University of Stavanger

**Faculty of Science and Technology**

# MASTER'S THESIS

| Study program/Specialization:<br><br>MSc Petroleum Geosciences Engineering | Fall semester, 2016<br><br>Open access |
|---|---|
| Writer:<br><br>Lena Ivarna Lindland Støle | ______________________________<br>(Writer's signature) |

Faculty supervisor: Udo Zimmermann

Title of thesis:

Hafnium isotope geochemistry on detrital zircons in Mesozoic succession of the Barents Sea to enhance the provenance knowledge of potential Hydrocarbon reservoir succession.

Credits (ECTS): 30

| Keywords:<br><br>Provenance<br>Zircon<br>Hafnium isotope<br>Barents Sea<br>Hammerfest Basin<br>Lower Cretaceous | Pages: _______________<br><br>+ enclosure: ___________<br><br>Stavanger, February 13th, 2017 |
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# Hafnium isotope geochemistry on detrital zircons in Mesozoic succession of the Barents Sea to enhance the provenance knowledge of potential Hydrocarbon reservoir succession.

**by**

**Lena Ivarna Lindland Støle**

**MSc. Thesis**

Presented to the Faculty of Science and Technology

The University of Stavanger

**The University of Stavanger**

**February 2017**

# Acknowledgements

Primarily I would like to the sponsors of the LoCrA consortium for making this research possible (BG Group, BP, Centrica Energy, ConocoPhillips, DEA, Det Norske, Dong Energy, Edison, Eni Norge, Force, GDF Suez, Idemitsu, Lukoil, Lundin Norway, Norske Shell, Norwegian Petroleum Directorate (NPD), PGNiG Upstream International, Premier Oil, Repsol, OMV, Statoil, Total, VNG Norge).

I would like to express my sincerest gratitude towards my supervisor, Professor Udo Zimmermann, for giving me the opportunity to explore geoscience and supporting me throughout this thesis process. He has done his best to tailor an engaging and challenging project allowing me to build on and further develop my skills and knowledge within the geological science world. Thank you Udo for an amazing educational journey!

Thanks to the staff at the laboratory at The Science Department of Earth and Atmospheric Science at University of Houston, TX, for all the support and guidance with machines and for the opportunity to use their lab. A special thanks to Minako Righter for all the patience, great lunches and friendship that made Houston feel like home.

Thanks to Ingunn Oddsen at the University of Stavanger for always being so flexible on using the SEM laboratory.

Without my fellow students, this would not have been an easy journey. Thank you so much for making this the best and worst two years of my life. Thanks for the endless hours in the lab, the breaks, all the discussions, the laughs, the collaboration and all the joy you have given me and for all the things you have thought me. I wish you all the best! A special thanks to Erik Helland and Yichen Yang for their patience and shedding light on the darkest paths and never giving up on me. People as remarkable like you are hard to find and I am so grateful for all of your support and friendship.

Finally, a very special thanks to my dad, Rune Støle, for always cheering me on, at all times being there making sure the journey went as smooth as possible and giving me confidence in accomplishing my pursuit. You are my rock!

# Abstract

Technological advances have led to the development of various methods that allows us to more accurately pinpoint the timing of geological events using geochronology. One of the most established and acknowledged techniques is the dating of detrital zircons by the use of U-Pb laser ablation - inductively coupled plasma mass spectrometry - (LA-ICP-MS). In combination with U-Pb *in situ* analyses of the same zircon grain, the Lutetium-Hafnium isotope system represent one of the most innovative and powerful tools for geochronology and isotope. This thesis focuses on investigating the provenance of Mesozoic succession from seven deep drill cores provided by the Norwegian Petroleum Directorate (NPD). The analysis of the samples resulted in U-Pb isotope dating of 2457 detrital zircons (Matthews et al., *subm.*). The isotopic composition of Hf has been measured in 1151 of those zircon grains, using a laser ablation multi collector (MC)-ICP-MS to further investigate basin evolution trends and to propose potential source areas. With 21 Cretaceous samples, 8 Jurassic samples and 1 Triassic sample, the zircons varies in age from 206 Ma to 3465 Ma, allowing indirect analysis of mantle-derived Hf over a significant time span. With a systematic Lu-Hf isotope analysis of the detrital zircons in these samples, it was possible to deduct some information about the likely provenances and sources for Mesozoic (<370 Ma), Caledonian (450 - 370 Ma), Gothian (1700 Ma – 1450 Ma) and Neoacrhean (2.8 – 2.5 Ga) detrital zircons. The resulting data yielded the most juvenile $\varepsilon Hf_{(t)}$ signature for Gothian detrital grains, pointing to crustal formation ages related to the Svecofennian or Transscandinavian Igneous Belt (TIB). The youngest Mesozoic detrital grains, have more non-juvenile $\varepsilon Hf_{(t)}$ values between 12.92 to -17.35 indicating juvenile sources and reworking of crust, respectively magma mixing. Most Caledonian show non-juvenile $\varepsilon Hf_{(t)}$ values ranging from 11.61 to -15.94, where most have values of $\varepsilon Hf_{(t)} < 2$. Around 10% of the grains show older Early Mesoproterozoic ages while a limited few are older. The oldest detritus is carefully discussed with model ages point to a Late Paleoarchean dominance and the oldest grain selected for Hf isotopes (NEZ2.063 from Kolje Fm; 3465 Ma) would point to a source in the northeast with an Eoarchean crustal component.

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# ABBREVIATION AND SYMBOLS

| | |
|---|---|
| LoCrA | Lower Cretaceous basin studies in the Arctic |
| LA | Laser Ablation |
| ICP-MS | Inductively Coupled Plasma Mass Spectrometry |
| MC | Multi Collector |
| TIMS | Thermal Ionisation Mass Spectrometry |
| SIMS | Secondary Ion Mass Spectrometry |
| SHRIMP | Sensitive High Resolution Ion Microprobe |
| SEM | Secondary Electron Microscope |
| CL | Cathodoluminescence |
| CHUR | Chondrite Undepleted Reservoir |
| DM | Depleted Mantel |
| Ma | Mega-annum (million years before present) |
| Ga | Giga-annum (billion years before present) |
| $\lambda$ | Decay Constant |
| t | Age |
| $Hf_{TDM}$ | Hafnium-Depleted Mantel Model Age |
| $\varepsilon Hf$ | Epsilon Hafnium |
| Lu | Lutetium |
| Hf | Hafnium |
| U | Uranium |
| Pb | Lead |
| Sm | Samarium |
| Nd | Neodymium |

# INTRODUCTION

This MSc project uses Lu-Hf isotope systematics for provenance information applied to a specific geological framework: selected Mesozoic successions of the Barents Sea, a shallow continental shelf sea of the Arctic Ocean located off the northern coasts of Norway and Russia situated between the Norwegian-Greenland Sea, Novaya-Zemlya, the Arctic Ocean Margin and the Norwegian-Russian mainland (Fig. 1). Within the Barents Sea this study concentrates on the Hammerfest basin (Fig. 2) in the southern part of the mentioned area. Here, 7/8 wells have been sampled for Mesozoic successions to gain as much information about the provenance of the sampled rocks (wells 7117/9-2 (W), 7019/1-1 (SW), 7120/1-2 (N1), 7120/2-2 (N2), 7120/10-2 (S1), 7120/12-1 (S2), 7122/2-1 (NE); Fig. 2). The samples collected represent three Cretaceous formations (Knurr, Kolje, Kolmule), three Jurassic formations (Stø, Fuglen, Hekkingen) and one Triassic formation (Kobbe) (Fig. 3).

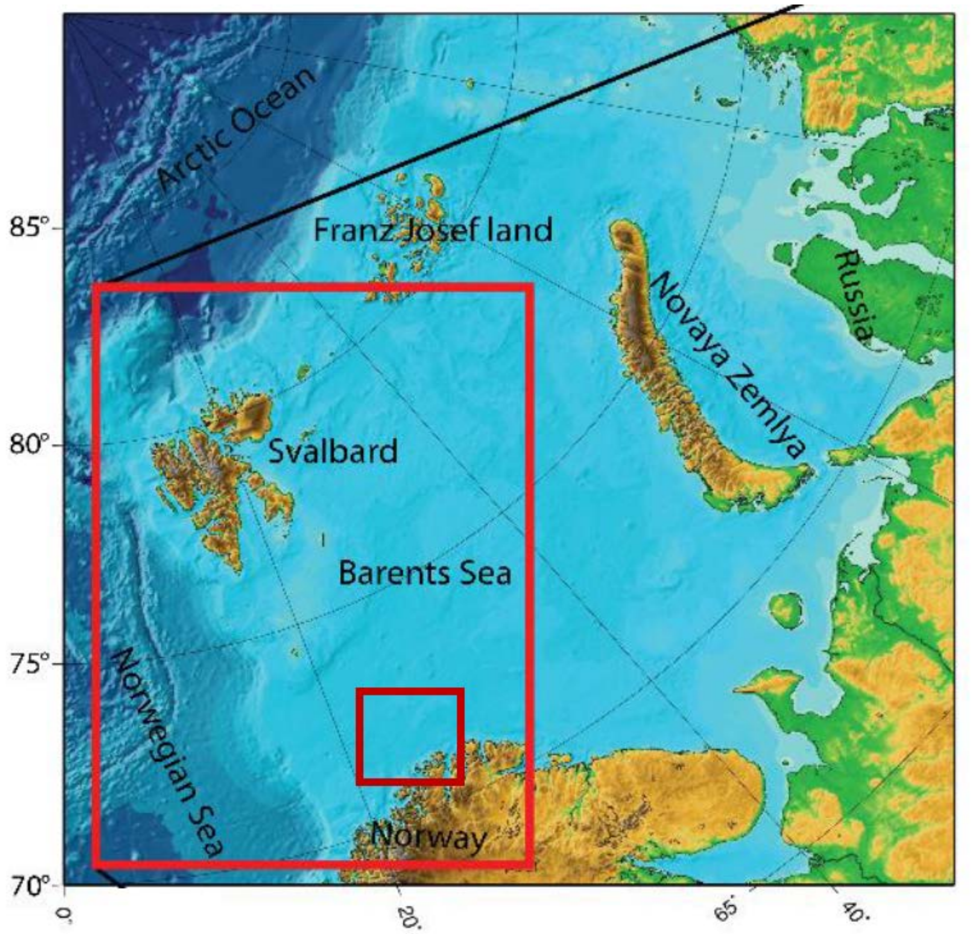



*Fig. 1: Regional setting of the Barents Sea marked with position of specific area of interest (red box). (Jakobsson et al., 2012).*

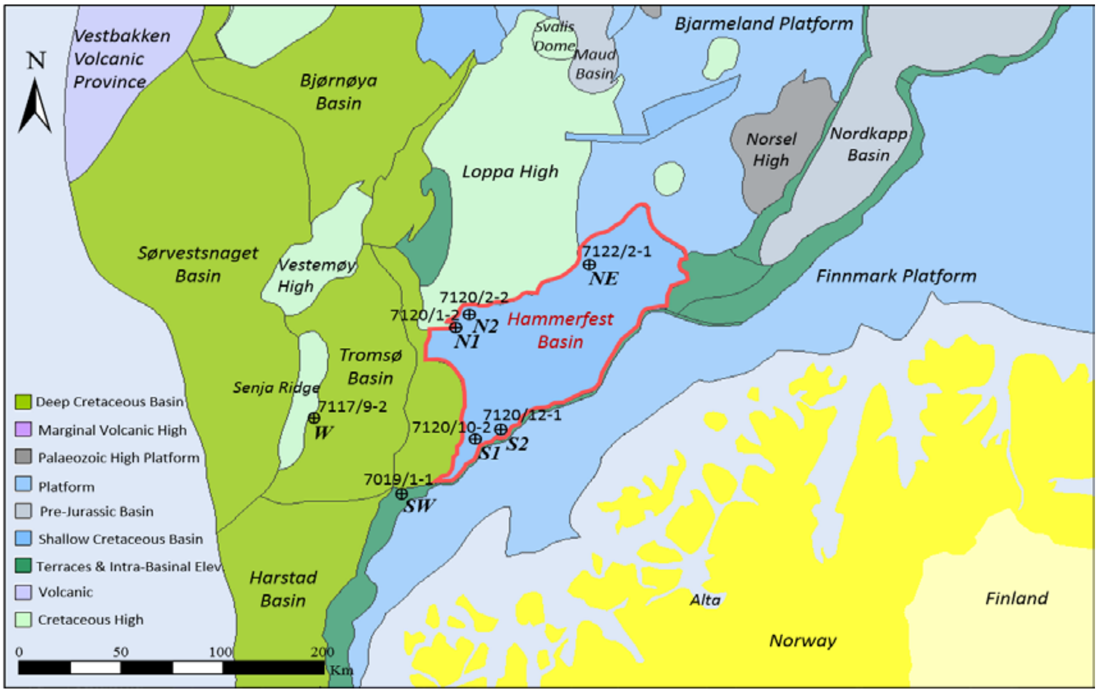



*Fig. 2: Map displaying geography of basement highs and basins in the Barents Sea along with sampled well locations in the Hammerfest Basin: 7120/1-2 (N1); 7120/2-2 (N2); 7122/2-1 (NE); 7120/10-2 (S1); 7120/12-1 (S2); 7019/1-1 (SW).*

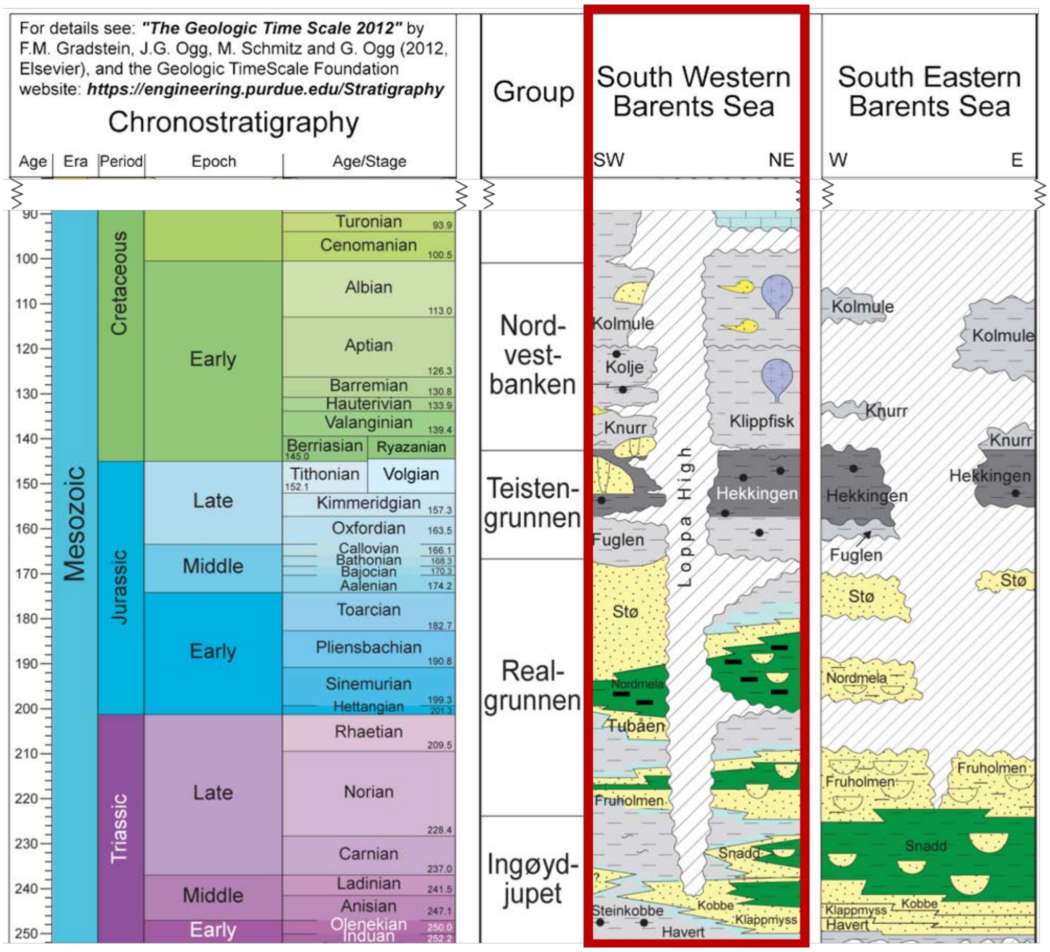



*Fig. 3: Stratigraphic column displaying Triassic to Cretaceous formations in the Hammerfest Basin (SW Barents Sea) and their corresponding depositional environments. Samples collected from Kobbe, Stø, Fuglen, Hekkingen, Knurr, Kolje and Kolmule Formation (Gradstein and Ogg, 2004).*

The continental crust is a database that stores the longest rock record of Earth's crust and tectonic evolution. The ability to decode these records provides an opportunity to gain insight into the significant differentiation processes of the Earth. Understanding the generation and reworking of continental crust has been a long-standing goal in Earth science (Armstrong, 1968; Rollinson, 1993). The evolution of crustal areas can in turn be used to differentiate crustal domains using the provenance information they generate when the detritus is collected in a specific basin. Detritus can be described on a petrological (Dickinson, 1985) or geochemical level (McLennan et al., 1990) or with isotope geochemistry especially on detrital minerals like zircon. Dating of detrital zircons from sedimentary rocks by analysing for radiogenic isotope ratios like U-Pb and Lu-Hf (Davis et al., 2003). Most of what is known about the geological evolution of Earth's upper crust has been framed from such data (Fedo et al., 2003; Vervoort et al., 1999).

The geochemical signature of the continental crust shows that subduction zone magmatism is an important area of juvenile continental crust addition (Hawkesworth and Kemp, 2006), and examines how long subduction processes have been in operation on Earth. Growth of the continental crust will occur when conservation of juvenile crusting exceeds the mass lost by recycling to the mantle. Global compilations of zircon U-Pb age data indicate that zircon crystallisation ages form fairly well defined peaks (Campbell and Allen, 2008; Condie, 1998; Hawkesworth et al., 2010; Puetz et al., 2017). This apparent periodicity in crust formation has been correlated with crust accretion and supercontinent assembly (Campbell and Allen, 2008; Puetz et al., 2017). However, this trend might not be due to periods of increased addition of material to the crust, associated with supercontinent amalgamation, but rather to variations in preservation of crust in altering tectonic settings (Hawkesworth et al., 2010). Zircons can indicate stabilization of the crust when less dense, intermediate to acidic rocks are formed, since the mineral is less common in basaltic than acidic rocks. However, U-Pb isotope characteristics in a zircon relate to its crystallisation age. Fortunately, another isotopic system is relatively easy to determine in the same grain: Lu-Hf. This isotopic system investigates isotope systematics at the time when the separation of the original magma was injected into the crust. These two isotope systems together are most powerful in understanding the evolution of the crust.

Siliciclastic sedimentary successions are abundant in the upper continental crust and may store important information regarding the tectonic setting and tectonic evolution of a basin. Zircon is an accessory mineral in those siliciclastic successions and the mineral has the unique ability of withstanding breakdown despite external forces, such as increased temperatures and pressures during metamorphism or- chemical and physical weathering, without diffusing any elements or isotopes (Hawkesworth and Kemp, 2006). It is also known for its physiochemical resilience and high concentrations of provenance indicating trace elements. Due to these characteristics, zircon preserves important isotopic information and trace elements in environments where most other minerals do not (Hawkesworth and Kemp, 2006). It can therefore be used as a powerful tool to obtain information about the provenance of Mesozoic successions of the Barents Sea. U-Pb and Lu-Hf analyses are yet frequently used to investigate depositional systems, tectonic evolution, and provenance areas for Arctic sedimentary basins (Anfinson et al., 2012; Bue and Andresen, 2014; Miller et al., 2011; Miller et al., 2013; Miller et al., 2006; Omma, 2009; Pease and Scott, 2009; Soloviev et al., 2015).

This study is part of the LoCrA (Lower Cretaceous basin studies in the Arctic) consortium, which concentrate on the understanding of petroleum plays during the Lower Cretaceous. Matthews et al. (*subm.*) could show that a variety of sources for the detrital zircons in Mesozoic rocks can have come from far sources or sources, which are not known, so-called ‘exotic sources’. In both cases, the Hf isotope systematic can assist in revealing more geological information about the original source. The major issue in Matthews et al. (*subm.*) data compilation is the need for more in depth characterisation of detrital zircons to pinpoint the origin of the sources.

## Objectives

This study includes a combination of different modern isotopic analytical techniques of U-Pb and Lu-Hf *in situ* analyses on detrital zircons to investigate the provenance of Mesozoic succession from seven deep drill cores provided by the Norwegian Petroleum Directorate (NPD).

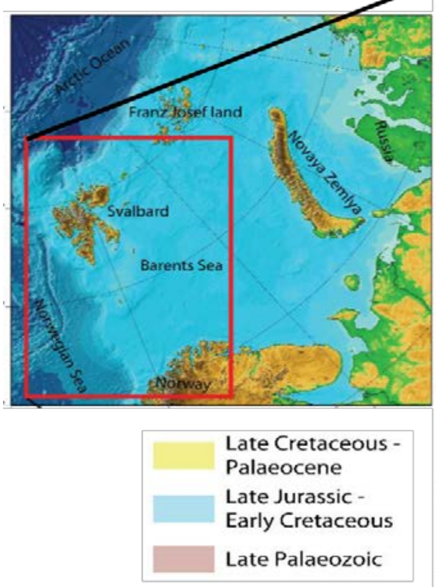
Systematic provenance analyses on the post-Paleozoic Barents Sea successions are nearly absent, as are U-Pb data on detrital zircons and relationships between the stratigraphic successions are therefore poorly understood in terms of reworking (Matthews et al., *subm.*). The primary objectives for this thesis will therefore be to add additional Hf isotopic analysis to the existing U-Pb data set (Matthews et al., *subm.*), and may give further insight in the basin evolution of the Hammerfest Basin, SW Barents Sea (Fig. 2). The U-Pb isotope data of detrital zircons have been interpreted in Matthews et al. (*subm.*). Building on this information, Hf isotope information on the same detrital zircons aims to decipher the sources and to characterize sources of the sampled successions. This study focuses, in regard of the identified sources, especially on those detrital zircons with crystallization ages (i) younger than 370 Ma, (ii) pointing to Caledonian origin, (iii) of Early Mesoproterozoic to Late Paleoproterozoic age and (iv) of Archean ages. Other sources are briefly discussed. This will enable to a more in depth analysis of the provenance of the detritus in the sampled successions and allow speculating around areas of further sediment accumulation related to the proposed petroleum play.

## PREVIOUS WORK

The Barents Sea region is of considerable interest as a not yet fully explored hydrocarbon province, and has therefore been the target of numerous geological and geophysical investigations (e.g., Ulmishek, 1982, 1985; Faleide et al., 1984; Johansen et al., 1993; Mørk, 1999; Mørk & Worsley, 2006; Worsley, 2008; Riis et al., 2008; Glørstad-Clarck et al., 2010; Bue & Andresen, 2014). The samples from the selected wells of the Hammerfest basin have not previously been subjected to Hf isotope based provenance studies. As this study is a part of the LoCrA consortium, it is a part of an extensive provenance project that in addition to detrital zircon separation, the project also include petrography, XRD, geochemistry and Sm-Nd isotope geochemistry. This is therefore a pioneer study with major contribution to the Hammerfest basin, which will hopefully provide further information to the Barents Sea research.

# GEOLOGICAL SETTING

Mesozoic sedimentary rocks were deposited in a large epicontinental sea, the Barents Sea. This sea extendes from the Sverdrup Basin and the Norwegian-Greenland Sea in the west, to Novaya Zemlya, the Pechora and the Kara Seas in the east; from the Arctic Ocean, Svalbard and Franz Josef Land in the north, and to northern Norway and northwestern Russia in the South (Bue and Andresen, 2014) (Fig. 1 & Fig. 4). The shelf deposits cover approximately 1.3 million $km^2$ of the northwestern corner of the Eurasian plate (Worsley, 2008). Generally, the Barents Sea can be subdivided into two major provinces based on the basin development history – the Eastern and Western Barents Sea (Bue and Andresen, 2014). The Eastern Barents Sea has been relatively stable since the Late Carboniferous, whereas the Western Barents Sea has been tectonically active since the Caledonian Orogeny (Gabrielsen et al., 1990; Smelror et al., 2009) (Fig. 4). The latter, where the Hammerfest Basin is located, is part of the continental shelf of northwestern Eurasia, located north of Fennoscandia and bordered by the Norwegian-Greenland Sea and the Svalbard Archipelago in the west (Faleide et al., 2008).



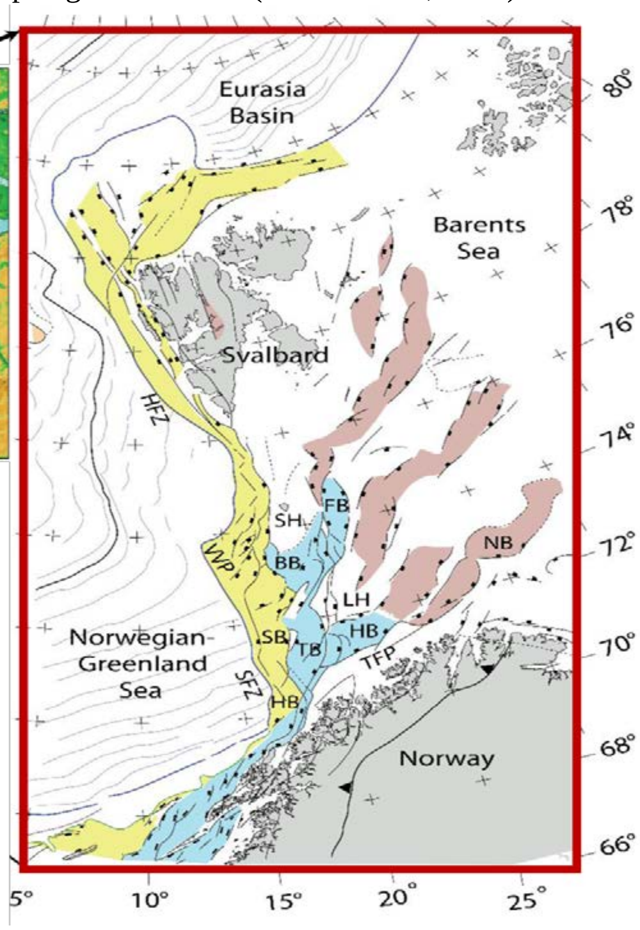




*Fig. 4: Regional setting of the Barents Sea with map of structural elements in the western Barents Sea (left; marked with red box). Main structures and basins are Troms-Finnmark platform (TFP), Harstad Basin (HB), Sørvestsnaget Basin (SB), Tromsø Basin (TB), Hammerfest Basin (HB), Loppa High (LH), Nordkapp Basin (NB), Fingerdjupet sub-Basin (FB), Bjørnøya Basin (BB), Vestbakken Volcanic province (VVP), Senja Fracture Zone (SFZ), Hornsund Fracture Zone (HFZ), and Stappen High (SH). Different colors show the basins developement in different ages. (Modified from Faleide et al., 2009)*

The tectonic history of this area is mainly controlled by three rift phases, the first two were associated with North Atlantic opening, and the last was during the Late Devonian-Carboniferous, Middle Jurassic-Early Cretaceous and Late Cretaceous-Paleocene – resulting in a complex structure of small-scaled basins, platforms and tectonic heights (Faleide et al., 2008; Gabrielsen, 1984; Ritzmann and Faleide, 2007). Svalbard and the Barents Sea Shelf are considered to be a northerly continuation of the North Atlantic Caledonides (the 'Barentsian Caledonides'; (Gee et al., 2008; Gee and Pease, 2004)). The Barentsian Caledonides dominate the basement of the Western Barents Shelf, separating Baltica and Laurentia, whereas the Eastern Barents Shelf is dominantly underlain by Timanide basement with fragments of 'Grenvillian' (Late Mesoproterozoic to Early Neoproterozoic, 1200 – 900 Ma) complexes and comprises the northern part of Baltica, speculated by Gee et al. (2006). The entire western Barents Sea rift system is characterized by predominantly NE-SW trending faults (Ritzmann and Faleide, 2007) formed during the Late Paleozoic rift event, in addition to N-S trending faults formed during the Late Jurassic-Early Cretaceous and Late Cretaceous-Paleocene (Faleide et al., 2008).

During the Late Paleozoic, crustal extension affected most of the Barents Sea and resulted in the formation of major regional fault zones (Faleide et al., 1984; Gabrielsen, 1984). A period of quiescence followed, during which a regional sag basin developed and filled with shallow marine carbonates and evaporates (Glørstad-Clark et al., 2010; Smelror et al., 2009). Clastic sedimentation began in the early Triassic, with prograding deltaic systems filling the regional basin sourced primarily from the Uralides in the east and the Baltic Shield in the southeast (Glørstad-Clark et al., 2010). During the early to middle Jurassic, coastal marine environments developed resulting in the deposition of the reservoir sandstones of the Stø Formation (Gabrielsen et al., 1990; Smelror et al., 2009). The Late Jurassic experienced a second rifting phase in the southwestern Barents Sea, creating well-defined rift basins including Hammerfest Basin, Tromsø Basin and Bjørnøya Basin to mention some (Riis et al., 1986). This rift event continued into the Early Cretaceous and affected the area during three main episodes (Berriasian-Valanginian, Hauterivian-Barremian and Aptian-Albian) (Faleide et al., 1993). The first two events affected the Hammerfest Basin, whereas the Albian-Aptian extension affected mostly the Tromsø Basin (Faleide et al., 1993). During the Berriasian-Barremian, a shallow basin characterized the north and central part of the Hammerfest Basin, where a newly uplifted area to the north, the Loppa High provided coarse-grained detritus, forming fan deltas (Marín et al., 2016).

Deep marine conditions have been described in the southwestern Hammerfest Basin only, where submarine fans were deposited (Marín et al., 2016; Seldal, 2005)) within a platform area, and marine clastic rocks on the Barents Shelf (Torsvik et al., 2002). Worsley (2008) and Smelror et al. (2009) interpret the area during the Lower Cretaceous as a shelf with sandstone fringes around structural highs (Loppa High) and a fluvial to shallow marine succession in Svalbard.

The marine environment in the southwestern area was dominated by distal conditions with periodic restricted bottom circulation (Faleide et al., 1993), while the northern Barents Sea experienced widespread magmatism as part of the Arctic Large Igneous Province, which resulted in regional uplift and erosion (Døssing et al., 2013; Glørstad-Clark et al., 2010). The uplift in the north triggered the progradation of clinoforms (Faleide et al., 2008; Glørstad-Clark et al., 2010; Worsley, 2008) in two main directions: toward the SE (during the Barremian) and toward SW (during the Barremian-Cenomanian) (Kayukova and Suslova, 2015).

Later in the Early Cretaceous (Aptian-Albian), renewed regional marine transgression occurred, linked to the northward propagation of the Atlantic rift system (Torsvik et al., 2002). The Barents Shelf was subsiding beneath the wave-base and experienced sediment starvation, with the dominant sediments being shallow-marine shales in the west, and distal prodelta and pelagic clays with low organic carbon content (Torsvik et al., 2002). Jurassic and Cretaceous sedimentation in the basins of the Barents Sea, Svalbard and North Greenland, was highly influenced by the proximity to tectonically active neighbouring plate boundaries (Dypvik et al., 2002; Faleide et al., 1993; Håkansson and Pedersen, 2001; Lawver et al., 1990).

## Geology of land areas surrounding the Barents Sea

During the Mesozoic, five separate potential provenance regions surrounded the study area (Fig. 5, Fig. 6). These regions are characterized by (1) Loppa High, with rather unknown stratigraphy and basement, as the northern basin boundary; (2) Caledonian Orogenic Belt to the south and southwest (early to middle Paleozoic); (3) Uralian Orogenic Belt in the east (middle to late Paleozoic) together with Novaya Zemlya and Franz Josef Land to the north-east; (4) the Laurentian margin of Greenland to the west (Archean to Paleozoic); and (5) the Fennoscandia Shield of Baltica including northwest Russia to the south and south-east (Archean to Neoproterozoic).

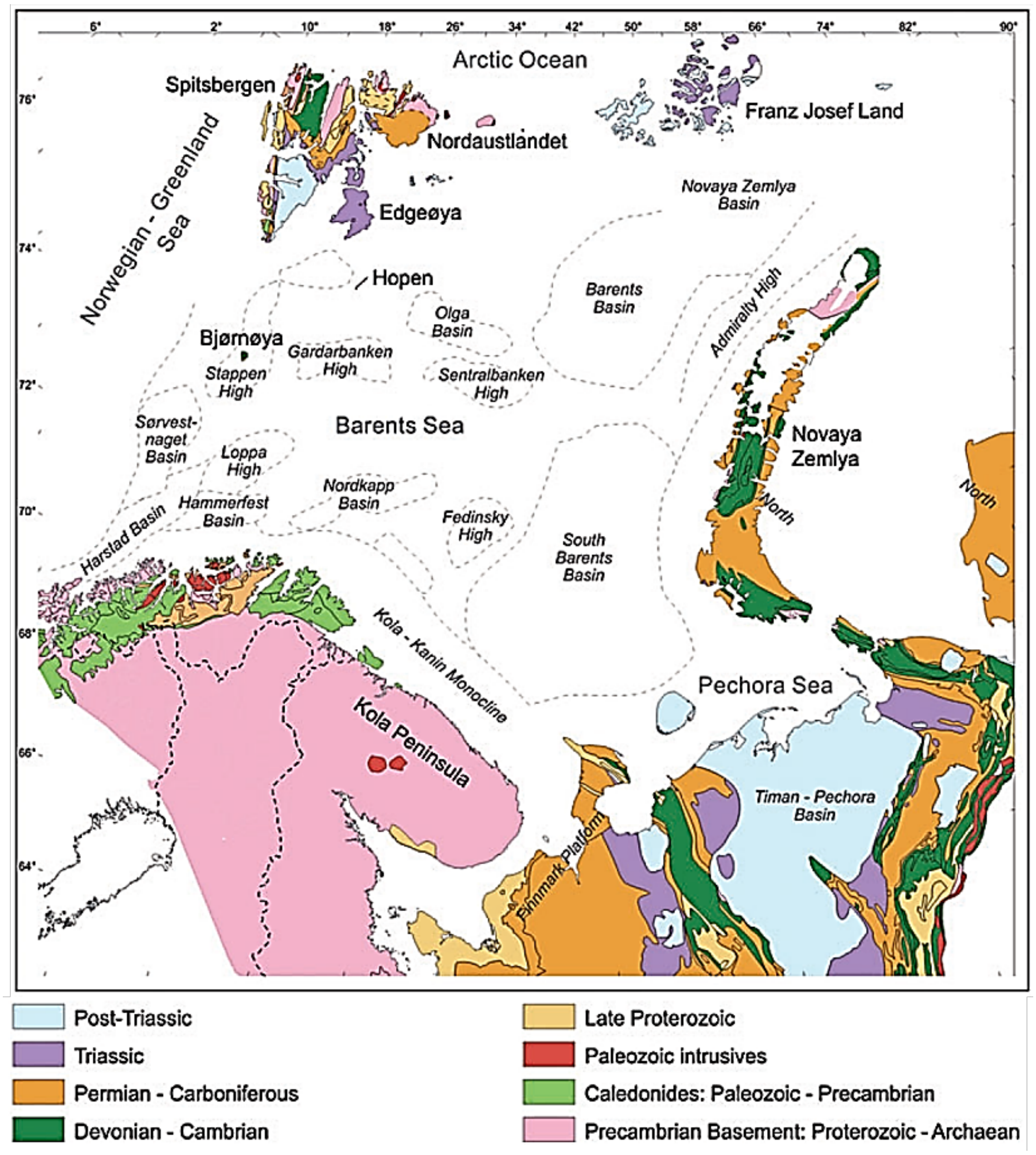



*Fig. 5: Land areas surrounding the Barents Sea have widely varying geologies (Mørk 1999).*


*Fig. 6: Circum-Arctic cratons, orogens, terranes, and locations modified from Colpron & Nelson (2011). Study area is marked with yellow star. AA, Arctic Alaska; Ax, Alexander terrane; Ch, Chukotka; FW, Farewell terrane; NZ, Novaya Zemlya; PB, Pechora Basin; PE, Pearya; SF, Shoo Fly subterrane; SP, Seward Peninsula region of Arctic Alaska; SV, Svalbard; SZ, Severnaya Zemlya; Ty, Trinity and yreka subterranes. (Journal of Geosciens – Beranek For land sourondings!)*

The geology of the Loppa High is mainly known to comprise the c. 1750 Ma granitoid batholith which is believed to be related to the Transcandinavian Igneous Belt (TIB) (1800 – 1600 Ma) or Caledonian Thrust sheet (Ritzmann and Faleide, 2007). A mafic intrusion dated to be c. 455 Ma, is found to the south of Loppa High (Fichler et al., 2013). To the east, Permo-Carboniferous exposures are dominating the Novaya Zemlya and believed to reflect the Ural-Taimyr orogeny (Lorenz et al., 2013; Worsley, 2008). Mesozoic exposures found on Franz Josef Land show (Triassic and post-Triassic) sedimentary and volcanic rocks that are similar to the north-eastern Svalbard Platform development (Corfu et al., 2013). The Timan-Pechora Basin to the southeast, next to to the Uralides, shows a varied geology with Paleozoic intrusive rocks (Post-Triassic) (Worsley, 2008). Additionally, the Siberian Traps event in western Siberia was a magmatic zircon-forming event at c. 250 Ma (Reichow et al., 2009). Precambrian basement rocks (Proterozoic-Archean) that relates to those of Northern Norway (Bogdanova et al., 2008) dominate the Kola Peninsula to the south and southeast, covering a large area.

The northern part of the Baltic Shield, consisting of Neoarchean to Paleoproterozoic basement rocks which were affected by late Precambrian (Timanides) along with Caledonide orogeny's (Ramberg, 2008; Worsley, 2008). The Caledonides also encompass basement rocks of Mesoproterozoic age (Bingen et al., 2011). This craton is known for being an erosional product considered to be an important contributor to the clastic Upper Paleozoic and Mesozoic hydrocarbon reservoirs on the southwestern shelf (Worsley, 2008).

Northeast Greenland Caledonides, to the far west of the Barents Sea, consist of Precambrian basement covered by a foreland of late Proterozoic-early Paleozoic sequences along with Caledonian reworking (Tucker et al., 1993). But, rocks of Mesoarchean to Early Paleoproterozoic age (3500 – 2100 Ma) are, at present, absent in this area, which may count as a decisive characteristic to differentiate Baltica from Greenland. Still, this is controversial given the identified fragments of Laurentia in northern Norway in addition to the identified fragments of Baltica in East Greenland (Augland et al., 2014). Andersen (2014) on the other hand, claims that younger detritus (Late Mesoproterozoic - Present) for both Laurentia/Greenland and Fennoscandia, cannot be differentiated based on U-Pb and Hf isotopes.

Svalbard, which was located further north of Greenland during the Mesozoic, comprises Neoproterozoic rocks, Caledonian bedrock and thick Paleozoic and Mesozoic successions (Gee et al., 2008).

## Geological characteristics of the sampled rocks

The focus in this thesis will primarily be on the formations of the Adventdalen Group (comprising Fuglen, Hekkingen, Klippfisk, Knurr, Kolje and Kolmule formations; Fig. 6), deposited in the Barents Sea during the Jurassic and Cretaceous. One underlying Triassic to Jurassic sample was collected from the Kobbe Formation to test reworking visible in the detrital zircon record (Matthews et al., *subm.*).

The Triassic Kobbe and Jurassic Stø formations are members of the Sassendalen and Kapp Toscana groups respectively (Dalland et al., 1988). The Kobbe Formation has an age of Anisian (Fig. 7) and suggest deposition during a transgressive pulse followed by renewed build-out of clastic marginal marine regimes (Dalland et al., 1988). Along the southern margin of the Hammerfest Basin, this unit displays a coarser proximal facies with a finer facies development towards the basin axis. The formation thickens northwards from the Troms-Finnmark Platform. The Stø Formation (Pliensbachian to Bajocian) comprises moderately to well-sorted and mineralogical mature sandstones, with thin shale/siltstone intervals and some wells display phosphatic lag conglomerates in the upper parts (Dalland et al., 1988). With the thickest units in southwestern wells of the Hammerfest basin and a generally eastward thinning the formation was deposited in prograding costal regimes, which represent regional transgressive pulses (Dalland et al., 1988).

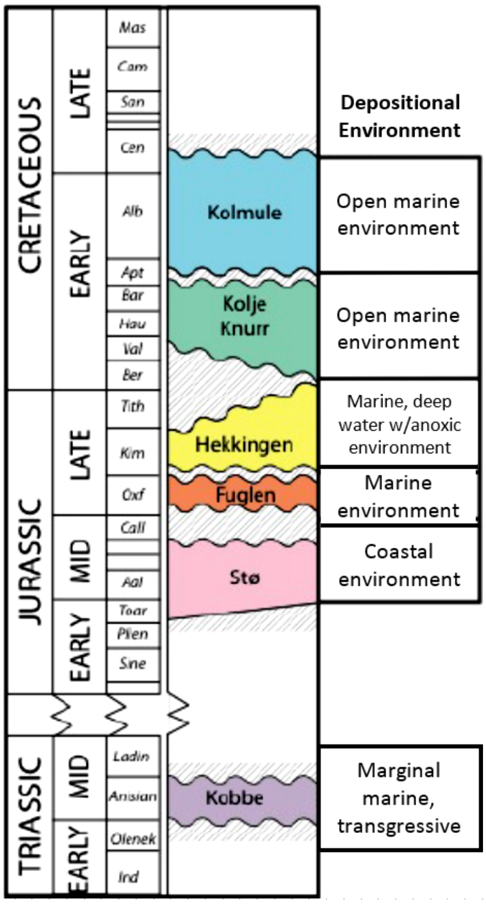



*Fig. 7: Stratigraphic column of Jurassic to Cretaceous formations in the Hammerfest Basin and their corresponding depositional environments (adapted from Matthews et al., subm.; modified from Steel & Worsley, 1984).*

The Jurassic Fuglen and Hekkingen formations can be correlated to the Agardhfjellet Formation on Svalbard (Dalland et al., 1988). The Fuglen Formation (Late Callovian to Oxfordian) was deposited in a marine environment during a high-stand with ongoing tectonic movements showing thickest units southwest of the Hammerfest basin and thinning (to less than 10 m) on the central highs (e.g. Loppa High) (Dalland et al., 1988). Pyritic mudstones with interbedded thin limestones are characteristic for this formation. The overlying Hekkingen Formation (late Oxfordian to Ryazanian)  consists of shale/claystone with occasional thin beds of limestone, dolomite, siltstone and sandstone and  was deposited in a deep-water marine environment with anoxic conditions (Dalland et al., 1988).

Lower Cretaceous successions in the Barents Sea are comprised by the Knurr, Klippfisk, Kolje and Kolmule formations, but samples from the Klippfisk Formation are not presented. These formations consist mainly of grey claystones with minor interbedding of siltstones, limestone (containing belemnites) and open marine sandstone deposits (Dalland et al., 1988). Biostratigraphic correlation between Svalbard and the Barents Sea of Lower Cretaceous strata is problematic due to poor age control, but previous studies have done correlations between onshore and offshore lithologies (Dalland et al., 1988; Dypvik et al., 2002; Mørk et al., 1999; Nøttvedt et al., 1993; Smelror et al., 1998; Worsley et al., 1988).

The Knurr Formation can be correlated to the Rurikfjellet Member on Svalbard (Dypvik et al., 2002) and was deposited in distal open marine environments (Dalland et al., 1988). Lateral sandstone and conglomerate variations are recorded within the formation deposited in submarine fans and shallow marine settings recognized in drill core from the Hammerfest basin, Troms-Finnmark Platform, Loppa High and Senja Ridge ((Marín et al., 2016; Seldal, 2005); see Fig. 3 for well locations).

The two overlying Kolje and Kolmule formations are correlated to the Svalbard Platform: the former (Early Barremian to Late Barremian/Early Aptian) is a lateral equivalent of the Helvetiafjellet and the younger succession, the Kolmule Formation (Aptian to mid-Cenomanian) is correlated with the Carolinefjellet Formation (Dypvik et al., 2002; Mørk et al., 1999; Nøttvedt et al., 1993; Smelror et al., 1998; Worsley et al., 1988). This, however, is in conflict with well reports (NPD Factpages, wells 7122/2-1, 7120/2-2 and 7321/9-1), which mention high contents of organic matter in Barremian rocks suggesting they may have even served as potential source rocks.

# SAMPLING AND ANALYTICAL APPROACH

Samples were taken from seven wells drilled in the Hammerfest basin and stored at the NPD in Stavanger (Norway). According to stratigraphic criteria, samples for detrital zircon dating were taken. As core sampling allows only for minute amounts (20 g per sample), several samples from the same stratigraphic horizon have been collected. This ensures to avoid sorting effects as different grain sizes were taken for one formation (see more details below). The dated detrital zircons with U-Pb isotope systems were then selected in terms of age constraints to allow Lu-Hf isotope systematics to gain more information about the source rocks. Today, analytical techniques are available that offer both spatial resolution and high-sensitivity analysis. *In situ* zircon U-Pb dating and Hf-isotope analysis, with e.g. ion probes and laser ablation can help in understanding the sediment orogeny and crustal evolution in the Barents Sea. The general principles of the zircon isotope systems and the applied techniques to analyse these isotopes are discussed below, together with more detailed descriptions of the analytical procedures used in this study.

## Zircon

Zircon is an accessory mineral that forms mainly in silica saturated melts and it has the unique combination of physiochemical resilience and high concentrations of important trace elements. These include two radiogenic isotope systems of geochronological importance (U–Pb, Th– Pb) and another (Lu–Hf) that is gaining momentum as a crustal evolutionary tracer.

Zircons typically crystallise from high silica melts at moderate to high grades of metamorphism and are found almost ubiquitously in upper crustal rocks. They retain their isotopic integrity through multiple episodes of sedimentary and magmatic recycling, and, remarkably, even appear to survive transient entrainment into the mantle via lower crustal delamination and sediment subduction (Gao et al., 2004).

Given their low solubility in silicic melts (Watson and Harrison, 1983), zircons persist as refractory relics in some granitic; they also carry chemical and isotopic information about the deep crust that may be otherwise inaccessible. Because weathering and erosion cover large tracts of continental crust, detrital zircons in clastic sediments preserve a more complete temporal record of igneous crustal growth episodes than the exposed basement. For example, the oldest surviving crustal rocks in the Yilgarn Craton of Western Australia are 4.01 Ga (Bowring and Williams, 1999), but detrital zircons extend our coverage of continent-forming processes back to 4.4 Ga (Wilde et al., 2001). Moreover, detailed studies of sediments of known provenance show that the age and Hf isotope populations of detrital zircons mirror that of the rock types from which they were derived (Knudsen et al., 2001). Thus, detrital zircons in young sediments can be used to evaluate key magmatic and metamorphic events in significant portions of the continental crust, and chart changes in crustal evolution (Amelin et al., 1999; Griffin et al., 2004; Knudsen et al., 2001).

Chemical and isotope information encoded within the complex growth structure of zircon, can now be extracted by micro-analytical techniques capable of high precision and spatial resolution. The ages of discrete growth phases within single grains can be determined by *in situ* U–Pb isotope analysis (Fig. 8 & Fig. 9), and zircons can provide an unparalleled time series of changing magmatic conditions during crystal growth. This record can be deciphered in turn using hafnium (this thesis) and oxygen isotope and trace element compositions.

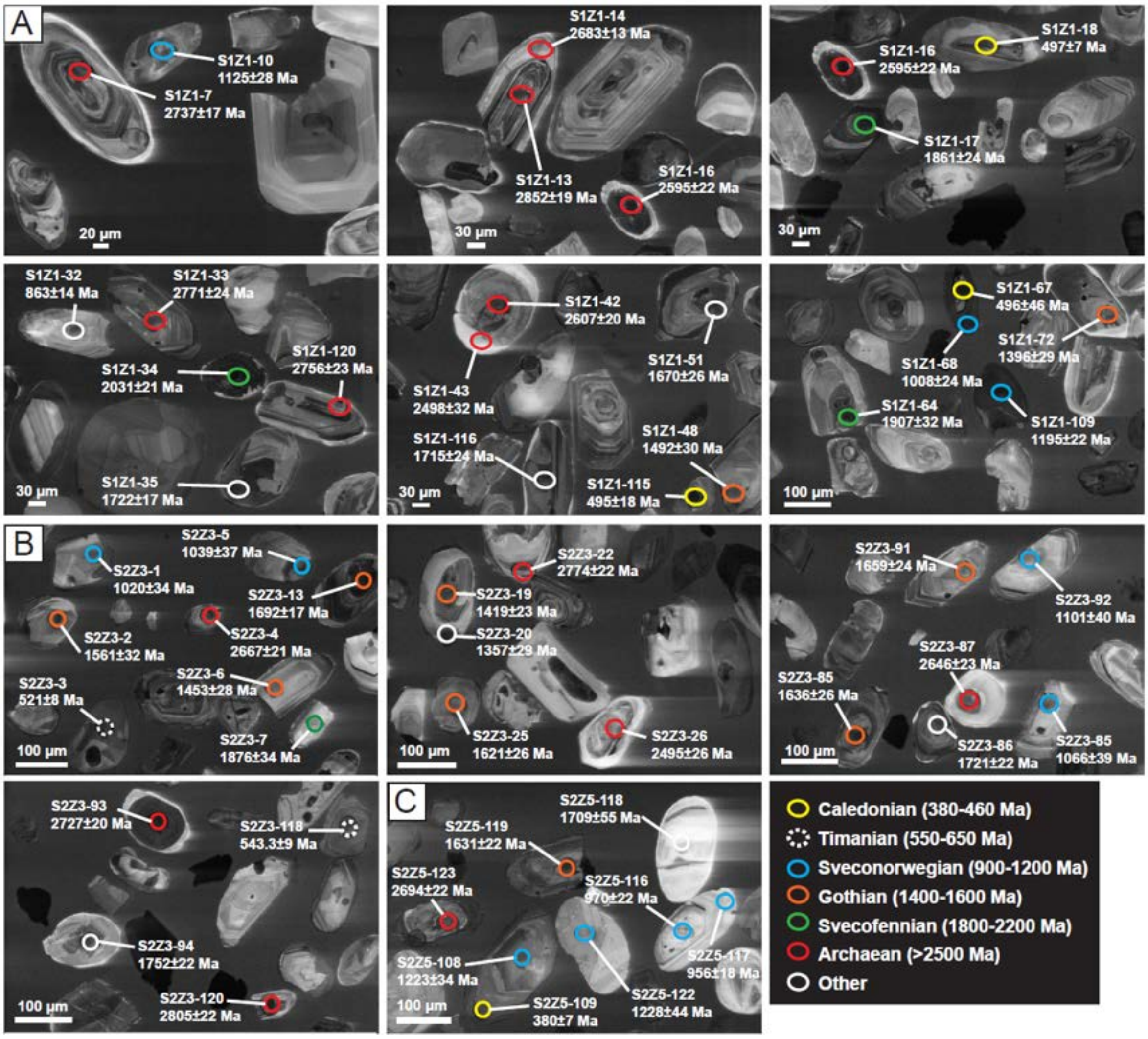



*Fig. 8 **:** Cathodoluminescence (CL) images of selected zircon grains representing different age groupings (Caledonian, Timanian, Sveconorwegian, Gothian, Svecofennian and Archaean). Note variability in zircon shape and internal zoning characteristics – e.g., some zircons are characterized by distinct core and rim regions separated by resorbtion horizons, while others have euhedral oscillatory zoning (modified from Matthews et al., subm.).*

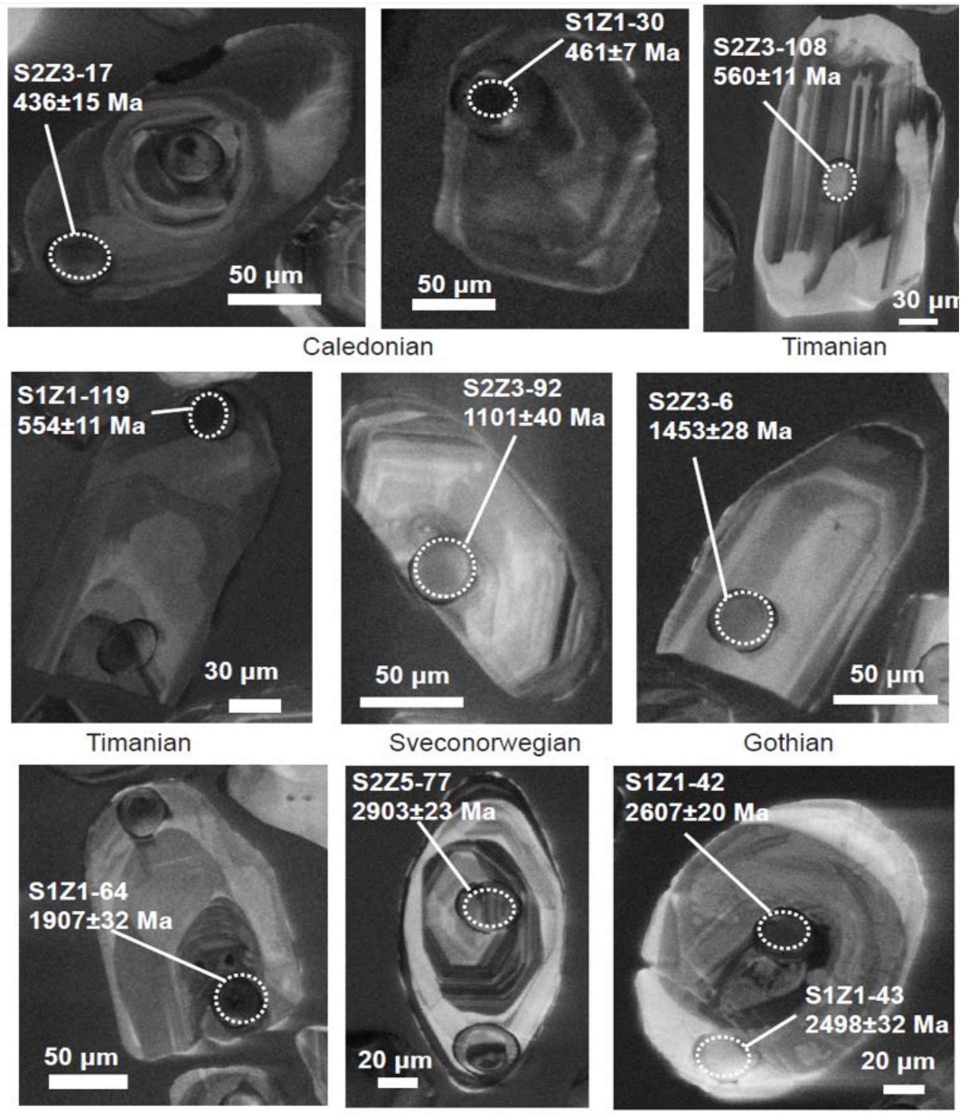



*Fig. 9: Selected CL images of dated zircons with ages annotated and analysis pits colour-coded by their corresponding orogeny. Samples are from the following formations: Knurr Formation (sample S1Z1 from well 7120/10-2), Hekkingen Formation (sample S2Z3 from well 7120/12-1), and Stø Formation (sample S2Z5 from well 7120/12-1) (modified from Matthews et al., subm.).*

## Sampling

28 samples were collected from drill cores penetrating the Triassic, Jurassic and Cretaceous successions of the Hammerfest Basin (Table 1). The provenance research group within the LoCrA (Lower Cretaceous basin studies in the Arctic) project collected all samples. The 28 samples were collected from seven different sediment core sheds (from wells 7117/9-2 (W), 7019/1-1 (SW), 7120/1-2 (N1), 7120/2-2 (N2), 7120/10-2 (S1), 7120/12-1 (S2), 7122/2-1 (NE)) located within the Hammerfest Basin, at Norwegian Petroleum Directorate (NPD) in 2013, Stavanger. Three additional samples were added in 2015 from a sediment core (well 7220/10-1 (Eni)) located at UNIS (Central University at Svalbard), in collaboration with LoCrA.

Samples of detrital zircon analysis were collected in order to investigate variations between different lithostratigraphic intervals at different intervals along the basin. Only one sample was collected from the Triassic Kobbe Formation (core from well 7120/12 –1). Jurassic samples were collected from Stø, Fuglen and Hekkingen Formations, and Cretaceous samples from Knurr, Kolje and Kolmule Formation. Fig. 7 shows the formation stratigraphic positions with corresponding depositional environment. It is important to note that there is still some debate regarding the accuracy of correlations across the Cretaceous formations across the Barents Sea. Because of large lateral facies variation, formation correlation uncertainties, and lack of biostratoigraphic data in the Lower Cretaceous succession, a sequence stratigraphic framework of seven sequences (S0 – S6) (Marín et al., 2016) can instead be used for interpretation of the Cretaceous data only. Nevertheless, formation names were kept in this project for correlation purposes and consistency between Triassic, Jurassic and Cretaceous.

With a restriction of sampling only 20 grams at maximum every one and a half meters, samples for zircon analysis were collected at specific depths (see Appendix 1, data table for sample depths). Keeping clearly one sample for each defined formation was therefore necessary to combine samples of the same facies, but from slightly different stratigraphic heights, to provide sufficient material for zircon separation. This sampling method has also proved to be more beneficial in achieving a greater amount of provenance information, and enhancing the spectra of grain size per sample to allow a more complete and often decisive information on provenance (Naidoo et al., 2013; Zimmermann et al., 2015).

## Zircon separation and sample processing

All samples was hand milled at the University of Stavanger and zircon concentrations were obtained using conventional heavy liquid electromagnetic separation techniques by Geotrack International, Australia. Naomi Matthews, Caroline Ruud and Lena Støle handpicked zircon grains as such that all grain sizes and geometric forms were presented in a representative amount under a light microscope. The handpicked zircon grains were then mounted on tape along with zircon standards, Plešovice (Slama et al., 2007). Each sample was casted on 1-inch epoxy discs and polished after hardening to expose their interior. Between 350 and 130 grains were selected for each sample.

The polished epoxy mounts were carbon coated and cathodoluminescense (CL) images were captured on a Zeiss Supra 35VP Scanning Electron Microscope (SEM) at the Faculty of Science and Engineering laboratory at the University of Stavanger. With this equipment, a high-energy primary electron beam can be used to produce secondary electrons, backscattered electrons, x-rays, cathodoluminescence, specimen current and transmitted electrons upon interaction with the mineral. Secondary electrons and cathodoluminescence electrons were used to build up images of the zircon grains. Cathodoluminescence (CL) analysis is the emission of photons of characteristic wavelengths from a material that is under high-energy electron bombardment (Egerton, 2006).

The nature of CL in a material is a complex function of composition, lattice structure and superimposed strain or damage on the structure of the material. Different minerals exhibit fluorescent or phosphorescent kinetic behaviour which can have an effect on the quality of the CL images, depending on the manner in which the image is obtained. This analytical work is non-destructive to the crystals. The images aim to display the internal structures of the crystals, to detect core and zones of structurally complex zircons, and to avoid fractures and inclusions. The CL images were used for guidance in order to accurately locate isotopic spot analysis.

In total, 3015 detrital zircon grains were analysed for U-Pb, of which 2457 were concordant (criteria: ≤ 11 % discordant). For Lu-Hf isotope analyses those detrital zircons were selected which have been concordant according to the criteria of less than 11 % discordance in their ages and by grain form. For each interpreted age population (according to major magma- to tectonic events) zircons of different sizes and forms were selected for Hf isotopic analyses. This ensures a complete cover of the provenance information for this method in the sample material. A total of 1438 detrital zircons were analysed for Lu-Hf analysis, of which 1151 grains were studied in this thesis. (Appendix 2, data sheet) contains all Hf isotope data for the samples together with the already existing Pb isotope data done from previous work with in the LoCrA project (Matthews et al., *subm*.).

## Laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS)

LA-ICP-MS is used to determine isotopic ratios of various solid materials (often of small volume). Detailed description of the methodology is found in Shaulis et al. (2010). In LA-(MC)-ICP-MS (Multi Collector) a pulsed laser beam, of high intensity photons with uniform wavelength, is used to create aerosols through vaporization and ablation. These aerosols are transported through plastic tubing into the inductively coupled argon plasma. The plasma is radiant, partially ionized, and produces temperatures between 6.000-10.000 K (Konarski et al., 2004). The plasma generates ions that are led into the mass analyser (predominantly singly charged cations), where a magnetic field separates the ions according to their mass to charge ratios. LA-ICP-MS allows for precise *in situ* measurements of small amounts from samples.

Other powerful instruments that also conduct *in situ* analysis of the chemical and isotopic composition of solid material are; TIMS; ion-probe; and SIMS including SHRIMP, however ICP-MS-LA is the most common. Ion-probe and SIMS may provide data with higher resolution due to less impurities within the zircon (Ireland and Williams, 2003). However, the ICP-MS and laser ablation is the most accessible for the reason that it is affordable and quick.

### U-TH-PB ANALYSIS USING LA-ICP-MS

Laser ablation and isotope counting for U-Th-Pb analysis was carried out at the Department of Earth and Atmospheric Science at the University of Houston, Houston, Texas. These analyses was executed on a Varian 811 quadruple ICP-MS in laser mode coupled to either a Cetac LSX-213 213 nm wavelength or a Photon Machines Analyte 193 nm wavelength laser ablation system and in solution mode coupled to a Peltier-cooled spray chamber with a 200 mL min$^{-1}$ quartz nebulizer (Shaulis et al., 2010). SEM-CL images, along with transmitted and reflected light images displayed at the computer screen were used to determine a proper location of the spot on each zircon.

### LU-HF ANALYSIS ON ZIRCON

The Lu-Hf system is analogues to the Sm-Nd system, however, Sm-Nd is a less sensitive tracer (Kinney and Maas, 2003) and is commonly applied to whole rock samples while Lu-Hf can be done on single zircon grains. As a part of the LoCrA consortium, Sm-Nd analysis is also conducted but not included in this study due to time constrains.

$^{176}$Lu decays via $\beta^-$ to $^{176}$Hf with a mean $\lambda^{176}$Lu of 1.87 ±0.008×10−11 year−1 (Scherer et al., 2001). $^{177}$Hf is used as the reference isotope because of its constant natural abundance. During separation of a melt from the mantel, i.e. magma seperation, Lu/Hf fractionation is driven by the higher incompatibility of Hf over Lu (Dickin, 2005). This has led to a depleted mantle with suprachondritic $^{176}$Hf/$^{177}$Hf and a crust with subchondritic $^{176}$Hf/$^{177}$Hf. At the time of Earth formation, the Hf isotope composition was chondritic and has since fractionated into its present reservoirs. The divergence of the Hf isotopic composition is measured as parts per ten thousand deviations from a Chondritic Uniform Reservoir (CHUR):

$$\varepsilon_{Hf_{(i,CHUR)}} = \left[\left(\frac{\left(\frac{^{176}Hf}{^{177}Hf}\right)_t}{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{chondrites}}\right) - 1\right] x10^4 \qquad \text{(Eq. 1)}$$

Positive εHf values indicate that the sample has higher $^{176}Hf/^{177}Hf$ values than the chondritic reference at the time t, hence derived from a depleted source. Negative values indicate derivation from an enriched source, either through re-melting of depleted mantle derived crust with extended residence time or through mixing between depleted juvenile components and ancient enriched crust (Kinny and Maas, 2003). Mixing of juvenile magma and reworked crustal components adds complexity to the system and is not uncommon. Also, complex zircon grains with core-rim relations can indicate mixing or give misleading, geologically insignificant results if one does not have full textural control. *In situ* analyses guided by SEM-CL imaging is therefore required (Kinny and Maas, 2003).

In a zircon the $^{176}Lu/^{177}Hf$ is normally very low (Harley and Kelly, 2007). This means that the effect of radiogenic Hf on the $^{176}Hf/^{177}Hf$ is almost negligible and the zircon preserves the initial crystallization $^{176}Hf/^{177}Hf$. This ratio can be used to calculate the model Hf-ages, as part of a Lu/Hf isochron and to determine initial εHf values, assuming that the crystallization age of the sample is known, by U-Pb dating (Kinny and Maas, 2003) (Fig. 10A, B).

### WHAT IS A MODEL AGE?

Model ages and crystallisation ages of rocks and minerals are different. Instead of providing information about the time of crystallization (U-Pb methodology), model ages represent the time when magma of which the minerals crystallised from, separated from the mantle. Operating with model ages is often an intricate procedure. It is important to be aware that melting of a heterogeneous crust or incorporation of sediments into magma sources, creates a magma mixture of two or more components. The model age will then represent a mixed value from the sources (Arndt and Goldstein, 1987).

Two systems that can provide information of model ages with respect to continental crust growth, are the Lu-Hf system and Sm-Nd system. The focus will be put on the implication of the Lu-Hf system, due to time constraints and large amount of data. Lu-Hf isotopic evaluation has become a growing subject in recent years (Bodet and Schärer, 2000; Gehrels and Pecha, 2014; Hawkesworth and Kemp, 2006; Kemp et al., 2006; Knudsen et al., 2001) and has the potential to provide insight regarding the regional provenance (Andersen et al., 2011; Bahlburg et al., 2009). The point of separation is frequently called Hf depleted mantel model age (Eq. 2) (Kinny and Maas, 2003):

$$Hf\ T_{DM} = \frac{1}{\lambda}\ x \ln\left(\frac{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{Sample} - \left(\frac{^{176}Hf}{^{177}Hf}\right)_{DM}}{\left(\frac{^{176}Lu}{^{177}Hf}\right)_{Sample} - \left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM}} + 1\right) x\ \frac{1}{10000000} \qquad \text{(Eq. 2)}$$

## LU-HF ANALYTICAL METHOD USING LA-ICP-MS

*In situ* Lu-Hf isotope analyses have been conducted by laser ablation MC-ICP-MS of detrital zircons using a NuPlasma II mass spectrometer coupled to a PhotonMachines Analyte.193 laser ablation instriment. Lutetium-Hf analyses were conducted on top of the laser pit used for U-Pb analyses.

During Hf isotope analysis, a 50 µm laser spot size was used, a repetition rate of 8 Hz, and a ~30s ablation period. On-peak backgrounds were measured for 60s prior to each analysis. During analysis, the following isotopes were analyzed: $^{174}$Hf, $^{176}$Hf, $^{177}$Hf, $^{178}$Hf, $^{179}$Hf and $^{180}$Hf as well as $^{171}$Yb, $^{172}$Yb, $^{173}$Yb, $^{175}$Lu, $^{181}$Ta and $^{182}$W which will be used to monitor, and ultimately correct for, isobaric interferences on $^{174}$Hf (Yb), $^{176}$Hf (Yb and Lu) and $^{180}$Hf (Ta and W). In addition, the $^{176}$Lu/$^{177}$Hf isotope ratio was calculated from the $^{175}$Lu beam intensities using the natural Lu isotope composition. Internal normalization of the Hf isotopes and correction of isobaric interferences follow methods outlined in Lapen et al. (2004). Initial Hf isotope compositions were calculated using the measured $^{176}$Hf/$^{177}$Hf and $^{176}$Lu/$^{177}$Hf ratios, the measured U-Pb age, and $^{176}$Lu decay constant of (Scherer et al., 2001). Hafnium model ages are calculated using source reservoirs for CHUR (Bouvier et al., 2008) and depleted mantle (DM) (Griffin et al., 2000). External reproducibility was monitored with zircon standard FC5z (equivalent to FC-1) and yielded an average $^{176}$Hf/$^{177}$Hf = 0.2821779 ± 0.026% (2 SD; n = 24) and compares well to the reference value of $^{176}$Hf/$^{177}$Hf = 0.282184 (Woodhead and Hergt, 2005). Internal precisions of the calculated and fully error propagated initial $\varepsilon^{176}$Hf are typically ± 1-2 $\varepsilon^{176}$Hf units.

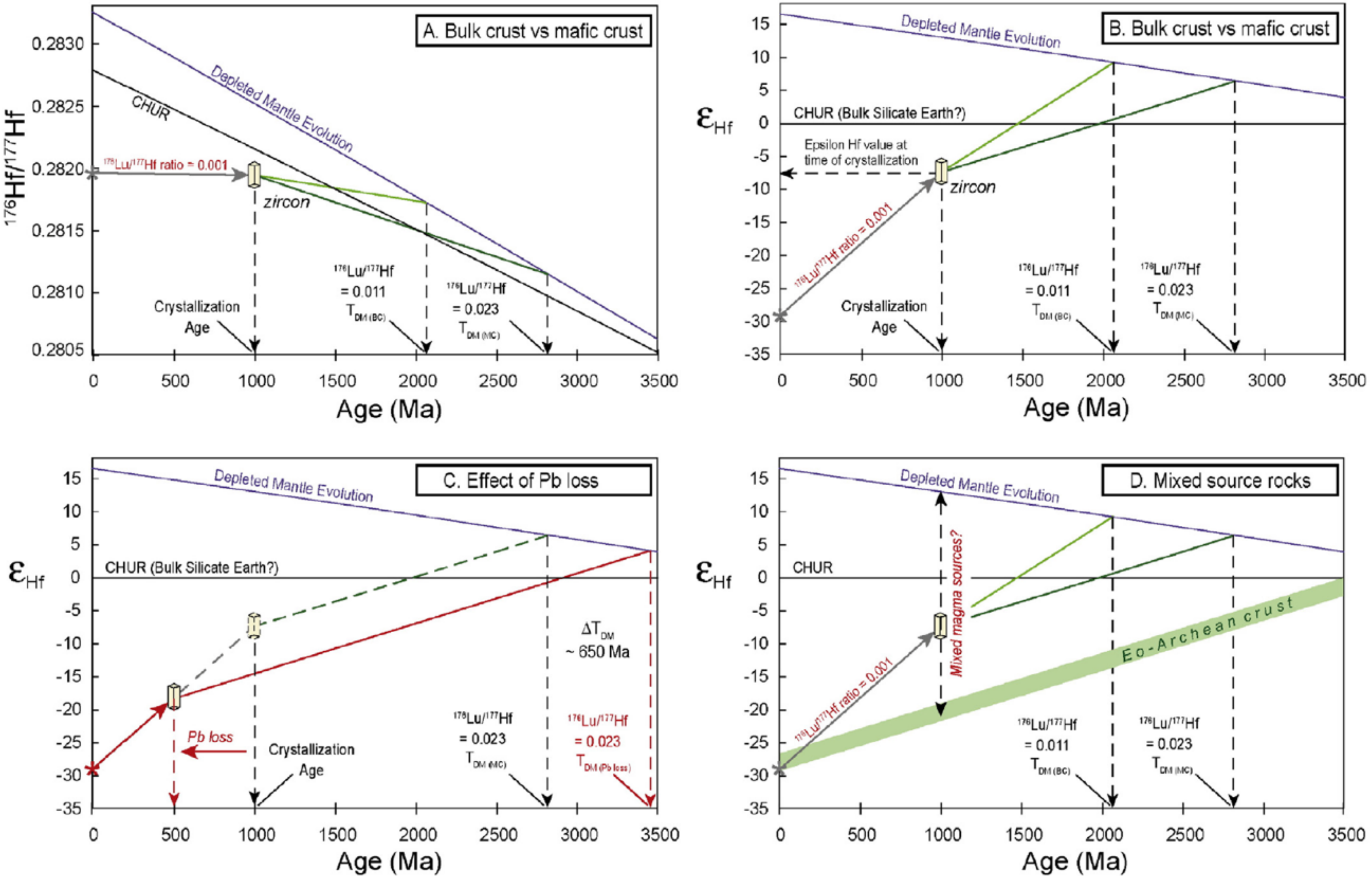



*Fig. 10* ***A, B, C, D:*** *The calculation of depleted mantle model ages from Hf isotopes in zircon, also showing some of their inherent sources of uncertainty.* ***A*** *and* ***B*** *show the derivation of model ages assuming that the zircon crystallized from either melts of mafic crust ('TDM(MC), dark green line) or bulk continental crust (TDM(BC), light green line). These cases show the shift in model ages calculated using these different sources is about 600 million years. This emphasizes the large inaccuracies that can result if the crustal source of the zircon is unconstrained, as with detrital zircons.* ***C*** *highlights the effect of ancient Pb loss on model ages. Here an age underestimated by 500 Ma translates into a model age (assuming a mafic crustal source) that is 650 million years older.* ***D*** *relates to the case where the zircon crystallized from a hybrid magma formed by a mix between a juvenile magma and older crust. Here, the model age might not correspond to an actual geological event.*

## ANALYTICAL LIMITATIONS

In many ways, it can be argued that the understanding of the growth and evolution of the Earth primarily lies within a microscopic zircon grain. The U–Pb isotope system preserved in zircon, provides important geochronological constraints for timing of geological events and processes on Earth. Recent technological advances allow precise determination of Hf isotope composition of zircon (Vervoort and Kemp, 2016). This geochemical tracer provides essential details into the chemical evolution of the Earth, and principally to the crust–mantle evolution system (Vervoort and Kemp, 2016). When combining U–Pb ages and Hf isotopes in zircons, it also provides extraordinary resolution in the timing and processes of planetary differentiation (Vervoort and Kemp, 2016). This technique, however, encompasses many potential pitfalls due to the nature of acquisition and interpretation of such data. The accuracy of the measured zircon age has a profound effect on model age calculations. In the case of unrecognized ancient Pb loss, the calculated Hf model ages will be disproportionately older (see Fig. 10C). In Arndt and Goldstein (1987), the ambiguities in Nd model ages that can result from the melting of mixed source rocks are highligted, and these similarly apply to zircon Hf model ages (see Fig. 10D and Kemp and Hawkesworth, 2013).

Methodological biases and challenges during the process of using LA-ICP-MS, have been acknowledged and discussed (Fisher et al., 2014; Košler and Sylvester, 2003). This includes several aspects involving selection of grain and quantity standard selection and measurement; (iii) calculation of isotope ratio and data reduction techniques. Many of these factors are not standardised and vary between different laboratories depending on their specific practice. The consequence of analytical variation between laboratories is not the focus of this thesis as all data and reduction is similar (all data is performed at the laboratory at UH, TX) and is for that reason comparable.

It must be noted that the precision of Hf data presented, might be influenced due to different factors. Firstly, many of the collected samples contain small sized zircon grains (i.e. sampling procedure could affect the analyses). Secondly, the Hf analysis pits are located on top of U-Pb analysis pit in order for the initial Hf measurements to be from the same domain as the U-Pb. In some of the smallest zircons the Hf analysis pit had to be located next to the U-Pb pit, but within the same domain. When gathering data, a fraction of the analytical values for a few grains were non-existent. The values were lost (marked “Lost” in Appendix 2, data sheet).

Also, for this thesis, data plotting outside the DM curve will not be discussed and thus excluded from some figures (for the discussion part). Figure 11 displays the entire data set of 1151 analysis including plots above the DM curve. Roughly 28 points plot above. These plots might be due to inaccurate and not enough careful analytical practices during sample selection or due to complex U-Pb isotope disturbance and/or because the context of the rock has been lost. This therefore leads to some ambiguity of the Hf isotopic record (Vervoort and Kemp, 2016).

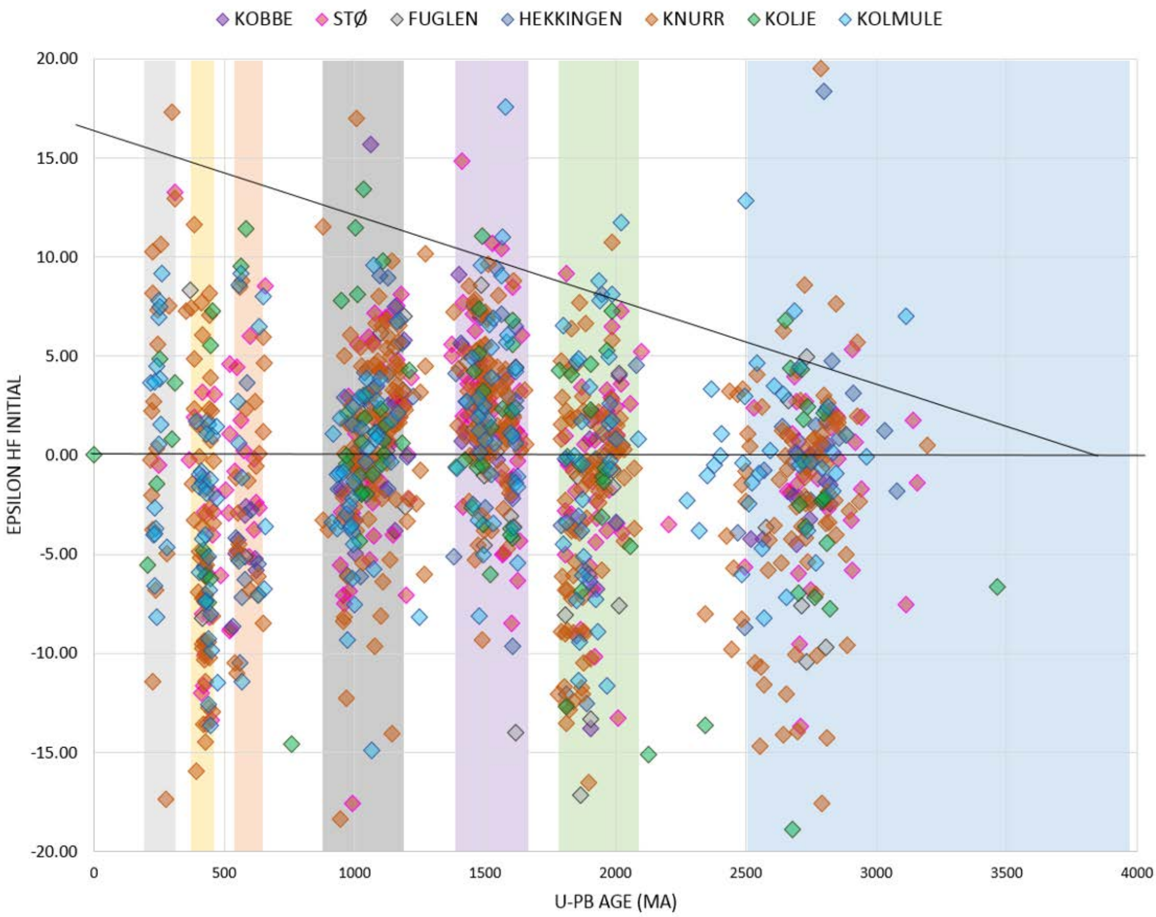



*Fig. 11: U-Pb and Hf data and interpretations for samples from the Hammerfest basin, western Barents Sea, here presenting the entire collection from the Mesozoic succession. Analyses (with number of U-Pb analyses) are from the Lower Cambrian Adams Argillite (n = 198) and the Upper Devonian Nation River Formation (n = 187). Upper plot shows εHf(t) values for each sample. Reference lines on the Hf plot are as follows: DM: depleted mantle, calculated using 176Hf/177Hf = 0.28325 and 176Lu/177Hf = 0.0399 (Griffin et al., 2000); CHUR: chondritic uniform reservoir, calculated using 176Hf/177Hf = 0.282785 and 176Lu/177Hf = 0.0336 (Bouvier et al., 2008); Gray arrow show interpreted crustal evolution trajectories assuming present-day 176Lu/177Hf = 0.0113 (Rudnick and Gao, 2003). Colored vertical bands indicate major orogeny and potential source areas (Ligt Grey: Young (<370 Ma); Yellow: Caledonian, Beige: Timanides, Dark grey: Sveconorwegian, Purple: Gothian, Green: Svecofennian, Blue: Archean).*

# RESULTS

## Characteristics of detrital zircon grains

Cathodoluminescence (CL) images representing detrital zircons analysed from studies done in Matthews et al. (*subm.*) are shown in Fig. 8 & 9. The selected zircon grains represent different age groupings (Post-Caledonian (youngest zircons < 360 Ma), Caledonian, Timanides, Sveconorwegian, Gothian, Svecofennian and Archaean) which have been the important basis for selecting zircon for further hafnium analysis. Note that there is variability in zircon shape and internal zoning characteristics (some zircons have distinct core and rim regions separated by resorbtion horizons, while others have euhedral oscillatory zoning). Qualitative assessment of the datasets shows no significant differences in grain shape or CL patterns between grains of different ages with zircon shape ranging from euhedral-elongate to euhedral-stubby, with some euhedral broken grains.

## U-Pb and Hf detrital zircon data

U-Pb and Hf data for detrital zircons from Cretaceous and Jurassic samples are presented in (Appendix 2, data sheet). U-Pb probability density plots and histograms from Matthewes et al. (*sumb.*) are presented in Appendix (Last page) and may be folded out for convenience while reading results.

A total of 898 Jurassic grains and 1987 Cretaceous grains for U-Pb isotope systematics were analysed, where 94 % and 88 % of the Jurassic and Cretaceous LA-ICP-MS data respectively are concordant (discordance ≤ 11 %), and only this data is considered (Matthews et al., *subm.*).

The Hf data are presented in Hf-evolution diagrams (Fig. 12-18) that display εHf values at the time of crystallization, and to assist with interpretation Figures 12-18 also display arrows indicating the Hf isotopic evolution of typical felsic crust. Additionally, coloured vertical bands on Figure 12-18 specify analyses representing different age groupings that have a range of Hf isotopic composition (Light Grey: Young (< 370 Ma), Yellow: Caledonian, Beige: Timanide (570-650 Ma), Grey: Sveconorwegian, Purple: Gothian, Green: Svecofennian, Blue: Archean (>2.5 Ga)).

### KOBBE FORMATION

For the Triassic Kobbe Formation (n=169; well (S2) 7120/12-1) only one sample was analysed based on U-Pb data by Matthews et al. (*subm.*). A number of 169 concordant U-Pb dated zircon grains were available for analysis and 49 grains were selected and analysed for Hf isotope analysis where 7 detrital grains produced unreliable results (to see the U-Pb age population, ref. Appendix 2, last page). In Figure 12 a diagram of $\varepsilon Hf_{(t)}$ (epsilon) versus U-Pb ages (Ma) of all grains are represented.

Only two zircons provided ages consistent with the Caledonian orogeny (< 450 Ma and older than 370 Ma) but no Hf analysis are available for these zircons. Younger zircon grains (< 370 Ma) is absent in this sample (Matthews et al., *subm.*). Timanide detrital zircons all show similar negative $\varepsilon Hf_{(t)}$ values from -3.04 to -5.83 (Fig. 12). Sveconorwegian detrital zircons in contrast show large spread of $\varepsilon Hf_{(t)}$ from juvenile values as 5.79 to -4.96. Gothian has the most juvenile signature with $\varepsilon Hf_{(t)}$ from 9.13 to -0,64 and a second group straddling the value 0. Svecofennian has few dated grains (5 grains) and the most widespread $\varepsilon_{Hf}$ ranging from 4.00 to -13.78. The oldest Archean zircon returned an age of 2827 ± 14 Ma and are more or less clustered with $\varepsilon Hf_{(t)}$ varying from 2.28 to -4.52.

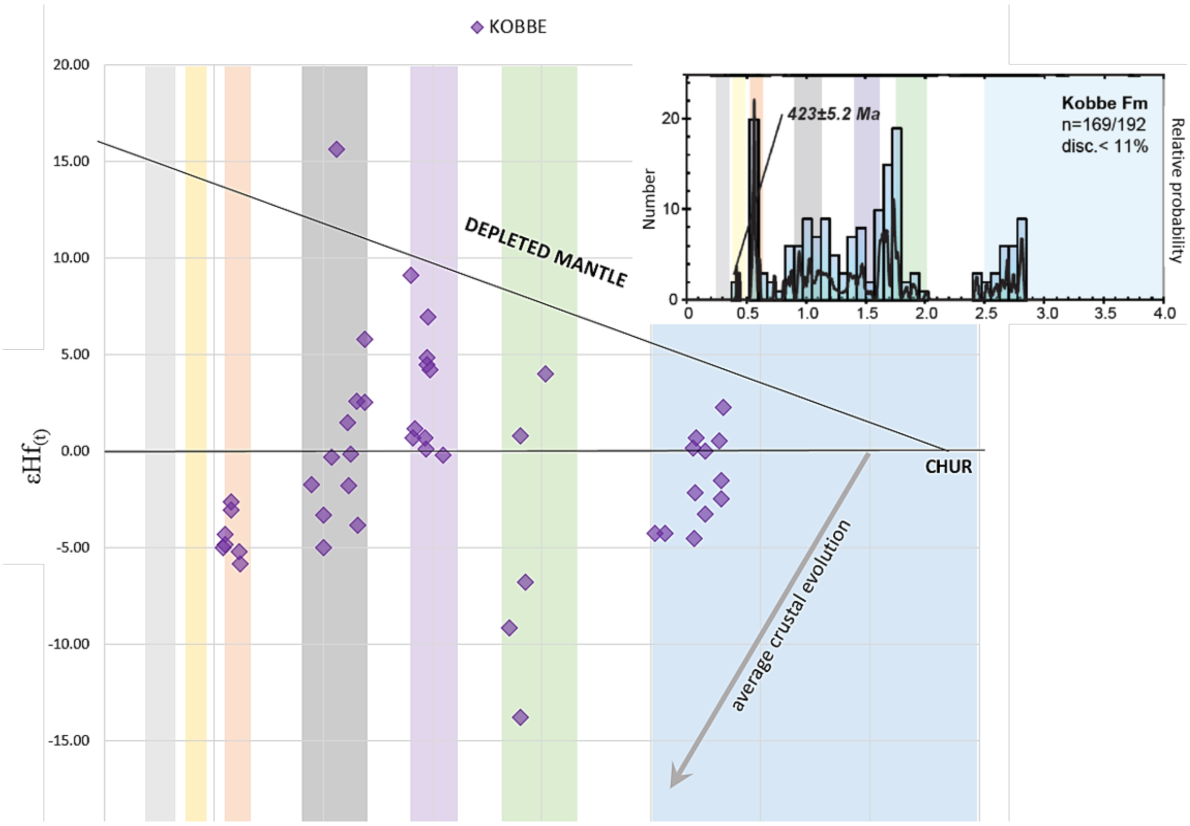



*Fig. 12: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Triassic Kobbe Formation (n =169) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

### STØ FORMATION

Four zircon samples from the Early Jurassic Stø Formation were analysed (n=408; from wells (S2) 7120/12-1, (SW) 7019/1-1 and (N2) 7120/2-2). Here 216 grains were analysed for Hf isotope analysis where 10 detrital grains gave unreliable results. The remaining 206 Lu-Hf data are shown in Appendix 2, data sheet. Figure 13 display the diagram of $\varepsilon Hf_{(t)}$ versus U-Pb ages (Ma) of all grains. Detrital zircons show a juvenile cluster for zircon age between 1400 to 1600 Ma which is similar for the other Jurassic formations. Only one detrital zircon represents the younger Pre-Caledonian (< 370 Ma) and has $\varepsilon Hf_{(t)}$ value of -0.48. Caledonian detrital zircons (n= 18) are represented with $\varepsilon Hf_{(t)}$ value from 3.08 to -11.99 and Post-Caledonian (n=9; 570-470 Ma) detrital zircons show a similar $\varepsilon Hf_{(t)}$range from 4.61 to -13.40 (Fig. 13). Timanide (n=8) show more juvenile then the Caledonian with $\varepsilon Hf_{(t)}$ from 8.56 to -5.12. Sveconorwegian detrital zircons display an equal spread of juvenile and mixed with $\varepsilon Hf_{(t)}$ from 5.79 to -4.96 and one that stands out with an $\varepsilon Hf_{(t)}$ value of -17.56. Gothian, similar to the Kobbe Formation, has a dominant juvenile cluster with few very negative $\varepsilon Hf_{(t)}$, ranging from 7.09 to -8.47. Values from Svecofennian detrital zircons are more widespread in their $\varepsilon Hf_{(t)}$ ranging from 5.20 to -13.27. Archean are somewhat clustered with most detrital zircons of $\varepsilon Hf_{(t)}$ between 3.96 to -3.31, but also displays a few with $\varepsilon Hf_{(t)}$ values from -5.99 to -13.72.

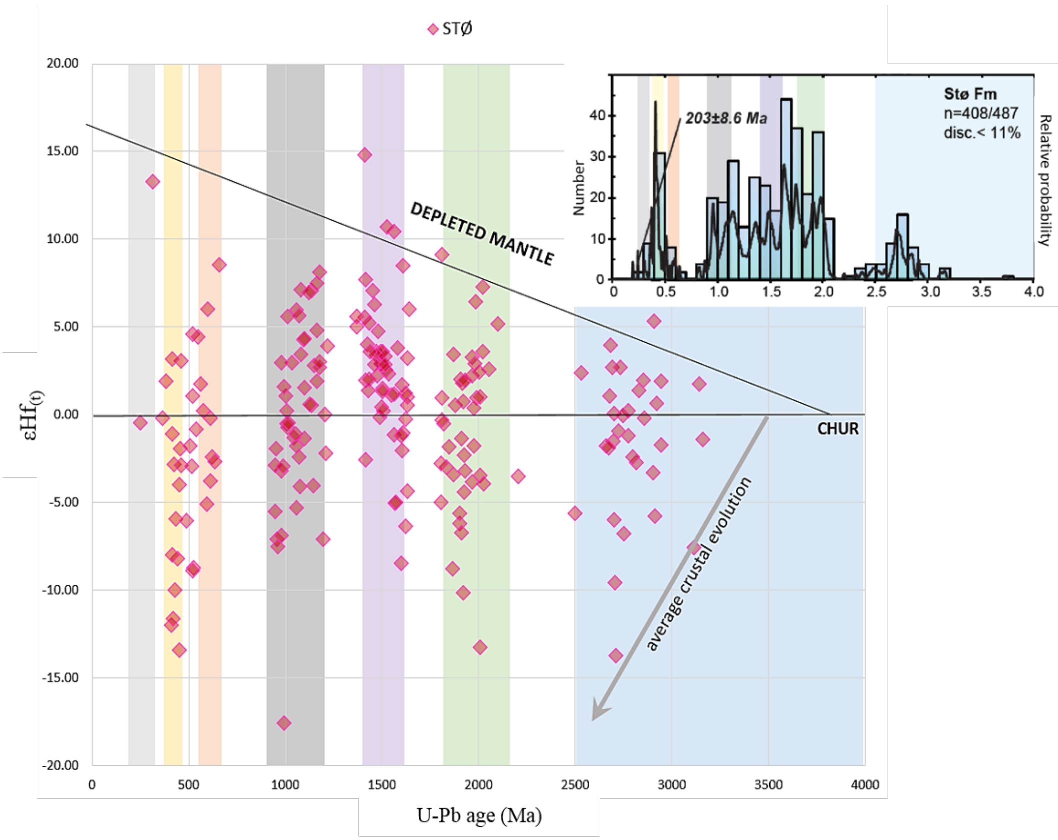



*Fig. 13: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Early Jurassic Stø Formation (n =408) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

### FUGLEN FORMATION

One sample from the Late Jurassic Fuglen Formation (Fig. 7) was analysed (n=89; well (S2) 7120/12-1) with a minimum zircon age of 366 ± 8 Ma (Matthews et al., *subm.*; Appendix 2, data sheet) but it contains detritus of grains younger than 370 Ma. Here 49 detrital zircons were analysed for Hf isotopes. 10 detrital grains gave unreliable results and the 39 Lu-Hf data are listed in Appendix 2, data sheet. $\varepsilon_{Hf}$ versus U-Pb ages are displayed in diagram below (Fig. 14).

Two detrital zircons for Caledonian represent εHf values of 8.31 and -8.22. The one Timanide detrital zircons has an $\varepsilon Hf_{(t)}$ of -5.11 (Fig. 14). Sveconorwegian detrital zircons with $\varepsilon Hf_{(t)}$ from 7.00 to -3.35 show more positive and juvenile $\varepsilon Hf_{(t)}$ in contrast to the underlying Kobbe and Stø Formation. Gothian aged detrital zircons have $\varepsilon Hf_{(t)}$ from 7.09 to -4.57 and does not show the dominant juvenile characteristic like observed in the previously discussed formations. Svecofennian detrital zircons show very different $\varepsilon Hf_{(t)}$ from 4.12 to –17.16. The oldest zircons from the Fuglen Formation shows $\varepsilon Hf_{(t)}$ varying from -2.24 to -10.44 with one juvenile of 2.76.

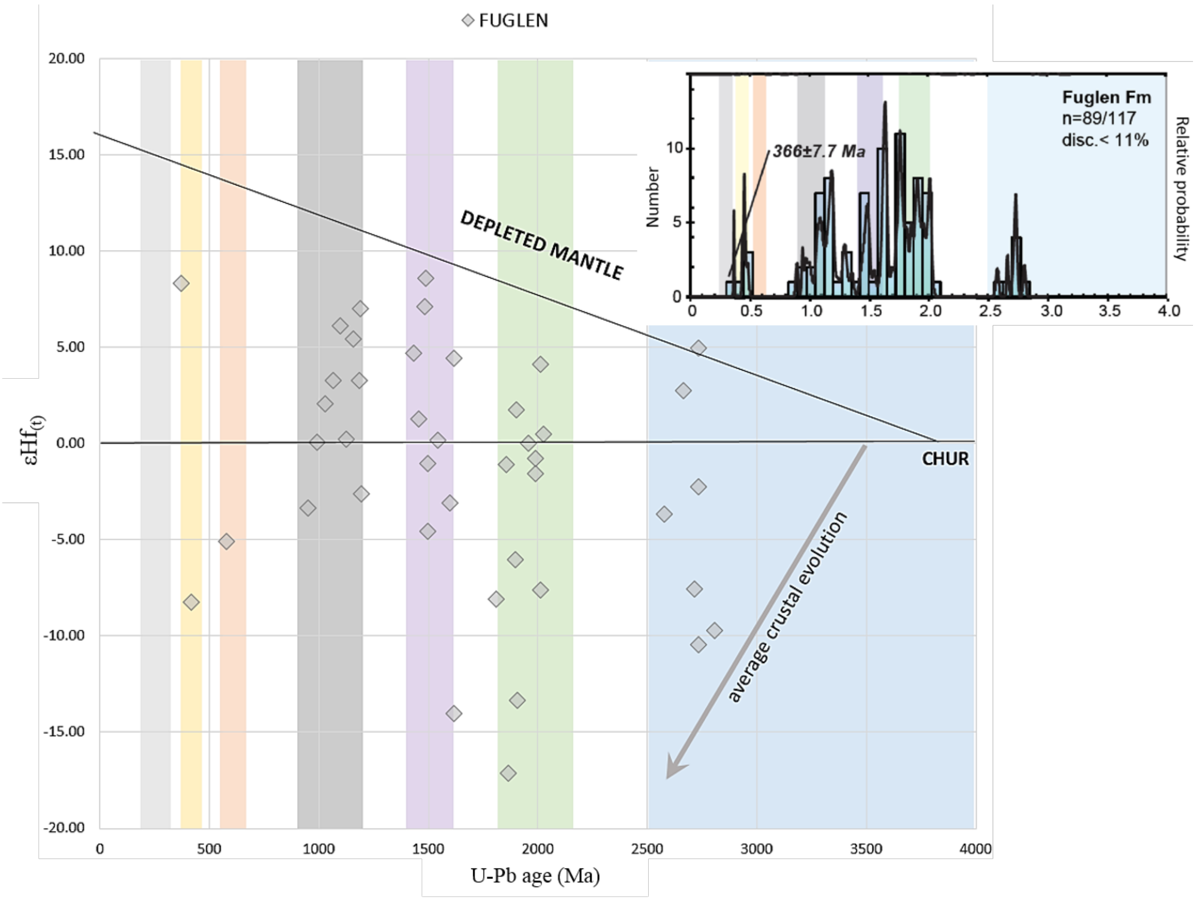



*Fig. 14: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Late Jurassic Fuglen Formation (n =89) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

### HEKKINGEN FORMATION

Two zircon samples from the Kimmeridgian (Late Jurassic) Hekkingen Formation (n=194; well S2 7120/12-1) is characterized by a dominant peak at c. 1635 Ma, and less significant peaks at c. 2750 Ma and c. 970 Ma (Fig. 15). The youngest dated detrital zircon has an age of 358 ± 8 Ma (discordance of 3.8) and like the zircons analysed from the Fuglen Formation, no hafnium isotope result can be presented for younger (<370 Ma) detrital zircons (Matthews et al., *subm.*)**.** From the available 194 U-Pb age data 99 grains was selected and analysed for Hf isotope analysis where 21 detrital grains gave unreliable results. The remaining 78 Lu-Hf data are shown in Appendix 2, data sheet In Figure 15 a diagram of $\varepsilon Hf_{(t)}$ versus U-Pb ages (Ma) for all grains are represented. Three zircons returned ages of < 450 Ma present $\varepsilon Hf_{(t)}$ from 1.75 to -5.59 for the Caledonian-aged population (450 – 370 Ma). Timanide detrital zircons range with $\varepsilon Hf_{(t)}$ from -2.78 to -10.50 with only one juvenile grain with $\varepsilon Hf_{(t)}$ of 3.66 (Fig. 15). Sveconorwegian detrital zircons show $\varepsilon Hf_{(t)}$ values from 9.04 to -6.11 where most are juvenile, similarly to the other Jurassic formations. For Gothian aged grains with $\varepsilon Hf_{(t)}$ values spread between 7.56 to -9.63 with most of them juvenile. Svecofennian have a very widespread $\varepsilon Hf_{(t)}$ ranging from 4.52 to -12.54. The oldest Archean zircon analysed for the Hekkingen Formation is 3077 ± 24, one of the two zircons older than 3.0 Ga are more or less clustered with εHf varying from 3.13 to -2.29. Only two of these plot outside this cluster with $\varepsilon Hf_{(t)}$ of -3.93 and -8.7

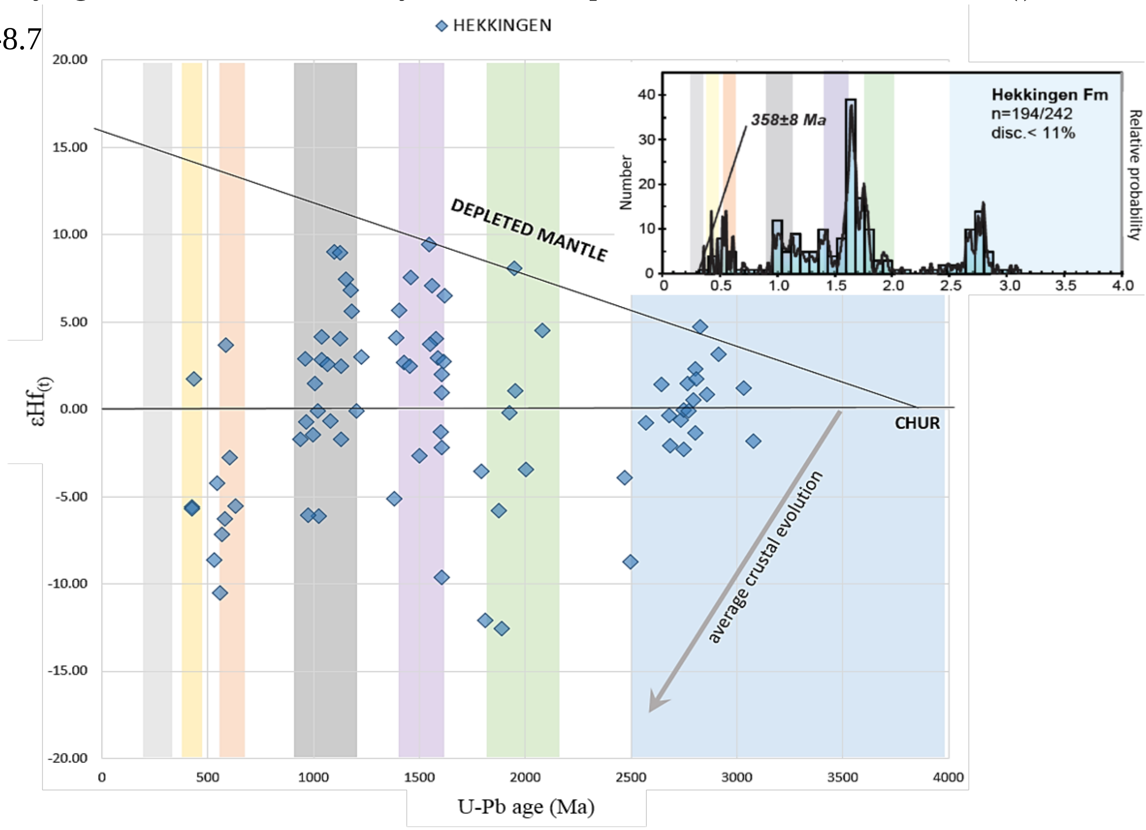



*Fig. 15: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Kimmeridgian Hekkingen Formation (n =194) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

### **KNURR FORMATION**

Detrital zircon ages from all 14 Lower Cretaceous (Ryazanian/Valanginian to early Barremian age; see Fig. 7) Knurr Formation samples together (from all wells studied; Appendix 2, data sheet; n=1111) show signatures characterised by dominant peaks at c. 420 Ma (Caledonian), c. 1600 Ma, and c. 225 Ma (Matthews et al., *subm.*) (Appendix 2, data sheet). The minimum ages are 195 ± 11 Ma (Fig. 4c), 204 ± 4 Ma and 205 ± 7 Ma (well-constrained values with discordances of 0.67, 0.99 and 0.84 respectively) (Matthews et al., *subm.*). Here 601 detrital zircon grains were analysed for Hf isotope analysis where 148 detrital grains gave unreliable results. The remaining 453 Lu-Hf data are shown in Appendix 2, data sheet. Figure 16 display the diagram of $\varepsilon Hf_{(t)}$ versus U-Pb ages (Ma) of all grains.

Pre-Caledonian (< 370 Ma) detrital zircons have $\varepsilon Hf_{(t)}$ value ranging from 12.92 to -17.35. Caledonian detrital zircons are represented with $\varepsilon Hf_{(t)}$ value from 11.61 to -15.94 and Post-Caledonian detrital zircons (n=7) show no juvenile $\varepsilon Hf_{(t)}$ and range from -1.11 to -11.04 (Fig. 16). Timanide are presented with $\varepsilon Hf_{(t)}$ from 8.78 to -8.47 with most of the grains being crustally contaminated with negative $\varepsilon Hf_{(t)}$ values (Fig. 16). Sveconorwegian detrital zircons has a more juvenile signature with some significant mixed and do show a difference of $\varepsilon_{Hf}$ from 9.80 to -18.37. Gothian aged grains, on the other hand has a clear juvenile signature with few grains containing negative $\varepsilon Hf_{(t)}$ ranging from 8.51 to -5.29 with one outsider of $\varepsilon Hf_{(t)}$ = -9.34. Svecofennian detrital zircons show a large spread in $\varepsilon Hf_{(t)}$ values - which is characteristic through the entire succession - with $\varepsilon Hf_{(t)}$ranging from 6.63 to -16.51. The older, mainly Neoarchean zircons analysed from the Knurr Formation shows a difference for $\varepsilon Hf_{(t)}$ varying from 4.04 to-17.60. The oldest zircon (3194 ± 35 Ma) has a juvenile signature.

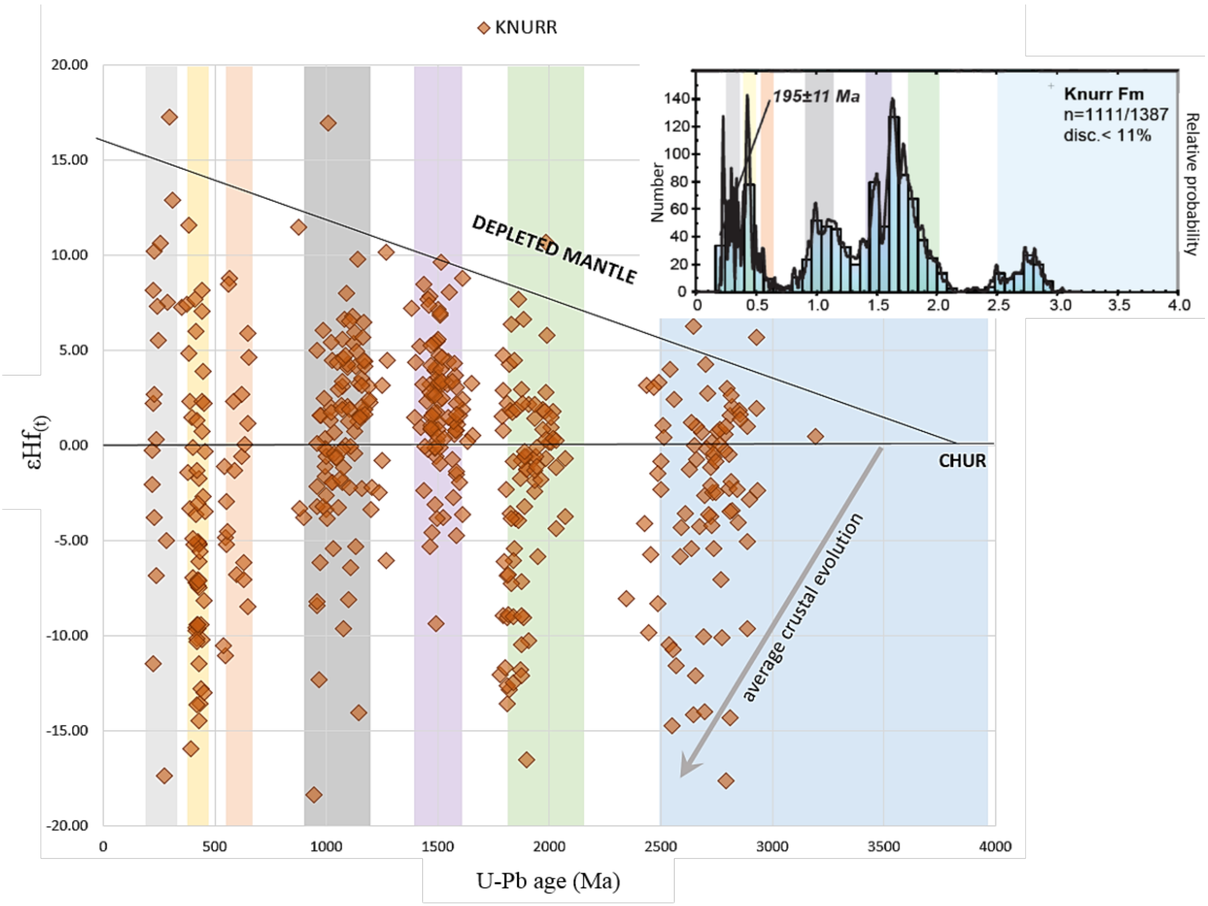



*Fig. 16: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Lower Cretaceous Knurr Formation (n =1111) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

### KOLJE FORMATION

Three samples of the Kolje Formation (n=237; from well (NE) 7122/2-1) yield a dominant detrital zircon age peak at c. 1620 Ma, and with a minimum zircon ages are 206 ± 4 Ma, 226 ± 4 Ma and 230 ± 4 Ma (Matthews et al., *subm.*) (Appendix 2, data sheet). Here 126 grains were analysed for Hf isotope analysis, where 37 detrital grains gave unreliable results. The remaining 89 Lu-Hf data are shown in Appendix 2, data sheet. Figure 17 display the diagram of εHf versus U-Pb ages (Ma) of all dated grains.

The youngest grains (<370 Ma) show a spread from 4.85 to -5.54 while the Caledonian detrital zircons show two clusters, one with $\varepsilon Hf_{(t)}$ around 6.00 and the other -6.00. (Fig. 17). Timanide aged/derived grains plot only with two zircons, and are juvenile with $\varepsilon Hf_{(t)}$ of 11.44 and 9.55. Sveconorwegian detrital zircons show a mainly juvenile trend for $\varepsilon Hf_{(t)}$ with few negative values ranging from 9.81 to -4.35. Gothian aged grains miss the dominant juvenile characteristic and range within $\varepsilon Hf_{(t)}$ from 7.37 to -6.05. Svecofennian is typically, spread largely in their $\varepsilon Hf_{(t)}$ values, ranging from 5.26 to -15.10. The oldest zircon analysed returned an age of 3465 ± 24 Ma and has an $\varepsilon Hf_{(t)}$ of -6.67. Neoarchean grains reveal very juvenile detrital zircons ($\varepsilon Hf_{(t)}$ =4.38) and some crustal contaminated ones with one having a $\varepsilon Hf_{(t)}$ value of -18.92 (Fig. 17).

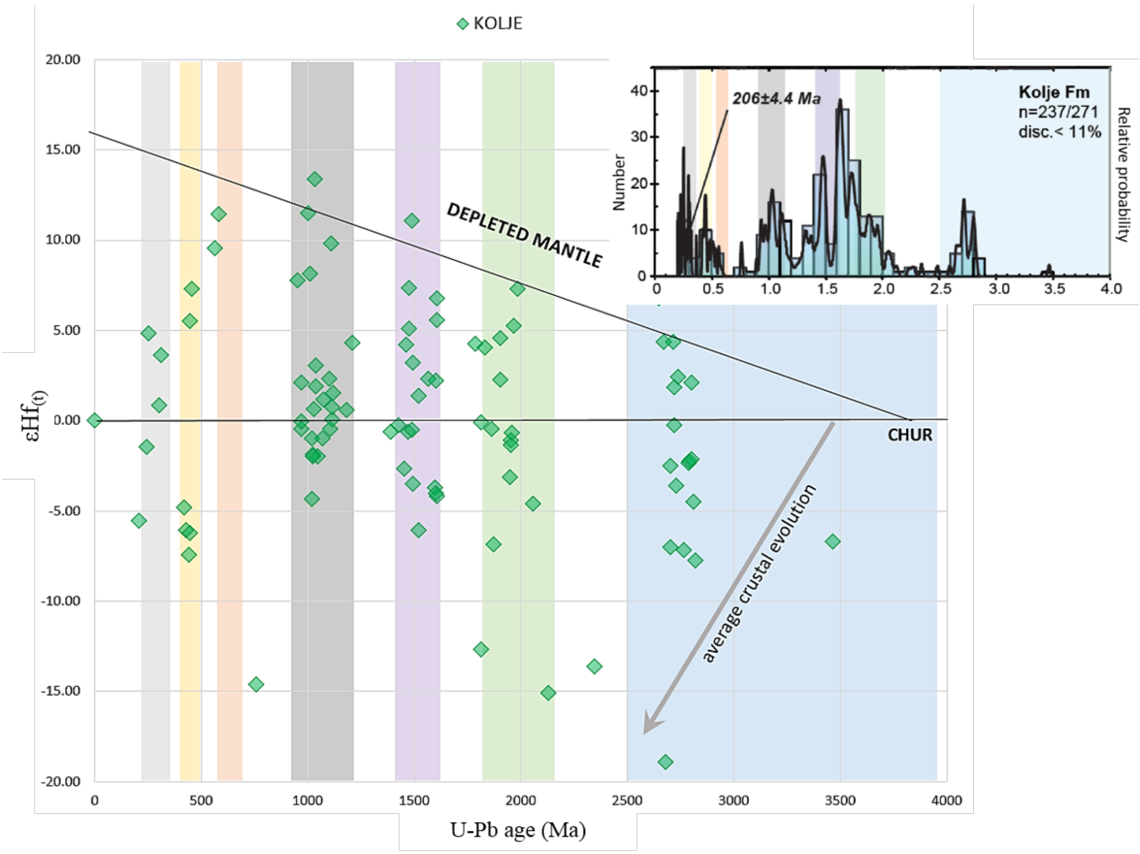



*Fig. 17: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Lower Cretaceous Kolje Formation (n =237) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

### KOLMULE FORMATION

The five Kolmule samples (from wells (N1) 7120/1-2, (N2) 7120/2-2 and (Eni) 7220/10-1; Appendix 2, data sheet) show detrital zircon age signatures with a dominant peak at c. 250 Ma (28 % of zircons gave ages younger than 370 Ma; Appendix 2, data sheet), and a minimum zircon age of 125 ± 3 Ma (discordance of 3.8) (Matthews et al., *subm.*). A number of 293 concordant U-Pb dated zircon grains were available for analysis and 229 grains selected and analysed for Hf isotope analysis, where 38 detrital grains gave unreliable results. The remaining 191 Lu-Hf data are shown in Appendix 2; data sheet, and all grains are presented in Fig. 18 by a diagram of $\varepsilon Hf_{(t)}$ versus U-Pb ages (Ma).Detrital zircons of younger age present an equal spread of juvenile and crustal contamination with $\varepsilon Hf_{(t)}$ range from 9.15 to -8.20 (Appendix 2, data sheet). The Caledonian-aged population (450 – 370 Ma) show less juvenile and much more grains with negative $\varepsilon Hf_{(t)}$ values, as in former discussed formations, ranging from 1.56 to -13.65. Timanide aged detrital zircons spread with $\varepsilon Hf_{(t)}$ from 8.58 to -11.43 (Fig. 18). Sveconorwegian detrital zircons in contrast show a very large spread in this sample, for $\varepsilon Hf_{(t)}$ from 9.59 to -14.89. Gothian aged grains contain mostly juvenile signatures with $\varepsilon Hf_{(t)}$ from 6.61 to -8.14. Svecofennian detrital zircons show its typical widespread of $\varepsilon Hf_{(t)}$ values ranging from 6.53 to -11.62. Early Paleoproterozoic grains contain $\varepsilon Hf_{(t)}$ values varying from 3.31 to -6.02 and similarly Neoarchean detritus show $\varepsilon Hf_{(t)}$ from 3.49 to -8.22.

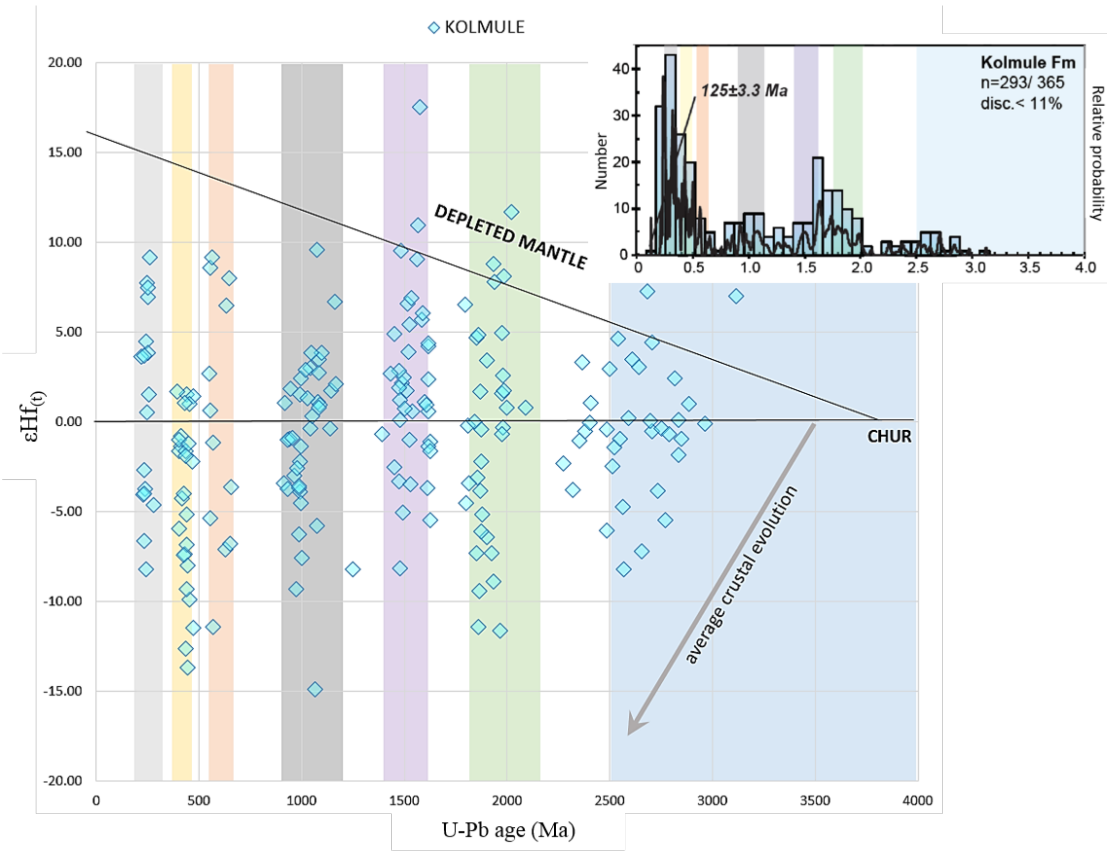



*Fig. 18: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Mid Cretaceous Kolmule Fornation (n =191) Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

# DISCUSSION

1346 detrital zircons were analysed for Hf isotopes, resulting in 1145 reliable Hf isotope systematics. This amount of isotope information is unrealistic to process on the span of a MSc thesis, and will be presented as a part of a larger review paper together with geochemical and U-Pb data information for the entire Hammerfest basin. Therefore, some specific source are selected to (i) highlight issues of Hf isotope interpretation and (ii) to pinpoint provenance characteristics in addition to U-Pb isotope data only.

Matthews et al., (*subm.*) argue that some source components are either exotic or originates from sources proven difficult to accurately interpret.

The interpretive part of this study will therefore mainly concentrate on four groups of grains important for the specific geological context and discuss rather shortly the other major populations:

1. Youngest grains (< 370 Ma; n=41),
2. Caledonian aged grains (n=111),
3. Gothian aged grains (n=233),
4. Oldest post-Neoarchean grains (> 2900 Ma; n=175), and
5. Short and preliminary comments on the Timiande-, Sveco-Norwegian-, Sveco-Scandinavian/Fennian- aged grains, also including other grains plotting outside these.

## MESOZOIC MAGMATISM – THE 'YOUNGEST' POPULATION

Source 1, the 'young' < 370 Ma (Naomi states < 250 Ma) (Permian-Jurassic) zircons show no specific crystal size with euhedral crystals characterized by oscillatory zoning varying from elongated to stubby and occasionally broken (Matthews et al, *subm.*). Only the Cretaceous samples (Knurr, Kolje and Kolmule formations) display zircon population of this age and presumably indicates Mesozoic igneous sources in the east of the sampling area located in Russia. This coincides with the interpretation of seismic data (Marin et al., in prep) and zircon producing magmatism is absent in northern Baltica and the entire region to the west of the Hammerfest Basin (Marín et al., 2016).

In the east regions around Novaya Zemlya and Taimyr, to the northeast and east of the Barents Sea, this area have possibly been affected by the Siberian-trap related volcanism ( ~250 Ma) (Kuzmichev and Pease, 2007; Renne et al., 1995). Also the volcanic activity in the South Taimyr Igneous Complex (230 – 220 Ma) (Walderhaug et al., 2005) and the magmatism which occurred in the Urals Orogen resulted in subduction-related granite batholiths (320 – 275 Ma) (Bea et al., 1997) which are good candidates. These are the known magmatic events of the south, west and north of the Barents Sea. Marín et al. (2016) suspect sources in the east based on subsurface studies.

Forty-one $\varepsilon Hf_{(t)}$ values are available for this age population, ranging from 12.92 to -17.35 (with a weighted average of 1.11) (Fig.19), indicating juvenile sources and reworking of crust, respectively magma mixing. There is no trend or change of provenance through the stratigraphy, all formations carrying the young zircons show juvenile and crustal dominated Hf isotope systematics. Figure 19 shows that most of the grains with a positive epsilon value, points to Palaeozoic mantle separation events. This most likely relates to a thin crusted tectonic setting which has enabled magma flow from the mantel into the crust causing rapid exhumation. Rifting events and subduction working on thinned crust may allow for such juvenile grains. A large amount of these grains point to Neoproterozoic model ages. Crustal formation of this age is not known from any of the possible sources and it is therefore, based on present day knowledge, possibly the most effective interpretation of these Hf isotopes related to magma mixing.

Model ages and Hf isotopes relating to Late Mesoproterozoic crustal formation events may be primary. Generally, grains of similar ages have Palaeozoic and Mesoproterozoic model ages (see Table 1 grain N2Z6.007 (U-Pb 226 Ma, TDMHf 1.25 Ga) and N2Z1.040 (U-Pb 230 Ma, TDMHf 437 Ma)). If these two zircon grains collected from the same well originates from the same geological source area, with a minor difference in crystallization age (Kolmule and Knurr Formation, respectively), it may be indicative of a complex area where rifting took place in an area with a Mesoproterozoic basement. This is however highly speculative at this point. Nevertheless, the fact that some grains are a result of crustal reworking and/or magma mixing, while others are strictly juvenile, points to a complex geological area for some of the grains and to an area with thin crust for others. Although a small number of grains were available, the amount measured could still provide a robust statistic. Samples from the south and southwest then point to crustal reworking/magma mixing, consequently, sediments in the north and northeast contain juvenile grains.

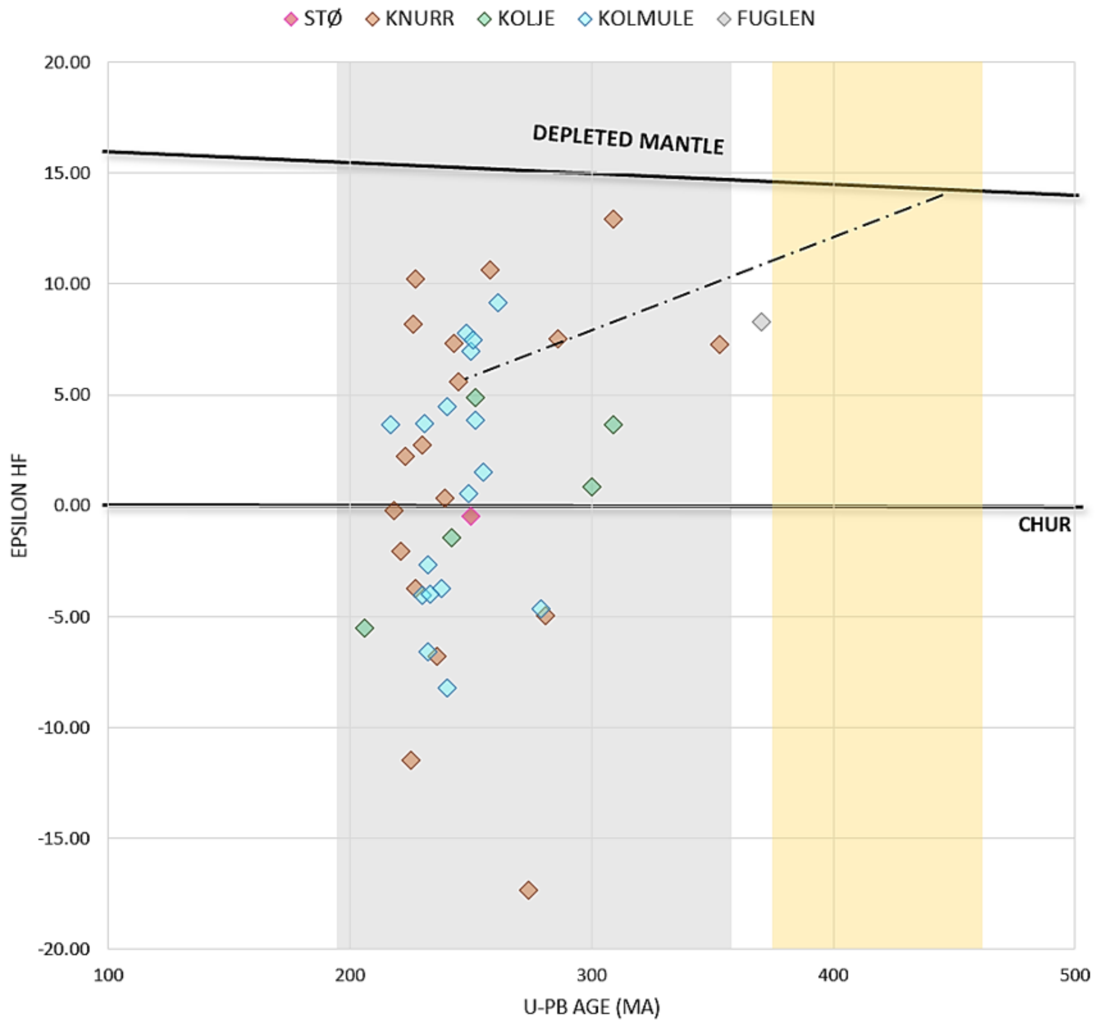



*Fig. 19: U-Pb and Hf data and interpretations for samples from Hammerfest Basin, western Barents Sea. Analyses are from the pre-Caledonian (n =44). Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| NEZ2.097 | NE | Kolje | 206 | 4 | -5.54 | 1.64 | 1021 |
| Eni-Z1.090 | ENI | Kolmule | 217 | 10 | 3.64 | 3.85 | 685 |
| NEZ4.029 | NE | Knurr | 218 | 4 | -0.23 | 1.67 | 822 |
| S2Z1.001 | S2 | Knurr | 221 | 3 | -2.05 | 4.83 | 947 |
| N1Z2.013 | N1 | Knurr | 223 | 4 | 2.22 | 2.17 | 733 |
| N2Z4.030 | N2 | Knurr | 225 | 5 | -11.46 | 3.33 | 1249 |
| N2Z6.007 | N2 | Knurr | 226 | 5 | 8.17 | 2.58 | 511 |
| N2Z4.039 | N2 | Knurr | 227 | 5 | -3.76 | 2.23 | 965 |
| N2Z5.017 | N2 | Knurr | 227 | 5 | 10.25 | 4.59 | 437 |
| N2Z4.034 | N2 | Knurr | 230 | 6 | 2.72 | 2.25 | 716 |
| N2Z1.040 | N2 | Kolmule | 230 | 4 | -4.05 | 2.05 | 992 |
| E.Z2.080 | ENI | Kolmule | 231 | 7 | 3.72 | 3.13 | 693 |
| N2Z1.079 | N2 | Kolmule | 232 | 4 | -6.59 | 2.48 | 1094 |
| E.Z2.111 | ENI | Kolmule | 232 | 7 | -2.65 | 1.66 | 935 |
| N2Z1.057 | N2 | Kolmule | 233 | 4 | -3.97 | 2.33 | 977 |
| S2Z1.068 | S2 | Knurr | 236 | 5 | -6.80 | 2.82 | 1108 |
| N1Z1.070 | N1 | Kolmule | 238 | 7 | -3.73 | 2.05 | 991 |
| NEZ7.100 | NE | Knurr | 239 | 7 | 0.35 | 1.91 | 820 |
| N1Z1.011 | N1 | Kolmule | 240 | 7 | 4.49 | 2.65 | 674 |
| E.Z2.009 | ENI | Kolmule | 240 | 7 | -8.20 | 1.69 | 1153 |
| NEZ1.001 | NE | Kolje | 242 | 5 | -1.45 | 2.00 | 891 |
| NEZ9.018 | NE | Knurr | 243 | 8 | 7.32 | 2.53 | 564 |
| N2Z5.008 | N2 | Knurr | 245 | 7 | 5.56 | 3.01 | 630 |
| N2Z1.063 | N2 | Kolmule | 248 | 4 | 7.77 | 3.03 | 547 |
| N2Z1.099 | N2 | Kolmule | 249 | 5 | 0.56 | 1.63 | 822 |
| N2Z8.098 | N2 | Stø | 250 | 5 | -0.48 | 2.95 | 903 |
| N2Z1.048. | N2 | Kolmule | 250 | 5 | 6.96 | 1.60 | 577 |
| E.Z1.065 | ENI | Kolmule | 251 | 8 | 7.48 | 1.64 | 559 |
| NEZ1.094 | NE | Kolje | 252 | 5 | 4.85 | 2.12 | 657 |
| N2Z2.083 | N2 | Kolmule | 252 | 5 | 3.85 | 2 | 708 |
| N2Z2.036 | N2 | Kolmule | 255 | 6 | 1.52 | 1 | 785 |
| N2Z5.037 | N2 | Knurr | 258 | 5 | 10.65 | 5.51 | 456 |
| N2Z2.081 | N2 | Kolmule | 261 | 6 | 9.15 | 3 | 510 |
| N2Z6.035 | N2 | Knurr | 274 | 5 | -17.35 | 2.30 | 1569 |
| E.Z2.034 | ENI | Kolmule | 279 | 8 | -4.63 | 2.56 | 1090 |
| N2Z4.095 | N2 | Knurr | 281 | 7 | -4.96 | 3.10 | 1063 |
| N1Z2.114 | N1 | Knurr | 286 | 8 | 7.52 | 1.81 | 584 |
| NEZ3.008 | NE | Kolje | 300 | 6 | 0.83 | 3.44 | 875 |
| NEZ5.065 | NE | Knurr | 309 | 5 | 12.92 | 2.53 | 398 |
| NEZ2.098 | NE | Kolje | 309 | 5 | 3.64 | 1.27 | 746 |
| N1Z2.061 | N1 | Knurr | 353 | 10 | 7.29 | 1.86 | 654 |

*Table 1: Datapoints of young Mesozoic detrital grains.*

### CALEDONIAN AGED DETRITAL ZIRCONS

For source 2 the enigmatic issue is the low abundance. Instead of being the dominating source, Caledonian aged detrital zircons are rare in the sampled Mesozoic rocks. However, Hf isotope data do exist for grains derived from the Caledonides and this study will compare this data with the data from (Andersen et al., 2011).

For the 111 grains analysed, most Caledonian show non-juvenile $\varepsilon Hf_{(t)}$ values ranging from 11.61 to -15.94, where most have values of $\varepsilon Hf_{(t)} < 2$ (Table 1 & Figure 20). Knurr (Early Cretaceous) has some juvenile signatures whereas the youngest Kolmule formation (Early-Mid Cretaceous) only display non-juvenile values for $\varepsilon Hf_{(t)}$. Most of the juvenile grains have pre-Ediacaran and Neoproterozoic model ages, where most of the grains have model ages older than 800 Ma. However, the most juvenile grains do not display a trend in term of the crystallisation ages, which implies that there had been several areas of juvenile magmatism in the Caledonides. These detrital zircons are however underrepresented in the well.

Grains with negative epsilon values and with values straddling 0 point to Late Mesoproterozoic crustal formation ages. Around 10% of the grains show older Early Mesoproterozoic ages while very few are older. These data coincide with the findings of Andersen et al. (2011) for most of the Caledonian aged detrital zircons. The general trend is that most of the magmatic rock in the Caledonian may be recycled from Mesoproterozoic crust.

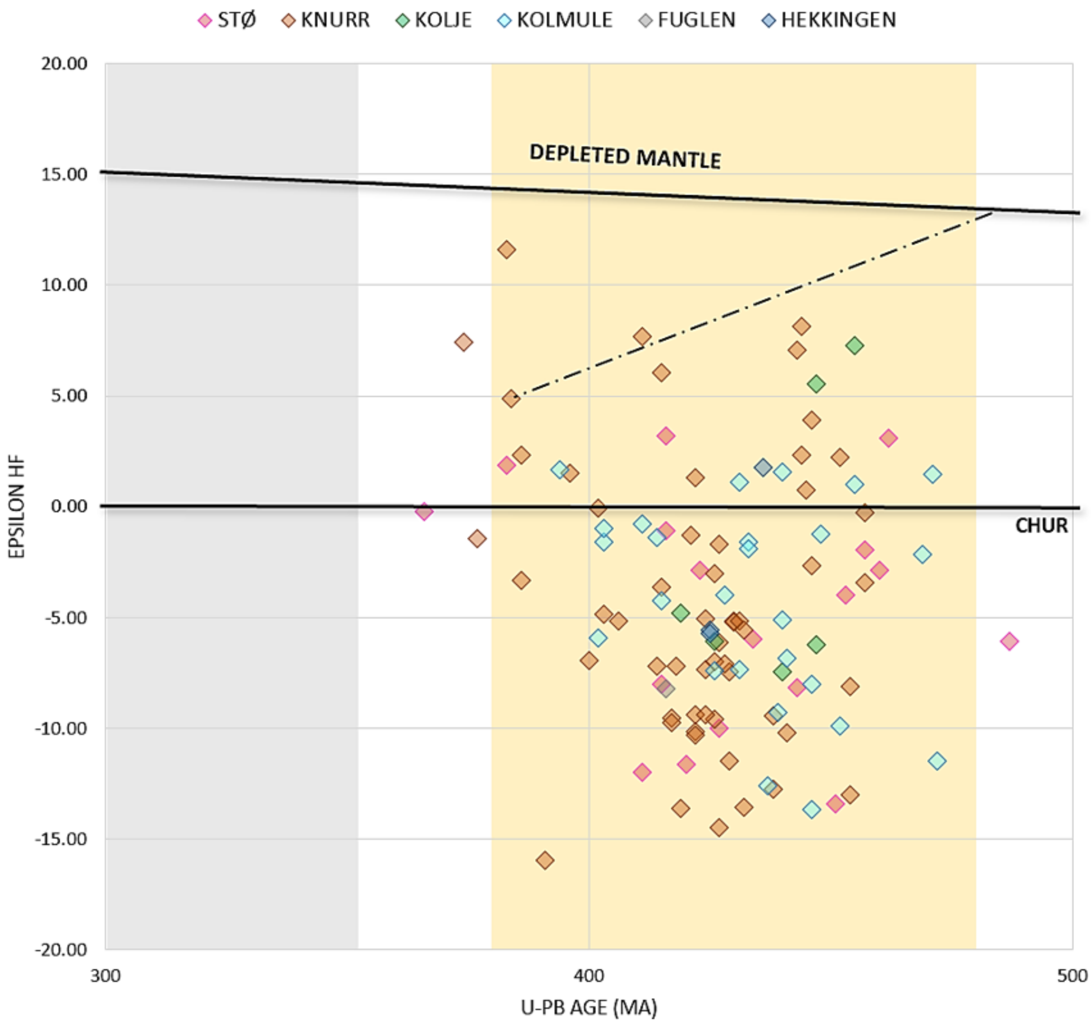



*Fig. 20: U-Pb and Hf data and interpretations for samples from Hammerfest Basin, western Barents Sea. Analyses are from the Caledonian (n =111). Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| SWZ3.001 | SW | Stø | 366 | 12 | -0.22 | 2.05 | 949 |
| S2Z4.069 | S2 | Fuglen | 370 | 9 | 8.31 | 2.18 | 622 |
| N2Z5.048 | N2 | Knurr | 374 | 10 | 7.42 | 2.39 | 659 |
| N2Z4.113 | N2 | Knurr | 377 | 8 | -1.43 | 2.17 | 1007 |
| SWZ3.039 | SW | Stø | 383 | 12 | 1.89 | 2.12 | 889 |
| N2Z4.115 | N2 | Knurr | 383 | 9 | 11.61 | 3.11 | 508 |
| N2Z5.029 | N2 | Knurr | 384 | 8 | 4.87 | 3.25 | 780 |
| N1Z2.034 | N1 | Knurr | 386 | 7 | 2.34 | 1.54 | 865 |
| N2Z4.041 | N2 | Knurr | 386 | 8 | -3.32 | 3.04 | 1100 |
| NEZ7.064 | NE | Knurr | 391 | 12 | -15.94 | 1.89 | 1579 |
| Eni-Z1.045 | ENI | Kolmule | 394 | 10 | 1.68 | 1.69 | 899 |
| NEZ7.046 | NE | Knurr | 396 | 10 | 1.52 | 1.58 | 898 |
| N2Z5.004 | N2 | Knurr | 400 | 6 | -6.94 | 1.72 | 1219 |
| NEZ10.020 | NE | Knurr | 402 | 13 | -0.07 | 2.56 | 978 |
| N2Z1.095 | N2 | Kolmule | 402 | 7 | -5.93 | 3.01 | 1214 |
| N2Z5.040 | N2 | Knurr | 403 | 7 | -4.87 | 3.71 | 1178 |
| N2Z1.092 | N2 | Kolmule | 403 | 7 | -1.61 | 1.59 | 1028 |
| Eni-Z1.102 | ENI | Kolmule | 403 | 18 | -0.99 | 2.07 | 1010 |
| N2Z4.022 | N2 | Knurr | 406 | 9 | -5.18 | 2.83 | 1160 |
| SWZ3.044 | SW | Stø | 411 | 12 | -11.99 | 1.36 | 1411 |
| NEZ5.094 | NE | Knurr | 411 | 9 | 7.70 | 1.58 | 685 |
| N2Z1.078 | N2 | Kolmule | 411 | 7 | -0.80 | 1.66 | 999 |
| SWZ1.040 | SW | Knurr | 414 | 9 | -7.21 | 1.75 | 1240 |
| N1Z1.026 | N1 | Kolmule | 414 | 9 | -1.38 | 1.56 | 1034 |
| SWZ3.096 | SW | Stø | 415 | 12 | -8.01 | 2.52 | 1327 |
| N2Z4.045 | N2 | Knurr | 415 | 8 | 6.04 | 3.09 | 753 |
| N2Z4.079 | N2 | Knurr | 415 | 9 | -3.63 | 2.31 | 1115 |
| Eni-Z1.060 | ENI | Kolmule | 415 | 14 | -4.25 | 2.83 | 1141 |
| SWZ2.078 | SW | Stø | 416 | 12 | -1.07 | 2.12 | 1018 |
| SWZ3.047 | SW | Stø | 416 | 12 | 3.19 | 3.32 | 881 |
| S2Z4.102 | S2 | Fuglen | 416 | 9 | -8.22 | 2.30 | 1298 |
| N2Z4.044 | N2 | Knurr | 417 | 9 | -9.55 | 2.16 | 1339 |
| N2Z4.061 | N2 | Knurr | 417 | 10 | -9.74 | 2.38 | 1353 |
| NEZ6.145 | NE | Knurr | 418 | 11 | -7.18 | 2.25 | 1277 |
| NEZ10.015 | NE | Knurr | 419 | 13 | -13.61 | 1.49 | 1478 |
| NEZ3.019 | NE | Kolje | 419 | 8 | -4.81 | 1.61 | 1158 |
| N2Z8.032 | N2 | Stø | 420 | 8 | -11.63 | 2.62 | 1487 |
| N2Z6.027 | N2 | Knurr | 421 | 8 | -1.27 | 2.83 | 1050 |
| NEZ7.095 | NE | Knurr | 422 | 12 | -10.13 | 1.76 | 1375 |
| NEZ9.040 | NE | Knurr | 422 | 13 | 1.33 | 3.25 | 956 |
| NEZ9.073 | NE | Knurr | 422 | 14 | -9.40 | 2.43 | 1355 |
| NEZ9.086 | NE | Knurr | 422 | 13 | -10.31 | 2.10 | 1376 |
| SWZ3.088 | SW | Stø | 423 | 12 | -2.85 | 2.44 | 1094 |

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|---|---|---|---|---|---|---|---|
| N1Z2.033 | N1 | Knurr | 424 | 8 | -5.06 | 1.97 | 1175 |
| NEZ5.123 | NE | Knurr | 424 | 8 | -7.37 | 1.94 | 1264 |
| NEZ9.111 | NE | Knurr | 424 | 13 | -9.40 | 2.08 | 1342 |
| S2Z2.022 | S2 | Hekkingen | 425 | 9 | -5.59 | 1.86 | 1204 |
| S2Z2.042 | S2 | Hekkingen | 425 | 8 | -5.71 | 1.87 | 1188 |
| SWZ1.058 | SW | Knurr | 426 | 10 | -9.60 | 2.61 | 1363 |
| N2Z5.009 | N2 | Knurr | 426 | 9 | -3.01 | 2.29 | 1120 |
| N2Z6.022 | N2 | Knurr | 426 | 9 | -7.01 | 3.10 | 1255 |
| NEZ1.083 | NE | Kolje | 426 | 9 | -6.08 | 1.81 | 1228 |
| N2Z2.014 | N2 | Kolmule | 426 | 8 | -7.41 | 2 | 1277 |
| E.Z3.108 | ENI | Stø | 427 | 11 | -10.02 | 1.74 | 1366 |
| SWZ1.001 | SW | Knurr | 427 | 10 | -1.72 | 4.10 | 1059 |
| N2Z5.024 | N2 | Knurr | 427 | 9 | -6.11 | 2.80 | 1216 |
| NEZ6.138 | NE | Knurr | 427 | 9 | -14.48 | 1.77 | 1535 |
| NEZ9.006 | NE | Knurr | 428 | 18 | -7.10 | 2.35 | 1265 |
| E.Z2.037 | ENI | Kolmule | 428 | 11 | -4.01 | 1.81 | 1170 |
| S2Z1.129 | S2 | Knurr | 429 | 8 | -7.44 | 2.55 | 1313 |
| NEZ7.073 | NE | Knurr | 429 | 13 | -11.46 | 1.62 | 1423 |
| S2Z1.110 | S2 | Knurr | 430 | 8 | -5.18 | 3.05 | 1187 |
| SWZ1.013 | SW | Knurr | 430 | 10 | -5.20 | 2.09 | 1191 |
| SWZ1.014 | SW | Knurr | 431 | 8 | -5.17 | 2.30 | 1186 |
| N1Z1.102 | N1 | Kolmule | 431 | 8 | -7.34 | 1.51 | 1261 |
| E.Z2.006 | ENI | Kolmule | 431 | 11 | 1.08 | 2.01 | 946 |
| NEZ8.091 | NE | Knurr | 432 | 13 | -5.54 | 2.63 | 1208 |
| NEZ9.080 | NE | Knurr | 432 | 14 | -13.58 | 1.71 | 1490 |
| Eni-Z1.023 | ENI | Kolmule | 433 | 12 | -1.61 | 1.86 | 1056 |
| Eni-Z1.096 | ENI | Kolmule | 433 | 19 | -1.90 | 2.56 | 1066 |
| SWZ2.038 | SW | Stø | 434 | 13 | -5.96 | 2.43 | 1219 |
| S2Z3.016 | S2 | Hekkingen | 436 | 15 | 1.75 | 1.87 | 920 |
| Eni-Z1.021 | ENI | Kolmule | 437 | 12 | -12.60 | 1.39 | 1470 |
| N2Z5.016 | N2 | Knurr | 438 | 9 | -12.77 | 1.85 | 1472 |
| N2Z5.059 | N2 | Knurr | 438 | 9 | -9.42 | 2.84 | 1357 |
| Eni-Z1.051 | ENI | Kolmule | 439 | 13 | -9.30 | 1.56 | 1335 |
| NEZ2.075 | NE | Kolje | 440 | 7 | -7.45 | 1.47 | 1274 |
| N1Z1.014 | N1 | Kolmule | 440 | 10 | 1.56 | 1.83 | 943 |
| N2Z1.051 | N2 | Kolmule | 440 | 8 | -5.13 | 1.77 | 1211 |
| SWZ2.033 | SW | Stø | 441 | 12 | -29.13 | 2.09 | 2082 |
| S2Z1.069 | S2 | Knurr | 441 | 9 | -10.21 | 2.06 | 1399 |
| N1Z1.039 | N1 | Kolmule | 441 | 10 | -6.83 | 1.47 | 1252 |
| SWZ2.083 | SW | Stø | 443 | 12 | -8.18 | 2.06 | 1397 |
| N2Z5.049 | N2 | Knurr | 443 | 8 | 7.06 | 3.67 | 741 |
| SWZ1.055 | SW | Knurr | 444 | 10 | 8.16 | 2.43 | 694 |
| N2Z5.027 | N2 | Knurr | 444 | 9 | 2.32 | 2.10 | 920 |
| N2Z6.033 | N2 | Knurr | 445 | 9 | 0.74 | 2.62 | 975 |
| N1Z2.083 | N1 | Knurr | 446 | 11 | -2.66 | 1.56 | 1104 |

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|---|---|---|---|---|---|---|---|
| N2Z5.010 | N2 | Knurr | 446 | 8 | 3.93 | 2.42 | 852 |
| E.Z2.024 | ENI | Kolmule | 446 | 12 | -8.00 | 1.94 | 1304 |
| E.Z2.064 | ENI | Kolmule | 446 | 13 | -13.65 | 2.21 | 1547 |
| NEZ1.026 | NE | Kolje | 447 | 9 | 5.52 | 1.84 | 800 |
| NEZ2.032 | NE | Kolje | 447 | 7 | -6.21 | 1.75 | 1238 |
| E.Z2.077 | ENI | Kolmule | 448 | 12 | -1.22 | 3.95 | 1088 |
| E.Z3.109 | ENI | Stø | 451 | 12 | -13.40 | 1.68 | 1501 |
| N2Z5.051 | N2 | Knurr | 452 | 8 | 2.22 | 2.36 | 923 |
| N1Z1.087 | N1 | Kolmule | 452 | 8 | -9.88 | 1.91 | 1399 |
| S2Z5.032 | S2 | Stø | 453 | 9 | -4.01 | 2.55 | 1157 |
| N2Z4.046 | N2 | Knurr | 454 | 9 | -8.13 | 2.14 | 1311 |
| NEZ6.066 | NE | Knurr | 454 | 9 | -12.98 | 3.19 | 1517 |
| NEZ1.067 | NE | Kolje | 455 | 8 | 7.28 | 2.72 | 742 |
| N2Z2.116 | N2 | Kolmule | 455 | 10 | 0.99 | 3 | 976 |
| N2Z8.068 | N2 | Stø | 457 | 9 | -1.94 | 2.20 | 1085 |
| N2Z4.085 | N2 | Knurr | 457 | 10 | -0.29 | 2.29 | 1023 |
| NEZ9.097 | NE | Knurr | 457 | 14 | -3.45 | 2.87 | 1219 |
| SWZ3.072 | SW | Stø | 460 | 13 | -2.86 | 2.04 | 1142 |
| S2Z5.036 | S2 | Stø | 462 | 18 | 3.08 | 2.22 | 908 |
| N1Z1.001 | N1 | Kolmule | 469 | 17 | -2.18 | 2.22 | 1120 |
| N2Z1.013 | N2 | Kolmule | 471 | 8 | 1.44 | 1.47 | 972 |
| N2Z2.063 | N2 | Kolmule | 472 | 10 | -11.49 | 2 | 1450 |
| E.Z3.110 | ENI | Stø | 487 | 12 | -6.07 | 4.07 | 1293 |

*Table 2: Datapoints of Caldonian detrital grains.*

### GOTHIAN AGED DETRITAL ZIRCONS

The Gothian event, source 3, occurred in the south of Baltica and the sediment transport of this detritus should have taken place either through the centre of Baltica to reach the Hammerfest basin, or, around Baltica along its western margin. Assuming that Baltica was frequently, since 1.6 Ga, an area of erosion and rarely flooded, the distance is still more than 1000 km (620 miles) of transport. Grains should then have characteristics of a certain roundness, which is not prominent for these detrital grains (Matthews et al., *subm.*). Therefore the study here will compare the Hf data with those from southern Baltica (Andersen et al., 2011) to test similarities and point out differences. The 233 collected values for this age population, have $\varepsilon Hf_{(t)}$ ranging from 9.13 to -14.02, where most of them plot above 0, and a majority clustered around 1.5 Ga, and is therefore displaying the most juvenile source of all (Fig. 21). Gothian aged rocks in Palaeozoic sandstones of the Oslo region, hence relatively proximal to the metamorphic rocks of that age point to Early Mesoproterozoic magmatic arc derivation for these grains (Andersen et al., 2004). A larger group of these detrital zircons in Oslo point to a more juvenile character, some are straddling CHUR values for the time of crystallisation and a small, but coherent, group of 1.45-1.50 Ga aged zircons have rather negative $\varepsilon Hf_{(t)}$ between -3 and -8.

The data presented here are heterogeneous, potentially due to the high amount of grains. However, most of the grains are trending to a more juvenile character rather than reworked origin (see Fig. 21). This could allow extrapolating a relation to the magmatic events in the south of Baltica. The issue of the rarely observed roundness is however unresolved. As there are definitely several areas on Earth with these isotope characteristics, an exotic source is as possible as the one to the south. This possible exotic source may have been to the north of the Hammerfest basin as rocks in the south, west and east do not contain magmatic or meta-igneous rocks of this age (Matthews et al., *subm.*).

The most juvenile grains are of the Early Mesoproterozoic to Late Paleoproterozoic ages and the less strongly juvenile input points to crustal formation ages related to the Svecofennian or Transscandinavian Igneous Belt (TIB). Detritus older than 2.0 Ga is rare in this sample. If these grains are related to magma mixing, then the source needs to be characterized by Paleoproterozoic basement. However, the time frame 2.2-1.8 Ga is worldwide one of the most abundant crustal formation events – possibly related to the formation of Nuna/Colombia (Condie et al., 2011). This may be less likely at the southern margin of Baltica when, some or most of, the Gothian aged detrital zircons point to a magmatic arc with juvenile trend, indicating a thin crust. It can therefore be argued that there are either two sources containing juvenile Gothian detritus, one located at the southern margin of Baltica providing well rounded detritus (rarely found) and another unknown exotic source with a similar isotopic fingerprint. A third source, which contained Paleoproterozoic basement which either allow magma mixing or reworking of crustal rocks at Early Mesoproterozoic times, is still unproven in eastern Greenland, northern Batlica and Svalbard.


*Fig. 21: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Gothian (purple color) (n =233). Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| N2Z8.018 | N2 | Stø | 1371 | 29 | 5.00 | 2.16 | 1586 |
| N2Z8.117 | N2 | Stø | 1371 | 43 | 5.58 | 2.55 | 1563 |
| S2Z2.061 | S2 | Hekkingen | 1380 | 35 | -5.14 | 3.04 | 1973 |
| N2Z5.034 | N2 | Knurr | 1381 | 49 | 7.23 | 3.33 | 1510 |
| S2Z2.088 | S2 | Hekkingen | 1388 | 43 | 4.10 | 2.91 | 1634 |
| NEZ1.111 | NE | Kolje | 1388 | 40 | -0.63 | 3.03 | 1809 |
| Eni-Z1.092 | N2 | Kolmule | 1392 | 78 | -0.65 | 3.48 | 1818 |
| N2Z4.119 | N2 | Knurr | 1397 | 41 | 1.50 | 4.62 | 1754 |
| NEZ4.026 | NE | Knurr | 1399 | 38 | 4.39 | 2.11 | 1632 |
| S2-Z6.018 | S2 | Kobbe | 1401 | 26 | 9.13 | 1.85 | 1455 |
| S2Z3.035 | S2 | Hekkingen | 1405 | 42 | 5.65 | 3.86 | 1589 |
| S2-Z6.062 | S2 | Kobbe | 1410 | 20 | 0.69 | 1.44 | 1776 |
| SWZ2.065 | SW | Stø | 1412 | 48 | 5.55 | 2.67 | 1598 |
| SWZ3.005 | SW | Stø | 1414 | 54 | 1.98 | 2.53 | 1734 |
| SWZ3.057 | SW | Stø | 1415 | 33 | -2.59 | 2.39 | 1912 |
| N2Z8.071 | N2 | Stø | 1416 | 33 | 7.69 | 2.43 | 1521 |
| S2-Z6.078 | S2 | Kobbe | 1420 | 21 | 1.16 | 1.44 | 1771 |
| NEZ4.022 | NE | Knurr | 1421 | 34 | 5.24 | 2.23 | 1618 |
| S2Z5.100 | S2 | Stø | 1424 | 31 | 4.02 | 2.39 | 1666 |
| NEZ2.005 | NE | Kolje | 1424 | 28 | -0.26 | 2.18 | 1825 |
| SWZ1.063 | SW | Knurr | 1425 | 44 | 0.98 | 2.70 | 1778 |
| E.Z3.130 | ENI | Stø | 1428 | 34 | 1.36 | 2.34 | 1768 |
| S2Z3.041 | S2 | Hekkingen | 1428 | 27 | 2.68 | 2.80 | 1718 |
| S2Z4.053 | S2 | Fuglen | 1431 | 33 | 4.72 | 2.49 | 1648 |
| E.Z2.053 | ENI | Kolmule | 1432 | 52 | 2.71 | 2.67 | 1734 |
| N2Z8.052 | N2 | Stø | 1433 | 20 | 5.22 | 2.55 | 1634 |
| NEZ7.066 | NE | Knurr | 1433 | 47 | 3.22 | 2.73 | 1703 |
| E.Z3.131 | ENI | Stø | 1435 | 36 | 2.01 | 2.15 | 1748 |
| N2Z8.008 | N2 | Stø | 1436 | 35 | 3.60 | 2.49 | 1691 |
| S2Z1.131 | S2 | Knurr | 1437 | 24 | -2.33 | 2.88 | 1923 |
| SWZ1.036 | SW | Knurr | 1437 | 42 | 8.51 | 2.48 | 1508 |
| NEZ7.113 | NE | Knurr | 1440 | 40 | -0.01 | 2.64 | 1830 |
| NEZ4.017 | NE | Knurr | 1449 | 33 | 2.32 | 2.06 | 1751 |
| NEZ2.077 | NE | Kolje | 1450 | 29 | -2.67 | 2.57 | 1940 |
| N2Z1.038 | N2 | Kolmule | 1451 | 32 | 4.89 | 2.33 | 1665 |
| N1Z1.027 | N1 | Kolmule | 1452 | 32 | -2.49 | 1.90 | 1932 |
| S2Z3.006 | S2 | Hekkingen | 1453 | 28 | 2.49 | 2.29 | 1748 |
| S2Z5.039 | S2 | Stø | 1454 | 34 | 7.09 | 2.82 | 1579 |
| S2Z4.115 | S2 | Fuglen | 1455 | 27 | 1.27 | 2.47 | 1794 |
| NEZ5.133 | NE | Knurr | 1455 | 50 | -0.19 | 2.82 | 1850 |
| NEZ5.050 | NE | Knurr | 1456 | 26 | 7.71 | 2.68 | 1563 |
| S2Z3.052 | S2 | Hekkingen | 1457 | 24 | 7.56 | 2.20 | 1561 |

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|---|---|---|---|---|---|---|---|
| NEZ9.108 | NE | Knurr | 1458 | 61 | 7.40 | 3.04 | 1567 |
| NEZ1.070 | NE | Kolje | 1459 | 27 | 4.20 | 2.47 | 1690 |
| E.Z3.132 | ENI | Stø | 1460 | 28 | 6.28 | 2.28 | 1615 |
| E.Z3.133 | ENI | Stø | 1461 | 33 | 2.85 | 2.18 | 1741 |
| N2Z6.001 | N2 | Knurr | 1463 | 31 | 7.86 | 2.10 | 1555 |
| NEZ9.045 | NE | Knurr | 1463 | 62 | -5.29 | 3.91 | 2065 |
| S2-Z6.057 | S2 | Kobbe | 1466 | 32 | 0.71 | 1.81 | 1824 |
| SWZ1.117 | SW | Knurr | 1466 | 50 | 3.21 | 2.49 | 1730 |
| NEZ8.021 | NE | Knurr | 1466 | 47 | 2.79 | 2.88 | 1748 |
| NEZ9.025 | NE | Knurr | 1467 | 59 | 5.29 | 3.01 | 1657 |
| S2-Z6.032 | S2 | Kobbe | 1468 | 37 | 0.10 | 2.29 | 1857 |
| SWZ2.070 | SW | Stø | 1468 | 48 | 3.59 | 2.52 | 1722 |
| NEZ6.042 | NE | Knurr | 1468 | 35 | 0.87 | 1.98 | 1822 |
| S2Z1.063 | S2 | Knurr | 1470 | 33 | 1.48 | 3.18 | 1801 |
| NEZ6.002 | NE | Knurr | 1470 | 26 | 4.24 | 2.27 | 1698 |
| NEZ6.080 | NE | Knurr | 1470 | 37 | 1.09 | 2.14 | 1815 |
| NEZ10.008 | NE | Knurr | 1470 | 62 | 0.90 | 3.56 | 1824 |
| NEZ1.013 | NE | Kolje | 1471 | 36 | -0.61 | 2.82 | 1878 |
| SWZ3.069 | SW | Stø | 1472 | 40 | 3.36 | 2.69 | 1730 |
| SWZ1.070 | SW | Knurr | 1472 | 54 | 2.66 | 2.73 | 1755 |
| N2Z2.060 | N2 | Kolmule | 1472 | 42 | 2.87 | 3 | 1749 |
| N2Z2.078 | N2 | Kolmule | 1472 | 37 | 1.92 | 3 | 1787 |
| NEZ9.056 | NE | Knurr | 1473 | 55 | 1.61 | 2.81 | 1796 |
| N2Z1.101 | N2 | Kolmule | 1473 | 60 | -3.31 | 7.23 | 1991 |
| S2-Z6.142 | S2 | Kobbe | 1474 | 27 | 4.83 | 2.28 | 1679 |
| NEZ4.005 | NE | Knurr | 1474 | 40 | -4.58 | 2.98 | 2031 |
| NEZ2.028 | NE | Kolje | 1475 | 23 | 7.37 | 2.29 | 1584 |
| S2-Z6.178 | S2 | Kobbe | 1476 | 20 | 4.49 | 1.88 | 1693 |
| SWZ2.082 | SW | Stø | 1477 | 56 | 2.21 | 3.51 | 1777 |
| NEZ2.115 | NE | Kolje | 1477 | 30 | 5.12 | 2.02 | 1669 |
| N1Z1.033 | N1 | Kolmule | 1477 | 28 | -8.14 | 2.15 | 2161 |
| E.Z2.030 | ENI | Kolmule | 1478 | 56 | 1.21 | 3.01 | 1815 |
| NEZ5.068 | NE | Knurr | 1479 | 43 | 0.89 | 2.63 | 1831 |
| Eni-Z1.030 | N2 | Kolmule | 1479 | 45 | 0.14 | 2.43 | 1859 |
| S2-Z6.003 | S2 | Kobbe | 1481 | 19 | 6.94 | 2.10 | 1606 |
| SWZ2.111 | SW | Stø | 1481 | 44 | 4.75 | 2.89 | 1685 |
| S2Z4.079 | S2 | Fuglen | 1481 | 28 | 7.09 | 2.84 | 1601 |
| NEZ7.010 | NE | Knurr | 1481 | 61 | 5.41 | 2.97 | 1664 |
| NEZ7.047 | NE | Knurr | 1482 | 67 | 1.76 | 3.23 | 1801 |
| NEZ9.096 | NE | Knurr | 1486 | 56 | 2.64 | 3.15 | 1770 |
| N1Z1.079 | N1 | Kolmule | 1486 | 28 | 2.17 | 2.21 | 1792 |
| SWZ1.024 | SW | Knurr | 1488 | 39 | -0.13 | 2.44 | 1882 |
| SWZ1.071 | SW | Knurr | 1488 | 43 | 3.95 | 3.30 | 1722 |
| NEZ6.143 | NE | Knurr | 1488 | 33 | -0.10 | 2.53 | 1874 |

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|---|---|---|---|---|---|---|---|
| NEZ1.090 | NE | Kolje | 1488 | 40 | -0.52 | 2.73 | 1897 |
| S2Z5.068 | S2 | Stø | 1489 | 41 | -0.14 | 2.71 | 1881 |
| NEZ8.077 | NE | Knurr | 1489 | 45 | -3.11 | 3.47 | 1999 |
| S2-Z6.089 | S2 | Kobbe | 1490 | 75 | 4.21 | 3.08 | 1713 |
| NEZ7.017 | NE | Knurr | 1490 | 64 | -9.34 | 2.80 | 2214 |
| S2Z1.052 | S2 | Knurr | 1491 | 27 | 3.18 | 2.67 | 1756 |
| N2Z4.021 | N2 | Knurr | 1491 | 40 | 4.14 | 4.52 | 1736 |
| NEZ2.099 | NE | Kolje | 1491 | 25 | -3.51 | 2.90 | 2008 |
| SWZ2.023 | SW | Stø | 1492 | 42 | 2.89 | 2.36 | 1765 |
| S1Z1.048 | S1 | Knurr | 1492 | 30 | -0.56 | 2.21 | 1893 |
| SWZ2.053 | SW | Stø | 1493 | 47 | 3.59 | 2.86 | 1740 |
| Eni-Z1.111 | N2 | Kolmule | 1493 | 65 | -5.01 | 4.30 | 2062 |
| NEZ2.121.120 | NE | Kolje | 1494 | 41 | 3.21 | 2.30 | 1754 |
| S2Z1.084 | S2 | Knurr | 1495 | 28 | 0.26 | 2.60 | 1868 |
| N1Z1.099 | N1 | Kolmule | 1495 | 24 | 2.50 | 2.43 | 1782 |
| N2Z8.064 | N2 | Stø | 1497 | 31 | 0.44 | 2.42 | 1859 |
| S2Z4.045 | S2 | Fuglen | 1497 | 24 | -4.57 | 2.33 | 2056 |
| NEZ5.089 | NE | Knurr | 1497 | 24 | 1.78 | 2.01 | 1811 |
| NEZ5.114 | NE | Knurr | 1497 | 25 | 5.51 | 2.27 | 1677 |
| NEZ6.026 | NE | Knurr | 1497 | 34 | -3.80 | 2.62 | 2028 |
| N2Z8.070 | N2 | Stø | 1498 | 33 | 2.91 | 2.22 | 1770 |
| S2Z4.068 | S2 | Fuglen | 1498 | 38 | -1.03 | 2.77 | 1919 |
| S2Z3.119 | S2 | Hekkingen | 1499 | 23 | -2.68 | 2.38 | 1978 |
| S2Z1.121 | S2 | Knurr | 1499 | 27 | 3.16 | 2.17 | 1761 |
| E.Z2.099 | ENI | Kolmule | 1500 | 49 | 0.73 | 2.76 | 1857 |
| E.Z3.134 | ENI | Stø | 1501 | 33 | 1.34 | 2.18 | 1830 |
| N2Z6.061 | N2 | Knurr | 1501 | 33 | 7.19 | 2.37 | 1615 |
| NEZ8.014 | NE | Knurr | 1501 | 43 | 0.51 | 2.54 | 1860 |
| NEZ5.062 | NE | Knurr | 1502 | 43 | 5.61 | 3.13 | 1677 |
| NEZ6.144 | NE | Knurr | 1502 | 42 | 0.84 | 2.53 | 1852 |
| SWZ2.088 | SW | Stø | 1503 | 45 | 3.62 | 3.04 | 1747 |
| NEZ5.142 | NE | Knurr | 1503 | 23 | 3.60 | 2.00 | 1753 |
| SWZ3.028 | SW | Stø | 1504 | 49 | 1.51 | 2.67 | 1829 |
| E.Z3.135 | ENI | Stø | 1505 | 29 | 0.21 | 2.35 | 1876 |
| S1Z1.005 | S1 | Knurr | 1505 | 21 | 2.41 | 2.17 | 1795 |
| NEZ5.102 | NE | Knurr | 1505 | 33 | 1.23 | 1.99 | 1837 |
| N2Z6.025 | N2 | Knurr | 1506 | 40 | 4.73 | 4.34 | 1705 |
| NEZ8.010 | NE | Knurr | 1507 | 50 | 3.34 | 2.55 | 1759 |
| N2Z6.009 | N2 | Knurr | 1508 | 25 | 6.85 | 2.42 | 1629 |
| NEZ6.148 | NE | Knurr | 1508 | 39 | 6.95 | 2.82 | 1628 |
| NEZ9.050 | NE | Knurr | 1510 | 58 | -0.93 | 2.63 | 1924 |
| N2Z4.080 | N2 | Knurr | 1511 | 33 | -0.07 | 3.22 | 1896 |
| N2Z1.036 | N2 | Kolmule | 1512 | 28 | 1.78 | 2.24 | 1821 |
| NEZ6.088 | NE | Knurr | 1514 | 49 | 3.16 | 2.43 | 1774 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E.Z3.136 | ENI | Stø | 1516 | 28 | 3.33 | 2.86 | 1791 |
| E.Z3.137 | ENI | Stø | 1516 | 36 | 2.86 | 2.96 | 1787 |
| NEZ7.027 | NE | Knurr | 1516 | 82 | 4.03 | 3.36 | 1743 |
| N2Z2.113 | N2 | Kolmule | 1516 | 25 | 6.61 | 3 | 1646 |
| NEZ8.009 | NE | Knurr | 1517 | 43 | 4.66 | 2.92 | 1723 |
| NEZ9.067 | NE | Knurr | 1517 | 59 | 3.38 | 3.11 | 1769 |
| N2Z8.036 | N2 | Stø | 1520 | 24 | 2.56 | 2.02 | 1801 |
| NEZ7.023 | NE | Knurr | 1520 | 61 | 2.47 | 2.66 | 1805 |
| NEZ1.075 | NE | Kolje | 1520 | 32 | -6.05 | 2.30 | 2125 |
| NEZ1.023 | NE | Kolje | 1522 | 58 | 1.37 | 3.49 | 1858 |
| N2Z1.052 | N2 | Kolmule | 1522 | 52 | 3.90 | 3.07 | 1760 |
| E.Z2.101 | ENI | Kolmule | 1523 | 50 | 5.44 | 2.48 | 1695 |
| E.Z2.108 | ENI | Kolmule | 1523 | 59 | -0.99 | 3.10 | 1946 |
| N2Z4.036 | N2 | Knurr | 1525 | 30 | -3.79 | 2.35 | 2041 |
| NEZ8.046 | NE | Knurr | 1530 | 48 | 0.37 | 3.32 | 1906 |
| N2Z2.108 | N2 | Kolmule | 1530 | 39 | -3.43 | 3 | 2029 |
| E.Z2.008 | ENI | Kolmule | 1533 | 48 | 6.92 | 3.59 | 1665 |
| SWZ3.078 | SW | Stø | 1535 | 38 | 2.33 | 2.17 | 1828 |
| Eni-Z1.061 | N2 | Kolmule | 1537 | 56 | 0.59 | 2.62 | 1889 |
| S2Z4.036 | S2 | Fuglen | 1543 | 27 | 0.17 | 2.60 | 1914 |
| NEZ8.083 | NE | Knurr | 1544 | 47 | 3.25 | 3.47 | 1797 |
| NEZ8.105 | NE | Knurr | 1545 | 59 | 1.49 | 2.93 | 1862 |
| S2-Z6.083 | S2 | Kobbe | 1548 | 23 | -0.22 | 1.73 | 1924 |
| S2Z2.057 | S2 | Hekkingen | 1548 | 32 | 3.72 | 1.97 | 1782 |
| S2Z1.124 | S2 | Knurr | 1548 | 29 | 4.44 | 3.69 | 1759 |
| SWZ2.072 | SW | Stø | 1549 | 44 | 1.13 | 3.47 | 1887 |
| S2Z1.008 | S2 | Knurr | 1551 | 31 | 8.05 | 2.51 | 1625 |
| E.Z3.139 | ENI | Stø | 1560 | 29 | 1.15 | 2.97 | 1897 |
| S2Z3.002 | S2 | Hekkingen | 1561 | 32 | 7.10 | 2.63 | 1666 |
| SWZ2.011 | SW | Stø | 1564 | 51 | -1.15 | 2.73 | 1974 |
| NEZ9.055 | NE | Knurr | 1564 | 63 | -0.70 | 2.91 | 1962 |
| NEZ9.011 | NE | Knurr | 1566 | 53 | 3.37 | 3.04 | 1810 |
| NEZ2.012 | NE | Kolje | 1567 | 32 | 2.33 | 2.88 | 1852 |
| S2Z5.006 | S2 | Stø | 1568 | 28 | -5.04 | 2.45 | 2119 |
| NEZ8.119 | NE | Knurr | 1569 | 53 | -2.72 | 2.61 | 2036 |
| NEZ6.083 | NE | Knurr | 1570 | 30 | 1.27 | 1.83 | 1889 |
| SWZ3.059 | SW | Stø | 1571 | 45 | -4.97 | 2.79 | 2145 |
| S2Z3.038 | S2 | Hekkingen | 1575 | 31 | 4.04 | 2.73 | 1796 |
| N2Z6.037 | N2 | Knurr | 1575 | 28 | 0.60 | 3.19 | 1921 |
| N2Z4.078 | N2 | Knurr | 1576 | 33 | 4.33 | 3.20 | 1784 |
| S2Z1.101 | S2 | Knurr | 1577 | 25 | 3.71 | 2.66 | 1807 |
| S2Z1.012 | S2 | Knurr | 1578 | 29 | 1.28 | 2.61 | 1905 |
| SWZ3.106 | SW | Stø | 1580 | 37 | 3.80 | 3.75 | 1814 |
| NEZ5.103 | NE | Knurr | 1580 | 51 | 0.82 | 2.52 | 1916 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SWZ1.006 | SW | Knurr | 1581 | 44 | 0.81 | 2.93 | 1918 |
| NEZ9.104 | NE | Knurr | 1581 | 54 | 1.65 | 2.80 | 1884 |
| NEZ8.047 | NE | Knurr | 1583 | 45 | 3.05 | 3.01 | 1836 |
| N2Z1.050 | N2 | Kolmule | 1583 | 29 | 5.71 | 2.16 | 1736 |
| N2Z6.019 | N2 | Knurr | 1584 | 23 | -1.50 | 2.61 | 2014 |
| NEZ4.025 | NE | Knurr | 1584 | 29 | -4.73 | 2.58 | 2131 |
| N2Z6.041 | N2 | Knurr | 1585 | 31 | 2.22 | 3.05 | 1865 |
| NEZ6.091 | NE | Knurr | 1585 | 37 | -1.34 | 2.38 | 2010 |
| NEZ4.019 | NE | Knurr | 1587 | 27 | 1.14 | 2.33 | 1918 |
| E.Z2.062 | ENI | Kolmule | 1587 | 48 | 6.09 | 3.21 | 1736 |
| S2Z3.029 | S2 | Hekkingen | 1588 | 27 | 2.94 | 2.84 | 1849 |
| NEZ7.096 | NE | Knurr | 1595 | 46 | -1.94 | 3.26 | 2043 |
| S2Z4.109 | S2 | Fuglen | 1596 | 44 | -3.06 | 2.72 | 2070 |
| NEZ7.016 | NE | Knurr | 1597 | 75 | 1.58 | 3.31 | 1903 |
| NEZ2.119 | NE | Kolje | 1598 | 27 | -3.72 | 2.03 | 2099 |
| NEZ2.100.101 | NE | Kolje | 1599 | 30 | -4.04 | 2.15 | 2109 |
| N2Z2.082 | N2 | Kolmule | 1599 | 42 | 1.13 | 4 | 1922 |
| N2Z8.087 | N2 | Stø | 1600 | 29 | -1.20 | 2.25 | 2006 |
| N2Z8.102 | N2 | Stø | 1601 | 27 | -8.47 | 2.09 | 2273 |
| NEZ2.089 | NE | Kolje | 1601 | 30 | 2.21 | 2.31 | 1889 |
| S2Z2.069 | S2 | Hekkingen | 1602 | 33 | -1.29 | 3.41 | 2026 |
| S2Z5.045 | S2 | Stø | 1603 | 37 | -2.03 | 2.73 | 2041 |
| SWZ3.043 | SW | Stø | 1603 | 34 | 1.71 | 2.54 | 1905 |
| S2Z2.032 | S2 | Hekkingen | 1604 | 30 | 1.99 | 2.96 | 1894 |
| NEZ1.084 | NE | Kolje | 1605 | 26 | -4.19 | 2.24 | 2122 |
| NEZ1.086 | NE | Kolje | 1605 | 31 | 5.59 | 2.92 | 1767 |
| NEZ1.107 | NE | Kolje | 1606 | 31 | 6.79 | 3.01 | 1717 |
| N2Z2.042 | N2 | Kolmule | 1606 | 29 | 0.97 | 2 | 1933 |
| S2Z3.023 | S2 | Hekkingen | 1607 | 38 | -2.19 | 2.86 | 2061 |
| S2Z2.106 | S2 | Hekkingen | 1607 | 27 | -9.63 | 3.67 | 2375 |
| S2Z2.071 | S2 | Hekkingen | 1607 | 41 | 0.97 | 2.72 | 1936 |
| SWZ1.101 | SW | Knurr | 1608 | 40 | 1.93 | 2.64 | 1895 |
| S1Z1.002 | S1 | Knurr | 1609 | 32 | 2.42 | 2.50 | 1883 |
| NEZ4.013 | NE | Knurr | 1609 | 29 | -3.61 | 2.44 | 2107 |
| SWZ2.092 | SW | Stø | 1610 | 49 | -1.06 | 3.24 | 2014 |
| N2Z1.056 | N2 | Kolmule | 1610 | 25 | -3.68 | 2.59 | 2127 |
| S2Z4.027 | S2 | Fuglen | 1615 | 22 | 4.42 | 2.68 | 1817 |
| S2Z2.033 | S2 | Hekkingen | 1615 | 34 | 2.73 | 2.80 | 1874 |
| Eni-Z1.048 | N2 | Kolmule | 1615 | 46 | 2.41 | 4.34 | 1911 |
| Eni-Z1.071 | N2 | Kolmule | 1615 | 63 | 4.215344 | 3.253511 | 1819.553 |
| Eni-Z1.080 | N2 | Kolmule | 1615 | 67 | -1.37824 | 4.475408 | 2031.192 |
| S2Z4.067 | S2 | Fuglen | 1616 | 30 | -14.02 | 3.11 | 2528 |
| Eni-Z1.025 | N2 | Kolmule | 1616 | 45 | 4.377271 | 2.261863 | 1811.977 |
| S2Z2.043 | S2 | Hekkingen | 1617 | 27 | 6.51 | 2.45 | 1735 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| N1Z1.082 | N1 | Kolmule | 1617 | 28 | 0.60 | 3.99 | 1962 |
| N2Z8.069 | N2 | Stø | 1621 | 31 | 1.22 | 2.10 | 1933 |
| N2Z8.001 | N2 | Stø | 1623 | 25 | -6.33 | 2.08 | 2218 |
| E.Z3.140 | ENI | Stø | 1624 | 30 | -0.27 | 2.93 | 2009 |
| N2Z1.045 | N2 | Kolmule | 1624 | 27 | -1.07 | 1.99 | 2020 |
| N2Z1.085 | N2 | Kolmule | 1624 | 27 | -5.45 | 3.17 | 2186 |
| Eni-Z1.110 | N2 | Kolmule | 1624 | 60 | -1.60 | 3.43 | 2060 |
| S2Z5.064 | S2 | Stø | 1631 | 28 | 3.23 | 2.28 | 1868 |
| S2Z5.119 | S2 | Stø | 1631 | 22 | 0.56 | 2.45 | 1968 |
| S2Z5.041 | S2 | Stø | 1632 | 31 | 1.03 | 2.67 | 1956 |
| S2Z5.076 | S2 | Stø | 1632 | 24 | -4.36 | 2.34 | 2172 |
| NEZ10.014 | NE | Knurr | 1635 | 52 | 0.24 | 3.17 | 1992 |
| S2Z5.113 | S2 | Stø | 1641 | 25 | 6.04 | 3.82 | 1786 |
| NEZ9.084 | NE | Knurr | 1653 | 56 | 3.26 | 2.88 | 1884 |
| NEZ9.028 | NE | Knurr | 1655 | 56 | 0.53 | 2.65 | 1986 |

*Table 3: Datapoints of Gothian detrital grains.*

### Neoarchean and the oldest detritus

The resulting model age for group 4 is important to gain information about the crustal evolution of the possible source regions. $\varepsilon Hf_{(t)}$ values ranging from 4.38 to -18.92, where many appear as juvenile, and most plot between $\varepsilon Hf_{(t)}$ = 3 and -3. Some negative values are pointing to older Paleoarchean crust. Most of the grains with positive epsilon values or close to zero point to a Neoarchean origin. Again, a very common age for early crustal formation (Condie et al., 2011). If cratons still contain these rocks, there is a large number of potential candidates. This detritus is in this regard difficult to pinpoint in terms of geographic origin. Another large amount of grains point to a Mesoarchean crustal element, comparable to the Hf isotope data by Kuznetsov et al. (2010) from Neoproterozoic rocks in northern Baltica. However, the oldest model ages in this presented sample set are as old as Paleoarchean (Table 4). Nearly 10 % of the entire population < 2.5 Ga show a Paleoarchean crustal element. Of those grains, most have been crystallised during the Neoarchean, with a few from Mesoarchean. The model ages point to a Late Paleoarchean dominance and the oldest grain selected for Hf isotopes (NEZ2.063 from Kolje Fm; 3465 Ma) would point to a source in the northeast (Marin et al., 2016) with an Eoarchean crustal component (TDMHf = 3.7 Ga). This craton area is unknown and the only regional source may be the oldest rocks in Greenland. This is however speculative. Nevertheless, the high amount of Early Mesoarchean detritus may point to another crustal source than northern Baltica or Greenland for the oldest grains. If this is correct, then it signifies that a significant recycling took place during the Neoarchean, pointing to thick crust from a mature craton as early as the Neoarchean.

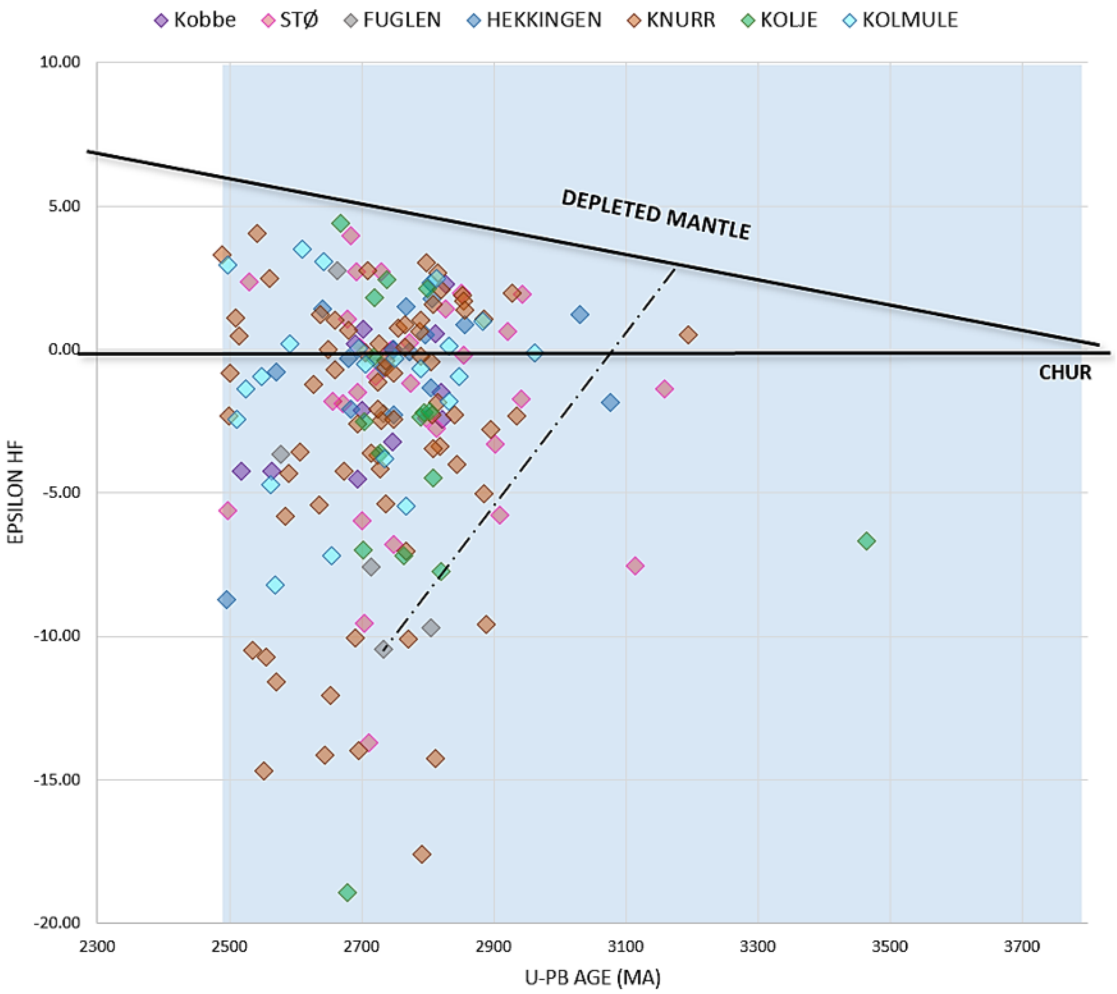



*Fig. 22: U-Pb and Hf data and interpretations for samples Hammerfest Basin, western Barents Sea. Analyses are from the Neoarchean (2.8-2.5 Ga) (n =175). Diagrams and symbols are as in Figure 11. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| N2Z4.093 | N2 | Knurr | 2489 | 24 | 3.31 | 2.23 | 2583 |
| S2Z3.024 | S2 | Hekkingen | 2495 | 26 | -8.72 | 2.10 | 3021 |
| N2Z8.116 | N2 | Stø | 2497 | 30 | -5.64 | 3.11 | 2967 |
| N2Z1.006 | N1 | Kolmule | 2497 | 45 | 2.94 | 2.43 | 2603 |
| SWZ1.091 | SW | Knurr | 2499 | 37 | -2.32 | 2.55 | 2798 |
| N2Z6.045 | N2 | Knurr | 2501 | 19 | -0.84 | 1.94 | 2745 |
| NEZ5.086 | NE | Knurr | 2509 | 31 | 1.08 | 1.98 | 2681 |
| N2Z1.105 | N1 | Kolmule | 2511 | 20 | -2.44 | 1.89 | 2810 |
| NEZ8.024 | NE | Knurr | 2514 | 38 | 0.45 | 2.62 | 2708 |
| S2-Z6.066 | S2 | Kobbe | 2518 | 16 | -4.23 | 1.45 | 2878 |
| Eni-Z1.009 | ENI | Kolmule | 2524 | 44 | -1.39 | 2.08 | 2782 |
| E.Z3.153 | ENI | Stø | 2529 | 28 | 2.37 | 2.38 | 2651 |
| SWZ1.056 | SW | Knurr | 2535 | 34 | -10.48 | 2.66 | 3126 |
| N2Z6.026 | N2 | Knurr | 2542 | 21 | 4.04 | 2.95 | 2600 |
| E.Z2.014 | ENI | Kolmule | 2548 | 40 | -0.93 | 2.52 | 2786 |
| SWZ1.053 | SW | Knurr | 2552 | 41 | -14.71 | 2.49 | 3287 |
| NEZ5.100 | NE | Knurr | 2556 | 22 | -10.73 | 2.04 | 3152 |
| N2Z5.003 | N2 | Knurr | 2560 | 25 | 2.46 | 2.98 | 2675 |
| N1Z1.125 | N1 | Kolmule | 2563 | 24 | -4.70 | 5.19 | 2975 |
| S2-Z6.063 | S2 | Kobbe | 2564 | 43 | -4.24 | 1.94 | 2916 |
| N2Z1.010 | N1 | Kolmule | 2569 | 27 | -8.22 | 2.31 | 3072 |
| S2Z2.039 | S2 | Hekkingen | 2570 | 21 | -0.79 | 2.22 | 2800 |
| NEZ10.010 | NE | Knurr | 2570 | 46 | -11.58 | 2.29 | 3186 |
| S2Z4.076 | S2 | Fuglen | 2577 | 23 | -3.65 | 2.09 | 2905 |
| NEZ5.022 | NE | Knurr | 2584 | 35 | -5.82 | 2.14 | 2992 |
| N2Z4.064 | N2 | Knurr | 2590 | 28 | -4.31 | 2.77 | 2942 |
| E.Z2.056 | ENI | Kolmule | 2592 | 41 | 0.21 | 2.33 | 2786 |
| S1Z1.042 | S1 | Knurr | 2607 | 20 | -3.58 | 1.74 | 2928 |
| N2Z2.098 | N1 | Kolmule | 2610 | 27 | 3.49 | 3 | 2678 |
| N2Z6.004 | N2 | Knurr | 2627 | 32 | -1.23 | 2.27 | 2865 |
| SWZ1.022 | SW | Knurr | 2635 | 37 | -5.43 | 2.36 | 3017 |
| NEZ7.093 | NE | Knurr | 2638 | 36 | 1.23 | 2.10 | 2784 |
| S2Z3.039 | S2 | Hekkingen | 2641 | 22 | 1.43 | 2.20 | 2777 |
| E.Z2.065 | ENI | Kolmule | 2642 | 41 | 3.05 | 5.03 | 2724 |
| NEZ6.023 | NE | Knurr | 2645 | 39 | -14.14 | 2.38 | 3340 |
| S2Z1.148 | S2 | Knurr | 2650 | 25 | -0.01 | 2.33 | 2843 |
| SWZ1.011 | SW | Knurr | 2653 | 41 | -12.08 | 2.39 | 3269 |
| Eni-Z1.064 | ENI | Kolmule | 2654 | 40 | -7.19 | 2.26 | 3101 |
| N2Z8.083 | N2 | Stø | 2657 | 25 | -1.80 | 2.36 | 2908 |
| S2Z1.064 | S2 | Knurr | 2660 | 24 | -0.71 | 2.87 | 2874 |
| NEZ5.070 | NE | Knurr | 2660 | 21 | 1.01 | 2.94 | 2815 |
| S2Z4.012 | S2 | Fuglen | 2663 | 16 | 2.76 | 2.71 | 2749 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NEZ1.085 | NE | Kolje | 2669 | 23 | 4.38 | 4.15 | 2696 |
| E.Z3.154 | ENI | Stø | 2671 | 25 | -1.87 | 2.05 | 2923 |
| S2Z1.118 | S2 | Knurr | 2674 | 26 | -4.26 | 2.11 | 3012 |
| SWZ3.082 | SW | Stø | 2679 | 30 | 1.06 | 2.27 | 2826 |
| NEZ1.101 | NE | Kolje | 2679 | 26 | -18.92 | 2.48 | **3539** |
| N1Z2.004 | SW | Knurr | 2680 | 22 | 0.68 | 1.89 | 2838 |
| S2Z3.014 | S2 | Hekkingen | 2681 | 20 | -0.33 | 1.93 | 2873 |
| S2Z3.053 | S2 | Hekkingen | 2683 | 17 | -2.09 | 2.01 | 2938 |
| SWZ3.103 | SW | Stø | 2684 | 30 | 3.96 | 2.04 | 2723 |
| S2-Z6.010 | S2 | Kobbe | 2691 | 14 | 0.19 | 1.30 | 2864 |
| NEZ9.089 | NE | Knurr | 2691 | 45 | -10.05 | 2.69 | 3232 |
| N2Z8.047 | N2 | Stø | 2692 | 27 | 2.69 | 2.13 | 2775 |
| S2-Z6.165 | S2 | Kobbe | 2694 | 23 | -4.52 | 1.73 | 3036 |
| S2Z5.123 | S2 | Stø | 2694 | 22 | -1.49 | 2.59 | 2930 |
| SWZ1.060 | SW | Knurr | 2694 | 35 | -2.60 | 2.55 | 2969 |
| N2Z1.008 | N1 | Kolmule | 2695 | 20 | 0.06 | 2.69 | 2876 |
| NEZ9.088 | NE | Knurr | 2696 | 42 | -13.98 | 2.28 | 3380 |
| S2Z5.013 | S2 | Stø | 2698 | 22 | 0.08 | 2.21 | 2877 |
| S2-Z6.015 | S2 | Kobbe | 2701 | 13 | -2.13 | 1.41 | 2957 |
| S2Z5.114 | S2 | Stø | 2701 | 28 | -5.99 | 2.32 | 3093 |
| S2-Z6.147 | S2 | Kobbe | 2703 | 14 | 0.71 | 1.26 | 2856 |
| NEZ2.018 | NE | Kolje | 2703 | 24 | -6.99 | 2.74 | 3134 |
| E.Z3.155 | ENI | Stø | 2704 | 23 | -9.56 | 1.87 | 3226 |
| NEZ1.020 | NE | Kolje | 2704 | 22 | -2.52 | 4.70 | 3005 |
| N1Z1.104 | N1 | Kolmule | 2705 | 25 | -0.51 | 2.16 | 2903 |
| NEZ5.057 | NE | Knurr | 2706 | 31 | -0.14 | 2.10 | 2889 |
| NEZ9.043 | NE | Knurr | 2710 | 47 | 2.76 | 3.06 | 2790 |
| SWZ3.046 | SW | Stø | 2711 | 29 | -13.72 | 2.75 | 3405 |
| S2Z4.087 | S2 | Fuglen | 2714 | 22 | -7.58 | 2.25 | 3166 |
| NEZ8.040 | NE | Knurr | 2715 | 35 | -3.60 | 2.43 | 3022 |
| NEZ2.020 | NE | Kolje | 2718 | 25 | -0.27 | 2.48 | 2905 |
| NEZ1.042 | NE | Kolje | 2720 | 21 | 1.82 | 1.96 | 2830 |
| SWZ3.006 | SW | Stø | 2722 | 38 | -0.96 | 2.31 | 2933 |
| SWZ1.052 | SW | Knurr | 2725 | 33 | -3.71 | 3.83 | 3042 |
| NEZ8.022 | NE | Knurr | 2725 | 36 | -1.13 | 2.26 | 2941 |
| NEZ8.066 | NE | Knurr | 2725 | 36 | -2.08 | 3.05 | 2978 |
| S2Z1.071 | S2 | Knurr | 2727 | 24 | 0.20 | 2.15 | 2894 |
| N2Z6.042 | N2 | Knurr | 2728 | 21 | -4.18 | 2.91 | 3059 |
| NEZ2.047 | NE | Kolje | 2728 | 26 | -3.61 | 2.07 | 3033 |
| N2Z8.120 | N2 | Stø | 2730 | 28 | 2.70 | 2.35 | 2807 |
| N2Z4.027 | N2 | Knurr | 2730 | 24 | -2.47 | 2.67 | 3001 |
| S2Z4.024 | S2 | Fuglen | 2734 | 22 | -2.24 | 2.59 | 2989 |
| S2Z4.026 | S2 | Fuglen | 2734 | 22 | -10.44 | 2.91 | 3288 |
| S2Z3.103 | S2 | Hekkingen | 2734 | 20 | -0.64 | 2.17 | 2931 |
| N2Z2.012 | N1 | Kolmule | 2735 | 23 | -3.81 | 3 | 3057 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NEZ7.059 | NE | Knurr | 2736 | 40 | -0.39 | 2.65 | 2930 |
| S1Z1.007 | S2 | Knurr | 2737 | 17 | -0.62 | 2.19 | 2934 |
| S1Z1.025 | S3 | Knurr | 2737 | 20 | -5.38 | 1.88 | 3102 |
| NEZ1.091 | NE | Kolje | 2738 | 22 | 2.42 | 3.91 | 2830 |
| N2Z8.010 | N2 | Stø | 2744 | 23 | -0.03 | 2.63 | 2918 |
| S2-Z6.117 | S2 | Kobbe | 2746 | 16 | -3.24 | 1.31 | 3033 |
| S2-Z6.173 | S2 | Kobbe | 2746 | 14 | 0.01 | 1.39 | 2917 |
| S2Z3.037 | S2 | Hekkingen | 2748 | 22 | -2.29 | 2.17 | 3002 |
| S2Z3.054.055 | S2 | Hekkingen | 2748 | 16 | -0.02 | 1.89 | 2919 |
| NEZ6.085 | NE | Knurr | 2748 | 22 | -2.44 | 1.54 | 3007 |
| NEZ9.007 | NE | Knurr | 2748 | 50 | -0.84 | 3.08 | 2952 |
| N2Z8.091 | N2 | Stø | 2749 | 31 | -6.79 | 2.37 | 3166 |
| Eni-Z1.001 | ENI | Kolmule | 2750 | 40 | -0.33 | 2.02 | 2933 |
| S1Z1.120 | S4 | Knurr | 2756 | 23 | 0.73 | 1.99 | 2900 |
| NEZ1.057 | NE | Kolje | 2764 | 19 | -7.18 | 2.21 | 3197 |
| S1Z1.071 | S5 | Knurr | 2765 | 20 | 0.86 | 2.21 | 2903 |
| NEZ8.108 | NE | Knurr | 2766 | 47 | 0.07 | 2.59 | 2932 |
| S2Z2.020 | S2 | Hekkingen | 2768 | 20 | 1.51 | 3.65 | 2884 |
| NEZ6.027 | NE | Knurr | 2768 | 21 | -7.04 | 1.85 | 3189 |
| Eni-Z1.112 | ENI | Kolmule | 2768 | 56 | -5.44 | 3.64 | 3136 |
| S1Z1.033 | S6 | Knurr | 2771 | 24 | -10.10 | 2.29 | 3303 |
| S2Z2.014 | S2 | Hekkingen | 2772 | 24 | -0.10 | 2.23 | 2943 |
| SWZ3.091 | SW | Stø | 2773 | 26 | 0.24 | 1.51 | 2932 |
| S2Z5.046 | S2 | Stø | 2774 | 23 | -1.17 | 2.15 | 2982 |
| S2Z1.123 | S2 | Knurr | 2788 | 24 | 0.61 | 1.96 | 2931 |
| NEZ7.092 | NE | Knurr | 2789 | 36 | -0.22 | 2.21 | 2962 |
| NEZ1.113 | NE | Kolje | 2789 | 22 | -2.35 | 5.02 | 3050 |
| NEZ9.060 | NE | Knurr | 2790 | 48 | 1.02 | 2.58 | 2917 |
| Eni-Z1.094 | ENI | Kolmule | 2790 | 54 | -0.66 | 5.25 | 2987 |
| NEZ10.003 | NE | Knurr | 2791 | 49 | -17.60 | 2.47 | **3585** |
| NEZ2.026 | NE | Kolje | 2794 | 25 | -2.22 | 2.71 | 3039 |
| S2Z2.008 | S2 | Hekkingen | 2796 | 23 | 0.52 | 2.74 | 2940 |
| SWZ3.037 | SW | Stø | 2798 | 28 | -2.40 | 1.97 | 3053 |
| NEZ7.101 | NE | Knurr | 2798 | 37 | 3.02 | 3.02 | 2853 |
| NEZ2.013 | NE | Kolje | 2799 | 24 | 2.10 | 2.62 | 2886 |
| NEZ2.090 | NE | Kolje | 2803 | 34 | -2.15 | 2.09 | 3043 |
| S2Z4.058 | S2 | Fuglen | 2805 | 21 | -9.69 | 2.11 | 3319 |
| S2Z3.120 | S2 | Hekkingen | 2805 | 22 | 2.30 | 5.00 | 2885 |
| S2Z2.001 | S2 | Hekkingen | 2805 | 42 | -1.33 | 2.80 | 3015 |
| NEZ6.123 | NE | Knurr | 2805 | 23 | -0.45 | 1.70 | 2984 |
| S2Z2.027 | S2 | Hekkingen | 2806 | 26 | 1.76 | 2.81 | 2908 |
| S1Z1.084 | S7 | Knurr | 2806 | 22 | -2.27 | 1.85 | 3047 |
| NEZ7.090 | NE | Knurr | 2808 | 35 | -3.47 | 2.38 | 3096 |
| S2Z1.120 | S2 | Knurr | 2809 | 24 | 1.59 | 1.98 | 2913 |
| NEZ1.063 | NE | Kolje | 2809 | 33 | -4.47 | 2.66 | 3133 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NEZ5.095 | NE | Knurr | 2811 | 21 | -14.28 | 1.81 | 3484 |
| S2-Z6.087.088 | S2 | Kobbe | 2812 | 18 | 0.54 | 1.51 | 2953 |
| S2Z5.019 | S2 | Stø | 2814 | 22 | -2.74 | 2.35 | 3073 |
| N2Z2.043 | N1 | Kolmule | 2814 | 32 | 2.46 | 2 | 2886 |
| NEZ6.137 | NE | Knurr | 2816 | 35 | -1.86 | 2.04 | 3046 |
| NEZ8.073 | NE | Knurr | 2816 | 35 | 2.66 | 2.92 | 2881 |
| N1Z2.031 | SW | Knurr | 2819 | 21 | -3.39 | 1.72 | 3103 |
| S2Z1.044 | S2 | Knurr | 2820 | 26 | 2.07 | 2.50 | 2906 |
| S2-Z6.119 | S2 | Kobbe | 2821 | 17 | -1.49 | 1.47 | 3034 |
| NEZ1.003 | NE | Kolje | 2821 | 26 | -7.75 | 2.80 | 3270 |
| S2-Z6.130 | S2 | Kobbe | 2822 | 15 | -2.44 | 1.76 | 3069 |
| S2-Z6.050 | S2 | Kobbe | 2827 | 14 | 2.28 | 1.74 | 2905 |
| S2Z5.047 | S2 | Stø | 2827 | 22 | 1.40 | 2.69 | 2936 |
| N2Z1.077 | N1 | Kolmule | 2833 | 20 | -1.83 | 4.34 | 3064 |
| Eni-Z1.052 | ENI | Kolmule | 2833 | 37 | 0.10 | 2.21 | 2988 |
| NEZ8.017 | NE | Knurr | 2841 | 42 | -2.28 | 3.24 | 3083 |
| NEZ4.014 | NE | Knurr | 2845 | 24 | -4.02 | 2.08 | 3151 |
| N2Z2.096 | N1 | Kolmule | 2847 | 31 | -0.93 | 3 | 3036 |
| S2Z5.058 | S2 | Stø | 2851 | 26 | 1.96 | 2.17 | 2936 |
| S1Z1.013 | S8 | Knurr | 2852 | 19 | 1.87 | 2.13 | 2940 |
| S2Z5.091 | S2 | Stø | 2854 | 24 | -0.19 | 2.14 | 3016 |
| NEZ8.092 | NE | Knurr | 2854 | 46 | 1.67 | 3.07 | 2948 |
| S2Z3.051 | S2 | Hekkingen | 2856 | 19 | 0.87 | 2.50 | 2979 |
| NEZ8.067 | NE | Knurr | 2856 | 38 | 1.38 | 2.94 | 2961 |
| N1Z1.086 | N1 | Kolmule | 2884 | 24 | 1.00 | 1.90 | 2997 |
| N1Z2.091 | SW | Knurr | 2885 | 54 | 1.04 | 2.43 | 2997 |
| NEZ4.007 | NE | Knurr | 2885 | 22 | -5.04 | 2.08 | 3215 |
| NEZ8.064 | NE | Knurr | 2889 | 39 | -9.60 | 2.54 | 3386 |
| S1Z1.080 | S9 | Knurr | 2896 | 22 | -2.80 | 2.18 | 3143 |
| S2Z5.077 | S2 | Stø | 2903 | 23 | -3.31 | 2.63 | 3175 |
| S2Z5.110 | S2 | Stø | 2909 | 21 | -5.79 | 2.47 | 3270 |
| E.Z3.156 | ENI | Stø | 2921 | 27 | 0.62 | 2.05 | 3042 |
| S2Z1.054 | S2 | Knurr | 2928 | 23 | 1.97 | 3.11 | 3001 |
| NEZ6.007 | NE | Knurr | 2934 | 24 | -2.33 | 2.04 | 3162 |
| SWZ3.075 | SW | Stø | 2942 | 27 | -1.74 | 1.91 | 3146 |
| E.Z3.157 | ENI | Stø | 2944 | 21 | 1.92 | 2.39 | 3016 |
| N1Z1.042 | N1 | Kolmule | 2962 | 19 | -0.11 | 1.65 | 3103 |
| S2Z2.060 | S2 | Hekkingen | 3030 | 24 | 1.21 | 2.50 | 3113 |
| S2Z2.111 | S2 | Hekkingen | 3077 | 24 | -1.83 | 2.20 | 3262 |
| SWZ3.109 | SW | Stø | 3114 | 17 | -7.55 | 1.85 | 3493 |
| SWZ3.084 | SW | Stø | 3158 | 27 | -1.39 | 2.39 | 3316 |
| SWZ1.078 | SW | Knurr | 3194 | 35 | 0.51 | 2.65 | 3276 |
| NEZ2.063 | NE | Kolje | 3465 | 24 | -6.67 | 2.69 | **3761** |

*Table 4: Datapoints of Neoarchean detrital grains*

## Preliminary comments of some sources

### TIMANIDES AGED DETRITAL ZIRCONS

The Timanide Orogen (in Baltic Craton interior: 750 - 500 Ma, (Pease and Scott, 2009); 800 - 590 Ma, (Kuznetsov et al., 2010); and in Greenland: 670 - 640 Ma, (Gasser, 2014) are mainly located in the Timan-Pechora region at the northeastern margin of the East European Craton (Kuznetsov et al., 2010). Most of the Timanide aged detrital zircon grains show negative $\varepsilon Hf_{(t)}$ values (Fig. 23). Table 5 shows the calculated model ages and point therefore to Mesoproterozoic origin. The absence of juvenile crust points to a mature arc, and if so, it was built on thick crust. This might be due to the source region (the Timandies) representing more distal areas of the subduction (retro-arc basin or retro-arc foreland basin). Similar results regarding the tectonic are also found by Beranek et al. (2013). Majority of the $\varepsilon Hf_{(t)}$ values (64%) are below 0 and 30% plot between 0 and -5. This further suggests that the Mesoproterozoic to Late Paleoproterozoic basement was reworked for such an arc, indicating a simple shallow subduction. As this then propose an arc setting, this means that the aged basement most likely underlied northern Baltica.It can also be speculated if there are Timanides in the N wells where this material comes from.

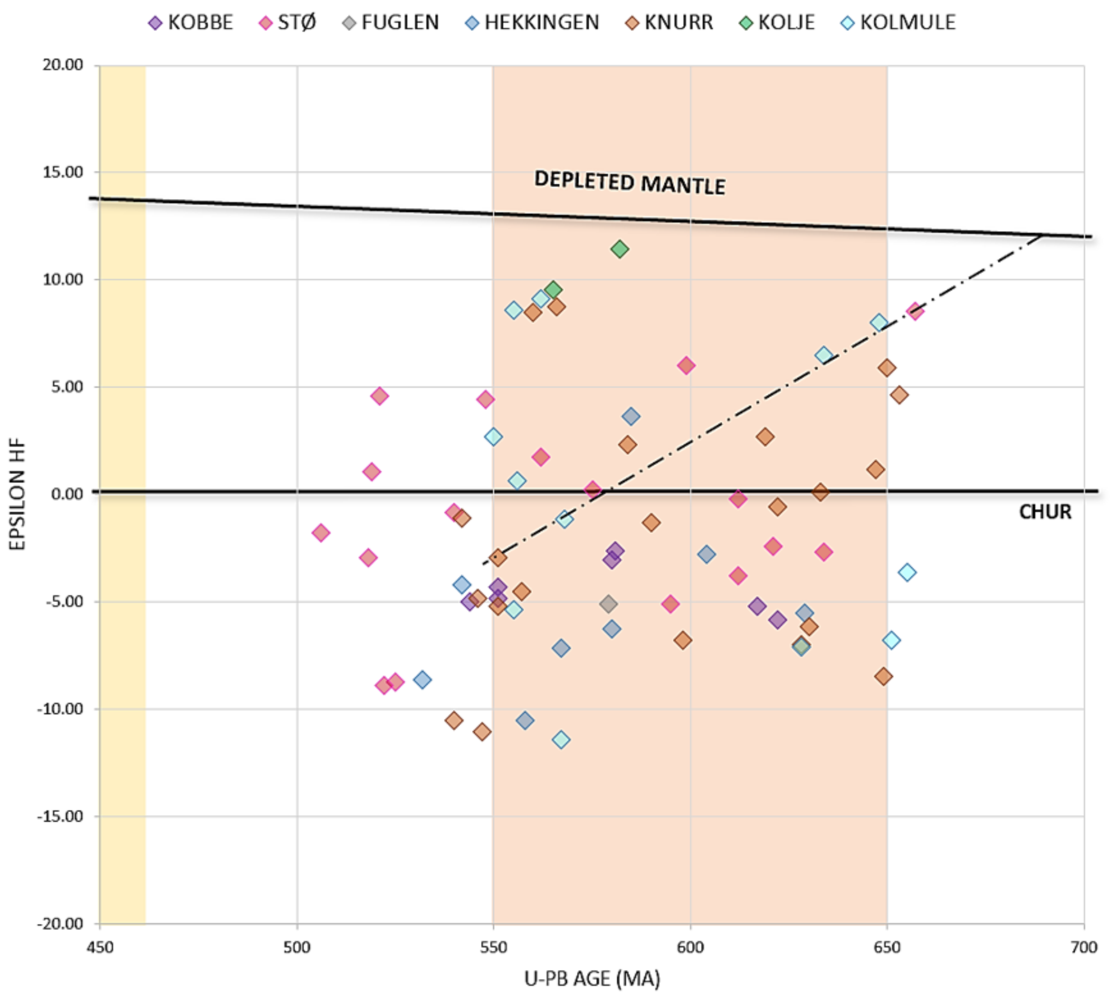





*Fig. 23 U-Pb and Hf data and interpretations for samples from Hammerfest Basin, western Barents Sea. Analyses are from the Timiande (beige color) (n =69). Diagrams and symbols are as in Figure 9. Upper left curve are probability density plots of U-Pb age (form Matthews et al., subm.).*

| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| SWZ3.098 | SW | Stø | 506 | 16 | -1.76 | 2.52 | 1122 |
| SWZ2.046 | SW | Stø | 518 | 18 | -2.92 | 2.19 | 1169 |
| N2Z8.103 | N2 | Stø | 519 | 10 | 1.08 | 1.83 | 1021 |
| E.Z3.111 | ENI | Stø | 521 | 13 | 4.61 | 2.08 | 907 |
| N2Z8.046 | N2 | Stø | 522 | 8 | -8.88 | 1.47 | 1392 |
| S2Z5.051 | S2 | Stø | 525 | 17 | -8.74 | 1.74 | 1405 |
| S2Z2.050 | S2 | Hekkingen | 532 | 10 | -8.63 | 2.03 | 1405 |
| E.Z3.112 | ENI | Stø | 540 | 15 | -0.85 | 1.53 | 1111 |
| S1Z1.113 | S2 | Knurr | 540 | 13 | -10.50 | 1.74 | 1473 |
| S2Z3.056 | S2 | Hekkingen | 542 | 15 | -4.21 | 2.40 | 1238 |
| NEZ7.080 | NE | Knurr | 542 | 17 | -1.11 | 1.81 | 1125 |
| S2-Z6.095 | S2 | Kobbe | 544 | 16 | -4.98 | 1.62 | 1273 |
| S1Z1.038 | S2 | Knurr | 546 | 10 | -4.82 | 1.88 | 1259 |
| S2Z1.092 | S2 | Knurr | 547 | 13 | -11.04 | 2.73 | 1528 |
| E.Z3.113 | ENI | Stø | 548 | 15 | 4.43 | 1.91 | 920 |
| E.Z2.050 | ENI | Kolmule | 550 | 14 | 2.70 | 2.23 | 999 |
| S2-Z6.029 | S2 | Kobbe | 551 | 15 | -4.30 | 1.76 | 1257 |
| S2-Z6.061 | S2 | Kobbe | 551 | 18 | -4.85 | 1.74 | 1276 |
| NEZ6.110 | NE | Knurr | 551 | 11 | -5.21 | 1.56 | 1283 |
| NEZ9.003 | NE | Knurr | 551 | 18 | -2.92 | 1.92 | 1200 |
| N1Z1.092 | N1 | Kolmule | 555 | 10 | 8.58 | 1.73 | 767 |
| N2Z1.087.088 | N2 | Kolmule | 555 | 10 | -5.35 | 1.92 | 1302 |
| N1Z1.068 | N1 | Kolmule | 556 | 12 | 0.62 | 1.80 | 1070 |
| NEZ9.114 | NE | Knurr | 557 | 19 | -4.52 | 2.19 | 1267 |
| S2Z3.118 | S2 | Hekkingen | 558 | 9 | -10.50 | 2.20 | 1498 |
| N2Z5.050 | N2 | Knurr | 560 | 12 | 8.50 | 2.23 | 776 |
| S2Z5.053 | S2 | Stø | 562 | 9 | 1.74 | 2.12 | 1035 |
| N2Z1.102 | N2 | Kolmule | 562 | 10 | 9.15 | 1.86 | 751 |
| NEZ1.006 | NE | Kolje | 565 | 11 | 9.55 | 2.23 | 740 |
| S2Z1.112 | S2 | Knurr | 566 | 10 | 8.78 | 2.99 | 766 |
| S2Z3.079 | S2 | Hekkingen | 567 | 14 | -7.16 | 1.95 | 1370 |
| N2Z1.043 | N2 | Kolmule | 567 | 10 | -11.43 | 1.63 | 1528 |
| Eni-Z1.010 | ENI | Kolmule | 568 | 15 | -1.14 | 2.56 | 1163 |
| S2Z5.120 | S2 | Stø | 575 | 9 | 0.20 | 2.20 | 1099 |
| S2Z4.095 | S2 | Fuglen | 579 | 16 | -5.11 | 2.85 | 1323 |
| S2-Z6.042 | S2 | Kobbe | 580 | 15 | -3.04 | 1.82 | 1236 |
| S2Z3.033 | S2 | Hekkingen | 580 | 9 | -6.27 | 2.35 | 1355 |
| S2-Z6.116 | S2 | Kobbe | 581 | 16 | -2.62 | 1.38 | 1209 |
| NEZ3.015 | NE | Kolje | 582 | 29 | 11.44 | 7.95 | 685 |
| NEZ9.009 | NE | Knurr | 584 | 19 | 2.35 | 2.06 | 1025 |
| S2Z3.031 | S2 | Hekkingen | 585 | 12 | 3.66 | 1.85 | 979 |
| NEZ10.004 | NE | Knurr | 590 | 19 | -1.31 | 1.98 | 1168 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SWZ3.110 | SW | Stø | 595 | 17 | -5.12 | 3.53 | 1386 |
| S2Z1.030 | S2 | Knurr | 598 | 11 | -6.79 | 2.27 | 1395 |
| SWZ2.076 | SW | Stø | 599 | 17 | 6.02 | 2.73 | 906 |
| S2Z3.115 | S2 | Hekkingen | 604 | 13 | -2.78 | 2.24 | 1241 |
| SWZ3.036 | SW | Stø | 612 | 18 | -0.20 | 1.75 | 1144 |
| E.Z3.114 | ENI | Stø | 612 | 16 | -3.78 | 2.49 | 1288 |
| S2-Z6.162.163 | S2 | Kobbe | 617 | 16 | -5.21 | 1.53 | 1334 |
| S1Z1.037 | S2 | Knurr | 619 | 14 | 2.70 | 2.75 | 1059 |
| E.Z3.115 | ENI | Stø | 621 | 15 | -2.40 | 3.35 | 1263 |
| S2-Z6.059 | S2 | Kobbe | 622 | 31 | -5.83 | 2.35 | 1367 |
| S1Z1.085 | S2 | Knurr | 622 | 19 | -0.58 | 2.62 | 1183 |
| S2Z1.098 | S2 | Knurr | 628 | 12 | -7.02 | 2.32 | 1421 |
| N1Z1.085 | N1 | Kolmule | 628 | 11 | -7.10 | 1.97 | 1427 |
| S2Z3.108 | S2 | Hekkingen | 629 | 14 | -5.51 | 2.73 | 1363 |
| N1Z2.086 | N1 | Knurr | 630 | 15 | -6.13 | 2.42 | 1400 |
| SWZ1.025 | SW | Knurr | 633 | 13 | 0.10 | 1.78 | 1153 |
| E.Z3.116 | ENI | Stø | 634 | 16 | -2.65 | 1.72 | 1256 |
| N1Z1.094 | N1 | Kolmule | 634 | 25 | 6.48 | 1.94 | 912 |
| SWZ1.038 | SW | Knurr | 647 | 16 | 1.18 | 2.12 | 1127 |
| N2Z1.059 | N2 | Kolmule | 648 | 11 | 8.03 | 1.84 | 868 |
| S1Z1.102 | S2 | Knurr | 649 | 81 | -8.47 | 3.63 | 1498 |
| N2Z4.054 | N1 | Knurr | 650 | 11 | 5.94 | 2.57 | 949 |
| E.Z2.105 | ENI | Kolmule | 651 | 16 | -6.78 | 1.62 | 1434 |
| NEZ6.040 | NE | Knurr | 653 | 13 | 4.62 | 1.66 | 998 |
| N2Z1.062 | N2 | Kolmule | 655 | 13 | -3.61 | 2.21 | 1306 |
| S2Z5.027 | S2 | Stø | 657 | 14 | 8.56 | 2.77 | 859 |
| NEZ1.114 | NE | Kolje | 759 | 14 | -14.59 | 1.75 | 1810 |

*Table 5: Datapoints of Timanides detrital grains*

# CONCLUSION

A huge data set was collected from the drilled wells in the Hammerfest basin. The crystallization ages retrieved from the U-Pb analyses by Matthews et al., (*subm.*) yield a variation of peaks for a potential source areas and tectonic events (Appendix 2, Last page). The Hf analysis was specifically selected for the Mesozoic (<370 Ma), Caledonian (450 - 370 Ma), Gothian (1700 Ma – 1450 Ma) and Neoacrhean (2.8 – 2.5 Ga) detrital zircons and specific grains within these intervals in order to provide further insight to the suggested source areas for the Hammerfest basin.

For the youngest detritus with grains of similar ages have Palaeozoic and Mesoproterozoic model ages. The observations indicate that samples from the south and southwest point to crustal reworking/magma mixing, whereas sediments in the north and northeast contain juvenile grains. These observations point to a complex geological area for some of the grains and to an area with thin crust for others.

For the surprisingly relatively rare Caledonian detritus, most $\varepsilon Hf_{(t)}$ values showed non-juvenile model ages, where the juvenile grains had no trend of crystallization age. The data coincided well with the findings of Andersen et al. (2011) for most of the Caledonian aged detrital zircons, indicating that most of the magmatic rock in the Caledonian may be recycled from Mesoproterozoic crust.

Due to the absence of definite sources, the abundance of detrital zircons of Enigmatic Gothian age from the collected formations is somewhat enigamatic. The juvenile grains (and the less juvenile grains) are of the Early Mesoproterozoic to Late Paleoproterozoic and points to crustal formation ages related to the Svecofennian or Transscandinavian Igneous Belt (TIB). If these grains are related to magma mixing, then the source needs to be characterized by Paleoproterozoic basement. However, the time frame 2.2-1.8 Ga is worldwide one of the most abundant crustal formation events – possibly related to the formation of Nuna/Colombia (Condie et al., 2011). This may be less likely at the southern margin of Baltica when, some or most of, the Gothian aged detrital zircons point to a magmatic arc with juvenile trend, indicating a thin crust. It can therefore be argued that there are either two sources containing juvenile Gothian detritus, one located at the southern margin of Baltica providing well rounded detritus (rarely found) and another unknown exotic source with a similar isotopic fingerprint.

A third source, which contained Paleoproterozoic basement which either allow magma mixing or reworking of crustal rocks at Early Mesoproterozoic times, is still unproven in eastern Greenland, northern Batlica and Svalbard.

# Future Work

Further studies on the dataset are needed to confirm the rigidity of the findings. A huge amount of data was collected, analysed and studied. So consequently, time constraints have been a challenge for this process. More time is needed to conduct a more in depth analysis of the results. For future work, more detailed studies to each single grain must be characterized.

Further studies to the Timandes, Sveconorwegian and Svecofennian detrital grains could be conducted as this was not discussed in this study due to time constrains. Additionally, detrital grains which plot outside of the selected tectonic events are not discussed in this thesis which also should be taken in to consideration for future work.

Detrital grains plotting outside of the DM curve are not discussed and the analytical limitations are only briefly discussed.

Available Sm-Nd analysis have also been conducted, but the data is for now, un-touched. In the future, when this data is properly processed, the combination of these three different techniques will provide a better foundation for this provenance study.

O-isotopic analysis can also provide significant information about provenance and is comparable with the Hf isotopic system which could enhance and improve the confidence of the data even more.

# REFERENCES


Amelin, Y., Lee, D.-C., Halliday, A.N., Pidgeon, R.T., 1999. Nature of the Earth's earliest crust from hafnium isotopes in single detrital zircons. Nature, 399(6733): 252-255.

Andersen, T., 2014. The detrital zircon record: Supercontinents, parallel evolution—Or coincidence? Precambrian Research, 244: 279-287.

Andersen, T., Laajoki, K., Saeed, A., 2004. Age, provenance and tectonostratigraphic status of the Mesoproterozoic Blefjell quartzite, Telemark sector, southern Norway. Precambrian Research, 135(3): 217-244.

Andersen, T., Saeed, A., Gabrielsen, R.H., Olaussen, S., 2011. Provenance characteristics of the Brumunddal sandstone in the Oslo Rift derived from U-Pb, Lu-Hf and trace element analyses of detrital zircons by laser ablation ICMPS. Norwegian Journal of Geology, 91: 1-19.

Anfinson, O.A., Leier, A.L., Embry, A.F., Dewing, K., 2012. Detrital zircon geochronology and provenance of the Neoproterozoic to Late Devonian Franklinian basin, Canadian Arctic Islands. Geological Society of America Bulletin, 124(3-4): 415-430.

Armstrong, R.L., 1968. A model for the evolution of strontium and lead isotopes in a dynamic earth. Reviews of Geophysics, 6(2): 175-199.

Arndt, N.T., Goldstein, S.L., 1987. Use and abuse of crust-formation ages. Geology, 15(10): 893-895.

Augland, L.E., Andresen, A., Corfu, F., Agyei-Dwarko, N.Y., Larionov, A.N., 2014. The Bratten–Landegode gneiss complex: a fragment of Laurentian continental crust in the Uppermost Allochthon of the Scandinavian Caledonides. Geological Society, London, Special Publications, 390(1): 633-654.

Bahlburg, H. et al., 2009. Timing of crust formation and recycling in accretionary orogens: Insights learned from the western margin of South America. Earth-Science Reviews, 97(1): 215-241.

Bea, F., Fershtater, G., Montero, P., Smirnov, V., Zin'kova, E., 1997. Generation and evolution of subduction-related batholiths from the central Urals: constraints on the PT history of the Uralian orogen. Tectonophysics, 276(1): 103-116.

Beranek, L.P., van Staal, C.R., McClelland, W.C., Israel, S., Mihalynuk, M.G., 2013. Baltican crustal provenance for Cambrian–Ordovician sandstones of the Alexander terrane, North American Cordillera: evidence from detrital zircon U–Pb geochronology and Hf isotope geochemistry. Journal of the Geological Society, 170(1): 7-18.

Bingen, B., Belousova, E., Griffin, W., 2011. Neoproterozoic recycling of the Sveconorwegian orogenic belt: detrital-zircon data from the Sparagmite basins in the Scandinavian Caledonides. Precambrian Research, 189(3): 347-367.

Bodet, F., Schärer, U., 2000. Evolution of the SE-Asian continent from U-Pb and Hf isotopes in single grains of zircon and baddeleyite from large rivers. Geochimica et Cosmochimica Acta, 64(12): 2067-2091.

Bogdanova, S. et al., 2008. The East European Craton (Baltica) before and during the assembly of Rodinia. Precambrian Research, 160(1): 23-45.

Bouvier, A., Vervoort, J.D., Patchett, P.J., 2008. The Lu–Hf and Sm–Nd isotopic composition of CHUR: constraints from unequilibrated chondrites and implications for the bulk composition of terrestrial planets. Earth and Planetary Science Letters, 273(1): 48-57.

Bowring, S.A., Williams, I.S., 1999. Priscoan (4.00–4.03 Ga) orthogneisses from northwestern Canada. Contributions to Mineralogy and Petrology, 134(1): 3-16.

Bue, E.P., Andresen, A., 2014. Constraining depositional models in the Barents Sea region using detrital zircon U–Pb data from Mesozoic sediments in Svalbard. Geological Society, London, Special Publications, 386(1): 261-279.

Campbell, I.H., Allen, C.M., 2008. Formation of supercontinents linked to increases in atmospheric oxygen. Nature Geoscience, 1(8): 554-558.

Condie, K.C., 1998. Episodic continental growth and supercontinents: a mantle avalanche connection? Earth and Planetary Science Letters, 163(1): 97-108.

Condie, K.C., Bickford, M., Aster, R.C., Belousova, E., Scholl, D.W., 2011. Episodic zircon ages, Hf isotopic composition, and the preservation rate of continental crust. Geological Society of America Bulletin, 123(5-6): 951-957.

Corfu, F. et al., 2013. U–Pb geochronology of Cretaceous magmatism on Svalbard and Franz Josef Land, Barents Sea large igneous province. Geological Magazine, 150(06): 1127-1135.

Dalland, A., Worsley, D., Ofstad, K., 1988. A Lithostratigraphic Scheme for the Mesozoic and Cenozoic and Succession Offshore Mid-and Northern Norway. Oljedirektoratet.

Davis, D.W., Krogh, T.E., Williams, I.S., 2003. Historical development of zircon geochronology. Reviews in mineralogy and geochemistry, 53(1): 145-181.

Dickin, A.P., 2005. Radiogenic isotope geology. Cambridge University Press.

Dickinson, W.R., 1985. Interpreting provenance relations from detrital modes of sandstones, Provenance of arenites. Springer, pp. 333-361.

Dypvik, H., Håkansson, E., Heinberg, C., 2002. Jurassic and Cretaceous palaeogeography and stratigraphic comparisons in the North Greenland-Svalbard region. Polar Research, 21(1): 91-108.

Døssing, A. et al., 2013. On the origin of the Amerasia Basin and the High Arctic Large Igneous Province—results of new aeromagnetic data. Earth and Planetary Science Letters, 363: 219-230.

Egerton, R.F., 2006. Physical principles of electron microscopy: an introduction to TEM, SEM, and AEM. Springer Science & Business Media.

Faleide, J., Vågnes, E., Gudlaugsson, S., 1993. Late Mesozoic–Cenozoic evolution of the southwestern Barents Sea, Geological Society, London, Petroleum Geology Conference series. Geological Society of London, pp. 933-950.

Faleide, J.I., Gudlaugsson, S.T., Jacquart, G., 1984. Evolution of the western Barents Sea. Marine and Petroleum Geology, 1(2): 123IN1129IN5137-128IN4136IN8150.

Faleide, J.I. et al., 2008. Structure and evolution of the continental margin off Norway and the Barents Sea. Episodes, 31(1): 82-91.

Fedo, C.M., Sircombe, K.N., Rainbird, R.H., 2003. Detrital zircon analysis of the sedimentary record. Reviews in Mineralogy and Geochemistry, 53(1): 277-303.

Fisher, C.M., Vervoort, J.D., Hanchar, J.M., 2014. Guidelines for reporting zircon Hf isotopic data by LA-MC-ICPMS and potential pitfalls in the interpretation of these data. Chemical geology, 363: 125-133.

Gabrielsen, R., 1984. Long-lived fault zones and their influence on the tectonic development of the southwestern Barents Sea. Journal of the Geological Society, 141(4): 651-662.

Gabrielsen, R.H., Faerseth, R.B., Jensen, L.N., 1990. Structural Elements of the Norwegian Continental Shelf. Pt. 1. The Barents Sea Region. Norwegian Petroleum Directorate.

Gao, S. et al., 2004. Recycling lower continental crust in the North China craton. Nature, 432(7019): 892-897.

Gasser, D., 2014. The Caledonides of Greenland, Svalbard and other Arctic areas: status of research and open questions. Geological Society, London, Special Publications, 390(1): 93-129.

Gee, D., Bogolepova, O., Lorenz, H., 2006. The Timanide, Caledonide and Uralide orogens in the Eurasian high Arctic, and relationships to the palaeo-continents Laurentia, Baltica and Siberia. Geological Society, London, Memoirs, 32(1): 507-520.

Gee, D.G., Fossen, H., Henriksen, N., Higgins, A.K., 2008. From the early Paleozoic platforms of Baltica and Laurentia to the Caledonide Orogen of Scandinavia and Greenland. Episodes, 31(1): 44-51.

Gee, D.G., Pease, V., 2004. The Neoproterozoic Timanide Orogen of Eastern Baltica. Geological Society of London.

Gehrels, G., Pecha, M., 2014. Detrital zircon U-Pb geochronology and Hf isotope geochemistry of Paleozoic and Triassic passive margin strata of western North America. Geosphere, 10(1): 49-65.

Glørstad-Clark, E., Faleide, J.I., Lundschien, B.A., Nystuen, J.P., 2010. Triassic seismic sequence stratigraphy and paleogeography of the western Barents Sea area. Marine and Petroleum Geology, 27(7): 1448-1475.

Gradstein, F., Ogg, J., 2004. Geologic time scale 2004–why, how, and where next! Lethaia, 37(2): 175-181.

Griffin, W., Belousova, E., Shee, S., Pearson, N., O'reilly, S., 2004. Archean crustal evolution in the northern Yilgarn Craton: U–Pb and Hf-isotope evidence from detrital zircons. Precambrian Research, 131(3): 231-282.

Griffin, W. et al., 2000. The Hf isotope composition of cratonic mantle: LAM-MC-ICPMS analysis of zircon megacrysts in kimberlites. Geochimica et Cosmochimica Acta, 64(1): 133-147.

Harley, S.L., Kelly, N.M., 2007. Zircon tiny but timely. Elements, 3(1): 13-18.

Hawkesworth, C. et al., 2010. The generation and evolution of the continental crust. Journal of the Geological Society, 167(2): 229-248.

Hawkesworth, C., Kemp, A., 2006. Using hafnium and oxygen isotopes in zircons to unravel the record of crustal evolution. Chemical Geology, 226(3): 144-162.

Håkansson, E., Pedersen, S.A.S., 2001. The Wandel Hav strike-slip mobile belt—a Mesozoic plate boundary in North Greenland. Bulletin of the Geological Society of Denmark, 48: 149-158.

Ireland, T.R., Williams, I.S., 2003. Considerations in zircon geochronology by SIMS. Reviews in Mineralogy and Geochemistry, 53(1): 215-241.

Jakobsson, M. et al., 2012. The international bathymetric chart of the Arctic Ocean (IBCAO) version 3.0. Geophysical Research Letters, 39(12).

Kayukova, A., Suslova, A., 2015. A seismostratigraphic analysis of the lower cretaceous deposits of the Barents sea to reveal petroleum perspectives. Moscow University Geology Bulletin, 70(2): 177-182.

Kemp, A., Hawkesworth, C., Paterson, B., Kinny, P., 2006. Episodic growth of the Gondwana supercontinent from hafnium and oxygen isotopes in zircon. Nature, 439(7076): 580-583.

Kinny, P.D., Maas, R., 2003. Lu–Hf and Sm–Nd isotope systems in zircon. Reviews in Mineralogy and Geochemistry, 53(1): 327-341.

Knudsen, T.-L., Griffin, W., Hartz, E., Andresen, A., Jackson, S., 2001. In-situ hafnium and lead isotope analyses of detrital zircons from the Devonian sedimentary basin of NE Greenland: a record of repeated crustal reworking. Contributions to Mineralogy and Petrology, 141(1): 83-94.

Konarski, P. et al., 2004. spectrometry and new technical solutions Plenary Lectures L1. DNA, 1: 1.

Košler, J., Sylvester, P.J., 2003. Present trends and the future of zircon in geochronology: laser ablation ICPMS. Reviews in mineralogy and geochemistry, 53(1): 243-275.

Kuzmichev, A.B., Pease, V.L., 2007. Siberian trap magmatism on the New Siberian Islands: constraints for Arctic Mesozoic plate tectonic reconstructions. Journal of the Geological Society, 164(5): 959-968.

Kuznetsov, N., Natapov, L., Belousova, E., OReilly, S.Y., Griffin, W.L., 2010. Geochronological, geochemical and isotopic study of detrital zircon suites from late Neoproterozoic clastic strata along the NE margin of the East European Craton: implications for plate tectonic models. Gondwana Research, 17(2): 583-601.

Lawver, L., Müller, R., Srivastava, S., Roest, W., 1990. The opening of the Arctic Ocean, Geological history of the polar oceans: Arctic versus Antarctic. Springer, pp. 29-62.

Lorenz, H. et al., 2013. Detrital zircon geochronology of Palaeozoic Novaya Zemlya–a key to understanding the basement of the Barents Shelf. Terra Nova, 25(6): 496-503.

Marín, D., Escalona, A., Śliwińska, K.K., Nøhr-Hansen, H., Mordasova, A., 2016. Sequence stratigraphy and lateral variability of Lower Cretaceous clinoforms in the southwestern Barents Sea. AAPG Bulletin(20,161,221).

McLennan, S., Taylor, S., McCulloch, M., Maynard, J., 1990. Geochemical and Nd☐ Sr isotopic composition of deep-sea turbidites: Crustal evolution and plate tectonic associations. Geochimica et Cosmochimica Acta, 54(7): 2015-2050.

Miller, E.L. et al., 2011. Baltica in the Cordillera? Geology, 39(8): 791-794.

Miller, E.L. et al., 2013. Triassic river systems and the paleo-Pacific margin of northwestern Pangea. Gondwana Research, 23(4): 1631-1645.

Miller, E.L. et al., 2006. New insights into Arctic paleogeography and tectonics from U-Pb detrital zircon geochronology. Tectonics, 25(3).

Mørk, A. et al., 1999. Mesozoic lithostratigraphy. Lithostratigraphic lexicon of Svalbard. Upper Palaeozoic to Quaternary bedrock. Review and recommendations for nomenclature use: 127-214.

Naidoo, T., Zimmermann, U., Chemale, F., 2013. The evolution of Gondwana: U–Pb, Sm–Nd, Pb–Pb and geochemical data from Neoproterozoic to Early Palaeozoic successions of the Kango Inlier (Saldania Belt, South Africa). Sedimentary Geology, 294: 164-178.

Nøttvedt, A. et al., 1993. Svalbard-Barents Sea correlation: a short review. Arctic Geology and Petroleum Potential, Norwegian Petroleum Society (NPF), Special Publication, 2: 363-375.

Omma, J.E., 2009. Provenance of Late Paleozoic and Mesozoic sediment to key Arctic basins: implications for the opening of the Arctic Ocean, University of Cambridge.

Pease, V., Scott, R., 2009. Crustal affinities in the Arctic Uralides, northern Russia: significance of detrital zircon ages from Neoproterozoic and Palaeozoic sediments in Novaya Zemlya and Taimyr. Journal of the Geological Society, 166(3): 517-527.

Puetz, S.J. et al., 2017. Quantifying the evolution of the continental and oceanic crust. Earth-Science Reviews, 164: 63-83.

Ramberg, I.B., 2008. The making of a land: geology of Norway. Geological Society of London.

Reichow, M.K. et al., 2009. The timing and extent of the eruption of the Siberian Traps large igneous province: implications for the end-Permian environmental crisis. Earth and Planetary Science Letters, 277(1): 9-20.

Renne, P.R., Zichao, Z., Richards, M.A., Black, M.T., Basu, A.R., 1995. Synchrony and causal relations between Permian-Triassic boundary crises and Siberian flood volcanism. Science, 269(5229): 1413.

Riis, F., Vollset, J., Sand, M., 1986. Tectonic development of the western margin of the Barents Sea and adjacent areas.

Ritzmann, O., Faleide, J.I., 2007. Caledonian basement of the western Barents Sea. Tectonics, 26(5).

Rollinson, H., 1993. A terrane interpretation of the Archaean Limpopo Belt. Geological Magazine, 130(06): 755-765.

Scherer, E., Münker, C., Mezger, K., 2001. Calibration of the lutetium-hafnium clock. Science, 293(5530): 683-687.

Seldal, J., 2005. Lower Cretaceous: the next target for oil exploration in the Barents Sea?, Geological Society, London, Petroleum Geology Conference series. Geological Society of London, pp. 231-240.

Shaulis, B., Lapen, T.J., Toms, A., 2010. Signal linearity of an extended range pulse counting detector: Applications to accurate and precise U-Pb dating of zircon by laser ablation quadrupole ICP-MS. Geochemistry, Geophysics, Geosystems, 11(11).

Slama, J. et al., 2007. Plesovice zircon-A new natural standard for U-Pb and Hf isotopic microanalysis, Geochimica et Cosmochimica Acta. PERGAMON-ELSEVIER SCIENCE LTD THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND, pp. A947-A947.

Smelror, M., Mørk, A., Monteil, E., Rutledge, D., Leereveld, H., 1998. The Klippfisk Formation—a new lithostratigraphic unit of Lower Cretaceous platform carbonates on the Western Barents Shelf. Polar Research, 17(2): 181-202.

Smelror, M., Petrov, O., Larssen, G., Werner, S., 2009. Geological History of the Barents Sea: Geological Survey of Norway. Trondheim, Norway Google Scholar.

Soloviev, A. et al., 2015. Evolution of the provenances of Triassic rocks in Franz Josef Land: U/Pb LA-ICP-MS dating of the detrital zircon from Well Severnaya. Lithology and Mineral Resources, 50(2): 102-116.

Torsvik, T.H., Carlos, D., Mosar, J., Cocks, L.R.M., Malme, T.N., 2002. Global reconstructions and North Atlantic paleogeography 440 Ma to recent. BATLAS—Mid Norway plate reconstruction atlas with global and Atlantic perspectives: 18-39.

Tucker, R., Dallmeyer, R., Strachan, R., 1993. Age and tectonothermal record of Laurentian basement, Caledonides of NE Greenland. Journal of the Geological Society, 150(2): 371-379.

Vervoort, J.D., Kemp, A.I., 2016. Clarifying the zircon Hf isotope record of crust–mantle evolution. Chemical Geology, 425: 65-75.

Vervoort, J.D., Patchett, P.J., Blichert-Toft, J., Albarède, F., 1999. Relationships between Lu–Hf and Sm–Nd isotopic systems in the global sedimentary system. Earth and Planetary Science Letters, 168(1): 79-99.

Walderhaug, H., Eide, E., Scott, R., Inger, S., Golionko, E., 2005. Palaeomagnetism and 40Ar/39Ar geochronology from the South Taimyr igneous complex, Arctic Russia: a Middle-Late Triassic magmatic pulse after Siberian flood-basalt volcanism. Geophysical Journal International, 163(2): 501-517.

Watson, E.B., Harrison, T.M., 1983. Zircon saturation revisited: temperature and composition effects in a variety of crustal magma types. Earth and Planetary Science Letters, 64(2): 295-304.

Wilde, S.A., Valley, J.W., Peck, W.H., Graham, C.M., 2001. Evidence from detrital zircons for the existence of continental crust and oceans on the Earth 4.4 Gyr ago. Nature, 409(6817): 175-178.

Woodhead, J.D., Hergt, J.M., 2005. A preliminary appraisal of seven natural zircon reference materials for in situ Hf isotope determination. Geostandards and Geoanalytical Research, 29(2): 183-195.

Worsley, D., 2008. The post-Caledonian development of Svalbard and the western Barents Sea. Polar Research, 27(3): 298-317.

Worsley, D., Johansen, R., Kristensen, S., 1988. The Mesozoic and Cenozoic succession of Tromsøflaket. A lithostratigraphic scheme for the Mesozoic and Cenozoic succession offshore mid-and northern Norway. Norwegian Petroleum Directorate Bulletin, 4: 42-65.

Zimmermann, U., Andersen, T., Madland, M.V., Larsen, I.S., 2015. The role of U-Pb ages of detrital zircons in sedimentology—An alarming case study for the impact of sampling for provenance interpretation. Sedimentary Geology, 320: 38-50.

Matthews, N.E., Zimmermann, U., Lapen, T., Støle, L., Rudd, C. *subm.* Zircon geochronology of Lower Cretaceous sediments in the Hammerfest Basin (Barents Sea, northern Norway): insights into sediment provenance. To be submitted to *GSA Bulletin*.

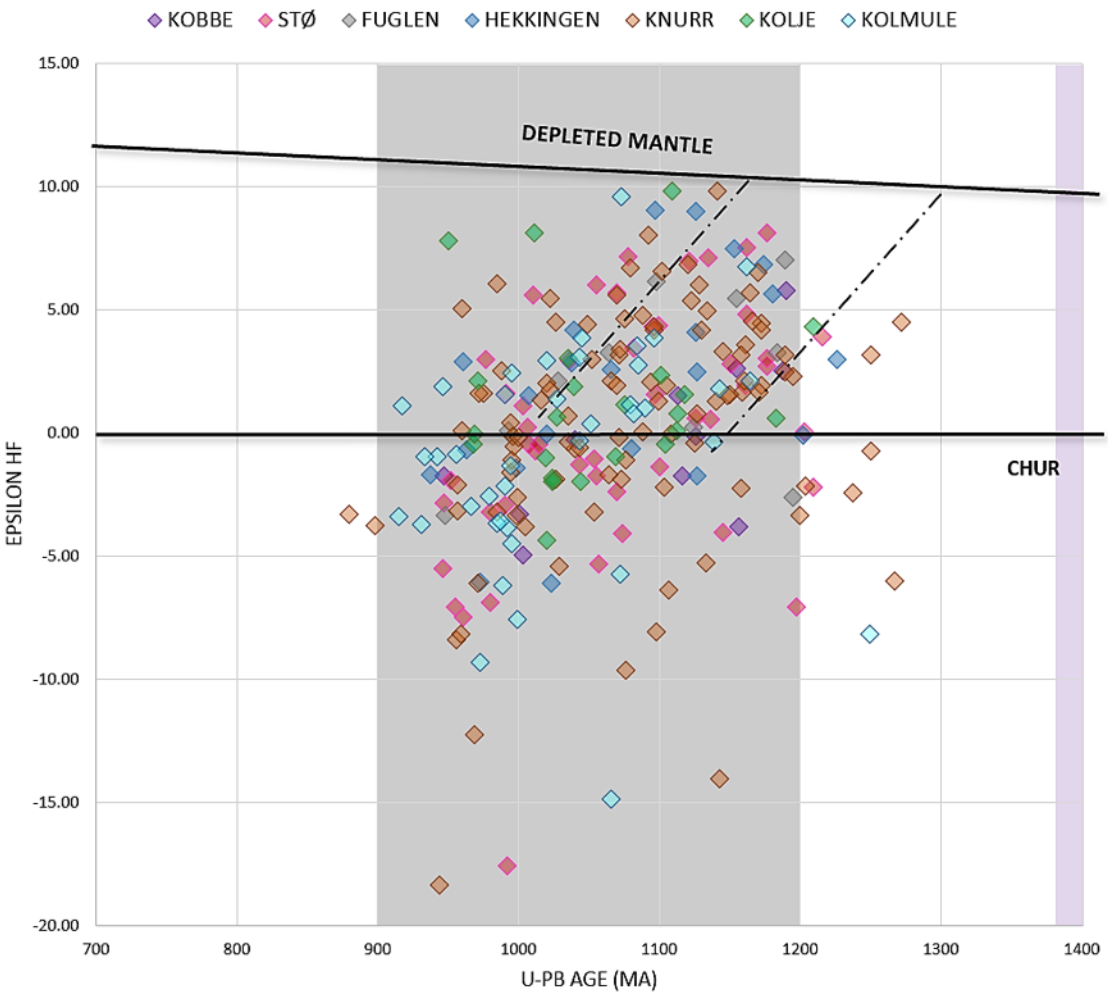
# Appendix 1

## PRELIMENARY OBSERVATIONS

**SVECO-NORWEGIAN &**

A lot of Mesoproterozoic to Late Paleoproterozoic THMHf comparable to Caledonian and Timanides detritus.

Well mixed. Mostly juvenile and a lot of negative as well. Crustal contaminated and juvenile indicating a complex origin. Magma mixing abundant.



| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| NEZ9.075 | NE | Knurr | 880 | 27 | -3.30 | 2.89 | 1494 |
| S1Z1.058 | S1 | Knurr | 898 | 14 | -3.78 | 1.83 | 1523 |
| N2Z1.004 | N2 | Kolmule | 915 | 14 | -3.42 | 1.82 | 1523 |
| N2Z1.068 | N2 | Kolmule | 917 | 18 | 1.08 | 3.07 | 1377 |
| N2Z2.053 | N2 | Kolmule | 931 | 0 | -3.72 | 1 | 1541 |
| N2Z2.011 | N2 | Kolmule | 933 | 14 | -0.97 | 2 | 1453 |
| S2Z3.034 | S2 | Hekkingen | 937 | 52 | -1.72 | 2.94 | 1476 |
| N1Z1.105 | N1 | Kolmule | 942 | 75 | -0.95 | 3.07 | 1450 |
| N2Z6.039 | N2 | Knurr | 944 | 17 | -18.37 | 2.47 | 2094 |
| SWZ3.038 | SW | Stø | 946 | 27 | -5.53 | 1.98 | 1625 |
| N2Z1.014 | N2 | Kolmule | 946 | 16 | 1.86 | 3.14 | 1351 |
| S2-Z6.100 | S2 | Kobbe | 947 | 99 | -1.73 | 3.23 | 1484 |
| SWZ3.012 | SW | Stø | 947 | 30 | -2.86 | 2.10 | 1533 |
| S2Z4.002 | S2 | Fuglen | 948 | 22 | -3.35 | 2.94 | 1564 |
| NEZ1.118 | NE | Kolje | 950 | 21 | 7.79 | 2.61 | 1142 |
| N2Z8.078 | N2 | Stø | 952 | 16 | -1.93 | 2.56 | 1499 |
| S2Z5.028 | S2 | Stø | 955 | 29 | -7.09 | 3.74 | 1727 |
| N2Z6.044 | N2 | Knurr | 956 | 15 | -8.40 | 2.56 | 1739 |
| E.Z2.089 | ENI | Kolmule | 956 | 22 | -0.88 | 4.38 | 1508 |
| NEZ7.018 | NE | Knurr | 957 | 25 | -3.19 | 2.30 | 1545 |
| NEZ8.002 | NE | Knurr | 957 | 28 | -2.12 | 1.95 | 1505 |
| NEZ8.003 | NE | Knurr | 959 | 28 | -8.17 | 1.96 | 1736 |
| NEZ9.093 | NE | Knurr | 960 | 32 | 5.02 | 3.17 | 1243 |
| NEZ9.094 | NE | Knurr | 960 | 56 | 0.10 | 3.08 | 1431 |
| SWZ3.065 | SW | Stø | 961 | 25 | -7.49 | 3.64 | 1748 |
| S2Z2.089 | S2 | Hekkingen | 961 | 18 | 2.90 | 2.27 | 1319 |
| S2Z2.110 | S2 | Hekkingen | 963 | 17 | -0.69 | 1.99 | 1454 |
| NEZ8.115 | NE | Knurr | 966 | 30 | -22.96 | 2.90 | 2320 |
| N2Z1.002 | N2 | Kolmule | 966 | 18 | -2.99 | 2.42 | 1547 |
| NEZ1.108 | NE | Kolje | 968 | 28 | -0.46 | 2.33 | 1453 |
| SWZ1.097 | SW | Knurr | 969 | 26 | -12.27 | 2.28 | 1895 |
| NEZ2.080 | NE | Kolje | 969 | 17 | -0.04 | 1.90 | 1436 |
| S2Z1.141 | S2 | Knurr | 971 | 19 | -6.12 | 2.19 | 1665 |
| NEZ1.052 | NE | Kolje | 971 | 18 | 2.10 | 2.22 | 1357 |
| SWZ1.098 | SW | Knurr | 972 | 25 | 1.60 | 2.76 | 1378 |
| S2Z2.067 | S2 | Hekkingen | 973 | 17 | -6.07 | 3.07 | 1673 |
| N2Z1.074 | N2 | Kolmule | 973 | 15 | -9.32 | 3.19 | 1806 |
| S2Z1.046 | S2 | Knurr | 975 | 23 | 1.59 | 2.68 | 1379 |
| E.Z3.118 | ENI | Stø | 977 | 24 | 2.96 | 1.90 | 1331 |
| E.Z2.084 | ENI | Kolmule | 979 | 26 | -2.56 | 4.30 | 1572 |
| SWZ2.049 | SW | Stø | 980 | 26 | -3.22 | 2.47 | 1565 |
| E.Z3.119 | ENI | Stø | 980 | 25 | -6.87 | 2.14 | 1698 |
| NEZ4.015 | NE | Knurr | 985 | 23 | 6.05 | 2.19 | 1225 |

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|---|---|---|---|---|---|---|---|
| NEZ7.110 | NE | Knurr | 985 | 28 | -3.22 | 2.45 | 1568 |
| Eni-Z1.019 | ENI | Kolmule | 985 | 24 | -3.68 | 2.85 | 1596 |
| E.Z2.102 | ENI | Kolmule | 987 | 25 | -3.57 | 2.13 | 1591 |
| NEZ9.109 | NE | Knurr | 988 | 32 | 2.49 | 2.58 | 1362 |
| E.Z2.074 | ENI | Kolmule | 989 | 23 | -6.22 | 2.92 | 1711 |
| N2Z8.074 | N2 | Stø | 990 | 17 | -2.93 | 1.93 | 1569 |
| Eni-Z1.037 | ENI | Kolmule | 990 | 25 | -2.17 | 2.71 | 1551 |
| Eni-Z1.082 | ENI | Kolmule | 990 | 41 | 1.55 | 2.41 | 1395 |
| N2Z8.056 | N2 | Stø | 991 | 16 | 1.59 | 1.63 | 1392 |
| S2Z5.024 | S2 | Stø | 992 | 22 | -17.56 | 3.17 | 2156 |
| N1Z1.047 | N1 | Kolmule | 992 | 31 | -3.88 | 3.77 | 1609 |
| S2Z4.116 | S2 | Fuglen | 993 | 30 | 0.06 | 5.82 | 1481 |
| NEZ5.036 | NE | Knurr | 994 | 48 | -1.61 | 2.51 | 1517 |
| NEZ5.093 | NE | Knurr | 994 | 18 | 0.39 | 1.69 | 1441 |
| N2Z2.035 | N2 | Kolmule | 994 | 18 | -1.34 | 2 | 1511 |
| NEZ5.011 | NE | Knurr | 995 | 16 | -1.09 | 1.97 | 1495 |
| N2Z2.059 | N2 | Kolmule | 995 | 21 | 2.42 | 2 | 1364 |
| Eni-Z1.115 | ENI | Kolmule | 995 | 41 | -4.50 | 2.77 | 1627 |
| NEZ6.124 | NE | Knurr | 996 | 17 | -0.14 | 1.86 | 1464 |
| NEZ7.079 | NE | Knurr | 997 | 28 | -0.56 | 1.96 | 1479 |
| S2Z2.003 | S2 | Hekkingen | 998 | 18 | -1.43 | 1.58 | 1508 |
| SWZ1.100 | SW | Knurr | 998 | 26 | -3.36 | 1.92 | 1582 |
| NEZ7.003 | NE | Knurr | 999 | 24 | -2.62 | 1.94 | 1561 |
| N1Z1.106 | N1 | Kolmule | 999 | 18 | -7.56 | 1.85 | 1750 |
| NEZ8.058 | NE | Knurr | 1000 | 31 | -0.21 | 2.75 | 1468 |
| S2-Z6.092 | S2 | Kobbe | 1001 | 26 | -3.31 | 1.79 | 1584 |
| S2-Z6.106 | S2 | Kobbe | 1003 | 27 | -4.96 | 1.95 | 1647 |
| S2Z5.069 | S2 | Stø | 1003 | 34 | 1.07 | 2.72 | 1425 |
| NEZ8.062 | NE | Knurr | 1005 | 62 | -3.81 | 3.40 | 1607 |
| E.Z3.120 | ENI | Stø | 1006 | 37 | 0.23 | 2.65 | 1459 |
| E.Z3.121 | ENI | Stø | 1007 | 36 | -0.49 | 2.72 | 1486 |
| S2Z2.007 | S2 | Hekkingen | 1007 | 30 | 1.48 | 2.58 | 1410 |
| S2Z5.116 | S2 | Stø | 1010 | 70 | 5.60 | 3.49 | 1260 |
| NEZ3.007 | NE | Kolje | 1011 | 72 | 8.12 | 4.97 | 1167 |
| E.Z3.122 | ENI | Stø | 1012 | 45 | -0.74 | 2.31 | 1498 |
| E.Z3.123 | ENI | Stø | 1014 | 32 | -0.48 | 2.25 | 1492 |
| N1Z2.103 | N1 | Knurr | 1016 | 86 | 1.31 | 3.55 | 1426 |
| NEZ2.003 | NE | Kolje | 1019 | 29 | -1.01 | 2.08 | 1514 |
| S2Z3.001 | S2 | Hekkingen | 1020 | 34 | -0.07 | 2.63 | 1482 |
| N1Z2.051 | N1 | Knurr | 1020 | 41 | 2.02 | 4.48 | 1403 |
| NEZ2.081 | NE | Kolje | 1020 | 28 | -4.35 | 1.89 | 1639 |
| E.Z2.116 | ENI | Kolmule | 1020 | 57 | 2.91 | 2.87 | 1368 |
| NEZ5.069 | NE | Knurr | 1022 | 40 | 5.45 | 2.55 | 1274 |
| NEZ6.078 | NE | Knurr | 1022 | 48 | 1.75 | 2.56 | 1420 |
| S2Z3.032 | S2 | Hekkingen | 1023 | 37 | -6.11 | 2.67 | 1711 |

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|---|---|---|---|---|---|---|---|
| NEZ1.046 | NE | Kolje | 1024 | 39 | -1.86 | 2.46 | 1551 |
| NEZ3.013 | NE | Kolje | 1024 | 47 | -2.00 | 2.98 | 1564 |
| NEZ5.002 | NE | Knurr | 1025 | 29 | -1.95 | 2.36 | 1548 |
| N1Z2.066 | N1 | Knurr | 1026 | 45 | -1.91 | 2.55 | 1553 |
| NEZ5.104 | NE | Knurr | 1026 | 50 | 4.48 | 2.43 | 1313 |
| NEZ1.019 | NE | Kolje | 1027 | 27 | 0.63 | 2.52 | 1471 |
| Eni-Z1.086 | ENI | Kolmule | 1027 | 73 | 1.35 | 2.91 | 1433 |
| S2Z4.112 | S2 | Fuglen | 1028 | 41 | 2.09 | 3.18 | 1405 |
| NEZ6.142 | NE | Knurr | 1029 | 32 | -5.42 | 2.69 | 1715 |
| NEZ9.072 | NE | Knurr | 1035 | 93 | 0.70 | 3.77 | 1465 |
| NEZ9.117 | NE | Knurr | 1035 | 59 | -0.38 | 2.77 | 1509 |
| NEZ2.082 | NE | Kolje | 1035 | 33 | 3.03 | 2.52 | 1378 |
| SWZ2.089 | SW | Stø | 1036 | 51 | 2.94 | 2.70 | 1380 |
| S2Z3.061 | S2 | Hekkingen | 1038 | 30 | 2.85 | 1.99 | 1387 |
| S2Z3.005 | S2 | Hekkingen | 1039 | 37 | 4.17 | 2.64 | 1337 |
| NEZ1.007 | NE | Kolje | 1039 | 37 | 1.88 | 2.87 | 1427 |
| S2-Z6.139 | S2 | Kobbe | 1040 | 21 | -0.29 | 1.82 | 1505 |
| NEZ6.004 | NE | Knurr | 1040 | 100 | -0.63 | 3.70 | 1517 |
| SWZ3.092 | SW | Stø | 1043 | 41 | -1.29 | 2.78 | 1549 |
| NEZ10.001 | NE | Knurr | 1043 | 65 | -0.61 | 2.98 | 1518 |
| N2Z1.114 | N2 | Kolmule | 1043 | 25 | 3.04 | 2.25 | 1383 |
| N2Z1.113 | N2 | Kolmule | 1043 | 43 | -0.34 | 3.02 | 1516 |
| NEZ1.069 | NE | Kolje | 1044 | 27 | -2.00 | 2.01 | 1578 |
| E.Z2.072 | ENI | Kolmule | 1045 | 53 | 3.85 | 3.94 | 1362 |
| NEZ8.100 | NE | Knurr | 1049 | 70 | 4.38 | 3.34 | 1338 |
| N2Z2.034 | N2 | Kolmule | 1051 | 41 | 0.35 | 3 | 1497 |
| NEZ6.015 | NE | Knurr | 1052 | 57 | 2.96 | 2.89 | 1393 |
| E.Z3.124 | ENI | Stø | 1054 | 46 | -1.08 | 2.95 | 1547 |
| NEZ8.053 | NE | Knurr | 1054 | 44 | -3.24 | 2.88 | 1636 |
| SWZ2.077 | SW | Stø | 1055 | 58 | 5.98 | 3.39 | 1287 |
| N2Z8.015 | N2 | Stø | 1055 | 37 | -1.76 | 2.75 | 1588 |
| N2Z8.009 | N2 | Stø | 1057 | 35 | -5.31 | 2.46 | 1707 |
| S2Z4.022 | S2 | Fuglen | 1064 | 26 | 3.26 | 2.31 | 1392 |
| NEZ7.089 | NE | Knurr | 1064 | 46 | -1.71 | 2.74 | 1577 |
| S2Z3.088 | S2 | Hekkingen | 1066 | 39 | 2.58 | 2.95 | 1420 |
| NEZ6.055 | NE | Knurr | 1066 | 63 | 2.11 | 2.79 | 1437 |
| N1Z1.080 | N1 | Kolmule | 1066 | 31 | -14.89 | 2.26 | 2082 |
| NEZ3.021 | NE | Kolje | 1069 | 40 | -0.98 | 2.66 | 1553 |
| SWZ3.053 | SW | Stø | 1070 | 43 | -2.39 | 2.78 | 1607 |
| E.Z3.125 | ENI | Stø | 1070 | 40 | 5.68 | 2.85 | 1313 |
| SWZ1.090 | SW | Knurr | 1070 | 49 | 5.60 | 3.67 | 1314 |
| NEZ6.017 | NE | Knurr | 1070 | 32 | 1.92 | 1.93 | 1453 |
| SWZ1.072 | SW | Knurr | 1071 | 59 | 3.14 | 2.97 | 1401 |
| NEZ9.082 | NE | Knurr | 1071 | 64 | -0.18 | 2.80 | 1531 |
| NEZ9.079 | NE | Knurr | 1072 | 56 | 3.40 | 2.96 | 1399 |

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|---|---|---|---|---|---|---|---|
| Eni-Z1.046 | ENI | Kolmule | 1072 | 53 | -5.76 | 2.74 | 1743 |
| N1Z2.120 | N1 | Knurr | 1073 | 66 | -1.90 | 2.81 | 1588 |
| E.Z2.071 | ENI | Kolmule | 1073 | 52 | 9.59 | 4.04 | 1166 |
| E.Z3.126 | ENI | Stø | 1074 | 61 | -4.07 | 2.74 | 1674 |
| NEZ8.039 | NE | Knurr | 1075 | 61 | 4.61 | 3.39 | 1352 |
| NEZ2.083 | NE | Kolje | 1075 | 87 | 1.14 | 3.36 | 1481 |
| NEZ8.049 | NE | Knurr | 1076 | 55 | -1.12 | 3.16 | 1568 |
| NEZ8.051 | NE | Knurr | 1076 | 55 | -9.63 | 3.58 | 1891 |
| SWZ3.010 | SW | Stø | 1078 | 53 | 7.15 | 2.55 | 1259 |
| N1Z2.027 | N1 | Knurr | 1079 | 27 | 6.66 | 2.09 | 1280 |
| N2Z1.097 | N2 | Kolmule | 1079 | 28 | 1.12 | 2.08 | 1488 |
| S2Z3.098 | S2 | Hekkingen | 1080 | 31 | -0.66 | 2.95 | 1551 |
| N2Z8.004 | N2 | Stø | 1082 | 25 | 3.43 | 1.87 | 1402 |
| E.Z2.113 | ENI | Kolmule | 1082 | 54 | 0.79 | 3.01 | 1502 |
| Eni-Z1.079 | ENI | Kolmule | 1084 | 71 | 3.50 | 2.97 | 1403 |
| N2Z2.029 | N2 | Kolmule | 1085 | 71 | 2.75 | 3 | 1428 |
| S2Z1.037 | S2 | Knurr | 1088 | 29 | 0.03 | 2.89 | 1547 |
| NEZ9.052 | NE | Knurr | 1088 | 62 | 4.77 | 2.84 | 1355 |
| N2Z1.115 | N2 | Kolmule | 1090 | 34 | 0.98 | 2.70 | 1503 |
| SWZ1.026 | SW | Knurr | 1092 | 46 | 8.00 | 2.80 | 1239 |
| S1Z1.021 | S1 | Knurr | 1094 | 24 | 2.06 | 4.42 | 1466 |
| S2Z5.017 | S2 | Stø | 1095 | 41 | 4.28 | 2.75 | 1379 |
| SWZ1.074 | SW | Knurr | 1096 | 48 | 4.15 | 2.62 | 1384 |
| NEZ7.104 | NE | Knurr | 1096 | 56 | 4.30 | 3.01 | 1380 |
| Eni-Z1.028 | ENI | Kolmule | 1096 | 56 | 3.84 | 4.35 | 1411 |
| S2Z5.022 | S2 | Stø | 1097 | 43 | 1.53 | 2.99 | 1484 |
| S2Z2.070 | S2 | Hekkingen | 1097 | 53 | 9.04 | 3.53 | 1203 |
| S2Z4.078 | S2 | Fuglen | 1098 | 28 | 6.14 | 3.03 | 1320 |
| N2Z4.031 | N1 | Knurr | 1098 | 42 | -8.10 | 3.15 | 1864 |
| SWZ2.007 | SW | Stø | 1099 | 49 | 4.34 | 2.85 | 1380 |
| NEZ9.116 | NE | Knurr | 1099 | 58 | 1.28 | 3.28 | 1501 |
| SWZ2.062 | SW | Stø | 1100 | 51 | -1.36 | 2.78 | 1609 |
| NEZ1.117 | NE | Kolje | 1101 | 39 | 2.33 | 2.49 | 1465 |
| NEZ6.054 | NE | Knurr | 1102 | 31 | 6.56 | 2.22 | 1303 |
| NEZ6.082 | | Knurr | 1103 | 35 | -2.20 | 2.11 | 1631 |
| NEZ3.016 | NE | Kolje | 1104 | 37 | -0.45 | 2.48 | 1564 |
| NEZ7.085 | NE | Knurr | 1105 | 49 | 1.92 | 2.71 | 1477 |
| NEZ5.118 | NE | Knurr | 1107 | 29 | -6.39 | 2.36 | 1795 |
| NEZ8.057 | NE | Knurr | 1108 | 45 | -0.04 | 2.99 | 1553 |
| NEZ1.039 | NE | Kolje | *1109* | 34 | 9.81 | 2.44 | *1185* |
| NEZ2.105 | NE | Kolje | 1112 | 31 | 0.07 | 2.07 | 1551 |
| S2-Z6.040 | S2 | Kobbe | 1113 | 23 | 1.49 | 1.74 | 1502 |
| NEZ2.085 | NE | Kolje | 1113 | 34 | 0.75 | 2.13 | 1527 |
| S2-Z6.143 | S2 | Kobbe | 1116 | 58 | -1.77 | 2.87 | 1621 |
| NEZ2.059 | NE | Kolje | 1118 | 23 | 1.54 | 2.36 | 1511 |

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|---|---|---|---|---|---|---|---|
| N1Z2.094 | N1 | Knurr | 1120 | 65 | 6.81 | 3.14 | 1307 |
| N2Z8.017 | N2 | Stø | 1121 | 30 | 6.94 | 2.18 | 1301 |
| SWZ1.061 | SW | Knurr | 1123 | 41 | 5.37 | 3.38 | 1370 |
| S2Z4.059 | S2 | Fuglen | 1124 | 32 | 0.23 | 2.88 | 1556 |
| S1Z1.010 | S1 | Knurr | 1125 | 28 | -0.42 | 6.43 | 1590 |
| S2-Z6.045 | S2 | Kobbe | 1126 | 31 | -0.13 | 2.29 | 1579 |
| N2Z8.048 | N2 | Stø | 1126 | 60 | 0.59 | 3.11 | 1547 |
| S2Z3.077 | S2 | Hekkingen | 1126 | 30 | 4.07 | 2.59 | 1413 |
| S2Z2.083 | S2 | Hekkingen | 1126 | 33 | 8.97 | 3.22 | 1231 |
| S2Z3.060 | S2 | Hekkingen | 1127 | 29 | 2.48 | 2.71 | 1480 |
| S2Z2.025 | S2 | Hekkingen | 1127 | 69 | -1.73 | 3.33 | 1635 |
| NEZ5.127 | NE | Knurr | 1127 | 45 | 0.77 | 2.18 | 1542 |
| N1Z2.099 | N1 | Knurr | 1128 | 68 | 5.99 | 2.93 | 1343 |
| N1Z2.041 | N1 | Knurr | 1130 | 43 | 4.16 | 2.71 | 1416 |
| NEZ5.001 | NE | Knurr | 1133 | 37 | -5.30 | 2.16 | 1770 |
| NEZ4.009 | NE | Knurr | 1134 | 46 | 4.95 | 2.96 | 1388 |
| SWZ3.025 | SW | Stø | 1135 | 53 | 7.08 | 3.27 | 1309 |
| SWZ2.115 | SW | Stø | 1136 | 54 | 0.52 | 3.08 | 1568 |
| Eni-Z1.042 | ENI | Kolmule | 1139 | 59 | -0.37 | 2.64 | 1592 |
| NEZ7.076 | NE | Knurr | 1140 | 49 | 1.29 | 2.85 | 1534 |
| S2Z1.011 | S2 | Knurr | 1141 | 40 | 9.80 | 3.09 | 1214 |
| N2Z5.005 | N2 | Knurr | 1143 | 32 | -14.04 | 2.38 | 2113 |
| N2Z1.116 | N2 | Kolmule | 1143 | 36 | 1.77 | 2.55 | 1520 |
| N2Z8.086 | N2 | Stø | 1145 | 43 | -4.03 | 2.44 | 1731 |
| S2Z1.053 | S2 | Knurr | 1145 | 35 | 3.29 | 2.52 | 1470 |
| NEZ10.012 | NE | Knurr | 1148 | 64 | 1.49 | 2.70 | 1538 |
| SWZ1.018 | SW | Knurr | 1150 | 50 | 1.56 | 4.67 | 1547 |
| S2Z5.103 | S2 | Stø | 1151 | 30 | 2.79 | 2.43 | 1482 |
| S2Z2.085 | S2 | Hekkingen | 1153 | 59 | 7.47 | 3.53 | 1310 |
| S2-Z6.006 | S2 | Kobbe | 1155 | 47 | 2.61 | 2.41 | 1494 |
| S2Z4.015 | S2 | Fuglen | 1155 | 34 | 5.44 | 4.71 | 1399 |
| S2-Z6.164 | S2 | Kobbe | 1156 | 45 | -3.82 | 2.37 | 1732 |
| S2Z1.108 | S2 | Knurr | 1158 | 66 | -2.25 | 3.45 | 1675 |
| NEZ8.037 | NE | Knurr | 1158 | 54 | 3.16 | 3.52 | 1476 |
| S2Z1.041 | S2 | Knurr | 1159 | 27 | 1.62 | 2.24 | 1541 |
| N1Z2.015 | N1 | Knurr | 1160 | 29 | 2.08 | 2.39 | 1519 |
| N2Z8.107 | N2 | Stø | 1161 | 24 | 1.93 | 2.20 | 1523 |
| N1Z2.050 | N1 | Knurr | 1161 | 50 | 3.55 | 2.84 | 1468 |
| S2Z5.035 | S2 | Stø | 1162 | 37 | 4.81 | 2.77 | 1417 |
| SWZ3.102 | SW | Stø | 1162 | 44 | 7.52 | 3.14 | 1316 |
| E.Z2.012 | ENI | Kolmule | 1162 | 68 | 6.73 | 3.37 | 1345 |
| NEZ4.020 | NE | Knurr | 1164 | 30 | 5.70 | 1.97 | 1386 |
| N2Z2.077 | N2 | Kolmule | 1164 | 33 | 2.11 | 2 | 1516 |
| NEZ4.034 | NE | Knurr | 1166 | 33 | 4.52 | 2.49 | 1438 |
| NEZ9.002 | NE | Knurr | 1170 | 61 | 6.51 | 3.25 | 1370 |

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|---|---|---|---|---|---|---|---|
| NEZ9.046 | NE | Knurr | 1171 | 78 | 1.64 | 3.34 | 1539 |
| SWZ1.010 | SW | Knurr | 1172 | 49 | 4.45 | 3.30 | 1439 |
| SWZ1.107 | SW | Knurr | 1172 | 45 | 1.90 | 3.00 | 1535 |
| N2Z5.013 | N2 | Knurr | 1172 | 31 | 4.16 | 2.95 | 1450 |
| S2Z2.107 | S2 | Hekkingen | 1174 | 37 | 6.80 | 2.90 | 1357 |
| SWZ2.119 | SW | Stø | 1176 | 48 | 8.11 | 3.76 | 1315 |
| N2Z8.053 | N2 | Stø | 1176 | 28 | 2.71 | 1.94 | 1510 |
| N2Z8.101 | N2 | Stø | 1176 | 34 | 3.00 | 2.86 | 1500 |
| S2Z3.030 | S2 | Hekkingen | 1180 | 25 | 5.62 | 3.22 | 1414 |
| NEZ2.030 | NE | Kolje | 1183 | 34 | 0.57 | 2.53 | 1595 |
| S2Z4.031 | S2 | Fuglen | 1184 | 46 | 3.26 | 2.78 | 1493 |
| S2-Z6.077 | S2 | Kobbe | 1188 | 44 | 2.53 | 2.29 | 1528 |
| S2Z4.030 | S2 | Fuglen | 1189 | 27 | 7.00 | 2.72 | 1363 |
| NEZ7.070 | NE | Knurr | 1189 | 66 | 2.44 | 3.37 | 1539 |
| NEZ7.106 | NE | Knurr | 1189 | 59 | 3.14 | 3.21 | 1500 |
| S2-Z6.053 | S2 | Kobbe | 1190 | 38 | 5.79 | 2.25 | 1408 |
| S2Z4.010 | S2 | Fuglen | 1195 | 25 | -2.63 | 2.35 | 1723 |
| S1Z1.109 | S1 | Knurr | 1195 | 22 | 2.27 | 2.55 | 1547 |
| SWZ2.068 | SW | Stø | 1197 | 53 | -7.10 | 2.90 | 1888 |
| SWZ1.119 | SW | Knurr | 1200 | 53 | -3.34 | 2.87 | 1757 |
| S2Z2.117 | S2 | Hekkingen | 1202 | 35 | -0.09 | 2.99 | 1637 |
| N2Z8.088 | N2 | Stø | 1203 | 36 | 0.04 | 2.63 | 1629 |
| S1Z1.036 | S1 | Knurr | 1204 | 34 | -2.17 | 2.42 | 1712 |
| SWZ3.074 | SW | Stø | 1209 | 43 | -2.22 | 2.78 | 1731 |
| NEZ1.066 | NE | Kolje | 1209 | 35 | 4.30 | 3.00 | 1490 |
| N2Z8.075 | N2 | Stø | 1216 | 34 | 3.89 | 2.67 | 1499 |
| S2Z2.087 | S2 | Hekkingen | 1226 | 31 | 2.99 | 3.83 | 1552 |
| NEZ9.071 | NE | Knurr | 1237 | 59 | -2.45 | 3.01 | 1756 |
| N1Z1.006 | N1 | Kolmule | 1249 | 32 | -8.18 | 2.25 | 1972 |
| NEZ4.002 | NE | Knurr | 1250 | 60 | -0.76 | 2.79 | 1701 |
| NEZ7.054 | NE | Knurr | 1250 | 70 | 3.16 | 3.26 | 1555 |
| NEZ7.063 | NE | Knurr | 1267 | 47 | -6.01 | 2.27 | 1909 |
| NEZ8.054 | NE | Knurr | 1272 | 70 | 4.47 | 3.76 | 1524 |

## SVECO-FENNIAN / SCANDINAVIAN

Similar to Sveco-Norwegian, both are quite similar, well mixed with juvenile material and significant either reworked and/or magma mixing. All wek known for these orogenic events Well mixed.

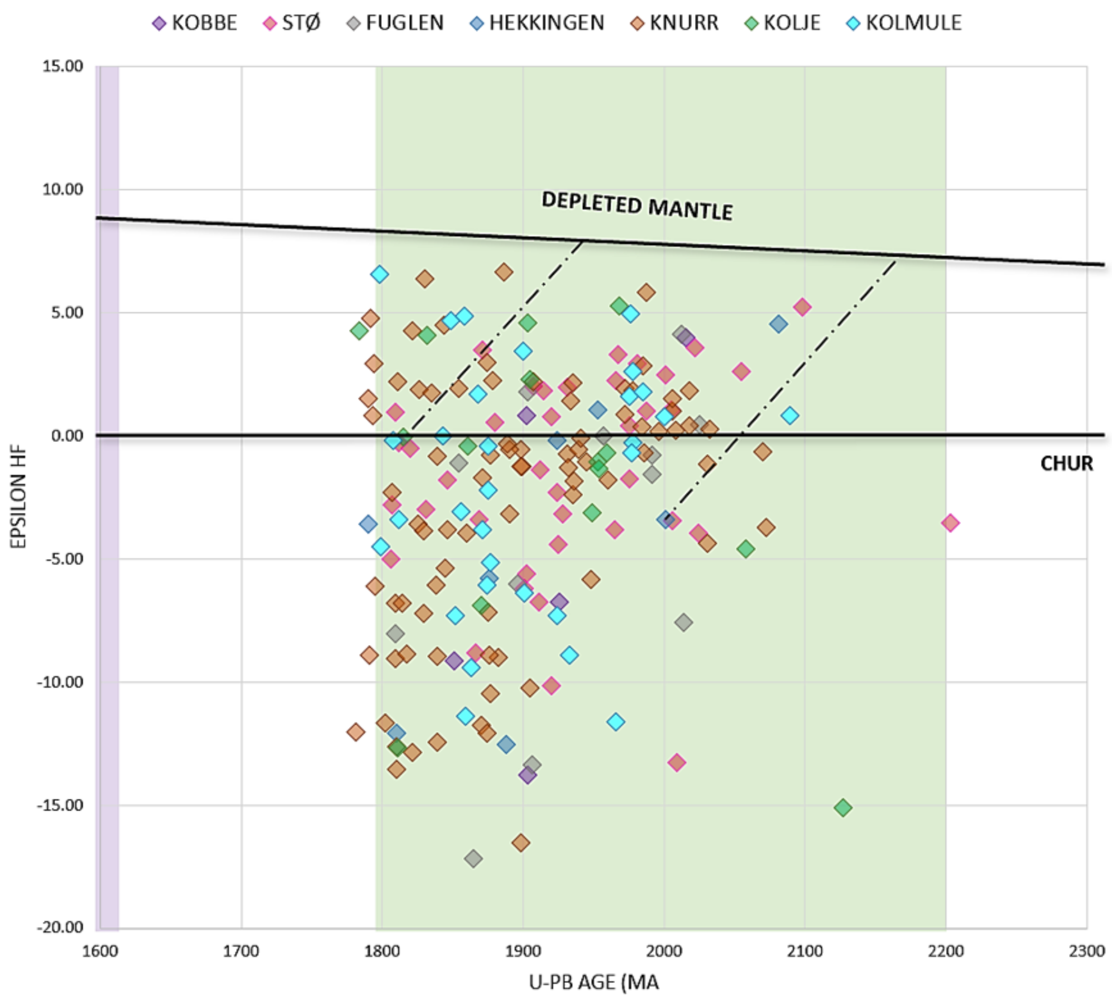
Mostly juvenile and a lot of negative as well.

Crustal contaminated and juvenile indicating a complex origin.

Magma mixing abundant.

Derived from cratons with a definite Paleproterozoic history.

A lot of juvenile between 1.8 and 2.1 Ga and then a permanent are distribution until 2.5 Ga. Older ones are less abundant and nearly no grains gave a reworked signature < 2.8 Ga.



| Sample | Well | Formation | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(DMM)}$ Ma |
|---|---|---|---|---|---|---|---|
| S1Z1.049 | S1 | Knurr | 1781 | 22 | -12.04 | 2.41 | 2559 |
| NEZ1.093 | NE | Kolje | 1784 | 26 | 4.28 | 2.20 | 1961 |
| S2Z2.052 | S2 | Hekkingen | 1790 | 25 | -3.57 | 2.91 | 2256 |
| N1Z2.119 | N1 | Knurr | 1790 | 58 | 1.52 | 2.67 | 2066 |
| N1Z2.023 | N1 | Knurr | 1791 | 24 | -8.93 | 2.28 | 2454 |
| S2Z1.006 | S2 | Knurr | 1792 | 26 | 4.74 | 2.71 | 1948 |
| S1Z1.083 | S1 | Knurr | 1793 | 22 | 0.80 | 2.43 | 2092 |
| S1Z1.105 | S1 | Knurr | 1794 | 25 | 2.91 | 2.81 | 2016 |
| NEZ10.017 | NE | Knurr | 1795 | 64 | -6.10 | 3.32 | 2355 |
| N1Z1.038 | N1 | Kolmule | 1798 | 25 | 6.53 | 4.67 | 1888 |
| N1Z1.108 | N1 | Kolmule | 1799 | 39 | -4.49 | 2.61 | 2290 |
| NEZ10.016 | NE | Knurr | 1802 | 58 | -11.69 | 3.42 | 2558 |
| S2Z5.008 | S2 | Stø | 1806 | 30 | -5.01 | 2.72 | 2317 |
| N2Z8.044 | N2 | Stø | 1807 | 27 | -2.79 | 1.84 | 2238 |
| N2Z6.060 | N2 | Knurr | 1807 | 28 | -2.28 | 3.76 | 2221 |
| N2Z2.095 | N2 | Kolmule | 1808 | 34 | -0.19 | 2 | 2140 |
| N2Z8.023 | N2 | Stø | 1809 | 25 | 0.98 | 2.15 | 2101 |
| S2Z4.004 | S2 | Fuglen | 1809 | 25 | -8.06 | 2.52 | 2438 |
| S2Z1.026 | S2 | Knurr | 1809 | 33 | -6.82 | 2.29 | 2394 |
| N1Z2.068 | N1 | Knurr | 1809 | 33 | -9.03 | 2.55 | 2470 |
| S2Z2.010 | S2 | Hekkingen | 1810 | 33 | -12.07 | 3.07 | 2583 |
| N1Z2.109 | N1 | Knurr | 1810 | 57 | -12.61 | 3.14 | 2606 |
| NEZ9.065 | NE | Knurr | 1810 | 57 | -13.55 | 2.75 | 2623 |
| NEZ6.059 | NE | Knurr | 1811 | 23 | 2.21 | 1.81 | 2056 |
| NEZ2.036 | NE | Kolje | 1811 | 40 | -12.69 | 2.68 | 2601 |
| N2Z8.014 | N2 | Stø | 1812 | 29 | -0.28 | 2.23 | 2149 |
| N2Z2.058 | N2 | Kolmule | 1812 | 30 | -3.40 | 2 | 2264 |
| NEZ9.032 | NE | Knurr | 1814 | 57 | -6.80 | 2.77 | 2403 |
| NEZ2.024 | NE | Kolje | 1815 | 27 | -0.07 | 2.94 | 2143 |
| N1Z2.071 | N1 | Knurr | 1817 | 63 | -8.89 | 2.85 | 2464 |
| S2Z5.030 | S2 | Stø | 1820 | 44 | -0.53 | 3.02 | 2163 |
| SWZ1.029 | SW | Knurr | 1821 | 38 | 4.27 | 2.67 | 1996 |
| SWZ1.084 | SW | Knurr | 1821 | 41 | -12.84 | 2.28 | 2614 |
| N1Z2.090 | N1 | Knurr | 1825 | 62 | -3.57 | 3.54 | 2282 |
| NEZ8.096 | NE | Knurr | 1826 | 51 | 1.86 | 2.75 | 2080 |
| N2Z6.048 | N2 | Knurr | 1829 | 25 | -3.84 | 3.00 | 2292 |
| NEZ5.025 | NE | Knurr | 1829 | 29 | -7.22 | 2.99 | 2442 |
| S2Z1.050 | S2 | Knurr | 1830 | 26 | 6.39 | 2.14 | 1917 |
| SWZ2.008 | SW | Stø | 1831 | 42 | -2.99 | 2.35 | 2262 |
| NEZ1.082 | NE | Kolje | 1832 | 21 | 4.07 | 2.48 | 2010 |
| NEZ8.025 | NE | Knurr | 1835 | 41 | 1.73 | 2.74 | 2094 |
| NEZ4.033 | NE | Knurr | 1838 | 27 | -6.06 | 3.27 | 2389 |
| N2Z4.110 | N2 | Knurr | 1839 | 37 | -12.45 | 2.62 | 2617 |

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|---|---|---|---|---|---|---|---|
| NEZ7.057 | NE | Knurr | 1839 | 53 | -8.96 | 2.87 | 2490 |
| NEZ10.011 | NE | Knurr | 1839 | 54 | -0.83 | 2.57 | 2190 |
| N2Z2.067 | N2 | Kolmule | 1843 | 33 | -0.01 | 2 | 2161 |
| NEZ4.031 | NE | Knurr | 1844 | 25 | 4.47 | 2.06 | 2000 |
| S1Z1.050 | S1 | Knurr | 1845 | 22 | -5.39 | 2.53 | 2370 |
| S2Z5.014 | S2 | Stø | 1846 | 22 | -1.81 | 2.37 | 2239 |
| N1Z2.110 | N1 | Knurr | 1846 | 67 | -3.82 | 3.10 | 2319 |
| N2Z1.022 | N2 | Kolmule | 1849 | 29 | 4.68 | 2.09 | 1996 |
| S2-Z6.115 | S2 | Kobbe | 1851 | 19 | -9.15 | 1.58 | 2506 |
| N2Z2.086 | N2 | Kolmule | 1852 | 34 | -7.33 | 2 | 2441 |
| S2Z4.038 | S2 | Fuglen | 1854 | 23 | -1.11 | 3.60 | 2215 |
| NEZ8.065 | NE | Knurr | 1854 | 39 | 1.92 | 2.44 | 2105 |
| N2Z1.047 | N2 | Kolmule | 1856 | 27 | -3.07 | 2.07 | 2287 |
| E.Z2.120 | ENI | Kolmule | 1858 | 45 | 4.86 | 2.37 | 1997 |
| Eni-Z1.114 | ENI | Kolmule | 1859 | 63 | -11.39 | 4.02 | 2618 |
| N1Z2.042 | N1 | Knurr | 1860 | 33 | -3.93 | 2.16 | 2327 |
| NEZ2.022 | NE | Kolje | 1861 | 24 | -0.43 | 2.19 | 2201 |
| N2Z1.089 | N2 | Kolmule | 1863 | 29 | -9.41 | 1.95 | 2525 |
| S2Z4.020 | S2 | Fuglen | 1865 | 24 | -17.16 | 2.35 | 2806 |
| SWZ3.080 | SW | Stø | 1866 | 31 | -8.80 | 2.69 | 2504 |
| Eni-Z1.017 | ENI | Kolmule | 1868 | 52 | 1.68 | 2.54 | 2126 |
| SWZ3.056 | SW | Stø | 1869 | 39 | -3.39 | 2.86 | 2313 |
| NEZ7.007 | NE | Knurr | 1870 | 61 | -11.77 | 2.48 | 2611 |
| NEZ2.041.042 | NE | Kolje | 1870 | 40 | -6.88 | 3.21 | 2446 |
| E.Z3.145 | ENI | Stø | 1871 | 28 | 3.46 | 2.54 | 2061 |
| NEZ6.149 | NE | Knurr | 1871 | 25 | -1.72 | 2.28 | 2255 |
| E.Z2.106 | ENI | Kolmule | 1871 | 44 | -3.82 | 2.26 | 2321 |
| S2Z1.027 | S2 | Knurr | 1874 | 62 | 2.97 | 2.89 | 2079 |
| NEZ9.081 | NE | Knurr | 1874 | 50 | -12.07 | 2.31 | 2626 |
| N2Z1.024 | N2 | Kolmule | 1874 | 21 | -6.07 | 6.43 | 2415 |
| N2Z6.050 | N2 | Knurr | 1875 | 21 | -7.17 | 2.67 | 2471 |
| Eni-Z1.120 | ENI | Kolmule | 1875 | 63 | -2.22 | 4.11 | 2270 |
| E.Z2.026 | ENI | Kolmule | 1875 | 45 | -0.43 | 2.45 | 2211 |
| S2Z3.007 | S2 | Hekkingen | 1876 | 34 | -5.78 | 2.48 | 2404 |
| NEZ9.051 | NE | Knurr | 1876 | 58 | -8.92 | 2.70 | 2517 |
| NEZ5.033 | NE | Knurr | 1877 | 44 | -10.46 | 3.05 | 2581 |
| NEZ6.025 | NE | Knurr | 1877 | 28 | -0.78 | 1.94 | 2227 |
| Eni-Z1.076 | ENI | Kolmule | 1877 | 62 | -5.15 | 2.57 | 2374 |
| NEZ10.009 | NE | Knurr | 1878 | 62 | 2.23 | 3.16 | 2112 |
| SWZ2.096 | SW | Stø | 1880 | 44 | 0.55 | 2.87 | 2176 |
| NEZ8.094 | NE | Knurr | 1882 | 51 | -9.01 | 3.21 | 2528 |
| NEZ9.017 | NE | Knurr | 1886 | 52 | 6.63 | 3.21 | 1957 |
| S2Z2.112 | S2 | Hekkingen | 1888 | 33 | -12.54 | 6.17 | 2661 |
| NEZ9.077 | NE | Knurr | 1889 | 51 | -0.32 | 2.57 | 2214 |
| NEZ8.038 | NE | Knurr | 1890 | 37 | -0.56 | 2.04 | 2222 |

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|---|---|---|---|---|---|---|---|
| NEZ8.063 | NE | Knurr | 1890 | 42 | -3.20 | 2.40 | 2318 |
| S2Z4.094 | S2 | Fuglen | 1896 | 31 | -6.03 | 2.71 | 2426 |
| N2Z6.056 | N2 | Knurr | 1898 | 28 | -0.58 | 3.73 | 2243 |
| NEZ4.021 | NE | Knurr | 1898 | 27 | -1.27 | 2.18 | 2257 |
| NEZ5.129 | NE | Knurr | 1898 | 22 | -16.51 | 1.81 | 2810 |
| N2Z5.052 | N2 | Knurr | 1899 | 27 | -1.23 | 2.57 | 2256 |
| Eni-Z1.034 | ENI | Kolmule | 1900 | 45 | 3.42 | 3.01 | 2091 |
| N2Z8.005 | N2 | Stø | 1901 | 30 | -6.18 | 2.44 | 2438 |
| N1Z1.112 | N1 | Kolmule | 1901 | 21 | -6.41 | 1.70 | 2446 |
| S2-Z6.104 | S2 | Kobbe | 1902 | 26 | 0.81 | 1.95 | 2182 |
| N2Z8.090 | N2 | Stø | 1902 | 29 | -5.62 | 2.49 | 2432 |
| S2-Z6.049 | S2 | Kobbe | 1903 | 22 | -13.78 | 1.63 | 2717 |
| S2Z4.113 | S2 | Fuglen | 1903 | 27 | 1.77 | 2.38 | 2148 |
| NEZ1.049 | NE | Kolje | 1903 | 25 | 4.57 | 2.32 | 2049 |
| N2Z6.013 | N2 | Knurr | 1905 | 25 | -10.26 | 2.17 | 2600 |
| NEZ2.094 | NE | Kolje | 1905 | 31 | 2.29 | 3.08 | 2133 |
| S2Z4.111 | S2 | Fuglen | 1906 | 27 | -13.34 | 2.56 | 2699 |
| SWZ2.021 | SW | Stø | 1907 | 43 | 2.01 | 2.51 | 2141 |
| S1Z1.064 | S1 | Knurr | 1907 | 32 | 2.20 | 2.69 | 2136 |
| E.Z3.146 | ENI | Stø | 1911 | 26 | -6.74 | 2.28 | 2474 |
| SWZ2.069 | SW | Stø | 1912 | 47 | -1.37 | 2.79 | 2270 |
| E.Z3.147 | ENI | Stø | 1914 | 23 | 1.83 | 2.11 | 2156 |
| SWZ3.083 | SW | Stø | 1920 | 32 | 0.77 | 2.49 | 2201 |
| SWZ3.108 | SW | Stø | 1920 | 31 | -10.17 | 2.20 | 2592 |
| S2Z5.049 | S2 | Stø | 1924 | 24 | -2.29 | 2.17 | 2312 |
| S2Z2.082 | S2 | Hekkingen | 1924 | 23 | -0.20 | 3.06 | 2249 |
| N1Z1.032 | N1 | Kolmule | 1924 | 24 | -7.29 | 1.78 | 2492 |
| E.Z3.148 | ENI | Stø | 1925 | 27 | -4.42 | 1.96 | 2388 |
| S2-Z6.183 | S2 | Kobbe | 1926 | 20 | -6.77 | 1.86 | 2483 |
| S2Z5.061 | S2 | Stø | 1928 | 29 | -3.19 | 3.57 | 2369 |
| E.Z3.149 | ENI | Stø | 1931 | 28 | 1.95 | 2.18 | 2165 |
| NEZ5.067 | NE | Knurr | 1931 | 23 | -0.73 | 1.92 | 2264 |
| NEZ7.012 | NE | Knurr | 1932 | 63 | -1.28 | 2.45 | 2289 |
| E.Z2.025 | ENI | Kolmule | 1933 | 45 | -8.90 | 2.60 | 2588 |
| NEZ5.049 | NE | Knurr | 1934 | 29 | 1.43 | 2.21 | 2187 |
| SWZ1.093 | SW | Knurr | 1935 | 40 | -2.38 | 2.72 | 2330 |
| NEZ7.009 | NE | Knurr | 1935 | 60 | 2.15 | 2.77 | 2164 |
| SWZ1.019 | SW | Knurr | 1936 | 38 | -1.84 | 2.32 | 2309 |
| NEZ6.084 | NE | Knurr | 1939 | 24 | -0.56 | 1.82 | 2266 |
| NEZ6.139 | NE | Knurr | 1941 | 22 | -0.11 | 2.33 | 2264 |
| NEZ8.019 | NE | Knurr | 1945 | 41 | -1.08 | 2.73 | 2289 |
| N1Z2.021 | N1 | Knurr | 1948 | 30 | -5.82 | 2.50 | 2470 |
| NEZ1.095 | NE | Kolje | 1949 | 34 | -3.14 | 3.05 | 2367 |
| S2Z2.051 | S2 | Hekkingen | 1953 | 24 | 1.05 | 2.74 | 2219 |
| NEZ1.036 | NE | Kolje | 1953 | 27 | -1.08 | 2.89 | 2298 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NEZ2.061 | NE | Kolje | 1954 | 25 | -1.34 | 2.28 | 2309 |
| S2Z4.093 | S2 | Fuglen | 1957 | 28 | -0.01 | 2.57 | 2263 |
| NEZ2.011 | NE | Kolje | 1959 | 25 | -0.68 | 2.34 | 2286 |
| NEZ4.018 | NE | Knurr | 1960 | 29 | -1.78 | 2.12 | 2328 |
| SWZ2.017 | SW | Stø | 1965 | 40 | -3.81 | 2.67 | 2407 |
| SWZ3.062 | SW | Stø | 1966 | 30 | 2.25 | 2.83 | 2190 |
| N1Z1.072 | N1 | Kolmule | 1966 | 28 | -11.62 | 1.84 | 2689 |
| N2Z8.110 | N2 | Stø | 1967 | 32 | 3.30 | 2.57 | 2146 |
| NEZ1.088 | NE | Kolje | 1968 | 24 | 5.26 | 1.88 | 2074 |
| NEZ5.023 | NE | Knurr | 1972 | 46 | 0.88 | 2.81 | 2240 |
| NEZ5.125 | NE | Knurr | 1972 | 28 | 1.92 | 2.30 | 2204 |
| SWZ2.047 | SW | Stø | 1975 | 48 | 0.39 | 2.70 | 2259 |
| SWZ2.054 | SW | Stø | 1975 | 43 | -1.76 | 2.94 | 2345 |
| N2Z2.075 | N2 | Kolmule | 1975 | 30 | 1.60 | 3 | 2217 |
| Eni-Z1.084 | ENI | Kolmule | 1976 | 57 | 4.97 | 3.93 | 2093 |
| Eni-Z1.118 | ENI | Kolmule | 1977 | 60 | -0.69 | 4.05 | 2318 |
| NEZ7.052 | NE | Knurr | 1978 | 59 | 1.81 | 2.95 | 2216 |
| N2Z1.020 | N2 | Kolmule | 1978 | 23 | 2.60 | 2.03 | 2183 |
| N2Z2.040 | N2 | Kolmule | 1978 | 28 | -0.30 | 2 | 2287 |
| E.Z3.151 | ENI | Stø | 1981 | 31 | 2.93 | 2.81 | 2173 |
| NEZ8.016 | NE | Knurr | 1984 | 42 | 0.35 | 2.72 | 2270 |
| NEZ7.074 | NE | Knurr | 1985 | 43 | 2.82 | 2.61 | 2179 |
| E.Z2.066 | ENI | Kolmule | 1985 | 43 | 1.77 | 3.06 | 2218 |
| SWZ1.076 | SW | Knurr | 1986 | 40 | -0.68 | 2.23 | 2308 |
| S2Z5.015 | S2 | Stø | 1987 | 22 | 0.98 | 2.63 | 2251 |
| NEZ4.011 | NE | Knurr | 1987 | 27 | 5.82 | 2.08 | 2070 |
| S2Z4.013 | S2 | Fuglen | 1991 | 20 | -1.59 | 2.17 | 2349 |
| S2Z4.023 | S2 | Fuglen | 1991 | 42 | -0.79 | 2.70 | 2320 |
| SWZ1.082 | SW | Knurr | 1996 | 39 | 0.19 | 2.58 | 2286 |
| N1Z1.065 | N1 | Kolmule | 2000 | 26 | 0.78 | 2.00 | 2267 |
| E.Z3.152 | ENI | Stø | 2001 | 33 | 2.45 | 2.50 | 2205 |
| S2Z2.093 | S2 | Hekkingen | 2001 | 41 | -3.42 | 2.74 | 2422 |
| SWZ2.029 | SW | Stø | 2005 | 44 | 1.04 | 2.18 | 2262 |
| SWZ3.029 | SW | Stø | 2006 | 45 | -3.47 | 2.78 | 2431 |
| NEZ4.023 | NE | Knurr | 2006 | 28 | 0.98 | 2.12 | 2264 |
| NEZ9.023 | NE | Knurr | 2006 | 49 | 1.49 | 2.90 | 2244 |
| SWZ1.104 | SW | Knurr | 2008 | 38 | 0.20 | 3.27 | 2302 |
| SWZ3.068 | SW | Stø | 2009 | 45 | -13.27 | 2.66 | 2787 |
| S2Z4.098 | S2 | Fuglen | 2012 | 23 | 4.13 | 2.84 | 2156 |
| S2Z4.046 | S2 | Fuglen | 2014 | 20 | -7.59 | 2.47 | 2596 |
| S2-Z6.107 | S2 | Kobbe | 2015 | 25 | 4.00 | 2.00 | 2161 |
| NEZ4.016 | NE | Knurr | 2018 | 25 | 1.83 | 2.13 | 2246 |
| NEZ8.093 | NE | Knurr | 2018 | 55 | 0.40 | 3.10 | 2295 |
| N2Z8.077 | N2 | Stø | 2022 | 24 | 3.58 | 2.84 | 2186 |
| SWZ3.014 | SW | Stø | 2024 | 48 | -3.94 | 2.82 | 2467 |

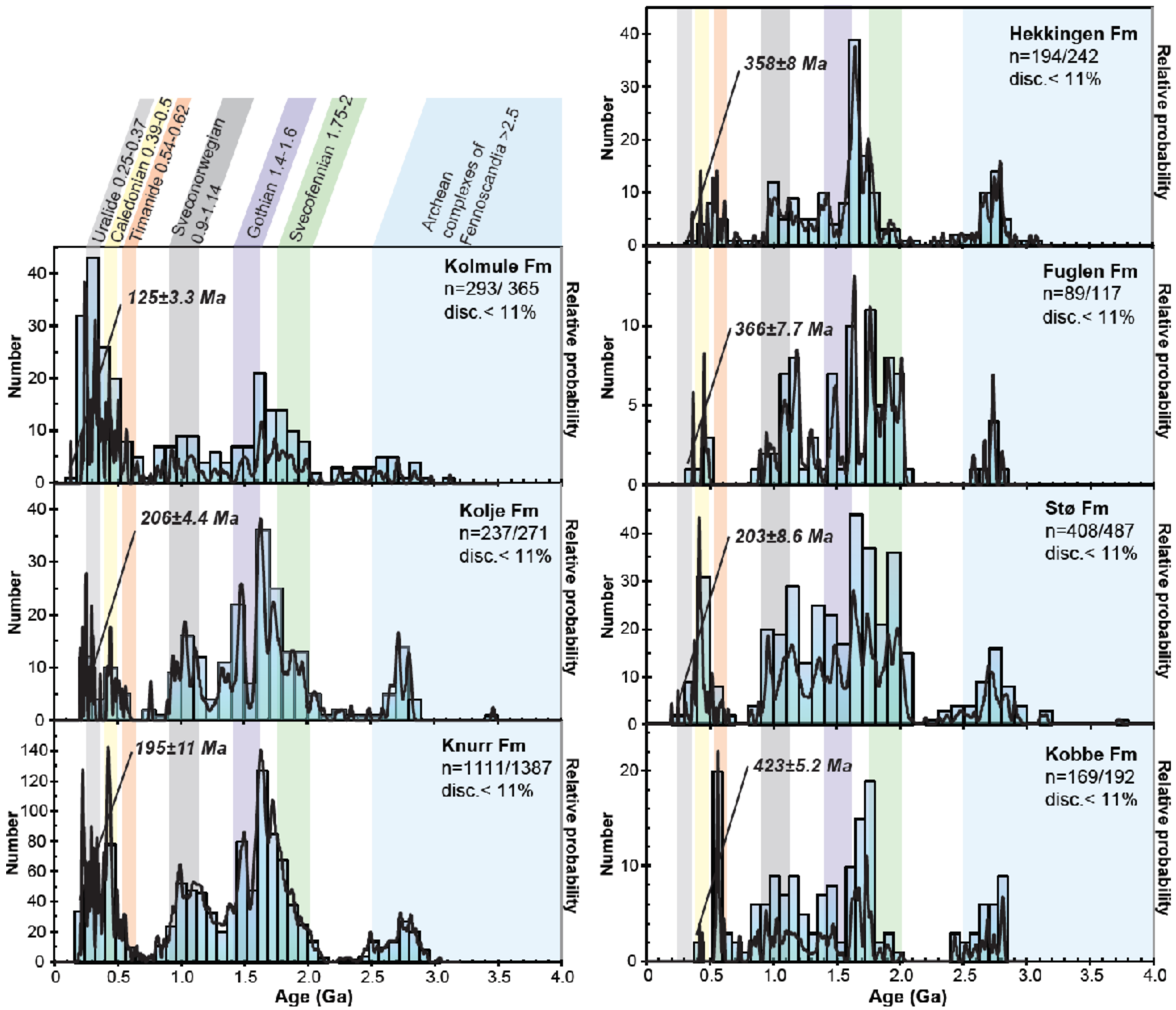
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| S2Z4.086 | S2 | Fuglen | 2025 | 29 | 0.47 | 3.00 | 2297 |
| S1Z1.034 | S1 | Knurr | 2031 | 21 | -4.36 | 2.09 | 2482 |
| NEZ9.069 | NE | Knurr | 2031 | 46 | -1.14 | 3.11 | 2368 |
| NEZ9.119 | NE | Knurr | 2032 | 66 | 0.27 | 3.08 | 2311 |
| SWZ2.005 | SW | Stø | 2055 | 40 | 2.62 | 2.20 | 2244 |
| NEZ2.069 | NE | Kolje | 2058 | 25 | -4.62 | 2.09 | 2517 |
| NEZ8.089 | NE | Knurr | 2070 | 48 | -0.66 | 2.77 | 2378 |
| N2Z4.091 | N2 | Knurr | 2072 | 22 | -3.73 | 2.01 | 2489 |
| S2Z2.076 | S2 | Hekkingen | 2081 | 31 | 4.52 | 2.54 | 2197 |
| N2Z1.046 | N2 | Kolmule | 2089 | 23 | 0.81 | 2.11 | 2343 |
| SWZ2.106 | SW | Stø | 2098 | 46 | 5.20 | 3.42 | 2185 |
| NEZ2.086 | NE | Kolje | 2127 | 30 | -15.10 | 2.35 | 2959 |
| N2Z8.026 | N2 | Stø | 2203 | 26 | -3.52 | 2.08 | 2591 |

# DATA

| Sample code | Sample depth [m] | Formation | ZRC yield | U-Pb Analysis | | Hf Analysis |
|---|---|---|---|---|---|---|
| | | | | Analysed | Concordant | Analysed |
| **Well 7120/12-1 (S2)** | | | | | | |
| S2-Z1 | 1538,05 - 1546,29 | Knurr | Low - good | 150 | 107 | 56 |
| S2-Z2 | 1663,45 - 1708,25 | Hekkingen | Low - good | 120 | 88 | 47 |
| S2-Z3 | 1557,05 - 1705,65 | Hekkingen | Good | 120 | 98 | 52 |
| S2-Z4 | 2043,1 - 2046,6 | Fuglen | Good | 120 | 86 | 49 |
| S2-Z5 | 2047,64 - 2057,55 | Stø | Good | 125 | 87 | 49 |
| S2-Z6 | 3521.3 - 3523.9 | Kobbe | | 192 | 145 | 55 |
| **Well 7120/10-2 (S1)** | | | | | | |
| S1-Z1 | 2128,35 - 2134,15 | Knurr | Good | 120 | 75 | 45 |
| **Well 7019/1-1 (SW)** | | | | | | |
| SW-Z1 | 2220,95 - 2231,66 | Knurr | Good | 120 | 104 | 55 |
| SW-Z2 | 2457,95 - 2462,45 | Stø | Good | 120 | 95 | 51 |
| SW-Z3 | 2561,95 - 2566,65 | Stø | Good | 120 | 94 | 61 |
| **Well 7120/1-2 (N1)** | | | | | | |
| N1-Z1 | 1815,35 - 1824,9 | Kolmule | Good | 125 | 54 | 47 |
| N1-Z2 | 1957,2 - 1967,65 | Knurr | Very good | 120 | 88 | 51 |
| **Well 7120/2-2 (N2)** | | | | | | |
| N2-Z1 | 1896,8 - 1907,05 | Kolmule | Very good | 120 | 81 | 63 |
| N2-Z2 | 1909,15 - 1922,7 | Kolmule | Good | 120 | 84 | 47 |
| N2-Z4 | 2183,8 - 2192,8 | Knurr | Good | 120 | 54 | 34 |
| N2-Z5 | 2194,5 - 2201,25 | Knurr | Low - good | 150 | 36 | 28 |
| N2-Z6 | 2368,05 - 2400,85 | Knurr | Good | 150 | 90 | 50 |
| N2-Z8 | 2720,75 - 2722,8 | Stø | Good | 120 | 110 | 55 |
| **Well 7122/2-1 (NE)** | | | | | | |
| NE-Z1 | 1771,35 - 1783,95 | Kolje | Good | 120 | 89 | 50 |
| NE-Z2 | 1813,15 - 1818,15 | Kolje | Good | 121 | 110 | 52 |
| NE-Z3 | 1812,95 - 1819,15 | Kolje | Low | 30 | 24 | 24 |
| NE-Z4 | 1834,9 - 1849,25 | Knurr | Good | 35 | 33 | 28 |
| NE-Z5 | 1851,2 - 1864,95 | Knurr | Good | 150 | 125 | 41 |
| NE-Z6 | 1866,5 - 1886,6 | Knurr | Very good | 150 | 109 | 43 |
| NE-Z7 | 1886,95 - 1900,95 | Knurr | Very good | 120 | 90 | 48 |
| NE-Z8 | 1902,85 - 1913,85 | Knurr | Good | 120 | 95 | 52 |
| NE-Z9 | 1914,85 - 1931,85 | Knurr | Good | 120 | 91 | 56 |
| NE-Z10 | 2053,85 - 2056,55 | Knurr | Very good | 20 | 14 | 14 |
| **Well 7220/10-1** (Salina) | | | | | | |
| Eni-Z1 | 1298.6 - 1312.23 | Kolmule | Good | 120 | 93 | 64 |
| Eni-Z2 | 1320.5 - 1352.6 | Kolmule | Good | 120 | 76 | 55 |
| Eni-Z3 | 1518.1 - 1574.55 | Stø | Good | 120 | 81 | 51 |

# Appendix 2

In the appendix the reader will find an overview of the dataset, containing all analyzed spectra of Lu and Hf isotope with additional U-Pb ages.




Relative age probability distribution diagrams with age histograms for Cretaceous, Jurassic and Triassic formations. Colour-shaded areas correspond to significant orogenies affecting the region (with corresponding ages noted at the top left). The minimum age for each formation is shown. The ratios for concordant/discordant ages (n) are provided in the upper right of each plot. Note that only data with discordances of less than 11% are included in these plots. Plotted X-axis age is in Ma, and the y-axis is the relative probability/number of analyses. From Matthews et al. (to subm.) plotted using Isoplot software, Ludwig 2003.

# Appendix

## Data sheet

In the appendix the reader will find an overview of the dataset, containing all analyzed spectra of Lu and Hf isotope with additional U-Pb ages.

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2Z1.058 | Knurr | 0.00068914 | 0.0000111 | 0.03588252 | 0.000306 | 0.2819534 | 0.0000395 | 1.467156 | 0.000121 | 1.886844 | 0.000131 | 0 | 0 | -29.41 | 1.40 | 1337 | 1742 | |
| S2Z1.147 | Knurr | 0.00094575 | 0.0000182 | 0.0588881 | 0.00204 | 0.2821485 | 0.0000563 | 1.466838 | 0.000131 | 1.886824 | 0.000138 | 0 | 0 | -22.51 | 1.99 | 1034 | 1494 | |
| S2Z1.001 | Knurr | 0.00360997 | 0.0000142 | 0.1806923 | 0.00176 | 0.282603 | 0.000135 | 1.466981 | 0.000171 | 1.886596 | 0.000211 | 221 | 3 | -2.05 | 4.83 | 324 | 947 | |
| S2Z1.068 | Knurr | 0.00173981 | 0.0000236 | 0.1103247 | 0.00104 | 0.2824521 | 0.0000769 | 1.466941 | 0.000138 | 1.88652 | 0.00016 | 236 | 5 | -6.80 | 2.82 | 557 | 1108 | |
| S2Z1.129 | Knurr | 0.00265153 | 0.0000471 | 0.1346451 | 0.00223 | 0.2823259 | 0.0000681 | 1.466954 | 0.000123 | 1.886903 | 0.000135 | 429 | 8 | -7.44 | 2.55 | 789 | 1313 | |
| S2Z1.110 | Knurr | 0.00084909 | 0.00000475 | 0.06077881 | 0.000474 | 0.2823746 | 0.0000813 | 1.466913 | 0.000199 | 1.886768 | 0.000193 | 430 | 8 | -5.18 | 3.05 | 667 | 1187 | |
| S2Z1.069 | Knurr | 0.00135518 | 0.0000381 | 0.07207559 | 0.000747 | 0.2822301 | 0.0000534 | 1.467239 | 0.000102 | 1.886918 | 0.000113 | 441 | 9 | -10.21 | 2.06 | 914 | 1399 | |
| S2Z1.093 | Knurr | 0.00032479 | 0.00000242 | 0.01447403 | 0.0000418 | 0.2826715 | 0.0000373 | 1.466996 | 0.000103 | 1.886826 | 0.000121 | 486 | 13 | 6.72 | 1.61 | 182 | 777 | |
| S2Z1.018 | Knurr | 0.00049134 | 0.0000244 | 0.02451696 | 0.000719 | 0.2825237 | 0.0000765 | 1.46722 | 0.000123 | 1.886842 | 0.000173 | 504 | 10 | 1.83 | 2.91 | 421 | 978 | |
| S2Z1.015 | Knurr | 0.00109693 | 0.0000101 | 0.05571011 | 0.000533 | 0.2822709 | 0.0000553 | 1.466994 | 0.000138 | 1.886478 | 0.000157 | 526 | 9 | -6.84 | 2.15 | 841 | 1335 | |
| S2Z1.081 | Knurr | 0.00054087 | 0.00000128 | 0.03192988 | 0.000245 | 0.2826008 | 0.0000535 | 1.466799 | 0.000112 | 1.886646 | 0.000133 | 542 | 10 | 5.38 | 2.11 | 298 | 876 | |
| S2Z1.092 | Knurr | 0.00175642 | 0.0000359 | 0.1152148 | 0.00168 | 0.2821463 | 0.0000701 | 1.466957 | 0.000122 | 1.887063 | 0.000163 | 547 | 13 | -11.04 | 2.73 | 1064 | 1528 | |
| S2Z1.095 | Knurr | | | | | | | | | | | 564 | 10 | -10000.00 | 0.00 | | | Lost |
| S2Z1.112 | Knurr | 0.00015329 | 0.00000125 | 0.00945723 | 0.0000837 | 0.2826777 | 0.0000781 | 1.467003 | 0.000149 | 1.887032 | 0.000185 | 566 | 10 | 8.78 | 2.99 | 172 | 766 | |
| S2Z1.030 | Knurr | 0.00122927 | 0.0000133 | 0.08284433 | 0.00163 | 0.2822298 | 0.0000576 | 1.467029 | 0.000121 | 1.886861 | 0.000139 | 598 | 11 | -6.79 | 2.27 | 911 | 1395 | |
| S2Z1.098 | Knurr | 0.00089627 | 0.00000712 | 0.05735817 | 0.000751 | 0.2822012 | 0.0000582 | 1.466928 | 0.000115 | 1.88708 | 0.000133 | 628 | 12 | -7.02 | 2.32 | 948 | 1421 | |
| S2Z1.127 | Knurr | 0.00315158 | 0.0000484 | 0.2281748 | 0.00315 | 0.2821786 | 0.000119 | 1.467163 | 0.000141 | 1.886761 | 0.000154 | 804 | 13 | -5.17 | 4.43 | 1056 | 1539 | |
| S2Z1.141 | Knurr | 0.00056816 | 0.00000464 | 0.03823998 | 0.00034 | 0.282008 | 0.00005 | 1.466971 | 0.000111 | 1.886965 | 0.000147 | 971 | 19 | -6.12 | 2.19 | 1245 | 1665 | |
| S2Z1.046 | Knurr | 0.00041174 | 0.00000175 | 0.02608152 | 0.0000966 | 0.2822203 | 0.0000611 | 1.467243 | 0.0000981 | 1.886651 | 0.000138 | 975 | 23 | 1.59 | 2.68 | 904 | 1379 | |
| S2Z1.037 | Knurr | 0.00173076 | 0.0000184 | 0.1189222 | 0.00111 | 0.2821318 | 0.0000648 | 1.466924 | 0.000115 | 1.886983 | 0.000129 | 1088 | 29 | 0.03 | 2.89 | 1087 | 1547 | |
| S2Z1.011 | Knurr | 0.00166392 | 0.0000131 | 0.08366516 | 0.00121 | 0.2823737 | 0.0000634 | 1.46743 | 0.00014 | 1.886425 | 0.000147 | 1141 | 40 | 9.80 | 3.09 | 685 | 1214 | |
| S2Z1.053 | Knurr | 0.00195027 | 0.000046 | 0.0767515 | 0.000976 | 0.2821939 | 0.0000519 | 1.467397 | 0.0000859 | 1.886518 | 0.000115 | 1145 | 35 | 3.29 | 2.52 | 991 | 1470 | |
| S2Z1.108 | Knurr | 0.00045629 | 6.250E-07 | 0.02921749 | 0.000161 | 0.2819971 | 0.0000557 | 1.466899 | 0.000167 | 1.886739 | 0.000175 | 1158 | 66 | -2.25 | 3.45 | 1258 | 1675 | |
| S2Z1.041 | Knurr | 0.00137837 | 0.0000028 | 0.09068225 | 0.00121 | 0.2821258 | 0.0000468 | 1.466861 | 0.0000942 | 1.88687 | 0.000105 | 1159 | 27 | 1.62 | 2.24 | 1085 | 1541 | |
| S2Z1.139 | Knurr | 0.00262437 | 0.0000249 | 0.1961762 | 0.00389 | 0.282292 | 0.000133 | 1.46676 | 0.000202 | 1.886837 | 0.000207 | 1275 | 26 | 8.98 | 5.22 | 846 | 1359 | |
| S2Z1.094 | Knurr | 0.00073073 | 0.00000795 | 0.03704035 | 0.000363 | 0.2820636 | 0.0000526 | 1.467049 | 0.00011 | 1.886703 | 0.000135 | 1319 | 33 | 3.48 | 2.59 | 1163 | 1598 | |
| S2Z1.083 | Knurr | 0.00185161 | 0.0000232 | 0.07053468 | 0.000658 | 0.2821991 | 0.0000548 | 1.467142 | 0.000116 | 1.886455 | 0.000139 | 1364 | 36 | 8.26 | 2.68 | 979 | 1459 | |
| S2Z1.131 | Knurr | 0.00153815 | 0.0000144 | 0.09148555 | 0.000384 | 0.2818476 | 0.0000671 | 1.466883 | 0.000119 | 1.88657 | 0.000142 | 1437 | 24 | -2.33 | 2.88 | 1544 | 1923 | |
| S2Z1.063 | Knurr | 0.00092071 | 0.00000543 | 0.05655722 | 0.000183 | 0.2819174 | 0.0000691 | 1.466962 | 0.000121 | 1.886675 | 0.000175 | 1470 | 33 | 1.48 | 3.18 | 1403 | 1801 | |
| S2Z1.052 | Knurr | 0.00116812 | 0.0000134 | 0.06763193 | 0.000802 | 0.2819592 | 0.0000591 | 1.467039 | 0.000145 | 1.886508 | 0.000136 | 1491 | 27 | 3.18 | 2.67 | 1347 | 1756 | |
| S2Z1.084 | Knurr | 0.001004 | 0.0000108 | 0.05297975 | 0.0000914 | 0.2818697 | 0.0000564 | 1.466959 | 0.000123 | 1.886953 | 0.000135 | 1495 | 28 | 0.26 | 2.60 | 1483 | 1868 | |
| S2Z1.121 | Knurr | 0.0007649 | 0.00000174 | 0.04004907 | 0.000619 | 0.2819421 | 0.0000442 | 1.466983 | 0.000106 | 1.886815 | 0.000115 | 1499 | 27 | 3.16 | 2.17 | 1358 | 1761 | |
| S2Z1.124 | Knurr | 0.00171607 | 0.0000163 | 0.1089918 | 0.000234 | 0.2819753 | 0.0000873 | 1.467196 | 0.000187 | 1.886567 | 0.000177 | 1548 | 29 | 4.44 | 3.69 | 1343 | 1759 | |
| S2Z1.008 | Knurr | 0.00260061 | 0.0000839 | 0.1155887 | 0.00233 | 0.282101 | 0.0000573 | 1.467261 | 0.000105 | 1.886362 | 0.000125 | 1551 | 31 | 8.05 | 2.51 | 1169 | 1625 | |
| S2Z1.101 | Knurr | 0.00101578 | 0.00000535 | 0.06332446 | 0.000157 | 0.2819158 | 0.0000596 | 1.467032 | 0.000115 | 1.886516 | 0.000124 | 1577 | 25 | 3.71 | 2.66 | 1410 | 1807 | |
| S2Z1.012 | Knurr | 0.00170662 | 0.0000273 | 0.07323136 | 0.000433 | 0.2818674 | 0.0000574 | 1.467299 | 0.000115 | 1.886619 | 0.000135 | 1578 | 29 | 1.28 | 2.61 | 1519 | 1905 | |
| S2Z1.038 | Knurr | 0.00184653 | 0.0000233 | 0.1252445 | 0.00244 | 0.2818835 | 0.00008 | 1.467071 | 0.000134 | 1.886549 | 0.000159 | 1653 | 22 | 3.33 | 3.26 | 1499 | 1890 | |
| S2Z1.122 | Knurr | 0.00095128 | 0.00000301 | 0.05958468 | 0.00023 | 0.2818703 | 0.0000775 | 1.46694 | 0.000186 | 1.886974 | 0.000187 | 1653 | 35 | 3.85 | 3.53 | 1480 | 1865 | |
| S2Z1.002 | Knurr | 0.00051523 | 0.00000209 | 0.03007684 | 0.000192 | 0.281863 | 0.0000403 | 1.467077 | 0.000104 | 1.886892 | 0.000116 | 1700 | 27 | 5.14 | 2.04 | 1472 | 1854 | |
| S2Z1.119 | Knurr | 0.00107716 | 0.00000612 | 0.06827181 | 0.000521 | 0.2816049 | 0.0000539 | 1.467167 | 0.000136 | 1.887025 | 0.000122 | 1739 | 25 | -3.79 | 2.46 | 1909 | 2223 | |
| S2Z1.006 | Knurr | 0.00111976 | 0.00000232 | 0.06575684 | 0.000461 | 0.2818135 | 0.0000603 | 1.467182 | 0.000108 | 1.886659 | 0.000126 | 1792 | 26 | 4.74 | 2.71 | 1579 | 1948 | |
| S2Z1.026 | Knurr | 0.00107833 | 0.0000272 | 0.05766241 | 0.000576 | 0.2814757 | 0.0000457 | 1.467192 | 0.000112 | 1.886778 | 0.000127 | 1809 | 33 | -6.82 | 2.29 | 2114 | 2394 | |
| S2Z1.050 | Knurr | 0.00061385 | 0.00000622 | 0.04083024 | 0.000409 | 0.2818184 | 0.0000442 | 1.467005 | 0.000118 | 1.886927 | 0.000121 | 1830 | 26 | 6.39 | 2.14 | 1547 | 1917 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2Z1.027 | Knurr | 0.00042222 | 0.00000192 | 0.01982863 | 0.000338 | 0.2816874 | 0.0000418 | 1.467208 | 0.0000901 | 1.886751 | 0.000122 | 1874 | 62 | 2.97 | 2.89 | 1743 | 2079 | |
| S2Z1.148 | Knurr | 0.00158105 | 0.00000886 | 0.0662473 | 0.000475 | 0.2811608 | 0.0000506 | 1.467341 | 0.000104 | 1.886489 | 0.000118 | 2650 | 25 | -0.01 | 2.33 | 2650 | 2843 | |
| S2Z1.064 | Knurr | 0.00077394 | 0.00000954 | 0.04181477 | 0.000881 | 0.2810936 | 0.0000661 | 1.467153 | 0.000132 | 1.886866 | 0.000162 | 2660 | 24 | -0.71 | 2.87 | 2691 | 2874 | |
| S2Z1.118 | Knurr | 0.00050516 | 0.0000057 | 0.02288526 | 0.000172 | 0.2809711 | 0.0000431 | 1.467142 | 0.000165 | 1.886739 | 0.000165 | 2674 | 26 | -4.26 | 2.11 | 2858 | 3012 | |
| S2Z1.105 | Knurr | 0.00010638 | 9.18E-07 | 0.00418648 | 0.0000274 | 0.2811743 | 0.0000382 | 1.467195 | 0.000104 | 1.886892 | 0.000115 | 2699 | 22 | 4.28 | 1.87 | 2516 | 2723 | |
| S2Z1.125 | Knurr | 0.00096664 | 0.0000102 | 0.04071118 | 0.000216 | 0.281322 | 0.000048 | 1.467288 | 0.000113 | 1.886489 | 0.000144 | 2726 | 21 | 8.57 | 2.15 | 2349 | 2589 | |
| S2Z1.071 | Knurr | 0.0001601 | 4.82E-07 | 0.00947043 | 0.0000918 | 0.2810439 | 0.0000446 | 1.467181 | 0.0000937 | 1.886843 | 0.000132 | 2727 | 24 | 0.20 | 2.15 | 2719 | 2894 | |
| S2Z1.009 | Knurr | 0.00202299 | 0.000281 | 0.1686498 | 0.0245 | 0.2816458 | 0.00021 | 1.466985 | 0.000132 | 1.886748 | 0.000256 | 2788 | 29 | 19.50 | 7.04 | 1898 | 2222 | |
| S2Z1.123 | Knurr | 0.00050707 | 0.0000109 | 0.02920033 | 0.00119 | 0.2810341 | 0.0000405 | 1.467133 | 0.000114 | 1.886725 | 0.000129 | 2788 | 24 | 0.61 | 1.96 | 2761 | 2931 | |
| S2Z1.120 | Knurr | 0.0004384 | 0.000012 | 0.01948004 | 0.000253 | 0.2810441 | 0.0000412 | 1.467293 | 0.000113 | 1.886754 | 0.000112 | 2809 | 24 | 1.59 | 1.98 | 2741 | 2913 | |
| S2Z1.044 | Knurr | 0.00074595 | 0.00000658 | 0.04647738 | 0.00052 | 0.281067 | 0.000054 | 1.467222 | 0.000146 | 1.886521 | 0.000144 | 2820 | 26 | 2.07 | 2.50 | 2730 | 2906 | |
| S2Z1.054 | Knurr | 0.00103901 | 0.00000612 | 0.06702511 | 0.000346 | 0.2810109 | 0.0000732 | 1.467157 | 0.000117 | 1.887095 | 0.000192 | 2928 | 23 | 1.97 | 3.11 | 2842 | 3001 | |
| | | | | | | | | | | | | | | | | | | |
| S2Z2.022 | Hekkingen | 0.001103 | 8.26E-06 | 0.058735 | 0.00129 | 0.282368 | 4.71E-05 | 1.467288 | 0.000114 | 1.886393 | 0.000142 | 425 | 9 | -5.59 | 1.86 | 682 | 1204 | |
| S2Z2.042 | Hekkingen | 7.46E-05 | 9.85E-07 | 0.005355 | 0.000113 | 0.282357 | 4.78E-05 | 1.46699 | 0.000171 | 1.887061 | 0.000157 | 425 | 8 | -5.71 | 1.87 | 680 | 1188 | |
| S2Z2.044 | Hekkingen | 0.002423 | 5.95E-05 | 0.130179 | 0.00172 | 0.282405 | 7.65E-05 | 1.466934 | 0.00012 | 1.887028 | 0.000132 | 475 | 9 | -3.63 | 2.86 | 649 | 1195 | |
| S2Z2.050 | Hekkingen | 0.000989 | 1.29E-05 | 0.063354 | 0.00114 | 0.282216 | 5.14E-05 | 1.467045 | 9.99E-05 | 1.887014 | 0.000121 | 532 | 10 | -8.63 | 2.03 | 927 | 1405 | |
| S2Z2.110 | Hekkingen | 0.000416 | 7.52E-07 | 0.024073 | 0.000161 | 0.282163 | 4.55E-05 | 1.467016 | 0.00011 | 1.886845 | 0.000117 | 963 | 17 | -0.69 | 1.99 | 994 | 1454 | |
| S2Z2.003 | Hekkingen | 0.000245 | 3.15E-06 | 0.012082 | 0.000053 | 0.282117 | 3.34E-05 | 1.46695 | 0.000124 | 1.886908 | 0.00012 | 998 | 18 | -1.43 | 1.58 | 1062 | 1508 | |
| S2Z2.007 | Hekkingen | 0.000496 | 3.14E-06 | 0.032213 | 0.000164 | 0.282199 | 5.39E-05 | 1.4671 | 0.000114 | 1.886861 | 0.000113 | 1007 | 30 | 1.48 | 2.58 | 940 | 1410 | |
| S2Z2.025 | Hekkingen | 0.000895 | 4.73E-06 | 0.038244 | 0.000323 | 0.282041 | 0.000051 | 1.467181 | 0.000138 | 1.88683 | 0.000148 | 1127 | 69 | -1.73 | 3.33 | 1205 | 1635 | |
| S2Z2.107 | Hekkingen | 0.001624 | 0.000011 | 0.109788 | 0.000729 | 0.282268 | 5.96E-05 | 1.467133 | 0.000109 | 1.886842 | 0.000119 | 1174 | 37 | 6.80 | 2.90 | 859 | 1357 | |
| S2Z2.117 | Hekkingen | 0.001011 | 1.26E-05 | 0.061827 | 0.000779 | 0.282043 | 6.31E-05 | 1.467032 | 0.000104 | 1.887069 | 0.000128 | 1202 | 35 | -0.09 | 2.99 | 1206 | 1637 | |
| S2Z2.032 | Hekkingen | 0.001061 | 2.03E-06 | 0.064931 | 0.000499 | 0.281852 | 6.48E-05 | 1.467176 | 9.81E-05 | 1.887012 | 0.00014 | 1604 | 30 | 1.99 | 2.96 | 1514 | 1894 | |
| S2Z2.106 | Hekkingen | 0.003305 | 4.26E-05 | 0.193806 | 0.00234 | 0.281591 | 9.03E-05 | 1.467127 | 0.000139 | 1.886712 | 0.000149 | 1607 | 27 | -9.63 | 3.67 | 2071 | 2375 | |
| S2Z2.033 | Hekkingen | 0.000886 | 2.73E-05 | 0.054014 | 0.00206 | 0.281861 | 5.92E-05 | 1.466862 | 0.000116 | 1.88672 | 0.000154 | 1615 | 34 | 2.73 | 2.80 | 1492 | 1874 | |
| S2Z2.043 | Hekkingen | 0.001068 | 1.34E-05 | 0.062911 | 0.00152 | 0.281971 | 0.000053 | 1.466955 | 0.000121 | 1.88688 | 0.000135 | 1617 | 27 | 6.51 | 2.45 | 1323 | 1735 | |
| S2Z2.011 | Hekkingen | 0.001491 | 1.17E-05 | 0.077205 | 0.000831 | 0.281662 | 9.54E-05 | 1.46643 | 0.000222 | 1.887195 | 0.000228 | 1668 | 27 | -3.82 | 3.95 | 1842 | 2170 | |
| S2Z2.048 | Hekkingen | 0.000817 | 1.07E-05 | 0.048325 | 0.000709 | 0.281765 | 0.000061 | 1.467089 | 0.000149 | 1.886832 | 0.00015 | 1668 | 31 | 0.59 | 2.84 | 1642 | 1998 | |
| S2Z2.012 | Hekkingen | 0.001216 | 4.13E-06 | 0.068654 | 0.000426 | 0.28196 | 5.61E-05 | 1.466968 | 0.000119 | 1.886711 | 0.000131 | 1741 | 29 | 8.71 | 2.63 | 1347 | 1757 | |
| S2Z2.010 | Hekkingen | 0.000785 | 2.08E-06 | 0.047605 | 0.000335 | 0.281317 | 6.57E-05 | 1.467066 | 0.000108 | 1.886858 | 0.000135 | 1810 | 33 | -12.07 | 3.07 | 2344 | 2583 | |
| S2Z2.112 | Hekkingen | 0.000561 | 4.38E-06 | 0.039391 | 0.000186 | 0.281247 | 0.000153 | 1.466818 | 0.000219 | 1.887485 | 0.000274 | 1888 | 33 | -12.54 | 6.17 | 2438 | 2661 | |
| S2Z2.051 | Hekkingen | 0.000919 | 9.85E-06 | 0.050893 | 0.000472 | 0.281601 | 6.27E-05 | 1.467055 | 0.000147 | 1.886724 | 0.000148 | 1953 | 24 | 1.05 | 2.74 | 1906 | 2219 | |
| S2Z2.039 | Hekkingen | 0.000527 | 0.000014 | 0.029109 | 0.00103 | 0.281137 | 5.02E-05 | 1.466897 | 9.55E-05 | 1.886961 | 0.000138 | 2570 | 21 | -0.79 | 2.22 | 2604 | 2800 | |
| S2Z2.020 | Hekkingen | 0.001211 | 8.28E-06 | 0.076273 | 0.000953 | 0.28111 | 9.06E-05 | 1.466857 | 0.000231 | 1.886753 | 0.000209 | 2768 | 20 | 1.51 | 3.65 | 2701 | 2884 | |
| S2Z2.014 | Hekkingen | 0.000293 | 4.04E-06 | 0.015532 | 0.000241 | 0.281013 | 4.73E-05 | 1.467146 | 9.56E-05 | 1.886898 | 0.000121 | 2772 | 24 | -0.10 | 2.23 | 2776 | 2943 | |
| S2Z2.008 | Hekkingen | 8.01E-05 | 5.57E-07 | 0.004781 | 5.64E-05 | 0.281003 | 0.000062 | 1.466885 | 0.00016 | 1.887065 | 0.000205 | 2796 | 23 | 0.52 | 2.74 | 2774 | 2940 | |
| S2Z2.001 | Hekkingen | 0.000361 | 1.34E-06 | 0.021627 | 0.000211 | 0.280961 | 5.14E-05 | 1.466941 | 8.77E-05 | 1.886859 | 0.000115 | 2805 | 42 | -1.33 | 2.80 | 2862 | 3015 | |
| S2Z2.027 | Hekkingen | 0.001701 | 1.57E-05 | 0.094918 | 0.000738 | 0.281119 | 6.42E-05 | 1.46715 | 0.000125 | 1.886953 | 0.000169 | 2806 | 26 | 1.76 | 2.81 | 2727 | 2908 | |
| S2Z2.028 | Hekkingen | 0.00071 | 3.91E-06 | 0.046416 | 0.000589 | 0.281036 | 6.04E-05 | 1.466882 | 0.000123 | 1.886505 | 0.000159 | 2911 | 22 | 3.13 | 2.64 | 2775 | 2944 | |
| S2Z2.111 | Hekkingen | 0.000662 | 6.32E-06 | 0.034702 | 0.000389 | 0.280786 | 4.68E-05 | 1.467148 | 0.000101 | 1.886942 | 0.0001 | 3077 | 24 | -1.83 | 2.20 | 3156 | 3262 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2Z2.089 | Hekkingen | 0.000462 | 1.1E-06 | 0.030148 | 0.000313 | 0.282267 | 5.27E-05 | 1.467098 | 0.000139 | 1.887131 | 0.000151 | 961 | 18 | 2.90 | 2.27 | 831 | 1319 | |
| S2Z2.067 | Hekkingen | 0.001023 | 4.37E-05 | 0.086902 | 0.00421 | 0.282017 | 7.76E-05 | 1.467175 | 0.00012 | 1.886827 | 0.000163 | 973 | 17 | -6.07 | 3.07 | 1249 | 1673 | |
| S2Z2.070 | Hekkingen | 0.000654 | 5.53E-06 | 0.044343 | 0.00057 | 0.282358 | 6.65E-05 | 1.467018 | 0.000167 | 1.886523 | 0.000165 | 1097 | 53 | 9.04 | 3.53 | 689 | 1203 | |
| S2Z2.083 | Hekkingen | 0.00087 | 3.76E-06 | 0.055083 | 0.000353 | 0.282343 | 7.03E-05 | 1.467119 | 0.000193 | 1.886955 | 0.000178 | 1126 | 33 | 8.97 | 3.22 | 719 | 1231 | |
| S2Z2.085 | Hekkingen | 0.000773 | 1.33E-06 | 0.045718 | 0.000267 | 0.282281 | 6.26E-05 | 1.467075 | 0.000102 | 1.886674 | 0.000139 | 1153 | 59 | 7.47 | 3.53 | 816 | 1310 | |
| S2Z2.087 | Hekkingen | 0.002308 | 1.37E-05 | 0.156334 | 0.000743 | 0.282145 | 9.01E-05 | 1.466874 | 0.000157 | 1.886708 | 0.000171 | 1226 | 31 | 2.99 | 3.83 | 1085 | 1552 | |
| S2Z2.091 | Hekkingen | 0.00166 | 9.4E-06 | 0.110174 | 0.00117 | 0.282169 | 8.14E-05 | 1.466997 | 0.00013 | 1.886837 | 0.000131 | 1314 | 58 | 6.28 | 4.13 | 1023 | 1493 | |
| S2Z2.061 | Hekkingen | 0.00088 | 1.23E-05 | 0.054552 | 0.00116 | 0.281786 | 6.43E-05 | 1.467022 | 8.98E-05 | 1.886772 | 0.000132 | 1380 | 35 | -5.14 | 3.04 | 1611 | 1973 | |
| S2Z2.088 | Hekkingen | 0.000932 | 1.08E-05 | 0.059735 | 0.00105 | 0.282043 | 5.58E-05 | 1.46692 | 0.000108 | 1.886912 | 0.000152 | 1388 | 43 | 4.10 | 2.91 | 1203 | 1634 | |
| S2Z2.078 | Hekkingen | 0.000408 | 4.19E-06 | 0.025554 | 0.000152 | 0.28208 | 4.83E-05 | 1.467089 | 0.000123 | 1.886942 | 0.000152 | 1544 | 37 | 9.43 | 2.54 | 1126 | 1564 | |
| S2Z2.057 | Hekkingen | 0.000958 | 1.75E-05 | 0.03628 | 0.000338 | 0.281933 | 3.65E-05 | 1.467206 | 8.59E-05 | 1.886308 | 0.000105 | 1548 | 32 | 3.72 | 1.97 | 1381 | 1782 | |
| S2Z2.069 | Hekkingen | 0.002037 | 3.33E-05 | 0.128746 | 0.00273 | 0.28179 | 7.82E-05 | 1.466971 | 0.000152 | 1.887007 | 0.000163 | 1602 | 33 | -1.29 | 3.41 | 1662 | 2026 | |
| S2Z2.071 | Hekkingen | 0.001207 | 1.32E-05 | 0.037211 | 0.000568 | 0.281826 | 5.19E-05 | 1.467192 | 8.01E-05 | 1.88667 | 0.000117 | 1607 | 41 | 0.97 | 2.72 | 1563 | 1936 | |
| S2Z2.052 | Hekkingen | 0.001045 | 9.18E-06 | 0.063014 | 0.000631 | 0.281578 | 0.000067 | 1.466722 | 0.000168 | 1.886839 | 0.000154 | 1790 | 25 | -3.57 | 2.91 | 1950 | 2256 | |
| S2Z2.082 | Hekkingen | 0.001785 | 1.48E-05 | 0.092369 | 0.000756 | 0.281616 | 0.000073 | 1.467125 | 0.000162 | 1.886682 | 0.000153 | 1924 | 23 | -0.20 | 3.06 | 1933 | 2249 | |
| S2Z2.077 | Hekkingen | 0.001372 | 9.38E-06 | 0.065313 | 0.000416 | 0.281821 | 7.66E-05 | 1.46674 | 0.000164 | 1.887035 | 0.000169 | 1946 | 25 | 8.10 | 3.25 | 1579 | 1951 | |
| S2Z2.093 | Hekkingen | 0.000642 | 6.13E-06 | 0.041197 | 0.000269 | 0.281434 | 5.14E-05 | 1.467018 | 0.000145 | 1.886619 | 0.000143 | 2001 | 41 | -3.42 | 2.74 | 2151 | 2422 | |
| S2Z2.076 | Hekkingen | 0.000689 | 7.3E-07 | 0.038913 | 0.000259 | 0.281608 | 5.18E-05 | 1.466935 | 9.72E-05 | 1.887032 | 0.000117 | 2081 | 31 | 4.52 | 2.54 | 1881 | 2197 | |
| S2Z2.079 | Hekkingen | 0.000483 | 5.69E-07 | 0.031165 | 0.000246 | 0.281112 | 5.71E-05 | 1.467022 | 0.000139 | 1.886726 | 0.000143 | 2469 | 30 | -3.93 | 2.72 | 2640 | 2829 | |
| S2Z2.056 | Hekkingen | 0.001141 | 9.42E-06 | 0.064713 | 0.00033 | 0.281561 | 5.99E-05 | 1.466943 | 0.000145 | 1.886696 | 0.00014 | 2797 | 24 | 18.35 | 2.64 | 1983 | 2285 | |
| S2Z2.060 | Hekkingen | 0.000898 | 1.98E-06 | 0.054902 | 0.000419 | 0.280916 | 0.000055 | 1.46706 | 0.000109 | 1.887185 | 0.000147 | 3030 | 24 | 1.21 | 2.50 | 2977 | 3113 | |
| | | | | | | | | | | | | | | | | | | |
| 2Z3.016.01 | Hekkingen | 0.000149 | 3.53E-06 | 0.009194 | 0.000292 | 0.282561 | 4.33E-05 | 1.467229 | 0.00011 | 1.886733 | 0.000121 | 436 | 15 | 1.75 | 1.87 | 357 | 920 | |
| S2Z3.003 | Hekkingen | 0.001469 | 2.6E-06 | 0.095577 | 0.000636 | 0.282519 | 6.36E-05 | 1.467192 | 0.000116 | 1.886702 | 0.000138 | 535 | 8 | 2.00 | 2.42 | 442 | 1009 | |
| S2Z3.056 | Hekkingen | 0.000574 | 2.4E-06 | 0.03543 | 0.000362 | 0.28233 | 5.86E-05 | 1.467141 | 0.000111 | 1.886703 | 0.00014 | 542 | 15 | -4.21 | 2.40 | 733 | 1238 | |
| S2Z3.118 | Hekkingen | 0.001014 | 5.3E-06 | 0.06432 | 9.98E-05 | 0.282147 | 5.68E-05 | 1.467138 | 0.000115 | 1.886937 | 0.000114 | 558 | 9 | -10.50 | 2.20 | 1038 | 1498 | |
| S2Z3.079 | Hekkingen | 0.000584 | 3.05E-06 | 0.03764 | 0.000278 | 0.282231 | 4.63E-05 | 1.467089 | 0.000117 | 1.886752 | 0.000119 | 567 | 14 | -7.16 | 1.95 | 891 | 1370 | |
| S2Z3.033 | Hekkingen | 0.00099 | 1.56E-06 | 0.063944 | 0.000451 | 0.282253 | 6.08E-05 | 1.466989 | 0.000121 | 1.886712 | 0.000116 | 580 | 9 | -6.27 | 2.35 | 867 | 1355 | |
| S2Z3.031 | Hekkingen | 0.000757 | 3.43E-06 | 0.05926 | 0.00062 | 0.282528 | 0.000045 | 1.466962 | 0.000106 | 1.886708 | 0.000121 | 585 | 12 | 3.66 | 1.85 | 418 | 979 | |
| S2Z3.115 | Hekkingen | 0.000898 | 7.41E-06 | 0.055674 | 0.000313 | 0.282336 | 5.55E-05 | 1.467018 | 0.000129 | 1.886869 | 0.000152 | 604 | 13 | -2.78 | 2.24 | 731 | 1241 | |
| S2Z3.108 | Hekkingen | 0.000769 | 8.93E-06 | 0.053654 | 0.001 | 0.282242 | 6.85E-05 | 1.467193 | 0.000128 | 1.886981 | 0.000145 | 629 | 14 | -5.51 | 2.73 | 879 | 1363 | |
| S2Z3.040 | Hekkingen | 0.001542 | 6.05E-06 | 0.102497 | 0.000414 | 0.282443 | 7.14E-05 | 1.467193 | 0.000119 | 1.887028 | 0.000148 | 694 | 16 | 2.71 | 2.87 | 568 | 1115 | |
| S2Z3.090 | Hekkingen | 0.001325 | 2.45E-05 | 0.095214 | 0.00137 | 0.282303 | 5.61E-05 | 1.467057 | 0.000138 | 1.886655 | 0.000128 | 730 | 33 | -1.40 | 2.68 | 795 | 1300 | |
| S2Z3.034 | Hekkingen | 0.00079 | 6.36E-06 | 0.047245 | 0.000118 | 0.282158 | 5.07E-05 | 1.467128 | 0.000102 | 1.886662 | 0.000122 | 937 | 52 | -1.72 | 2.94 | 1015 | 1476 | |
| S2Z3.001 | Hekkingen | 0.000695 | 6.5E-06 | 0.043717 | 0.000181 | 0.28215 | 5.33E-05 | 1.467186 | 0.000103 | 1.886754 | 0.000125 | 1020 | 34 | -0.07 | 2.63 | 1023 | 1482 | |
| S2Z3.032 | Hekkingen | 0.000758 | 4.02E-06 | 0.045042 | 7.41E-05 | 0.281979 | 5.24E-05 | 1.467165 | 0.00011 | 1.886968 | 0.00012 | 1023 | 37 | -6.11 | 2.67 | 1298 | 1711 | |
| S2Z3.061 | Hekkingen | 0.000652 | 7.79E-06 | 0.040892 | 0.000147 | 0.282221 | 3.76E-05 | 1.46715 | 9.38E-05 | 1.886503 | 0.000111 | 1038 | 30 | 2.85 | 1.99 | 910 | 1387 | |
| S2Z3.005 | Hekkingen | 0.000553 | 1.08E-05 | 0.03367 | 0.000499 | 0.282255 | 5.17E-05 | 1.467188 | 0.00011 | 1.886779 | 0.000132 | 1039 | 37 | 4.17 | 2.64 | 852 | 1337 | |
| S2Z3.088 | Hekkingen | 0.000635 | 1.44E-05 | 0.038706 | 0.000772 | 0.282195 | 5.92E-05 | 1.467003 | 0.000108 | 1.887071 | 0.000139 | 1066 | 39 | 2.58 | 2.95 | 950 | 1420 | |
| S2Z3.098 | Hekkingen | 0.000489 | 3.64E-06 | 0.033194 | 0.000441 | 0.282092 | 6.39E-05 | 1.467089 | 0.000112 | 1.886453 | 0.000138 | 1080 | 31 | -0.66 | 2.95 | 1109 | 1551 | |
| S2Z3.077 | Hekkingen | 0.000403 | 1.62E-06 | 0.024303 | 8.37E-05 | 0.282194 | 5.41E-05 | 1.467093 | 0.000114 | 1.886618 | 0.000146 | 1126 | 30 | 4.07 | 2.59 | 945 | 1413 | |
| S2Z3.060 | Hekkingen | 0.001229 | 6.25E-06 | 0.077645 | 0.000339 | 0.282167 | 5.87E-05 | 1.467079 | 0.000123 | 1.886883 | 0.000147 | 1127 | 29 | 2.48 | 2.71 | 1013 | 1480 | |
| S2Z3.030 | Hekkingen | 0.002753 | 1.15E-06 | 0.18074 | 0.0011 | 0.282256 | 7.62E-05 | 1.467211 | 0.000111 | 1.886937 | 0.000135 | 1180 | 25 | 5.62 | 3.22 | 910 | 1414 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2Z3.027 | Hekkingen | 0.00323 | 2.27E-05 | 0.215092 | 0.00191 | 0.282197 | 8.97E-05 | 1.466992 | 0.000113 | 1.88692 | 0.000133 | 1271 | 54 | 5.01 | 4.25 | 1027 | 1516 | |
| S2Z3.105 | Hekkingen | 0.00113 | 1.34E-05 | 0.071262 | 0.000532 | 0.28227 | 5.95E-05 | 1.46719 | 0.000132 | 1.886697 | 0.000143 | 1300 | 37 | 10.04 | 2.90 | 842 | 1337 | |
| 2Z3.019.02 | Hekkingen | 0.001145 | 2.91E-06 | 0.061671 | 0.00036 | 0.281947 | 5.08E-05 | 1.467154 | 0.000104 | 1.886966 | 0.000116 | 1357 | 29 | -0.19 | 2.44 | 1366 | 1771 | |
| S2Z3.035 | Hekkingen | 0.000688 | 1.54E-05 | 0.034343 | 0.000522 | 0.28207 | 8.32E-05 | 1.467128 | 0.000228 | 1.886734 | 0.000237 | 1405 | 42 | 5.65 | 3.86 | 1152 | 1589 | |
| S2Z3.041 | Hekkingen | 0.000623 | 1.03E-05 | 0.037349 | 0.000942 | 0.28197 | 6.24E-05 | 1.467174 | 0.000155 | 1.886683 | 0.000169 | 1428 | 27 | 2.68 | 2.80 | 1308 | 1718 | |
| S2Z3.006 | Hekkingen | 0.000812 | 0.000015 | 0.050946 | 0.000868 | 0.281954 | 4.78E-05 | 1.46706 | 0.000119 | 1.886845 | 0.000154 | 1453 | 28 | 2.49 | 2.29 | 1341 | 1748 | |
| S2Z3.052 | Hekkingen | 0.000644 | 3.49E-06 | 0.037139 | 0.000279 | 0.282089 | 4.71E-05 | 1.467118 | 0.000117 | 1.886726 | 0.000126 | 1457 | 24 | 7.56 | 2.20 | 1119 | 1561 | |
| S2Z3.119 | Hekkingen | 0.000769 | 9.48E-06 | 0.047451 | 0.000371 | 0.281778 | 0.000053 | 1.466924 | 0.000128 | 1.886638 | 0.000154 | 1499 | 23 | -2.68 | 2.38 | 1618 | 1978 | |
| S2Z3.002 | Hekkingen | 0.000831 | 1.66E-05 | 0.049441 | 0.00136 | 0.282016 | 5.48E-05 | 1.467185 | 0.000117 | 1.886808 | 0.000128 | 1561 | 32 | 7.10 | 2.63 | 1243 | 1666 | |
| S2Z3.038 | Hekkingen | 0.001573 | 1.47E-05 | 0.097451 | 0.00139 | 0.281943 | 5.87E-05 | 1.467041 | 0.000108 | 1.88712 | 0.000132 | 1575 | 31 | 4.04 | 2.73 | 1390 | 1796 | |
| S2Z3.029 | Hekkingen | 0.001606 | 1.61E-05 | 0.091634 | 0.000548 | 0.281905 | 6.45E-05 | 1.467261 | 0.000108 | 1.886833 | 0.000139 | 1588 | 27 | 2.94 | 2.84 | 1453 | 1849 | |
| S2Z3.023 | Hekkingen | 0.00168 | 1.93E-05 | 0.10026 | 0.000422 | 0.281751 | 5.85E-05 | 1.467175 | 0.000104 | 1.886492 | 0.000127 | 1607 | 38 | -2.19 | 2.86 | 1708 | 2061 | |
| 2Z3.057.05 | Hekkingen | 0.001497 | 0.000008 | 0.086439 | 0.000209 | 0.281813 | 5.34E-05 | 1.467145 | 0.000108 | 1.887008 | 0.000115 | 1648 | 25 | 1.12 | 2.43 | 1597 | 1967 | |
| S2Z3.073 | Hekkingen | 0.00068 | 4.21E-06 | 0.035678 | 0.000404 | 0.281439 | 0.00005 | 1.467138 | 0.000125 | 1.886732 | 0.000139 | 1720 | 26 | -9.65 | 2.35 | 2146 | 2418 | |
| S2Z3.086 | Hekkingen | 0.000651 | 4.34E-06 | 0.040324 | 0.000105 | 0.281785 | 6.96E-05 | 1.466886 | 0.000193 | 1.886399 | 0.000202 | 1721 | 22 | 2.68 | 2.96 | 1602 | 1963 | |
| S2Z3.059 | Hekkingen | 0.001102 | 1.56E-06 | 0.065284 | 0.000395 | 0.281872 | 6.56E-05 | 1.467307 | 0.000114 | 1.88703 | 0.000148 | 1767 | 26 | 6.29 | 2.90 | 1484 | 1869 | |
| S2Z3.007 | Hekkingen | 0.000561 | 9.85E-06 | 0.032484 | 0.000549 | 0.281445 | 4.89E-05 | 1.467086 | 0.000104 | 1.886841 | 0.000124 | 1876 | 34 | -5.78 | 2.48 | 2130 | 2404 | |
| S2Z3.024 | Hekkingen | 0.000284 | 1.95E-06 | 0.016195 | 0.000124 | 0.280951 | 4.24E-05 | 1.4672 | 0.00011 | 1.886834 | 0.00012 | 2495 | 26 | -8.72 | 2.10 | 2870 | 3021 | |
| S2Z3.039 | Hekkingen | 0.000142 | 3.8E-06 | 0.007962 | 0.000233 | 0.281134 | 4.79E-05 | 1.467166 | 0.000117 | 1.886947 | 0.000136 | 2641 | 22 | 1.43 | 2.20 | 2580 | 2777 | |
| S2Z3.014 | Hekkingen | 4.26E-05 | 5.2E-07 | 0.003022 | 5.25E-05 | 0.281053 | 0.000041 | 1.467116 | 0.000116 | 1.8869 | 0.000142 | 2681 | 20 | -0.33 | 1.93 | 2695 | 2873 | |
| S2Z3.053 | Hekkingen | 3.6E-05 | 6.51E-07 | 0.002073 | 3.59E-05 | 0.281002 | 4.53E-05 | 1.467181 | 9.15E-05 | 1.886739 | 0.000117 | 2683 | 17 | -2.09 | 2.01 | 2772 | 2938 | |
| S2Z3.103 | Hekkingen | 0.000509 | 4.53E-06 | 0.027906 | 0.00035 | 0.281034 | 4.84E-05 | 1.467098 | 0.000114 | 1.886626 | 0.000128 | 2734 | 20 | -0.64 | 2.17 | 2761 | 2931 | |
| S2Z3.037 | Hekkingen | 0.000328 | 5.36E-06 | 0.017053 | 0.000226 | 0.280969 | 4.71E-05 | 1.467159 | 0.000111 | 1.88683 | 0.000121 | 2748 | 22 | -2.29 | 2.17 | 2846 | 3002 | |
| 2Z3.054.05 | Hekkingen | 0.000253 | 2.72E-06 | 0.01251 | 0.000193 | 0.281029 | 4.28E-05 | 1.467136 | 0.000109 | 1.886749 | 0.000132 | 2748 | 16 | -0.02 | 1.89 | 2749 | 2919 | |
| S2Z3.120 | Hekkingen | 0.000553 | 6.96E-06 | 0.024984 | 0.000299 | 0.281073 | 0.000127 | 1.467035 | 0.000472 | 1.886721 | 0.000395 | 2805 | 22 | 2.30 | 5.00 | 2705 | 2885 | |
| 2Z3.100.10 | Hekkingen | 0.000435 | 5.47E-06 | 0.031116 | 0.000418 | 0.28112 | 7.98E-05 | 1.46737 | 0.000205 | 1.886721 | 0.000216 | 2828 | 20 | 4.74 | 3.28 | 2624 | 2816 | |
| S2Z3.051 | Hekkingen | 0.000436 | 1.24E-05 | 0.02436 | 0.000624 | 0.280993 | 5.91E-05 | 1.466922 | 0.000139 | 1.887288 | 0.000162 | 2856 | 19 | 0.87 | 2.50 | 2819 | 2979 | |
| S2Z4.069 | Fuglen | 0.000537 | 9.18E-07 | 0.035751 | 0.000215 | 0.282791 | 0.000056 | 1.467081 | 8.71E-05 | 1.88669 | 0.00013 | 370 | 9 | 8.31 | 2.18 | -9 | 622 | |
| S2Z4.102 | Fuglen | 0.001174 | 1.47E-05 | 0.066274 | 0.000161 | 0.2823 | 5.97E-05 | 1.466995 | 0.000113 | 1.88703 | 0.000123 | 416 | 9 | -8.22 | 2.30 | 795 | 1298 | |
| S2Z4.095 | Fuglen | 0.001635 | 2.86E-05 | 0.097241 | 0.000913 | 0.282293 | 7.15E-05 | 1.467176 | 0.000132 | 1.886806 | 0.000151 | 579 | 16 | -5.11 | 2.85 | 818 | 1323 | |
| S2Z4.002 | Fuglen | 0.001928 | 1.18E-05 | 0.127528 | 0.00117 | 0.282125 | 7.02E-05 | 1.467039 | 0.000132 | 1.886773 | 0.000134 | 948 | 22 | -3.35 | 2.94 | 1105 | 1564 | |
| S2Z4.116 | Fuglen | 0.002842 | 1.07E-05 | 0.202274 | 0.00109 | 0.282211 | 0.000147 | 1.467315 | 0.000146 | 1.887256 | 0.000211 | 993 | 30 | 0.06 | 5.82 | 990 | 1481 | |
| S2Z4.112 | Fuglen | 0.000481 | 1.39E-06 | 0.03327 | 0.000236 | 0.282202 | 6.38E-05 | 1.467181 | 9.09E-05 | 1.886792 | 0.000142 | 1028 | 41 | 2.09 | 3.18 | 934 | 1405 | |
| S2Z4.022 | Fuglen | 0.000586 | 1.51E-05 | 0.033322 | 0.000755 | 0.282215 | 4.95E-05 | 1.467097 | 9.62E-05 | 1.886755 | 0.000113 | 1064 | 26 | 3.26 | 2.31 | 917 | 1392 | |
| S2Z4.078 | Fuglen | 0.001774 | 6.6E-06 | 0.121608 | 0.00134 | 0.282299 | 6.88E-05 | 1.467 | 0.000102 | 1.887131 | 0.000164 | 1098 | 28 | 6.14 | 3.03 | 812 | 1320 | |
| S2Z4.059 | Fuglen | 0.000617 | 6.16E-07 | 0.041166 | 0.00021 | 0.282092 | 6.11E-05 | 1.467177 | 8.44E-05 | 1.886923 | 0.000132 | 1124 | 32 | 0.23 | 2.88 | 1114 | 1556 | |
| S2Z4.015 | Fuglen | 0.002627 | 5.32E-05 | 0.113539 | 0.00108 | 0.282263 | 0.000115 | 1.467331 | 0.000196 | 1.88704 | 0.000237 | 1155 | 34 | 5.44 | 4.71 | 895 | 1399 | |
| S2Z4.031 | Fuglen | 0.000623 | 1.62E-06 | 0.04314 | 0.000291 | 0.28214 | 4.94E-05 | 1.467065 | 8.48E-05 | 1.886713 | 0.000128 | 1184 | 46 | 3.26 | 2.78 | 1038 | 1493 | |
| S2Z4.030 | Fuglen | 0.002119 | 2.98E-06 | 0.142943 | 0.000883 | 0.282276 | 6.05E-05 | 1.467225 | 9.27E-05 | 1.887094 | 0.000124 | 1189 | 27 | 7.00 | 2.72 | 859 | 1363 | |
| S2Z4.010 | Fuglen | 0.000724 | 1.47E-05 | 0.044824 | 0.00069 | 0.281969 | 5.12E-05 | 1.467277 | 8.69E-05 | 1.886857 | 0.000107 | 1195 | 25 | -2.63 | 2.35 | 1313 | 1723 | |
| S2Z4.083 | Fuglen | 0.00119 | 4.55E-06 | 0.0517 | 0.000891 | 0.2819 | 5.81E-05 | 1.467174 | 0.000113 | 1.886963 | 0.000125 | 1287 | 34 | -3.42 | 2.80 | 1442 | 1836 | |
| S2Z4.080 | Fuglen | 0.001192 | 2.58E-05 | 0.054849 | 0.000202 | 0.282244 | 5.04E-05 | 1.467185 | 0.000104 | 1.887048 | 0.000132 | 1297 | 30 | 8.99 | 2.40 | 886 | 1374 | |
| S2Z4.084 | Fuglen | 0.003504 | 0.000146 | 0.173624 | 0.00442 | 0.282421 | 9.99E-05 | 1.467523 | 0.000138 | 1.886605 | 0.000167 | 1356 | 29 | 14.47 | 3.87 | 643 | 1206 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2Z4.053 | Fuglen | 0.001127 | 7.12E-06 | 0.05748 | 0.000434 | 0.282039 | 5.01E-05 | 1.467088 | 8.72E-05 | 1.886787 | 0.00011 | 1431 | 33 | 4.72 | 2.49 | 1217 | 1648 | |
| S2Z4.115 | Fuglen | 0.000759 | 6.82E-06 | 0.055201 | 0.000225 | 0.281917 | 5.29E-05 | 1.46705 | 0.000126 | 1.886754 | 0.000136 | 1455 | 27 | 1.27 | 2.47 | 1398 | 1794 | |
| S2Z4.079 | Fuglen | 0.001516 | 3.12E-05 | 0.086837 | 0.000285 | 0.282085 | 6.47E-05 | 1.467186 | 0.000111 | 1.886727 | 0.000136 | 1481 | 28 | 7.09 | 2.84 | 1156 | 1601 | |
| S2Z4.082 | Fuglen | 0.001181 | 2.74E-05 | 0.07416 | 0.000747 | 0.282116 | 9.29E-05 | 1.467006 | 0.000166 | 1.88672 | 0.000179 | 1486 | 28 | 8.61 | 3.86 | 1095 | 1547 | |
| S2Z4.045 | Fuglen | 0.001402 | 1.69E-05 | 0.093503 | 0.00196 | 0.281744 | 5.18E-05 | 1.467089 | 9.01E-05 | 1.886812 | 9.65E-05 | 1497 | 24 | -4.57 | 2.33 | 1705 | 2056 | |
| S2Z4.068 | Fuglen | 0.001008 | 1.22E-05 | 0.060922 | 0.000387 | 0.281832 | 5.49E-05 | 1.467099 | 8.62E-05 | 1.886936 | 0.000114 | 1498 | 38 | -1.03 | 2.77 | 1544 | 1919 | |
| S2Z4.036 | Fuglen | 0.00132 | 9.98E-06 | 0.069921 | 0.000359 | 0.281846 | 5.71E-05 | 1.467146 | 0.00011 | 1.886833 | 0.000141 | 1543 | 27 | 0.17 | 2.60 | 1535 | 1914 | |
| S2Z4.109 | Fuglen | 0.000516 | 1.74E-05 | 0.027634 | 0.000408 | 0.281698 | 4.97E-05 | 1.467148 | 0.000118 | 1.886766 | 0.000144 | 1596 | 44 | -3.06 | 2.72 | 1731 | 2070 | |
| S2Z4.027 | Fuglen | 0.001925 | 3.57E-05 | 0.096999 | 0.00115 | 0.28194 | 6.42E-05 | 1.467141 | 0.000111 | 1.886484 | 0.000127 | 1615 | 22 | 4.42 | 2.68 | 1410 | 1817 | |
| S2Z4.067 | Fuglen | 0.002217 | 0.000045 | 0.150769 | 0.00191 | 0.281429 | 7.23E-05 | 1.467091 | 0.000113 | 1.887166 | 0.00014 | 1616 | 30 | -14.02 | 3.11 | 2266 | 2528 | |
| S2Z4.016 | Fuglen | 0.001054 | 8.44E-06 | 0.059224 | 0.000296 | 0.281776 | 8.29E-05 | 1.467182 | 0.000106 | 1.886863 | 0.000173 | 1651 | 29 | 0.36 | 3.57 | 1635 | 1994 | |
| S2Z4.005 | Fuglen | 0.003081 | 1.63E-05 | 0.187116 | 0.000755 | 0.281833 | 7.96E-05 | 1.467003 | 0.000103 | 1.8868 | 0.000119 | 1754 | 20 | 2.27 | 3.21 | 1645 | 2023 | |
| S2Z4.054 | Fuglen | 0.000923 | 2.27E-06 | 0.059187 | 0.00048 | 0.281769 | 5.68E-05 | 1.467118 | 0.000101 | 1.886898 | 0.00012 | 1755 | 20 | 2.55 | 2.46 | 1641 | 1998 | |
| S2Z4.004 | Fuglen | 0.000956 | 1.63E-05 | 0.058274 | 0.000832 | 0.281437 | 5.63E-05 | 1.467219 | 8.98E-05 | 1.887023 | 0.000146 | 1809 | 25 | -8.06 | 2.52 | 2168 | 2438 | |
| S2Z4.038 | Fuglen | 0.000726 | 3.92E-05 | 0.032953 | 0.00114 | 0.281596 | 8.95E-05 | 1.467434 | 0.000178 | 1.886936 | 0.000229 | 1854 | 23 | -1.11 | 3.60 | 1903 | 2215 | |
| S2Z4.020 | Fuglen | 0.00039 | 1.03E-06 | 0.024926 | 0.000164 | 0.281125 | 0.000051 | 1.467067 | 8.57E-05 | 1.886732 | 0.000138 | 1865 | 24 | -17.16 | 2.35 | 2612 | 2806 | |
| S2Z4.094 | Fuglen | 0.000343 | 1.33E-06 | 0.02383 | 6.93E-05 | 0.281417 | 5.65E-05 | 1.46719 | 9.28E-05 | 1.886908 | 0.000138 | 1896 | 31 | -6.03 | 2.71 | 2159 | 2426 | |
| S2Z4.113 | Fuglen | 0.00038 | 1.99E-06 | 0.021569 | 0.000275 | 0.281633 | 4.97E-05 | 1.467209 | 0.000147 | 1.886772 | 0.000137 | 1903 | 27 | 1.77 | 2.38 | 1825 | 2148 | |
| S2Z4.111 | Fuglen | 0.00028 | 1.13E-05 | 0.020229 | 0.000847 | 0.281202 | 5.55E-05 | 1.467019 | 9.48E-05 | 1.886848 | 0.000131 | 1906 | 27 | -13.34 | 2.56 | 2486 | 2699 | |
| S2Z4.093 | Fuglen | 0.001005 | 0.000016 | 0.070541 | 0.00108 | 0.281572 | 5.58E-05 | 1.466938 | 9.74E-05 | 1.887068 | 0.000138 | 1957 | 28 | -0.01 | 2.57 | 1957 | 2263 | |
| S2Z4.013 | Fuglen | 0.000919 | 2.54E-05 | 0.056284 | 0.00129 | 0.281503 | 5.04E-05 | 1.467015 | 0.000107 | 1.886815 | 0.000139 | 1991 | 20 | -1.59 | 2.17 | 2062 | 2349 | |
| S2Z4.023 | Fuglen | 0.001027 | 6.38E-06 | 0.056068 | 0.000317 | 0.281529 | 4.99E-05 | 1.46706 | 0.000111 | 1.886693 | 0.000133 | 1991 | 42 | -0.79 | 2.70 | 2026 | 2320 | |
| S2Z4.098 | Fuglen | 0.001513 | 3.3E-06 | 0.105528 | 0.000673 | 0.281673 | 6.59E-05 | 1.467119 | 9.39E-05 | 1.88668 | 0.000143 | 2012 | 23 | 4.13 | 2.84 | 1825 | 2156 | |
| S2Z4.046 | Fuglen | 0.001382 | 9.98E-06 | 0.09634 | 0.000392 | 0.281337 | 5.79E-05 | 1.467241 | 0.000108 | 1.887078 | 0.00012 | 2014 | 20 | -7.59 | 2.47 | 2355 | 2596 | |
| S2Z4.086 | Fuglen | 0.000332 | 1.45E-06 | 0.018557 | 0.000157 | 0.281516 | 6.58E-05 | 1.467139 | 8.13E-05 | 1.886889 | 0.000144 | 2025 | 29 | 0.47 | 3.00 | 2004 | 2297 | |
| S2Z4.076 | Fuglen | 2.93E-05 | 5.1E-07 | 0.002563 | 3.43E-05 | 0.281028 | 4.38E-05 | 1.467049 | 8.99E-05 | 1.886882 | 0.000107 | 2577 | 23 | -3.65 | 2.09 | 2733 | 2905 | |
| S2Z4.012 | Fuglen | 0.000819 | 0.000029 | 0.045533 | 0.00104 | 0.281192 | 6.88E-05 | 1.466948 | 0.00021 | 1.886973 | 0.000198 | 2663 | 16 | 2.76 | 2.71 | 2542 | 2749 | |
| S2Z4.087 | Fuglen | 0.000549 | 2.97E-06 | 0.030002 | 0.000142 | 0.280854 | 4.94E-05 | 1.467044 | 0.000113 | 1.886694 | 0.000123 | 2714 | 22 | -7.58 | 2.25 | 3041 | 3166 | |
| S2Z4.048 | Fuglen | 0.000999 | 2.84E-05 | 0.056336 | 0.000685 | 0.281218 | 0.000037 | 1.467019 | 8.43E-05 | 1.88704 | 0.000103 | 2733 | 22 | 4.95 | 1.71 | 2515 | 2728 | |
| S2Z4.024 | Fuglen | 0.000427 | 9.66E-07 | 0.023999 | 7.38E-05 | 0.280985 | 5.85E-05 | 1.467178 | 8.33E-05 | 1.887075 | 0.000133 | 2734 | 22 | -2.24 | 2.59 | 2831 | 2989 | |
| S2Z4.026 | Fuglen | 0.000769 | 2.43E-06 | 0.046873 | 0.000186 | 0.280772 | 6.78E-05 | 1.467109 | 8.35E-05 | 1.886731 | 0.000142 | 2734 | 22 | -10.44 | 2.91 | 3187 | 3288 | |
| S2Z4.058 | Fuglen | 0.000687 | 2.92E-06 | 0.039619 | 0.000254 | 0.280743 | 4.59E-05 | 1.467105 | 9.46E-05 | 1.886978 | 0.000119 | 2805 | 21 | -9.69 | 2.11 | 3224 | 3319 | |
| | | | | | | | | | | | | | | | | | | |
| S2Z5.032 | Stø | 0.000555 | 1.14E-05 | 0.031338 | 0.000506 | 0.282391 | 6.65E-05 | 1.4673 | 9.73E-05 | 1.886867 | 0.000144 | 453 | 9 | -4.01 | 2.55 | 635 | 1157 | |
| S2Z5.036 | Stø | 0.001522 | 3.43E-05 | 0.084132 | 0.00221 | 0.282594 | 5.25E-05 | 1.467019 | 7.22E-05 | 1.886861 | 0.000101 | 462 | 18 | 3.08 | 2.22 | 318 | 908 | |
| S2Z5.051 | Stø | 0.001046 | 2.17E-05 | 0.059541 | 0.000388 | 0.282218 | 3.91E-05 | 1.467166 | 0.000085 | 1.886781 | 0.000118 | 525 | 17 | -8.74 | 1.74 | 926 | 1405 | |
| S2Z5.053 | Stø | 0.000878 | 6.29E-07 | 0.05718 | 0.000146 | 0.282489 | 5.43E-05 | 1.46711 | 8.65E-05 | 1.886907 | 0.000126 | 562 | 9 | 1.74 | 2.12 | 483 | 1035 | |
| S2Z5.120 | Stø | 0.000536 | 6.68E-07 | 0.037674 | 0.000164 | 0.282434 | 5.66E-05 | 1.46716 | 7.23E-05 | 1.886969 | 0.000126 | 575 | 9 | 0.20 | 2.20 | 566 | 1099 | |
| S2Z5.027 | Stø | 0.001828 | 6.23E-06 | 0.115247 | 0.000167 | 0.282635 | 0.00007 | 1.467033 | 8.31E-05 | 1.886788 | 0.000134 | 657 | 14 | 8.56 | 2.77 | 253 | 859 | |
| S2Z5.028 | Stø | 0.002571 | 2.41E-05 | 0.184007 | 0.00218 | 0.282027 | 8.94E-05 | 1.467043 | 8.61E-05 | 1.886975 | 0.000132 | 955 | 29 | -7.09 | 3.74 | 1293 | 1727 | |
| S2Z5.024 | Stø | 0.00223 | 3.34E-05 | 0.13149 | 0.000856 | 0.281703 | 7.77E-05 | 1.467 | 0.00012 | 1.886816 | 0.000127 | 992 | 22 | -17.56 | 3.17 | 1816 | 2156 | |
| S2Z5.069 | Stø | 0.000751 | 1.03E-06 | 0.051772 | 0.000164 | 0.282194 | 5.55E-05 | 1.46705 | 7.12E-05 | 1.886649 | 0.000116 | 1003 | 34 | 1.07 | 2.72 | 955 | 1425 | |
| S2Z5.116 | Stø | 0.000676 | 2.77E-06 | 0.046613 | 0.000118 | 0.282316 | 5.47E-05 | 1.467119 | 8.49E-05 | 1.886835 | 0.000122 | 1010 | 70 | 5.60 | 3.49 | 757 | 1260 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2Z5.017 | Stø | 0.000506 | 6.56E-07 | 0.033708 | 9.51E-05 | 0.282222 | 5.17E-05 | 1.467211 | 6.57E-05 | 1.886888 | 0.000118 | 1095 | 41 | 4.28 | 2.75 | 903 | 1379 | |
| S2Z5.022 | Stø | 0.00053 | 2.8E-06 | 0.032378 | 9.21E-05 | 0.282144 | 5.73E-05 | 1.467145 | 7.23E-05 | 1.886714 | 0.000126 | 1097 | 43 | 1.53 | 2.99 | 1028 | 1484 | |
| S2Z5.103 | Stø | 0.000556 | 6.46E-07 | 0.038603 | 0.000184 | 0.282146 | 4.97E-05 | 1.467143 | 7.29E-05 | 1.887002 | 0.000121 | 1151 | 30 | 2.79 | 2.43 | 1026 | 1482 | |
| S2Z5.035 | Stø | 0.000644 | 2.92E-06 | 0.042727 | 0.000135 | 0.282198 | 0.000055 | 1.4671 | 7.69E-05 | 1.887111 | 0.000127 | 1162 | 37 | 4.81 | 2.77 | 946 | 1417 | |
| S2Z5.062 | Stø | 0.001233 | 8.74E-06 | 0.066502 | 0.000498 | 0.282122 | 6.18E-05 | 1.46705 | 0.00013 | 1.886382 | 0.000143 | 1258 | 28 | 3.77 | 2.79 | 1086 | 1540 | |
| S2Z5.002 | Stø | 0.000826 | 2.22E-06 | 0.059611 | 0.000338 | 0.282284 | 5.71E-05 | 1.467135 | 7.81E-05 | 1.886713 | 0.00011 | 1348 | 29 | 11.87 | 2.67 | 812 | 1308 | |
| S2Z5.094 | Stø | 0.001356 | 9.85E-06 | 0.090687 | 0.000172 | 0.282075 | 4.94E-05 | 1.46718 | 8.49E-05 | 1.886779 | 0.000103 | 1361 | 29 | 4.24 | 2.37 | 1167 | 1609 | |
| S2Z5.100 | Stø | 0.000819 | 1.76E-06 | 0.054437 | 0.000253 | 0.282015 | 4.79E-05 | 1.467357 | 6.78E-05 | 1.886922 | 0.000117 | 1424 | 31 | 4.02 | 2.39 | 1244 | 1666 | |
| S2Z5.039 | Stø | 0.001699 | 3.79E-05 | 0.085628 | 0.00162 | 0.282107 | 6.08E-05 | 1.467235 | 9.19E-05 | 1.886852 | 0.000151 | 1454 | 34 | 7.09 | 2.82 | 1126 | 1579 | |
| S2Z5.068 | Stø | 0.001365 | 1.32E-05 | 0.072742 | 0.000163 | 0.281872 | 5.18E-05 | 1.467131 | 0.000082 | 1.886818 | 0.000105 | 1489 | 41 | -0.14 | 2.71 | 1495 | 1881 | |
| S2Z5.087 | Stø | 0.001054 | 5.56E-06 | 0.072163 | 0.000402 | 0.282115 | 0.000056 | 1.467169 | 7.91E-05 | 1.886753 | 0.000118 | 1563 | 30 | 10.42 | 2.64 | 1092 | 1543 | |
| S2Z5.006 | Stø | 0.000457 | 1.14E-06 | 0.029908 | 0.000171 | 0.281658 | 5.14E-05 | 1.46725 | 7.37E-05 | 1.886913 | 0.000114 | 1568 | 28 | -5.04 | 2.45 | 1790 | 2119 | |
| S2Z5.045 | Stø | 0.00083 | 1.48E-06 | 0.055917 | 0.000263 | 0.281732 | 5.36E-05 | 1.467216 | 7.84E-05 | 1.886869 | 0.00011 | 1603 | 37 | -2.03 | 2.73 | 1694 | 2041 | |
| S2Z5.064 | Stø | 0.000666 | 6.22E-07 | 0.043019 | 0.000137 | 0.281858 | 4.66E-05 | 1.467176 | 0.000059 | 1.886828 | 0.000118 | 1631 | 28 | 3.23 | 2.28 | 1487 | 1868 | |
| S2Z5.119 | Stø | 0.000851 | 1.75E-06 | 0.056103 | 0.000279 | 0.281788 | 5.52E-05 | 1.467077 | 7.39E-05 | 1.887076 | 0.000126 | 1631 | 22 | 0.56 | 2.45 | 1606 | 1968 | |
| S2Z5.041 | Stø | 0.001408 | 1.73E-05 | 0.077795 | 0.000281 | 0.281818 | 5.71E-05 | 1.467149 | 8.92E-05 | 1.88706 | 0.00013 | 1632 | 31 | 1.03 | 2.67 | 1585 | 1956 | |
| S2Z5.076 | Stø | 0.002294 | 0.000039 | 0.143927 | 0.00243 | 0.281694 | 5.38E-05 | 1.467122 | 8.09E-05 | 1.887001 | 0.000126 | 1632 | 24 | -4.36 | 2.34 | 1835 | 2172 | |
| S2Z5.113 | Stø | 0.004558 | 1.26E-05 | 0.346784 | 0.000444 | 0.282052 | 9.43E-05 | 1.467121 | 7.97E-05 | 1.88678 | 0.000141 | 1641 | 25 | 6.04 | 3.82 | 1336 | 1786 | |
| S2Z5.118 | Stø | 0.000774 | 1.11E-06 | 0.054626 | 0.000164 | 0.281462 | 6.46E-05 | 1.46709 | 8.45E-05 | 1.88696 | 0.000117 | 1709 | 55 | -9.19 | 3.53 | 2117 | 2394 | |
| S2Z5.052 | Stø | 0.001088 | 3.11E-05 | 0.071764 | 0.00242 | 0.281784 | 4.88E-05 | 1.467077 | 0.000079 | 1.887046 | 9.62E-05 | 1750 | 28 | 2.80 | 2.28 | 1624 | 1986 | |
| S2Z5.008 | Stø | 0.000584 | 6.15E-07 | 0.037701 | 0.000114 | 0.281512 | 5.75E-05 | 1.467202 | 8.15E-05 | 1.886805 | 0.00013 | 1806 | 30 | -5.01 | 2.72 | 2027 | 2317 | |
| S2Z5.030 | Stø | 0.000442 | 8.02E-07 | 0.028805 | 0.000115 | 0.281624 | 0.000057 | 1.467188 | 0.000082 | 1.886697 | 0.000123 | 1820 | 44 | -0.53 | 3.02 | 1843 | 2163 | |
| S2Z5.014 | Stø | 0.00118 | 2.14E-06 | 0.076358 | 0.000132 | 0.281597 | 5.31E-05 | 1.467239 | 6.89E-05 | 1.886718 | 0.000113 | 1846 | 22 | -1.81 | 2.37 | 1927 | 2239 | |
| S2Z5.049 | Stø | 0.000173 | 1.23E-06 | 0.01028 | 4.79E-05 | 0.281498 | 4.57E-05 | 1.467181 | 0.000111 | 1.886881 | 0.000125 | 1924 | 24 | -2.29 | 2.17 | 2024 | 2312 | |
| S2Z5.061 | Stø | 0.002127 | 2.99E-05 | 0.08671 | 0.000777 | 0.281542 | 8.52E-05 | 1.467241 | 0.000144 | 1.887041 | 0.000167 | 1928 | 29 | -3.19 | 3.57 | 2075 | 2369 | |
| S2Z5.038 | Stø | 0.000679 | 2.12E-06 | 0.046204 | 0.000178 | 0.281723 | 4.78E-05 | 1.467211 | 6.72E-05 | 1.886378 | 0.000114 | 1986 | 25 | 6.46 | 2.26 | 1700 | 2045 | |
| S2Z5.015 | Stø | 0.000966 | 7.15E-06 | 0.055866 | 0.000521 | 0.281579 | 6.08E-05 | 1.467166 | 0.000095 | 1.886987 | 0.000136 | 1987 | 22 | 0.98 | 2.63 | 1943 | 2251 | |
| S2Z5.123 | Stø | 0.000714 | 4.07E-06 | 0.046242 | 0.000419 | 0.281047 | 5.89E-05 | 1.467186 | 0.000102 | 1.886525 | 0.000141 | 2694 | 22 | -1.49 | 2.59 | 2759 | 2930 | |
| S2Z5.013 | Stø | 0.000893 | 5.04E-06 | 0.054471 | 0.000174 | 0.281098 | 4.86E-05 | 1.467164 | 7.66E-05 | 1.886657 | 0.000111 | 2698 | 22 | 0.08 | 2.21 | 2695 | 2877 | |
| S2Z5.114 | Stø | 0.000102 | 7.33E-07 | 0.006494 | 5.89E-05 | 0.280884 | 0.000047 | 1.467131 | 7.67E-05 | 1.886955 | 0.000115 | 2701 | 28 | -5.99 | 2.32 | 2956 | 3093 | |
| S2Z5.046 | Stø | 9.27E-05 | 1.29E-06 | 0.004316 | 5.14E-05 | 0.280971 | 4.55E-05 | 1.4672 | 8.72E-05 | 1.886731 | 0.000127 | 2774 | 23 | -1.17 | 2.15 | 2824 | 2982 | |
| S2Z5.019 | Stø | 0.000387 | 6.52E-07 | 0.025463 | 8.95E-05 | 0.280917 | 5.18E-05 | 1.467066 | 6.51E-05 | 1.886642 | 0.000128 | 2814 | 22 | -2.74 | 2.35 | 2932 | 3073 | |
| S2Z5.047 | Stø | 0.00071 | 1.88E-06 | 0.042835 | 0.00029 | 0.281042 | 6.15E-05 | 1.467317 | 8.08E-05 | 1.886493 | 0.000126 | 2827 | 22 | 1.40 | 2.69 | 2766 | 2936 | |
| S2Z5.058 | Stø | 0.00062 | 1.82E-06 | 0.040812 | 0.000163 | 0.281037 | 4.43E-05 | 1.467229 | 6.82E-05 | 1.88679 | 9.56E-05 | 2851 | 26 | 1.96 | 2.17 | 2766 | 2936 | |
| S2Z5.091 | Stø | 0.000515 | 2.08E-06 | 0.027527 | 0.000286 | 0.280969 | 4.48E-05 | 1.467107 | 7.17E-05 | 1.886696 | 0.000109 | 2854 | 24 | -0.19 | 2.14 | 2862 | 3016 | |
| S2Z5.077 | Stø | 0.001394 | 1.36E-06 | 0.091149 | 0.000358 | 0.280898 | 5.93E-05 | 1.467161 | 8.47E-05 | 1.886472 | 0.000133 | 2903 | 23 | -3.31 | 2.63 | 3049 | 3175 | |
| S2Z5.110 | Stø | 0.001256 | 1.46E-06 | 0.079542 | 0.000359 | 0.280817 | 5.61E-05 | 1.46707 | 8.09E-05 | 1.887113 | 0.000108 | 2909 | 21 | -5.79 | 2.47 | 3164 | 3270 | |
| | | | | | | | | | | | | | | | | | | |
| S2-Z6.095 | Kobbe | 0.000773 | 1.04E-05 | 0.049472 | 0.00099 | 0.282309 | 3.61E-05 | 1.467073 | 7.44E-05 | 1.886706 | 9.96E-05 | 544 | 16 | -4.98 | 1.62 | 771 | 1273 | |
| S2-Z6.029 | Kobbe | 0.001032 | 1.37E-05 | 0.063633 | 0.00068 | 0.282327 | 4.08E-05 | 1.467232 | 8.63E-05 | 1.887082 | 9.46E-05 | 551 | 15 | -4.30 | 1.76 | 748 | 1257 | |
| S2-Z6.061 | Kobbe | 0.000913 | 9.14E-06 | 0.059277 | 0.000258 | 0.28231 | 3.82E-05 | 1.467075 | 9.16E-05 | 1.88674 | 0.000101 | 551 | 18 | -4.85 | 1.74 | 773 | 1276 | |
| S2-Z6.042 | Kobbe | 0.001195 | 1.11E-05 | 0.076689 | 0.00115 | 0.282346 | 4.24E-05 | 1.467117 | 7.98E-05 | 1.886983 | 0.000104 | 580 | 15 | -3.04 | 1.82 | 720 | 1236 | |
| S2-Z6.116 | Kobbe | 0.000475 | 7.46E-06 | 0.028728 | 0.00028 | 0.28235 | 0.000029 | 1.46713 | 6.94E-05 | 1.886994 | 9.11E-05 | 581 | 16 | -2.62 | 1.38 | 699 | 1209 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Z6.162.16 | Kobbe | 0.000333 | 1.26E-06 | 0.020233 | 0.00022 | 0.282252 | 3.32E-05 | 1.467077 | 7.37E-05 | 1.887104 | 9.58E-05 | 617 | 16 | -5.21 | 1.53 | 851 | 1334 | |
| S2-Z6.059 | Kobbe | 0.000641 | 3.91E-06 | 0.042444 | 0.000166 | 0.282235 | 4.71E-05 | 1.467118 | 8.79E-05 | 1.887096 | 0.000101 | 622 | 31 | -5.83 | 2.35 | 886 | 1367 | |
| S2-Z6.025 | Kobbe | 4.3E-05 | 2.6E-07 | 0.002761 | 2.69E-05 | 0.281691 | 2.56E-05 | 1.467161 | 7.09E-05 | 1.886899 | 7.36E-05 | 760 | 240 | -21.75 | 6.31 | 1718 | 2055 | |
| S2-Z6.151 | Kobbe | 0.000811 | 7.56E-06 | 0.049218 | 0.000209 | 0.282035 | 3.68E-05 | 1.467078 | 9.14E-05 | 1.887149 | 0.000101 | 820 | 120 | -8.67 | 3.94 | 1212 | 1640 | |
| S2-Z6.155 | Kobbe | 0.000478 | 1.06E-06 | 0.030306 | 0.000145 | 0.282201 | 0.000035 | 1.467178 | 8.24E-05 | 1.887101 | 0.000104 | 825 | 26 | -2.47 | 1.82 | 936 | 1406 | |
| S2-Z6.100 | Kobbe | 0.000757 | 2.03E-05 | 0.045245 | 0.000885 | 0.28215 | 3.02E-05 | 1.467058 | 7.19E-05 | 1.88709 | 9.32E-05 | 947 | 99 | -1.73 | 3.23 | 1025 | 1484 | |
| S2-Z6.092 | Kobbe | 0.000452 | 5.5E-06 | 0.025568 | 8.19E-05 | 0.282066 | 3.42E-05 | 1.467061 | 7.69E-05 | 1.887314 | 9.28E-05 | 1001 | 26 | -3.31 | 1.79 | 1149 | 1584 | |
| S2-Z6.106 | Kobbe | 0.000449 | 1.97E-06 | 0.026098 | 0.000185 | 0.282018 | 0.000038 | 1.466995 | 0.000116 | 1.886874 | 0.000115 | 1003 | 27 | -4.96 | 1.95 | 1225 | 1647 | |
| S2-Z6.139 | Kobbe | 0.000543 | 6.03E-07 | 0.03267 | 0.000255 | 0.282129 | 3.82E-05 | 1.467023 | 9.24E-05 | 1.886849 | 0.000106 | 1040 | 21 | -0.29 | 1.82 | 1053 | 1505 | |
| S2-Z6.157 | Kobbe | 0.0007 | 7.74E-07 | 0.030522 | 0.000196 | 0.282569 | 3.27E-05 | 1.467045 | 8.71E-05 | 1.886945 | 9.74E-05 | 1060 | 27 | 15.67 | 1.76 | 350 | 922 | |
| S2-Z6.040 | Kobbe | 0.000856 | 6.57E-06 | 0.05392 | 0.000242 | 0.28214 | 0.000035 | 1.467138 | 8.23E-05 | 1.887053 | 8.65E-05 | 1113 | 23 | 1.49 | 1.74 | 1045 | 1502 | |
| S2-Z6.143 | Kobbe | 0.000411 | 3.7E-06 | 0.023112 | 0.000119 | 0.282036 | 4.45E-05 | 1.467137 | 9.35E-05 | 1.887045 | 0.000119 | 1116 | 58 | -1.77 | 2.87 | 1195 | 1621 | |
| S2-Z6.045 | Kobbe | 0.001266 | 9.98E-06 | 0.086313 | 0.00137 | 0.282094 | 0.000046 | 1.467046 | 8.52E-05 | 1.887049 | 0.000118 | 1126 | 31 | -0.13 | 2.29 | 1132 | 1579 | |
| S2-Z6.006 | Kobbe | 0.000717 | 1.16E-06 | 0.043632 | 0.000204 | 0.282142 | 3.86E-05 | 1.467179 | 8.55E-05 | 1.88713 | 9.21E-05 | 1155 | 47 | 2.61 | 2.41 | 1038 | 1494 | |
| S2-Z6.164 | Kobbe | 0.000518 | 1.22E-06 | 0.031923 | 0.000125 | 0.281956 | 3.86E-05 | 1.466989 | 8.48E-05 | 1.886957 | 0.000102 | 1156 | 45 | -3.82 | 2.37 | 1326 | 1732 | |
| S2-Z6.077 | Kobbe | 0.001188 | 3.09E-05 | 0.076287 | 0.00255 | 0.28213 | 3.89E-05 | 1.466969 | 7.73E-05 | 1.887038 | 8.31E-05 | 1188 | 44 | 2.53 | 2.29 | 1072 | 1528 | |
| S2-Z6.053 | Kobbe | 0.001456 | 1.8E-06 | 0.091485 | 0.000586 | 0.282226 | 4.02E-05 | 1.46721 | 0.000079 | 1.886922 | 8.75E-05 | 1190 | 38 | 5.79 | 2.25 | 923 | 1408 | |
| S2-Z6.110 | Kobbe | 0.000784 | 9.93E-06 | 0.048332 | 0.000311 | 0.282012 | 3.67E-05 | 1.467091 | 8.77E-05 | 1.887013 | 0.000102 | 1255 | 43 | 0.19 | 2.24 | 1247 | 1669 | |
| S2-Z6.051 | Kobbe | 0.00071 | 2.12E-06 | 0.044438 | 0.000166 | 0.282025 | 3.42E-05 | 1.467155 | 7.53E-05 | 1.886999 | 0.000094 | 1349 | 33 | 2.78 | 1.95 | 1224 | 1649 | |
| S2-Z6.018 | Kobbe | 0.000763 | 1.89E-05 | 0.045042 | 0.000904 | 0.282172 | 3.67E-05 | 1.467131 | 8.14E-05 | 1.886933 | 9.57E-05 | 1401 | 26 | 9.13 | 1.85 | 990 | 1455 | |
| S2-Z6.062 | Kobbe | 0.000512 | 9.23E-06 | 0.029184 | 0.000714 | 0.281922 | 2.84E-05 | 1.467225 | 7.64E-05 | 1.886866 | 0.000088 | 1410 | 20 | 0.69 | 1.44 | 1379 | 1776 | |
| S2-Z6.078 | Kobbe | 0.000864 | 5.68E-07 | 0.048397 | 0.000297 | 0.281938 | 2.75E-05 | 1.467109 | 7.69E-05 | 1.886758 | 8.92E-05 | 1420 | 21 | 1.16 | 1.44 | 1368 | 1771 | |
| S2-Z6.057 | Kobbe | 0.00065 | 7.06E-06 | 0.034924 | 0.000114 | 0.281891 | 3.11E-05 | 1.467052 | 7.01E-05 | 1.886961 | 0.000094 | 1466 | 32 | 0.71 | 1.81 | 1434 | 1824 | |
| S2-Z6.032 | Kobbe | 0.001543 | 3.72E-06 | 0.091657 | 0.0007 | 0.281897 | 0.000042 | 1.467113 | 7.01E-05 | 1.886881 | 9.35E-05 | 1468 | 37 | 0.10 | 2.29 | 1463 | 1857 | |
| S2-Z6.142 | Kobbe | 0.001052 | 9.43E-06 | 0.0641 | 0.000943 | 0.282013 | 4.78E-05 | 1.46701 | 0.000127 | 1.887008 | 0.000124 | 1474 | 27 | 4.83 | 2.28 | 1255 | 1679 | |
| S2-Z6.178 | Kobbe | 0.001071 | 5.94E-06 | 0.066304 | 0.00085 | 0.282003 | 4.09E-05 | 1.467091 | 0.000104 | 1.887032 | 0.000114 | 1476 | 20 | 4.49 | 1.88 | 1273 | 1693 | |
| S2-Z6.003 | Kobbe | 0.001351 | 4.5E-06 | 0.082104 | 0.000798 | 0.282077 | 4.77E-05 | 1.467074 | 0.00012 | 1.886988 | 0.000116 | 1481 | 19 | 6.94 | 2.10 | 1164 | 1606 | |
| S2-Z6.089 | Kobbe | 0.000574 | 7.59E-07 | 0.032714 | 0.000194 | 0.281972 | 3.92E-05 | 1.467094 | 7.11E-05 | 1.886928 | 0.000101 | 1490 | 75 | 4.21 | 3.08 | 1303 | 1713 | |
| S2-Z6.083 | Kobbe | 0.000392 | 6.73E-07 | 0.024323 | 0.00018 | 0.281805 | 3.42E-05 | 1.467182 | 6.34E-05 | 1.886978 | 9.91E-05 | 1548 | 23 | -0.22 | 1.73 | 1558 | 1924 | |
| S2-Z6.102 | Kobbe | 0.000923 | 5.93E-06 | 0.054667 | 0.000247 | 0.281654 | 0.000044 | 1.467121 | 8.31E-05 | 1.886972 | 9.95E-05 | 1685 | 21 | -3.06 | 2.02 | 1822 | 2149 | |
| S2-Z6.056 | Kobbe | 0.000427 | 4.17E-07 | 0.025422 | 0.000188 | 0.281713 | 3.53E-05 | 1.467073 | 8.04E-05 | 1.887135 | 8.56E-05 | 1686 | 24 | -0.39 | 1.80 | 1703 | 2046 | |
| 2-Z6.135.13 | Kobbe | 0.001023 | 4.02E-06 | 0.062085 | 0.000437 | 0.281711 | 6.24E-05 | 1.467181 | 0.000121 | 1.887015 | 0.000157 | 1733 | 18 | -0.10 | 2.61 | 1738 | 2080 | |
| S2-Z6.068 | Kobbe | 0.000157 | 4.89E-07 | 0.00831 | 7.98E-05 | 0.281531 | 0.000034 | 1.467065 | 8.13E-05 | 1.887234 | 0.000105 | 1740 | 17 | -5.33 | 1.60 | 1972 | 2269 | |
| S2-Z6.115 | Kobbe | 0.000529 | 2.97E-06 | 0.031393 | 8.63E-05 | 0.281365 | 3.27E-05 | 1.467116 | 7.18E-05 | 1.88714 | 9.58E-05 | 1851 | 19 | -9.15 | 1.58 | 2253 | 2506 | |
| S2-Z6.104 | Kobbe | 0.000405 | 3.15E-06 | 0.022851 | 0.000183 | 0.281608 | 3.83E-05 | 1.467169 | 0.000103 | 1.887049 | 0.000101 | 1902 | 26 | 0.81 | 1.95 | 1866 | 2182 | |
| S2-Z6.049 | Kobbe | 0.00049 | 3.38E-06 | 0.029131 | 0.000369 | 0.2812 | 0.000032 | 1.467184 | 0.00007 | 1.886975 | 0.000106 | 1903 | 22 | -13.78 | 1.63 | 2505 | 2717 | |
| S2-Z6.183 | Kobbe | 0.000658 | 3.4E-06 | 0.038808 | 8.33E-05 | 0.281388 | 0.00004 | 1.467168 | 9.57E-05 | 1.886982 | 9.71E-05 | 1926 | 20 | -6.77 | 1.86 | 2224 | 2483 | |
| S2-Z6.107 | Kobbe | 0.000636 | 1.15E-06 | 0.03761 | 0.00022 | 0.281634 | 4.03E-05 | 1.46702 | 9.63E-05 | 1.887012 | 0.000104 | 2015 | 25 | 4.00 | 2.00 | 1839 | 2161 | |
| S2-Z6.066 | Kobbe | 0.000165 | 1.34E-06 | 0.009916 | 0.000149 | 0.281057 | 3.05E-05 | 1.466962 | 0.000077 | 1.887031 | 9.89E-05 | 2518 | 16 | -4.23 | 1.45 | 2700 | 2878 | |
| S2-Z6.063 | Kobbe | 2.61E-05 | 5.03E-07 | 0.001855 | 2.84E-05 | 0.281019 | 2.64E-05 | 1.467108 | 6.73E-05 | 1.887087 | 8.17E-05 | 2564 | 43 | -4.24 | 1.94 | 2745 | 2916 | |
| S2-Z6.010 | Kobbe | 0.000115 | 3.59E-07 | 0.006558 | 5.24E-05 | 0.281065 | 2.75E-05 | 1.467041 | 7.73E-05 | 1.886844 | 9.31E-05 | 2691 | 14 | 0.19 | 1.30 | 2683 | 2864 | |
| S2-Z6.165 | Kobbe | 0.000212 | 1.22E-05 | 0.011828 | 0.000669 | 0.280936 | 3.48E-05 | 1.467065 | 8.49E-05 | 1.886899 | 0.000103 | 2694 | 23 | -4.52 | 1.73 | 2887 | 3036 | |
| S2-Z6.015 | Kobbe | 0.000353 | 9.09E-07 | 0.020032 | 0.00009 | 0.281006 | 3.13E-05 | 1.46705 | 8.72E-05 | 1.887235 | 9.84E-05 | 2701 | 13 | -2.13 | 1.41 | 2793 | 2957 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S2-Z6.147 | Kobbe | 0.000274 | 1.49E-06 | 0.014581 | 0.000197 | 0.28108 | 2.63E-05 | 1.467001 | 7.34E-05 | 1.886731 | 9.59E-05 | 2703 | 14 | 0.71 | 1.26 | 2672 | 2856 | |
| S2-Z6.117 | Kobbe | 0.000159 | 8.18E-07 | 0.008888 | 3.41E-05 | 0.280935 | 2.63E-05 | 1.467035 | 6.88E-05 | 1.887148 | 8.59E-05 | 2746 | 16 | -3.24 | 1.31 | 2884 | 3033 | |
| S2-Z6.173 | Kobbe | 0.000304 | 5.48E-07 | 0.016014 | 7.04E-05 | 0.281034 | 0.00003 | 1.467059 | 8.14E-05 | 1.887021 | 0.000112 | 2746 | 14 | 0.01 | 1.39 | 2746 | 2917 | |
| S2-Z6.177 | Kobbe | | | | | | | | | | | 2811 | 19 | ####### | 0.00 | | | Lost |
| 2-Z6.087.0 | Kobbe | 0.000272 | 3.18E-06 | 0.015124 | 9.14E-05 | 0.281004 | 3.11E-05 | 1.467032 | 8.06E-05 | 1.887031 | 9.59E-05 | 2812 | 18 | 0.54 | 1.51 | 2789 | 2953 | |
| S2-Z6.119 | Kobbe | 0.000404 | 1.5E-06 | 0.023661 | 7.91E-05 | 0.280948 | 3.03E-05 | 1.46721 | 8.43E-05 | 1.886993 | 9.08E-05 | 2821 | 17 | -1.49 | 1.47 | 2885 | 3034 | |
| S2-Z6.130 | Kobbe | 0.00034 | 1.72E-06 | 0.01818 | 3.33E-05 | 0.280917 | 3.98E-05 | 1.46705 | 0.000106 | 1.887105 | 0.000108 | 2822 | 15 | -2.44 | 1.76 | 2926 | 3069 | |
| S2-Z6.050 | Kobbe | 0.001313 | 6.01E-06 | 0.076096 | 0.000812 | 0.281099 | 4.06E-05 | 1.467108 | 8.06E-05 | 1.886892 | 0.000102 | 2827 | 14 | 2.28 | 1.74 | 2726 | 2905 | |
| S1Z1.018 | Knurr | 0.00041 | 5.68E-06 | 0.028043 | 0.000664 | 0.282255 | 4.07E-05 | 1.466965 | 0.000101 | 1.887271 | 0.000125 | 535 | 12 | -6.96 | 1.70 | 848 | 1333 | |
| S1Z1.113 | Knurr | 0.000571 | 2.04E-06 | 0.041213 | 0.000452 | 0.282154 | 4.11E-05 | 1.466824 | 0.000112 | 1.887134 | 0.000118 | 540 | 13 | -10.50 | 1.74 | 1014 | 1473 | |
| S1Z1.038 | Knurr | 0.000283 | 8.85E-07 | 0.0187 | 0.000103 | 0.282308 | 4.67E-05 | 1.466988 | 0.000113 | 1.887371 | 0.00012 | 546 | 10 | -4.82 | 1.88 | 762 | 1259 | |
| S1Z1.037 | Knurr | 0.002038 | 3.64E-05 | 0.136776 | 0.00227 | 0.282494 | 7.01E-05 | 1.466962 | 0.000108 | 1.887283 | 0.000119 | 619 | 14 | 2.70 | 2.75 | 491 | 1059 | |
| S1Z1.085 | Knurr | 0.001588 | 2.02E-05 | 0.115113 | 0.00103 | 0.282395 | 0.000063 | 1.466877 | 0.000117 | 1.887197 | 0.000133 | 622 | 19 | -0.58 | 2.62 | 649 | 1183 | |
| S1Z1.102 | Knurr | 0.001099 | 2.45E-06 | 0.076999 | 0.000255 | 0.28215 | 5.28E-05 | 1.466946 | 0.000121 | 1.887431 | 0.000101 | 649 | 81 | -8.47 | 3.63 | 1037 | 1498 | |
| S1Z1.103 | Knurr | 0.000539 | 1.06E-06 | 0.03848 | 0.00015 | 0.28203 | 4.83E-05 | 1.466918 | 0.000121 | 1.887029 | 0.000117 | 801 | 22 | -9.09 | 2.20 | 1209 | 1635 | |
| S1Z1.058 | Knurr | 0.000903 | 0.000018 | 0.032529 | 0.000196 | 0.282125 | 4.37E-05 | 1.467086 | 0.000152 | 1.887054 | 0.000129 | 898 | 14 | -3.78 | 1.83 | 1070 | 1523 | |
| S1Z1.068 | Knurr | 0.002958 | 1.08E-05 | 0.145996 | 0.00207 | 0.282682 | 5.79E-05 | 1.466944 | 9.33E-05 | 1.887153 | 0.000104 | 1008 | 24 | 16.98 | 2.53 | 180 | 817 | |
| S1Z1.021 | Knurr | 0.000967 | 4.68E-06 | 0.065317 | 0.000355 | 0.28217 | 0.00011 | 1.467241 | 0.000286 | 1.887461 | 0.000294 | 1094 | 24 | 2.06 | 4.42 | 1001 | 1466 | |
| S1Z1.010 | Knurr | 0.001333 | 1.87E-05 | 0.095343 | 0.000478 | 0.282088 | 0.000165 | 1.4666 | 0.000371 | 1.887049 | 0.000355 | 1125 | 28 | -0.42 | 6.43 | 1144 | 1590 | |
| S1Z1.109 | Knurr | 0.001544 | 3.38E-06 | 0.118593 | 0.00053 | 0.282126 | 5.86E-05 | 1.466779 | 0.000116 | 1.88712 | 0.000119 | 1195 | 22 | 2.27 | 2.55 | 1090 | 1547 | |
| S1Z1.036 | Knurr | 0.000582 | 2.87E-06 | 0.039646 | 0.000201 | 0.281973 | 0.000047 | 1.466698 | 0.000133 | 1.887412 | 0.000144 | 1204 | 34 | -2.17 | 2.42 | 1301 | 1712 | |
| S1Z1.046 | Knurr | 0.001005 | 1.86E-06 | 0.072907 | 0.000574 | 0.282212 | 5.59E-05 | 1.466872 | 0.00013 | 1.88685 | 0.00013 | 1374 | 32 | 9.71 | 2.69 | 934 | 1411 | |
| S1Z1.075 | Knurr | 0.000989 | 2.14E-05 | 0.066004 | 0.00263 | 0.282121 | 5.19E-05 | 1.466858 | 0.000116 | 1.887266 | 0.000115 | 1380 | 29 | 6.64 | 2.44 | 1079 | 1532 | |
| S1Z1.048 | Knurr | 0.000749 | 6.78E-07 | 0.050841 | 0.000377 | 0.281841 | 4.33E-05 | 1.466893 | 9.78E-05 | 1.887121 | 0.000124 | 1492 | 30 | -0.56 | 2.21 | 1517 | 1893 | |
| S1Z1.005 | Knurr | 0.000894 | 4.36E-06 | 0.059017 | 0.000804 | 0.281921 | 4.82E-05 | 1.466982 | 0.000122 | 1.887383 | 0.000136 | 1505 | 21 | 2.41 | 2.17 | 1397 | 1795 | |
| S1Z1.002 | Knurr | 0.001179 | 7.39E-06 | 0.08092 | 0.000613 | 0.281865 | 5.08E-05 | 1.466921 | 0.000108 | 1.887163 | 0.000131 | 1609 | 32 | 2.42 | 2.50 | 1499 | 1883 | |
| S1Z1.116 | Knurr | 0.000688 | 9.6E-07 | 0.045488 | 0.000284 | 0.281731 | 5.54E-05 | 1.466962 | 0.000128 | 1.887222 | 0.000136 | 1715 | 24 | 0.58 | 2.51 | 1689 | 2036 | |
| S1Z1.003 | Knurr | 0.000765 | 1.86E-06 | 0.048779 | 0.000265 | 0.281702 | 4.58E-05 | 1.466852 | 0.000114 | 1.887304 | 0.00012 | 1722 | 19 | -0.36 | 2.05 | 1738 | 2078 | |
| S1Z1.035 | Knurr | 0.001942 | 6.92E-05 | 0.140021 | 0.0059 | 0.281645 | 7.07E-05 | 1.466839 | 9.94E-05 | 1.887292 | 0.000126 | 1722 | 24 | -3.74 | 2.87 | 1894 | 2218 | |
| S1Z1.041 | Knurr | 0.00149 | 0.000056 | 0.082807 | 0.00133 | 0.281628 | 4.92E-05 | 1.46673 | 0.00012 | 1.887376 | 0.000126 | 1723 | 28 | -3.81 | 2.23 | 1896 | 2215 | |
| S1Z1.049 | Knurr | 0.0008 | 1.05E-06 | 0.056081 | 0.000379 | 0.281337 | 5.41E-05 | 1.466942 | 0.000128 | 1.887316 | 0.000136 | 1781 | 22 | -12.04 | 2.41 | 2314 | 2559 | |
| S1Z1.083 | Knurr | 0.000426 | 5.37E-07 | 0.028992 | 0.000191 | 0.281678 | 5.45E-05 | 1.466971 | 0.000125 | 1.887364 | 0.000126 | 1793 | 22 | 0.80 | 2.43 | 1758 | 2092 | |
| S1Z1.105 | Knurr | 0.000616 | 2.99E-06 | 0.044871 | 0.0005 | 0.281744 | 6.35E-05 | 1.46715 | 0.00019 | 1.88702 | 0.00018 | 1794 | 25 | 2.91 | 2.81 | 1665 | 2016 | |
| S1Z1.050 | Knurr | 0.001052 | 3.55E-06 | 0.076212 | 0.000404 | 0.281493 | 5.78E-05 | 1.466987 | 0.000106 | 1.887149 | 0.000126 | 1845 | 22 | -5.39 | 2.53 | 2086 | 2370 | |
| S1Z1.017 | Knurr | 0.001389 | 4.41E-06 | 0.087258 | 0.000584 | 0.281863 | 4.84E-05 | 1.466914 | 0.00011 | 1.887138 | 0.000118 | 1861 | 24 | 7.70 | 2.24 | 1512 | 1895 | |
| S1Z1.064 | Knurr | 0.000594 | 1.12E-06 | 0.040415 | 0.000208 | 0.281651 | 5.55E-05 | 1.46685 | 8.88E-05 | 1.887261 | 0.000142 | 1907 | 32 | 2.20 | 2.69 | 1810 | 2136 | |
| S1Z1.034 | Knurr | 0.000701 | 5.87E-06 | 0.036277 | 0.000377 | 0.281391 | 0.000046 | 1.467159 | 0.000129 | 1.887076 | 0.000125 | 2031 | 21 | -4.36 | 2.09 | 2223 | 2482 | |
| S1Z1.042 | Knurr | 4.86E-05 | 2.69E-07 | 0.003661 | 4.46E-05 | 0.281011 | 3.57E-05 | 1.466809 | 0.000107 | 1.887221 | 0.000126 | 2607 | 20 | -3.58 | 1.74 | 2760 | 2928 | |
| S1Z1.007 | Knurr | 0.000606 | 2.33E-06 | 0.040447 | 0.000221 | 0.281038 | 5.08E-05 | 1.466897 | 0.000111 | 1.887117 | 0.000123 | 2737 | 17 | -0.62 | 2.19 | 2764 | 2934 | |
| S1Z1.025 | Knurr | 0.000164 | 5.69E-07 | 0.009351 | 0.000134 | 0.280881 | 3.97E-05 | 1.466981 | 0.000111 | 1.887291 | 0.000116 | 2737 | 20 | -5.38 | 1.88 | 2967 | 3102 | |
| S1Z1.120 | Knurr | 0.000349 | 3.99E-06 | 0.021059 | 0.000211 | 0.28105 | 4.12E-05 | 1.466935 | 0.000102 | 1.88724 | 0.000115 | 2756 | 23 | 0.73 | 1.99 | 2725 | 2900 | |
| S1Z1.071 | Knurr | 0.000465 | 2.35E-06 | 0.032169 | 6.56E-05 | 0.281054 | 4.92E-05 | 1.466851 | 0.000118 | 1.887294 | 0.000136 | 2765 | 20 | 0.86 | 2.21 | 2728 | 2903 | |
| S1Z1.033 | Knurr | 0.000501 | 8.26E-07 | 0.03357 | 0.000316 | 0.280744 | 4.88E-05 | 1.46693 | 0.000112 | 1.887211 | 0.000122 | 2771 | 24 | -10.10 | 2.29 | 3205 | 3303 | |

| Source file | Formation | $^{176}$Lu/$^{177}$Hf' mean | $^{176}$Lu/$^{177}$Hf' SE | $^{176}$Yb/$^{177}$Hf' mean | $^{176}$Yb/$^{177}$Hf' SE | $^{176}$Hf/$^{177}$Hf Corrected' mean | $^{176}$Hf/$^{177}$Hf Corrected' SE | $^{178}$Hf/$^{177}$Hf Corrected' mean | $^{178}$Hf/$^{177}$Hf Corrected' SE | $^{180}$Hf/$^{177}$Hf Corrected' mean | $^{180}$Hf/$^{177}$Hf Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S1Z1.084 | Knurr | 1.3E-05 | 2.34E-07 | 0.001024 | 2.53E-05 | 0.280915 | 3.74E-05 | 1.46695 | 0.000101 | 1.887277 | 0.000123 | 2806 | 22 | -2.27 | 1.85 | 2902 | 3047 | |
| S1Z1.013 | Knurr | 0.000735 | 8.63E-06 | 0.050108 | 0.00091 | 0.28104 | 4.86E-05 | 1.466801 | 0.00011 | 1.887195 | 0.00014 | 2852 | 19 | 1.87 | 2.13 | 2771 | 2940 | |
| S1Z1.080 | Knurr | 0.000196 | 4.43E-07 | 0.012404 | 9.87E-05 | 0.28085 | 4.68E-05 | 1.466902 | 0.000111 | 1.887391 | 0.000111 | 2896 | 22 | -2.80 | 2.18 | 3016 | 3143 | |
| SWZ1.040 | Knurr | 0.000303 | 6.05E-07 | 0.025286 | 0.000211 | 0.282323 | 4.38E-05 | 1.466853 | 0.000119 | 1.887293 | 0.00013 | 414 | 9 | -7.21 | 1.75 | 738 | 1240 | |
| SWZ1.058 | Knurr | 0.001326 | 1.46E-05 | 0.09525 | 0.000733 | 0.282256 | 6.79E-05 | 1.466885 | 0.00013 | 1.887445 | 0.000121 | 426 | 10 | -9.60 | 2.61 | 871 | 1363 | |
| SWZ1.001 | Knurr | 0.001207 | 1.42E-05 | 0.099486 | 0.00113 | 0.282477 | 0.00011 | 1.467112 | 0.00023 | 1.887001 | 0.000243 | 427 | 10 | -1.72 | 4.10 | 507 | 1059 | |
| SWZ1.013 | Knurr | 0.000981 | 2.81E-05 | 0.070911 | 0.00247 | 0.282375 | 5.35E-05 | 1.466781 | 0.000119 | 1.887149 | 0.000122 | 430 | 10 | -5.20 | 2.09 | 669 | 1191 | |
| SWZ1.014 | Knurr | 0.000742 | 9.37E-06 | 0.068274 | 0.00144 | 0.282374 | 6.01E-05 | 1.466543 | 0.000143 | 1.887333 | 0.000141 | 431 | 8 | -5.17 | 2.30 | 666 | 1186 | |
| SWZ1.055 | Knurr | 0.001284 | 1.37E-05 | 0.090422 | 0.00195 | 0.282747 | 6.29E-05 | 1.466791 | 0.000129 | 1.887171 | 0.000149 | 444 | 10 | 8.16 | 2.43 | 64 | 694 | |
| SWZ1.089 | Knurr | 0.001342 | 0.000035 | 0.087073 | 0.00205 | 0.282393 | 5.54E-05 | 1.46688 | 9.87E-05 | 1.88713 | 0.000126 | 473 | 11 | -3.74 | 2.18 | 647 | 1177 | |
| SWZ1.103 | Knurr | 0.000485 | 4.41E-06 | 0.039625 | 0.000135 | 0.282328 | 5.34E-05 | 1.466821 | 0.000114 | 1.887032 | 0.000141 | 530 | 12 | -4.54 | 2.15 | 735 | 1239 | |
| SWZ1.025 | Knurr | 0.000633 | 3.27E-06 | 0.047819 | 0.000187 | 0.282396 | 4.23E-05 | 1.46664 | 0.000115 | 1.887331 | 0.000126 | 633 | 13 | 0.10 | 1.78 | 629 | 1153 | |
| SWZ1.038 | Knurr | 0.000914 | 4.09E-06 | 0.058711 | 0.000562 | 0.282421 | 5.02E-05 | 1.466913 | 0.00011 | 1.8873 | 0.000104 | 647 | 16 | 1.18 | 2.12 | 593 | 1127 | |
| SWZ1.097 | Knurr | 0.0007 | 1.26E-06 | 0.052841 | 0.000361 | 0.281838 | 0.000048 | 1.467045 | 0.000118 | 1.887327 | 0.000119 | 969 | 26 | -12.27 | 2.28 | 1520 | 1895 | |
| SWZ1.098 | Knurr | 0.000626 | 5.34E-06 | 0.046216 | 0.000661 | 0.282226 | 6.24E-05 | 1.4669 | 0.000145 | 1.887191 | 0.000148 | 972 | 25 | 1.60 | 2.76 | 900 | 1378 | |
| SWZ1.100 | Knurr | 0.000382 | 1.1E-06 | 0.027564 | 9.06E-05 | 0.282066 | 3.79E-05 | 1.466918 | 9.32E-05 | 1.887418 | 0.000123 | 998 | 26 | -3.36 | 1.92 | 1148 | 1582 | |
| SWZ1.090 | Knurr | 0.001361 | 1.66E-05 | 0.110792 | 0.00215 | 0.282293 | 7.42E-05 | 1.467019 | 0.000169 | 1.887365 | 0.000151 | 1070 | 49 | 5.60 | 3.67 | 812 | 1314 | |
| SWZ1.072 | Knurr | 0.000401 | 1.93E-06 | 0.029969 | 0.000377 | 0.282203 | 4.66E-05 | 1.466847 | 0.000131 | 1.887197 | 0.000131 | 1071 | 59 | 3.14 | 2.97 | 931 | 1401 | |
| SWZ1.026 | Knurr | 0.000756 | 4.1E-06 | 0.052734 | 0.000118 | 0.282334 | 5.02E-05 | 1.466874 | 9.73E-05 | 1.887449 | 0.000116 | 1092 | 46 | 8.00 | 2.80 | 730 | 1239 | |
| SWZ1.074 | Knurr | 0.000374 | 1.15E-06 | 0.027231 | 0.000188 | 0.282215 | 4.35E-05 | 1.467022 | 0.000112 | 1.887319 | 0.000113 | 1096 | 48 | 4.15 | 2.62 | 911 | 1384 | |
| SWZ1.061 | Knurr | 0.001771 | 9.54E-07 | 0.125218 | 0.000917 | 0.282262 | 7.06E-05 | 1.466868 | 0.000131 | 1.887109 | 0.00013 | 1123 | 41 | 5.37 | 3.38 | 873 | 1370 | |
| SWZ1.018 | Knurr | 0.002517 | 2.03E-05 | 0.202359 | 0.000777 | 0.282154 | 0.000103 | 1.466928 | 0.000151 | 1.887287 | 0.000143 | 1150 | 50 | 1.56 | 4.67 | 1076 | 1547 | |
| SWZ1.010 | Knurr | 0.000705 | 2.02E-06 | 0.050082 | 0.00043 | 0.282183 | 6.24E-05 | 1.466984 | 0.000145 | 1.887073 | 0.000146 | 1172 | 49 | 4.45 | 3.30 | 972 | 1439 | |
| SWZ1.107 | Knurr | 0.000726 | 1.37E-06 | 0.067222 | 0.000567 | 0.282111 | 5.63E-05 | 1.467095 | 9.75E-05 | 1.887439 | 0.000115 | 1172 | 45 | 1.90 | 3.00 | 1087 | 1535 | |
| SWZ1.119 | Knurr | 0.000943 | 8.91E-06 | 0.061348 | 0.000246 | 0.281951 | 4.82E-05 | 1.4668 | 0.000105 | 1.887434 | 0.000122 | 1200 | 53 | -3.34 | 2.87 | 1351 | 1757 | |
| SWZ1.044 | Knurr | 0.002727 | 2.59E-05 | 0.19521 | 0.00054 | 0.282088 | 8.97E-05 | 1.46688 | 0.000137 | 1.88732 | 0.000149 | 1342 | 43 | 3.06 | 4.04 | 1196 | 1649 | |
| SWZ1.087 | Knurr | 0.004192 | 4.32E-05 | 0.35136 | 0.00115 | 0.282177 | 0.000108 | 1.466933 | 0.000105 | 1.887178 | 0.000115 | 1349 | 40 | 5.03 | 4.55 | 1096 | 1586 | |
| SWZ1.046 | Knurr | 0.000685 | 8.52E-06 | 0.045576 | 0.000467 | 0.282099 | 0.000052 | 1.466859 | 0.00014 | 1.88722 | 0.000138 | 1380 | 51 | 6.14 | 2.97 | 1105 | 1550 | |
| SWZ1.063 | Knurr | 0.000562 | 5.64E-07 | 0.039119 | 0.000276 | 0.281922 | 4.83E-05 | 1.466819 | 0.000137 | 1.887164 | 0.000132 | 1425 | 44 | 0.98 | 2.70 | 1381 | 1778 | |
| SWZ1.036 | Knurr | 0.00077 | 1.77E-06 | 0.057389 | 0.000686 | 0.282132 | 4.35E-05 | 1.466816 | 0.000108 | 1.887042 | 0.000131 | 1437 | 42 | 8.51 | 2.48 | 1054 | 1508 | |
| SWZ1.117 | Knurr | 0.00062 | 4.49E-06 | 0.04455 | 8.59E-05 | 0.28196 | 3.88E-05 | 1.467076 | 8.47E-05 | 1.887062 | 0.000111 | 1466 | 50 | 3.21 | 2.49 | 1323 | 1730 | |
| SWZ1.070 | Knurr | 0.000536 | 1.62E-06 | 0.032609 | 0.00031 | 0.281939 | 4.28E-05 | 1.466818 | 0.000121 | 1.887198 | 0.000124 | 1472 | 54 | 2.66 | 2.73 | 1354 | 1755 | |
| SWZ1.024 | Knurr | 0.001596 | 9.21E-06 | 0.094376 | 0.000522 | 0.28188 | 4.52E-05 | 1.466995 | 8.94E-05 | 1.887213 | 0.000101 | 1488 | 39 | -0.13 | 2.44 | 1494 | 1882 | |
| SWZ1.071 | Knurr | 0.000768 | 1.07E-05 | 0.052749 | 0.00019 | 0.281972 | 6.66E-05 | 1.466833 | 0.000196 | 1.887672 | 0.000163 | 1488 | 43 | 3.95 | 3.30 | 1311 | 1722 | |
| SWZ1.115 | Knurr | | | | | | | | | | | 1511 | 45 | ####### | 0.00 | | | Lost |
| SWZ1.006 | Knurr | 0.000954 | 5.13E-06 | 0.062182 | 0.000791 | 0.28183 | 5.53E-05 | 1.466918 | 0.000124 | 1.887174 | 0.000148 | 1581 | 44 | 0.81 | 2.93 | 1545 | 1918 | |
| SWZ1.101 | Knurr | 0.000452 | 9.98E-07 | 0.025791 | 0.000245 | 0.281829 | 4.89E-05 | 1.466921 | 0.000131 | 1.887238 | 0.000129 | 1608 | 40 | 1.93 | 2.64 | 1523 | 1895 | |
| SWZ1.085 | Knurr | 0.000815 | 3.85E-06 | 0.055528 | 0.000758 | 0.281722 | 5.07E-05 | 1.466936 | 0.000124 | 1.887304 | 0.000118 | 1656 | 42 | -1.20 | 2.73 | 1710 | 2054 | |
| SWZ1.017 | Knurr | 0.000584 | 3.92E-06 | 0.036658 | 6.93E-05 | 0.281867 | 4.67E-05 | 1.466937 | 0.000109 | 1.887137 | 0.000112 | 1658 | 42 | 4.26 | 2.60 | 1469 | 1852 | |
| SWZ1.048 | Knurr | 0.002138 | 3.61E-05 | 0.149721 | 0.00212 | 0.281643 | 6.85E-05 | 1.466794 | 0.000129 | 1.887268 | 0.000138 | 1728 | 38 | -3.91 | 3.16 | 1909 | 2232 | |
| SWZ1.029 | Knurr | 0.002464 | 4.66E-05 | 0.13569 | 0.00302 | 0.281828 | 5.57E-05 | 1.466885 | 0.000102 | 1.887212 | 0.000108 | 1821 | 38 | 4.27 | 2.67 | 1621 | 1996 | |
| SWZ1.084 | Knurr | 0.000448 | 8.1E-07 | 0.031856 | 0.000317 | 0.281277 | 3.79E-05 | 1.466944 | 0.0001 | 1.887155 | 0.000115 | 1821 | 41 | -12.84 | 2.28 | 2383 | 2614 | |
| SWZ1.093 | Knurr | 0.000771 | 4.57E-06 | 0.046425 | 0.000525 | 0.28151 | 5.16E-05 | 1.466598 | 0.00012 | 1.887323 | 0.000126 | 1935 | 40 | -2.38 | 2.72 | 2041 | 2330 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWZ1.019 | Knurr | 0.000616 | 1.11E-06 | 0.044054 | 0.000501 | 0.281519 | 4.12E-05 | 1.466846 | 0.000123 | 1.887342 | 0.000125 | 1936 | 38 | -1.84 | 2.32 | 2017 | 2309 | |
| SWZ1.057 | Knurr | 0.000805 | 1.56E-06 | 0.054385 | 0.000599 | 0.281848 | 0.00005 | 1.466665 | 0.000131 | 1.887288 | 0.000129 | 1986 | 39 | 10.73 | 2.65 | 1509 | 1887 | |
| SWZ1.076 | Knurr | 0.000586 | 5.11E-07 | 0.039313 | 0.000316 | 0.281519 | 3.73E-05 | 1.466937 | 9.88E-05 | 1.887343 | 0.000108 | 1986 | 40 | -0.68 | 2.23 | 2016 | 2308 | |
| SWZ1.082 | Knurr | 0.000818 | 2.93E-06 | 0.057917 | 0.000579 | 0.281546 | 0.000048 | 1.467003 | 0.00012 | 1.887381 | 0.000129 | 1996 | 39 | 0.19 | 2.58 | 1988 | 2286 | |
| SWZ1.104 | Knurr | 0.001668 | 0.000024 | 0.122088 | 0.00224 | 0.281571 | 7.04E-05 | 1.466923 | 0.000109 | 1.887409 | 0.000125 | 2008 | 38 | 0.20 | 3.27 | 1999 | 2302 | |
| SWZ1.035 | Knurr | 0.000357 | 8.3E-07 | 0.025902 | 0.0002 | 0.281129 | 4.85E-05 | 1.466823 | 0.000121 | 1.88711 | 0.000122 | 2427 | 34 | -4.10 | 2.51 | 2604 | 2799 | |
| SWZ1.099 | Knurr | 0.000412 | 2.35E-06 | 0.022717 | 0.000156 | 0.281069 | 4.41E-05 | 1.466932 | 0.000136 | 1.887141 | 0.000123 | 2452 | 42 | -5.72 | 2.53 | 2700 | 2879 | |
| SWZ1.091 | Knurr | 0.000731 | 3.04E-06 | 0.041266 | 0.000563 | 0.28115 | 4.82E-05 | 1.466734 | 0.000116 | 1.88727 | 0.000115 | 2499 | 37 | -2.32 | 2.55 | 2600 | 2798 | |
| SWZ1.056 | Knurr | 0.000866 | 9.91E-06 | 0.062004 | 0.000921 | 0.280904 | 0.000054 | 1.466936 | 0.000123 | 1.887388 | 0.000141 | 2535 | 34 | -10.48 | 2.66 | 2993 | 3126 | |
| SWZ1.053 | Knurr | 0.000489 | 1.67E-06 | 0.029716 | 0.000346 | 0.280756 | 4.37E-05 | 1.466724 | 0.000107 | 1.887144 | 0.00013 | 2552 | 41 | -14.71 | 2.49 | 3186 | 3287 | |
| SWZ1.022 | Knurr | 1.01E-05 | 4.87E-07 | 0.001103 | 6.05E-05 | 0.280939 | 4.19E-05 | 1.466946 | 0.000117 | 1.887268 | 0.00012 | 2635 | 37 | -5.43 | 2.36 | 2866 | 3017 | |
| SWZ1.011 | Knurr | 4.75E-05 | 4.76E-07 | 0.003779 | 5.71E-05 | 0.280742 | 4.03E-05 | 1.466866 | 0.000109 | 1.887166 | 0.000127 | 2653 | 41 | -12.08 | 2.39 | 3166 | 3269 | |
| SWZ1.060 | Knurr | 0.000489 | 1.36E-06 | 0.033402 | 0.000374 | 0.281004 | 4.91E-05 | 1.466813 | 0.000121 | 1.887264 | 0.000132 | 2694 | 35 | -2.60 | 2.55 | 2806 | 2969 | |
| SWZ1.052 | Knurr | 0.001451 | 8.64E-06 | 0.113539 | 0.000857 | 0.281003 | 8.78E-05 | 1.466917 | 0.000147 | 1.88739 | 0.000196 | 2725 | 33 | -3.71 | 3.83 | 2890 | 3042 | |
| SWZ1.078 | Knurr | 0.000813 | 9.14E-07 | 0.050944 | 0.000383 | 0.280785 | 5.17E-05 | 1.466991 | 0.000136 | 1.887426 | 0.000137 | 3194 | 35 | 0.51 | 2.65 | 3172 | 3276 | |
| | | | | | | | | | | | | | | | | | | |
| SWZ2.078 | Stø | 0.000728 | 0.000011 | 0.044028 | 0.000534 | 0.282499 | 5.26E-05 | 1.466774 | 0.000137 | 1.88705 | 0.000145 | 416 | 12 | -1.07 | 2.12 | 465 | 1018 | |
| SWZ2.038 | Stø | 0.000807 | 1.48E-05 | 0.064322 | 0.00152 | 0.28235 | 6.08E-05 | 1.467172 | 0.00013 | 1.887129 | 0.00013 | 434 | 13 | -5.96 | 2.43 | 706 | 1219 | |
| SWZ2.033 | Stø | 0.0005 | 2.2E-06 | 0.03598 | 8.65E-05 | 0.281688 | 5.15E-05 | 1.466952 | 0.000139 | 1.887185 | 0.000143 | 441 | 12 | -29.13 | 2.09 | 1746 | 2082 | |
| SWZ2.083 | Stø | 0.004354 | 3.74E-05 | 0.167628 | 0.000821 | 0.282311 | 5.22E-05 | 1.466845 | 8.02E-05 | 1.887307 | 8.53E-05 | 443 | 12 | -8.18 | 2.06 | 861 | 1397 | |
| SWZ2.046 | Stø | 0.000538 | 7.6E-06 | 0.038031 | 0.000266 | 0.282381 | 5.08E-05 | 1.466929 | 0.000147 | 1.887446 | 0.000131 | 518 | 18 | -2.92 | 2.19 | 650 | 1169 | |
| SWZ2.076 | Stø | 0.001351 | 1.67E-05 | 0.085663 | 0.000913 | 0.282592 | 0.000067 | 1.466842 | 0.000131 | 1.887254 | 0.000131 | 599 | 17 | 6.02 | 2.73 | 319 | 906 | |
| SWZ2.049 | Stø | 0.000583 | 3.97E-06 | 0.041317 | 0.000357 | 0.282084 | 5.34E-05 | 1.466971 | 0.000181 | 1.887257 | 0.00014 | 980 | 26 | -3.22 | 2.47 | 1125 | 1565 | |
| SWZ2.089 | Stø | 0.000446 | 9.15E-07 | 0.03196 | 0.00026 | 0.282221 | 4.39E-05 | 1.46719 | 0.000136 | 1.887148 | 0.000124 | 1036 | 51 | 2.94 | 2.70 | 904 | 1380 | |
| SWZ2.077 | Stø | 0.001238 | 5.41E-07 | 0.09842 | 0.000484 | 0.28231 | 5.99E-05 | 1.466796 | 0.00012 | 1.887171 | 0.00014 | 1055 | 58 | 5.98 | 3.39 | 781 | 1287 | |
| SWZ2.007 | Stø | 0.000397 | 7.16E-06 | 0.029792 | 0.000752 | 0.282219 | 4.96E-05 | 1.46682 | 0.000136 | 1.887302 | 0.000162 | 1099 | 49 | 4.34 | 2.85 | 905 | 1380 | |
| SWZ2.062 | Stø | 0.001651 | 8.76E-06 | 0.091616 | 0.00122 | 0.282084 | 4.78E-05 | 1.46666 | 9.22E-05 | 1.887328 | 0.000116 | 1100 | 51 | -1.36 | 2.78 | 1163 | 1609 | |
| SWZ2.115 | Stø | 0.00176 | 2.32E-05 | 0.091366 | 0.00127 | 0.282117 | 0.000055 | 1.466896 | 0.000104 | 1.887162 | 0.000113 | 1136 | 54 | 0.52 | 3.08 | 1112 | 1568 | |
| SWZ2.119 | Stø | 0.00364 | 1.19E-05 | 0.154083 | 0.000971 | 0.282349 | 0.000079 | 1.467214 | 0.000144 | 1.886937 | 0.000154 | 1176 | 48 | 8.11 | 3.76 | 774 | 1315 | |
| SWZ2.068 | Stø | 0.000529 | 1.79E-06 | 0.038426 | 0.000322 | 0.281838 | 4.84E-05 | 1.466945 | 0.000121 | 1.887343 | 0.000123 | 1197 | 53 | -7.10 | 2.90 | 1513 | 1888 | |
| SWZ2.027 | Stø | 0.001032 | 1.13E-05 | 0.058455 | 0.000649 | 0.282114 | 0.000124 | 1.467636 | 0.000444 | 1.887074 | 0.000405 | 1306 | 68 | 4.72 | 5.88 | 1092 | 1543 | |
| SWZ2.093 | Stø | 0.000841 | 4.31E-06 | 0.072477 | 0.000657 | 0.28202 | 0.000101 | 1.466984 | 0.000256 | 1.887371 | 0.000233 | 1316 | 49 | 1.76 | 4.66 | 1237 | 1661 | |
| SWZ2.086 | Stø | 0.001977 | 1.76E-05 | 0.118506 | 0.000962 | 0.282304 | 6.58E-05 | 1.466906 | 0.000117 | 1.886881 | 0.00012 | 1324 | 50 | 11.01 | 3.38 | 809 | 1320 | |
| SWZ2.065 | Stø | 0.000715 | 2.09E-06 | 0.055157 | 0.000278 | 0.282063 | 4.52E-05 | 1.466846 | 0.000116 | 1.887295 | 0.000117 | 1412 | 48 | 5.55 | 2.67 | 1163 | 1598 | |
| SWZ2.063 | Stø | 0.001471 | 1.06E-05 | 0.115244 | 0.000368 | 0.282345 | 6.45E-05 | 1.467036 | 0.000116 | 1.887008 | 0.000121 | 1412 | 48 | 14.83 | 3.32 | 729 | 1247 | |
| SWZ2.070 | Stø | 0.001275 | 3.16E-06 | 0.06858 | 0.000912 | 0.281988 | 4.13E-05 | 1.466917 | 9.12E-05 | 1.887349 | 8.92E-05 | 1468 | 48 | 3.59 | 2.52 | 1304 | 1722 | |
| SWZ2.082 | Stø | 0.000711 | 2.02E-06 | 0.053992 | 0.000257 | 0.281928 | 6.36E-05 | 1.466873 | 0.000179 | 1.887311 | 0.000149 | 1477 | 56 | 2.21 | 3.51 | 1378 | 1777 | |
| SWZ2.111 | Stø | 0.000623 | 3.41E-06 | 0.048152 | 0.000269 | 0.281994 | 5.37E-05 | 1.46699 | 0.000129 | 1.887394 | 0.000153 | 1481 | 44 | 4.75 | 2.89 | 1269 | 1685 | |
| SWZ2.023 | Stø | 0.000807 | 0.000013 | 0.05139 | 0.00026 | 0.28194 | 4.09E-05 | 1.466786 | 0.000128 | 1.887388 | 0.000118 | 1492 | 42 | 2.89 | 2.36 | 1362 | 1765 | |
| SWZ2.053 | Stø | 0.000735 | 9.29E-06 | 0.05377 | 0.000895 | 0.281957 | 5.14E-05 | 1.466949 | 0.000152 | 1.887039 | 0.000148 | 1493 | 47 | 3.59 | 2.86 | 1333 | 1740 | |
| SWZ2.088 | Stø | 0.00086 | 2.25E-06 | 0.063039 | 0.000518 | 0.281955 | 5.76E-05 | 1.466861 | 0.000132 | 1.887202 | 0.000139 | 1503 | 45 | 3.62 | 3.04 | 1340 | 1747 | |
| SWZ2.072 | Stø | 0.001763 | 2.42E-05 | 0.131425 | 0.00211 | 0.281883 | 7.24E-05 | 1.466723 | 0.000132 | 1.887266 | 0.000121 | 1549 | 44 | 1.13 | 3.47 | 1497 | 1887 | |
| SWZ2.011 | Stø | 0.000611 | 5.98E-06 | 0.040208 | 0.000624 | 0.281775 | 0.000045 | 1.467133 | 0.0001 | 1.887571 | 0.000116 | 1564 | 51 | -1.15 | 2.73 | 1615 | 1974 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWZ2.092 | Stø | 0.00113 | 8.5E-06 | 0.081704 | 0.00132 | 0.281764 | 6.13E-05 | 1.466741 | 0.000131 | 1.887218 | 0.000152 | 1610 | 49 | -1.06 | 3.24 | 1658 | 2014 | |
| SWZ2.008 | Stø | 0.000453 | 1.25E-06 | 0.030879 | 0.000343 | 0.281548 | 3.93E-05 | 1.466941 | 0.000131 | 1.88724 | 0.000119 | 1831 | 42 | -2.99 | 2.35 | 1962 | 2262 | |
| SWZ2.096 | Stø | 0.00084 | 4.26E-06 | 0.054265 | 0.000397 | 0.28163 | 5.33E-05 | 1.466864 | 0.00014 | 1.887258 | 0.000128 | 1880 | 44 | 0.55 | 2.87 | 1856 | 2176 | |
| SWZ2.021 | Stø | 0.000313 | 1.34E-06 | 0.01969 | 0.000138 | 0.281635 | 4.31E-05 | 1.466855 | 0.000146 | 1.887231 | 0.000141 | 1907 | 43 | 2.01 | 2.51 | 1819 | 2141 | |
| SWZ2.069 | Stø | 0.000395 | 4.46E-06 | 0.02708 | 0.000225 | 0.28154 | 4.88E-05 | 1.466864 | 0.000143 | 1.887287 | 0.000135 | 1912 | 47 | -1.37 | 2.79 | 1972 | 2270 | |
| SWZ2.017 | Stø | 0.000724 | 9.39E-06 | 0.043494 | 0.000971 | 0.281449 | 5.03E-05 | 1.466896 | 0.000144 | 1.887519 | 0.000137 | 1965 | 40 | -3.81 | 2.67 | 2133 | 2407 | |
| SWZ2.047 | Stø | 0.000426 | 7.84E-06 | 0.02859 | 0.000522 | 0.28155 | 4.57E-05 | 1.467031 | 0.000124 | 1.887396 | 0.000135 | 1975 | 48 | 0.39 | 2.70 | 1958 | 2259 | |
| SWZ2.054 | Stø | 0.001212 | 3.44E-06 | 0.088083 | 0.00073 | 0.281519 | 0.000056 | 1.467021 | 0.000104 | 1.887273 | 0.000127 | 1975 | 43 | -1.76 | 2.94 | 2054 | 2345 | |
| SWZ2.029 | Stø | 0.000744 | 9.31E-06 | 0.040242 | 0.000581 | 0.281561 | 0.000034 | 1.466895 | 0.00011 | 1.88732 | 0.000114 | 2005 | 44 | 1.04 | 2.18 | 1959 | 2262 | |
| SWZ2.005 | Stø | 0.000367 | 1.54E-06 | 0.021892 | 0.000244 | 0.281559 | 3.63E-05 | 1.466962 | 0.000105 | 1.887447 | 0.000112 | 2055 | 40 | 2.62 | 2.20 | 1941 | 2244 | |
| SWZ2.106 | Stø | 0.000335 | 4.67E-07 | 0.023797 | 9.64E-05 | 0.281603 | 6.65E-05 | 1.467083 | 0.000189 | 1.887164 | 0.000173 | 2098 | 46 | 5.20 | 3.42 | 1871 | 2185 | |
| SWZ2.043 | Stø | 0.00097 | 4.68E-06 | 0.075233 | 0.000841 | 0.281243 | 5.68E-05 | 1.46692 | 0.000128 | 1.887217 | 0.000132 | 2371 | 42 | -2.32 | 2.96 | 2473 | 2693 | |
| | | | | | | | | | | | | | | | | | | |
| SWZ3.115 | Stø | 0.00052 | 5.33E-06 | 0.032561 | 0.000482 | 0.282494 | 4.48E-05 | 1.467089 | 0.000115 | 1.887443 | 0.000122 | 0 | 0 | -10.30 | 1.58 | 470 | 1019 | Lost |
| SWZ3.112 | Stø | 0.002288 | 2.45E-05 | 0.134244 | 0.000761 | 0.281675 | 5.26E-05 | 1.46697 | 0.000099 | 1.887106 | 0.000102 | 0 | 0 | -39.24 | 1.86 | 1865 | 2197 | Lost |
| SWZ3.116 | Stø | 0.00162 | 2.26E-05 | 0.101969 | 0.00151 | 0.281804 | 4.15E-05 | 1.467091 | 6.92E-05 | 1.887186 | 0.000104 | 0 | 0 | -34.70 | 1.47 | 1619 | 1986 | Lost |
| SWZ3.120 | Stø | 0.000628 | 1.76E-06 | 0.045148 | 0.000374 | 0.280768 | 4.98E-05 | 1.466873 | 0.000167 | 1.887225 | 0.000157 | 0 | 0 | -71.34 | 1.76 | 3181 | 3283 | Lost |
| SWZ3.035 | Stø | 0.001841 | 1.31E-05 | 0.112048 | 0.000574 | 0.282975 | 6.42E-05 | 1.467056 | 0.000126 | 1.887185 | 0.000131 | 312 | 9 | 13.28 | 2.46 | -321 | 386 | |
| SWZ3.001 | Stø | 0.001076 | 1.54E-05 | 0.07122 | 0.000642 | 0.282556 | 5.07E-05 | 1.46683 | 0.00012 | 1.887423 | 0.000121 | 366 | 12 | -0.22 | 2.05 | 376 | 949 | |
| SWZ3.039 | Stø | 0.001587 | 1.13E-05 | 0.096634 | 0.000367 | 0.282609 | 5.29E-05 | 1.46713 | 9.57E-05 | 1.887203 | 0.000107 | 383 | 12 | 1.89 | 2.12 | 294 | 889 | |
| SWZ3.044 | Stø | 0.000135 | 6.7E-07 | 0.010081 | 4.47E-05 | 0.282189 | 0.000031 | 1.466864 | 0.000116 | 1.88708 | 0.000112 | 411 | 12 | -11.99 | 1.36 | 946 | 1411 | |
| SWZ3.096 | Stø | 0.002791 | 2.08E-05 | 0.177334 | 0.00232 | 0.282319 | 6.45E-05 | 1.466904 | 0.000106 | 1.887154 | 0.000129 | 415 | 12 | -8.01 | 2.52 | 804 | 1327 | |
| SWZ3.047 | Stø | 0.002826 | 0.000031 | 0.200355 | 0.000883 | 0.282635 | 8.73E-05 | 1.467012 | 0.000132 | 1.887464 | 0.000139 | 416 | 12 | 3.19 | 3.32 | 260 | 881 | |
| SWZ3.099 | Stø | | | | | | | | | | | 416 | 12 | ####### | 0.00 | | | Lost |
| SWZ3.088 | Stø | 0.000883 | 9.49E-06 | 0.072395 | 0.00115 | 0.282445 | 6.17E-05 | 1.467162 | 0.000129 | 1.887063 | 0.000129 | 423 | 12 | -2.85 | 2.44 | 554 | 1094 | |
| SWZ3.072 | Stø | 0.001857 | 4.88E-06 | 0.120222 | 0.000629 | 0.28243 | 0.00005 | 1.466879 | 9.83E-05 | 1.887126 | 9.97E-05 | 460 | 13 | -2.86 | 2.04 | 595 | 1142 | |
| SWZ3.098 | Stø | 0.000936 | 6.58E-06 | 0.06278 | 0.000294 | 0.282425 | 6.14E-05 | 1.466912 | 0.000125 | 1.887318 | 0.000141 | 506 | 16 | -1.76 | 2.52 | 587 | 1122 | |
| SWZ3.110 | Stø | 0.004058 | 4.98E-05 | 0.230438 | 0.00534 | 0.282311 | 9.14E-05 | 1.467034 | 0.000119 | 1.887081 | 0.00013 | 595 | 17 | -5.12 | 3.53 | 853 | 1386 | |
| SWZ3.036 | Stø | 0.000436 | 2.79E-06 | 0.028937 | 7.54E-05 | 0.282398 | 3.83E-05 | 1.466984 | 9.51E-05 | 1.887364 | 0.000106 | 612 | 18 | -0.20 | 1.75 | 621 | 1144 | |
| SWZ3.038 | Stø | 0.00072 | 1.44E-05 | 0.023637 | 0.000505 | 0.282043 | 3.95E-05 | 1.466866 | 9.54E-05 | 1.88723 | 0.000117 | 946 | 27 | -5.53 | 1.98 | 1195 | 1625 | |
| SWZ3.012 | Stø | 0.0012 | 0.000007 | 0.077633 | 0.000262 | 0.282126 | 4.11E-05 | 1.466934 | 0.000104 | 1.887186 | 0.000132 | 947 | 30 | -2.86 | 2.10 | 1078 | 1533 | |
| SWZ3.065 | Stø | 0.002569 | 7.67E-05 | 0.209992 | 0.00584 | 0.282012 | 9.08E-05 | 1.466976 | 0.00012 | 1.887326 | 0.00014 | 961 | 25 | -7.49 | 3.64 | 1318 | 1748 | |
| SWZ3.092 | Stø | 0.000929 | 4.48E-06 | 0.056521 | 0.000291 | 0.282106 | 5.32E-05 | 1.466842 | 0.000146 | 1.887401 | 0.000136 | 1043 | 41 | -1.29 | 2.78 | 1101 | 1549 | |
| SWZ3.053 | Stø | 0.000428 | 4.33E-06 | 0.031881 | 0.000165 | 0.282048 | 5.14E-05 | 1.466878 | 0.000136 | 1.887443 | 0.000143 | 1070 | 43 | -2.39 | 2.78 | 1177 | 1607 | |
| SWZ3.010 | Stø | 0.00071 | 6.81E-06 | 0.04868 | 0.000394 | 0.282318 | 0.000039 | 1.466913 | 8.75E-05 | 1.88705 | 9.86E-05 | 1078 | 53 | 7.15 | 2.55 | 755 | 1259 | |
| SWZ3.025 | Stø | 0.000751 | 7.67E-06 | 0.057538 | 0.000589 | 0.282281 | 5.94E-05 | 1.466949 | 0.000151 | 1.887213 | 0.000146 | 1135 | 53 | 7.08 | 3.27 | 815 | 1309 | |
| SWZ3.102 | Stø | 0.000891 | 1.15E-06 | 0.072923 | 0.000254 | 0.28228 | 6.12E-05 | 1.466826 | 0.00013 | 1.887135 | 0.000133 | 1162 | 44 | 7.52 | 3.14 | 821 | 1316 | |
| SWZ3.074 | Stø | 0.00162 | 6.14E-06 | 0.080764 | 0.000918 | 0.281992 | 5.23E-05 | 1.466909 | 0.000124 | 1.887136 | 0.000124 | 1209 | 43 | -2.22 | 2.78 | 1311 | 1731 | |
| SWZ3.085 | Stø | 0.001266 | 8.32E-06 | 0.075711 | 0.000209 | 0.282078 | 5.31E-05 | 1.467015 | 0.000134 | 1.887134 | 0.000141 | 1317 | 43 | 3.46 | 2.81 | 1159 | 1601 | |
| SWZ3.011 | Stø | 0.001532 | 5.47E-06 | 0.110786 | 0.000765 | 0.282172 | 5.95E-05 | 1.466883 | 0.000115 | 1.887417 | 0.000121 | 1339 | 50 | 7.05 | 3.19 | 1014 | 1484 | |
| SWZ3.100 | Stø | 0.001999 | 1.17E-05 | 0.12337 | 0.000949 | 0.282225 | 5.17E-05 | 1.466933 | 9.49E-05 | 1.88691 | 0.000104 | 1345 | 38 | 8.65 | 2.63 | 940 | 1429 | |
| SWZ3.005 | Stø | 0.000804 | 7.81E-06 | 0.0591 | 0.000426 | 0.281963 | 3.78E-05 | 1.466898 | 7.67E-05 | 1.887208 | 9.84E-05 | 1414 | 54 | 1.98 | 2.53 | 1325 | 1734 | |
| SWZ3.057 | Stø | 0.001286 | 2.09E-06 | 0.083374 | 0.000177 | 0.281847 | 0.000047 | 1.466691 | 0.000116 | 1.8873 | 0.000118 | 1415 | 33 | -2.59 | 2.39 | 1533 | 1912 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWZ3.069 | Stø | 0.000722 | 6.4E-06 | 0.058559 | 0.000554 | 0.281964 | 0.000051 | 1.466932 | 0.000125 | 1.887037 | 0.000137 | 1472 | 40 | 3.36 | 2.69 | 1322 | 1730 | |
| SWZ3.028 | Stø | 0.001105 | 5.55E-06 | 0.061721 | 0.000619 | 0.281902 | 4.49E-05 | 1.466904 | 9.53E-05 | 1.887152 | 0.000109 | 1504 | 49 | 1.51 | 2.67 | 1436 | 1829 | |
| SWZ3.078 | Stø | 0.001576 | 2.73E-05 | 0.093335 | 0.00102 | 0.28192 | 3.93E-05 | 1.466751 | 8.95E-05 | 1.88742 | 0.000109 | 1535 | 38 | 2.33 | 2.17 | 1428 | 1828 | |
| SWZ3.059 | Stø | 0.002295 | 6.26E-05 | 0.131782 | 0.00401 | 0.281713 | 5.53E-05 | 1.466764 | 7.65E-05 | 1.887224 | 0.000117 | 1571 | 45 | -4.97 | 2.79 | 1803 | 2145 | |
| SWZ3.106 | Stø | 0.002274 | 3.33E-05 | 0.179302 | 0.0033 | 0.281954 | 8.54E-05 | 1.466959 | 0.000139 | 1.886989 | 0.000137 | 1580 | 37 | 3.80 | 3.75 | 1402 | 1814 | |
| SWZ3.043 | Stø | 0.001155 | 6.56E-06 | 0.06944 | 0.000494 | 0.281848 | 5.08E-05 | 1.467105 | 0.000114 | 1.887262 | 0.000117 | 1603 | 34 | 1.71 | 2.54 | 1526 | 1905 | |
| SWZ3.089 | Stø | 0.002135 | 1.12E-05 | 0.124099 | 0.000951 | 0.282066 | 0.000049 | 1.466882 | 9.92E-05 | 1.887201 | 9.56E-05 | 1607 | 35 | 8.49 | 2.47 | 1210 | 1653 | |
| SWZ3.066 | Stø | 0.001295 | 1.24E-05 | 0.066188 | 0.000958 | 0.28183 | 5.63E-05 | 1.466871 | 0.000161 | 1.887163 | 0.000161 | 1752 | 33 | 4.22 | 2.70 | 1561 | 1935 | |
| SWZ3.090 | Stø | 0.001945 | 1.59E-05 | 0.114292 | 0.000965 | 0.281798 | 4.73E-05 | 1.466969 | 8.94E-05 | 1.887244 | 0.000108 | 1753 | 34 | 2.34 | 2.38 | 1645 | 2011 | |
| SWZ3.041 | Stø | 0.001447 | 1.07E-05 | 0.104121 | 0.000653 | 0.281937 | 7.45E-05 | 1.467522 | 0.00016 | 1.887082 | 0.000156 | 1811 | 28 | 9.14 | 3.24 | 1395 | 1799 | |
| SWZ3.080 | Stø | 0.00041 | 7.49E-06 | 0.029441 | 0.000183 | 0.28136 | 5.65E-05 | 1.466748 | 0.000137 | 1.887426 | 0.000146 | 1866 | 31 | -8.80 | 2.69 | 2251 | 2504 | |
| SWZ3.056 | Stø | 0.000839 | 5.71E-07 | 0.063382 | 0.000343 | 0.281526 | 0.000056 | 1.466991 | 0.000131 | 1.887294 | 0.000143 | 1869 | 39 | -3.39 | 2.86 | 2020 | 2313 | |
| SWZ3.083 | Stø | 0.000759 | 5.77E-06 | 0.05671 | 0.000924 | 0.281608 | 5.02E-05 | 1.466911 | 0.000134 | 1.886945 | 0.000133 | 1920 | 32 | 0.77 | 2.49 | 1886 | 2201 | |
| SWZ3.108 | Stø | 4.81E-05 | 5.93E-07 | 0.004618 | 6.58E-05 | 0.281274 | 4.19E-05 | 1.467031 | 0.000109 | 1.887039 | 0.00013 | 1920 | 31 | -10.17 | 2.20 | 2359 | 2592 | |
| SWZ3.027 | Stø | 0 | 0 | 0 | 0 | -0.007611 | -0.008294 | -0.007493 | -0.008092 | -0.007758 | -0.008412 | 1965 | 45 | ####### | 294.68 | 121382 | 113284 | Lost |
| SWZ3.062 | Stø | 0.001625 | 1.11E-05 | 0.10384 | 0.00072 | 0.281653 | 0.000062 | 1.466927 | 0.000121 | 1.887187 | 0.000133 | 1966 | 30 | 2.25 | 2.83 | 1864 | 2190 | |
| SWZ3.029 | Stø | 0.000956 | 3.71E-06 | 0.067545 | 0.000627 | 0.281442 | 5.01E-05 | 1.466751 | 0.000118 | 1.887383 | 0.000116 | 2006 | 45 | -3.47 | 2.78 | 2160 | 2431 | |
| SWZ3.068 | Stø | 0.000539 | 2.59E-06 | 0.041362 | 0.000575 | 0.281148 | 4.64E-05 | 1.466942 | 0.000106 | 1.887361 | 0.000114 | 2009 | 45 | -13.27 | 2.66 | 2589 | 2787 | |
| SWZ3.014 | Stø | 0.001257 | 8.46E-06 | 0.086699 | 0.000246 | 0.281429 | 4.98E-05 | 1.466894 | 9.81E-05 | 1.887224 | 0.000108 | 2024 | 48 | -3.94 | 2.82 | 2201 | 2467 | |
| SWZ3.101 | Stø | 0.001444 | 4.43E-06 | 0.086035 | 0.000318 | 0.281216 | 6.09E-05 | 1.466762 | 0.000136 | 1.887005 | 0.000137 | 2474 | 32 | -1.76 | 2.87 | 2553 | 2761 | |
| SWZ3.082 | Stø | 0.000968 | 9.09E-06 | 0.056531 | 0.00074 | 0.281141 | 4.54E-05 | 1.466909 | 0.00011 | 1.887291 | 0.00013 | 2679 | 30 | 1.06 | 2.27 | 2632 | 2826 | |
| SWZ3.103 | Stø | 0.000315 | 7.85E-07 | 0.019377 | 0.00011 | 0.281186 | 3.78E-05 | 1.466745 | 0.000094 | 1.887325 | 0.000104 | 2684 | 30 | 3.96 | 2.04 | 2514 | 2723 | |
| SWZ3.046 | Stø | 0.001713 | 5.47E-06 | 0.082288 | 0.000502 | 0.280744 | 5.97E-05 | 1.466809 | 0.000122 | 1.887089 | 0.000164 | 2711 | 29 | -13.72 | 2.75 | 3323 | 3405 | |
| SWZ3.006 | Stø | 0.000545 | 1.65E-06 | 0.037467 | 0.000208 | 0.281035 | 4.03E-05 | 1.466854 | 0.000103 | 1.887249 | 0.000109 | 2722 | 38 | -0.96 | 2.31 | 2763 | 2933 | |
| SWZ3.091 | Stø | 0.00053 | 9.47E-06 | 0.032921 | 0.000926 | 0.281035 | 2.65E-05 | 1.467021 | 5.93E-05 | 1.887159 | 7.82E-05 | 2773 | 26 | 0.24 | 1.51 | 2763 | 2932 | |
| SWZ3.037 | Stø | 0.001227 | 0.000018 | 0.074561 | 0.00104 | 0.280981 | 3.94E-05 | 1.466817 | 8.39E-05 | 1.887186 | 9.46E-05 | 2798 | 28 | -2.40 | 1.97 | 2904 | 3053 | |
| SWZ3.061 | Stø | 0.001109 | 6.57E-06 | 0.088058 | 0.00041 | 0.281122 | 7.77E-05 | 1.46686 | 0.00014 | 1.88697 | 0.000156 | 2908 | 27 | 5.33 | 3.36 | 2674 | 2861 | |
| SWZ3.075 | Stø | 0.000598 | 3.94E-06 | 0.0335 | 0.000227 | 0.280873 | 3.66E-05 | 1.466907 | 7.73E-05 | 1.88712 | 8.98E-05 | 2942 | 27 | -1.74 | 1.91 | 3017 | 3146 | |
| SWZ3.109 | Stø | 9.86E-05 | 1.84E-06 | 0.007254 | 0.000159 | 0.280568 | 4.08E-05 | 1.466866 | 0.000137 | 1.887402 | 0.000141 | 3114 | 17 | -7.55 | 1.85 | 3433 | 3493 | |
| SWZ3.034 | Stø | 0.000439 | 1.05E-06 | 0.03192 | 0.00026 | 0.280832 | 4.01E-05 | 1.467101 | 0.000136 | 1.887033 | 0.000134 | 3141 | 38 | 1.77 | 2.31 | 3065 | 3186 | |
| SWZ3.084 | Stø | 0.00101 | 9.74E-06 | 0.08172 | 0.000887 | 0.280767 | 5.09E-05 | 1.466866 | 0.000115 | 1.887256 | 0.000114 | 3158 | 27 | -1.39 | 2.39 | 3219 | 3316 | |
| | | | | | | | | | | | | | | | | | | |
| N1Z1.070 | Kolmule | 0.00174 | 1.51E-05 | 0.109562 | 0.00042 | 0.282538 | 5.38E-05 | 1.466825 | 8.76E-05 | 1.887227 | 0.000114 | 238 | 7 | -3.73 | 2.05 | 414 | 991 | |
| N1Z1.011 | Kolmule | 0.001962 | 3.52E-05 | 0.11094 | 0.000335 | 0.28277 | 0.000071 | 1.467059 | 0.00014 | 1.887282 | 0.000168 | 240 | 7 | 4.49 | 2.65 | 26 | 674 | |
| N1Z1.116 | Kolmule | 0.001126 | 2.91E-06 | 0.079175 | 0.00054 | 0.282588 | 4.55E-05 | 1.467148 | 0.000088 | 1.886971 | 0.000122 | 312 | 6 | -0.24 | 1.74 | 323 | 906 | |
| N1Z1.091 | Kolmule | 0.000865 | 1.91E-06 | 0.052854 | 0.000235 | 0.282726 | 3.99E-05 | 1.466962 | 0.000118 | 1.8872 | 0.000116 | 342 | 6 | 5.34 | 1.54 | 96 | 714 | |
| N1Z1.026 | Kolmule | 0.001134 | 2.4E-06 | 0.069603 | 0.000599 | 0.282494 | 3.87E-05 | 1.466984 | 7.79E-05 | 1.887066 | 0.000101 | 414 | 9 | -1.38 | 1.56 | 478 | 1034 | |
| N1Z1.102 | Kolmule | 0.000412 | 0.000001 | 0.023413 | 0.000175 | 0.28231 | 3.77E-05 | 1.467074 | 7.59E-05 | 1.887273 | 9.86E-05 | 431 | 8 | -7.34 | 1.51 | 762 | 1261 | |
| N1Z1.014 | Kolmule | 0.00114 | 1.69E-05 | 0.072794 | 0.00183 | 0.282561 | 4.59E-05 | 1.467022 | 0.000103 | 1.887082 | 0.000124 | 440 | 10 | 1.56 | 1.83 | 368 | 943 | |
| N1Z1.039 | Kolmule | 0.000528 | 9.23E-07 | 0.031706 | 0.000151 | 0.282319 | 3.53E-05 | 1.467046 | 8.26E-05 | 1.887177 | 9.29E-05 | 441 | 10 | -6.83 | 1.47 | 750 | 1252 | |
| N1Z1.087 | Kolmule | 0.001517 | 1.53E-05 | 0.107229 | 0.000458 | 0.282234 | 4.94E-05 | 1.466775 | 0.000104 | 1.887252 | 0.000108 | 452 | 8 | -9.88 | 1.91 | 912 | 1399 | |
| N1Z1.001 | Kolmule | 0.001738 | 1.01E-05 | 0.11823 | 0.00121 | 0.282443 | 5.27E-05 | 1.467097 | 8.64E-05 | 1.887124 | 0.000107 | 469 | 17 | -2.18 | 2.22 | 571 | 1120 | |
| N1Z1.050 | Kolmule | 0.000403 | 1.3E-06 | 0.022565 | 0.000111 | 0.282754 | 3.61E-05 | 1.467022 | 8.23E-05 | 1.887004 | 0.000111 | 514 | 17 | 10.24 | 1.65 | 50 | 668 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t,\ CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N1Z1.019 | Kolmule | 0.000846 | 1.62E-06 | 0.055079 | 0.000495 | 0.281852 | 4.42E-05 | 1.467051 | 0.000103 | 1.887146 | 0.000123 | 539 | 12 | -21.29 | 1.83 | 1504 | 1883 | |
| N1Z1.092 | Kolmule | 0.000624 | 7.92E-06 | 0.036662 | 0.000718 | 0.282684 | 4.29E-05 | 1.466956 | 0.000102 | 1.887141 | 0.000115 | 555 | 10 | 8.58 | 1.73 | 164 | 767 | |
| N1Z1.068 | Kolmule | 0.000761 | 3.73E-06 | 0.04358 | 0.00048 | 0.28246 | 4.36E-05 | 1.467086 | 9.12E-05 | 1.887274 | 0.000114 | 556 | 12 | 0.62 | 1.80 | 528 | 1070 | |
| N1Z1.085 | Kolmule | 0.001049 | 2.06E-06 | 0.072945 | 0.000506 | 0.282201 | 0.000049 | 1.466997 | 8.52E-05 | 1.887331 | 0.000122 | 628 | 11 | -7.10 | 1.97 | 953 | 1427 | |
| N1Z1.094 | Kolmule | 0.000685 | 9.27E-06 | 0.041161 | 0.000157 | 0.282576 | 3.95E-05 | 1.466966 | 0.000113 | 1.887009 | 0.00012 | 634 | 25 | 6.48 | 1.94 | 339 | 912 | |
| N1Z1.024 | Kolmule | 0.001346 | 1.54E-05 | 0.093817 | 0.000897 | 0.281991 | 6.09E-05 | 1.466922 | 0.000117 | 1.887393 | 0.000116 | 824 | 12 | -10.42 | 2.40 | 1303 | 1721 | |
| N1Z1.023 | Kolmule | 0.001261 | 1.69E-05 | 0.085292 | 0.000903 | 0.282122 | 4.67E-05 | 1.466849 | 8.39E-05 | 1.887234 | 0.000106 | 873 | 18 | -4.68 | 2.03 | 1088 | 1542 | |
| N1Z1.015 | Kolmule | 0.001012 | 0.000002 | 0.064442 | 0.000308 | 0.282185 | 3.92E-05 | 1.466935 | 7.97E-05 | 1.887173 | 0.0001 | 884 | 21 | -2.04 | 1.85 | 977 | 1447 | |
| N1Z1.105 | Kolmule | 0.000723 | 2.59E-06 | 0.047181 | 0.000238 | 0.282175 | 3.99E-05 | 1.466837 | 9.98E-05 | 1.887358 | 0.000106 | 942 | 75 | -0.95 | 3.07 | 985 | 1450 | |
| N1Z1.047 | Kolmule | 0.001194 | 1.04E-05 | 0.090939 | 0.000926 | 0.28207 | 8.76E-05 | 1.466871 | 0.000195 | 1.887027 | 0.000194 | 992 | 31 | -3.88 | 3.77 | 1169 | 1609 | |
| N1Z1.106 | Kolmule | 0.001004 | 3.53E-06 | 0.067527 | 0.000715 | 0.281958 | 4.11E-05 | 1.46705 | 9.21E-05 | 1.887292 | 0.000104 | 999 | 18 | -7.56 | 1.85 | 1342 | 1750 | |
| N1Z1.080 | Kolmule | 0.001076 | 7.78E-06 | 0.071731 | 0.00101 | 0.281711 | 0.000045 | 1.466824 | 7.92E-05 | 1.887282 | 0.000117 | 1066 | 31 | -14.89 | 2.26 | 1740 | 2082 | |
| N1Z1.006 | Kolmule | 0.000556 | 9.22E-06 | 0.030625 | 8.07E-05 | 0.281775 | 4.37E-05 | 1.467056 | 0.000121 | 1.887259 | 0.000123 | 1249 | 32 | -8.18 | 2.25 | 1613 | 1972 | |
| N1Z1.120 | Kolmule | 0.001319 | 8.8E-06 | 0.096062 | 0.000701 | 0.282094 | 4.67E-05 | 1.466943 | 9.75E-05 | 1.887155 | 9.62E-05 | 1354 | 25 | 4.81 | 2.19 | 1134 | 1581 | |
| N1Z1.027 | Kolmule | 0.000747 | 1.19E-06 | 0.047815 | 0.000359 | 0.281812 | 3.34E-05 | 1.466956 | 7.31E-05 | 1.887202 | 0.000123 | 1452 | 32 | -2.49 | 1.90 | 1563 | 1932 | |
| N1Z1.033 | Kolmule | 0.000651 | 1.61E-06 | 0.041401 | 0.000384 | 0.281634 | 4.29E-05 | 1.467034 | 0.000107 | 1.887278 | 0.000116 | 1477 | 28 | -8.14 | 2.15 | 1839 | 2161 | |
| N1Z1.079 | Kolmule | 0.001427 | 7.02E-06 | 0.093573 | 0.000297 | 0.281941 | 4.55E-05 | 1.467104 | 9.94E-05 | 1.887215 | 0.000104 | 1486 | 28 | 2.17 | 2.21 | 1387 | 1792 | |
| N1Z1.099 | Kolmule | 0.000791 | 3.49E-06 | 0.05058 | 0.000213 | 0.281927 | 5.35E-05 | 1.467023 | 0.000103 | 1.886802 | 0.000125 | 1495 | 24 | 2.50 | 2.43 | 1383 | 1782 | |
| N1Z1.082 | Kolmule | 0.001608 | 1.93E-05 | 0.108575 | 0.00343 | 0.281821 | 9.64E-05 | 1.466674 | 0.000195 | 1.8872 | 0.000204 | 1617 | 28 | 0.60 | 3.99 | 1589 | 1962 | |
| N1Z1.046 | Kolmule | 0.001512 | 5.24E-06 | 0.091054 | 0.000962 | 0.281883 | 5.57E-05 | 1.466931 | 0.000124 | 1.887161 | 0.000121 | 1693 | 26 | 4.57 | 2.54 | 1485 | 1874 | |
| N1Z1.096 | Kolmule | 0.002543 | 4.06E-05 | 0.11603 | 0.000799 | 0.281701 | 7.01E-05 | 1.466718 | 0.000134 | 1.887523 | 0.000149 | 1695 | 22 | -3.03 | 2.86 | 1838 | 2176 | |
| N1Z1.090 | Kolmule | 0.001425 | 2.89E-05 | 0.080443 | 0.000192 | 0.28178 | 6.21E-05 | 1.466884 | 0.000141 | 1.887099 | 0.000135 | 1723 | 22 | 1.65 | 2.62 | 1648 | 2009 | |
| N1Z1.038 | Kolmule | 0.002092 | 0.000038 | 0.161223 | 0.0024 | 0.281893 | 0.000119 | 1.467022 | 0.000263 | 1.887012 | 0.000238 | 1798 | 25 | 6.53 | 4.67 | 1495 | 1888 | |
| N1Z1.108 | Kolmule | 0.000425 | 5.76E-06 | 0.028695 | 0.000553 | 0.281525 | 4.89E-05 | 1.466991 | 8.56E-05 | 1.887057 | 0.000109 | 1799 | 39 | -4.49 | 2.61 | 1996 | 2290 | |
| N1Z1.112 | Kolmule | 0.00044 | 2.61E-06 | 0.030197 | 0.000383 | 0.281407 | 3.47E-05 | 1.467059 | 8.59E-05 | 1.887011 | 0.000111 | 1901 | 21 | -6.41 | 1.70 | 2182 | 2446 | |
| N1Z1.032 | Kolmule | 0.000108 | 3.68E-06 | 0.007481 | 0.000287 | 0.281355 | 3.47E-05 | 1.466967 | 8.92E-05 | 1.88721 | 0.000112 | 1924 | 24 | -7.29 | 1.78 | 2240 | 2492 | |
| N1Z1.066 | Kolmule | 0.000591 | 3.5E-06 | 0.039034 | 0.000268 | 0.281789 | 4.04E-05 | 1.466891 | 0.000121 | 1.887112 | 0.000123 | 1938 | 25 | 7.81 | 1.99 | 1593 | 1955 | |
| N1Z1.072 | Kolmule | 0.000441 | 1.53E-06 | 0.027478 | 0.00028 | 0.281218 | 3.39E-05 | 1.467003 | 8.39E-05 | 1.887201 | 0.000105 | 1966 | 28 | -11.62 | 1.84 | 2473 | 2689 | |
| N1Z1.065 | Kolmule | 0.000691 | 1.51E-06 | 0.045253 | 0.000296 | 0.281555 | 3.98E-05 | 1.466922 | 9.13E-05 | 1.887001 | 0.000106 | 2000 | 26 | 0.78 | 2.00 | 1965 | 2267 | |
| N1Z1.064 | Kolmule | 0.000951 | 0.000019 | 0.049468 | 0.00019 | 0.281289 | 4.28E-05 | 1.466691 | 0.000103 | 1.887192 | 0.000113 | 2378 | 24 | -0.51 | 2.00 | 2400 | 2632 | |
| N1Z1.020 | Kolmule | 0.000671 | 5.47E-06 | 0.03703 | 6.22E-05 | 0.281302 | 0.000042 | 1.467081 | 7.83E-05 | 1.887247 | 0.000107 | 2406 | 26 | 1.08 | 2.07 | 2359 | 2595 | |
| N1Z1.125 | Kolmule | 0.004263 | 3.95E-05 | 0.2322 | 0.00384 | 0.281215 | 0.000136 | 1.466788 | 0.000173 | 1.887152 | 0.000153 | 2563 | 24 | -4.70 | 5.19 | 2793 | 2975 | |
| N1Z1.104 | Kolmule | 0.000628 | 2.24E-06 | 0.044483 | 0.000146 | 0.281063 | 4.48E-05 | 1.466989 | 9.63E-05 | 1.887151 | 0.000119 | 2705 | 25 | -0.51 | 2.16 | 2727 | 2903 | |
| N1Z1.086 | Kolmule | 0.000255 | 5.77E-07 | 0.014169 | 0.000134 | 0.280968 | 3.77E-05 | 1.46712 | 9.15E-05 | 1.887064 | 0.000107 | 2884 | 24 | 1.00 | 1.90 | 2841 | 2997 | |
| N1Z1.042 | Kolmule | 0.000381 | 0.000011 | 0.021724 | 0.000439 | 0.280893 | 3.52E-05 | 1.466803 | 0.000108 | 1.887284 | 0.000109 | 2962 | 19 | -0.11 | 1.65 | 2967 | 3103 | |
| N1Z1.060 | Kolmule | 0.00039 | 4.15E-06 | 0.024994 | 0.000416 | 0.280993 | 4.24E-05 | 1.467026 | 0.00014 | 1.887093 | 0.000135 | 3115 | 16 | 7.02 | 1.87 | 2814 | 2975 | |
| | | | | | | | | | | | | | | | | | | |
| N1Z2.013 | Knurr | 0.000784 | 3.92E-06 | 0.04978 | 8.76E-05 | 0.282711 | 5.89E-05 | 1.467124 | 9.46E-05 | 1.887034 | 0.000137 | 223 | 4 | 2.22 | 2.17 | 121 | 733 | |
| N1Z2.114 | Knurr | 0.000848 | 3.82E-06 | 0.057892 | 0.000809 | 0.282822 | 4.62E-05 | 1.466894 | 0.00008 | 1.887007 | 0.000103 | 286 | 8 | 7.52 | 1.81 | -61 | 584 | |
| N1Z2.061 | Knurr | 0.001613 | 4.92E-06 | 0.080082 | 0.000349 | 0.28278 | 4.67E-05 | 1.466925 | 0.00011 | 1.887035 | 0.00011 | 353 | 10 | 7.29 | 1.86 | 9 | 654 | |
| N1Z2.034 | Knurr | 0.000859 | 1.31E-05 | 0.05417 | 0.000505 | 0.282614 | 3.95E-05 | 1.466933 | 7.91E-05 | 1.887507 | 0.000108 | 386 | 7 | 2.34 | 1.54 | 278 | 865 | |
| N1Z2.033 | Knurr | 0.00072 | 3.09E-05 | 0.047941 | 0.00211 | 0.282381 | 5.12E-05 | 1.466775 | 0.000091 | 1.887549 | 0.000108 | 424 | 8 | -5.06 | 1.97 | 654 | 1175 | |
| N1Z2.083 | Knurr | 0.000798 | 1.26E-05 | 0.048642 | 0.00107 | 0.282436 | 3.76E-05 | 1.466891 | 6.14E-05 | 1.887242 | 9.08E-05 | 446 | 11 | -2.66 | 1.56 | 568 | 1104 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N1Z2.087 | Knurr | 0.001015 | 1.06E-05 | 0.074227 | 0.00141 | 0.282286 | 4.02E-05 | 1.467102 | 0.000069 | 1.887011 | 9.99E-05 | 472 | 11 | -7.44 | 1.66 | 813 | 1311 | |
| N1Z2.086 | Knurr | 0.00142 | 1.02E-05 | 0.072681 | 0.000809 | 0.282231 | 5.94E-05 | 1.466713 | 0.000131 | 1.887116 | 0.000114 | 630 | 15 | -6.13 | 2.42 | 914 | 1400 | |
| N1Z2.107 | Knurr | 0.000641 | 8.79E-07 | 0.038323 | 0.00018 | 0.282203 | 4.05E-05 | 1.467116 | 7.16E-05 | 1.887481 | 9.58E-05 | 745 | 16 | -4.28 | 1.79 | 938 | 1410 | |
| N1Z2.046 | Knurr | 0.002729 | 6.61E-05 | 0.167712 | 0.00521 | 0.2826 | 8.76E-05 | 1.4668 | 0.000109 | 1.887448 | 0.000132 | 877 | 24 | 11.50 | 3.52 | 320 | 929 | |
| N1Z2.103 | Knurr | 0.000672 | 6.22E-06 | 0.044498 | 0.000647 | 0.282191 | 4.65E-05 | 1.46708 | 8.26E-05 | 1.887098 | 0.000126 | 1016 | 86 | 1.31 | 3.55 | 957 | 1426 | |
| N1Z2.051 | Knurr | 0.000696 | 1.03E-05 | 0.056785 | 0.00077 | 0.282209 | 0.000101 | 1.467368 | 0.000267 | 1.887475 | 0.000324 | 1020 | 41 | 2.02 | 4.48 | 929 | 1403 | |
| N1Z2.066 | Knurr | 0.00049 | 0.000001 | 0.032036 | 9.11E-05 | 0.282091 | 4.35E-05 | 1.466994 | 8.14E-05 | 1.887239 | 0.000105 | 1026 | 45 | -1.91 | 2.55 | 1112 | 1553 | |
| N1Z2.120 | Knurr | 0.000217 | 3.74E-07 | 0.014465 | 8.47E-05 | 0.282056 | 3.73E-05 | 1.467141 | 7.74E-05 | 1.887228 | 0.000104 | 1073 | 66 | -1.90 | 2.81 | 1157 | 1588 | |
| N1Z2.027 | Knurr | 0.001122 | 2.64E-06 | 0.072831 | 0.000626 | 0.282312 | 4.23E-05 | 1.467013 | 7.98E-05 | 1.887297 | 9.32E-05 | 1079 | 27 | 6.66 | 2.09 | 774 | 1280 | |
| N1Z2.094 | Knurr | 0.000858 | 4.94E-06 | 0.067468 | 0.000856 | 0.282285 | 4.82E-05 | 1.466948 | 9.76E-05 | 1.887388 | 0.000118 | 1120 | 65 | 6.81 | 3.14 | 811 | 1307 | |
| N1Z2.099 | Knurr | 0.000544 | 9.73E-07 | 0.033823 | 0.0002 | 0.28225 | 3.99E-05 | 1.466921 | 7.28E-05 | 1.887191 | 0.000107 | 1128 | 68 | 5.99 | 2.93 | 859 | 1343 | |
| N1Z2.041 | Knurr | 0.000833 | 2.18E-06 | 0.06461 | 0.000244 | 0.282204 | 4.97E-05 | 1.46697 | 0.000093 | 1.887098 | 0.000121 | 1130 | 43 | 4.16 | 2.71 | 942 | 1416 | |
| N1Z2.015 | Knurr | 0.000825 | 1.48E-06 | 0.055506 | 0.00028 | 0.282126 | 4.93E-05 | 1.46696 | 7.98E-05 | 1.887217 | 0.000124 | 1160 | 29 | 2.08 | 2.39 | 1066 | 1519 | |
| N1Z2.050 | Knurr | 0.001254 | 1.59E-06 | 0.093896 | 0.000971 | 0.282176 | 4.94E-05 | 1.466905 | 7.34E-05 | 1.887059 | 0.000112 | 1161 | 50 | 3.55 | 2.84 | 998 | 1468 | |
| N1Z2.085 | Knurr | 0.000592 | 6.59E-07 | 0.04014 | 0.000277 | 0.281998 | 4.48E-05 | 1.467014 | 7.85E-05 | 1.887207 | 0.000121 | 1276 | 70 | 0.32 | 3.16 | 1262 | 1679 | |
| N1Z2.055 | Knurr | 0.000386 | 3.28E-06 | 0.028143 | 0.000548 | 0.281976 | 4.31E-05 | 1.466613 | 0.000111 | 1.887488 | 0.00011 | 1278 | 36 | -0.27 | 2.33 | 1290 | 1700 | |
| N1Z2.003 | Knurr | 0.001737 | 5.98E-06 | 0.11425 | 0.000421 | 0.282077 | 4.87E-05 | 1.466998 | 7.43E-05 | 1.887238 | 0.000102 | 1364 | 25 | 4.02 | 2.26 | 1178 | 1622 | |
| N1Z2.052 | Knurr | 0.00083 | 1.36E-06 | 0.057907 | 0.000307 | 0.282026 | 4.27E-05 | 1.466925 | 0.000087 | 1.887184 | 0.000113 | 1674 | 29 | 9.97 | 2.16 | 1227 | 1653 | |
| N1Z2.002 | Knurr | 0.001662 | 2.52E-05 | 0.102387 | 0.00104 | 0.281837 | 3.87E-05 | 1.467024 | 0.000078 | 1.887315 | 9.89E-05 | 1675 | 23 | 2.36 | 1.82 | 1567 | 1944 | |
| N1Z2.017 | Knurr | 0.000476 | 8.27E-07 | 0.031081 | 0.000268 | 0.2817 | 3.53E-05 | 1.466899 | 7.37E-05 | 1.887209 | 9.26E-05 | 1723 | 22 | -0.08 | 1.75 | 1727 | 2066 | |
| N1Z2.119 | Knurr | 0.000974 | 1.05E-05 | 0.064723 | 0.000352 | 0.281719 | 3.94E-05 | 1.466983 | 7.63E-05 | 1.886999 | 0.000118 | 1790 | 58 | 1.52 | 2.67 | 1722 | 2066 | |
| N1Z2.023 | Knurr | 0.000894 | 8.67E-06 | 0.05968 | 0.000285 | 0.281421 | 4.98E-05 | 1.467038 | 0.000086 | 1.887367 | 0.000114 | 1791 | 24 | -8.93 | 2.28 | 2188 | 2454 | |
| N1Z2.068 | Knurr | 0.000771 | 6.39E-06 | 0.039712 | 0.000448 | 0.281403 | 5.14E-05 | 1.466762 | 0.000107 | 1.887436 | 0.000132 | 1809 | 33 | -9.03 | 2.55 | 2209 | 2470 | |
| N1Z2.109 | Knurr | 0.000928 | 2.6E-06 | 0.067135 | 0.000371 | 0.281307 | 5.28E-05 | 1.466928 | 7.45E-05 | 1.887066 | 0.000107 | 1810 | 57 | -12.61 | 3.14 | 2370 | 2606 | |
| N1Z2.071 | Knurr | 0.000308 | 7.56E-07 | 0.020954 | 9.66E-05 | 0.281386 | 3.97E-05 | 1.466892 | 8.58E-05 | 1.887055 | 9.75E-05 | 1817 | 63 | -8.89 | 2.85 | 2205 | 2464 | |
| N1Z2.090 | Knurr | 0.000762 | 2.66E-06 | 0.039671 | 0.000255 | 0.281546 | 6.05E-05 | 1.466683 | 0.000139 | 1.887411 | 0.000154 | 1825 | 62 | -3.57 | 3.54 | 1983 | 2282 | |
| N1Z2.110 | Knurr | 0.001561 | 1.02E-05 | 0.103745 | 0.000843 | 0.281554 | 4.66E-05 | 1.466955 | 8.25E-05 | 1.887438 | 0.000107 | 1846 | 67 | -3.82 | 3.10 | 2019 | 2319 | |
| N1Z2.042 | Knurr | 0.000913 | 1.33E-06 | 0.060564 | 0.000447 | 0.281519 | 0.00004 | 1.4669 | 0.000078 | 1.887128 | 0.000102 | 1860 | 33 | -3.93 | 2.16 | 2035 | 2327 | |
| N1Z2.021 | Knurr | 0.000933 | 2.63E-06 | 0.061528 | 0.000528 | 0.281411 | 5.17E-05 | 1.467092 | 8.26E-05 | 1.887408 | 0.000112 | 1948 | 30 | -5.82 | 2.50 | 2206 | 2470 | |
| N1Z2.058 | Knurr | 0 | 0 | 0 | 0 | -0.007508 | -0.008035 | -0.007511 | -0.008138 | -0.007679 | -0.008316 | 1955 | 39 | ####### | 285.44 | 121365 | 113268 | Lost |
| N1Z2.118 | Knurr | 0.000268 | 3.6E-06 | 0.018354 | 0.000343 | 0.281323 | 5.72E-05 | 1.466993 | 9.08E-05 | 1.887459 | 0.000135 | 2437 | 54 | 3.20 | 3.27 | 2299 | 2542 | |
| N1Z2.004 | Knurr | 0.000518 | 8.06E-07 | 0.030924 | 0.000166 | 0.281107 | 3.88E-05 | 1.466838 | 7.32E-05 | 1.887364 | 0.000107 | 2680 | 22 | 0.68 | 1.89 | 2650 | 2838 | |
| N1Z2.031 | Knurr | 0.000618 | 2.14E-06 | 0.038414 | 0.00016 | 0.280907 | 3.49E-05 | 1.466901 | 7.02E-05 | 1.887511 | 0.000118 | 2819 | 21 | -3.39 | 1.72 | 2966 | 3103 | |
| N1Z2.091 | Knurr | 0.000388 | 5.35E-06 | 0.025858 | 0.000396 | 0.280976 | 3.35E-05 | 1.467009 | 8.19E-05 | 1.887027 | 9.68E-05 | 2885 | 54 | 1.04 | 2.43 | 2840 | 2997 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z1.040 | Kolmule | 0.001519 | 3.98E-05 | 0.09398 | 0.00303 | 0.282533 | 5.58E-05 | 1.466885 | 0.000073 | 1.886407 | 9.23E-05 | 230 | 4 | -4.05 | 2.05 | 420 | 992 | |
| N2Z1.067 | Kolmule | | | | | | | | | | | 232 | 5 | ####### | 0.00 | | | Lost |
| N2Z1.079 | Kolmule | 0.001622 | 1.83E-05 | 0.109054 | 0.00212 | 0.28246 | 6.79E-05 | 1.467094 | 0.000142 | 1.886475 | 0.000155 | 232 | 4 | -6.59 | 2.48 | 542 | 1094 | |
| N2Z1.057 | Kolmule | 0.000764 | 3.13E-06 | 0.03404 | 0.000209 | 0.28253 | 6.33E-05 | 1.467562 | 0.000123 | 1.886266 | 0.00013 | 233 | 4 | -3.97 | 2.33 | 415 | 977 | |
| N2Z1.063 | Kolmule | 0.00152 | 2.15E-05 | 0.085724 | 0.000417 | 0.282856 | 8.33E-05 | 1.467498 | 0.000176 | 1.8863 | 0.000167 | 248 | 4 | 7.77 | 3.03 | -118 | 547 | |
| N2Z1.099 | Kolmule | 0.001046 | 1.08E-05 | 0.059382 | 0.000389 | 0.282649 | 0.000043 | 1.467243 | 0.000102 | 1.886453 | 0.000112 | 249 | 5 | 0.56 | 1.63 | 223 | 822 | |
| 2Z1.048.04 | Kolmule | 0.001079 | 8.59E-06 | 0.054226 | 0.00067 | 0.28283 | 4.23E-05 | 1.46707 | 8.71E-05 | 1.886773 | 0.000104 | 250 | 5 | 6.96 | 1.60 | -74 | 577 | |
| N2Z1.083 | Kolmule | 0.000829 | 8.16E-06 | 0.046906 | 0.000769 | 0.282853 | 4.26E-05 | 1.466911 | 0.000121 | 1.886888 | 0.000122 | 298 | 5 | 8.86 | 1.61 | -110 | 542 | |

| Source file | Formation | $^{176}$Lu/$^{177}$Hf' mean | $^{176}$Lu/$^{177}$Hf' SE | $^{176}$Yb/$^{177}$Hf' mean | $^{176}$Yb/$^{177}$Hf' SE | $^{176}$Hf/$^{177}$Hf Corrected' mean | $^{176}$Hf/$^{177}$Hf Corrected' SE | $^{178}$Hf/$^{177}$Hf Corrected' mean | $^{178}$Hf/$^{177}$Hf Corrected' SE | $^{180}$Hf/$^{177}$Hf Corrected' mean | $^{180}$Hf/$^{177}$Hf Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z1.019 | Kolmule | 0.001893 | 2.92E-06 | 0.118714 | 0.00129 | 0.282532 | 4.32E-05 | 1.46697 | 6.81E-05 | 1.88643 | 9.78E-05 | 347 | 7 | -1.66 | 1.68 | 426 | 1003 | |
| N2Z1.027 | Kolmule | 0.001254 | 9.49E-06 | 0.065653 | 0.000354 | 0.282691 | 4.37E-05 | 1.466955 | 7.76E-05 | 1.886617 | 0.000104 | 348 | 8 | 4.13 | 1.71 | 155 | 769 | |
| N2Z1.053 | Kolmule | 0.000623 | 1.99E-05 | 0.034399 | 0.000508 | 0.281226 | 7.08E-05 | 1.467053 | 0.000256 | 1.886553 | 0.000226 | 361 | 6 | -47.27 | 2.63 | 2474 | 2691 | |
| N2Z1.071 | Kolmule | 0.001387 | 3.02E-05 | 0.088766 | 0.00092 | 0.282562 | 5.36E-05 | 1.467184 | 0.000107 | 1.886495 | 0.000115 | 377 | 7 | 0.17 | 2.03 | 369 | 948 | |
| N2Z1.095 | Kolmule | 0.001906 | 4.45E-05 | 0.114234 | 0.0006 | 0.282379 | 8.16E-05 | 1.466712 | 0.000144 | 1.886915 | 0.000172 | 402 | 7 | -5.93 | 3.01 | 682 | 1214 | |
| N2Z1.092 | Kolmule | 0.000773 | 6.5E-06 | 0.045053 | 0.000508 | 0.282492 | 4.08E-05 | 1.467164 | 0.000101 | 1.886658 | 9.67E-05 | 403 | 7 | -1.61 | 1.59 | 477 | 1028 | |
| N2Z1.078 | Kolmule | 0.000394 | 2.5E-06 | 0.021572 | 0.000303 | 0.282507 | 4.27E-05 | 1.466954 | 0.000093 | 1.886491 | 0.000127 | 411 | 7 | -0.80 | 1.66 | 447 | 999 | |
| N2Z1.051 | Kolmule | 0.001742 | 1.44E-05 | 0.105558 | 0.00163 | 0.282377 | 4.55E-05 | 1.467077 | 6.64E-05 | 1.886739 | 9.39E-05 | 440 | 8 | -5.13 | 1.77 | 681 | 1211 | |
| N2Z1.013 | Kolmule | 0.001025 | 3.13E-05 | 0.062256 | 0.000925 | 0.282538 | 3.73E-05 | 1.467149 | 8.09E-05 | 1.886317 | 0.000102 | 471 | 8 | 1.44 | 1.47 | 405 | 972 | |
| N2Z1.065 | Kolmule | 0.001332 | 9.57E-06 | 0.083052 | 0.00107 | 0.282716 | 6.58E-05 | 1.466838 | 8.13E-05 | 1.887008 | 0.000127 | 507 | 8 | 8.41 | 2.50 | 115 | 737 | |
| N2Z1.033 | Kolmule | 0.001121 | 1.45E-05 | 0.060048 | 0.00025 | 0.282819 | 6.61E-05 | 1.467244 | 0.000129 | 1.886582 | 0.000137 | 508 | 11 | 12.17 | 2.57 | -57 | 592 | |
| 2Z1.087.08 | Kolmule | 0.001117 | 9.33E-06 | 0.075253 | 0.000828 | 0.282296 | 4.83E-05 | 1.467165 | 9.59E-05 | 1.886585 | 0.000121 | 555 | 10 | -5.35 | 1.92 | 801 | 1302 | |
| N2Z1.102 | Kolmule | 0.000655 | 3.29E-06 | 0.037987 | 0.000605 | 0.282696 | 4.65E-05 | 1.467069 | 9.93E-05 | 1.886572 | 0.000113 | 562 | 10 | 9.15 | 1.86 | 145 | 751 | |
| N2Z1.043 | Kolmule | 0.000512 | 5.53E-06 | 0.032362 | 0.000211 | 0.28211 | 3.99E-05 | 1.467147 | 7.94E-05 | 1.886542 | 9.18E-05 | 567 | 10 | -11.43 | 1.63 | 1082 | 1528 | |
| N2Z1.059 | Kolmule | 0.00106 | 1.76E-05 | 0.050169 | 0.000495 | 0.282616 | 4.57E-05 | 1.467122 | 8.09E-05 | 1.886643 | 0.000116 | 648 | 11 | 8.03 | 1.84 | 278 | 868 | |
| N2Z1.062 | Kolmule | 0.000344 | 5.75E-06 | 0.019565 | 0.000129 | 0.282274 | 5.45E-05 | 1.467545 | 9.95E-05 | 1.886524 | 0.000142 | 655 | 13 | -3.61 | 2.21 | 817 | 1306 | |
| N2Z1.044 | Kolmule | 0.001957 | 1.78E-05 | 0.105306 | 0.000667 | 0.282115 | 6.61E-05 | 1.467187 | 0.000121 | 1.88644 | 0.000129 | 824 | 13 | -6.37 | 2.60 | 1123 | 1579 | |
| N2Z1.004 | Kolmule | 0.000893 | 1.55E-05 | 0.055281 | 0.000588 | 0.282125 | 4.33E-05 | 1.467017 | 7.29E-05 | 1.88659 | 9.47E-05 | 915 | 14 | -3.42 | 1.82 | 1070 | 1523 | |
| N2Z1.068 | Kolmule | 0.002781 | 7.14E-05 | 0.143138 | 0.00108 | 0.282283 | 7.87E-05 | 1.467315 | 0.000152 | 1.886423 | 0.000175 | 917 | 18 | 1.08 | 3.07 | 865 | 1377 | |
| N2Z1.014 | Kolmule | 0.001011 | 5.3E-06 | 0.074195 | 0.000373 | 0.282257 | 0.000079 | 1.467005 | 0.000144 | 1.88651 | 0.000174 | 946 | 16 | 1.86 | 3.14 | 861 | 1351 | |
| N2Z1.002 | Kolmule | 0.000762 | 2.09E-05 | 0.044894 | 0.000309 | 0.282103 | 5.79E-05 | 1.466854 | 0.000145 | 1.886543 | 0.000169 | 966 | 18 | -2.99 | 2.42 | 1101 | 1547 | |
| N2Z1.074 | Kolmule | 0.001544 | 3.49E-05 | 0.087104 | 0.000813 | 0.281934 | 8.22E-05 | 1.46726 | 0.000194 | 1.886717 | 0.000198 | 973 | 15 | -9.32 | 3.19 | 1403 | 1806 | |
| N2Z1.114 | Kolmule | 0.000531 | 1.76E-06 | 0.032284 | 0.000165 | 0.282221 | 4.78E-05 | 1.466979 | 9.86E-05 | 1.886596 | 0.000121 | 1043 | 25 | 3.04 | 2.25 | 907 | 1383 | |
| N2Z1.113 | Kolmule | 0.001111 | 1.19E-05 | 0.071553 | 0.000599 | 0.282137 | 5.91E-05 | 1.467171 | 0.000125 | 1.886568 | 0.000133 | 1043 | 43 | -0.34 | 3.02 | 1058 | 1516 | |
| N2Z1.097 | Kolmule | 0.000818 | 2.26E-06 | 0.052602 | 0.000374 | 0.282149 | 4.14E-05 | 1.467133 | 9.92E-05 | 1.88671 | 0.000113 | 1079 | 28 | 1.12 | 2.08 | 1029 | 1488 | |
| N2Z1.115 | Kolmule | 0.000903 | 1.41E-05 | 0.059811 | 0.000354 | 0.28214 | 5.56E-05 | 1.467169 | 0.000137 | 1.88667 | 0.000158 | 1090 | 34 | 0.98 | 2.70 | 1046 | 1503 | |
| N2Z1.116 | Kolmule | 0.001222 | 1.55E-05 | 0.076479 | 0.00147 | 0.282137 | 5.04E-05 | 1.467087 | 0.000118 | 1.886384 | 0.000138 | 1143 | 36 | 1.77 | 2.55 | 1062 | 1520 | |
| N2Z1.119 | Kolmule | 0.002057 | 0.000065 | 0.116558 | 0.00172 | 0.282233 | 0.00005 | 1.467385 | 9.85E-05 | 1.886486 | 0.000089 | 1266 | 35 | 7.19 | 2.41 | 929 | 1420 | |
| N2Z1.070 | Kolmule | 0.001428 | 1.08E-05 | 0.09746 | 0.00044 | 0.282304 | 5.71E-05 | 1.466964 | 7.65E-05 | 1.886699 | 0.000113 | 1267 | 29 | 10.23 | 2.64 | 796 | 1302 | |
| N2Z1.108 | Kolmule | 0.001626 | 2.34E-05 | 0.107305 | 0.000682 | 0.282093 | 6.44E-05 | 1.467089 | 0.000111 | 1.886502 | 0.000137 | 1310 | 29 | 3.52 | 2.87 | 1148 | 1596 | |
| N2Z1.038 | Kolmule | 0.002419 | 0.000065 | 0.149924 | 0.00166 | 0.282067 | 5.02E-05 | 1.467275 | 7.64E-05 | 1.886411 | 9.73E-05 | 1451 | 32 | 4.89 | 2.33 | 1220 | 1665 | |
| N2Z1.101 | Kolmule | 0.001567 | 1.87E-05 | 0.109286 | 0.000615 | 0.281799 | 0.000168 | 1.466268 | 0.00105 | 1.887028 | 0.000986 | 1473 | 60 | -3.31 | 7.23 | 1624 | 1991 | |
| N2Z1.036 | Kolmule | 0.000524 | 2.83E-06 | 0.028214 | 0.000263 | 0.281888 | 4.55E-05 | 1.466881 | 9.84E-05 | 1.886854 | 0.000103 | 1512 | 28 | 1.78 | 2.24 | 1433 | 1821 | |
| N2Z1.052 | Kolmule | 0.002004 | 4.03E-05 | 0.079167 | 0.000886 | 0.281984 | 5.74E-05 | 1.467642 | 9.21E-05 | 1.886421 | 0.000112 | 1522 | 52 | 3.90 | 3.07 | 1341 | 1760 | |
| N2Z1.050 | Kolmule | 0.000722 | 3.22E-05 | 0.042554 | 0.00206 | 0.28196 | 4.45E-05 | 1.467028 | 9.43E-05 | 1.886381 | 0.000111 | 1583 | 29 | 5.71 | 2.16 | 1328 | 1736 | |
| N2Z1.056 | Kolmule | 0.002221 | 1.98E-05 | 0.128366 | 0.000287 | 0.281724 | 0.000059 | 1.467158 | 8.89E-05 | 1.886495 | 0.00012 | 1610 | 25 | -3.68 | 2.59 | 1781 | 2127 | |
| N2Z1.045 | Kolmule | 0.000472 | 5.95E-06 | 0.028382 | 0.000129 | 0.281735 | 3.92E-05 | 1.467229 | 7.41E-05 | 1.886568 | 0.000108 | 1624 | 27 | -1.07 | 1.99 | 1671 | 2020 | |
| N2Z1.085 | Kolmule | 0.000804 | 3.69E-06 | 0.052297 | 0.000619 | 0.281622 | 7.26E-05 | 1.466943 | 0.000146 | 1.886295 | 0.000161 | 1624 | 27 | -5.45 | 3.17 | 1867 | 2186 | |
| N2Z1.032 | Kolmule | 0.000965 | 3.55E-06 | 0.056756 | 0.000611 | 0.281801 | 0.000047 | 1.466961 | 8.66E-05 | 1.886502 | 0.000108 | 1740 | 27 | 3.32 | 2.26 | 1591 | 1957 | |
| N2Z1.058 | Kolmule | 0.00289 | 8.71E-05 | 0.189677 | 0.00524 | 0.281581 | 0.000058 | 1.467055 | 8.43E-05 | 1.886804 | 8.73E-05 | 1740 | 23 | -6.74 | 2.34 | 2059 | 2362 | |
| N2Z1.022 | Kolmule | 0.000457 | 1.97E-06 | 0.025615 | 0.000226 | 0.281753 | 4.03E-05 | 1.467067 | 9.97E-05 | 1.88624 | 0.00013 | 1849 | 29 | 4.68 | 2.09 | 1643 | 1996 | |
| N2Z1.047 | Kolmule | 0.000568 | 6.34E-06 | 0.037112 | 0.000144 | 0.281534 | 4.16E-05 | 1.466948 | 7.95E-05 | 1.886377 | 0.000108 | 1856 | 27 | -3.07 | 2.07 | 1991 | 2287 | |
| N2Z1.089 | Kolmule | 0.000489 | 1.57E-06 | 0.030251 | 0.000202 | 0.281348 | 3.64E-05 | 1.467035 | 9.26E-05 | 1.886535 | 9.93E-05 | 1863 | 29 | -9.41 | 1.95 | 2276 | 2525 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z1.024 | Kolmule | 0.000728 | 3.23E-06 | 0.056299 | 0.000267 | 0.281444 | 0.000168 | 1.467563 | 0.000372 | 1.886426 | 0.000343 | 1874 | 21 | -6.07 | 6.43 | 2142 | 2415 | |
| N2Z1.020 | Kolmule | 0.0009 | 2.11E-05 | 0.053914 | 0.000735 | 0.281628 | 4.43E-05 | 1.467073 | 8.44E-05 | 1.886344 | 9.97E-05 | 1978 | 23 | 2.60 | 2.03 | 1862 | 2183 | |
| N2Z1.046 | Kolmule | 0.001097 | 8.77E-06 | 0.070957 | 0.0013 | 0.281515 | 4.57E-05 | 1.46708 | 9.23E-05 | 1.886539 | 0.000116 | 2089 | 23 | 0.81 | 2.11 | 2053 | 2343 | |
| N2Z1.084 | Kolmule | 0.000881 | 7.13E-06 | 0.06421 | 0.00117 | 0.281288 | 7.06E-05 | 1.467001 | 0.000206 | 1.88677 | 0.000183 | 2351 | 21 | -1.04 | 2.96 | 2397 | 2628 | |
| N2Z1.025 | Kolmule | 0.00101 | 6.51E-06 | 0.052358 | 0.000202 | 0.281405 | 4.28E-05 | 1.467087 | 8.34E-05 | 1.886517 | 0.000103 | 2368 | 21 | 3.31 | 1.98 | 2222 | 2483 | |
| N2Z1.006 | Kolmule | 0.0007 | 1.52E-06 | 0.038793 | 0.000333 | 0.281298 | 3.94E-05 | 1.46705 | 0.00008 | 1.886575 | 0.000108 | 2497 | 45 | 2.94 | 2.43 | 2368 | 2603 | |
| N2Z1.105 | Kolmule | 0.000535 | 1.61E-06 | 0.033578 | 0.000193 | 0.28113 | 4.04E-05 | 1.467137 | 8.83E-05 | 1.886468 | 0.000105 | 2511 | 20 | -2.44 | 1.89 | 2617 | 2810 | |
| N2Z1.035 | Kolmule | 0.000464 | 1.62E-06 | 0.024684 | 0.000325 | 0.281306 | 4.25E-05 | 1.466876 | 7.34E-05 | 1.886237 | 9.77E-05 | 2541 | 26 | 4.66 | 2.11 | 2339 | 2577 | |
| N2Z1.010 | Kolmule | 0.000858 | 2.96E-06 | 0.04886 | 0.000462 | 0.280945 | 4.78E-05 | 1.466846 | 0.000102 | 1.886803 | 0.00014 | 2569 | 27 | -8.22 | 2.31 | 2928 | 3072 | |
| N2Z1.096 | Kolmule | 0.001287 | 2.64E-05 | 0.082967 | 0.0008 | 0.281329 | 4.46E-05 | 1.467189 | 9.58E-05 | 1.8865 | 0.000094 | 2684 | 24 | 7.28 | 2.03 | 2361 | 2601 | |
| N2Z1.008 | Kolmule | 0.000957 | 9.14E-06 | 0.041021 | 0.000249 | 0.281102 | 6.38E-05 | 1.467472 | 0.000215 | 1.886002 | 0.000214 | 2695 | 20 | 0.06 | 2.69 | 2693 | 2876 | |
| N2Z1.077 | Kolmule | 0.001615 | 5.4E-06 | 0.11711 | 0.00165 | 0.280996 | 0.00011 | 1.466811 | 0.000199 | 1.886431 | 0.000215 | 2833 | 20 | -1.83 | 4.34 | 2914 | 3064 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z2.065 | Kolmule | 0.000664 | 3.42E-06 | 0.044644 | 0.00047 | 0.281689 | 4.36E-05 | 1.466918 | 7.92E-05 | 1.886612 | 0.000106 | 0 | 0 | -38.75 | 1.54 | 1753 | 2089 | |
| N2Z2.036 | Kolmule | 0.000675 | 3.77E-06 | 0.033224 | 0.000263 | 0.282671 | 3.81E-05 | 1.467001 | 8.41E-05 | 1.886705 | 0.000107 | 255 | 6 | 1.52 | 1.48 | 185 | 785 | |
| N2Z2.030 | Kolmule | 0.002069 | 3.45E-05 | 0.147164 | 0.00189 | 0.282813 | 8.99E-05 | 1.466896 | 0.000131 | 1.88667 | 0.000157 | 315 | 7 | 7.59 | 3.31 | -48 | 615 | |
| N2Z2.028 | Kolmule | 0.001885 | 4.01E-05 | 0.087678 | 0.000455 | 0.2829 | 4.02E-05 | 1.467115 | 7.19E-05 | 1.886475 | 0.000094 | 318 | 6 | 10.75 | 1.53 | -195 | 491 | |
| N2Z2.014 | Kolmule | 0.001235 | 8.65E-06 | 0.074912 | 0.000692 | 0.282317 | 4.33E-05 | 1.467058 | 7.63E-05 | 1.886536 | 0.000101 | 426 | 8 | -7.41 | 1.70 | 768 | 1277 | |
| N2Z2.006 | Kolmule | 0.000948 | 1.28E-05 | 0.046904 | 0.000124 | 0.282423 | 4.45E-05 | 1.46701 | 8.95E-05 | 1.886811 | 0.000101 | 489 | 9 | -2.20 | 1.76 | 590 | 1125 | |
| N2Z2.046 | Kolmule | 0.001726 | 6.02E-05 | 0.094457 | 0.00192 | 0.282831 | 6.24E-05 | 1.467315 | 0.000116 | 1.886516 | 0.000135 | 637 | 14 | 15.14 | 2.46 | -78 | 584 | |
| N2Z2.032 | Kolmule | 0.000654 | 4.07E-06 | 0.042293 | 0.000437 | 0.282233 | 4.29E-05 | 1.466982 | 9.79E-05 | 1.886507 | 0.000118 | 836 | 26 | -1.18 | 2.09 | 889 | 1370 | |
| N2Z2.052 | Kolmule | 0.001825 | 0.000064 | 0.109976 | 0.0021 | 0.28212 | 4.55E-05 | 1.467243 | 9.68E-05 | 1.886483 | 9.79E-05 | 849 | 14 | -5.58 | 1.84 | 1110 | 1567 | |
| N2Z2.053 | Kolmule | 0.000433 | 2.37E-06 | 0.028373 | 0.000387 | 0.282098 | 0.000037 | 1.467033 | 7.94E-05 | 1.886614 | 9.15E-05 | 931 | 0 | -3.72 | 1.31 | 1097 | 1541 | |
| N2Z2.011 | Kolmule | 0.00147 | 4.79E-05 | 0.09389 | 0.00143 | 0.282193 | 5.96E-05 | 1.467311 | 0.000105 | 1.886537 | 0.000139 | 933 | 14 | -0.97 | 2.35 | 978 | 1453 | |
| N2Z2.035 | Kolmule | 0.000971 | 7.14E-06 | 0.055273 | 0.000875 | 0.282136 | 4.36E-05 | 1.467047 | 7.57E-05 | 1.886684 | 0.000107 | 994 | 18 | -1.34 | 1.93 | 1055 | 1511 | |
| N2Z2.059 | Kolmule | 0.00038 | 5.2E-07 | 0.022061 | 0.000207 | 0.28223 | 4.18E-05 | 1.467056 | 0.0001 | 1.886642 | 0.000124 | 995 | 21 | 2.42 | 1.95 | 887 | 1364 | |
| N2Z2.034 | Kolmule | 0.001179 | 4.45E-05 | 0.063928 | 0.00142 | 0.282153 | 5.24E-05 | 1.467155 | 8.97E-05 | 1.886625 | 0.000125 | 1051 | 41 | 0.35 | 2.69 | 1035 | 1497 | |
| N2Z2.029 | Kolmule | 0.000449 | 1.16E-06 | 0.027054 | 0.000184 | 0.282184 | 4.37E-05 | 1.466961 | 9.43E-05 | 1.886685 | 0.000111 | 1085 | 71 | 2.75 | 3.14 | 962 | 1428 | |
| N2Z2.037 | Kolmule | 0.000801 | 1.04E-06 | 0.053912 | 0.000328 | 0.28225 | 5.03E-05 | 1.467149 | 0.000101 | 1.886257 | 0.000126 | 1309 | 51 | 9.80 | 2.92 | 867 | 1353 | |
| N2Z2.009 | Kolmule | 0.000658 | 8.3E-06 | 0.037638 | 0.000884 | 0.28221 | 3.49E-05 | 1.466927 | 0.00007 | 1.8866 | 9.39E-05 | 1320 | 32 | 8.74 | 1.94 | 928 | 1402 | |
| N2Z2.008 | Kolmule | 0.000563 | 1.73E-06 | 0.033775 | 0.000438 | 0.282111 | 4.11E-05 | 1.467009 | 0.000079 | 1.886635 | 0.00011 | 1323 | 51 | 5.39 | 2.60 | 1082 | 1529 | |
| N2Z2.060 | Kolmule | 0.00078 | 1.21E-05 | 0.04698 | 0.000433 | 0.281951 | 4.74E-05 | 1.467154 | 9.07E-05 | 1.886788 | 0.000115 | 1472 | 42 | 2.87 | 2.60 | 1343 | 1749 | |
| N2Z2.042 | Kolmule | 0.000953 | 7.39E-06 | 0.055656 | 0.000394 | 0.281819 | 4.15E-05 | 1.467112 | 7.14E-05 | 1.886684 | 0.000104 | 1606 | 29 | 0.97 | 2.10 | 1562 | 1933 | |
| N2Z2.050 | Kolmule | 0.001391 | 2.13E-05 | 0.077642 | 0.000518 | 0.281852 | 5.14E-05 | 1.467001 | 0.000101 | 1.886877 | 0.000113 | 1638 | 31 | 2.37 | 2.46 | 1530 | 1911 | |
| N2Z2.058 | Kolmule | 0.000651 | 1.32E-06 | 0.039865 | 0.000431 | 0.281555 | 0.000038 | 1.467016 | 7.18E-05 | 1.886547 | 9.49E-05 | 1812 | 30 | -3.40 | 2.02 | 1962 | 2264 | |
| N2Z2.040 | Kolmule | 0.000476 | 4.65E-06 | 0.023533 | 0.000103 | 0.28153 | 4.87E-05 | 1.467223 | 9.82E-05 | 1.886785 | 0.000135 | 1978 | 28 | -0.30 | 2.36 | 1991 | 2287 | |
| N2Z2.055 | Kolmule | 0.001381 | 2.59E-05 | 0.076156 | 0.00046 | 0.281876 | 4.29E-05 | 1.467046 | 8.32E-05 | 1.88667 | 0.000105 | 2021 | 31 | 11.72 | 2.14 | 1490 | 1877 | |
| N2Z2.047 | Kolmule | 0.000446 | 1.04E-06 | 0.025724 | 0.000272 | 0.281339 | 4.03E-05 | 1.466967 | 7.78E-05 | 1.886689 | 0.00011 | 2523 | 25 | 5.43 | 2.01 | 2287 | 2534 | |
| N2Z2.012 | Kolmule | 0.001823 | 8.52E-05 | 0.091264 | 0.00243 | 0.281013 | 6.93E-05 | 1.467468 | 0.000114 | 1.886668 | 0.000141 | 2735 | 23 | -3.81 | 2.66 | 2906 | 3057 | |
| N2Z2.043 | Kolmule | 0.00066 | 7.7E-06 | 0.035038 | 0.000234 | 0.281077 | 4.22E-05 | 1.467007 | 8.86E-05 | 1.886607 | 0.000109 | 2814 | 32 | 2.46 | 2.21 | 2707 | 2886 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z2.083 | Kolmule | 0.00188 | 0.000012 | 0.114728 | 0.000978 | 0.282744 | 5.64E-05 | 1.466966 | 8.92E-05 | 1.88667 | 0.000108 | 252 | 5 | 3.85 | 2.10 | 69 | 708 | |
| N2Z2.081 | Kolmule | 0.002422 | 8.26E-06 | 0.147866 | 0.00208 | 0.282891 | 0.000082 | 1.467083 | 0.000104 | 1.886467 | 0.000132 | 261 | 6 | 9.15 | 3.02 | -183 | 510 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z2.107 | Kolmule | 0.001464 | 9.59E-06 | 0.081081 | 0.000113 | 0.282858 | 5.45E-05 | 1.467094 | 0.000107 | 1.887004 | 0.000122 | 312 | 7 | 9.22 | 2.07 | -121 | 544 | |
| N2Z2.062 | Kolmule | 0.00208 | 4.14E-05 | 0.132376 | 0.0035 | 0.282328 | 5.05E-05 | 1.466947 | 7.57E-05 | 1.886633 | 9.83E-05 | 318 | 6 | -9.52 | 1.89 | 770 | 1290 | |
| N2Z2.097 | Kolmule | 0.000988 | 2.21E-05 | 0.050948 | 0.000435 | 0.282874 | 5.79E-05 | 1.467283 | 0.000163 | 1.886618 | 0.000164 | 349 | 8 | 10.68 | 2.21 | -146 | 515 | |
| N2Z2.116 | Kolmule | 0.001048 | 6.36E-06 | 0.041559 | 0.000278 | 0.282535 | 6.71E-05 | 1.467397 | 0.000187 | 1.886557 | 0.00019 | 455 | 10 | 0.99 | 2.59 | 409 | 976 | |
| N2Z2.063 | Kolmule | 0.000428 | 2.93E-06 | 0.026955 | 0.000358 | 0.282167 | 4.01E-05 | 1.46702 | 0.000104 | 1.886595 | 0.00011 | 472 | 10 | -11.49 | 1.64 | 989 | 1450 | |
| N2Z2.093 | Kolmule | 0.001099 | 8.39E-06 | 0.06333 | 0.00109 | 0.282818 | 4.98E-05 | 1.467186 | 9.87E-05 | 1.88665 | 0.00011 | 692 | 15 | 16.13 | 2.08 | -54 | 593 | |
| N2Z2.066 | Kolmule | 0.002073 | 2.21E-05 | 0.13881 | 0.000982 | 0.282135 | 5.82E-05 | 1.467447 | 0.000102 | 1.886218 | 0.000117 | 753 | 15 | -7.21 | 2.36 | 1093 | 1556 | |
| N2Z2.077 | Kolmule | 0.000246 | 5.7E-07 | 0.01464 | 0.000228 | 0.282112 | 4.11E-05 | 1.467117 | 9.32E-05 | 1.886658 | 0.000103 | 1164 | 33 | 2.11 | 2.20 | 1070 | 1516 | |
| N2Z2.078 | Kolmule | 0.001103 | 8.17E-06 | 0.062175 | 0.000982 | 0.281934 | 5.52E-05 | 1.467317 | 9.62E-05 | 1.886488 | 0.000104 | 1472 | 37 | 1.92 | 2.76 | 1385 | 1787 | |
| N2Z2.113 | Kolmule | 0.000807 | 6.03E-06 | 0.053346 | 0.000315 | 0.28203 | 7.84E-05 | 1.467259 | 0.000209 | 1.886792 | 0.00019 | 1516 | 25 | 6.61 | 3.33 | 1219 | 1646 | |
| N2Z2.108 | Kolmule | 0.000529 | 2.83E-06 | 0.033348 | 0.000493 | 0.28173 | 4.77E-05 | 1.467138 | 0.000108 | 1.886749 | 0.000142 | 1530 | 39 | -3.43 | 2.57 | 1682 | 2029 | |
| N2Z2.087 | Kolmule | 0.001139 | 1.25E-05 | 0.062805 | 0.00125 | 0.282132 | 4.35E-05 | 1.467352 | 0.0001 | 1.886785 | 9.56E-05 | 1566 | 34 | 10.99 | 2.27 | 1068 | 1524 | |
| N2Z2.082 | Kolmule | 0.001057 | 2.36E-05 | 0.063976 | 0.000387 | 0.281831 | 7.56E-05 | 1.467191 | 0.000136 | 1.886302 | 0.000144 | 1599 | 42 | 1.13 | 3.56 | 1548 | 1922 | |
| N2Z2.117 | Kolmule | 0.000527 | 8.91E-06 | 0.032507 | 0.000215 | 0.281908 | 5.18E-05 | 1.467129 | 0.000128 | 1.886535 | 0.000136 | 1637 | 42 | 5.31 | 2.77 | 1401 | 1795 | |
| N2Z2.102 | Kolmule | 0.000637 | 1.3E-06 | 0.043586 | 0.000264 | 0.281598 | 4.51E-05 | 1.467115 | 0.000105 | 1.886741 | 0.000114 | 1717 | 29 | -4.02 | 2.25 | 1895 | 2208 | |
| N2Z2.095 | Kolmule | 0.000371 | 9.4E-06 | 0.019623 | 0.000188 | 0.281639 | 4.19E-05 | 1.467345 | 9.87E-05 | 1.886548 | 0.000121 | 1808 | 34 | -0.19 | 2.24 | 1816 | 2140 | |
| N2Z2.067 | Kolmule | 0.000213 | 6.38E-07 | 0.013462 | 0.000116 | 0.281616 | 3.96E-05 | 1.467024 | 8.38E-05 | 1.88661 | 0.0001 | 1843 | 33 | -0.01 | 2.16 | 1843 | 2161 | |
| N2Z2.086 | Kolmule | 0.000609 | 5.57E-06 | 0.037462 | 0.000352 | 0.281418 | 3.42E-05 | 1.467184 | 7.31E-05 | 1.886287 | 9.49E-05 | 1852 | 34 | -7.33 | 1.97 | 2175 | 2441 | |
| N2Z2.075 | Kolmule | 0.000821 | 3.13E-05 | 0.041261 | 0.00074 | 0.281599 | 5.93E-05 | 1.467282 | 0.000127 | 1.886421 | 0.000143 | 1975 | 30 | 1.60 | 2.70 | 1904 | 2217 | |
| N2Z2.090 | Kolmule | 0.000245 | 1.89E-06 | 0.014752 | 0.000198 | 0.281201 | 7.73E-05 | 1.467122 | 0.000182 | 1.886948 | 0.000218 | 2321 | 35 | -3.80 | 3.55 | 2485 | 2698 | |
| N2Z2.098 | Kolmule | 0.000731 | 1.59E-05 | 0.045511 | 0.000302 | 0.281242 | 6.04E-05 | 1.467397 | 0.000152 | 1.886419 | 0.000158 | 2610 | 27 | 3.49 | 2.71 | 2457 | 2678 | |
| N2Z2.120 | Kolmule | 0.001389 | 0.00005 | 0.057044 | 0.00151 | 0.28124 | 7.24E-05 | 1.467448 | 0.000131 | 1.886302 | 0.000151 | 2706 | 24 | 4.42 | 2.93 | 2509 | 2725 | |
| N2Z2.096 | Kolmule | 0.000462 | 2.77E-06 | 0.02703 | 0.000144 | 0.28095 | 5.25E-05 | 1.467173 | 8.92E-05 | 1.886675 | 0.000124 | 2847 | 31 | -0.93 | 2.58 | 2887 | 3036 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z4.030 | Knurr | 0.000568 | 1.1E-06 | 0.035868 | 0.000321 | 0.282322 | 9.11E-05 | 1.467025 | 0.000118 | 1.886613 | 0.000183 | 225 | 5 | -11.46 | 3.33 | 745 | 1249 | |
| N2Z4.039 | Knurr | 0.000811 | 1.17E-06 | 0.049267 | 0.000329 | 0.28254 | 5.99E-05 | 1.467211 | 9.55E-05 | 1.886893 | 0.000132 | 227 | 5 | -3.76 | 2.23 | 399 | 965 | |
| N2Z4.034 | Knurr | 0.000483 | 1.35E-06 | 0.027602 | 0.000139 | 0.282719 | 0.00006 | 1.467161 | 8.87E-05 | 1.886553 | 0.000149 | 230 | 6 | 2.72 | 2.25 | 106 | 716 | |
| N2Z4.095 | Knurr | 0.001224 | 2.07E-06 | 0.078623 | 0.000418 | 0.282474 | 8.34E-05 | 1.467021 | 0.0001 | 1.886738 | 0.000192 | 281 | 7 | -4.96 | 3.10 | 511 | 1063 | |
| N2Z4.011 | Knurr | 0.000942 | 3.54E-06 | 0.06286 | 0.000699 | 0.282616 | 6.61E-05 | 1.467061 | 9.42E-05 | 1.886624 | 0.000139 | 305 | 7 | 0.61 | 2.49 | 277 | 865 | |
| N2Z4.019 | Knurr | 0.000881 | 3.65E-06 | 0.056727 | 0.000195 | 0.282694 | 7.47E-05 | 1.467125 | 0.000105 | 1.886784 | 0.000133 | 305 | 7 | 3.40 | 2.79 | 149 | 758 | |
| N2Z4.070 | Knurr | 0.001438 | 7.16E-06 | 0.076095 | 0.000249 | 0.282791 | 7.22E-05 | 1.467228 | 0.000106 | 1.886488 | 0.000132 | 336 | 8 | 7.36 | 2.72 | -9 | 636 | |
| N2Z4.086 | Knurr | 0.001278 | 1.53E-05 | 0.077176 | 0.000498 | 0.282917 | 7.41E-05 | 1.467304 | 8.94E-05 | 1.887004 | 0.000147 | 336 | 8 | 11.87 | 2.79 | -219 | 460 | |
| N2Z4.103 | Knurr | 0.000819 | 1.37E-05 | 0.047764 | 0.000442 | 0.282805 | 6.28E-05 | 1.467185 | 9.21E-05 | 1.886626 | 0.000129 | 336 | 8 | 8.02 | 2.39 | -33 | 606 | |
| N2Z4.003 | Knurr | 0.00074 | 1.15E-05 | 0.03936 | 0.000793 | 0.282608 | 6.25E-05 | 1.467102 | 0.0001 | 1.886874 | 0.00014 | 363 | 8 | 1.63 | 2.38 | 288 | 872 | |
| N2Z4.002 | Knurr | 0.000905 | 0.000003 | 0.054069 | 0.000172 | 0.282591 | 8.76E-05 | 1.466973 | 9.65E-05 | 1.886512 | 0.000176 | 363 | 7 | 1.01 | 3.25 | 317 | 897 | |
| N2Z4.113 | Knurr | 0.001197 | 5.51E-06 | 0.074677 | 0.000247 | 0.282516 | 5.65E-05 | 1.467109 | 8.93E-05 | 1.88705 | 0.000121 | 377 | 8 | -1.43 | 2.17 | 443 | 1007 | |
| N2Z4.115 | Knurr | 0.000785 | 1.14E-05 | 0.047583 | 0.000796 | 0.282878 | 8.24E-05 | 1.466808 | 0.000119 | 1.886826 | 0.000163 | 383 | 9 | 11.61 | 3.11 | -151 | 508 | |
| N2Z4.041 | Knurr | 0.001924 | 1.21E-05 | 0.112791 | 0.000172 | 0.282462 | 8.13E-05 | 1.466986 | 0.000102 | 1.886535 | 0.00018 | 386 | 8 | -3.32 | 3.04 | 543 | 1100 | |
| N2Z4.022 | Knurr | 0.000449 | 8.27E-07 | 0.030222 | 0.000181 | 0.282387 | 7.44E-05 | 1.466905 | 9.51E-05 | 1.886707 | 0.000138 | 406 | 9 | -5.18 | 2.83 | 640 | 1160 | |
| N2Z4.045 | Knurr | 0.001434 | 7.48E-06 | 0.059602 | 0.000706 | 0.282705 | 8.26E-05 | 1.466982 | 0.000181 | 1.886936 | 0.000181 | 415 | 8 | 6.04 | 3.09 | 132 | 753 | |
| N2Z4.079 | Knurr | 0.000819 | 4.25E-06 | 0.048595 | 0.000121 | 0.282428 | 5.98E-05 | 1.46717 | 8.13E-05 | 1.886939 | 0.000138 | 415 | 9 | -3.63 | 2.31 | 581 | 1115 | |
| N2Z4.044 | Knurr | 0.000709 | 4.15E-05 | 0.049685 | 0.00288 | 0.282258 | 0.000056 | 1.467185 | 0.000109 | 1.886699 | 0.000124 | 417 | 9 | -9.55 | 2.16 | 851 | 1339 | |
| N2Z4.061 | Knurr | 0.000988 | 1.11E-05 | 0.059104 | 0.0012 | 0.282255 | 6.12E-05 | 1.46711 | 9.31E-05 | 1.886821 | 0.000137 | 417 | 10 | -9.74 | 2.38 | 864 | 1353 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z4.046 | Knurr | 0.000493 | 1.89E-06 | 0.030573 | 0.000153 | 0.282274 | 0.000055 | 1.466983 | 7.03E-05 | 1.88675 | 0.000132 | 454 | 9 | -8.13 | 2.14 | 821 | 1311 | |
| N2Z4.085 | Knurr | 0.000772 | 4.31E-06 | 0.053579 | 0.000259 | 0.282496 | 5.87E-05 | 1.46703 | 9.45E-05 | 1.886351 | 0.000124 | 457 | 10 | -0.29 | 2.29 | 470 | 1023 | |
| N2Z4.104 | Knurr | 0.000942 | 1.79E-05 | 0.061422 | 0.000303 | 0.282337 | 8.07E-05 | 1.466905 | 0.00013 | 1.887043 | 0.000209 | 477 | 10 | -5.51 | 3.06 | 729 | 1240 | |
| N2Z4.067 | Knurr | 0.000888 | 3.23E-06 | 0.064707 | 0.000459 | 0.282361 | 8.25E-05 | 1.467094 | 0.000166 | 1.886967 | 0.000217 | 491 | 11 | -4.35 | 3.16 | 690 | 1207 | |
| N2Z4.054 | Knurr | 0.000982 | 4.42E-06 | 0.05984 | 0.000696 | 0.282554 | 6.58E-05 | 1.467068 | 9.56E-05 | 1.886958 | 0.000131 | 650 | 11 | 5.94 | 2.57 | 377 | 949 | |
| N2Z4.031 | Knurr | 0.001613 | 8.81E-07 | 0.108155 | 0.000837 | 0.281894 | 6.34E-05 | 1.467074 | 9.36E-05 | 1.886665 | 0.000122 | 1098 | 42 | -8.10 | 3.15 | 1472 | 1864 | |
| N2Z4.119 | Knurr | 0.002559 | 3.93E-05 | 0.19683 | 0.0042 | 0.282007 | 0.000108 | 1.467212 | 0.000139 | 1.886658 | 0.000174 | 1397 | 41 | 1.50 | 4.62 | 1326 | 1754 | |
| N2Z4.021 | Knurr | 0.003745 | 4.28E-05 | 0.268685 | 0.00299 | 0.282059 | 0.000107 | 1.467127 | 9.11E-05 | 1.886936 | 0.00015 | 1491 | 40 | 4.14 | 4.52 | 1287 | 1736 | |
| N2Z4.080 | Knurr | 0.001209 | 1.62E-05 | 0.084484 | 0.00182 | 0.281856 | 7.11E-05 | 1.467099 | 0.000108 | 1.886485 | 0.000133 | 1511 | 33 | -0.07 | 3.22 | 1514 | 1896 | |
| N2Z4.036 | Knurr | 0.000778 | 1.03E-05 | 0.05176 | 0.000305 | 0.28173 | 0.000048 | 1.467104 | 8.54E-05 | 1.886818 | 0.00012 | 1525 | 30 | -3.79 | 2.35 | 1694 | 2041 | |
| N2Z4.078 | Knurr | 0.00117 | 1.17E-06 | 0.074538 | 0.000658 | 0.281939 | 6.96E-05 | 1.467114 | 0.000109 | 1.886759 | 0.000126 | 1576 | 33 | 4.33 | 3.20 | 1380 | 1784 | |
| N2Z4.099 | Knurr | 0.000349 | 9.39E-07 | 0.02305 | 0.000189 | 0.281453 | 7.12E-05 | 1.467058 | 8.78E-05 | 1.88666 | 0.000155 | 1774 | 51 | -7.52 | 3.69 | 2103 | 2379 | |
| N2Z4.110 | Knurr | 0.000546 | 1.44E-06 | 0.038045 | 0.000255 | 0.28128 | 5.02E-05 | 1.466962 | 9.96E-05 | 1.886947 | 0.000145 | 1839 | 37 | -12.45 | 2.62 | 2385 | 2617 | |
| N2Z4.091 | Knurr | 0.000296 | 1.5E-06 | 0.019562 | 0.000138 | 0.281367 | 4.24E-05 | 1.467205 | 0.000112 | 1.886859 | 0.000117 | 2072 | 22 | -3.73 | 2.01 | 2234 | 2489 | |
| N2Z4.093 | Knurr | 0.000499 | 1.33E-06 | 0.026423 | 0.000204 | 0.281304 | 4.72E-05 | 1.466853 | 0.000113 | 1.886537 | 0.000129 | 2489 | 24 | 3.31 | 2.23 | 2345 | 2583 | |
| N2Z4.064 | Knurr | 0.000363 | 1.22E-06 | 0.021791 | 0.000135 | 0.281017 | 5.97E-05 | 1.466841 | 0.000111 | 1.886682 | 0.000142 | 2590 | 28 | -4.31 | 2.77 | 2776 | 2942 | |
| N2Z4.027 | Knurr | 0.001428 | 7.97E-06 | 0.084403 | 0.000686 | 0.281033 | 6.07E-05 | 1.467059 | 0.000118 | 1.886672 | 0.000138 | 2730 | 24 | -2.47 | 2.67 | 2840 | 3001 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z5.017 | Knurr | 0.002293 | 3.78E-05 | 0.098489 | 0.000418 | 0.282942 | 0.000127 | 1.466968 | 0.000226 | 1.886277 | 0.000269 | 227 | 5 | 10.25 | 4.59 | -269 | 437 | |
| N2Z5.008 | Knurr | 0.00141 | 1.32E-05 | 0.093893 | 0.000911 | 0.282795 | 0.000081 | 1.467135 | 0.000121 | 1.886759 | 0.000165 | 245 | 7 | 5.56 | 3.01 | -16 | 630 | |
| N2Z5.037 | Knurr | 0.004078 | 9.41E-05 | 0.283414 | 0.00735 | 0.282944 | 0.000154 | 1.467179 | 0.000176 | 1.886441 | 0.000169 | 258 | 5 | 10.65 | 5.51 | -288 | 456 | |
| N2Z5.006 | Knurr | 0.001732 | 0.000036 | 0.071597 | 0.00128 | 0.282848 | 7.57E-05 | 1.467096 | 0.000148 | 1.886479 | 0.000156 | 291 | 6 | 8.37 | 2.79 | -106 | 561 | |
| N2Z5.047 | Knurr | 0.002028 | 0.000026 | 0.077301 | 0.000394 | 0.283021 | 7.33E-05 | 1.467241 | 0.000187 | 1.886412 | 0.000193 | 358 | 8 | 15.85 | 2.75 | -402 | 323 | |
| N2Z5.048 | Knurr | 0.000633 | 4.91E-06 | 0.037001 | 0.000398 | 0.282764 | 6.15E-05 | 1.467233 | 0.000178 | 1.886662 | 0.000178 | 374 | 10 | 7.42 | 2.39 | 35 | 659 | |
| N2Z5.029 | Knurr | 0.002173 | 8.2E-06 | 0.109855 | 0.000335 | 0.282697 | 8.73E-05 | 1.467138 | 0.000143 | 1.886888 | 0.000134 | 384 | 8 | 4.87 | 3.25 | 151 | 780 | |
| N2Z5.004 | Knurr | 0.000378 | 1.38E-06 | 0.023442 | 0.000284 | 0.28234 | 4.49E-05 | 1.46727 | 0.000135 | 1.886658 | 0.000125 | 400 | 6 | -6.94 | 1.72 | 713 | 1219 | |
| N2Z5.040 | Knurr | 0.002114 | 2.26E-05 | 0.115703 | 0.000339 | 0.28241 | 0.000101 | 1.467154 | 0.000183 | 1.886639 | 0.000189 | 403 | 7 | -4.87 | 3.71 | 635 | 1178 | |
| N2Z5.009 | Knurr | 0.001899 | 9.09E-06 | 0.077489 | 0.000295 | 0.282447 | 5.96E-05 | 1.467239 | 0.000121 | 1.886936 | 0.000144 | 426 | 9 | -3.01 | 2.29 | 568 | 1120 | |
| N2Z5.024 | Knurr | 0.000658 | 1.49E-05 | 0.043109 | 0.000323 | 0.282349 | 7.37E-05 | 1.466921 | 0.000175 | 1.886341 | 0.000146 | 427 | 9 | -6.11 | 2.80 | 705 | 1216 | |
| N2Z5.016 | Knurr | 0.000511 | 6.16E-06 | 0.027801 | 0.000125 | 0.282153 | 4.67E-05 | 1.467223 | 0.000121 | 1.886532 | 0.000134 | 438 | 9 | -12.77 | 1.85 | 1014 | 1472 | |
| N2Z5.059 | Knurr | 0.000951 | 0.000019 | 0.061342 | 0.00145 | 0.282251 | 7.49E-05 | 1.467125 | 0.000173 | 1.886915 | 0.000169 | 438 | 9 | -9.42 | 2.84 | 869 | 1357 | |
| N2Z5.049 | Knurr | 0.002057 | 1.57E-05 | 0.099198 | 0.00101 | 0.282723 | 9.91E-05 | 1.467471 | 0.00022 | 1.886483 | 0.000206 | 443 | 8 | 7.06 | 3.67 | 106 | 741 | |
| N2Z5.027 | Knurr | 0.001388 | 1.91E-05 | 0.068788 | 0.000518 | 0.282583 | 5.41E-05 | 1.467226 | 0.000125 | 1.886805 | 0.000113 | 444 | 9 | 2.32 | 2.10 | 336 | 920 | |
| N2Z5.010 | Knurr | 0.000619 | 3.67E-06 | 0.039242 | 0.000177 | 0.28262 | 6.34E-05 | 1.467172 | 0.000104 | 1.886429 | 0.000131 | 446 | 8 | 3.93 | 2.42 | 267 | 852 | |
| N2Z5.051 | Knurr | 0.00074 | 5.36E-06 | 0.048533 | 0.000101 | 0.282569 | 6.18E-05 | 1.466955 | 0.000153 | 1.886767 | 0.000148 | 452 | 8 | 2.22 | 2.36 | 351 | 923 | |
| N2Z5.002 | Knurr | 0.00061 | 7.51E-06 | 0.034219 | 0.000512 | 0.282719 | 5.28E-05 | 1.467266 | 0.000139 | 1.886784 | 0.000143 | 523 | 13 | 9.12 | 2.15 | 107 | 719 | |
| N2Z5.050 | Knurr | 0.00113 | 5.27E-06 | 0.073736 | 0.000378 | 0.282684 | 5.57E-05 | 1.467017 | 0.000116 | 1.886659 | 0.000138 | 560 | 12 | 8.50 | 2.23 | 167 | 776 | |
| N2Z5.018 | Knurr | 0.003277 | 2.19E-05 | 0.20078 | 0.0017 | 0.282359 | 0.000109 | 1.467024 | 0.000125 | 1.886812 | 0.000141 | 815 | 17 | 1.36 | 4.18 | 748 | 1288 | |
| N2Z5.032 | Knurr | 0.001745 | 2.78E-06 | 0.106946 | 0.000416 | 0.282133 | 5.37E-05 | 1.467107 | 9.41E-05 | 1.886825 | 0.000121 | 828 | 15 | -5.54 | 2.22 | 1086 | 1546 | |
| N2Z5.045 | Knurr | 0.001093 | 3.82E-06 | 0.069146 | 0.00056 | 0.282678 | 8.49E-05 | 1.467225 | 0.00013 | 1.886982 | 0.000157 | 1135 | 37 | 20.90 | 3.82 | 175 | 783 | |
| N2Z5.005 | Knurr | 0.001044 | 1.12E-05 | 0.057722 | 0.000713 | 0.281687 | 4.78E-05 | 1.467056 | 9.99E-05 | 1.886886 | 0.000118 | 1143 | 32 | -14.04 | 2.38 | 1777 | 2113 | |
| N2Z5.013 | Knurr | 0.000719 | 4.47E-06 | 0.049356 | 0.000635 | 0.282175 | 6.38E-05 | 1.46729 | 0.000145 | 1.886674 | 0.00015 | 1172 | 31 | 4.16 | 2.95 | 985 | 1450 | |
| N2Z5.026 | Knurr | 0.001124 | 1.64E-05 | 0.054482 | 0.00112 | 0.281986 | 5.64E-05 | 1.467109 | 0.000146 | 1.886794 | 0.000138 | 1305 | 43 | 0.06 | 2.92 | 1302 | 1719 | |

| Source file | Formation | $^{176}$Lu/$^{177}$Hf' mean | $^{176}$Lu/$^{177}$Hf' SE | $^{176}$Yb/$^{177}$Hf' mean | $^{176}$Yb/$^{177}$Hf' SE | $^{176}$Hf/$^{177}$Hf Corrected' mean | $^{176}$Hf/$^{177}$Hf Corrected' SE | $^{178}$Hf/$^{177}$Hf Corrected' mean | $^{178}$Hf/$^{177}$Hf Corrected' SE | $^{180}$Hf/$^{177}$Hf Corrected' mean | $^{180}$Hf/$^{177}$Hf Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z5.034 | Knurr | 0.000762 | 3.09E-06 | 0.051213 | 0.000421 | 0.282131 | 6.33E-05 | 1.467164 | 0.000166 | 1.886803 | 0.000183 | 1381 | 49 | 7.23 | 3.33 | 1056 | 1510 | |
| N2Z5.015 | Knurr | | | | | | | | | | | 1673 | 57 | ####### | 0.00 | | | Lost |
| N2Z5.023 | Knurr | 0.000551 | 4.35E-06 | 0.030588 | 0.000111 | 0.281832 | 4.14E-05 | 1.467269 | 0.000117 | 1.886666 | 0.000114 | 1754 | 37 | 5.22 | 2.30 | 1523 | 1896 | |
| N2Z5.052 | Knurr | 0.000582 | 4.16E-06 | 0.040405 | 0.00051 | 0.281559 | 5.55E-05 | 1.467048 | 0.000156 | 1.886495 | 0.000149 | 1899 | 27 | -1.23 | 2.57 | 1953 | 2256 | |
| N2Z5.039 | Knurr | 0.00067 | 2.64E-05 | 0.040656 | 0.000604 | 0.28097 | 0.000065 | 1.466975 | 0.000146 | 1.886959 | 0.000155 | 2446 | 24 | -9.83 | 2.77 | 2874 | 3026 | |
| N2Z5.003 | Knurr | 0.001001 | 6.55E-06 | 0.059253 | 0.00035 | 0.281258 | 6.84E-05 | 1.467063 | 0.000137 | 1.88689 | 0.000141 | 2560 | 25 | 2.46 | 2.98 | 2452 | 2675 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z6.007 | Knurr | 0.001257 | 9.7E-06 | 0.076299 | 0.000878 | 0.282879 | 7.01E-05 | 1.467213 | 9.31E-05 | 1.886587 | 0.000131 | 226 | 5 | 8.17 | 2.58 | -156 | 511 | |
| N2Z6.035 | Knurr | 0.002373 | 3.08E-05 | 0.147259 | 0.00196 | 0.282134 | 6.23E-05 | 1.467182 | 8.37E-05 | 1.886769 | 0.000108 | 274 | 5 | -17.35 | 2.30 | 1104 | 1569 | |
| N2Z6.040 | Knurr | 0.002296 | 1.86E-05 | 0.150141 | 0.00126 | 0.283098 | 8.18E-05 | 1.467095 | 0.000103 | 1.886458 | 0.000146 | 299 | 7 | 17.29 | 3.03 | -539 | 216 | |
| N2Z6.003 | Knurr | 0.002881 | 3.38E-05 | 0.102566 | 0.000931 | 0.282948 | 6.77E-05 | 1.467357 | 9.79E-05 | 1.886699 | 0.000164 | 311 | 6 | 12.10 | 2.50 | -285 | 435 | |
| N2Z6.058 | Knurr | 0.000983 | 1.83E-06 | 0.065613 | 0.000156 | 0.282899 | 7.97E-05 | 1.467146 | 0.000107 | 1.88683 | 0.000171 | 327 | 5 | 11.10 | 2.93 | -188 | 481 | |
| N2Z6.017 | Knurr | 0.001588 | 4.12E-05 | 0.102246 | 0.00288 | 0.282473 | 0.000071 | 1.467094 | 0.000102 | 1.887065 | 0.000139 | 346 | 5 | -3.69 | 2.60 | 519 | 1075 | |
| N2Z6.014 | Knurr | 0.002841 | 3.03E-05 | 0.1318 | 0.00193 | 0.282652 | 5.88E-05 | 1.467172 | 0.000077 | 1.886835 | 0.000117 | 365 | 7 | 2.73 | 2.21 | 231 | 858 | |
| N2Z6.027 | Knurr | 0.001982 | 2.52E-05 | 0.132786 | 0.00139 | 0.2825 | 7.56E-05 | 1.467132 | 0.000089 | 1.886599 | 0.000128 | 421 | 8 | -1.27 | 2.83 | 481 | 1050 | |
| N2Z6.022 | Knurr | 0.000921 | 3.5E-06 | 0.062291 | 0.000444 | 0.282326 | 8.21E-05 | 1.467355 | 0.000107 | 1.886793 | 0.000176 | 426 | 9 | -7.01 | 3.10 | 747 | 1255 | |
| N2Z6.033 | Knurr | 0.000852 | 5.41E-06 | 0.05717 | 0.000693 | 0.282533 | 6.85E-05 | 1.467171 | 0.00012 | 1.8866 | 0.000158 | 445 | 9 | 0.74 | 2.62 | 411 | 975 | |
| N2Z6.039 | Knurr | 0.000453 | 4.66E-06 | 0.025818 | 0.000194 | 0.281677 | 5.92E-05 | 1.467105 | 0.000119 | 1.886732 | 0.000145 | 944 | 17 | -18.37 | 2.47 | 1761 | 2094 | |
| N2Z6.044 | Knurr | 0.000614 | 4.79E-06 | 0.039255 | 0.000608 | 0.281954 | 0.000063 | 1.467047 | 9.89E-05 | 1.88667 | 0.000122 | 956 | 15 | -8.40 | 2.56 | 1333 | 1739 | |
| N2Z6.053 | Knurr | 0.0008 | 3.98E-06 | 0.049424 | 0.000269 | 0.282079 | 4.91E-05 | 1.467227 | 0.0001 | 1.88637 | 0.000109 | 1388 | 28 | 5.52 | 2.36 | 1140 | 1580 | |
| N2Z6.001 | Knurr | 0.000751 | 1.37E-05 | 0.040359 | 0.0004 | 0.282097 | 4.04E-05 | 1.466995 | 9.86E-05 | 1.887105 | 0.000121 | 1463 | 31 | 7.86 | 2.10 | 1110 | 1555 | |
| N2Z6.061 | Knurr | 0.00203 | 4.66E-05 | 0.078414 | 0.00155 | 0.282091 | 4.96E-05 | 1.467175 | 9.74E-05 | 1.886557 | 0.000118 | 1501 | 33 | 7.19 | 2.37 | 1166 | 1615 | |
| N2Z6.025 | Knurr | 0.000261 | 6.93E-07 | 0.017194 | 0.000109 | 0.281968 | 9.67E-05 | 1.466958 | 8.71E-05 | 1.887077 | 0.000167 | 1506 | 40 | 4.73 | 4.34 | 1297 | 1705 | |
| N2Z6.009 | Knurr | 0.000353 | 3.06E-06 | 0.018911 | 0.000376 | 0.282029 | 5.23E-05 | 1.467213 | 8.75E-05 | 1.886665 | 0.000115 | 1508 | 25 | 6.85 | 2.42 | 1205 | 1629 | |
| N2Z6.037 | Knurr | 0.000968 | 2.22E-06 | 0.062733 | 0.000388 | 0.281828 | 7.25E-05 | 1.467078 | 9.65E-05 | 1.886883 | 0.000146 | 1575 | 28 | 0.60 | 3.19 | 1548 | 1921 | |
| N2Z6.019 | Knurr | 0.001618 | 2.18E-05 | 0.102442 | 0.000522 | 0.281783 | 6.07E-05 | 1.466899 | 0.0001 | 1.886838 | 0.000124 | 1584 | 23 | -1.50 | 2.61 | 1653 | 2014 | |
| N2Z6.041 | Knurr | 0.000456 | 3.68E-06 | 0.033833 | 0.000185 | 0.281852 | 6.64E-05 | 1.467235 | 0.000109 | 1.886815 | 0.000169 | 1585 | 31 | 2.22 | 3.05 | 1487 | 1865 | |
| N2Z6.015 | Knurr | 0.000855 | 1.26E-05 | 0.052944 | 0.00108 | 0.281513 | 6.53E-05 | 1.467165 | 9.31E-05 | 1.886879 | 0.000159 | 1759 | 30 | -6.34 | 2.96 | 2041 | 2331 | |
| N2Z6.060 | Knurr | 0.00088 | 5.97E-06 | 0.063213 | 0.000639 | 0.281598 | 8.86E-05 | 1.467124 | 0.000105 | 1.886559 | 0.000166 | 1807 | 28 | -2.28 | 3.76 | 1909 | 2221 | |
| N2Z6.048 | Knurr | 0.000492 | 8.89E-06 | 0.037371 | 0.000786 | 0.281527 | 6.92E-05 | 1.467156 | 0.0002 | 1.88643 | 0.00019 | 1829 | 25 | -3.84 | 3.00 | 1998 | 2292 | |
| N2Z6.050 | Knurr | 0.001752 | 7.71E-06 | 0.09703 | 0.000817 | 0.281449 | 6.27E-05 | 1.466927 | 0.000112 | 1.887001 | 0.000137 | 1875 | 21 | -7.17 | 2.67 | 2202 | 2471 | |
| N2Z6.056 | Knurr | 0.001898 | 1.43E-05 | 0.140592 | 0.000542 | 0.281625 | 0.000089 | 1.467331 | 0.00013 | 1.886687 | 0.000141 | 1898 | 28 | -0.58 | 3.73 | 1925 | 2243 | |
| N2Z6.013 | Knurr | 0.001052 | 1.16E-05 | 0.061127 | 0.000747 | 0.281318 | 4.62E-05 | 1.467161 | 0.000102 | 1.88707 | 0.00012 | 1905 | 25 | -10.26 | 2.17 | 2362 | 2600 | |
| N2Z6.045 | Knurr | 0.000646 | 2.94E-06 | 0.029719 | 0.000275 | 0.281186 | 4.27E-05 | 1.467173 | 9.78E-05 | 1.886835 | 0.000108 | 2501 | 19 | -0.84 | 1.94 | 2538 | 2745 | |
| N2Z6.026 | Knurr | 0.000343 | 1.89E-06 | 0.022245 | 0.000113 | 0.281282 | 6.94E-05 | 1.467222 | 9.78E-05 | 1.887125 | 0.000136 | 2542 | 21 | 4.04 | 2.95 | 2367 | 2600 | |
| N2Z6.004 | Knurr | 0.000812 | 4.65E-06 | 0.028012 | 0.000533 | 0.281102 | 4.37E-05 | 1.467257 | 0.000088 | 1.886945 | 0.000139 | 2627 | 32 | -1.23 | 2.27 | 2681 | 2865 | |
| N2Z6.042 | Knurr | 0.001093 | 1.03E-05 | 0.080472 | 0.00094 | 0.280969 | 6.94E-05 | 1.467134 | 0.000103 | 1.886766 | 0.000134 | 2728 | 21 | -4.18 | 2.91 | 2912 | 3059 | |
| N2Z6.020 | Knurr | 0.000269 | 2.37E-06 | 0.018289 | 9.38E-05 | 0.281182 | 0.000059 | 1.467145 | 0.000103 | 1.886772 | 0.000146 | 2845 | 21 | 7.66 | 2.58 | 2516 | 2725 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z6.079 | Knurr | 0.00244 | 2.17E-05 | 0.108063 | 0.000443 | 0.28258 | 5.77E-05 | 1.467153 | 8.05E-05 | 1.886903 | 0.000114 | 222 | 5 | -2.68 | 2.14 | 352 | 950 | |
| N2Z6.076 | Knurr | 0.001666 | 2.18E-05 | 0.102974 | 0.00141 | 0.282659 | 7.11E-05 | 1.467271 | 0.000137 | 1.88661 | 0.00015 | 238 | 6 | 0.58 | 2.64 | 211 | 821 | |
| N2Z6.093 | Knurr | 0.003335 | 2.38E-05 | 0.16131 | 0.00126 | 0.282854 | 0.000067 | 1.467029 | 7.79E-05 | 1.886912 | 0.000124 | 283 | 7 | 8.12 | 2.50 | -123 | 577 | |
| N2Z6.106 | Knurr | 0.001456 | 5.84E-06 | 0.062645 | 0.000238 | 0.282273 | 4.76E-05 | 1.467188 | 6.41E-05 | 1.886677 | 0.000106 | 411 | 9 | -9.35 | 1.87 | 846 | 1344 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z6.069 | Knurr | 0.002 | 1.55E-05 | 0.094654 | 0.00115 | 0.282751 | 5.92E-05 | 1.467207 | 8.13E-05 | 1.886918 | 0.000106 | 420 | 8 | 7.58 | 2.26 | 58 | 701 | |
| N2Z6.077 | Knurr | 0.000892 | 1.12E-06 | 0.067109 | 0.000279 | 0.282315 | 7.78E-05 | 1.467148 | 0.00013 | 1.886942 | 0.000161 | 435 | 7 | -7.20 | 2.91 | 764 | 1269 | |
| N2Z6.103 | Knurr | 0.000778 | 6.17E-06 | 0.053515 | 0.000896 | 0.282304 | 0.000076 | 1.467189 | 0.000155 | 1.886915 | 0.000174 | 439 | 8 | -7.46 | 2.86 | 779 | 1280 | |
| N2Z6.108 | Knurr | 0.00144 | 9.01E-06 | 0.091152 | 0.000413 | 0.282358 | 6.27E-05 | 1.467292 | 0.00011 | 1.886774 | 0.000127 | 830 | 17 | 2.66 | 2.58 | 707 | 1228 | |
| N2Z6.062 | Knurr | 0.001013 | 9.83E-06 | 0.073629 | 0.000405 | 0.282131 | 7.16E-05 | 1.467157 | 0.000108 | 1.886933 | 0.000159 | 982 | 19 | -1.81 | 2.94 | 1064 | 1520 | |
| N2Z6.096 | Knurr | 0.000833 | 1.14E-06 | 0.063117 | 0.000149 | 0.282292 | 6.65E-05 | 1.467063 | 0.000147 | 1.886624 | 0.000163 | 1039 | 26 | 5.27 | 2.93 | 800 | 1298 | |
| N2Z6.117 | Knurr | 0.000884 | 6.39E-06 | 0.058239 | 0.000253 | 0.282302 | 0.000075 | 1.466923 | 0.000112 | 1.886766 | 0.000159 | 1042 | 38 | 5.66 | 3.49 | 785 | 1286 | |
| N2Z6.071 | Knurr | 0.000798 | 6.25E-06 | 0.060415 | 0.000633 | 0.282224 | 6.51E-05 | 1.467329 | 0.000124 | 1.886603 | 0.000146 | 1085 | 35 | 3.92 | 3.07 | 908 | 1387 | |
| N2Z6.067 | Knurr | 0.000631 | 7.4E-06 | 0.04869 | 0.000196 | 0.282166 | 7.69E-05 | 1.466856 | 0.000148 | 1.88674 | 0.000165 | 1109 | 43 | 2.52 | 3.67 | 996 | 1458 | |
| N2Z6.087 | Knurr | 0.001543 | 4.22E-06 | 0.106413 | 0.000374 | 0.282066 | 9.63E-05 | 1.467133 | 0.000163 | 1.887058 | 0.000183 | 1206 | 34 | 0.40 | 4.15 | 1188 | 1628 | |
| N2Z6.072 | Knurr | 0.000741 | 1.57E-06 | 0.053985 | 0.000298 | 0.282155 | 8.76E-05 | 1.467111 | 0.000146 | 1.886796 | 0.000178 | 1220 | 31 | 4.51 | 3.79 | 1017 | 1477 | |
| N2Z6.086 | Knurr | 0.000367 | 2.25E-06 | 0.025185 | 0.000148 | 0.282086 | 5.15E-05 | 1.467165 | 0.000127 | 1.886694 | 0.00013 | 1231 | 31 | 2.61 | 2.52 | 1115 | 1554 | |
| N2Z6.110 | Knurr | 0.001123 | 3.12E-06 | 0.072655 | 0.000378 | 0.282047 | 6.33E-05 | 1.467037 | 9.16E-05 | 1.887034 | 0.00013 | 1447 | 26 | 5.37 | 2.81 | 1204 | 1636 | |
| N2Z6.083 | Knurr | 0.000628 | 8.66E-06 | 0.030429 | 0.00039 | 0.281835 | 5.73E-05 | 1.467242 | 0.000138 | 1.886731 | 0.000146 | 1565 | 24 | 0.99 | 2.56 | 1521 | 1896 | |
| N2Z6.089 | Knurr | 0.001484 | 4.55E-06 | 0.096233 | 0.000296 | 0.281751 | 6.18E-05 | 1.467104 | 0.000139 | 1.886805 | 0.000144 | 1577 | 42 | -2.63 | 3.10 | 1697 | 2050 | |
| N2Z6.111 | Knurr | 0.00081 | 4.12E-06 | 0.049229 | 0.000442 | 0.281937 | 8.49E-05 | 1.467404 | 0.000132 | 1.887247 | 0.00017 | 1619 | 29 | 5.60 | 3.65 | 1368 | 1770 | |
| N2Z6.115 | Knurr | 0.002074 | 8.72E-06 | 0.143813 | 0.000723 | 0.281476 | 0.00013 | 1.467103 | 0.000209 | 1.887256 | 0.000211 | 1761 | 21 | -9.06 | 5.05 | 2179 | 2455 | |
| N2Z6.114 | Knurr | 0.000715 | 1.55E-06 | 0.048562 | 0.000278 | 0.281439 | 6.29E-05 | 1.467196 | 0.000108 | 1.886608 | 0.00016 | 1807 | 28 | -7.72 | 2.86 | 2148 | 2420 | |
| N2Z6.075 | Knurr | 0.000741 | 1.81E-06 | 0.035746 | 0.000288 | 0.2815 | 4.68E-05 | 1.467091 | 7.96E-05 | 1.886653 | 0.000107 | 1875 | 23 | -4.07 | 2.18 | 2055 | 2342 | |
| N2Z6.116 | Knurr | 0.000283 | 9.51E-07 | 0.019855 | 0.000157 | 0.28151 | 5.08E-05 | 1.466913 | 0.000122 | 1.886859 | 0.000132 | 1998 | 28 | -0.33 | 2.44 | 2012 | 2303 | |
| N2Z6.099 | Knurr | 0.000912 | 1.03E-05 | 0.041982 | 0.000157 | 0.280946 | 7.17E-05 | 1.467275 | 0.000152 | 1.887237 | 0.000239 | 2485 | 26 | -10.21 | 3.11 | 2932 | 3076 | |
| N2Z6.074 | Knurr | 0.000689 | 8.6E-06 | 0.043285 | 0.000811 | 0.281327 | 8.81E-05 | 1.466788 | 0.000161 | 1.886472 | 0.000203 | 2507 | 21 | 4.23 | 3.59 | 2322 | 2565 | |
| N2Z6.094 | Knurr | 0.000546 | 1.83E-06 | 0.036881 | 8.17E-05 | 0.281412 | 6.62E-05 | 1.46705 | 0.000153 | 1.886542 | 0.000177 | 2541 | 20 | 8.26 | 2.81 | 2181 | 2446 | |
| N2Z6.105 | Knurr | 0.000428 | 1.5E-06 | 0.026022 | 0.000289 | 0.280956 | 6.02E-05 | 1.467197 | 0.000114 | 1.886896 | 0.000147 | 2627 | 25 | -5.74 | 2.71 | 2874 | 3025 | |
| N2Z6.073 | Knurr | 0.000394 | 2.18E-06 | 0.02779 | 0.000303 | 0.281067 | 0.000056 | 1.467218 | 0.000117 | 1.887068 | 0.000159 | 2790 | 21 | 2.06 | 2.47 | 2701 | 2880 | |
| N2Z6.102 | Knurr | 0.002488 | 0.000049 | 0.104715 | 0.00251 | 0.281014 | 4.48E-05 | 1.467131 | 7.26E-05 | 1.88687 | 9.29E-05 | 3038 | 22 | 1.60 | 1.87 | 2965 | 3109 | |
| | | | | | | | | | | | | | | | | | | |
| N2Z8.098 | Stø | 0.003435 | 1.23E-05 | 0.233949 | 0.000847 | 0.28263 | 8.07E-05 | 1.467056 | 0.000082 | 1.886879 | 0.00015 | 250 | 5 | -0.48 | 2.95 | 274 | 903 | |
| N2Z8.032 | Stø | 0.00323 | 1.24E-06 | 0.234616 | 0.0016 | 0.282217 | 6.95E-05 | 1.466935 | 6.91E-05 | 1.886553 | 0.000115 | 420 | 8 | -11.63 | 2.62 | 992 | 1487 | |
| N2Z8.068 | Stø | 0.000733 | 2.09E-06 | 0.05268 | 0.000538 | 0.282449 | 5.65E-05 | 1.467105 | 7.96E-05 | 1.886629 | 0.000129 | 457 | 9 | -1.94 | 2.20 | 546 | 1085 | |
| N2Z8.103 | Stø | 0.000613 | 4.31E-06 | 0.044149 | 0.000487 | 0.282494 | 4.56E-05 | 1.467033 | 7.01E-05 | 1.887078 | 0.000108 | 519 | 10 | 1.08 | 1.83 | 470 | 1021 | |
| N2Z8.046 | Stø | 0.000325 | 5.58E-07 | 0.02465 | 0.000216 | 0.282208 | 3.65E-05 | 1.466992 | 6.44E-05 | 1.886881 | 9.21E-05 | 522 | 8 | -8.88 | 1.47 | 920 | 1392 | |
| N2Z8.078 | Stø | 0.000965 | 1.02E-05 | 0.068631 | 0.000648 | 0.282145 | 6.28E-05 | 1.466973 | 6.86E-05 | 1.886539 | 0.000135 | 952 | 16 | -1.93 | 2.56 | 1040 | 1499 | |
| N2Z8.074 | Stø | 0.00106 | 3.14E-06 | 0.072162 | 0.000368 | 0.282095 | 0.000044 | 1.467129 | 0.000066 | 1.886905 | 9.02E-05 | 990 | 17 | -2.93 | 1.93 | 1124 | 1569 | |
| N2Z8.056 | Stø | 0.000392 | 2.59E-06 | 0.020256 | 9.18E-05 | 0.28221 | 0.000036 | 1.467025 | 5.38E-05 | 1.886872 | 8.54E-05 | 991 | 16 | 1.59 | 1.63 | 920 | 1392 | |
| N2Z8.015 | Stø | 0.001702 | 3.17E-06 | 0.118072 | 0.00071 | 0.282101 | 5.53E-05 | 1.466961 | 6.38E-05 | 1.88668 | 0.000112 | 1055 | 37 | -1.76 | 2.75 | 1137 | 1588 | |
| N2Z8.009 | Stø | 0.00063 | 9.37E-07 | 0.042287 | 0.000265 | 0.281978 | 4.74E-05 | 1.467005 | 6.89E-05 | 1.886816 | 0.000102 | 1057 | 35 | -5.31 | 2.46 | 1295 | 1707 | |
| N2Z8.004 | Stø | 0.00071 | 4.68E-06 | 0.048176 | 0.000644 | 0.282211 | 3.74E-05 | 1.466991 | 0.000065 | 1.886802 | 0.000085 | 1082 | 25 | 3.43 | 1.87 | 927 | 1402 | |
| N2Z8.017 | Stø | 0.000278 | 5.39E-07 | 0.019258 | 0.000169 | 0.282276 | 4.23E-05 | 1.46697 | 0.000061 | 1.886919 | 0.000102 | 1121 | 30 | 6.94 | 2.18 | 812 | 1301 | |
| N2Z8.048 | Stø | 0.000875 | 3.81E-06 | 0.060673 | 0.000672 | 0.282107 | 5.03E-05 | 1.467053 | 6.66E-05 | 1.886762 | 0.00011 | 1126 | 60 | 0.59 | 3.11 | 1099 | 1547 | |
| N2Z8.041 | Stø | 0.001474 | 1.31E-06 | 0.104031 | 0.000601 | 0.282391 | 4.06E-05 | 1.467108 | 6.99E-05 | 1.88694 | 8.29E-05 | 1143 | 25 | 10.61 | 1.98 | 652 | 1184 | |
| N2Z8.086 | Stø | 0.00053 | 8.98E-06 | 0.033103 | 0.000136 | 0.281957 | 4.21E-05 | 1.467068 | 0.000086 | 1.886946 | 0.000122 | 1145 | 43 | -4.03 | 2.44 | 1325 | 1731 | |
| N2Z8.107 | Stø | 0.000571 | 5.37E-07 | 0.042987 | 0.000251 | 0.282116 | 4.69E-05 | 1.46714 | 7.36E-05 | 1.887043 | 0.000118 | 1161 | 24 | 1.93 | 2.20 | 1075 | 1523 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N2Z8.053 | Stø | 0.001037 | 1.6E-06 | 0.067492 | 0.000455 | 0.282139 | 3.75E-05 | 1.466926 | 5.97E-05 | 1.886601 | 9.05E-05 | 1176 | 28 | 2.71 | 1.94 | 1053 | 1510 | |
| N2Z8.101 | Stø | 0.001096 | 1.61E-06 | 0.089121 | 0.00056 | 0.282148 | 5.96E-05 | 1.467189 | 8.67E-05 | 1.886963 | 0.000119 | 1176 | 34 | 3.00 | 2.86 | 1040 | 1500 | |
| N2Z8.088 | Stø | 0.000595 | 2.23E-06 | 0.040513 | 0.000285 | 0.282036 | 5.16E-05 | 1.467155 | 8.04E-05 | 1.886934 | 0.000108 | 1203 | 36 | 0.04 | 2.63 | 1201 | 1629 | |
| N2Z8.075 | Stø | 0.000996 | 2.19E-06 | 0.072924 | 0.000351 | 0.282146 | 5.43E-05 | 1.466996 | 7.06E-05 | 1.886895 | 0.000123 | 1216 | 34 | 3.89 | 2.67 | 1039 | 1499 | |
| N2Z8.119 | Stø | 0.00084 | 2.35E-06 | 0.058436 | 0.000543 | 0.282002 | 4.52E-05 | 1.467195 | 6.92E-05 | 1.886899 | 9.77E-05 | 1328 | 31 | 1.38 | 2.29 | 1266 | 1685 | |
| N2Z8.018 | Stø | 0.000897 | 5.16E-06 | 0.058713 | 0.000714 | 0.282078 | 4.31E-05 | 1.467102 | 0.000068 | 1.887219 | 9.67E-05 | 1371 | 29 | 5.00 | 2.16 | 1145 | 1586 | |
| N2Z8.117 | Stø | 0.000691 | 0.000001 | 0.046789 | 0.000409 | 0.282089 | 4.47E-05 | 1.467076 | 7.02E-05 | 1.886824 | 9.96E-05 | 1371 | 43 | 5.58 | 2.55 | 1121 | 1563 | |
| N2Z8.071 | Stø | 0.00052 | 8.61E-07 | 0.033396 | 0.000235 | 0.282116 | 4.77E-05 | 1.467001 | 7.62E-05 | 1.886654 | 0.000105 | 1416 | 33 | 7.69 | 2.43 | 1073 | 1521 | |
| N2Z8.052 | Stø | 0.0019 | 6.05E-06 | 0.127925 | 0.00143 | 0.282073 | 6.01E-05 | 1.467082 | 6.92E-05 | 1.886891 | 0.000108 | 1433 | 20 | 5.22 | 2.55 | 1190 | 1634 | |
| N2Z8.008 | Stø | 0.000601 | 9.22E-07 | 0.039086 | 0.000325 | 0.28199 | 4.82E-05 | 1.467052 | 6.42E-05 | 1.886845 | 0.000102 | 1436 | 35 | 3.60 | 2.49 | 1275 | 1691 | |
| N2Z8.064 | Stø | 0.000667 | 1.05E-06 | 0.04307 | 0.000328 | 0.281864 | 4.87E-05 | 1.467163 | 6.95E-05 | 1.886869 | 0.000111 | 1497 | 31 | 0.44 | 2.42 | 1477 | 1859 | |
| N2Z8.070 | Stø | 0.000836 | 2.49E-06 | 0.0558 | 0.000284 | 0.281938 | 4.18E-05 | 1.466977 | 6.59E-05 | 1.886971 | 9.68E-05 | 1498 | 33 | 2.91 | 2.22 | 1368 | 1770 | |
| N2Z8.036 | Stø | 0.000825 | 2.07E-06 | 0.054941 | 0.000463 | 0.281914 | 4.19E-05 | 1.467104 | 6.77E-05 | 1.886608 | 9.78E-05 | 1520 | 24 | 2.56 | 2.02 | 1405 | 1801 | |
| N2Z8.087 | Stø | 0.000692 | 1.14E-06 | 0.045256 | 0.000424 | 0.281753 | 0.000045 | 1.467033 | 0.000063 | 1.88677 | 9.17E-05 | 1600 | 29 | -1.20 | 2.25 | 1653 | 2006 | |
| N2Z8.102 | Stø | 0.000484 | 1.02E-05 | 0.035362 | 0.000906 | 0.281542 | 4.23E-05 | 1.467077 | 6.91E-05 | 1.886806 | 0.000101 | 1601 | 27 | -8.47 | 2.09 | 1974 | 2273 | |
| N2Z8.069 | Stø | 0.00056 | 1.85E-06 | 0.035175 | 0.000413 | 0.281804 | 3.95E-05 | 1.467053 | 6.01E-05 | 1.887113 | 8.93E-05 | 1621 | 31 | 1.22 | 2.10 | 1567 | 1933 | |
| N2Z8.001 | Stø | 0.000843 | 1.28E-06 | 0.057375 | 0.000248 | 0.281599 | 0.000043 | 1.466892 | 6.22E-05 | 1.886755 | 0.000107 | 1623 | 25 | -6.33 | 2.08 | 1905 | 2218 | |
| N2Z8.081 | Stø | 0.00063 | 1.5E-06 | 0.04107 | 0.000221 | 0.281897 | 4.47E-05 | 1.46701 | 6.36E-05 | 1.886873 | 9.79E-05 | 1658 | 26 | 5.26 | 2.17 | 1424 | 1815 | |
| N2Z8.112 | Stø | 0.001141 | 7.35E-06 | 0.056702 | 0.000734 | 0.281863 | 3.14E-05 | 1.467114 | 5.94E-05 | 1.886906 | 7.92E-05 | 1661 | 37 | 3.56 | 1.92 | 1500 | 1883 | |
| N2Z8.108 | Stø | 0.000639 | 5.41E-06 | 0.04477 | 0.000246 | 0.28175 | 4.16E-05 | 1.466937 | 6.78E-05 | 1.887089 | 9.73E-05 | 1670 | 26 | 0.33 | 2.05 | 1656 | 2008 | |
| N2Z8.044 | Stø | 0.000693 | 1.57E-06 | 0.045261 | 0.000466 | 0.281577 | 3.47E-05 | 1.467149 | 6.18E-05 | 1.887012 | 0.000105 | 1807 | 27 | -2.79 | 1.84 | 1931 | 2238 | |
| N2Z8.023 | Stø | 0.000762 | 1.78E-06 | 0.048663 | 0.000524 | 0.281685 | 4.48E-05 | 1.467 | 6.16E-05 | 1.886755 | 9.99E-05 | 1809 | 25 | 0.98 | 2.15 | 1766 | 2101 | |
| N2Z8.014 | Stø | 0.000633 | 2.8E-06 | 0.041791 | 0.000175 | 0.281643 | 4.45E-05 | 1.46695 | 6.26E-05 | 1.887093 | 9.26E-05 | 1812 | 29 | -0.28 | 2.23 | 1824 | 2149 | |
| N2Z8.005 | Stø | 0.00049 | 1.47E-06 | 0.032472 | 0.000177 | 0.281415 | 4.97E-05 | 1.466943 | 0.000067 | 1.886899 | 0.00012 | 1901 | 30 | -6.18 | 2.44 | 2172 | 2438 | |
| N2Z8.090 | Stø | 0.001496 | 2.61E-05 | 0.099769 | 0.00177 | 0.281466 | 5.39E-05 | 1.466919 | 7.87E-05 | 1.886856 | 0.00012 | 1902 | 29 | -5.62 | 2.49 | 2156 | 2432 | |
| N2Z8.110 | Stø | 0.000562 | 1.59E-06 | 0.037591 | 0.00038 | 0.281642 | 5.21E-05 | 1.467286 | 7.06E-05 | 1.886901 | 0.000105 | 1967 | 32 | 3.30 | 2.57 | 1822 | 2146 | |
| N2Z8.037 | Stø | 0.000895 | 4.28E-06 | 0.056887 | 0.000544 | 0.281732 | 0.000042 | 1.467053 | 6.69E-05 | 1.886834 | 0.0001 | 2021 | 29 | 7.28 | 2.13 | 1697 | 2044 | |
| N2Z8.077 | Stø | 0.001503 | 8.59E-06 | 0.103137 | 0.000347 | 0.281651 | 6.57E-05 | 1.467109 | 0.000084 | 1.886893 | 0.000117 | 2022 | 24 | 3.58 | 2.84 | 1860 | 2186 | |
| N2Z8.026 | Stø | 0.000335 | 4.6E-06 | 0.023715 | 0.000361 | 0.281289 | 0.000042 | 1.467017 | 5.99E-05 | 1.88697 | 9.82E-05 | 2203 | 26 | -3.52 | 2.08 | 2356 | 2591 | |
| N2Z8.095 | Stø | 0.000476 | 3.94E-06 | 0.032862 | 0.000206 | 0.281287 | 4.28E-05 | 1.467038 | 6.54E-05 | 1.886791 | 0.000108 | 2310 | 28 | -1.36 | 2.15 | 2369 | 2603 | |
| N2Z8.025 | Stø | 2.38E-05 | 1.94E-06 | 0.00142 | 0.000108 | 0.280939 | 0.000043 | 1.466996 | 7.39E-05 | 1.886761 | 0.000102 | 2440 | 31 | -10.01 | 2.25 | 2867 | 3018 | |
| N2Z8.116 | Stø | 0.004929 | 8.27E-05 | 0.373093 | 0.00691 | 0.281258 | 7.86E-05 | 1.467283 | 6.67E-05 | 1.887094 | 9.28E-05 | 2497 | 30 | -5.64 | 3.11 | 2779 | 2967 | |
| N2Z8.083 | Stø | 0.000384 | 8.7E-07 | 0.025963 | 0.000223 | 0.281045 | 5.02E-05 | 1.466986 | 8.75E-05 | 1.886916 | 0.000115 | 2657 | 25 | -1.80 | 2.36 | 2735 | 2908 | |
| N2Z8.047 | Stø | 0.000274 | 9.49E-07 | 0.016139 | 0.000155 | 0.281143 | 4.23E-05 | 1.467082 | 7.59E-05 | 1.886999 | 0.000107 | 2692 | 27 | 2.69 | 2.13 | 2576 | 2775 | |
| N2Z8.061 | Stø | 0.000365 | 9.17E-07 | 0.022353 | 0.000123 | 0.281791 | 4.08E-05 | 1.467127 | 6.39E-05 | 1.886822 | 0.000112 | 2725 | 25 | 26.35 | 2.03 | 1579 | 1941 | |
| N2Z8.120 | Stø | 0.000459 | 1.48E-06 | 0.027615 | 0.000287 | 0.281128 | 4.79E-05 | 1.4671 | 7.75E-05 | 1.886826 | 9.66E-05 | 2730 | 28 | 2.70 | 2.35 | 2613 | 2807 | |
| N2Z8.010 | Stø | 0.000492 | 1.6E-06 | 0.027029 | 0.000177 | 0.281044 | 0.000059 | 1.467063 | 7.98E-05 | 1.886636 | 0.00012 | 2744 | 23 | -0.03 | 2.63 | 2745 | 2918 | |
| N2Z8.091 | Stø | 0.000508 | 3.98E-06 | 0.034353 | 0.000516 | 0.280851 | 0.000047 | 1.467166 | 8.24E-05 | 1.886971 | 0.000128 | 2749 | 31 | -6.79 | 2.37 | 3042 | 3166 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ1.001 | Kolje | 0.000923 | 7.54E-06 | 0.0541 | 0.00061 | 0.282596 | 5.35E-05 | 1.466948 | 8.09E-05 | 1.886752 | 0.000115 | 242 | 5 | -1.45 | 2.00 | 309 | 891 | |
| NEZ1.094 | Kolje | 0.000841 | 6.36E-06 | 0.052722 | 0.000323 | 0.282768 | 5.69E-05 | 1.467157 | 8.73E-05 | 1.886958 | 0.000124 | 252 | 5 | 4.85 | 2.12 | 28 | 657 | |
| NEZ1.083 | Kolje | 0.001332 | 7.15E-06 | 0.089533 | 0.000919 | 0.282356 | 4.59E-05 | 1.467162 | 7.05E-05 | 1.887069 | 0.000108 | 426 | 9 | -6.08 | 1.81 | 708 | 1228 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ1.026 | Kolje | 0.001488 | 1.96E-05 | 0.06832 | 0.000642 | 0.282672 | 0.000047 | 1.467276 | 8.83E-05 | 1.887105 | 0.000126 | 447 | 9 | 5.52 | 1.84 | 189 | 800 | |
| NEZ1.067 | Kolje | 0.001987 | 1.22E-05 | 0.107336 | 0.000603 | 0.282721 | 7.22E-05 | 1.467084 | 9.61E-05 | 1.886609 | 0.000121 | 455 | 8 | 7.28 | 2.72 | 108 | 742 | |
| NEZ1.006 | Kolje | 0.000932 | 6.36E-06 | 0.041498 | 0.00047 | 0.282708 | 5.62E-05 | 1.467355 | 0.000118 | 1.886949 | 0.000135 | 565 | 11 | 9.55 | 2.23 | 126 | 740 | |
| NEZ1.114 | Kolje | 0.000764 | 5.71E-06 | 0.048569 | 0.00057 | 0.281905 | 4.09E-05 | 1.467093 | 7.37E-05 | 1.886753 | 0.000101 | 759 | 14 | -14.59 | 1.75 | 1417 | 1810 | |
| NEZ1.118 | Kolje | 0.003621 | 4.05E-05 | 0.155173 | 0.00218 | 0.282468 | 6.32E-05 | 1.467227 | 0.000115 | 1.886827 | 0.000109 | 950 | 21 | 7.79 | 2.61 | 563 | 1142 | |
| NEZ1.108 | Kolje | 0.000684 | 1.25E-05 | 0.046779 | 0.000544 | 0.282172 | 4.87E-05 | 1.467098 | 9.44E-05 | 1.886819 | 0.000111 | 968 | 28 | -0.46 | 2.33 | 989 | 1453 | |
| NEZ1.052 | Kolje | 0.000453 | 1.4E-06 | 0.029026 | 5.96E-05 | 0.282238 | 5.14E-05 | 1.467159 | 7.02E-05 | 1.886828 | 0.000117 | 971 | 18 | 2.10 | 2.22 | 877 | 1357 | |
| NEZ1.046 | Kolje | 0.000607 | 3.05E-06 | 0.03971 | 0.000217 | 0.282096 | 0.000045 | 1.466979 | 6.88E-05 | 1.886823 | 0.000113 | 1024 | 39 | -1.86 | 2.46 | 1107 | 1551 | |
| NEZ1.019 | Kolje | 0.00155 | 7.69E-06 | 0.107396 | 0.000773 | 0.282182 | 5.49E-05 | 1.467082 | 9.08E-05 | 1.887144 | 0.000123 | 1027 | 27 | 0.63 | 2.52 | 998 | 1471 | |
| NEZ1.007 | Kolje | 0.000996 | 9.72E-06 | 0.066436 | 0.000605 | 0.2822 | 5.84E-05 | 1.467153 | 8.11E-05 | 1.887145 | 0.000123 | 1039 | 37 | 1.88 | 2.87 | 953 | 1427 | |
| NEZ1.069 | Kolje | 0.00103 | 3.62E-06 | 0.045272 | 0.000527 | 0.282088 | 4.01E-05 | 1.467217 | 0.000085 | 1.886839 | 0.000114 | 1044 | 27 | -2.00 | 2.01 | 1135 | 1578 | |
| NEZ1.117 | Kolje | 0.001298 | 4.94E-06 | 0.06825 | 0.000629 | 0.28218 | 4.63E-05 | 1.467016 | 8.11E-05 | 1.886766 | 0.000107 | 1101 | 39 | 2.33 | 2.49 | 994 | 1465 | |
| NEZ1.039 | Kolje | 0.000836 | 1.02E-06 | 0.054813 | 0.000192 | 0.282376 | 4.76E-05 | 1.467178 | 6.65E-05 | 1.886879 | 0.000101 | 1109 | 34 | 9.81 | 2.44 | 664 | 1185 | |
| NEZ1.066 | Kolje | 0.002724 | 3.07E-05 | 0.114747 | 0.00202 | 0.282201 | 6.53E-05 | 1.467372 | 0.000102 | 1.886873 | 0.00013 | 1209 | 35 | 4.30 | 3.00 | 1003 | 1490 | |
| NEZ1.029 | Kolje | 0.000805 | 6.58E-06 | 0.056769 | 0.000606 | 0.282135 | 3.95E-05 | 1.467135 | 8.38E-05 | 1.886717 | 9.58E-05 | 1250 | 31 | 4.42 | 2.08 | 1051 | 1506 | |
| NEZ1.032 | Kolje | 0.001665 | 1.23E-05 | 0.099422 | 0.00134 | 0.282165 | 6.18E-05 | 1.467026 | 0.00011 | 1.886973 | 0.000114 | 1307 | 36 | 6.00 | 2.95 | 1030 | 1499 | |
| NEZ1.078 | Kolje | 0.001565 | 3.47E-06 | 0.084435 | 0.000546 | 0.281991 | 4.63E-05 | 1.46699 | 5.92E-05 | 1.88692 | 9.48E-05 | 1365 | 31 | 1.17 | 2.31 | 1311 | 1731 | |
| NEZ1.111 | Kolje | 0.000684 | 5.82E-06 | 0.04611 | 0.000202 | 0.281903 | 6.06E-05 | 1.467125 | 9.15E-05 | 1.886954 | 0.000139 | 1388 | 40 | -0.63 | 3.03 | 1416 | 1809 | |
| NEZ1.070 | Kolje | 0.001055 | 2.46E-06 | 0.069855 | 0.000304 | 0.282005 | 0.000053 | 1.467059 | 6.58E-05 | 1.886853 | 0.000116 | 1459 | 27 | 4.20 | 2.47 | 1269 | 1690 | |
| NEZ1.013 | Kolje | 0.000749 | 2.42E-06 | 0.049349 | 0.000375 | 0.281853 | 5.68E-05 | 1.46708 | 7.76E-05 | 1.886992 | 0.00013 | 1471 | 36 | -0.61 | 2.82 | 1498 | 1878 | |
| NEZ1.073 | Kolje | 0.003194 | 0.000008 | 0.157792 | 0.00143 | 0.28224 | 9.27E-05 | 1.467295 | 0.000143 | 1.886557 | 0.000169 | 1488 | 27 | 11.06 | 3.83 | 951 | 1454 | |
| NEZ1.090 | Kolje | 0.001522 | 8.66E-06 | 0.064791 | 0.000821 | 0.281867 | 5.27E-05 | 1.467172 | 8.97E-05 | 1.887086 | 0.000122 | 1488 | 40 | -0.52 | 2.73 | 1512 | 1897 | |
| NEZ1.075 | Kolje | 0.00104 | 6.29E-06 | 0.052792 | 0.000597 | 0.281677 | 4.52E-05 | 1.467192 | 8.57E-05 | 1.886956 | 0.00011 | 1520 | 32 | -6.05 | 2.30 | 1792 | 2125 | |
| NEZ1.023 | Kolje | 0.002017 | 6.34E-06 | 0.112553 | 0.000922 | 0.281913 | 6.34E-05 | 1.467178 | 8.77E-05 | 1.887018 | 0.00013 | 1522 | 58 | 1.37 | 3.49 | 1458 | 1858 | |
| NEZ1.084 | Kolje | 0.000716 | 1.63E-06 | 0.045512 | 0.000178 | 0.281667 | 4.68E-05 | 1.467164 | 7.06E-05 | 1.886754 | 0.000106 | 1605 | 26 | -4.19 | 2.24 | 1791 | 2122 | |
| NEZ1.086 | Kolje | 0.002697 | 2.55E-05 | 0.120253 | 0.00212 | 0.282002 | 6.55E-05 | 1.467541 | 0.000111 | 1.886519 | 0.000143 | 1605 | 31 | 5.59 | 2.92 | 1340 | 1767 | |
| NEZ1.107 | Kolje | 0.001705 | 2.91E-05 | 0.06088 | 0.000226 | 0.282006 | 6.76E-05 | 1.467537 | 0.000159 | 1.886665 | 0.000124 | 1606 | 31 | 6.79 | 3.01 | 1293 | 1717 | |
| NEZ1.037 | Kolje | 0.000951 | 1.05E-06 | 0.068304 | 0.000297 | 0.281794 | 6.03E-05 | 1.467145 | 8.49E-05 | 1.886817 | 0.000132 | 1642 | 26 | 0.90 | 2.72 | 1602 | 1966 | |
| NEZ1.022 | Kolje | 0.001291 | 2.76E-06 | 0.084149 | 0.000305 | 0.281823 | 7.03E-05 | 1.467154 | 8.65E-05 | 1.886709 | 0.000139 | 1741 | 29 | 3.74 | 3.13 | 1571 | 1944 | |
| NEZ1.072 | Kolje | 0.001377 | 1.18E-05 | 0.099847 | 0.000324 | 0.281587 | 4.71E-05 | 1.466998 | 6.88E-05 | 1.886872 | 8.88E-05 | 1744 | 27 | -4.68 | 2.24 | 1956 | 2264 | |
| NEZ1.093 | Kolje | 0.001493 | 5.89E-06 | 0.077338 | 0.000685 | 0.281818 | 4.62E-05 | 1.467183 | 8.49E-05 | 1.886823 | 0.000104 | 1784 | 26 | 4.28 | 2.20 | 1589 | 1961 | |
| NEZ1.082 | Kolje | 0.00194 | 3.77E-05 | 0.068734 | 0.000223 | 0.281798 | 5.97E-05 | 1.467372 | 0.000121 | 1.886699 | 0.000145 | 1832 | 21 | 4.07 | 2.48 | 1644 | 2010 | |
| NEZ1.049 | Kolje | 0.001517 | 4.35E-06 | 0.101521 | 0.000269 | 0.281753 | 0.00005 | 1.467217 | 8.51E-05 | 1.886872 | 0.000129 | 1903 | 25 | 4.57 | 2.32 | 1695 | 2049 | |
| NEZ1.095 | Kolje | 0.000551 | 1.58E-06 | 0.039237 | 0.000117 | 0.281472 | 6.41E-05 | 1.467297 | 0.000105 | 1.88734 | 0.000175 | 1949 | 34 | -3.14 | 3.05 | 2087 | 2367 | |
| NEZ1.036 | Kolje | 0.00091 | 3.22E-06 | 0.057241 | 8.55E-05 | 0.281541 | 6.44E-05 | 1.467116 | 0.000074 | 1.88684 | 0.000137 | 1953 | 27 | -1.08 | 2.89 | 2001 | 2298 | |
| NEZ1.088 | Kolje | 0.000293 | 7.51E-07 | 0.01746 | 0.000115 | 0.281686 | 3.74E-05 | 1.467187 | 7.48E-05 | 1.887144 | 0.000103 | 1968 | 24 | 5.26 | 1.88 | 1738 | 2074 | |
| NEZ1.028 | Kolje | 0.001239 | 1.11E-05 | 0.077121 | 0.00015 | 0.281768 | 4.09E-05 | 1.467146 | 6.46E-05 | 1.886875 | 0.000109 | 1986 | 25 | 7.29 | 1.98 | 1658 | 2015 | |
| NEZ1.048 | Kolje | 0.000751 | 2.63E-06 | 0.050032 | 8.99E-05 | 0.280931 | 5.16E-05 | 1.46718 | 7.37E-05 | 1.886874 | 0.000114 | 2345 | 22 | -13.64 | 2.33 | 2940 | 3082 | |
| NEZ1.085 | Kolje | 0.00205 | 4.61E-05 | 0.073711 | 0.00128 | 0.281296 | 0.000107 | 1.467591 | 0.000117 | 1.886856 | 0.000225 | 2669 | 23 | 4.38 | 4.15 | 2470 | 2696 | |
| NEZ1.101 | Kolje | 0.000309 | 2.85E-06 | 0.020686 | 0.000196 | 0.280546 | 5.29E-05 | 1.467047 | 7.12E-05 | 1.886807 | 0.000126 | 2679 | 26 | -18.92 | 2.48 | 3487 | 3539 | |
| NEZ1.020 | Kolje | 0.004547 | 3.36E-05 | 0.210646 | 0.00228 | 0.28121 | 0.000123 | 1.467513 | 0.000162 | 1.886717 | 0.000222 | 2704 | 22 | -2.52 | 4.70 | 2828 | 3005 | |
| NEZ1.042 | Kolje | 0.000409 | 3.86E-06 | 0.02247 | 0.000197 | 0.281107 | 4.18E-05 | 1.467293 | 9.28E-05 | 1.88679 | 0.000117 | 2720 | 21 | 1.82 | 1.96 | 2641 | 2830 | |
| NEZ1.091 | Kolje | 0.002953 | 4.98E-05 | 0.109459 | 0.000719 | 0.281246 | 0.000102 | 1.467848 | 0.00012 | 1.886255 | 0.000164 | 2738 | 22 | 2.42 | 3.91 | 2625 | 2830 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ1.057 | Kolje | 0.000883 | 5.31E-06 | 0.061417 | 0.000535 | 0.280851 | 5.04E-05 | 1.467135 | 8.76E-05 | 1.88681 | 0.000115 | 2764 | 19 | -7.18 | 2.21 | 3077 | 3197 | |
| NEZ1.113 | Kolje | 0.002102 | 4.25E-05 | 0.074188 | 0.00169 | 0.281035 | 0.000132 | 1.467558 | 0.000151 | 1.886117 | 0.00024 | 2789 | 22 | -2.35 | 5.02 | 2896 | 3050 | |
| NEZ1.063 | Kolje | 0.000593 | 3.93E-06 | 0.037138 | 0.000458 | 0.280882 | 5.37E-05 | 1.467051 | 6.43E-05 | 1.886864 | 0.00012 | 2809 | 33 | -4.47 | 2.66 | 3002 | 3133 | |
| NEZ1.003 | Kolje | 0.001386 | 1.54E-06 | 0.087902 | 0.000573 | 0.280825 | 6.24E-05 | 1.467086 | 6.68E-05 | 1.886564 | 0.000124 | 2821 | 26 | -7.75 | 2.80 | 3163 | 3270 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ2.097 | Kolje | 0.001077 | 4.68E-06 | 0.064521 | 0.000505 | 0.282503 | 4.39E-05 | 1.467103 | 9.26E-05 | 1.887069 | 0.000107 | 206 | 4 | -5.54 | 1.64 | 462 | 1021 | |
| NEZ2.098 | Kolje | 0.000397 | 2.16E-06 | 0.022028 | 0.000043 | 0.282696 | 3.27E-05 | 1.467034 | 8.67E-05 | 1.887048 | 0.0001 | 309 | 5 | 3.64 | 1.27 | 144 | 746 | |
| NEZ2.075 | Kolje | 0.000498 | 4.74E-07 | 0.028671 | 0.000217 | 0.282302 | 3.72E-05 | 1.467087 | 8.52E-05 | 1.886869 | 0.000105 | 440 | 7 | -7.45 | 1.47 | 777 | 1274 | |
| NEZ2.032 | Kolje | 0.000709 | 3.11E-06 | 0.044125 | 8.53E-05 | 0.282334 | 4.52E-05 | 1.46721 | 0.000104 | 1.886928 | 0.000128 | 447 | 7 | -6.21 | 1.75 | 730 | 1238 | |
| NEZ2.035 | Kolje | 0.000444 | 2.12E-06 | 0.02732 | 0.000246 | 0.282364 | 0.000053 | 1.467123 | 0.000092 | 1.886954 | 0.000113 | 475 | 10 | -4.44 | 2.10 | 676 | 1189 | |
| NEZ2.039 | Kolje | 0.001346 | 3.19E-06 | 0.086369 | 0.000698 | 0.282498 | 6.96E-05 | 1.467155 | 9.09E-05 | 1.887087 | 0.00015 | 510 | 9 | 0.78 | 2.66 | 474 | 1034 | |
| NEZ2.062 | Kolje | 0.000443 | 8.08E-07 | 0.025228 | 0.000123 | 0.282695 | 0.000046 | 1.467174 | 8.99E-05 | 1.887124 | 0.000129 | 521 | 10 | 8.27 | 1.85 | 146 | 749 | |
| NEZ2.080 | Kolje | 0.000553 | 9.88E-07 | 0.03381 | 0.000227 | 0.282181 | 4.31E-05 | 1.467121 | 0.000101 | 1.886885 | 0.000109 | 969 | 17 | -0.04 | 1.90 | 971 | 1436 | |
| NEZ2.003 | Kolje | 0.000579 | 2.19E-05 | 0.033173 | 0.00144 | 0.282122 | 4.14E-05 | 1.46729 | 9.87E-05 | 1.886804 | 0.00013 | 1019 | 29 | -1.01 | 2.08 | 1064 | 1514 | |
| NEZ2.081 | Kolje | 0.000531 | 4.15E-07 | 0.031119 | 0.000242 | 0.282026 | 3.58E-05 | 1.467136 | 9.48E-05 | 1.886975 | 0.000094 | 1020 | 28 | -4.35 | 1.89 | 1215 | 1639 | |
| NEZ2.111 | Kolje | 0.002595 | 5.08E-05 | 0.213138 | 0.00708 | 0.282559 | 0.000187 | 1.467158 | 0.000252 | 1.886933 | 0.000274 | 1034 | 46 | 13.39 | 7.52 | 390 | 984 | |
| NEZ2.082 | Kolje | 0.000794 | 1.59E-06 | 0.045729 | 0.000493 | 0.282231 | 5.05E-05 | 1.467055 | 0.000145 | 1.886955 | 0.000122 | 1035 | 33 | 3.03 | 2.52 | 898 | 1378 | |
| NEZ2.083 | Kolje | 0.000571 | 5.35E-06 | 0.038678 | 0.00059 | 0.282148 | 4.03E-05 | 1.467105 | 0.000115 | 1.88702 | 0.000121 | 1075 | 87 | 1.14 | 3.36 | 1024 | 1481 | |
| NEZ2.105 | Kolje | 0.000547 | 2.31E-06 | 0.032975 | 0.000129 | 0.282094 | 0.000039 | 1.467065 | 9.01E-05 | 1.886771 | 0.000107 | 1112 | 31 | 0.07 | 2.07 | 1109 | 1551 | |
| NEZ2.085 | Kolje | 0.000577 | 9.48E-07 | 0.034622 | 0.000346 | 0.282113 | 3.87E-05 | 1.467164 | 0.000087 | 1.887079 | 0.000102 | 1113 | 34 | 0.75 | 2.13 | 1079 | 1527 | |
| NEZ2.059 | Kolje | 0.001501 | 1.88E-06 | 0.105075 | 0.000662 | 0.282152 | 5.25E-05 | 1.467155 | 7.93E-05 | 1.887059 | 0.000104 | 1118 | 23 | 1.54 | 2.36 | 1047 | 1511 | |
| NEZ2.030 | Kolje | 0.000878 | 8.96E-06 | 0.046613 | 0.00055 | 0.28207 | 5.05E-05 | 1.467392 | 0.000134 | 1.886758 | 0.000137 | 1183 | 34 | 0.57 | 2.53 | 1157 | 1595 | |
| NEZ2.051 | Kolje | 0.00116 | 6.52E-06 | 0.084011 | 0.000258 | 0.28219 | 0.00005 | 1.467191 | 7.02E-05 | 1.886937 | 9.88E-05 | 1323 | 32 | 7.67 | 2.47 | 974 | 1446 | |
| EZ2.109.11 | Kolje | 0.000922 | 5.15E-07 | 0.054974 | 0.000463 | 0.282047 | 3.92E-05 | 1.466995 | 9.31E-05 | 1.88704 | 0.000103 | 1325 | 36 | 2.85 | 2.19 | 1197 | 1628 | |
| NEZ2.001 | Kolje | 0.000728 | 5.76E-07 | 0.046931 | 0.000199 | 0.282331 | 5.84E-05 | 1.467302 | 0.000101 | 1.887326 | 0.000131 | 1369 | 33 | 14.09 | 2.81 | 734 | 1242 | |
| NEZ2.005 | Kolje | 0.000669 | 1.82E-06 | 0.04551 | 0.000328 | 0.28189 | 4.39E-05 | 1.467165 | 0.000081 | 1.886884 | 0.000101 | 1424 | 28 | -0.26 | 2.18 | 1436 | 1825 | |
| NEZ2.077 | Kolje | 0.000986 | 1.78E-05 | 0.06404 | 0.000636 | 0.281815 | 5.54E-05 | 1.467054 | 0.000122 | 1.886998 | 0.000133 | 1450 | 29 | -2.67 | 2.57 | 1570 | 1940 | |
| NEZ2.028 | Kolje | 0.001107 | 4.54E-06 | 0.067935 | 0.000572 | 0.282086 | 5.05E-05 | 1.467194 | 8.04E-05 | 1.886779 | 0.000106 | 1475 | 23 | 7.37 | 2.29 | 1141 | 1584 | |
| NEZ2.115 | Kolje | 0.000857 | 9.41E-06 | 0.048573 | 0.000141 | 0.282014 | 3.87E-05 | 1.467027 | 9.09E-05 | 1.886814 | 9.97E-05 | 1477 | 30 | 5.12 | 2.02 | 1247 | 1669 | |
| NEZ2.099 | Kolje | 0.001181 | 1.13E-05 | 0.074367 | 0.000974 | 0.281771 | 6.67E-05 | 1.466881 | 0.000158 | 1.886819 | 0.000163 | 1491 | 25 | -3.51 | 2.90 | 1650 | 2008 | |
| EZ2.121.12 | Kolje | 0.00066 | 6.6E-07 | 0.039878 | 0.000362 | 0.281944 | 3.89E-05 | 1.467142 | 9.59E-05 | 1.886873 | 9.98E-05 | 1494 | 41 | 3.21 | 2.30 | 1351 | 1754 | |
| NEZ2.012 | Kolje | 0.001229 | 6.49E-06 | 0.072833 | 0.000265 | 0.28189 | 6.17E-05 | 1.467156 | 8.94E-05 | 1.886803 | 0.000126 | 1567 | 32 | 2.33 | 2.88 | 1461 | 1852 | |
| NEZ2.119 | Kolje | 0.000739 | 1.92E-06 | 0.042561 | 0.000512 | 0.281685 | 4.03E-05 | 1.467204 | 9.17E-05 | 1.887076 | 0.000101 | 1598 | 27 | -3.72 | 2.03 | 1764 | 2099 | |
| EZ2.100.1C | Kolje | 0.000582 | 2.09E-06 | 0.03511 | 0.000393 | 0.281671 | 4.16E-05 | 1.467155 | 0.000086 | 1.88699 | 0.000103 | 1599 | 30 | -4.04 | 2.15 | 1778 | 2109 | |
| NEZ2.089 | Kolje | 0.001802 | 5.23E-06 | 0.102652 | 0.00116 | 0.281882 | 0.000047 | 1.467177 | 9.02E-05 | 1.886852 | 0.000105 | 1601 | 30 | 2.21 | 2.31 | 1499 | 1889 | |
| NEZ2.025 | Kolje | 0.001095 | 1.54E-06 | 0.066973 | 0.000298 | 0.281716 | 5.73E-05 | 1.467074 | 0.000103 | 1.886901 | 0.000145 | 1660 | 25 | -1.63 | 2.59 | 1733 | 2077 | |
| NEZ2.002 | Kolje | 0.00064 | 1.26E-06 | 0.042127 | 0.000189 | 0.281204 | 0.000066 | 1.467173 | 0.000123 | 1.886858 | 0.000142 | 1668 | 27 | -19.10 | 2.95 | 2509 | 2721 | |
| NEZ2.079 | Kolje | 0.000947 | 1.23E-05 | 0.052261 | 0.00118 | 0.281881 | 0.000047 | 1.467223 | 8.76E-05 | 1.88694 | 0.000112 | 1715 | 31 | 5.61 | 2.33 | 1463 | 1851 | |
| NEZ2.027 | Kolje | 0.000447 | 5.61E-07 | 0.029204 | 0.000168 | 0.281479 | 4.62E-05 | 1.467329 | 8.63E-05 | 1.886831 | 0.000125 | 1717 | 32 | -8.03 | 2.36 | 2070 | 2352 | |
| NEZ2.036 | Kolje | 0.00047 | 1.17E-06 | 0.031208 | 7.18E-05 | 0.281288 | 4.99E-05 | 1.467078 | 9.25E-05 | 1.886868 | 0.000118 | 1811 | 40 | -12.69 | 2.68 | 2367 | 2601 | |
| NEZ2.024 | Kolje | 0.000542 | 7.69E-07 | 0.035441 | 0.000156 | 0.281644 | 6.56E-05 | 1.467081 | 9.29E-05 | 1.887223 | 0.000144 | 1815 | 27 | -0.07 | 2.94 | 1818 | 2143 | |
| NEZ2.022 | Kolje | 0.001287 | 1.99E-05 | 0.084454 | 0.00113 | 0.28163 | 0.000048 | 1.467301 | 9.61E-05 | 1.887019 | 0.000108 | 1861 | 24 | -0.43 | 2.19 | 1880 | 2201 | |
| EZ2.041.04 | Kolje | 0.001048 | 3.02E-06 | 0.068272 | 0.000304 | 0.281435 | 6.54E-05 | 1.467282 | 9.82E-05 | 1.887038 | 0.000127 | 1870 | 40 | -6.88 | 3.21 | 2177 | 2446 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ2.094 | Kolje | 0.000947 | 1.98E-05 | 0.062639 | 0.0017 | 0.281667 | 6.86E-05 | 1.46705 | 0.000165 | 1.886566 | 0.00017 | 1905 | 31 | 2.29 | 3.08 | 1803 | 2133 | |
| NEZ2.061 | Kolje | 0.000968 | 6.32E-06 | 0.0632 | 0.000773 | 0.281535 | 4.88E-05 | 1.467113 | 8.32E-05 | 1.886994 | 0.000118 | 1954 | 25 | -1.34 | 2.28 | 2014 | 2309 | |
| NEZ2.011 | Kolje | 0.00065 | 1.09E-06 | 0.041201 | 0.000259 | 0.281539 | 4.99E-05 | 1.467278 | 9.47E-05 | 1.886901 | 0.000125 | 1959 | 25 | -0.68 | 2.34 | 1989 | 2286 | |
| NEZ2.069 | Kolje | 0.000976 | 1.36E-05 | 0.055458 | 0.000462 | 0.281377 | 0.000044 | 1.467138 | 0.000102 | 1.886938 | 0.000108 | 2058 | 25 | -4.62 | 2.09 | 2263 | 2517 | |
| NEZ2.086 | Kolje | 0.000943 | 7.29E-06 | 0.061668 | 0.000874 | 0.281037 | 4.78E-05 | 1.466961 | 9.49E-05 | 1.886717 | 0.000105 | 2127 | 30 | -15.10 | 2.35 | 2793 | 2959 | |
| NEZ2.040 | Kolje | 0.000522 | 5.27E-06 | 0.029959 | 0.000327 | 0.281299 | 3.81E-05 | 1.467225 | 0.000117 | 1.886625 | 0.000113 | 2649 | 18 | 6.80 | 1.75 | 2354 | 2590 | |
| NEZ2.018 | Kolje | 0.000449 | 1.99E-06 | 0.028721 | 0.000105 | 0.280873 | 6.16E-05 | 1.467073 | 9.14E-05 | 1.887184 | 0.00014 | 2703 | 24 | -6.99 | 2.74 | 3004 | 3134 | |
| NEZ2.056 | Kolje | 0.000241 | 8.76E-07 | 0.015131 | 4.74E-05 | 0.281173 | 3.62E-05 | 1.467129 | 0.000081 | 1.8869 | 0.000113 | 2714 | 22 | 4.34 | 1.80 | 2528 | 2734 | |
| NEZ2.020 | Kolje | 0.000647 | 7.34E-06 | 0.042279 | 0.000753 | 0.281062 | 5.43E-05 | 1.466889 | 7.32E-05 | 1.887117 | 0.000124 | 2718 | 25 | -0.27 | 2.48 | 2730 | 2905 | |
| NEZ2.047 | Kolje | 0.000362 | 2.59E-06 | 0.0232 | 0.000186 | 0.280947 | 4.15E-05 | 1.467118 | 9.65E-05 | 1.886933 | 0.000109 | 2728 | 26 | -3.61 | 2.07 | 2883 | 3033 | |
| NEZ2.026 | Kolje | 0.000629 | 0.000001 | 0.038801 | 0.000156 | 0.280957 | 6.01E-05 | 1.467202 | 8.05E-05 | 1.886901 | 0.000117 | 2794 | 25 | -2.22 | 2.71 | 2890 | 3039 | |
| NEZ2.013 | Kolje | 0.000348 | 7.81E-07 | 0.021547 | 0.000103 | 0.28106 | 5.79E-05 | 1.467109 | 8.76E-05 | 1.88701 | 0.000127 | 2799 | 24 | 2.10 | 2.62 | 2709 | 2886 | |
| NEZ2.090 | Kolje | 0.000462 | 3.87E-06 | 0.024703 | 4.64E-05 | 0.280944 | 0.000037 | 1.467114 | 9.69E-05 | 1.887011 | 9.09E-05 | 2803 | 34 | -2.15 | 2.09 | 2895 | 3043 | |
| NEZ2.063 | Kolje | 0.000759 | 6.19E-06 | 0.053089 | 0.000661 | 0.280403 | 6.05E-05 | 1.467373 | 9.21E-05 | 1.886742 | 0.000122 | 3465 | 24 | -6.67 | 2.69 | 3750 | 3761 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ3.008 | Kolje | 0.002463 | 2.42E-05 | 0.113862 | 0.00262 | 0.282634 | 9.39E-05 | 1.467623 | 0.000174 | 1.887022 | 0.000195 | 300 | 6 | 0.83 | 3.44 | 260 | 875 | |
| NEZ3.019 | Kolje | 0.000502 | 1.09E-06 | 0.034291 | 0.000113 | 0.282389 | 4.04E-05 | 1.467152 | 0.000103 | 1.886805 | 0.000126 | 419 | 8 | -4.81 | 1.61 | 637 | 1158 | |
| NEZ3.015 | Kolje | 0.00217 | 2.64E-05 | 0.122821 | 0.0022 | 0.282765 | 0.000208 | 1.467839 | 0.000449 | 1.886733 | 0.000338 | 582 | 29 | 11.44 | 7.95 | 35 | 685 | |
| NEZ3.005 | Kolje | 0.00066 | 1.24E-05 | 0.044155 | 0.000397 | 0.282216 | 4.54E-05 | 1.467189 | 8.37E-05 | 1.887018 | 0.000103 | 767 | 13 | -3.33 | 1.88 | 917 | 1393 | |
| NEZ3.006 | Kolje | 0.000433 | 5.68E-07 | 0.030497 | 0.000102 | 0.282482 | 5.06E-05 | 1.467092 | 8.67E-05 | 1.886667 | 0.00012 | 1003 | 31 | 11.48 | 2.49 | 487 | 1032 | |
| NEZ3.007 | Kolje | 0.000844 | 3.72E-06 | 0.033228 | 0.00045 | 0.28239 | 9.53E-05 | 1.467619 | 0.000219 | 1.886989 | 0.000237 | 1011 | 72 | 8.12 | 4.97 | 642 | 1167 | |
| NEZ3.013 | Kolje | 0.001172 | 1.91E-05 | 0.053841 | 0.00153 | 0.282103 | 5.59E-05 | 1.467303 | 0.000122 | 1.886767 | 0.000139 | 1024 | 47 | -2.00 | 2.98 | 1115 | 1564 | |
| NEZ3.021 | Kolje | 0.000447 | 1.92E-06 | 0.029527 | 5.18E-05 | 0.282089 | 4.98E-05 | 1.467133 | 7.97E-05 | 1.886939 | 0.000112 | 1069 | 40 | -0.98 | 2.66 | 1113 | 1553 | |
| NEZ3.016 | Kolje | 0.000552 | 8.5E-06 | 0.034005 | 0.000556 | 0.282084 | 4.69E-05 | 1.467008 | 0.000112 | 1.887149 | 0.00012 | 1104 | 37 | -0.45 | 2.48 | 1124 | 1564 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ4.029 | Knurr | 0.000779 | 4.73E-06 | 0.042162 | 0.000243 | 0.282645 | 4.47E-05 | 1.467247 | 0.000106 | 1.886801 | 0.000111 | 218 | 4 | -0.23 | 1.67 | 228 | 822 | |
| NEZ4.015 | Knurr | 0.001097 | 6.94E-06 | 0.067865 | 0.000988 | 0.282353 | 4.79E-05 | 1.467062 | 0.000101 | 1.886802 | 0.000119 | 985 | 23 | 6.05 | 2.19 | 708 | 1225 | |
| NEZ4.009 | Knurr | 0.000618 | 4.75E-06 | 0.042854 | 0.000514 | 0.282219 | 5.47E-05 | 1.467271 | 0.00014 | 1.886861 | 0.000145 | 1134 | 46 | 4.95 | 2.96 | 912 | 1388 | |
| NEZ4.020 | Knurr | 0.000857 | 2.93E-06 | 0.057206 | 0.0003 | 0.282226 | 0.000037 | 1.466975 | 7.61E-05 | 1.886956 | 8.84E-05 | 1164 | 30 | 5.70 | 1.97 | 906 | 1386 | |
| NEZ4.034 | Knurr | 0.001708 | 1.65E-06 | 0.106786 | 0.00094 | 0.282211 | 5.01E-05 | 1.467085 | 9.03E-05 | 1.88691 | 0.000104 | 1166 | 33 | 4.52 | 2.49 | 956 | 1438 | |
| NEZ4.002 | Knurr | 0.000884 | 4.06E-06 | 0.054412 | 0.000708 | 0.281991 | 4.12E-05 | 1.467097 | 9.14E-05 | 1.887126 | 0.000101 | 1250 | 60 | -0.76 | 2.79 | 1284 | 1701 | |
| NEZ4.003 | Knurr | 0.000637 | 1.87E-06 | 0.040182 | 0.000183 | 0.281975 | 4.75E-05 | 1.467067 | 9.01E-05 | 1.887048 | 0.000131 | 1339 | 54 | 0.87 | 2.89 | 1300 | 1712 | |
| NEZ4.026 | Knurr | 0.000895 | 3.47E-06 | 0.056947 | 0.000179 | 0.282043 | 3.58E-05 | 1.466961 | 7.86E-05 | 1.886859 | 8.88E-05 | 1399 | 38 | 4.39 | 2.11 | 1201 | 1632 | |
| NEZ4.022 | Knurr | 0.000708 | 1.57E-06 | 0.043613 | 0.00039 | 0.282048 | 4.16E-05 | 1.467206 | 8.85E-05 | 1.886716 | 0.0001 | 1421 | 34 | 5.24 | 2.23 | 1186 | 1618 | |
| NEZ4.017 | Knurr | 0.000842 | 2.42E-06 | 0.052478 | 0.000162 | 0.281952 | 3.75E-05 | 1.467063 | 0.000083 | 1.886988 | 9.49E-05 | 1449 | 33 | 2.32 | 2.06 | 1345 | 1751 | |
| NEZ4.005 | Knurr | 0.000986 | 7.69E-07 | 0.070749 | 0.000567 | 0.281746 | 5.89E-05 | 1.467194 | 8.93E-05 | 1.886893 | 0.000132 | 1474 | 40 | -4.58 | 2.98 | 1680 | 2031 | |
| NEZ4.025 | Knurr | 0.001211 | 2.27E-05 | 0.074736 | 0.00188 | 0.28168 | 5.59E-05 | 1.46694 | 0.000092 | 1.886942 | 0.000117 | 1584 | 29 | -4.73 | 2.58 | 1797 | 2131 | |
| NEZ4.019 | Knurr | 0.001752 | 6.72E-06 | 0.105786 | 0.00121 | 0.281859 | 4.94E-05 | 1.467139 | 8.52E-05 | 1.886849 | 0.000107 | 1587 | 27 | 1.14 | 2.33 | 1534 | 1918 | |
| NEZ4.013 | Knurr | 0.000998 | 0.000015 | 0.067826 | 0.0017 | 0.281689 | 5.16E-05 | 1.467157 | 0.000121 | 1.887036 | 0.00011 | 1609 | 29 | -3.61 | 2.44 | 1771 | 2107 | |
| NEZ4.027 | Knurr | 0.002238 | 1.94E-05 | 0.118268 | 0.00159 | 0.281791 | 7.33E-05 | 1.466994 | 0.000128 | 1.887114 | 0.000151 | 1649 | 30 | -0.47 | 3.20 | 1671 | 2036 | |
| NEZ4.004 | Knurr | 0.000745 | 6.74E-06 | 0.047361 | 0.000226 | 0.28174 | 4.15E-05 | 1.467059 | 9.28E-05 | 1.886879 | 0.00011 | 1703 | 28 | 0.57 | 2.09 | 1677 | 2027 | |
| NEZ4.001 | Knurr | 0.000635 | 1.28E-06 | 0.038741 | 0.000311 | 0.281503 | 4.42E-05 | 1.467067 | 7.95E-05 | 1.887 | 0.000102 | 1716 | 23 | -7.40 | 2.08 | 2043 | 2331 | |
| NEZ4.028 | Knurr | 0.000498 | 1.69E-06 | 0.031506 | 0.000268 | 0.281735 | 3.32E-05 | 1.467028 | 7.23E-05 | 1.887006 | 9.43E-05 | 1733 | 28 | 1.38 | 1.81 | 1672 | 2021 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ4.033 | Knurr | 0.001032 | 4.96E-06 | 0.064436 | 0.000625 | 0.281477 | 7.55E-05 | 1.46698 | 0.000176 | 1.887157 | 0.000176 | 1838 | 27 | -6.06 | 3.27 | 2108 | 2389 | |
| NEZ4.031 | Knurr | 0.000591 | 1.15E-06 | 0.035696 | 0.000249 | 0.281755 | 4.22E-05 | 1.467171 | 0.000083 | 1.8871 | 9.14E-05 | 1844 | 25 | 4.47 | 2.06 | 1646 | 2000 | |
| NEZ4.021 | Knurr | 0.00062 | 3.27E-06 | 0.037816 | 0.000134 | 0.28156 | 4.43E-05 | 1.467092 | 8.35E-05 | 1.887027 | 9.83E-05 | 1898 | 27 | -1.27 | 2.18 | 1954 | 2257 | |
| NEZ4.018 | Knurr | 0.000678 | 7.17E-07 | 0.041332 | 0.000398 | 0.281508 | 4.13E-05 | 1.467066 | 8.52E-05 | 1.886985 | 0.000106 | 1960 | 29 | -1.78 | 2.12 | 2038 | 2328 | |
| NEZ4.011 | Knurr | 0.000522 | 1.12E-06 | 0.029428 | 0.000266 | 0.281699 | 4.14E-05 | 1.467029 | 0.000119 | 1.886871 | 0.000109 | 1987 | 27 | 5.82 | 2.08 | 1731 | 2070 | |
| NEZ4.023 | Knurr | 0.000578 | 7.65E-07 | 0.032865 | 0.000296 | 0.281553 | 4.19E-05 | 1.467039 | 8.56E-05 | 1.887 | 9.61E-05 | 2006 | 28 | 0.98 | 2.12 | 1963 | 2264 | |
| NEZ4.016 | Knurr | 0.001098 | 3.92E-06 | 0.068177 | 0.000618 | 0.281589 | 4.45E-05 | 1.467128 | 0.000105 | 1.886887 | 0.000113 | 2018 | 25 | 1.83 | 2.13 | 1936 | 2246 | |
| NEZ4.014 | Knurr | 0.001152 | 1.56E-05 | 0.068886 | 0.00143 | 0.280902 | 4.48E-05 | 1.467014 | 8.03E-05 | 1.886739 | 9.63E-05 | 2845 | 24 | -4.02 | 2.08 | 3022 | 3151 | |
| NEZ4.007 | Knurr | 0.000317 | 7.96E-07 | 0.017114 | 0.00017 | 0.280802 | 4.41E-05 | 1.466962 | 9.67E-05 | 1.886924 | 0.000114 | 2885 | 22 | -5.04 | 2.08 | 3101 | 3215 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ5.065 | Knurr | 0.00189 | 0.000009 | 0.089351 | 0.00151 | 0.282967 | 6.87E-05 | 1.46693 | 0.000155 | 1.886968 | 0.000167 | 309 | 5 | 12.92 | 2.53 | -308 | 398 | |
| NEZ5.094 | Knurr | 0.001343 | 1.04E-05 | 0.075365 | 0.00024 | 0.282754 | 3.93E-05 | 1.467021 | 0.000078 | 1.886987 | 9.92E-05 | 411 | 9 | 7.70 | 1.58 | 51 | 685 | |
| NEZ5.123 | Knurr | 0.000777 | 2.7E-06 | 0.042162 | 0.000522 | 0.282316 | 0.00005 | 1.467105 | 0.000118 | 1.887153 | 0.000128 | 424 | 8 | -7.37 | 1.94 | 760 | 1264 | |
| NEZ5.135 | Knurr | 0.002283 | 1.09E-05 | 0.152307 | 0.0021 | 0.282161 | 5.47E-05 | 1.467114 | 9.19E-05 | 1.886908 | 0.000106 | 862 | 17 | -4.12 | 2.28 | 1057 | 1529 | |
| NEZ5.036 | Knurr | 0.000642 | 7.02E-07 | 0.040065 | 0.00035 | 0.282122 | 4.07E-05 | 1.466995 | 8.05E-05 | 1.886806 | 0.000106 | 994 | 48 | -1.61 | 2.51 | 1066 | 1517 | |
| NEZ5.093 | Knurr | 0.0005 | 1.1E-06 | 0.029487 | 0.000287 | 0.282176 | 3.64E-05 | 1.466967 | 8.97E-05 | 1.886803 | 0.000105 | 994 | 18 | 0.39 | 1.69 | 977 | 1441 | |
| NEZ5.011 | Knurr | 0.000382 | 7.37E-07 | 0.025499 | 0.000209 | 0.282131 | 4.54E-05 | 1.467043 | 8.25E-05 | 1.887077 | 0.000111 | 995 | 16 | -1.09 | 1.97 | 1044 | 1495 | |
| NEZ5.069 | Knurr | 0.000427 | 5.86E-07 | 0.026268 | 0.000241 | 0.2823 | 4.68E-05 | 1.467161 | 8.11E-05 | 1.887089 | 0.000108 | 1022 | 40 | 5.45 | 2.55 | 778 | 1274 | |
| NEZ5.002 | Knurr | 0.000103 | 7.36E-07 | 0.007296 | 0.000047 | 0.282083 | 0.000048 | 1.467005 | 7.16E-05 | 1.886871 | 0.000111 | 1025 | 29 | -1.95 | 2.36 | 1111 | 1548 | |
| NEZ5.104 | Knurr | 0.000385 | 1.6E-06 | 0.023867 | 8.57E-05 | 0.282269 | 0.000037 | 1.467026 | 8.15E-05 | 1.887007 | 0.000107 | 1026 | 50 | 4.48 | 2.43 | 826 | 1313 | |
| NEZ5.118 | Knurr | 0.000982 | 2.67E-05 | 0.057412 | 0.00133 | 0.281924 | 4.96E-05 | 1.467151 | 0.000096 | 1.886981 | 0.00011 | 1107 | 29 | -6.39 | 2.36 | 1396 | 1795 | |
| NEZ5.127 | Knurr | 0.000987 | 5.12E-06 | 0.044955 | 0.000362 | 0.282113 | 3.37E-05 | 1.467091 | 7.63E-05 | 1.886879 | 8.54E-05 | 1127 | 45 | 0.77 | 2.18 | 1092 | 1542 | |
| NEZ5.001 | Knurr | 0.000615 | 4.58E-07 | 0.039595 | 0.000348 | 0.28193 | 3.76E-05 | 1.467158 | 7.47E-05 | 1.886976 | 9.73E-05 | 1133 | 37 | -5.30 | 2.16 | 1370 | 1770 | |
| NEZ5.101 | Knurr | 0.000717 | 8.7E-07 | 0.041262 | 0.000289 | 0.282049 | 4.43E-05 | 1.466965 | 7.51E-05 | 1.887225 | 0.000103 | 1296 | 31 | 2.45 | 2.26 | 1186 | 1618 | |
| NEZ5.143 | Knurr | 0.000798 | 8.76E-07 | 0.047159 | 0.000342 | 0.282258 | 4.76E-05 | 1.467006 | 8.02E-05 | 1.88692 | 0.00011 | 1300 | 43 | 9.90 | 2.65 | 853 | 1342 | |
| NEZ5.038 | Knurr | 0.001416 | 2.78E-05 | 0.092201 | 0.00147 | 0.282254 | 5.33E-05 | 1.467184 | 8.88E-05 | 1.887045 | 0.000145 | 1303 | 42 | 9.27 | 2.76 | 877 | 1369 | |
| NEZ5.133 | Knurr | 0.000914 | 3.34E-06 | 0.053403 | 0.000463 | 0.28188 | 4.84E-05 | 1.466912 | 8.04E-05 | 1.886984 | 0.000123 | 1455 | 50 | -0.19 | 2.82 | 1463 | 1850 | |
| NEZ5.050 | Knurr | 0.00387 | 2.44E-05 | 0.200877 | 0.00224 | 0.282183 | 6.21E-05 | 1.467247 | 7.91E-05 | 1.886997 | 9.97E-05 | 1456 | 26 | 7.71 | 2.68 | 1074 | 1563 | |
| NEZ5.068 | Knurr | 0.001042 | 4.35E-06 | 0.066264 | 0.000616 | 0.281899 | 4.74E-05 | 1.467075 | 8.56E-05 | 1.887137 | 0.000111 | 1479 | 43 | 0.89 | 2.63 | 1439 | 1831 | |
| NEZ5.089 | Knurr | 0.00082 | 3.69E-06 | 0.049282 | 0.000537 | 0.281906 | 4.17E-05 | 1.467144 | 0.000114 | 1.88697 | 0.000107 | 1497 | 24 | 1.78 | 2.01 | 1417 | 1811 | |
| NEZ5.114 | Knurr | 0.001968 | 1.63E-05 | 0.121481 | 0.000466 | 0.282044 | 4.97E-05 | 1.46682 | 8.51E-05 | 1.887012 | 9.58E-05 | 1497 | 25 | 5.51 | 2.27 | 1241 | 1677 | |
| NEZ5.062 | Knurr | 0.002004 | 8.24E-06 | 0.116595 | 0.000512 | 0.282045 | 6.27E-05 | 1.467123 | 9.57E-05 | 1.886737 | 0.000124 | 1502 | 43 | 5.61 | 3.13 | 1241 | 1677 | |
| NEZ5.142 | Knurr | 0.001533 | 1.27E-05 | 0.090947 | 0.0015 | 0.281974 | 0.000043 | 1.466978 | 8.03E-05 | 1.887127 | 0.000107 | 1503 | 23 | 3.60 | 2.00 | 1338 | 1753 | |
| NEZ5.102 | Knurr | 0.000608 | 1.62E-06 | 0.035518 | 0.000186 | 0.281879 | 3.54E-05 | 1.467155 | 7.93E-05 | 1.887007 | 0.000102 | 1505 | 33 | 1.23 | 1.99 | 1450 | 1837 | |
| NEZ5.103 | Knurr | 0.000835 | 4.67E-06 | 0.05207 | 0.000258 | 0.281827 | 3.92E-05 | 1.467036 | 8.03E-05 | 1.88699 | 0.000107 | 1580 | 51 | 0.82 | 2.52 | 1543 | 1916 | |
| NEZ5.025 | Knurr | 0.002133 | 8.62E-06 | 0.100902 | 0.00192 | 0.281489 | 6.71E-05 | 1.467071 | 0.000128 | 1.887033 | 0.000128 | 1829 | 29 | -7.22 | 2.99 | 2163 | 2442 | |
| NEZ5.033 | Knurr | 0.000866 | 1.23E-05 | 0.04182 | 0.000539 | 0.281323 | 0.000059 | 1.467062 | 0.000136 | 1.886724 | 0.000138 | 1877 | 44 | -10.46 | 3.05 | 2341 | 2581 | |
| NEZ5.129 | Knurr | 0.000411 | 4.86E-07 | 0.025594 | 0.000184 | 0.281123 | 3.68E-05 | 1.467086 | 8.53E-05 | 1.886965 | 0.000103 | 1898 | 22 | -16.51 | 1.81 | 2617 | 2810 | |
| NEZ5.067 | Knurr | 0.000544 | 6.85E-07 | 0.032443 | 0.000274 | 0.281551 | 3.93E-05 | 1.466963 | 8.13E-05 | 1.886931 | 0.000104 | 1931 | 23 | -0.73 | 1.92 | 1963 | 2264 | |
| NEZ5.049 | Knurr | 0.000544 | 1.71E-06 | 0.031518 | 0.000172 | 0.28161 | 4.37E-05 | 1.467074 | 8.16E-05 | 1.887065 | 9.08E-05 | 1934 | 29 | 1.43 | 2.21 | 1871 | 2187 | |
| NEZ5.023 | Knurr | 0.000669 | 4.31E-06 | 0.03783 | 0.000228 | 0.281575 | 5.02E-05 | 1.467143 | 8.87E-05 | 1.886869 | 0.000127 | 1972 | 46 | 0.88 | 2.81 | 1933 | 2240 | |
| NEZ5.125 | Knurr | 0.001146 | 3.31E-06 | 0.073564 | 0.000369 | 0.281622 | 4.75E-05 | 1.467031 | 8.49E-05 | 1.887231 | 0.000107 | 1972 | 28 | 1.92 | 2.30 | 1886 | 2204 | |
| NEZ5.146 | Knurr | 0.000727 | 6.46E-06 | 0.046756 | 0.000307 | 0.280991 | 0.000042 | 1.467109 | 8.18E-05 | 1.886882 | 0.000104 | 2484 | 25 | -8.31 | 2.04 | 2846 | 3003 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ5.086 | Knurr | 0.000521 | 2.3E-06 | 0.029243 | 0.000321 | 0.281229 | 3.58E-05 | 1.467161 | 9.16E-05 | 1.887085 | 9.43E-05 | 2509 | 31 | 1.08 | 1.98 | 2462 | 2681 | |
| NEZ5.100 | Knurr | 0.000791 | 7.49E-06 | 0.039554 | 0.000653 | 0.28088 | 4.41E-05 | 1.466993 | 0.000124 | 1.887041 | 0.000125 | 2556 | 22 | -10.73 | 2.04 | 3023 | 3152 | |
| NEZ5.022 | Knurr | 0.000332 | 4.64E-07 | 0.019796 | 0.000127 | 0.280977 | 3.73E-05 | 1.467077 | 0.000088 | 1.88692 | 0.00011 | 2584 | 35 | -5.82 | 2.14 | 2834 | 2992 | |
| NEZ5.070 | Knurr | 0.001957 | 5.96E-06 | 0.151347 | 0.00182 | 0.281202 | 7.02E-05 | 1.467162 | 0.000114 | 1.887007 | 0.000119 | 2660 | 21 | 1.01 | 2.94 | 2614 | 2815 | |
| NEZ5.057 | Knurr | 0.00029 | 1.54E-06 | 0.015382 | 7.66E-05 | 0.281055 | 3.88E-05 | 1.467132 | 8.28E-05 | 1.886956 | 0.000105 | 2706 | 31 | -0.14 | 2.10 | 2712 | 2889 | |
| NEZ5.095 | Knurr | 0.000374 | 8.48E-07 | 0.024871 | 0.000257 | 0.280594 | 3.71E-05 | 1.467084 | 8.99E-05 | 1.887055 | 0.000102 | 2811 | 21 | -14.28 | 1.81 | 3421 | 3484 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ6.145 | Knurr | 0.001944 | 2.59E-05 | 0.076741 | 0.0014 | 0.282334 | 5.74E-05 | 1.467198 | 0.000168 | 1.887204 | 0.000146 | 418 | 11 | -7.18 | 2.25 | 758 | 1277 | |
| NEZ6.138 | Knurr | 0.000813 | 5.41E-05 | 0.052316 | 0.00336 | 0.282114 | 4.54E-05 | 1.467096 | 7.53E-05 | 1.887021 | 9.57E-05 | 427 | 9 | -14.48 | 1.77 | 1086 | 1535 | |
| NEZ6.066 | Knurr | 0.001426 | 1.17E-05 | 0.058013 | 0.000574 | 0.282144 | 0.000085 | 1.467096 | 0.000202 | 1.886631 | 0.000206 | 454 | 9 | -12.98 | 3.19 | 1056 | 1517 | |
| NEZ6.110 | Knurr | 0.000576 | 0.00001 | 0.040178 | 0.000548 | 0.282296 | 3.74E-05 | 1.467086 | 8.38E-05 | 1.886799 | 9.15E-05 | 551 | 11 | -5.21 | 1.56 | 787 | 1283 | |
| NEZ6.040 | Knurr | 0.000579 | 5.56E-06 | 0.035884 | 0.000137 | 0.282511 | 3.88E-05 | 1.467101 | 8.88E-05 | 1.88701 | 0.000101 | 653 | 13 | 4.62 | 1.66 | 443 | 998 | |
| NEZ6.135 | Knurr | 0.001602 | 4.42E-05 | 0.099421 | 0.00389 | 0.282413 | 5.56E-05 | 1.467044 | 0.000119 | 1.887173 | 0.000159 | 677 | 12 | 1.25 | 2.19 | 618 | 1157 | |
| NEZ6.124 | Knurr | 0.000705 | 1.5E-06 | 0.041496 | 0.000202 | 0.282164 | 0.000042 | 1.467062 | 7.91E-05 | 1.886937 | 9.56E-05 | 996 | 17 | -0.14 | 1.86 | 1002 | 1464 | |
| NEZ6.078 | Knurr | 0.001168 | 8.14E-06 | 0.074421 | 0.000879 | 0.28221 | 0.000043 | 1.467089 | 6.73E-05 | 1.887324 | 8.63E-05 | 1022 | 48 | 1.75 | 2.56 | 942 | 1420 | |
| NEZ6.142 | Knurr | 0.002178 | 1.61E-05 | 0.144456 | 0.000728 | 0.282023 | 5.74E-05 | 1.46689 | 9.57E-05 | 1.887006 | 0.000138 | 1029 | 32 | -5.42 | 2.69 | 1284 | 1715 | |
| NEZ6.004 | Knurr | 0.000515 | 2.45E-06 | 0.03261 | 0.00045 | 0.282119 | 4.15E-05 | 1.467129 | 8.49E-05 | 1.886804 | 0.000103 | 1040 | 100 | -0.63 | 3.70 | 1068 | 1517 | |
| NEZ6.015 | Knurr | 0.000526 | 1.29E-06 | 0.033512 | 0.000345 | 0.282213 | 4.56E-05 | 1.467023 | 7.51E-05 | 1.887029 | 0.000103 | 1052 | 57 | 2.96 | 2.89 | 919 | 1393 | |
| NEZ6.055 | Knurr | 0.000553 | 2.77E-06 | 0.034015 | 0.000479 | 0.28218 | 3.91E-05 | 1.467022 | 7.68E-05 | 1.886917 | 0.000109 | 1066 | 63 | 2.11 | 2.79 | 971 | 1437 | |
| NEZ6.017 | Knurr | 0.001172 | 0.000014 | 0.072249 | 0.000574 | 0.282185 | 3.53E-05 | 1.467167 | 7.33E-05 | 1.887052 | 9.69E-05 | 1070 | 32 | 1.92 | 1.93 | 982 | 1453 | |
| NEZ6.054 | Knurr | 0.001002 | 3.07E-06 | 0.062615 | 0.000326 | 0.282292 | 4.34E-05 | 1.467123 | 7.46E-05 | 1.88697 | 0.00011 | 1102 | 31 | 6.56 | 2.22 | 803 | 1303 | |
| NEZ6.082 | Knurr | 0.000719 | 5.75E-06 | 0.043449 | 6.33E-05 | 0.282039 | 3.78E-05 | 1.467043 | 7.35E-05 | 1.886923 | 9.98E-05 | 1103 | 35 | -2.20 | 2.11 | 1202 | 1631 | |
| NEZ6.006 | Knurr | 0.001408 | 8.76E-06 | 0.056177 | 0.000843 | 0.281923 | 3.29E-05 | 1.467157 | 7.22E-05 | 1.886923 | 7.24E-05 | 1292 | 28 | -2.70 | 1.76 | 1416 | 1816 | |
| NEZ6.030 | Knurr | 0.000611 | 1.04E-06 | 0.041235 | 0.000355 | 0.282008 | 3.74E-05 | 1.467119 | 0.00008 | 1.886947 | 0.000098 | 1305 | 33 | 1.30 | 2.06 | 1247 | 1667 | |
| NEZ6.115 | Knurr | 0.001284 | 1.77E-05 | 0.066022 | 0.000439 | 0.282164 | 4.96E-05 | 1.466825 | 0.00011 | 1.886969 | 0.000127 | 1312 | 26 | 6.41 | 2.30 | 1019 | 1485 | |
| NEZ6.042 | Knurr | 0.000887 | 1.89E-06 | 0.056075 | 0.00035 | 0.2819 | 3.39E-05 | 1.467128 | 6.82E-05 | 1.887125 | 8.34E-05 | 1468 | 35 | 0.87 | 1.98 | 1429 | 1822 | |
| NEZ6.002 | Knurr | 0.001183 | 4.02E-06 | 0.074399 | 0.000446 | 0.282003 | 4.79E-05 | 1.467034 | 7.02E-05 | 1.886993 | 9.66E-05 | 1470 | 26 | 4.24 | 2.27 | 1277 | 1698 | |
| NEZ6.080 | Knurr | 0.00091 | 1.73E-06 | 0.053505 | 0.000288 | 0.281906 | 3.72E-05 | 1.467116 | 7.84E-05 | 1.886954 | 7.86E-05 | 1470 | 37 | 1.09 | 2.14 | 1421 | 1815 | |
| NEZ6.143 | Knurr | 0.000859 | 1.18E-05 | 0.054467 | 0.00116 | 0.28186 | 5.12E-05 | 1.466846 | 8.63E-05 | 1.887186 | 0.000132 | 1488 | 33 | -0.10 | 2.53 | 1493 | 1874 | |
| NEZ6.026 | Knurr | 0.001477 | 1.34E-05 | 0.092451 | 0.0013 | 0.281767 | 5.37E-05 | 1.4668 | 9.19E-05 | 1.886996 | 0.00011 | 1497 | 34 | -3.80 | 2.62 | 1671 | 2028 | |
| NEZ6.144 | Knurr | 0.001074 | 9.06E-06 | 0.061032 | 0.000172 | 0.281884 | 4.55E-05 | 1.467142 | 7.52E-05 | 1.887142 | 0.000118 | 1502 | 42 | 0.84 | 2.53 | 1464 | 1852 | |
| NEZ6.148 | Knurr | 0.001241 | 8.18E-06 | 0.055925 | 0.000882 | 0.282057 | 5.57E-05 | 1.466999 | 0.000111 | 1.886874 | 0.000142 | 1508 | 39 | 6.95 | 2.82 | 1192 | 1628 | |
| NEZ6.088 | Knurr | 0.000807 | 1.53E-06 | 0.043974 | 0.000328 | 0.281934 | 3.77E-05 | 1.467064 | 6.92E-05 | 1.887057 | 9.31E-05 | 1514 | 49 | 3.16 | 2.43 | 1373 | 1774 | |
| NEZ6.083 | Knurr | 0.000586 | 1.48E-06 | 0.032059 | 0.000155 | 0.281839 | 3.26E-05 | 1.467068 | 6.93E-05 | 1.886931 | 0.000083 | 1570 | 30 | 1.27 | 1.83 | 1514 | 1889 | |
| NEZ6.091 | Knurr | 0.001674 | 8.34E-06 | 0.098951 | 0.000303 | 0.281789 | 4.49E-05 | 1.467043 | 9.61E-05 | 1.88708 | 9.55E-05 | 1585 | 37 | -1.34 | 2.38 | 1646 | 2010 | |
| NEZ6.053 | Knurr | 0.00046 | 9.3E-07 | 0.027503 | 0.000203 | 0.281538 | 3.94E-05 | 1.467232 | 7.17E-05 | 1.887321 | 0.000107 | 1768 | 31 | -4.80 | 2.10 | 1979 | 2276 | |
| NEZ6.059 | Knurr | 0.000648 | 8.27E-06 | 0.035432 | 0.000815 | 0.281714 | 3.69E-05 | 1.467005 | 7.49E-05 | 1.887051 | 0.000101 | 1811 | 23 | 2.21 | 1.81 | 1713 | 2056 | |
| NEZ6.149 | Knurr | 0.001021 | 7.7E-06 | 0.075198 | 0.00115 | 0.281579 | 4.89E-05 | 1.467059 | 0.000113 | 1.887011 | 0.000139 | 1871 | 25 | -1.72 | 2.28 | 1948 | 2255 | |
| NEZ6.025 | Knurr | 0.001254 | 0.000012 | 0.068029 | 0.000226 | 0.281609 | 0.000038 | 1.466954 | 0.000087 | 1.887051 | 0.000105 | 1877 | 28 | -0.78 | 1.94 | 1912 | 2227 | |
| NEZ6.084 | Knurr | 0.000684 | 2.27E-06 | 0.038353 | 0.000323 | 0.281556 | 3.61E-05 | 1.46698 | 7.16E-05 | 1.887004 | 9.82E-05 | 1939 | 24 | -0.56 | 1.82 | 1964 | 2266 | |
| NEZ6.139 | Knurr | 0.002361 | 3.18E-05 | 0.127206 | 0.00259 | 0.281629 | 5.46E-05 | 1.466913 | 0.000094 | 1.88732 | 0.000116 | 1941 | 22 | -0.11 | 2.33 | 1946 | 2264 | |
| NEZ6.116 | Knurr | 0.00114 | 2.11E-05 | 0.083183 | 0.00221 | 0.281319 | 5.59E-05 | 1.467209 | 0.000124 | 1.886808 | 0.000126 | 2644 | 24 | 6.27 | 2.46 | 2366 | 2604 | |
| NEZ6.023 | Knurr | 0.000284 | 5.14E-07 | 0.017663 | 0.000127 | 0.280701 | 4.15E-05 | 1.466915 | 7.91E-05 | 1.887017 | 0.000102 | 2645 | 39 | -14.14 | 2.38 | 3250 | 3340 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ6.085 | Knurr | 0.000315 | 2.88E-06 | 0.018567 | 0.000346 | 0.280964 | 2.91E-05 | 1.467151 | 7.13E-05 | 1.887057 | 8.63E-05 | 2748 | 22 | -2.44 | 1.54 | 2853 | 3007 | |
| NEZ6.027 | Knurr | 0.000333 | 7.04E-07 | 0.018513 | 0.000118 | 0.280823 | 3.82E-05 | 1.467078 | 8.01E-05 | 1.887055 | 8.86E-05 | 2768 | 21 | -7.04 | 1.85 | 3069 | 3189 | |
| NEZ6.123 | Knurr | 0.000475 | 5.8E-06 | 0.026972 | 0.000474 | 0.280991 | 3.34E-05 | 1.467007 | 7.84E-05 | 1.886788 | 9.18E-05 | 2805 | 23 | -0.45 | 1.70 | 2824 | 2984 | |
| NEZ6.137 | Knurr | 0.000826 | 7.86E-06 | 0.050153 | 0.000541 | 0.280963 | 3.55E-05 | 1.467004 | 6.71E-05 | 1.887005 | 8.95E-05 | 2816 | 35 | -1.86 | 2.04 | 2897 | 3046 | |
| NEZ6.007 | Knurr | 0.000883 | 3.32E-05 | 0.055811 | 0.00238 | 0.280878 | 4.57E-05 | 1.467055 | 7.56E-05 | 1.887182 | 0.000102 | 2934 | 24 | -2.33 | 2.04 | 3035 | 3162 | |
| NEZ7.100 | Knurr | 0.000927 | 1.67E-06 | 0.054843 | 0.000561 | 0.282649 | 4.97E-05 | 1.467149 | 0.000117 | 1.886821 | 0.000129 | 239 | 7 | 0.35 | 1.91 | 223 | 820 | |
| NEZ7.064 | Knurr | 0.001436 | 9.75E-06 | 0.071772 | 0.00108 | 0.282099 | 4.62E-05 | 1.4671 | 0.000127 | 1.887327 | 0.000127 | 391 | 12 | -15.94 | 1.89 | 1130 | 1579 | |
| NEZ7.046 | Knurr | 0.00036 | 3.07E-06 | 0.01902 | 0.000326 | 0.282581 | 3.83E-05 | 1.467124 | 0.000115 | 1.886999 | 0.000116 | 396 | 10 | 1.52 | 1.58 | 327 | 898 | |
| NEZ7.095 | Knurr | 0.001122 | 1.12E-05 | 0.076275 | 0.0011 | 0.282242 | 4.27E-05 | 1.467056 | 9.64E-05 | 1.887383 | 0.000086 | 422 | 12 | -10.13 | 1.76 | 888 | 1375 | |
| NEZ7.073 | Knurr | 0.000815 | 1.66E-05 | 0.061033 | 0.000908 | 0.282198 | 0.000038 | 1.467074 | 0.000105 | 1.887047 | 0.000107 | 429 | 13 | -11.46 | 1.62 | 951 | 1423 | |
| NEZ7.080 | Knurr | 0.00081 | 1.03E-06 | 0.053711 | 0.000511 | 0.28242 | 4.05E-05 | 1.467118 | 0.000106 | 1.887258 | 0.000123 | 542 | 17 | -1.11 | 1.81 | 593 | 1125 | |
| NEZ7.105 | Knurr | 0.000698 | 2.92E-06 | 0.047629 | 0.000528 | 0.282404 | 6.02E-05 | 1.467103 | 0.000179 | 1.887102 | 0.000172 | 815 | 37 | 4.37 | 2.95 | 617 | 1144 | |
| NEZ7.018 | Knurr | 0.000592 | 2.35E-06 | 0.035436 | 0.00012 | 0.2821 | 4.92E-05 | 1.467167 | 0.000113 | 1.887095 | 0.000133 | 957 | 25 | -3.19 | 2.30 | 1100 | 1545 | |
| NEZ7.110 | Knurr | 0.000535 | 1.93E-06 | 0.034506 | 0.000423 | 0.282081 | 5.15E-05 | 1.467156 | 0.000135 | 1.887167 | 0.000156 | 985 | 28 | -3.22 | 2.45 | 1129 | 1568 | |
| NEZ7.079 | Knurr | 0.000555 | 1.34E-06 | 0.035234 | 0.00036 | 0.282148 | 3.77E-05 | 1.467135 | 0.000104 | 1.886906 | 0.000107 | 997 | 28 | -0.56 | 1.96 | 1022 | 1479 | |
| NEZ7.003 | Knurr | 0.000816 | 1.79E-05 | 0.041496 | 0.00022 | 0.282094 | 4.04E-05 | 1.467239 | 0.000133 | 1.887016 | 0.000115 | 999 | 24 | -2.62 | 1.94 | 1117 | 1561 | |
| NEZ7.089 | Knurr | 0.000498 | 4.65E-06 | 0.0324 | 0.00019 | 0.282073 | 4.86E-05 | 1.467 | 0.000131 | 1.887126 | 0.000137 | 1064 | 46 | -1.71 | 2.74 | 1140 | 1577 | |
| NEZ7.104 | Knurr | 0.000572 | 2.07E-06 | 0.036348 | 0.000294 | 0.282223 | 4.96E-05 | 1.467144 | 0.000111 | 1.88711 | 0.00013 | 1096 | 56 | 4.30 | 3.01 | 903 | 1380 | |
| NEZ7.085 | Knurr | 0.000627 | 1.86E-06 | 0.038194 | 8.95E-05 | 0.282152 | 4.58E-05 | 1.466856 | 0.000124 | 1.886857 | 0.000141 | 1105 | 49 | 1.92 | 2.71 | 1019 | 1477 | |
| NEZ7.076 | Knurr | 0.001084 | 6.22E-06 | 0.073698 | 0.000219 | 0.282122 | 5.02E-05 | 1.467112 | 0.000122 | 1.886808 | 0.000119 | 1140 | 49 | 1.29 | 2.85 | 1081 | 1534 | |
| NEZ7.070 | Knurr | 0.001957 | 4.04E-05 | 0.092133 | 0.00103 | 0.282144 | 5.71E-05 | 1.467071 | 0.000144 | 1.886642 | 0.000158 | 1189 | 66 | 2.44 | 3.37 | 1075 | 1539 | |
| NEZ7.106 | Knurr | 0.00045 | 3.05E-07 | 0.027639 | 0.000241 | 0.282129 | 5.32E-05 | 1.466999 | 0.00013 | 1.886861 | 0.000126 | 1189 | 59 | 3.14 | 3.21 | 1049 | 1500 | |
| NEZ7.054 | Knurr | 0.001035 | 9.44E-06 | 0.064787 | 0.00013 | 0.282105 | 4.88E-05 | 1.46732 | 0.000129 | 1.887258 | 0.00014 | 1250 | 70 | 3.16 | 3.26 | 1107 | 1555 | |
| NEZ7.063 | Knurr | 0.000713 | 3.3E-06 | 0.037879 | 0.000549 | 0.281828 | 3.47E-05 | 1.467026 | 0.000117 | 1.88704 | 0.000113 | 1267 | 47 | -6.01 | 2.27 | 1536 | 1909 | |
| NEZ7.067 | Knurr | 0.00068 | 1.38E-06 | 0.042127 | 0.00033 | 0.281912 | 4.74E-05 | 1.466991 | 0.000123 | 1.887048 | 0.000134 | 1317 | 55 | -1.90 | 2.91 | 1402 | 1797 | |
| NEZ7.066 | Knurr | 0.00069 | 4.04E-07 | 0.043964 | 0.000347 | 0.281984 | 4.73E-05 | 1.46705 | 0.000126 | 1.886898 | 0.000126 | 1433 | 47 | 3.22 | 2.73 | 1289 | 1703 | |
| NEZ7.113 | Knurr | 0.000735 | 7.89E-06 | 0.047328 | 0.00109 | 0.281889 | 4.97E-05 | 1.466989 | 0.000136 | 1.887082 | 0.000155 | 1440 | 40 | -0.01 | 2.64 | 1441 | 1830 | |
| NEZ7.010 | Knurr | 0.00132 | 3.36E-06 | 0.070363 | 0.000474 | 0.282033 | 4.61E-05 | 1.467 | 0.000112 | 1.887015 | 0.000108 | 1481 | 61 | 5.41 | 2.97 | 1234 | 1664 | |
| NEZ7.047 | Knurr | 0.000978 | 6.99E-06 | 0.061271 | 0.0003 | 0.281919 | 4.94E-05 | 1.466971 | 0.00013 | 1.887139 | 0.000121 | 1482 | 67 | 1.76 | 3.23 | 1403 | 1801 | |
| NEZ7.017 | Knurr | 0.000572 | 4.37E-07 | 0.034821 | 0.000298 | 0.28159 | 3.84E-05 | 1.467099 | 0.000105 | 1.887057 | 0.000112 | 1490 | 64 | -9.34 | 2.80 | 1904 | 2214 | |
| NEZ7.088 | Knurr | 0 | 0 | 0 | 0 | -0.007594 | -0.008326 | -0.007622 | -0.008333 | -0.007654 | -0.008191 | 1492 | 41 | ####### | 295.48 | 121379 | 113282 | Lost |
| NEZ7.027 | Knurr | 0.000854 | 5.33E-06 | 0.054197 | 0.000589 | 0.281959 | 4.35E-05 | 1.467049 | 0.000112 | 1.886975 | 0.000114 | 1516 | 82 | 4.03 | 3.36 | 1335 | 1743 | |
| NEZ7.023 | Knurr | 0.000858 | 1.38E-06 | 0.053619 | 0.000371 | 0.281912 | 3.67E-05 | 1.467095 | 9.97E-05 | 1.886939 | 0.00011 | 1520 | 61 | 2.47 | 2.66 | 1409 | 1805 | |
| NEZ7.096 | Knurr | 0.00183 | 6.8E-06 | 0.113735 | 0.00135 | 0.28177 | 6.42E-05 | 1.467018 | 0.000122 | 1.88712 | 0.000133 | 1595 | 46 | -1.94 | 3.26 | 1684 | 2043 | |
| NEZ7.016 | Knurr | 0.00095 | 1.64E-06 | 0.058281 | 0.000464 | 0.281842 | 4.61E-05 | 1.467166 | 0.000129 | 1.886954 | 0.000118 | 1597 | 75 | 1.58 | 3.31 | 1526 | 1903 | |
| NEZ7.055 | Knurr | 0.001503 | 3.36E-06 | 0.095957 | 0.000756 | 0.281817 | 4.49E-05 | 1.467151 | 0.000104 | 1.887021 | 0.000101 | 1675 | 62 | 1.84 | 2.95 | 1591 | 1962 | |
| NEZ7.098 | Knurr | 0.000562 | 2.08E-06 | 0.034696 | 0.00039 | 0.28178 | 6.03E-05 | 1.467105 | 0.000133 | 1.886776 | 0.000134 | 1675 | 48 | 1.57 | 3.22 | 1605 | 1965 | |
| NEZ7.120 | Knurr | 0.000967 | 2.27E-06 | 0.057909 | 0.000581 | 0.281857 | 5.17E-05 | 1.467055 | 0.000124 | 1.887158 | 0.000117 | 1688 | 40 | 4.16 | 2.72 | 1501 | 1883 | |
| NEZ7.042 | Knurr | 0.001295 | 5.76E-06 | 0.082303 | 0.000167 | 0.281749 | 4.63E-05 | 1.467134 | 9.56E-05 | 1.887129 | 0.000105 | 1776 | 62 | 1.87 | 3.00 | 1692 | 2044 | |
| NEZ7.084 | Knurr | 0.000898 | 8.18E-07 | 0.056294 | 0.000499 | 0.281726 | 5.51E-05 | 1.467006 | 0.000119 | 1.886971 | 0.000128 | 1778 | 44 | 1.57 | 2.94 | 1708 | 2054 | |
| NEZ7.057 | Knurr | 0.000591 | 1.41E-06 | 0.03737 | 0.000244 | 0.28138 | 4.72E-05 | 1.467121 | 0.000122 | 1.88694 | 0.000135 | 1839 | 53 | -8.96 | 2.87 | 2233 | 2490 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ7.007 | Knurr | 0.000196 | 1.51E-06 | 0.011177 | 9.11E-05 | 0.281267 | 3.07E-05 | 1.46704 | 0.00009 | 1.887156 | 0.000098 | 1870 | 61 | -11.77 | 2.48 | 2381 | 2611 | |
| NEZ7.012 | Knurr | 0.001017 | 8.67E-06 | 0.055604 | 0.000187 | 0.281552 | 2.98E-05 | 1.46709 | 0.000092 | 1.887084 | 0.000103 | 1932 | 63 | -1.28 | 2.45 | 1989 | 2289 | |
| NEZ7.009 | Knurr | 0.000962 | 3.85E-06 | 0.057236 | 0.000236 | 0.281645 | 4.04E-05 | 1.467103 | 9.69E-05 | 1.886863 | 0.000112 | 1935 | 60 | 2.15 | 2.77 | 1839 | 2164 | |
| NEZ7.052 | Knurr | 0.001565 | 9.74E-06 | 0.077904 | 0.000854 | 0.281631 | 4.72E-05 | 1.467249 | 0.000111 | 1.88696 | 0.000107 | 1978 | 59 | 1.81 | 2.95 | 1896 | 2216 | |
| NEZ7.074 | Knurr | 0.000735 | 1.28E-06 | 0.045869 | 0.000438 | 0.281624 | 4.63E-05 | 1.467119 | 0.000125 | 1.88723 | 0.000131 | 1985 | 43 | 2.82 | 2.61 | 1860 | 2179 | |
| NEZ7.053 | Knurr | 0.000427 | 2.15E-06 | 0.023524 | 0.000246 | 0.281076 | 3.08E-05 | 1.467029 | 9.88E-05 | 1.886954 | 9.58E-05 | 2343 | 58 | -8.02 | 2.42 | 2690 | 2871 | |
| NEZ7.093 | Knurr | 0.000677 | 5.73E-07 | 0.038394 | 0.000344 | 0.281157 | 3.57E-05 | 1.467192 | 0.000104 | 1.887233 | 0.000123 | 2638 | 36 | 1.23 | 2.10 | 2585 | 2784 | |
| NEZ7.059 | Knurr | 0.001675 | 4.91E-06 | 0.121355 | 0.00123 | 0.281101 | 0.00005 | 1.467107 | 9.05E-05 | 1.886951 | 9.93E-05 | 2736 | 40 | -0.39 | 2.65 | 2753 | 2930 | |
| NEZ7.092 | Knurr | 0.000336 | 1.39E-06 | 0.020088 | 0.000244 | 0.281001 | 3.87E-05 | 1.467219 | 0.00013 | 1.887185 | 0.000131 | 2789 | 36 | -0.22 | 2.21 | 2799 | 2962 | |
| NEZ7.101 | Knurr | 0.000826 | 4.78E-06 | 0.051036 | 0.000794 | 0.281112 | 6.16E-05 | 1.467062 | 0.000117 | 1.887078 | 0.000131 | 2798 | 37 | 3.02 | 3.02 | 2666 | 2853 | |
| NEZ7.090 | Knurr | 0.000659 | 3.85E-06 | 0.041116 | 0.000317 | 0.280915 | 4.46E-05 | 1.46703 | 0.000114 | 1.887011 | 0.000116 | 2808 | 35 | -3.47 | 2.38 | 2958 | 3096 | |
| NEZ7.050 | Knurr | 0.000967 | 8.32E-06 | 0.059967 | 0.000121 | 0.281112 | 5.66E-05 | 1.467075 | 0.00015 | 1.886794 | 0.000161 | 2927 | 57 | 5.71 | 3.29 | 2677 | 2863 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ8.091 | Knurr | 0.00111 | 5.49E-06 | 0.067299 | 0.000782 | 0.282365 | 6.65E-05 | 1.467065 | 0.000148 | 1.886809 | 0.000152 | 432 | 13 | -5.54 | 2.63 | 687 | 1208 | |
| NEZ8.035 | Knurr | 0.00141 | 5.58E-06 | 0.083813 | 0.000774 | 0.282377 | 7.59E-05 | 1.467042 | 0.000157 | 1.886976 | 0.000169 | 489 | 14 | -4.01 | 2.98 | 675 | 1202 | |
| NEZ8.072 | Knurr | 0.000555 | 1.13E-06 | 0.031691 | 0.00018 | 0.282745 | 5.21E-05 | 1.46709 | 0.00016 | 1.887479 | 0.000148 | 504 | 15 | 9.64 | 2.17 | 65 | 683 | |
| NEZ8.079 | Knurr | 0.002073 | 3.89E-05 | 0.139541 | 0.00258 | 0.282394 | 7.44E-05 | 1.466837 | 0.000109 | 1.886801 | 0.000143 | 527 | 15 | -2.80 | 2.92 | 660 | 1198 | |
| NEZ8.068 | Knurr | 0.001464 | 2.06E-06 | 0.10028 | 0.00089 | 0.282257 | 5.94E-05 | 1.466945 | 0.000126 | 1.887186 | 0.000112 | 880 | 26 | 0.16 | 2.66 | 872 | 1366 | |
| NEZ8.002 | Knurr | 0.000632 | 1.15E-06 | 0.040829 | 0.000354 | 0.282131 | 3.74E-05 | 1.466847 | 9.99E-05 | 1.887263 | 9.85E-05 | 957 | 28 | -2.12 | 1.95 | 1052 | 1505 | |
| NEZ8.003 | Knurr | 0.000808 | 6.08E-06 | 0.046928 | 0.000494 | 0.281962 | 3.82E-05 | 1.466877 | 9.75E-05 | 1.88692 | 9.16E-05 | 959 | 28 | -8.17 | 1.96 | 1328 | 1736 | |
| NEZ8.115 | Knurr | 0.001617 | 3.45E-05 | 0.104999 | 0.00203 | 0.281555 | 6.48E-05 | 1.466877 | 0.000125 | 1.887401 | 0.000146 | 966 | 30 | -22.96 | 2.90 | 2021 | 2320 | |
| NEZ8.058 | Knurr | 0.000517 | 4.27E-06 | 0.035286 | 0.000567 | 0.282156 | 5.81E-05 | 1.467132 | 0.000165 | 1.886887 | 0.000148 | 1000 | 31 | -0.21 | 2.75 | 1009 | 1468 | |
| NEZ8.062 | Knurr | 0.000551 | 1.34E-06 | 0.036283 | 0.00019 | 0.282052 | 5.71E-05 | 1.467134 | 0.000141 | 1.887281 | 0.00015 | 1005 | 62 | -3.81 | 3.40 | 1176 | 1607 | |
| NEZ8.100 | Knurr | 0.000542 | 5.25E-06 | 0.03365 | 0.000651 | 0.282255 | 5.02E-05 | 1.467238 | 0.000128 | 1.887117 | 0.000135 | 1049 | 70 | 4.38 | 3.34 | 852 | 1338 | |
| NEZ8.053 | Knurr | 0.001228 | 1.28E-06 | 0.073708 | 0.000472 | 0.28205 | 5.43E-05 | 1.467045 | 0.000131 | 1.88714 | 0.000125 | 1054 | 44 | -3.24 | 2.88 | 1202 | 1636 | |
| NEZ8.039 | Knurr | 0.000813 | 3.06E-06 | 0.057378 | 0.000172 | 0.282251 | 5.75E-05 | 1.467003 | 0.000139 | 1.887277 | 0.000144 | 1075 | 61 | 4.61 | 3.39 | 866 | 1352 | |
| NEZ8.049 | Knurr | 0.000706 | 7.82E-06 | 0.04619 | 0.000198 | 0.282086 | 0.000055 | 1.46698 | 0.000136 | 1.887222 | 0.000144 | 1076 | 55 | -1.12 | 3.16 | 1126 | 1568 | |
| NEZ8.051 | Knurr | 0.000977 | 6.05E-06 | 0.06226 | 0.000162 | 0.281851 | 6.72E-05 | 1.467079 | 0.000169 | 1.887135 | 0.000165 | 1076 | 55 | -9.63 | 3.58 | 1511 | 1891 | |
| NEZ8.057 | Knurr | 0.000627 | 1.06E-06 | 0.041391 | 0.000239 | 0.282095 | 5.62E-05 | 1.467114 | 0.000171 | 1.887122 | 0.00019 | 1108 | 45 | -0.04 | 2.99 | 1110 | 1553 | |
| NEZ8.037 | Knurr | 0.000793 | 4.42E-06 | 0.048713 | 0.000755 | 0.282157 | 6.56E-05 | 1.467395 | 0.000176 | 1.886898 | 0.000166 | 1158 | 54 | 3.16 | 3.52 | 1016 | 1476 | |
| NEZ8.099 | Knurr | 0.000904 | 4.63E-07 | 0.061263 | 0.000462 | 0.282288 | 5.69E-05 | 1.466992 | 0.000121 | 1.887185 | 0.000129 | 1270 | 59 | 10.18 | 3.33 | 809 | 1306 | |
| NEZ8.054 | Knurr | 0.001047 | 1.57E-05 | 0.068452 | 0.00116 | 0.282129 | 6.32E-05 | 1.466942 | 0.000153 | 1.886921 | 0.000165 | 1272 | 70 | 4.47 | 3.76 | 1069 | 1524 | |
| NEZ8.052 | Knurr | 0.001415 | 4.82E-06 | 0.089419 | 0.000785 | 0.281809 | 5.64E-05 | 1.467137 | 0.000121 | 1.887126 | 0.00013 | 1362 | 42 | -5.23 | 2.91 | 1601 | 1969 | |
| NEZ8.021 | Knurr | 0.000969 | 9.23E-06 | 0.055883 | 0.000786 | 0.281958 | 5.22E-05 | 1.467013 | 0.000104 | 1.887174 | 0.000145 | 1466 | 47 | 2.79 | 2.88 | 1340 | 1748 | |
| NEZ8.077 | Knurr | 0.001784 | 2.72E-06 | 0.123576 | 0.000651 | 0.281801 | 7.06E-05 | 1.467114 | 0.000146 | 1.887101 | 0.000147 | 1489 | 45 | -3.11 | 3.47 | 1632 | 1999 | |
| NEZ8.014 | Knurr | 0.000636 | 1.07E-06 | 0.040406 | 0.000381 | 0.281863 | 4.43E-05 | 1.46707 | 0.000116 | 1.887173 | 0.000118 | 1501 | 43 | 0.51 | 2.54 | 1478 | 1860 | |
| NEZ8.010 | Knurr | 0.000472 | 0.000001 | 0.026176 | 0.000272 | 0.281934 | 4.01E-05 | 1.466971 | 0.000129 | 1.887159 | 0.000133 | 1507 | 50 | 3.34 | 2.55 | 1359 | 1759 | |
| NEZ8.055 | Knurr | 0.001246 | 3.97E-06 | 0.073227 | 0.00081 | 0.28213 | 6.23E-05 | 1.467005 | 0.000148 | 1.887273 | 0.000146 | 1513 | 53 | 9.64 | 3.37 | 1074 | 1530 | |
| NEZ8.009 | Knurr | 0.001289 | 1.01E-05 | 0.081601 | 0.000222 | 0.281988 | 5.63E-05 | 1.467172 | 0.000126 | 1.887215 | 0.000134 | 1517 | 43 | 4.66 | 2.92 | 1305 | 1723 | |
| NEZ8.046 | Knurr | 0.002327 | 2.91E-05 | 0.155821 | 0.00258 | 0.281889 | 6.63E-05 | 1.467154 | 0.000113 | 1.887155 | 0.000119 | 1530 | 48 | 0.37 | 3.32 | 1513 | 1906 | |
| NEZ8.083 | Knurr | 0.001117 | 3.68E-06 | 0.062544 | 0.000235 | 0.281927 | 6.86E-05 | 1.466897 | 0.000165 | 1.887168 | 0.000159 | 1544 | 47 | 3.25 | 3.47 | 1397 | 1797 | |
| NEZ8.105 | Knurr | 0.000812 | 4.79E-06 | 0.05191 | 0.000202 | 0.281868 | 4.57E-05 | 1.466983 | 0.000121 | 1.887156 | 0.000131 | 1545 | 59 | 1.49 | 2.93 | 1478 | 1862 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ8.119 | Knurr | 0.000595 | 9.41E-07 | 0.038638 | 0.000277 | 0.281727 | 0.00004 | 1.466995 | 0.000107 | 1.887408 | 0.000106 | 1569 | 53 | -2.72 | 2.61 | 1690 | 2036 | |
| NEZ8.047 | Knurr | 0.000898 | 5.5E-06 | 0.059256 | 0.000756 | 0.28189 | 5.68E-05 | 1.46696 | 0.000133 | 1.887067 | 0.000136 | 1583 | 45 | 3.05 | 3.01 | 1446 | 1836 | |
| NEZ8.032 | Knurr | 0.001506 | 4.46E-06 | 0.094942 | 0.000693 | 0.282054 | 7.34E-05 | 1.466986 | 0.000132 | 1.887172 | 0.000147 | 1608 | 40 | 8.78 | 3.47 | 1206 | 1642 | |
| NEZ8.120 | Knurr | | | | | | | | | | | 1673 | 63 | ####### | 0.00 | | | |
| NEZ8.104 | Knurr | 0.001459 | 4.49E-06 | 0.089379 | 0.000886 | 0.281773 | 5.66E-05 | 1.467046 | 0.000113 | 1.887084 | 0.000127 | 1674 | 54 | 0.30 | 3.19 | 1660 | 2019 | |
| NEZ8.008 | Knurr | 0.000345 | 1.53E-06 | 0.021628 | 0.000289 | 0.282129 | 4.97E-05 | 1.467016 | 0.000132 | 1.887036 | 0.00014 | 1700 | 43 | 14.77 | 2.74 | 1047 | 1497 | |
| NEZ8.096 | Knurr | 0.000417 | 2.54E-06 | 0.024313 | 0.00033 | 0.281687 | 4.48E-05 | 1.467077 | 0.000121 | 1.887223 | 0.000129 | 1826 | 51 | 1.86 | 2.75 | 1744 | 2080 | |
| NEZ8.025 | Knurr | 0.000661 | 9.28E-06 | 0.043088 | 0.00093 | 0.281686 | 5.17E-05 | 1.466992 | 0.000131 | 1.887226 | 0.000139 | 1835 | 41 | 1.73 | 2.74 | 1758 | 2094 | |
| NEZ8.065 | Knurr | 0.000987 | 1.33E-06 | 0.056173 | 0.000517 | 0.281691 | 4.43E-05 | 1.467042 | 0.000116 | 1.88735 | 0.000125 | 1854 | 39 | 1.92 | 2.44 | 1768 | 2105 | |
| NEZ8.094 | Knurr | 0.000634 | 5.92E-06 | 0.040119 | 0.000686 | 0.281352 | 5.84E-05 | 1.466877 | 0.000122 | 1.887096 | 0.00015 | 1882 | 51 | -9.01 | 3.21 | 2278 | 2528 | |
| NEZ8.038 | Knurr | 0.00042 | 3.46E-06 | 0.029059 | 0.000445 | 0.281578 | 3.39E-05 | 1.466984 | 0.000109 | 1.88713 | 0.000106 | 1890 | 37 | -0.56 | 2.04 | 1914 | 2222 | |
| NEZ8.063 | Knurr | 0.000341 | 2.04E-06 | 0.022171 | 0.000293 | 0.2815 | 4.08E-05 | 1.467042 | 9.82E-05 | 1.887253 | 0.000115 | 1890 | 42 | -3.20 | 2.40 | 2030 | 2318 | |
| NEZ8.019 | Knurr | 0.000597 | 3.12E-06 | 0.036808 | 0.000399 | 0.281534 | 0.000051 | 1.467031 | 0.000153 | 1.886923 | 0.00015 | 1945 | 41 | -1.08 | 2.73 | 1993 | 2289 | |
| NEZ8.016 | Knurr | 0.000743 | 2.45E-06 | 0.04905 | 0.00044 | 0.281555 | 4.99E-05 | 1.466838 | 0.000128 | 1.887159 | 0.000118 | 1984 | 42 | 0.35 | 2.72 | 1968 | 2270 | |
| NEZ8.093 | Knurr | 0.00057 | 1.23E-06 | 0.038515 | 0.000222 | 0.281528 | 5.21E-05 | 1.467172 | 0.000156 | 1.887261 | 0.000139 | 2018 | 55 | 0.40 | 3.10 | 2000 | 2295 | |
| NEZ8.089 | Knurr | 0.000636 | 4.8E-06 | 0.036698 | 8.18E-05 | 0.281468 | 4.77E-05 | 1.467177 | 0.000126 | 1.886934 | 0.000133 | 2070 | 48 | -0.66 | 2.77 | 2099 | 2378 | |
| NEZ8.024 | Knurr | 0.000559 | 1.05E-06 | 0.029832 | 0.000241 | 0.28121 | 4.93E-05 | 1.467026 | 0.000136 | 1.887167 | 0.000147 | 2514 | 38 | 0.45 | 2.62 | 2494 | 2708 | |
| NEZ8.040 | Knurr | 0.000517 | 8.78E-06 | 0.033084 | 0.000566 | 0.280964 | 4.64E-05 | 1.467114 | 0.000128 | 1.887414 | 0.00014 | 2715 | 35 | -3.60 | 2.43 | 2870 | 3022 | |
| NEZ8.022 | Knurr | 0.000417 | 1.4E-06 | 0.026563 | 0.000122 | 0.281021 | 4.01E-05 | 1.466935 | 0.000123 | 1.88713 | 0.00013 | 2725 | 36 | -1.13 | 2.26 | 2774 | 2941 | |
| NEZ8.066 | Knurr | 0.00079 | 6.82E-06 | 0.051043 | 0.00067 | 0.281014 | 6.31E-05 | 1.467302 | 0.000162 | 1.88699 | 0.000161 | 2725 | 36 | -2.08 | 3.05 | 2815 | 2978 | |
| NEZ8.108 | Knurr | 0.000452 | 2.92E-06 | 0.029938 | 0.000368 | 0.28103 | 4.25E-05 | 1.466898 | 0.000113 | 1.887232 | 0.000127 | 2766 | 47 | 0.07 | 2.59 | 2763 | 2932 | |
| NEZ8.073 | Knurr | 0.000868 | 6.61E-06 | 0.053552 | 0.00118 | 0.281093 | 6.01E-05 | 1.467141 | 0.000177 | 1.886909 | 0.000157 | 2816 | 35 | 2.66 | 2.92 | 2700 | 2881 | |
| NEZ8.017 | Knurr | 0.000977 | 3.89E-06 | 0.064048 | 0.000369 | 0.280944 | 6.46E-05 | 1.467085 | 0.000142 | 1.887186 | 0.000143 | 2841 | 42 | -2.28 | 3.24 | 2941 | 3083 | |
| NEZ8.092 | Knurr | 0.000536 | 5.36E-06 | 0.033987 | 0.000482 | 0.281023 | 5.69E-05 | 1.467062 | 0.000142 | 1.886729 | 0.000167 | 2854 | 46 | 1.67 | 3.07 | 2782 | 2948 | |
| NEZ8.067 | Knurr | 0.000717 | 1.79E-06 | 0.044573 | 0.000432 | 0.281023 | 5.83E-05 | 1.467112 | 0.000157 | 1.887034 | 0.000158 | 2856 | 38 | 1.38 | 2.94 | 2796 | 2961 | |
| NEZ8.064 | Knurr | 0.000741 | 1.08E-05 | 0.051773 | 0.000593 | 0.280694 | 4.73E-05 | 1.466928 | 0.000129 | 1.887044 | 0.000124 | 2889 | 39 | -9.60 | 2.54 | 3304 | 3386 | |
| | | | | | | | | | | | | | | | | | | |
| NEZ9.018 | Knurr | 0.001905 | 6.53E-06 | 0.129052 | 0.000519 | 0.282848 | 6.69E-05 | 1.467054 | 0.000135 | 1.887125 | 0.000142 | 243 | 8 | 7.32 | 2.53 | -106 | 564 | |
| NEZ9.019 | Knurr | 0.000914 | 1.16E-05 | 0.055948 | 0.00074 | 0.282758 | 5.32E-05 | 1.467102 | 0.000122 | 1.88701 | 0.00012 | 361 | 12 | 6.86 | 2.14 | 45 | 672 | |
| NEZ9.040 | Knurr | 0.002529 | 9.99E-06 | 0.166805 | 0.000783 | 0.282577 | 8.44E-05 | 1.466982 | 0.000124 | 1.887147 | 0.00015 | 422 | 13 | 1.33 | 3.25 | 358 | 956 | |
| NEZ9.073 | Knurr | 0.001454 | 0.000009 | 0.088613 | 0.00109 | 0.282265 | 6.04E-05 | 1.467104 | 0.000113 | 1.887265 | 0.000136 | 422 | 14 | -9.40 | 2.43 | 859 | 1355 | |
| NEZ9.086 | Knurr | 0.000911 | 1.15E-05 | 0.054176 | 0.00115 | 0.282235 | 5.16E-05 | 1.466829 | 0.000146 | 1.887137 | 0.000136 | 422 | 13 | -10.31 | 2.10 | 893 | 1376 | |
| NEZ9.111 | Knurr | 0.000855 | 1.47E-06 | 0.059613 | 0.000427 | 0.282259 | 5.07E-05 | 1.467038 | 0.000127 | 1.886876 | 0.000128 | 424 | 13 | -9.40 | 2.08 | 853 | 1342 | |
| NEZ9.006 | Knurr | 0.001188 | 9.57E-06 | 0.075753 | 0.000235 | 0.282325 | 5.57E-05 | 1.467089 | 0.000128 | 1.886841 | 0.000131 | 428 | 18 | -7.10 | 2.35 | 756 | 1265 | |
| NEZ9.080 | Knurr | 0.000218 | 1.69E-06 | 0.01339 | 0.000264 | 0.282131 | 3.96E-05 | 1.466769 | 0.000165 | 1.887195 | 0.000153 | 432 | 14 | -13.58 | 1.71 | 1039 | 1490 | |
| NEZ9.097 | Knurr | 0.004718 | 8.21E-05 | 0.215348 | 0.00151 | 0.28244 | 7.49E-05 | 1.467173 | 9.66E-05 | 1.886702 | 0.000106 | 457 | 14 | -3.45 | 2.87 | 636 | 1219 | |
| NEZ9.003 | Knurr | 0.000705 | 1.68E-06 | 0.041403 | 0.000259 | 0.282362 | 4.32E-05 | 1.467121 | 0.000102 | 1.887517 | 0.000125 | 551 | 18 | -2.92 | 1.92 | 684 | 1200 | |
| NEZ9.114 | Knurr | 0.000842 | 1.32E-05 | 0.055106 | 0.000417 | 0.282315 | 5.04E-05 | 1.467039 | 0.000134 | 1.886926 | 0.000131 | 557 | 19 | -4.52 | 2.19 | 763 | 1267 | |
| NEZ9.009 | Knurr | 0.000481 | 1.43E-06 | 0.028518 | 0.000238 | 0.282488 | 4.63E-05 | 1.466996 | 0.000121 | 1.887108 | 0.000133 | 584 | 19 | 2.35 | 2.06 | 478 | 1025 | |
| NEZ9.075 | Knurr | 0.001181 | 4.76E-05 | 0.073784 | 0.00204 | 0.282155 | 6.65E-05 | 1.466986 | 0.000159 | 1.887073 | 0.000166 | 880 | 27 | -3.30 | 2.89 | 1031 | 1494 | |
| NEZ9.093 | Knurr | 0.00108 | 5.52E-05 | 0.06911 | 0.000829 | 0.282339 | 7.16E-05 | 1.467517 | 0.000179 | 1.887119 | 0.000153 | 960 | 32 | 5.02 | 3.17 | 730 | 1243 | |
| NEZ9.094 | Knurr | 0.001171 | 8.2E-06 | 0.083071 | 0.000959 | 0.282201 | 5.26E-05 | 1.467018 | 0.000124 | 1.887205 | 0.00012 | 960 | 56 | 0.10 | 3.08 | 956 | 1431 | |
| NEZ9.109 | Knurr | 0.001051 | 9.02E-06 | 0.058853 | 0.000437 | 0.282249 | 5.33E-05 | 1.466975 | 0.000147 | 1.887176 | 0.000131 | 988 | 32 | 2.49 | 2.58 | 874 | 1362 | |

| Source file | Formation | $^{176}$Lu/$^{177}$Hf' mean | $^{176}$Lu/$^{177}$Hf' SE | $^{176}$Yb/$^{177}$Hf' mean | $^{176}$Yb/$^{177}$Hf' SE | $^{176}$Hf/$^{177}$Hf Corrected' mean | $^{176}$Hf/$^{177}$Hf Corrected' SE | $^{178}$Hf/$^{177}$Hf Corrected' mean | $^{178}$Hf/$^{177}$Hf Corrected' SE | $^{180}$Hf/$^{177}$Hf Corrected' mean | $^{180}$Hf/$^{177}$Hf Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ9.072 | Knurr | 0.000664 | 1.01E-06 | 0.042457 | 0.000366 | 0.282162 | 0.000048 | 1.466885 | 0.000131 | 1.887119 | 0.000149 | 1035 | 93 | 0.70 | 3.77 | 1004 | 1465 | |
| NEZ9.117 | Knurr | 0.000983 | 1.28E-06 | 0.065299 | 0.000418 | 0.282138 | 4.15E-05 | 1.466915 | 0.000115 | 1.887121 | 0.000115 | 1035 | 59 | -0.38 | 2.77 | 1052 | 1509 | |
| NEZ9.082 | Knurr | 0.00097 | 7.14E-06 | 0.061558 | 0.000532 | 0.282121 | 3.95E-05 | 1.467028 | 9.74E-05 | 1.887124 | 9.91E-05 | 1071 | 64 | -0.18 | 2.80 | 1079 | 1531 | |
| NEZ9.079 | Knurr | 0.001193 | 1.11E-05 | 0.071133 | 0.00148 | 0.282226 | 4.94E-05 | 1.466971 | 0.000111 | 1.887374 | 0.000117 | 1072 | 56 | 3.40 | 2.96 | 916 | 1399 | |
| NEZ9.098 | Knurr | | | | | | | | | | | 1086 | 55 | ####### | 0.00 | | | Lost |
| NEZ9.052 | Knurr | 0.000468 | 0.000016 | 0.030803 | 0.00087 | 0.28224 | 4.15E-05 | 1.467051 | 0.000122 | 1.886981 | 0.000123 | 1088 | 62 | 4.77 | 2.84 | 874 | 1355 | |
| NEZ9.116 | Knurr | 0.001133 | 7.5E-06 | 0.074025 | 0.000151 | 0.282148 | 5.68E-05 | 1.466994 | 0.000143 | 1.886955 | 0.000127 | 1099 | 58 | 1.28 | 3.28 | 1040 | 1501 | |
| NEZ9.002 | Knurr | 0.002648 | 1.21E-05 | 0.160366 | 0.00117 | 0.282285 | 5.61E-05 | 1.467001 | 8.74E-05 | 1.887245 | 0.000103 | 1170 | 61 | 6.51 | 3.25 | 858 | 1370 | |
| NEZ9.046 | Knurr | 0.000223 | 4.71E-07 | 0.013359 | 0.000087 | 0.282093 | 4.45E-05 | 1.467096 | 0.000131 | 1.887384 | 0.000143 | 1171 | 78 | 1.64 | 3.34 | 1099 | 1539 | |
| NEZ9.071 | Knurr | 0.001039 | 2.21E-05 | 0.064856 | 0.00232 | 0.281955 | 4.93E-05 | 1.467106 | 0.000118 | 1.886947 | 0.000126 | 1237 | 59 | -2.45 | 3.01 | 1348 | 1756 | |
| NEZ9.106 | Knurr | 0.000908 | 3.7E-06 | 0.057405 | 0.00022 | 0.282064 | 5.64E-05 | 1.466909 | 0.000147 | 1.887057 | 0.00013 | 1325 | 63 | 3.45 | 3.39 | 1169 | 1605 | |
| NEZ9.074 | Knurr | 0.001368 | 3.06E-05 | 0.089808 | 0.000523 | 0.281984 | 6.15E-05 | 1.46685 | 0.000151 | 1.887443 | 0.000144 | 1358 | 58 | 0.95 | 3.39 | 1315 | 1732 | |
| NEZ9.108 | Knurr | 0.000524 | 3.7E-06 | 0.033243 | 0.000481 | 0.282081 | 0.000047 | 1.466994 | 0.000143 | 1.886906 | 0.000133 | 1458 | 61 | 7.40 | 3.04 | 1128 | 1567 | |
| NEZ9.045 | Knurr | 0.002053 | 1.04E-05 | 0.121829 | 0.000405 | 0.281762 | 7.34E-05 | 1.466919 | 0.000144 | 1.887043 | 0.000156 | 1463 | 62 | -5.29 | 3.91 | 1709 | 2065 | |
| NEZ9.025 | Knurr | 0.00119 | 1.07E-05 | 0.074176 | 0.00104 | 0.282034 | 4.87E-05 | 1.466975 | 0.000123 | 1.887093 | 0.000113 | 1467 | 59 | 5.29 | 3.01 | 1227 | 1657 | |
| NEZ9.056 | Knurr | 0.00068 | 1.14E-06 | 0.039888 | 0.000292 | 0.281912 | 4.46E-05 | 1.466901 | 0.000112 | 1.887177 | 0.000128 | 1473 | 55 | 1.61 | 2.81 | 1401 | 1796 | |
| NEZ9.096 | Knurr | 0.00092 | 4.89E-06 | 0.062147 | 0.000258 | 0.28194 | 5.39E-05 | 1.466873 | 0.000122 | 1.887172 | 0.000134 | 1486 | 56 | 2.64 | 3.15 | 1367 | 1770 | |
| NEZ9.050 | Knurr | 0.000943 | 2.99E-06 | 0.055624 | 0.000504 | 0.281825 | 0.000038 | 1.466932 | 8.28E-05 | 1.887005 | 0.000111 | 1510 | 58 | -0.93 | 2.63 | 1552 | 1924 | |
| NEZ9.067 | Knurr | 0.000964 | 3.24E-06 | 0.060196 | 0.00024 | 0.281943 | 5.07E-05 | 1.466998 | 0.000122 | 1.887195 | 0.00013 | 1517 | 59 | 3.38 | 3.11 | 1365 | 1769 | |
| NEZ9.055 | Knurr | 0.001094 | 3.13E-05 | 0.061829 | 0.0015 | 0.281802 | 4.44E-05 | 1.46693 | 0.000107 | 1.887266 | 0.000124 | 1564 | 63 | -0.70 | 2.91 | 1596 | 1962 | |
| NEZ9.011 | Knurr | 0.000905 | 1.71E-06 | 0.06081 | 0.000378 | 0.28191 | 5.24E-05 | 1.466905 | 0.000122 | 1.8871 | 0.000137 | 1566 | 53 | 3.37 | 3.04 | 1415 | 1810 | |
| NEZ9.104 | Knurr | 0.000563 | 5.63E-06 | 0.029284 | 0.000115 | 0.281842 | 4.49E-05 | 1.466725 | 0.000145 | 1.88731 | 0.000152 | 1581 | 54 | 1.65 | 2.80 | 1508 | 1884 | |
| NEZ9.084 | Knurr | 0.000533 | 4.53E-06 | 0.032131 | 0.000578 | 0.281841 | 4.56E-05 | 1.46704 | 0.000144 | 1.88722 | 0.000132 | 1653 | 56 | 3.26 | 2.88 | 1508 | 1884 | |
| NEZ9.028 | Knurr | 0.000454 | 1.76E-06 | 0.026989 | 9.18E-05 | 0.28176 | 3.91E-05 | 1.466846 | 0.000116 | 1.887289 | 0.000122 | 1655 | 56 | 0.53 | 2.65 | 1631 | 1986 | |
| NEZ9.057 | Knurr | 0.001786 | 1.62E-05 | 0.097161 | 0.000203 | 0.281987 | 5.98E-05 | 1.466969 | 0.000113 | 1.887145 | 0.000129 | 1688 | 57 | 7.82 | 3.33 | 1328 | 1747 | |
| NEZ9.065 | Knurr | 8.36E-05 | 7.7E-07 | 0.004933 | 8.17E-05 | 0.281251 | 4.05E-05 | 1.467139 | 0.000141 | 1.887231 | 0.000141 | 1810 | 57 | -13.55 | 2.75 | 2397 | 2623 | |
| NEZ9.032 | Knurr | 0.001481 | 2.47E-05 | 0.080624 | 0.000333 | 0.281487 | 4.45E-05 | 1.4672 | 9.85E-05 | 1.887026 | 0.000114 | 1814 | 57 | -6.80 | 2.77 | 2122 | 2403 | |
| NEZ9.081 | Knurr | 0.000242 | 2.61E-06 | 0.014688 | 0.000258 | 0.281257 | 3.31E-05 | 1.467046 | 0.000112 | 1.88709 | 0.00012 | 1874 | 50 | -12.07 | 2.31 | 2398 | 2626 | |
| NEZ9.051 | Knurr | 0.00047 | 3.93E-06 | 0.025245 | 4.14E-05 | 0.281353 | 3.91E-05 | 1.467067 | 0.000115 | 1.887202 | 0.000132 | 1876 | 58 | -8.92 | 2.70 | 2267 | 2517 | |
| NEZ9.017 | Knurr | 0.001605 | 8.14E-06 | 0.099927 | 0.00095 | 0.281825 | 5.87E-05 | 1.466757 | 0.000126 | 1.887323 | 0.00014 | 1886 | 52 | 6.63 | 3.21 | 1583 | 1957 | |
| NEZ9.077 | Knurr | 0.000582 | 1.99E-06 | 0.033218 | 0.000137 | 0.281591 | 3.98E-05 | 1.466876 | 0.000125 | 1.887201 | 0.000127 | 1889 | 51 | -0.32 | 2.57 | 1903 | 2214 | |
| NEZ9.036 | Knurr | 0 | 0 | 0 | 0 | -0.007429 | -0.008401 | -0.007583 | -0.008372 | -0.007615 | -0.008269 | 2004 | 51 | ####### | 298.50 | 121352 | 113255 | Lost |
| NEZ9.023 | Knurr | 0.000339 | 2.05E-06 | 0.017801 | 0.000249 | 0.281558 | 5.02E-05 | 1.466796 | 0.00015 | 1.886909 | 0.000156 | 2006 | 49 | 1.49 | 2.90 | 1941 | 2244 | |
| NEZ9.069 | Knurr | 0.001223 | 3.29E-06 | 0.074282 | 0.00056 | 0.281502 | 5.89E-05 | 1.466849 | 0.000132 | 1.886941 | 0.000132 | 2031 | 46 | -1.14 | 3.11 | 2082 | 2368 | |
| NEZ9.119 | Knurr | 0.000466 | 7.25E-06 | 0.03089 | 0.000302 | 0.281511 | 4.47E-05 | 1.467108 | 0.000123 | 1.886934 | 0.000137 | 2032 | 66 | 0.27 | 3.08 | 2020 | 2311 | |
| NEZ9.064 | Knurr | 0.000747 | 7.5E-07 | 0.041553 | 0.000325 | 0.281322 | 4.21E-05 | 1.46703 | 0.00013 | 1.887193 | 0.000136 | 2467 | 47 | 3.05 | 2.57 | 2333 | 2574 | |
| NEZ9.042 | Knurr | 0.000472 | 3.98E-07 | 0.030246 | 0.000259 | 0.281171 | 4.78E-05 | 1.46687 | 0.000132 | 1.887031 | 0.00014 | 2484 | 51 | -1.48 | 2.87 | 2548 | 2753 | |
| NEZ9.089 | Knurr | 0.000281 | 5.11E-06 | 0.019259 | 0.000156 | 0.280786 | 4.66E-05 | 1.466828 | 0.000137 | 1.887289 | 0.000146 | 2691 | 45 | -10.05 | 2.69 | 3121 | 3232 | |
| NEZ9.088 | Knurr | 0.000509 | 4.87E-06 | 0.029038 | 0.000249 | 0.280684 | 3.72E-05 | 1.467058 | 0.000116 | 1.887076 | 0.000119 | 2696 | 42 | -13.98 | 2.28 | 3297 | 3380 | |
| NEZ9.043 | Knurr | 0.001584 | 1.81E-06 | 0.091544 | 0.000565 | 0.281201 | 5.65E-05 | 1.467071 | 0.000109 | 1.88723 | 0.000144 | 2710 | 47 | 2.76 | 3.06 | 2587 | 2790 | |
| NEZ9.007 | Knurr | 0.000792 | 1.94E-06 | 0.042471 | 0.000329 | 0.281034 | 5.46E-05 | 1.467076 | 0.000144 | 1.886991 | 0.000157 | 2748 | 50 | -0.84 | 3.08 | 2785 | 2952 | |
| NEZ9.060 | Knurr | 0.000242 | 2.51E-06 | 0.015025 | 5.73E-05 | 0.28103 | 4.12E-05 | 1.467122 | 0.000123 | 1.8871 | 0.000116 | 2790 | 48 | 1.02 | 2.58 | 2746 | 2917 | |

| Source file | Formation | $^{176}$Lu/$^{177}$Hf' mean | $^{176}$Lu/$^{177}$Hf' SE | $^{176}$Yb/$^{177}$Hf' mean | $^{176}$Yb/$^{177}$Hf' SE | $^{176}$Hf/$^{177}$Hf Corrected' mean | $^{176}$Hf/$^{177}$Hf Corrected' SE | $^{178}$Hf/$^{177}$Hf Corrected' mean | $^{178}$Hf/$^{177}$Hf Corrected' SE | $^{180}$Hf/$^{177}$Hf Corrected' mean | $^{180}$Hf/$^{177}$Hf Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEZ10.020 | Knurr | 0.001381 | 4.8E-06 | 0.083656 | 0.000232 | 0.28254 | 6.44E-05 | 1.466966 | 0.000104 | 1.887087 | 0.000138 | 402 | 13 | -0.07 | 2.56 | 405 | 978 | |
| NEZ10.015 | Knurr | 0.000154 | 3.73E-07 | 0.01234 | 8.37E-05 | 0.282138 | 0.000034 | 1.466989 | 0.000108 | 1.887116 | 0.000108 | 419 | 13 | -13.61 | 1.49 | 1027 | 1478 | |
| NEZ10.004 | Knurr | 0.000508 | 3.06E-06 | 0.033532 | 0.000158 | 0.282382 | 4.41E-05 | 1.467175 | 9.41E-05 | 1.887128 | 0.000123 | 590 | 19 | -1.31 | 1.98 | 649 | 1168 | |
| NEZ10.001 | Knurr | 0.000486 | 0.000014 | 0.031177 | 0.000353 | 0.282117 | 4.36E-05 | 1.466938 | 0.000134 | 1.887122 | 0.000137 | 1043 | 65 | -0.61 | 2.98 | 1070 | 1518 | |
| NEZ10.012 | Knurr | 0.001486 | 1.24E-05 | 0.057829 | 0.000891 | 0.282131 | 3.74E-05 | 1.467172 | 9.25E-05 | 1.887154 | 0.000102 | 1148 | 64 | 1.49 | 2.70 | 1079 | 1538 | |
| NEZ10.008 | Knurr | 0.001104 | 0.000039 | 0.065674 | 0.000236 | 0.281906 | 6.39E-05 | 1.466996 | 0.000178 | 1.887147 | 0.000157 | 1470 | 62 | 0.90 | 3.56 | 1429 | 1824 | |
| NEZ10.014 | Knurr | 0.001796 | 1.44E-05 | 0.109419 | 0.000672 | 0.281806 | 5.84E-05 | 1.466942 | 9.48E-05 | 1.886969 | 0.000109 | 1635 | 52 | 0.24 | 3.17 | 1624 | 1992 | |
| NEZ10.019 | Knurr | 0.000826 | 3.4E-06 | 0.051984 | 0.000376 | 0.281827 | 4.47E-05 | 1.466939 | 0.000107 | 1.887028 | 0.000136 | 1732 | 57 | 4.21 | 2.86 | 1544 | 1917 | |
| NEZ10.017 | Knurr | 0.001019 | 1.19E-06 | 0.067165 | 0.000471 | 0.281503 | 5.33E-05 | 1.467072 | 0.000101 | 1.886888 | 0.000128 | 1795 | 64 | -6.10 | 3.32 | 2068 | 2355 | |
| NEZ10.016 | Knurr | 0.000556 | 3.77E-06 | 0.033029 | 0.000445 | 0.281325 | 5.95E-05 | 1.467007 | 0.000109 | 1.887231 | 0.000154 | 1802 | 58 | -11.69 | 3.42 | 2315 | 2558 | |
| NEZ10.011 | Knurr | 0.000434 | 1.09E-06 | 0.025621 | 0.000143 | 0.281603 | 3.79E-05 | 1.466878 | 0.000091 | 1.887267 | 0.000104 | 1839 | 54 | -0.83 | 2.57 | 1875 | 2190 | |
| NEZ10.009 | Knurr | 0.000837 | 2.25E-06 | 0.052568 | 0.000561 | 0.281679 | 4.98E-05 | 1.467004 | 0.000103 | 1.886996 | 0.000113 | 1878 | 62 | 2.23 | 3.16 | 1779 | 2112 | |
| NEZ10.010 | Knurr | 0.000258 | 4.12E-07 | 0.015759 | 0.000117 | 0.280821 | 3.43E-05 | 1.466953 | 9.54E-05 | 1.887181 | 0.000101 | 2570 | 46 | -11.58 | 2.29 | 3066 | 3186 | |
| NEZ10.003 | Knurr | 0.000338 | 2.42E-07 | 0.020197 | 0.000155 | 0.280511 | 3.74E-05 | 1.467067 | 9.53E-05 | 1.887092 | 9.57E-05 | 2791 | 49 | -17.60 | 2.47 | 3542 | 3585 | |
| | | | | | | | | | | | | | | | | | | |
| Eni-Z1.008 | Kolmule | 0.000909 | 1.92E-06 | 0.052636 | 0.000417 | 0.281247 | 3.45E-05 | 1.467173 | 0.000071 | 1.887015 | 8.56E-05 | 0 | 0 | -54.41 | 1.22 | 2463 | 2684 | |
| Eni-Z1.090 | Kolmule | 0.001731 | 9.92E-06 | 0.075276 | 0.000921 | 0.282759 | 0.000103 | 1.466838 | 0.000274 | 1.887353 | 0.000301 | 217 | 10 | 3.64 | 3.85 | 45 | 685 | |
| Eni-Z1.065 | Kolmule | 0.001271 | 1.48E-05 | 0.079069 | 0.00123 | 0.282845 | 4.17E-05 | 1.467003 | 8.23E-05 | 1.887182 | 0.000102 | 251 | 8 | 7.48 | 1.64 | -99 | 559 | |
| Eni-Z1.041 | Kolmule | 0.001766 | 8.37E-06 | 0.113991 | 0.000243 | 0.282993 | 6.44E-05 | 1.467027 | 0.000103 | 1.887144 | 0.000118 | 312 | 9 | 13.92 | 2.47 | -350 | 360 | |
| Eni-Z1.058 | Kolmule | 0.000908 | 9.6E-07 | 0.056191 | 0.000347 | 0.28289 | 4.79E-05 | 1.46716 | 9.26E-05 | 1.887151 | 0.00011 | 312 | 8 | 10.46 | 1.87 | -172 | 493 | |
| Eni-Z1.018 | Kolmule | 0.002133 | 7.97E-05 | 0.131239 | 0.00439 | 0.282828 | 5.85E-05 | 1.467094 | 8.77E-05 | 1.887004 | 0.000129 | 325 | 9 | 8.30 | 2.22 | -73 | 595 | |
| Eni-Z1.045 | Kolmule | 0.001064 | 5.87E-06 | 0.068473 | 0.00071 | 0.282592 | 4.17E-05 | 1.466962 | 0.000087 | 1.887494 | 0.0001 | 394 | 10 | 1.68 | 1.69 | 316 | 899 | |
| Eni-Z1.102 | Kolmule | 0.001139 | 9.74E-06 | 0.078207 | 0.00123 | 0.282512 | 4.77E-05 | 1.467031 | 0.000094 | 1.887313 | 0.000105 | 403 | 18 | -0.99 | 2.07 | 449 | 1010 | |
| Eni-Z1.060 | Kolmule | 0.000916 | 7.45E-06 | 0.044859 | 0.00035 | 0.282411 | 7.15E-05 | 1.466642 | 0.000158 | 1.887707 | 0.000151 | 415 | 14 | -4.25 | 2.83 | 610 | 1141 | |
| Eni-Z1.023 | Kolmule | 0.000925 | 1.38E-05 | 0.060589 | 0.00137 | 0.282474 | 4.54E-05 | 1.467069 | 8.32E-05 | 1.887158 | 9.71E-05 | 433 | 12 | -1.61 | 1.86 | 507 | 1056 | |
| Eni-Z1.096 | Kolmule | 0.000867 | 3.11E-06 | 0.045437 | 0.000236 | 0.282466 | 6.08E-05 | 1.467214 | 0.000202 | 1.887194 | 0.000178 | 433 | 19 | -1.90 | 2.56 | 520 | 1066 | |
| Eni-Z1.021 | Kolmule | 0.000712 | 1.96E-06 | 0.04076 | 0.000215 | 0.28216 | 3.18E-05 | 1.466844 | 0.000087 | 1.887079 | 8.68E-05 | 437 | 12 | -12.60 | 1.39 | 1009 | 1470 | |
| Eni-Z1.051 | Kolmule | 0.000173 | 8.52E-06 | 0.013102 | 0.000478 | 0.282247 | 3.61E-05 | 1.467124 | 9.91E-05 | 1.886936 | 0.000109 | 439 | 13 | -9.30 | 1.56 | 855 | 1335 | |
| Eni-Z1.113 | Kolmule | 0.003496 | 2.31E-05 | 0.192532 | 0.00106 | 0.282785 | 0.000354 | 1.467616 | 0.000512 | 1.886596 | 0.000433 | 470 | 20 | 9.40 | 12.92 | 0 | 680 | |
| Eni-Z1.067 | Kolmule | 0.00083 | 3.15E-06 | 0.0474 | 0.000338 | 0.282789 | 4.04E-05 | 1.467032 | 9.78E-05 | 1.887164 | 0.000122 | 515 | 14 | 11.35 | 1.73 | -6 | 628 | |
| Eni-Z1.013 | Kolmule | 0.00074 | 3.95E-06 | 0.041654 | 7.95E-05 | 0.282398 | 4.11E-05 | 1.466784 | 8.97E-05 | 1.887316 | 0.000106 | 540 | 14 | -1.92 | 1.76 | 627 | 1153 | |
| Eni-Z1.010 | Kolmule | 0.001796 | 8.41E-06 | 0.118674 | 0.000667 | 0.282414 | 6.36E-05 | 1.466793 | 0.000128 | 1.887061 | 0.00013 | 568 | 15 | -1.14 | 2.56 | 622 | 1163 | |
| Eni-Z1.055 | Kolmule | 0.000504 | 3.03E-06 | 0.036981 | 0.000314 | 0.282061 | 3.85E-05 | 1.466963 | 9.41E-05 | 1.887253 | 0.000103 | 731 | 18 | -9.55 | 1.76 | 1160 | 1593 | |
| Eni-Z1.005 | Kolmule | 0.000747 | 1.15E-05 | 0.041402 | 0.000645 | 0.282562 | 3.93E-05 | 1.466938 | 8.12E-05 | 1.887166 | 9.56E-05 | 782 | 21 | 9.22 | 1.84 | 362 | 933 | |
| Eni-Z1.019 | Kolmule | 0.001231 | 3.45E-06 | 0.068719 | 0.000286 | 0.28208 | 6.58E-05 | 1.466709 | 0.000189 | 1.88722 | 0.00016 | 985 | 24 | -3.68 | 2.85 | 1154 | 1596 | |
| Eni-Z1.037 | Kolmule | 0.001821 | 1.44E-05 | 0.14418 | 0.00114 | 0.282131 | 0.000062 | 1.466861 | 0.000116 | 1.886995 | 0.000108 | 990 | 25 | -2.17 | 2.71 | 1091 | 1551 | |
| Eni-Z1.082 | Kolmule | 0.000608 | 8.81E-06 | 0.035641 | 0.000101 | 0.282213 | 4.26E-05 | 1.466966 | 0.000109 | 1.886985 | 0.000118 | 990 | 41 | 1.55 | 2.41 | 920 | 1395 | |
| Eni-Z1.115 | Kolmule | 0.000742 | 4.37E-06 | 0.034486 | 0.000261 | 0.282042 | 5.27E-05 | 1.467042 | 0.000148 | 1.887239 | 0.000156 | 995 | 41 | -4.50 | 2.77 | 1198 | 1627 | |
| Eni-Z1.086 | Kolmule | 0.000629 | 1.63E-06 | 0.046304 | 0.000123 | 0.282185 | 3.62E-05 | 1.467011 | 8.99E-05 | 1.887447 | 0.000104 | 1027 | 73 | 1.35 | 2.91 | 966 | 1433 | |
| Eni-Z1.046 | Kolmule | 0.001026 | 1.75E-05 | 0.071604 | 0.000292 | 0.281964 | 4.51E-05 | 1.466778 | 0.000103 | 1.88737 | 0.000114 | 1072 | 53 | -5.76 | 2.74 | 1333 | 1743 | |
| Eni-Z1.079 | Kolmule | 0.000923 | 1.65E-05 | 0.077725 | 0.00153 | 0.282216 | 4.02E-05 | 1.467061 | 8.18E-05 | 1.88698 | 9.84E-05 | 1084 | 71 | 3.50 | 2.97 | 925 | 1403 | |
| Eni-Z1.028 | Kolmule | 0.002292 | 3.49E-05 | 0.131798 | 0.00208 | 0.282246 | 9.09E-05 | 1.466753 | 0.00016 | 1.887033 | 0.000161 | 1096 | 56 | 3.84 | 4.35 | 914 | 1411 | |
| Eni-Z1.106 | Kolmule | | | | | | | | | | | 1098 | 69 | ####### | 0.00 | | | Lost |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eni-Z1.042 | Kolmule | 0.000742 | 2.16E-06 | 0.051004 | 0.000167 | 0.282068 | 3.77E-05 | 1.466975 | 9.35E-05 | 1.887451 | 0.000113 | 1139 | 59 | -0.37 | 2.64 | 1156 | 1592 | |
| Eni-Z1.012 | Kolmule | 0.000796 | 1.61E-06 | 0.049034 | 0.000231 | 0.281827 | 3.66E-05 | 1.466982 | 7.01E-05 | 1.887176 | 0.000102 | 1279 | 61 | -5.88 | 2.65 | 1543 | 1915 | |
| Eni-Z1.095 | Kolmule | 0.001338 | 5.93E-06 | 0.068539 | 0.000569 | 0.28142 | 9.58E-05 | 1.466932 | 0.000296 | 1.887253 | 0.000249 | 1284 | 71 | -20.65 | 4.94 | 2220 | 2483 | |
| Eni-Z1.092 | Kolmule | 0.001172 | 1.14E-05 | 0.068334 | 0.000474 | 0.281913 | 5.03E-05 | 1.467059 | 0.000138 | 1.887131 | 0.000126 | 1392 | 78 | -0.65 | 3.48 | 1421 | 1818 | |
| Eni-Z1.030 | Kolmule | 0.001044 | 1.53E-05 | 0.075908 | 0.00097 | 0.281878 | 4.12E-05 | 1.467007 | 0.000104 | 1.887356 | 0.000111 | 1479 | 45 | 0.14 | 2.43 | 1472 | 1859 | |
| Eni-Z1.111 | Kolmule | 0.000911 | 6.69E-06 | 0.040424 | 0.000239 | 0.28172 | 8.09E-05 | 1.46706 | 0.000279 | 1.88708 | 0.00024 | 1493 | 65 | -5.01 | 4.30 | 1718 | 2062 | |
| Eni-Z1.061 | Kolmule | 0.000848 | 1.21E-05 | 0.047674 | 0.000692 | 0.281848 | 3.94E-05 | 1.466892 | 0.000104 | 1.887159 | 0.000108 | 1537 | 56 | 0.59 | 2.62 | 1511 | 1889 | |
| Eni-Z1.048 | Kolmule | 0.004077 | 0.000126 | 0.272692 | 0.00641 | 0.281949 | 0.000104 | 1.467105 | 0.000102 | 1.887076 | 0.000105 | 1615 | 46 | 2.41 | 4.34 | 1495 | 1911 | |
| Eni-Z1.071 | Kolmule | 0.001005 | 4.65E-06 | 0.077678 | 0.00064 | 0.281906 | 5.24E-05 | 1.467093 | 9.13E-05 | 1.887179 | 0.000119 | 1615 | 63 | 4.22 | 3.25 | 1425 | 1820 | |
| Eni-Z1.080 | Kolmule | 0.001218 | 9.23E-06 | 0.056014 | 0.000223 | 0.281755 | 8.49E-05 | 1.466956 | 0.000276 | 1.887186 | 0.000223 | 1615 | 67 | -1.38 | 4.48 | 1677 | 2031 | |
| Eni-Z1.025 | Kolmule | 0.00054 | 2.03E-06 | 0.036418 | 0.000313 | 0.281896 | 3.52E-05 | 1.467125 | 7.68E-05 | 1.887119 | 8.36E-05 | 1616 | 45 | 4.38 | 2.26 | 1422 | 1812 | |
| Eni-Z1.110 | Kolmule | 0.002389 | 1.79E-05 | 0.097743 | 0.000873 | 0.281779 | 6.18E-05 | 1.467077 | 0.000153 | 1.887138 | 0.000128 | 1624 | 60 | -1.60 | 3.43 | 1699 | 2060 | |
| Eni-Z1.043 | Kolmule | 0.001217 | 8.23E-06 | 0.077194 | 0.00105 | 0.281844 | 4.15E-05 | 1.467008 | 8.12E-05 | 1.887117 | 8.41E-05 | 1667 | 49 | 2.95 | 2.54 | 1534 | 1912 | |
| Eni-Z1.029 | Kolmule | 0.001404 | 3.98E-06 | 0.093472 | 0.000209 | 0.281884 | 4.21E-05 | 1.466983 | 9.45E-05 | 1.887274 | 9.29E-05 | 1668 | 45 | 4.15 | 2.48 | 1479 | 1868 | |
| Eni-Z1.100 | Kolmule | 0.001709 | 9.8E-06 | 0.074388 | 0.000477 | 0.281918 | 0.000112 | 1.467315 | 0.000289 | 1.886734 | 0.000257 | 1717 | 58 | 6.09 | 5.22 | 1437 | 1837 | |
| Eni-Z1.022 | Kolmule | 0.00084 | 2.38E-06 | 0.05578 | 0.000341 | 0.281678 | 4.71E-05 | 1.46688 | 0.000121 | 1.887248 | 0.000128 | 1722 | 48 | -1.29 | 2.74 | 1780 | 2113 | |
| Eni-Z1.114 | Kolmule | 0.001769 | 6.16E-06 | 0.124139 | 0.000529 | 0.28134 | 7.48E-05 | 1.467115 | 0.000119 | 1.887426 | 0.000138 | 1859 | 63 | -11.39 | 4.02 | 2378 | 2618 | |
| Eni-Z1.017 | Kolmule | 0.001016 | 1.33E-05 | 0.065985 | 0.000462 | 0.281676 | 3.98E-05 | 1.467038 | 8.25E-05 | 1.887116 | 0.000103 | 1868 | 52 | 1.68 | 2.54 | 1793 | 2126 | |
| Eni-Z1.120 | Kolmule | 0.000407 | 2.6E-06 | 0.018238 | 0.000113 | 0.28154 | 7.56E-05 | 1.466799 | 0.000315 | 1.887119 | 0.000283 | 1875 | 63 | -2.22 | 4.11 | 1972 | 2270 | |
| Eni-Z1.076 | Kolmule | 1.57E-05 | 2.34E-07 | 0.001511 | 1.95E-05 | 0.281442 | 3.22E-05 | 1.467058 | 0.000093 | 1.886969 | 0.000106 | 1877 | 62 | -5.15 | 2.57 | 2100 | 2374 | |
| Eni-Z1.034 | Kolmule | 0.001715 | 2.97E-05 | 0.087522 | 0.00192 | 0.28173 | 5.93E-05 | 1.4669 | 0.000102 | 1.887317 | 0.000139 | 1900 | 45 | 3.42 | 3.01 | 1744 | 2091 | |
| Eni-Z1.084 | Kolmule | 0.001015 | 6.59E-06 | 0.055322 | 0.000637 | 0.2817 | 7.51E-05 | 1.46696 | 0.000218 | 1.88714 | 0.000191 | 1976 | 57 | 4.97 | 3.93 | 1754 | 2093 | |
| Eni-Z1.118 | Kolmule | 0.002562 | 2.18E-05 | 0.096512 | 0.00131 | 0.281599 | 7.97E-05 | 1.466984 | 0.000129 | 1.887088 | 0.000137 | 1977 | 60 | -0.69 | 4.05 | 2009 | 2318 | |
| Eni-Z1.069 | Kolmule | 0.001827 | 2.53E-05 | 0.124927 | 0.00131 | 0.281343 | 5.33E-05 | 1.466946 | 9.01E-05 | 1.887247 | 0.000105 | 2273 | 41 | -2.30 | 2.72 | 2378 | 2618 | |
| Eni-Z1.083 | Kolmule | 0.000819 | 0.000003 | 0.063229 | 0.000239 | 0.281281 | 4.74E-05 | 1.467077 | 0.000109 | 1.887073 | 0.000112 | 2401 | 52 | -0.04 | 2.86 | 2403 | 2633 | |
| Eni-Z1.057 | Kolmule | 0.000663 | 4.45E-06 | 0.045966 | 0.00022 | 0.281052 | 4.46E-05 | 1.46702 | 9.33E-05 | 1.887222 | 0.000129 | 2484 | 43 | -6.02 | 2.56 | 2746 | 2919 | |
| Eni-Z1.088 | Kolmule | 0.001735 | 1.09E-05 | 0.085162 | 0.000516 | 0.281259 | 0.000125 | 1.467215 | 0.000294 | 1.886903 | 0.000263 | 2487 | 54 | -0.42 | 5.61 | 2506 | 2724 | |
| Eni-Z1.009 | Kolmule | 0.000391 | 1.18E-06 | 0.023915 | 7.58E-05 | 0.281144 | 2.99E-05 | 1.467013 | 8.04E-05 | 1.887262 | 9.75E-05 | 2524 | 44 | -1.39 | 2.08 | 2584 | 2782 | |
| Eni-Z1.064 | Kolmule | 0.000474 | 2.82E-06 | 0.024871 | 0.000264 | 0.2809 | 3.79E-05 | 1.466937 | 0.000093 | 1.887377 | 0.000111 | 2654 | 40 | -7.19 | 2.26 | 2964 | 3101 | |
| Eni-Z1.001 | Kolmule | 0.000398 | 1.14E-06 | 0.025492 | 0.000204 | 0.281026 | 3.09E-05 | 1.467114 | 8.36E-05 | 1.887265 | 0.00011 | 2750 | 40 | -0.33 | 2.02 | 2764 | 2933 | |
| Eni-Z1.112 | Kolmule | 0.000835 | 2.98E-06 | 0.036851 | 0.000215 | 0.280894 | 6.66E-05 | 1.467282 | 0.000244 | 1.887005 | 0.000205 | 2768 | 56 | -5.44 | 3.64 | 3005 | 3136 | |
| Eni-Z1.035 | Kolmule | 0.000572 | 3.55E-06 | 0.037997 | 7.92E-05 | 0.282232 | 3.56E-05 | 1.46699 | 9.55E-05 | 1.886922 | 0.000102 | 2775 | 41 | 42.82 | 2.21 | 890 | 1369 | |
| Eni-Z1.094 | Kolmule | 0.002088 | 1.88E-05 | 0.096641 | 0.000967 | 0.281082 | 0.000116 | 1.467102 | 0.000297 | 1.88698 | 0.000229 | 2790 | 54 | -0.66 | 5.25 | 2820 | 2987 | |
| Eni-Z1.052 | Kolmule | 0.000674 | 4.93E-06 | 0.043776 | 9.74E-05 | 0.280999 | 3.85E-05 | 1.466988 | 0.000084 | 1.887247 | 0.000111 | 2833 | 37 | 0.10 | 2.21 | 2829 | 2988 | |
| | | | | | | | | | | | | | | | | | | |
| E.Z2.080 | Kolmule | 0.001689 | 1.24E-05 | 0.079399 | 0.000772 | 0.282752 | 8.45E-05 | 1.467617 | 0.000254 | 1.886999 | 0.000247 | 231 | 7 | 3.72 | 3.13 | 55 | 693 | |
| E.Z2.111 | Kolmule | 0.001282 | 7.57E-06 | 0.063671 | 0.000295 | 0.28257 | 4.27E-05 | 1.467065 | 9.73E-05 | 1.887154 | 0.000116 | 232 | 7 | -2.65 | 1.66 | 355 | 935 | |
| E.Z2.009 | Kolmule | 0.001189 | 3.5E-06 | 0.056332 | 0.000395 | 0.282408 | 4.36E-05 | 1.466889 | 9.56E-05 | 1.887285 | 9.99E-05 | 240 | 7 | -8.20 | 1.69 | 620 | 1153 | |
| E.Z2.034 | Kolmule | 0.003176 | 5.11E-05 | 0.145155 | 0.0024 | 0.282495 | 6.83E-05 | 1.467124 | 9.47E-05 | 1.887127 | 0.000101 | 279 | 8 | -4.63 | 2.56 | 508 | 1090 | |
| E.Z2.039 | Kolmule | 0.001867 | 1.52E-05 | 0.087669 | 0.000808 | 0.282681 | 3.42E-05 | 1.467091 | 5.68E-05 | 1.887087 | 8.05E-05 | 299 | 7 | 2.61 | 1.35 | 175 | 795 | |
| E.Z2.049 | Kolmule | 0.004817 | 6.51E-05 | 0.205317 | 0.0024 | 0.28284 | 8.28E-05 | 1.467199 | 0.000132 | 1.887043 | 0.000141 | 304 | 8 | 7.75 | 3.06 | -103 | 622 | |
| E.Z2.007 | Kolmule | 0.000751 | 4.46E-06 | 0.049749 | 0.00057 | 0.28255 | 4.96E-05 | 1.466821 | 7.39E-05 | 1.887162 | 0.000117 | 309 | 8 | -1.60 | 1.93 | 382 | 950 | |
| E.Z2.090 | Kolmule | 0 | 0 | 0 | 0 | -0.007501 | -0.008227 | -0.007511 | -0.008323 | -0.007658 | -0.008252 | 365 | 10 | ####### | 291.17 | 121364 | 113267 | Lost |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E.Z2.114 | Kolmule | 0.001108 | 1.62E-05 | 0.050744 | 0.000279 | 0.282886 | 3.83E-05 | 1.466936 | 0.000106 | 1.887164 | 8.11E-05 | 366 | 12 | 11.45 | 1.61 | -166 | 501 | |
| E.Z2.037 | Kolmule | 0.002391 | 0.000032 | 0.110922 | 0.00149 | 0.282421 | 4.51E-05 | 1.466951 | 6.67E-05 | 1.887012 | 0.00008 | 428 | 11 | -4.01 | 1.81 | 621 | 1170 | |
| E.Z2.006 | Kolmule | 0.000515 | 1.38E-06 | 0.033748 | 0.000124 | 0.282548 | 4.99E-05 | 1.466942 | 6.93E-05 | 1.887046 | 0.000114 | 431 | 11 | 1.08 | 2.01 | 382 | 946 | |
| E.Z2.024 | Kolmule | 0.000714 | 6.9E-06 | 0.049085 | 0.000321 | 0.282284 | 4.74E-05 | 1.466955 | 7.01E-05 | 1.887065 | 0.000103 | 446 | 12 | -8.00 | 1.94 | 810 | 1304 | |
| E.Z2.064 | Kolmule | 0.001803 | 1.04E-05 | 0.074657 | 0.000479 | 0.282133 | 5.47E-05 | 1.467126 | 0.000124 | 1.886952 | 0.000136 | 446 | 13 | -13.65 | 2.21 | 1087 | 1547 | |
| E.Z2.077 | Kolmule | 0.003041 | 1.58E-05 | 0.120569 | 0.00101 | 0.282494 | 0.000105 | 1.467055 | 0.000217 | 1.887076 | 0.000183 | 448 | 12 | -1.22 | 3.95 | 508 | 1088 | |
| E.Z2.075 | Kolmule | 0.004304 | 1.23E-05 | 0.194863 | 0.00214 | 0.282431 | 0.000127 | 1.467169 | 0.00022 | 1.88671 | 0.000193 | 481 | 12 | -3.18 | 4.72 | 644 | 1219 | |
| E.Z2.050 | Kolmule | 0.001843 | 9.89E-06 | 0.097016 | 0.000578 | 0.282534 | 5.49E-05 | 1.467022 | 0.000103 | 1.887227 | 0.00013 | 550 | 14 | 2.70 | 2.23 | 422 | 999 | |
| E.Z2.105 | Kolmule | 0.001015 | 1.27E-05 | 0.068683 | 0.000787 | 0.282195 | 3.61E-05 | 1.466853 | 8.36E-05 | 1.887245 | 9.39E-05 | 651 | 16 | -6.78 | 1.62 | 961 | 1434 | |
| E.Z2.027 | Kolmule | 0.001168 | 1.01E-05 | 0.090839 | 0.000509 | 0.281828 | 6.99E-05 | 1.466745 | 0.000149 | 1.886942 | 0.00016 | 740 | 31 | -17.93 | 3.14 | 1558 | 1932 | |
| E.Z2.089 | Kolmule | 0.004193 | 2.28E-05 | 0.153821 | 0.000916 | 0.282231 | 0.000112 | 1.467397 | 0.000178 | 1.886483 | 0.000186 | 956 | 22 | -0.88 | 4.38 | 1000 | 1508 | |
| E.Z2.084 | Kolmule | 0.002735 | 2.75E-05 | 0.09687 | 0.000581 | 0.282143 | 0.000107 | 1.467403 | 0.000233 | 1.886907 | 0.000216 | 979 | 26 | -2.56 | 4.30 | 1102 | 1572 | |
| E.Z2.102 | Kolmule | 0.001045 | 5.26E-06 | 0.073475 | 0.00015 | 0.282079 | 4.49E-05 | 1.466742 | 0.000079 | 1.887264 | 8.75E-05 | 987 | 25 | -3.57 | 2.13 | 1150 | 1591 | |
| E.Z2.074 | Kolmule | 0.002039 | 3.49E-05 | 0.08419 | 0.00134 | 0.282021 | 6.99E-05 | 1.467129 | 0.00016 | 1.887017 | 0.000155 | 989 | 23 | -6.22 | 2.92 | 1281 | 1711 | |
| E.Z2.116 | Kolmule | 0.000523 | 5.55E-07 | 0.037501 | 0.000202 | 0.282231 | 4.51E-05 | 1.466882 | 8.36E-05 | 1.88704 | 0.000119 | 1020 | 57 | 2.91 | 2.87 | 889 | 1368 | |
| E.Z2.072 | Kolmule | 0.001522 | 1.06E-05 | 0.060505 | 0.00036 | 0.282262 | 7.93E-05 | 1.467133 | 0.000245 | 1.886692 | 0.00021 | 1045 | 53 | 3.85 | 3.94 | 867 | 1362 | |
| E.Z2.071 | Kolmule | 0.002154 | 5.37E-05 | 0.104959 | 0.0017 | 0.282419 | 8.51E-05 | 1.467509 | 0.000142 | 1.887095 | 0.000155 | 1073 | 52 | 9.59 | 4.04 | 620 | 1166 | |
| E.Z2.113 | Kolmule | 0.000735 | 1.68E-06 | 0.057882 | 0.000625 | 0.282137 | 5.11E-05 | 1.467031 | 8.35E-05 | 1.887234 | 0.000124 | 1082 | 54 | 0.79 | 3.01 | 1047 | 1502 | |
| E.Z2.012 | Kolmule | 0.000757 | 1.53E-06 | 0.052999 | 0.000341 | 0.282254 | 5.23E-05 | 1.466995 | 8.81E-05 | 1.887116 | 0.000108 | 1162 | 68 | 6.73 | 3.37 | 858 | 1345 | |
| E.Z2.117 | Kolmule | 0.000716 | 7.83E-06 | 0.051003 | 0.00107 | 0.281987 | 0.000041 | 1.466891 | 8.54E-05 | 1.887242 | 0.000109 | 1288 | 61 | 0.07 | 2.80 | 1285 | 1700 | |
| E.Z2.053 | Kolmule | 0.002412 | 3.26E-05 | 0.113328 | 0.00252 | 0.282016 | 0.000046 | 1.466915 | 0.000099 | 1.887063 | 0.000108 | 1432 | 52 | 2.71 | 2.67 | 1304 | 1734 | |
| E.Z2.030 | Kolmule | 0.000632 | 3.51E-06 | 0.047928 | 0.000243 | 0.281897 | 4.97E-05 | 1.467122 | 0.000111 | 1.88719 | 0.000125 | 1478 | 56 | 1.21 | 3.01 | 1424 | 1815 | |
| E.Z2.058 | Kolmule | 0.003564 | 4.32E-05 | 0.186299 | 0.00204 | 0.282211 | 0.000102 | 1.467043 | 0.000125 | 1.886894 | 0.000124 | 1483 | 49 | 9.56 | 4.53 | 1014 | 1510 | |
| E.Z2.099 | Kolmule | 0.001349 | 1.67E-05 | 0.07683 | 0.00138 | 0.28189 | 4.85E-05 | 1.466844 | 0.000101 | 1.887253 | 9.36E-05 | 1500 | 49 | 0.73 | 2.76 | 1467 | 1857 | |
| E.Z2.101 | Kolmule | 0.000499 | 8.16E-06 | 0.034548 | 0.000387 | 0.281984 | 3.85E-05 | 1.466912 | 0.0001 | 1.887276 | 0.000103 | 1523 | 50 | 5.44 | 2.48 | 1281 | 1695 | |
| E.Z2.108 | Kolmule | 0.00174 | 3.75E-05 | 0.085831 | 0.000329 | 0.281838 | 5.35E-05 | 1.466984 | 0.000094 | 1.887089 | 0.000112 | 1523 | 59 | -0.99 | 3.10 | 1569 | 1946 | |
| E.Z2.008 | Kolmule | 0.005508 | 5.41E-05 | 0.236976 | 0.00135 | 0.282164 | 7.85E-05 | 1.467142 | 9.26E-05 | 1.887088 | 0.000116 | 1533 | 48 | 6.92 | 3.59 | 1170 | 1665 | |
| E.Z2.081 | Kolmule | 0.002311 | 3.51E-05 | 0.075338 | 0.00158 | 0.282115 | 8.65E-05 | 1.467636 | 0.000179 | 1.887304 | 0.000168 | 1561 | 49 | 9.07 | 4.04 | 1134 | 1593 | |
| E.Z2.087 | Kolmule | 0.004024 | 3.06E-05 | 0.149709 | 0.00213 | 0.282396 | 0.000132 | 1.467011 | 0.000122 | 1.886639 | 0.000193 | 1577 | 47 | 17.56 | 5.57 | 700 | 1260 | |
| E.Z2.062 | Kolmule | 0.00367 | 2.27E-05 | 0.17896 | 0.000964 | 0.282056 | 6.42E-05 | 1.466858 | 8.32E-05 | 1.887196 | 0.000104 | 1587 | 48 | 6.09 | 3.21 | 1288 | 1736 | |
| E.Z2.032 | Kolmule | 0.001916 | 7.16E-06 | 0.096069 | 0.000386 | 0.281855 | 4.78E-05 | 1.467084 | 9.41E-05 | 1.887168 | 0.000112 | 1657 | 50 | 2.31 | 2.76 | 1550 | 1933 | |
| E.Z2.073 | Kolmule | 0.002502 | 1.36E-05 | 0.101504 | 0.00117 | 0.281741 | 0.000108 | 1.467022 | 0.000296 | 1.887252 | 0.000248 | 1657 | 47 | -2.37 | 4.80 | 1768 | 2119 | |
| E.Z2.035 | Kolmule | 0.00124 | 7.94E-06 | 0.047395 | 0.00109 | 0.281798 | 3.53E-05 | 1.467209 | 8.67E-05 | 1.887317 | 0.000106 | 1714 | 50 | 2.32 | 2.34 | 1609 | 1975 | |
| E.Z2.100 | Kolmule | 0.000594 | 6.78E-07 | 0.044828 | 0.00017 | 0.281833 | 4.82E-05 | 1.46715 | 0.000104 | 1.886855 | 0.000119 | 1720 | 45 | 4.42 | 2.73 | 1524 | 1898 | |
| E.Z2.120 | Kolmule | 0.000639 | 1.24E-05 | 0.041284 | 0.000145 | 0.281758 | 0.000039 | 1.466928 | 0.000104 | 1.887323 | 0.000116 | 1858 | 45 | 4.86 | 2.37 | 1643 | 1997 | |
| E.Z2.106 | Kolmule | 3.07E-05 | 6.64E-07 | 0.001643 | 3.08E-05 | 0.281484 | 0.000035 | 1.46719 | 0.000111 | 1.887108 | 0.000112 | 1871 | 44 | -3.82 | 2.26 | 2036 | 2321 | |
| E.Z2.026 | Kolmule | 0.001109 | 1.25E-05 | 0.073719 | 0.000646 | 0.281615 | 4.16E-05 | 1.466911 | 0.000085 | 1.88706 | 0.000105 | 1875 | 45 | -0.43 | 2.45 | 1894 | 2211 | |
| E.Z2.025 | Kolmule | 0.00192 | 4.46E-05 | 0.110262 | 0.00188 | 0.28137 | 4.89E-05 | 1.466923 | 0.000104 | 1.88738 | 9.79E-05 | 1933 | 45 | -8.90 | 2.60 | 2340 | 2588 | |
| E.Z2.107 | Kolmule | 0.002041 | 6.37E-05 | 0.10599 | 0.000857 | 0.281872 | 5.99E-05 | 1.467037 | 0.000134 | 1.887148 | 0.000138 | 1935 | 44 | 8.81 | 2.91 | 1527 | 1915 | |
| E.Z2.066 | Kolmule | 0.00075 | 6.91E-06 | 0.038959 | 0.000287 | 0.281595 | 5.94E-05 | 1.467079 | 0.000154 | 1.887389 | 0.000147 | 1985 | 43 | 1.77 | 3.06 | 1907 | 2218 | |
| E.Z2.086 | Kolmule | 0.002142 | 0.000024 | 0.097394 | 0.00186 | 0.281826 | 0.000057 | 1.467202 | 0.000126 | 1.887108 | 0.000115 | 1985 | 44 | 8.12 | 2.91 | 1608 | 1983 | |
| E.Z2.098 | Kolmule | 0.003485 | 3.74E-05 | 0.172476 | 0.00169 | 0.281708 | 8.32E-05 | 1.467089 | 0.000101 | 1.887017 | 0.000127 | 2498 | 43 | 12.84 | 3.73 | 1882 | 2221 | |
| E.Z2.014 | Kolmule | 0.000441 | 1.18E-05 | 0.030063 | 0.000981 | 0.281143 | 4.59E-05 | 1.466868 | 0.000107 | 1.886948 | 0.000123 | 2548 | 40 | -0.93 | 2.52 | 2588 | 2786 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E.Z2.056 | Kolmule | 0.001303 | 1.14E-05 | 0.051726 | 0.000395 | 0.28119 | 4.08E-05 | 1.46702 | 0.000108 | 1.887088 | 0.000122 | 2592 | 41 | 0.21 | 2.33 | 2583 | 2786 | |
| E.Z2.065 | Kolmule | 0.001975 | 2.09E-05 | 0.107077 | 0.000771 | 0.281272 | 0.000118 | 1.466952 | 0.000234 | 1.886959 | 0.000218 | 2642 | 41 | 3.05 | 5.03 | 2504 | 2724 | |
| E.Z3.108 | Stø | 0.000774 | 9.12E-07 | 0.056078 | 0.000269 | 0.282239 | 4.25E-05 | 1.466837 | 9.23E-05 | 1.887017 | 9.89E-05 | 427 | 11 | -10.02 | 1.74 | 883 | 1366 | |
| E.Z3.033 | Stø | 0.000327 | 8.1E-06 | 0.022874 | 0.000682 | 0.282125 | 0.00004 | 1.466947 | 0.000116 | 1.887181 | 0.000137 | 451 | 12 | -13.40 | 1.68 | 1052 | 1501 | |
| E.Z3.060 | Stø | 0.002049 | 1.09E-05 | 0.151582 | 0.000788 | 0.282326 | 0.000108 | 1.466884 | 0.00018 | 1.887251 | 0.000186 | 487 | 12 | -6.07 | 4.07 | 774 | 1293 | |
| E.Z3.119 | Stø | 0.002476 | 1.76E-05 | 0.128367 | 0.000793 | 0.282611 | 5.15E-05 | 1.466918 | 7.38E-05 | 1.887326 | 0.000116 | 521 | 13 | 4.61 | 2.08 | 298 | 907 | |
| E.Z3.069 | Stø | 0.000637 | 2.7E-06 | 0.043832 | 0.000448 | 0.282427 | 0.000034 | 1.467134 | 8.18E-05 | 1.887111 | 8.53E-05 | 540 | 15 | -0.85 | 1.53 | 578 | 1111 | |
| E.Z3.095 | Stø | 0.000827 | 3.47E-07 | 0.060403 | 0.00027 | 0.282573 | 4.46E-05 | 1.466999 | 0.000107 | 1.887149 | 0.000111 | 548 | 15 | 4.43 | 1.91 | 345 | 920 | |
| E.Z3.044 | Stø | 0.001037 | 4.1E-06 | 0.07729 | 0.000449 | 0.282304 | 6.07E-05 | 1.467082 | 0.000128 | 1.887081 | 0.000144 | 612 | 16 | -3.78 | 2.49 | 785 | 1288 | |
| E.Z3.021 | Stø | 0.002253 | 2.57E-05 | 0.152349 | 0.00125 | 0.282352 | 8.63E-05 | 1.466857 | 0.000143 | 1.887028 | 0.000143 | 621 | 15 | -2.40 | 3.35 | 735 | 1263 | |
| E.Z3.075 | Stø | 0.000607 | 6.97E-06 | 0.038636 | 0.000295 | 0.282317 | 3.87E-05 | 1.466838 | 8.74E-05 | 1.887165 | 9.99E-05 | 634 | 16 | -2.65 | 1.72 | 754 | 1256 | |
| E.Z3.043 | Stø | 0.001147 | 3.51E-05 | 0.083966 | 0.00297 | 0.282203 | 4.72E-05 | 1.467008 | 9.44E-05 | 1.887204 | 0.000108 | 749 | 24 | -4.44 | 2.16 | 953 | 1428 | |
| E.Z3.120 | Stø | 0.000642 | 1.93E-06 | 0.048288 | 0.000111 | 0.282262 | 3.86E-05 | 1.467046 | 0.000103 | 1.887074 | 9.82E-05 | 977 | 24 | 2.96 | 1.90 | 843 | 1331 | |
| E.Z3.111 | Stø | 0.000433 | 1.82E-06 | 0.029156 | 0.000329 | 0.281979 | 4.48E-05 | 1.466723 | 0.00012 | 1.887361 | 0.000122 | 980 | 25 | -6.87 | 2.14 | 1287 | 1698 | |
| E.Z3.068 | Stø | 0.000676 | 3.08E-06 | 0.047751 | 0.000185 | 0.282167 | 5.17E-05 | 1.467126 | 0.00012 | 1.887462 | 0.000131 | 1006 | 37 | 0.23 | 2.65 | 996 | 1459 | |
| E.Z3.037 | Stø | 0.000634 | 6.3E-07 | 0.044707 | 0.000119 | 0.282146 | 5.43E-05 | 1.467028 | 0.000105 | 1.887259 | 0.000132 | 1007 | 36 | -0.49 | 2.72 | 1029 | 1486 | |
| E.Z3.101 | Stø | 0.000502 | 6.28E-07 | 0.035632 | 0.000182 | 0.282133 | 3.68E-05 | 1.466847 | 6.69E-05 | 1.887185 | 9.43E-05 | 1012 | 45 | -0.74 | 2.31 | 1045 | 1498 | |
| E.Z3.071 | Stø | 0.00067 | 4.99E-07 | 0.045895 | 0.000351 | 0.282142 | 4.35E-05 | 1.466939 | 0.000107 | 1.887358 | 9.93E-05 | 1014 | 32 | -0.48 | 2.25 | 1036 | 1492 | |
| E.Z3.091 | Stø | 0.000677 | 1.3E-06 | 0.042834 | 0.000331 | 0.2821 | 5.43E-05 | 1.466888 | 0.000117 | 1.887126 | 0.000126 | 1054 | 46 | -1.08 | 2.95 | 1103 | 1547 | |
| E.Z3.106 | Stø | 0.001614 | 1.56E-06 | 0.116988 | 0.000363 | 0.2823 | 0.000056 | 1.467084 | 8.58E-05 | 1.887204 | 0.000122 | 1070 | 40 | 5.68 | 2.85 | 807 | 1313 | |
| E.Z3.004 | Stø | 0.000515 | 8.94E-07 | 0.032941 | 0.000236 | 0.282 | 0.000039 | 1.467078 | 0.000114 | 1.887213 | 0.000135 | 1074 | 61 | -4.07 | 2.74 | 1256 | 1674 | |
| E.Z3.112 | Stø | 0.001524 | 1.01E-05 | 0.103474 | 0.00102 | 0.281992 | 6.18E-05 | 1.466823 | 0.000124 | 1.887314 | 0.000132 | 1332 | 28 | 0.51 | 2.78 | 1308 | 1728 | |
| E.Z3.074 | Stø | 0.000966 | 0.000011 | 0.065124 | 0.000471 | 0.282098 | 4.43E-05 | 1.467051 | 9.16E-05 | 1.887207 | 0.000116 | 1365 | 30 | 5.52 | 2.22 | 1116 | 1562 | |
| E.Z3.087 | Stø | 0.000879 | 1.1E-06 | 0.06329 | 0.000467 | 0.282087 | 5.16E-05 | 1.467048 | 0.000127 | 1.887151 | 0.000135 | 1365 | 45 | 5.18 | 2.83 | 1131 | 1574 | |
| E.Z3.105 | Stø | 0.000703 | 6.97E-06 | 0.047821 | 0.000125 | 0.281935 | 4.49E-05 | 1.466892 | 0.000118 | 1.887223 | 0.000132 | 1428 | 34 | 1.36 | 2.34 | 1367 | 1768 | |
| E.Z3.080 | Stø | 0.000495 | 9.68E-07 | 0.032545 | 0.000166 | 0.281943 | 3.79E-05 | 1.466997 | 9.13E-05 | 1.886969 | 9.93E-05 | 1435 | 36 | 2.01 | 2.15 | 1346 | 1748 | |
| E.Z3.098 | Stø | 0.001622 | 2.89E-06 | 0.092687 | 0.000162 | 0.282078 | 4.73E-05 | 1.466918 | 9.37E-05 | 1.887043 | 0.000108 | 1460 | 28 | 6.28 | 2.28 | 1171 | 1615 | |
| E.Z3.099 | Stø | 0.000761 | 2.92E-06 | 0.05167 | 0.00019 | 0.281957 | 4.09E-05 | 1.466994 | 8.45E-05 | 1.887074 | 9.86E-05 | 1461 | 33 | 2.85 | 2.18 | 1333 | 1741 | |
| E.Z3.019 | Stø | 0.000732 | 1.09E-06 | 0.046412 | 0.000355 | 0.281889 | 4.06E-05 | 1.466785 | 0.000117 | 1.887061 | 0.000109 | 1501 | 33 | 1.34 | 2.18 | 1441 | 1830 | |
| E.Z3.024 | Stø | 0.000818 | 2.28E-06 | 0.050399 | 0.000296 | 0.281857 | 4.82E-05 | 1.466828 | 0.000102 | 1.887181 | 0.000115 | 1505 | 29 | 0.21 | 2.35 | 1496 | 1876 | |
| E.Z3.076 | Stø | 0.00396 | 3.14E-05 | 0.216606 | 0.000576 | 0.282028 | 6.65E-05 | 1.467005 | 0.000107 | 1.887174 | 0.000112 | 1516 | 28 | 3.33 | 2.86 | 1351 | 1791 | |
| E.Z3.052 | Stø | 0.00089 | 3.96E-06 | 0.056527 | 0.000238 | 0.281927 | 0.000061 | 1.467101 | 0.000148 | 1.887336 | 0.000142 | 1516 | 36 | 2.86 | 2.96 | 1387 | 1787 | |
| E.Z3.117 | Stø | 0.000778 | 0.000005 | 0.054229 | 9.22E-05 | 0.282137 | 4.53E-05 | 1.467094 | 0.000107 | 1.887073 | 0.000122 | 1527 | 37 | 10.70 | 2.43 | 1047 | 1502 | |
| E.Z3.103 | Stø | 0.002008 | 1.98E-05 | 0.115733 | 0.00088 | 0.281884 | 6.73E-05 | 1.46681 | 0.000116 | 1.887212 | 0.000133 | 1560 | 29 | 1.15 | 2.97 | 1506 | 1897 | |
| E.Z3.113 | Stø | 0.002438 | 1.16E-05 | 0.157334 | 0.000487 | 0.281818 | 6.52E-05 | 1.467149 | 0.000125 | 1.88706 | 0.000113 | 1624 | 30 | -0.27 | 2.93 | 1637 | 2009 | |
| E.Z3.110 | Stø | 0.00322 | 2.99E-05 | 0.159148 | 0.0022 | 0.281954 | 6.12E-05 | 1.466949 | 0.000107 | 1.887355 | 0.000115 | 1696 | 30 | 5.19 | 2.73 | 1446 | 1860 | |
| E.Z3.013 | Stø | 0.000302 | 7.24E-07 | 0.018063 | 7.58E-05 | 0.281562 | 4.61E-05 | 1.46694 | 0.000105 | 1.887459 | 0.000117 | 1699 | 33 | -5.34 | 2.39 | 1933 | 2237 | |
| E.Z3.051 | Stø | 0.000499 | 4.03E-06 | 0.034474 | 0.000235 | 0.281776 | 4.69E-05 | 1.466973 | 0.00013 | 1.88726 | 0.000109 | 1740 | 29 | 2.99 | 2.31 | 1608 | 1967 | |
| E.Z3.009 | Stø | 0.000967 | 3.82E-06 | 0.070225 | 0.000446 | 0.281833 | 5.58E-05 | 1.466945 | 0.000119 | 1.886902 | 0.000136 | 1745 | 26 | 4.58 | 2.55 | 1540 | 1914 | |
| E.Z3.022 | Stø | 0.000771 | 3.19E-06 | 0.053719 | 0.000274 | 0.281715 | 0.000054 | 1.467042 | 0.000125 | 1.887416 | 0.000133 | 1871 | 28 | 3.46 | 2.54 | 1717 | 2061 | |
| E.Z3.086 | Stø | 0.001004 | 5.38E-06 | 0.067532 | 0.000166 | 0.281411 | 4.82E-05 | 1.466993 | 0.000112 | 1.887388 | 0.000115 | 1911 | 26 | -6.74 | 2.28 | 2211 | 2474 | |
| E.Z3.035 | Stø | 0.00058 | 7.84E-07 | 0.038753 | 0.000206 | 0.281635 | 4.49E-05 | 1.467207 | 0.000106 | 1.887321 | 0.000114 | 1914 | 23 | 1.83 | 2.11 | 1833 | 2156 | |

| Source file | Formation | $^{176}Lu/^{177}Hf'$ mean | $^{176}Lu/^{177}Hf'$ SE | $^{176}Yb/^{177}Hf'$ mean | $^{176}Yb/^{177}Hf'$ SE | $^{176}Hf/^{177}Hf$ Corrected' mean | $^{176}Hf/^{177}Hf$ Corrected' SE | $^{178}Hf/^{177}Hf$ Corrected' mean | $^{178}Hf/^{177}Hf$ Corrected' SE | $^{180}Hf/^{177}Hf$ Corrected' mean | $^{180}Hf/^{177}Hf$ Corrected' SE | U-Pb age | 2SD | Epsilon $Hf_{(t, CHUR)}$ | SD | $T_{(CHUR)}$ Ma | $T_{(DMM)}$ Ma | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E.Z3.040 | Stø | 6.76E-05 | 3.3E-07 | 0.005149 | 3.37E-05 | 0.281434 | 3.78E-05 | 1.467168 | 0.000109 | 1.887249 | 0.000113 | 1925 | 27 | -4.42 | 1.96 | 2116 | 2388 | |
| E.Z3.072 | Stø | 0.000475 | 6.12E-07 | 0.030394 | 0.000197 | 0.281624 | 4.35E-05 | 1.467002 | 0.000101 | 1.887304 | 0.000123 | 1931 | 28 | 1.95 | 2.18 | 1845 | 2165 | |
| E.Z3.092 | Stø | 0.000895 | 0.000006 | 0.066892 | 0.000153 | 0.281802 | 3.22E-05 | 1.467135 | 6.31E-05 | 1.887046 | 9.48E-05 | 1973 | 31 | 8.67 | 1.83 | 1586 | 1952 | |
| E.Z3.030 | Stø | 0.000907 | 1.64E-06 | 0.061063 | 0.000345 | 0.281636 | 5.95E-05 | 1.467088 | 0.000135 | 1.887101 | 0.000158 | 1981 | 31 | 2.93 | 2.81 | 1851 | 2173 | |
| E.Z3.063 | Stø | 0.000485 | 1.97E-06 | 0.035406 | 0.000065 | 0.281593 | 4.92E-05 | 1.46713 | 0.000128 | 1.887334 | 0.000126 | 2001 | 33 | 2.45 | 2.50 | 1893 | 2205 | |
| E.Z3.016 | Stø | 0.000588 | 2.17E-06 | 0.038392 | 7.58E-05 | 0.281256 | 4.91E-05 | 1.467144 | 0.000118 | 1.887199 | 0.000134 | 2529 | 28 | 2.37 | 2.38 | 2426 | 2651 | |
| 3.053.054.( | Stø | 0.000403 | 8.55E-07 | 0.027656 | 0.00015 | 0.281035 | 4.14E-05 | 1.466978 | 0.000122 | 1.88711 | 0.000119 | 2671 | 25 | -1.87 | 2.05 | 2752 | 2923 | |
| E.Z3.118 | Stø | 0.00032 | 2.7E-07 | 0.020123 | 0.000142 | 0.280793 | 3.77E-05 | 1.466826 | 0.000102 | 1.887373 | 0.000113 | 2704 | 23 | -9.56 | 1.87 | 3114 | 3226 | |
| E.Z3.065 | Stø | 0.000375 | 4.57E-07 | 0.026128 | 0.000177 | 0.28094 | 0.00004 | 1.466925 | 0.00012 | 1.887313 | 0.000116 | 2921 | 27 | 0.62 | 2.05 | 2894 | 3042 | |
| E.Z3.014 | Stø | 0.00128 | 0.000005 | 0.086142 | 0.000514 | 0.281013 | 5.43E-05 | 1.466987 | 8.36E-05 | 1.887048 | 0.000108 | 2944 | 21 | 1.92 | 2.39 | 2859 | 3016 | |