2.3 | 12.8744 | 0.9 | 2.0329 | 1.6 | 0.1898 | 1.4 | 0.83 | 1120.4 | 13.9 | 1126.6 | 11.0 | 1138.6 | 17.7 | 1138.6 | 17.7 | 98.4 |
| H14-007_27May2015-Spot 189 | 97 | 51448 | 1.8 | 11.9765 | 1.4 | 2.5462 | 1.8 | 0.2212 | 1.2 | 0.64 | 1288.0 | 13.6 | 1285.3 | 13.2 | 1280.8 | 27.2 | 1280.8 | 27.2 | 100.6 |
| H14-007_27May2015-Spot 190 | 121 | 71599 | 2.2 | 11.9673 | 1.1 | 2.4444 | 1.9 | 0.2122 | 1.5 | 0.82 | 1240.3 | 17.4 | 1255.8 | 13.6 | 1282.3 | 21.0 | 1282.3 | 21.0 | 96.7 |
| H14-007_27May2015-Spot 191 | 627 | 52363 | 5.3 | 12.7346 | 1.0 | 1.9665 | 1.6 | 0.1816 | 1.3 | 0.77 | 1075.9 | 12.5 | 1104.1 | 11.0 | 1160.2 | 20.6 | 1160.2 | 20.6 | 92.7 |
| H14-007_27May2015-Spot 192 | 490 | 77208 | 2.4 | 10.9999 | 1.0 | 3.0421 | 1.7 | 0.2427 | 1.3 | 0.79 | 1400.7 | 16.5 | 1418.3 | 12.7 | 1444.7 | 19.4 | 1444.7 | 19.4 | 97.0 |
| H14-007_27May2015-Spot 193 | 111 | 36814 | 2.5 | 13.9202 | 1.2 | 1.7076 | 1.8 | 0.1724 | 1.4 | 0.75 | 1025.3 | 13.1 | 1011.4 | 11.7 | 981.4 | 24.5 | 981.4 | 24.5 | 104.5 |
| H14-007_27May2015-Spot 194 | 361 | 83304 | 3.4 | 12.4362 | 0.9 | 2.3223 | 1.2 | 0.2095 | 0.8 | 0.68 | 1225.9 | 9.4 | 1219.1 | 8.8 | 1207.1 | 18.0 | 1207.1 | 18.0 | 101.6 |
| H14-007_27May2015-Spot 196 | 970 | 63028 | 13.8 | 11.9257 | 0.9 | 2.1520 | 1.5 | 0.1861 | 1.2 | 0.80 | 1100.4 | 12.4 | 1165.7 | 10.6 | 1289.1 | 17.7 | 1289.1 | 17.7 | 85.4 |
| H14-007_27May2015-Spot 197 | 128 | 249174 | 2.4 | 13.4611 | 1.3 | 1.8303 | 2.1 | 0.1787 | 1.6 | 0.79 | 1059.8 | 15.8 | 1056.4 | 13.5 | 1049.3 | 25.5 | 1049.3 | 25.5 | 101.0 |
| H14-007_27May2015-Spot 200 | 560 | 151541 | 9.7 | 12.2683 | 0.9 | 2.3108 | 1.6 | 0.2056 | 1.3 | 0.81 | 1205.4 | 14.6 | 1215.6 | 11.6 | 1233.8 | 18.5 | 1233.8 | 18.5 | 97.7 |
| H14-007_27May2015-Spot 201 | 199 | 217542 | 4.7 | 12.4377 | 1.0 | 2.2363 | 1.6 | 0.2017 | 1.2 | 0.78 | 1184.6 | 13.4 | 1192.5 | 11.1 | 1206.9 | 19.6 | 1206.9 | 19.6 | 98.2 |
| H14-007_27May2015-Spot 202 | 311 | 145432 | 5.0 | 12.7624 | 0.8 | 2.0005 | 1.5 | 0.1852 | 1.3 | 0.83 | 1095.1 | 12.6 | 1115.7 | 10.2 | 1155.9 | 16.5 | 1155.9 | 16.5 | 94.7 |
| H14-007_27May2015-Spot 203 | 321 | 240798 | 2.6 | 12.2560 | 1.1 | 2.2282 | 1.7 | 0.1981 | 1.3 | 0.76 | 1164.9 | 13.4 | 1190.0 | 11.6 | 1235.8 | 21.3 | 1235.8 | 21.3 | 94.3 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 204 | 570 | 85671 | 24.8 | 13.3417 | 0.7 | 1.7643 | 1.3 | 0.1707 | 1.2 | 0.87 | 1016.1 | 10.9 | 1032.4 | 8.7 | 1067.3 | 13.3 | 1067.3 | 13.3 | 95.2 |
| H14-007_27May2015-Spot 205 | 638 | 108397 | 4.7 | 13.7129 | 0.8 | 1.6239 | 1.4 | 0.1615 | 1.1 | 0.82 | 965.2 | 10.3 | 979.5 | 8.8 | 1011.8 | 16.2 | 1011.8 | 16.2 | 95.4 |
| H14-007_27May2015-Spot 206 | 327 | 132189 | 2.0 | 13.0353 | 1.1 | 1.9316 | 1.7 | 0.1826 | 1.3 | 0.76 | 1081.2 | 13.1 | 1092.1 | 11.6 | 1113.8 | 22.6 | 1113.8 | 22.6 | 97.1 |
| H14-007_27May2015-Spot 207 | 152 | 100426 | 8.6 | 15.9799 | 2.3 | 0.8448 | 3.1 | 0.0979 | 2.0 | 0.65 | 602.2 | 11.4 | 621.8 | 14.2 | 694.0 | 49.5 | 602.2 | 11.4 | 86.8 |
| H14-007_27May2015-Spot 208 | 98 | 79838 | 1.3 | 9.8761 | 1.0 | 4.0151 | 1.6 | 0.2876 | 1.2 | 0.76 | 1629.5 | 17.2 | 1637.3 | 12.8 | 1647.2 | 19.1 | 1647.2 | 19.1 | 98.9 |
| H14-007_27May2015-Spot 209 | 1240 | 155502 | 8.3 | 13.1771 | 1.0 | 1.8099 | 1.6 | 0.1730 | 1.3 | 0.80 | 1028.5 | 12.5 | 1049.0 | 10.7 | 1092.1 | 19.5 | 1092.1 | 19.5 | 94.2 |
| H14-007_27May2015-Spot 210 | 534 | 206501 | 1.2 | 9.3567 | 0.9 | 4.3884 | 1.6 | 0.2978 | 1.3 | 0.82 | 1680.4 | 19.6 | 1710.1 | 13.4 | 1746.8 | 16.8 | 1746.8 | 16.8 | 96.2 |
| H14-007_27May2015-Spot 212 | 213 | 401096 | 2.8 | 12.7774 | 1.0 | 2.1421 | 1.4 | 0.1985 | 1.1 | 0.75 | 1167.3 | 11.6 | 1162.5 | 10.0 | 1153.5 | 19.1 | 1153.5 | 19.1 | 101.2 |
| H14-007_27May2015-Spot 213 | 132 | 108937 | 1.9 | 13.3653 | 1.1 | 1.8319 | 1.6 | 0.1776 | 1.1 | 0.69 | 1053.7 | 10.6 | 1057.0 | 10.3 | 1063.7 | 22.8 | 1063.7 | 22.8 | 99.1 |
| H14-007_27May2015-Spot 214 | 760 | 1306613 | 5.9 | 13.4802 | 0.9 | 1.7463 | 1.9 | 0.1707 | 1.7 | 0.87 | 1016.1 | 15.5 | 1025.8 | 12.2 | 1046.5 | 18.7 | 1046.5 | 18.7 | 97.1 |
| H14-007_27May2015-Spot 215 | 291 | 101903 | 3.9 | 13.4641 | 1.3 | 1.7647 | 2.5 | 0.1723 | 2.1 | 0.84 | 1024.9 | 19.7 | 1032.6 | 16.1 | 1048.9 | 27.2 | 1048.9 | 27.2 | 97.7 |
| H14-007_27May2015-Spot 216 | 144 | 108054 | 2.3 | 12.4706 | 1.0 | 2.1796 | 1.4 | 0.1971 | 1.0 | 0.71 | 1159.9 | 10.2 | 1174.5 | 9.5 | 1201.6 | 19.0 | 1201.6 | 19.0 | 96.5 |
| H14-007_27May2015-Spot 217 | 163 | 149636 | 1.7 | 13.4752 | 1.1 | 1.7882 | 1.7 | 0.1748 | 1.3 | 0.76 | 1038.3 | 12.6 | 1041.2 | 11.3 | 1047.2 | 22.8 | 1047.2 | 22.8 | 99.1 |
| H14-007_27May2015-Spot 219 | 146 | 102758 | 1.9 | 11.7466 | 1.2 | 2.6968 | 1.8 | 0.2298 | 1.3 | 0.73 | 1333.2 | 15.4 | 1327.6 | 13.0 | 1318.5 | 23.2 | 1318.5 | 23.2 | 101.1 |
| H14-007_27May2015-Spot 220 | 173 | 79010 | 2.7 | 13.7239 | 1.0 | 1.6826 | 1.6 | 0.1675 | 1.3 | 0.80 | 998.2 | 11.9 | 1002.0 | 10.3 | 1010.2 | 19.7 | 1010.2 | 19.7 | 98.8 |
| H14-007_27May2015-Spot 221 | 168 | 169525 | 1.9 | 12.5697 | 1.4 | 2.1193 | 1.9 | 0.1932 | 1.3 | 0.70 | 1138.7 | 14.0 | 1155.1 | 13.3 | 1186.0 | 27.3 | 1186.0 | 27.3 | 96.0 |
| H14-007_27May2015-Spot 222 | 838 | 185731 | 2.3 | 12.8249 | 1.1 | 1.8015 | 1.8 | 0.1676 | 1.5 | 0.81 | 998.7 | 13.6 | 1046.0 | 11.9 | 1146.2 | 21.5 | 1146.2 | 21.5 | 87.1 |
| H14-007_27May2015-Spot 223 | 527 | 121287 | 1.8 | 15.2820 | 1.1 | 1.1351 | 2.0 | 0.1258 | 1.7 | 0.84 | 763.9 | 12.1 | 770.2 | 10.8 | 788.4 | 22.9 | 763.9 | 12.1 | 96.9 |
| H14-007_27May2015-Spot 224 | 233 | 108869 | 2.6 | 12.5709 | 1.0 | 2.1774 | 1.6 | 0.1985 | 1.3 | 0.79 | 1167.3 | 13.4 | 1173.8 | 11.1 | 1185.8 | 19.2 | 1185.8 | 19.2 | 98.4 |
| H14-007_27May2015-Spot 225 | 397 | 70669 | 2.4 | 12.0598 | 1.1 | 2.4242 | 1.7 | 0.2120 | 1.2 | 0.74 | 1239.7 | 13.9 | 1249.8 | 11.9 | 1267.4 | 21.7 | 1267.4 | 21.7 | 97.8 |
| H14-007_27May2015-Spot 226 | 149 | 168201 | 2.3 | 8.8581 | 0.9 | 4.9593 | 1.5 | 0.3186 | 1.2 | 0.81 | 1782.9 | 19.3 | 1812.4 | 13.0 | 1846.5 | 16.4 | 1846.5 | 16.4 | 96.6 |
| H14-007_27May2015-Spot 227 | 537 | 90623 | 4.6 | 12.3623 | 0.9 | 2.2532 | 1.4 | 0.2020 | 1.1 | 0.79 | 1186.2 | 12.2 | 1197.8 | 10.1 | 1218.8 | 17.5 | 1218.8 | 17.5 | 97.3 |
| H14-007_27May2015-Spot 228 | 210 | 97117 | 1.8 | 12.7311 | 1.1 | 2.1273 | 1.7 | 0.1964 | 1.3 | 0.78 | 1156.1 | 14.2 | 1157.7 | 11.9 | 1160.8 | 21.4 | 1160.8 | 21.4 | 99.6 |
| H14-007_27May2015-Spot 229 | 1953 | 217376 | 4.1 | 13.2241 | 0.9 | 1.8542 | 1.4 | 0.1778 | 1.1 | 0.79 | 1055.2 | 10.6 | 1064.9 | 9.1 | 1085.0 | 17.2 | 1085.0 | 17.2 | 97.2 |
| H14-007_27May2015-Spot 230 | 1104 | 132695 | 2.8 | 11.4337 | 0.7 | 2.4657 | 1.5 | 0.2045 | 1.3 | 0.89 | 1199.3 | 14.7 | 1262.0 | 10.9 | 1370.7 | 13.3 | 1370.7 | 13.3 | 87.5 |
| H14-007_27May2015-Spot 231 | 224 | 197052 | 2.1 | 12.0454 | 1.1 | 2.4190 | 1.8 | 0.2113 | 1.4 | 0.77 | 1235.9 | 15.2 | 1248.3 | 12.6 | 1269.7 | 21.8 | 1269.7 | 21.8 | 97.3 |
| H14-007_27May2015-Spot 232 | 234 | 9283373 | 2.4 | 13.5902 | 1.4 | 1.5129 | 2.1 | 0.1491 | 1.6 | 0.75 | 896.0 | 13.1 | 935.6 | 12.8 | 1030.0 | 28.1 | 1030.0 | 28.1 | 87.0 |
| H14-007_27May2015-Spot 234 | 266 | 119172 | 2.3 | 12.3210 | 0.8 | 2.3056 | 1.2 | 0.2060 | 0.9 | 0.74 | 1207.6 | 9.6 | 1214.0 | 8.3 | 1225.4 | 15.5 | 1225.4 | 15.5 | 98.6 |
| H14-007_27May2015-Spot 235 | 127 | 1683383 | 2.6 | 12.7101 | 1.1 | 2.1664 | 1.8 | 0.1997 | 1.4 | 0.78 | 1173.7 | 15.1 | 1170.3 | 12.6 | 1164.0 | 22.7 | 1164.0 | 22.7 | 100.8 |
| H14-007_27May2015-Spot 236 | 895 | 65377 | 2.4 | 13.0535 | 0.9 | 1.7569 | 1.6 | 0.1663 | 1.3 | 0.83 | 991.8 | 11.9 | 1029.7 | 10.1 | 1111.0 | 17.4 | 1111.0 | 17.4 | 89.3 |
| H14-007_27May2015-Spot 237 | 820 | 72301 | 6.4 | 12.3666 | 1.1 | 2.1036 | 1.8 | 0.1887 | 1.5 | 0.81 | 1114.2 | 14.8 | 1150.0 | 12.4 | 1218.1 | 20.9 | 1218.1 | 20.9 | 91.5 |
| H14-007_27May2015-Spot 238 | 136 | 91230 | 2.9 | 12.3244 | 1.3 | 2.2755 | 1.9 | 0.2034 | 1.4 | 0.73 | 1193.6 | 15.3 | 1204.7 | 13.7 | 1224.8 | 26.2 | 1224.8 | 26.2 | 97.4 |
| H14-007_27May2015-Spot 239 | 1640 | 132086 | 18.4 | 13.7792 | 0.8 | 1.4895 | 1.3 | 0.1489 | 1.0 | 0.78 | 894.6 | 8.3 | 926.1 | 7.8 | 1002.0 | 16.4 | 1002.0 | 16.4 | 89.3 |
| H14-007_27May2015-Spot 240 | 621 | 97952 | 3.6 | 13.1287 | 1.0 | 1.7282 | 1.6 | 0.1646 | 1.3 | 0.78 | 982.1 | 11.5 | 1019.1 | 10.3 | 1099.5 | 19.9 | 1099.5 | 19.9 | 89.3 |
| H14-007_27May2015-Spot 241 | 107 | 49686 | 2.2 | 12.4285 | 1.5 | 2.2995 | 2.0 | 0.2073 | 1.3 | 0.66 | 1214.3 | 14.3 | 1212.1 | 13.9 | 1208.3 | 29.3 | 1208.3 | 29.3 | 100.5 |
| H14-007_27May2015-Spot 242 | 938 | 303444 | 1.6 | 12.7565 | 0.8 | 2.0257 | 1.3 | 0.1874 | 1.1 | 0.80 | 1107.4 | 10.9 | 1124.2 | 9.1 | 1156.8 | 15.8 | 1156.8 | 15.8 | 95.7 |
| H14-007_27May2015-Spot 243 | 146 | 105507 | 2.0 | 12.6719 | 1.1 | 2.1657 | 1.6 | 0.1990 | 1.2 | 0.72 | 1170.1 | 12.4 | 1170.1 | 11.3 | 1170.0 | 22.4 | 1170.0 | 22.4 | 100.0 |
| H14-007_27May2015-Spot 244 | 393 | 65496 | 9.2 | 13.7262 | 0.8 | 1.6806 | 1.4 | 0.1673 | 1.1 | 0.79 | 997.2 | 10.0 | 1001.2 | 8.7 | 1009.9 | 17.0 | 1009.9 | 17.0 | 98.8 |
| H14-007_27May2015-Spot 245 | 256 | 84681 | 3.6 | 12.4514 | 1.1 | 2.0623 | 1.9 | 0.1862 | 1.6 | 0.83 | 1101.0 | 16.1 | 1136.4 | 13.1 | 1204.6 | 21.1 | 1204.6 | 21.1 | 91.4 |
| H14-007_27May2015-Spot 247 | 388 | 78470 | 2.5 | 12.7438 | 1.2 | 2.1508 | 1.7 | 0.1988 | 1.2 | 0.69 | 1168.8 | 12.7 | 1165.3 | 11.9 | 1158.8 | 24.5 | 1158.8 | 24.5 | 100.9 |
| H14-007_27May2015-Spot 248 | 589 | 78731 | 5.1 | 13.7207 | 0.9 | 1.6385 | 1.2 | 0.1630 | 0.8 | 0.67 | 973.7 | 7.5 | 985.1 | 7.7 | 1010.7 | 18.3 | 1010.7 | 18.3 | 96.3 |
| H14-007_27May2015-Spot 249 | 179 | 169164 | 3.4 | 12.4262 | 1.0 | 2.0212 | 1.7 | 0.1822 | 1.4 | 0.80 | 1078.8 | 13.6 | 1122.7 | 11.6 | 1208.7 | 20.4 | 1208.7 | 20.4 | 89.3 |
| H14-007_27May2015-Spot 250 | 640 | 58395 | 54.0 | 13.7542 | 1.1 | 1.5472 | 1.8 | 0.1543 | 1.4 | 0.79 | 925.2 | 12.3 | 949.4 | 11.2 | 1005.7 | 22.9 | 1005.7 | 22.9 | 92.0 |
| H14-007_27May2015-Spot 251 | 1371 | 54709 | 3.7 | 13.6842 | 1.1 | 1.4706 | 1.8 | 0.1459 | 1.5 | 0.82 | 878.2 | 12.3 | 918.4 | 11.1 | 1016.1 | 21.3 | 1016.1 | 21.3 | 86.4 |
| H14-007_27May2015-Spot 252 | 206 | 76296 | 3.9 | 11.1133 | 0.9 | 3.0335 | 1.6 | 0.2445 | 1.3 | 0.82 | 1410.1 | 16.4 | 1416.1 | 12.1 | 1425.1 | 17.4 | 1425.1 | 17.4 | 98.9 |
| H14-007_27May2015-Spot 253 | 257 | 777802 | 1.4 | 13.5096 | 1.2 | 1.7958 | 1.6 | 0.1760 | 1.0 | 0.64 | 1044.8 | 9.8 | 1043.9 | 10.4 | 1042.0 | 24.8 | 1042.0 | 24.8 | 100.3 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 254 | 1709 | 95601 | 6.7 | 12.8680 | 0.7 | 1.9018 | 1.4 | 0.1775 | 1.2 | 0.87 | 1053.2 | 11.4 | 1081.7 | 9.0 | 1139.5 | 13.5 | 1139.5 | 13.5 | 92.4 |
| H14-007_27May2015-Spot 255 | 320 | 72211 | 3.7 | 12.0229 | 1.0 | 2.1990 | 1.9 | 0.1917 | 1.6 | 0.84 | 1130.8 | 16.3 | 1180.7 | 13.0 | 1273.3 | 19.7 | 1273.3 | 19.7 | 88.8 |
| H14-007_27May2015-Spot 256 | 254 | 55098 | 2.6 | 13.4478 | 1.5 | 1.7498 | 2.1 | 0.1707 | 1.5 | 0.71 | 1015.7 | 13.8 | 1027.1 | 13.4 | 1051.3 | 29.6 | 1051.3 | 29.6 | 96.6 |
| H14-007_27May2015-Spot 257 | 151 | 231482 | 2.6 | 13.2319 | 1.0 | 1.8965 | 1.8 | 0.1820 | 1.5 | 0.81 | 1077.9 | 14.5 | 1079.9 | 11.9 | 1083.8 | 21.0 | 1083.8 | 21.0 | 99.5 |
| H14-007_27May2015-Spot 258 | 97 | 52714 | 2.2 | 13.2698 | 1.4 | 1.7574 | 1.8 | 0.1691 | 1.2 | 0.63 | 1007.3 | 10.8 | 1029.9 | 11.9 | 1078.1 | 28.6 | 1078.1 | 28.6 | 93.4 |
| H14-007_27May2015-Spot 259 | 366 | 59725 | 1.8 | 13.6372 | 1.1 | 1.7493 | 1.7 | 0.1730 | 1.3 | 0.75 | 1028.7 | 12.4 | 1026.9 | 11.2 | 1023.0 | 23.2 | 1023.0 | 23.2 | 100.6 |
| H14-007_27May2015-Spot 260 | 911 | 113683 | 8.5 | 14.7695 | 0.7 | 1.0648 | 1.4 | 0.1141 | 1.2 | 0.86 | 696.3 | 7.9 | 736.2 | 7.4 | 859.6 | 15.2 | 696.3 | 7.9 | 81.0 |
| H14-007_27May2015-Spot 261 | 239 | 161962 | 4.0 | 12.6663 | 0.9 | 2.0958 | 1.4 | 0.1925 | 1.2 | 0.80 | 1135.1 | 12.1 | 1147.4 | 9.9 | 1170.9 | 17.0 | 1170.9 | 17.0 | 96.9 |
| H14-007_27May2015-Spot 262 | 200 | 206858 | 2.8 | 12.6978 | 1.2 | 1.8472 | 2.5 | 0.1701 | 2.2 | 0.88 | 1012.7 | 20.4 | 1062.4 | 16.3 | 1165.9 | 23.3 | 1165.9 | 23.3 | 86.9 |
| H14-007_27May2015-Spot 263 | 64 | 74451 | 2.7 | 12.1809 | 1.4 | 2.3082 | 1.9 | 0.2039 | 1.2 | 0.66 | 1196.3 | 13.6 | 1214.8 | 13.4 | 1247.8 | 28.0 | 1247.8 | 28.0 | 95.9 |
| H14-007_27May2015-Spot 264 | 1189 | 97068 | 13.3 | 13.5385 | 0.9 | 1.5500 | 1.5 | 0.1522 | 1.3 | 0.82 | 913.2 | 10.8 | 950.5 | 9.5 | 1037.7 | 17.6 | 1037.7 | 17.6 | 88.0 |
| H14-007_27May2015-Spot 265 | 422 | 207195 | 1.6 | 12.5622 | 0.9 | 2.1282 | 1.6 | 0.1939 | 1.3 | 0.81 | 1142.5 | 13.7 | 1158.0 | 11.2 | 1187.2 | 18.6 | 1187.2 | 18.6 | 96.2 |
| H14-007_27May2015-Spot 266 | 109 | 156282 | 1.3 | 12.2966 | 1.3 | 2.2892 | 1.8 | 0.2042 | 1.2 | 0.66 | 1197.6 | 12.8 | 1209.0 | 12.5 | 1229.3 | 26.1 | 1229.3 | 26.1 | 97.4 |
| H14-007_27May2015-Spot 267 | 415 | 90771 | 4.8 | 12.8750 | 1.1 | 1.7669 | 4.1 | 0.1650 | 4.0 | 0.96 | 984.4 | 36.2 | 1033.4 | 26.7 | 1138.5 | 22.7 | 1138.5 | 22.7 | 86.5 |
| H14-007_27May2015-Spot 268 | 191 | 159835 | 3.4 | 13.4591 | 1.1 | 1.7538 | 1.5 | 0.1712 | 0.9 | 0.62 | 1018.7 | 8.5 | 1028.6 | 9.4 | 1049.6 | 23.1 | 1049.6 | 23.1 | 97.1 |
| H14-007_27May2015-Spot 269 | 377 | 134421 | 1.0 | 12.5723 | 1.2 | 2.1997 | 1.8 | 0.2006 | 1.4 | 0.75 | 1178.4 | 14.6 | 1180.9 | 12.6 | 1185.6 | 23.5 | 1185.6 | 23.5 | 99.4 |
| H14-007_27May2015-Spot 270 | 570 | 262975 | 2.1 | 13.2040 | 0.9 | 1.8809 | 1.5 | 0.1801 | 1.2 | 0.79 | 1067.7 | 11.4 | 1074.4 | 9.8 | 1088.1 | 18.3 | 1088.1 | 18.3 | 98.1 |
| H14-007_27May2015-Spot 272 | 551 | 146952 | 15.4 | 13.8048 | 1.0 | 1.6644 | 1.7 | 0.1666 | 1.4 | 0.82 | 993.6 | 12.7 | 995.1 | 10.7 | 998.3 | 19.5 | 998.3 | 19.5 | 99.5 |
| H14-007_27May2015-Spot 273 | 437 | 112530 | 0.9 | 12.6872 | 1.2 | 2.2541 | 1.6 | 0.2074 | 1.0 | 0.64 | 1215.0 | 11.5 | 1198.1 | 11.4 | 1167.6 | 24.6 | 1167.6 | 24.6 | 104.1 |
| H14-007_27May2015-Spot 274 | 329 | 90914 | 1.9 | 12.4298 | 1.1 | 2.2597 | 1.6 | 0.2037 | 1.2 | 0.74 | 1195.2 | 13.0 | 1199.8 | 11.3 | 1208.1 | 21.2 | 1208.1 | 21.2 | 98.9 |
| H14-007_27May2015-Spot 275 | 415 | 230335 | 2.1 | 12.0780 | 0.6 | 2.4624 | 1.1 | 0.2157 | 0.9 | 0.82 | 1259.1 | 10.6 | 1261.1 | 8.2 | 1264.4 | 12.6 | 1264.4 | 12.6 | 99.6 |
| H14-007_27May2015-Spot 276 | 285 | 179494 | 3.2 | 12.5715 | 1.0 | 2.1818 | 1.5 | 0.1989 | 1.1 | 0.75 | 1169.6 | 11.7 | 1175.2 | 10.1 | 1185.7 | 18.9 | 1185.7 | 18.9 | 98.6 |
| H14-007_27May2015-Spot 279 | 584 | 74097 | 2.8 | 13.0113 | 0.9 | 1.9935 | 1.7 | 0.1881 | 1.5 | 0.86 | 1111.2 | 14.9 | 1113.3 | 11.5 | 1117.5 | 17.4 | 1117.5 | 17.4 | 99.4 |
| H14-007_27May2015-Spot 280 | 1143 | 227059 | 1.8 | 12.7660 | 1.1 | 2.0330 | 1.5 | 0.1882 | 1.0 | 0.69 | 1111.8 | 10.3 | 1126.6 | 10.0 | 1155.3 | 21.3 | 1155.3 | 21.3 | 96.2 |
| H14-007_27May2015-Spot 281 | 294 | 190446 | 6.6 | 13.2938 | 1.1 | 1.9447 | 1.7 | 0.1875 | 1.4 | 0.78 | 1107.8 | 13.9 | 1096.6 | 11.7 | 1074.5 | 21.9 | 1074.5 | 21.9 | 103.1 |
| H14-007_27May2015-Spot 282 | 226 | 145223 | 0.6 | 13.1926 | 1.1 | 1.9574 | 1.5 | 0.1873 | 1.0 | 0.68 | 1106.6 | 10.6 | 1101.0 | 10.2 | 1089.8 | 22.2 | 1089.8 | 22.2 | 101.5 |
| H14-007_27May2015-Spot 283 | 589 | 194127 | 4.3 | 13.0176 | 0.9 | 1.7386 | 1.5 | 0.1641 | 1.2 | 0.79 | 979.8 | 10.7 | 1022.9 | 9.6 | 1116.5 | 18.3 | 1116.5 | 18.3 | 87.8 |
| H14-007_27May2015-Spot 284 | 301 | 102045 | 2.3 | 12.7256 | 1.0 | 1.7812 | 1.7 | 0.1644 | 1.4 | 0.81 | 981.2 | 12.5 | 1038.6 | 11.0 | 1161.6 | 19.7 | 1161.6 | 19.7 | 84.5 |
| H14-007_27May2015-Spot 286 | 83 | 155875 | 2.1 | 11.1444 | 1.1 | 3.0095 | 1.7 | 0.2433 | 1.3 | 0.78 | 1403.6 | 16.6 | 1410.0 | 12.9 | 1419.8 | 20.3 | 1419.8 | 20.3 | 98.9 |
| H14-007_27May2015-Spot 287 | 87 | 58020 | 1.9 | 13.2348 | 1.5 | 1.9454 | 1.7 | 0.1867 | 0.9 | 0.53 | 1103.7 | 9.4 | 1096.9 | 11.7 | 1083.4 | 29.5 | 1083.4 | 29.5 | 101.9 |
| H14-007_27May2015-Spot 288 | 692 | 289171 | 11.7 | 16.1731 | 1.0 | 0.8115 | 1.8 | 0.0952 | 1.5 | 0.83 | 586.1 | 8.5 | 603.3 | 8.4 | 668.3 | 22.1 | 586.1 | 8.5 | 87.7 |
| H14-007_27May2015-Spot 289 | 144 | 258742 | 2.9 | 12.5280 | 1.0 | 2.2116 | 1.7 | 0.2010 | 1.4 | 0.82 | 1180.4 | 15.2 | 1184.7 | 11.9 | 1192.6 | 19.2 | 1192.6 | 19.2 | 99.0 |
| H14-007_27May2015-Spot 290 | 565 | 162006 | 2.0 | 13.0244 | 1.1 | 2.0028 | 1.8 | 0.1892 | 1.4 | 0.77 | 1117.0 | 14.1 | 1116.5 | 12.0 | 1115.4 | 22.5 | 1115.4 | 22.5 | 100.1 |
| H14-007_27May2015-Spot 291 | 784 | 106476 | 7.1 | 13.8167 | 0.9 | 1.5699 | 1.3 | 0.1573 | 1.0 | 0.74 | 941.8 | 8.7 | 958.4 | 8.3 | 996.5 | 18.1 | 996.5 | 18.1 | 94.5 |
| H14-007_27May2015-Spot 292 | 37 | 51910 | 1.8 | 13.2351 | 2.1 | 1.9267 | 2.6 | 0.1849 | 1.5 | 0.58 | 1094.0 | 14.8 | 1090.4 | 17.1 | 1083.3 | 41.9 | 1083.3 | 41.9 | 101.0 |
| H14-007_27May2015-Spot 293 | 136 | 79182 | 3.9 | 13.3526 | 1.2 | 1.8321 | 1.9 | 0.1774 | 1.4 | 0.76 | 1052.9 | 13.9 | 1057.0 | 12.3 | 1065.6 | 24.3 | 1065.6 | 24.3 | 98.8 |
| H14-007_27May2015-Spot 294 | 1629 | 152332 | 6.4 | 13.1598 | 0.8 | 1.7263 | 1.5 | 0.1648 | 1.3 | 0.87 | 983.2 | 12.1 | 1018.4 | 9.9 | 1094.8 | 15.4 | 1094.8 | 15.4 | 89.8 |
| H14-007_27May2015-Spot 295 | 455 | 77296 | 1.4 | 13.4641 | 1.1 | 1.7275 | 1.6 | 0.1687 | 1.1 | 0.73 | 1004.9 | 10.7 | 1018.8 | 10.1 | 1048.9 | 21.7 | 1048.9 | 21.7 | 95.8 |
| H14-007_27May2015-Spot 296 | 134 | 49797 | 1.2 | 12.4293 | 0.9 | 2.2427 | 1.7 | 0.2022 | 1.4 | 0.85 | 1187.0 | 15.3 | 1194.5 | 11.7 | 1208.2 | 17.4 | 1208.2 | 17.4 | 98.2 |
| H14-007_27May2015-Spot 297 | 89 | 56754 | 5.2 | 12.8725 | 1.4 | 1.9398 | 2.2 | 0.1811 | 1.7 | 0.77 | 1073.0 | 16.4 | 1094.9 | 14.5 | 1138.8 | 27.6 | 1138.8 | 27.6 | 94.2 |
| H14-007_27May2015-Spot 298 | 863 | 286509 | 3.5 | 13.1590 | 1.0 | 1.7882 | 1.7 | 0.1707 | 1.4 | 0.82 | 1015.8 | 13.0 | 1041.2 | 11.0 | 1094.9 | 19.5 | 1094.9 | 19.5 | 92.8 |
| H14-007_27May2015-Spot 300 | 38 | 27160 | 3.1 | 13.8556 | 2.2 | 1.7148 | 2.5 | 0.1723 | 1.3 | 0.50 | 1024.9 | 12.1 | 1014.1 | 16.2 | 990.8 | 44.3 | 990.8 | 44.3 | 103.4 |
| H14-007_27May2015-Spot 301 | 944 | 87251 | 3.0 | 13.9234 | 1.3 | 1.3646 | 1.9 | 0.1378 | 1.4 | 0.73 | 832.2 | 10.9 | 873.8 | 11.2 | 980.9 | 26.7 | 980.9 | 26.7 | 84.8 |
| H14-007_27May2015-Spot 303 | 404 | 180728 | 6.2 | 12.9860 | 1.0 | 1.8204 | 1.6 | 0.1715 | 1.3 | 0.79 | 1020.1 | 11.9 | 1052.8 | 10.4 | 1121.4 | 19.5 | 1121.4 | 19.5 | 91.0 |
| H14-007_27May2015-Spot 304 | 542 | 109097 | 3.2 | 13.2360 | 0.9 | 1.8578 | 1.6 | 0.1783 | 1.3 | 0.82 | 1057.9 | 12.6 | 1066.2 | 10.4 | 1083.2 | 18.0 | 1083.2 | 18.0 | 97.7 |
| H14-007_27May2015-Spot 305 | 72 | 48060 | 2.2 | 11.7949 | 1.5 | 2.5847 | 2.0 | 0.2211 | 1.4 | 0.68 | 1287.7 | 16.0 | 1296.3 | 14.7 | 1310.5 | 28.5 | 1310.5 | 28.5 | 98.3 |

**Appendix C: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-007 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-007_27May2015-Spot 306 | 520 | 314134 | 2.2 | 12.6467 | 1.0 | 2.1932 | 1.8 | 0.2012 | 1.4 | 0.82 | 1181.6 | 15.6 | 1178.9 | 12.3 | 1174.0 | 19.8 | 1174.0 | 19.8 | 100.7 |
| H14-007_27May2015-Spot 307 | 453 | 90664 | 2.5 | 12.3039 | 1.1 | 2.3223 | 1.5 | 0.2072 | 1.0 | 0.65 | 1214.1 | 10.7 | 1219.1 | 10.5 | 1228.1 | 22.0 | 1228.1 | 22.0 | 98.9 |
| H14-007_27May2015-Spot 308 | 695 | 72143 | 2.6 | 12.5061 | 1.1 | 1.8043 | 1.8 | 0.1637 | 1.4 | 0.79 | 977.1 | 12.9 | 1047.0 | 11.7 | 1196.0 | 21.7 | 1196.0 | 21.7 | 81.7 |
| H14-007_27May2015-Spot 309 | 38 | 85443 | 2.2 | 10.8437 | 1.6 | 3.1069 | 1.9 | 0.2443 | 1.0 | 0.54 | 1409.2 | 12.7 | 1434.4 | 14.3 | 1471.9 | 29.8 | 1471.9 | 29.8 | 95.7 |
| H14-007_27May2015-Spot 310 | 226 | 162371 | 0.8 | 13.5689 | 1.0 | 1.7476 | 1.4 | 0.1720 | 0.9 | 0.69 | 1023.0 | 8.9 | 1026.3 | 8.7 | 1033.2 | 19.8 | 1033.2 | 19.8 | 99.0 |
| H14-007_27May2015-Spot 311 | 853 | 56409 | 26.1 | 11.1760 | 0.9 | 2.8699 | 1.6 | 0.2326 | 1.3 | 0.82 | 1348.2 | 16.3 | 1374.0 | 12.3 | 1414.4 | 17.9 | 1414.4 | 17.9 | 95.3 |
| H14-007_27May2015-Spot 312 | 511 | 84420 | 3.4 | 12.9091 | 1.1 | 2.0247 | 1.7 | 0.1896 | 1.3 | 0.76 | 1119.0 | 13.1 | 1123.8 | 11.5 | 1133.2 | 22.0 | 1133.2 | 22.0 | 98.8 |
| H14-007_27May2015-Spot 313 | 45 | 124269 | 1.1 | 14.0758 | 1.9 | 1.4901 | 2.3 | 0.1521 | 1.3 | 0.56 | 912.8 | 10.8 | 926.3 | 13.7 | 958.7 | 38.1 | 958.7 | 38.1 | 95.2 |
| H14-007_27May2015-Spot 314 | 315 | 172333 | 3.3 | 12.2235 | 1.2 | 2.2053 | 2.0 | 0.1955 | 1.6 | 0.78 | 1151.1 | 16.4 | 1182.7 | 13.9 | 1241.0 | 24.1 | 1241.0 | 24.1 | 92.8 |
| H14-007_27May2015-Spot 315 | 238 | 157154 | 2.7 | 11.2807 | 0.8 | 2.8200 | 1.3 | 0.2307 | 1.0 | 0.79 | 1338.3 | 12.7 | 1360.9 | 10.0 | 1396.5 | 15.8 | 1396.5 | 15.8 | 95.8 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run1-Spot 1 | 427 | 146966 | 2.1 | 13.3036 | 1.1 | 1.5556 | 2.6 | 0.1501 | 2.4 | 0.91 | 901.5 | 20.1 | 952.7 | 16.3 | 1073.0 | 22.4 | 1073.0 | 22.4 | 84.0 |
| H14-011_Run1-Spot 10 | 57 | 70015 | 1.5 | 14.6758 | 2.8 | 1.3581 | 3.1 | 0.1446 | 1.4 | 0.46 | 870.4 | 11.7 | 871.1 | 18.2 | 872.8 | 57.0 | 870.4 | 11.7 | 99.7 |
| H14-011_Run1-Spot 100 | 88 | 290086 | 3.7 | 13.1200 | 1.4 | 1.8922 | 2.6 | 0.1801 | 2.2 | 0.84 | 1067.3 | 21.4 | 1078.4 | 17.2 | 1100.8 | 28.2 | 1100.8 | 28.2 | 97.0 |
| H14-011_Run1-Spot 101 | 131 | 60964 | 6.3 | 13.6967 | 2.0 | 1.5805 | 2.8 | 0.1570 | 2.0 | 0.71 | 940.1 | 17.7 | 962.6 | 17.6 | 1014.2 | 40.1 | 1014.2 | 40.1 | 92.7 |
| H14-011_Run1-Spot 102 | 44 | 26184 | 2.2 | 13.3826 | 2.5 | 1.7965 | 3.9 | 0.1744 | 3.0 | 0.76 | 1036.1 | 28.4 | 1044.2 | 25.5 | 1061.1 | 51.2 | 1061.1 | 51.2 | 97.6 |
| H14-011_Run1-Spot 103 | 376 | 39775 | 29.5 | 17.6453 | 1.7 | 0.5874 | 2.3 | 0.0752 | 1.6 | 0.69 | 467.3 | 7.1 | 469.2 | 8.6 | 478.8 | 37.0 | 467.3 | 7.1 | 97.6 |
| H14-011_Run1-Spot 104 | 59 | 33875 | 3.9 | 13.5542 | 2.1 | 1.7257 | 2.8 | 0.1696 | 1.9 | 0.66 | 1010.1 | 17.5 | 1018.1 | 18.1 | 1035.4 | 42.6 | 1035.4 | 42.6 | 97.6 |
| H14-011_Run1-Spot 105 | 83 | 64190 | 2.5 | 14.5500 | 1.6 | 1.2012 | 3.4 | 0.1268 | 3.0 | 0.88 | 769.4 | 21.4 | 801.2 | 18.6 | 890.6 | 33.1 | 769.4 | 21.4 | 86.4 |
| H14-011_Run1-Spot 106 | 280 | 32393 | 10.6 | 16.8313 | 1.7 | 0.6752 | 2.0 | 0.0824 | 1.2 | 0.57 | 510.6 | 5.7 | 523.9 | 8.3 | 582.3 | 36.2 | 510.6 | 5.7 | 87.7 |
| H14-011_Run1-Spot 107 | 100 | 136665 | 4.9 | 16.5168 | 2.5 | 0.7001 | 3.1 | 0.0839 | 1.8 | 0.60 | 519.1 | 9.2 | 538.8 | 12.8 | 623.1 | 53.1 | 519.1 | 9.2 | 83.3 |
| H14-011_Run1-Spot 108 | 549 | 86703 | 1.8 | 9.7093 | 1.0 | 3.7878 | 3.0 | 0.2667 | 2.9 | 0.94 | 1524.2 | 38.8 | 1590.2 | 24.4 | 1678.8 | 18.7 | 1678.8 | 18.7 | 90.8 |
| H14-011_Run1-Spot 109 | 235 | 74961 | 18.8 | 13.7689 | 1.3 | 1.2190 | 2.4 | 0.1217 | 2.0 | 0.85 | 740.5 | 14.1 | 809.3 | 13.2 | 1003.6 | 25.5 | 740.5 | 14.1 | 73.8 |
| H14-011_Run1-Spot 11 | 65 | 79494 | 1.6 | 14.1201 | 2.6 | 1.4410 | 4.4 | 0.1476 | 3.5 | 0.80 | 887.3 | 29.2 | 906.1 | 26.2 | 952.3 | 53.2 | 952.3 | 53.2 | 93.2 |
| H14-011_Run1-Spot 110 | 510 | 113282 | 76.2 | 17.7431 | 1.9 | 0.5835 | 2.4 | 0.0751 | 1.5 | 0.61 | 466.7 | 6.7 | 466.7 | 9.2 | 466.5 | 42.9 | 466.7 | 6.7 | 100.0 |
| H14-011_Run1-Spot 12 | 100 | 53921 | 2.5 | 12.6839 | 2.2 | 2.2407 | 2.9 | 0.2061 | 1.9 | 0.66 | 1208.2 | 21.1 | 1193.9 | 20.3 | 1168.1 | 42.8 | 1168.1 | 42.8 | 103.4 |
| H14-011_Run1-Spot 13 | 147 | 63771 | 2.8 | 13.6478 | 1.3 | 1.7381 | 2.1 | 0.1720 | 1.7 | 0.79 | 1023.4 | 15.8 | 1022.8 | 13.7 | 1021.5 | 26.6 | 1021.5 | 26.6 | 100.2 |
| H14-011_Run1-Spot 14 | 251 | 141485 | 3.6 | 12.6322 | 1.3 | 1.5610 | 2.1 | 0.1430 | 1.6 | 0.78 | 861.7 | 12.9 | 954.9 | 12.7 | 1176.2 | 25.6 | 1176.2 | 25.6 | 73.3 |
| H14-011_Run1-Spot 15 | 192 | 177965 | 11.0 | 14.4960 | 1.8 | 1.0877 | 2.6 | 0.1144 | 1.8 | 0.72 | 698.0 | 12.1 | 747.4 | 13.5 | 898.3 | 36.8 | 698.0 | 12.1 | 77.7 |
| H14-011_Run1-Spot 16 | 492 | 56944 | 13.5 | 18.0015 | 1.5 | 0.5588 | 2.4 | 0.0730 | 1.9 | 0.79 | 453.9 | 8.4 | 450.7 | 8.8 | 434.4 | 33.3 | 453.9 | 8.4 | 104.5 |
| H14-011_Run1-Spot 17 | 221 | 87271 | 2.0 | 9.8200 | 1.2 | 3.4769 | 2.1 | 0.2476 | 1.7 | 0.83 | 1426.2 | 22.1 | 1522.0 | 16.5 | 1657.8 | 21.7 | 1657.8 | 21.7 | 86.0 |
| H14-011_Run1-Spot 18 | 547 | 89747 | 5.6 | 13.6719 | 0.9 | 1.7576 | 2.2 | 0.1743 | 2.0 | 0.91 | 1035.6 | 18.8 | 1030.0 | 14.0 | 1017.9 | 18.5 | 1017.9 | 18.5 | 101.7 |
| H14-011_Run1-Spot 19 | 273 | 253239 | 8.8 | 13.2238 | 1.3 | 1.7844 | 2.5 | 0.1711 | 2.2 | 0.86 | 1018.4 | 20.5 | 1039.8 | 16.6 | 1085.1 | 26.4 | 1085.1 | 26.4 | 93.9 |
| H14-011_Run1-Spot 2 | 363 | 309435 | 5.4 | 13.8073 | 1.1 | 1.6260 | 1.9 | 0.1628 | 1.5 | 0.81 | 972.5 | 13.7 | 980.3 | 11.8 | 997.9 | 22.5 | 997.9 | 22.5 | 97.5 |
| H14-011_Run1-Spot 20 | 445 | 123873 | 6.1 | 15.5320 | 1.3 | 0.8722 | 2.4 | 0.0983 | 2.0 | 0.82 | 604.2 | 11.3 | 636.8 | 11.2 | 754.2 | 28.4 | 604.2 | 11.3 | 80.1 |
| H14-011_Run1-Spot 21 | 151 | 50770 | 1.9 | 12.2504 | 1.4 | 2.3187 | 2.1 | 0.2060 | 1.6 | 0.77 | 1207.5 | 17.9 | 1218.0 | 15.1 | 1236.7 | 26.7 | 1236.7 | 26.7 | 97.6 |
| H14-011_Run1-Spot 22 | 367 | 54920 | 36.1 | 17.6451 | 1.2 | 0.5734 | 2.4 | 0.0734 | 2.0 | 0.85 | 456.5 | 8.8 | 460.2 | 8.7 | 478.8 | 27.5 | 456.5 | 8.8 | 95.3 |
| H14-011_Run1-Spot 23 | 244 | 86625 | 5.2 | 14.0598 | 1.3 | 1.2450 | 2.2 | 0.1270 | 1.8 | 0.80 | 770.5 | 12.8 | 821.1 | 12.5 | 961.0 | 27.3 | 770.5 | 12.8 | 80.2 |
| H14-011_Run1-Spot 24 | 374 | 113067 | 13.9 | 14.6743 | 1.4 | 0.9809 | 2.1 | 0.1044 | 1.5 | 0.73 | 640.1 | 9.2 | 694.0 | 10.4 | 873.0 | 29.0 | 640.1 | 9.2 | 73.3 |
| H14-011_Run1-Spot 25 | 302 | 107664 | 12.8 | 17.3819 | 1.5 | 0.5771 | 2.3 | 0.0728 | 1.7 | 0.74 | 452.7 | 7.4 | 462.6 | 8.5 | 512.0 | 34.0 | 452.7 | 7.4 | 88.4 |
| H14-011_Run1-Spot 26 | 253 | 97939 | 4.6 | 14.6027 | 1.5 | 1.3780 | 2.9 | 0.1459 | 2.5 | 0.85 | 878.2 | 20.5 | 879.6 | 17.2 | 883.2 | 31.5 | 878.2 | 20.5 | 99.4 |
| H14-011_Run1-Spot 27 | 235 | 48760 | 3.8 | 13.2325 | 1.6 | 1.5699 | 2.7 | 0.1507 | 2.2 | 0.81 | 904.7 | 18.3 | 958.4 | 16.7 | 1083.7 | 31.8 | 1083.7 | 31.8 | 83.5 |
| H14-011_Run1-Spot 28 | 239 | 62432 | 2.0 | 13.8253 | 1.3 | 1.6797 | 2.0 | 0.1684 | 1.6 | 0.78 | 1003.4 | 14.8 | 1000.9 | 12.9 | 995.3 | 25.7 | 995.3 | 25.7 | 100.8 |
| H14-011_Run1-Spot 29 | 179 | 59825 | 11.0 | 15.6984 | 1.4 | 0.9311 | 2.2 | 0.1060 | 1.7 | 0.78 | 649.5 | 10.8 | 668.2 | 11.0 | 731.7 | 29.7 | 649.5 | 10.8 | 88.8 |
| H14-011_Run1-Spot 3 | 76 | 24735 | 4.9 | 14.2730 | 1.7 | 1.3433 | 2.8 | 0.1391 | 2.1 | 0.78 | 839.3 | 16.9 | 864.6 | 16.0 | 930.2 | 35.5 | 839.3 | 16.9 | 90.2 |
| H14-011_Run1-Spot 30 | 659 | 54797 | 11.6 | 15.1486 | 1.0 | 1.0377 | 1.4 | 0.1140 | 1.0 | 0.68 | 696.0 | 6.4 | 722.8 | 7.3 | 806.8 | 21.8 | 696.0 | 6.4 | 86.3 |
| H14-011_Run1-Spot 31 | 404 | 113243 | 26.9 | 13.6831 | 1.6 | 1.2555 | 2.7 | 0.1246 | 2.2 | 0.80 | 756.9 | 15.4 | 825.9 | 15.3 | 1016.2 | 32.8 | 756.9 | 15.4 | 74.5 |
| H14-011_Run1-Spot 32 | 162 | 51061 | 3.1 | 12.4484 | 1.6 | 2.0463 | 2.6 | 0.1848 | 2.0 | 0.78 | 1092.9 | 20.4 | 1131.1 | 17.8 | 1205.1 | 32.3 | 1205.1 | 32.3 | 90.7 |
| H14-011_Run1-Spot 33 | 77 | 20207 | 8.9 | 13.7262 | 1.7 | 1.2827 | 2.6 | 0.1277 | 1.9 | 0.75 | 774.7 | 14.1 | 838.0 | 14.8 | 1009.9 | 34.9 | 774.7 | 14.1 | 76.7 |
| H14-011_Run1-Spot 34 | 94 | 94122 | 4.2 | 12.3018 | 1.3 | 2.3631 | 3.1 | 0.2108 | 2.8 | 0.90 | 1233.3 | 31.8 | 1231.5 | 22.4 | 1228.4 | 26.4 | 1228.4 | 26.4 | 100.4 |
| H14-011_Run1-Spot 35 | 33 | 20865 | 0.9 | 12.5613 | 2.5 | 2.0018 | 3.4 | 0.1824 | 2.3 | 0.68 | 1079.9 | 22.9 | 1116.1 | 22.9 | 1187.4 | 48.9 | 1187.4 | 48.9 | 91.0 |
| H14-011_Run1-Spot 36 | 211 | 137120 | 3.4 | 11.8798 | 1.5 | 2.2467 | 2.1 | 0.1936 | 1.4 | 0.70 | 1140.7 | 15.1 | 1195.8 | 14.5 | 1296.6 | 28.9 | 1296.6 | 28.9 | 88.0 |
| H14-011_Run1-Spot 37 | 177 | 44407 | 2.2 | 13.7968 | 1.6 | 1.2916 | 2.4 | 0.1292 | 1.8 | 0.74 | 783.6 | 13.0 | 842.0 | 13.7 | 999.5 | 32.7 | 783.6 | 13.0 | 78.4 |
| H14-011_Run1-Spot 38 | 88 | 65463 | 1.8 | 13.3185 | 2.8 | 1.7138 | 3.6 | 0.1655 | 2.3 | 0.64 | 987.5 | 21.2 | 1013.7 | 23.2 | 1070.8 | 55.9 | 1070.8 | 55.9 | 92.2 |
| H14-011_Run1-Spot 39 | 599 | 119106 | 5.2 | 12.6035 | 1.5 | 1.7689 | 2.5 | 0.1617 | 1.9 | 0.79 | 966.2 | 17.5 | 1034.1 | 16.0 | 1180.7 | 29.7 | 1180.7 | 29.7 | 81.8 |
| H14-011_Run1-Spot 4 | 205 | 163903 | 2.0 | 15.2222 | 1.3 | 0.9701 | 2.2 | 0.1071 | 1.8 | 0.80 | 655.9 | 11.2 | 688.5 | 11.2 | 796.6 | 28.2 | 655.9 | 11.2 | 82.3 |
| H14-011_Run1-Spot 40 | 217 | 132240 | 7.0 | 15.3455 | 1.9 | 1.0012 | 2.7 | 0.1114 | 2.0 | 0.73 | 681.0 | 12.8 | 704.4 | 13.8 | 779.7 | 39.1 | 681.0 | 12.8 | 87.4 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run1-Spot 41 | 506 | 71521 | 12.6 | 14.2680 | 1.2 | 1.4042 | 2.5 | 0.1453 | 2.2 | 0.87 | 874.6 | 18.0 | 890.7 | 15.0 | 930.9 | 25.4 | 930.9 | 25.4 | 94.0 |
| H14-011_Run1-Spot 42 | 325 | 29884 | 8.6 | 13.8132 | 2.1 | 0.9695 | 2.7 | 0.0971 | 1.7 | 0.62 | 597.6 | 9.4 | 688.2 | 13.4 | 997.0 | 43.1 | 597.6 | 9.4 | 59.9 |
| H14-011_Run1-Spot 43 | 323 | 44897 | 35.6 | 17.9109 | 1.7 | 0.5727 | 2.2 | 0.0744 | 1.4 | 0.64 | 462.6 | 6.2 | 459.8 | 8.1 | 445.7 | 37.7 | 462.6 | 6.2 | 103.8 |
| H14-011_Run1-Spot 44 | 130 | 128030 | 3.0 | 12.7570 | 1.6 | 2.1211 | 2.2 | 0.1962 | 1.5 | 0.69 | 1155.1 | 16.1 | 1155.7 | 15.2 | 1156.7 | 31.4 | 1156.7 | 31.4 | 99.9 |
| H14-011_Run1-Spot 45 | 589 | 206667 | 43.6 | 17.8067 | 1.3 | 0.5669 | 2.4 | 0.0732 | 2.0 | 0.83 | 455.5 | 8.8 | 456.0 | 8.9 | 458.6 | 29.7 | 455.5 | 8.8 | 99.3 |
| H14-011_Run1-Spot 46 | 343 | 72023 | 3.9 | 13.6404 | 1.1 | 1.6083 | 1.8 | 0.1591 | 1.5 | 0.80 | 951.8 | 12.9 | 973.4 | 11.4 | 1022.6 | 22.1 | 1022.6 | 22.1 | 93.1 |
| H14-011_Run1-Spot 47 | 325 | 31289 | 46.5 | 17.7150 | 1.9 | 0.5798 | 2.4 | 0.0745 | 1.5 | 0.63 | 463.1 | 6.8 | 464.3 | 9.0 | 470.1 | 41.6 | 463.1 | 6.8 | 98.5 |
| H14-011_Run1-Spot 48 | 150 | 48175 | 3.0 | 13.5590 | 1.4 | 1.7161 | 2.4 | 0.1688 | 1.9 | 0.81 | 1005.3 | 17.7 | 1014.6 | 15.1 | 1034.7 | 27.9 | 1034.7 | 27.9 | 97.2 |
| H14-011_Run1-Spot 49 | 319 | 122568 | 1.7 | 12.5914 | 1.3 | 2.1228 | 2.1 | 0.1939 | 1.6 | 0.78 | 1142.2 | 17.2 | 1156.2 | 14.5 | 1182.6 | 26.0 | 1182.6 | 26.0 | 96.6 |
| H14-011_Run1-Spot 5 | 310 | 139554 | 7.1 | 13.2994 | 1.5 | 1.7169 | 3.2 | 0.1656 | 2.8 | 0.88 | 987.8 | 25.5 | 1014.9 | 20.4 | 1073.6 | 30.6 | 1073.6 | 30.6 | 92.0 |
| H14-011_Run1-Spot 50 | 480 | 68299 | 4.3 | 13.9384 | 1.6 | 1.3560 | 2.2 | 0.1371 | 1.6 | 0.70 | 828.1 | 12.1 | 870.2 | 13.1 | 978.7 | 32.6 | 978.7 | 32.6 | 84.6 |
| H14-011_Run1-Spot 51 | 376 | 427479 | 3.8 | 12.6431 | 1.5 | 2.1961 | 2.2 | 0.2014 | 1.6 | 0.72 | 1182.7 | 16.9 | 1179.8 | 15.1 | 1174.5 | 29.7 | 1174.5 | 29.7 | 100.7 |
| H14-011_Run1-Spot 52 | 453 | 144431 | 8.9 | 14.2938 | 1.2 | 1.3130 | 2.5 | 0.1361 | 2.3 | 0.89 | 822.7 | 17.5 | 851.4 | 14.7 | 927.2 | 23.8 | 822.7 | 17.5 | 88.7 |
| H14-011_Run1-Spot 53 | 331 | 51958 | 1.5 | 12.5944 | 1.2 | 1.9222 | 2.2 | 0.1756 | 1.8 | 0.82 | 1042.8 | 17.0 | 1088.8 | 14.4 | 1182.1 | 24.6 | 1182.1 | 24.6 | 88.2 |
| H14-011_Run1-Spot 54 | 396 | 118071 | 9.9 | 13.5785 | 1.3 | 1.4770 | 2.6 | 0.1455 | 2.2 | 0.86 | 875.5 | 18.2 | 921.0 | 15.6 | 1031.8 | 26.6 | 1031.8 | 26.6 | 84.9 |
| H14-011_Run1-Spot 55 | 101 | 154512 | 4.2 | 12.2082 | 1.7 | 2.4612 | 2.9 | 0.2179 | 2.3 | 0.81 | 1270.9 | 26.8 | 1260.7 | 20.8 | 1243.4 | 33.2 | 1243.4 | 33.2 | 102.2 |
| H14-011_Run1-Spot 56 | 76 | 25715 | 3.2 | 12.7784 | 2.1 | 1.8290 | 5.7 | 0.1695 | 5.3 | 0.93 | 1009.4 | 49.2 | 1055.9 | 37.2 | 1153.4 | 41.2 | 1153.4 | 41.2 | 87.5 |
| H14-011_Run1-Spot 57 | 411 | 111859 | 43.9 | 17.3959 | 2.0 | 0.5806 | 2.5 | 0.0733 | 1.5 | 0.61 | 455.7 | 6.6 | 464.8 | 9.2 | 510.2 | 43.2 | 455.7 | 6.6 | 89.3 |
| H14-011_Run1-Spot 58 | 537 | 95550 | 17.6 | 15.1744 | 1.2 | 0.9774 | 2.4 | 0.1076 | 2.1 | 0.87 | 658.6 | 13.3 | 692.3 | 12.3 | 803.2 | 25.5 | 658.6 | 13.3 | 82.0 |
| H14-011_Run1-Spot 59 | 143 | 53764 | 3.3 | 12.3154 | 1.2 | 2.0338 | 2.4 | 0.1817 | 2.0 | 0.86 | 1076.0 | 20.2 | 1126.9 | 16.2 | 1226.3 | 24.1 | 1226.3 | 24.1 | 87.7 |
| H14-011_Run1-Spot 6 | 417 | 126489 | 12.8 | 16.0053 | 1.7 | 0.7526 | 2.8 | 0.0874 | 2.2 | 0.79 | 539.9 | 11.6 | 569.7 | 12.3 | 690.5 | 36.7 | 539.9 | 11.6 | 78.2 |
| H14-011_Run1-Spot 60 | 612 | 84837 | 55.6 | 16.6506 | 1.9 | 0.7103 | 2.6 | 0.0858 | 1.8 | 0.69 | 530.5 | 9.1 | 544.9 | 10.9 | 605.6 | 40.6 | 530.5 | 9.1 | 87.6 |
| H14-011_Run1-Spot 61 | 205 | 97794 | 2.4 | 8.9838 | 0.9 | 4.3600 | 2.2 | 0.2841 | 2.0 | 0.91 | 1611.9 | 28.6 | 1704.8 | 18.2 | 1820.9 | 16.3 | 1820.9 | 16.3 | 88.5 |
| H14-011_Run1-Spot 63 | 313 | 158400 | 34.0 | 17.8636 | 1.7 | 0.5828 | 2.4 | 0.0755 | 1.8 | 0.72 | 469.3 | 8.0 | 466.3 | 9.1 | 451.5 | 37.5 | 469.3 | 8.0 | 103.9 |
| H14-011_Run1-Spot 64 | 215 | 140014 | 2.9 | 12.0611 | 1.5 | 2.4201 | 2.4 | 0.2117 | 1.8 | 0.78 | 1237.8 | 20.8 | 1248.6 | 17.1 | 1267.1 | 29.3 | 1267.1 | 29.3 | 97.7 |
| H14-011_Run1-Spot 65 | 492 | 274601 | 34.9 | 17.3727 | 1.7 | 0.6373 | 2.4 | 0.0803 | 1.7 | 0.72 | 497.9 | 8.3 | 500.6 | 9.5 | 513.1 | 36.6 | 497.9 | 8.3 | 97.0 |
| H14-011_Run1-Spot 66 | 96 | 226473 | 3.4 | 12.8052 | 1.7 | 2.1245 | 2.4 | 0.1973 | 1.7 | 0.69 | 1160.8 | 17.6 | 1156.8 | 16.6 | 1149.2 | 34.4 | 1149.2 | 34.4 | 101.0 |
| H14-011_Run1-Spot 67 | 82 | 29162 | 2.5 | 15.1300 | 2.5 | 0.9228 | 3.5 | 0.1013 | 2.5 | 0.70 | 621.8 | 14.6 | 663.8 | 17.2 | 809.3 | 53.0 | 621.8 | 14.6 | 76.8 |
| H14-011_Run1-Spot 68 | 234 | 99649 | 4.9 | 15.3689 | 1.7 | 0.9251 | 3.7 | 0.1031 | 3.3 | 0.89 | 632.7 | 19.7 | 665.1 | 18.0 | 776.5 | 36.1 | 632.7 | 19.7 | 81.5 |
| H14-011_Run1-Spot 69 | 375 | 104487 | 6.7 | 11.5188 | 3.6 | 1.6586 | 4.2 | 0.1386 | 2.1 | 0.51 | 836.5 | 16.8 | 992.8 | 26.4 | 1356.4 | 68.9 | 1356.4 | 68.9 | 61.7 |
| H14-011_Run1-Spot 7 | 347 | 534060 | 28.1 | 17.7426 | 1.5 | 0.5777 | 2.7 | 0.0743 | 2.2 | 0.84 | 462.3 | 10.0 | 463.0 | 9.9 | 466.6 | 32.2 | 462.3 | 10.0 | 99.1 |
| H14-011_Run1-Spot 71 | 841 | 218556 | 7.4 | 12.7941 | 0.9 | 2.0169 | 1.6 | 0.1872 | 1.3 | 0.82 | 1105.9 | 13.3 | 1121.2 | 10.9 | 1151.0 | 18.2 | 1151.0 | 18.2 | 96.1 |
| H14-011_Run1-Spot 72 | 247 | 84545 | 2.4 | 9.8305 | 0.9 | 3.4290 | 3.1 | 0.2445 | 3.0 | 0.96 | 1409.9 | 37.6 | 1511.1 | 24.4 | 1655.8 | 16.8 | 1655.8 | 16.8 | 85.2 |
| H14-011_Run1-Spot 73 | 582 | 117788 | 5.8 | 13.7515 | 2.2 | 1.3226 | 2.9 | 0.1319 | 1.9 | 0.66 | 798.8 | 14.4 | 855.7 | 16.7 | 1006.1 | 43.7 | 1006.1 | 43.7 | 79.4 |
| H14-011_Run1-Spot 74 | 344 | 249110 | 29.5 | 17.4877 | 1.6 | 0.5932 | 2.6 | 0.0752 | 2.1 | 0.78 | 467.6 | 9.3 | 472.9 | 9.9 | 498.6 | 36.2 | 467.6 | 9.3 | 93.8 |
| H14-011_Run1-Spot 75 | 377 | 61735 | 11.9 | 14.2618 | 1.8 | 1.0974 | 2.3 | 0.1135 | 1.4 | 0.62 | 693.1 | 9.4 | 752.1 | 12.2 | 931.8 | 36.9 | 693.1 | 9.4 | 74.4 |
| H14-011_Run1-Spot 76 | 123 | 151194 | 2.4 | 13.0252 | 3.3 | 1.7551 | 3.8 | 0.1658 | 1.7 | 0.46 | 988.9 | 15.9 | 1029.0 | 24.3 | 1115.3 | 66.5 | 1115.3 | 66.5 | 88.7 |
| H14-011_Run1-Spot 77 | 139 | 165644 | 1.2 | 9.4205 | 1.2 | 4.2681 | 2.3 | 0.2916 | 1.9 | 0.84 | 1649.6 | 28.2 | 1687.2 | 19.0 | 1734.3 | 22.9 | 1734.3 | 22.9 | 95.1 |
| H14-011_Run1-Spot 78 | 29 | 17716 | 7.5 | 13.1327 | 2.9 | 1.7638 | 3.6 | 0.1680 | 2.2 | 0.62 | 1001.1 | 20.7 | 1032.2 | 23.5 | 1098.9 | 57.1 | 1098.9 | 57.1 | 91.1 |
| H14-011_Run1-Spot 79 | 715 | 67916 | 4.3 | 13.2466 | 1.3 | 1.5446 | 2.3 | 0.1484 | 2.0 | 0.84 | 891.9 | 16.3 | 948.3 | 14.4 | 1081.6 | 25.5 | 1081.6 | 25.5 | 82.5 |
| H14-011_Run1-Spot 8 | 752 | 108354 | 11.9 | 13.0283 | 1.2 | 1.9100 | 1.9 | 0.1805 | 1.5 | 0.78 | 1069.6 | 14.5 | 1084.6 | 12.6 | 1114.8 | 23.5 | 1114.8 | 23.5 | 95.9 |
| H14-011_Run1-Spot 80 | 453 | 109284 | 5.2 | 15.1687 | 1.2 | 0.9962 | 1.9 | 0.1096 | 1.5 | 0.77 | 670.4 | 9.5 | 701.9 | 9.8 | 804.0 | 25.8 | 670.4 | 9.5 | 83.4 |
| H14-011_Run1-Spot 81 | 868 | 51611 | 5.3 | 13.4046 | 3.2 | 1.4250 | 4.8 | 0.1385 | 3.5 | 0.74 | 836.4 | 27.8 | 899.5 | 28.6 | 1057.8 | 64.9 | 1057.8 | 64.9 | 79.1 |
| H14-011_Run1-Spot 82 | 298 | 204365 | 3.5 | 12.7766 | 1.1 | 2.1759 | 1.8 | 0.2016 | 1.5 | 0.79 | 1184.1 | 15.7 | 1173.4 | 12.9 | 1153.7 | 22.6 | 1153.7 | 22.6 | 102.6 |
| H14-011_Run1-Spot 83 | 473 | 197643 | 11.0 | 17.1302 | 1.3 | 0.6182 | 1.9 | 0.0768 | 1.4 | 0.74 | 477.1 | 6.5 | 488.7 | 7.5 | 543.9 | 28.4 | 477.1 | 6.5 | 87.7 |
| H14-011_Run1-Spot 84 | 388 | 143963 | 27.6 | 17.1868 | 1.4 | 0.6203 | 2.4 | 0.0773 | 1.9 | 0.80 | 480.1 | 8.7 | 490.1 | 9.2 | 536.7 | 31.6 | 480.1 | 8.7 | 89.5 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run1-Spot 85 | 217 | 63786 | 2.4 | 12.6669 | 1.2 | 2.1593 | 1.7 | 0.1984 | 1.2 | 0.72 | 1166.6 | 13.3 | 1168.0 | 12.1 | 1170.8 | 24.0 | 1170.8 | 24.0 | 99.6 |
| H14-011_Run1-Spot 86 | 118 | 102934 | 2.2 | 13.7939 | 1.9 | 1.6241 | 3.2 | 0.1625 | 2.6 | 0.80 | 970.6 | 23.0 | 979.6 | 20.1 | 999.9 | 39.0 | 999.9 | 39.0 | 97.1 |
| H14-011_Run1-Spot 87 | 252 | 90554 | 3.4 | 13.5881 | 1.4 | 1.6997 | 2.3 | 0.1675 | 1.7 | 0.77 | 998.4 | 16.1 | 1008.4 | 14.4 | 1030.3 | 29.0 | 1030.3 | 29.0 | 96.9 |
| H14-011_Run1-Spot 88 | 46 | 47244 | 3.9 | 13.9683 | 1.9 | 1.5568 | 2.8 | 0.1577 | 2.1 | 0.76 | 944.1 | 18.9 | 953.2 | 17.6 | 974.3 | 38.0 | 974.3 | 38.0 | 96.9 |
| H14-011_Run1-Spot 89 | 245 | 29932 | 4.1 | 14.9045 | 1.8 | 1.0513 | 2.4 | 0.1136 | 1.6 | 0.68 | 693.9 | 10.7 | 729.5 | 12.5 | 840.7 | 36.6 | 693.9 | 10.7 | 82.5 |
| H14-011_Run1-Spot 9 | 288 | 164230 | 3.4 | 12.7481 | 1.8 | 2.0477 | 2.7 | 0.1893 | 2.0 | 0.75 | 1117.7 | 20.9 | 1131.5 | 18.6 | 1158.1 | 35.8 | 1158.1 | 35.8 | 96.5 |
| H14-011_Run1-Spot 91 | 169 | 53762 | 3.5 | 14.8121 | 1.0 | 1.1120 | 2.1 | 0.1195 | 1.8 | 0.86 | 727.4 | 12.2 | 759.1 | 11.0 | 853.6 | 21.6 | 727.4 | 12.2 | 85.2 |
| H14-011_Run1-Spot 92 | 118 | 57638 | 2.7 | 12.9023 | 2.0 | 1.7752 | 3.3 | 0.1661 | 2.7 | 0.81 | 990.7 | 24.4 | 1036.4 | 21.4 | 1134.2 | 38.9 | 1134.2 | 38.9 | 87.3 |
| H14-011_Run1-Spot 93 | 148 | 54054 | 2.6 | 12.7930 | 2.0 | 1.8497 | 3.4 | 0.1716 | 2.8 | 0.81 | 1021.0 | 26.1 | 1063.3 | 22.5 | 1151.1 | 40.1 | 1151.1 | 40.1 | 88.7 |
| H14-011_Run1-Spot 94 | 309 | 90491 | 22.2 | 15.5984 | 2.2 | 0.8031 | 2.8 | 0.0909 | 1.7 | 0.61 | 560.6 | 9.0 | 598.6 | 12.4 | 745.2 | 46.0 | 560.6 | 9.0 | 75.2 |
| H14-011_Run1-Spot 95 | 547 | 100459 | 1.7 | 14.6021 | 1.7 | 1.3698 | 2.6 | 0.1451 | 1.9 | 0.74 | 873.3 | 15.7 | 876.1 | 15.2 | 883.2 | 36.0 | 873.3 | 15.7 | 98.9 |
| H14-011_Run1-Spot 96 | 154 | 164447 | 2.3 | 9.7088 | 1.8 | 3.3156 | 2.7 | 0.2335 | 2.0 | 0.74 | 1352.6 | 23.8 | 1484.7 | 20.7 | 1678.8 | 33.2 | 1678.8 | 33.2 | 80.6 |
| H14-011_Run1-Spot 97 | 443 | 56583 | 6.8 | 14.9598 | 2.7 | 1.0255 | 4.0 | 0.1113 | 3.0 | 0.75 | 680.1 | 19.4 | 716.7 | 20.7 | 833.0 | 55.9 | 680.1 | 19.4 | 81.6 |
| H14-011_Run1-Spot 98 | 473 | 189462 | 59.5 | 17.9115 | 1.4 | 0.5728 | 2.3 | 0.0744 | 1.8 | 0.77 | 462.7 | 7.8 | 459.8 | 8.4 | 445.6 | 31.8 | 462.7 | 7.8 | 103.8 |
| H14-011_Run1-Spot 99 | 264 | 186508 | 4.2 | 13.0001 | 1.5 | 1.9055 | 2.4 | 0.1797 | 1.9 | 0.78 | 1065.1 | 18.5 | 1083.0 | 16.0 | 1119.2 | 29.7 | 1119.2 | 29.7 | 95.2 |
| H14-011_Run2-Spot 112 | 87 | 56070 | 7.6 | 14.2137 | 2.0 | 1.2101 | 3.1 | 0.1247 | 2.4 | 0.77 | 757.8 | 16.9 | 805.3 | 17.1 | 938.7 | 40.3 | 757.8 | 16.9 | 80.7 |
| H14-011_Run2-Spot 113 | 114 | 44403 | 1.7 | 13.8567 | 2.1 | 1.5583 | 3.0 | 0.1566 | 2.1 | 0.72 | 937.9 | 18.7 | 953.8 | 18.4 | 990.7 | 42.0 | 990.7 | 42.0 | 94.7 |
| H14-011_Run2-Spot 114 | 383 | 312567 | 1.8 | 12.7759 | 1.2 | 1.9328 | 1.9 | 0.1791 | 1.5 | 0.76 | 1062.0 | 14.5 | 1092.5 | 12.9 | 1153.8 | 24.7 | 1153.8 | 24.7 | 92.0 |
| H14-011_Run2-Spot 116 | 762 | 57770 | 26.1 | 13.7088 | 1.3 | 1.2991 | 2.4 | 0.1292 | 2.0 | 0.83 | 783.1 | 14.4 | 845.3 | 13.5 | 1012.4 | 26.6 | 783.1 | 14.4 | 77.3 |
| H14-011_Run2-Spot 117 | 405 | 312618 | 5.2 | 14.7387 | 1.2 | 1.1435 | 2.1 | 0.1222 | 1.7 | 0.83 | 743.4 | 12.3 | 774.2 | 11.4 | 864.0 | 24.3 | 743.4 | 12.3 | 86.0 |
| H14-011_Run2-Spot 118 | 207 | 110095 | 2.2 | 12.0353 | 0.9 | 2.3121 | 1.5 | 0.2018 | 1.2 | 0.81 | 1185.1 | 13.5 | 1216.0 | 11.0 | 1271.3 | 17.8 | 1271.3 | 17.8 | 93.2 |
| H14-011_Run2-Spot 119 | 123 | 48554 | 3.1 | 12.6889 | 1.8 | 1.9491 | 2.5 | 0.1794 | 1.7 | 0.69 | 1063.5 | 16.9 | 1098.1 | 16.8 | 1167.3 | 35.9 | 1167.3 | 35.9 | 91.1 |
| H14-011_Run2-Spot 120 | 251 | 231160 | 2.4 | 12.4366 | 1.4 | 1.9689 | 2.4 | 0.1776 | 1.9 | 0.81 | 1053.8 | 18.9 | 1104.9 | 16.2 | 1207.0 | 28.1 | 1207.0 | 28.1 | 87.3 |
| H14-011_Run2-Spot 121 | 260 | 135696 | 13.0 | 11.1816 | 1.8 | 2.5341 | 2.7 | 0.2055 | 2.1 | 0.75 | 1204.8 | 22.7 | 1281.9 | 20.0 | 1413.4 | 34.5 | 1413.4 | 34.5 | 85.2 |
| H14-011_Run2-Spot 122 | 295 | 45834 | 20.1 | 15.6726 | 2.0 | 0.8052 | 3.6 | 0.0915 | 3.0 | 0.83 | 564.5 | 16.2 | 599.7 | 16.3 | 735.2 | 42.2 | 564.5 | 16.2 | 76.8 |
| H14-011_Run2-Spot 123 | 179 | 28692 | 4.5 | 14.9389 | 1.4 | 0.9354 | 2.1 | 0.1013 | 1.6 | 0.75 | 622.3 | 9.3 | 670.5 | 10.2 | 835.9 | 28.6 | 622.3 | 9.3 | 74.4 |
| H14-011_Run2-Spot 124 | 129 | 137108 | 3.5 | 12.5944 | 1.9 | 1.9133 | 3.8 | 0.1748 | 3.3 | 0.87 | 1038.3 | 32.1 | 1085.7 | 25.6 | 1182.1 | 37.3 | 1182.1 | 37.3 | 87.8 |
| H14-011_Run2-Spot 126 | 377 | 85632 | 8.0 | 10.0157 | 1.1 | 3.9924 | 2.5 | 0.2900 | 2.2 | 0.90 | 1641.6 | 32.3 | 1632.6 | 20.1 | 1621.1 | 19.9 | 1621.1 | 19.9 | 101.3 |
| H14-011_Run2-Spot 127 | 442 | 81014 | 15.9 | 17.5741 | 1.5 | 0.5855 | 2.5 | 0.0746 | 2.0 | 0.80 | 464.0 | 8.8 | 468.0 | 9.3 | 487.7 | 33.0 | 464.0 | 8.8 | 95.1 |
| H14-011_Run2-Spot 128 | 91 | 79063 | 2.1 | 13.6651 | 2.4 | 1.3317 | 3.0 | 0.1320 | 1.8 | 0.60 | 799.2 | 13.6 | 859.6 | 17.5 | 1018.9 | 48.9 | 1018.9 | 48.9 | 78.4 |
| H14-011_Run2-Spot 129 | 148 | 31184 | 5.4 | 17.5996 | 2.8 | 0.5943 | 3.4 | 0.0759 | 1.9 | 0.56 | 471.4 | 8.7 | 473.6 | 12.8 | 484.5 | 61.8 | 471.4 | 8.7 | 97.3 |
| H14-011_Run2-Spot 130 | 288 | 87437 | 14.8 | 15.2793 | 2.0 | 0.9111 | 3.2 | 0.1010 | 2.5 | 0.78 | 620.0 | 14.6 | 657.6 | 15.4 | 788.7 | 41.8 | 620.0 | 14.6 | 78.6 |
| H14-011_Run2-Spot 131 | 68 | 35546 | 3.0 | 13.9953 | 2.4 | 1.6589 | 2.9 | 0.1684 | 1.6 | 0.57 | 1003.2 | 15.2 | 992.9 | 18.1 | 970.4 | 48.0 | 970.4 | 48.0 | 103.4 |
| H14-011_Run2-Spot 132 | 257 | 232602 | 6.7 | 15.4146 | 1.9 | 0.9181 | 2.7 | 0.1026 | 1.9 | 0.71 | 629.9 | 11.5 | 661.4 | 13.0 | 770.2 | 39.7 | 629.9 | 11.5 | 81.8 |
| H14-011_Run2-Spot 133 | 260 | 79867 | 51.3 | 16.2191 | 1.9 | 0.7838 | 2.4 | 0.0922 | 1.5 | 0.61 | 568.5 | 8.0 | 587.7 | 10.8 | 662.2 | 40.8 | 568.5 | 8.0 | 85.9 |
| H14-011_Run2-Spot 134 | 231 | 27795 | 13.1 | 13.9978 | 2.1 | 1.0571 | 2.8 | 0.1073 | 1.8 | 0.65 | 657.2 | 11.3 | 732.4 | 14.5 | 970.0 | 43.2 | 657.2 | 11.3 | 67.7 |
| H14-011_Run2-Spot 135 | 206 | 139144 | 3.9 | 12.2553 | 0.9 | 2.1809 | 2.0 | 0.1938 | 1.8 | 0.88 | 1142.2 | 18.5 | 1175.0 | 13.9 | 1235.9 | 18.3 | 1235.9 | 18.3 | 92.4 |
| H14-011_Run2-Spot 136 | 384 | 59803 | 39.1 | 17.3623 | 2.0 | 0.6055 | 2.9 | 0.0763 | 2.1 | 0.74 | 473.7 | 9.8 | 480.7 | 11.1 | 514.4 | 43.2 | 473.7 | 9.8 | 92.1 |
| H14-011_Run2-Spot 137 | 207 | 61185 | 4.2 | 12.7446 | 1.6 | 1.9556 | 2.3 | 0.1808 | 1.6 | 0.70 | 1071.1 | 15.7 | 1100.4 | 15.3 | 1158.6 | 32.2 | 1158.6 | 32.2 | 92.4 |
| H14-011_Run2-Spot 138 | 388 | 65759 | 4.8 | 13.8806 | 1.6 | 1.4877 | 2.9 | 0.1498 | 2.4 | 0.83 | 899.7 | 20.0 | 925.4 | 17.4 | 987.2 | 32.4 | 987.2 | 32.4 | 91.1 |
| H14-011_Run2-Spot 139 | 274 | 33164 | 3.1 | 13.1080 | 1.5 | 1.7022 | 2.7 | 0.1618 | 2.3 | 0.85 | 966.9 | 20.9 | 1009.4 | 17.6 | 1102.7 | 29.1 | 1102.7 | 29.1 | 87.7 |
| H14-011_Run2-Spot 140 | 65 | 83804 | 4.8 | 12.9912 | 3.1 | 2.0269 | 4.8 | 0.1910 | 3.7 | 0.77 | 1126.7 | 37.8 | 1124.6 | 32.5 | 1120.6 | 61.4 | 1120.6 | 61.4 | 100.5 |
| H14-011_Run2-Spot 141 | 497 | 87666 | 73.4 | 17.7935 | 1.7 | 0.5704 | 2.7 | 0.0736 | 2.1 | 0.77 | 457.9 | 9.3 | 458.3 | 10.1 | 460.3 | 38.3 | 457.9 | 9.3 | 99.5 |
| H14-011_Run2-Spot 142 | 321 | 114396 | 5.1 | 14.9384 | 2.0 | 0.9830 | 2.6 | 0.1065 | 1.7 | 0.64 | 652.4 | 10.4 | 695.2 | 13.2 | 836.0 | 41.7 | 652.4 | 10.4 | 78.0 |
| H14-011_Run2-Spot 143 | 557 | 217239 | 6.6 | 15.1668 | 0.9 | 0.9982 | 2.7 | 0.1098 | 2.6 | 0.95 | 671.6 | 16.4 | 702.9 | 13.8 | 804.2 | 18.6 | 671.6 | 16.4 | 83.5 |
| H14-011_Run2-Spot 144 | 386 | 75199 | 6.1 | 13.5805 | 1.5 | 1.6553 | 2.8 | 0.1630 | 2.4 | 0.84 | 973.7 | 21.4 | 991.6 | 17.8 | 1031.5 | 30.9 | 1031.5 | 30.9 | 94.4 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run2-Spot 145 | 99 | 72988 | 2.1 | 12.5736 | 1.9 | 2.0131 | 2.5 | 0.1836 | 1.7 | 0.67 | 1086.5 | 16.9 | 1119.9 | 17.2 | 1185.4 | 37.2 | 1185.4 | 37.2 | 91.7 |
| H14-011_Run2-Spot 146 | 101 | 42264 | 4.1 | 12.4129 | 1.9 | 2.1870 | 2.9 | 0.1969 | 2.1 | 0.73 | 1158.6 | 22.2 | 1176.9 | 19.9 | 1210.8 | 38.2 | 1210.8 | 38.2 | 95.7 |
| H14-011_Run2-Spot 147 | 120 | 141814 | 3.7 | 13.5207 | 1.7 | 1.7162 | 3.1 | 0.1683 | 2.6 | 0.84 | 1002.7 | 24.0 | 1014.6 | 19.8 | 1040.4 | 33.9 | 1040.4 | 33.9 | 96.4 |
| H14-011_Run2-Spot 148 | 330 | 65216 | 5.4 | 14.9589 | 1.8 | 1.0137 | 4.1 | 0.1100 | 3.6 | 0.89 | 672.6 | 23.3 | 710.7 | 20.8 | 833.1 | 38.1 | 672.6 | 23.3 | 80.7 |
| H14-011_Run2-Spot 149 | 286 | 1820490 | 7.7 | 14.8179 | 1.2 | 1.0994 | 2.1 | 0.1182 | 1.8 | 0.84 | 719.9 | 12.1 | 753.1 | 11.3 | 852.8 | 24.3 | 719.9 | 12.1 | 84.4 |
| H14-011_Run2-Spot 150 | 268 | 249671 | 4.7 | 14.4057 | 2.1 | 1.2130 | 3.3 | 0.1267 | 2.5 | 0.78 | 769.2 | 18.4 | 806.6 | 18.1 | 911.1 | 42.3 | 769.2 | 18.4 | 84.4 |
| H14-011_Run2-Spot 151 | 135 | 104025 | 4.3 | 12.4110 | 1.4 | 2.2018 | 2.8 | 0.1982 | 2.5 | 0.87 | 1165.6 | 26.2 | 1181.6 | 19.7 | 1211.1 | 26.9 | 1211.1 | 26.9 | 96.2 |
| H14-011_Run2-Spot 152 | 435 | 80755 | 50.7 | 17.6399 | 1.6 | 0.5979 | 2.7 | 0.0765 | 2.2 | 0.81 | 475.2 | 9.9 | 475.9 | 10.2 | 479.5 | 35.1 | 475.2 | 9.9 | 99.1 |
| H14-011_Run2-Spot 153 | 204 | 54906 | 6.2 | 17.4252 | 1.7 | 0.6442 | 2.6 | 0.0814 | 1.9 | 0.76 | 504.5 | 9.4 | 504.9 | 10.2 | 506.5 | 37.0 | 504.5 | 9.4 | 99.6 |
| H14-011_Run2-Spot 154 | 397 | 122229 | 4.8 | 12.6349 | 1.1 | 1.8123 | 2.2 | 0.1661 | 1.9 | 0.88 | 990.4 | 17.9 | 1049.9 | 14.5 | 1175.8 | 21.1 | 1175.8 | 21.1 | 84.2 |
| H14-011_Run2-Spot 156 | 332 | 177674 | 16.6 | 17.2937 | 1.6 | 0.6469 | 2.2 | 0.0811 | 1.4 | 0.66 | 502.9 | 6.9 | 506.6 | 8.6 | 523.1 | 35.5 | 502.9 | 6.9 | 96.1 |
| H14-011_Run2-Spot 157 | 686 | 50472 | 21.4 | 15.4207 | 1.0 | 0.9301 | 2.1 | 0.1040 | 1.9 | 0.88 | 638.0 | 11.4 | 667.7 | 10.5 | 769.4 | 21.6 | 638.0 | 11.4 | 82.9 |
| H14-011_Run2-Spot 158 | 124 | 63989 | 2.5 | 10.0974 | 1.0 | 2.7537 | 3.5 | 0.2017 | 3.4 | 0.96 | 1184.3 | 36.5 | 1343.1 | 26.2 | 1606.0 | 18.0 | 1606.0 | 18.0 | 73.7 |
| H14-011_Run2-Spot 159 | 1660 | 78752 | 28.2 | 15.4510 | 1.2 | 0.8589 | 2.0 | 0.0962 | 1.6 | 0.81 | 592.4 | 9.1 | 629.5 | 9.4 | 765.3 | 24.8 | 592.4 | 9.1 | 77.4 |
| H14-011_Run2-Spot 160 | 461 | 75378 | 2.7 | 9.6103 | 1.3 | 3.6436 | 2.2 | 0.2540 | 1.8 | 0.81 | 1458.9 | 23.0 | 1559.1 | 17.3 | 1697.7 | 23.4 | 1697.7 | 23.4 | 85.9 |
| H14-011_Run2-Spot 161 | 334 | 124587 | 21.4 | 16.8182 | 1.8 | 0.6781 | 3.0 | 0.0827 | 2.4 | 0.80 | 512.3 | 11.9 | 525.6 | 12.4 | 583.9 | 39.5 | 512.3 | 11.9 | 87.7 |
| H14-011_Run2-Spot 162 | 29 | 38861 | 1.1 | 12.6116 | 3.2 | 1.8692 | 4.2 | 0.1710 | 2.7 | 0.65 | 1017.5 | 25.3 | 1070.2 | 27.6 | 1179.4 | 63.0 | 1179.4 | 63.0 | 86.3 |
| H14-011_Run2-Spot 163 | 559 | 127859 | 6.1 | 9.6637 | 1.1 | 3.0746 | 2.7 | 0.2155 | 2.5 | 0.92 | 1258.0 | 28.8 | 1426.4 | 21.0 | 1687.4 | 19.8 | 1687.4 | 19.8 | 74.6 |
| H14-011_Run2-Spot 164 | 279 | 91957 | 14.9 | 16.3452 | 2.0 | 0.7784 | 2.6 | 0.0923 | 1.7 | 0.65 | 569.0 | 9.2 | 584.6 | 11.6 | 645.6 | 42.7 | 569.0 | 9.2 | 88.1 |
| H14-011_Run2-Spot 165 | 61 | 36652 | 4.1 | 12.5239 | 1.8 | 2.2805 | 2.9 | 0.2071 | 2.3 | 0.78 | 1213.6 | 25.2 | 1206.3 | 20.6 | 1193.2 | 36.1 | 1193.2 | 36.1 | 101.7 |
| H14-011_Run2-Spot 166 | 306 | 71930 | 6.8 | 14.5807 | 1.7 | 1.2584 | 2.6 | 0.1331 | 2.0 | 0.75 | 805.4 | 14.8 | 827.2 | 14.8 | 886.3 | 35.7 | 805.4 | 14.8 | 90.9 |
| H14-011_Run2-Spot 167 | 323 | 34885 | 9.6 | 16.1992 | 1.6 | 0.7770 | 2.2 | 0.0913 | 1.6 | 0.71 | 563.2 | 8.5 | 583.8 | 9.9 | 664.8 | 33.7 | 563.2 | 8.5 | 84.7 |
| H14-011_Run2-Spot 168 | 474 | 95672 | 4.7 | 12.8253 | 1.7 | 1.6012 | 3.0 | 0.1489 | 2.4 | 0.82 | 895.0 | 20.2 | 970.7 | 18.5 | 1146.2 | 34.0 | 1146.2 | 34.0 | 78.1 |
| H14-011_Run2-Spot 169 | 146 | 34444 | 10.6 | 13.5374 | 2.1 | 1.0292 | 2.9 | 0.1010 | 2.0 | 0.69 | 620.5 | 11.8 | 718.5 | 14.9 | 1037.9 | 42.3 | 620.5 | 11.8 | 59.8 |
| H14-011_Run2-Spot 170 | 181 | 207915 | 6.6 | 14.0817 | 1.9 | 1.2808 | 2.8 | 0.1308 | 2.1 | 0.73 | 792.4 | 15.4 | 837.2 | 16.2 | 957.8 | 39.7 | 792.4 | 15.4 | 82.7 |
| H14-011_Run2-Spot 171 | 425 | 200303 | 8.1 | 12.6850 | 1.3 | 1.6576 | 3.5 | 0.1525 | 3.2 | 0.92 | 914.9 | 27.6 | 992.4 | 22.2 | 1167.9 | 26.6 | 1167.9 | 26.6 | 78.3 |
| H14-011_Run2-Spot 172 | 187 | 234567 | 3.3 | 13.2475 | 1.9 | 1.6304 | 3.3 | 0.1566 | 2.7 | 0.82 | 938.1 | 23.7 | 982.0 | 20.9 | 1081.5 | 38.1 | 1081.5 | 38.1 | 86.7 |
| H14-011_Run2-Spot 173 | 528 | 192637 | 72.2 | 17.6392 | 1.2 | 0.5883 | 2.1 | 0.0753 | 1.7 | 0.81 | 467.8 | 7.7 | 469.8 | 7.9 | 479.6 | 27.1 | 467.8 | 7.7 | 97.5 |
| H14-011_Run2-Spot 174 | 469 | 88186 | 14.0 | 17.4345 | 1.5 | 0.5835 | 2.4 | 0.0738 | 1.8 | 0.76 | 458.9 | 7.9 | 466.7 | 8.8 | 505.3 | 33.8 | 458.9 | 7.9 | 90.8 |
| H14-011_Run2-Spot 175 | 360 | 179357 | 76.1 | 17.7847 | 1.6 | 0.5895 | 2.2 | 0.0760 | 1.4 | 0.65 | 472.4 | 6.4 | 470.5 | 8.1 | 461.4 | 36.4 | 472.4 | 6.4 | 102.4 |
| H14-011_Run2-Spot 176 | 406 | 104605 | 8.1 | 13.5070 | 1.3 | 1.6711 | 2.1 | 0.1637 | 1.7 | 0.80 | 977.3 | 15.3 | 997.6 | 13.4 | 1042.4 | 25.5 | 1042.4 | 25.5 | 93.8 |
| H14-011_Run2-Spot 177 | 159 | 43839 | 8.3 | 15.9235 | 2.7 | 0.7492 | 4.8 | 0.0865 | 3.9 | 0.82 | 534.9 | 20.2 | 567.8 | 20.8 | 701.5 | 57.6 | 534.9 | 20.2 | 76.3 |
| H14-011_Run2-Spot 178 | 179 | 100360 | 3.6 | 13.9871 | 1.6 | 1.4271 | 2.0 | 0.1448 | 1.2 | 0.62 | 871.6 | 10.1 | 900.3 | 11.9 | 971.6 | 31.7 | 971.6 | 31.7 | 89.7 |
| H14-011_Run2-Spot 179 | 483 | 144964 | 3.1 | 12.5463 | 1.5 | 1.9565 | 2.2 | 0.1780 | 1.6 | 0.75 | 1056.2 | 16.0 | 1100.7 | 14.8 | 1189.7 | 28.7 | 1189.7 | 28.7 | 88.8 |
| H14-011_Run2-Spot 180 | 624 | 276289 | 1.4 | 9.4960 | 1.0 | 4.1341 | 1.6 | 0.2847 | 1.3 | 0.80 | 1615.1 | 18.0 | 1661.1 | 12.9 | 1719.7 | 17.6 | 1719.7 | 17.6 | 93.9 |
| H14-011_Run2-Spot 181 | 308 | 176136 | 12.9 | 17.9240 | 2.0 | 0.5601 | 2.7 | 0.0728 | 1.7 | 0.65 | 453.0 | 7.6 | 451.6 | 9.7 | 444.0 | 44.9 | 453.0 | 7.6 | 102.0 |
| H14-011_Run2-Spot 182 | 305 | 120900 | 6.5 | 13.8662 | 2.0 | 1.2734 | 3.3 | 0.1281 | 2.5 | 0.78 | 776.8 | 18.5 | 833.9 | 18.5 | 989.2 | 41.7 | 776.8 | 18.5 | 78.5 |
| H14-011_Run2-Spot 183 | 138 | 49115 | 5.8 | 10.9808 | 1.6 | 3.1023 | 2.3 | 0.2471 | 1.6 | 0.71 | 1423.3 | 20.3 | 1433.3 | 17.3 | 1448.0 | 30.4 | 1448.0 | 30.4 | 98.3 |
| H14-011_Run2-Spot 184 | 329 | 97612 | 20.0 | 17.4906 | 2.1 | 0.5878 | 2.7 | 0.0746 | 1.7 | 0.62 | 463.6 | 7.4 | 469.4 | 10.2 | 498.2 | 47.0 | 463.6 | 7.4 | 93.0 |
| H14-011_Run2-Spot 185 | 113 | 57903 | 3.4 | 13.5632 | 1.1 | 1.6966 | 2.2 | 0.1669 | 1.9 | 0.86 | 995.0 | 17.6 | 1007.3 | 14.1 | 1034.0 | 22.4 | 1034.0 | 22.4 | 96.2 |
| H14-011_Run2-Spot 186 | 308 | 219462 | 8.1 | 12.8411 | 1.2 | 1.9379 | 1.6 | 0.1805 | 1.1 | 0.65 | 1069.6 | 10.5 | 1094.3 | 11.0 | 1143.7 | 24.6 | 1143.7 | 24.6 | 93.5 |
| H14-011_Run2-Spot 187 | 185 | 56940 | 1.2 | 12.6639 | 1.7 | 2.1835 | 2.4 | 0.2006 | 1.7 | 0.70 | 1178.3 | 18.1 | 1175.8 | 16.8 | 1171.3 | 34.3 | 1171.3 | 34.3 | 100.6 |
| H14-011_Run2-Spot 188 | 337 | 109670 | 3.5 | 12.8044 | 1.3 | 2.0220 | 2.2 | 0.1878 | 1.8 | 0.82 | 1109.3 | 18.5 | 1122.9 | 15.0 | 1149.4 | 25.2 | 1149.4 | 25.2 | 96.5 |
| H14-011_Run2-Spot 189 | 508 | 59658 | 9.2 | 12.4700 | 1.9 | 1.6505 | 2.6 | 0.1493 | 1.8 | 0.69 | 896.9 | 15.1 | 989.8 | 16.6 | 1201.7 | 37.5 | 1201.7 | 37.5 | 74.6 |
| H14-011_Run2-Spot 190 | 282 | 92027 | 1.6 | 12.5403 | 1.1 | 2.2602 | 1.8 | 0.2056 | 1.4 | 0.78 | 1205.2 | 15.5 | 1200.0 | 12.7 | 1190.6 | 22.2 | 1190.6 | 22.2 | 101.2 |
| H14-011_Run2-Spot 191 | 336 | 59591 | 13.4 | 17.9865 | 1.8 | 0.5609 | 2.8 | 0.0732 | 2.2 | 0.76 | 455.2 | 9.5 | 452.1 | 10.3 | 436.3 | 40.4 | 455.2 | 9.5 | 104.3 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run2-Spot 192 | 114 | 37985 | 6.3 | 14.2209 | 2.2 | 1.0812 | 2.7 | 0.1115 | 1.6 | 0.61 | 681.5 | 10.6 | 744.2 | 14.3 | 937.7 | 44.1 | 681.5 | 10.6 | 72.7 |
| H14-011_Run2-Spot 193 | 46 | 23528 | 3.4 | 12.4237 | 3.0 | 2.0769 | 3.7 | 0.1871 | 2.2 | 0.59 | 1105.9 | 22.2 | 1141.2 | 25.4 | 1209.1 | 59.1 | 1209.1 | 59.1 | 91.5 |
| H14-011_Run2-Spot 194 | 83 | 137056 | 2.9 | 13.6884 | 1.9 | 1.7743 | 2.5 | 0.1762 | 1.7 | 0.68 | 1045.9 | 16.6 | 1036.1 | 16.5 | 1015.5 | 37.9 | 1015.5 | 37.9 | 103.0 |
| H14-011_Run2-Spot 195 | 340 | 76741 | 24.5 | 16.9975 | 2.5 | 0.6686 | 3.3 | 0.0824 | 2.2 | 0.67 | 510.6 | 11.0 | 519.9 | 13.6 | 560.9 | 54.0 | 510.6 | 11.0 | 91.0 |
| H14-011_Run2-Spot 196 | 142 | 164925 | 7.0 | 13.1391 | 1.4 | 1.7293 | 2.3 | 0.1648 | 1.8 | 0.80 | 983.3 | 16.6 | 1019.5 | 14.7 | 1097.9 | 27.4 | 1097.9 | 27.4 | 89.6 |
| H14-011_Run2-Spot 197 | 360 | 105221 | 32.3 | 14.9644 | 2.0 | 0.8373 | 3.7 | 0.0909 | 3.1 | 0.84 | 560.7 | 16.8 | 617.7 | 17.2 | 832.4 | 41.6 | 560.7 | 16.8 | 67.4 |
| H14-011_Run2-Spot 198 | 148 | 272916 | 1.9 | 12.5797 | 1.5 | 1.7993 | 2.3 | 0.1642 | 1.8 | 0.77 | 979.9 | 16.4 | 1045.2 | 15.3 | 1184.5 | 29.7 | 1184.5 | 29.7 | 82.7 |
| H14-011_Run2-Spot 199 | 435 | 112205 | 25.4 | 17.7465 | 1.7 | 0.5732 | 2.5 | 0.0738 | 1.9 | 0.73 | 458.8 | 8.2 | 460.1 | 9.4 | 466.2 | 38.3 | 458.8 | 8.2 | 98.4 |
| H14-011_Run2-Spot 200 | 386 | 90924 | 3.1 | 14.9504 | 1.3 | 1.2703 | 1.8 | 0.1377 | 1.3 | 0.71 | 831.9 | 10.0 | 832.5 | 10.2 | 834.3 | 26.5 | 831.9 | 10.0 | 99.7 |
| H14-011_Run2-Spot 201 | 282 | 147332 | 4.8 | 10.5051 | 1.4 | 3.0081 | 2.0 | 0.2292 | 1.5 | 0.74 | 1330.2 | 17.9 | 1409.7 | 15.4 | 1531.9 | 25.8 | 1531.9 | 25.8 | 86.8 |
| H14-011_Run2-Spot 202 | 322 | 38985 | 13.4 | 17.5542 | 1.9 | 0.6005 | 2.4 | 0.0765 | 1.5 | 0.62 | 474.9 | 6.8 | 477.6 | 9.2 | 490.3 | 41.9 | 474.9 | 6.8 | 96.9 |
| H14-011_Run2-Spot 203 | 86 | 15874 | 3.2 | 15.8890 | 2.5 | 0.8659 | 3.1 | 0.0998 | 1.8 | 0.57 | 613.1 | 10.2 | 633.3 | 14.5 | 706.1 | 53.8 | 613.1 | 10.2 | 86.8 |
| H14-011_Run2-Spot 204 | 513 | 57718 | 20.1 | 15.0017 | 1.5 | 0.9936 | 2.6 | 0.1081 | 2.1 | 0.82 | 661.7 | 13.3 | 700.6 | 13.0 | 827.1 | 30.7 | 661.7 | 13.3 | 80.0 |
| H14-011_Run2-Spot 205 | 389 | 73265 | 62.1 | 17.7299 | 1.5 | 0.5745 | 2.7 | 0.0739 | 2.2 | 0.82 | 459.5 | 9.6 | 460.9 | 9.8 | 468.2 | 33.7 | 459.5 | 9.6 | 98.1 |
| H14-011_Run2-Spot 206 | 94 | 54962 | 2.2 | 12.3331 | 1.7 | 2.2121 | 3.1 | 0.1979 | 2.6 | 0.85 | 1163.8 | 28.2 | 1184.9 | 21.9 | 1223.4 | 32.8 | 1223.4 | 32.8 | 95.1 |
| H14-011_Run2-Spot 207 | 596 | 158661 | 9.5 | 14.1743 | 1.0 | 1.3586 | 1.8 | 0.1397 | 1.5 | 0.82 | 842.8 | 11.7 | 871.3 | 10.6 | 944.4 | 21.4 | 842.8 | 11.7 | 89.2 |
| H14-011_Run2-Spot 208 | 250 | 132132 | 3.7 | 12.4347 | 1.7 | 1.8220 | 3.0 | 0.1643 | 2.4 | 0.82 | 980.7 | 22.2 | 1053.4 | 19.7 | 1207.3 | 34.2 | 1207.3 | 34.2 | 81.2 |
| H14-011_Run2-Spot 209 | 33 | 15115 | 1.2 | 12.7041 | 3.8 | 1.7964 | 4.2 | 0.1655 | 1.7 | 0.41 | 987.4 | 15.8 | 1044.2 | 27.3 | 1164.9 | 75.6 | 1164.9 | 75.6 | 84.8 |
| H14-011_Run2-Spot 210 | 220 | 37934 | 2.5 | 13.1874 | 1.6 | 1.6444 | 3.0 | 0.1573 | 2.5 | 0.83 | 941.6 | 21.7 | 987.4 | 18.7 | 1090.6 | 32.8 | 1090.6 | 32.8 | 86.3 |
| H14-011_Run2-Spot 211 | 371 | 234810 | 1.9 | 9.8144 | 1.1 | 3.7919 | 2.1 | 0.2699 | 1.8 | 0.84 | 1540.3 | 24.1 | 1591.0 | 16.8 | 1658.8 | 20.9 | 1658.8 | 20.9 | 92.9 |
| H14-011_Run2-Spot 212 | 423 | 226588 | 62.3 | 17.4426 | 1.8 | 0.5848 | 3.5 | 0.0740 | 3.0 | 0.86 | 460.1 | 13.3 | 467.5 | 13.0 | 504.3 | 38.9 | 460.1 | 13.3 | 91.2 |
| H14-011_Run2-Spot 213 | 369 | 71605 | 43.3 | 17.8402 | 1.8 | 0.5808 | 3.8 | 0.0751 | 3.3 | 0.88 | 467.1 | 15.1 | 465.0 | 14.2 | 454.5 | 41.0 | 467.1 | 15.1 | 102.8 |
| H14-011_Run2-Spot 214 | 247 | 28040 | 57.3 | 17.3445 | 2.3 | 0.5901 | 2.7 | 0.0742 | 1.4 | 0.51 | 461.6 | 6.3 | 470.9 | 10.3 | 516.7 | 51.6 | 461.6 | 6.3 | 89.3 |
| H14-011_Run2-Spot 215 | 349 | 35947 | 2.0 | 15.6745 | 1.2 | 1.0549 | 2.2 | 0.1199 | 1.9 | 0.84 | 730.1 | 13.0 | 731.3 | 11.7 | 735.0 | 26.2 | 730.1 | 13.0 | 99.3 |
| H14-011_Run2-Spot 216 | 32 | 17017 | 1.6 | 12.6437 | 2.1 | 1.9541 | 3.0 | 0.1792 | 2.1 | 0.71 | 1062.6 | 20.6 | 1099.9 | 20.0 | 1174.4 | 41.8 | 1174.4 | 41.8 | 90.5 |
| H14-011_Run2-Spot 217 | 285 | 210381 | 4.9 | 12.6314 | 1.4 | 1.7873 | 2.2 | 0.1637 | 1.7 | 0.79 | 977.5 | 15.8 | 1040.8 | 14.4 | 1176.4 | 27.1 | 1176.4 | 27.1 | 83.1 |
| H14-011_Run2-Spot 218 | 170 | 128403 | 2.3 | 13.5508 | 1.6 | 1.8035 | 2.1 | 0.1772 | 1.4 | 0.67 | 1051.9 | 13.6 | 1046.7 | 13.6 | 1035.9 | 31.4 | 1035.9 | 31.4 | 101.5 |
| H14-011_Run2-Spot 219 | 441 | 232296 | 2.0 | 9.9081 | 1.1 | 3.3420 | 1.9 | 0.2402 | 1.5 | 0.82 | 1387.5 | 19.2 | 1490.9 | 14.7 | 1641.2 | 20.2 | 1641.2 | 20.2 | 84.5 |
| H14-011_Run2-Spot 220 | 253 | 80722 | 3.2 | 13.4208 | 1.7 | 1.6970 | 2.1 | 0.1652 | 1.2 | 0.59 | 985.5 | 11.3 | 1007.4 | 13.3 | 1055.4 | 33.8 | 1055.4 | 33.8 | 93.4 |
| H14-011_Run3-Spot 221 | 325 | 29028 | 6.9 | 17.3832 | 1.5 | 0.6217 | 2.0 | 0.0784 | 1.3 | 0.67 | 486.5 | 6.3 | 490.9 | 7.7 | 511.8 | 32.4 | 486.5 | 6.3 | 95.1 |
| H14-011_Run3-Spot 224 | 822 | 186134 | 44.7 | 17.7583 | 1.4 | 0.5770 | 2.5 | 0.0743 | 2.1 | 0.84 | 462.1 | 9.4 | 462.5 | 9.4 | 464.7 | 30.8 | 462.1 | 9.4 | 99.4 |
| H14-011_Run3-Spot 225 | 128 | 42189 | 1.5 | 12.8152 | 1.7 | 1.9030 | 4.2 | 0.1769 | 3.9 | 0.92 | 1049.9 | 37.5 | 1082.1 | 28.1 | 1147.7 | 33.6 | 1147.7 | 33.6 | 91.5 |
| H14-011_Run3-Spot 226 | 1189 | 106559 | 8.3 | 13.6903 | 1.1 | 1.4402 | 3.0 | 0.1430 | 2.8 | 0.92 | 861.6 | 22.5 | 905.8 | 18.1 | 1015.2 | 23.2 | 1015.2 | 23.2 | 84.9 |
| H14-011_Run3-Spot 227 | 172 | 154643 | 2.5 | 13.4568 | 1.3 | 1.7597 | 1.8 | 0.1717 | 1.2 | 0.70 | 1021.7 | 11.8 | 1030.7 | 11.6 | 1050.0 | 25.8 | 1050.0 | 25.8 | 97.3 |
| H14-011_Run3-Spot 228 | 578 | 71544 | 8.4 | 14.8396 | 1.0 | 1.1927 | 2.1 | 0.1284 | 1.9 | 0.89 | 778.6 | 13.9 | 797.2 | 11.7 | 849.8 | 20.1 | 778.6 | 13.9 | 91.6 |
| H14-011_Run3-Spot 229 | 95 | 90761 | 2.8 | 12.4430 | 1.5 | 2.2145 | 3.5 | 0.1998 | 3.1 | 0.90 | 1174.5 | 33.8 | 1185.6 | 24.4 | 1206.0 | 29.6 | 1206.0 | 29.6 | 97.4 |
| H14-011_Run3-Spot 230 | 1536 | 2448467 | 30.5 | 17.9063 | 1.1 | 0.5638 | 2.4 | 0.0732 | 2.1 | 0.89 | 455.5 | 9.3 | 454.0 | 8.7 | 446.2 | 24.0 | 455.5 | 9.3 | 102.1 |
| H14-011_Run3-Spot 231 | 476 | 61840 | 2.0 | 13.1213 | 1.2 | 1.8498 | 3.6 | 0.1760 | 3.4 | 0.94 | 1045.3 | 33.1 | 1063.3 | 24.0 | 1100.6 | 24.2 | 1100.6 | 24.2 | 95.0 |
| H14-011_Run3-Spot 232 | 128 | 69574 | 0.9 | 14.0849 | 2.5 | 1.6334 | 2.9 | 0.1669 | 1.5 | 0.51 | 994.7 | 13.6 | 983.2 | 18.1 | 957.3 | 50.4 | 957.3 | 50.4 | 103.9 |
| H14-011_Run3-Spot 233 | 82 | 257030 | 2.3 | 11.2569 | 1.7 | 2.7874 | 2.5 | 0.2276 | 1.9 | 0.73 | 1321.8 | 22.2 | 1352.2 | 19.0 | 1400.6 | 33.3 | 1400.6 | 33.3 | 94.4 |
| H14-011_Run3-Spot 234 | 559 | 605109 | 3.4 | 11.8932 | 0.8 | 2.6311 | 1.6 | 0.2269 | 1.4 | 0.87 | 1318.5 | 16.5 | 1309.4 | 11.6 | 1294.4 | 15.0 | 1294.4 | 15.0 | 101.9 |
| H14-011_Run3-Spot 235 | 421 | 80082 | 3.8 | 14.0804 | 1.8 | 1.5039 | 2.5 | 0.1536 | 1.8 | 0.70 | 921.0 | 15.1 | 932.0 | 15.2 | 958.0 | 36.1 | 958.0 | 36.1 | 96.1 |
| H14-011_Run3-Spot 236 | 522 | 97833 | 2.2 | 12.5446 | 1.0 | 2.1205 | 1.6 | 0.1929 | 1.3 | 0.78 | 1137.2 | 13.4 | 1155.5 | 11.4 | 1190.0 | 20.3 | 1190.0 | 20.3 | 95.6 |
| H14-011_Run3-Spot 237 | 217 | 66200 | 4.5 | 11.6896 | 1.6 | 2.4399 | 2.3 | 0.2069 | 1.6 | 0.72 | 1212.1 | 18.1 | 1254.5 | 16.4 | 1327.9 | 30.5 | 1327.9 | 30.5 | 91.3 |
| H14-011_Run3-Spot 238 | 136 | 25742 | 1.3 | 13.8520 | 1.9 | 1.4653 | 2.7 | 0.1472 | 1.9 | 0.69 | 885.3 | 15.5 | 916.2 | 16.3 | 991.3 | 39.4 | 991.3 | 39.4 | 89.3 |
| H14-011_Run3-Spot 239 | 71 | 55368 | 3.2 | 14.1570 | 3.1 | 1.5628 | 3.9 | 0.1605 | 2.4 | 0.62 | 959.3 | 21.5 | 955.6 | 24.1 | 946.9 | 62.5 | 946.9 | 62.5 | 101.3 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run3-Spot 240 | 302 | 120977 | 2.6 | 12.1454 | 0.8 | 2.4180 | 1.9 | 0.2130 | 1.7 | 0.90 | 1244.8 | 19.6 | 1248.0 | 13.8 | 1253.5 | 16.0 | 1253.5 | 16.0 | 99.3 |
| H14-011_Run3-Spot 241 | 378 | 118855 | 1.4 | 12.5107 | 1.1 | 2.2019 | 2.3 | 0.1998 | 2.0 | 0.87 | 1174.2 | 21.4 | 1181.6 | 16.0 | 1195.3 | 22.3 | 1195.3 | 22.3 | 98.2 |
| H14-011_Run3-Spot 242 | 895 | 58064 | 1.6 | 12.7184 | 0.9 | 2.2534 | 1.8 | 0.2079 | 1.5 | 0.85 | 1217.4 | 17.0 | 1197.9 | 12.7 | 1162.7 | 18.7 | 1162.7 | 18.7 | 104.7 |
| H14-011_Run3-Spot 243 | 69 | 22958 | 2.8 | 13.7754 | 2.6 | 1.6890 | 4.1 | 0.1687 | 3.2 | 0.77 | 1005.2 | 29.6 | 1004.4 | 26.2 | 1002.6 | 53.1 | 1002.6 | 53.1 | 100.3 |
| H14-011_Run3-Spot 244 | 615 | 94112 | 4.1 | 13.2731 | 1.5 | 1.8843 | 2.1 | 0.1814 | 1.5 | 0.72 | 1074.6 | 15.3 | 1075.6 | 14.2 | 1077.6 | 29.7 | 1077.6 | 29.7 | 99.7 |
| H14-011_Run3-Spot 245 | 602 | 132266 | 5.1 | 17.9055 | 1.4 | 0.5637 | 1.9 | 0.0732 | 1.2 | 0.65 | 455.4 | 5.4 | 453.9 | 6.9 | 446.3 | 31.9 | 455.4 | 5.4 | 102.0 |
| H14-011_Run3-Spot 246 | 627 | 78855 | 12.0 | 17.8334 | 1.7 | 0.5850 | 2.4 | 0.0757 | 1.7 | 0.71 | 470.2 | 7.8 | 467.7 | 9.0 | 455.3 | 37.4 | 470.2 | 7.8 | 103.3 |
| H14-011_Run3-Spot 247 | 1280 | 316457 | 2.9 | 12.8296 | 0.9 | 2.0353 | 1.9 | 0.1894 | 1.7 | 0.89 | 1118.0 | 17.4 | 1127.4 | 12.9 | 1145.5 | 17.0 | 1145.5 | 17.0 | 97.6 |
| H14-011_Run3-Spot 248 | 172 | 101689 | 1.2 | 13.8146 | 1.8 | 1.5463 | 2.4 | 0.1549 | 1.6 | 0.67 | 928.5 | 13.9 | 949.0 | 14.9 | 996.8 | 36.7 | 996.8 | 36.7 | 93.1 |
| H14-011_Run3-Spot 249 | 1055 | 57480 | 92.3 | 17.5578 | 1.6 | 0.5827 | 2.6 | 0.0742 | 2.0 | 0.77 | 461.4 | 8.8 | 466.2 | 9.6 | 489.8 | 36.4 | 461.4 | 8.8 | 94.2 |
| H14-011_Run3-Spot 250 | 176 | 35111 | 7.1 | 13.1732 | 1.6 | 1.6548 | 2.4 | 0.1581 | 1.7 | 0.74 | 946.2 | 15.3 | 991.4 | 14.9 | 1092.7 | 31.8 | 1092.7 | 31.8 | 86.6 |
| H14-011_Run3-Spot 251 | 46 | 18328 | 1.3 | 12.7775 | 2.7 | 2.0588 | 3.2 | 0.1908 | 1.6 | 0.52 | 1125.7 | 16.9 | 1135.2 | 21.6 | 1153.5 | 53.5 | 1153.5 | 53.5 | 97.6 |
| H14-011_Run3-Spot 252 | 142 | 161444 | 1.8 | 13.7220 | 2.5 | 1.5154 | 3.3 | 0.1508 | 2.2 | 0.67 | 905.5 | 19.0 | 936.6 | 20.4 | 1010.5 | 50.0 | 1010.5 | 50.0 | 89.6 |
| H14-011_Run3-Spot 253 | 304 | 50721 | 1.8 | 14.2221 | 1.3 | 1.3229 | 2.6 | 0.1365 | 2.3 | 0.87 | 824.6 | 17.5 | 855.8 | 15.0 | 937.5 | 25.9 | 824.6 | 17.5 | 88.0 |
| H14-011_Run3-Spot 254 | 666 | 139663 | 33.1 | 17.5958 | 1.3 | 0.6097 | 2.5 | 0.0778 | 2.1 | 0.85 | 483.0 | 9.7 | 483.4 | 9.5 | 485.0 | 28.9 | 483.0 | 9.7 | 99.6 |
| H14-011_Run3-Spot 255 | 700 | 68294 | 29.7 | 17.3079 | 2.0 | 0.6161 | 2.5 | 0.0773 | 1.4 | 0.58 | 480.2 | 6.7 | 487.4 | 9.7 | 521.3 | 44.6 | 480.2 | 6.7 | 92.1 |
| H14-011_Run3-Spot 256 | 1021 | 125160 | 11.5 | 14.5384 | 1.3 | 1.1251 | 2.1 | 0.1186 | 1.7 | 0.80 | 722.7 | 11.4 | 765.4 | 11.2 | 892.2 | 26.0 | 722.7 | 11.4 | 81.0 |
| H14-011_Run3-Spot 257 | 592 | 158432 | 4.3 | 13.2454 | 2.1 | 1.4627 | 2.9 | 0.1405 | 2.0 | 0.70 | 847.6 | 16.2 | 915.1 | 17.5 | 1081.8 | 41.4 | 1081.8 | 41.4 | 78.3 |
| H14-011_Run3-Spot 258 | 785 | 80606 | 7.0 | 14.0698 | 1.6 | 1.3657 | 3.2 | 0.1394 | 2.7 | 0.86 | 841.0 | 21.6 | 874.3 | 18.5 | 959.5 | 32.5 | 959.5 | 32.5 | 87.7 |
| H14-011_Run3-Spot 259 | 436 | 201198 | 2.0 | 12.7830 | 1.5 | 1.9121 | 2.7 | 0.1773 | 2.2 | 0.83 | 1052.1 | 21.5 | 1085.3 | 17.8 | 1152.7 | 29.6 | 1152.7 | 29.6 | 91.3 |
| H14-011_Run3-Spot 260 | 608 | 120522 | 19.4 | 17.6683 | 1.4 | 0.5935 | 2.3 | 0.0761 | 1.7 | 0.77 | 472.5 | 7.9 | 473.1 | 8.5 | 475.9 | 31.7 | 472.5 | 7.9 | 99.3 |
| H14-011_Run3-Spot 261 | 2315 | 71659 | 32.3 | 14.2956 | 1.0 | 1.2590 | 2.0 | 0.1305 | 1.7 | 0.86 | 790.9 | 12.6 | 827.5 | 11.2 | 926.9 | 20.9 | 790.9 | 12.6 | 85.3 |
| H14-011_Run3-Spot 262 | 174 | 28757 | 1.8 | 12.3150 | 1.9 | 2.2625 | 2.7 | 0.2021 | 2.0 | 0.73 | 1186.5 | 21.8 | 1200.7 | 19.4 | 1226.3 | 36.8 | 1226.3 | 36.8 | 96.8 |
| H14-011_Run3-Spot 263 | 895 | 320413 | 12.3 | 13.7971 | 1.3 | 1.2507 | 3.2 | 0.1252 | 3.0 | 0.92 | 760.1 | 21.2 | 823.7 | 18.3 | 999.4 | 26.4 | 760.1 | 21.2 | 76.1 |
| H14-011_Run3-Spot 264 | 487 | 122183 | 8.2 | 15.5187 | 1.2 | 0.8595 | 2.8 | 0.0967 | 2.6 | 0.91 | 595.3 | 14.6 | 629.9 | 13.3 | 756.0 | 25.4 | 595.3 | 14.6 | 78.7 |
| H14-011_Run3-Spot 265 | 480 | 806076 | 1.5 | 12.8461 | 1.1 | 1.9321 | 1.8 | 0.1800 | 1.4 | 0.77 | 1067.0 | 13.3 | 1092.2 | 11.7 | 1142.9 | 22.1 | 1142.9 | 22.1 | 93.4 |
| H14-011_Run3-Spot 266 | 596 | 230619 | 25.5 | 17.6777 | 1.6 | 0.5989 | 2.7 | 0.0768 | 2.1 | 0.78 | 476.9 | 9.6 | 476.5 | 10.1 | 474.7 | 36.5 | 476.9 | 9.6 | 100.5 |
| H14-011_Run3-Spot 268 | 736 | 68348 | 48.3 | 17.4610 | 1.6 | 0.5868 | 2.6 | 0.0743 | 2.0 | 0.79 | 462.1 | 9.0 | 468.8 | 9.6 | 502.0 | 34.6 | 462.1 | 9.0 | 92.1 |
| H14-011_Run3-Spot 269 | 560 | 166549 | 3.7 | 13.6819 | 1.3 | 1.5480 | 2.1 | 0.1536 | 1.6 | 0.77 | 921.1 | 13.9 | 949.7 | 12.9 | 1016.4 | 26.9 | 1016.4 | 26.9 | 90.6 |
| H14-011_Run3-Spot 270 | 98 | 23788 | 3.5 | 13.1280 | 2.0 | 1.6337 | 2.9 | 0.1556 | 2.1 | 0.73 | 932.0 | 18.3 | 983.3 | 18.2 | 1099.6 | 39.7 | 1099.6 | 39.7 | 84.8 |
| H14-011_Run3-Spot 271 | 539 | 133255 | 29.6 | 17.4634 | 1.3 | 0.5905 | 2.0 | 0.0748 | 1.6 | 0.78 | 465.0 | 7.1 | 471.2 | 7.6 | 501.7 | 27.8 | 465.0 | 7.1 | 92.7 |
| H14-011_Run3-Spot 272 | 141 | 68914 | 1.1 | 13.1213 | 1.6 | 1.7441 | 2.3 | 0.1660 | 1.6 | 0.71 | 989.9 | 15.1 | 1025.0 | 15.0 | 1100.6 | 32.9 | 1100.6 | 32.9 | 89.9 |
| H14-011_Run3-Spot 273 | 93 | 108960 | 1.2 | 12.6262 | 2.1 | 2.1640 | 3.4 | 0.1982 | 2.6 | 0.78 | 1165.5 | 27.9 | 1169.6 | 23.4 | 1177.2 | 42.0 | 1177.2 | 42.0 | 99.0 |
| H14-011_Run3-Spot 274 | 601 | 47047 | 36.1 | 17.8302 | 2.0 | 0.5736 | 2.8 | 0.0742 | 2.1 | 0.72 | 461.3 | 9.2 | 460.4 | 10.5 | 455.7 | 43.7 | 461.3 | 9.2 | 101.2 |
| H14-011_Run3-Spot 275 | 455 | 151627 | 35.5 | 17.6488 | 1.3 | 0.5872 | 2.5 | 0.0752 | 2.2 | 0.86 | 467.2 | 9.8 | 469.1 | 9.5 | 478.3 | 28.7 | 467.2 | 9.8 | 97.7 |
| H14-011_Run3-Spot 276 | 199 | 69907 | 3.0 | 11.1631 | 2.3 | 2.3819 | 3.0 | 0.1928 | 1.9 | 0.62 | 1136.8 | 19.4 | 1237.2 | 21.3 | 1416.6 | 44.5 | 1416.6 | 44.5 | 80.2 |
| H14-011_Run3-Spot 277 | 626 | 247960 | 26.5 | 14.9555 | 1.3 | 0.9521 | 2.5 | 0.1033 | 2.1 | 0.85 | 633.6 | 12.7 | 679.2 | 12.4 | 833.6 | 27.7 | 633.6 | 12.7 | 76.0 |
| H14-011_Run3-Spot 278 | 204 | 48649 | 1.3 | 13.3558 | 1.8 | 1.6757 | 3.0 | 0.1623 | 2.4 | 0.80 | 969.7 | 21.7 | 999.4 | 19.1 | 1065.1 | 36.0 | 1065.1 | 36.0 | 91.0 |
| H14-011_Run3-Spot 279 | 784 | 76743 | 52.3 | 17.7453 | 1.8 | 0.5518 | 3.1 | 0.0710 | 2.5 | 0.80 | 442.3 | 10.6 | 446.2 | 11.2 | 466.3 | 40.7 | 442.3 | 10.6 | 94.8 |
| H14-011_Run3-Spot 280 | 55 | 26759 | 1.1 | 13.7278 | 3.5 | 1.6107 | 4.5 | 0.1604 | 2.8 | 0.63 | 958.8 | 25.2 | 974.4 | 28.1 | 1009.6 | 70.6 | 1009.6 | 70.6 | 95.0 |
| H14-011_Run3-Spot 281 | 688 | 158935 | 1.2 | 13.2863 | 0.9 | 1.5049 | 2.3 | 0.1450 | 2.1 | 0.92 | 873.0 | 17.6 | 932.4 | 14.2 | 1075.6 | 18.1 | 1075.6 | 18.1 | 81.2 |
| H14-011_Run3-Spot 282 | 825 | 62089 | 39.3 | 17.6971 | 2.1 | 0.5699 | 2.7 | 0.0732 | 1.6 | 0.59 | 455.1 | 7.0 | 458.0 | 9.8 | 472.3 | 47.5 | 455.1 | 7.0 | 96.4 |
| H14-011_Run3-Spot 283 | 613 | 487796 | 2.6 | 12.7480 | 1.9 | 1.6948 | 2.5 | 0.1567 | 1.7 | 0.65 | 938.4 | 14.5 | 1006.6 | 16.3 | 1158.1 | 38.2 | 1158.1 | 38.2 | 81.0 |
| H14-011_Run3-Spot 284 | 40 | 18376 | 0.8 | 13.7497 | 3.3 | 1.6623 | 4.1 | 0.1658 | 2.4 | 0.59 | 988.8 | 22.0 | 994.3 | 25.9 | 1006.4 | 67.2 | 1006.4 | 67.2 | 98.2 |
| H14-011_Run3-Spot 285 | 183 | 102359 | 0.9 | 13.6247 | 2.1 | 1.6042 | 2.6 | 0.1585 | 1.4 | 0.55 | 948.6 | 12.5 | 971.9 | 16.0 | 1024.9 | 43.3 | 1024.9 | 43.3 | 92.6 |
| H14-011_Run3-Spot 286 | 359 | 89218 | 3.9 | 15.3425 | 1.7 | 0.9074 | 2.1 | 0.1010 | 1.3 | 0.63 | 620.1 | 8.0 | 655.7 | 10.4 | 780.1 | 35.2 | 620.1 | 8.0 | 79.5 |

**Appendix D: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H14-011 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H14-011_Run3-Spot 287 | 650 | 82285 | 47.4 | 17.6065 | 1.8 | 0.5949 | 2.5 | 0.0760 | 1.7 | 0.67 | 472.0 | 7.6 | 474.0 | 9.5 | 483.7 | 40.8 | 472.0 | 7.6 | 97.6 |
| H14-011_Run3-Spot 290 | 253 | 2310773 | 2.7 | 12.4440 | 1.5 | 2.1514 | 2.8 | 0.1942 | 2.4 | 0.84 | 1143.9 | 24.7 | 1165.5 | 19.5 | 1205.8 | 30.2 | 1205.8 | 30.2 | 94.9 |
| H14-011_Run3-Spot 291 | 1069 | 12274718 | 20.0 | 12.6155 | 1.5 | 1.6632 | 2.2 | 0.1522 | 1.7 | 0.75 | 913.2 | 14.4 | 994.6 | 14.2 | 1178.8 | 29.1 | 1178.8 | 29.1 | 77.5 |
| H14-011_Run3-Spot 292 | 557 | 112974 | 14.3 | 17.6335 | 1.2 | 0.5771 | 1.8 | 0.0738 | 1.3 | 0.75 | 459.1 | 5.9 | 462.6 | 6.6 | 480.3 | 25.8 | 459.1 | 5.9 | 95.6 |
| H14-011_Run3-Spot 293 | 204 | 66926 | 0.9 | 12.7839 | 1.8 | 1.9222 | 2.6 | 0.1782 | 1.8 | 0.70 | 1057.3 | 17.6 | 1088.8 | 17.2 | 1152.5 | 36.5 | 1152.5 | 36.5 | 91.7 |
| H14-011_Run3-Spot 294 | 297 | 112169 | 3.3 | 13.7997 | 1.9 | 1.4083 | 2.8 | 0.1409 | 2.0 | 0.73 | 850.0 | 16.3 | 892.4 | 16.6 | 999.0 | 38.6 | 999.0 | 38.6 | 85.1 |
| H14-011_Run3-Spot 295 | 1547 | 112312 | 8.6 | 14.5560 | 1.2 | 1.1096 | 1.7 | 0.1171 | 1.2 | 0.70 | 714.1 | 7.9 | 758.0 | 8.9 | 889.7 | 24.7 | 714.1 | 7.9 | 80.3 |
| H14-011_Run3-Spot 297 | 519 | 87661 | 11.7 | 12.4233 | 1.3 | 2.1017 | 2.6 | 0.1894 | 2.2 | 0.86 | 1117.9 | 22.8 | 1149.3 | 17.9 | 1209.1 | 26.4 | 1209.1 | 26.4 | 92.5 |
| H14-011_Run3-Spot 298 | 166 | 194202 | 4.5 | 12.1213 | 1.9 | 2.2473 | 2.8 | 0.1976 | 2.1 | 0.76 | 1162.2 | 22.8 | 1195.9 | 20.0 | 1257.4 | 36.4 | 1257.4 | 36.4 | 92.4 |
| H14-011_Run3-Spot 299 | 590 | 144437 | 27.9 | 17.8044 | 1.6 | 0.5767 | 2.4 | 0.0745 | 1.7 | 0.72 | 463.0 | 7.7 | 462.4 | 8.8 | 458.9 | 36.2 | 463.0 | 7.7 | 100.9 |
| H14-011_Run3-Spot 300 | 497 | 79201 | 4.0 | 14.4611 | 1.7 | 1.1115 | 2.7 | 0.1166 | 2.0 | 0.77 | 710.8 | 13.8 | 758.9 | 14.3 | 903.2 | 35.3 | 710.8 | 13.8 | 78.7 |
| H14-011_Run3-Spot 301 | 854 | 93667 | 39.3 | 14.7635 | 1.3 | 1.1332 | 2.6 | 0.1213 | 2.3 | 0.88 | 738.2 | 16.3 | 769.3 | 14.3 | 860.4 | 26.2 | 738.2 | 16.3 | 85.8 |
| H14-011_Run3-Spot 302 | 438 | 80895 | 4.7 | 12.6999 | 1.2 | 2.0271 | 2.1 | 0.1867 | 1.7 | 0.80 | 1103.5 | 17.1 | 1124.6 | 14.3 | 1165.6 | 24.7 | 1165.6 | 24.7 | 94.7 |
| H14-011_Run3-Spot 303 | 400 | 41548 | 6.1 | 15.8036 | 2.0 | 0.8813 | 2.9 | 0.1010 | 2.2 | 0.75 | 620.3 | 12.9 | 641.7 | 14.0 | 717.5 | 41.5 | 620.3 | 12.9 | 86.5 |
| H14-011_Run3-Spot 304 | 493 | 60190 | 4.4 | 11.5385 | 1.5 | 2.4946 | 2.5 | 0.2088 | 2.0 | 0.79 | 1222.2 | 22.0 | 1270.5 | 18.0 | 1353.1 | 29.1 | 1353.1 | 29.1 | 90.3 |
| H14-011_Run3-Spot 305 | 761 | 77507 | 44.1 | 17.8544 | 1.6 | 0.5762 | 2.3 | 0.0746 | 1.6 | 0.70 | 463.9 | 7.1 | 462.0 | 8.4 | 452.7 | 35.9 | 463.9 | 7.1 | 102.5 |
| H14-011_Run3-Spot 306 | 601 | 192254 | 16.8 | 14.4703 | 1.5 | 1.1155 | 2.2 | 0.1171 | 1.6 | 0.74 | 713.7 | 10.7 | 760.8 | 11.5 | 901.9 | 30.0 | 713.7 | 10.7 | 79.1 |
| H14-011_Run3-Spot 307 | 330 | 100469 | 12.6 | 12.5082 | 1.4 | 2.0738 | 2.3 | 0.1881 | 1.9 | 0.81 | 1111.2 | 18.9 | 1140.2 | 15.7 | 1195.7 | 26.7 | 1195.7 | 26.7 | 92.9 |
| H14-011_Run3-Spot 308 | 646 | 51003 | 2.0 | 14.4927 | 1.4 | 1.2521 | 2.0 | 0.1316 | 1.4 | 0.71 | 797.0 | 10.5 | 824.3 | 11.1 | 898.7 | 28.4 | 797.0 | 10.5 | 88.7 |
| H14-011_Run3-Spot 309 | 628 | 158555 | 2.8 | 13.4620 | 1.3 | 1.4524 | 3.1 | 0.1418 | 2.8 | 0.91 | 854.9 | 22.8 | 910.9 | 18.8 | 1049.2 | 26.1 | 1049.2 | 26.1 | 81.5 |
| H14-011_Run3-Spot 310 | 318 | 189484 | 3.5 | 14.0309 | 1.6 | 1.2330 | 3.0 | 0.1255 | 2.6 | 0.85 | 762.0 | 18.6 | 815.7 | 17.0 | 965.2 | 32.1 | 762.0 | 18.6 | 78.9 |
| H14-011_Run3-Spot 311 | 219 | 1001765 | 1.1 | 12.3832 | 1.8 | 2.2661 | 3.0 | 0.2035 | 2.4 | 0.81 | 1194.2 | 26.0 | 1201.8 | 20.9 | 1215.5 | 34.5 | 1215.5 | 34.5 | 98.2 |
| H14-011_Run3-Spot 312 | 460 | 249075 | 4.9 | 10.7635 | 1.2 | 2.6889 | 2.1 | 0.2099 | 1.7 | 0.82 | 1228.3 | 18.9 | 1325.4 | 15.4 | 1486.0 | 22.7 | 1486.0 | 22.7 | 82.7 |
| H14-011_Run3-Spot 313 | 571 | 90871 | 16.3 | 16.3543 | 1.7 | 0.7409 | 2.3 | 0.0879 | 1.6 | 0.68 | 543.0 | 8.2 | 562.9 | 10.1 | 644.4 | 36.8 | 543.0 | 8.2 | 84.3 |
| H14-011_Run3-Spot 315 | 774 | 53963 | 37.2 | 17.5718 | 1.6 | 0.5953 | 2.7 | 0.0759 | 2.1 | 0.80 | 471.4 | 9.8 | 474.2 | 10.2 | 488.0 | 35.6 | 471.4 | 9.8 | 96.6 |
| H14-011_Run3-Spot 316 | 554 | 136089 | 24.2 | 17.4762 | 1.6 | 0.5828 | 2.6 | 0.0739 | 2.1 | 0.78 | 459.5 | 9.2 | 466.3 | 9.9 | 500.1 | 36.2 | 459.5 | 9.2 | 91.9 |
| H14-011_Run3-Spot 317 | 384 | 63017 | 2.1 | 13.7212 | 1.3 | 1.5781 | 2.3 | 0.1570 | 1.8 | 0.80 | 940.3 | 15.8 | 961.6 | 14.0 | 1010.6 | 27.2 | 1010.6 | 27.2 | 93.0 |
| H14-011_Run3-Spot 319 | 736 | 59773 | 34.2 | 17.9721 | 1.5 | 0.5647 | 2.1 | 0.0736 | 1.5 | 0.71 | 457.9 | 6.6 | 454.6 | 7.7 | 438.1 | 32.8 | 457.9 | 6.6 | 104.5 |
| H14-011_Run3-Spot 320 | 603 | 98301 | 47.4 | 17.8794 | 1.7 | 0.5823 | 2.3 | 0.0755 | 1.6 | 0.70 | 469.2 | 7.4 | 465.9 | 8.7 | 449.6 | 36.8 | 469.2 | 7.4 | 104.4 |
| H14-011_Run3-Spot 321 | 817 | 203602 | 44.2 | 17.5426 | 1.5 | 0.5604 | 2.4 | 0.0713 | 1.8 | 0.76 | 444.0 | 7.7 | 451.8 | 8.6 | 491.7 | 33.6 | 444.0 | 7.7 | 90.3 |
| H14-011_Run3-Spot 322 | 81 | 26465 | 1.3 | 13.9271 | 2.4 | 1.6126 | 3.0 | 0.1629 | 1.8 | 0.61 | 972.8 | 16.4 | 975.1 | 18.7 | 980.3 | 48.3 | 980.3 | 48.3 | 99.2 |
| H14-011_Run3-Spot 323 | 98 | 152459 | 0.9 | 13.6391 | 2.0 | 1.6326 | 2.6 | 0.1615 | 1.6 | 0.63 | 965.1 | 14.7 | 982.8 | 16.5 | 1022.8 | 41.2 | 1022.8 | 41.2 | 94.4 |
| H14-011_Run3-Spot 324 | 406 | 298013 | 15.2 | 16.3157 | 1.7 | 0.7394 | 2.4 | 0.0875 | 1.7 | 0.70 | 540.7 | 8.6 | 562.0 | 10.3 | 649.4 | 36.7 | 540.7 | 8.6 | 83.3 |
| H14-011_Run3-Spot 325 | 165 | 193457 | 0.6 | 12.7557 | 1.8 | 2.0031 | 2.2 | 0.1853 | 1.3 | 0.59 | 1095.9 | 13.1 | 1116.6 | 14.9 | 1156.9 | 35.3 | 1156.9 | 35.3 | 94.7 |
| H14-011_Run3-Spot 326 | 457 | 101668 | 6.7 | 17.4008 | 1.8 | 0.5671 | 2.5 | 0.0716 | 1.6 | 0.67 | 445.6 | 7.1 | 456.2 | 9.0 | 509.6 | 40.2 | 445.6 | 7.1 | 87.4 |
| H14-011_Run3-Spot 327 | 137 | 105785 | 3.2 | 12.5425 | 1.5 | 1.9807 | 2.1 | 0.1802 | 1.5 | 0.71 | 1067.9 | 14.5 | 1109.0 | 14.0 | 1190.3 | 28.8 | 1190.3 | 28.8 | 89.7 |
| H14-011_Run3-Spot 328 | 800 | 244919 | 28.0 | 17.6491 | 1.2 | 0.5824 | 2.6 | 0.0746 | 2.3 | 0.89 | 463.5 | 10.4 | 466.0 | 9.8 | 478.3 | 26.5 | 463.5 | 10.4 | 96.9 |
| H14-011_Run3-Spot 330 | 1414 | 208524 | 9.7 | 13.2863 | 1.0 | 1.5686 | 2.1 | 0.1511 | 1.9 | 0.88 | 907.4 | 15.8 | 957.9 | 13.1 | 1075.6 | 19.9 | 1075.6 | 19.9 | 84.4 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 1 | 124 | 121287 | 1.1 | 12.6466 | 1.3 | 2.1376 | 2.1 | 0.1961 | 1.7 | 0.81 | 1154.2 | 18.1 | 1161.1 | 14.7 | 1174.0 | 24.8 | 1174.0 | 24.8 | 98.3 |
| H15-003 -Spot 3 | 78 | 132559 | 1.8 | 12.4594 | 1.0 | 2.1902 | 1.7 | 0.1979 | 1.3 | 0.79 | 1164.1 | 14.3 | 1177.9 | 11.9 | 1203.4 | 20.5 | 1203.4 | 20.5 | 96.7 |
| H15-003 -Spot 4 | 101 | 137732 | 1.1 | 12.7665 | 0.9 | 2.0592 | 1.3 | 0.1907 | 1.0 | 0.73 | 1125.0 | 10.1 | 1135.4 | 9.2 | 1155.2 | 18.4 | 1155.2 | 18.4 | 97.4 |
| H15-003 -Spot 5 | 67 | 65918 | 1.5 | 12.7598 | 1.1 | 2.0307 | 1.6 | 0.1879 | 1.1 | 0.74 | 1110.1 | 11.7 | 1125.8 | 10.6 | 1156.3 | 20.9 | 1156.3 | 20.9 | 96.0 |
| H15-003 -Spot 6 | 78 | 65256 | 3.0 | 12.7094 | 1.0 | 2.1863 | 1.8 | 0.2015 | 1.6 | 0.85 | 1183.5 | 16.8 | 1176.7 | 12.7 | 1164.1 | 19.0 | 1164.1 | 19.0 | 101.7 |
| H15-003 -Spot 7 | 86 | 56060 | 1.5 | 12.4291 | 1.0 | 2.2498 | 1.6 | 0.2028 | 1.2 | 0.79 | 1190.4 | 13.5 | 1196.7 | 11.0 | 1208.2 | 18.8 | 1208.2 | 18.8 | 98.5 |
| H15-003 -Spot 8 | 61 | 185046 | 1.1 | 12.2337 | 1.0 | 2.3915 | 1.5 | 0.2122 | 1.1 | 0.73 | 1240.5 | 12.3 | 1240.1 | 10.7 | 1239.3 | 20.0 | 1239.3 | 20.0 | 100.1 |
| H15-003 -Spot 9 | 70 | 186682 | 1.4 | 12.6050 | 0.8 | 2.1793 | 1.8 | 0.1992 | 1.6 | 0.88 | 1171.2 | 16.7 | 1174.5 | 12.4 | 1180.5 | 16.8 | 1180.5 | 16.8 | 99.2 |
| H15-003 -Spot 10 | 122 | 82673 | 0.9 | 13.1822 | 1.1 | 1.8301 | 1.4 | 0.1750 | 0.9 | 0.63 | 1039.4 | 8.7 | 1056.3 | 9.5 | 1091.4 | 22.4 | 1091.4 | 22.4 | 95.2 |
| H15-003 -Spot 11 | 95 | 110463 | 3.2 | 12.4771 | 1.0 | 2.2327 | 1.4 | 0.2020 | 1.0 | 0.69 | 1186.3 | 10.6 | 1191.4 | 10.0 | 1200.6 | 20.5 | 1200.6 | 20.5 | 98.8 |
| H15-003 -Spot 13 | 60 | 913872 | 1.3 | 12.6207 | 1.2 | 2.1561 | 1.7 | 0.1974 | 1.2 | 0.72 | 1161.1 | 12.8 | 1167.0 | 11.6 | 1178.0 | 23.0 | 1178.0 | 23.0 | 98.6 |
| H15-003 -Spot 14 | 60 | 48553 | 1.6 | 12.9219 | 1.2 | 2.0777 | 1.7 | 0.1947 | 1.2 | 0.71 | 1146.9 | 12.7 | 1141.5 | 11.7 | 1131.2 | 24.1 | 1131.2 | 24.1 | 101.4 |
| H15-003 -Spot 15 | 153 | 124682 | 6.1 | 13.3909 | 0.8 | 1.8675 | 1.4 | 0.1814 | 1.1 | 0.83 | 1074.5 | 11.3 | 1069.6 | 9.1 | 1059.9 | 15.5 | 1059.9 | 15.5 | 101.4 |
| H15-003 -Spot 16 | 131 | 279551 | 1.1 | 14.1086 | 0.9 | 1.3832 | 1.3 | 0.1415 | 1.0 | 0.77 | 853.4 | 8.1 | 881.8 | 7.8 | 953.9 | 17.4 | 953.9 | 17.4 | 89.5 |
| H15-003 -Spot 17 | 292 | 112621 | 4.1 | 12.5759 | 1.1 | 2.0006 | 1.6 | 0.1825 | 1.1 | 0.70 | 1080.5 | 10.9 | 1115.7 | 10.6 | 1185.1 | 22.1 | 1185.1 | 22.1 | 91.2 |
| H15-003 -Spot 18 | 50 | 140615 | 1.3 | 12.2640 | 1.2 | 2.4123 | 1.6 | 0.2146 | 1.2 | 0.71 | 1253.1 | 13.3 | 1246.3 | 11.8 | 1234.5 | 22.6 | 1234.5 | 22.6 | 101.5 |
| H15-003 -Spot 19 | 245 | 79062 | 2.7 | 13.0267 | 0.9 | 1.9206 | 2.5 | 0.1815 | 2.3 | 0.93 | 1074.9 | 23.2 | 1088.3 | 16.8 | 1115.1 | 18.2 | 1115.1 | 18.2 | 96.4 |
| H15-003 -Spot 20 | 133 | 142484 | 1.4 | 14.2044 | 1.0 | 1.2551 | 1.7 | 0.1293 | 1.4 | 0.79 | 783.9 | 10.1 | 825.7 | 9.7 | 940.0 | 21.4 | 783.9 | 10.1 | 83.4 |
| H15-003 -Spot 21 | 45 | 33765 | 16.4 | 17.7108 | 1.9 | 0.5702 | 2.3 | 0.0732 | 1.2 | 0.54 | 455.6 | 5.4 | 458.1 | 8.4 | 470.6 | 42.4 | 455.6 | 5.4 | 96.8 |
| H15-003 -Spot 22 | 134 | 166550 | 2.5 | 12.9870 | 1.1 | 1.8929 | 1.6 | 0.1783 | 1.1 | 0.71 | 1057.7 | 11.0 | 1078.6 | 10.6 | 1121.2 | 22.5 | 1121.2 | 22.5 | 94.3 |
| H15-003 -Spot 23 | 90 | 98961 | 2.7 | 14.2797 | 1.3 | 1.3119 | 2.1 | 0.1359 | 1.6 | 0.77 | 821.2 | 12.6 | 851.0 | 12.2 | 929.2 | 27.5 | 821.2 | 12.6 | 88.4 |
| H15-003 -Spot 24 | 72 | 147619 | 1.2 | 12.6004 | 0.9 | 2.2293 | 1.6 | 0.2037 | 1.3 | 0.80 | 1195.3 | 13.8 | 1190.3 | 11.1 | 1181.2 | 18.8 | 1181.2 | 18.8 | 101.2 |
| H15-003 -Spot 25 | 58 | 106218 | 1.5 | 12.4070 | 1.2 | 2.2996 | 1.6 | 0.2069 | 1.0 | 0.63 | 1212.4 | 11.1 | 1212.2 | 11.2 | 1211.7 | 24.2 | 1211.7 | 24.2 | 100.1 |
| H15-003 -Spot 27 | 76 | 130508 | 1.9 | 13.2974 | 1.1 | 1.6403 | 2.2 | 0.1582 | 1.9 | 0.87 | 946.7 | 16.6 | 985.8 | 13.6 | 1073.9 | 21.1 | 1073.9 | 21.1 | 88.2 |
| H15-003 -Spot 28 | 121 | 1287489 | 1.7 | 12.4310 | 0.8 | 2.3209 | 1.4 | 0.2092 | 1.2 | 0.83 | 1224.8 | 13.1 | 1218.7 | 10.1 | 1207.9 | 15.7 | 1207.9 | 15.7 | 101.4 |
| H15-003 -Spot 29 | 54 | 61585 | 21.4 | 14.0321 | 1.6 | 1.3686 | 2.0 | 0.1393 | 1.2 | 0.61 | 840.6 | 9.5 | 875.6 | 11.7 | 965.0 | 32.4 | 965.0 | 32.4 | 87.1 |
| H15-003 -Spot 30 | 70 | 119591 | 1.3 | 12.6569 | 1.2 | 2.2641 | 2.3 | 0.2078 | 1.9 | 0.84 | 1217.3 | 21.2 | 1201.2 | 16.0 | 1172.4 | 24.1 | 1172.4 | 24.1 | 103.8 |
| H15-003 -Spot 31 | 211 | 65219 | 2.7 | 12.4923 | 1.0 | 2.2055 | 1.4 | 0.1998 | 1.0 | 0.69 | 1174.4 | 10.6 | 1182.8 | 10.0 | 1198.2 | 20.3 | 1198.2 | 20.3 | 98.0 |
| H15-003 -Spot 32 | 212 | 2006884 | 1.2 | 12.9763 | 1.3 | 1.9318 | 1.7 | 0.1818 | 1.1 | 0.63 | 1076.9 | 10.5 | 1092.2 | 11.2 | 1122.9 | 26.0 | 1122.9 | 26.0 | 95.9 |
| H15-003 -Spot 33 | 58 | 96645 | 1.6 | 13.2416 | 1.1 | 1.6531 | 1.4 | 0.1588 | 0.9 | 0.66 | 949.9 | 8.4 | 990.7 | 9.1 | 1082.3 | 21.7 | 1082.3 | 21.7 | 87.8 |
| H15-003 -Spot 34 | 115 | 159720 | 0.9 | 12.6041 | 0.9 | 2.1474 | 1.3 | 0.1963 | 0.9 | 0.73 | 1155.4 | 9.9 | 1164.2 | 8.9 | 1180.6 | 17.3 | 1180.6 | 17.3 | 97.9 |
| H15-003 -Spot 35 | 63 | 120774 | 1.0 | 12.3877 | 1.1 | 2.3224 | 1.6 | 0.2087 | 1.1 | 0.71 | 1221.6 | 12.7 | 1219.2 | 11.3 | 1214.8 | 22.0 | 1214.8 | 22.0 | 100.6 |
| H15-003 -Spot 36 | 54 | 184368 | 0.7 | 12.4120 | 1.3 | 2.2491 | 1.6 | 0.2025 | 1.0 | 0.62 | 1188.6 | 10.9 | 1196.5 | 11.3 | 1210.9 | 24.9 | 1210.9 | 24.9 | 98.2 |
| H15-003 -Spot 37 | 79 | 67089 | 1.8 | 12.8590 | 1.4 | 1.9920 | 2.4 | 0.1858 | 1.9 | 0.81 | 1098.5 | 19.5 | 1112.8 | 16.0 | 1140.9 | 27.5 | 1140.9 | 27.5 | 96.3 |
| H15-003 -Spot 38 | 211 | 78618 | 2.4 | 12.4431 | 1.0 | 2.2658 | 1.4 | 0.2045 | 1.1 | 0.73 | 1199.3 | 11.6 | 1201.7 | 10.2 | 1206.0 | 19.4 | 1206.0 | 19.4 | 99.5 |
| H15-003 -Spot 39 | 52 | 94601 | 1.1 | 12.5408 | 1.2 | 2.1769 | 1.8 | 0.1980 | 1.3 | 0.74 | 1164.6 | 14.0 | 1173.7 | 12.4 | 1190.5 | 23.6 | 1190.5 | 23.6 | 97.8 |
| H15-003 -Spot 40 | 27 | 47196 | 1.6 | 13.8975 | 1.8 | 1.4119 | 2.7 | 0.1423 | 2.0 | 0.75 | 857.7 | 16.4 | 894.0 | 16.1 | 984.7 | 36.1 | 984.7 | 36.1 | 87.1 |
| H15-003 -Spot 41 | 19 | 43129 | 0.9 | 14.0368 | 1.7 | 1.4911 | 2.3 | 0.1518 | 1.5 | 0.66 | 911.1 | 13.0 | 926.8 | 14.1 | 964.4 | 35.7 | 964.4 | 35.7 | 94.5 |
| H15-003 -Spot 42 | 89 | 106429 | 1.1 | 12.1789 | 1.0 | 2.5438 | 1.7 | 0.2247 | 1.3 | 0.81 | 1306.6 | 15.9 | 1284.7 | 12.0 | 1248.1 | 18.9 | 1248.1 | 18.9 | 104.7 |
| H15-003 -Spot 43 | 65 | 218843 | 1.4 | 13.5357 | 1.5 | 1.4982 | 2.6 | 0.1471 | 2.1 | 0.81 | 884.6 | 17.4 | 929.7 | 15.8 | 1038.1 | 30.8 | 1038.1 | 30.8 | 85.2 |
| H15-003 -Spot 44 | 100 | 184438 | 1.1 | 12.7518 | 0.9 | 2.0742 | 1.6 | 0.1918 | 1.4 | 0.84 | 1131.3 | 14.1 | 1140.3 | 11.0 | 1157.5 | 17.2 | 1157.5 | 17.2 | 97.7 |
| H15-003 -Spot 45 | 111 | 129435 | 1.5 | 12.4383 | 0.9 | 2.0803 | 1.3 | 0.1877 | 0.9 | 0.71 | 1108.7 | 9.4 | 1142.3 | 8.9 | 1206.8 | 17.9 | 1206.8 | 17.9 | 91.9 |
| H15-003 -Spot 46 | 50 | 50777 | 1.3 | 13.2312 | 1.6 | 1.6661 | 2.1 | 0.1599 | 1.4 | 0.65 | 956.1 | 12.1 | 995.7 | 13.4 | 1083.9 | 32.3 | 1083.9 | 32.3 | 88.2 |
| H15-003 -Spot 47 | 87 | 72055 | 1.2 | 12.8322 | 1.5 | 2.0042 | 2.1 | 0.1865 | 1.5 | 0.70 | 1102.5 | 15.1 | 1116.9 | 14.5 | 1145.1 | 30.3 | 1145.1 | 30.3 | 96.3 |
| H15-003 -Spot 48 | 75 | 122176 | 1.6 | 12.4349 | 1.0 | 2.1279 | 1.5 | 0.1919 | 1.1 | 0.74 | 1131.7 | 11.5 | 1157.9 | 10.3 | 1207.3 | 19.6 | 1207.3 | 19.6 | 93.7 |
| H15-003 -Spot 49 | 234 | 115087 | 9.7 | 13.5989 | 1.0 | 1.6818 | 1.5 | 0.1659 | 1.2 | 0.77 | 989.3 | 10.7 | 1001.7 | 9.7 | 1028.7 | 19.7 | 1028.7 | 19.7 | 96.2 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 50 | 138 | 154346 | 3.6 | 12.4252 | 0.7 | 2.2530 | 1.3 | 0.2030 | 1.1 | 0.83 | 1191.6 | 11.6 | 1197.7 | 9.0 | 1208.8 | 14.1 | 1208.8 | 14.1 | 98.6 |
| H15-003 -Spot 51 | 105 | 220593 | 1.2 | 13.3460 | 1.0 | 1.7420 | 1.6 | 0.1686 | 1.3 | 0.78 | 1004.5 | 11.9 | 1024.2 | 10.5 | 1066.6 | 20.4 | 1066.6 | 20.4 | 94.2 |
| H15-003 -Spot 52 | 38 | 57993 | 1.1 | 12.4309 | 1.7 | 1.9197 | 2.1 | 0.1731 | 1.2 | 0.58 | 1029.0 | 11.8 | 1088.0 | 14.1 | 1207.9 | 33.9 | 1207.9 | 33.9 | 85.2 |
| H15-003 -Spot 53 | 115 | 209601 | 1.0 | 12.8083 | 1.1 | 2.0494 | 1.7 | 0.1904 | 1.3 | 0.75 | 1123.4 | 12.9 | 1132.1 | 11.4 | 1148.8 | 22.0 | 1148.8 | 22.0 | 97.8 |
| H15-003 -Spot 54 | 68 | 85769 | 1.3 | 12.5428 | 1.3 | 2.2649 | 1.8 | 0.2060 | 1.3 | 0.71 | 1207.7 | 14.3 | 1201.4 | 13.0 | 1190.2 | 25.8 | 1190.2 | 25.8 | 101.5 |
| H15-003 -Spot 55 | 43 | 98277 | 1.7 | 13.6825 | 1.2 | 1.6567 | 1.6 | 0.1644 | 1.0 | 0.65 | 981.2 | 9.4 | 992.1 | 10.1 | 1016.3 | 24.6 | 1016.3 | 24.6 | 96.5 |
| H15-003 -Spot 56 | 82 | 54242 | 1.6 | 13.2316 | 1.1 | 1.8057 | 1.6 | 0.1733 | 1.2 | 0.75 | 1030.2 | 11.6 | 1047.5 | 10.6 | 1083.9 | 21.4 | 1083.9 | 21.4 | 95.0 |
| H15-003 -Spot 57 | 175 | 60636 | 1.1 | 12.6886 | 0.9 | 2.0287 | 1.5 | 0.1867 | 1.1 | 0.77 | 1103.4 | 11.5 | 1125.2 | 10.0 | 1167.4 | 18.6 | 1167.4 | 18.6 | 94.5 |
| H15-003 -Spot 58 | 102 | 52319 | 1.0 | 12.6474 | 0.9 | 2.0890 | 1.4 | 0.1916 | 1.1 | 0.77 | 1130.1 | 11.3 | 1145.2 | 9.7 | 1173.8 | 18.1 | 1173.8 | 18.1 | 96.3 |
| H15-003 -Spot 59 | 66 | 54578 | 1.3 | 12.2728 | 0.8 | 2.4118 | 1.3 | 0.2147 | 1.0 | 0.77 | 1253.7 | 11.6 | 1246.1 | 9.5 | 1233.1 | 16.5 | 1233.1 | 16.5 | 101.7 |
| H15-003 -Spot 60 | 94 | 69361 | 2.4 | 12.6227 | 1.0 | 2.1450 | 1.5 | 0.1964 | 1.1 | 0.75 | 1155.8 | 11.8 | 1163.4 | 10.3 | 1177.7 | 19.3 | 1177.7 | 19.3 | 98.1 |
| H15-003 -Spot 61 | 225 | 58496 | 1.3 | 12.5861 | 0.8 | 2.1691 | 1.4 | 0.1980 | 1.1 | 0.81 | 1164.6 | 11.9 | 1171.2 | 9.6 | 1183.5 | 16.2 | 1183.5 | 16.2 | 98.4 |
| H15-003 -Spot 63 | 14 | 40815 | 43.0 | 17.0255 | 3.7 | 0.6745 | 5.8 | 0.0833 | 4.4 | 0.77 | 515.7 | 22.0 | 523.5 | 23.6 | 557.3 | 80.1 | 515.7 | 22.0 | 92.5 |
| H15-003 -Spot 64 | 31 | 90481 | 1.1 | 12.5678 | 1.8 | 2.1326 | 2.3 | 0.1944 | 1.3 | 0.57 | 1145.1 | 13.5 | 1159.4 | 15.6 | 1186.3 | 36.5 | 1186.3 | 36.5 | 96.5 |
| H15-003 -Spot 65 | 133 | 137897 | 0.9 | 12.4275 | 1.1 | 2.1318 | 1.6 | 0.1921 | 1.1 | 0.72 | 1133.0 | 11.9 | 1159.2 | 10.9 | 1208.5 | 21.6 | 1208.5 | 21.6 | 93.8 |
| H15-003 -Spot 66 | 144 | 81645 | 1.0 | 13.4059 | 1.2 | 1.5238 | 1.7 | 0.1482 | 1.2 | 0.69 | 890.6 | 9.6 | 940.0 | 10.3 | 1057.6 | 24.6 | 1057.6 | 24.6 | 84.2 |
| H15-003 -Spot 67 | 56 | 159943 | 28.9 | 17.7535 | 2.2 | 0.5622 | 2.5 | 0.0724 | 1.2 | 0.47 | 450.6 | 5.1 | 453.0 | 9.1 | 465.3 | 48.8 | 450.6 | 5.1 | 96.8 |
| H15-003 -Spot 68 | 48 | 115767 | 1.5 | 13.6626 | 1.5 | 1.6771 | 1.8 | 0.1662 | 0.9 | 0.53 | 991.0 | 8.6 | 999.9 | 11.2 | 1019.3 | 30.2 | 1019.3 | 30.2 | 97.2 |
| H15-003 -Spot 69 | 190 | 54416 | 8.7 | 13.6788 | 0.8 | 1.6798 | 1.4 | 0.1667 | 1.1 | 0.83 | 993.6 | 10.4 | 1000.9 | 8.7 | 1016.9 | 15.4 | 1016.9 | 15.4 | 97.7 |
| H15-003 -Spot 70 | 24 | 27268 | 1.3 | 14.4076 | 2.1 | 1.1697 | 2.6 | 0.1222 | 1.4 | 0.56 | 743.4 | 10.1 | 786.5 | 14.1 | 910.9 | 43.9 | 743.4 | 10.1 | 81.6 |
| H15-003 -Spot 72 | 136 | 222150 | 1.9 | 12.5768 | 1.1 | 2.2302 | 1.9 | 0.2034 | 1.6 | 0.84 | 1193.7 | 17.6 | 1190.6 | 13.6 | 1184.9 | 21.0 | 1184.9 | 21.0 | 100.7 |
| H15-003 -Spot 73 | 123 | 120508 | 1.0 | 12.9865 | 1.0 | 1.9039 | 1.6 | 0.1793 | 1.3 | 0.81 | 1063.3 | 12.9 | 1082.5 | 10.9 | 1121.3 | 19.3 | 1121.3 | 19.3 | 94.8 |
| H15-003 -Spot 74 | 309 | 523324 | 1.3 | 13.2682 | 0.9 | 1.7582 | 1.3 | 0.1692 | 1.0 | 0.75 | 1007.7 | 9.2 | 1030.2 | 8.4 | 1078.3 | 17.2 | 1078.3 | 17.2 | 93.4 |
| H15-003 -Spot 75 | 143 | 107291 | 1.0 | 12.5153 | 0.8 | 2.2181 | 1.3 | 0.2013 | 1.1 | 0.80 | 1182.5 | 11.7 | 1186.8 | 9.4 | 1194.6 | 15.9 | 1194.6 | 15.9 | 99.0 |
| H15-003 -Spot 76 | 48 | 88982 | 1.2 | 12.4820 | 1.2 | 2.3402 | 1.8 | 0.2118 | 1.3 | 0.74 | 1238.7 | 15.1 | 1224.6 | 12.9 | 1199.8 | 24.2 | 1199.8 | 24.2 | 103.2 |
| H15-003 -Spot 77 | 52 | 119610 | 1.3 | 12.4788 | 1.5 | 2.2099 | 1.9 | 0.2000 | 1.2 | 0.62 | 1175.3 | 12.5 | 1184.2 | 13.2 | 1200.4 | 29.4 | 1200.4 | 29.4 | 97.9 |
| H15-003 -Spot 78 | 58 | 81352 | 2.4 | 13.0209 | 1.6 | 1.9186 | 2.0 | 0.1812 | 1.3 | 0.64 | 1073.5 | 13.1 | 1087.6 | 13.7 | 1116.0 | 31.3 | 1116.0 | 31.3 | 96.2 |
| H15-003 -Spot 79 | 64 | 79463 | 1.4 | 12.9092 | 1.0 | 2.0040 | 1.6 | 0.1876 | 1.2 | 0.78 | 1108.5 | 12.5 | 1116.9 | 10.6 | 1133.2 | 19.2 | 1133.2 | 19.2 | 97.8 |
| H15-003 -Spot 80 | 178 | 173367 | 2.9 | 12.5927 | 1.0 | 2.2421 | 1.3 | 0.2048 | 0.8 | 0.61 | 1200.9 | 8.8 | 1194.3 | 9.2 | 1182.4 | 20.4 | 1182.4 | 20.4 | 101.6 |
| H15-003 -Spot 81 | 80 | 159537 | 2.3 | 12.6284 | 1.1 | 2.2045 | 1.6 | 0.2019 | 1.2 | 0.74 | 1185.6 | 13.2 | 1182.5 | 11.5 | 1176.8 | 21.8 | 1176.8 | 21.8 | 100.7 |
| H15-003 -Spot 82 | 108 | 124652 | 3.4 | 12.4315 | 0.8 | 2.2597 | 1.3 | 0.2037 | 1.0 | 0.80 | 1195.4 | 11.2 | 1199.8 | 9.1 | 1207.8 | 15.4 | 1207.8 | 15.4 | 99.0 |
| H15-003 -Spot 83 | 98 | 137878 | 4.3 | 13.6055 | 0.9 | 1.6815 | 1.4 | 0.1659 | 1.1 | 0.80 | 989.6 | 10.5 | 1001.6 | 9.1 | 1027.7 | 17.4 | 1027.7 | 17.4 | 96.3 |
| H15-003 -Spot 85 | 88 | 116505 | 1.0 | 12.7048 | 1.3 | 1.8637 | 1.8 | 0.1717 | 1.2 | 0.68 | 1021.6 | 11.5 | 1068.3 | 11.9 | 1164.8 | 26.3 | 1164.8 | 26.3 | 87.7 |
| H15-003 -Spot 86 | 247 | 70410 | 18.2 | 12.6282 | 0.8 | 2.2748 | 1.3 | 0.2083 | 1.1 | 0.81 | 1220.0 | 11.8 | 1204.5 | 9.2 | 1176.9 | 15.2 | 1176.9 | 15.2 | 103.7 |
| H15-003 -Spot 87 | 75 | 241987 | 0.8 | 12.2291 | 1.0 | 2.3117 | 1.6 | 0.2050 | 1.3 | 0.78 | 1202.3 | 14.0 | 1215.9 | 11.6 | 1240.1 | 19.9 | 1240.1 | 19.9 | 97.0 |
| H15-003 -Spot 88 | 132 | 124980 | 0.7 | 14.2330 | 0.9 | 1.3470 | 1.5 | 0.1390 | 1.2 | 0.80 | 839.3 | 9.3 | 866.3 | 8.6 | 935.9 | 18.4 | 839.3 | 9.3 | 89.7 |
| H15-003 -Spot 89 | 61 | 83600 | 1.6 | 13.5828 | 1.0 | 1.6014 | 1.6 | 0.1578 | 1.3 | 0.77 | 944.3 | 11.0 | 970.7 | 10.2 | 1031.1 | 21.2 | 1031.1 | 21.2 | 91.6 |
| H15-003 -Spot 90 | 102 | 78559 | 0.9 | 13.1252 | 1.2 | 1.7802 | 1.6 | 0.1695 | 1.0 | 0.65 | 1009.2 | 9.7 | 1038.3 | 10.4 | 1100.1 | 24.2 | 1100.1 | 24.2 | 91.7 |
| H15-003 -Spot 91 | 69 | 85505 | 1.4 | 12.6607 | 1.0 | 2.2648 | 3.1 | 0.2080 | 2.9 | 0.95 | 1218.0 | 32.5 | 1201.4 | 21.8 | 1171.8 | 19.6 | 1171.8 | 19.6 | 103.9 |
| H15-003 -Spot 92 | 107 | 205270 | 1.5 | 13.2521 | 1.1 | 1.7805 | 1.7 | 0.1711 | 1.3 | 0.77 | 1018.3 | 12.4 | 1038.4 | 11.1 | 1080.7 | 22.0 | 1080.7 | 22.0 | 94.2 |
| H15-003 -Spot 93 | 240 | 463658 | 10.0 | 13.4429 | 1.2 | 1.6052 | 2.5 | 0.1565 | 2.2 | 0.87 | 937.3 | 18.9 | 972.3 | 15.5 | 1052.0 | 24.2 | 1052.0 | 24.2 | 89.1 |
| H15-003 -Spot 94 | 229 | 89053 | 1.8 | 12.4933 | 0.8 | 2.1825 | 1.6 | 0.1978 | 1.4 | 0.85 | 1163.3 | 14.5 | 1175.5 | 11.2 | 1198.0 | 16.5 | 1198.0 | 16.5 | 97.1 |
| H15-003 -Spot 95 | 103 | 61951 | 1.3 | 13.0318 | 0.9 | 1.8547 | 1.6 | 0.1753 | 1.3 | 0.83 | 1041.2 | 12.5 | 1065.1 | 10.3 | 1114.3 | 17.5 | 1114.3 | 17.5 | 93.4 |
| H15-003 -Spot 96 | 56 | 81041 | 1.2 | 12.9565 | 1.4 | 1.8032 | 2.1 | 0.1694 | 1.5 | 0.75 | 1009.1 | 14.4 | 1046.6 | 13.4 | 1125.9 | 27.0 | 1125.9 | 27.0 | 89.6 |
| H15-003 -Spot 97 | 128 | 107048 | 1.3 | 12.8310 | 0.8 | 1.9246 | 1.4 | 0.1791 | 1.2 | 0.83 | 1062.1 | 11.6 | 1089.7 | 9.5 | 1145.3 | 15.5 | 1145.3 | 15.5 | 92.7 |
| H15-003 -Spot 98 | 38 | 75482 | 1.8 | 13.5725 | 3.6 | 1.4023 | 3.9 | 0.1380 | 1.4 | 0.36 | 833.6 | 10.7 | 889.9 | 22.9 | 1032.7 | 73.1 | 1032.7 | 73.1 | 80.7 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 99 | 154 | 456631 | 2.5 | 12.8028 | 1.2 | 2.1188 | 1.5 | 0.1967 | 0.9 | 0.62 | 1157.8 | 9.7 | 1155.0 | 10.1 | 1149.6 | 22.9 | 1149.6 | 22.9 | 100.7 |
| H15-003 -Spot 100 | 69 | 69378 | 1.9 | 12.4148 | 1.1 | 2.2854 | 1.5 | 0.2058 | 1.0 | 0.66 | 1206.3 | 11.0 | 1207.8 | 10.7 | 1210.5 | 22.3 | 1210.5 | 22.3 | 99.7 |
| H15-003 -Spot 101 | 123 | 72967 | 3.3 | 14.3500 | 1.0 | 1.2470 | 1.5 | 0.1298 | 1.2 | 0.76 | 786.7 | 8.7 | 822.1 | 8.7 | 919.1 | 20.5 | 786.7 | 8.7 | 85.6 |
| H15-003 -Spot 102 | 181 | 208868 | 2.2 | 12.4245 | 0.9 | 2.2361 | 1.6 | 0.2015 | 1.3 | 0.81 | 1183.3 | 13.9 | 1192.4 | 11.1 | 1208.9 | 18.1 | 1208.9 | 18.1 | 97.9 |
| H15-003 -Spot 103 | 142 | 59977 | 2.3 | 14.1834 | 1.1 | 1.4198 | 1.6 | 0.1460 | 1.2 | 0.74 | 878.8 | 9.9 | 897.3 | 9.6 | 943.1 | 22.1 | 943.1 | 22.1 | 93.2 |
| H15-003 -Spot 104 | 110 | 81338 | 2.5 | 12.3728 | 1.1 | 2.2374 | 1.9 | 0.2008 | 1.6 | 0.83 | 1179.5 | 17.1 | 1192.9 | 13.5 | 1217.1 | 21.4 | 1217.1 | 21.4 | 96.9 |
| H15-003 -Spot 105 | 83 | 235564 | 1.2 | 13.9858 | 1.3 | 1.4660 | 1.7 | 0.1487 | 1.0 | 0.61 | 893.7 | 8.6 | 916.5 | 10.1 | 971.7 | 26.9 | 971.7 | 26.9 | 92.0 |
| H15-003 -Spot 106 | 98 | 185319 | 1.8 | 12.5637 | 1.3 | 2.1602 | 1.9 | 0.1968 | 1.4 | 0.74 | 1158.3 | 15.2 | 1168.3 | 13.4 | 1187.0 | 25.5 | 1187.0 | 25.5 | 97.6 |
| H15-003 -Spot 107 | 58 | 38897 | 3.6 | 15.2741 | 1.4 | 0.9618 | 1.8 | 0.1065 | 1.2 | 0.66 | 652.7 | 7.3 | 684.2 | 8.9 | 789.5 | 28.4 | 652.7 | 7.3 | 82.7 |
| H15-003 -Spot 108 | 222 | 80336 | 1.9 | 12.5152 | 0.9 | 2.2740 | 1.5 | 0.2064 | 1.2 | 0.82 | 1209.7 | 13.5 | 1204.3 | 10.6 | 1194.6 | 17.2 | 1194.6 | 17.2 | 101.3 |
| H15-003 -Spot 109 | 86 | 61194 | 1.6 | 12.9960 | 1.0 | 1.9896 | 2.0 | 0.1875 | 1.7 | 0.85 | 1108.0 | 17.1 | 1112.0 | 13.3 | 1119.8 | 20.5 | 1119.8 | 20.5 | 98.9 |
| H15-003 -Spot 110 | 98 | 185140 | 1.5 | 12.2326 | 1.2 | 2.2269 | 1.6 | 0.1976 | 1.1 | 0.69 | 1162.2 | 12.0 | 1189.5 | 11.5 | 1239.5 | 23.3 | 1239.5 | 23.3 | 93.8 |
| H15-003 -Spot 111 | 71 | 145729 | 1.5 | 12.7509 | 1.1 | 2.0469 | 1.4 | 0.1893 | 1.0 | 0.69 | 1117.5 | 10.2 | 1131.2 | 9.9 | 1157.7 | 20.9 | 1157.7 | 20.9 | 96.5 |
| H15-003 -Spot 112 | 92 | 130150 | 8.3 | 13.2830 | 0.8 | 1.8008 | 1.3 | 0.1735 | 1.1 | 0.80 | 1031.3 | 10.3 | 1045.7 | 8.8 | 1076.1 | 16.0 | 1076.1 | 16.0 | 95.8 |
| H15-003 -Spot 113 | 142 | 55568 | 4.9 | 12.9390 | 1.4 | 1.8652 | 2.5 | 0.1750 | 2.1 | 0.83 | 1039.8 | 19.9 | 1068.8 | 16.4 | 1128.6 | 27.2 | 1128.6 | 27.2 | 92.1 |
| H15-003 -Spot 114 | 26 | 70596 | 6.4 | 13.8419 | 1.9 | 1.6259 | 2.6 | 0.1632 | 1.7 | 0.67 | 974.7 | 15.6 | 980.3 | 16.3 | 992.8 | 39.2 | 992.8 | 39.2 | 98.2 |
| H15-003 -Spot 115 | 176 | 110640 | 1.4 | 12.5070 | 0.8 | 2.2879 | 1.5 | 0.2075 | 1.2 | 0.84 | 1215.7 | 13.7 | 1208.6 | 10.4 | 1195.9 | 15.8 | 1195.9 | 15.8 | 101.7 |
| H15-003 -Spot 116 | 485 | 101058 | 5.6 | 12.9599 | 0.8 | 1.8745 | 1.3 | 0.1762 | 1.1 | 0.82 | 1046.2 | 10.6 | 1072.1 | 8.9 | 1125.4 | 15.3 | 1125.4 | 15.3 | 93.0 |
| H15-003 -Spot 117 | 105 | 2110645 | 2.0 | 12.5058 | 1.2 | 2.3449 | 2.1 | 0.2127 | 1.7 | 0.82 | 1243.1 | 19.6 | 1226.0 | 15.0 | 1196.1 | 23.9 | 1196.1 | 23.9 | 103.9 |
| H15-003 -Spot 118 | 103 | 94468 | 1.4 | 12.7830 | 0.9 | 2.0160 | 1.9 | 0.1869 | 1.7 | 0.89 | 1104.6 | 17.5 | 1120.9 | 13.1 | 1152.7 | 17.5 | 1152.7 | 17.5 | 95.8 |
| H15-003 -Spot 119 | 55 | 52708 | 2.5 | 13.6283 | 1.3 | 1.5603 | 1.9 | 0.1542 | 1.4 | 0.74 | 924.6 | 12.3 | 954.6 | 12.0 | 1024.4 | 26.5 | 1024.4 | 26.5 | 90.3 |
| H15-003 -Spot 120 | 28 | 167047 | 1.5 | 13.4058 | 1.4 | 1.7774 | 2.2 | 0.1728 | 1.8 | 0.79 | 1027.6 | 16.6 | 1037.2 | 14.4 | 1057.6 | 27.5 | 1057.6 | 27.5 | 97.2 |
| H15-003 -Spot 121 | 70 | 88541 | 1.5 | 12.5172 | 1.2 | 2.3024 | 1.6 | 0.2090 | 1.1 | 0.69 | 1223.6 | 12.2 | 1213.0 | 11.3 | 1194.3 | 22.9 | 1194.3 | 22.9 | 102.5 |
| H15-003 -Spot 122 | 67 | 113285 | 1.1 | 12.5400 | 1.0 | 2.2648 | 1.9 | 0.2060 | 1.7 | 0.86 | 1207.4 | 18.3 | 1201.4 | 13.6 | 1190.7 | 19.6 | 1190.7 | 19.6 | 101.4 |
| H15-003 -Spot 123 | 145 | 106084 | 3.0 | 13.9964 | 1.0 | 1.3321 | 1.5 | 0.1352 | 1.2 | 0.77 | 817.6 | 9.0 | 859.8 | 8.8 | 970.2 | 19.6 | 817.6 | 9.0 | 84.3 |
| H15-003 -Spot 124 | 22 | 241394 | 0.7 | 13.5697 | 1.9 | 1.8601 | 2.6 | 0.1831 | 1.7 | 0.68 | 1083.7 | 17.4 | 1067.0 | 17.0 | 1033.1 | 38.2 | 1033.1 | 38.2 | 104.9 |
| H15-003 -Spot 125 | 57 | 56802 | 0.9 | 13.9601 | 1.2 | 1.4075 | 1.7 | 0.1425 | 1.2 | 0.69 | 858.8 | 9.3 | 892.1 | 9.9 | 975.5 | 24.8 | 975.5 | 24.8 | 88.0 |
| H15-003 -Spot 126 | 132 | 49200 | 13.3 | 17.8635 | 1.5 | 0.5700 | 1.9 | 0.0738 | 1.1 | 0.59 | 459.3 | 4.9 | 458.0 | 6.9 | 451.6 | 33.8 | 459.3 | 4.9 | 101.7 |
| H15-003 -Spot 127 | 72 | 67559 | 1.5 | 12.6670 | 1.1 | 2.1860 | 1.5 | 0.2008 | 1.1 | 0.71 | 1179.8 | 11.8 | 1176.6 | 10.7 | 1170.8 | 21.3 | 1170.8 | 21.3 | 100.8 |
| H15-003 -Spot 128 | 38 | 76808 | 3.0 | 13.5756 | 1.4 | 1.7528 | 1.9 | 0.1726 | 1.3 | 0.66 | 1026.3 | 11.9 | 1028.2 | 12.3 | 1032.2 | 29.0 | 1032.2 | 29.0 | 99.4 |
| H15-003 -Spot 129 | 63 | 111101 | 1.1 | 13.3738 | 1.3 | 1.7487 | 1.8 | 0.1696 | 1.3 | 0.72 | 1010.0 | 12.1 | 1026.7 | 11.7 | 1062.4 | 25.3 | 1062.4 | 25.3 | 95.1 |
| H15-003 -Spot 130 | 173 | 175658 | 2.3 | 12.8859 | 0.9 | 2.0157 | 1.7 | 0.1884 | 1.4 | 0.83 | 1112.6 | 14.7 | 1120.8 | 11.7 | 1136.8 | 18.9 | 1136.8 | 18.9 | 97.9 |
| H15-003 -Spot 131 | 93 | 111072 | 1.1 | 12.4846 | 1.2 | 2.3000 | 1.8 | 0.2083 | 1.3 | 0.75 | 1219.5 | 15.0 | 1212.3 | 12.7 | 1199.4 | 23.3 | 1199.4 | 23.3 | 101.7 |
| H15-003 -Spot 132 | 166 | 165380 | 2.5 | 12.6689 | 1.1 | 2.1308 | 2.0 | 0.1958 | 1.7 | 0.84 | 1152.7 | 17.5 | 1158.9 | 13.6 | 1170.5 | 21.0 | 1170.5 | 21.0 | 98.5 |
| H15-003 -Spot 133 | 183 | 172159 | 4.7 | 13.2523 | 0.8 | 1.8125 | 1.5 | 0.1742 | 1.2 | 0.83 | 1035.3 | 11.9 | 1050.0 | 9.8 | 1080.7 | 16.9 | 1080.7 | 16.9 | 95.8 |
| H15-003 -Spot 134 | 77 | 203305 | 13.8 | 17.5122 | 1.7 | 0.6160 | 2.2 | 0.0782 | 1.4 | 0.63 | 485.6 | 6.5 | 487.3 | 8.5 | 495.5 | 37.9 | 485.6 | 6.5 | 98.0 |
| H15-003 -Spot 135 | 87 | 197936 | 5.2 | 13.7770 | 1.4 | 1.5880 | 2.0 | 0.1587 | 1.4 | 0.73 | 949.4 | 12.8 | 965.5 | 12.4 | 1002.4 | 27.7 | 1002.4 | 27.7 | 94.7 |
| H15-003 -Spot 136 | 117 | 151046 | 3.5 | 12.5504 | 1.0 | 2.1419 | 1.5 | 0.1950 | 1.0 | 0.71 | 1148.2 | 10.9 | 1162.5 | 10.2 | 1189.1 | 20.5 | 1189.1 | 20.5 | 96.6 |
| H15-003 -Spot 137 | 67 | 45060 | 1.2 | 12.8593 | 1.3 | 1.9832 | 1.8 | 0.1850 | 1.3 | 0.71 | 1094.0 | 12.8 | 1109.8 | 12.2 | 1140.8 | 25.3 | 1140.8 | 25.3 | 95.9 |
| H15-003 -Spot 138 | 83 | 179621 | 1.3 | 12.8683 | 1.0 | 1.9336 | 1.6 | 0.1805 | 1.2 | 0.75 | 1069.5 | 11.7 | 1092.8 | 10.6 | 1139.5 | 20.8 | 1139.5 | 20.8 | 93.9 |
| H15-003 -Spot 139 | 86 | 56007 | 1.4 | 12.9210 | 1.5 | 2.0022 | 1.9 | 0.1876 | 1.2 | 0.61 | 1108.5 | 11.7 | 1116.2 | 12.8 | 1131.4 | 29.6 | 1131.4 | 29.6 | 98.0 |
| H15-003 -Spot 140 | 185 | 78295 | 2.0 | 12.6224 | 0.9 | 2.1885 | 1.6 | 0.2003 | 1.3 | 0.83 | 1177.2 | 14.4 | 1177.4 | 11.2 | 1177.8 | 17.5 | 1177.8 | 17.5 | 100.0 |
| H15-003 -Spot 141 | 86 | 162262 | 1.6 | 12.4944 | 0.9 | 2.1334 | 1.4 | 0.1933 | 1.1 | 0.77 | 1139.3 | 11.2 | 1159.7 | 9.6 | 1197.9 | 17.4 | 1197.9 | 17.4 | 95.1 |
| H15-003 -Spot 142 | 101 | 144765 | 1.3 | 13.7490 | 0.9 | 1.6053 | 1.3 | 0.1601 | 0.9 | 0.71 | 957.2 | 8.4 | 972.3 | 8.3 | 1006.5 | 19.0 | 1006.5 | 19.0 | 95.1 |
| H15-003 -Spot 143 | 117 | 454436 | 1.8 | 12.5934 | 0.9 | 2.2708 | 1.3 | 0.2074 | 1.0 | 0.74 | 1215.0 | 10.9 | 1203.3 | 9.4 | 1182.3 | 17.9 | 1182.3 | 17.9 | 102.8 |
| H15-003 -Spot 144 | 21 | 203865 | 1.1 | 13.9257 | 1.7 | 1.5398 | 2.1 | 0.1555 | 1.2 | 0.59 | 931.8 | 10.7 | 946.4 | 12.8 | 980.5 | 34.1 | 980.5 | 34.1 | 95.0 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 145 | 141 | 306598 | 0.9 | 12.4616 | 0.7 | 2.2494 | 1.6 | 0.2033 | 1.4 | 0.88 | 1193.0 | 15.1 | 1196.6 | 11.1 | 1203.0 | 14.6 | 1203.0 | 14.6 | 99.2 |
| H15-003 -Spot 146 | 51 | 164792 | 1.2 | 12.6243 | 0.8 | 2.0769 | 1.7 | 0.1902 | 1.4 | 0.87 | 1122.3 | 14.9 | 1141.2 | 11.4 | 1177.5 | 16.3 | 1177.5 | 16.3 | 95.3 |
| H15-003 -Spot 147 | 44 | 204089 | 3.0 | 13.9324 | 1.3 | 1.6524 | 1.9 | 0.1670 | 1.4 | 0.75 | 995.4 | 13.2 | 990.5 | 12.1 | 979.5 | 26.0 | 979.5 | 26.0 | 101.6 |
| H15-003 -Spot 148 | 66 | 48568 | 1.6 | 14.6309 | 1.4 | 1.1624 | 2.3 | 0.1233 | 1.8 | 0.78 | 749.8 | 12.8 | 783.1 | 12.6 | 879.1 | 29.5 | 749.8 | 12.8 | 85.3 |
| H15-003 -Spot 149 | 144 | 221925 | 12.7 | 13.5822 | 0.9 | 1.7387 | 1.2 | 0.1713 | 0.8 | 0.69 | 1019.1 | 7.9 | 1023.0 | 7.8 | 1031.2 | 17.6 | 1031.2 | 17.6 | 98.8 |
| H15-003 -Spot 150 | 267 | 193229 | 12.5 | 13.6198 | 0.9 | 1.6924 | 1.2 | 0.1672 | 0.9 | 0.70 | 996.5 | 7.9 | 1005.7 | 7.8 | 1025.6 | 17.7 | 1025.6 | 17.7 | 97.2 |
| H15-003 -Spot 151 | 279 | 210452 | 9.5 | 13.2703 | 1.0 | 1.8140 | 1.8 | 0.1746 | 1.5 | 0.84 | 1037.3 | 14.1 | 1050.5 | 11.5 | 1078.0 | 19.4 | 1078.0 | 19.4 | 96.2 |
| H15-003 -Spot 152 | 65 | 51789 | 1.5 | 13.1384 | 1.4 | 1.8186 | 2.1 | 0.1733 | 1.6 | 0.74 | 1030.2 | 14.9 | 1052.2 | 13.9 | 1098.0 | 28.6 | 1098.0 | 28.6 | 93.8 |
| H15-003 -Spot 153 | 118 | 156086 | 3.2 | 12.6967 | 1.2 | 2.0882 | 3.2 | 0.1923 | 3.0 | 0.93 | 1133.8 | 30.8 | 1144.9 | 22.0 | 1166.1 | 24.1 | 1166.1 | 24.1 | 97.2 |
| H15-003 -Spot 154 | 23 | 67778 | 0.6 | 13.7098 | 1.5 | 1.6832 | 2.0 | 0.1674 | 1.4 | 0.68 | 997.6 | 12.7 | 1002.2 | 12.9 | 1012.3 | 30.1 | 1012.3 | 30.1 | 98.5 |
| H15-003 -Spot 155 | 198 | 4146234 | 2.5 | 12.8002 | 1.0 | 2.1279 | 1.4 | 0.1975 | 1.0 | 0.72 | 1162.1 | 10.9 | 1157.9 | 9.8 | 1150.0 | 19.5 | 1150.0 | 19.5 | 101.1 |
| H15-003 -Spot 156 | 57 | 102986 | 1.3 | 12.6609 | 1.0 | 2.1858 | 1.5 | 0.2007 | 1.1 | 0.76 | 1179.2 | 12.0 | 1176.5 | 10.2 | 1171.7 | 19.0 | 1171.7 | 19.0 | 100.6 |
| H15-003 -Spot 157 | 268 | 220132 | 8.8 | 13.4481 | 0.6 | 1.7738 | 1.3 | 0.1730 | 1.2 | 0.88 | 1028.6 | 10.9 | 1035.9 | 8.5 | 1051.3 | 12.5 | 1051.3 | 12.5 | 97.8 |
| H15-003 -Spot 158 | 230 | 202171 | 2.6 | 12.6660 | 0.9 | 2.0164 | 1.4 | 0.1852 | 1.1 | 0.80 | 1095.5 | 11.4 | 1121.0 | 9.6 | 1170.9 | 16.9 | 1170.9 | 16.9 | 93.6 |
| H15-003 -Spot 159 | 42 | 36283 | 60.9 | 17.6273 | 1.8 | 0.5774 | 2.2 | 0.0738 | 1.3 | 0.58 | 459.1 | 5.7 | 462.8 | 8.4 | 481.0 | 40.6 | 459.1 | 5.7 | 95.4 |
| H15-003 -Spot 160 | 756 | 407947 | 5.2 | 12.4491 | 0.9 | 2.2815 | 1.7 | 0.2060 | 1.4 | 0.84 | 1207.4 | 15.6 | 1206.6 | 11.9 | 1205.0 | 17.9 | 1205.0 | 17.9 | 100.2 |
| H15-003 -Spot 161 | 55 | 56237 | 1.2 | 12.7559 | 1.1 | 2.0409 | 1.7 | 0.1888 | 1.3 | 0.75 | 1114.9 | 12.9 | 1129.3 | 11.4 | 1156.9 | 21.7 | 1156.9 | 21.7 | 96.4 |
| H15-003 -Spot 162 | 158 | 79608 | 1.7 | 12.4914 | 0.9 | 2.1337 | 1.4 | 0.1933 | 1.1 | 0.80 | 1139.2 | 11.8 | 1159.8 | 9.8 | 1198.3 | 16.8 | 1198.3 | 16.8 | 95.1 |
| H15-003 -Spot 163 | 52 | 85024 | 1.7 | 13.9967 | 1.5 | 1.4389 | 2.2 | 0.1461 | 1.6 | 0.75 | 878.9 | 13.5 | 905.3 | 13.2 | 970.2 | 29.9 | 970.2 | 29.9 | 90.6 |
| H15-003 -Spot 164 | 93 | 134113 | 1.0 | 12.1491 | 1.0 | 2.3546 | 1.7 | 0.2075 | 1.4 | 0.80 | 1215.4 | 15.3 | 1229.0 | 12.2 | 1252.9 | 19.9 | 1252.9 | 19.9 | 97.0 |
| H15-003 -Spot 165 | 71 | 218748 | 1.2 | 12.7895 | 1.3 | 2.0461 | 2.0 | 0.1898 | 1.5 | 0.75 | 1120.3 | 15.3 | 1131.0 | 13.6 | 1151.7 | 26.2 | 1151.7 | 26.2 | 97.3 |
| H15-003 -Spot 166 | 126 | 117035 | 3.7 | 12.7814 | 0.9 | 2.0606 | 1.4 | 0.1910 | 1.0 | 0.75 | 1126.9 | 10.7 | 1135.8 | 9.4 | 1152.9 | 18.0 | 1152.9 | 18.0 | 97.7 |
| H15-003 -Spot 167 | 62 | 45405 | 1.2 | 13.0743 | 1.3 | 1.8979 | 1.8 | 0.1800 | 1.2 | 0.70 | 1066.8 | 12.3 | 1080.4 | 11.9 | 1107.8 | 25.5 | 1107.8 | 25.5 | 96.3 |
| H15-003 -Spot 168 | 59 | 179642 | 1.5 | 13.4350 | 1.1 | 1.7071 | 1.8 | 0.1663 | 1.5 | 0.79 | 991.9 | 13.3 | 1011.2 | 11.8 | 1053.2 | 22.6 | 1053.2 | 22.6 | 94.2 |
| H15-003 -Spot 169 | 115 | 85118 | 1.0 | 13.0519 | 1.3 | 1.9189 | 1.8 | 0.1816 | 1.2 | 0.66 | 1076.0 | 11.8 | 1087.7 | 12.0 | 1111.2 | 26.8 | 1111.2 | 26.8 | 96.8 |
| H15-003 -Spot 170 | 30 | 56041 | 1.3 | 13.8204 | 1.7 | 1.6209 | 3.7 | 0.1625 | 3.2 | 0.88 | 970.5 | 29.3 | 978.3 | 23.2 | 996.0 | 35.4 | 996.0 | 35.4 | 97.4 |
| H15-003 -Spot 171 | 85 | 59549 | 1.5 | 12.6729 | 1.3 | 2.1193 | 1.7 | 0.1948 | 1.1 | 0.65 | 1147.3 | 11.7 | 1155.1 | 11.9 | 1169.8 | 26.0 | 1169.8 | 26.0 | 98.1 |
| H15-003 -Spot 172 | 254 | 60160 | 2.0 | 12.5432 | 0.7 | 2.2363 | 1.5 | 0.2034 | 1.3 | 0.88 | 1193.8 | 14.7 | 1192.5 | 10.7 | 1190.2 | 14.0 | 1190.2 | 14.0 | 100.3 |
| H15-003 -Spot 173 | 117 | 50501 | 1.0 | 12.4849 | 1.1 | 2.1949 | 1.8 | 0.1987 | 1.5 | 0.81 | 1168.6 | 15.6 | 1179.4 | 12.6 | 1199.4 | 21.1 | 1199.4 | 21.1 | 97.4 |
| H15-003 -Spot 174 | 57 | 170890 | 1.0 | 12.2654 | 1.1 | 2.3685 | 1.9 | 0.2107 | 1.5 | 0.80 | 1232.5 | 17.0 | 1233.1 | 13.4 | 1234.3 | 21.9 | 1234.3 | 21.9 | 99.9 |
| H15-003 -Spot 175 | 26 | 33104 | 0.4 | 13.8829 | 1.7 | 1.6002 | 2.3 | 0.1611 | 1.6 | 0.69 | 963.0 | 14.3 | 970.3 | 14.6 | 986.8 | 34.5 | 986.8 | 34.5 | 97.6 |
| H15-003 -Spot 176 | 15 | 19170 | 0.5 | 13.8670 | 2.0 | 1.5231 | 2.5 | 0.1532 | 1.6 | 0.63 | 918.8 | 13.6 | 939.7 | 15.5 | 989.1 | 39.9 | 989.1 | 39.9 | 92.9 |
| H15-003 -Spot 177 | 85 | 126679 | 1.4 | 13.4897 | 1.1 | 1.7657 | 1.7 | 0.1728 | 1.3 | 0.76 | 1027.3 | 12.1 | 1033.0 | 10.9 | 1045.0 | 22.2 | 1045.0 | 22.2 | 98.3 |
| H15-003 -Spot 178 | 71 | 63861 | 1.5 | 12.4556 | 1.2 | 2.2746 | 1.7 | 0.2055 | 1.3 | 0.74 | 1204.7 | 13.8 | 1204.5 | 12.0 | 1204.0 | 22.6 | 1204.0 | 22.6 | 100.1 |
| H15-003 -Spot 179 | 99 | 67926 | 1.5 | 12.4060 | 1.1 | 2.2379 | 1.8 | 0.2014 | 1.4 | 0.80 | 1182.6 | 15.7 | 1193.0 | 12.7 | 1211.9 | 21.5 | 1211.9 | 21.5 | 97.6 |
| H15-003 -Spot 180 | 136 | 209538 | 2.3 | 12.6085 | 0.9 | 2.2019 | 1.3 | 0.2014 | 1.0 | 0.74 | 1182.6 | 10.7 | 1181.7 | 9.3 | 1179.9 | 17.8 | 1179.9 | 17.8 | 100.2 |
| H15-003 -Spot 181 | 78 | 121469 | 1.1 | 13.0126 | 1.2 | 1.7481 | 1.9 | 0.1650 | 1.5 | 0.80 | 984.4 | 13.9 | 1026.5 | 12.3 | 1117.3 | 23.0 | 1117.3 | 23.0 | 88.1 |
| H15-003 -Spot 182 | 136 | 80078 | 1.1 | 12.3770 | 0.8 | 2.2806 | 1.3 | 0.2047 | 1.0 | 0.80 | 1200.7 | 11.5 | 1206.3 | 9.2 | 1216.5 | 15.4 | 1216.5 | 15.4 | 98.7 |
| H15-003 -Spot 183 | 31 | 78064 | 2.1 | 13.6772 | 1.6 | 1.7503 | 2.0 | 0.1736 | 1.2 | 0.61 | 1032.1 | 11.7 | 1027.3 | 13.0 | 1017.1 | 32.4 | 1017.1 | 32.4 | 101.5 |
| H15-003 -Spot 184 | 136 | 261897 | 3.7 | 13.7881 | 1.0 | 1.5131 | 1.5 | 0.1513 | 1.2 | 0.75 | 908.3 | 9.8 | 935.7 | 9.5 | 1000.7 | 20.8 | 1000.7 | 20.8 | 90.8 |
| H15-003 -Spot 185 | 126 | 257448 | 0.9 | 12.4681 | 0.9 | 2.2804 | 1.5 | 0.2062 | 1.2 | 0.80 | 1208.6 | 13.3 | 1206.2 | 10.7 | 1202.0 | 18.0 | 1202.0 | 18.0 | 100.5 |
| H15-003 -Spot 186 | 310 | 499942 | 2.6 | 12.6365 | 1.0 | 2.0871 | 1.3 | 0.1913 | 0.9 | 0.68 | 1128.3 | 9.3 | 1144.6 | 9.0 | 1175.6 | 19.0 | 1175.6 | 19.0 | 96.0 |
| H15-003 -Spot 187 | 265 | 337815 | 2.1 | 12.6408 | 0.5 | 2.0508 | 1.5 | 0.1880 | 1.4 | 0.95 | 1110.6 | 14.6 | 1132.6 | 10.3 | 1174.9 | 9.5 | 1174.9 | 9.5 | 94.5 |
| H15-003 -Spot 188 | 71 | 230748 | 0.9 | 12.4025 | 1.2 | 2.3142 | 1.5 | 0.2082 | 1.0 | 0.63 | 1219.0 | 10.9 | 1216.6 | 10.9 | 1212.4 | 23.5 | 1212.4 | 23.5 | 100.5 |
| H15-003 -Spot 189 | 25 | 39300 | 47.3 | 13.9611 | 1.9 | 1.5524 | 2.3 | 0.1572 | 1.3 | 0.57 | 941.1 | 11.2 | 951.5 | 13.9 | 975.4 | 37.9 | 975.4 | 37.9 | 96.5 |
| H15-003 -Spot 190 | 122 | 74064 | 1.0 | 12.4843 | 0.8 | 2.2416 | 1.8 | 0.2030 | 1.6 | 0.88 | 1191.2 | 16.9 | 1194.2 | 12.3 | 1199.5 | 16.2 | 1199.5 | 16.2 | 99.3 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 191 | 127 | 535818 | 0.8 | 12.7232 | 0.8 | 2.0680 | 1.3 | 0.1908 | 1.0 | 0.78 | 1125.9 | 10.7 | 1138.3 | 9.1 | 1162.0 | 16.4 | 1162.0 | 16.4 | 96.9 |
| H15-003 -Spot 192 | 91 | 144560 | 1.6 | 13.1019 | 1.4 | 1.8801 | 1.8 | 0.1787 | 1.2 | 0.64 | 1059.6 | 11.3 | 1074.1 | 12.0 | 1103.6 | 27.6 | 1103.6 | 27.6 | 96.0 |
| H15-003 -Spot 193 | 122 | 60498 | 15.9 | 13.7002 | 0.9 | 1.6811 | 1.6 | 0.1670 | 1.3 | 0.82 | 995.8 | 12.4 | 1001.4 | 10.4 | 1013.7 | 18.7 | 1013.7 | 18.7 | 98.2 |
| H15-003 -Spot 194 | 356 | 78481 | 8.6 | 13.5243 | 0.6 | 1.7277 | 1.3 | 0.1695 | 1.1 | 0.88 | 1009.1 | 10.4 | 1018.9 | 8.2 | 1039.8 | 12.3 | 1039.8 | 12.3 | 97.0 |
| H15-003 -Spot 195 | 52 | 108996 | 1.4 | 13.1230 | 1.2 | 1.8668 | 1.7 | 0.1777 | 1.2 | 0.68 | 1054.3 | 11.3 | 1069.4 | 11.2 | 1100.4 | 24.7 | 1100.4 | 24.7 | 95.8 |
| H15-003 -Spot 196 | 24 | 28648 | 0.7 | 13.3709 | 1.9 | 1.6791 | 2.3 | 0.1628 | 1.3 | 0.57 | 972.5 | 11.7 | 1000.7 | 14.5 | 1062.9 | 37.8 | 1062.9 | 37.8 | 91.5 |
| H15-003 -Spot 197 | 71 | 76711 | 4.4 | 13.8809 | 1.2 | 1.6476 | 1.8 | 0.1659 | 1.4 | 0.75 | 989.3 | 12.5 | 988.6 | 11.5 | 987.1 | 24.4 | 987.1 | 24.4 | 100.2 |
| H15-003 -Spot 198 | 61 | 136302 | 1.5 | 13.0813 | 1.0 | 1.9112 | 1.8 | 0.1813 | 1.5 | 0.84 | 1074.2 | 14.8 | 1085.0 | 11.8 | 1106.8 | 19.0 | 1106.8 | 19.0 | 97.1 |
| H15-003 -Spot 199 | 184 | 290305 | 2.3 | 13.8567 | 0.9 | 1.5256 | 1.5 | 0.1533 | 1.2 | 0.81 | 919.5 | 10.6 | 940.7 | 9.4 | 990.7 | 18.3 | 990.7 | 18.3 | 92.8 |
| H15-003 -Spot 200 | 16 | 34590 | 0.5 | 13.7705 | 2.3 | 1.6965 | 2.7 | 0.1694 | 1.5 | 0.55 | 1009.0 | 14.1 | 1007.2 | 17.4 | 1003.3 | 46.1 | 1003.3 | 46.1 | 100.6 |
| H15-003 -Spot 201 | 69 | 99938 | 1.5 | 12.5914 | 1.3 | 2.1424 | 1.8 | 0.1956 | 1.2 | 0.68 | 1151.9 | 13.0 | 1162.6 | 12.5 | 1182.6 | 26.3 | 1182.6 | 26.3 | 97.4 |
| H15-003 -Spot 202 | 117 | 180549 | 1.9 | 12.4306 | 0.9 | 2.2973 | 1.7 | 0.2071 | 1.5 | 0.84 | 1213.4 | 16.3 | 1211.5 | 12.4 | 1208.0 | 18.4 | 1208.0 | 18.4 | 100.5 |
| H15-003 -Spot 203 | 54 | 104035 | 0.9 | 12.8779 | 1.2 | 2.0602 | 2.4 | 0.1924 | 2.1 | 0.86 | 1134.5 | 22.0 | 1135.7 | 16.7 | 1138.0 | 24.5 | 1138.0 | 24.5 | 99.7 |
| H15-003 -Spot 204 | 141 | 52319 | 2.1 | 12.7046 | 1.0 | 2.0918 | 1.5 | 0.1927 | 1.0 | 0.70 | 1136.2 | 10.7 | 1146.1 | 10.1 | 1164.9 | 20.7 | 1164.9 | 20.7 | 97.5 |
| H15-003 -Spot 205 | 50 | 73779 | 1.4 | 13.2385 | 1.1 | 1.6901 | 1.5 | 0.1623 | 1.0 | 0.67 | 969.4 | 9.1 | 1004.8 | 9.6 | 1082.8 | 22.4 | 1082.8 | 22.4 | 89.5 |
| H15-003 -Spot 206 | 89 | 143963 | 1.1 | 12.8685 | 1.0 | 2.0071 | 1.6 | 0.1873 | 1.2 | 0.79 | 1106.9 | 12.7 | 1117.9 | 10.7 | 1139.5 | 19.1 | 1139.5 | 19.1 | 97.1 |
| H15-003 -Spot 208 | 110 | 290845 | 1.1 | 13.0895 | 1.5 | 1.7990 | 4.0 | 0.1708 | 3.7 | 0.92 | 1016.4 | 34.5 | 1045.1 | 26.0 | 1105.5 | 30.5 | 1105.5 | 30.5 | 91.9 |
| H15-003 -Spot 209 | 18 | 14444 | 55.4 | 17.2855 | 3.6 | 0.5885 | 4.0 | 0.0738 | 1.6 | 0.41 | 458.9 | 7.2 | 469.9 | 14.9 | 524.1 | 79.0 | 458.9 | 7.2 | 87.5 |
| H15-003 -Spot 210 | 76 | 1172422 | 2.0 | 12.9051 | 1.1 | 2.0246 | 1.4 | 0.1895 | 0.9 | 0.63 | 1118.7 | 9.4 | 1123.8 | 9.8 | 1133.8 | 22.4 | 1133.8 | 22.4 | 98.7 |
| H15-003 -Spot 211 | 73 | 64018 | 0.8 | 13.2708 | 1.4 | 1.7554 | 1.8 | 0.1690 | 1.1 | 0.61 | 1006.4 | 10.0 | 1029.2 | 11.4 | 1077.9 | 28.2 | 1077.9 | 28.2 | 93.4 |
| H15-003 -Spot 212 | 224 | 244919 | 1.7 | 12.7353 | 0.9 | 2.1006 | 1.5 | 0.1940 | 1.3 | 0.83 | 1143.1 | 13.4 | 1149.0 | 10.6 | 1160.1 | 17.3 | 1160.1 | 17.3 | 98.5 |
| H15-003 -Spot 214 | 167 | 118360 | 2.1 | 12.9157 | 0.8 | 1.8369 | 1.3 | 0.1721 | 1.0 | 0.79 | 1023.5 | 9.7 | 1058.7 | 8.6 | 1132.2 | 16.0 | 1132.2 | 16.0 | 90.4 |
| H15-003 -Spot 215 | 71 | 94260 | 1.5 | 12.3846 | 1.2 | 2.3398 | 2.2 | 0.2102 | 1.8 | 0.82 | 1229.7 | 20.0 | 1224.5 | 15.5 | 1215.3 | 24.6 | 1215.3 | 24.6 | 101.2 |
| H15-003 -Spot 216 | 68 | 94630 | 1.3 | 12.6532 | 1.7 | 2.1588 | 2.4 | 0.1981 | 1.8 | 0.73 | 1165.2 | 19.0 | 1167.9 | 16.9 | 1172.9 | 32.7 | 1172.9 | 32.7 | 99.3 |
| H15-003 -Spot 217 | 68 | 57817 | 1.4 | 12.2755 | 1.2 | 2.4399 | 2.4 | 0.2172 | 2.1 | 0.86 | 1267.2 | 23.7 | 1254.5 | 17.4 | 1232.7 | 24.5 | 1232.7 | 24.5 | 102.8 |
| H15-003 -Spot 218 | 176 | 124118 | 6.6 | 12.6551 | 0.9 | 2.1217 | 1.5 | 0.1947 | 1.2 | 0.79 | 1147.0 | 12.5 | 1155.9 | 10.4 | 1172.6 | 18.2 | 1172.6 | 18.2 | 97.8 |
| H15-003 -Spot 219 | 111 | 72437 | 22.5 | 14.2841 | 1.3 | 1.5361 | 1.8 | 0.1591 | 1.3 | 0.73 | 952.0 | 11.9 | 944.9 | 11.4 | 928.6 | 26.1 | 928.6 | 26.1 | 102.5 |
| H15-003 -Spot 220 | 179 | 125734 | 6.9 | 13.3767 | 1.0 | 1.7996 | 1.8 | 0.1746 | 1.5 | 0.83 | 1037.4 | 14.6 | 1045.3 | 12.0 | 1062.0 | 20.5 | 1062.0 | 20.5 | 97.7 |
| H15-003 -Spot 221 | 79 | 120297 | 1.4 | 12.6377 | 1.0 | 2.1818 | 1.3 | 0.2000 | 0.8 | 0.64 | 1175.2 | 9.1 | 1175.2 | 9.1 | 1175.4 | 19.9 | 1175.4 | 19.9 | 100.0 |
| H15-003 -Spot 223 | 59 | 107018 | 1.4 | 12.4832 | 1.2 | 2.2309 | 1.7 | 0.2020 | 1.3 | 0.73 | 1185.9 | 13.7 | 1190.8 | 12.2 | 1199.6 | 23.5 | 1199.6 | 23.5 | 98.9 |
| H15-003 -Spot 224 | 46 | 53206 | 1.4 | 14.3449 | 1.7 | 1.2145 | 2.0 | 0.1264 | 1.2 | 0.56 | 767.0 | 8.3 | 807.3 | 11.4 | 919.9 | 34.7 | 767.0 | 8.3 | 83.4 |
| H15-003 -Spot 225 | 96 | 164294 | 1.0 | 13.0394 | 1.1 | 1.7221 | 1.5 | 0.1629 | 1.0 | 0.68 | 972.6 | 9.2 | 1016.8 | 9.6 | 1113.1 | 21.8 | 1113.1 | 21.8 | 87.4 |
| H15-003 -Spot 226 | 379 | 200545 | 0.7 | 12.7960 | 0.9 | 1.8729 | 1.4 | 0.1738 | 1.1 | 0.77 | 1033.1 | 10.1 | 1071.6 | 9.1 | 1150.7 | 17.2 | 1150.7 | 17.2 | 89.8 |
| H15-003 -Spot 227 | 168 | 233001 | 2.9 | 12.6241 | 0.9 | 2.1892 | 1.4 | 0.2004 | 1.0 | 0.76 | 1177.7 | 11.1 | 1177.6 | 9.4 | 1177.5 | 17.4 | 1177.5 | 17.4 | 100.0 |
| H15-003 -Spot 228 | 92 | 57114 | 1.2 | 12.7626 | 1.1 | 2.0910 | 1.5 | 0.1936 | 1.1 | 0.70 | 1140.6 | 11.4 | 1145.9 | 10.6 | 1155.9 | 21.8 | 1155.9 | 21.8 | 98.7 |
| H15-003 -Spot 229 | 79 | 158277 | 1.2 | 12.5317 | 1.1 | 2.2563 | 1.6 | 0.2051 | 1.1 | 0.72 | 1202.5 | 12.3 | 1198.7 | 11.0 | 1192.0 | 21.4 | 1192.0 | 21.4 | 100.9 |
| H15-003 -Spot 230 | 18 | 121444 | 1.3 | 14.2565 | 2.6 | 1.2473 | 3.2 | 0.1290 | 1.8 | 0.57 | 782.0 | 13.4 | 822.2 | 17.9 | 932.6 | 53.5 | 782.0 | 13.4 | 83.9 |
| H15-003 -Spot 231 | 72 | 167664 | 1.6 | 13.3031 | 1.2 | 1.7839 | 1.8 | 0.1721 | 1.3 | 0.72 | 1023.8 | 12.3 | 1039.6 | 11.7 | 1073.1 | 24.9 | 1073.1 | 24.9 | 95.4 |
| H15-003 -Spot 232 | 26 | 36056 | 0.7 | 13.5139 | 1.3 | 1.7314 | 1.7 | 0.1697 | 1.1 | 0.64 | 1010.4 | 10.3 | 1020.3 | 11.0 | 1041.4 | 26.4 | 1041.4 | 26.4 | 97.0 |
| H15-003 -Spot 234 | 85 | 59647 | 1.7 | 12.5405 | 1.1 | 2.2774 | 1.6 | 0.2071 | 1.2 | 0.73 | 1213.5 | 13.0 | 1205.3 | 11.4 | 1190.6 | 21.8 | 1190.6 | 21.8 | 101.9 |
| H15-003 -Spot 235 | 18 | 38562 | 0.7 | 12.9931 | 1.8 | 1.7383 | 2.3 | 0.1638 | 1.5 | 0.64 | 977.9 | 13.5 | 1022.8 | 14.9 | 1120.3 | 35.3 | 1120.3 | 35.3 | 87.3 |
| H15-003 -Spot 236 | 84 | 157723 | 1.4 | 12.9462 | 1.0 | 1.9914 | 1.5 | 0.1870 | 1.1 | 0.72 | 1105.0 | 10.9 | 1112.6 | 10.1 | 1127.5 | 20.6 | 1127.5 | 20.6 | 98.0 |
| H15-003 -Spot 237 | 143 | 88244 | 2.9 | 13.3106 | 1.1 | 1.7563 | 1.5 | 0.1696 | 1.0 | 0.69 | 1009.6 | 9.6 | 1029.5 | 9.5 | 1072.0 | 21.4 | 1072.0 | 21.4 | 94.2 |
| H15-003 -Spot 238 | 57 | 109776 | 0.5 | 12.7178 | 1.3 | 1.9604 | 1.8 | 0.1808 | 1.2 | 0.69 | 1071.5 | 11.9 | 1102.0 | 11.8 | 1162.8 | 25.3 | 1162.8 | 25.3 | 92.1 |
| H15-003 -Spot 239 | 199 | 386860 | 5.3 | 12.9598 | 1.0 | 1.8220 | 3.1 | 0.1713 | 2.9 | 0.95 | 1019.0 | 27.2 | 1053.4 | 20.0 | 1125.4 | 19.9 | 1125.4 | 19.9 | 90.5 |
| H15-003 -Spot 240 | 228 | 219266 | 7.1 | 13.3715 | 0.9 | 1.7851 | 1.6 | 0.1731 | 1.3 | 0.84 | 1029.3 | 12.6 | 1040.1 | 10.2 | 1062.8 | 17.1 | 1062.8 | 17.1 | 96.8 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 241 | 137 | 153035 | 4.8 | 13.5694 | 1.4 | 1.5140 | 1.8 | 0.1490 | 1.1 | 0.61 | 895.4 | 9.2 | 936.1 | 11.1 | 1033.1 | 29.3 | 1033.1 | 29.3 | 86.7 |
| H15-003 -Spot 242 | 102 | 98626 | 1.2 | 12.8933 | 0.9 | 1.9154 | 1.5 | 0.1791 | 1.2 | 0.81 | 1062.1 | 12.0 | 1086.5 | 10.1 | 1135.6 | 17.8 | 1135.6 | 17.8 | 93.5 |
| H15-003 -Spot 243 | 62 | 324712 | 1.9 | 12.8109 | 1.3 | 1.9191 | 2.3 | 0.1783 | 2.0 | 0.83 | 1057.7 | 19.1 | 1087.7 | 15.7 | 1148.3 | 25.7 | 1148.3 | 25.7 | 92.1 |
| H15-003 -Spot 244 | 257 | 474496 | 2.2 | 12.5223 | 0.9 | 2.2886 | 1.5 | 0.2079 | 1.3 | 0.83 | 1217.4 | 14.2 | 1208.8 | 10.9 | 1193.4 | 16.8 | 1193.4 | 16.8 | 102.0 |
| H15-003 -Spot 245 | 90 | 60596 | 0.9 | 13.1121 | 1.0 | 1.8248 | 1.6 | 0.1735 | 1.2 | 0.80 | 1031.6 | 11.9 | 1054.4 | 10.3 | 1102.1 | 19.0 | 1102.1 | 19.0 | 93.6 |
| H15-003 -Spot 246 | 508 | 74127 | 4.8 | 12.9074 | 0.7 | 1.8755 | 1.6 | 0.1756 | 1.4 | 0.88 | 1042.7 | 13.2 | 1072.5 | 10.3 | 1133.4 | 14.7 | 1133.4 | 14.7 | 92.0 |
| H15-003 -Spot 247 | 40 | 117803 | 2.5 | 14.6276 | 3.1 | 1.3411 | 3.5 | 0.1423 | 1.6 | 0.46 | 857.5 | 12.9 | 863.7 | 20.1 | 879.6 | 63.4 | 857.5 | 12.9 | 97.5 |
| H15-003 -Spot 248 | 78 | 207179 | 1.3 | 12.5796 | 1.3 | 2.0719 | 2.0 | 0.1890 | 1.5 | 0.77 | 1116.1 | 15.6 | 1139.6 | 13.5 | 1184.5 | 24.8 | 1184.5 | 24.8 | 94.2 |
| H15-003 -Spot 249 | 74 | 57845 | 1.0 | 12.6338 | 1.1 | 2.2084 | 1.6 | 0.2024 | 1.2 | 0.74 | 1188.0 | 12.9 | 1183.7 | 11.3 | 1176.0 | 21.6 | 1176.0 | 21.6 | 101.0 |
| H15-003 -Spot 250 | 171 | 141260 | 2.2 | 12.5987 | 1.0 | 2.0918 | 1.6 | 0.1911 | 1.2 | 0.78 | 1127.5 | 12.8 | 1146.1 | 10.9 | 1181.5 | 19.8 | 1181.5 | 19.8 | 95.4 |
| H15-003 -Spot 251 | 55 | 64330 | 2.8 | 13.7079 | 1.5 | 1.5234 | 2.2 | 0.1515 | 1.5 | 0.71 | 909.1 | 13.1 | 939.9 | 13.4 | 1012.6 | 31.4 | 1012.6 | 31.4 | 89.8 |
| H15-003 -Spot 252 | 102 | 65115 | 1.2 | 12.7478 | 0.9 | 2.0054 | 1.3 | 0.1854 | 0.9 | 0.73 | 1096.5 | 9.4 | 1117.3 | 8.6 | 1158.1 | 17.0 | 1158.1 | 17.0 | 94.7 |
| H15-003 -Spot 253 | 48 | 76541 | 1.3 | 12.8700 | 1.1 | 1.9936 | 1.4 | 0.1861 | 0.9 | 0.63 | 1100.1 | 9.1 | 1113.3 | 9.7 | 1139.2 | 22.3 | 1139.2 | 22.3 | 96.6 |
| H15-003 -Spot 255 | 114 | 74827 | 1.0 | 12.7528 | 1.1 | 1.7206 | 1.6 | 0.1591 | 1.2 | 0.72 | 952.0 | 10.6 | 1016.2 | 10.6 | 1157.4 | 22.6 | 1157.4 | 22.6 | 82.3 |
| H15-003 -Spot 256 | 74 | 105639 | 1.7 | 13.1417 | 1.2 | 1.6527 | 1.9 | 0.1575 | 1.5 | 0.77 | 943.0 | 12.8 | 990.6 | 12.1 | 1097.5 | 24.6 | 1097.5 | 24.6 | 85.9 |
| H15-003 -Spot 257 | 222 | 236478 | 2.2 | 12.6437 | 0.9 | 2.2020 | 2.2 | 0.2019 | 2.0 | 0.92 | 1185.7 | 21.9 | 1181.7 | 15.4 | 1174.4 | 17.2 | 1174.4 | 17.2 | 101.0 |
| H15-003 -Spot 258 | 35 | 56227 | 1.0 | 13.9065 | 1.6 | 1.6136 | 2.3 | 0.1627 | 1.6 | 0.71 | 972.0 | 14.9 | 975.5 | 14.6 | 983.4 | 33.3 | 983.4 | 33.3 | 98.8 |
| H15-003 -Spot 259 | 58 | 127711 | 1.6 | 13.1586 | 1.4 | 1.7652 | 1.8 | 0.1685 | 1.0 | 0.58 | 1003.6 | 9.7 | 1032.7 | 11.5 | 1095.0 | 28.8 | 1095.0 | 28.8 | 91.7 |
| H15-003 -Spot 261 | 55 | 63772 | 245.0 | 14.0498 | 1.3 | 1.5452 | 1.7 | 0.1575 | 1.1 | 0.66 | 942.6 | 10.1 | 948.6 | 10.8 | 962.5 | 26.8 | 962.5 | 26.8 | 97.9 |
| H15-003 -Spot 262 | 53 | 249097 | 1.9 | 12.9983 | 1.3 | 2.0342 | 2.0 | 0.1918 | 1.5 | 0.75 | 1131.0 | 15.3 | 1127.0 | 13.4 | 1119.5 | 26.1 | 1119.5 | 26.1 | 101.0 |
| H15-003 -Spot 264 | 70 | 44865 | 2.0 | 13.3203 | 1.3 | 1.5198 | 2.5 | 0.1468 | 2.1 | 0.86 | 883.1 | 17.7 | 938.4 | 15.2 | 1070.5 | 25.4 | 1070.5 | 25.4 | 82.5 |
| H15-003 -Spot 265 | 147 | 91483 | 3.0 | 12.3397 | 1.0 | 2.2223 | 1.6 | 0.1989 | 1.3 | 0.79 | 1169.3 | 13.7 | 1188.1 | 11.4 | 1222.4 | 19.7 | 1222.4 | 19.7 | 95.7 |
| H15-003 -Spot 266 | 130 | 110005 | 6.2 | 14.0414 | 1.1 | 1.4748 | 1.8 | 0.1502 | 1.3 | 0.76 | 902.0 | 11.2 | 920.1 | 10.6 | 963.7 | 23.5 | 963.7 | 23.5 | 93.6 |
| H15-003 -Spot 267 | 26 | 21087 | 3.1 | 14.1186 | 1.7 | 1.3597 | 2.2 | 0.1392 | 1.3 | 0.61 | 840.3 | 10.4 | 871.7 | 12.7 | 952.5 | 35.3 | 840.3 | 10.4 | 88.2 |
| H15-003 -Spot 268 | 15 | 30305 | 0.5 | 13.4115 | 2.0 | 1.7212 | 2.6 | 0.1674 | 1.6 | 0.63 | 997.9 | 15.2 | 1016.5 | 16.6 | 1056.8 | 40.3 | 1056.8 | 40.3 | 94.4 |
| H15-003 -Spot 269 | 43 | 173478 | 89.1 | 14.6081 | 1.7 | 1.2033 | 2.1 | 0.1275 | 1.2 | 0.58 | 773.5 | 9.0 | 802.1 | 11.9 | 882.4 | 36.1 | 773.5 | 9.0 | 87.7 |
| H15-003 -Spot 270 | 76 | 108513 | 2.3 | 13.0278 | 1.1 | 1.9544 | 1.9 | 0.1847 | 1.5 | 0.81 | 1092.4 | 15.3 | 1100.0 | 12.6 | 1114.9 | 22.0 | 1114.9 | 22.0 | 98.0 |
| H15-003 -Spot 271 | 198 | 75178 | 3.4 | 12.5901 | 0.8 | 2.1693 | 1.6 | 0.1981 | 1.4 | 0.85 | 1165.0 | 14.5 | 1171.2 | 11.1 | 1182.8 | 16.6 | 1182.8 | 16.6 | 98.5 |
| H15-003 -Spot 272 | 65 | 51301 | 2.7 | 12.5930 | 1.1 | 2.1862 | 1.7 | 0.1997 | 1.2 | 0.75 | 1173.5 | 13.3 | 1176.6 | 11.5 | 1182.4 | 21.5 | 1182.4 | 21.5 | 99.3 |
| H15-003 -Spot 273 | 76 | 82428 | 1.4 | 12.8002 | 1.2 | 2.0089 | 2.0 | 0.1865 | 1.7 | 0.82 | 1102.4 | 16.9 | 1118.5 | 13.8 | 1150.0 | 23.2 | 1150.0 | 23.2 | 95.9 |
| H15-003 -Spot 274 | 187 | 53039 | 10.2 | 13.7265 | 1.1 | 1.6658 | 1.8 | 0.1658 | 1.5 | 0.81 | 989.1 | 13.3 | 995.6 | 11.4 | 1009.8 | 21.3 | 1009.8 | 21.3 | 98.0 |
| H15-003 -Spot 276 | 58 | 95709 | 1.3 | 12.3933 | 1.1 | 2.3173 | 1.5 | 0.2083 | 1.0 | 0.67 | 1219.7 | 10.9 | 1217.6 | 10.4 | 1213.9 | 21.3 | 1213.9 | 21.3 | 100.5 |
| H15-003 -Spot 277 | 49 | 75984 | 1.3 | 13.4017 | 1.2 | 1.6880 | 1.6 | 0.1641 | 1.1 | 0.66 | 979.4 | 9.6 | 1004.0 | 10.3 | 1058.2 | 24.5 | 1058.2 | 24.5 | 92.5 |
| H15-003 -Spot 278 | 138 | 50053 | 1.0 | 12.6173 | 0.8 | 2.1409 | 1.3 | 0.1959 | 1.0 | 0.76 | 1153.3 | 10.6 | 1162.1 | 9.1 | 1178.6 | 16.8 | 1178.6 | 16.8 | 97.9 |
| H15-003 -Spot 279 | 75 | 250119 | 1.6 | 13.7284 | 1.4 | 1.5095 | 2.1 | 0.1503 | 1.6 | 0.75 | 902.6 | 13.5 | 934.2 | 13.0 | 1009.5 | 28.6 | 1009.5 | 28.6 | 89.4 |
| H15-003 -Spot 280 | 56 | 90245 | 1.1 | 12.5223 | 1.4 | 2.0713 | 1.8 | 0.1881 | 1.1 | 0.61 | 1111.2 | 11.1 | 1139.4 | 12.2 | 1193.5 | 28.0 | 1193.5 | 28.0 | 93.1 |
| H15-003 -Spot 281 | 73 | 214032 | 1.6 | 12.9455 | 1.2 | 1.8897 | 2.0 | 0.1774 | 1.6 | 0.81 | 1052.9 | 15.5 | 1077.5 | 13.1 | 1127.6 | 23.3 | 1127.6 | 23.3 | 93.4 |
| H15-003 -Spot 282 | 89 | 166288 | 2.0 | 12.8042 | 1.1 | 1.9456 | 1.5 | 0.1807 | 1.0 | 0.69 | 1070.7 | 10.1 | 1096.9 | 10.0 | 1149.4 | 21.6 | 1149.4 | 21.6 | 93.2 |
| H15-003 -Spot 283 | 59 | 118098 | 1.4 | 12.7138 | 1.3 | 2.1576 | 1.9 | 0.1989 | 1.4 | 0.73 | 1169.7 | 14.6 | 1167.5 | 13.0 | 1163.4 | 25.5 | 1163.4 | 25.5 | 100.5 |
| H15-003 -Spot 284 | 116 | 213746 | 6.8 | 12.9137 | 1.1 | 2.1084 | 2.5 | 0.1975 | 2.2 | 0.90 | 1161.7 | 23.6 | 1151.5 | 17.0 | 1132.5 | 21.5 | 1132.5 | 21.5 | 102.6 |
| H15-003 -Spot 285 | 112 | 79488 | 9.3 | 13.7593 | 1.0 | 1.6549 | 1.4 | 0.1651 | 1.0 | 0.71 | 985.3 | 8.8 | 991.4 | 8.6 | 1005.0 | 19.3 | 1005.0 | 19.3 | 98.0 |
| H15-003 -Spot 287 | 148 | 964482 | 3.0 | 12.4322 | 0.9 | 2.2099 | 1.6 | 0.1993 | 1.3 | 0.81 | 1171.3 | 13.5 | 1184.2 | 10.9 | 1207.7 | 18.0 | 1207.7 | 18.0 | 97.0 |
| H15-003 -Spot 288 | 65 | 63283 | 1.2 | 12.8587 | 0.9 | 2.0246 | 1.2 | 0.1888 | 0.8 | 0.64 | 1115.0 | 8.1 | 1123.8 | 8.3 | 1141.0 | 18.7 | 1141.0 | 18.7 | 97.7 |
| H15-003 -Spot 289 | 59 | 141202 | 1.3 | 12.6990 | 1.2 | 2.0114 | 1.6 | 0.1853 | 1.0 | 0.62 | 1095.6 | 9.8 | 1119.4 | 10.7 | 1165.7 | 24.4 | 1165.7 | 24.4 | 94.0 |
| H15-003 -Spot 290 | 63 | 86856 | 1.3 | 12.8721 | 1.0 | 1.9729 | 1.5 | 0.1842 | 1.1 | 0.76 | 1089.8 | 11.3 | 1106.3 | 10.0 | 1138.9 | 19.3 | 1138.9 | 19.3 | 95.7 |
| H15-003 -Spot 291 | 97 | 284432 | 1.6 | 13.5364 | 1.1 | 1.6708 | 1.5 | 0.1640 | 1.0 | 0.68 | 979.1 | 9.2 | 997.5 | 9.4 | 1038.0 | 21.9 | 1038.0 | 21.9 | 94.3 |

**Appendix E: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-003 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-003 -Spot 292 | 75 | 145874 | 1.4 | 12.6319 | 1.0 | 2.1331 | 1.4 | 0.1954 | 0.9 | 0.69 | 1150.7 | 9.9 | 1159.6 | 9.3 | 1176.3 | 19.3 | 1176.3 | 19.3 | 97.8 |
| H15-003 -Spot 293 | 73 | 53068 | 1.8 | 12.7317 | 1.1 | 2.1567 | 1.8 | 0.1991 | 1.4 | 0.79 | 1170.7 | 14.9 | 1167.2 | 12.3 | 1160.7 | 21.6 | 1160.7 | 21.6 | 100.9 |
| H15-003 -Spot 294 | 55 | 59164 | 1.0 | 12.5509 | 1.4 | 2.1256 | 1.8 | 0.1935 | 1.1 | 0.64 | 1140.3 | 12.0 | 1157.2 | 12.3 | 1189.0 | 27.0 | 1189.0 | 27.0 | 95.9 |
| H15-003 -Spot 295 | 65 | 8034901 | 1.3 | 12.4746 | 1.3 | 2.1339 | 1.7 | 0.1931 | 1.1 | 0.66 | 1137.9 | 11.8 | 1159.8 | 11.8 | 1201.0 | 25.3 | 1201.0 | 25.3 | 94.7 |
| H15-003 -Spot 296 | 98 | 73170 | 1.5 | 12.4261 | 1.2 | 2.4085 | 1.7 | 0.2171 | 1.1 | 0.67 | 1266.3 | 12.9 | 1245.1 | 12.0 | 1208.7 | 24.3 | 1208.7 | 24.3 | 104.8 |
| H15-003 -Spot 297 | 66 | 186037 | 1.7 | 13.3508 | 1.0 | 1.7476 | 1.9 | 0.1692 | 1.6 | 0.86 | 1007.8 | 15.3 | 1026.3 | 12.4 | 1065.9 | 20.0 | 1065.9 | 20.0 | 94.6 |
| H15-003 -Spot 298 | 127 | 93418 | 6.7 | 13.8541 | 0.9 | 1.3979 | 2.0 | 0.1405 | 1.8 | 0.88 | 847.3 | 14.2 | 888.1 | 12.0 | 991.1 | 19.3 | 991.1 | 19.3 | 85.5 |
| H15-003 -Spot 299 | 506 | 276516 | 5.8 | 12.9222 | 0.9 | 1.8971 | 1.5 | 0.1778 | 1.2 | 0.82 | 1054.9 | 12.0 | 1080.1 | 10.0 | 1131.2 | 17.3 | 1131.2 | 17.3 | 93.3 |
| H15-003 -Spot 300 | 95 | 98901 | 1.0 | 12.5227 | 0.9 | 2.1003 | 1.2 | 0.1908 | 0.9 | 0.72 | 1125.5 | 9.2 | 1148.9 | 8.6 | 1193.4 | 17.2 | 1193.4 | 17.2 | 94.3 |
| H15-003 -Spot 301 | 94 | 150212 | 2.7 | 12.6288 | 0.8 | 2.0970 | 1.3 | 0.1921 | 1.0 | 0.77 | 1132.6 | 10.3 | 1147.8 | 8.8 | 1176.8 | 16.0 | 1176.8 | 16.0 | 96.2 |
| H15-003 -Spot 302 | 19 | 108022 | 0.6 | 13.9955 | 2.2 | 1.3923 | 3.0 | 0.1413 | 2.1 | 0.70 | 852.2 | 16.8 | 885.7 | 17.8 | 970.3 | 43.9 | 970.3 | 43.9 | 87.8 |
| H15-003 -Spot 303 | 50 | 35723 | 1.3 | 13.2417 | 1.3 | 1.7538 | 1.8 | 0.1684 | 1.3 | 0.69 | 1003.5 | 11.8 | 1028.6 | 11.9 | 1082.3 | 26.8 | 1082.3 | 26.8 | 92.7 |
| H15-003 -Spot 304 | 238 | 78508 | 9.0 | 13.3480 | 0.7 | 1.8056 | 1.4 | 0.1748 | 1.2 | 0.85 | 1038.5 | 11.4 | 1047.5 | 9.1 | 1066.3 | 15.0 | 1066.3 | 15.0 | 97.4 |
| H15-003 -Spot 305 | 85 | 88108 | 0.7 | 12.8714 | 1.2 | 1.9441 | 1.6 | 0.1815 | 1.1 | 0.67 | 1075.1 | 10.4 | 1096.4 | 10.5 | 1139.0 | 23.0 | 1139.0 | 23.0 | 94.4 |
| H15-003 -Spot 306 | 135 | 223699 | 1.4 | 12.8991 | 1.0 | 1.9647 | 1.3 | 0.1838 | 0.9 | 0.69 | 1087.7 | 9.1 | 1103.5 | 8.9 | 1134.7 | 19.2 | 1134.7 | 19.2 | 95.9 |
| H15-003 -Spot 307 | 20 | 87355 | 0.5 | 14.5147 | 2.6 | 1.2200 | 3.2 | 0.1284 | 1.9 | 0.59 | 778.9 | 13.8 | 809.8 | 17.7 | 895.6 | 52.8 | 778.9 | 13.8 | 87.0 |
| H15-003 -Spot 308 | 58 | 66919 | 1.3 | 12.8219 | 1.1 | 2.0428 | 1.7 | 0.1900 | 1.3 | 0.75 | 1121.2 | 13.1 | 1129.9 | 11.5 | 1146.6 | 22.2 | 1146.6 | 22.2 | 97.8 |
| H15-003 -Spot 309 | 57 | 81948 | 1.7 | 13.6889 | 2.6 | 1.4048 | 2.8 | 0.1395 | 1.2 | 0.41 | 841.6 | 9.2 | 890.9 | 16.8 | 1015.4 | 52.3 | 1015.4 | 52.3 | 82.9 |
| H15-003 -Spot 310 | 55 | 56578 | 1.3 | 12.4656 | 1.1 | 2.2034 | 1.5 | 0.1992 | 1.1 | 0.69 | 1171.0 | 11.3 | 1182.1 | 10.7 | 1202.4 | 21.8 | 1202.4 | 21.8 | 97.4 |
| H15-003 -Spot 311 | 86 | 96781 | 2.4 | 13.7761 | 1.1 | 1.5961 | 1.7 | 0.1595 | 1.3 | 0.77 | 953.8 | 11.7 | 968.7 | 10.7 | 1002.5 | 22.3 | 1002.5 | 22.3 | 95.1 |
| H15-003 -Spot 312 | 72 | 131876 | 1.3 | 12.9574 | 1.3 | 1.9799 | 1.6 | 0.1861 | 0.9 | 0.58 | 1100.0 | 9.4 | 1108.7 | 10.7 | 1125.7 | 25.7 | 1125.7 | 25.7 | 97.7 |
| H15-003 -Spot 313 | 86 | 107905 | 1.9 | 12.8428 | 1.0 | 2.1656 | 1.5 | 0.2017 | 1.1 | 0.75 | 1184.5 | 11.8 | 1170.1 | 10.2 | 1143.4 | 19.4 | 1143.4 | 19.4 | 103.6 |
| H15-003 -Spot 314 | 210 | 369044 | 2.6 | 12.6953 | 0.8 | 2.0597 | 1.4 | 0.1896 | 1.1 | 0.80 | 1119.4 | 11.2 | 1135.5 | 9.3 | 1166.3 | 16.2 | 1166.3 | 16.2 | 96.0 |
| H15-003 -Spot 315 | 96 | 80922 | 1.7 | 12.6600 | 1.0 | 1.9848 | 1.4 | 0.1822 | 1.0 | 0.74 | 1079.2 | 10.4 | 1110.4 | 9.6 | 1171.9 | 19.1 | 1171.9 | 19.1 | 92.1 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004 26May2014-Spot 1 | 352 | 56460 | 18.2 | 15.4579 | 1.6 | 0.9542 | 2.4 | 0.1070 | 1.8 | 0.76 | 655.1 | 11.4 | 680.3 | 12.0 | 764.3 | 33.2 | 655.1 | 11.4 | 85.7 |
| H15-004 26May2014-Spot 2 | 191 | 112646 | 4.6 | 12.3714 | 1.3 | 2.1112 | 1.6 | 0.1894 | 1.1 | 0.64 | 1118.3 | 10.8 | 1152.5 | 11.4 | 1217.3 | 24.9 | 1217.3 | 24.9 | 91.9 |
| H15-004 26May2014-Spot 3 | 117 | 565920 | 4.5 | 13.3448 | 1.2 | 1.4906 | 1.7 | 0.1443 | 1.2 | 0.69 | 868.8 | 9.5 | 926.6 | 10.2 | 1066.8 | 24.3 | 1066.8 | 24.3 | 81.4 |
| H15-004 26May2014-Spot 4 | 95 | 72980 | 6.7 | 13.8860 | 1.1 | 1.6929 | 1.7 | 0.1705 | 1.4 | 0.78 | 1014.8 | 12.7 | 1005.8 | 11.0 | 986.4 | 21.8 | 986.4 | 21.8 | 102.9 |
| H15-004 26May2014-Spot 5 | 572 | 79057 | 4.5 | 13.9418 | 1.1 | 1.4637 | 2.0 | 0.1480 | 1.7 | 0.82 | 889.8 | 13.9 | 915.5 | 12.2 | 978.2 | 23.3 | 978.2 | 23.3 | 91.0 |
| H15-004 26May2014-Spot 6 | 65 | 78528 | 2.9 | 13.3135 | 1.4 | 1.8698 | 2.2 | 0.1805 | 1.7 | 0.76 | 1070.0 | 16.4 | 1070.5 | 14.6 | 1071.5 | 29.0 | 1071.5 | 29.0 | 99.9 |
| H15-004 26May2014-Spot 7 | 170 | 68175 | 2.2 | 13.1189 | 1.0 | 1.9138 | 1.8 | 0.1821 | 1.5 | 0.82 | 1078.4 | 14.5 | 1085.9 | 11.9 | 1101.0 | 20.4 | 1101.0 | 20.4 | 97.9 |
| H15-004 26May2014-Spot 8 | 53 | 35965 | 1.6 | 12.5907 | 1.2 | 2.1288 | 2.2 | 0.1944 | 1.8 | 0.83 | 1145.1 | 19.4 | 1158.2 | 15.4 | 1182.7 | 24.6 | 1182.7 | 24.6 | 96.8 |
| H15-004 26May2014-Spot 9 | 139 | 71477 | 1.2 | 13.8060 | 1.2 | 1.6445 | 2.0 | 0.1647 | 1.5 | 0.78 | 982.7 | 13.9 | 987.5 | 12.4 | 998.1 | 25.1 | 998.1 | 25.1 | 98.5 |
| H15-004 26May2014-Spot 10 | 149 | 84457 | 1.8 | 13.8851 | 1.2 | 1.5896 | 1.7 | 0.1601 | 1.2 | 0.71 | 957.2 | 10.6 | 966.1 | 10.4 | 986.5 | 23.7 | 986.5 | 23.7 | 97.0 |
| H15-004 26May2014-Spot 11 | 144 | 242050 | 5.2 | 12.8879 | 1.4 | 2.0182 | 2.0 | 0.1886 | 1.5 | 0.72 | 1114.0 | 15.0 | 1121.7 | 13.8 | 1136.5 | 28.2 | 1136.5 | 28.2 | 98.0 |
| H15-004 26May2014-Spot 12 | 97 | 198693 | 1.0 | 11.7096 | 1.2 | 2.6546 | 1.7 | 0.2254 | 1.3 | 0.75 | 1310.6 | 15.5 | 1315.9 | 12.9 | 1324.6 | 22.5 | 1324.6 | 22.5 | 98.9 |
| H15-004 26May2014-Spot 13 | 656 | 62805 | 5.2 | 13.8651 | 0.7 | 1.4593 | 1.6 | 0.1467 | 1.4 | 0.89 | 882.7 | 11.7 | 913.7 | 9.7 | 989.4 | 15.2 | 989.4 | 15.2 | 89.2 |
| H15-004 26May2014-Spot 14 | 75 | 53549 | 3.0 | 12.2079 | 1.1 | 2.3279 | 1.7 | 0.2061 | 1.2 | 0.73 | 1208.1 | 13.2 | 1220.8 | 11.7 | 1243.4 | 22.2 | 1243.4 | 22.2 | 97.2 |
| H15-004 26May2014-Spot 15 | 396 | 248171 | 3.7 | 12.7282 | 1.1 | 2.0939 | 1.8 | 0.1933 | 1.4 | 0.78 | 1139.2 | 14.9 | 1146.8 | 12.5 | 1161.2 | 22.5 | 1161.2 | 22.5 | 98.1 |
| H15-004 26May2014-Spot 16 | 407 | 1705410 | 1.9 | 11.8392 | 1.2 | 2.5296 | 2.0 | 0.2172 | 1.5 | 0.79 | 1267.1 | 17.7 | 1280.6 | 14.3 | 1303.3 | 23.5 | 1303.3 | 23.5 | 97.2 |
| H15-004 26May2014-Spot 17 | 1511 | 116123 | 3.2 | 13.4875 | 1.0 | 1.6835 | 1.6 | 0.1647 | 1.2 | 0.78 | 982.8 | 11.1 | 1002.3 | 10.0 | 1045.4 | 19.9 | 1045.4 | 19.9 | 94.0 |
| H15-004 26May2014-Spot 18 | 530 | 60833 | 46.8 | 13.5833 | 1.1 | 1.6219 | 1.7 | 0.1598 | 1.3 | 0.77 | 955.6 | 12.0 | 978.7 | 11.0 | 1031.0 | 22.5 | 1031.0 | 22.5 | 92.7 |
| H15-004 26May2014-Spot 19 | 395 | 178775 | 7.5 | 13.1145 | 1.4 | 1.6425 | 2.1 | 0.1562 | 1.6 | 0.76 | 935.8 | 14.0 | 986.7 | 13.4 | 1101.7 | 27.6 | 1101.7 | 27.6 | 84.9 |
| H15-004 26May2014-Spot 20 | 201 | 165594 | 3.1 | 13.9562 | 1.2 | 1.6159 | 1.7 | 0.1636 | 1.2 | 0.70 | 976.6 | 10.6 | 976.4 | 10.5 | 976.1 | 24.5 | 976.1 | 24.5 | 100.0 |
| H15-004 26May2014-Spot 21 | 813 | 99567 | 4.9 | 12.3154 | 1.1 | 2.2467 | 1.8 | 0.2007 | 1.4 | 0.80 | 1179.0 | 15.2 | 1195.8 | 12.4 | 1226.2 | 20.7 | 1226.2 | 20.7 | 96.1 |
| H15-004 26May2014-Spot 23 | 357 | 124235 | 3.6 | 15.6443 | 1.2 | 0.9783 | 1.9 | 0.1110 | 1.5 | 0.77 | 678.6 | 9.4 | 692.7 | 9.4 | 739.0 | 25.1 | 678.6 | 9.4 | 91.8 |
| H15-004 26May2014-Spot 24 | 375 | 207102 | 11.6 | 12.9950 | 1.0 | 2.0007 | 1.8 | 0.1886 | 1.6 | 0.86 | 1113.6 | 16.2 | 1115.7 | 12.5 | 1120.0 | 19.1 | 1120.0 | 19.1 | 99.4 |
| H15-004 26May2014-Spot 25 | 134 | 87950 | 2.1 | 12.7912 | 0.9 | 1.8570 | 1.9 | 0.1723 | 1.7 | 0.89 | 1024.6 | 16.2 | 1065.9 | 12.7 | 1151.4 | 17.2 | 1151.4 | 17.2 | 89.0 |
| H15-004 26May2014-Spot 26 | 163 | 154249 | 3.5 | 12.7676 | 1.3 | 2.1420 | 1.9 | 0.1983 | 1.3 | 0.72 | 1166.4 | 14.2 | 1162.5 | 12.8 | 1155.1 | 25.6 | 1155.1 | 25.6 | 101.0 |
| H15-004 26May2014-Spot 27 | 121 | 196424 | 2.4 | 13.4489 | 1.7 | 1.7828 | 2.0 | 0.1739 | 1.2 | 0.57 | 1033.6 | 11.0 | 1039.2 | 13.1 | 1051.2 | 33.4 | 1051.2 | 33.4 | 98.3 |
| H15-004 26May2014-Spot 28 | 142 | 133511 | 3.0 | 13.8512 | 1.2 | 1.5187 | 1.8 | 0.1526 | 1.3 | 0.75 | 915.3 | 11.3 | 937.9 | 10.8 | 991.5 | 23.6 | 991.5 | 23.6 | 92.3 |
| H15-004 26May2014-Spot 29 | 265 | 47516 | 30.3 | 16.4487 | 1.6 | 0.7341 | 2.0 | 0.0876 | 1.2 | 0.60 | 541.2 | 6.4 | 558.9 | 8.7 | 632.0 | 34.8 | 541.2 | 6.4 | 85.6 |
| H15-004 26May2014-Spot 30 | 272 | 53039 | 27.7 | 17.0394 | 1.3 | 0.6387 | 2.1 | 0.0789 | 1.7 | 0.78 | 489.7 | 7.8 | 501.5 | 8.4 | 555.5 | 28.7 | 489.7 | 7.8 | 88.2 |
| H15-004 26May2014-Spot 31 | 795 | 195141 | 5.0 | 13.0498 | 1.1 | 1.7147 | 1.6 | 0.1623 | 1.2 | 0.75 | 969.5 | 11.0 | 1014.1 | 10.5 | 1111.5 | 21.6 | 1111.5 | 21.6 | 87.2 |
| H15-004 26May2014-Spot 32 | 169 | 117622 | 1.5 | 12.9156 | 0.9 | 1.8755 | 1.6 | 0.1757 | 1.3 | 0.80 | 1043.4 | 12.2 | 1072.5 | 10.4 | 1132.2 | 18.8 | 1132.2 | 18.8 | 92.2 |
| H15-004 26May2014-Spot 33 | 114 | 72909 | 3.8 | 12.7650 | 1.2 | 2.0739 | 1.9 | 0.1920 | 1.5 | 0.79 | 1132.2 | 15.4 | 1140.2 | 12.9 | 1155.5 | 23.1 | 1155.5 | 23.1 | 98.0 |
| H15-004 26May2014-Spot 34 | 160 | 162128 | 3.2 | 12.7246 | 1.1 | 2.1189 | 1.9 | 0.1955 | 1.6 | 0.82 | 1151.4 | 16.8 | 1155.0 | 13.3 | 1161.8 | 21.7 | 1161.8 | 21.7 | 99.1 |
| H15-004 26May2014-Spot 35 | 129 | 34210 | 4.7 | 13.7768 | 1.1 | 1.7195 | 1.8 | 0.1718 | 1.4 | 0.79 | 1022.1 | 13.2 | 1015.8 | 11.4 | 1002.4 | 22.1 | 1002.4 | 22.1 | 102.0 |
| H15-004 26May2014-Spot 36 | 242 | 259959 | 3.3 | 12.7686 | 0.8 | 1.9963 | 2.2 | 0.1849 | 2.0 | 0.93 | 1093.5 | 20.5 | 1114.3 | 14.8 | 1154.9 | 16.0 | 1154.9 | 16.0 | 94.7 |
| H15-004 26May2014-Spot 37 | 115 | 32038 | 2.6 | 12.7253 | 1.0 | 2.0971 | 1.8 | 0.1935 | 1.5 | 0.82 | 1140.6 | 15.2 | 1147.9 | 12.2 | 1161.6 | 20.3 | 1161.6 | 20.3 | 98.2 |
| H15-004 26May2014-Spot 38 | 58 | 74453 | 2.7 | 12.8358 | 1.7 | 1.9988 | 2.3 | 0.1861 | 1.6 | 0.69 | 1100.1 | 15.8 | 1115.1 | 15.4 | 1144.5 | 33.0 | 1144.5 | 33.0 | 96.1 |
| H15-004 26May2014-Spot 39 | 281 | 131116 | 18.1 | 16.1279 | 1.2 | 0.7743 | 1.8 | 0.0906 | 1.3 | 0.74 | 558.9 | 7.2 | 582.2 | 8.1 | 674.2 | 26.6 | 558.9 | 7.2 | 82.9 |
| H15-004 26May2014-Spot 40 | 403 | 199538 | 2.4 | 12.3829 | 0.9 | 2.1529 | 1.8 | 0.1933 | 1.5 | 0.87 | 1139.5 | 16.1 | 1166.0 | 12.3 | 1215.5 | 17.5 | 1215.5 | 17.5 | 93.7 |
| H15-004 26May2014-Spot 41 | 90 | 43514 | 3.1 | 13.4324 | 1.6 | 1.7725 | 2.0 | 0.1727 | 1.2 | 0.59 | 1026.9 | 11.1 | 1035.4 | 12.9 | 1053.6 | 32.3 | 1053.6 | 32.3 | 97.5 |
| H15-004 26May2014-Spot 42 | 259 | 69097 | 5.3 | 13.6081 | 1.1 | 1.7018 | 1.8 | 0.1680 | 1.5 | 0.80 | 1000.9 | 13.5 | 1009.2 | 11.6 | 1027.4 | 21.8 | 1027.4 | 21.8 | 97.4 |
| H15-004 26May2014-Spot 43 | 963 | 1204731 | 2.2 | 12.5339 | 1.3 | 2.1010 | 2.0 | 0.1910 | 1.5 | 0.74 | 1126.7 | 15.2 | 1149.1 | 13.7 | 1191.6 | 26.5 | 1191.6 | 26.5 | 94.6 |
| H15-004 26May2014-Spot 44 | 529 | 73925 | 1.7 | 12.7469 | 0.9 | 2.1153 | 1.4 | 0.1956 | 1.0 | 0.73 | 1151.4 | 10.5 | 1153.8 | 9.4 | 1158.3 | 18.3 | 1158.3 | 18.3 | 99.4 |
| H15-004 26May2014-Spot 45 | 169 | 206610 | 1.9 | 12.9338 | 1.0 | 2.0999 | 2.3 | 0.1970 | 2.1 | 0.90 | 1159.1 | 22.1 | 1148.8 | 15.8 | 1129.4 | 19.7 | 1129.4 | 19.7 | 102.6 |
| H15-004 26May2014-Spot 46 | 785 | 469196 | 3.4 | 12.1860 | 0.9 | 2.1157 | 1.8 | 0.1870 | 1.6 | 0.88 | 1105.0 | 16.4 | 1153.9 | 12.6 | 1247.0 | 17.0 | 1247.0 | 17.0 | 88.6 |
| H15-004 26May2014-Spot 47 | 264 | 64855 | 13.5 | 13.1045 | 1.3 | 1.9554 | 2.1 | 0.1858 | 1.6 | 0.77 | 1098.8 | 16.0 | 1100.3 | 13.8 | 1103.2 | 26.3 | 1103.2 | 26.3 | 99.6 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004 26May2014-Spot 48 | 55 | 88926 | 2.9 | 12.8017 | 1.3 | 2.0596 | 2.0 | 0.1912 | 1.5 | 0.76 | 1128.0 | 15.8 | 1135.5 | 13.8 | 1149.8 | 26.2 | 1149.8 | 26.2 | 98.1 |
| H15-004 26May2014-Spot 49 | 493 | 127774 | 0.5 | 13.3087 | 1.1 | 1.8368 | 1.8 | 0.1773 | 1.5 | 0.82 | 1052.2 | 14.4 | 1058.7 | 12.0 | 1072.2 | 21.1 | 1072.2 | 21.1 | 98.1 |
| H15-004 26May2014-Spot 50 | 215 | 280402 | 3.3 | 11.8599 | 1.2 | 2.6368 | 2.0 | 0.2268 | 1.6 | 0.80 | 1317.7 | 19.5 | 1311.0 | 15.1 | 1299.9 | 24.1 | 1299.9 | 24.1 | 101.4 |
| H15-004 26May2014-Spot 51 | 821 | 389754 | 6.4 | 13.5938 | 1.3 | 1.7203 | 2.2 | 0.1696 | 1.8 | 0.82 | 1009.9 | 16.8 | 1016.1 | 14.1 | 1029.5 | 25.7 | 1029.5 | 25.7 | 98.1 |
| H15-004 26May2014-Spot 52 | 166 | 208652 | 2.9 | 13.7579 | 1.4 | 1.5373 | 2.1 | 0.1534 | 1.5 | 0.73 | 919.9 | 13.0 | 945.4 | 12.7 | 1005.2 | 28.7 | 1005.2 | 28.7 | 91.5 |
| H15-004 26May2014-Spot 54 | 70 | 90590 | 7.2 | 11.9268 | 1.2 | 2.4975 | 2.1 | 0.2160 | 1.7 | 0.82 | 1260.9 | 19.7 | 1271.3 | 15.3 | 1288.9 | 23.8 | 1288.9 | 23.8 | 97.8 |
| H15-004 26May2014-Spot 55 | 423 | 77444 | 1.4 | 11.9072 | 1.1 | 2.4248 | 2.1 | 0.2094 | 1.8 | 0.85 | 1225.6 | 19.7 | 1250.0 | 15.0 | 1292.1 | 21.5 | 1292.1 | 21.5 | 94.9 |
| H15-004 26May2014-Spot 56 | 85 | 98389 | 2.2 | 13.2914 | 1.3 | 1.8327 | 1.8 | 0.1767 | 1.2 | 0.67 | 1048.8 | 11.4 | 1057.3 | 11.5 | 1074.8 | 26.1 | 1074.8 | 26.1 | 97.6 |
| H15-004 26May2014-Spot 57 | 193 | 136652 | 1.2 | 12.1302 | 1.0 | 2.2762 | 1.6 | 0.2003 | 1.2 | 0.79 | 1176.7 | 13.3 | 1204.9 | 11.0 | 1256.0 | 18.6 | 1256.0 | 18.6 | 93.7 |
| H15-004 26May2014-Spot 58 | 324 | 75864 | 3.2 | 13.6273 | 1.0 | 1.7762 | 1.6 | 0.1756 | 1.2 | 0.78 | 1042.6 | 11.8 | 1036.8 | 10.2 | 1024.5 | 20.0 | 1024.5 | 20.0 | 101.8 |
| H15-004 26May2014-Spot 59 | 128 | 143579 | 2.6 | 12.8575 | 1.1 | 2.0105 | 1.8 | 0.1875 | 1.4 | 0.78 | 1107.7 | 14.0 | 1119.1 | 12.0 | 1141.1 | 22.2 | 1141.1 | 22.2 | 97.1 |
| H15-004 26May2014-Spot 60 | 325 | 215503 | 1.6 | 13.9789 | 1.2 | 1.4499 | 1.7 | 0.1470 | 1.2 | 0.70 | 884.1 | 10.0 | 909.8 | 10.4 | 972.8 | 25.2 | 972.8 | 25.2 | 90.9 |
| H15-004 26May2014-Spot 61 | 489 | 157114 | 3.6 | 12.7709 | 0.9 | 2.1687 | 1.7 | 0.2009 | 1.4 | 0.83 | 1180.0 | 15.1 | 1171.1 | 11.7 | 1154.5 | 18.5 | 1154.5 | 18.5 | 102.2 |
| H15-004 26May2014-Spot 62 | 210 | 167102 | 2.6 | 13.4862 | 1.2 | 1.8657 | 2.0 | 0.1825 | 1.5 | 0.78 | 1080.5 | 15.4 | 1069.0 | 13.1 | 1045.6 | 25.1 | 1045.6 | 25.1 | 103.3 |
| H15-004 26May2014-Spot 63 | 201 | 74367 | 3.4 | 13.8052 | 1.2 | 1.7182 | 1.8 | 0.1720 | 1.2 | 0.71 | 1023.3 | 11.8 | 1015.4 | 11.3 | 998.2 | 25.1 | 998.2 | 25.1 | 102.5 |
| H15-004 26May2014-Spot 64 | 42 | 144953 | 2.2 | 13.2237 | 1.5 | 1.7687 | 1.9 | 0.1696 | 1.2 | 0.61 | 1010.1 | 10.9 | 1034.0 | 12.4 | 1085.1 | 30.2 | 1085.1 | 30.2 | 93.1 |
| H15-004 26May2014-Spot 65 | 188 | 154900 | 2.4 | 13.2808 | 1.1 | 1.7754 | 1.9 | 0.1710 | 1.5 | 0.80 | 1017.7 | 14.2 | 1036.5 | 12.3 | 1076.4 | 23.0 | 1076.4 | 23.0 | 94.5 |
| H15-004 26May2014-Spot 66 | 146 | 120991 | 2.6 | 14.2838 | 2.3 | 1.3432 | 3.8 | 0.1391 | 3.1 | 0.81 | 839.8 | 24.3 | 864.6 | 22.3 | 928.6 | 46.4 | 839.8 | 24.3 | 90.4 |
| H15-004 26May2014-Spot 67 | 51 | 41796 | 5.3 | 12.1201 | 1.8 | 2.3195 | 2.2 | 0.2039 | 1.3 | 0.56 | 1196.2 | 13.7 | 1218.3 | 15.9 | 1257.6 | 36.1 | 1257.6 | 36.1 | 95.1 |
| H15-004 26May2014-Spot 68 | 366 | 173204 | 5.7 | 9.8942 | 1.1 | 3.6366 | 1.8 | 0.2610 | 1.5 | 0.82 | 1494.8 | 20.2 | 1557.6 | 14.7 | 1643.8 | 19.7 | 1643.8 | 19.7 | 90.9 |
| H15-004 26May2014-Spot 69 | 487 | 55172 | 2.6 | 13.6765 | 0.9 | 1.7165 | 1.5 | 0.1703 | 1.3 | 0.83 | 1013.5 | 11.9 | 1014.7 | 9.9 | 1017.2 | 17.5 | 1017.2 | 17.5 | 99.6 |
| H15-004 26May2014-Spot 70 | 116 | 106517 | 2.4 | 13.0880 | 1.2 | 1.8834 | 1.9 | 0.1788 | 1.5 | 0.80 | 1060.3 | 15.0 | 1075.3 | 12.8 | 1105.7 | 23.3 | 1105.7 | 23.3 | 95.9 |
| H15-004 26May2014-Spot 71 | 413 | 83499 | 13.7 | 13.1618 | 1.1 | 1.9682 | 1.8 | 0.1879 | 1.5 | 0.81 | 1109.9 | 15.1 | 1104.7 | 12.4 | 1094.5 | 21.9 | 1094.5 | 21.9 | 101.4 |
| H15-004 26May2014-Spot 72 | 397 | 64637 | 2.3 | 12.3686 | 1.0 | 2.3878 | 1.6 | 0.2142 | 1.2 | 0.79 | 1251.2 | 14.1 | 1239.0 | 11.3 | 1217.8 | 19.3 | 1217.8 | 19.3 | 102.7 |
| H15-004 26May2014-Spot 73 | 98 | 90397 | 5.3 | 14.4829 | 1.7 | 1.1685 | 2.3 | 0.1227 | 1.6 | 0.68 | 746.3 | 11.1 | 786.0 | 12.6 | 900.1 | 34.9 | 746.3 | 11.1 | 82.9 |
| H15-004 26May2014-Spot 75 | 297 | 187580 | 67.8 | 17.1873 | 2.0 | 0.6327 | 2.5 | 0.0789 | 1.5 | 0.60 | 489.3 | 7.0 | 497.8 | 9.7 | 536.7 | 42.9 | 489.3 | 7.0 | 91.2 |
| H15-004 26May2014-Spot 76 | 149 | 56274 | 2.7 | 7.7886 | 0.8 | 6.3917 | 1.8 | 0.3611 | 1.6 | 0.89 | 1987.2 | 27.3 | 2031.1 | 15.8 | 2076.1 | 14.4 | 2076.1 | 14.4 | 95.7 |
| H15-004 26May2014-Spot 77 | 421 | 661066 | 2.3 | 12.9556 | 1.1 | 1.9470 | 1.9 | 0.1829 | 1.6 | 0.81 | 1083.0 | 15.5 | 1097.4 | 12.9 | 1126.0 | 22.7 | 1126.0 | 22.7 | 96.2 |
| H15-004 26May2014-Spot 78 | 317 | 77011 | 1.6 | 13.8853 | 1.0 | 1.4961 | 1.7 | 0.1507 | 1.4 | 0.81 | 904.7 | 11.6 | 928.8 | 10.4 | 986.5 | 20.5 | 986.5 | 20.5 | 91.7 |
| H15-004 26May2014-Spot 79 | 48 | 28654 | 1.8 | 12.4431 | 1.8 | 2.1716 | 2.7 | 0.1960 | 2.0 | 0.75 | 1153.7 | 21.1 | 1172.0 | 18.6 | 1206.0 | 35.1 | 1206.0 | 35.1 | 95.7 |
| H15-004 26May2014-Spot 80 | 432 | 57474 | 5.3 | 13.7799 | 1.0 | 1.5796 | 1.8 | 0.1579 | 1.5 | 0.84 | 944.9 | 13.2 | 962.2 | 11.2 | 1001.9 | 19.9 | 1001.9 | 19.9 | 94.3 |
| H15-004 26May2014-Spot 81 | 85 | 110568 | 2.9 | 12.7539 | 1.4 | 2.1418 | 2.2 | 0.1981 | 1.6 | 0.76 | 1165.2 | 17.5 | 1162.4 | 14.9 | 1157.2 | 27.6 | 1157.2 | 27.6 | 100.7 |
| H15-004 26May2014-Spot 82 | 103 | 50079 | 2.9 | 12.5133 | 1.4 | 2.1726 | 2.0 | 0.1972 | 1.4 | 0.68 | 1160.1 | 14.4 | 1172.3 | 13.8 | 1194.9 | 28.6 | 1194.9 | 28.6 | 97.1 |
| H15-004 26May2014-Spot 83 | 97 | 72819 | 5.5 | 13.7095 | 1.2 | 1.7061 | 2.0 | 0.1696 | 1.6 | 0.79 | 1010.1 | 14.5 | 1010.8 | 12.6 | 1012.3 | 24.5 | 1012.3 | 24.5 | 99.8 |
| H15-004 26May2014-Spot 84 | 952 | 2451909 | 25.7 | 13.4571 | 0.9 | 1.6189 | 1.6 | 0.1580 | 1.4 | 0.85 | 945.7 | 12.3 | 977.6 | 10.3 | 1049.9 | 17.4 | 1049.9 | 17.4 | 90.1 |
| H15-004 26May2014-Spot 85 | 104 | 99436 | 2.6 | 12.8914 | 1.5 | 2.0743 | 2.4 | 0.1939 | 1.9 | 0.77 | 1142.7 | 19.4 | 1140.3 | 16.5 | 1135.9 | 30.5 | 1135.9 | 30.5 | 100.6 |
| H15-004 26May2014-Spot 87 | 161 | 172245 | 3.5 | 11.8882 | 1.1 | 2.0316 | 1.9 | 0.1752 | 1.6 | 0.81 | 1040.5 | 15.2 | 1126.1 | 13.2 | 1295.2 | 22.2 | 1295.2 | 22.2 | 80.3 |
| H15-004 26May2014-Spot 88 | 205 | 79054 | 2.7 | 12.8882 | 1.1 | 1.9570 | 1.6 | 0.1829 | 1.1 | 0.70 | 1083.0 | 11.1 | 1100.9 | 10.6 | 1136.4 | 22.4 | 1136.4 | 22.4 | 95.3 |
| H15-004 26May2014-Spot 89 | 468 | 105270 | 3.3 | 13.5960 | 0.9 | 1.7392 | 1.4 | 0.1715 | 1.1 | 0.78 | 1020.4 | 10.3 | 1023.2 | 9.1 | 1029.2 | 17.9 | 1029.2 | 17.9 | 99.1 |
| H15-004 26May2014-Spot 90 | 188 | 132860 | 2.7 | 12.5629 | 1.3 | 2.0275 | 1.7 | 0.1847 | 1.1 | 0.66 | 1092.8 | 11.0 | 1124.8 | 11.3 | 1187.1 | 24.8 | 1187.1 | 24.8 | 92.1 |
| H15-004 26May2014-Spot 91 | 543 | 231677 | 2.2 | 13.3610 | 1.1 | 1.8044 | 1.8 | 0.1749 | 1.4 | 0.78 | 1038.8 | 13.6 | 1047.0 | 11.9 | 1064.3 | 23.0 | 1064.3 | 23.0 | 97.6 |
| H15-004 26May2014-Spot 92 | 582 | 235047 | 6.1 | 13.4730 | 1.1 | 1.7250 | 2.1 | 0.1686 | 1.8 | 0.84 | 1004.2 | 16.7 | 1017.9 | 13.7 | 1047.5 | 23.2 | 1047.5 | 23.2 | 95.9 |
| H15-004 26May2014-Spot 93 | 195 | 240709 | 2.3 | 12.4353 | 1.1 | 2.3221 | 1.6 | 0.2094 | 1.2 | 0.75 | 1225.8 | 13.2 | 1219.1 | 11.3 | 1207.2 | 20.8 | 1207.2 | 20.8 | 101.5 |
| H15-004 26May2014-Spot 94 | 248 | 57323 | 5.8 | 14.1598 | 1.1 | 1.4592 | 1.8 | 0.1499 | 1.4 | 0.78 | 900.1 | 12.0 | 913.7 | 11.0 | 946.5 | 23.2 | 946.5 | 23.2 | 95.1 |
| H15-004 26May2014-Spot 95 | 1152 | 63439 | 5.0 | 13.3067 | 0.9 | 1.5708 | 1.7 | 0.1516 | 1.4 | 0.84 | 909.9 | 12.0 | 958.7 | 10.5 | 1072.5 | 18.5 | 1072.5 | 18.5 | 84.8 |
| H15-004 26May2014-Spot 96 | 93 | 396334 | 3.0 | 12.4676 | 1.2 | 2.2739 | 1.8 | 0.2056 | 1.4 | 0.77 | 1205.4 | 15.5 | 1204.2 | 12.9 | 1202.1 | 22.9 | 1202.1 | 22.9 | 100.3 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004 26May2014-Spot 97 | 371 | 457994 | 1.8 | 13.0936 | 1.0 | 2.0125 | 1.9 | 0.1911 | 1.6 | 0.85 | 1127.4 | 16.7 | 1119.7 | 12.9 | 1104.9 | 20.1 | 1104.9 | 20.1 | 102.0 |
| H15-004 26May2014-Spot 98 | 244 | 66503 | 8.9 | 13.6246 | 1.0 | 1.6628 | 1.8 | 0.1643 | 1.5 | 0.83 | 980.7 | 13.4 | 994.5 | 11.3 | 1024.9 | 20.3 | 1024.9 | 20.3 | 95.7 |
| H15-004 26May2014-Spot 100 | 140 | 47586 | 3.1 | 12.9031 | 1.3 | 1.9264 | 1.8 | 0.1803 | 1.2 | 0.67 | 1068.5 | 11.9 | 1090.3 | 12.1 | 1134.1 | 26.7 | 1134.1 | 26.7 | 94.2 |
| H15-004 26May2014-Spot 101 | 106 | 193738 | 2.2 | 13.4494 | 1.5 | 1.6904 | 2.0 | 0.1649 | 1.3 | 0.65 | 983.9 | 12.1 | 1004.9 | 13.0 | 1051.1 | 31.1 | 1051.1 | 31.1 | 93.6 |
| H15-004 26May2014-Spot 102 | 359 | 112339 | 8.8 | 12.2405 | 1.0 | 2.3127 | 1.8 | 0.2053 | 1.5 | 0.84 | 1203.8 | 16.6 | 1216.2 | 12.8 | 1238.3 | 19.3 | 1238.3 | 19.3 | 97.2 |
| H15-004 26May2014-Spot 103 | 171 | 113877 | 0.7 | 12.7832 | 1.0 | 2.1020 | 1.7 | 0.1949 | 1.4 | 0.81 | 1147.8 | 14.8 | 1149.5 | 11.9 | 1152.6 | 19.9 | 1152.6 | 19.9 | 99.6 |
| H15-004 26May2014-Spot 104 | 608 | 219078 | 13.6 | 12.3464 | 0.8 | 2.2911 | 2.0 | 0.2052 | 1.8 | 0.92 | 1203.0 | 20.2 | 1209.5 | 14.2 | 1221.3 | 15.9 | 1221.3 | 15.9 | 98.5 |
| H15-004 26May2014-Spot 105 | 308 | 167807 | 3.7 | 13.1917 | 1.1 | 1.8437 | 2.2 | 0.1764 | 1.9 | 0.87 | 1047.2 | 18.6 | 1061.2 | 14.6 | 1089.9 | 22.2 | 1089.9 | 22.2 | 96.1 |
| H15-004 26May2014-Spot 106 | 311 | 2103620 | 3.3 | 12.8273 | 0.9 | 2.1434 | 1.5 | 0.1994 | 1.3 | 0.83 | 1172.1 | 13.6 | 1162.9 | 10.6 | 1145.8 | 17.2 | 1145.8 | 17.2 | 102.3 |
| H15-004 26May2014-Spot 107 | 78 | 98448 | 2.6 | 13.1093 | 1.3 | 1.8119 | 1.8 | 0.1723 | 1.2 | 0.66 | 1024.6 | 11.1 | 1049.7 | 11.6 | 1102.5 | 26.8 | 1102.5 | 26.8 | 92.9 |
| H15-004 26May2014-Spot 108 | 286 | 138408 | 6.0 | 13.6047 | 0.8 | 1.7379 | 1.6 | 0.1715 | 1.4 | 0.87 | 1020.2 | 13.6 | 1022.7 | 10.6 | 1027.9 | 16.1 | 1027.9 | 16.1 | 99.3 |
| H15-004 26May2014-Spot 109 | 234 | 209316 | 5.1 | 13.2163 | 1.3 | 1.5997 | 1.8 | 0.1533 | 1.2 | 0.67 | 919.6 | 10.2 | 970.1 | 11.0 | 1086.2 | 26.0 | 1086.2 | 26.0 | 84.7 |
| H15-004 26May2014-Spot 110 | 84 | 158813 | 1.9 | 13.3872 | 1.6 | 1.8333 | 2.1 | 0.1780 | 1.4 | 0.65 | 1056.0 | 13.4 | 1057.5 | 13.9 | 1060.4 | 32.6 | 1060.4 | 32.6 | 99.6 |
| H15-004 26May2014-Spot 125 | 449 | 169318 | 4.7 | 12.6383 | 1.0 | 2.1253 | 1.8 | 0.1948 | 1.5 | 0.83 | 1147.4 | 16.1 | 1157.1 | 12.7 | 1175.3 | 20.3 | 1175.3 | 20.3 | 97.6 |
| H15-004_Run2-Spot 146 | 1612 | 76696 | 2.9 | 12.5532 | 1.4 | 2.1071 | 2.7 | 0.1918 | 2.3 | 0.85 | 1131.3 | 23.6 | 1151.1 | 18.3 | 1188.6 | 27.5 | 1188.6 | 27.5 | 95.2 |
| H15-004_Run2-Spot 147 | 847 | 204879 | 4.9 | 12.7295 | 1.2 | 2.1015 | 2.8 | 0.1940 | 2.6 | 0.90 | 1143.1 | 26.7 | 1149.3 | 19.4 | 1161.0 | 24.0 | 1161.0 | 24.0 | 98.5 |
| H15-004_Run2-Spot 148 | 425 | 70887 | 3.7 | 13.6944 | 2.0 | 1.4857 | 3.1 | 0.1476 | 2.4 | 0.77 | 887.3 | 19.8 | 924.6 | 18.9 | 1014.6 | 40.4 | 1014.6 | 40.4 | 87.5 |
| H15-004_Run2-Spot 149 | 448 | 154830 | 2.8 | 11.4120 | 1.5 | 2.6308 | 2.6 | 0.2177 | 2.1 | 0.80 | 1269.9 | 23.7 | 1309.3 | 18.9 | 1374.3 | 29.5 | 1374.3 | 29.5 | 92.4 |
| H15-004_Run2-Spot 150 | 607 | 188948 | 2.9 | 12.5507 | 1.9 | 1.9430 | 4.1 | 0.1769 | 3.7 | 0.89 | 1049.8 | 35.4 | 1096.0 | 27.6 | 1189.0 | 37.2 | 1189.0 | 37.2 | 88.3 |
| H15-004_Run2-Spot 151 | 254 | 43175 | 1.9 | 13.4624 | 1.9 | 1.8330 | 2.9 | 0.1790 | 2.2 | 0.76 | 1061.3 | 21.4 | 1057.3 | 18.9 | 1049.1 | 37.7 | 1049.1 | 37.7 | 101.2 |
| H15-004_Run2-Spot 152 | 1346 | 97725 | 3.4 | 13.2380 | 1.2 | 1.5873 | 2.5 | 0.1524 | 2.1 | 0.86 | 914.4 | 18.0 | 965.2 | 15.3 | 1082.9 | 25.0 | 1082.9 | 25.0 | 84.4 |
| H15-004_Run2-Spot 153 | 280 | 41712 | 6.0 | 12.5342 | 2.0 | 2.1514 | 4.0 | 0.1956 | 3.5 | 0.87 | 1151.5 | 37.2 | 1165.5 | 28.0 | 1191.6 | 38.8 | 1191.6 | 38.8 | 96.6 |
| H15-004_Run2-Spot 154 | 969 | 484021 | 8.1 | 12.8786 | 1.3 | 1.8612 | 4.5 | 0.1738 | 4.3 | 0.96 | 1033.2 | 41.4 | 1067.4 | 29.9 | 1137.9 | 26.1 | 1137.9 | 26.1 | 90.8 |
| H15-004_Run2-Spot 155 | 780 | 97456 | 11.0 | 13.5331 | 1.5 | 1.6075 | 2.7 | 0.1578 | 2.2 | 0.83 | 944.4 | 19.6 | 973.1 | 16.8 | 1038.5 | 30.1 | 1038.5 | 30.1 | 90.9 |
| H15-004_Run2-Spot 156 | 442 | 50301 | 1.8 | 13.3071 | 1.4 | 1.6059 | 2.6 | 0.1550 | 2.2 | 0.84 | 928.9 | 19.0 | 972.5 | 16.4 | 1072.5 | 28.9 | 1072.5 | 28.9 | 86.6 |
| H15-004_Run2-Spot 157 | 298 | 143686 | 3.9 | 12.2471 | 1.8 | 2.2963 | 2.3 | 0.2040 | 1.4 | 0.63 | 1196.6 | 15.6 | 1211.2 | 16.1 | 1237.2 | 34.9 | 1237.2 | 34.9 | 96.7 |
| H15-004_Run2-Spot 158 | 1887 | 151631 | 39.4 | 17.7776 | 1.4 | 0.5703 | 2.0 | 0.0735 | 1.5 | 0.74 | 457.4 | 6.7 | 458.2 | 7.5 | 462.3 | 30.4 | 457.4 | 6.7 | 99.0 |
| H15-004_Run2-Spot 159 | 1038 | 108897 | 3.5 | 12.8740 | 1.5 | 1.9268 | 2.5 | 0.1799 | 2.0 | 0.80 | 1066.4 | 19.3 | 1090.4 | 16.5 | 1138.6 | 29.6 | 1138.6 | 29.6 | 93.7 |
| H15-004_Run2-Spot 160 | 1680 | 221342 | 23.7 | 13.6232 | 1.2 | 1.4972 | 1.9 | 0.1479 | 1.5 | 0.77 | 889.4 | 12.1 | 929.3 | 11.4 | 1025.1 | 24.1 | 1025.1 | 24.1 | 86.8 |
| H15-004_Run2-Spot 161 | 265 | 43336 | 1.6 | 12.3521 | 1.8 | 2.2603 | 2.9 | 0.2025 | 2.3 | 0.80 | 1188.7 | 25.3 | 1200.0 | 20.5 | 1220.4 | 34.6 | 1220.4 | 34.6 | 97.4 |
| H15-004_Run2-Spot 162 | 1384 | 209727 | 5.2 | 14.3682 | 2.3 | 1.1285 | 3.9 | 0.1176 | 3.1 | 0.80 | 716.7 | 21.1 | 767.0 | 20.9 | 916.5 | 48.2 | 716.7 | 21.1 | 78.2 |
| H15-004_Run2-Spot 163 | 108 | 58439 | 1.5 | 13.0677 | 1.7 | 1.8017 | 2.5 | 0.1708 | 1.9 | 0.76 | 1016.3 | 18.1 | 1046.1 | 16.6 | 1108.8 | 33.2 | 1108.8 | 33.2 | 91.7 |
| H15-004_Run2-Spot 164 | 395 | 42453 | 5.7 | 12.2804 | 1.5 | 2.0978 | 2.0 | 0.1868 | 1.3 | 0.65 | 1104.2 | 13.0 | 1148.1 | 13.5 | 1231.9 | 29.1 | 1231.9 | 29.1 | 89.6 |
| H15-004_Run2-Spot 165 | 1181 | 139190 | 2.2 | 13.1066 | 1.3 | 1.8428 | 2.7 | 0.1752 | 2.4 | 0.88 | 1040.6 | 23.2 | 1060.9 | 18.0 | 1102.9 | 25.9 | 1102.9 | 25.9 | 94.3 |
| H15-004_Run2-Spot 166 | 119 | 34559 | 2.1 | 12.8812 | 2.5 | 1.7649 | 3.7 | 0.1649 | 2.7 | 0.74 | 983.8 | 24.8 | 1032.6 | 23.9 | 1137.5 | 49.3 | 1137.5 | 49.3 | 86.5 |
| H15-004_Run2-Spot 167 | 340 | 37577 | 1.4 | 13.2620 | 1.6 | 1.7874 | 2.4 | 0.1719 | 1.9 | 0.77 | 1022.7 | 17.7 | 1040.9 | 15.8 | 1079.3 | 31.1 | 1079.3 | 31.1 | 94.8 |
| H15-004_Run2-Spot 168 | 81 | 22001 | 3.3 | 14.6130 | 3.3 | 1.0095 | 4.1 | 0.1070 | 2.4 | 0.60 | 655.2 | 15.2 | 708.6 | 20.9 | 881.6 | 67.8 | 655.2 | 15.2 | 74.3 |
| H15-004_Run2-Spot 169 | 191 | 35665 | 1.3 | 13.0326 | 2.2 | 1.8565 | 3.0 | 0.1755 | 2.0 | 0.68 | 1042.3 | 19.3 | 1065.8 | 19.6 | 1114.2 | 43.5 | 1114.2 | 43.5 | 93.5 |
| H15-004_Run2-Spot 170 | 779 | 221920 | 12.6 | 12.2446 | 2.3 | 2.2981 | 3.4 | 0.2041 | 2.5 | 0.73 | 1197.2 | 27.3 | 1211.7 | 24.2 | 1237.6 | 45.8 | 1237.6 | 45.8 | 96.7 |
| H15-004_Run2-Spot 171 | 244 | 191622 | 2.7 | 12.5191 | 1.8 | 2.2939 | 3.3 | 0.2083 | 2.7 | 0.83 | 1219.7 | 30.4 | 1210.4 | 23.4 | 1194.0 | 36.5 | 1194.0 | 36.5 | 102.2 |
| H15-004_Run2-Spot 172 | 1547 | 137280 | 36.8 | 12.9671 | 1.3 | 1.8648 | 2.4 | 0.1754 | 2.0 | 0.83 | 1041.7 | 19.1 | 1068.7 | 15.8 | 1124.2 | 26.3 | 1124.2 | 26.3 | 92.7 |
| H15-004_Run2-Spot 173 | 776 | 92353 | 1.8 | 13.6134 | 1.4 | 1.7459 | 2.3 | 0.1724 | 1.9 | 0.80 | 1025.2 | 17.8 | 1025.6 | 15.1 | 1026.6 | 28.2 | 1026.6 | 28.2 | 99.9 |
| H15-004_Run2-Spot 174 | 1064 | 162274 | 2.2 | 12.7497 | 1.3 | 1.9628 | 3.0 | 0.1815 | 2.7 | 0.91 | 1075.2 | 26.7 | 1102.8 | 20.0 | 1157.8 | 25.0 | 1157.8 | 25.0 | 92.9 |
| H15-004_Run2-Spot 175 | 81 | 44972 | 3.2 | 13.9372 | 3.3 | 1.5143 | 3.9 | 0.1531 | 2.1 | 0.54 | 918.2 | 17.9 | 936.2 | 23.7 | 978.8 | 66.6 | 978.8 | 66.6 | 93.8 |
| H15-004_Run2-Spot 176 | 227 | 81583 | 3.5 | 12.2920 | 1.6 | 2.1447 | 2.4 | 0.1912 | 1.8 | 0.73 | 1127.9 | 18.1 | 1163.3 | 16.5 | 1230.0 | 31.7 | 1230.0 | 31.7 | 91.7 |
| H15-004_Run2-Spot 177 | 163 | 50362 | 4.8 | 12.3142 | 2.1 | 2.2794 | 2.8 | 0.2036 | 1.9 | 0.66 | 1194.5 | 20.3 | 1205.9 | 19.8 | 1226.4 | 41.3 | 1226.4 | 41.3 | 97.4 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004_Run2-Spot 178 | 248 | 115833 | 3.4 | 12.5354 | 1.5 | 2.0081 | 2.9 | 0.1826 | 2.5 | 0.86 | 1081.0 | 24.7 | 1118.2 | 19.5 | 1191.4 | 28.8 | 1191.4 | 28.8 | 90.7 |
| H15-004_Run2-Spot 179 | 179 | 50149 | 1.9 | 13.2159 | 2.1 | 1.7478 | 2.6 | 0.1675 | 1.6 | 0.62 | 998.5 | 15.1 | 1026.4 | 17.0 | 1086.3 | 41.5 | 1086.3 | 41.5 | 91.9 |
| H15-004_Run2-Spot 180 | 486 | 85409 | 3.7 | 13.3214 | 1.3 | 1.8174 | 2.4 | 0.1756 | 2.0 | 0.83 | 1042.8 | 19.0 | 1051.7 | 15.6 | 1070.3 | 26.7 | 1070.3 | 26.7 | 97.4 |
| H15-004_Run2-Spot 181 | 479 | 68106 | 2.0 | 13.1203 | 1.8 | 1.7209 | 3.2 | 0.1638 | 2.6 | 0.82 | 977.6 | 23.7 | 1016.3 | 20.5 | 1100.8 | 36.6 | 1100.8 | 36.6 | 88.8 |
| H15-004_Run2-Spot 182 | 226 | 38776 | 2.0 | 13.4102 | 2.2 | 1.5887 | 3.6 | 0.1545 | 2.9 | 0.80 | 926.2 | 25.1 | 965.8 | 22.7 | 1057.0 | 44.0 | 1057.0 | 44.0 | 87.6 |
| H15-004_Run2-Spot 183 | 311 | 49505 | 2.3 | 12.7348 | 1.9 | 2.1046 | 2.9 | 0.1944 | 2.1 | 0.74 | 1145.1 | 22.3 | 1150.3 | 19.7 | 1160.2 | 38.2 | 1160.2 | 38.2 | 98.7 |
| H15-004_Run2-Spot 184 | 295 | 58780 | 3.4 | 11.6660 | 1.7 | 2.3089 | 3.5 | 0.1954 | 3.1 | 0.88 | 1150.3 | 32.3 | 1215.0 | 24.8 | 1331.8 | 32.4 | 1331.8 | 32.4 | 86.4 |
| H15-004_Run2-Spot 185 | 720 | 70019 | 1.2 | 14.2513 | 1.2 | 1.4164 | 1.7 | 0.1464 | 1.2 | 0.70 | 880.8 | 9.8 | 895.9 | 10.1 | 933.3 | 24.7 | 933.3 | 24.7 | 94.4 |
| H15-004_Run2-Spot 186 | 294 | 122640 | 2.3 | 14.0075 | 1.6 | 1.6159 | 2.5 | 0.1642 | 1.9 | 0.76 | 979.9 | 17.5 | 976.4 | 15.8 | 968.6 | 33.3 | 968.6 | 33.3 | 101.2 |
| H15-004_Run2-Spot 187 | 980 | 252050 | 3.4 | 12.6872 | 1.3 | 1.9797 | 3.0 | 0.1822 | 2.7 | 0.90 | 1078.8 | 26.4 | 1108.6 | 19.9 | 1167.6 | 25.5 | 1167.6 | 25.5 | 92.4 |
| H15-004_Run2-Spot 188 | 741 | 111067 | 12.5 | 16.0739 | 1.9 | 0.7526 | 3.8 | 0.0877 | 3.3 | 0.86 | 542.1 | 17.1 | 569.7 | 16.6 | 681.4 | 41.2 | 542.1 | 17.1 | 79.6 |
| H15-004_Run2-Spot 189 | 496 | 74269 | 2.5 | 12.5294 | 1.4 | 2.2102 | 2.4 | 0.2008 | 2.0 | 0.81 | 1179.8 | 21.0 | 1184.3 | 16.9 | 1192.3 | 28.3 | 1192.3 | 28.3 | 99.0 |
| H15-004_Run2-Spot 190 | 652 | 62669 | 6.0 | 13.2083 | 1.7 | 1.4736 | 2.5 | 0.1412 | 1.9 | 0.75 | 851.2 | 15.1 | 919.6 | 15.3 | 1087.4 | 33.8 | 1087.4 | 33.8 | 78.3 |
| H15-004_Run2-Spot 191 | 214 | 30341 | 2.9 | 12.7025 | 1.9 | 2.0234 | 3.2 | 0.1864 | 2.6 | 0.80 | 1101.9 | 26.3 | 1123.4 | 22.0 | 1165.2 | 38.3 | 1165.2 | 38.3 | 94.6 |
| H15-004_Run2-Spot 192 | 116 | 26106 | 2.4 | 12.4226 | 2.7 | 1.9973 | 3.8 | 0.1799 | 2.6 | 0.69 | 1066.7 | 25.7 | 1114.6 | 25.5 | 1209.2 | 53.6 | 1209.2 | 53.6 | 88.2 |
| H15-004_Run2-Spot 193 | 222 | 67924 | 3.0 | 12.7207 | 1.9 | 2.0933 | 3.2 | 0.1931 | 2.5 | 0.80 | 1138.3 | 26.5 | 1146.6 | 21.7 | 1162.4 | 37.5 | 1162.4 | 37.5 | 97.9 |
| H15-004_Run2-Spot 194 | 133 | 50362 | 3.2 | 13.9829 | 2.9 | 1.5356 | 3.7 | 0.1557 | 2.3 | 0.62 | 933.0 | 19.7 | 944.8 | 22.5 | 972.2 | 58.3 | 972.2 | 58.3 | 96.0 |
| H15-004_Run2-Spot 195 | 629 | 84544 | 3.9 | 13.3099 | 1.5 | 1.6667 | 2.3 | 0.1609 | 1.7 | 0.74 | 961.7 | 14.9 | 995.9 | 14.3 | 1072.1 | 30.5 | 1072.1 | 30.5 | 89.7 |
| H15-004_Run2-Spot 196 | 658 | 81693 | 210.4 | 17.6001 | 2.0 | 0.5785 | 3.0 | 0.0738 | 2.2 | 0.73 | 459.2 | 9.8 | 463.5 | 11.2 | 484.5 | 45.2 | 459.2 | 9.8 | 94.8 |
| H15-004_Run2-Spot 197 | 267 | 39605 | 4.2 | 12.7185 | 2.5 | 1.7537 | 3.9 | 0.1618 | 3.0 | 0.77 | 966.6 | 27.3 | 1028.5 | 25.4 | 1162.7 | 49.5 | 1162.7 | 49.5 | 83.1 |
| H15-004_Run2-Spot 198 | 277 | 121524 | 2.9 | 12.5750 | 2.0 | 1.9020 | 3.1 | 0.1735 | 2.3 | 0.76 | 1031.2 | 22.4 | 1081.8 | 20.4 | 1185.2 | 39.1 | 1185.2 | 39.1 | 87.0 |
| H15-004_Run2-Spot 199 | 107 | 157154 | 2.0 | 12.7982 | 1.9 | 2.0261 | 2.7 | 0.1881 | 1.9 | 0.71 | 1110.9 | 19.7 | 1124.3 | 18.3 | 1150.3 | 37.5 | 1150.3 | 37.5 | 96.6 |
| H15-004_Run2-Spot 200 | 2871 | 3657751 | 4.3 | 12.4968 | 1.3 | 1.9805 | 2.2 | 0.1795 | 1.7 | 0.81 | 1064.3 | 17.1 | 1108.9 | 14.5 | 1197.5 | 24.9 | 1197.5 | 24.9 | 88.9 |
| H15-004_Run2-Spot 201 | 847 | 136623 | 3.0 | 12.1414 | 1.5 | 2.3823 | 2.9 | 0.2098 | 2.5 | 0.86 | 1227.6 | 28.1 | 1237.3 | 21.1 | 1254.1 | 29.8 | 1254.1 | 29.8 | 97.9 |
| H15-004_Run2-Spot 202 | 288 | 78970 | 1.0 | 13.2957 | 1.3 | 1.8682 | 2.8 | 0.1802 | 2.5 | 0.88 | 1067.8 | 24.5 | 1069.9 | 18.7 | 1074.2 | 26.6 | 1074.2 | 26.6 | 99.4 |
| H15-004_Run2-Spot 203 | 387 | 74077 | 2.2 | 13.7011 | 2.6 | 1.3545 | 3.5 | 0.1346 | 2.4 | 0.68 | 814.0 | 18.4 | 869.5 | 20.6 | 1013.6 | 52.4 | 1013.6 | 52.4 | 80.3 |
| H15-004_Run2-Spot 204 | 385 | 73750 | 1.1 | 13.1316 | 2.0 | 1.8447 | 2.8 | 0.1757 | 2.0 | 0.70 | 1043.4 | 18.9 | 1061.5 | 18.4 | 1099.1 | 39.8 | 1099.1 | 39.8 | 94.9 |
| H15-004_Run2-Spot 205 | 348 | 159118 | 2.0 | 13.0774 | 1.9 | 1.6999 | 3.3 | 0.1612 | 2.7 | 0.82 | 963.6 | 24.1 | 1008.5 | 20.9 | 1107.4 | 37.1 | 1107.4 | 37.1 | 87.0 |
| H15-004_Run2-Spot 206 | 907 | 155043 | 5.5 | 12.9647 | 1.9 | 1.8886 | 2.7 | 0.1776 | 1.9 | 0.72 | 1053.8 | 18.9 | 1077.1 | 17.9 | 1124.6 | 37.1 | 1124.6 | 37.1 | 93.7 |
| H15-004_Run2-Spot 207 | 113 | 119327 | 2.6 | 14.4994 | 2.9 | 1.5195 | 3.1 | 0.1598 | 1.3 | 0.40 | 955.6 | 11.1 | 938.3 | 19.1 | 897.8 | 58.9 | 897.8 | 58.9 | 106.4 |
| H15-004_Run2-Spot 208 | 708 | 279117 | 5.9 | 12.8017 | 1.4 | 2.0456 | 2.8 | 0.1899 | 2.4 | 0.87 | 1121.0 | 25.1 | 1130.8 | 19.1 | 1149.8 | 27.5 | 1149.8 | 27.5 | 97.5 |
| H15-004_Run2-Spot 209 | 1137 | 143575 | 5.9 | 12.9314 | 1.1 | 1.9365 | 3.7 | 0.1816 | 3.5 | 0.96 | 1075.8 | 35.1 | 1093.8 | 24.8 | 1129.8 | 21.7 | 1129.8 | 21.7 | 95.2 |
| H15-004_Run2-Spot 210 | 648 | 41568 | 6.1 | 15.8022 | 2.1 | 0.8416 | 3.1 | 0.0965 | 2.3 | 0.73 | 593.6 | 12.8 | 620.0 | 14.4 | 717.7 | 45.1 | 593.6 | 12.8 | 82.7 |
| H15-004_Run2-Spot 211 | 95 | 84652 | 3.6 | 13.0593 | 2.7 | 2.0861 | 3.5 | 0.1976 | 2.3 | 0.66 | 1162.3 | 24.7 | 1144.2 | 24.3 | 1110.1 | 53.4 | 1110.1 | 53.4 | 104.7 |
| H15-004_Run2-Spot 212 | 454 | 126121 | 3.5 | 13.1435 | 1.4 | 1.8221 | 3.0 | 0.1737 | 2.6 | 0.88 | 1032.4 | 24.9 | 1053.4 | 19.5 | 1097.3 | 28.5 | 1097.3 | 28.5 | 94.1 |
| H15-004_Run2-Spot 213 | 321 | 94308 | 4.7 | 13.2534 | 2.2 | 1.7678 | 3.4 | 0.1699 | 2.6 | 0.76 | 1011.7 | 24.1 | 1033.7 | 22.0 | 1080.6 | 44.3 | 1080.6 | 44.3 | 93.6 |
| H15-004_Run2-Spot 214 | 293 | 128351 | 5.6 | 13.4903 | 2.5 | 1.6954 | 3.1 | 0.1659 | 1.8 | 0.59 | 989.4 | 16.8 | 1006.8 | 19.8 | 1045.0 | 50.5 | 1045.0 | 50.5 | 94.7 |
| H15-004_Run2-Spot 215 | 520 | 106300 | 2.7 | 13.7487 | 1.5 | 1.6183 | 2.8 | 0.1614 | 2.4 | 0.85 | 964.4 | 21.1 | 977.3 | 17.5 | 1006.5 | 29.9 | 1006.5 | 29.9 | 95.8 |
| H15-004_Run2-Spot 216 | 369 | 73334 | 2.6 | 12.8478 | 1.8 | 2.1170 | 3.5 | 0.1973 | 2.9 | 0.85 | 1160.6 | 31.2 | 1154.4 | 23.9 | 1142.7 | 36.4 | 1142.7 | 36.4 | 101.6 |
| H15-004_Run2-Spot 217 | 2123 | 72446 | 7.2 | 13.0105 | 1.4 | 1.8323 | 3.1 | 0.1729 | 2.8 | 0.90 | 1028.1 | 26.8 | 1057.1 | 20.6 | 1117.6 | 27.5 | 1117.6 | 27.5 | 92.0 |
| H15-004_Run2-Spot 218 | 1092 | 90574 | 2.6 | 12.8705 | 1.2 | 1.7916 | 4.4 | 0.1672 | 4.2 | 0.96 | 996.9 | 38.8 | 1042.4 | 28.5 | 1139.1 | 24.7 | 1139.1 | 24.7 | 87.5 |
| H15-004_Run2-Spot 219 | 419 | 163047 | 3.9 | 13.2497 | 2.0 | 1.7597 | 2.5 | 0.1691 | 1.4 | 0.58 | 1007.1 | 13.5 | 1030.7 | 16.1 | 1081.2 | 40.4 | 1081.2 | 40.4 | 93.2 |
| H15-004_Run2-Spot 220 | 204 | 129010 | 2.0 | 13.2580 | 2.4 | 1.8859 | 4.3 | 0.1813 | 3.6 | 0.84 | 1074.3 | 35.7 | 1076.1 | 28.6 | 1079.9 | 47.3 | 1079.9 | 47.3 | 99.5 |
| H15-004_Run3-Spot 221 | 408 | 114777 | 2.9 | 13.7899 | 2.0 | 1.7277 | 2.9 | 0.1728 | 2.2 | 0.74 | 1027.5 | 20.5 | 1018.9 | 18.8 | 1000.5 | 40.3 | 1000.5 | 40.3 | 102.7 |
| H15-004_Run3-Spot 222 | 304 | 69001 | 2.4 | 12.4416 | 1.3 | 2.1844 | 2.4 | 0.1971 | 2.0 | 0.84 | 1159.8 | 21.3 | 1176.1 | 16.7 | 1206.2 | 25.8 | 1206.2 | 25.8 | 96.1 |
| H15-004_Run3-Spot 223 | 171 | 28013 | 2.1 | 13.5280 | 1.8 | 1.7395 | 2.7 | 0.1707 | 2.0 | 0.73 | 1015.8 | 18.5 | 1023.3 | 17.4 | 1039.3 | 37.2 | 1039.3 | 37.2 | 97.7 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004_Run3-Spot 224 | 48 | 36321 | 2.0 | 13.5431 | 3.4 | 1.7521 | 4.0 | 0.1721 | 2.0 | 0.49 | 1023.6 | 18.6 | 1027.9 | 25.6 | 1037.0 | 69.5 | 1037.0 | 69.5 | 98.7 |
| H15-004_Run3-Spot 225 | 567 | 192254 | 6.7 | 13.5851 | 1.6 | 1.6290 | 2.5 | 0.1605 | 2.0 | 0.79 | 959.6 | 18.0 | 981.5 | 16.0 | 1030.8 | 31.4 | 1030.8 | 31.4 | 93.1 |
| H15-004_Run3-Spot 226 | 89 | 33486 | 2.0 | 13.2759 | 2.8 | 1.7444 | 3.6 | 0.1680 | 2.3 | 0.63 | 1000.8 | 21.4 | 1025.1 | 23.5 | 1077.2 | 56.5 | 1077.2 | 56.5 | 92.9 |
| H15-004_Run3-Spot 227 | 218 | 5315362 | 3.5 | 10.2191 | 1.6 | 3.1206 | 4.0 | 0.2313 | 3.7 | 0.91 | 1341.2 | 44.4 | 1437.8 | 30.8 | 1583.6 | 30.3 | 1583.6 | 30.3 | 84.7 |
| H15-004_Run3-Spot 228 | 194 | 173817 | 2.1 | 13.2030 | 1.5 | 1.8326 | 2.6 | 0.1755 | 2.1 | 0.81 | 1042.3 | 20.2 | 1057.2 | 16.9 | 1088.2 | 29.9 | 1088.2 | 29.9 | 95.8 |
| H15-004_Run3-Spot 229 | 695 | 85397 | 3.4 | 12.8403 | 1.8 | 2.0474 | 2.7 | 0.1907 | 1.9 | 0.73 | 1125.0 | 20.1 | 1131.4 | 18.2 | 1143.8 | 36.2 | 1143.8 | 36.2 | 98.4 |
| H15-004_Run3-Spot 230 | 170 | 35381 | 2.7 | 13.7694 | 2.0 | 1.5032 | 2.8 | 0.1501 | 2.0 | 0.71 | 901.6 | 16.7 | 931.7 | 17.1 | 1003.5 | 40.0 | 1003.5 | 40.0 | 89.8 |
| H15-004_Run3-Spot 231 | 1852 | 70708 | 7.3 | 13.9960 | 1.3 | 1.3439 | 3.9 | 0.1364 | 3.6 | 0.94 | 824.4 | 28.1 | 864.9 | 22.5 | 970.3 | 26.4 | 824.4 | 28.1 | 85.0 |
| H15-004_Run3-Spot 232 | 583 | 267588 | 5.3 | 12.6160 | 2.1 | 2.2393 | 3.5 | 0.2049 | 2.8 | 0.80 | 1201.5 | 30.3 | 1193.4 | 24.2 | 1178.8 | 40.9 | 1178.8 | 40.9 | 101.9 |
| H15-004_Run3-Spot 233 | 125 | 42875 | 2.3 | 13.6266 | 1.7 | 1.8072 | 2.8 | 0.1786 | 2.2 | 0.80 | 1059.4 | 21.8 | 1048.1 | 18.3 | 1024.6 | 34.1 | 1024.6 | 34.1 | 103.4 |
| H15-004_Run3-Spot 234 | 217 | 43438 | 2.4 | 13.3920 | 2.1 | 1.7247 | 2.8 | 0.1675 | 1.8 | 0.64 | 998.4 | 16.4 | 1017.8 | 17.9 | 1059.7 | 43.2 | 1059.7 | 43.2 | 94.2 |
| H15-004_Run3-Spot 235 | 420 | 56511 | 15.6 | 16.1701 | 1.8 | 0.7018 | 2.8 | 0.0823 | 2.1 | 0.76 | 509.9 | 10.3 | 539.9 | 11.7 | 668.7 | 39.0 | 509.9 | 10.3 | 76.3 |
| H15-004_Run3-Spot 236 | 200 | 69226 | 5.8 | 14.1994 | 2.4 | 1.1730 | 3.3 | 0.1208 | 2.2 | 0.69 | 735.2 | 15.6 | 788.0 | 17.9 | 940.8 | 48.3 | 735.2 | 15.6 | 78.1 |
| H15-004_Run3-Spot 237 | 140 | 48504 | 3.2 | 11.6067 | 2.1 | 2.6962 | 3.3 | 0.2270 | 2.6 | 0.77 | 1318.6 | 30.4 | 1327.4 | 24.5 | 1341.7 | 40.8 | 1341.7 | 40.8 | 98.3 |
| H15-004_Run3-Spot 238 | 281 | 29683 | 1.9 | 12.8571 | 1.7 | 1.8205 | 2.6 | 0.1698 | 2.0 | 0.75 | 1010.8 | 18.5 | 1052.9 | 17.2 | 1141.2 | 34.4 | 1141.2 | 34.4 | 88.6 |
| H15-004_Run3-Spot 239 | 96 | 38513 | 2.0 | 12.6378 | 2.4 | 2.0943 | 4.1 | 0.1920 | 3.3 | 0.82 | 1132.0 | 34.7 | 1146.9 | 28.1 | 1175.4 | 46.6 | 1175.4 | 46.6 | 96.3 |
| H15-004_Run3-Spot 240 | 230 | 40214 | 2.1 | 13.5160 | 1.4 | 1.7038 | 2.6 | 0.1670 | 2.2 | 0.84 | 995.7 | 20.0 | 1010.0 | 16.5 | 1041.1 | 28.4 | 1041.1 | 28.4 | 95.6 |
| H15-004_Run3-Spot 241 | 207 | 81867 | 1.5 | 10.3369 | 1.8 | 3.7915 | 2.6 | 0.2843 | 1.9 | 0.73 | 1612.7 | 27.7 | 1590.9 | 21.3 | 1562.2 | 33.8 | 1562.2 | 33.8 | 103.2 |
| H15-004_Run3-Spot 242 | 62 | 17379 | 2.2 | 13.9296 | 2.7 | 1.5599 | 3.2 | 0.1576 | 1.8 | 0.55 | 943.4 | 15.5 | 954.4 | 19.9 | 980.0 | 54.7 | 980.0 | 54.7 | 96.3 |
| H15-004_Run3-Spot 243 | 546 | 231754 | 4.0 | 13.5477 | 1.6 | 1.8367 | 2.3 | 0.1805 | 1.7 | 0.72 | 1069.5 | 16.3 | 1058.7 | 15.1 | 1036.3 | 32.4 | 1036.3 | 32.4 | 103.2 |
| H15-004_Run3-Spot 244 | 340 | 44243 | 7.3 | 14.8055 | 2.1 | 1.1202 | 3.5 | 0.1203 | 2.8 | 0.80 | 732.2 | 19.5 | 763.1 | 18.9 | 854.6 | 43.6 | 732.2 | 19.5 | 85.7 |
| H15-004_Run3-Spot 245 | 297 | 1565767 | 1.8 | 13.9235 | 1.4 | 1.5366 | 2.7 | 0.1552 | 2.3 | 0.85 | 929.9 | 19.6 | 945.1 | 16.3 | 980.9 | 28.2 | 980.9 | 28.2 | 94.8 |
| H15-004_Run3-Spot 246 | 147 | 64910 | 3.6 | 13.7794 | 2.2 | 1.7013 | 3.0 | 0.1700 | 2.0 | 0.67 | 1012.3 | 18.8 | 1009.0 | 19.3 | 1002.0 | 45.5 | 1002.0 | 45.5 | 101.0 |
| H15-004_Run3-Spot 247 | 483 | 61158 | 4.4 | 12.6492 | 1.9 | 2.1099 | 2.3 | 0.1936 | 1.4 | 0.59 | 1140.6 | 14.3 | 1152.0 | 16.0 | 1173.6 | 37.0 | 1173.6 | 37.0 | 97.2 |
| H15-004_Run3-Spot 248 | 191 | 35633 | 1.7 | 13.3271 | 2.0 | 1.8835 | 3.2 | 0.1821 | 2.5 | 0.78 | 1078.2 | 25.2 | 1075.3 | 21.5 | 1069.5 | 40.6 | 1069.5 | 40.6 | 100.8 |
| H15-004_Run3-Spot 249 | 292 | 142233 | 4.8 | 12.7211 | 1.2 | 2.1276 | 2.3 | 0.1963 | 2.0 | 0.86 | 1155.4 | 21.0 | 1157.8 | 15.9 | 1162.3 | 23.3 | 1162.3 | 23.3 | 99.4 |
| H15-004_Run3-Spot 250 | 978 | 248313 | 5.6 | 13.3407 | 1.1 | 1.8304 | 2.5 | 0.1771 | 2.2 | 0.89 | 1051.1 | 21.5 | 1056.4 | 16.3 | 1067.4 | 22.6 | 1067.4 | 22.6 | 98.5 |
| H15-004_Run3-Spot 251 | 603 | 174756 | 5.6 | 12.4223 | 1.4 | 2.2179 | 2.5 | 0.1998 | 2.1 | 0.84 | 1174.4 | 22.8 | 1186.7 | 17.7 | 1209.3 | 27.0 | 1209.3 | 27.0 | 97.1 |
| H15-004_Run3-Spot 252 | 922 | 166070 | 2.2 | 13.0973 | 1.2 | 1.9343 | 3.1 | 0.1837 | 2.8 | 0.92 | 1087.4 | 28.2 | 1093.0 | 20.5 | 1104.3 | 23.5 | 1104.3 | 23.5 | 98.5 |
| H15-004_Run3-Spot 253 | 624 | 73341 | 2.0 | 13.0365 | 1.4 | 1.9434 | 2.6 | 0.1838 | 2.2 | 0.85 | 1087.4 | 22.3 | 1096.2 | 17.5 | 1113.6 | 27.1 | 1113.6 | 27.1 | 97.7 |
| H15-004_Run3-Spot 254 | 286 | 242626 | 3.8 | 13.2670 | 1.8 | 1.6507 | 2.9 | 0.1588 | 2.3 | 0.79 | 950.3 | 20.1 | 989.8 | 18.3 | 1078.5 | 36.0 | 1078.5 | 36.0 | 88.1 |
| H15-004_Run3-Spot 255 | 387 | 1155086 | 3.0 | 13.1104 | 1.8 | 2.0072 | 2.8 | 0.1909 | 2.1 | 0.76 | 1126.0 | 22.1 | 1117.9 | 19.0 | 1102.3 | 36.0 | 1102.3 | 36.0 | 102.1 |
| H15-004_Run3-Spot 256 | 88 | 101757 | 2.8 | 13.1795 | 2.2 | 1.9094 | 4.1 | 0.1825 | 3.5 | 0.84 | 1080.7 | 34.5 | 1084.4 | 27.4 | 1091.8 | 44.0 | 1091.8 | 44.0 | 99.0 |
| H15-004_Run3-Spot 257 | 189 | 103213 | 1.5 | 13.3120 | 2.3 | 1.8661 | 3.3 | 0.1802 | 2.4 | 0.72 | 1067.9 | 23.3 | 1069.1 | 21.6 | 1071.7 | 45.4 | 1071.7 | 45.4 | 99.6 |
| H15-004_Run3-Spot 258 | 260 | 54425 | 5.0 | 12.0477 | 1.7 | 1.9329 | 2.8 | 0.1689 | 2.2 | 0.80 | 1006.0 | 20.8 | 1092.5 | 18.8 | 1269.3 | 33.0 | 1269.3 | 33.0 | 79.3 |
| H15-004_Run3-Spot 259 | 235 | 137145 | 1.8 | 11.7305 | 1.8 | 2.5653 | 2.5 | 0.2183 | 1.8 | 0.72 | 1272.6 | 21.0 | 1290.8 | 18.5 | 1321.2 | 33.9 | 1321.2 | 33.9 | 96.3 |
| H15-004_Run3-Spot 260 | 208 | 36929 | 1.6 | 11.4536 | 1.8 | 2.6973 | 4.2 | 0.2241 | 3.8 | 0.90 | 1303.3 | 44.6 | 1327.7 | 31.0 | 1367.3 | 34.4 | 1367.3 | 34.4 | 95.3 |
| H15-004_Run3-Spot 261 | 446 | 61941 | 2.1 | 12.8684 | 1.8 | 2.0572 | 2.5 | 0.1920 | 1.7 | 0.69 | 1132.2 | 17.8 | 1134.7 | 16.9 | 1139.5 | 35.6 | 1139.5 | 35.6 | 99.4 |
| H15-004_Run3-Spot 262 | 446 | 82701 | 3.5 | 12.9500 | 1.4 | 1.9588 | 2.5 | 0.1840 | 2.0 | 0.82 | 1088.6 | 20.2 | 1101.5 | 16.6 | 1126.9 | 28.2 | 1126.9 | 28.2 | 96.6 |
| H15-004_Run3-Spot 263 | 83 | 69082 | 2.5 | 10.9641 | 2.8 | 2.7893 | 3.6 | 0.2218 | 2.3 | 0.63 | 1291.4 | 26.5 | 1352.7 | 26.7 | 1450.9 | 52.7 | 1450.9 | 52.7 | 89.0 |
| H15-004_Run3-Spot 264 | 91 | 29413 | 3.4 | 13.3304 | 2.6 | 1.8395 | 3.5 | 0.1778 | 2.4 | 0.68 | 1055.2 | 23.2 | 1059.7 | 23.1 | 1069.0 | 52.1 | 1069.0 | 52.1 | 98.7 |
| H15-004_Run3-Spot 265 | 215 | 69111 | 2.8 | 11.7690 | 1.8 | 2.9853 | 3.1 | 0.2548 | 2.5 | 0.80 | 1463.3 | 32.2 | 1403.9 | 23.3 | 1314.8 | 35.5 | 1314.8 | 35.5 | 111.3 |
| H15-004_Run3-Spot 266 | 131 | 25688 | 1.5 | 11.6426 | 1.7 | 2.6655 | 2.7 | 0.2251 | 2.2 | 0.79 | 1308.6 | 25.6 | 1318.9 | 20.1 | 1335.7 | 32.1 | 1335.7 | 32.1 | 98.0 |
| H15-004_Run3-Spot 267 | 197 | 49819 | 3.3 | 13.6731 | 1.7 | 1.7115 | 2.2 | 0.1697 | 1.4 | 0.65 | 1010.6 | 13.5 | 1012.8 | 14.3 | 1017.7 | 34.3 | 1017.7 | 34.3 | 99.3 |
| H15-004_Run3-Spot 268 | 260 | 178096 | 2.3 | 12.8729 | 1.9 | 1.9880 | 3.0 | 0.1856 | 2.3 | 0.78 | 1097.5 | 23.2 | 1111.4 | 20.0 | 1138.8 | 36.9 | 1138.8 | 36.9 | 96.4 |
| H15-004_Run3-Spot 269 | 403 | 185766 | 2.1 | 12.9368 | 1.6 | 1.8609 | 2.6 | 0.1746 | 2.1 | 0.79 | 1037.4 | 19.9 | 1067.3 | 17.5 | 1128.9 | 32.6 | 1128.9 | 32.6 | 91.9 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004_Run3-Spot 270 | 328 | 44361 | 66.9 | 17.5084 | 2.5 | 0.6138 | 2.9 | 0.0779 | 1.5 | 0.51 | 483.8 | 7.0 | 485.9 | 11.3 | 496.0 | 55.4 | 483.8 | 7.0 | 97.5 |
| H15-004_Run3-Spot 271 | 112 | 29121 | 4.2 | 13.2791 | 1.8 | 1.7872 | 2.9 | 0.1721 | 2.2 | 0.77 | 1023.8 | 20.8 | 1040.8 | 18.6 | 1076.7 | 36.6 | 1076.7 | 36.6 | 95.1 |
| H15-004_Run3-Spot 272 | 854 | 236202 | 12.6 | 13.4021 | 1.3 | 1.7342 | 2.3 | 0.1686 | 1.8 | 0.80 | 1004.2 | 16.8 | 1021.3 | 14.5 | 1058.2 | 27.0 | 1058.2 | 27.0 | 94.9 |
| H15-004_Run3-Spot 273 | 209 | 25886 | 2.2 | 13.8269 | 2.0 | 1.5324 | 2.7 | 0.1537 | 1.8 | 0.66 | 921.5 | 15.3 | 943.4 | 16.7 | 995.1 | 41.5 | 995.1 | 41.5 | 92.6 |
| H15-004_Run3-Spot 274 | 76 | 16281 | 1.2 | 13.8719 | 2.7 | 1.5882 | 3.6 | 0.1598 | 2.3 | 0.64 | 955.6 | 20.4 | 965.6 | 22.2 | 988.4 | 55.6 | 988.4 | 55.6 | 96.7 |
| H15-004_Run3-Spot 275 | 828 | 147954 | 2.6 | 11.7457 | 1.2 | 2.5823 | 2.7 | 0.2200 | 2.5 | 0.91 | 1281.8 | 28.9 | 1295.6 | 20.1 | 1318.7 | 22.4 | 1318.7 | 22.4 | 97.2 |
| H15-004_Run3-Spot 276 | 162 | 57468 | 5.7 | 14.8630 | 2.8 | 0.9367 | 3.7 | 0.1010 | 2.5 | 0.67 | 620.1 | 14.9 | 671.1 | 18.3 | 846.5 | 57.4 | 620.1 | 14.9 | 73.3 |
| H15-004_Run3-Spot 277 | 190 | 34108 | 6.7 | 13.6698 | 2.3 | 1.7230 | 3.0 | 0.1708 | 2.0 | 0.65 | 1016.7 | 18.6 | 1017.2 | 19.5 | 1018.2 | 46.7 | 1018.2 | 46.7 | 99.8 |
| H15-004_Run3-Spot 278 | 255 | 80519 | 3.7 | 13.7185 | 1.4 | 1.6443 | 2.3 | 0.1636 | 1.9 | 0.80 | 976.8 | 16.8 | 987.4 | 14.7 | 1011.0 | 28.3 | 1011.0 | 28.3 | 96.6 |
| H15-004_Run3-Spot 279 | 1212 | 104858 | 3.0 | 13.9709 | 1.6 | 1.6465 | 2.6 | 0.1668 | 2.0 | 0.79 | 994.6 | 18.7 | 988.2 | 16.2 | 973.9 | 32.2 | 973.9 | 32.2 | 102.1 |
| H15-004_Run3-Spot 280 | 188 | 70151 | 3.8 | 12.6936 | 1.9 | 2.1550 | 2.5 | 0.1984 | 1.7 | 0.67 | 1166.7 | 18.1 | 1166.7 | 17.4 | 1166.6 | 36.7 | 1166.6 | 36.7 | 100.0 |
| H15-004_Run3-Spot 281 | 268 | 170914 | 3.7 | 13.6303 | 1.8 | 1.6499 | 3.3 | 0.1631 | 2.8 | 0.83 | 974.0 | 25.0 | 989.5 | 21.0 | 1024.1 | 37.4 | 1024.1 | 37.4 | 95.1 |
| H15-004_Run3-Spot 282 | 171 | 114172 | 2.1 | 11.6545 | 2.0 | 2.5668 | 2.6 | 0.2170 | 1.8 | 0.66 | 1265.8 | 20.1 | 1291.2 | 19.3 | 1333.7 | 38.1 | 1333.7 | 38.1 | 94.9 |
| H15-004_Run3-Spot 283 | 158 | 71154 | 2.2 | 13.7318 | 1.9 | 1.6030 | 2.7 | 0.1596 | 1.9 | 0.71 | 954.8 | 16.9 | 971.4 | 16.7 | 1009.0 | 37.9 | 1009.0 | 37.9 | 94.6 |
| H15-004_Run3-Spot 284 | 141 | 38312 | 1.8 | 13.2135 | 1.8 | 1.7954 | 3.8 | 0.1721 | 3.3 | 0.88 | 1023.5 | 31.6 | 1043.8 | 24.8 | 1086.6 | 36.6 | 1086.6 | 36.6 | 94.2 |
| H15-004_Run3-Spot 285 | 354 | 46655 | 2.0 | 12.6451 | 1.1 | 2.1152 | 2.0 | 0.1940 | 1.7 | 0.84 | 1142.9 | 18.0 | 1153.8 | 14.1 | 1174.2 | 22.0 | 1174.2 | 22.0 | 97.3 |
| H15-004_Run3-Spot 286 | 1663 | 167662 | 30.2 | 13.6614 | 1.7 | 1.2222 | 2.5 | 0.1211 | 1.9 | 0.76 | 736.9 | 13.4 | 810.8 | 14.2 | 1019.4 | 33.5 | 736.9 | 13.4 | 72.3 |
| H15-004_Run3-Spot 287 | 538 | 142337 | 6.5 | 13.5104 | 1.5 | 1.4501 | 2.1 | 0.1421 | 1.4 | 0.70 | 856.5 | 11.6 | 909.9 | 12.4 | 1041.9 | 29.7 | 1041.9 | 29.7 | 82.2 |
| H15-004_Run3-Spot 288 | 251 | 57888 | 3.8 | 13.0872 | 2.0 | 1.9254 | 2.9 | 0.1828 | 2.1 | 0.73 | 1082.0 | 21.1 | 1090.0 | 19.4 | 1105.8 | 39.5 | 1105.8 | 39.5 | 97.8 |
| H15-004_Run3-Spot 289 | 617 | 125651 | 22.6 | 16.7724 | 2.0 | 0.7118 | 3.1 | 0.0866 | 2.3 | 0.75 | 535.3 | 11.9 | 545.8 | 13.0 | 589.9 | 43.8 | 535.3 | 11.9 | 90.8 |
| H15-004_Run3-Spot 290 | 1757 | 208368 | 6.2 | 14.0177 | 1.0 | 1.5371 | 1.6 | 0.1563 | 1.3 | 0.81 | 936.0 | 11.6 | 945.4 | 10.1 | 967.1 | 19.6 | 967.1 | 19.6 | 96.8 |
| H15-004_Run3-Spot 291 | 210 | 44464 | 3.1 | 11.6523 | 1.6 | 2.6422 | 2.5 | 0.2233 | 1.9 | 0.76 | 1299.2 | 22.1 | 1312.5 | 18.2 | 1334.1 | 31.0 | 1334.1 | 31.0 | 97.4 |
| H15-004_Run3-Spot 292 | 2283 | 231047 | 7.8 | 13.4341 | 1.2 | 1.7835 | 2.0 | 0.1738 | 1.6 | 0.79 | 1032.9 | 14.9 | 1039.5 | 12.9 | 1053.4 | 24.7 | 1053.4 | 24.7 | 98.1 |
| H15-004_Run3-Spot 293 | 423 | 130239 | 13.0 | 13.4034 | 1.7 | 1.4203 | 2.5 | 0.1381 | 1.8 | 0.73 | 833.7 | 14.3 | 897.5 | 14.9 | 1058.0 | 34.6 | 1058.0 | 34.6 | 78.8 |
| H15-004_Run3-Spot 294 | 701 | 215477 | 3.6 | 12.7641 | 1.1 | 2.2090 | 2.4 | 0.2045 | 2.1 | 0.89 | 1199.4 | 23.1 | 1183.9 | 16.5 | 1155.6 | 21.3 | 1155.6 | 21.3 | 103.8 |
| H15-004_Run3-Spot 295 | 633 | 87445 | 6.7 | 12.6421 | 1.4 | 2.0353 | 2.5 | 0.1866 | 2.1 | 0.84 | 1103.0 | 21.2 | 1127.4 | 17.0 | 1174.7 | 26.8 | 1174.7 | 26.8 | 93.9 |
| H15-004_Run3-Spot 296 | 95 | 72125 | 4.2 | 12.6601 | 2.8 | 2.1865 | 3.9 | 0.2008 | 2.7 | 0.69 | 1179.4 | 29.2 | 1176.8 | 27.3 | 1171.9 | 56.1 | 1171.9 | 56.1 | 100.6 |
| H15-004_Run3-Spot 297 | 857 | 58667 | 4.0 | 13.5272 | 1.1 | 1.7402 | 2.2 | 0.1707 | 1.9 | 0.87 | 1016.1 | 17.8 | 1023.5 | 14.0 | 1039.4 | 21.6 | 1039.4 | 21.6 | 97.8 |
| H15-004_Run3-Spot 298 | 325 | 45872 | 3.4 | 13.5769 | 1.6 | 1.7343 | 2.7 | 0.1708 | 2.2 | 0.81 | 1016.4 | 20.4 | 1021.3 | 17.3 | 1032.0 | 32.2 | 1032.0 | 32.2 | 98.5 |
| H15-004_Run3-Spot 299 | 196 | 64828 | 1.0 | 13.3208 | 1.5 | 1.8218 | 3.4 | 0.1760 | 3.1 | 0.90 | 1045.1 | 29.5 | 1053.3 | 22.2 | 1070.4 | 29.2 | 1070.4 | 29.2 | 97.6 |
| H15-004_Run3-Spot 300 | 1821 | 80556 | 6.6 | 13.5394 | 1.1 | 1.6912 | 2.4 | 0.1661 | 2.2 | 0.89 | 990.4 | 19.9 | 1005.2 | 15.5 | 1037.6 | 22.4 | 1037.6 | 22.4 | 95.5 |
| H15-004_Run3-Spot 301 | 504 | 166671 | 92.2 | 17.8489 | 1.8 | 0.5829 | 2.7 | 0.0755 | 2.0 | 0.73 | 468.9 | 8.9 | 466.3 | 10.0 | 453.4 | 40.6 | 468.9 | 8.9 | 103.4 |
| H15-004_Run3-Spot 302 | 1975 | 61947 | 4.3 | 13.9999 | 0.9 | 1.6788 | 1.9 | 0.1705 | 1.7 | 0.89 | 1014.6 | 16.2 | 1000.5 | 12.4 | 969.7 | 18.5 | 969.7 | 18.5 | 104.6 |
| H15-004_Run3-Spot 303 | 396 | 66704 | 2.3 | 12.7708 | 1.7 | 2.0720 | 2.5 | 0.1919 | 1.9 | 0.75 | 1131.8 | 19.2 | 1139.6 | 17.0 | 1154.6 | 32.9 | 1154.6 | 32.9 | 98.0 |
| H15-004_Run3-Spot 304 | 103 | 195063 | 3.2 | 13.8859 | 1.7 | 1.6447 | 4.1 | 0.1656 | 3.7 | 0.91 | 988.0 | 34.0 | 987.5 | 25.8 | 986.4 | 34.6 | 986.4 | 34.6 | 100.2 |
| H15-004_Run3-Spot 305 | 719 | 127509 | 1.5 | 12.8125 | 1.3 | 2.1085 | 2.0 | 0.1959 | 1.5 | 0.76 | 1153.4 | 16.3 | 1151.6 | 14.1 | 1148.1 | 26.5 | 1148.1 | 26.5 | 100.5 |
| H15-004_Run3-Spot 306 | 657 | 242917 | 3.7 | 13.4039 | 1.1 | 1.8292 | 2.1 | 0.1778 | 1.8 | 0.85 | 1055.1 | 17.6 | 1056.0 | 14.0 | 1057.9 | 22.8 | 1057.9 | 22.8 | 99.7 |
| H15-004_Run3-Spot 307 | 439 | 60706 | 5.3 | 12.8714 | 1.2 | 2.0281 | 2.2 | 0.1893 | 1.9 | 0.85 | 1117.7 | 19.1 | 1125.0 | 14.9 | 1139.0 | 23.1 | 1139.0 | 23.1 | 98.1 |
| H15-004_Run3-Spot 308 | 252 | 76089 | 2.9 | 12.7297 | 1.6 | 2.0797 | 2.4 | 0.1920 | 1.7 | 0.72 | 1132.2 | 17.6 | 1142.1 | 16.2 | 1161.0 | 32.6 | 1161.0 | 32.6 | 97.5 |
| H15-004_Run3-Spot 309 | 1538 | 82246 | 2.8 | 13.1453 | 1.3 | 1.9100 | 2.5 | 0.1821 | 2.1 | 0.85 | 1078.4 | 20.9 | 1084.6 | 16.5 | 1097.0 | 26.1 | 1097.0 | 26.1 | 98.3 |
| H15-004_Run3-Spot 310 | 247 | 50939 | 11.4 | 11.1200 | 1.6 | 2.9544 | 3.0 | 0.2383 | 2.5 | 0.84 | 1377.7 | 31.0 | 1396.0 | 22.5 | 1424.0 | 30.8 | 1424.0 | 30.8 | 96.7 |
| H15-004_Run3-Spot 311 | 528 | 78891 | 3.2 | 12.6028 | 1.5 | 1.9901 | 2.2 | 0.1819 | 1.5 | 0.70 | 1077.4 | 14.9 | 1112.1 | 14.6 | 1180.8 | 30.4 | 1180.8 | 30.4 | 91.2 |
| H15-004_Run3-Spot 312 | 374 | 101102 | 2.1 | 7.7826 | 1.1 | 6.3924 | 3.2 | 0.3608 | 3.1 | 0.94 | 1986.0 | 52.2 | 2031.2 | 28.5 | 2077.4 | 19.5 | 2077.4 | 19.5 | 95.6 |
| H15-004_Run3-Spot 313 | 343 | 346321 | 2.8 | 13.8181 | 1.4 | 1.6252 | 2.8 | 0.1629 | 2.4 | 0.86 | 972.7 | 21.5 | 980.0 | 17.5 | 996.3 | 29.0 | 996.3 | 29.0 | 97.6 |
| H15-004_Run3-Spot 314 | 365 | 46127 | 4.3 | 13.1965 | 1.8 | 1.9611 | 3.1 | 0.1877 | 2.5 | 0.81 | 1108.9 | 25.8 | 1102.2 | 21.1 | 1089.2 | 37.0 | 1089.2 | 37.0 | 101.8 |
| H15-004_Run3-Spot 315 | 198 | 46894 | 4.6 | 13.7399 | 2.4 | 1.5306 | 3.2 | 0.1525 | 2.1 | 0.66 | 915.1 | 18.2 | 942.7 | 19.8 | 1007.8 | 49.1 | 1007.8 | 49.1 | 90.8 |

**Appendix F: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| H15-004 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| H15-004_Run3-Spot 316 | 413 | 215250 | 6.2 | 12.7544 | 1.5 | 2.0877 | 2.6 | 0.1931 | 2.1 | 0.81 | 1138.2 | 22.0 | 1144.8 | 18.0 | 1157.1 | 30.7 | 1157.1 | 30.7 | 98.4 |
| H15-004_Run3-Spot 317 | 863 | 141093 | 2.9 | 13.0355 | 1.3 | 1.9848 | 2.8 | 0.1876 | 2.4 | 0.88 | 1108.6 | 24.8 | 1110.3 | 18.8 | 1113.7 | 26.7 | 1113.7 | 26.7 | 99.5 |
| H15-004_Run3-Spot 318 | 931 | 81290 | 2.2 | 12.4192 | 1.2 | 2.2780 | 2.5 | 0.2052 | 2.3 | 0.89 | 1203.1 | 24.8 | 1205.5 | 17.9 | 1209.8 | 22.9 | 1209.8 | 22.9 | 99.5 |
| H15-004_Run3-Spot 319 | 253 | 32592 | 3.9 | 13.4435 | 1.9 | 1.7007 | 2.9 | 0.1658 | 2.1 | 0.74 | 989.0 | 19.4 | 1008.8 | 18.2 | 1052.0 | 38.6 | 1052.0 | 38.6 | 94.0 |
| H15-004_Run3-Spot 320 | 140 | 224594 | 2.4 | 12.3366 | 2.3 | 2.2480 | 3.0 | 0.2011 | 1.9 | 0.64 | 1181.4 | 20.5 | 1196.2 | 20.8 | 1222.9 | 44.5 | 1222.9 | 44.5 | 96.6 |
| H15-004_Run3-Spot 321 | 667 | 177269 | 153.3 | 17.2541 | 2.3 | 0.5738 | 6.9 | 0.0718 | 6.5 | 0.94 | 447.0 | 28.0 | 460.5 | 25.5 | 528.2 | 50.2 | 447.0 | 28.0 | 84.6 |
| H15-004_Run3-Spot 322 | 332 | 40102 | 202.1 | 17.6786 | 1.6 | 0.5851 | 2.4 | 0.0750 | 1.8 | 0.74 | 466.4 | 7.9 | 467.8 | 8.9 | 474.6 | 35.1 | 466.4 | 7.9 | 98.3 |
| H15-004_Run3-Spot 323 | 1127 | 746538 | 25.2 | 13.9829 | 1.5 | 1.3469 | 3.0 | 0.1366 | 2.6 | 0.87 | 825.4 | 20.2 | 866.2 | 17.4 | 972.2 | 29.8 | 825.4 | 20.2 | 84.9 |
| H15-004_Run3-Spot 324 | 161 | 30334 | 5.4 | 14.4707 | 3.6 | 1.1736 | 4.9 | 0.1232 | 3.3 | 0.68 | 748.8 | 23.3 | 788.3 | 26.7 | 901.9 | 73.9 | 748.8 | 23.3 | 83.0 |
| H15-004_Run3-Spot 325 | 1375 | 124455010 | 4.7 | 13.3505 | 1.4 | 1.6585 | 2.7 | 0.1606 | 2.4 | 0.86 | 960.0 | 21.0 | 992.8 | 17.3 | 1065.9 | 27.8 | 1065.9 | 27.8 | 90.1 |
| H15-004_Run3-Spot 326 | 183 | 25896 | 2.0 | 12.7003 | 2.0 | 1.7318 | 2.6 | 0.1595 | 1.7 | 0.65 | 954.1 | 15.0 | 1020.4 | 16.9 | 1165.5 | 39.7 | 1165.5 | 39.7 | 81.9 |
| H15-004_Run3-Spot 327 | 738 | 52340 | 3.1 | 11.0260 | 1.1 | 3.0920 | 2.0 | 0.2473 | 1.6 | 0.81 | 1424.3 | 20.4 | 1430.7 | 15.1 | 1440.2 | 21.8 | 1440.2 | 21.8 | 98.9 |
| H15-004_Run3-Spot 328 | 655 | 107745 | 4.1 | 13.8024 | 1.4 | 1.6044 | 2.3 | 0.1606 | 1.8 | 0.78 | 960.1 | 16.1 | 971.9 | 14.4 | 998.6 | 29.1 | 998.6 | 29.1 | 96.1 |
| H15-004_Run3-Spot 329 | 281 | 70108 | 1.9 | 12.1018 | 1.4 | 2.2876 | 4.3 | 0.2008 | 4.0 | 0.95 | 1179.5 | 43.5 | 1208.5 | 30.1 | 1260.5 | 26.6 | 1260.5 | 26.6 | 93.6 |
| H15-004_Run3-Spot 330 | 684 | 212021 | 4.5 | 12.5251 | 1.2 | 2.0716 | 2.4 | 0.1882 | 2.1 | 0.85 | 1111.5 | 20.9 | 1139.5 | 16.4 | 1193.1 | 24.7 | 1193.1 | 24.7 | 93.2 |

**Appendix G: LA-ICPMS U-Pb Zircon Geochronology**

| DEL14-1 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| DEL14-01_Run1-Spot 1 | 298 | 6798088 | 2.4 | 12.4948 | 1.1 | 2.1823 | 1.7 | 0.1978 | 1.3 | 0.76 | 1163.3 | 14.0 | 1175.4 | 12.0 | 1197.8 | 22.0 | 1197.8 | 22.0 | 97.1 |
| DEL14-01_Run1-Spot 2 | 61 | 45695 | 2.2 | 13.6113 | 1.7 | 1.6741 | 2.4 | 0.1653 | 1.8 | 0.73 | 986.0 | 16.3 | 998.7 | 15.5 | 1026.9 | 33.7 | 1026.9 | 33.7 | 96.0 |
| DEL14-01_Run1-Spot 3 | 423 | 87861 | 1.4 | 13.4045 | 1.1 | 1.8656 | 3.0 | 0.1814 | 2.8 | 0.93 | 1074.5 | 27.7 | 1069.0 | 19.8 | 1057.8 | 21.5 | 1057.8 | 21.5 | 101.6 |
| DEL14-01_Run1-Spot 4 | 628 | 379418 | 4.3 | 13.6999 | 1.0 | 1.7656 | 2.0 | 0.1754 | 1.7 | 0.87 | 1042.0 | 16.8 | 1032.9 | 13.0 | 1013.7 | 20.3 | 1013.7 | 20.3 | 102.8 |
| DEL14-01_Run1-Spot 5 | 761 | 585559 | 5.0 | 13.1083 | 0.9 | 1.8894 | 1.8 | 0.1796 | 1.5 | 0.86 | 1065.0 | 15.1 | 1077.4 | 11.8 | 1102.6 | 18.0 | 1102.6 | 18.0 | 96.6 |
| DEL14-01_Run1-Spot 6 | 304 | 635869 | 1.5 | 13.5580 | 1.4 | 1.7141 | 2.2 | 0.1686 | 1.7 | 0.77 | 1004.1 | 15.7 | 1013.8 | 14.1 | 1034.8 | 28.5 | 1034.8 | 28.5 | 97.0 |
| DEL14-01_Run1-Spot 7 | 108 | 144486 | 2.8 | 12.4531 | 1.1 | 2.2916 | 2.0 | 0.2070 | 1.7 | 0.85 | 1212.7 | 19.2 | 1209.7 | 14.5 | 1204.4 | 21.3 | 1204.4 | 21.3 | 100.7 |
| DEL14-01_Run1-Spot 8 | 354 | 65617 | 7.2 | 13.6123 | 1.1 | 1.7135 | 1.7 | 0.1692 | 1.3 | 0.75 | 1007.5 | 11.8 | 1013.6 | 10.8 | 1026.7 | 22.4 | 1026.7 | 22.4 | 98.1 |
| DEL14-01_Run1-Spot 10 | 762 | 211424 | 5.9 | 13.4206 | 1.3 | 1.8524 | 2.2 | 0.1803 | 1.8 | 0.80 | 1068.6 | 17.3 | 1064.3 | 14.5 | 1055.4 | 26.4 | 1055.4 | 26.4 | 101.3 |
| DEL14-01_Run1-Spot 11 | 150 | 84593 | 2.7 | 13.4309 | 2.4 | 1.6053 | 3.1 | 0.1564 | 2.0 | 0.64 | 936.6 | 17.4 | 972.3 | 19.5 | 1053.8 | 48.1 | 1053.8 | 48.1 | 88.9 |
| DEL14-01_Run1-Spot 12 | 50 | 33110 | 1.8 | 13.2400 | 1.6 | 1.8662 | 2.1 | 0.1792 | 1.4 | 0.67 | 1062.6 | 14.0 | 1069.2 | 14.2 | 1082.6 | 32.1 | 1082.6 | 32.1 | 98.2 |
| DEL14-01_Run1-Spot 13 | 410 | 162048 | 3.2 | 12.7631 | 1.2 | 1.9861 | 1.8 | 0.1838 | 1.4 | 0.76 | 1088.0 | 13.8 | 1110.8 | 12.2 | 1155.8 | 23.3 | 1155.8 | 23.3 | 94.1 |
| DEL14-01_Run1-Spot 14 | 106 | 122438 | 1.4 | 12.6789 | 2.2 | 2.0690 | 3.4 | 0.1903 | 2.5 | 0.76 | 1122.8 | 26.2 | 1138.6 | 23.0 | 1168.9 | 43.5 | 1168.9 | 43.5 | 96.1 |
| DEL14-01_Run1-Spot 15 | 555 | 51354 | 23.8 | 13.4847 | 1.1 | 1.7349 | 2.3 | 0.1697 | 1.9 | 0.86 | 1010.3 | 18.2 | 1021.6 | 14.5 | 1045.8 | 22.9 | 1045.8 | 22.9 | 96.6 |
| DEL14-01_Run1-Spot 17 | 250 | 199795 | 2.2 | 12.0480 | 1.1 | 2.4861 | 1.8 | 0.2172 | 1.4 | 0.79 | 1267.3 | 16.6 | 1268.0 | 13.2 | 1269.2 | 21.7 | 1269.2 | 21.7 | 99.8 |
| DEL14-01_Run1-Spot 18 | 112 | 39562 | 3.0 | 12.2593 | 2.1 | 2.4249 | 3.5 | 0.2156 | 2.8 | 0.80 | 1258.6 | 31.8 | 1250.0 | 25.0 | 1235.2 | 41.1 | 1235.2 | 41.1 | 101.9 |
| DEL14-01_Run1-Spot 19 | 602 | 273285 | 3.2 | 10.6272 | 1.1 | 3.3871 | 1.7 | 0.2611 | 1.3 | 0.76 | 1495.3 | 17.6 | 1501.4 | 13.7 | 1510.1 | 21.6 | 1510.1 | 21.6 | 99.0 |
| DEL14-01_Run1-Spot 20 | 856 | 69465 | 5.0 | 13.0300 | 1.1 | 1.8828 | 2.0 | 0.1779 | 1.7 | 0.83 | 1055.6 | 16.1 | 1075.0 | 13.1 | 1114.6 | 21.8 | 1114.6 | 21.8 | 94.7 |
| DEL14-01_Run1-Spot 21 | 269 | 99356 | 3.4 | 12.6798 | 1.3 | 2.0545 | 2.3 | 0.1889 | 1.8 | 0.81 | 1115.6 | 18.8 | 1133.8 | 15.4 | 1168.7 | 26.1 | 1168.7 | 26.1 | 95.5 |
| DEL14-01_Run1-Spot 22 | 914 | 102761 | 4.7 | 13.3690 | 1.2 | 1.7337 | 1.8 | 0.1681 | 1.4 | 0.76 | 1001.7 | 12.9 | 1021.1 | 11.8 | 1063.2 | 23.9 | 1063.2 | 23.9 | 94.2 |
| DEL14-01_Run1-Spot 23 | 1277 | 169143 | 13.2 | 13.0249 | 0.8 | 1.8645 | 1.7 | 0.1761 | 1.5 | 0.87 | 1045.8 | 14.1 | 1068.6 | 11.1 | 1115.4 | 16.5 | 1115.4 | 16.5 | 93.8 |
| DEL14-01_Run1-Spot 24 | 132 | 32453 | 2.0 | 12.3418 | 2.1 | 2.1911 | 2.5 | 0.1961 | 1.4 | 0.55 | 1154.5 | 14.5 | 1178.2 | 17.4 | 1222.0 | 41.0 | 1222.0 | 41.0 | 94.5 |
| DEL14-01_Run1-Spot 25 | 29 | 43301 | 0.7 | 12.0760 | 1.8 | 2.4608 | 2.9 | 0.2155 | 2.3 | 0.78 | 1258.2 | 25.9 | 1260.6 | 20.9 | 1264.7 | 35.0 | 1264.7 | 35.0 | 99.5 |
| DEL14-01_Run1-Spot 27 | 367 | 20552288 | 4.4 | 12.5546 | 1.0 | 2.2001 | 2.3 | 0.2003 | 2.1 | 0.90 | 1177.1 | 22.3 | 1181.1 | 16.1 | 1188.4 | 19.8 | 1188.4 | 19.8 | 99.0 |
| DEL14-01_Run1-Spot 28 | 903 | 253722 | 8.1 | 13.5343 | 1.0 | 1.6286 | 1.7 | 0.1599 | 1.4 | 0.80 | 956.0 | 12.1 | 981.3 | 10.7 | 1038.3 | 20.3 | 1038.3 | 20.3 | 92.1 |
| DEL14-01_Run1-Spot 29 | 191 | 233276 | 2.1 | 11.5576 | 1.0 | 2.7974 | 1.4 | 0.2345 | 0.9 | 0.69 | 1358.0 | 11.4 | 1354.8 | 10.1 | 1349.9 | 18.9 | 1349.9 | 18.9 | 100.6 |
| DEL14-01_Run1-Spot 30 | 325 | 186286 | 3.0 | 12.6674 | 1.2 | 2.0382 | 2.0 | 0.1873 | 1.6 | 0.80 | 1106.5 | 16.1 | 1128.4 | 13.5 | 1170.7 | 23.7 | 1170.7 | 23.7 | 94.5 |
| DEL14-01_Run1-Spot 31 | 318 | 140881 | 4.2 | 11.3249 | 0.9 | 2.7944 | 1.7 | 0.2295 | 1.4 | 0.86 | 1332.0 | 17.0 | 1354.0 | 12.4 | 1389.0 | 16.4 | 1389.0 | 16.4 | 95.9 |
| DEL14-01_Run1-Spot 32 | 55 | 81084 | 1.3 | 13.1697 | 2.3 | 1.8327 | 3.0 | 0.1751 | 2.0 | 0.66 | 1039.9 | 19.2 | 1057.3 | 19.9 | 1093.3 | 45.4 | 1093.3 | 45.4 | 95.1 |
| DEL14-01_Run1-Spot 33 | 469 | 161449 | 1.2 | 13.5596 | 1.1 | 1.7274 | 1.6 | 0.1699 | 1.1 | 0.70 | 1011.5 | 10.3 | 1018.8 | 10.2 | 1034.6 | 23.0 | 1034.6 | 23.0 | 97.8 |
| DEL14-01_Run1-Spot 34 | 421 | 96863 | 1.4 | 12.1636 | 1.5 | 2.3582 | 2.1 | 0.2080 | 1.5 | 0.71 | 1218.4 | 16.7 | 1230.0 | 15.0 | 1250.6 | 28.8 | 1250.6 | 28.8 | 97.4 |
| DEL14-01_Run1-Spot 35 | 487 | 67596 | 3.6 | 12.0002 | 0.8 | 2.3630 | 2.2 | 0.2057 | 2.0 | 0.93 | 1205.6 | 22.0 | 1231.5 | 15.4 | 1277.0 | 15.9 | 1277.0 | 15.9 | 94.4 |
| DEL14-01_Run1-Spot 36 | 213 | 179190 | 2.5 | 12.1988 | 0.9 | 2.3878 | 1.6 | 0.2113 | 1.4 | 0.84 | 1235.5 | 15.3 | 1238.9 | 11.6 | 1244.9 | 17.2 | 1244.9 | 17.2 | 99.2 |
| DEL14-01_Run1-Spot 37 | 435 | 151855 | 2.5 | 11.6659 | 1.0 | 2.7675 | 1.6 | 0.2342 | 1.2 | 0.77 | 1356.3 | 14.6 | 1346.8 | 11.7 | 1331.9 | 19.5 | 1331.9 | 19.5 | 101.8 |
| DEL14-01_Run1-Spot 38 | 606 | 147295 | 5.7 | 13.5444 | 1.0 | 1.6086 | 1.7 | 0.1580 | 1.4 | 0.83 | 945.8 | 12.6 | 973.6 | 10.8 | 1036.8 | 19.7 | 1036.8 | 19.7 | 91.2 |
| DEL14-01_Run1-Spot 39 | 455 | 593722 | 8.0 | 12.6294 | 1.1 | 1.9814 | 1.9 | 0.1815 | 1.5 | 0.79 | 1075.1 | 14.7 | 1109.2 | 12.6 | 1176.7 | 22.4 | 1176.7 | 22.4 | 91.4 |
| DEL14-01_Run1-Spot 40 | 641 | 82157 | 1.5 | 12.6980 | 1.1 | 2.0910 | 1.6 | 0.1926 | 1.3 | 0.77 | 1135.3 | 13.1 | 1145.8 | 11.3 | 1165.9 | 21.0 | 1165.9 | 21.0 | 97.4 |
| DEL14-01_Run1-Spot 41 | 568 | 87483 | 4.8 | 11.8321 | 1.0 | 2.6731 | 2.0 | 0.2294 | 1.7 | 0.86 | 1331.3 | 20.5 | 1321.0 | 14.7 | 1304.4 | 19.8 | 1304.4 | 19.8 | 102.1 |
| DEL14-01_Run1-Spot 42 | 152 | 166533 | 1.0 | 12.6571 | 1.1 | 2.1388 | 1.8 | 0.1963 | 1.4 | 0.78 | 1155.6 | 15.2 | 1161.4 | 12.7 | 1172.3 | 22.5 | 1172.3 | 22.5 | 98.6 |
| DEL14-01_Run1-Spot 43 | 427 | 107692 | 2.6 | 12.0556 | 1.0 | 2.4349 | 1.7 | 0.2129 | 1.4 | 0.80 | 1244.2 | 15.7 | 1253.0 | 12.5 | 1268.0 | 20.3 | 1268.0 | 20.3 | 98.1 |
| DEL14-01_Run1-Spot 44 | 58 | 177266 | 2.2 | 12.2821 | 1.2 | 2.3061 | 1.9 | 0.2054 | 1.5 | 0.78 | 1204.4 | 16.2 | 1214.2 | 13.4 | 1231.6 | 23.2 | 1231.6 | 23.2 | 97.8 |
| DEL14-01_Run1-Spot 45 | 316 | 2009290 | 3.1 | 11.8713 | 1.8 | 2.4796 | 2.6 | 0.2135 | 2.0 | 0.75 | 1247.4 | 22.5 | 1266.1 | 19.2 | 1298.0 | 34.1 | 1298.0 | 34.1 | 96.1 |
| DEL14-01_Run1-Spot 46 | 108 | 95356 | 2.0 | 13.5261 | 1.2 | 1.7866 | 2.0 | 0.1753 | 1.6 | 0.80 | 1041.1 | 15.5 | 1040.6 | 13.1 | 1039.6 | 24.3 | 1039.6 | 24.3 | 100.1 |
| DEL14-01_Run1-Spot 47 | 124 | 60115 | 3.5 | 13.1560 | 1.4 | 1.9411 | 2.1 | 0.1852 | 1.6 | 0.74 | 1095.4 | 16.0 | 1095.4 | 14.4 | 1095.4 | 28.8 | 1095.4 | 28.8 | 100.0 |
| DEL14-01_Run1-Spot 48 | 78 | 64268 | 2.2 | 13.1792 | 1.7 | 1.7324 | 2.2 | 0.1656 | 1.5 | 0.66 | 987.8 | 13.5 | 1020.6 | 14.2 | 1091.8 | 33.1 | 1091.8 | 33.1 | 90.5 |
| DEL14-01_Run1-Spot 49 | 139 | 362159 | 2.7 | 12.4516 | 1.4 | 2.2761 | 1.9 | 0.2055 | 1.3 | 0.67 | 1205.1 | 14.0 | 1204.9 | 13.5 | 1204.6 | 28.0 | 1204.6 | 28.0 | 100.0 |
| DEL14-01_Run1-Spot 51 | 938 | 244786 | 6.2 | 11.1633 | 1.1 | 2.7384 | 1.6 | 0.2217 | 1.1 | 0.73 | 1290.9 | 13.2 | 1338.9 | 11.5 | 1416.6 | 20.4 | 1416.6 | 20.4 | 91.1 |
| DEL14-01_Run1-Spot 52 | 94 | 26233 | 2.0 | 12.6688 | 1.3 | 2.1518 | 2.0 | 0.1977 | 1.5 | 0.75 | 1163.0 | 15.7 | 1165.6 | 13.6 | 1170.5 | 25.8 | 1170.5 | 25.8 | 99.4 |
| DEL14-01_Run1-Spot 53 | 384 | 91516 | 2.5 | 13.1163 | 1.2 | 1.8553 | 1.7 | 0.1765 | 1.2 | 0.72 | 1047.8 | 11.7 | 1065.3 | 11.1 | 1101.4 | 23.5 | 1101.4 | 23.5 | 95.1 |
| DEL14-01_Run1-Spot 54 | 81 | 95608 | 1.5 | 11.7424 | 1.4 | 2.7301 | 2.1 | 0.2325 | 1.6 | 0.76 | 1347.6 | 20.0 | 1336.7 | 16.0 | 1319.2 | 26.9 | 1319.2 | 26.9 | 102.2 |
| DEL14-01_Run1-Spot 55 | 111 | 110567 | 3.5 | 13.9242 | 3.3 | 1.6104 | 4.7 | 0.1626 | 3.4 | 0.72 | 971.4 | 30.3 | 974.3 | 29.4 | 980.7 | 66.9 | 980.7 | 66.9 | 99.0 |
| DEL14-01_Run1-Spot 56 | 53 | 176413 | 3.6 | 11.1470 | 1.6 | 2.9870 | 1.9 | 0.2415 | 1.0 | 0.53 | 1394.4 | 12.5 | 1404.3 | 14.4 | 1419.3 | 30.8 | 1419.3 | 30.8 | 98.2 |
| DEL14-01_Run1-Spot 57 | 55 | 31743 | 0.7 | 11.1092 | 2.2 | 2.8610 | 3.5 | 0.2305 | 2.7 | 0.78 | 1337.2 | 32.9 | 1371.7 | 26.4 | 1425.8 | 42.4 | 1425.8 | 42.4 | 93.8 |
| DEL14-01_Run1-Spot 58 | 338 | 68037 | 5.8 | 13.5538 | 1.4 | 1.7384 | 2.2 | 0.1709 | 1.7 | 0.77 | 1017.0 | 15.9 | 1022.9 | 14.1 | 1035.4 | 28.0 | 1035.4 | 28.0 | 98.2 |
| DEL14-01_Run1-Spot 59 | 70 | 89108 | 2.0 | 13.8034 | 3.4 | 1.4826 | 4.4 | 0.1484 | 2.9 | 0.65 | 892.1 | 24.0 | 923.3 | 26.9 | 998.5 | 68.6 | 998.5 | 68.6 | 89.3 |

**Appendix G: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| DEL14-1 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| DEL14-01_Run1-Spot 60 | 973 | 85604 | 10.9 | 13.1741 | 0.9 | 1.7816 | 1.7 | 0.1702 | 1.4 | 0.85 | 1013.4 | 13.2 | 1038.8 | 10.8 | 1092.6 | 17.3 | 1092.6 | 17.3 | 92.7 |
| DEL14-01_Run1-Spot 61 | 175 | 96649 | 5.4 | 12.6158 | 1.0 | 2.3110 | 1.4 | 0.2115 | 1.0 | 0.69 | 1236.5 | 11.1 | 1215.7 | 10.1 | 1178.8 | 20.2 | 1178.8 | 20.2 | 104.9 |
| DEL14-01_Run1-Spot 62 | 797 | 171429 | 3.2 | 12.1318 | 1.0 | 2.4185 | 1.9 | 0.2128 | 1.6 | 0.86 | 1243.7 | 18.3 | 1248.1 | 13.6 | 1255.7 | 19.0 | 1255.7 | 19.0 | 99.0 |
| DEL14-01_Run1-Spot 63 | 204 | 155445 | 0.7 | 12.8820 | 2.1 | 1.9455 | 2.5 | 0.1818 | 1.3 | 0.51 | 1076.6 | 12.5 | 1096.9 | 16.5 | 1137.4 | 41.9 | 1137.4 | 41.9 | 94.7 |
| DEL14-01_Run1-Spot 64 | 198 | 82313 | 2.7 | 12.7213 | 2.1 | 2.1140 | 2.6 | 0.1950 | 1.6 | 0.62 | 1148.6 | 17.2 | 1153.4 | 18.2 | 1162.3 | 41.0 | 1162.3 | 41.0 | 98.8 |
| DEL14-01_Run1-Spot 65 | 577 | 384759 | 6.4 | 13.5245 | 0.9 | 1.7322 | 1.6 | 0.1699 | 1.3 | 0.81 | 1011.6 | 12.1 | 1020.6 | 10.3 | 1039.8 | 18.9 | 1039.8 | 18.9 | 97.3 |
| DEL14-01_Run1-Spot 66 | 483 | 74807 | 3.9 | 12.6298 | 1.3 | 1.9667 | 2.6 | 0.1802 | 2.2 | 0.86 | 1067.8 | 22.0 | 1104.2 | 17.5 | 1176.6 | 26.5 | 1176.6 | 26.5 | 90.8 |
| DEL14-01_Run1-Spot 67 | 1078 | 122536 | 3.5 | 12.9852 | 0.9 | 1.8648 | 1.3 | 0.1756 | 1.0 | 0.73 | 1043.0 | 9.2 | 1068.7 | 8.6 | 1121.5 | 17.8 | 1121.5 | 17.8 | 93.0 |
| DEL14-01_Run1-Spot 68 | 244 | 74256 | 3.4 | 12.6763 | 1.2 | 2.1248 | 2.0 | 0.1953 | 1.6 | 0.80 | 1150.3 | 17.0 | 1156.9 | 14.0 | 1169.3 | 24.4 | 1169.3 | 24.4 | 98.4 |
| DEL14-01_Run1-Spot 69 | 926 | 420843 | 10.8 | 12.6946 | 1.3 | 2.0585 | 2.3 | 0.1895 | 1.8 | 0.81 | 1118.8 | 18.8 | 1135.1 | 15.5 | 1166.4 | 26.4 | 1166.4 | 26.4 | 95.9 |
| DEL14-01_Run1-Spot 71 | 100 | 113990 | 3.3 | 11.0317 | 2.1 | 2.9738 | 3.0 | 0.2379 | 2.2 | 0.73 | 1375.9 | 27.6 | 1401.0 | 23.1 | 1439.2 | 39.5 | 1439.2 | 39.5 | 95.6 |
| DEL14-01_Run1-Spot 72 | 413 | 149950 | 3.0 | 12.0513 | 1.2 | 2.5059 | 1.7 | 0.2190 | 1.2 | 0.71 | 1276.7 | 13.6 | 1273.7 | 12.1 | 1268.7 | 23.0 | 1268.7 | 23.0 | 100.6 |
| DEL14-01_Run1-Spot 74 | 58 | 45708 | 1.5 | 13.2702 | 1.8 | 1.8028 | 2.0 | 0.1735 | 0.9 | 0.45 | 1031.4 | 8.6 | 1046.5 | 12.9 | 1078.0 | 35.4 | 1078.0 | 35.4 | 95.7 |
| DEL14-01_Run1-Spot 75 | 1210 | 60223 | 10.2 | 14.0817 | 0.9 | 1.6493 | 1.8 | 0.1684 | 1.5 | 0.85 | 1003.5 | 13.9 | 989.3 | 11.2 | 957.8 | 19.3 | 957.8 | 19.3 | 104.8 |
| DEL14-01_Run1-Spot 76 | 818 | 170603 | 4.5 | 12.9630 | 1.1 | 2.0408 | 2.5 | 0.1919 | 2.2 | 0.89 | 1131.5 | 23.1 | 1129.2 | 16.9 | 1124.9 | 22.1 | 1124.9 | 22.1 | 100.6 |
| DEL14-01_Run1-Spot 77 | 60 | 35300 | 2.5 | 13.3138 | 2.9 | 1.8517 | 3.4 | 0.1788 | 1.8 | 0.53 | 1060.4 | 17.5 | 1064.0 | 22.3 | 1071.5 | 57.6 | 1071.5 | 57.6 | 99.0 |
| DEL14-01_Run1-Spot 78 | 148 | 827113 | 3.1 | 12.4965 | 1.1 | 2.1904 | 1.7 | 0.1985 | 1.3 | 0.76 | 1167.4 | 14.1 | 1178.0 | 12.2 | 1197.6 | 22.5 | 1197.6 | 22.5 | 97.5 |
| DEL14-01_Run1-Spot 79 | 799 | 186337 | 2.2 | 12.3520 | 1.3 | 2.1188 | 2.3 | 0.1898 | 1.8 | 0.81 | 1120.3 | 18.9 | 1154.9 | 15.7 | 1220.5 | 26.4 | 1220.5 | 26.4 | 91.8 |
| DEL14-01_Run1-Spot 80 | 44 | 69742 | 2.4 | 13.7977 | 2.2 | 1.6653 | 2.8 | 0.1667 | 1.7 | 0.60 | 993.6 | 15.2 | 995.4 | 17.6 | 999.3 | 45.2 | 999.3 | 45.2 | 99.4 |
| DEL14-01_Run1-Spot 81 | 99 | 30356 | 2.4 | 12.6235 | 2.1 | 2.1562 | 3.0 | 0.1974 | 2.1 | 0.70 | 1161.4 | 22.6 | 1167.0 | 21.0 | 1177.6 | 42.4 | 1177.6 | 42.4 | 98.6 |
| DEL14-01_Run1-Spot 82 | 396 | 75979 | 2.9 | 12.8385 | 0.9 | 2.1100 | 1.8 | 0.1965 | 1.6 | 0.87 | 1156.3 | 16.8 | 1152.1 | 12.5 | 1144.1 | 17.6 | 1144.1 | 17.6 | 101.1 |
| DEL14-01_Run1-Spot 83 | 667 | 125805 | 10.6 | 12.5204 | 1.5 | 2.2162 | 3.6 | 0.2012 | 3.3 | 0.91 | 1182.0 | 35.5 | 1186.2 | 25.2 | 1193.8 | 29.2 | 1193.8 | 29.2 | 99.0 |
| DEL14-01_Run1-Spot 84 | 159 | 560887 | 2.0 | 13.3597 | 1.0 | 1.8684 | 2.4 | 0.1810 | 2.2 | 0.91 | 1072.6 | 21.3 | 1069.9 | 15.7 | 1064.5 | 20.2 | 1064.5 | 20.2 | 100.8 |
| DEL14-01_Run1-Spot 85 | 163 | 862417 | 3.9 | 12.3916 | 1.1 | 2.1949 | 2.1 | 0.1973 | 1.8 | 0.85 | 1160.6 | 19.4 | 1179.4 | 15.0 | 1214.1 | 22.1 | 1214.1 | 22.1 | 95.6 |
| DEL14-01_Run1-Spot 86 | 40 | 51046 | 1.5 | 13.4801 | 1.6 | 1.8313 | 2.3 | 0.1790 | 1.6 | 0.71 | 1061.7 | 15.9 | 1056.7 | 15.0 | 1046.5 | 32.5 | 1046.5 | 32.5 | 101.5 |
| DEL14-01_Run1-Spot 87 | 127 | 67556 | 3.2 | 12.4391 | 1.4 | 2.1057 | 2.0 | 0.1900 | 1.5 | 0.73 | 1121.2 | 15.2 | 1150.7 | 14.0 | 1206.6 | 27.4 | 1206.6 | 27.4 | 92.9 |
| DEL14-01_Run1-Spot 89 | 117 | 77891 | 3.4 | 12.8249 | 1.4 | 2.0052 | 2.0 | 0.1865 | 1.5 | 0.73 | 1102.5 | 15.1 | 1117.3 | 13.7 | 1146.2 | 27.3 | 1146.2 | 27.3 | 96.2 |
| DEL14-01_Run1-Spot 90 | 897 | 74666 | 3.7 | 13.9483 | 1.3 | 1.6344 | 2.6 | 0.1653 | 2.2 | 0.86 | 986.4 | 20.1 | 983.5 | 16.2 | 977.3 | 27.0 | 977.3 | 27.0 | 100.9 |
| DEL14-01_Run1-Spot 91 | 173 | 69469 | 1.6 | 12.6376 | 1.1 | 2.1790 | 1.9 | 0.1997 | 1.5 | 0.80 | 1173.8 | 16.0 | 1174.4 | 13.1 | 1175.4 | 22.5 | 1175.4 | 22.5 | 99.9 |
| DEL14-01_Run1-Spot 92 | 98 | 367674 | 1.7 | 12.6226 | 1.8 | 2.1469 | 2.2 | 0.1965 | 1.3 | 0.60 | 1156.7 | 13.9 | 1164.1 | 15.2 | 1177.7 | 34.7 | 1177.7 | 34.7 | 98.2 |
| DEL14-01_Run1-Spot 93 | 1642 | 551758 | 26.7 | 12.7735 | 1.4 | 1.9482 | 2.1 | 0.1805 | 1.6 | 0.76 | 1069.6 | 16.0 | 1097.8 | 14.3 | 1154.1 | 27.4 | 1154.1 | 27.4 | 92.7 |
| DEL14-01_Run1-Spot 94 | 263 | 139261 | 5.4 | 12.3771 | 1.5 | 2.2382 | 2.0 | 0.2009 | 1.3 | 0.65 | 1180.2 | 13.8 | 1193.1 | 13.8 | 1216.5 | 29.4 | 1216.5 | 29.4 | 97.0 |
| DEL14-01_Run1-Spot 95 | 391 | 68261 | 5.9 | 12.1544 | 1.2 | 2.3443 | 2.3 | 0.2067 | 1.9 | 0.86 | 1211.0 | 21.3 | 1225.8 | 16.1 | 1252.1 | 22.7 | 1252.1 | 22.7 | 96.7 |
| DEL14-01_Run1-Spot 96 | 104 | 173478 | 3.0 | 12.7246 | 1.3 | 2.1421 | 1.9 | 0.1977 | 1.4 | 0.74 | 1162.9 | 14.8 | 1162.5 | 13.0 | 1161.8 | 25.1 | 1161.8 | 25.1 | 100.1 |
| DEL14-01_Run1-Spot 97 | 116 | 197962 | 1.0 | 11.5892 | 1.2 | 2.7384 | 1.8 | 0.2302 | 1.4 | 0.76 | 1335.4 | 16.6 | 1338.9 | 13.5 | 1344.6 | 22.7 | 1344.6 | 22.7 | 99.3 |
| DEL14-01_Run1-Spot 98 | 344 | 38389 | 3.5 | 12.0269 | 1.6 | 2.1764 | 2.4 | 0.1898 | 1.8 | 0.75 | 1120.5 | 18.2 | 1173.5 | 16.4 | 1272.7 | 30.5 | 1272.7 | 30.5 | 88.0 |
| DEL14-01_Run1-Spot 99 | 372 | 409711 | 2.1 | 12.6099 | 1.2 | 2.1103 | 2.1 | 0.1930 | 1.7 | 0.83 | 1137.6 | 18.1 | 1152.2 | 14.5 | 1179.7 | 23.5 | 1179.7 | 23.5 | 96.4 |
| DEL14-01_Run1-Spot 100 | 743 | 108954 | 4.2 | 13.6121 | 1.0 | 1.6291 | 1.8 | 0.1608 | 1.5 | 0.84 | 961.4 | 13.4 | 981.5 | 11.3 | 1026.8 | 19.7 | 1026.8 | 19.7 | 93.6 |
| DEL14-01_Run1-Spot 101 | 479 | 87672 | 2.0 | 12.7381 | 1.0 | 2.1979 | 1.8 | 0.2031 | 1.5 | 0.85 | 1191.7 | 16.7 | 1180.4 | 12.6 | 1159.7 | 19.0 | 1159.7 | 19.0 | 102.8 |
| DEL14-01_Run1-Spot 102 | 349 | 161550 | 1.4 | 13.3605 | 1.5 | 1.9079 | 2.4 | 0.1849 | 1.9 | 0.77 | 1093.6 | 18.8 | 1083.9 | 16.1 | 1064.4 | 30.8 | 1064.4 | 30.8 | 102.7 |
| DEL14-01_Run1-Spot 103 | 448 | 17075257 | 2.1 | 12.7964 | 1.0 | 2.1258 | 1.9 | 0.1973 | 1.7 | 0.87 | 1160.7 | 17.9 | 1157.2 | 13.4 | 1150.6 | 18.9 | 1150.6 | 18.9 | 100.9 |
| DEL14-01_Run1-Spot 104 | 254 | 154583 | 3.0 | 13.1980 | 0.9 | 1.9309 | 1.7 | 0.1848 | 1.4 | 0.83 | 1093.3 | 14.2 | 1091.9 | 11.4 | 1089.0 | 18.8 | 1089.0 | 18.8 | 100.4 |
| DEL14-01_Run1-Spot 105 | 230 | 39390 | 1.9 | 12.6232 | 2.1 | 2.1676 | 2.7 | 0.1984 | 1.6 | 0.61 | 1167.0 | 17.4 | 1170.7 | 18.5 | 1177.6 | 41.4 | 1177.6 | 41.4 | 99.1 |
| DEL14-01_Run1-Spot 107 | 469 | 76420 | 1.9 | 14.0637 | 1.3 | 1.3189 | 2.4 | 0.1345 | 2.0 | 0.84 | 813.6 | 15.2 | 854.0 | 13.7 | 960.5 | 26.2 | 813.6 | 15.2 | 84.7 |
| DEL14-01_Run1-Spot 108 | 145 | 123183 | 3.7 | 13.6200 | 1.3 | 1.8002 | 1.9 | 0.1778 | 1.5 | 0.76 | 1055.1 | 14.4 | 1045.5 | 12.7 | 1025.6 | 25.3 | 1025.6 | 25.3 | 102.9 |
| DEL14-01_Run1-Spot 109 | 184 | 48304 | 2.7 | 13.4851 | 1.4 | 1.6651 | 2.2 | 0.1629 | 1.7 | 0.78 | 972.6 | 15.2 | 995.3 | 13.8 | 1045.7 | 27.7 | 1045.7 | 27.7 | 93.0 |
| DEL14-01_Run1-Spot 110 | 48 | 52650 | 5.4 | 13.7776 | 2.1 | 1.6563 | 2.3 | 0.1655 | 0.9 | 0.39 | 987.3 | 8.2 | 992.0 | 14.5 | 1002.3 | 42.8 | 1002.3 | 42.8 | 98.5 |
| DEL14-1 26May2015-Spot 1 | 461 | 1524522 | 2.4 | 12.2031 | 1.2 | 2.3972 | 2.4 | 0.2122 | 2.1 | 0.87 | 1240.3 | 23.7 | 1241.8 | 17.3 | 1244.2 | 23.5 | 1244.2 | 23.5 | 99.7 |
| DEL14-1 26May2015-Spot 2 | 323 | 151771 | 5.5 | 12.3162 | 1.3 | 2.2576 | 1.9 | 0.2017 | 1.3 | 0.71 | 1184.2 | 14.6 | 1199.1 | 13.3 | 1226.1 | 26.2 | 1226.1 | 26.2 | 96.6 |
| DEL14-1 26May2015-Spot 3 | 122 | 60102 | 7.4 | 12.2210 | 1.2 | 2.3012 | 1.8 | 0.2040 | 1.4 | 0.76 | 1196.6 | 15.2 | 1212.7 | 13.0 | 1241.3 | 23.5 | 1241.3 | 23.5 | 96.4 |
| DEL14-1 26May2015-Spot 5 | 170 | 52320 | 2.7 | 13.7639 | 2.0 | 1.7401 | 2.9 | 0.1737 | 2.1 | 0.72 | 1032.5 | 20.0 | 1023.5 | 18.8 | 1004.3 | 41.0 | 1004.3 | 41.0 | 102.8 |
| DEL14-1 26May2015-Spot 6 | 116 | 44768 | 3.7 | 12.7443 | 1.6 | 2.0707 | 2.6 | 0.1914 | 2.1 | 0.80 | 1129.0 | 21.6 | 1139.2 | 17.9 | 1158.7 | 31.4 | 1158.7 | 31.4 | 97.4 |
| DEL14-1 26May2015-Spot 7 | 460 | 202308 | 4.9 | 12.4556 | 1.0 | 2.0551 | 1.8 | 0.1856 | 1.5 | 0.83 | 1097.8 | 14.9 | 1134.0 | 12.1 | 1204.0 | 19.3 | 1204.0 | 19.3 | 91.2 |
| DEL14-1 26May2015-Spot 8 | 199 | 54885 | 1.9 | 13.3282 | 1.8 | 1.8406 | 2.7 | 0.1779 | 2.0 | 0.74 | 1055.6 | 19.5 | 1060.1 | 17.8 | 1069.3 | 36.4 | 1069.3 | 36.4 | 98.7 |
| DEL14-1 26May2015-Spot 9 | 352 | 84780 | 9.6 | 15.1700 | 1.7 | 0.9939 | 2.6 | 0.1094 | 2.0 | 0.77 | 669.0 | 12.8 | 700.7 | 13.2 | 803.8 | 34.6 | 669.0 | 12.8 | 83.2 |

**Appendix G: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| DEL14-1 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| DEL14-1 26May2015-Spot 10 | 138 | 27678 | 6.2 | 11.0653 | 1.2 | 3.0730 | 2.0 | 0.2466 | 1.6 | 0.81 | 1421.0 | 20.4 | 1426.0 | 15.1 | 1433.4 | 22.1 | 1433.4 | 22.1 | 99.1 |
| DEL14-1 26May2015-Spot 11 | 142 | 65636 | 2.1 | 12.0122 | 1.3 | 2.5502 | 1.9 | 0.2222 | 1.4 | 0.74 | 1293.4 | 16.5 | 1286.5 | 14.0 | 1275.0 | 25.3 | 1275.0 | 25.3 | 101.4 |
| DEL14-1 26May2015-Spot 12 | 211 | 114198 | 20.2 | 12.4785 | 1.2 | 2.2020 | 1.6 | 0.1993 | 1.1 | 0.67 | 1171.5 | 11.6 | 1181.7 | 11.3 | 1200.4 | 23.5 | 1200.4 | 23.5 | 97.6 |
| DEL14-1 26May2015-Spot 13 | 72 | 42656 | 1.5 | 13.6090 | 2.3 | 1.7500 | 3.7 | 0.1727 | 2.8 | 0.77 | 1027.1 | 27.0 | 1027.2 | 23.8 | 1027.2 | 47.1 | 1027.2 | 47.1 | 100.0 |
| DEL14-1 26May2015-Spot 14 | 88 | 74116 | 2.3 | 13.5186 | 1.3 | 1.6728 | 1.9 | 0.1640 | 1.4 | 0.73 | 979.0 | 12.9 | 998.2 | 12.3 | 1040.7 | 26.7 | 1040.7 | 26.7 | 94.1 |
| DEL14-1 26May2015-Spot 15 | 200 | 293158 | 4.9 | 13.5206 | 1.3 | 1.4811 | 2.3 | 0.1452 | 1.9 | 0.82 | 874.2 | 15.5 | 922.7 | 14.0 | 1040.4 | 26.5 | 1040.4 | 26.5 | 84.0 |
| DEL14-1 26May2015-Spot 16 | 942 | 233454 | 2.4 | 12.8492 | 0.8 | 2.1418 | 1.5 | 0.1996 | 1.3 | 0.84 | 1173.2 | 13.5 | 1162.4 | 10.4 | 1142.4 | 16.0 | 1142.4 | 16.0 | 102.7 |
| DEL14-1 26May2015-Spot 17 | 64 | 29351 | 2.3 | 12.2318 | 1.5 | 2.2153 | 2.2 | 0.1965 | 1.7 | 0.76 | 1156.6 | 18.0 | 1185.9 | 15.7 | 1239.6 | 28.9 | 1239.6 | 28.9 | 93.3 |
| DEL14-1 26May2015-Spot 18 | 221 | 159987 | 1.6 | 13.0621 | 1.1 | 1.7207 | 1.7 | 0.1630 | 1.3 | 0.77 | 973.5 | 11.7 | 1016.3 | 10.8 | 1109.7 | 21.4 | 1109.7 | 21.4 | 87.7 |
| DEL14-1 26May2015-Spot 19 | 788 | 516828 | 2.6 | 12.4822 | 0.9 | 2.1302 | 1.4 | 0.1928 | 1.1 | 0.79 | 1136.8 | 11.6 | 1158.7 | 9.7 | 1199.8 | 16.9 | 1199.8 | 16.9 | 94.7 |
| DEL14-1 26May2015-Spot 20 | 337 | 60461 | 2.9 | 12.6399 | 1.1 | 2.1587 | 1.9 | 0.1979 | 1.6 | 0.81 | 1164.0 | 16.5 | 1167.8 | 13.3 | 1175.0 | 22.2 | 1175.0 | 22.2 | 99.1 |
| DEL14-1 26May2015-Spot 21 | 191 | 234647 | 3.7 | 13.7826 | 1.0 | 1.6707 | 1.6 | 0.1670 | 1.2 | 0.78 | 995.6 | 11.3 | 997.5 | 9.9 | 1001.5 | 19.7 | 1001.5 | 19.7 | 99.4 |
| DEL14-1 26May2015-Spot 22 | 371 | 85757 | 1.9 | 12.2457 | 0.9 | 2.2642 | 1.3 | 0.2011 | 0.9 | 0.69 | 1181.2 | 9.5 | 1201.2 | 8.9 | 1237.4 | 17.9 | 1237.4 | 17.9 | 95.5 |
| DEL14-1 26May2015-Spot 23 | 1836 | 109151 | 21.4 | 13.5796 | 0.8 | 1.4854 | 1.6 | 0.1463 | 1.4 | 0.87 | 880.2 | 11.5 | 924.4 | 9.7 | 1031.6 | 15.7 | 1031.6 | 15.7 | 85.3 |
| DEL14-1 26May2015-Spot 24 | 160 | 57605 | 2.6 | 13.9505 | 1.3 | 1.4800 | 1.9 | 0.1497 | 1.3 | 0.69 | 899.6 | 10.9 | 922.2 | 11.3 | 976.9 | 27.4 | 976.9 | 27.4 | 92.1 |
| DEL14-1 26May2015-Spot 25 | 208 | 97947 | 1.9 | 12.3961 | 2.1 | 2.1793 | 2.6 | 0.1959 | 1.5 | 0.58 | 1153.4 | 15.8 | 1174.5 | 18.0 | 1213.4 | 41.5 | 1213.4 | 41.5 | 95.1 |
| DEL14-1 26May2015-Spot 26 | 339 | 232541 | 3.2 | 13.5562 | 1.0 | 1.7152 | 1.6 | 0.1686 | 1.3 | 0.77 | 1004.6 | 11.8 | 1014.2 | 10.6 | 1035.1 | 21.2 | 1035.1 | 21.2 | 97.1 |
| DEL14-1 26May2015-Spot 27 | 592 | 116330 | 2.6 | 13.4254 | 1.2 | 1.7491 | 2.9 | 0.1703 | 2.7 | 0.91 | 1013.8 | 24.9 | 1026.8 | 18.8 | 1054.7 | 24.0 | 1054.7 | 24.0 | 96.1 |
| DEL14-1 26May2015-Spot 28 | 291 | 124336 | 2.5 | 12.2733 | 1.1 | 2.0696 | 1.8 | 0.1842 | 1.4 | 0.77 | 1090.0 | 14.0 | 1138.8 | 12.4 | 1233.0 | 22.5 | 1233.0 | 22.5 | 88.4 |
| DEL14-1 26May2015-Spot 29 | 114 | 70969 | 2.2 | 12.0730 | 1.6 | 2.4504 | 2.6 | 0.2146 | 2.0 | 0.79 | 1253.1 | 23.3 | 1257.6 | 18.6 | 1265.2 | 30.6 | 1265.2 | 30.6 | 99.0 |
| DEL14-1 26May2015-Spot 30 | 75 | 177960 | 1.6 | 13.3373 | 1.6 | 1.7835 | 2.3 | 0.1725 | 1.7 | 0.72 | 1026.0 | 15.9 | 1039.5 | 15.1 | 1067.9 | 32.1 | 1067.9 | 32.1 | 96.1 |
| DEL14-1 26May2015-Spot 31 | 268 | 128646 | 3.6 | 12.7643 | 1.2 | 2.1101 | 2.1 | 0.1953 | 1.7 | 0.82 | 1150.3 | 17.9 | 1152.1 | 14.2 | 1155.6 | 23.2 | 1155.6 | 23.2 | 99.5 |
| DEL14-1 26May2015-Spot 32 | 108 | 32467 | 1.9 | 13.8884 | 2.2 | 1.6964 | 3.1 | 0.1709 | 2.2 | 0.71 | 1016.9 | 21.0 | 1007.2 | 20.0 | 986.0 | 44.8 | 986.0 | 44.8 | 103.1 |
| DEL14-1 26May2015-Spot 33 | 79 | 94984 | 1.0 | 9.6589 | 1.1 | 4.0018 | 2.4 | 0.2803 | 2.1 | 0.88 | 1593.1 | 29.1 | 1634.6 | 19.1 | 1688.4 | 20.9 | 1688.4 | 20.9 | 94.4 |
| DEL14-1 26May2015-Spot 34 | 110 | 49649 | 2.0 | 12.2571 | 1.2 | 2.1954 | 1.6 | 0.1952 | 1.0 | 0.63 | 1149.3 | 10.4 | 1179.6 | 11.0 | 1235.6 | 24.2 | 1235.6 | 24.2 | 93.0 |
| DEL14-1 26May2015-Spot 35 | 622 | 91227 | 2.3 | 13.4947 | 1.0 | 1.6979 | 1.6 | 0.1662 | 1.2 | 0.75 | 991.0 | 10.7 | 1007.8 | 10.0 | 1044.3 | 21.0 | 1044.3 | 21.0 | 94.9 |
| DEL14-1 26May2015-Spot 36 | 166 | 219609 | 4.1 | 12.2695 | 1.1 | 2.3173 | 1.6 | 0.2062 | 1.2 | 0.72 | 1208.6 | 13.1 | 1217.6 | 11.6 | 1233.6 | 22.1 | 1233.6 | 22.1 | 98.0 |
| DEL14-1 26May2015-Spot 37 | 505 | 332112 | 2.7 | 12.5835 | 1.0 | 2.2055 | 1.7 | 0.2013 | 1.4 | 0.82 | 1182.2 | 15.0 | 1182.8 | 11.8 | 1183.9 | 19.2 | 1183.9 | 19.2 | 99.9 |
| DEL14-1 26May2015-Spot 38 | 333 | 5483957 | 2.3 | 12.3582 | 1.2 | 2.4413 | 1.8 | 0.2188 | 1.3 | 0.74 | 1275.6 | 15.1 | 1254.9 | 12.7 | 1219.5 | 23.4 | 1219.5 | 23.4 | 104.6 |
| DEL14-1 26May2015-Spot 39 | 416 | 52810 | 4.1 | 13.5776 | 1.2 | 1.8050 | 2.4 | 0.1777 | 2.0 | 0.85 | 1054.6 | 19.7 | 1047.3 | 15.5 | 1031.9 | 25.2 | 1031.9 | 25.2 | 102.2 |
| DEL14-1 26May2015-Spot 40 | 111 | 102879 | 5.8 | 12.3325 | 1.2 | 2.2853 | 1.8 | 0.2044 | 1.4 | 0.76 | 1199.0 | 14.9 | 1207.8 | 12.7 | 1223.5 | 23.0 | 1223.5 | 23.0 | 98.0 |
| DEL14-1 26May2015-Spot 41 | 282 | 132630 | 2.6 | 12.6115 | 1.8 | 2.1604 | 2.9 | 0.1976 | 2.2 | 0.78 | 1162.4 | 23.7 | 1168.4 | 19.8 | 1179.5 | 35.3 | 1179.5 | 35.3 | 98.6 |
| DEL14-1 26May2015-Spot 42 | 348 | 158888 | 3.0 | 13.2294 | 1.2 | 1.8386 | 1.8 | 0.1764 | 1.3 | 0.75 | 1047.3 | 13.0 | 1059.3 | 11.7 | 1084.2 | 23.4 | 1084.2 | 23.4 | 96.6 |
| DEL14-1 26May2015-Spot 43 | 395 | 173371 | 9.7 | 12.2766 | 0.7 | 1.9134 | 1.5 | 0.1704 | 1.3 | 0.88 | 1014.1 | 12.2 | 1085.8 | 9.9 | 1232.5 | 14.1 | 1232.5 | 14.1 | 82.3 |
| DEL14-1 26May2015-Spot 44 | 226 | 219253 | 2.0 | 11.7889 | 1.2 | 2.5283 | 1.9 | 0.2162 | 1.5 | 0.77 | 1261.6 | 16.9 | 1280.2 | 13.8 | 1311.5 | 23.3 | 1311.5 | 23.3 | 96.2 |
| DEL14-1 26May2015-Spot 45 | 1346 | 246020 | 13.4 | 13.6400 | 0.8 | 1.5024 | 1.5 | 0.1486 | 1.3 | 0.87 | 893.2 | 11.2 | 931.3 | 9.4 | 1022.6 | 15.6 | 1022.6 | 15.6 | 87.3 |
| DEL14-1 26May2015-Spot 46 | 57 | 77800 | 1.6 | 13.5418 | 1.9 | 1.7255 | 2.4 | 0.1695 | 1.6 | 0.64 | 1009.2 | 14.6 | 1018.1 | 15.7 | 1037.2 | 38.2 | 1037.2 | 38.2 | 97.3 |
| DEL14-1 26May2015-Spot 47 | 297 | 55973 | 3.4 | 12.9051 | 1.1 | 2.0483 | 1.6 | 0.1917 | 1.1 | 0.73 | 1130.7 | 11.9 | 1131.7 | 10.8 | 1133.8 | 21.6 | 1133.8 | 21.6 | 99.7 |
| DEL14-1 26May2015-Spot 48 | 307 | 166220 | 7.0 | 12.4029 | 1.2 | 1.8953 | 1.8 | 0.1705 | 1.4 | 0.77 | 1014.8 | 13.3 | 1079.4 | 12.3 | 1212.4 | 23.3 | 1212.4 | 23.3 | 83.7 |
| DEL14-1 26May2015-Spot 50 | 204 | 119959 | 4.6 | 12.9989 | 1.3 | 1.9114 | 1.7 | 0.1802 | 1.1 | 0.66 | 1068.1 | 11.2 | 1085.1 | 11.5 | 1119.4 | 25.7 | 1119.4 | 25.7 | 95.4 |
| DEL14-1 26May2015-Spot 51 | 149 | 150012 | 1.3 | 12.0894 | 2.2 | 2.4187 | 3.4 | 0.2121 | 2.5 | 0.74 | 1239.9 | 28.2 | 1248.2 | 24.1 | 1262.6 | 43.8 | 1262.6 | 43.8 | 98.2 |
| DEL14-1 26May2015-Spot 52 | 991 | 464664 | 4.0 | 13.7375 | 1.3 | 1.6634 | 2.2 | 0.1657 | 1.7 | 0.78 | 988.6 | 15.5 | 994.7 | 13.7 | 1008.2 | 27.1 | 1008.2 | 27.1 | 98.1 |
| DEL14-1 26May2015-Spot 53 | 1211 | 212672 | 3.9 | 13.0655 | 0.9 | 1.7898 | 1.4 | 0.1696 | 1.2 | 0.80 | 1009.9 | 10.8 | 1041.7 | 9.4 | 1109.2 | 17.1 | 1109.2 | 17.1 | 91.1 |
| DEL14-1 26May2015-Spot 54 | 149 | 153823 | 1.2 | 13.7001 | 1.3 | 1.6030 | 1.9 | 0.1593 | 1.4 | 0.71 | 952.8 | 12.0 | 971.4 | 11.9 | 1013.7 | 27.1 | 1013.7 | 27.1 | 94.0 |
| DEL14-1 26May2015-Spot 55 | 348 | 220172 | 1.1 | 13.5505 | 0.9 | 1.7559 | 1.6 | 0.1726 | 1.3 | 0.83 | 1026.2 | 12.5 | 1029.3 | 10.2 | 1035.9 | 17.6 | 1035.9 | 17.6 | 99.1 |
| DEL14-1 26May2015-Spot 56 | 160 | 131591 | 2.4 | 12.0533 | 1.3 | 2.2845 | 2.2 | 0.1997 | 1.7 | 0.79 | 1173.7 | 18.8 | 1207.5 | 15.6 | 1268.4 | 26.2 | 1268.4 | 26.2 | 92.5 |
| DEL14-1 26May2015-Spot 57 | 320 | 82767 | 2.7 | 12.3104 | 1.2 | 2.0182 | 2.1 | 0.1802 | 1.7 | 0.83 | 1068.0 | 16.9 | 1121.7 | 14.0 | 1227.0 | 22.7 | 1227.0 | 22.7 | 87.0 |
| DEL14-1 26May2015-Spot 58 | 586 | 1240353 | 0.9 | 13.5408 | 0.9 | 1.7754 | 1.7 | 0.1744 | 1.4 | 0.84 | 1036.0 | 13.9 | 1036.5 | 11.2 | 1037.4 | 18.9 | 1037.4 | 18.9 | 99.9 |
| DEL14-1 26May2015-Spot 59 | 94 | 75272 | 3.7 | 12.7129 | 1.1 | 1.9757 | 1.9 | 0.1822 | 1.6 | 0.81 | 1078.8 | 15.5 | 1107.2 | 12.9 | 1163.6 | 22.0 | 1163.6 | 22.0 | 92.7 |
| DEL14-1 26May2015-Spot 60 | 182 | 82337 | 1.9 | 12.6448 | 1.0 | 2.1809 | 1.4 | 0.2000 | 1.0 | 0.72 | 1175.4 | 10.8 | 1175.0 | 9.7 | 1174.3 | 19.2 | 1174.3 | 19.2 | 100.1 |
| DEL14-1 26May2015-Spot 61 | 208 | 165194 | 7.7 | 13.5477 | 1.0 | 1.7819 | 1.9 | 0.1751 | 1.6 | 0.84 | 1040.1 | 15.3 | 1038.9 | 12.3 | 1036.3 | 20.7 | 1036.3 | 20.7 | 100.4 |
| DEL14-1 26May2015-Spot 62 | 183 | 78852 | 3.3 | 12.8276 | 1.4 | 1.9229 | 1.9 | 0.1789 | 1.4 | 0.70 | 1060.9 | 13.3 | 1089.1 | 13.0 | 1145.8 | 27.7 | 1145.8 | 27.7 | 92.6 |
| DEL14-1 26May2015-Spot 63 | 799 | 590542 | 13.6 | 13.8265 | 1.0 | 1.6196 | 1.8 | 0.1624 | 1.5 | 0.84 | 970.2 | 13.7 | 977.8 | 11.3 | 995.1 | 19.6 | 995.1 | 19.6 | 97.5 |
| DEL14-1 26May2015-Spot 64 | 46 | 27819 | 3.6 | 12.6281 | 1.1 | 2.2369 | 1.7 | 0.2049 | 1.3 | 0.76 | 1201.4 | 14.1 | 1192.7 | 11.9 | 1176.9 | 22.0 | 1176.9 | 22.0 | 102.1 |
| DEL14-1 26May2015-Spot 65 | 200 | 150000 | 2.9 | 12.4404 | 1.3 | 2.2979 | 1.7 | 0.2073 | 1.1 | 0.64 | 1214.6 | 11.8 | 1211.6 | 11.8 | 1206.4 | 25.3 | 1206.4 | 25.3 | 100.7 |

**Appendix G: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| DEL14-1 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| DEL14-1 26May2015-Spot 66 | 269 | 110537 | 2.5 | 13.3993 | 1.0 | 1.7124 | 1.9 | 0.1664 | 1.6 | 0.85 | 992.3 | 15.2 | 1013.2 | 12.4 | 1058.6 | 20.5 | 1058.6 | 20.5 | 93.7 |
| DEL14-1 26May2015-Spot 67 | 121 | 49771 | 6.4 | 12.3308 | 2.1 | 2.2292 | 3.0 | 0.1994 | 2.0 | 0.69 | 1171.9 | 21.8 | 1190.3 | 20.7 | 1223.8 | 42.1 | 1223.8 | 42.1 | 95.8 |
| DEL14-1 26May2015-Spot 68 | 320 | 135996 | 3.6 | 12.8045 | 1.3 | 2.1392 | 2.3 | 0.1987 | 1.9 | 0.82 | 1168.1 | 20.3 | 1161.6 | 16.0 | 1149.3 | 26.3 | 1149.3 | 26.3 | 101.6 |
| DEL14-1 26May2015-Spot 69 | 206 | 137524 | 2.2 | 13.5728 | 0.9 | 1.7469 | 1.5 | 0.1720 | 1.2 | 0.79 | 1022.9 | 11.0 | 1026.0 | 9.6 | 1032.6 | 18.5 | 1032.6 | 18.5 | 99.1 |
| DEL14-1 26May2015-Spot 70 | 243 | 228125 | 3.5 | 13.8264 | 1.2 | 1.6945 | 1.7 | 0.1699 | 1.3 | 0.73 | 1011.7 | 11.9 | 1006.5 | 11.1 | 995.1 | 24.0 | 995.1 | 24.0 | 101.7 |
| DEL14-1 26May2015-Spot 71 | 99 | 176677 | 1.8 | 13.6999 | 1.9 | 1.7737 | 3.0 | 0.1762 | 2.4 | 0.79 | 1046.4 | 23.0 | 1035.9 | 19.7 | 1013.7 | 38.1 | 1013.7 | 38.1 | 103.2 |
| DEL14-1 26May2015-Spot 72 | 387 | 112852 | 4.0 | 13.3402 | 1.2 | 1.8752 | 1.8 | 0.1814 | 1.3 | 0.73 | 1074.8 | 12.7 | 1072.4 | 11.7 | 1067.5 | 24.5 | 1067.5 | 24.5 | 100.7 |
| DEL14-1 26May2015-Spot 74 | 297 | 327721 | 3.3 | 12.3702 | 1.4 | 2.2867 | 2.0 | 0.2052 | 1.4 | 0.73 | 1203.0 | 15.9 | 1208.2 | 14.1 | 1217.6 | 27.0 | 1217.6 | 27.0 | 98.8 |
| DEL14-1 26May2015-Spot 75 | 83 | 85806 | 1.2 | 13.8309 | 1.3 | 1.5604 | 2.1 | 0.1565 | 1.6 | 0.76 | 937.4 | 13.6 | 954.6 | 12.7 | 994.5 | 27.3 | 994.5 | 27.3 | 94.3 |
| DEL14-1 26May2015-Spot 76 | 217 | 92357 | 1.7 | 12.6795 | 1.1 | 2.0894 | 1.7 | 0.1921 | 1.3 | 0.78 | 1133.0 | 13.4 | 1145.3 | 11.4 | 1168.8 | 20.8 | 1168.8 | 20.8 | 96.9 |
| DEL14-1 26May2015-Spot 78 | 115 | 62485 | 1.9 | 13.3427 | 1.5 | 1.8403 | 1.9 | 0.1781 | 1.3 | 0.65 | 1056.5 | 12.3 | 1060.0 | 12.7 | 1067.1 | 29.4 | 1067.1 | 29.4 | 99.0 |
| DEL14-1 26May2015-Spot 79 | 122 | 41475 | 3.3 | 13.8792 | 1.4 | 1.6003 | 2.0 | 0.1611 | 1.4 | 0.73 | 962.8 | 12.9 | 970.3 | 12.4 | 987.4 | 27.7 | 987.4 | 27.7 | 97.5 |
| DEL14-1 26May2015-Spot 80 | 235 | 137587 | 1.9 | 11.7566 | 0.9 | 2.5463 | 1.6 | 0.2171 | 1.2 | 0.79 | 1266.6 | 14.3 | 1285.4 | 11.4 | 1316.9 | 18.4 | 1316.9 | 18.4 | 96.2 |
| DEL14-1 26May2015-Spot 81 | 980 | 102979 | 35.2 | 14.3450 | 1.2 | 1.3108 | 1.6 | 0.1364 | 1.0 | 0.66 | 824.2 | 7.9 | 850.5 | 9.0 | 919.9 | 24.2 | 824.2 | 7.9 | 89.6 |
| DEL14-1 26May2015-Spot 82 | 495 | 69335 | 13.9 | 13.6551 | 0.9 | 1.6817 | 1.6 | 0.1666 | 1.3 | 0.81 | 993.1 | 11.9 | 1001.6 | 10.2 | 1020.4 | 19.2 | 1020.4 | 19.2 | 97.3 |
| DEL14-1 26May2015-Spot 84 | 2533 | 282031 | 1.5 | 13.3516 | 0.7 | 1.8612 | 1.5 | 0.1802 | 1.3 | 0.86 | 1068.2 | 12.4 | 1067.4 | 9.7 | 1065.8 | 15.0 | 1065.8 | 15.0 | 100.2 |
| DEL14-1 26May2015-Spot 85 | 91 | 149532 | 2.7 | 14.1707 | 1.4 | 1.5023 | 1.8 | 0.1544 | 1.1 | 0.62 | 925.6 | 9.9 | 931.3 | 11.2 | 944.9 | 29.6 | 944.9 | 29.6 | 97.9 |
| DEL14-1 26May2015-Spot 86 | 748 | 64723 | 4.4 | 13.5803 | 0.9 | 1.7407 | 1.8 | 0.1714 | 1.6 | 0.87 | 1020.1 | 14.7 | 1023.7 | 11.5 | 1031.5 | 17.9 | 1031.5 | 17.9 | 98.9 |
| DEL14-1 26May2015-Spot 87 | 83 | 108574 | 2.1 | 13.5231 | 1.5 | 1.7187 | 2.1 | 0.1686 | 1.5 | 0.69 | 1004.2 | 13.7 | 1015.5 | 13.7 | 1040.0 | 31.2 | 1040.0 | 31.2 | 96.6 |
| DEL14-1 26May2015-Spot 88 | 232 | 98872 | 6.2 | 13.0711 | 1.3 | 1.8944 | 2.3 | 0.1796 | 1.9 | 0.82 | 1064.8 | 18.4 | 1079.1 | 15.1 | 1108.3 | 25.7 | 1108.3 | 25.7 | 96.1 |
| DEL14-1 26May2015-Spot 89 | 190 | 822690 | 2.7 | 13.6105 | 1.4 | 1.7179 | 1.8 | 0.1696 | 1.1 | 0.63 | 1009.8 | 10.6 | 1015.2 | 11.5 | 1027.0 | 28.0 | 1027.0 | 28.0 | 98.3 |
| DEL14-1 26May2015-Spot 90 | 379 | 86787 | 2.9 | 12.6906 | 1.2 | 2.1163 | 2.0 | 0.1948 | 1.6 | 0.80 | 1147.2 | 16.5 | 1154.1 | 13.5 | 1167.1 | 23.3 | 1167.1 | 23.3 | 98.3 |
| DEL14-1 26May2015-Spot 91 | 298 | 123759 | 3.7 | 13.3688 | 1.1 | 1.9276 | 1.7 | 0.1869 | 1.3 | 0.77 | 1104.6 | 13.4 | 1090.7 | 11.4 | 1063.2 | 21.8 | 1063.2 | 21.8 | 103.9 |
| DEL14-1 26May2015-Spot 92 | 221 | 236305 | 4.7 | 12.7793 | 0.9 | 2.1690 | 1.6 | 0.2010 | 1.3 | 0.82 | 1180.9 | 13.7 | 1171.2 | 10.8 | 1153.2 | 17.7 | 1153.2 | 17.7 | 102.4 |
| DEL14-1 26May2015-Spot 93 | 289 | 143620 | 2.7 | 12.2728 | 1.1 | 2.3024 | 1.9 | 0.2049 | 1.5 | 0.81 | 1201.8 | 16.9 | 1213.0 | 13.5 | 1233.1 | 22.0 | 1233.1 | 22.0 | 97.5 |
| DEL14-1 26May2015-Spot 94 | 58 | 153461 | 1.6 | 13.0855 | 1.8 | 1.8317 | 2.4 | 0.1738 | 1.7 | 0.69 | 1033.2 | 15.9 | 1056.9 | 15.9 | 1106.1 | 35.2 | 1106.1 | 35.2 | 93.4 |
| DEL14-1 26May2015-Spot 96 | 544 | 218897 | 1.4 | 12.6397 | 1.2 | 2.2161 | 2.1 | 0.2032 | 1.7 | 0.82 | 1192.3 | 18.9 | 1186.1 | 14.8 | 1175.0 | 24.1 | 1175.0 | 24.1 | 101.5 |
| DEL14-1 26May2015-Spot 97 | 158 | 147376 | 3.4 | 12.6134 | 2.0 | 2.1219 | 2.6 | 0.1941 | 1.6 | 0.62 | 1143.6 | 16.9 | 1156.0 | 17.9 | 1179.2 | 40.2 | 1179.2 | 40.2 | 97.0 |
| DEL14-1 26May2015-Spot 98 | 1421 | 218411 | 3.9 | 13.0435 | 1.0 | 1.7669 | 1.5 | 0.1671 | 1.1 | 0.75 | 996.4 | 10.3 | 1033.4 | 9.6 | 1112.5 | 19.4 | 1112.5 | 19.4 | 89.6 |
| DEL14-1 26May2015-Spot 99 | 447 | 901938 | 2.5 | 13.6409 | 1.0 | 1.6575 | 1.6 | 0.1640 | 1.2 | 0.77 | 978.9 | 11.3 | 992.4 | 10.2 | 1022.5 | 21.0 | 1022.5 | 21.0 | 95.7 |
| DEL14-1 26May2015-Spot 100 | 837 | 89477 | 5.1 | 13.6986 | 1.0 | 1.7121 | 1.7 | 0.1701 | 1.3 | 0.80 | 1012.7 | 12.4 | 1013.1 | 10.7 | 1013.9 | 20.4 | 1013.9 | 20.4 | 99.9 |
| DEL14-1 26May2015-Spot 101 | 184 | 35689 | 3.4 | 13.6732 | 1.8 | 1.6600 | 2.4 | 0.1646 | 1.6 | 0.68 | 982.4 | 14.9 | 993.4 | 15.2 | 1017.7 | 35.7 | 1017.7 | 35.7 | 96.5 |
| DEL14-1 26May2015-Spot 103 | 379 | 48491 | 4.6 | 13.2652 | 1.5 | 1.8619 | 2.7 | 0.1791 | 2.2 | 0.84 | 1062.2 | 21.7 | 1067.7 | 17.5 | 1078.8 | 29.1 | 1078.8 | 29.1 | 98.5 |
| DEL14-1 26May2015-Spot 104 | 581 | 1121216 | 2.2 | 12.1959 | 1.0 | 2.2429 | 1.4 | 0.1984 | 1.1 | 0.74 | 1166.7 | 11.4 | 1194.6 | 10.2 | 1245.4 | 19.1 | 1245.4 | 19.1 | 93.7 |
| DEL14-1 26May2015-Spot 105 | 33 | 41996 | 3.2 | 12.0001 | 1.5 | 2.3915 | 2.1 | 0.2081 | 1.4 | 0.67 | 1218.9 | 15.7 | 1240.0 | 15.0 | 1277.0 | 30.1 | 1277.0 | 30.1 | 95.4 |
| DEL14-1 26May2015-Spot 106 | 1077 | 1811584 | 3.9 | 13.4870 | 0.9 | 1.6247 | 1.5 | 0.1589 | 1.2 | 0.82 | 950.8 | 10.8 | 979.8 | 9.4 | 1045.4 | 17.3 | 1045.4 | 17.3 | 90.9 |
| DEL14-1 26May2015-Spot 107 | 293 | 200747 | 8.8 | 12.8954 | 0.9 | 2.0949 | 1.6 | 0.1959 | 1.4 | 0.85 | 1153.4 | 14.7 | 1147.1 | 11.3 | 1135.3 | 17.2 | 1135.3 | 17.2 | 101.6 |
| DEL14-1 26May2015-Spot 108 | 207 | 163270 | 1.5 | 12.7221 | 1.5 | 2.1258 | 2.4 | 0.1961 | 1.9 | 0.78 | 1154.6 | 19.8 | 1157.2 | 16.6 | 1162.1 | 30.0 | 1162.1 | 30.0 | 99.4 |
| DEL14-1 26May2015-Spot 109 | 165 | 85507 | 1.9 | 13.7402 | 1.8 | 1.7264 | 2.5 | 0.1720 | 1.6 | 0.66 | 1023.3 | 15.4 | 1018.4 | 15.8 | 1007.8 | 37.5 | 1007.8 | 37.5 | 101.5 |
| DEL14-1 26May2015-Spot 110 | 201 | 128758 | 2.2 | 12.4917 | 1.3 | 2.2804 | 1.8 | 0.2066 | 1.3 | 0.70 | 1210.7 | 13.8 | 1206.2 | 12.6 | 1198.3 | 25.0 | 1198.3 | 25.0 | 101.0 |
| DEL14-1 26May2015-Spot 111 | 86 | 174418 | 1.6 | 13.0414 | 1.4 | 1.9422 | 1.9 | 0.1837 | 1.2 | 0.66 | 1087.2 | 12.2 | 1095.8 | 12.4 | 1112.8 | 27.9 | 1112.8 | 27.9 | 97.7 |
| DEL14-1 26May2015-Spot 113 | 132 | 55426 | 1.3 | 13.2752 | 1.0 | 1.8067 | 1.7 | 0.1739 | 1.3 | 0.80 | 1033.8 | 12.6 | 1047.9 | 10.8 | 1077.3 | 20.0 | 1077.3 | 20.0 | 96.0 |
| DEL14-1 26May2015-Spot 114 | 523 | 91516 | 2.1 | 13.3301 | 1.2 | 1.8083 | 2.7 | 0.1748 | 2.4 | 0.90 | 1038.6 | 23.4 | 1048.5 | 17.8 | 1069.0 | 24.2 | 1069.0 | 24.2 | 97.2 |
| DEL14-1 26May2015-Spot 115 | 210 | 97075 | 3.2 | 12.2938 | 1.1 | 2.2811 | 2.8 | 0.2034 | 2.6 | 0.91 | 1193.5 | 27.8 | 1206.5 | 19.7 | 1229.7 | 22.1 | 1229.7 | 22.1 | 97.1 |
| DEL14-1 26May2015-Spot 116 | 566 | 204323 | 3.7 | 12.1657 | 0.6 | 2.3317 | 1.3 | 0.2057 | 1.1 | 0.89 | 1206.0 | 12.6 | 1222.0 | 9.2 | 1250.3 | 11.7 | 1250.3 | 11.7 | 96.5 |
| DEL14-1 26May2015-Spot 117 | 456 | 120905 | 2.8 | 12.8870 | 1.0 | 2.0197 | 1.7 | 0.1888 | 1.3 | 0.78 | 1114.7 | 13.2 | 1122.1 | 11.2 | 1136.6 | 20.4 | 1136.6 | 20.4 | 98.1 |
| DEL14-1 26May2015-Spot 118 | 160 | 27403 | 2.7 | 13.0674 | 1.8 | 1.7869 | 2.4 | 0.1694 | 1.6 | 0.66 | 1008.5 | 14.5 | 1040.7 | 15.4 | 1108.8 | 35.6 | 1108.8 | 35.6 | 91.0 |
| DEL14-1 26May2015-Spot 119 | 138 | 103370 | 3.5 | 12.7173 | 1.0 | 2.0790 | 1.8 | 0.1918 | 1.4 | 0.81 | 1130.9 | 14.9 | 1141.9 | 12.2 | 1162.9 | 20.7 | 1162.9 | 20.7 | 97.2 |
| DEL14-1 26May2015-Spot 120 | 114 | 89065 | 2.5 | 12.7821 | 2.6 | 1.9438 | 3.8 | 0.1802 | 2.7 | 0.73 | 1068.1 | 26.8 | 1096.3 | 25.2 | 1152.8 | 51.2 | 1152.8 | 51.2 | 92.6 |
| DEL14-1 26May2015-Spot 121 | 221 | 83813 | 2.9 | 11.6737 | 1.0 | 2.7288 | 1.5 | 0.2310 | 1.1 | 0.74 | 1339.9 | 13.6 | 1336.3 | 11.3 | 1330.6 | 19.8 | 1330.6 | 19.8 | 100.7 |
| DEL14-1 26May2015-Spot 122 | 308 | 89113 | 3.3 | 14.1891 | 1.7 | 1.4440 | 2.2 | 0.1486 | 1.4 | 0.65 | 893.1 | 11.9 | 907.4 | 13.1 | 942.3 | 34.0 | 942.3 | 34.0 | 94.8 |
| DEL14-1 26May2015-Spot 123 | 865 | 198936 | 27.6 | 12.7827 | 0.9 | 1.8922 | 1.6 | 0.1754 | 1.3 | 0.84 | 1041.9 | 12.9 | 1078.4 | 10.6 | 1152.7 | 17.2 | 1152.7 | 17.2 | 90.4 |
| DEL14-1 26May2015-Spot 124 | 578 | 723759 | 4.3 | 13.5532 | 0.7 | 1.8176 | 1.4 | 0.1787 | 1.2 | 0.87 | 1059.7 | 12.0 | 1051.8 | 9.2 | 1035.5 | 13.9 | 1035.5 | 13.9 | 102.3 |
| DEL14-1 26May2015-Spot 125 | 1143 | 75574 | 4.1 | 14.1017 | 1.2 | 1.2451 | 2.3 | 0.1273 | 2.0 | 0.86 | 772.7 | 14.5 | 821.2 | 13.1 | 954.9 | 24.5 | 772.7 | 14.5 | 80.9 |
| DEL14-1 26May2015-Spot 126 | 684 | 109048 | 2.7 | 12.3694 | 0.9 | 2.2239 | 1.7 | 0.1995 | 1.4 | 0.83 | 1172.7 | 15.0 | 1188.6 | 11.8 | 1217.7 | 18.5 | 1217.7 | 18.5 | 96.3 |

**Appendix G: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| DEL14-1 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| DEL14-1 26May2015-Spot 127 | 242 | 91537 | 2.9 | 13.4039 | 1.1 | 1.8113 | 2.3 | 0.1761 | 2.0 | 0.88 | 1045.5 | 19.3 | 1049.5 | 14.8 | 1057.9 | 21.6 | 1057.9 | 21.6 | 98.8 |
| DEL14-1 26May2015-Spot 128 | 707 | 146615 | 14.7 | 13.5062 | 0.9 | 1.7024 | 1.6 | 0.1668 | 1.4 | 0.85 | 994.3 | 12.9 | 1009.4 | 10.5 | 1042.5 | 17.5 | 1042.5 | 17.5 | 95.4 |
| DEL14-1 26May2015-Spot 129 | 709 | 168887 | 3.0 | 12.9521 | 1.0 | 1.8807 | 1.8 | 0.1767 | 1.5 | 0.83 | 1048.8 | 14.2 | 1074.3 | 11.8 | 1126.6 | 19.9 | 1126.6 | 19.9 | 93.1 |
| DEL14-1 26May2015-Spot 130 | 831 | 261290 | 2.3 | 13.5492 | 0.8 | 1.7450 | 1.7 | 0.1715 | 1.6 | 0.90 | 1020.2 | 14.8 | 1025.3 | 11.3 | 1036.1 | 15.5 | 1036.1 | 15.5 | 98.5 |
| DEL14-1 26May2015-Spot 132 | 303 | 54791 | 2.7 | 13.2395 | 1.4 | 1.8996 | 2.4 | 0.1824 | 2.0 | 0.82 | 1080.1 | 19.7 | 1080.9 | 16.1 | 1082.7 | 28.1 | 1082.7 | 28.1 | 99.8 |
| DEL14-1 26May2015-Spot 133 | 384 | 64644 | 3.7 | 13.3367 | 1.4 | 1.8882 | 2.5 | 0.1826 | 2.0 | 0.83 | 1081.4 | 20.3 | 1076.9 | 16.3 | 1068.0 | 27.3 | 1068.0 | 27.3 | 101.3 |
| DEL14-1 26May2015-Spot 134 | 75 | 52207 | 1.9 | 11.5954 | 2.9 | 2.6906 | 3.3 | 0.2263 | 1.7 | 0.50 | 1314.9 | 20.1 | 1325.9 | 24.7 | 1343.6 | 55.7 | 1343.6 | 55.7 | 97.9 |
| DEL14-1 26May2015-Spot 135 | 242 | 199003 | 1.9 | 11.9377 | 0.9 | 2.5019 | 1.5 | 0.2166 | 1.2 | 0.80 | 1264.0 | 14.0 | 1272.6 | 11.0 | 1287.2 | 17.6 | 1287.2 | 17.6 | 98.2 |
| DEL14-1 26May2015-Spot 136 | 115 | 120616 | 2.8 | 12.1577 | 1.2 | 2.4356 | 2.0 | 0.2148 | 1.6 | 0.80 | 1254.1 | 17.9 | 1253.2 | 14.1 | 1251.5 | 22.9 | 1251.5 | 22.9 | 100.2 |
| DEL14-1 26May2015-Spot 137 | 738 | 939001 | 3.6 | 12.3407 | 1.0 | 2.1276 | 1.7 | 0.1904 | 1.3 | 0.81 | 1123.7 | 13.8 | 1157.8 | 11.4 | 1222.2 | 19.3 | 1222.2 | 19.3 | 91.9 |
| DEL14-1 26May2015-Spot 138 | 247 | 166534 | 4.2 | 13.3078 | 1.2 | 1.7656 | 1.8 | 0.1704 | 1.4 | 0.78 | 1014.4 | 13.4 | 1032.9 | 11.9 | 1072.4 | 23.4 | 1072.4 | 23.4 | 94.6 |
| DEL14-1 26May2015-Spot 139 | 311 | 120292 | 3.7 | 11.0522 | 0.9 | 3.0987 | 1.4 | 0.2484 | 1.0 | 0.74 | 1430.2 | 12.9 | 1432.4 | 10.4 | 1435.7 | 17.5 | 1435.7 | 17.5 | 99.6 |
| DEL14-1 26May2015-Spot 140 | 256 | 147739 | 3.2 | 12.3600 | 1.1 | 2.3438 | 2.2 | 0.2101 | 1.9 | 0.87 | 1229.4 | 20.9 | 1225.7 | 15.3 | 1219.2 | 21.0 | 1219.2 | 21.0 | 100.8 |
| DEL14-1 26May2015-Spot 141 | 2238 | 128204 | 2.5 | 13.4900 | 0.8 | 1.7500 | 1.8 | 0.1712 | 1.6 | 0.88 | 1018.8 | 14.7 | 1027.1 | 11.4 | 1045.0 | 17.0 | 1045.0 | 17.0 | 97.5 |
| DEL14-1 26May2015-Spot 142 | 419 | 157158 | 6.8 | 13.8274 | 1.0 | 1.6599 | 1.9 | 0.1665 | 1.6 | 0.84 | 992.6 | 14.3 | 993.3 | 11.8 | 995.0 | 20.5 | 995.0 | 20.5 | 99.8 |
| DEL14-1 26May2015-Spot 143 | 276 | 57443 | 4.5 | 11.9855 | 1.2 | 2.4007 | 2.1 | 0.2087 | 1.7 | 0.81 | 1221.8 | 18.9 | 1242.8 | 15.1 | 1279.4 | 24.1 | 1279.4 | 24.1 | 95.5 |
| DEL14-1 26May2015-Spot 144 | 384 | 60233 | 4.7 | 11.1671 | 1.1 | 2.8602 | 2.0 | 0.2316 | 1.6 | 0.82 | 1343.1 | 19.5 | 1371.5 | 14.8 | 1415.9 | 21.6 | 1415.9 | 21.6 | 94.9 |
| DEL14-1 26May2015-Spot 145 | 278 | 320552 | 2.1 | 12.7920 | 0.9 | 2.1817 | 1.8 | 0.2024 | 1.6 | 0.87 | 1188.2 | 16.8 | 1175.2 | 12.4 | 1151.3 | 17.5 | 1151.3 | 17.5 | 103.2 |
| DEL14-1 26May2015-Spot 147 | 673 | 283508 | 3.2 | 12.9517 | 0.8 | 1.9582 | 1.6 | 0.1839 | 1.3 | 0.84 | 1088.5 | 13.1 | 1101.3 | 10.4 | 1126.6 | 16.7 | 1126.6 | 16.7 | 96.6 |
| DEL14-1 26May2015-Spot 148 | 254 | 62152 | 2.7 | 11.6664 | 1.4 | 2.6529 | 2.2 | 0.2245 | 1.7 | 0.77 | 1305.4 | 20.5 | 1315.4 | 16.5 | 1331.8 | 27.4 | 1331.8 | 27.4 | 98.0 |
| DEL14-1 26May2015-Spot 149 | 99 | 39631 | 0.7 | 11.9283 | 2.6 | 2.3845 | 3.6 | 0.2063 | 2.5 | 0.69 | 1209.0 | 27.9 | 1238.0 | 26.1 | 1288.7 | 51.0 | 1288.7 | 51.0 | 93.8 |
| DEL14-1 26May2015-Spot 150 | 169 | 41798 | 2.0 | 13.4196 | 1.8 | 1.8080 | 2.9 | 0.1760 | 2.3 | 0.78 | 1044.9 | 22.2 | 1048.4 | 19.2 | 1055.5 | 36.7 | 1055.5 | 36.7 | 99.0 |
| DEL14-1 26May2015-Spot 151 | 242 | 78274 | 2.1 | 13.6340 | 1.0 | 1.7504 | 1.6 | 0.1731 | 1.2 | 0.78 | 1029.1 | 11.6 | 1027.3 | 10.1 | 1023.5 | 20.0 | 1023.5 | 20.0 | 100.5 |
| DEL14-1 26May2015-Spot 152 | 629 | 205785 | 4.4 | 13.2072 | 1.3 | 1.7638 | 2.7 | 0.1689 | 2.3 | 0.87 | 1006.3 | 21.6 | 1032.2 | 17.2 | 1087.6 | 26.1 | 1087.6 | 26.1 | 92.5 |
| DEL14-1 26May2015-Spot 153 | 920 | 202033 | 2.6 | 12.2012 | 1.1 | 2.3391 | 1.8 | 0.2070 | 1.4 | 0.80 | 1212.8 | 15.7 | 1224.2 | 12.7 | 1244.5 | 21.2 | 1244.5 | 21.2 | 97.4 |
| DEL14-1 26May2015-Spot 154 | 257 | 10147677 | 3.4 | 12.3092 | 1.3 | 2.2924 | 1.7 | 0.2047 | 1.2 | 0.69 | 1200.3 | 13.2 | 1209.9 | 12.3 | 1227.2 | 24.7 | 1227.2 | 24.7 | 97.8 |
| DEL14-1 26May2015-Spot 155 | 363 | 58386 | 4.0 | 12.2042 | 0.9 | 2.0382 | 2.3 | 0.1804 | 2.1 | 0.91 | 1069.2 | 21.2 | 1128.4 | 16.0 | 1244.0 | 18.6 | 1244.0 | 18.6 | 85.9 |
| DEL14-1 26May2015-Spot 157 | 100 | 147711 | 1.2 | 13.8436 | 1.2 | 1.6453 | 1.8 | 0.1652 | 1.3 | 0.75 | 985.6 | 12.1 | 987.8 | 11.1 | 992.6 | 23.6 | 992.6 | 23.6 | 99.3 |
| DEL14-1 26May2015-Spot 158 | 59 | 202592 | 1.6 | 13.3498 | 1.5 | 1.7369 | 2.5 | 0.1682 | 2.0 | 0.79 | 1002.0 | 18.3 | 1022.3 | 16.1 | 1066.0 | 30.8 | 1066.0 | 30.8 | 94.0 |
| DEL14-1 26May2015-Spot 159 | 348 | 118140 | 2.4 | 11.4833 | 1.4 | 2.8052 | 2.3 | 0.2336 | 1.9 | 0.81 | 1353.5 | 23.1 | 1356.9 | 17.5 | 1362.3 | 26.4 | 1362.3 | 26.4 | 99.4 |
| DEL14-1 26May2015-Spot 160 | 469 | 77669 | 3.5 | 13.1348 | 1.3 | 2.0202 | 2.3 | 0.1925 | 1.8 | 0.81 | 1134.6 | 19.0 | 1122.3 | 15.3 | 1098.6 | 26.4 | 1098.6 | 26.4 | 103.3 |
| DEL14-1 26May2015-Spot 161 | 109 | 69378 | 4.0 | 12.4206 | 1.5 | 2.3342 | 2.1 | 0.2103 | 1.4 | 0.70 | 1230.3 | 16.2 | 1222.8 | 14.7 | 1209.5 | 29.0 | 1209.5 | 29.0 | 101.7 |
| DEL14-1 26May2015-Spot 162 | 227 | 86993 | 2.0 | 12.7917 | 1.6 | 2.1323 | 2.7 | 0.1978 | 2.2 | 0.82 | 1163.6 | 23.8 | 1159.3 | 18.8 | 1151.3 | 30.9 | 1151.3 | 30.9 | 101.1 |
| DEL14-1 26May2015-Spot 163 | 230 | 420690 | 4.1 | 12.8699 | 1.1 | 1.9891 | 1.8 | 0.1857 | 1.5 | 0.79 | 1097.9 | 14.7 | 1111.8 | 12.4 | 1139.2 | 22.2 | 1139.2 | 22.2 | 96.4 |
| DEL14-1 26May2015-Spot 164 | 946 | 81818 | 2.3 | 13.0312 | 1.1 | 1.9247 | 2.0 | 0.1819 | 1.7 | 0.82 | 1077.4 | 16.5 | 1089.7 | 13.5 | 1114.4 | 22.8 | 1114.4 | 22.8 | 96.7 |
| DEL14-1 26May2015-Spot 165 | 293 | 54876 | 2.2 | 13.0148 | 1.4 | 2.0359 | 2.3 | 0.1922 | 1.8 | 0.79 | 1133.2 | 18.9 | 1127.6 | 15.6 | 1116.9 | 27.8 | 1116.9 | 27.8 | 101.5 |
| DEL14-1 26May2015-Spot 166 | 175 | 29363 | 2.6 | 12.7413 | 1.8 | 2.0677 | 2.7 | 0.1911 | 2.0 | 0.75 | 1127.2 | 20.9 | 1138.2 | 18.4 | 1159.2 | 35.0 | 1159.2 | 35.0 | 97.2 |
| DEL14-1 26May2015-Spot 167 | 52 | 56150 | 4.0 | 13.8911 | 1.6 | 1.6259 | 2.3 | 0.1638 | 1.6 | 0.72 | 977.9 | 14.8 | 980.3 | 14.2 | 985.6 | 31.7 | 985.6 | 31.7 | 99.2 |
| DEL14-1 26May2015-Spot 168 | 93 | 48431 | 3.8 | 12.5043 | 1.3 | 2.0413 | 1.8 | 0.1851 | 1.2 | 0.67 | 1094.9 | 12.3 | 1129.4 | 12.3 | 1196.3 | 26.4 | 1196.3 | 26.4 | 91.5 |
| DEL14-1 26May2015-Spot 169 | 377 | 98812 | 2.1 | 12.6118 | 1.4 | 2.1595 | 2.6 | 0.1975 | 2.1 | 0.83 | 1162.0 | 22.6 | 1168.1 | 17.7 | 1179.4 | 28.0 | 1179.4 | 28.0 | 98.5 |
| DEL14-1 26May2015-Spot 170 | 43 | 21577 | 3.3 | 12.6153 | 2.7 | 2.2843 | 3.6 | 0.2090 | 2.3 | 0.65 | 1223.5 | 25.7 | 1207.4 | 25.2 | 1178.9 | 53.9 | 1178.9 | 53.9 | 103.8 |
| DEL14-1 26May2015-Spot 171 | 1109 | 72916 | 20.9 | 13.8052 | 1.1 | 1.6697 | 1.9 | 0.1672 | 1.5 | 0.81 | 996.5 | 13.9 | 997.1 | 11.8 | 998.2 | 21.9 | 998.2 | 21.9 | 99.8 |
| DEL14-1 26May2015-Spot 172 | 1041 | 202549 | 4.8 | 13.6041 | 1.4 | 1.7648 | 2.5 | 0.1741 | 2.0 | 0.83 | 1034.8 | 19.6 | 1032.6 | 16.0 | 1028.0 | 27.8 | 1028.0 | 27.8 | 100.7 |
| DEL14-1 26May2015-Spot 173 | 567 | 52730 | 2.1 | 12.8617 | 1.1 | 2.0159 | 1.8 | 0.1881 | 1.5 | 0.82 | 1110.8 | 15.5 | 1120.9 | 12.6 | 1140.5 | 21.0 | 1140.5 | 21.0 | 97.4 |
| DEL14-1 26May2015-Spot 174 | 569 | 52169 | 21.8 | 12.6226 | 0.9 | 2.1615 | 1.6 | 0.1979 | 1.2 | 0.80 | 1163.9 | 13.2 | 1168.8 | 10.8 | 1177.7 | 18.5 | 1177.7 | 18.5 | 98.8 |
| DEL14-1 26May2015-Spot 175 | 281 | 202146 | 2.7 | 11.0226 | 1.2 | 3.0771 | 2.1 | 0.2460 | 1.7 | 0.82 | 1417.8 | 22.1 | 1427.0 | 16.2 | 1440.8 | 23.2 | 1440.8 | 23.2 | 98.4 |
| DEL14-1 26May2015-Spot 176 | 141 | 74296 | 2.2 | 13.5749 | 2.1 | 1.7553 | 3.7 | 0.1728 | 3.1 | 0.84 | 1027.6 | 29.8 | 1029.1 | 24.2 | 1032.3 | 41.5 | 1032.3 | 41.5 | 99.5 |
| DEL14-1 26May2015-Spot 177 | 137 | 28290 | 0.8 | 12.5326 | 1.7 | 2.1246 | 2.5 | 0.1931 | 1.8 | 0.73 | 1138.2 | 18.9 | 1156.8 | 17.3 | 1191.8 | 34.0 | 1191.8 | 34.0 | 95.5 |
| DEL14-1 26May2015-Spot 178 | 214 | 168020 | 3.3 | 13.9686 | 1.3 | 1.5808 | 2.3 | 0.1602 | 2.0 | 0.84 | 957.6 | 17.4 | 962.7 | 14.5 | 974.3 | 25.8 | 974.3 | 25.8 | 98.3 |
| DEL14-1 26May2015-Spot 179 | 313 | 101026 | 9.4 | 13.5990 | 1.2 | 1.5686 | 1.9 | 0.1547 | 1.5 | 0.79 | 927.3 | 13.2 | 957.9 | 12.1 | 1028.7 | 24.2 | 1028.7 | 24.2 | 90.1 |
| DEL14-1 26May2015-Spot 180 | 267 | 138134 | 3.6 | 12.3770 | 1.2 | 2.2732 | 1.7 | 0.2041 | 1.2 | 0.71 | 1197.1 | 13.4 | 1204.0 | 12.2 | 1216.5 | 24.2 | 1216.5 | 24.2 | 98.4 |
| DEL14-1 26May2015-Spot 181 | 149 | 61540 | 1.4 | 12.8663 | 1.0 | 2.1136 | 1.7 | 0.1972 | 1.3 | 0.78 | 1160.4 | 13.6 | 1153.2 | 11.4 | 1139.8 | 20.6 | 1139.8 | 20.6 | 101.8 |
| DEL14-1 26May2015-Spot 182 | 901 | 107152 | 4.1 | 12.7575 | 1.0 | 2.0564 | 1.9 | 0.1903 | 1.6 | 0.85 | 1122.9 | 16.6 | 1134.4 | 12.9 | 1156.6 | 19.7 | 1156.6 | 19.7 | 97.1 |
| DEL14-1 26May2015-Spot 183 | 88 | 36892 | 5.3 | 13.1307 | 1.3 | 1.9077 | 1.8 | 0.1817 | 1.2 | 0.66 | 1076.1 | 11.6 | 1083.8 | 11.9 | 1099.2 | 26.9 | 1099.2 | 26.9 | 97.9 |
| DEL14-1 26May2015-Spot 184 | 779 | 121887 | 10.5 | 10.5740 | 0.9 | 2.9061 | 1.8 | 0.2229 | 1.5 | 0.85 | 1297.0 | 17.4 | 1383.5 | 13.2 | 1519.5 | 17.6 | 1519.5 | 17.6 | 85.4 |

**Appendix G: LA-ICPMS U-Pb Zircon Geochronology (continued)**

| DEL14-1 | | | | Isotope ratios | | | | | | | Apparent ages (Ma) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | U (ppm) | 206Pb 204Pb | U/Th | 206Pb* 207Pb* | ± (%) | 207Pb* 235U* | ± (%) | 206Pb* 238U | ± (%) | error corr. | 206Pb* 238U* | ± (Ma) | 207Pb* 235U | ± (Ma) | 206Pb* 207Pb* | ± (Ma) | Best age (Ma) | ± (Ma) | Conc (%) |
| DEL14-1 26May2015-Spot 185 | 136 | 289948 | 3.1 | 11.6833 | 0.9 | 2.7330 | 1.7 | 0.2316 | 1.4 | 0.83 | 1342.8 | 17.0 | 1337.5 | 12.6 | 1329.0 | 18.3 | 1329.0 | 18.3 | 101.0 |
| DEL14-1 26May2015-Spot 186 | 924 | 69634 | 8.7 | 13.1620 | 1.0 | 1.8651 | 1.7 | 0.1780 | 1.4 | 0.82 | 1056.3 | 13.4 | 1068.8 | 11.1 | 1094.5 | 19.3 | 1094.5 | 19.3 | 96.5 |
| DEL14-1 26May2015-Spot 187 | 385 | 226615 | 6.0 | 13.3255 | 1.0 | 1.7712 | 1.7 | 0.1712 | 1.4 | 0.80 | 1018.6 | 13.0 | 1035.0 | 11.2 | 1069.7 | 20.9 | 1069.7 | 20.9 | 95.2 |
| DEL14-1 26May2015-Spot 188 | 93 | 28647 | 1.3 | 13.8406 | 2.4 | 1.7183 | 3.3 | 0.1725 | 2.2 | 0.67 | 1025.8 | 20.7 | 1015.4 | 21.0 | 993.0 | 49.4 | 993.0 | 49.4 | 103.3 |
| DEL14-1 26May2015-Spot 190 | 901 | 123071 | 3.4 | 13.5070 | 1.0 | 1.8787 | 2.4 | 0.1840 | 2.2 | 0.90 | 1089.0 | 21.9 | 1073.6 | 16.1 | 1042.4 | 21.0 | 1042.4 | 21.0 | 104.5 |
| DEL14-1 26May2015-Spot 193 | 76 | 29587 | 2.5 | 12.7855 | 1.6 | 2.1453 | 2.1 | 0.1989 | 1.4 | 0.67 | 1169.6 | 15.3 | 1163.5 | 14.9 | 1152.3 | 31.7 | 1152.3 | 31.7 | 101.5 |
| DEL14-1 26May2015-Spot 194 | 202 | 187830 | 3.1 | 12.3645 | 1.1 | 2.2973 | 2.3 | 0.2060 | 2.0 | 0.88 | 1207.6 | 22.0 | 1211.5 | 16.2 | 1218.4 | 21.7 | 1218.4 | 21.7 | 99.1 |
| DEL14-1 26May2015-Spot 195 | 296 | 81749 | 3.8 | 12.4797 | 1.1 | 2.1240 | 1.7 | 0.1922 | 1.3 | 0.75 | 1133.5 | 13.5 | 1156.6 | 11.9 | 1200.2 | 22.4 | 1200.2 | 22.4 | 94.4 |
| DEL14-1 26May2015-Spot 196 | 130 | 2500202 | 4.2 | 12.5356 | 1.0 | 2.0126 | 1.9 | 0.1830 | 1.7 | 0.85 | 1083.2 | 16.6 | 1119.8 | 13.2 | 1191.4 | 20.1 | 1191.4 | 20.1 | 90.9 |
| DEL14-1 26May2015-Spot 197 | 210 | 31140 | 2.3 | 12.7501 | 1.6 | 2.1104 | 2.8 | 0.1951 | 2.3 | 0.82 | 1149.2 | 23.8 | 1152.2 | 19.0 | 1157.8 | 31.2 | 1157.8 | 31.2 | 99.3 |
| DEL14-1 26May2015-Spot 198 | 169 | 72316 | 4.1 | 11.2523 | 1.3 | 2.9591 | 2.1 | 0.2415 | 1.7 | 0.79 | 1394.5 | 20.9 | 1397.2 | 16.1 | 1401.4 | 25.1 | 1401.4 | 25.1 | 99.5 |
| DEL14-1 26May2015-Spot 199 | 78 | 150849 | 3.0 | 13.4826 | 1.2 | 1.7751 | 2.0 | 0.1736 | 1.6 | 0.80 | 1031.8 | 14.9 | 1036.4 | 12.7 | 1046.1 | 23.9 | 1046.1 | 23.9 | 98.6 |
| DEL14-1 26May2015-Spot 200 | 353 | 1803187 | 0.5 | 12.3047 | 0.9 | 2.3242 | 1.4 | 0.2074 | 1.1 | 0.76 | 1215.0 | 12.2 | 1219.7 | 10.3 | 1228.0 | 18.3 | 1228.0 | 18.3 | 98.9 |
| DEL14-1 26May2015-Spot 201 | 337 | 318224 | 2.4 | 12.2397 | 1.5 | 2.3598 | 2.2 | 0.2095 | 1.7 | 0.75 | 1226.0 | 18.7 | 1230.5 | 15.9 | 1238.4 | 28.7 | 1238.4 | 28.7 | 99.0 |
| DEL14-1 26May2015-Spot 202 | 895 | 134762 | 4.5 | 11.7439 | 1.1 | 2.3378 | 2.4 | 0.1991 | 2.1 | 0.88 | 1170.6 | 22.2 | 1223.9 | 16.8 | 1319.0 | 21.6 | 1319.0 | 21.6 | 88.8 |
| DEL14-1 26May2015-Spot 203 | 40 | 66903 | 2.9 | 11.0995 | 1.3 | 3.0119 | 1.9 | 0.2425 | 1.4 | 0.75 | 1399.5 | 18.1 | 1410.6 | 14.7 | 1427.5 | 24.5 | 1427.5 | 24.5 | 98.0 |
| DEL14-1 26May2015-Spot 204 | 146 | 217973 | 3.6 | 12.3295 | 1.0 | 2.3316 | 1.5 | 0.2085 | 1.1 | 0.77 | 1220.8 | 12.7 | 1222.0 | 10.6 | 1224.0 | 18.9 | 1224.0 | 18.9 | 99.7 |
| DEL14-1 26May2015-Spot 205 | 379 | 745810 | 1.6 | 13.3665 | 0.9 | 1.7841 | 1.6 | 0.1730 | 1.3 | 0.81 | 1028.4 | 12.4 | 1039.7 | 10.4 | 1063.5 | 18.8 | 1063.5 | 18.8 | 96.7 |
| DEL14-1 26May2015-Spot 206 | 341 | 175789 | 15.6 | 15.4358 | 1.4 | 0.9201 | 1.9 | 0.1030 | 1.2 | 0.65 | 632.0 | 7.4 | 662.4 | 9.2 | 767.3 | 30.4 | 632.0 | 7.4 | 82.4 |
| DEL14-1 26May2015-Spot 207 | 647 | 202555 | 7.6 | 13.4354 | 1.0 | 1.7837 | 1.8 | 0.1738 | 1.5 | 0.84 | 1033.1 | 14.5 | 1039.5 | 11.8 | 1053.2 | 19.6 | 1053.2 | 19.6 | 98.1 |
| DEL14-1 26May2015-Spot 208 | 430 | 155587 | 6.1 | 13.7819 | 1.0 | 1.5955 | 1.9 | 0.1595 | 1.6 | 0.86 | 953.9 | 14.3 | 968.4 | 11.7 | 1001.6 | 19.6 | 1001.6 | 19.6 | 95.2 |
| DEL14-1 26May2015-Spot 209 | 332 | 68483 | 3.2 | 12.3829 | 0.9 | 2.3198 | 1.6 | 0.2083 | 1.4 | 0.83 | 1219.9 | 15.2 | 1218.3 | 11.7 | 1215.5 | 17.9 | 1215.5 | 17.9 | 100.4 |
| DEL14-1 26May2015-Spot 210 | 420 | 50906 | 14.4 | 12.9954 | 1.1 | 1.9672 | 1.6 | 0.1854 | 1.1 | 0.71 | 1096.5 | 11.1 | 1104.3 | 10.6 | 1119.9 | 22.2 | 1119.9 | 22.2 | 97.9 |
| DEL14-1 26May2015-Spot 211 | 276 | 66801 | 1.2 | 13.8009 | 1.7 | 1.6531 | 2.3 | 0.1655 | 1.6 | 0.69 | 987.1 | 14.3 | 990.7 | 14.4 | 998.8 | 33.5 | 998.8 | 33.5 | 98.8 |
| DEL14-1 26May2015-Spot 212 | 281 | 38617 | 2.4 | 12.3378 | 1.5 | 2.1942 | 2.2 | 0.1963 | 1.6 | 0.73 | 1155.7 | 17.3 | 1179.2 | 15.7 | 1222.7 | 30.2 | 1222.7 | 30.2 | 94.5 |
| DEL14-1 26May2015-Spot 213 | 109 | 90806 | 6.7 | 14.6570 | 1.7 | 1.1064 | 2.1 | 0.1176 | 1.3 | 0.61 | 716.8 | 8.7 | 756.5 | 11.2 | 875.5 | 34.3 | 716.8 | 8.7 | 81.9 |
| DEL14-1 26May2015-Spot 214 | 1409 | 23952839 | 29.6 | 13.7021 | 1.2 | 1.5581 | 1.9 | 0.1548 | 1.4 | 0.75 | 928.0 | 12.0 | 953.7 | 11.5 | 1013.4 | 24.9 | 1013.4 | 24.9 | 91.6 |
| DEL14-1 26May2015-Spot 215 | 94 | 231493 | 1.6 | 13.6141 | 1.3 | 1.8314 | 1.9 | 0.1808 | 1.4 | 0.73 | 1071.5 | 14.0 | 1056.8 | 12.8 | 1026.5 | 26.8 | 1026.5 | 26.8 | 104.4 |
| DEL14-1 26May2015-Spot 216 | 167 | 78215 | 1.3 | 13.1603 | 2.1 | 1.8113 | 3.2 | 0.1729 | 2.4 | 0.75 | 1028.0 | 22.8 | 1049.6 | 20.8 | 1094.7 | 41.8 | 1094.7 | 41.8 | 93.9 |
| DEL14-1 26May2015-Spot 217 | 185 | 163564 | 1.8 | 12.5201 | 1.9 | 2.1909 | 3.0 | 0.1989 | 2.3 | 0.77 | 1169.7 | 24.4 | 1178.2 | 20.6 | 1193.8 | 37.1 | 1193.8 | 37.1 | 98.0 |
| DEL14-1 26May2015-Spot 218 | 309 | 53196 | 3.7 | 12.9536 | 1.6 | 1.8344 | 2.4 | 0.1723 | 1.8 | 0.75 | 1025.0 | 16.8 | 1057.8 | 15.5 | 1126.3 | 31.0 | 1126.3 | 31.0 | 91.0 |
| DEL14-1 26May2015-Spot 219 | 302 | 54405 | 2.4 | 12.3342 | 0.9 | 2.3336 | 2.0 | 0.2088 | 1.8 | 0.89 | 1222.2 | 20.3 | 1222.6 | 14.5 | 1223.2 | 18.2 | 1223.2 | 18.2 | 99.9 |
| DEL14-1 26May2015-Spot 220 | 172 | 143795 | 2.0 | 15.9595 | 1.1 | 1.0271 | 1.8 | 0.1189 | 1.4 | 0.77 | 724.2 | 9.3 | 717.5 | 9.1 | 696.6 | 24.2 | 724.2 | 9.3 | 104.0 |

**Appendix H: SIMS U-Pb Zircon Geochronology**

| H14-020 | Apparent ages (Ma) | | | | | | | Isotope ratios | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analysis | *206Pb/ 238U* | *206Pb/ 238U 1 s.e.* | *207Pb/ 235U* | *207Pb/ 235U 1 s.e.* | *207Pb/ 206Pb* | *207Pb/ 206Pb 1 s.e.* | % Radiogeni *206Pb* | *207Pb*/ 235U* | *207Pb*/ 235U 1 s.e.* | *206Pb*/ 238U* | *206Pb*/ 238U 1 s.e.* | Correlation of Concordia Ellipses | *207Pb*/ 206Pb** | *207Pb*/ 206Pb* 1 s.e.* |
| 2014_10_29Oct\ H14-020_Gr1_zone_3.ais | 1136 | 38 | 1147 | 25 | 1167 | 12 | 99.95 | 2.0940 | 0.0759 | 0.1928 | 0.0070 | 0.0788 | 0.0005 | 0.9856 |
| 2014_10_29Oct\ H14-020_Gr10_zone3.ais | 1087 | 36 | 1101 | 26 | 1127 | 21 | 99.89 | 1.9560 | 0.0761 | 0.1837 | 0.0067 | 0.0772 | 0.0008 | 0.9638 |
| 2014_10_29Oct\ H14-020_Gr17_zone3.ais | 1167 | 43 | 1154 | 29 | 1130 | 26 | 99.94 | 2.1170 | 0.0899 | 0.1985 | 0.0080 | 0.0773 | 0.0010 | 0.9519 |
| 2014_10_29Oct\ H14-020_Gr29_zone3.ais | 1153 | 41 | 1145 | 27 | 1130 | 23 | 99.94 | 2.0900 | 0.0820 | 0.1959 | 0.0076 | 0.0774 | 0.0009 | 0.9568 |
| 2014_10_29Oct\ H14-020_Gr20_zone3.ais | 1153 | 45 | 1154 | 33 | 1155 | 27 | 99.91 | 2.1150 | 0.1000 | 0.1958 | 0.0083 | 0.0783 | 0.0011 | 0.9596 |
| 2014_10_29Oct\ H14-020_Gr15_core.ais | 1135 | 39 | 1128 | 28 | 1114 | 22 | 99.87 | 2.0370 | 0.0823 | 0.1926 | 0.0072 | 0.0767 | 0.0008 | 0.9636 |
| 2014_10_29Oct\ H14-020_Gr5_core.ais | 1181 | 45 | 1169 | 30 | 1148 | 32 | 99.8 | 2.1630 | 0.0937 | 0.2010 | 0.0084 | 0.0781 | 0.0013 | 0.9274 |
| 2014_10_29Oct\ H14-020_Gr4_core.ais | 1232 | 41 | 1207 | 34 | 1161 | 63 | 99.58 | 2.2810 | 0.1100 | 0.2106 | 0.0076 | 0.0786 | 0.0025 | 0.7561 |
| 2014_10_29Oct\ H14-020_Gr13_core.ais | 1144 | 67 | 1100 | 66 | 1014 | 150 | 99.14 | 1.9540 | 0.1930 | 0.1942 | 0.0123 | 0.0730 | 0.0054 | 0.6613 |

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