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**DEPOSITIONAL HISTORY AND PROVENANCE ANALYSIS OF THE
PERMIAN-AGED GARBER SANDSTONE, CENTRAL OKLAHOMA**

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DEPOSITIONAL HISTORY AND PROVENANCE ANALYSIS OF THE PERMIAN-
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DEDICATION

I would like to dedicate this work to my parents, Jann and Michael Callahan, for their continued support and encouragement. My success is as much a reflection of you as it is of me—thank you for always believing in me.

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ABSTRACT

The Lower Permian Kungurian (Leonardian) Garber Sandstone records a time of profound climatic and tectonic transition in central Pangea with the collapse of an icehouse climate, inception of Pangean monsoonal circulation, and the terminations of the Wichita, Ouachita, and Arbuckle regional uplifts. The source, transport direction, and environment of deposition of the Garber Sandstone in central Oklahoma remains poorly understood. Previous interpretations of this unit range from deltaic to fluvial to shallow/marginal marine. Regional studies of Late Paleozoic sediment dispersal are limited for the Early Permian due to lack of outcrops within and particularly east of the Midcontinent. To rectify this information gap, this study utilizes six new U-Pb detrital zircon geochronology analyses from the Garber Sandstone supported by sandstone petrography, paleocurrent data, grain size analysis, and outcrop and core-based facies analyses to assess trends in sediment provenance and depositional processes along strike of an approximately 435 km outcrop belt. Facies from core and outcrop observations show a predominance of cross bedded, massive, and ripple and planar laminated sandstone that likely represent a sandy, ephemeral fluvial system. A continental fluvial system is further supported by analysis of a core in the central outcrop belt that exhibits abundant macroscopic and microscopic pedogenic features. The Garber Sandstone is highly quartzose with minor sedimentary and low-grade metamorphic lithic fragments. Detrital zircon analysis suggests Paleoproterozoic (1800-1600 Ma), Mesoproterozoic (1300-925 Ma), and Neoproterozoic (790-570 Ma) age populations are present and are interpreted to represent Yavapai-Mazatzal, Peri-Gondwanan, Grenville, and Appalachian sources. Further, there is very little difference among the sandstone mineralogy or detrital

zircon age spectra across the outcrop belt, suggesting a well-mixed, single source fluvial system.

Ultimately, the Ouachita fold and thrust belt and possibly reworked strata from the Arkoma basin are interpreted as the primary source for the Garber Sandstone based on detrital zircon geochronology and sandstone petrography. This is also supported by limited paleocurrent data that indicate transport directions from the southeast. Notably, zircon grains with 1600-1800 Ma ages prove difficult to constrain and may represent a source from the Sabine block to the southeast or Yavapai-Mazatzal provinces to the west. The results of this study bear importance on paleogeographic interpretations and sediment dispersal trends in Oklahoma with broader implications for the Midcontinent during the Early Permian. This study agrees with more recent paleogeographic interpretations that the Permian seas retreated from Oklahoma by the Kungurian producing an arid continental interior and suggests seasonal drainage from the Ouachita highlands to the southeast. This further implies that the Ouachita fold and thrust belt was likely still a highland even as other studies suggest regional uplifts such as the Wichita uplift were subsiding and buried by this time.

INTRODUCTION

Oklahoma's Permian clastic "red beds" provide a window into a unique time in earth history. The stratigraphy records a transient time characterized by profound climatic and tectonic changes across the North American Midcontinent, which was located in west-central Pangea during the Permian (Fig. 1). By the Early Permian, the Late Paleozoic Ice Age was collapsing, and climate shifted towards intense aridification of the continental interior of Pangea (Montañez & Poulsen, 2013; Soreghan et al., 2023) as the global climate regime evolved from an icehouse to a greenhouse state. Megamonsoonal circulation was also well developed by this time, creating strongly seasonal conditions in west-central Pangea (Parrish, 1993; Soreghan et al., 2002). Permian clastic red beds in central Oklahoma act as a rich archive of this climate change, and widespread and localized tectonic events, such as the Wichita, Arbuckle, and Ouachita orogenies that initiated in the Mississippian and Pennsylvanian and ended by the Early Permian (Perry, 1989). The formation of Pangea and thus the associated Alleghenian-Ouachita orogenies ceased by the end of the Pennsylvanian and several of the regional uplifts that defined Oklahoma's Early Permian landscape were undergoing rapid burial (Soreghan et al., 2012). During the Kungurian, Oklahoma was paleoequatorial with Pangea drifting slowly northward throughout the Permian (Fig. 1; Scotese, 2021). As noted by other studies, the shift in climate conditions in the Midcontinent, specifically Oklahoma, correlates to a change in deposition from marine cyclothem deposits to widespread red bed deposition (Tabor and Poulsen, 2008; Sweet et al., 2013; Giles et al., 2013; Foster et al., 2014). Within Oklahoma, several red bed deposits, including the Wellington Formation, the Flowerpot Shale, and the Dog Creek Shale have all been reinterpreted as potential

massive loessite and mudflat deposits due to aridification enhancing eolian transport as opposed to previous suggestions of marginal to shallow marine (Sweet et al., 2013; Giles et al., 2013; Foster et al., 2014; Soreghan et al., 2018). These studies focused largely on very fine grained clastic and evaporite deposits as well as paleosols. The Garber Sandstone, which lies stratigraphically between these units, possesses a different sedimentological character as the unit consists primarily of sand and contains no evaporites.

This study focuses on analysis of the Lower Permian Garber Sandstone through facies observations and provenance datasets. The Garber Sandstone is Kungurian aged with a recent study placing the approximate depositional age at ~281 Ma (Thomas et al., 2021). The objectives of this study are to address 1) the depositional setting of the Garber Sandstone in central Oklahoma and 2) determine the major provenance sources and transport pathways of siliciclastic sediment. Understanding the depositional model and sediment provenance bears importance on the paleogeography and sedimentation controls of central Oklahoma and the broader Midcontinent during the Early Permian. Additionally, as a key component of the Central Oklahoma Aquifer, understanding the depositional history of the Garber Sandstone aids in predicting facies and grain size distribution—both of which can impact hydrogeologic properties of an aquifer such as permeability, porosity, and ultimately flowpaths (Mashburn et al., 2013).

Oklahoma Permian Red Bed Controversies

Extensive literature on the Garber Sandstone exists in the form of United States Geological Survey (USGS) reports concerning the geochemistry and hydrologic properties of the Garber Sandstone; however, very little recent literature exists on the

depositional model and provenance of the Garber Sandstone. The first mention of a depositional environment for the Garber occurs in a paper in which the author asserts a deltaic depositional environment based on field observations of lenticular sandstone bodies being interbedded with sandy shales (Patterson, 1933). Tanner (1959) suggested an epeiric sea covered central Oklahoma and that sea-level fluctuations in the Early Permian may have created marginal marine deposits, citing the prevalent cross beds in the Garber as evidence for being a littoral environment. The same study also states that a deltaic environment likely existed in central Oklahoma and a lagoonal/barrier island environment farther east (Tanner, 1959). More recent studies cite these previous interpretations and accept a deltaic interpretation. For example, a USGS report states that all Permian rocks in central Oklahoma were deposited in a “large fluvial system” and associated delta environment (Mosier and Bullock, 1988). Breit (1998) assesses mineral textures of all Permian units in the Central Oklahoma Aquifer to understand previous seawater and freshwater interactions and concurs with Tanner (1959) that central Oklahoma Permian units were deposited in some combination of shallow coastal marine with fluvial and deltaic input due to mineral growth suggesting both seawater and freshwater interaction (Breit, 1998). A paleontological study by Olson (1967) found that the terrestrial vertebrate fossils in the mudstone of the lower Garber suggest a freshwater river system and could not be marine. Though many sources cite a deltaic or marginal marine setting for the Garber Sandstone there is a lack of characteristics such as marine fossils, heterolithic bedding, or indications of bidirectional currents. In 2005, a new hypothesis for a depositional model was introduced in an Oklahoma State University master’s thesis which proposes a meandering fluvial system as the main mode of

deposition (Kenney, 2005). This hypothesis is supported by the presence of unidirectional ripples, cross bedding, and abundant amalgamated channels with some showing evidence of lateral migration (Kenney, 2005). However, fluvial systems are complex, and the study area only included outcrops around Lake Thunderbird providing a limited view of the Garber outcrop belt. This study hopes to rectify this information gap by conducting sedimentologic and provenance analysis covering a greater portion of the Garber outcrop belt in central Oklahoma.

GEOLOGIC BACKGROUND

Paleogeography and Tectonic Overview

Permian paleogeography within west-central Pangaea was largely controlled by far-field compressive forces caused by the collision of Gondwanaland and Larussia (Laurentia and Baltica) forming Pangea and giving rise to the Appalachian-Ouachita-Marathon orogeny and the uplift of the Central Pangean Mountains (CPM) (Scotese, 2021). The Ouachita orogeny (Late Mississippian-Middle Pennsylvanian) created the Ouachita fold-thrust belt in southeastern Oklahoma and initiated subsidence to the north in the adjacent Arkoma foreland basin (Fig. 1; Arbenz, 1989; Whitaker and Engelder, 2006). The Ouachita Mountains potentially act as important highlands for contributing to sediment dispersal across Oklahoma in the Late Paleozoic. Some of the oldest studies to investigate sediment routing in Oklahoma during the Pennsylvanian to Early Permian suggested a pathway from the southeast due to the presence of chert pebbles in Permian red beds that resemble novaculite only found in the Ouachita Mountains (Oakes, 1947; Chenoweth, 1959). Modern studies have attempted to further constrain sediment pathways at large spatial scales across the North American Midcontinent in the Late

Paleozoic with paleocurrent data and detrital zircon geochronology suggesting both axial and transverse flow through the Appalachian foreland basin toward the southwest margin of Pangea (Chapman and Laskowski, 2019; Lawton et al., 2021).

The formation of the Ancestral Rocky Mountains (ARM) west of Oklahoma began in the Early Pennsylvanian as the continued collision to form Pangea caused widespread intracratonic deformation and block uplifts along high-angle reverse faults (Kluth and Coney, 1981); onlapping of lower Permian strata across these faults confirm uplift ceased by then, likely due to widespread load-induced subsidence in the Early Permian (Fig. 1; Soreghan et al., 2012). Recent work suggests that the Ouachita-Marathon compressive forces are minor in forming the ARM, and transpressional and convergent forces verging to the northeast and east from the southwestern margin account for most of the deformation uplifting the ARM (Leary et al., 2017). The Wichita Mountains, part of the ARM in Oklahoma, similarly formed due to the far-field compressive forces inverting extensional structures of the Southern Oklahoma Aulacogen (SOA) and exposing Cambrian igneous rocks that formed during the SOA rifting event (Ham et al., 1965; Gilbert, 1992; Soreghan et al., 2012; Price, 2016) related to the opening of the Iapetus Ocean (Thomas, 2011). Post rifting, the region experienced thermal subsidence as shallow seas covered Oklahoma, depositing carbonate and clastic sequences until the Late Mississippian when inversion of the Cambrian structures led to uplift and flexural induced subsidence to the north, forming the Anadarko basin that accumulated very thick Pennsylvanian strata (Perry, 1989; Johnson et al., 1989; Soreghan et al., 2012). Epeirogenic subsidence took over by the Early Permian with the cessation of far-field compression, and the Anadarko basin and surrounding highlands underwent

rapid subsidence effectively burying Permian landscapes under as much as 2.5 km of sediment (Soreghan et al., 2012).

The Arbuckle orogeny is a regional tectonic event that also occurred along the Southern Oklahoma Fault System in the Late Pennsylvanian when basement cored block uplifts exhumed Cambrian igneous rocks of the SOA (Thomas et al., 2012) and older Mesoproterozoic granites. Overlying passive margin Cambrian-Mississippian strata are also uplifted and folded in the Arbuckle Mountains (Thomas et al., 2016). In north-central Oklahoma, the narrow low relief Precambrian Nemaha Uplift is a heavily faulted ridge that formed in association with the Midcontinent Rift System that was briefly exposed in the Mississippian and subsequently buried (Fig. 1; Dolton and Finn, 1989; Xie et al., 2016).

Late Paleozoic Paleoclimate

The Late Paleozoic is marked by major changes in climate caused by Gondwanan ice sheets waxing and waning that characterize the Late Paleozoic Ice Age (LPIA) and impact associated stratigraphy worldwide (Veever and Powell, 1987; Montañez and Poulsen, 2013; Qie et al., 2019). Additionally, the presence of the CPM along the equator during the Late Pennsylvanian and Early Permian acted to reroute moist equatorial air, forming an arid rain shadow to the northwest of the CPM where Oklahoma was located (Scotese, 2021). Proposed—and non-exclusive—mechanisms for initiating the onset of the LPIA include: 1) the expansion and colonization of land plants during the Devonian, which led to increased coal formation and carbon burial in the Carboniferous, 2) the closure of the Rheic gateway rerouting warm ocean waters towards southern

Gondwanaland for enhanced precipitation, 3) explosive volcanism that would have reduced incoming solar radiation, and 4) increased silicate weathering during uplift and erosion of the CPM (Saltzman, 2003; Montañez and Poulsen, 2013; Godd ris et al., 2017; Soreghan et al., 2019; Qie et al., 2019).

The LPIA began in the Middle Mississippian with the formation of peripolar ice sheets in southern Gondwanaland and began to collapse during the Early Permian in western Gondwanaland with eastern parts of the ice sheet persisting until the Middle Permian (Fielding et al., 2008; Montañez and Poulsen, 2013). Peak glaciation is diachronous with ice sheets reaching their maximum in the Middle Pennsylvanian and regrowing across the Pennsylvanian-Permian boundary with another ice extent maximum occurring in the Asselian (Fielding et al., 2008; Montañez and Poulsen, 2013; Soreghan et al., 2019). Rapid deglaciation has often been paired with an interpretation of increased aridification in the equatorial regions of Pangea which was enhanced by a transition from zonal to monsoonal circulation (Parrish, 1993; Soreghan et al., 2002).

Evidence for hypothesized monsoonal circulation in the North American Midcontinent starting in the Asselian is corroborated by zircons sourced from Midcontinent loessite beds that indicate both easterly and westerly winds were well-developed and providing eolian sediment to the region (Fig. 1; Soreghan et al., 2002). Loessite deposits in northeastern New Mexico and Oklahoma commonly occur in strata exhibiting vertic paleosol features that reflect marked seasonality and aridity (Kessler et al., 2001; Giles et al., 2013; Foster et al., 2014). A comprehensive study of Late Pennsylvanian to Early Permian paleosols across the Midcontinent found a strong shift from humid ever-wet climates to strong seasonal arid climates (Tabor et al., 2008).

Oklahoma exhibits the greatest change in paleosol morphology as Pennsylvanian paleosols are largely gleyed argillisols and histosols with a sharp transition in the Early Permian to calcic vertisols, calcic argillisols, and calcisols (Tabor et al., 2008). A comprehensive review of Late Paleozoic sediment dispersal and paleogeography highlights a recession of the interior seaway out of Oklahoma by the Early Permian and names the area the Western Interior Desert (WID) due to the thick loessite and mudflat deposits (Lawton et al., 2021). Thus, the Kungurian Garber Sandstone provides a window into deposition within the WID during this transitional time of Gondwanan deglaciation, increased equatorial aridification, and seasonal monsoonal circulation in the North American Midcontinent.

Study Area and Stratigraphic Overview

Lower Permian red beds in Oklahoma tend to crop out in a roughly north-south trending line with the Garber Sandstone grading into the Ninnescah Shale in southern Kansas and curving towards the west south of the Wichita Mountains dipping into the subsurface near the Texas border (Fig 2; Norton, 1937; Wood and Burton, 1968). Lower Permian units crop out east of Oklahoma City with the units progressively younging towards the west due to the regional shallow westward dip of $\sim 1^\circ$ until they become buried by younger Middle Permian strata in the Anadarko basin (Johnson et al., 1989; Soreghan et al., 2012; Kushner et al., 2022).

Late Carboniferous (Pennsylvanian) stratigraphy across the North American Midcontinent is dominated by cyclothems formed by glacioeustatic sea level changes (Heckel, 2008; Fielding, 2021). Alternating carbonate and clastic sequences are recognized in the lowest part of the study area in the Gzhelian Vanoss Formation (Fig.

2A). The Vanoss Formation is characterized by red shales, sandstones, conglomerates with limestone clasts, and thinly bedded limestones totaling 75-150 m (McKinley, 1952; Bingham and Moore, 1975). The Lower Permian strata continue to show cyclothemic character as the Admire, Council Grove, and Chase Groups all consist of alternating fine-grained sandstone, shale, mudstone, and limestone that together are 175-285 m thick (Bingham and Moore, 1975; Chaplin, 2004). These strata represent deposition in regressing marine subtidal to peritidal environments transitioning into continental environments (Chaplin, 2004; Johnson et al., 1998) with some of the mudstone units in the Council Grove and Chase showing evidence of paleo-loess/eolian deposition (Soreghan et al., 2018).

The Early Permian Sumner Group records a transition in the stratigraphy from cyclothem sequences to dominantly clastic red beds. The base of the Sumner Group consists of the Wellington Formation which crops out directly east of the Garber and extends northward to southern Kansas (Giles et al., 2013). The Wellington Formation is characterized by anhydrite, dolomite, siltstone, mudstone and sandstone facies that are 75-250 m thick (Chaplin, 2004; Giles et al., 2013; Stanley, 2021). Interpretations for the depositional environment of the Wellington initially suggested lacustrine or marine conditions, but the most recent investigation of the Wellington advocates for a purely continental environment shifting from perennial lake deposition to an ephemeral lake and loess plain (Giles et al., 2013). The contact between the Wellington and Garber is ill defined as it is gradational. Recent mapping projects use the lowest Garber sandstone lithofacies paired with the highest Wellington shale to define the contact; in some areas the lowest Garber conglomerate marks the contact with the Wellington (Stanley, 2021).

The basic lithology of the Garber Sandstone has been described in a series of publications and geologic maps (Patterson, 1933; Aurin et al., 1926; Gromadzki, 2004; Kenney, 2005; Stanley, 2021). The Garber is largely a red-brown to red-orange medium- to very fine-grained friable sandstone that commonly exhibits trough cross-bedding, tabular cross-bedding, and lenticular multistory sand body geometries (Patterson, 1933; Aurin et al., 1926; Gromadzki, 2004; Kenney, 2005; Stanley, 2021). Studies note both the Wellington and Garber become increasingly finer grained towards the north and slightly downdip towards the west as lithologies change from sandstone dominated to progressively being interbedded with more mudstone and shale (Patterson, 1933; Aurin et al., 1926; Wood and Burton 1968). This is also reflected in the topography and vegetation as Wood and Burton (1968) noted hills composed of sandstone outcrops typically have deciduous tree growth, whereas flatter areas underlain by shale tend to be grassy and barren of trees. The Ninnescah Shale is the upper portion of the Sumner Group in Kansas and lies atop the Wellington making it roughly correlative to the Garber. The Ninnescah crops out in the south-central portion of Kansas and rapidly grades into the Garber close to the Oklahoma state line (Norton, 1937). The overall thickness of the Garber varies but recent mapping conducted by Oklahoma Geological Survey staff suggest a thickness of ~25 m in the north (Noble County) to ~320 m in the center (Cleveland County) (Stanley and Miller, 2008; Stanley and Standridge, 2008).

The last unit in the Sumner Group is the Hennessey Shale, which exhibits a gradational contact with the underlying Garber Sandstone (Wood and Burton, 1968). The Hennessey is fairly homogenous and defined by thickly bedded, internally structureless red-brown to red-orange blocky mudstone and siltstone with local conchoidal fracturing

(Aurin et al., 1926; Patterson, 1933; Soreghan et al., 2018). Rare lenses of sandstone and one noted instance of lateral accretion surfaces suggest minor fluvial transport, but the overall lack of channels and massive character suggest mostly eolian deposition as loess (Soreghan et al., 2018). The thickness of the Hennessey is estimated to range between 185-200 m.

METHODS

Field Work

Twenty-two locations (Fig. 2B) across the Garber outcrop belt were studied and sampled for a variety of data including sandstone petrography, grain size, and detrital zircon geochronology analyses as well as outcrop-based facies and paleocurrent observations. Outcrops were sampled to make thin sections to aid facies description and for modal point-counts on sandstones, and for quantitative grain size analyses. Six of the outcrops were sampled for detrital zircon geochronology (Fig 2B). Facies analysis was based on outcrop scale observations aided in some cases by panoramic photographs; however, no large-scale outcrops occur. Overall character of the units, facies and facies associations, internal surfaces, sedimentary structures/bedforms, and grain size were documented for each outcrop. Paleocurrent data was taken where cross beds were prevalent; trough cross beds were assessed using the methods outlined by DeCelles et al., (1983). The Garber Sandstone is not significantly tectonically deformed and dips at very low angles (<1-2°), so no structural corrections of paleocurrent data were made. Paleocurrent measurements of several Lake Thunderbird outcrops are recorded in a

previous Oklahoma State University master's thesis (Kenney, 2005) and are included in this study.

In the field most large sandstone outcrops occur at the crests of hills, which is corroborated by a GIS analysis of topography and rock type by Belt and Paxton (2005); therefore, a preservation bias may exist towards sand-rich facies in outcrop analysis. In addition, stratigraphic correlation across Permian outcrops in Oklahoma is challenging as outcrops are constrained to road-cuts and because of the low relief and shallow dips (Soreghan et al., 2018). Given these limitations, this study expands upon previous outcrop studies from the historically well-documented Lake Thunderbird area (Kenney et al., 2005) to field sites significantly farther to the north and south, thus allowing a broader analysis of the spatial distribution of facies and provenance sources in the Garber Sandstone.

Core Analysis

Further understanding of lithologic trends is supplemented by the NOTS Hole 3 core (35°40'28.1"N 97°22'49.8"W) drilled by the USGS in Oklahoma County (Fig 2B). The core interval spans 4.5 m to 60 m below ground surface. Another core interval also stored at the Oklahoma Petroleum Information Center (OPIC) labeled Garber with API numbers 35047012180000, 35047012190000, and 35047012200000 was initially examined but the cored interval is too deep in the subsurface to represent the Garber and likely contains the Wellington Formation or Chase and Council Grove Groups and should be disregarded for future studies of the Garber. The quality of the NOTS Hole 3 core ranges from good to poor with large sections of the core being rubble and not intact—particularly the mudstone. Lithologic observations are documented at ~30 cm scale and

hand samples were taken directly from the core boxes of mudstone, but the more indurated sandstone and conglomerate lithologies were slabbed using a water saw for a total of 21 core samples. Nine representative thin sections were made of the different lithologies and other relevant fabrics or features, and eight samples were further processed for grain size.

Laser Particle Size Analysis (LPSA)

Grain size data for 28 outcrop and 8 core samples were obtained after applying a chemical treatment to disaggregate the samples. All samples, including mudstone and shale samples, are generally poorly indurated, and most sandstone samples are easily broken by hand. The most prominent cements present upon inspection of thin sections, as well as noted by Breit (1998), are iron-rich (hematitic) clay and local authigenic calcite that fills pore spaces. The abundance of hematite cement varies across samples, with more cement creating slightly more indurated darker red samples. Basin subsidence curves of the northeastern edge of the Anadarko basin show Kungurian strata being buried to depths <1 km and with burial temperatures <50°C (Carter et al., 1998) with another study similarly suggesting that the Garber and Wellington were buried to only relatively shallow depths of 0.6 to 0.8 km (Breit, 1998), consistent with minimal burial diagenetic features and cementation.

Disaggregation methods are modified from Jiang and Liu (2011). Samples that did not break down easily by hand were placed into a ceramic mortar and pestle and lightly crushed to roughly granule size and sieved with a .701 mm mesh sieve, so no fine sediment created by crushing was included. About 5 g of sediment was placed in 50 ml

centrifuge tubes and then filled with 30 ml of 0.3 M sodium citrate. The samples were sonicated for 20 minutes, centrifuged for six and half minutes, and decanted. Another 20 ml of sodium citrate was added to the samples along with 2.5 ml of 1.0 M sodium bicarbonate then placed in a 75°C hot bath for 15 minutes. After removing the centrifuge tubes from the hot bath, 1-2 g of sodium dithionate was added and then returned to the hot bath for an additional 15 minutes; this step is repeated a second time. Depending on the amount of hematite cement the entire CBD treatment was repeated a second time. Once the CBD treatment is completed the samples are rinsed with distilled water three times. All samples were moved to beakers and submerged in ~30 ml of 2 N hydrochloric acid and left loosely covered for 24 hours. A few samples required an additional 24 hours in the acid bath due to persistent calcite cement. The samples were returned to centrifuge tubes and rinsed three times with distilled water.

To avoid clay flocculation samples were sonicated for one minute in ~15 ml of sodium hexametaphosphate dispersant preceding analysis on a Malvern Mastersizer 3000 using the Hydro SM small volume unit. Using an eyedropper ~1 ml of sample suspended in dispersant was added to the wet dispersion unit set to 2,500 rpm until obscuration is within the range of 15-17%. We assume all samples are fully disaggregated due to grain size volume percent curves showing no outlying large size fractions suggesting incomplete disaggregation.

Sandstone Petrography

Twenty-five sandstone samples were collected for point counting of modal mineralogy. Thin sections were impregnated with blue epoxy to preserve integrity of the

highly friable sandstones and to highlight porosity. Thin sections were stained using sodium cobaltinitrite to aid in identifying potassium feldspar. 300 grains per sample were counted using the Gazzi-Dickinson method (Dickinson, 1970; Ingersoll et al., 1984), which is deemed statistically sufficient for petrographic analyses where the lowest relative percentages of a class is around 5% (Dryden, 1931; Van Der Plas and Tobi, 1965). Quartz samples are differentiated between Q_m (monocrystalline quartz), Q_{p2-3} (polycrystalline quartz with 2-3 distinct areas of extinction), and $Q_{p>4}$ (polycrystalline quartz with many areas of extinction). Chert grains are counted as lithics. Results of framework grain percentages are plotted on QFL and Q_mFL_i ternary diagrams to assess provenance sources in relation to tectonic regimes (Dickinson and Suczek, 1979; Dickinson et al., 1983).

Detrital Zircon Geochronology

Roughly 5 kg of sandstone per sample was collected from six fresh outcrop faces spanning the Garber outcrop belt. All samples were processed at the University of Arizona LaserChron Center following standard detrital zircon separation procedures, including rock crushing, magnetic separation, and gravity separation (using Wilfley table and heavy liquids) (Gehrels et al., 2008, 2011). The non-magnetic heavy minerals are mounted on 2.5 cm epoxy disks and polished to expose the interior of the grains (Gehrels et al., 2006, 2008). All samples are mounted with the Sri Lanka (563.5 ± 2.3 Ma), Duluth Gabbro Complex (FC1 1099 ± 2 Ma) and the Vermont Braintree Monzodiorite Complex (R33 419.3 ± 0.4 Ma) standard zircons to aid in calibration of the unknown zircons (Schmitz et al., 2003; Black et al., 2004; Gehrels et al., 2008). Zircon identification is assisted by cathodoluminescence (CL) and backscattered electron (BSE)

imaging on the Scanning Electron Microscope (SEM). BSE images are used to differentiate between zircons and other heavy minerals that may have been mounted and CL images are used to see zonation within zircons for core-rim relationships and provide higher precision for ablating zircon rims as opposed to cores for detrital studies.

A Thermo Element 2 Laser Ablation-Single Collector-Inductively Coupled Plasma-Mass Spectrometer (E2 LA-SC-ICP-MS) was used to obtain U-Th-Pb isotopic ratios and age dates for all samples. All samples proved to have high zircon fertility and 315 analyses were conducted per sample with intermittent standard analyses. Grains were randomly selected to include a variety of sizes and morphologies to avoid potential bias. Grains excluded from analyses included those with inclusions, large cracks, or those smaller than the laser diameter to avoid contamination and erroneous ages (Gehrels et al., 2011). Contaminated surface material is removed preceding analysis using a 40 μm diameter laser to carry out shallow cleaning shots. Zircons were ablated with a 20 μm laser firing at a repetition rate of 7 Hz over 27 seconds per grain and then carried to the E2 mass spectrometer via helium gas. Best ages for grains younger than 900 Ma are calculated using the $^{206}\text{Pb}/^{238}\text{U}$ decay system due to it being more accurate for younger ages whereas the $^{206}\text{Pb}/^{207}\text{Pb}$ decay system is used for grains older than 900 Ma (Gehrels et al., 2006, 2008). This cutoff is based on $^{206}\text{Pb}/^{207}\text{Pb}$ undergoing less Pb loss compared to $^{206}\text{Pb}/^{238}\text{U}$ which becomes more common in older zircons as well as ^{207}Pb having a low intensity in younger zircons (Gehrels et al., 2006, 2008). All initial data reduction is conducted at the LaserChron Center using AgeCalcML v1.42, a MATLAB based program that produces Concordia plots, weighted means, and calculates ages and associated uncertainties (Gehrels et al., 2008; Sundell et al., 2021). All initial corrections

applied in AgeCalc use SL, FC1, and R33 standards to mitigate effects of depth-related fractionation, apply common Pb correction and fractionation correction, as well as comparing U/Th concentrations to assess discordance in unknowns (Gehrels et al., 2008). Additional data reduction includes removing grains that are >20% discordant and >5% reverse discordant which can likely be attributed to Pb loss for high normal discordance and machine error for reverse discordance. Conservative cutoffs for discordance ensure that biasing towards younger ages does not occur as young populations are less prone to Pb loss compared to older populations (Gehrels et al., 2011). Specifics of E2 instrumentation, calibration to standards, and removal of grains during data reduction are further outlined in Gehrels et al., (2008), Gehrels et al., (2011), Pullen et al., (2018) and Sundell et al., (2021).

Detrital zircon geochronology data is visualized with stacked probability density plots (PDP) and cumulative probability plots made using detritalPy—a Python-based geochronologic data analysis tool that plots detrital age distributions (Sharman et al., 2018). For multi-sample comparison, multidimensional scaling (MDS) plots were created using MATLAB based software DZmds v1.10 (Saylor et al., 2018). A MDS plots dissimilarities between U-Pb age datasets with the Euclidean distance between samples representing disparities across the samples (Vermeesch, 2013). A non-parametric Kolmogorov-Smirnov (K-S) test is applied to assess similarities in detrital age spectra signatures; a K-S test was used due to its recent identification as a statistically vigorous method for visualizing nuanced differences across detrital datasets for MDS plots (Vermeesch, 2018).

RESULTS

Facies Analysis

Facies analysis is largely based upon outcrop and core (NOTS Hole 3) observations, as well as thin section observations. The descriptive lithofacies of the Garber Sandstone are outlined in Table 1 and consist of sandstone, mudstone, and conglomerate facies.

Sandstone Lithofacies

Cross-Bedded Sandstone (Sc)

Description–

The cross-bedded sandstone facies is most commonly very fine- to fine- grained with rare instances of medium-grained sand. Trough cross beds are the most common bedform followed by tabular cross beds (Fig. 3). The sand is commonly rounded to subrounded, moderately to well-sorted, and ranges in color from dark red to red-orange and light tan. In thin section, the laminae are defined by an iron cemented clay matrix imparting a red color. Trough sets average ~1m wide and ~20cm tall (Fig. 3A). Troughs are commonly seen in cross-sectional view. However, the outcrop in Figure 3B shows two large plane view troughs. In cross-sectional view the trough cross beds tend to weather to look massive unless a fresh face is exposed (Fig. 3A). Tabular cross beds can be high or low angle and vary in height from ~2 cm to ~30 cm (Fig. 3C, 3D). Observable tabular cross beds tend to persist in cross sectional view even on weathered surfaces (Fig. 3D). Trough cross beds slightly scour into the massive mudstone facies whereas tabular cross beds occur in association with massive sandstone, planar laminated sandstone, and

conglomeratic facies. Trough cross beds occur most commonly in the central portion of the outcrop belt and are not seen in the north and tabular cross beds are distributed across from the center to the north but tend to be smaller and less common in the north.

Interpretation—

The trough and tabular cross beds of the cross-bedded sandstone facies represent the migration of three dimensional sandy bedforms in a unidirectional flow environment under lower flow regime conditions (Miall, 1977). Trough cross beds represent the preservation of crescent-shaped dune trains that have a similar shape to linguoid/lunate ripples but on a larger scale (Allen, 1963). Tabular cross beds are the expression of relatively straight-crested dunes of various sizes (Allen, 1963). The very fine to medium grain size, subangular to subrounded morphology, and moderate sorting and formation of cross-beds indicate these facies were deposited during times of lower energy in the system. The interbedding of these bedforms at outcrop-scale likely reflect changes in flow velocity and may indicate the formation of transverse bars in the center of channel complexes. Transverse bars often have dunes and ripples superimposed atop them and tend to exhibit planar cross bedding caused by downstream stream accretion (Miall, 1977). This geometry is observed in the central portion of the outcrop belt around Lake Thunderbird and Lake Arcadia as there are instances of stacked trough and planar cross beds on the sides that are overlain by rippled beds at the top (Fig. 3C).

Ripple Laminated Sandstone (Sr)

Description–

Ripple cross-laminated sandstones are common in the Garber Formation in cross section but are seen in one plan-view bedding plane (Fig. 4). Small ripple cross-laminations, some displaying climbing patterns, are seen in cross section across most outcrops including instances within core (Fig. 4A). The sand in this facies is very fine- to fine- grained, well-sorted, and subrounded to subangular. Similar to the cross-bedded sandstone facies the ripple laminations are defined by very thin red-orange laminae cemented by an iron oxide mud matrix with light tan sand between laminae being largely uncemented as seen in thin section. Climbing ripples range in size from thinly to thickly laminated and sets range in height from ~2 cm to ~10 cm (Fig. 4B). On one large bedding plane, three ripple types including climbing, asymmetrical and lunate/linguoid ripple trains are observed in plan-view (Fig. 4B, 4C, 4D). The asymmetrical ripples are semi-sinuuous crested and occasionally bifurcate and are only ~1 cm tall (Fig. 4C). Lunate/linguoid ripples are highly convex/concave and are also ~1 cm tall with ~8 cm across the concave/convex shapes (Fig. 4D). The ripple laminated facies is commonly associated with the cross-bedded sandstone facies when it is superimposed atop cross beds.

Interpretation–

The asymmetrical nature of the ripples is consistent with a unidirectional-flow origin and the very fine- to fine-grained well-sorted sand is consistent with a lower flow regime. Climbing ripples are typically indicative of rapidly decelerating flow velocity and high sediment supply (McKee, 1966) and commonly occur where the flow leaves channel

confines. Adjacent to the large plan-view climbing ripples is a series of plan-view asymmetrical then linguoid/lunate ripples along the Lake Arcadia shoreline (Fig 4). This association may suggest a rapid decrease in flow conditions. The small ripple cross-laminations seen when weathered outcrops are exposed in cross-sectional view across the outcrop belt are also associated with low flow regime currents moving bedforms downstream under aggradational conditions (Miall, 1977; Burns et al., 2017).

Planar laminated sandstone (Sh)

Description–

The planar laminated facies is very fine- to fine-grained to rarely medium-grained, and is well sorted, and subrounded to subangular. This facies is typically red-orange, light tan, and in rare instances pale green (Fig. 5). The laminations vary in thickness from very thin (0.1cm) to thick (1cm) and can occur in sets up to 1m in thickness occasionally with a “flaggy” appearance (Fig. 5). The laminae are composed of iron oxide cemented sand grains. The planar laminations are typically horizontal and continuous but are locally low angle when associated with sigmoidal and wedge-shaped sand body geometries (Fig. 5A). In one southern outcrop, the low angle laminations exhibit medium grain size and are subtly graded. Parting lineations are observed on some bedding planes of more thickly laminated outcrops (Fig. 5B), but toward the northwest stacked planar sandstones occur without observable parting lineations on bedding planes (5C). These planar sandstones also have instances of pore filling carbonate cement observed in thin section. This facies occurs commonly atop thin erosive conglomerate beds, particularly in the core. In outcrop, this facies tends to occur beneath cross-bedded or rippled sandstone (Fig. 5D).

Interpretation–

Planar horizontal laminated sandstones can represent both upper and lower flow regimes in subaqueous unidirectional flow settings (Miall, 1985), though they are associated with the upper flow regime when grain size is very fine to medium and parting lineations are present (Fielding, 2006). In the Garber Sandstone this facies is thought to represent a laminar high flow regime particularly when there are parting lineations and when occurring directly atop scoured mud-chip conglomerates. This facies suggests upper flow regime conditions and shallow water depths, which is common in regions experiencing enhanced seasonal discharge in ephemeral systems (Miall, 1985). In the northwest thickly laminated sand sheets stacked almost a meter high do not show parting lineations, meaning they could have formed in upper or lower flow regimes. Recent studies have suggested that previous interpretations stating low-flow regime plane beds can only form in sediments with a grain size larger than coarse sand are incorrect and that low-flow-regime plane beds can form even in very fine grain sizes and over a wide range of Froude numbers (Ohata et al., 2022).

Massive Sandstone (Sm)

Description–

The massive sandstone facies is noted in outcrops in the central portion and twice in the northern portion of the outcrop belt (Fig. 6). This facies is fine grained, moderately sorted, with subrounded to subangular grains. The color is typically a light tan to red color with minimal iron oxide cement observed in thin section except for one outcrop that is capped by a potential iron hardpan. The ~10 cm iron hardpan caused leaching of iron oxides into the massive sandstone below giving the grains a thick iron oxide coating and

imparting a deep purple-red color to that portion of the outcrop. The massive sandstone often has a laterally extensive and very thickly bedded (~2 m) tabular to lenticular character as well as occurring locally as thin lenticular sand bodies that are only a few meters (1-3 m) across and 1 m at their thickest (Fig. 6A). The massive sandstone tends to occur as isolated deposits along road cuts or in association with cross-bedded and laminated sandstone facies. In the instances of one Edmond outcrop the massive mudstone facies is topped by the cross-bedded sandstone facies and has both a planar and scoured surface into the top of very thickly bedded massive sandstone at the base of the outcrop (Fig. 6B). In this location the massive sandstone also thins to the north and grades into large tabular cross beds. Well exposed fresh faces of massive sandstone 1-2 m thick and tens of meters across are noted in three instances around Edmond and Lake Arcadia.

Interpretation–

Massive sandstones can represent a variety of flow conditions despite its structureless form. The sediment is moderately sorted, fine-grained, and sometimes amalgamated; this facies may represent a sudden decrease in flow velocity (Sumner et al., 2008). Experimental studies show that structureless sands accumulate in subaqueous regimes when hyperconcentrated flows experience a sudden change from high to low velocities and the sediment rapidly falls out of suspension (Sumner et al., 2008). This requires sediment to be abundant and fine enough to be transported in suspension. This is consistent with the grain size of the massive sandstone facies and with the occurrences of other bedforms, such as large climbing ripples, that suggest abundant sediment supply and high sediment accumulation rates. Another explanation for massive sands is

liquefaction induced deformation caused by bank and bedform failure (Jones and Rust, 1983). In this scenario, unstable channel margins or bedforms collapse and quickly introduce large amounts of sediment into the channel inducing liquefaction of the sediment downstream. These explanations for massive sandstone generally call for transient flow conditions from high to low velocity, are typically associated with waning flood conditions, and require sediment-laden waters that rapidly deposit the sediment out of suspension. It is also possible that weathering artifacts make primary sedimentary structures difficult to see in some highly weathered outcrops. Large outcrops in the central portion of the outcrop belt around Lake Thunderbird have weathered to a darker gray giving the impression of a massive nature, but when a fresh face is created by small erosive slumps it displays cross-bedding and planar laminations, however, in other cases, fresh surfaces of the massive sandstone facies do not exhibit cross beds or other internal structures (Fig. 6).

Massive Mudstone (Fm)

Description–

The massive mudstone facies is typically light red, orange, or light brown and is blocky and friable (Fig.7). The facies exhibits a coarse silt fraction in outcrop as the dominant grain size mode with a secondary mode of very fine sand. The massive mudstone tends to be thickly bedded with most occurrences ~1-1.5m thick. In the southernmost outcrop no mudstone facies are observed. Thickly bedded mudstone is observed in the central and northern outcrop belt; however, sandstone bodies are isolated within the mudstone in one northern outcrop. Mudcracks are also noted by Siemers

(2000) and Kenney (2005) in this facies. In outcrop, the massive mudstone tends to exhibit a slightly scoured upper contact with the cross-bedded sandstone facies overlying.

In core, the mudstone is well-preserved and tends to show subangular blocky peds, nodules, small slickensides, rare bifurcating vertical traces, and a short interval of chaotic bedding (Fig. 8, 7A, 7B). It also is always strongly red to orange, and the modal grain size is 4-5 microns (Fig. 8). Petrographic analysis reveals that the massive mudstone in the core is composed mostly of an orange iron oxide clay matrix with occasional poor to moderately sorted silt-sized angular to subrounded quartz grains floating in the matrix (Fig. 7C, 7D). The subangular blocky ped fracture pattern is common throughout the mudstone and is also observed in thin section (Fig. 7C).

Slickensides are small (1-2 cm) and found sporadically throughout the core. There is one occurrence of chaotic bedding that forms a ~20 cm interval near the base of the core and is almost entirely clay with small swirly structures observable in thin section (Fig. 7D).

Calcareous nodules (3-8mm) are fairly common and are characterized by a white color, microcrystalline texture, and thin clay coatings. Nodules of iron oxides minerals (0.5-2cm) are also noted to a lesser extent and have a dark grey metallic luster and appear as opaque dark red to black in thin section. One large (2 cm diameter) septarian iron oxide nodule was studied in thin section and found to be fractured on the inside and replaced with sparry calcite. Typically, the mudstone forms an erosive scoured contact with the thin conglomerates above.

Interpretation—

The massive character, and fine grain size of the mudstone beds may indicate suspension deposition by either eolian or aqueous processes. The massive nature, coupled with the presence of intervals with carbonate nodules—some with Fe/Mn oxide coatings—as well as slickensides and wedge-shaped blocky pedes strongly suggest pedogenic overprinting (Retallack, 1990) and thus a terrestrial setting for the mudstones. Specifically, the macro- and micro-morphologic features observed are consistent with a calcic vertisol. These characteristic features include: subangular blocky ped microstructure with an almost entirely clayey matrix with striated b-fabrics as well as calcareous nodules (Kovda and Mermut, 2010; Verrecchia and Trombino, 2021). Applying the terminology from Retallack (1990) the microfabric is weakly defined clinobimasepic suggesting alignment of clay particles in slickensides. Vertisols often have high clay contents which correspond to the secondary clay peak in the core grain size histograms (Fig. 8). Argilliturbation is the dominant form of pedoturbation in vertisols which creates the slickensides and homogenous soil profiles caused by the frequent wetting and drying of shrink-swell clays which form in highly seasonal climates (Retallack, 1990). The instance of chaotic swirly bedding is interpreted to represent bioturbation.

The process of transport of the mud is more difficult to infer given limitations of the outcrops. In continental settings, suspension sedimentation can occur in unconfined overbank flooding events forming thick mudstone deposits (Miall, 1985; Foix et al., 2013). However, suspension deposition through eolian transport also occurs as dust settles out of suspension and forms massive loess deposits (Pye, 1995; Muhs, 2007). It is

difficult to discern dust in the rock record (Meijer et al., 2020; Soreghan et al., 2023) but the massive tabular character, common angular morphology of the silt quartz grains, and absence of channels, sand sheets, or bedding may indicate primarily eolian deposition of the mudstone facies. Loess deposits tend to form in tandem with paleosols, sometimes showing alternating deposition in the stratigraphy (Muhs, 2007; Dubois et al., 2012). However, paleosols are also common in fluvial overbank environments as well (Bown and Kraus, 1987; Kraus, 1999). Soil development requires landscape stability in which neither eolian or fluvial sedimentation is dominant (Kraus, 1999; Muhs, 2007) so that pedogenic processes may take over.

Conglomerate facies (Gm)

Description–

The conglomeratic facies is the least common lithology in the Garber Sandstone. Conglomerates in the Garber tend to be matrix supported and composed of rounded to subangular clasts (Fig. 9). In the southernmost outcrop, a small conglomeratic layer ~10 cm thick is composed entirely of 1-3 cm subangular chert clasts topped by coarse to medium sand in a restricted lens. In the central portion of the outcrop the conglomerate has a different character and is composed of sedimentary clasts of sandstone, mud chips, chert, and local light-colored calcareous nodules that are 1-5cm in diameter (Fig. 9A, 9B). These conglomerates are 20-30 cm thick and are medium bedded; they lack lateral continuity as they cannot be correlated across outcrops but locally form sheets several meters wide. In core, these sedimentary clast conglomerate beds punctuate the mudstone and sandstone lithologies as thin beds that are typically 3-5 cm thick with one conglomerate interval near the top of the core being upwards of ~20 cm thick (9C). These

thin conglomerates tend to scour the mudstone beneath forming an erosive contact and are then capped by planar laminated or climbing rippled sandstones (Fig. 9C). In outcrop, the conglomerate beds tend to be well-indurated and occasionally grade upwards into low angle planar laminated sandstone (Fig. 9D). They also are noted to be interbedded with tabular cross-bedded sandstone in the central portion of the outcrop belt. Conglomerates are not observed commonly in northern outcrops.

Interpretation–

Disorganized crudely-bedded conglomerates are common in subaqueous systems and are representative of high energy flows (Allen, 1970; Miall, 1988). The thin erosive conglomerate beds are likely indicative of channel lag fill that is activated during times of high discharge and scours into the deepest part of the channel eroding and depositing intraformational sedimentary clasts (North and Taylor, 1996). These thin beds are abruptly overlain by planar laminated or climbing rippled sandstone suggesting flow velocity decreased but remained in the upper flow regime. The more thickly bedded conglomerates seen near the top of the core and in outcrop may represent an accumulation of channel lag deposits that form larger bedload-transported longitudinal bars (Miall, 1977; Miall, 1985); however, the thick nature of the conglomerates suggests that they were not deposited during repeated channel lag accretion which can create stratification, but during large high density and high-velocity flows (Todd, 1989). The thin slightly erosive contact seen between conglomerate beds may indicate deposition of gravels during different flooding events. These beds grade into low angle planar-bedded sandstones than were deposited in waning flow conditions. The carbonate clasts are likely sourced from carbonate nodules in the mudstone facies that was eroded and entrained

into the flow during high energy events as observed in the Garber by Siemers et al., (2000) and in other similar deposits by North and Taylor, (1996).

Facies Associations

Taken in sum, the sandstone and conglomeratic facies suggest unidirectional, subaqueous channel deposits associated with fine-grained mudstone facies reflecting subaerial exposure and periodic landscape stability. This is most consistent with a fluvial depositional model. There is also a lack of diagnostic characteristics of nearshore or deltaic environments, including mud draping or bidirectional flow indicators. Using the classification schemes of Miall (1985) facies are grouped together into larger hierarchical schemes based on facies associations and bounding surfaces. The facies and their associations can be grouped into two overarching fluvial facies associations: Channel-fill facies association and overbank facies associations. The channel-fill facies association is characterized by the Sc, Sr, Sh, Sm, and Gm facies and the overbank facies association is characterized by Fm, Sh, and Sr facies (Table 1). Limited outcrop exposure precludes lateral correlation and limits the analysis of higher order bounding surfaces that help define the nature of the fluvial channel (Miall, 1985), so generally only the internal architecture of channel elements is assessed.

Channel-fill Facies Associations-

This facies association consists of sandstone and conglomerate lithofacies and is most dominant in the central portion of the outcrop belt. There is also a notable lack of associated floodplain deposits intercalated with the sandstones. Instead, most outcrops appear to be internally amalgamated sandstone bodies forming lens shaped channel-fill. In Figure 10A, a large outcrop ~45m wide and ~3m tall on the eastern side of Lake Thunderbird exhibits a concave up scoured erosional surface as the highest order bounding surface. Another scour equally as long but shifted slightly west exists halfway up the outcrop. Beneath the lower erosional surface there is sandstone, so, although the full extent is not exposed, we infer this represents larger scale amalgamation of relatively shallow channel-fill deposits with no interbedded floodplain deposits. Within the erosional surface there are two small lobate bar forms laterally cross cutting one another as well as sets of medium tabular cross-beds. Near the top of the outcrop the beds become more thinly bedded potentially indicating shallower water deposition.

Figure 10B shows a typical Garber outcrop in the central outcrop belt with the interior exposed due to a small slump. Massive mudstone (Fm) is slightly scoured by the thick, indurated channel-fill facies atop. The channel-fill is defined entirely by the Sc facies with large low angle cross beds on the bottom that are truncated by trough cross beds. Another small outcrop slightly further north but still in the central belt shows thin, elongated, semi-amalgamated sand bodies that are off-set and stacked obliquely; these are internally rippled laminated (Fig. 10C). Also north of Lake Thunderbird along the Lake Arcadia shoreline, sigmoidal sand bodies are semi-amalgamated and composed of Sm, Sc, and Sr facies, with wedges of Sh facies between; likely indicating barform migration

(Fig. 10D, 10E). Thickly bedded conglomerate (Gm) crops out several meters away where it grades upwards into low angle cross-bedded sand. In the north, the outcrop quality decreases significantly but no large, amalgamated sandstone bodies were observed. Figure 10F shows a small lens shaped internally massive sandstone along with isolated thinly bedded structureless sands. Another smaller internally structureless lens not pictured is ~5m away indicating these sandstones are isolated within massive mudstone deposits.

Overbank Facies Associations-

Fine-grained facies indicative of floodplain fines define this facies association. The most dominant facies is the massive mudstone (Fm) with instances of thickly laminated sandstone (Sh) and rippled sandstone (Sr). Massive mudstone outcrops beneath thick sandstone outcrops in the central outcrop belt and in association with small sandstone lenses in the north (Fig. 10B, 10F). The mudstone-sandstone contact is typically erosional and topped by rip up clast conglomerate suggesting scouring of the floodplain during initial channel development. In core, mudstone, commonly with pedogenic alteration, suggests a stable floodplain environment. Climbing ripples seen in core and outcrop likely represent crevasse splays on the proximal floodplain when poorly channelized flows broke through the levee and deposited sediment rapidly (Burns et al., 2017). Figure 10G depicts an outcrop interpreted to represent a floodplain environment with very fine-grained laminated sandstone. Parting lineations are absent, and the lower portion of the outcrop is a leached light green color with pore filling calcite, whereas the upper portion of the outcrop is composed of iron oxide cemented laminae. In this case, these thin stacked sand sheets may reflect low-flow regime depositing extremely low

amplitude sand waves that appear as laminations in very shallow water across a floodplain (Smith, 1971). Additionally, Miall (1988) suggested that thin sheet sands may reflect unconfined sheet deposition within playa lakes; this may explain the light green color and calcite cement in the lower half meter of the northern laminated outcrop.

Channel and overbank spatial trends-

Changes in character of the channel-fill facies from the central portion of the outcrop belt to the north warrant further interpretation. Direct correlation is not possible, but distinct trends occur in the fluvial architecture. For example, near Lake Thunderbird, outcrops consist predominantly of amalgamated sandstone beds with minimal mudstone save for the outcrop in Figure 10B which overlies a massive mudstone deposit. However, the sandstone here is never interbedded with mudstone and tends to form large tabular to lenticular outcrops. North of Lake Thunderbird, the Lake Arcadia outcrops remain predominantly sandstone; however, the sand-bodies are more sigmoidal and lens-shaped and only semi-amalgamated. The sandstones in the northernmost outcrops are not amalgamated and exist only as small, isolated bodies within massive mudstone.

Sandstone Modal Mineralogy

Table 2 summarizes the modal mineralogy of the 25 sandstone samples across the outcrop belt. The samples are mostly quartz-rich with total quartz content ranging from 83.3-94.3%. The total quartz is mostly made of monocrystalline quartz (less than 4 extinction planes) that ranges from 73.4-90.1% in the samples. Lithic fragments are the next most common framework grain and include sedimentary, metamorphic, and volcanic lithic fragments. The lithic grains range from 4.6-13.0% with metamorphic lithics being

slightly more common than sedimentary lithics; however, including chert in sedimentary lithics makes them slightly more common. Metamorphic lithic fragments usually appear as grains of aligned, platy, high-birefringence minerals. Non-chert sedimentary lithic fragments are primarily mudstone fragments. Notably few volcanic lithics occur; 10 samples have none and the remaining 15 samples have only 1-4 volcanic lithic grains per sample. When polycrystalline quartz is included as part of the total lithic fragment category, the percentages range from 8.1-24.3%. Feldspar grains are the least common, ranging from 1.0-6.0% with plagioclase being slightly more common than potassium feldspar. Other grains that were rarely observed during petrographic analysis were opaque black to very dark red-brown detrital iron oxide grains, zircon, and muscovite. A few instances of quartz grains with randomly oriented high birefringence needle-like inclusions were also noted across a few samples with the southern sample site having five instances of this grain type. There are marginal spatial trends in the modal mineralogy as there is slightly less quartz and slightly more lithic fragments in the southern samples compared to northern samples (Table 2). The northernmost six samples also exhibit fewer feldspar grains (Table 2).

Paleocurrent

Owing to outcrop exposure limitations, paleocurrent data for the Garber Sandstone is sparse. Paleocurrent measurements used in this study include unpublished data from Kenney et al., (2005) as well as additional measurements from this study (Fig. 11). Paleocurrent measurements for the Garber Sandstone are made from trough and tabular cross-beds, asymmetrical ripples, and parting lineations. Though there is scatter in the data, the paleocurrent measurements surrounding Lake Thunderbird in central

Oklahoma show a general north to northwesterly paleoflow from the south to southeast. (Kenney, 2005). Additional paleocurrent measurements from this study show similar trends and exhibit a west to northwest transport direction with a few measurements also plotting slightly to north (Fig. 11).

Grain Size Analysis

As described above, the sandstone lithofacies are generally very fine- to fine-grained, although some sand bodies are medium to lower coarse grained. Figure 12 summarizes the volume percent grain size distribution of sampled sandstone outcrops generated from LPSA data. The northern outcrops all show similar, tight-peaked histograms indicative of well sorted and very fine to fine sand with modes $\sim 100\text{-}125\ \mu\text{m}$. Farther south, but still in the central portion of the outcrop belt, the grain size coarsens to fine and medium sand with a modes from $\sim 300\text{-}550\ \mu\text{m}$. In the southern outcrop belt, coarse and medium well-sorted to moderately well sorted sand occurs. One analyzed mudstone sampled beneath a channel-fill medium sand unit in outcrop (Fig. 10B) is dominated by a coarse silt with a coarse tail in the very fine sand fraction.

The grain size analysis from the core samples is illustrated in Figure 8; all the sandstone samples are very well sorted and modes are between very fine to medium sand. The mudstone samples show slightly bimodal peaks with smaller peaks in the clay-size range and the larger peaks in the very fine to fine silt size range. The slight coarse tail in the mudstone grain size curves may be attributed to very fine sand grains or may indicate incomplete disaggregation of the mudstone. Additionally, slight peaks in the very fine silt to clay fraction in most of the sandstone grain size curves may be attributed to

disaggregation of iron oxide clay cement minerals that form the matrix within the sandstones.

Detrital Zircon Geochronology

Six new samples (n=1682) of very fine to medium grained sandstone were selected for U-Pb detrital zircon geochronology of the Garber Sandstone with one additional sample from Thomas et al., (2021) (OK-5-GB2). For the composite PDPs and MDS plots, the data for Appalachian samples is from Park et al., (2010) and Thomas et al., (2017); Fort Worth samples are from Alsalem et al., (2018) and Thomas et al., (2021); and Ouachita/Arkoma samples are from McGuire, (2017), Sharrah, (2006) and Thomas et al., (2021). The Garber-Wellington dataset is composed of eight U-Pb detrital zircon samples from this study with one additional sample each from Thomas et al., (2021) and Soreghan et al., (2018). Basement source terrane age bins follow those outlined in Kushner et al., (2022) (Fig. 13). Figures 14 and 15 highlight Garber PDPs and an MDS plot of Lower Permian samples. Figures 16 and 17 show combined datasets from the Appalachian foreland, Fort Worth basin, and Ouachita fold-thrust/proximal Arkoma basin.

Probability density plots display a cosmopolitan age spectra that is very similar across all Garber Sandstone samples (Fig. 14). The primary age peak for all samples is between 925-1300 Ma aligning with a Mesoproterozoic basement source. The grains in this age range comprise 42.1-52.0% of the total with the average over the seven samples being 47.5%. The second largest age grouping includes Paleoproterozoic ages from 1600-1800 Ma; this age range comprises 13.7-21.0% of the total ages (average 15.9%). Another age range of importance are the grains from 300-500 Ma as they are associated

with Paleozoic terranes. Grains of these ages comprise a modest of 4.3-9.7% of the total grains (average 6.9%). Grains with Neoproterozoic ages account for a modest percentage of all samples ranging from 1.1-4.1% and averaging 2.3%. Zircon grains with U-Pb ages in the 520-540 Ma range are rare in the Garber Sandstone. This range spans the magmatism associated with the Southern Oklahoma Aulacogen. Two samples, GBR-COV1-22 and GBR-NTB-22 recorded no 520-540 Ma grains whereas the other five samples contain < 1.5%. The only notable potential spatial trends are a slight increase of 1600-1800 Ma grains northward that correlates with a slight decrease in 925-1300 Ma grains as sample GBR-COV2-22 represents the northernmost sample and GBR-HW39-22 the southernmost (Table 3).

DISCUSSION

Depositional setting of the Garber Sandstone

Continental environment and paleoclimate

Initial studies of the Garber Sandstone initiated debate on the depositional environment of the unit and the implications toward the presence of a Permian seaway and regional paleoclimate in general (Patterson, 1933; Tanner, 1959; Cox 1978; Kenney, 2005; Soreghan et al., 2018). Many earlier studies considered the Garber Sandstone to represent marginal marine conditions in the form of transitional shallow marine, deltaic complexes, and even lagoonal/barrier island assemblages (Patterson, 1933; Tanner, 1959; Cox; 1978). The hypothesis of a meandering fluvial system by Kenney (2005) provides the most detailed analysis of facies surrounding Lake Thunderbird and establishes the first robust study to suggest a purely continental origin for the Garber Sandstone.

However, the Kenney (2005) study was spatially constrained to a small area of the Garber outcrop belt and did not provide detailed provenance analysis. Additionally, past studies of fluvial systems in the rock record often assigned either a meandering or braided interpretation, although rivers rarely fit these end members and even within the dichotomy significant internal variability occurs owing to variations in climate and sediment supply (Miall, 1977). Additionally, river systems in Earth's deep-time record likely operated differently and preservational biases may skew interpretations of ancient river morphology (Fielding, 2012; Latrubesse, 2015). Facies analysis in this study is inconsistent with a marine or deltaic interpretation and supports a fluvial depositional model. Furthermore, we speculate that the Garber Sandstone likely accumulated in an ephemeral river system.

Early studies suggested the Garber Sandstone is marginal marine as evidenced by lenticular sand bodies interpreted as deltaic channels, and perpendicular modes of paleocurrents inferred to record a littoral, tidal--influenced shoreline (Patterson, 1933; Tanner, 1959) but neither of these characteristics are diagnostic of deltas or shallow marine settings. Deltaic complexes would preserve evidence of both fluvial and marine influences, such as heterolithic flaser bedding with sand bodies draped by mud and exhibit some combination of bidirectional current indicators, prevalent carbonaceous sediments, marine and restricted marine fossils, hummocky cross stratification, and wavy bedding (Aschoff et al., 2018). All these characteristics, notably any form of thin mud draping or interbedding, are absent in the Garber Sandstone. Additionally, the fossils present in the Garber Sandstone in the north are composed of terrestrial vertebrate species that would have thrived more so in a freshwater environment and on land (Olson, 1967).

Recent reinterpretations of other Oklahoma red beds have come to similar conclusions and reinforce a continental setting (Kenney, 2005; Sweet et al., 2013; Giles et al., 2013; Foster et al., 2014; Soreghan et al., 2018). All these red beds, including the Garber Sandstone contain mudstones inferred as thick vertisols, indicating significant periods of subaerial exposure and landscape stability that are common in monsoonal arid continental settings (Sweet et al., 2013; Giles et al., 2013; Foster et al., 2014). The red beds that stratigraphically bind the Garber Sandstone are also defined by large accumulations of loessite, reflecting a semi-arid, continental environment (Sweet et al., 2013; Giles et al., 2013; Foster et al., 2014; Soreghan et al., 2018; Lawton et al., 2021).

The Garber Sandstone then likely accumulated in a dryland landscape ephemeral fluvial system with highly seasonal discharge. Ephemeral fluvial systems comprise channel-fill facies associated with both high energy and flashy discharge events such as thickly bedded intraformational rip-up clast conglomerates, planar laminated sand sheets with parting lineations, climbing ripples, and massive sandstones (North and Taylor, 1996; Horn et al., 2018)—all of which characterize the Garber Sandstone. Additionally, the dominance of very fine to fine sand that is typically well sorted and locally has very well-rounded grains may record an influence of eolian sediment being reworked and transported into the fluvial system, although we observed no evidence of eolian deposits within the outcrop belt. Further work using an SEM to assess grain morphology for traits associated with eolian transport will provide further insight to identifying eolian sediments (Meijer et al., 2020). In summary, the Garber Sandstone records a continental, likely ephemeral, fluvial environment based upon the facies present, previous

interpretations of stratigraphic units encasing the Garber Sandstone, and lack of distinguishing delta or marine characteristics.

Fluvial Morphology of the Garber Sandstone

Recent debate regarding the type of fluvial morphologies preserved in the rock record has become contentious, with some suggesting distributive fluvial systems (DFS) are preferentially preserved, whereas others suggest axial systems and avulsive fluvial morphologies have high preservation potential as well (Weissmann et al., 2010; Fielding et al., 2012; Latrubesse, 2015). Distributive fluvial systems are a recently recognized fluvial system defined by radial flow patterns, decrease in grain size and channel size downslope, and increasingly unconfined channels away from the apex (Nichols and Fisher, 2007). Generally, this implies more interconnected amalgamated sand bodies near the apex and small disconnected sand bodies laterally spaced apart in floodplain deposits distal to the apex (Nichols and Fisher, 2007; Trendell et al., 2013).

Whether or not the Garber Sandstone represents a DFS remains unclear; however, some data supports the interpretation of a distributive character with an apex southeast of the outcrop belt. Firstly, grain size decreases towards the north (Fig. 18), as indicated from samples collected exclusively from sandstone bodies interpreted to represent channel-fill facies. Secondly, the sand bodies around Lake Thunderbird and Lake Arcadia are large and generally amalgamated to semi-amalgamated whereas those in more northerly outcrops exhibit a significant decrease in channel-fill facies, with smaller instances interbedded with overbank floodplain deposits (Fig. 10). Thirdly, DEM analysis (Belt and Paxton, 2005) paired with bedrock observations of the Garber show that mudstone

fractions increase, and sandstone fractions correspondingly decrease from the central outcrop belt to the north, with erosion removing the more susceptible mudstone units and creating flat topography (Aurin et al., 1926; Wood and Burton, 1968; Belt and Paxton, 2005). This may also apply to the southernmost portion of the Garber Sandstone being composed of mostly eroded mudstone and rare sand bodies as it is entirely flat-lying topography south of the Wichita Mountains. A trend of thinning sandstone and increasing mudstone away from the central portion of the outcrop belt is consistent with a distributive character. Unfortunately, paleocurrent data are too limited to show the diagnostic radial flow. Though the limitations of the study are not conducive to fully testing the distributary model, we do contend that the Garber Sandstone reflects an ephemeral fluvial system with some evidence pointing to a distributive character.

Provenance of the Garber Sandstone

Sandstone Petrography Provenance Trends

The QFL and Q_mFL_t ternary plots exhibit very little scatter in the data with all samples plotting in the recycled orogen region (Fig. 18). The Q_mFL_t diagram exhibits slightly more scatter, but most samples plot within the quartzose recycled orogen region close to the craton interior line with one sample plotting within the craton interior region (Fig. 18). These data strongly suggests that the source for the Garber Sandstone was uniform, and dominated by mature lithologies reflecting a recycled orogen, such as a fold-thrust belt associated with a convergent plate boundary (Dickinson et al., 1983). Petrographic observations also document metamorphic grains in the form of low-grade metamorphic lithics and polycrystalline quartz grains derived from a metamorphic source (Basu et al., 1975; Young, 1976). Deformed siliciclastic passive margin sediments and

low-grade metamorphic occur within the Ouachita fold-thrust belt (Babaei and Viele, 1992). Large chert grains and prevalent quartz grains with high birefringence needle-like inclusions are also common in petrographic observations of the two southernmost outcrops. These needle-like inclusions further support a low-grade metamorphic source whereas the large chert grains may have originated from the Arkansas Novaculite that was uplifted in the Ouachita Mountains and outcrops in Oklahoma and Arkansas. The lack of volcanic lithics and feldspars argues against a Wichita or Arbuckle proximal granitic source. Below we present detrital zircon provenance data that supports a Ouachita orogen source as opposed to the further afield Appalachian orogen source.

Detrital Zircon U-Pb Age Provenance Interpretations

The Ouachita salient records a tectonically complex time in the history of the Midcontinent owing to the accretion of Peri-Gondwanan terranes against Laurentian continental crust during the Appalachian-Ouachita-Marathon orogeny (Thomas et al., 2021). Permian sedimentary rocks in Oklahoma may contain sand from Laurentian and Gondwanan sources that were tectonically active until the end of the Pennsylvanian. Previous interpretations of the Garber Sandstone provenance remained largely speculative with studies suggesting the Wichita, Arbuckle, and Ouachita Mountains as major sources with varying opinions on which source is most dominant (Tanner 1959; Cox, 1978; Kenney et al., 2005). Detrital zircon data indicate that the Garber sands were sourced from a homogenized system given the similarity of the ages among all samples, but that the source region includes multiple age-populations rather than a single basement terrane with a unique age.

The primary age mode for all samples in Figure 14 falls within the 1300-925 Ma range and corresponds ultimately to the Grenville orogeny in the east, which is a prominent supplier of zircons across the Midcontinent in various time periods (Fig. 13; Moecher and Samson, 2006; Gehrels et al., 2011). Another prominent age peak observed in Figure 14 reflects the Taconic, Acadian, and Alleghanian orogenies (500-300 Ma) associated with the formation of the Appalachian Mountains (Fig. 13; Miller, 2000; Aleinikoff, 2002; Park et al., 2010; Thomas et al., 2017). These sources align with progressive recycling of sediments within each orogen's respective clastic wedges as synorogenic sediments rarely record primary zircons from synorogenic igneous rocks, but the following orogen records recycling of the previously formed crystalline rocks (Becker et al., 2005; Thomas et al., 2017). Throughout the Pennsylvanian, transverse and axial rivers that drained the Appalachian orogen deposited sediment with Grenville and Appalachian sources within foreland and intracratonic basins westward and southward (Thomas et al., 2017; Chapman and Laskowski, 2019; Lawton et al., 2021) as seen within the partially imbricated Arkoma Basin (Sharrah, 2006), the Anadarko Basin (Kushner, et al., 2022), and the Illinois and Forest City Basins (Kissock et al., 2018).

A small but persistent 2500-2800 Ma Archean signature exists in the Garber Sandstone that matches a Wyoming craton or Superior province source (Fig. 13; Hoffman, 1989; Van Schmus et al., 1996). However, these regions were buried long before the Permian and thus advocate for sediment recycling as the primary mode of delivery for these grains (Thomas et al., 2017, 2021; Kushner et al., 2022; Sharrah, 2006).

Another secondary population is the 1300-1600 Ma grains that reflect the Granite-Rhyolite basement located across the Midcontinent and is fairly common in Paleozoic sediments across the continent (Fig. 13; Thomas et al., 2017, 2021; Alsalem et al., 2018; Sharrah, 2006). It is possible that an Arbuckle source signature may be recorded in 1320-1390 Ma age grains attributed to the Southern Granite-Rhyolite basement being uplifted and exposed along the Arbuckle Mountains, however as previously stated this age signature is also preserved within older Paleozoic strata (Thomas et al., 2012) and lower Permian strata onlap the Arbuckle uplift, suggesting it was not actively shedding sediment by time of Garber deposition.

The 570-790 Ma source is not explained by basement terranes in the east as it is associated with southern accreted Peri-Gondwanan terranes along the Appalachian-Ouachita-Marathon margin (Fig. 13). A possible source contributing to this signal is the continental Peri-Gondwanan Sabine block—though interpretations of the age of the Sabine block remain poorly understood (Fig. 13; Clift et al., 2018; Thomas et al., 2021). Some authors suggest the Sabine block is a major source of Neoproterozoic (800-500 Ma) age zircons to Pennsylvanian strata incorporated into the Ouachita-Marathon fold and thrust belt and the Fort Worth basin (Alsalem et al., 2018; Thomas et al., 2021). This would suggest that by the Early Permian, Peri-Gondwanan continental blocks behind the thrust front may have been more significant contributors of sediment compared to early in the Carboniferous (Fig. 13). This trend is also noted in the Fort Worth basin with the Lower Permian Cisco Group sandstone sample possessing a slightly stronger Peri-Gondwanan signature compared to the Gzhelian Bunger Group sandstone (Thomas et al., 2021).

Finally, the lack of detrital zircon ages matching the Cambrian igneous suites of the Wichita and Arbuckle Mountains suggest these were not major sediment suppliers. Additionally, by the Kungurian the Wichita and Arbuckle uplifts were already mostly buried and not contributing significant sediment (Soreghan et al., 2012; Soreghan and Soreghan, 2013; Thomas et al., 2021).

Discrepancies in source of 1600-1800 Ma zircons

The secondary mode of 1600-1800 Ma zircons is somewhat enigmatic for the Garber Sandstone as these ages are typically associated with the Yavapai-Mazatzal province located significantly west of the Garber Sandstone outcrop belt (Fig. 13). Grains of Yavapai-Mazatzal age are associated with the Ancestral Rocky Mountain (ARM) uplifts that occurred during the Pennsylvanian to Early Permian in the western portion of the Midcontinent (Gehrels et al., 2011; Soreghan and Soreghan, 2013; Leary et al., 2020). The presence of silt-sized Yavapai-Mazatzal grains in the Wellington Formation is explained by eolian transport from westerly winds due to the Wellington having a dominant mode of loess deposition at the end of its depositional history (Giles et al., 2013). It is possible that these same eolian transport mechanisms transported sandy sediment eastward to the alluvial plain that the fluvial system depositing the Garber Sandstone traversed; however, there is no paleocurrent data to support this. The Nemaha Uplift stretches into north-central Oklahoma (Fig. 1) and exposed Yavapai-Mazatzal age basement during the Mississippian; however, this uplift was subsequently buried by the Pennsylvanian, ruling it out as a provenance source (Xie et al., 2016). The unconstrained Sabine block that currently lies under 3.5 km of Gulf Coastal Plain sediments directly to the southeast of Oklahoma may possess a unique age signature separate from other

interpreted Gondwana terranes (Fig. 13; Clift et al., 2018). A recent study used granite xenoliths thought to be sourced from the Sabine block and found they represent ages from 1800-1600 Ga which are distinct from surrounding terranes (Clift et al., 2018). The hypothesis suggests that the Sabine block was once part of the Yavapai-Mazatzal province in the west and was rifted away then reaccreted before 1.4 Ga and subjected to additional Granite-Rhyolite magmatism (Clift et al., 2018). However, Thomas et al., (2021) argues that based on published geophysical models, the xenolith sampling location represents thinned Laurentian crust—not the Sabine block—reiterating that the Sabine basement is more likely to have a 500-800 Ma Peri-Gondwanan signature. Upon review of these potential 1800-1600 Ma provenance sources, we find either a western Yavapai-Mazatzal source or southeastern Sabine block source to be most convincing. Until the Sabine block is confidently dated it is difficult to say if it contributes more strongly to 1600-1800 Ma or 500-800 Ma ages.

Provenance synthesis and comparison to other basins

The provenance analysis above suggests a number of primary basement sources for the Garber Sandstone, but the similarity of the spectra among the samples suggest that multiple transport pathways is unlikely. The most likely interpretation is that Garber sand was sourced from a single drainage system tapping a recycled orogen, which matches the sandstone mineralogy. That recycled orogen was most likely the Ouachita fold-thrust belt and with possible sediment input from the Peri-Gondwanan blocks to the south.

As noted above, Pennsylvanian reconstructions suggest trans-continental drainages sourced in the Appalachians supplied Grenville- and Paleozoic-aged detrital zircons, but these ages are also common in Paleozoic strata incorporated within the

Ouachita fold thrust belts (Sharrah, 2006). Also, Ordovician strata imbricated in the Ouachita fold-thrust notably have prominent percentages of Archean craton grains and would have been exposed in the Ouachita fold-thrust during the time of the Garber Sandstone deposition (Gleason et al., 2002; Sharrah, 2006; McGuire, 2017; Thomas et al., 2017, 2021). Granite-Rhyolite ages, present in the Garber samples, are another dominant mode in strata incorporated in the Ouachita fold-thrust belt further supporting recycling of these strata (Fig. 13; McGuire, 2017; Thomas et al., 2021). The Neoproterozoic ages can also be explained by recycling of strata within the Ouachita thrust belt, or directly from the Peri-Gondwanan basement blocks located to the south.

To test whether the Ouachita fold-thrust belt formed the primary source of detrital zircons to the Garber Sandstone, we compiled detrital zircon data from other basins to compare signatures and assess potential similarities (Park et al., 2010; McGuire, 2017; Thomas et al., 2017, 2021; Soreghan et al., 2018; Alsalem et al., 2018; Sharrah, 2006). However, it is important to note the comparative datasets are mostly Pennsylvanian in age, as Lower Permian outcrops are limited in the Midcontinent and almost entirely absent eastward. The Appalachian dataset contains one Lower Permian unit, the Proctor Sandstone, and the Fort Worth basin contains the Lower Permian Cisco Group sample. No Permian units are recorded in the Ouachita fold-thrust or Arkoma basin. So, the comparison provides limited power for interpreting coeval source similarities but does allow for interpreting possible recycling of sand from the older regions to the Garber-Wellington (Fig. 16, 17). The MDS plot (Fig. 17) suggests that the Ouachita fold-thrust units are most similar to the Garber-Wellington, signifying that it could have acted as both a source of sediment and drainage system source with headwaters in the Ouachita

region. The Fort Worth basin samples are distinct from Garber-Wellington (Fig. 17), mostly because of the larger Neoproterozoic peak (Fig. 16) in the former. This may reflect the interpretation that the source of the Fort Worth basin sediment during the Pennsylvanian-Early Permian was more directly from Peri-Gondwanan terranes. (Alsalem et al., 2018; Lawton et al., 2021; Thomas et al., 2021). The Appalachian basin signature differs from both because of the lack of these same Neoproterozoic ages as well as fewer grains reflecting Yavapai-Mazatzal sources. The most notable difference between the two sets (Fig. 16) is that the Garber-Wellington possesses a stronger Yavapai-Mazatzal signal compared to the Ouachita fold-thrust units. This difference could be attributed to the drainage system accessing the Sabine terrane that may contain Yavapai-Mazatzal age basement in addition to Neoproterozoic (Peri-Gondwanan) basement. Alternatively, if sourced from the west, eolian processes would have had to carry the sand to the depositional site to be well mixed and distributed along the outcrop belt.

Regional paleocurrent and sediment dispersal

Paleocurrent data has long been proven to be a powerful method for understanding basin analysis and the relationship between sediment source and sink (Potter and Pettijohn, 1977). By knowing the general direction of sediment routing, predictions are made about the source of sediments. As noted above, specific paleocurrent data in the Garber is limited but shows a flow direction between north and west (Fig. 11; Kenney, 2005). Regional paleocurrent datasets also exist, particularly for older units. For example, Late Pennsylvanian data from a comprehensive review of paleocurrent measurements in eastern Oklahoma and Arkansas archive a history of

paleoflow during and after the Ouachita orogeny (Fig. 11; Hirtz et al. 2022). Paleocurrent indicators in Gzhelian units that crop out east of the Permian red beds suggest a mostly west to northwestward flow direction (Fig. 11; Hirtz et al. 2022).

Implications for Continental Paleogeography and Sediment Dispersal

Beyond the regional scale, these paleocurrent trends fit into larger scale continental sediment dispersal hypotheses. Studies of dispersal trends across western Pangea in the Late Paleozoic has gained traction in recent years as larger and more numerous detrital zircon datasets are providing insight into provenance and sediment routing (Gehrels et al., 2011; Xie et al., 2016; Soreghan et al., 2018; Chapman and Laskowski, 2019; Lawton et al., 2021; Thomas et al., 2021; Kushner et al., 2022). Most studies have focused on Mississippian to Pennsylvanian sediment routing, with less data available for the Early Permian. In general, there is consensus for the Pennsylvanian that large axial and transverse fluvial systems drained the Appalachian Mountains depositing abundant sand beyond the Appalachian foreland across the southwest, including Oklahoma, as recorded by mixed western and eastern source detrital zircons in the southwest (Gehrels et al., 2011; Chapman and Laskowski, 2019; Lawton et al., 2021). By the Early Permian, fluvial sedimentation in the Midcontinent took on an ephemeral transverse character compared to the extensively developed axial rivers of the Carboniferous (Gehrels et al., 2011; Lawton et al., 2021; Thomas et al., 2021). This might be because of increased aridity in the Midcontinent creating wadi and sabkha-like environments that reworked and supplied sediment for eolian deposition; though rivers still drained the region (Sweet et al., 2013; Giles et al., 2013; Foster et al., 2014; Soreghan et al., 2018; Lawton et al., 2021). Lawton et al., (2021), in a recent (Kungurian,

ca. 275 Ma) paleogeographic reconstruction represents the Wellington Formation as having a transverse distributive fluvial character with a flow direction from the southeast and headlands in the Ouachita Mountains, however, this dataset asserts that this is more representative of the Garber Sandstone which has more widespread fluvial characteristics in comparison to the Wellington Formation (Fig. 19). This implies that Late Pennsylvanian to Early Permian fluvial transport likely evolved from draining eastward (Appalachian) sources to flow from the southeast of central Oklahoma and is consistent with the provenance data suggesting the Ouachita fold-thrust belt as a source. Another regional tectonic implication is that although the ARM-related uplifts were actively subsiding by this time, the Ouachita fold-thrust belt maintained relief and must have been supported geodynamically to continue to source sediment even with active erosion during deposition of the Garber Sandstone (Fig. 19).

CONCLUSIONS

The facies and detailed sedimentologic analyses presented in this study show no unequivocal evidence for a marginal marine or deltaic depositional environment of the Garber Sandstone. Rather, when paired with interpretations of the surrounding stratigraphy, which includes thick paleosols, a continental fluvial environment is more probable. Study area limitations proved difficult in assessing the fluvial morphology but the limited evidence suggesting a distributive character includes 1) a slight decrease in sandstone grain size from central to northern outcrops 2) heavily amalgamated sandstone outcrops in the central outcrop belt with no large amalgamated sands in the north 3) an overall decrease in sandstone facies and increase in mudstone facies from the central belt to the north. Vertisols, pedogenic carbonate nodules, mudcracks, and continental

paleoclimate interpretations support an arid climate during deposition of the Garber Sandstone.

Though sediment routing of the Late Paleozoic Midcontinent is well documented in the Carboniferous, studies of Early Permian provenance sources and implications for sediment dispersal and paleogeography are less robust. The data presented here suggests a single source for the Garber Sandstone, but that the source consisted of a mixture of age populations. A mostly recycled Ouachita/Arkoma source for the Garber Sandstone is supported by petrographic data suggesting a recycled orogen source. Primary sediment supply from the Sabine block or the Yavapai-Mazatzal provinces also impacted sedimentation within the Garber but less so in the pre-Permian Ouachita/Arkoma sediments.

Detrital zircon data supports a Ouachita/Arkoma source and also rejects a large axial fluvial system routing directly from the Appalachians as the Garber-Wellington detrital zircon spectra would be expected to show a stronger similarity to the Appalachian source spectra (Fig. 17). Additionally, the arid climate of the Permian may be more conducive to forming short transverse fluvial drainages from the Ouachita fold-thrust rather than large, continental fluvial systems draining the Appalachians which would need a very wet climate, like that of the Carboniferous, to persist (Soreghan et al., 2018; Chapman and Laskowski, 2019; Lawton et al., 2021). This also suggests that the Ouachita fold-thrust formed a highland—and source of sediment—later than other regional uplifts such as the Wichita and Arbuckle uplifts, that were being buried by Permian sediments at this time. Finally, this work aids in paleogeographic reconstructions as a lack of consensus on the extent of Early Permian seas complicates interpretations of

Permian red beds; this study supports a retreat of the inland seas in Oklahoma by the Kungurian to continental conditions (Fig. 17; Soreghan et al., 2018; Lawton et al., 2021).

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FIGURES

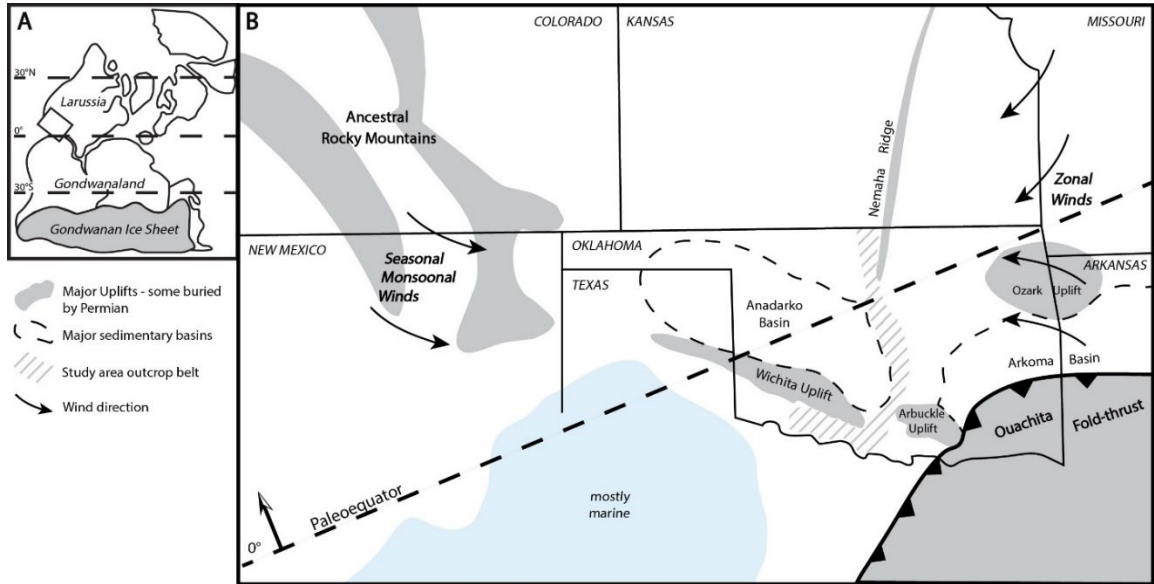


Fig 1. A) Global map showing formation of Pangea in the Early Permian with the Midcontinent outlined, modified from Soreghan et al. (2018). **B)** Map highlighting Kungurian paleogeographic elements mentioned in text, modified from Giles et al., (2013). Modern Garber Sandstone outcrop belt shown with gray diagonal lines. Arrows show monsoonal and zonal winds and paleoequator shown with bold dashed line. Uplifts shown in gray, most of which save for the Ouachita fold-thrust were mostly or entirely buried. Extent of the Permian sea shown in blue. Major basins outlined with dashed lines.

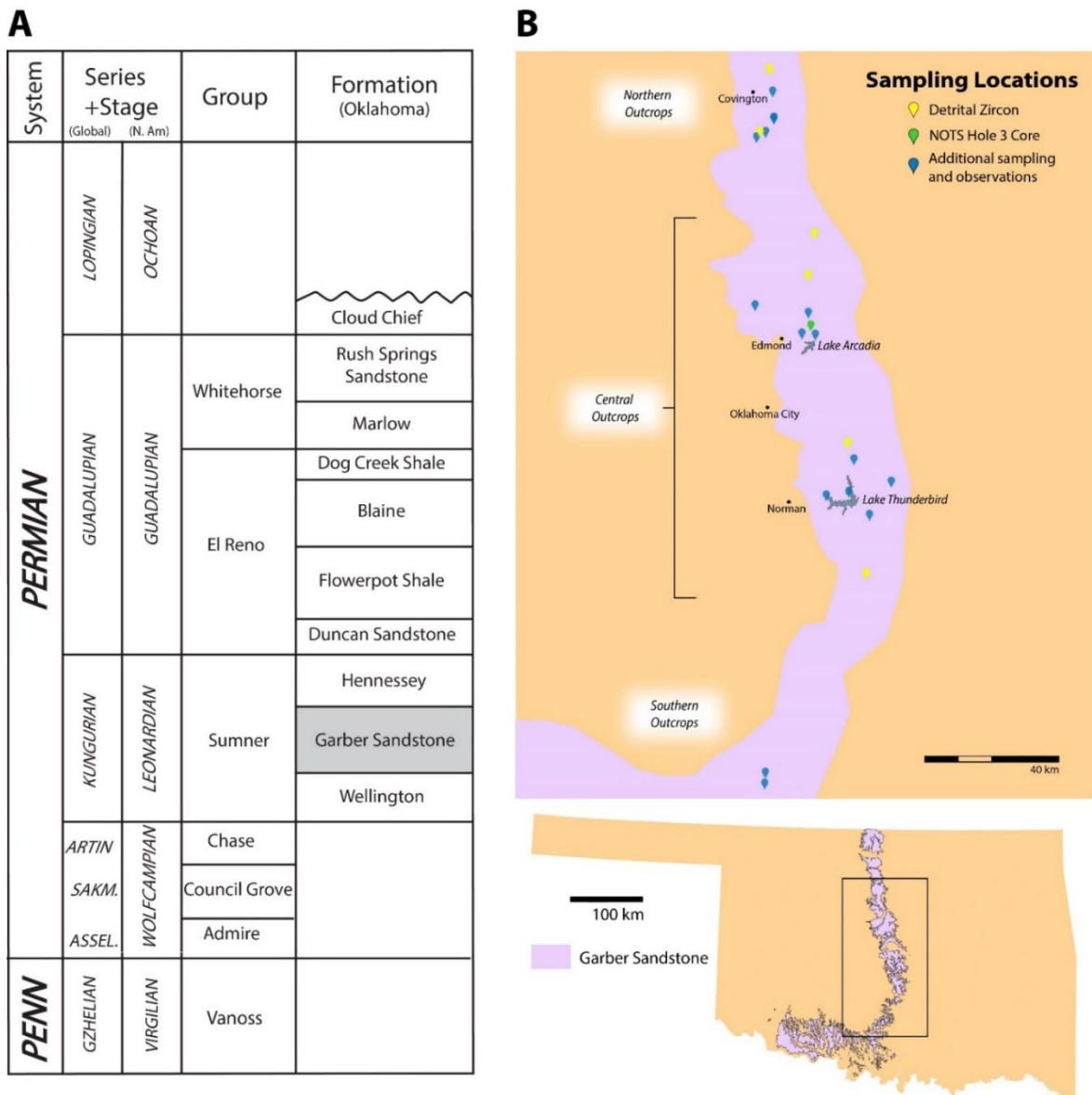


Fig 2. A) Late Pennsylvanian to Permian stratigraphy in central Oklahoma modified from Giles et al., 2013. Assel., Sakm., and Artin., stand for Asselian, Sakmarian, and Artinskian, respectively. **B)** Study area map highlights Garber Sandstone outcrop belt (purple) and 23 sampling locations. Blue symbols represent areas where facies, grain size, and petrographic data was collected. Yellow symbols represent locations where detrital zircon geochronology samples were taken. Green symbol represents NOTS Hole 3 core. Lake Thunderbird, Lake Arcadia, and significant cities near study areas are included as well.

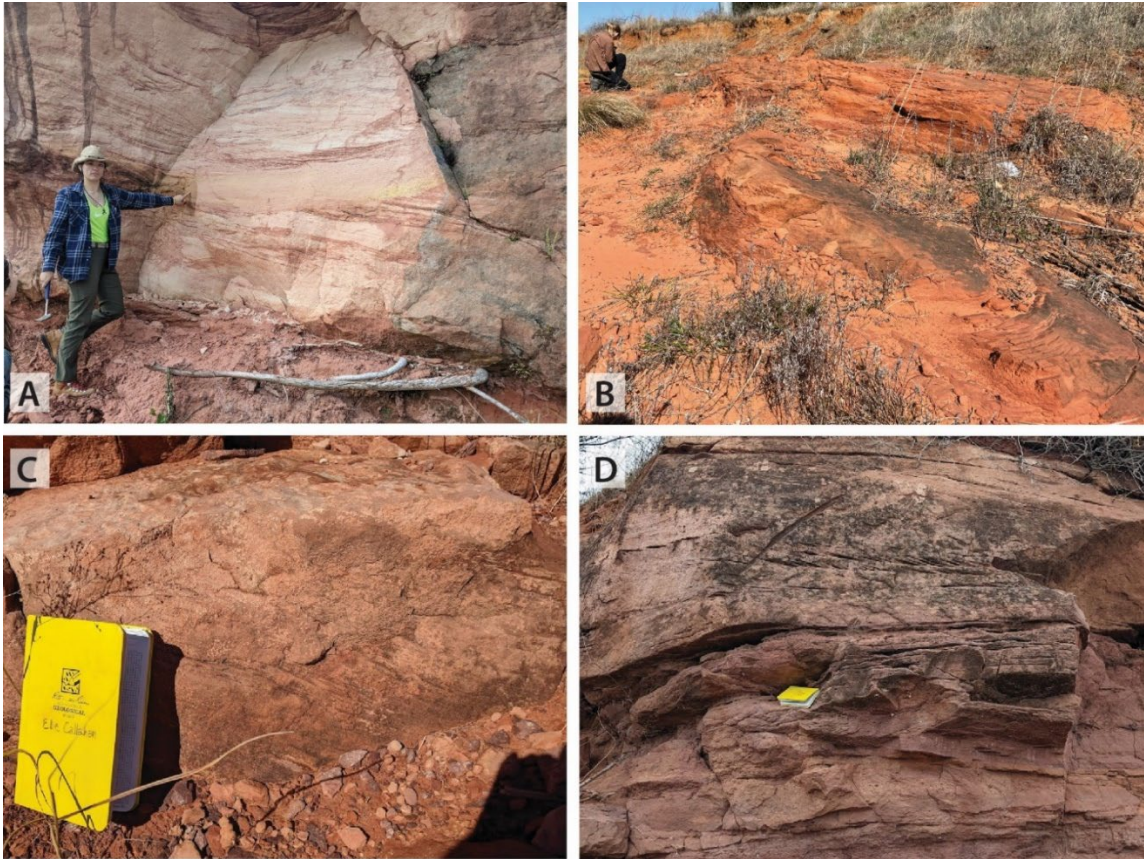


Fig. 3: Cross-bedded sandstone facies (Sc). **A)** Shallow trough cross beds near center of outcrop. **B)** Large plan-view trough cross beds. **C)** Planar cross beds with small super imposed ripple marks on top. **D)** Massive lenticular sandstone with small planar cross beds directly above. Large lower angle planar cross beds at the top of the outcrop.

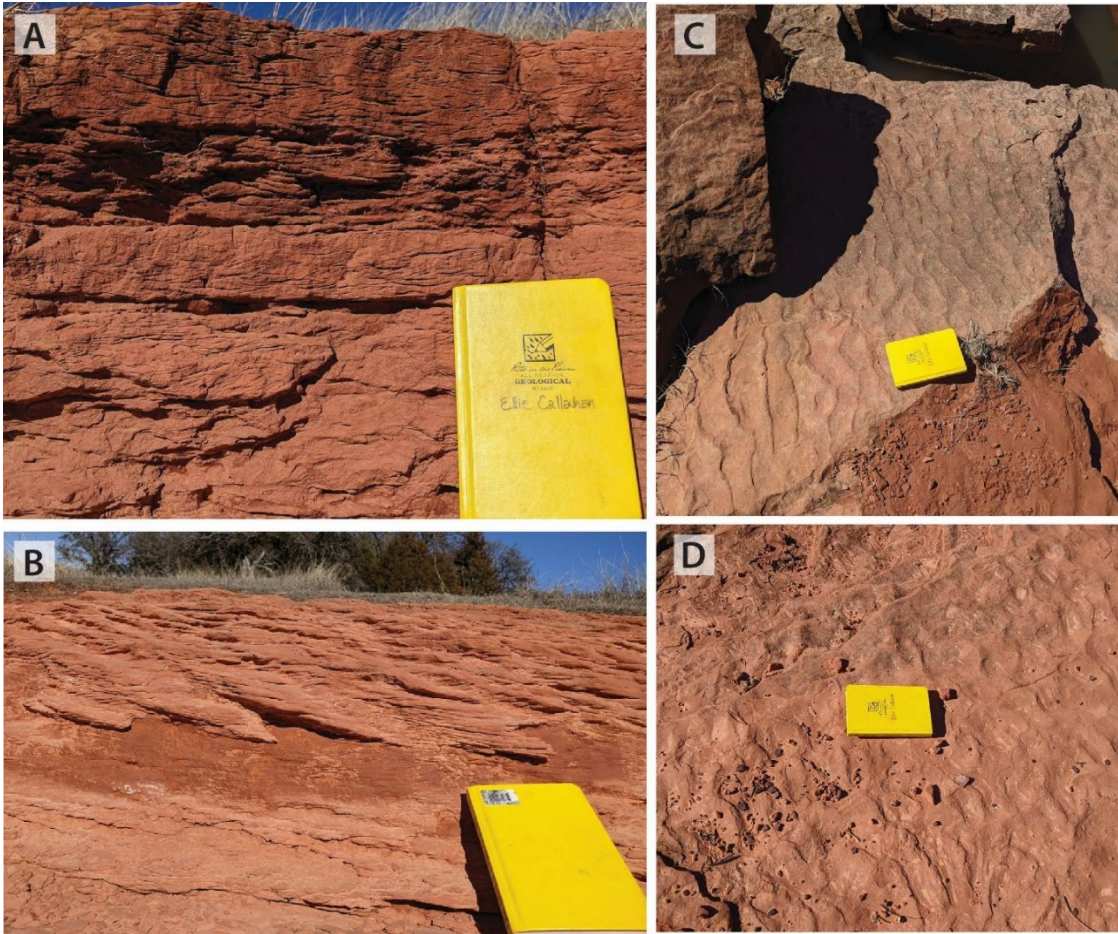


Fig. 4: Ripple laminated facies (Sr). **A)** Small cross-section view ripple laminations that become more abundant near the top of the outcrop. **B)** Large cross section view of climbing ripples. **C)** Asymmetrical plan-view current ripples. **D)** Lunate/lingoid plan-view ripples.

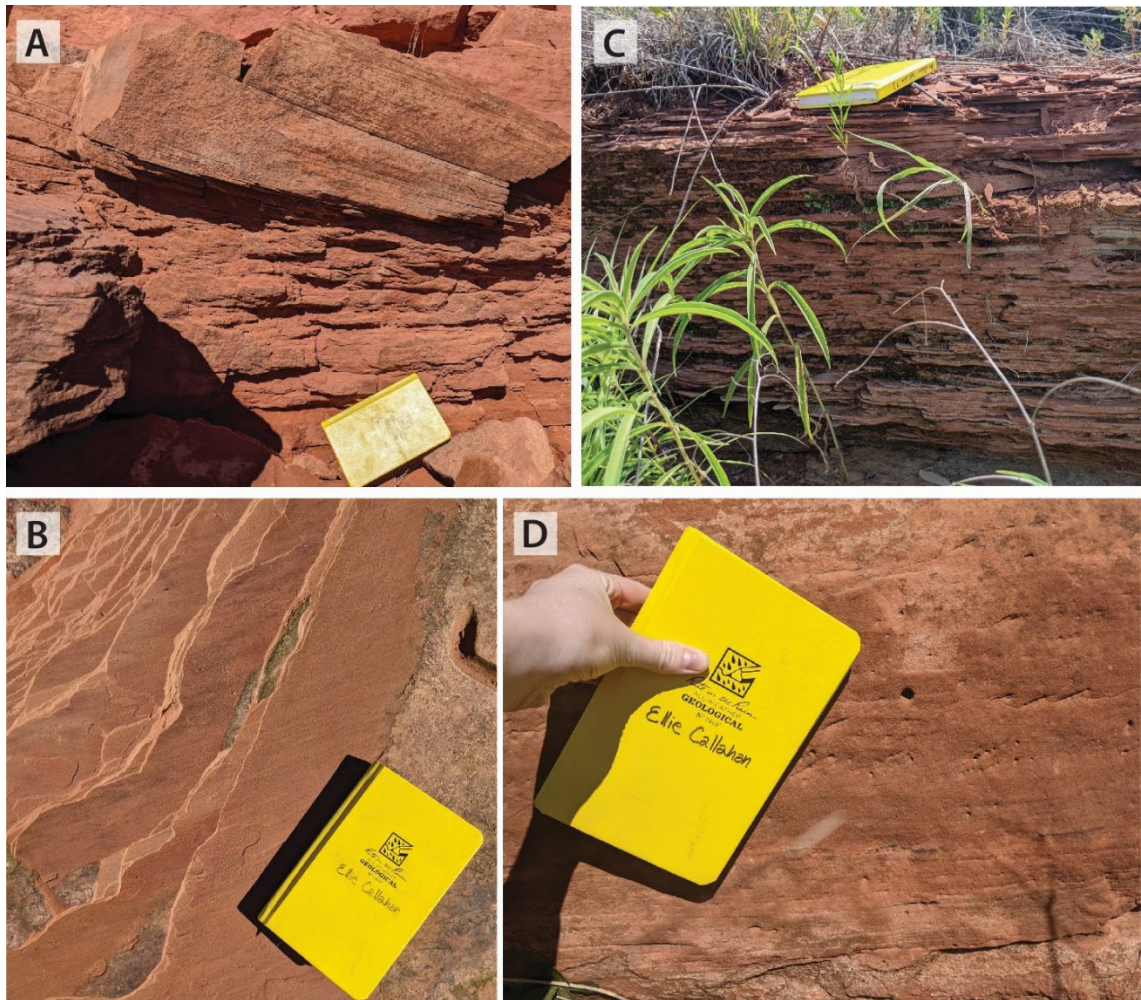


Fig. 5: Planar laminated sandstone facies (Sh). **A)** Wedge of thick low angle cross beds above planar laminated sandstone. **B)** Thickly laminated sandstone with parting lineations and flaggy appearance. **C)** Thickly laminated very fine sandstone with pale green laminations as base and no parting lineations on bedding planes. **D)** Planar laminated sandstone grading to small cross ripple laminations.

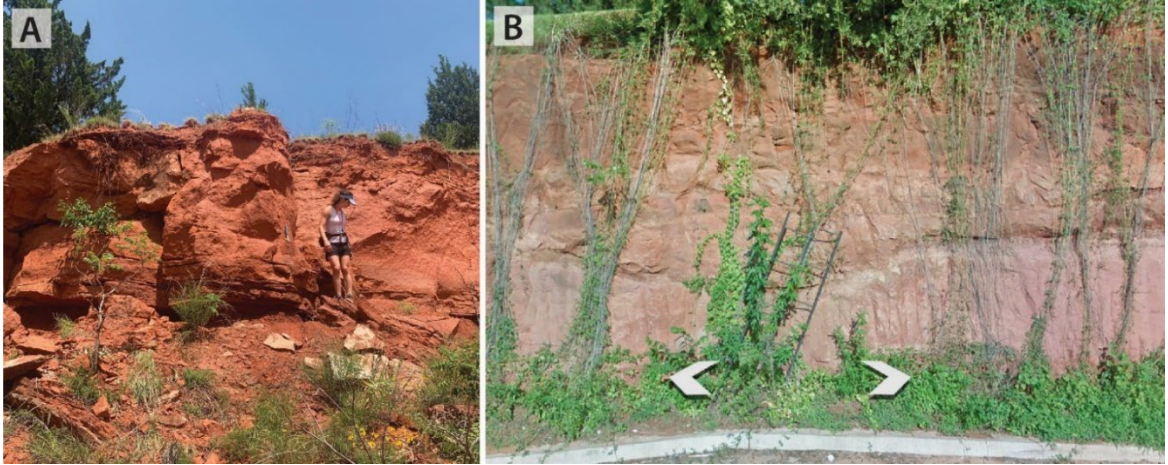


Figure 6: Massive sandstone (Sm). Outcrops near Edmond, OK. **A)** Large lenticular shaped outcrop atop sandy mudstone. Light green sand layer between massive sandstone and massive mudstone. **B)** Massive sandstone scoured by amalgamated massive sandstone and cross-bedded sandstone. Image from Google Earth.

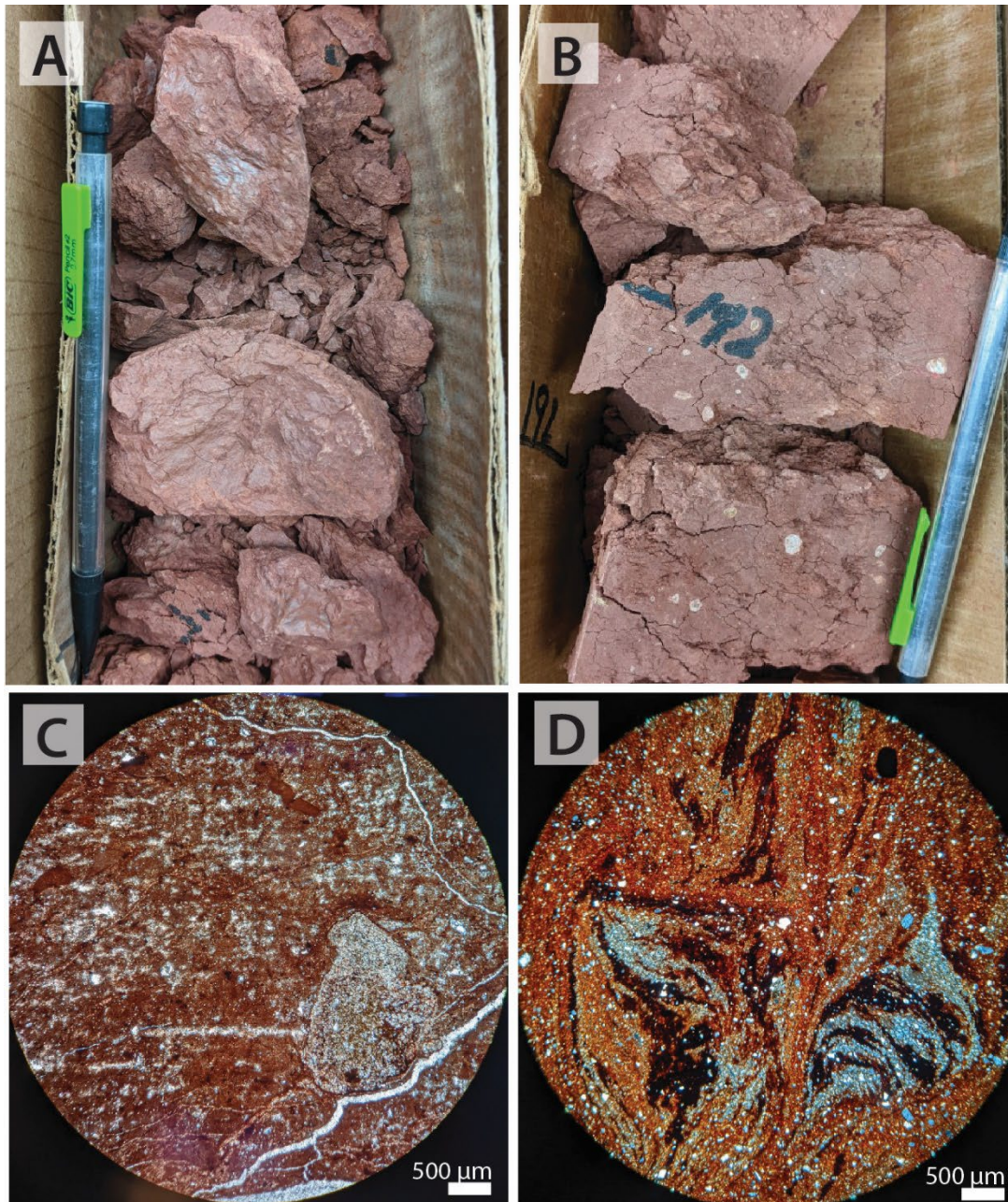


Figure 7: Mudstone (Fm) in core. **A)** Mudstone in core exhibiting small Mn-Fe coated slickensides and wedge-shaped peds. **B)** Fractured mudstone in core with small carbonate nodules. **C)** Thin section view of mudstone with weakly developed clinobimasepic fabric. **D)** Thin section view of mudstones without slickensides and with coarse poorly sorted silt and an iron oxide clay matrix. Chaotic bedding interpreted to be bioturbation.

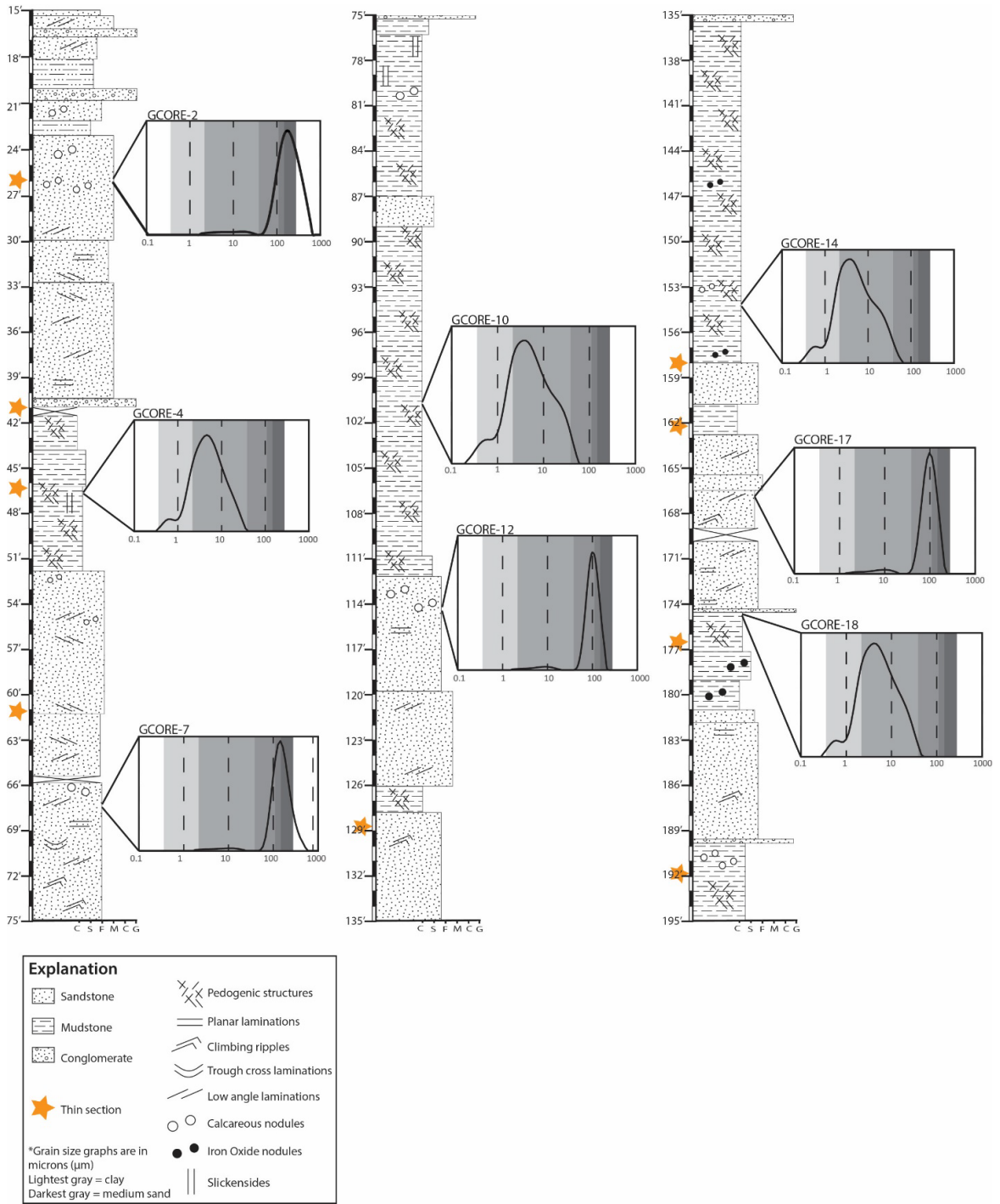


Fig. 8: Core log of NOTS Hole 3 drilled by the USGS (35°40'28.1"N 97°22'49.8"W). Grain size plots show volume percent of grain size in micrometers and stars denote thin section sampling locations.

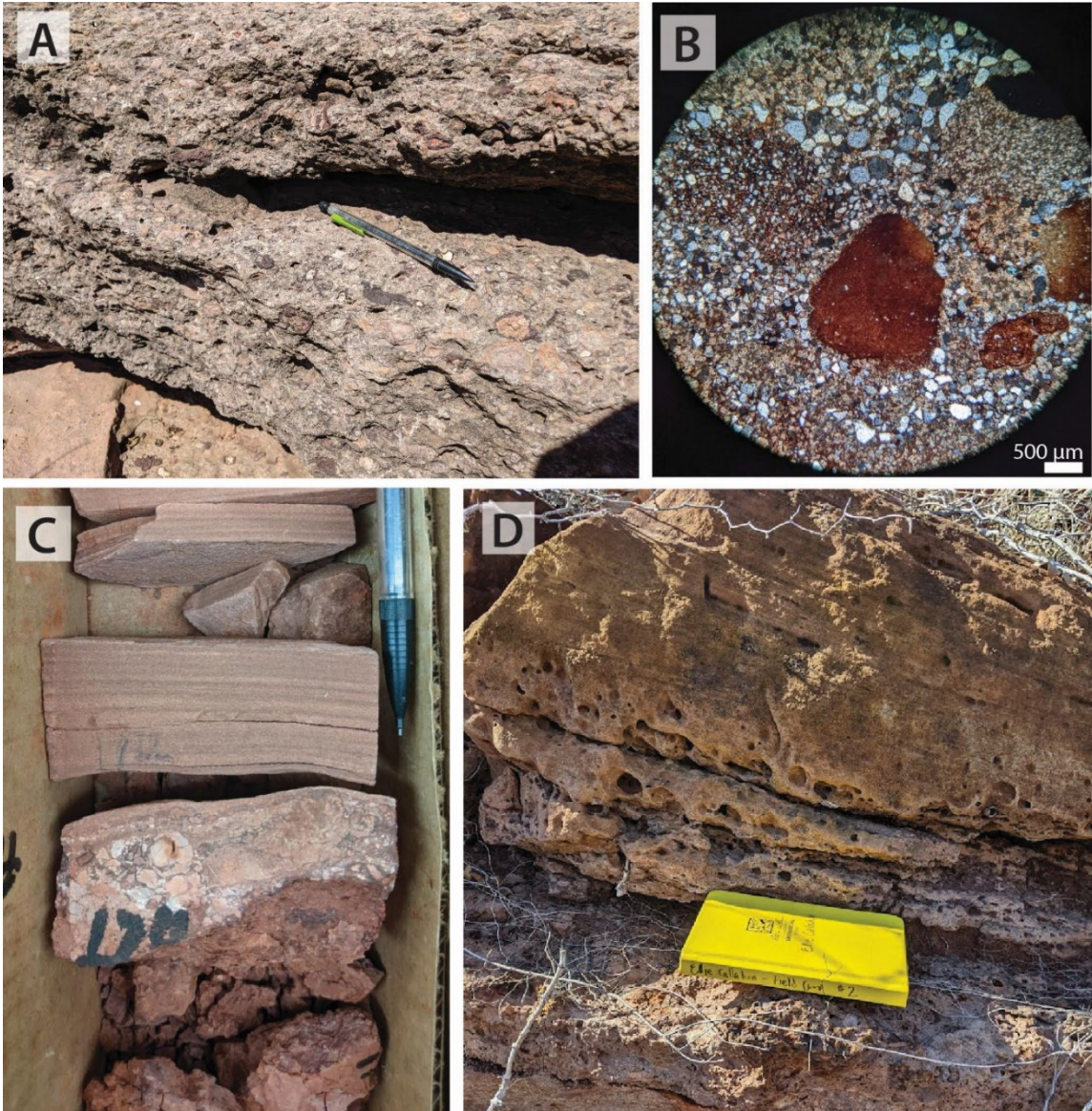


Figure 9: Conglomerate facies (Gm). **A)** Crudely bedded conglomerate bed typical of Lake Arcadia outcrops. **B)** Thin section (XPL) with several sedimentary rock fragments. **C)** Thin erosive conglomerate with intraclasts typical in core. **D)** Thick, crudely bedded conglomerate that grades upward into low-angle planar cross-bedded sandstone

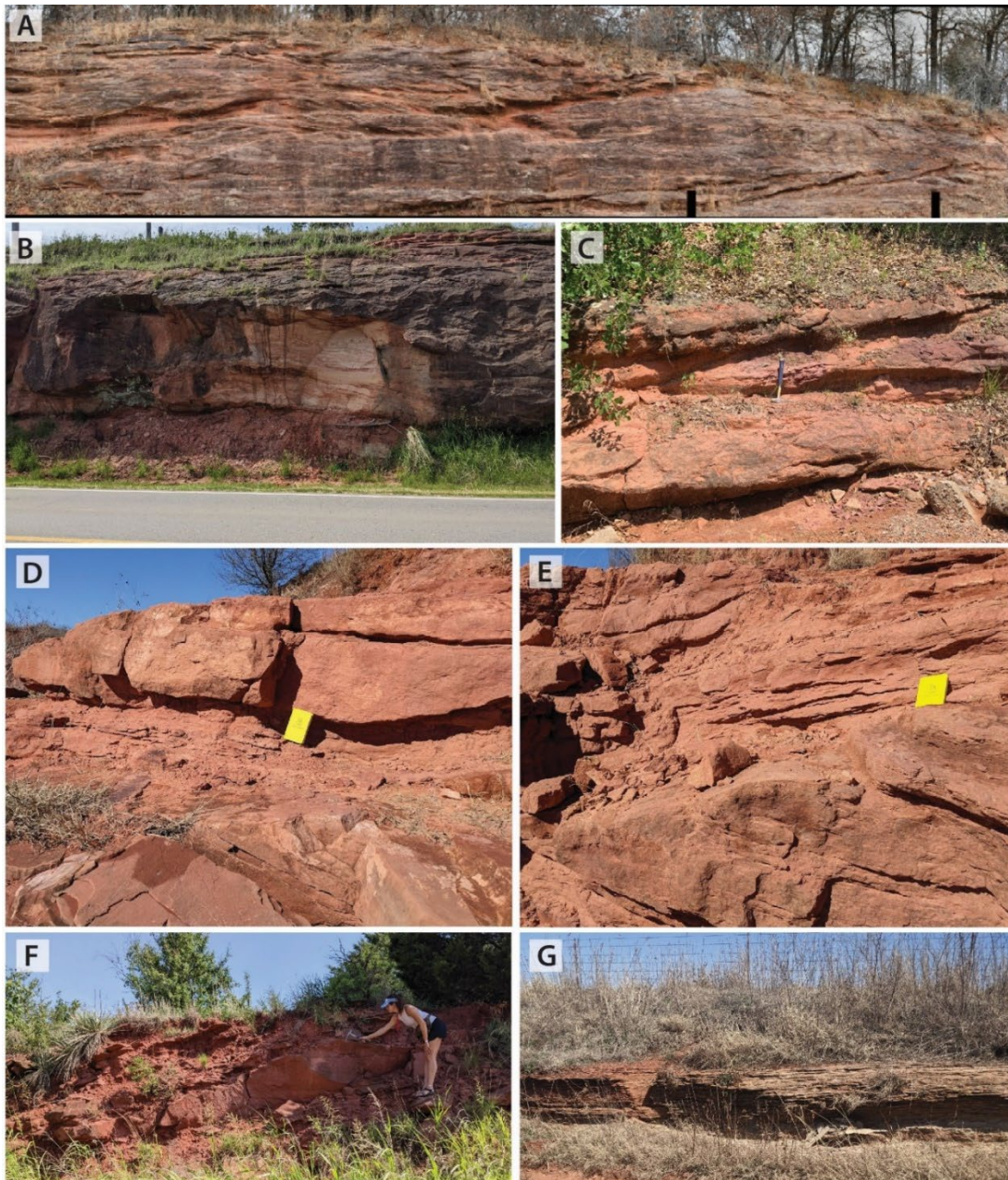


Fig. 10: Pictures of some of the largest outcrops observed. **A)** Amalgamated sandstone with a lower erosive contact that is convex up. Near Lake Thunderbird. **B)** Outcrop with exposed large low angle tabular cross beds and trough cross beds that lie erosively above massive mudstone. Near Lake Thunderbird. **C)** Semi-amalgamated thin lenticular sand bodies that are internally ripple laminated. North of Lake Arcadia. **D and E)** Weakly laminated sigmoidal sand bodies that are semi-amalgamated. North shore of Lake Arcadia. **F)** Internally massive sandstone lens within friable sandy mudstone. Near Covington, OK. **G)** Thickly laminated very fine flaggy sandstone near Covington, OK.

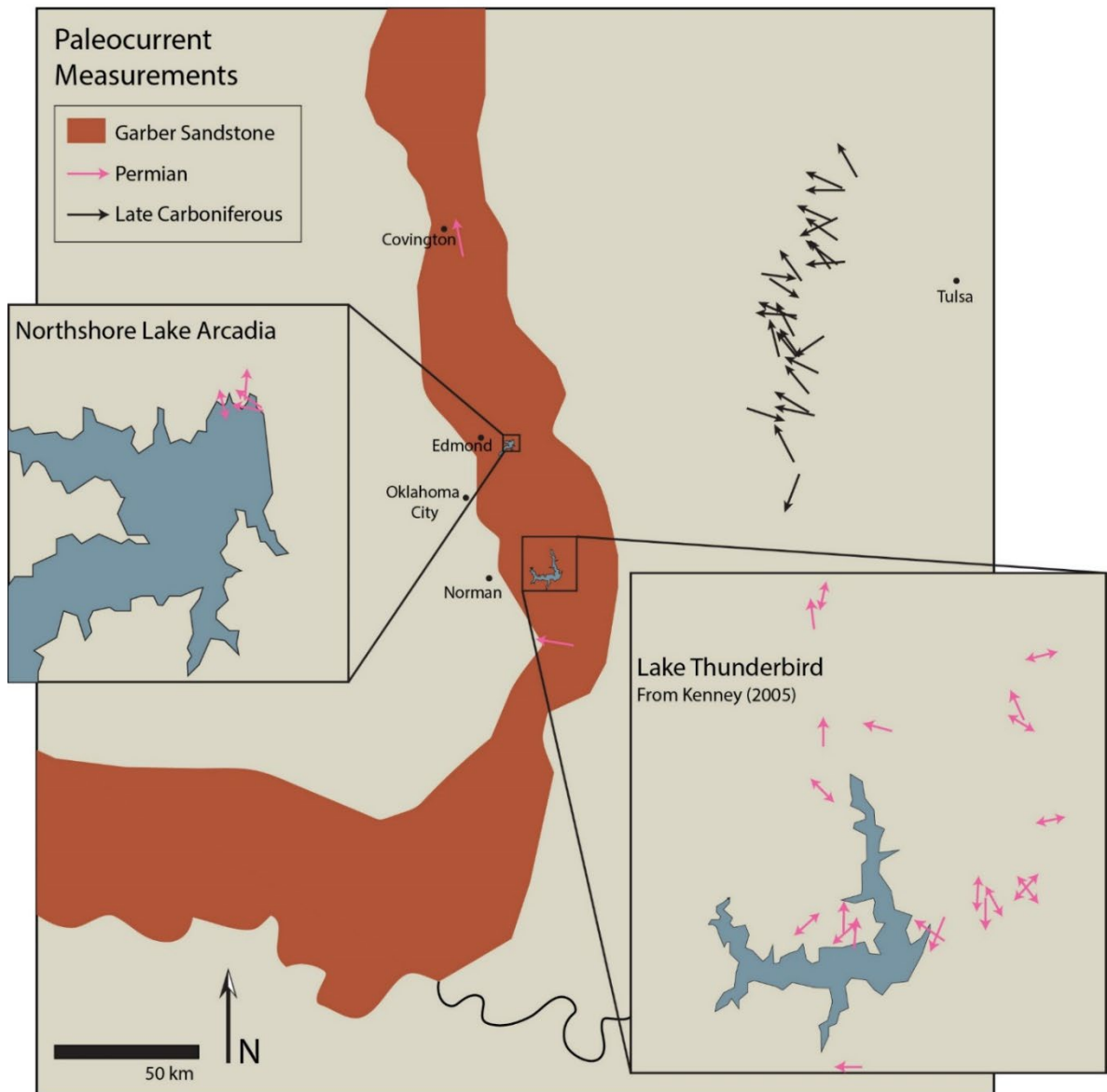


Fig. 11: Paleocurrent data from this study and Kenney (2005), and Late Carboniferous from Hirtz et al., (2021). Single arrows indicate confirmed unidirectional flow whereas two-sided arrows indicate flow indicators where flow cannot be constrained to one direction (i.e. parting lineations and some trough cross bed exposures).

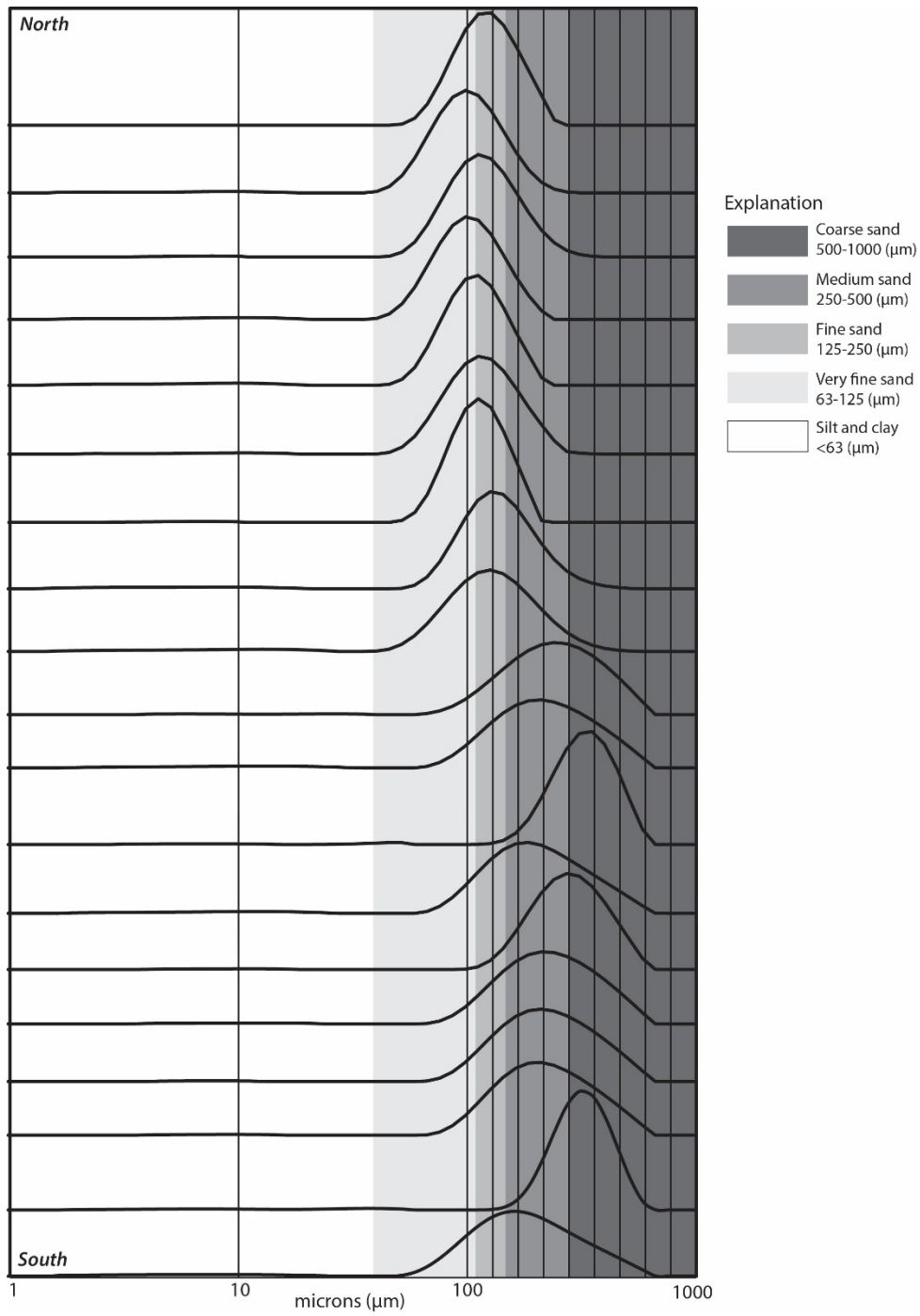


Fig. 12: Grain size histograms of representative sandstone facies in outcrops arranged by location on outcrop belt from south at the bottom to north at the top.

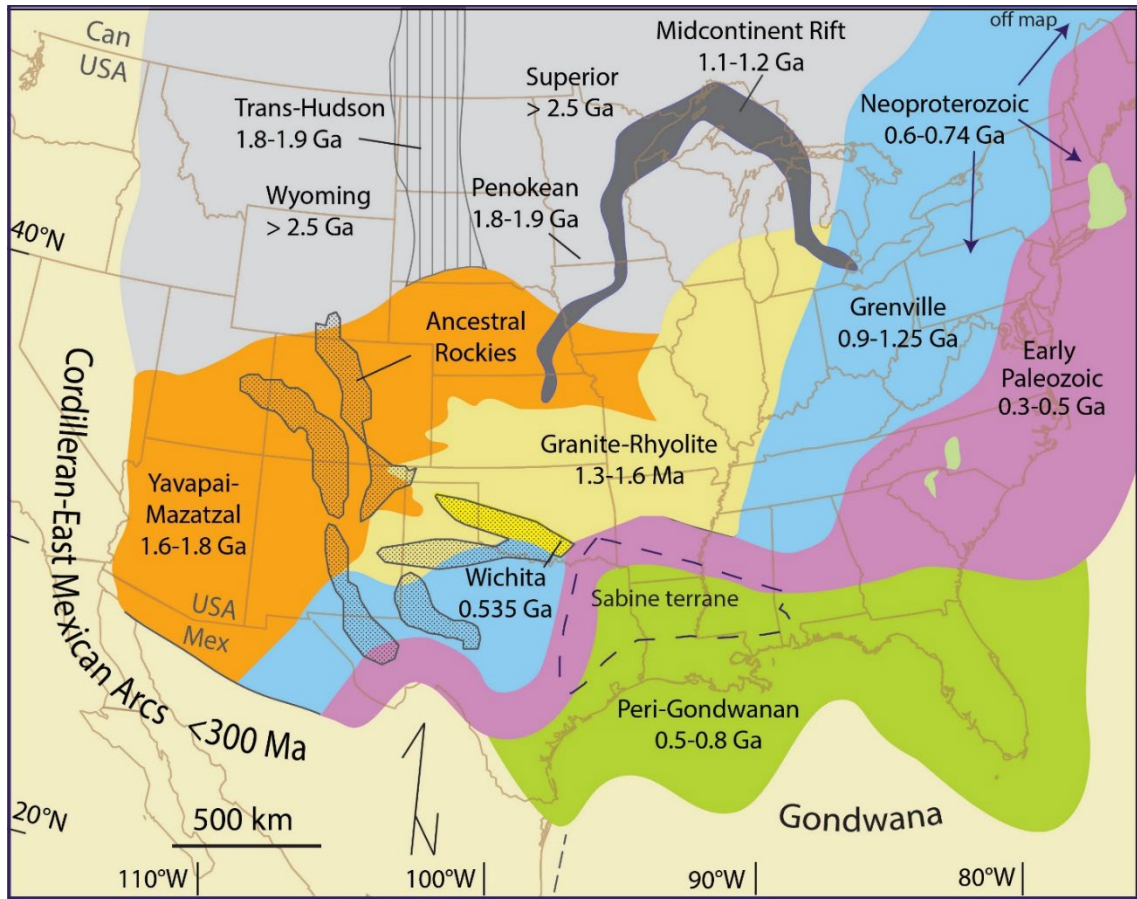


Fig 13. Map of basement terranes that supply primary zircons to the North American continent. Modified from Kushner et al. (2022). Dashed line highlights potential location of Sabine terrane at depth. Can – Canada, Mex – Mexico.

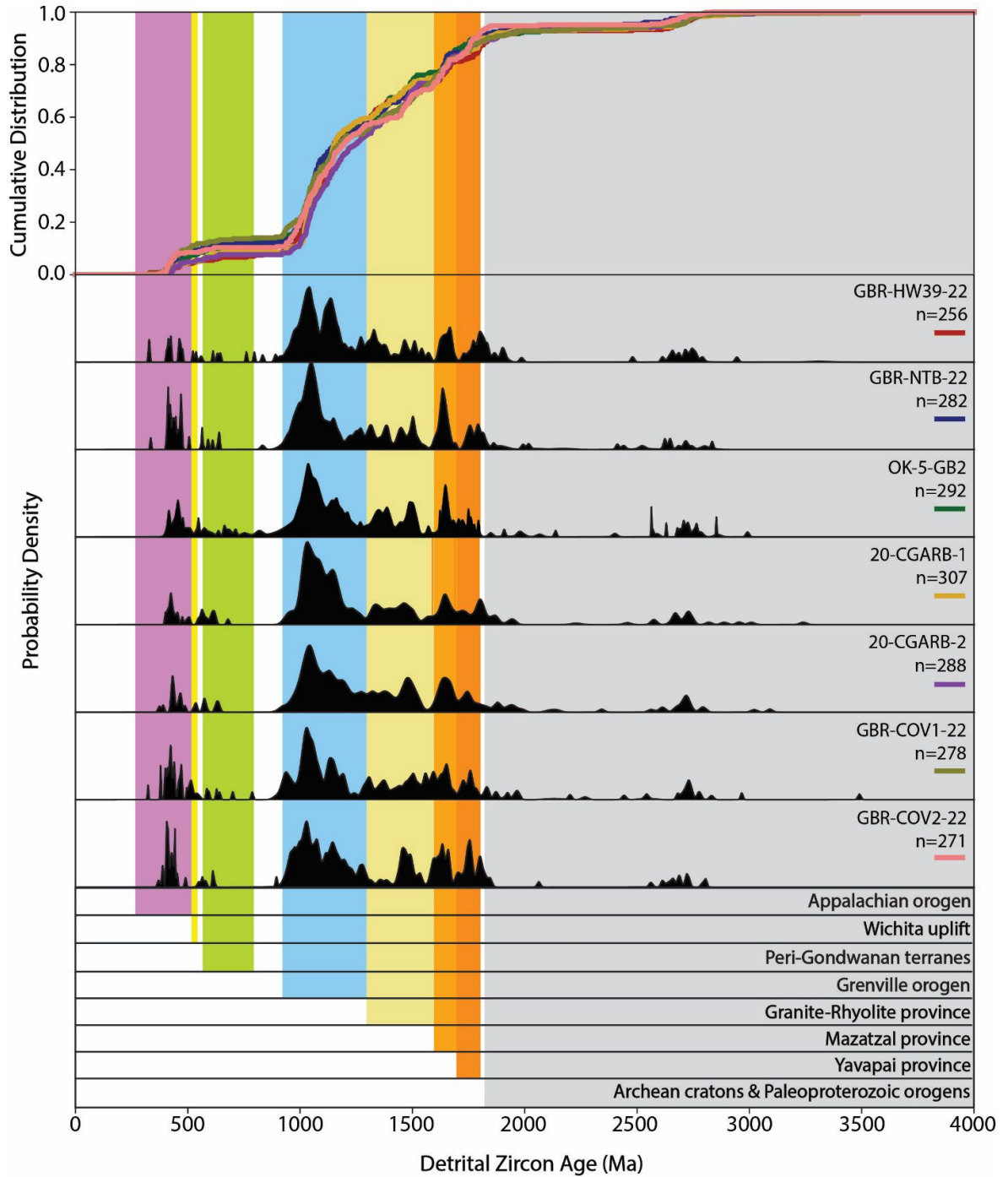


Fig 14: Cumulative probability plots and probability density plots display detrital zircon ages for six new Garber Sandstone samples and one published (OK-5-GB2, Thomas et al., 2021) sample. Colored bars show interpreted primary source regions matching the colors of basement terranes in Figure 5. Number of concordant grains (n) reported for each sample.

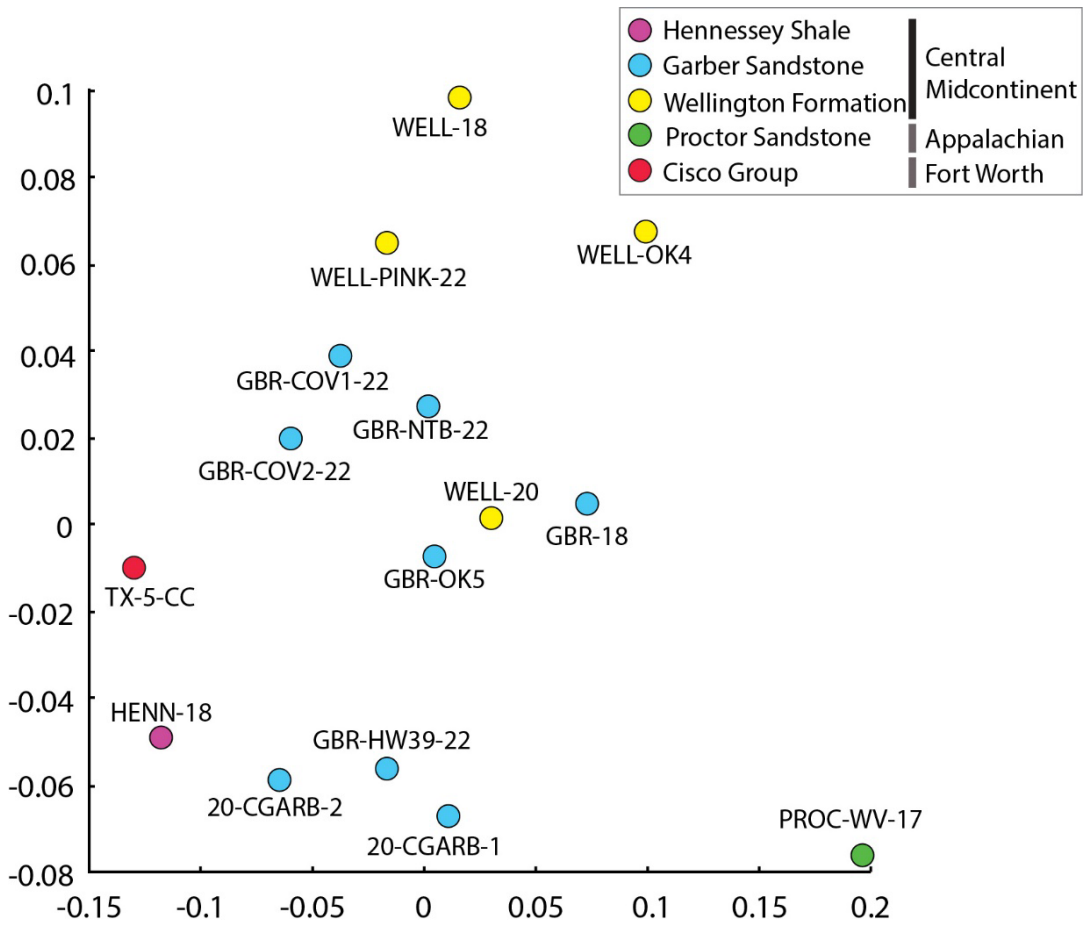


Fig. 15: Multidimensional scaling plot of Lower Permian samples including the Sumner Group samples (this study; Soreghan et al., 2018; Thomas et al., 2021), Proctor Sandstone (Appalachian – Thomas et al., 2017) and Cisco Group sandstone (Fort Worth – Thomas et al., 2021). Created using the Kolmogorov-Smirnov statistical test to calculate similarities between samples.

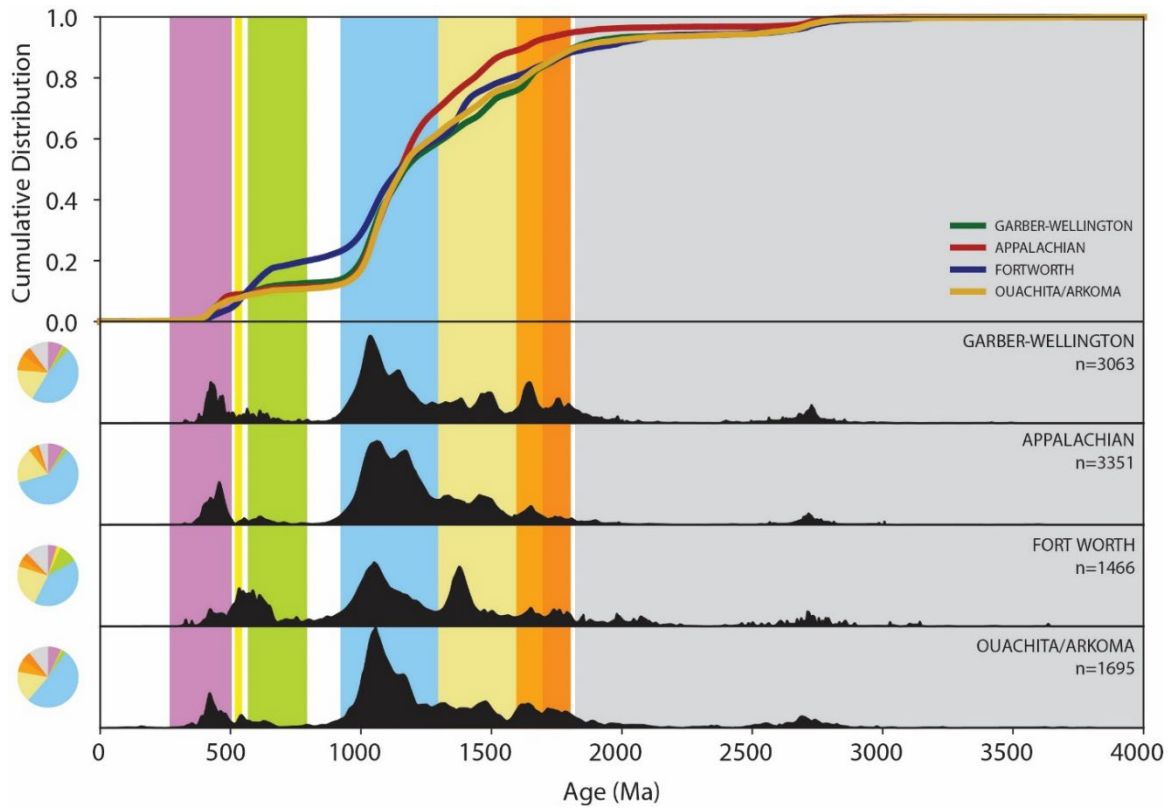


Fig. 16: Cumulative probability plots probability density plots, and pie charts display detrital zircon ages of compiled major Late Paleozoic basins along the Appalachian-Ouachita-Marathon margin. Vertical colored bars correlate to same ages and terranes as shown in Figure 6 and 5. Colors of the pie chart also correspond to same color scheme. Number of concordant grains (n) reported for each sample. Appalachian samples data is from Park et al., (2010) and Thomas et al., (2017); Fort Worth samples are from Alsalem et al., (2018) and Thomas et al., (2021); and Ouachita/Arkoma samples are from McGuire, (2017), Sharrah, (2006) and Thomas et al., (2021). Wellington-Garber samples are from this study, Thomas et al., (2021) and Soreghan et al., (2018).

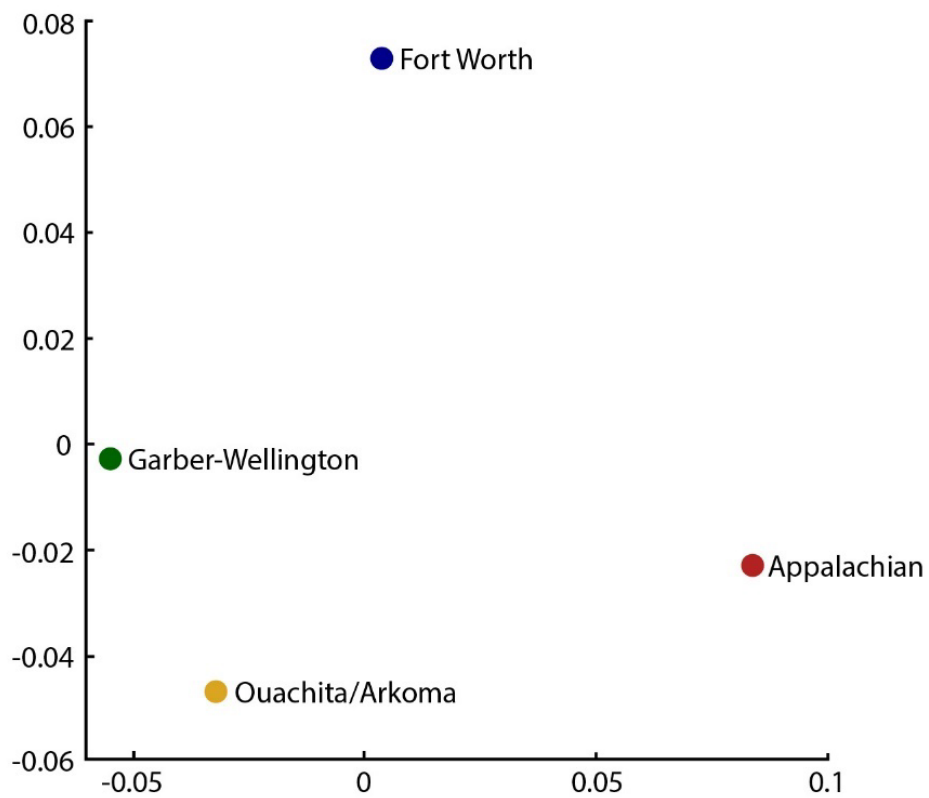


Fig. 17: Multidimensional scaling plot of Late Paleozoic samples Appalachian samples are from Park et al., (2010) and Thomas et al., (2017); Fort Worth samples are from Alsalem et al., (2018) and Thomas et al., (2021); and Ouachita/Arkoma samples are from McGuire, (2017), Sharrah, (2006) and Thomas et al., (2021). Wellington-Garber samples are from this study, Thomas et al., (2021) and Soreghan et al., (2018). Created using the Kolmogorov-Smirnov statistical test to calculate similarities between samples.

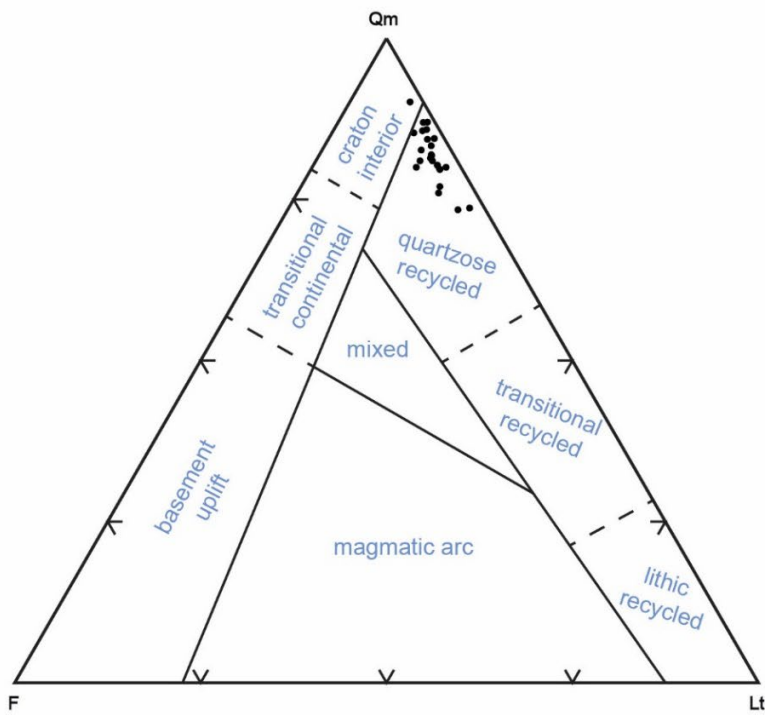
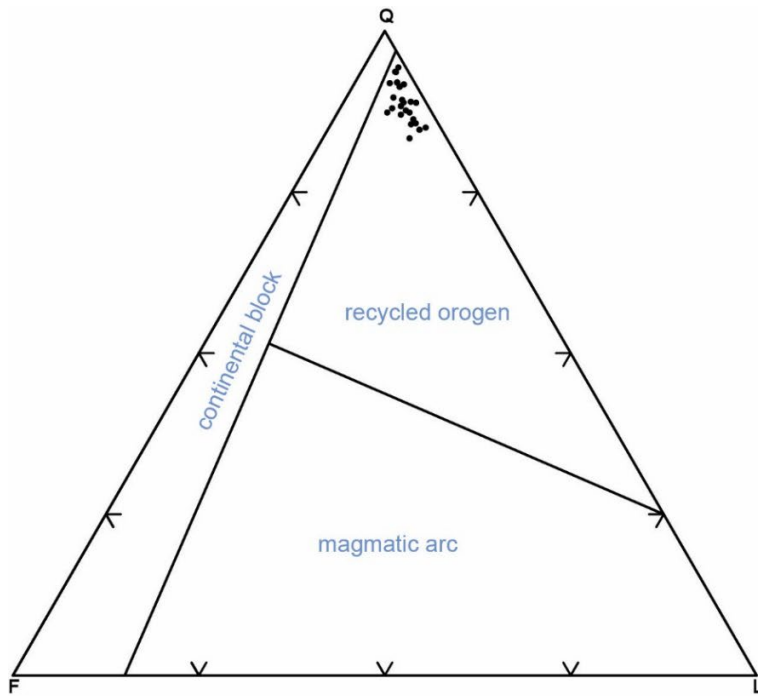


Fig. 18: QFL and QmFLt plots from Dickinson (1983) highlight tectonic provenance sources for Garber sandstone samples counted using the Gazzi-Dickinson method.

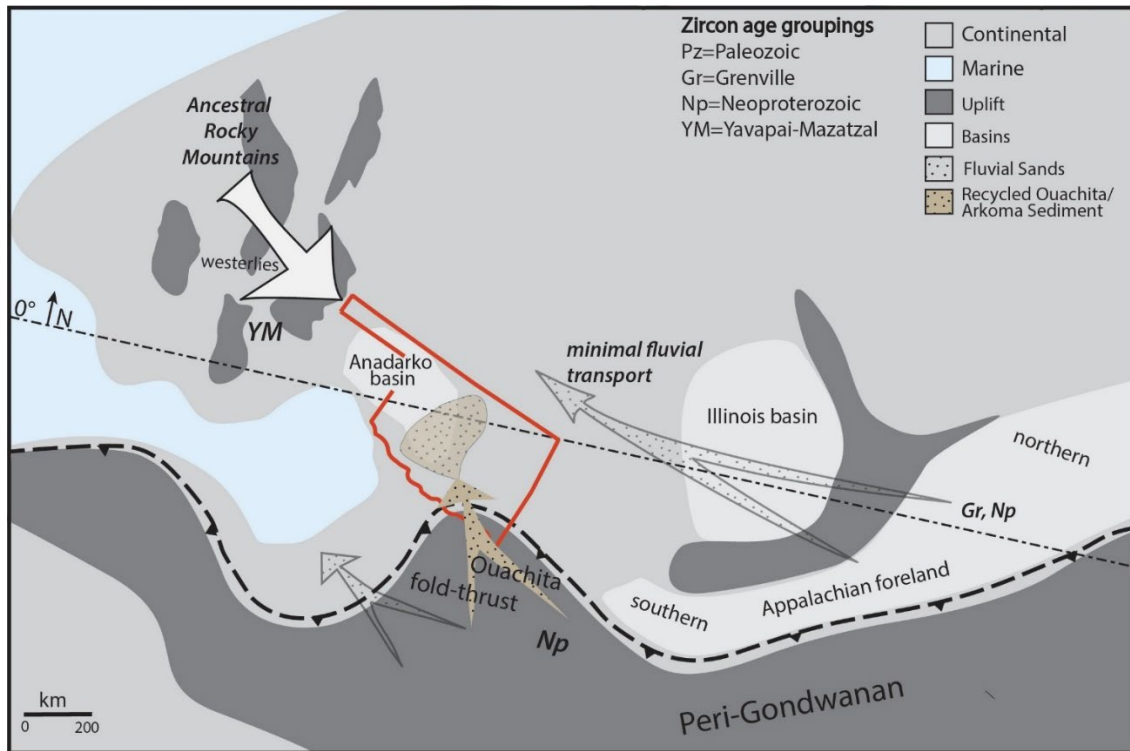


Fig. 19: Kungurian reconstruction of potential fluvial pathway and deposition of the Garber Sandstone, modified from Soreghan et al., (2018). Oklahoma outlined in red. Paleoequator shown with dashed and dotted line. Uplifts show in dark gray, and basins shown in light gray. Medium gray represents continental land cover and light blue represents extent of shallow seas. Sands shown with stippling and stippled arrows show fluvial sediment transport. White arrow represents westerlies. Garber Sandstone transport and deposition shown in light brown stippled pattern. Zircon age groupings are Pz = Paleozoic, Gr = Grenville, Np = Neoproterozoic, YM = Yavapai-Mazatzal.

FACIES	GRAIN SIZE	COLOR	FEATURES	ENVIRONMENT INTERPRETATION
Sandstone Lithofacies				
Cross-bedded Sandstone	very fine to medium	Red, red-orange, and buff	Trough and tabular x-beds troughs large (1m wide, 20 cm tall), tabular x-beds vary in height from ~2-30cm	Subaqueous migration of 3D sandy bedforms and barforms downstream. Under unidirectional low flow regime conditions.
Rippled Sandstone	very fine to fine	Red - orange	Asymmetrical, sinuous crested, climbing, and lunate/lingoid ripples seen in plan view. Ripple laminations frequent in outcrop	Subaqueous migration of ripples in unidirectional flow, lower flow regime, climbing ripples indicate rapid decrease from high to low flow regime.
Planar laminated Sandstone	very fine to medium	Red-orange, buff, and rarely pale green	Very thin (~1cm) to thickly (1cm) laminated, +/- parting lineations, horizontal and low angle	Subaqueous unidirectional flow, parting lineations associated with high flow regime, no parting lineations associated with low flow regime.
Massive Sandstone	very fine to fine	Buff - light red	~2m very thickly bedded, occasionally beneath scoured surface with x-bedded facies	Subaqueous rapid deposition of sand from sediment laden flows resulting from a sudden decrease in flow velocity.
Mudstone Lithofacies				
Massive Mudstone	coarse silt	Orange, red, and light brown	Friable, tends to outcrop beneath cross beds and scoured by thin conglomerate deposits	Quiescent distal floodplain depositions either from flooding or from aeolian sedimentation.
Pedogenic Intervals within Mudstone	very fine silt to clay	Orange - dark red	Blocky angular peds, small slickensides, calcium carbonate and iron hydroxide nodules	Soil development associated with pedogenesis indicates subaerial landscape stability with little sedimentation.
Conglomerate Lithofacies	sand to pebbles	Light brown, tan, and gray	Matrix supported, thin (3cm) to medium (20cm) bedded	High velocity flooding events depositing unstratified gravel. Scouring and intraformation clasts indicate erosion and rip-up clast deposition associated with high energy events.

Table 1: Summary of main facies and associated sedimentological character of the Garber Sandstone.

Q	F	L		Qm	F	Lt
94.33	1.00	4.67		87.00	1.00	12.00
91.70	1.58	6.72		86.96	1.58	11.46
93.66	1.76	4.58		90.14	1.76	8.10
92.00	2.33	5.67		83.33	2.33	14.33
88.85	1.35	9.80		84.46	1.35	14.19
93.60	1.68	4.71		85.86	1.68	12.46
89.30	3.01	7.69		81.94	3.01	15.05
87.00	4.33	8.67		77.00	4.33	18.67
88.89	3.03	8.08		81.82	3.03	15.15
88.33	3.67	8.00		85.33	3.67	11.00
89.67	4.00	6.33		82.67	4.00	13.33
85.52	3.70	10.77		73.40	3.70	22.90
91.89	3.38	4.73		81.42	3.38	15.20
89.00	2.00	9.00		80.00	2.00	18.00
87.33	3.00	9.67		80.33	3.00	16.67
91.33	2.33	6.33		84.33	2.33	13.33
92.00	2.33	5.67		85.67	2.33	12.00
87.33	6.00	6.67		80.00	6.00	14.00
85.00	2.00	13.00		73.67	2.00	24.33
88.00	5.00	7.00		81.00	5.00	14.00
83.33	5.00	11.67		76.00	5.00	19.00
85.67	3.00	11.33		79.67	3.00	17.33
84.67	3.00	12.33		79.67	3.00	17.33
87.67	3.33	9.00		81.00	3.33	15.67
86.29	3.01	10.70		80.27	3.01	16.72

Table 2: Model mineral framework percentages – listed north to south. Q – quartz, F – feldspar, L – lithics; Qm – monocrystalline quartz, F – feldspar, Lt – total lithics.

<i>Sample Name</i>	<i>Total Grains</i>	Grenville %	Yavapai-Mazatzal %	Appalachian %	Peri-Gondwanan %	Wichita %
GBR-COV2-22	271.00	46.86	21.03	8.49	1.11	0.00
GBR-COV1-22	278.00	42.09	15.47	9.71	2.16	1.44
20-NGARB-2	288.00	47.57	15.97	4.86	2.08	0.69
20-NGARB-1	307.00	51.47	14.98	4.89	3.26	0.33
OK-5-GB2	292.00	45.55	13.70	6.85	4.11	1.37
GBR-NTB-22	282.00	47.16	16.67	9.22	2.13	0.00
GBR-HW39-22	256.00	51.95	13.67	4.30	1.56	0.78

Table 3: Detrital zircon percentages for major interpreted source regions in Garber Sandstone samples – listed north to south. Includes sample from Thomas et al. (2021) (OK-5-GB2).

APPENDIX I – Sampling Information

Sample name	Lat/Long	Detrital Zircon	Thin Section	LPSA
GBR-COV1-22	36.188352/-97.5586468	X	X	X
GBR-COV2-22	36.355417/-97.532212	X	X	X
GBR-HW39-22	35.015181/-97.186228	X	X	X
GBR-NTB-22	35.3628708/-97.2529394	X		X
20-CGARB-1	35.812289/-97.416033	X		
20-CGARB-2	35.928802/-97.381885	X		
22-CGARB-3	35.222225/-97.321326		X	X
22-CGARB-4	35.232451/-97.246526		X	X
22-CGARB-5	35.319193/-97.231237		X	X
22-CGARB-6	35.260726/-97.10661		X	X
22-CGARB-7	35.171619/-97.177343		X	X
22-NGARB-3a	36.173867/-97.571429		X	X
22-NGARB-3b	"		X	X
22-NGARB-4a	36.188463/-97.541304		X	X
22-NGARB-4b	"		X	X
22-NGARB-4c	"		X	X
22-NGARB-5a	36.223822/-97.514331		X	X
22-NGARB-5b	"		X	
22-NGARB-6	36.225092/-97.514317		X	X
22-NGARB-7a	36.296455/-97.519906		X	X
22-NGARB-7b	"		X	X
22-CGARB-8a	35.6528429/-97.4097553		X	X
22-CGARB-8b	"		X	X
22-CGARB-8c	"			
22-CGARB-9a	35.708374/-97.389317		X	X
22-CGARB-9b	"		X	X
22-CGARB-10	35.7256305/-97.5671752		X	X
22-CGARB-11	35.65/-97.365			X
22-SGARB-1a	34.4799699/-97.5082558		X	X
22-SGARB-1b	"			X
22-SGARB-1c	"			X
22-SGARB-2	34.450836/-97.509648		X	X

Core Samples	Depth (ft)	Thin Section	LPSA
22-GCORE-2	25.8	X	X
22-GCORE-3	40.9	X	
22-GCORE-4	46.2	X	X
22-GCORE-6	61.2	X	
22-GCORE-7	67		X
22-GCORE-10	100.9		X
22-GCORE-12	114.4		X
22-GCORE-13	128.8	X	
22-GCORE-14	154.5		X
22-GCORE-15	158	X	
22-GCORE-16	162.2	X	
22-GCORE-17	167.4		X
22-GCORE-18	175		X
22-GCORE-19	176.4	X	
22-GCORE-21	191.9	X	

Core Information
File S-092
66 Boxes
Depths 15-195 ft
35.674472/-97.3805

APPENDIX II – Point Count Data

Sample Name	Qm	Qp2-3	Q4>	P	K	Ls	Lm	Lv	Chert	Carb	Fe Oxide	Other
GBR-COV2-22	214	47	22	3	0	2	6	3	3	0	0	0
22-NGARB-7a	194	26	12	3	1	6	10	0	1	37	0	10
22-NGARB-7b	236	20	10	4	1	9	4	0	0	12	0	0
22-NGARB-6	212	38	26	4	3	2	11	0	4	0	0	0
22-NGARB-5a	227	23	13	4	0	5	22	1	1	0	4	0
22-NGARB-5b	229	26	23	4	1	3	10	0	1	0	3	0
22-NGARB-4a	228	17	22	4	5	10	11	0	2	0	1	0
22-NGARB-4b	195	36	30	7	6	14	12	0	0	0	0	0
22-NGARB-4c	192	51	21	5	4	11	10	1	2	0	3	0
GBR-COV1-22	239	17	9	7	4	14	9	1	0	0	0	0
22-NGARB-3a	212	36	21	7	5	6	7	3	3	0	0	0
22-NGARB-3b	167	51	36	6	5	5	24	1	2	0	3	0
22-CGARB-10	210	31	31	2	8	2	8	1	3	4	0	0
22-CGARB-9a	217	23	27	3	3	3	19	3	2	0	0	0
22-CGARB-9b	217	24	21	7	2	7	17	4	1	0	0	0
22-CGARB-8a	236	17	21	5	2	3	11	2	3	0	0	0
22-CGARB-8b	238	19	19	5	2	8	6	0	3	0	0	0
22-CGARB-5	218	22	22	11	7	16	4	0	0	0	0	0
22-CGARB-6	186	35	34	3	3	23	7	2	7	0	0	0
22-CGARB-4	212	31	21	9	6	18	1	0	2	0	0	0
22-CGARB-3	191	37	22	8	7	22	12	1	0	0	0	0
22-CGARB-7	227	12	18	7	2	10	22	0	2	0	0	0
GBR-HW39-22	211	28	15	7	2	19	12	1	5	0	0	0
22-SGARB-1a	224	19	20	7	3	15	2	1	9	0	0	0
22-SGARB-2	222	18	18	2	7	19	8	1	4	0	1	0

APPENDIX III – Detrital Zircon U-Pb Geochronology Data

20-CGARB-1

Sample	206Pb 204Pb	U/Th	206Pb* ± 207Pb* (%)	±	207Pb* ± 235U (%)	±	206Pb* ± 238U (%)	±	error corr.	206Pb* ± 238U (Ma)	±	207Pb* ± 235U (Ma)	±	206Pb* ± 238U (Ma)	±	Best age ± (Ma)	±	Conc (%)
20-CGARB-1	18571.7	1.69902	12.2807	6.22628	0.79211	6.35085	0.07097	1.18382	0.1864	442.007	5.05719	592.366	28.5099	1220.12	122.744	442.007	5.05719	36.2265
20-CGARB-1	69140.4	2.40768	16.3937	1.87605	0.56768	2.21876	0.06735	1.18042	0.53202	420.167	4.80154	456.511	8.1582	643.891	40.4026	420.167	4.80154	65.2543
20-CGARB-1	71249.3	4.5864	17.1621	1.28394	0.45706	2.02095	0.05682	1.56057	0.7722	356.238	5.40852	382.214	6.43709	542.727	28.0937	356.238	5.40852	65.6385
20-CGARB-1	32844.2	1.94501	15.746	2.53536	0.68319	3.01896	0.07839	1.63578	0.54184	486.484	7.66497	528.702	12.4428	715.358	53.9055	486.484	7.66497	68.0056
20-CGARB-1	41022.6	1.82241	16.8082	1.6869	0.5416	1.89311	0.06611	0.85851	0.45349	412.7	3.43205	439.478	6.75334	582.255	36.6411	412.7	3.43205	70.8796
20-CGARB-1	176786	1.27242	17.2424	1.62521	0.54827	2.10857	0.0685	1.34341	0.63712	427.093	5.55168	443.862	7.58182	531.772	35.6054	427.093	5.55168	80.3151
20-CGARB-1	26306.7	3.25424	11.4905	1.96986	2.24741	2.27257	0.18868	1.90663	0.47991	1114.2	11.1597	1195.98	15.9708	1346.9	38.4954	1346.9	38.4954	82.7236
20-CGARB-1	61382.1	2.2141	13.7339	0.92383	1.48206	1.6308	0.14764	1.34378	0.824	887.738	11.1443	923.074	9.88774	1008.47	18.7409	1008.47	18.7409	88.0282
20-CGARB-1	28721.1	2.64596	11.1219	0.81675	2.68716	1.95417	0.21734	1.75441	0.89778	1267.79	20.1918	1324.93	14.4618	1418.54	16.4539	1418.54	16.4539	89.3733
20-CGARB-1	104392	1.89326	17.536	1.22365	0.55659	1.71693	0.07079	1.20436	0.70146	440.928	5.13281	449.302	6.23373	492.387	26.9734	440.928	5.13281	89.5491
20-CGARB-1	176609	3.44404	16.5043	1.41654	0.57569	1.82648	0.09077	1.15299	0.63126	560.081	6.1851	572.676	7.9947	622.968	30.5328	560.081	6.1851	89.9052
20-CGARB-1	37514.9	2.0551	16.4211	1.42265	0.76515	1.7594	0.09148	1.03345	0.58739	564.266	5.58348	576.977	7.74403	627.332	30.7055	564.266	5.58348	89.9447
20-CGARB-1	316412	1.89111	7.16123	1.30422	7.09925	1.92387	0.36752	1.41431	0.73514	2017.7	24.5023	2123.95	17.1244	2228.42	22.5839	2228.42	22.5839	90.5441
20-CGARB-1	30537.2	3.77204	11.51	1.46551	2.51116	1.79247	0.20991	1.03202	0.57576	1228.35	11.5423	1275.27	13.0176	1355.23	28.2628	1355.23	28.2628	90.6372
20-CGARB-1	20787.6	1.44261	6.25004	1.04069	9.09979	1.91436	0.41247	1.60676	0.83932	2226.21	30.2474	2348.09	17.5153	2455.71	17.5964	2455.71	17.5964	90.6545
20-CGARB-1	56030.5	3.46591	13.6107	1.2272	1.55716	1.75137	0.15442	1.24539	1.10919	925.707	10.7391	953.341	10.8239	1017.66	24.9369	1017.66	24.9369	90.6642
20-CGARB-1	123446	1.5048	17.7002	1.33045	0.54227	1.84558	0.06956	1.27847	0.69272	433.493	5.35985	439.919	6.58907	473.703	29.4447	433.493	5.35985	91.5615
20-CGARB-1	101491	3.32864	5.83908	0.81198	10.5395	1.25317	0.44439	0.95452	0.76169	2370.26	18.9314	2483.4	11.6223	2577.29	13.5666	2577.29	13.5666	91.9669
20-CGARB-1	170493	2.21297	12.9326	1.48063	1.87842	2.02189	0.17596	1.37685	0.68097	1044.86	13.2807	1073.51	13.3983	1132.15	29.4622	1132.15	29.4622	92.2898
20-CGARB-1	77278.7	0.89075	17.1255	1.07917	0.65973	1.53006	0.0818	1.08426	0.70864	506.866	5.28526	514.452	6.17554	548.314	23.599	506.866	5.28526	92.4400
20-CGARB-1	43834	1.08796	13.3344	0.92614	1.71717	1.52689	0.16606	1.20081	0.78644	990.342	11.0237	1014.97	9.79823	1068.51	18.9468	1068.51	18.9468	92.684
20-CGARB-1	256161	0.98563	17.8393	2.4969	0.52765	2.74865	0.06817	1.14916	0.41808	425.127	4.72776	430.246	9.64012	457.75	55.4008	425.127	4.72776	92.8733
20-CGARB-1	812663	20.8592	9.10275	1.00347	4.52853	1.68639	0.29793	1.35335	0.8037	1681.02	20.0554	1736.23	14.027	1803.38	18.2492	1803.38	18.2492	93.2148
20-CGARB-1	500012	4.14704	8.47776	1.04558	5.24271	1.97285	0.32188	1.67299	0.84801	1798.9	26.2613	1859.59	16.8247	1928.11	18.7313	1928.11	18.7313	93.2986
20-CGARB-1	106316	6.97779	12.4452	0.91844	2.13014	1.54502	0.19169	1.24212	0.80395	1130.55	12.8803	1158.63	10.6764	1211.52	18.1022	1211.52	18.1022	93.316
20-CGARB-1	48303.3	1.87433	11.4794	1.18792	2.6259	1.63948	0.2186	1.1275	0.68772	1274.48	13.0384	1307.92	12.0564	1363.17	22.9269	1363.17	22.9269	93.4936
20-CGARB-1	558580	0.96135	13.6259	1.02505	1.64017	1.65667	0.16159	1.30147	0.7856	965.604	11.6711	985.779	10.4505	1030.95	20.7381	1030.95	20.7381	93.6611
20-CGARB-1	151025	1.99226	17.6385	1.02338	0.5737	1.53322	0.07318	1.14113	0.74427	455.279	5.01611	460.402	5.67544	486.047	22.596	455.279	5.01611	93.6698
20-CGARB-1	28286.7	0.96604	10.5787	1.51415	3.18815	1.86507	0.24623	1.07583	0.57683	1419.01	13.7028	1454.29	14.4169	1506.21	28.7825	1506.21	28.7825	94.2108
20-CGARB-1	104242	2.5405	13.7342	0.88386	1.61185	1.79637	0.16011	1.5638	0.87053	957.402	13.9131	974.827	11.2569	1014.28	17.9137	1014.28	17.9137	94.919
20-CGARB-1	107784	2.27857	12.8441	0.93184	1.95244	1.34754	0.18201	0.97325	0.72224	1077.95	9.66095	1099.29	9.04857	1141.74	18.5118	1141.74	18.5118	94.3143
20-CGARB-1	615557	3.84584	12.8189	0.99992	2.0025	1.45775	0.18514	1.11426	0.76437	1094.99	11.2211	1116.36	9.87223	1158.17	18.6616	1158.17	18.6616	94.5446
20-CGARB-1	169445	2.96317	13.1031	1.12985	1.8653	1.6378	0.17682	1.18567	0.72394	1049.57	11.4841	1068.87	10.8264	1108.44	22.5674	1108.44	22.5674	94.6883
20-CGARB-1	752948	1.62457	5.40232	0.92187	12.4847	1.59253	0.48774	1.29858	0.81542	2560.9	27.4443	2641.57	14.9722	2703.96	15.218	2703.96	15.218	94.7092
20-CGARB-1	73402.7	6.79055	16.626	0.77217	0.77768	1.54916	0.09374	1.34298	0.86691	577.644	7.42023	584.161	6.88147	609.553	16.6717	577.644	7.42023	94.7553
20-CGARB-1	122278	1.46639	10.0917	0.86469	3.65076	1.49528	0.26695	1.21972	0.81572	1525.29	16.5672	1560.68	11.9188	1608.87	16.1206	1608.87	16.1206	94.805
20-CGARB-1	18107.7	1.44606	13.1027	1.56267	1.80159	2.29067	0.17287	1.66284	0.72592	1027.89	15.7991	1046.03	14.9581	1084.12	31.5934	1084.12	31.5934	94.8131
20-CGARB-1	49216.4	3.01816	13.173	1.31246	1.82875	1.75643	0.1747	1.16576	0.66911	1037.93	11.176	1055.83	11.5303	1093.05	26.3003	1093.05	26.3003	94.9777
20-CGARB-1	21143.9	0.9184	16.1662	1.61325	0.85638	2.11412	0.10116	1.2764	0.60375	621.209	7.55907	628.143	9.90312	653.2	36.1759	621.209	7.55907	95.1024
20-CGARB-1	153627	1.42373	13.149	1.08238	1.85467	1.54392	0.17647	1.10609	0.71292	1047.68	10.6434	1065.09	10.1854	1100.95	21.6684	1100.95	21.6684	95.1612
20-CGARB-1	56546.2	2.59257	13.1664	0.9205	1.84961	1.35109	0.17616	0.98858	0.7317	1045.94	9.54477	1063.29	8.90469	1099.04	18.4449	1099.04	18.4449	95.1684
20-CGARB-1	61361.8	2.38865	11.2858	1.99278	2.79968	2.39894	0.22905	1.33553	0.55671	1329.52	16.0448	1355.45	17.9496	1396.57	38.2139	1396.57	38.2139	95.1888
20-CGARB-1	359786	1.17842	5.30685	0.73453	12.8871	1.6005	0.49615	1.42199	0.88847	2597.22	30.3987	2671.43	15.082	2728.09	12.0945	2728.09	12.0945	95.2027
20-CGARB-1	58554.7	1.32825	13.3116	1.28641	1.76631	1.83272	0.17089	1.30286	0.71089	1016.99	12.2576	1033.17	11.8826	1067.59	25.9265	1067.59	25.9265	95.2626
20-CGARB-1	89585.8	5.51135	12.9184	1.22469	1.94967	1.68945	0.18253	1.16275	0.68824	1080.77	11.5697	1098.33	11.3392	1133.28	24.4	1133.28	24.4	95.3665
20-CGARB-1	129279	2.08438	11.0649	0.86847	2.94238	1.47504	0.23625	1.19206	0.80816	1367.2	14.6856	1392.89	11.1787	1432.43	16.5762	1432.43	16.5762	95.4458
20-CGARB-1	43920.1	2.46837	12.4719	1.32568	2.13637	1.89994	0.19389	1.35994	0.71578	1142.41	14.2373	1160.65	13.1415	1194.87	26.1582	1194.87	26.1582	95.6091
20-CGARB-1	975551	5.24637	9.36463	0.80973	4.37124	1.48117	0.29648	1.24024	0.83734	1673.85	18.2834	1706.92	12.2401	1747.73	14.8273	1747.73	14.8273	95.7274
20-CGARB-1	67611	4.71854	13.9087	0.89678	1.56213	1.30095	0.15749	0.93631	0.71917	942.788	8.21224	955.311	8.05406	984.245	18.3798	984.245	18.3798	95.7879
20-CGARB-1	612437	0.85874	10.2291	0.79515	3.61056	1.17821	0.26664	0.86943	0.73792	1523.71	11.7983	1551.86	9.36882	1590.38	14.8569	1590.38	14.8569	95.8081
20-CGARB-1	155890	2.368	9.81497	0.76857	3.94859	1.3564	0.28047	1.11755	0.82391	1593.71	15.7797	1623.7	10.9899	1662.78	14.2275	1662.78	14.2275	95.8463
20-CGARB-1	69683	1.55445	10.9884	1.28947	3.02052	1.87548	0.24056	1.3604	0.72536	1389.61	17.0056	1412.82	14.3077	1447.96	24.5823	1447.96		

20-CGARB-1	1191569	2.10415	9.7456	0.9591	4.05843	1.67035	0.28699	1.36755	0.81872	1626.45	19.6585	1645.99	13.6084	1671.02	17.7333	1671.02	17.7333	97.3328	
20-CGARB-1	198444	1.77012	9.59178	0.88364	4.20376	1.49053	0.29264	1.20031	0.80529	1654.72	17.5175	1674.75	12.2268	1699.93	16.2794	1699.93	16.2794	97.3401	
20-CGARB-1	165796	2.77467	10.9537	0.83357	3.12185	1.3679	0.24698	1.08449	0.79282	1422.88	13.8467	1438.09	10.5201	1460.64	15.8466	1460.64	15.8466	97.4148	
20-CGARB-1	404967	1.45158	10.3717	0.84737	3.57023	1.46792	0.26709	1.19865	0.81656	1526.03	16.2879	1542.94	11.6442	1566.16	15.881	1566.16	15.881	97.4375	
20-CGARB-1	341032	3.91718	13.415	0.87934	1.80216	1.27144	0.17464	0.91833	0.72227	1037.6	8.80124	1046.24	8.30301	1064.35	17.6849	1064.35	17.6849	97.4866	
20-CGARB-1	165495	2.19526	5.5023	0.67779	12.472	1.09395	0.49778	0.85688	0.78493	2604.27	18.3967	2640.62	10.2836	2668.58	11.2258	2668.58	11.2258	97.5899	
20-CGARB-1	2.7E+07	2.02602	12.2372	0.77572	2.32477	1.18817	0.20634	0.90001	0.75747	1209.28	9.92377	1219.88	8.43604	1238.67	15.2253	1238.67	15.2253	97.6269	
20-CGARB-1	195055	2.44811	12.8706	0.75821	2.03562	1.36137	0.18942	1.13066	0.83053	1118.25	11.6077	1127.5	9.26971	1145.35	15.0603	1145.35	15.0603	97.6334	
20-CGARB-1	408589	2.90155	13.0798	0.8613	1.91335	1.32021	0.18187	1.00057	0.75788	1077.19	9.92561	1085.75	8.80414	1103	17.2132	1103	17.2132	97.6598	
20-CGARB-1	214039	3.87694	12.8806	1.65887	2.04124	1.99737	0.18978	1.1125	0.55698	1120.21	11.4397	1129.38	13.6132	1147.04	32.9574	1147.04	32.9574	97.6611	
20-CGARB-1	353900	0.98895	12.9572	1.11816	1.99646	1.51351	0.18705	1.02002	0.67394	1105.36	10.3612	1114.31	10.2396	1131.81	10.2396	1131.81	22.2632	97.6634	
20-CGARB-1	1348813	1.97785	9.72484	0.7207	4.13082	1.34392	0.29032	1.13434	0.84405	1643.12	16.4528	1660.42	10.9688	1682.35	13.3075	1682.35	13.3075	97.6681	
20-CGARB-1	159582	0.82687	5.33118	0.76297	13.2967	1.87978	0.51188	1.14963	0.8332	2664.63	25.0915	2700.94	13.0309	2728.22	12.5631	2728.22	12.5631	97.6694	
20-CGARB-1	2304376	1.97565	12.3818	0.89086	2.25971	1.43319	0.2027	1.12267	0.78334	1189.82	12.1974	1199.82	10.0884	1217.89	17.536	1217.89	17.536	97.6949	
20-CGARB-1	205196	3.8085	10.8801	0.82502	3.17113	1.29408	0.24961	0.99695	0.77039	1436.47	12.8376	1450.16	9.99003	1470.25	15.6627	1470.25	15.6627	97.7025	
20-CGARB-1	2403272	1.66052	11.2814	0.72807	2.88888	1.12946	0.23611	1.08649	0.7645	1366.44	10.6322	1379.01	8.51954	1398.52	13.9561	1398.52	13.9561	97.7062	
20-CGARB-1	572009	2.69045	11.3352	0.86347	2.87792	1.45231	0.23567	1.16774	0.80406	1364.16	14.3572	1376.15	10.9442	1394.78	16.5601	1394.78	16.5601	97.805	
20-CGARB-1	888696	1.66982	13.2489	0.97266	1.86854	1.54952	0.17915	1.20622	0.77844	1062.32	11.8138	1070.02	10.2491	1085.74	19.4873	1085.74	19.4873	97.8432	
20-CGARB-1	86012.7	4.067	16.4987	0.95415	0.82066	1.42734	0.0985	1.0603	0.74285	605.601	6.12878	608.414	6.53274	618.883	20.6351	605.601	6.12878	97.8539	
20-CGARB-1	337400	4.09801	13.5551	0.99735	1.75525	1.75423	0.17179	1.44312	0.82265	1021.96	13.6384	1029.1	11.3478	1044.34	20.139	1044.34	20.139	97.8657	
20-CGARB-1	518598	4.54099	12.9953	1.26339	1.95726	1.80975	0.18477	1.29578	0.716	1092.96	13.0268	1100.94	12.1626	1116.78	25.4936	1116.78	25.4936	97.8669	
20-CGARB-1	123228	1.99966	17.5517	1.24037	0.59965	1.57787	0.07651	0.97527	0.61809	475.239	4.46812	477.014	6.00595	485.553	27.4104	475.239	4.46812	97.8757	
20-CGARB-1	508620	3.35895	9.02532	0.69165	4.87104	1.30772	0.31792	1.10984	0.84868	1779.55	17.2586	1797.26	11.0171	1817.85	12.5554	1817.85	12.5554	97.8932	
20-CGARB-1	197063	3.23486	12.6023	0.99234	2.17974	1.67122	0.19823	1.34469	0.80462	1165.78	14.3405	1174.59	11.6331	1190.85	19.5815	1190.85	19.5815	97.8954	
20-CGARB-1	153226	2.99062	13.1552	0.83256	1.88793	1.36165	0.18044	1.07732	0.79119	1069.36	10.6157	1076.86	9.03871	1092.08	16.6644	1092.08	16.6644	97.92	
20-CGARB-1	258190	1.12827	5.50257	0.79207	12.5972	1.42955	0.50133	1.19005	0.83247	2619.52	25.6174	2650.01	13.4487	2673.36	13.1126	2673.36	13.1126	97.9859	
20-CGARB-1	440680	5.60642	12.4264	1.12568	2.26543	1.79605	0.2033	1.39951	0.77922	1193.01	15.2424	1201.59	12.6526	1217.07	22.1377	1217.07	22.1377	98.0235	
20-CGARB-1	30991.2	2.53702	12.7506	1.36906	2.04308	1.91462	0.19019	1.33785	0.69876	1122.42	13.7818	1129.99	13.053	1144.57	27.2211	1144.57	27.2211	98.0654	
20-CGARB-1	289805	4.63115	13.5403	0.99875	1.76275	1.5011	0.17241	1.12062	0.74653	1025.39	10.6235	1031.86	9.72526	1045.61	20.1624	1045.61	20.1624	98.0667	
20-CGARB-1	70806.8	0.32785	5.31178	0.86312	13.3337	1.34243	0.51401	1.02784	0.76566	2673.71	22.4953	2703.58	12.6805	2725.96	14.2217	2725.96	14.2217	98.0831	
20-CGARB-1	104329	1.36156	13.1518	1.05969	1.90625	1.63124	0.18171	1.23946	0.75983	1076.32	12.2863	1083.27	10.8645	1097.31	21.2434	1097.31	21.2434	98.0867	
20-CGARB-1	81505.4	2.45477	12.8061	0.99899	2.03529	1.48259	0.18975	1.0938	0.73776	1120.01	11.2455	1127.39	10.0947	1141.6	19.8994	1141.6	19.8994	98.1093	
20-CGARB-1	196182	1.52439	9.91162	0.79841	3.9483	1.2944	0.28378	1.01882	0.7871	1610.38	14.5181	1623.64	10.4874	1640.85	14.8208	1640.85	14.8208	98.1431	
20-CGARB-1	136295	2.74025	12.3473	0.8344	2.30583	1.37274	0.2057	1.09001	0.79404	1205.89	11.9882	1214.08	9.7225	1228.69	16.3823	1228.69	16.3823	98.1448	
20-CGARB-1	1696528	3.58279	16.5475	0.73446	0.84567	1.31051	0.10091	1.08356	0.8282	619.768	6.41347	622.267	6.09706	631.389	15.8395	619.768	6.41347	98.1594	
20-CGARB-1	100990	2.93365	13.6909	1.01429	1.6947	1.67812	0.16795	1.33689	0.79666	1000.82	12.393	1006.54	10.7164	1018.97	20.5398	1018.97	20.5398	98.219	
20-CGARB-1	166079	2.22319	13.5322	0.78864	1.7704	1.17605	0.17303	1.08215	0.74159	1028.78	8.29316	1034.67	7.63122	1047.15	15.9275	1047.15	15.9275	98.2452	
20-CGARB-1	143422	2.13321	12.3488	0.93099	2.29456	1.43871	0.20517	1.09657	0.75129	1203.03	12.0343	1210.61	10.1747	1224.14	18.2782	1224.14	18.2782	98.2757	
20-CGARB-1	704261	1.94023	13.3741	1.12537	1.80858	1.5278	0.17559	1.0333	0.67633	1042.86	9.94945	1048.56	9.98899	1060.48	22.6619	1060.48	22.6619	98.3391	
20-CGARB-1	17055.1	2.18886	17.9161	1.96186	5.0826	2.42014	0.06669	1.41408	0.5843	416.21	5.69958	417.276	8.28111	423.151	41.2621	416.21	5.69958	98.3599	
20-CGARB-1	164609	2.1289	13.5712	0.87653	1.72137	1.38763	0.16984	1.0755	0.77506	1011.22	10.0656	1016.54	8.91252	1027.99	17.7498	1027.99	17.7498	98.3687	
20-CGARB-1	2015570	7.95936	13.8184	0.78364	1.66252	1.73709	0.16586	1.50529	0.89246	1041.24	10.5049	1046.09	10.7755	1056.26	24.9027	1056.26	24.9027	98.5702	
20-CGARB-1	1271448	2.86064	9.92277	0.96439	3.99349	1.305	0.28597	0.87919	0.67371	1621.36	12.6035	1632.87	10.5976	1647.72	17.8844	1647.72	17.8844	98.4002	
20-CGARB-1	3048.95	49.5726	16.4078	2.89245	4.80995	0.56237	4.80995	0.07261	1.42141	0.29551	451.875	6.20305	453.068	17.5814	459.148	101.952	451.875	6.20305	98.4161
20-CGARB-1	273660	3.00178	13.0948	0.83057	1.94615	1.29517	0.18449	0.99376	0.76728	1091.46	9.978	1097.12	8.68737	1108.35	16.5759	1108.35	16.5759	98.476	
20-CGARB-1	143983	1.27697	4.48689	0.93442	18.0217	1.36398	0.58368	0.99363	0.72848	2963.73	23.6076	2990.89	13.1223	3009.19	15.0118	3009.19	15.0118	98.4893	
20-CGARB-1	157860	1.55108	12.5317	0.97068	2.21789	1.38679	0.20093	0.99029	0.71409	1180.3	10.6808	1186.7	9.70561	1198.39	19.1305	1198.39	19.1305	98.4909	
20-CGARB-1	493322	2.50266	13.6162	0.75216	1.71491	1.2956	0.16948	1.0549	0.81422	1009.24	9.85494	1014.12	8.3099	1024.67	15.2183	1024.67	15.2183	98.4941	
20-CGARB-1	159691	2.41055	13.4556	0.88791	1.78682	1.45426	0.17427	1.1517	0.79195	1035.62	11.0185	1040.67	9.46795	1051.3	17.9131	1051.3	17.9131	98.5084	
20-CGARB-1	1133867	1.2808	12.0678	0.75982	2.44239	1.45778	0.21365	1.24411	0.85342	1248.25	14.1186	1255.18	10.5025	1267.1	14.8354	1267.1	14.8354	98.5127	
20-CGARB-1	493212	2.24179	13.6114	1.51713	1.73845	1.99909	0.1711	1.30179	0.65119	1018.17	12.2607	1022.89	12.8867	1032.98	30.6768	1032.98	30.6768	98.5662	
20-CGARB-1	1823504	1.20619	5.04566	0.87474	14.7958	1.41364	0.53889	1.1105	0.78556	2778.78	25.0685	2802.2	13.4459	2819.09	14.2843	2819.09	14.2843	98.5702	
20-CGARB-1	46006.9	0.75814	13.3974	1.23385	1.80174	1.65016	0.1753	1.09256	0.66209	1041.24	10.5049	1046.09	10.7755	1056.26	24.9027	1056.26	24.9027	98.5782	
20-CGARB-1	147270	2.3613	18.2432	1.60059	0.48356	1.85474	0.06396	0.9											

20-CGARB-1	922207	4.59524	12.6051	0.70995	2.19262	1.33205	0.20003	1.12709	0.84613	1175.51	12.1112	1178.7	9.28919	1184.58	14.0221	1184.58	14.0221	99.2336
20-CGARB-1	150403	1.43977	10.1238	0.96961	3.79647	1.54964	0.2791	1.20873	0.78	1586.84	17.0022	1592	12.4549	1598.82	18.0989	1598.82	18.0989	99.2508
20-CGARB-1	149740	2.31602	17.5164	1.0982	0.62857	1.80756	0.07974	1.43555	0.79419	494.556	6.83409	495.203	7.08394	498.177	24.1859	494.556	6.83409	99.2732
20-CGARB-1	196773	3.82221	12.9169	0.91703	2.05764	1.44879	0.19196	1.12157	0.77414	1132.01	11.644	1134.84	9.89994	1140.26	18.2201	1140.26	18.2201	99.2769
20-CGARB-1	152176	3.46041	12.7226	0.66243	2.14259	1.26558	0.19711	1.07836	0.85207	1159.78	11.4461	1162.66	8.76155	1168.05	13.1386	1168.05	13.1386	99.2915
20-CGARB-1	26802.3	1.76672	13.3008	1.17134	1.83674	1.49889	0.17807	0.90346	0.60275	1056.41	8.80317	1058.69	9.85467	1063.43	24.0591	1063.43	24.0591	99.3392
20-CGARB-1	172075	2.15877	11.5868	0.94621	2.74234	1.56451	0.23044	1.24586	0.79652	1336.8	15.0413	1340.01	11.6414	1345.13	18.2752	1345.13	18.2752	99.3809
20-CGARB-1	142743	1.29837	9.91874	0.78765	4.03515	1.38474	0.28907	1.13888	0.82245	1636.9	16.4637	1641.31	11.2684	1646.95	14.6102	1646.95	14.6102	99.3895
20-CGARB-1	1816939	2.24049	13.2156	0.57521	1.9177	1.33849	0.18333	1.20859	0.90295	1085.12	12.0703	1087.27	8.93301	1091.6	11.5214	1091.6	11.5214	99.4062
20-CGARB-1	350705	1.62118	11.6194	0.88997	2.74059	1.52086	0.23038	1.23326	0.8109	1336.51	14.8863	1339.54	11.3146	1344.36	17.189	1344.36	17.189	99.4159
20-CGARB-1	103904	3.03698	10.9277	0.98535	3.1968	1.87649	0.25281	1.59644	0.85076	1452.94	20.7672	1456.39	14.5145	1461.39	18.744	1461.39	18.744	99.4218
20-CGARB-1	434574	0.63689	8.91265	0.88244	5.08151	1.3809	0.32787	1.06216	0.76918	1828.07	16.9067	1833.02	11.7164	1838.64	15.9789	1838.64	15.9789	99.4248
20-CGARB-1	107846	1.79663	13.2459	1.01059	1.89474	1.58763	0.18188	1.22388	0.77088	1077.26	12.1416	1079.25	10.552	1083.26	20.2774	1083.26	20.2774	99.4456
20-CGARB-1	121733	2.29848	9.96607	0.75088	3.96553	1.47796	0.28634	1.27291	0.86126	1623.24	18.2662	1627.17	11.9853	1632.24	13.9551	1632.24	13.9551	99.4482
20-CGARB-1	222868	2.84099	13.4822	0.95597	1.78055	1.48024	0.17444	1.1301	0.76345	1036.53	10.8205	1038.38	9.62499	1042.27	19.311	1042.27	19.311	99.4491
20-CGARB-1	40338.5	4.07014	13.1574	0.88434	1.90793	1.42604	0.18274	1.11866	0.78445	1081.91	11.1419	1083.86	9.50064	1087.77	17.7064	1087.77	17.7064	99.4616
20-CGARB-1	129214	2.20423	10.9275	1.01761	3.20397	1.45564	0.25319	1.0408	0.71501	1454.91	13.5555	1458.12	11.265	1462.78	19.3382	1462.78	19.3382	99.4623
20-CGARB-1	129943	4.03606	12.7777	0.87967	2.12028	1.38333	0.19591	1.06756	0.71713	1153.31	11.2737	1155.43	9.54485	1159.39	17.4651	1159.39	17.4651	99.4754
20-CGARB-1	195242	3.30636	11.5211	0.90193	2.8168	1.34913	0.23437	1.0033	0.74366	1357.34	12.2801	1360.02	10.1101	1364.2	17.3721	1364.2	17.3721	99.4973
20-CGARB-1	331374	4.11734	13.5991	0.87905	1.73974	1.62661	0.17175	1.36861	0.84139	1021.73	12.9316	1023.37	10.4883	1026.86	17.7994	1026.86	17.7994	99.5001
20-CGARB-1	894337	2.29358	8.72242	0.88451	5.34204	1.37379	0.3368	1.05068	0.76481	1871.28	17.0648	1875.62	11.7502	1880.41	15.9459	1880.41	15.9459	99.5141
20-CGARB-1	554105	3.28286	9.06764	0.66506	4.91251	1.82247	0.32226	0.97772	0.82684	1800.75	15.361	1804.41	9.97619	1808.61	12.0862	1808.61	12.0862	99.5653
20-CGARB-1	196195	3.52184	5.28954	0.90099	13.7387	1.64303	0.52613	1.37395	0.83623	2725.11	30.5347	2731.87	15.5524	2736.85	14.8246	2736.85	14.8246	99.5712
20-CGARB-1	237227	1.19602	13.3449	0.8425	1.88221	1.34547	0.18116	1.04897	0.77963	1073.32	10.3715	1074.84	8.92192	1077.91	16.9024	1077.91	16.9024	99.5745
20-CGARB-1	109144	1.84449	13.1313	1.05927	1.95465	1.39707	0.18578	0.91021	0.65151	1098.49	9.19312	1100.05	9.3848	1103.14	21.1749	1103.14	21.1749	99.5791
20-CGARB-1	181488	1.03955	18.19	0.93838	0.49444	1.54372	0.06528	1.22555	0.7939	407.673	4.84154	407.934	5.18607	409.391	20.9968	407.673	4.84154	99.5802
20-CGARB-1	128418	2.19922	9.06447	0.85103	4.9135	1.40883	0.32234	1.12261	0.79683	1801.14	17.6407	1804.58	11.8865	1808.53	15.4701	1808.53	15.4701	99.5915
20-CGARB-1	207960	2.35545	12.2229	0.92022	2.41004	1.37229	0.21282	1.01977	0.7418	1243.83	11.5152	1245.6	9.84815	1248.66	18.0151	1248.66	18.0151	99.6133
20-CGARB-1	551653	2.54673	11.7914	0.7467	2.65476	1.49198	0.2261	1.29168	0.86575	1314.04	15.3552	1315.97	11.0047	1319.09	14.4724	1319.09	14.4724	99.6178
20-CGARB-1	5467166	2.6713	12.8753	0.9167	2.0748	1.58397	0.19329	1.29175	0.81552	1139.18	13.4885	1140.52	10.8531	1143.08	18.2235	1143.08	18.2235	99.6591
20-CGARB-1	170523	6.06763	11.6447	0.854	2.72116	1.53602	0.22964	1.27673	0.83119	1332.62	15.3706	1334.25	11.4057	1336.84	16.5111	1336.84	16.5111	99.6847
20-CGARB-1	177032	2.14223	9.93355	0.70822	4.04214	1.3003	0.28981	1.09046	0.83863	1640.57	15.7949	1642.72	10.5849	1645.45	13.1399	1645.45	13.1399	99.7039
20-CGARB-1	1E+07	5.36183	13.6784	0.83818	1.72531	1.70092	0.17092	1.48006	0.87015	1017.17	13.9271	1018.01	10.9341	1019.79	16.9721	1019.79	16.9721	99.7428
20-CGARB-1	409442	2.87986	11.0501	0.93887	3.1272	1.5261	0.24995	1.20312	0.78836	1438.21	15.5091	1439.41	11.7417	1441.15	17.8922	1441.15	17.8922	99.7962
20-CGARB-1	37081.2	1.81725	12.8515	1.08783	2.0637	1.63827	0.19272	1.22161	0.74567	1136.1	12.7245	1136.85	11.2055	1138.28	21.6963	1138.28	21.6963	99.8008
20-CGARB-1	67923.8	2.11821	13.3222	1.17909	1.87194	1.81713	0.18066	1.38096	0.75997	1070.59	13.622	1071.22	12.0269	1072.51	23.7235	1072.51	23.7235	99.8208
20-CGARB-1	505101	1.81974	5.84625	0.79965	11.5934	1.53298	0.49015	1.30789	0.85317	2571.31	27.7326	2572.14	14.3306	2572.79	13.3665	2572.79	13.3665	99.9424
20-CGARB-1	177790	2.64291	11.5543	0.92165	2.79815	1.5377	0.23387	1.23076	0.80039	1354.75	15.0383	1355.04	11.5032	1355.49	17.7768	1355.49	17.7768	99.9456
20-CGARB-1	194499	4.45765	13.2416	0.79675	1.91434	1.63424	0.18347	1.42681	0.87307	1085.92	14.2593	1086.1	10.9004	1086.45	15.9552	1086.45	15.9552	99.9514
20-CGARB-1	80774.9	4.24844	9.41132	0.87826	4.53627	1.6088	0.30942	1.34792	0.83784	1737.87	20.5331	1737.65	13.3856	1737.37	16.1031	1737.37	16.1031	100.029
20-CGARB-1	147267	2.89086	4.81977	0.90805	16.1827	1.65807	0.56525	1.3873	0.8367	2888.3	32.2963	2887.65	15.8572	2887.18	14.739	2887.18	14.739	100.039
20-CGARB-1	169124	3.87059	13.1222	0.8423	1.98177	1.63449	0.18781	1.40074	0.85699	1109.49	14.2772	1109.32	11.0309	1108.99	16.8281	1108.99	16.8281	100.045
20-CGARB-1	234141	4.71209	9.90501	0.83691	4.07132	1.47574	0.29152	1.21545	0.82362	1649.12	17.6857	1648.58	12.0302	1647.88	15.5219	1647.88	15.5219	100.075
20-CGARB-1	5.1E+07	3.14677	12.6814	0.90066	2.19261	1.49933	0.2007	1.19867	0.79947	1179.05	12.9158	1178.7	10.4559	1178.06	11.812	1178.06	11.812	100.084
20-CGARB-1	194601	14.4358	13.593	0.62266	1.76841	1.56088	0.17409	1.43131	0.91699	1034.6	13.6811	1033.94	10.1244	1032.52	12.6024	1032.52	12.6024	100.202
20-CGARB-1	45395.1	4.94803	13.7032	0.89984	1.71555	1.64126	0.17053	1.37257	0.83629	1015.01	12.8903	1014.36	10.5285	1012.95	18.2248	1012.95	18.2248	100.203
20-CGARB-1	457299	1.69227	9.45026	0.86838	4.50195	1.47647	0.30844	1.1941	0.80875	1733.02	18.1458	1731.33	12.2676	1729.28	15.938	1729.28	15.938	100.216
20-CGARB-1	82705.5	2.84404	12.1025	0.67734	2.49015	1.16641	0.2178	0.9482	0.81293	1270.23	10.932	1269.17	8.45028	1267.37	13.2442	1267.37	13.2442	100.226
20-CGARB-1	803892	1.48076	5.50558	0.83929	12.9658	1.37015	0.51567	1.083	0.79043	2680.78	23.7528	2677.17	12.9168	2674.44	13.8896	2674.44	13.8896	100.237
20-CGARB-1	242999	1.63295	14.122	0.88503	1.54818	1.57632	0.15887	1.30437	0.82748	950.481	11.5271	949.769	9.72477	948.133	18.1058	948.133	18.1058	100.248
20-CGARB-1	603207	2.48596	12.8593	0.88711	2.1007	1.62107	0.19531	1.3568	0.83698	1150.07	14.2915	1149.04	11.152	1147.1	17.6142	1147.1	17.6142	100.259
20-CGARB-1	187124	3.50084	9.35686	0.85898	4.63143	1.39891	0.31335	1.10409	0.78925	1757.17	16.9814	1754.95	11.6824	1752.29	15.7121	1752.29	15.7121	100.279
20-CGARB-1	152334	3.1044	9.16575	0.66378	4.86227	1.18307	0.32176	0.97918	0.82766	1798.34	15.3661	1795.74	9.96382	1792.71	12.092	1792.71	12.092	100.314
20-CGARB-1	169560	0.85958	8.97078	1.03154	4.11755	1.40593	0.29975	0.95513	0.67936	1660								

20-CGARB-1	439398	3.32065	13.596	1.09484	1.80865	1.52222	0.17743	1.05758	0.69476	1052.91	10.2736	1048.59	9.95357	1039.57	22.1204	1039.57	22.1204	101.284
20-CGARB-1	62814.3	0.92082	10.045	0.9255	3.99364	1.48629	0.29011	1.16296	0.78246	1642.08	16.8585	1632.9	12.07	1621.09	17.2224	1621.09	17.2224	101.295
20-CGARB-1	132654	2.37634	10.7926	0.86593	3.37017	1.38022	0.26315	1.07432	0.77837	1505.91	14.4276	1497.49	10.8081	1485.57	16.4159	1485.57	16.4159	101.37
20-CGARB-1	155546	5.78244	13.7588	0.86922	1.74242	1.28161	0.17307	0.94159	0.73469	1029.02	8.95544	1024.36	8.26828	1014.4	17.6183	1014.4	17.6183	101.442
20-CGARB-1	138418	1.48501	9.92465	0.97964	4.0974	1.66757	0.29455	1.34937	0.80918	1664.25	19.7922	1653.79	13.6113	1640.51	18.1888	1640.51	18.1888	101.447
20-CGARB-1	288299	1.43039	9.82243	0.96835	4.17387	1.64399	0.29768	1.32853	0.80812	1679.8	19.6461	1668.9	13.4672	1655.21	17.9406	1655.21	17.9406	101.486
20-CGARB-1	236591	2.55606	13.309	0.84489	1.90627	1.45072	0.18397	1.17925	0.81287	1088.65	11.8124	1083.28	9.6622	1072.52	16.9543	1072.52	16.9543	101.504
20-CGARB-1	16623.2	1.66036	17.8962	2.33854	0.52085	2.66681	0.06844	1.27492	0.47807	426.732	5.26432	425.719	9.27385	420.218	52.3089	426.732	5.26432	101.55
20-CGARB-1	63921.4	1.83305	13.4519	1.16088	1.82623	1.85698	0.17876	1.44923	0.78042	1060.21	14.1679	1054.93	12.1844	1044.02	23.4435	1044.02	23.4435	101.55
20-CGARB-1	109045	1.89913	13.5305	1.20477	1.79632	1.82685	0.17677	1.37319	0.75167	1049.33	13.2976	1044.12	11.9165	1033.22	24.366	1033.22	24.366	101.559
20-CGARB-1	1332113	6.11993	9.54265	0.92413	4.50468	1.89789	0.31066	1.6577	0.87344	1743.97	25.3293	1731.84	15.7713	1717.19	16.9872	1717.19	16.9872	101.559
20-CGARB-1	5593663	1.45402	5.33794	1.00025	13.8314	1.49149	0.5353	1.10637	0.74179	2763.76	24.8672	2738.23	14.1242	2719.44	16.4843	2719.44	16.4843	101.63
20-CGARB-1	2786078	5.42522	8.43848	0.75251	5.86869	1.26819	0.35789	1.02079	0.80492	1972.17	17.3437	1956.62	11.0026	1940.19	13.4612	1940.19	13.4612	101.648
20-CGARB-1	199480	2.26612	9.14768	0.79275	4.93186	1.37098	0.32652	1.11852	0.81585	1821.47	17.7482	1807.72	11.5745	1791.9	14.4376	1791.9	14.4376	101.65
20-CGARB-1	157331	3.3835	12.8249	0.94075	2.11195	1.47054	0.19704	1.13003	0.76844	1159.4	11.9909	1152.71	10.1338	1140.19	18.7146	1140.19	18.7146	101.685
20-CGARB-1	125629	1.74966	13.4289	1.06823	1.84185	1.50814	0.17988	1.06424	0.70566	1066.33	10.4594	1060.52	9.9252	1048.6	21.5615	1048.6	21.5615	101.691
20-CGARB-1	601575	4.60809	13.3852	0.78645	1.88911	1.36717	0.18301	1.11832	0.81798	1083.42	11.1527	1077.27	9.07729	1064.86	15.7973	1064.86	15.7973	101.743
20-CGARB-1	157204	3.09599	13.6575	0.76611	1.75996	1.35913	0.17456	1.1224	0.82583	1037.21	10.7533	1030.83	8.80037	1017.32	15.5248	1017.32	15.5248	101.955
20-CGARB-1	64952.5	2.24297	11.0402	1.07409	3.20474	1.54875	0.25614	1.11273	0.71847	1470.07	14.6267	1458.31	11.9863	1441.19	20.5305	1441.19	20.5305	102.003
20-CGARB-1	192133	2.7048	13.4733	0.96661	1.84667	1.48323	0.18046	1.12493	0.75844	1069.48	11.086	1062.24	9.77017	1047.41	19.5109	1047.41	19.5109	102.107
20-CGARB-1	100562	3.25699	12.9066	0.8463	2.10901	1.47017	0.19717	1.20208	0.81765	1160.1	12.7626	1151.75	10.1267	1136.09	16.8301	1136.09	16.8301	102.114
20-CGARB-1	13542.9	1.9709	13.6655	1.25373	1.69434	1.82939	0.17019	1.15084	0.62908	1013.18	10.7899	1006.4	11.6816	991.657	28.8981	991.657	28.8981	102.17
20-CGARB-1	6082026	1.97156	8.83195	0.89917	5.34934	1.39162	0.34193	1.06212	0.76323	1895.96	17.4463	1876.78	11.9054	1855.6	16.2485	1855.6	16.2485	102.175
20-CGARB-1	691006	1.41089	13.7809	0.87954	1.73607	1.33588	0.17307	1.00547	0.75267	1029	9.56285	1022.01	8.60689	1007.03	17.8245	1007.03	17.8245	102.182
20-CGARB-1	225073	3.31067	12.8664	0.79562	2.15034	1.37968	0.19975	1.12713	0.81695	1173.99	12.0974	1165.16	9.5625	1148.81	15.8036	1148.81	15.8036	102.192
20-CGARB-1	172420	3.47549	10.9255	0.83131	3.28389	1.37773	0.26018	1.0985	0.79733	1490.76	14.6205	1477.24	10.7241	1457.85	15.8114	1457.85	15.8114	102.257
20-CGARB-1	122631	2.6009	16.9941	1.08516	0.74513	2.13489	0.0921	1.83846	0.86115	567.933	9.99451	565.394	9.25594	555.215	23.6742	567.933	9.99451	102.291
20-CGARB-1	119688	3.84047	16.8367	0.91082	0.78602	1.74998	0.09622	1.49426	0.85387	592.193	8.45462	588.913	7.82023	576.314	19.7986	592.193	8.45462	102.755
20-CGARB-1	68085.3	3.98491	13.6379	0.95968	1.77892	1.40329	0.17634	1.02379	0.72956	1046.96	9.89358	1037.79	9.12161	1018.49	19.4367	1018.49	19.4367	102.795
20-CGARB-1	96442.5	2.71035	13.6407	0.85849	1.80126	1.46296	0.17793	1.1837	0.80911	1055.64	11.5261	1045.91	9.5521	1025.65	17.4097	1025.65	17.4097	102.924
20-CGARB-1	188957	3.60773	14.2039	0.75991	1.59852	1.46876	0.16393	1.2568	0.85569	978.572	11.4107	969.634	9.17459	949.413	15.5579	949.413	15.5579	103.071
20-CGARB-1	176268	3.10864	9.49084	0.7422	4.60356	1.40788	0.3168	1.19628	0.8497	1774.06	18.5529	1749.91	11.7447	1721.17	13.6396	1721.17	13.6396	103.073
20-CGARB-1	44441.9	3.23508	12.883	1.09391	2.12228	1.77565	0.1987	1.38996	0.78279	1168.32	14.8526	1156.08	12.2557	1133.18	21.9972	1133.18	21.9972	103.101
20-CGARB-1	149833	3.08862	13.0141	0.91957	2.08951	1.39468	0.19684	1.04835	0.75168	1158.34	11.115	1145.37	9.57796	1120.88	18.3642	1120.88	18.3642	103.342
20-CGARB-1	399730	1.75624	10.8589	0.91656	3.37926	1.51551	0.26601	1.20693	0.79639	1520.52	16.348	1499.6	11.8749	1470.14	17.3999	1470.14	17.3999	103.427
20-CGARB-1	32941.2	2.17383	13.4303	1.08687	1.8756	1.74365	0.18321	1.36301	0.7817	1084.47	13.6051	1072.51	11.5484	1048.29	21.9422	1048.29	21.9422	103.451
20-CGARB-1	159669	5.89157	13.2434	1.53196	2.01064	4.31169	0.1923	4.03028	0.93473	1133.83	41.9042	1119.11	29.2464	1090.6	30.6765	1090.6	30.6765	103.964
20-CGARB-1	497286	2.10822	4.64486	0.82175	18.2809	1.56913	0.61262	1.33675	0.8519	3080.49	32.7365	3004.64	15.1075	2954.26	13.2638	2954.26	13.2638	104.273
20-CGARB-1	95436	1.86728	18.1759	0.93411	0.51225	1.38769	0.06778	1.02524	0.73881	422.788	4.1955	419.963	4.77292	404.455	20.9378	422.788	4.1955	104.533
20-CGARB-1	74374	1.94302	17.8141	1.0033	0.59205	1.55627	0.07669	1.1833	0.76035	476.318	5.43308	472.178	5.87654	452.088	22.4577	476.318	5.43308	105.359
20-CGARB-1	33576.5	1.30187	17.7353	1.35744	0.60838	1.97172	0.07852	1.4128	0.71653	487.311	6.63094	482.538	7.57303	459.904	30.4984	487.311	6.63094	105.959
20-CGARB-1	105968	6.15551	17.1493	0.95415	0.7633	2.56562	0.09474	2.38076	0.92795	583.527	13.2822	575.911	11.2774	545.953	20.9138	583.527	13.2822	106.882
20-CGARB-1	17526	1.84457	18.0516	1.21418	0.5205	1.52217	0.06897	0.91685	0.60233	429.927	3.81321	425.486	5.29091	401.476	27.2186	429.927	3.81321	107.087

20-CGARB-2

Sample	206Pb 204Pb	U/Th	206Pb* ± 207Pb* (%)	±	207Pb* ± 235U (%)	±	206Pb* ± 238U (%)	±	error corr.	206Pb* ± 238U (Ma)	±	207Pb* ± 235U (Ma)	±	206Pb* ± 207Pb* (Ma)	±	Best age ± (Ma)	±	Conc (%)
20-CGARB-2	28657.8	1.03904	14.4305	4.11532	0.67645	4.28004	0.07088	1.17211	0.27385	441.426	5.00083	524.629	17.5375	905.34	84.8506	441.426	5.00083	48.758
20-CGARB-2	280526	2.15518	17.4016	1.01182	0.52002	1.51864	0.06544	1.13243	0.74569	408.621	4.48375	425.166	5.27546	515.868	22.2012	408.621	4.48375	79.2104
20-CGARB-2	104833	2.672	8.39908	0.7865	4.55962	1.24837	0.27692	0.96941	0.77654	1575.85	13.5525	1741.92	10.3961	1947.51	14.0599	1947.51	14.0599	80.9161
20-CGARB-2	53867.2	2.63654	9.17054	0.95988	3.86706	1.75621	0.25685	1.47067	0.83741	1473.69	19.3743	1606.83	14.1693	1786.02	17.4941	1786.02	17.4941	82.5122
20-CGARB-2	95965.5	1.54775	12.6349	2.54898	1.76236	3.85566	0.16192	0.89282	0.75028	967.444	25.9878	1031.72	24.9822	1170.62	50.4687	1170.62	50.4687	62.6437
20-CGARB-2	22364.4	1.06335	17.1856	1.26588	0.59175	1.76021	0.07412	1.21549	0.69054	460.924	5.4069	471.983	6.64449	526.135	27.912	460.924	5.4069	87.6056
20-CGARB-2	192691	2.86483	5.5257	0.72429	10.9913	1.59541	0.4383	1.42151	0.891	2343.02	27.925	2522.4	14.8496	2670.06	11.9945	2670.06	11.9945	87.7516
20-CGARB-2	135414	6.41893	10.077	0.88103	3.39335	1.54559	0.24676	1.26989	0.82162	1421.75	16.2024	1502.86	12.1221	1619.14	16.3986	1619.14	16.3986	87.8092
20-CGARB-2	147255	1.43831	17.5524	1.16235	0.5564	1.95775	0.07058	1.57505	0.80452	439.627	6.69351	449.182	7.10657	498.38	25.601	439.627	6.69351	88.2111
20-CGARB-2	1.7E+07	8.99462	12.9698	0.74548	1.83315	1.68598	0.1716	1.51222	0.89693	1020.92	14.2781	1057.41	11.0772	1133.5	14.8345	1133.5	14.8345	90.0684
20-CGARB-2	16754.6	0.91097	12.6201	1.20712	1.92326	1.65533	0.17715	1.13119	0.68328	1051.4	10.9741	1089.2	11.06	1165.56	23.9688	1165.56	23.9688	90.206
20-CGARB-2	162760	1.39629	12.6022	1.02378	1.9995	1.74605	0.18194	1.41434	0.81003	1077.54	14.0345	1115.34	11.8189	1189.76	20.2139	1189.76	20.2139	90.5679
20-CGARB-2	6396945	0.85681	12.9837	0.7184	1.83062	1.40356	0.17212	1.20577	0.85908	1023.77	11.414	1056.5	9.21698	1124.75	14.3186	1124.75	14.3186	91.0224
20-CGARB-2	27916.2	1.73188	12.3575	1.13523	2.1094	2.27973	0.18951	1.97541	0.86651	1118.74	20.2884	1151.88	15.7047	1214.78	22.4024	1214.78	22.4024	92.0944
20-CGARB-2	75311	2.90372	9.75939	0.98753	3.84243	1.79998	0.27093	1.50488	0.83606	1545.5	20.6801	1601.68	14.5034	1676.38	18.2471	1676.38	18.2471	92.193
20-CGARB-2	148517	2.02935	17.5641	1.64384	0.5817	2.372	0.07381	1.71	0.72091	459.075	7.57717	465.55	8.85784	497.597	36.2275	497.597	36.2275	92.2583
20-CGARB-2	21340.7	1.47349	16.0295	1.40342	0.86891	1.86209	0.10172	1.22123	0.65584	624.497	7.26876	634.974	8.79076	672.441	30.0598	624.497	7.26876	92.8702
20-CGARB-2	463242	2.92921	9.42153	0.68011	4.17255	1.40968	0.28465	1.23476	0.87592	1614.75	17.6373	1668.64	11.5469	1737.11	12.4699	1737.11	12.4699	92.9561
20-CGARB-2	144439	1.11749	12.7887	0.99006	1.93928	1.74574	0.18033	1.43777	0.82359	1068.78	14.1603	1094.75	11.6958	1146.77	19.6677	1146.77	19.6677	93.1986
20-CGARB-2	67536.2	1.60459	17.515	1.62686	0.59675	1.98967	0.07561	1.14434	0.57514	469.887	5.1858	475.171	7.55049	500.741	35.8411	469.887	5.1858	93.8382
20-CGARB-2	95065.2	2.1698	10.1026	0.74803	3.60707	1.43431	0.26398	1.22371	0.85317	1510.16	16.4749	1551.09	11.4031	1607.29	13.9487	1607.29	13.9487	93.5626
20-CGARB-2	20805.1	1.90031	13.0744	1.20162	1.85083	1.92348	0.17631	1.50125	0.78049	1046.79	14.5054	1063.73	12.6805	1098.62	24.0451	1098.62	24.0451	95.2824
20-CGARB-2	11208.8	4.79653	11.1929	1.23276	2.76537	1.91043	0.22745	1.27643	0.66814	1321.13	15.2476	1346.24	14.2474	1386.36	27.2943	1386.36	27.2943	95.2943
20-CGARB-2	90994.2	2.7906	12.1651	1.2174	2.31876	1.64182	0.20405	1.10155	0.67093	1197.03	12.034	1218.05	11.6481	1255.48	23.7922	1255.48	23.7922	95.3441
20-CGARB-2	118078	3.33629	12.6898	1.10113	2.07667	1.795	0.19023	1.41744	0.78966	1122.61	14.6038	1141.14	12.3027	1176.56	21.7941	1176.56	21.7941	95.4144
20-CGARB-2	35975.2	1.86807	13.9763	1.03781	1.53277	1.67718	0.1554	2.29912	0.73458	931.188	11.2641	943.609	10.3064	972.73	21.6381	972.73	21.6381	95.7294
20-CGARB-2	9489.08	146.212	16.7183	1.40829	0.69102	2.45457	0.08556	1.52221	0.62015	529.219	7.73402	533.412	10.185	551.366	42.0365	529.219	7.73402	95.9833
20-CGARB-2	45133.5	3.58864	16.6357	0.85268	0.77938	1.7695	0.09417	1.55308	0.87617	580.168	8.60194	585.133	7.86994	604.424	18.4315	580.168	8.60194	95.9868
20-CGARB-2	108851	30.861	12.5507	0.77908	2.15174	1.25138	0.19514	0.97927	0.78255	1149.16	10.3074	1165.62	8.67498	1196.33	15.3492	1196.33	15.3492	96.0569
20-CGARB-2	80914.6	2.17583	12.238	1.13443	2.26138	1.59113	0.20148	1.11525	0.70092	1183.28	12.0563	1200.33	11.2028	1231.17	22.291	1231.17	22.291	96.11
20-CGARB-2	116938	5.58727	13.1473	0.89642	1.8859	1.54078	0.17915	1.25314	0.81332	1062.35	12.7377	1076.14	10.224	1104.16	17.9317	1104.16	17.9317	96.2136
20-CGARB-2	72022.2	1.62965	10.9857	0.96355	3.05504	1.78589	0.24256	1.50364	0.84196	1399.97	18.9217	1421.5	13.6626	1453.87	18.3324	1453.87	18.3324	96.2932
20-CGARB-2	1052744	1.25121	5.08348	0.76328	14.1037	1.25169	0.51953	0.99204	0.79255	2697.19	21.865	2756.7	11.8685	2800.57	12.4885	2800.57	12.4885	96.3088
20-CGARB-2	99686.5	2.17752	11.4007	1.07214	2.78174	1.58808	0.22944	1.17153	0.7377	1331.58	14.0941	1350.65	11.8617	1380.95	20.6028	1380.95	20.6028	96.4247
20-CGARB-2	228423	0.65185	5.28625	0.957	13.2243	1.51203	0.50611	1.17063	0.77421	2640	25.3587	2695.79	14.2745	2737.88	15.7448	2737.88	15.7448	96.4247
20-CGARB-2	47971.9	1.57928	13.5039	1.08256	1.7296	1.57111	0.16924	1.13083	0.71977	1007.95	10.5518	1019.6	10.1087	1044.73	22.0201	1044.73	22.0201	96.4794
20-CGARB-2	150436	2.02249	17.0905	1.0684	0.70449	1.57867	0.087	1.16022	0.73608	537.781	5.99555	541.471	6.62533	557.057	23.2997	537.781	5.99555	96.5397
20-CGARB-2	87509.3	1.60817	17.9775	1.45204	0.5301	1.73653	0.06889	0.95127	0.5478	429.451	3.95215	431.876	6.10879	444.812	32.2999	429.451	3.95215	96.5466
20-CGARB-2	146404	3.42395	10.7865	0.84031	3.21063	1.47246	0.25009	1.20913	0.82117	1438.94	15.5936	1459.73	11.4008	1490.1	15.9098	1490.1	15.9098	96.5666
20-CGARB-2	1.6E+07	2.45987	12.445	1.13851	2.21831	1.81176	0.19944	1.40935	0.77789	1172.31	15.1067	1186.84	12.6808	1213.43	22.4109	1213.43	22.4109	96.611
20-CGARB-2	1978997	2.40408	13.3186	1.00889	1.83595	1.4718	0.17626	1.07161	0.72809	1046.51	10.3515	1058.41	9.67508	1083.05	20.2212	1083.05	20.2212	96.6262
20-CGARB-2	32621.5	1.25042	17.3874	1.02724	0.6202	1.64954	0.0785	1.23239	0.74711	487.155	5.78243	489.975	6.41157	503.178	24.1533	487.155	5.78243	96.8157
20-CGARB-2	30676.1	0.92465	12.5028	1.37461	2.12946	1.9529	0.19446	1.36525	0.69909	1145.52	14.3284	1158.41	13.4938	1182.62	27.6167	1182.62	27.6167	96.8625
20-CGARB-2	23538.8	1.24653	12.2925	0.77094	2.2538	1.75545	0.20168	1.57319	0.89617	1184.32	17.0203	1197.97	12.3471	1222.66	15.3049	1222.66	15.3049	96.8639
20-CGARB-2	105926	1.29975	8.70923	0.79132	5.18163	1.56671	0.32662	1.35218	0.86307	1821.95	21.4608	1849.6	13.3354	1880.83	14.2559	1880.83	14.2559	96.8698
20-CGARB-2	125564	10.2955	12.3222	0.98558	2.24174	1.56855	0.20103	1.22002	0.7778	1180.87	13.1644	1194.2	11.0142	1218.43	19.4017	1218.43	19.4017	96.917
20-CGARB-2	88242.3	4.09288	16.7796	1.12488	0.76743	1.95789	0.09325	1.13341	0.70931	574.743	6.23223	578.289	7.04502	592.225	24.3982	574.743	6.23223	97.0481
20-CGARB-2	86270.8	2.88685	10.9851	0.86812	3.03205	1.68333	0.24233	1.44219	0.85675	1398.8	18.1348	1415.72	12.8539	1441.26	16.5452	1441.26	16.5452	97.0539
20-CGARB-2	151230	4.23294	9.5761	0.72128	4.06906	1.4775	0.28706	1.28996	0.87267	1626.8	18.538	1648.12	12.0432	1675.4	13.3321	1675.4	13.3321	97.0994
20-CGARB-2	143261	2.06762	13.1505	0.91293	1.87393	1.63579	0.179	1.35716	0.82967	1061.5	13.2827	1071.92	10.8306	1093.19	18.2676	1093.19	18.2676	97.1015
20-CGARB-2	147379	1.89778	11.859	1.21849	2.53051	1.75379	0.21723	1.26137	0.71922	1267.2	14.5112	1280.85	12.7644	1303.8	23.6684	1303.8	23.6684	97.1928
20-CGARB-2	126697	1.74467	10.699	0.96873	3.29156	2.3218	0.25455	2.10995	0.90876	1461.88	27.5978	1479.06	18.0837	1503.77	18.3102	1503.77	18.3102	97.2145
20-CGARB-2	125655	4.00922	14.090															

20-CGARB-2	1989704	1.63918	9.78229	0.71715	4.12513	1.52059	0.29163	1.34085	0.8818	1649.69	19.5165	1659.29	12.4279	1671.45	13.2586	1671.45	13.2586	98.6985
20-CGARB-2	209128	1.69513	12.6357	0.75589	2.18511	1.46079	0.19923	1.24997	0.85568	1171.21	13.3869	1176.31	10.1761	1185.72	14.9162	1185.72	14.9162	98.7766
20-CGARB-2	240616	2.85779	13.602	0.95653	1.75183	1.52204	0.17212	1.17649	0.77297	1023.8	11.1371	1027.84	9.83877	1036.42	19.5225	1036.42	19.5225	98.7821
20-CGARB-2	38369.7	1.53268	12.8568	0.9472	2.04407	1.69933	0.19079	1.40973	0.82958	1125.66	14.5605	1130.32	11.5869	1139.3	18.8545	1139.3	18.8545	98.8028
20-CGARB-2	1057411	2.06154	12.7698	1.06187	2.10141	1.4851	0.19429	1.03825	0.69911	1144.55	10.8881	1149.27	10.2177	1158.17	21.0745	1158.17	21.0745	98.8234
20-CGARB-2	263717	4.78568	8.90446	1.02276	5.25748	1.861	0.33274	1.55475	0.83544	1851.67	25.0233	1861.99	15.8778	1873.51	18.4425	1873.51	18.4425	98.8345
20-CGARB-2	40225.2	1.19614	9.94755	0.75281	3.95349	1.49353	0.28498	1.2883	0.86259	1616.41	18.4187	1624.71	12.1041	1635.45	14.0356	1635.45	14.0356	98.8359
20-CGARB-2	100732	1.52625	12.8797	0.96701	2.06381	1.49409	0.19205	1.13836	0.76191	1132.47	11.8227	1136.88	10.2195	1145.31	19.2108	1145.31	19.2108	98.879
20-CGARB-2	164303	1.52155	4.23133	0.77665	19.7251	1.43615	0.60693	1.20802	0.84115	3057.7	29.4127	3077.98	13.8796	3091.23	12.3873	3091.23	12.3873	98.8152
20-CGARB-2	127095	3.84178	14.1055	0.85992	1.55439	1.54966	0.15866	1.28872	0.83162	949.325	11.376	952.24	9.57532	959.002	17.6024	959.002	17.6024	98.991
20-CGARB-2	194308	1.26068	13.5477	1.1205	1.74112	1.61776	0.17155	1.16688	0.72129	1020.63	11.0146	1023.88	10.4342	1030.82	22.6686	1030.82	22.6686	99.0115
20-CGARB-2	102234	2.03692	10.0037	0.80817	3.92792	1.5663	0.28426	1.3416	0.85654	1612.78	19.1428	1619.45	12.6773	1628.11	15.0277	1628.11	15.0277	99.0581
20-CGARB-2	80687.8	1.07128	18.3946	1.16598	0.44514	2.08072	0.05963	1.72176	0.82748	373.38	6.24608	373.871	6.50783	376.891	26.2728	373.38	6.24608	99.0683
20-CGARB-2	1078031	4.10196	12.5886	0.91201	2.19445	1.56908	0.20002	1.27681	0.81373	1175.45	13.7195	1179.28	10.9452	1186.34	18.0156	1186.34	18.0156	99.0826
20-CGARB-2	86933.2	4.6387	13.4359	0.92021	1.81803	1.74471	0.17668	1.48156	0.84917	1048.84	14.3409	1051.98	11.4295	1058.51	18.548	1058.51	18.548	99.086
20-CGARB-2	45214.1	1.99624	12.9997	1.12505	1.96057	1.5995	0.18584	1.12812	0.70529	1098.82	11.3971	1102.08	10.7557	1108.49	22.6448	1108.49	22.6448	99.1274
20-CGARB-2	82625.2	3.05904	12.7815	1.44372	2.08014	1.83358	0.19323	1.1302	0.61639	1138.86	11.7985	1142.28	12.574	1148.79	28.6964	1148.79	28.6964	99.1353
20-CGARB-2	48562.4	1.32411	13.6011	1.07948	1.73653	1.82149	0.17132	1.46532	0.80446	1019.4	13.8163	1022.18	11.737	1028.1	21.8999	1028.1	21.8999	99.1544
20-CGARB-2	50418.1	1.265797	5.3471	0.79749	13.4348	1.64995	0.51973	1.44428	0.87534	2698.03	31.8407	2710.71	15.594	2720.16	13.1489	2720.16	13.1489	99.1865
20-CGARB-2	59073.5	1.77141	13.6608	1.0628	1.70584	1.39183	0.16928	0.89862	0.64564	1008.16	8.38658	1010.72	8.9097	1016.27	21.5237	1016.27	21.5237	99.2012
20-CGARB-2	233754	1.72637	9.47966	0.86609	4.37372	1.70484	0.30204	1.46846	0.86135	1701.42	21.9594	1707.39	14.0902	1714.71	15.9251	1714.71	15.9251	99.2249
20-CGARB-2	354323	1.13624	9.90902	0.89474	3.98339	1.66536	0.28675	1.40458	0.84341	1625.28	20.1781	1630.82	13.5174	1637.94	16.6136	1637.94	16.6136	99.2271
20-CGARB-2	752541	2.37575	10.8897	0.91374	3.24764	1.4768	0.25495	1.16018	0.7856	1463.98	15.1942	1468.61	11.4654	1475.31	17.3343	1475.31	17.3343	99.2318
20-CGARB-2	491749	2.66676	11.8998	0.85417	2.5444	1.5727	0.21986	1.32052	0.83965	1281.14	15.3427	1284.84	11.464	1291	16.6212	1291	16.6212	99.2361
20-CGARB-2	131441	1.17632	13.8056	0.95583	1.65956	1.44763	0.16615	1.087	0.75088	990.877	9.98386	993.208	9.17241	998.341	19.4033	998.341	19.4033	99.2524
20-CGARB-2	384604	4.16639	13.3222	1.09416	1.84791	1.70629	0.17876	1.30928	0.76733	1060.18	12.7994	1062.68	11.2423	1067.85	21.9765	1067.85	21.9765	99.2816
20-CGARB-2	88789.1	3.42001	9.34556	0.93107	4.58625	1.49788	0.31018	1.17287	0.78302	1741.61	17.9002	1746.77	12.4872	1752.94	17.0492	1752.94	17.0492	99.3534
20-CGARB-2	156422	1.39197	9.74519	0.92137	4.16938	1.33108	0.29448	0.96062	0.72169	1663.86	14.0873	1668.02	10.9014	1673.25	17.0313	1673.25	17.0313	99.4392
20-CGARB-2	60085.7	2.24526	13.0668	1.14815	1.946	1.62832	0.18515	1.1538	0.70858	1095.02	11.6195	1097.07	10.9219	1101.14	22.9641	1101.14	22.9641	99.4443
20-CGARB-2	37871.2	2.27248	13.3845	1.11146	1.83124	1.65571	0.1778	1.21204	0.73204	1054.94	11.7949	1056.72	10.8743	1060.42	22.7148	1060.42	22.7148	99.4832
20-CGARB-2	113628	3.23861	13.4587	1.05029	1.81982	1.77076	0.17707	1.42564	0.8051	1050.95	13.8253	1052.62	11.6042	1056.1	21.1695	1056.1	21.1695	99.5123
20-CGARB-2	106086	2.56216	5.12818	0.7094	14.4781	1.46349	0.53794	1.28005	0.87466	2774.81	28.8629	2781.56	13.9008	2786.46	11.6185	2786.46	11.6185	99.5189
20-CGARB-2	7681548	2.46387	13.0457	0.85472	2.00831	1.49284	0.18916	1.22393	0.81987	1116.8	12.5504	1118.32	10.1196	1121.29	17.0478	1121.29	17.0478	99.5992
20-CGARB-2	101171	2.05292	9.35426	0.88223	4.56602	1.51356	0.30989	1.22981	0.81257	1740.16	18.7556	1743.09	12.6079	1746.58	16.1581	1746.58	16.1581	99.6325
20-CGARB-2	3051991	4.3919	13.2462	0.92573	1.92015	1.80258	0.18366	1.54671	0.85806	1086.94	15.471	1088.12	12.0358	1090.46	18.5273	1090.46	18.5273	99.6772
20-CGARB-2	40140.2	2.76604	10.2085	1.01819	3.76363	1.95304	0.27834	1.66658	0.83333	1583	23.3926	1585.02	15.6691	1587.69	19.0306	1587.69	19.0306	99.7049
20-CGARB-2	109385	2.0738	11.3412	0.9257	2.91172	1.68496	0.23939	1.40781	0.83551	1383.54	17.5293	1384.96	12.7357	1387.13	17.7745	1387.13	17.7745	99.7414
20-CGARB-2	65740.8	3.56852	13.5239	0.95497	1.79208	1.51669	0.17539	1.17795	0.77666	1041.72	11.3308	1042.58	9.88483	1044.41	19.2909	1044.41	19.2909	99.7432
20-CGARB-2	50830.3	1.65517	13.231	1.07878	1.90313	1.62143	0.18262	1.209	0.74564	1081.27	12.0351	1082.19	10.7931	1084.04	21.6481	1084.04	21.6481	99.7444
20-CGARB-2	82451.3	0.69667	12.4212	1.04369	2.30161	1.72153	0.20679	1.36897	0.79521	1211.71	15.1222	1212.78	12.1863	1214.68	20.5338	1214.68	20.5338	99.7855
20-CGARB-2	141426	0.95317	12.6461	0.90709	2.20488	1.42655	0.21626	1.101	0.71719	1182.11	11.8915	1182.59	9.96562	1183.5	17.9258	1183.5	17.9258	99.8227
20-CGARB-2	210246	3.87953	10.8614	0.85276	3.26729	1.49925	0.25664	1.23309	0.82248	1472.61	16.2339	1473.3	11.6562	1474.27	16.1799	1474.27	16.1799	99.8873
20-CGARB-2	355281	1.51469	13.6694	1.02674	1.74659	1.56742	0.17245	1.18431	0.75558	1025.6	11.2294	1025.9	10.1211	1026.53	20.7873	1026.53	20.7873	99.91
20-CGARB-2	128001	2.64617	14.3137	1.13749	1.47194	1.68349	0.15317	1.2408	0.73074	918.709	10.6243	918.927	10.179	919.472	23.3951	919.472	23.3951	99.917
20-CGARB-2	66457.2	34.4048	13.2205	1.02537	1.88542	1.56575	0.1816	1.13004	0.75558	1075.73	11.7212	1075.97	10.3888	1076.47	20.5806	1076.47	20.5806	99.9309
20-CGARB-2	231632	1.50307	11.7472	0.93008	2.66362	1.67406	0.22689	1.39189	0.83145	1318.16	16.5931	1318.43	12.359	1318.84	18.0281	1318.84	18.0281	99.9481
20-CGARB-2	61128.6	2.74694	9.8624	0.89449	4.08286	1.61631	0.29184	1.34623	0.8329	1650.72	19.6054	1650.89	13.1836	1651.08	16.5808	1651.08	16.5808	99.9784
20-CGARB-2	96857.5	3.29556	13.715	1.11764	1.68988	1.63092	0.16865	1.18762	0.72819	1004.65	11.0482	1004.72	10.404	1004.85	22.6771	1004.85	22.6771	99.9805
20-CGARB-2	115444	0.83767	9.83017	0.76345	4.09128	1.39713	0.29219	1.16979	0.83728	1652.46	17.0517	1652.57	11.4003	1652.69	14.1569	1652.69	14.1569	99.9861
20-CGARB-2	130075	1.93125	10.6901	0.87862	3.35048	1.34545	0.2606	1.01886	0.75727	1492.92	13.578	1492.9	10.5216	1492.86	16.6307	1492.86	16.6307	100.004
20-CGARB-2	10235.3	0.86971	12.8191	1.62571	2.02516	2.05452	0.19049	1.20302	0.58555	1124.05	12.4093	1123.99	13.9662	1123.86	33.202	1123.86	33.202	100.018
20-CGARB-2	338205	2.39043	12.9403	1.12782	2.02154	1.69167	0.19027	1.26086	0.74533	1122.86	12.9932	1122.78	11.4926	1122.61	22.4782	1122.61	22.4782	100.023
20-CGARB-2	114672	1.14659	6.70436	0.76285	9.04615	1.58467	0.43832	1.38891	0.87647	2343.11	27.2854	2342.68	14.4898	2342.3	13.0507	2342.3	13.0507	100.035
20-CGARB-2	138519	1.63638	12.8954	1.0634	2.02166	1.91532	0.19029	1.59298	0.831									

20-CGARB-2	59680.8	2.40366	13.2212	1.15498	1.93585	1.65708	0.18545	1.181	0.7127	1096.68	11.91	1093.56	11.095	1087.37	23.2784	1087.37	23.2784	100.856
20-CGARB-2	143948	36.3621	13.5568	0.91599	1.78437	1.44303	0.17556	1.11498	0.77267	1042.67	10.7341	1039.78	9.3902	1033.68	18.5269	1033.68	18.5269	100.87
20-CGARB-2	131841	1.58807	9.88671	0.89383	4.09371	1.57235	0.29358	1.29343	0.82261	1659.4	18.9232	1653.05	12.8318	1644.97	16.5875	1644.97	16.5875	100.877
20-CGARB-2	38921	4.38922	13.571	1.14162	1.78909	1.72203	0.17589	1.28858	0.74829	1044.46	12.425	1041.49	11.2165	1035.23	20.0943	1035.23	20.0943	100.89
20-CGARB-2	120093	2.01236	9.10086	0.81624	4.96364	1.42389	0.32645	1.16662	0.81932	1821.14	18.5086	1813.15	12.0341	1803.96	14.845	1803.96	14.845	100.953
20-CGARB-2	346737	1.45008	9.92312	0.72466	4.09925	1.23716	0.29401	1.00271	0.81049	1661.53	14.6864	1654.15	10.0988	1644.79	13.445	1644.79	13.445	101.018
20-CGARB-2	225909	9.32569	13.1585	0.94694	1.98796	1.70409	0.18888	1.41675	0.83138	1115.29	14.5096	1111.43	11.5126	1103.88	18.9435	1103.88	18.9435	101.034
20-CGARB-2	4828892	1.36379	5.39475	0.80683	13.4557	1.44083	0.52692	1.19374	0.82851	2728.44	26.5557	2712.18	13.6187	2700.06	13.3205	2700.06	13.3205	101.051
20-CGARB-2	147161	5.7038	13.8485	0.88967	1.70106	1.55696	0.17003	1.27771	0.82064	1012.3	11.9699	1008.93	9.95653	1001.6	18.0483	1001.6	18.0483	101.068
20-CGARB-2	312929	1.1238	9.76744	0.90143	4.19949	1.56221	0.2981	1.27589	0.81672	1681.88	18.888	1673.92	12.8123	1663.94	16.6822	1663.94	16.6822	101.078
20-CGARB-2	32522.8	1.95691	13.4298	0.78978	1.82846	1.28868	0.17867	1.01033	0.784	1059.68	9.87258	1055.73	8.45905	1047.58	16.148	1047.58	16.148	101.155
20-CGARB-2	60070.3	1.3963	12.6545	1.02462	2.18333	1.65541	0.20099	1.30017	0.78541	1180.64	14.0268	1175.74	11.529	1166.71	20.2979	1166.71	20.2979	101.195
20-CGARB-2	60004.8	2.01918	13.4306	1.04448	1.83491	1.77205	0.17914	1.43147	0.8078	1062.26	14.0192	1058.04	11.6467	1049.36	21.0752	1049.36	21.0752	101.229
20-CGARB-2	31810.7	2.5628	12.8728	1.16679	2.09219	1.84311	0.19551	1.42651	0.77397	1151.15	15.0386	1146.24	12.6631	1136.99	23.203	1136.99	23.203	101.245
20-CGARB-2	46922.4	2.15814	10.7814	0.9792	3.38226	1.54018	0.26367	1.18859	0.77173	1508.59	15.9874	1500.3	12.0706	1488.58	18.5485	1488.58	18.5485	101.344
20-CGARB-2	506460	3.65397	13.4961	0.92856	1.81602	1.58576	0.17796	1.28546	0.81063	1055.81	12.5189	1051.25	10.3841	1041.76	18.7575	1041.76	18.7575	101.349
20-CGARB-2	511101	3.18805	5.40163	0.91668	13.6182	1.38983	0.53074	1.04466	0.75165	2744.56	23.3493	2723.53	13.1474	2707.96	15.1267	2707.96	15.1267	101.352
20-CGARB-2	22060.7	0.99944	13.465	1.32436	1.81086	1.97488	0.17763	1.40052	0.70917	1054.03	13.6182	1049.39	12.9193	1039.72	28.1273	1039.72	28.1273	101.377
20-CGARB-2	78664.4	3.45225	13.0144	0.89949	2.0315	1.49777	0.19185	1.1957	0.79832	1131.4	12.4075	1126.12	10.1917	1115.97	18.0196	1115.97	18.0196	101.383
20-CGARB-2	247142	1.82341	9.79539	0.99647	4.2559	1.54	0.30081	1.17416	0.76244	1695.33	17.5035	1684.88	12.6624	1671.88	18.4224	1671.88	18.4224	101.402
20-CGARB-2	74374.8	1.66568	13.5425	1.22787	1.82406	1.74096	0.17854	1.23382	0.7087	1059	12.0494	1054.15	11.4183	1044.13	24.7971	1044.13	24.7971	101.424
20-CGARB-2	293844	1.91652	10.7717	0.92909	3.34699	1.59915	0.26215	1.30155	0.8139	1500.84	17.427	1492.09	12.5028	1479.65	17.6156	1479.65	17.6156	101.432
20-CGARB-2	274738	1.87934	11.7254	0.89494	2.72922	1.60607	0.23179	1.33336	0.83035	1343.88	16.1773	1336.45	11.9353	1324.54	17.3327	1324.54	17.3327	101.46
20-CGARB-2	104279	2.56789	11.5539	1.04648	2.85723	1.61314	0.23845	1.2275	0.76094	1378.63	15.2356	1370.72	12.1337	1358.38	20.1758	1358.38	20.1758	101.491
20-CGARB-2	2305493	3.0453	14.3118	0.70154	1.49784	1.73999	0.15585	1.5923	0.91512	933.66	13.8402	929.509	10.5948	919.696	14.4371	919.696	14.4371	101.518
20-CGARB-2	264836	2.72103	16.5261	1.05513	0.86311	1.6853	0.10333	1.3141	0.79794	633.894	7.93356	631.821	7.92764	624.391	22.7726	624.391	22.7726	101.522
20-CGARB-2	24076.6	1.61827	12.4132	0.97109	2.31755	1.77683	0.20917	1.48796	0.83743	1224.4	16.5929	1217.67	12.604	1205.8	19.1103	1205.8	19.1103	101.542
20-CGARB-2	131694	1.37651	18.1299	0.91365	0.53151	1.90251	0.06962	1.66875	0.87713	433.849	7.0016	432.809	6.7043	427.256	20.3757	427.256	20.3757	101.543
20-CGARB-2	55057.4	2.00574	11.4369	0.94071	2.87789	1.40162	0.23962	1.03852	0.74094	1384.71	12.941	1376.14	10.5622	1362.85	18.1325	1362.85	18.1325	101.605
20-CGARB-2	147742	2.76076	12.3842	0.66779	2.32809	1.33063	0.20984	1.14495	0.86045	1227.95	12.8014	1220.9	9.45159	1208.46	13.3312	1208.46	13.3312	101.613
20-CGARB-2	215835	10.8189	12.0028	0.74314	2.57354	1.53373	0.22368	1.36444	0.87817	1301.31	16.0782	1293.15	11.362	1279.61	14.4677	1279.61	14.4677	101.695
20-CGARB-2	138969	3.16931	13.5831	1.32668	1.70014	2.20796	0.17034	1.65223	0.74831	1013.98	15.5022	1008.58	14.1172	996.863	29.741	996.863	29.741	101.717
20-CGARB-2	66654.6	1.13693	13.3884	1.14159	1.89021	1.63569	0.18311	1.17129	0.71609	1083.92	11.686	1077.66	10.8624	1065.02	22.9617	1065.02	22.9617	101.775
20-CGARB-2	8674742	2.10397	5.43677	0.88747	13.3565	1.53241	0.52788	1.24926	0.81523	2732.52	27.8242	2705.19	14.477	2684.82	14.673	2684.82	14.673	101.777
20-CGARB-2	105022	2.43805	12.9669	0.98643	2.09311	1.58633	0.19598	1.24213	0.78303	1153.69	13.1213	1146.55	10.9002	1133.04	19.6236	1133.04	19.6236	101.823
20-CGARB-2	31809.6	3.3821	13.5768	0.89942	1.79004	1.59606	0.17652	1.31848	0.82609	1047.93	12.7522	1041.84	10.3979	1029.07	18.2054	1029.07	18.2054	101.833
20-CGARB-2	750362	2.55307	12.8449	0.8957	2.12817	1.43468	0.19814	1.12072	0.78117	1165.3	11.9475	1157.99	9.91093	1144.33	17.783	1144.33	17.783	101.833
20-CGARB-2	138567	4.39044	9.29825	0.85262	4.73367	1.30263	0.31976	0.9848	0.75601	1788.58	15.3816	1773.22	10.9202	1755.17	15.9987	1755.17	15.9987	101.904
20-CGARB-2	193046	2.59265	13.6182	1.02655	1.7907	1.55674	0.17661	1.17021	0.7517	1048.42	11.3323	1042.08	10.1431	1028.78	20.7784	1028.78	20.7784	101.909
20-CGARB-2	161866	3.5331	11.48	1.00082	2.87413	1.56427	0.23974	1.20211	0.76848	1385.37	14.9858	1375.15	11.784	1359.31	19.291	1359.31	19.291	101.917
20-CGARB-2	4269544	2.02483	11.2913	0.76592	3.04696	1.29097	0.24844	1.03922	0.80499	1430.44	13.3316	1419.47	9.86957	1403.03	14.6726	1403.03	14.6726	101.954
20-CGARB-2	237725	2.70798	11.1844	0.97217	3.09121	1.669	0.25063	1.35662	0.81283	1441.73	17.526	1430.51	12.8052	1413.85	18.5968	1413.85	18.5968	101.971
20-CGARB-2	285543	1.59411	5.89212	0.82681	11.7529	1.63939	0.49999	1.41562	0.8635	2613.76	30.4187	2584.92	15.342	2562.37	13.8316	2562.37	13.8316	102.005
20-CGARB-2	523853	5.14224	9.18249	0.85159	4.93628	1.35815	0.32739	1.058	0.779	1825.7	16.8215	1808.48	11.4678	1788.68	15.5148	1788.68	15.5148	102.069
20-CGARB-2	7746.06	2.50356	13.7981	1.69182	1.60517	1.94413	0.1639	0.95149	0.48942	978.414	8.63749	972.225	12.1635	958.284	34.6515	958.284	34.6515	102.101
20-CGARB-2	455784	2.0669	10.0062	0.92814	4.07458	1.75651	0.2946	1.49127	0.849	1664.46	21.8761	1649.23	14.3216	1629.86	17.2517	1629.86	17.2517	102.123
20-CGARB-2	104463	1.05321	5.34921	0.85963	13.8189	1.40472	0.53697	1.11098	0.79089	2770.73	25.0212	2737.38	13.3016	2712.85	14.1787	2712.85	14.1787	102.134
20-CGARB-2	525963	2.22988	9.96433	0.88737	4.07073	1.55659	0.29448	1.27888	0.82159	1663.89	18.7548	1648.46	12.689	1628.82	16.496	1628.82	16.496	102.153
20-CGARB-2	350459	80.1294	13.8553	0.69203	1.66835	1.45167	0.1684	1.2761	0.87905	1003.26	11.8561	996.559	9.21628	981.841	14.0743	981.841	14.0743	102.182
20-CGARB-2	153858	1.84477	11.722	0.98835	2.75833	1.70618	0.23404	1.39068	0.81509	1355.64	17.0023	1344.34	12.7153	1326.39	19.1383	1326.39	19.1383	102.205
20-CGARB-2	69266.8	3.17074	11.7839	0.91217	2.72857	1.41646	0.23252	1.08347	0.76491	1347.71	13.1767	1336.27	10.5255	1317.97	17.6867	1317.97	17.6867	102.256
20-CGARB-2	262085	3.18994	13.6788	0.94945	1.78927	1.52238	0.17673	1.19	0.78167	1049.08	11.5212	1041.56	9.91637	1025.79	19.2261	1025.79	19.2261	102.271
20-CGARB-2	696918	2.11848	8.5254	0.96592	5.7999	1.67157	0.35695	1.36423	0.81614	1967.69	23.134	1946.4	14.4778	1923.8	17.3129	1923.8	17.3129	102.282
20-CGARB-2	11-407	2.48943	13.2399	1.02981	1.98693	1.70577	0.18973	1.35983	0.79719	1119.94	13.9798							

20-CGARB-2	330638	2.12865	9.47662	0.77122	4.62155	1.63287	0.31851	1.43926	0.88143	1782.47	22.4131	1753.17	13.6314	1718.4	14.1758	1718.4	14.1758	103.729
20-CGARB-2	77702.2	0.89506	18.1167	1.07477	0.52953	1.48307	0.06965	1.01899	0.68708	434.053	4.27733	431.497	5.21347	417.853	24.0693	434.053	4.27733	103.877
20-CGARB-2	43515.5	0.87244	13.5898	0.94924	1.82497	1.51691	0.18015	1.17297	0.77326	1067.82	11.5428	1054.47	9.9505	1026.92	19.4728	1026.92	19.4728	103.983
20-CGARB-2	113015	1.08693	17.9162	0.84964	0.58265	1.4613	0.0755	1.18877	0.8135	469.224	5.37983	466.16	5.46253	451.077	18.8939	469.224	5.37983	104.023
20-CGARB-2	60491.2	1.53158	10.8205	1.03412	3.41677	1.59995	0.26857	1.22082	0.76503	1533.53	16.6614	1508.26	12.5681	1472.93	19.6248	1472.93	19.6248	104.114
20-CGARB-2	86527.8	2.90016	9.17043	1.00416	5.0046	1.52201	0.33341	1.14335	0.75121	1854.87	18.4293	1820.1	12.8812	1780.52	18.3218	1780.52	18.3218	104.176
20-CGARB-2	24167.3	3.07544	12.0327	0.93282	2.59861	1.4946	0.22733	1.16761	0.78122	1320.51	13.9418	1300.25	10.9591	1266.93	18.2125	1266.93	18.2125	104.229
20-CGARB-2	15141.2	1.62755	13.461	1.30405	1.83025	1.87193	0.18069	1.2513	0.66846	1070.75	12.3447	1056.37	12.2921	1026.75	28.181	1026.75	28.181	104.285
20-CGARB-2	83432.2	5.38059	13.2926	1.00368	1.9715	1.62184	0.19005	1.27377	0.78538	1121.65	13.1133	1105.82	10.9264	1074.83	20.148	1074.83	20.148	104.356
20-CGARB-2	37876.8	0.38962	12.9103	0.93966	2.11784	1.36658	0.19938	0.99202	0.72592	1171.98	10.6307	1154.63	9.42574	1122.23	18.7498	1122.23	18.7498	104.433
20-CGARB-2	1414025	2.06467	11.3343	0.96498	3.11536	1.64541	0.25468	1.33273	0.80997	1462.58	17.4392	1436.49	12.6481	1398.04	18.4987	1398.04	18.4987	104.616
20-CGARB-2	20693.1	1.72729	13.6993	1.12344	1.77491	1.77067	0.17717	1.3568	0.76627	1051.49	13.1639	1036.32	11.5004	1004.43	23.0701	1004.43	23.0701	104.686
20-CGARB-2	24644.2	1.61584	11.3308	0.93539	3.07094	1.59111	0.25257	1.2871	0.80893	1451.71	16.7304	1425.47	12.1878	1386.49	17.9602	1386.49	17.9602	104.704
20-CGARB-2	240715	2.38556	10.7329	0.96289	3.50953	1.7812	0.27357	1.49848	0.84127	1558.9	20.7498	1529.36	14.0763	1488.73	18.2347	1488.73	18.2347	104.713
20-CGARB-2	232586	3.5665	13.8507	1.28557	1.76863	1.74978	0.1768	1.18702	0.67838	1049.45	11.496	1034.02	11.3502	1001.52	26.0837	1001.52	26.0837	104.786
20-CGARB-2	2064288	1.92845	10.1179	1.04981	4.0954	1.61742	0.29923	1.23043	0.76074	1687.51	18.2684	1653.39	13.2007	1610.28	19.5628	1610.28	19.5628	104.796
20-CGARB-2	205640	4.07663	8.41984	0.83918	6.05812	1.57675	0.37011	1.33488	0.8466	2029.92	23.2455	1984.24	13.7426	1936.96	15.0176	1936.96	15.0176	104.799
20-CGARB-2	61236	2.62548	18.1173	1.07859	0.52114	1.55512	0.06893	1.12019	0.72032	429.707	4.65659	425.913	5.40983	405.413	24.1466	429.707	4.65659	105.993
20-CGARB-2	7652.83	0.28891	16.3509	1.31234	0.82972	2.01822	0.10126	1.53187	0.75902	621.818	9.08048	613.455	9.29301	582.681	28.5329	621.818	9.08048	106.717
20-CGARB-2	23767.8	3.00805	18.3556	1.13455	0.48895	1.76142	0.06548	1.34423	0.76315	408.852	5.32525	404.198	5.87334	377.664	25.605	408.852	5.32525	108.258
20-CGARB-2	7704.51	1.09644	16.7412	1.84531	0.74642	2.25609	0.09394	1.2861	0.57005	578.821	7.11977	566.146	9.79119	515.526	40.6946	578.821	7.11977	112.278

GBR-HW39-22

Sample	U (ppm)	206Pb 204Pb	U/Th	206Pb* 207Pb*	Δ± (%)	207Pb* 235U	Δ± (%)	206Pb* 238U	Δ± (%)	error corr.	206Pb* 238U	Δ± (Ma)	207Pb* 235U	Δ± (Ma)	206Pb* 207Pb*	Δ± (Ma)	Best age (Ma)	Δ± (Ma)	Conc (%)
GBR-HW39-22	1142.42	667.184	0.98231	6.83265	0.84687	0.70937	1.53683	0.04087	1.28147	0.83384	258.234	3.24378	544.373	6.47586	2041.16	14.9984	258.234	3.24378	12.6513
GBR-HW39-22	2139.19	1173.08	2.68891	6.82348	0.83794	1.83364	0.72986	0.0989	0.61788	0.84658	607.942	3.58468	1057.58	4.79555	2157.15	6.77992	2157.15	6.77992	28.1827
GBR-HW39-22	808.991	1758.54	9.29147	11.3761	1.51063	6.62018	2.09877	0.05678	1.45569	0.69359	356.024	5.0421	489.963	8.15756	1177.55	29.9215	356.024	5.0421	30.2344
GBR-HW39-22	263.917	1890.96	1.37474	11.4574	1.25022	0.63825	1.73154	0.05833	1.17212	0.67692	365.491	4.16482	501.222	6.84983	1180.96	25.2141	365.491	4.16482	30.9486
GBR-HW39-22	337.337	1510.38	2.30452	10.1319	6.64169	0.99707	8.49968	0.0813	1.07035	0.12593	503.875	5.18783	702.32	43.1147	1403.02	161.819	1403.02	161.819	35.9136
GBR-HW39-22	1048.39	1276.6	5.57217	8.58317	2.34937	1.47142	5.19621	0.10197	4.6247	0.89001	625.935	27.5868	918.711	31.4228	1708.28	43.6036	1708.28	43.6036	36.6412
GBR-HW39-22	1250.9	2133.18	1.49074	9.88859	2.2497	1.31149	5.47986	0.10122	4.99279	0.91112	621.557	29.5841	850.78	31.58	1507.52	42.6648	1507.52	42.6648	41.2306
GBR-HW39-22	469.734	5641.7	4.65509	14.2359	3.87864	0.57042	4.08989	0.06148	1.38059	0.32534	384.636	4.96825	458.287	15.0853	846.722	80.4678	384.636	4.96825	45.4265
GBR-HW39-22	34.268	3362.56	1.17588	11.2039	2.55033	1.25674	6.44941	0.10768	5.86404	0.90924	659.241	36.7476	826.441	36.4839	1307.49	52.1105	1307.49	52.1105	50.4202
GBR-HW39-22	541.216	7535.08	1.47827	15.3849	2.7412	0.48863	3.1472	0.05684	0.77226	0.24538	356.383	2.67753	403.976	10.4897	686.074	65.3339	356.383	2.67753	51.9453
GBR-HW39-22	305.803	4225	1.86803	12.6681	1.62324	1.07445	2.50541	0.10367	1.25115	0.6102	635.9	5.75627	740.919	10.7837	1072.94	32.6308	635.9	5.75627	59.2671
GBR-HW39-22	608.914	15901.1	1.62007	16.1154	8.7059	0.62229	1.56333	0.07453	1.29271	0.8269	463.418	5.78039	491.283	0.68907	623.369	18.9803	463.418	5.78039	74.3408
GBR-HW39-22	292.188	7505.96	1.23469	6.05426	0.46789	8.07233	1.00887	0.36062	0.89354	0.88568	1985.1	15.2666	2239.15	9.11498	2480.26	7.90145	2480.26	7.90145	80.0361
GBR-HW39-22	38275.1	2.2303	15.801	1.25102	0.78052	1.80529	0.90954	1.3012	0.72078	558.754	6.96435	585.783	6.03569	691.958	26.6689	558.754	6.96435	80.7459	
GBR-HW39-22	37.9247	3634.07	1.04477	11.3283	3.98337	2.04871	4.28359	0.17709	1.12884	0.26353	1051.07	10.9481	1131.87	29.2363	1290.3	80.448	1290.3	80.448	81.9592
GBR-HW39-22	67.9911	11187	1.89002	11.0969	1.01193	2.34519	1.19517	0.19284	0.6168	0.51608	1136.74	6.42801	1226.1	8.50799	1386.88	19.6545	1386.88	19.6545	81.464
GBR-HW39-22	580.792	35982.1	2.41319	12.4113	0.64522	1.80229	1.25738	0.16386	1.07695	0.8565	978.212	9.77452	1046.29	8.21141	1191.3	12.8099	1191.3	12.8099	82.1129
GBR-HW39-22	49.3531	9783.44	1.69775	12.8431	0.95884	1.56598	1.48226	0.14967	0.94161	0.62566	899.113	7.90227	956.837	9.81541	1092.03	22.9277	956.837	9.81541	82.3339
GBR-HW39-22	379.114	10320.7	2.4847	11.5687	0.62214	2.13585	1.1363	0.18257	0.95081	0.83676	1081	9.46271	1160.48	7.85866	1312.03	12.0713	1312.03	12.0713	82.3914
GBR-HW39-22	541.216	9086.86	6.8778	12.4842	0.46413	1.70994	0.71836	0.15888	0.54724	0.7618	950.574	4.8366	1012.26	4.60251	1148.27	9.24336	1148.27	9.24336	82.7832
GBR-HW39-22	252.259	8892.76	3.03437	16.8089	1.09392	0.53932	1.49309	0.06801	1.01188	0.67771	424.18	4.154	437.977	5.31175	511.164	24.1313	424.18	4.154	82.9853
GBR-HW39-22	352.055	8419.55	2.09357	10.5436	0.75084	2.70851	1.12802	0.21165	0.69135	0.61289	1237.62	7.78505	1330.79	8.36543	1484.04	16.8894	1484.04	16.8894	83.3951
GBR-HW39-22	845.292	8157.64	2.85637	8.70292	0.73766	4.19337	1.16906	0.27033	0.85164	0.78249	1542.49	11.6831	1672.73	9.58499	1840.22	14.4988	1840.22	14.4988	83.2121
GBR-HW39-22	274.533	8604.16	2.6765	11.5757	2.64658	2.13459	5.23395	0.18398	4.44939	0.84906	1088.69	44.5165	1160.07	36.2057	1295.94	53.7769	1295.94	53.7769	84.0075
GBR-HW39-22	514.573	13128.1	9.07256	4.58614	0.48261	14.3144	1.29003	0.48259	1.18118	0.91562	2538.53	24.7851	2770.77	12.244	2944.55	8.37862	2944.55	8.37862	86.2109
GBR-HW39-22	640.098	5965.8	3.04296	11.4913	1.88173	2.20629	2.53369	0.19012	0.97143	0.38341	1122.01	10.0038	1183.04	17.7046	1296.38	45.5063	1296.38	45.5063	86.0463
GBR-HW39-22	219.035	24617.5	1.1436	9.64325	0.41013	3.57646	0.77023	0.25303	0.64723	0.84024	1454.06	8.42522	1544.32	6.11247	1670.14	7.72239	1670.14	7.72239	87.5626
GBR-HW39-22	175.823	10859	3.24124	12.6369	0.73338	1.76251	1.58845	0.16524	1.40883	0.88692	985.855	12.8791	1031.77	10.2907	1130.44	14.5947	1130.44	14.5947	87.21
GBR-HW39-22	107.543	175807	1.31137	17.4389	0.81716	0.53382	1.10869	0.06812	0.7493	0.67884	424.829	3.08062	434.339	3.91798	485.106	18.0482	424.829	3.08062	87.5744
GBR-HW39-22	341.039	14980.6	4.11002	16.9239	0.7553	0.59315	1.14167	0.0744	0.85242	0.47654	462.604	3.80515	472.875	4.316	523.006	16.6648	462.604	3.80515	88.451
GBR-HW39-22	163.236	9552.26	4.1071	12.4172	1.17536	1.86505	1.46645	0.17273	0.71932	0.49052	1027.15	6.82991	1068.78	9.6932	1154.71	25.3651	1154.71	25.3651	88.9536
GBR-HW39-22	428.331	18190.5	3.15755	12.9054	0.82778	1.74888	1.15686	0.16581	0.8062	0.69688	988.993	7.39172	1026.75	7.47349	1108.08	16.5606	1108.08	16.5606	89.2525
GBR-HW39-22	48.1134	39443.2	1.33051	10.5504	0.93646	3.03	1.69629	0.23232	1.41375	0.83343	1351.39	17.2356	1415.21	12.9506	1512.6	17.6933	1512.6	17.6933	89.3424
GBR-HW39-22	72.1215	3466.42	1.46865	8.78265	2.72757	4.26737	3.31204	0.28277	0.5842	0.17639	1605.3	8.30164	1687.09	27.2159	1790.31	59.3995	1790.31	59.3995	89.6626
GBR-HW39-22	321.349	28574.6	4.97439	12.3389	1.62421	2.05099	2.08357	0.18441	1.30507	0.62636	1091	13.0986	1132.63	14.2229	1213.33	31.941	1213.33	31.941	89.918
GBR-HW39-22	564.557	22778.6	1.8822	5.24865	0.55451	12.1027	0.98377	0.46685	0.81259	0.826	2469.73	16.6718	2612.4	9.22688	2724.91	9.13561	2724.91	9.13561	90.6352
GBR-HW39-22	604.613	2.4E+07	4.1179	12.4156	0.4441	2.03824	1.06575	0.18448	0.96881	0.90904	1091.4	9.72694	1128.37	7.2598	1200.22	8.75648	1200.22	8.75648	90.9239
GBR-HW39-22	12.1021	12651.2	13.7993	14.0481	8.7271	1.32167	2.02226	0.13796	0.73559	0.36375	833.1	5.74873	855.243	11.6898	913.127	38.7777	833.1	5.74873	91.2359
GBR-HW39-22	354.547	69419.9	1.54192	18.4901	0.65736	0.38805	1.25678	0.0524	1.07107	0.85223	329.227	3.43772	332.941	3.56757	358.953	14.8173	329.227	3.43772	91.7186
GBR-HW39-22	51.7844	6388.07	2.23908	12.3962	1.88904	1.89085	2.16911	0.17856	0.58852	0.27007	1048.16	5.67707	1077.88	14.407	1138.49	41.5651	1138.49	41.5651	92.0651
GBR-HW39-22	25.198	4980.42	1.53874	11.348	2.48306	2.38679	2.67543	0.20486	0.78253	0.29049	1201.39	8.57723	1238.65	19.147	1304.03	49.6803	1304.03	49.6803	92.1219
GBR-HW39-22	220.217	37315.3	3.81052	9.96278	0.42626	3.59076	2.38472	0.26101	2.3453	0.98347	1495	31.2998	1547.49	18.9417	1619.91	8.03547	1619.91	8.03547	92.2894
GBR-HW39-22	326.96	1760.34	2.85232	4.983	3.43339	12.8914	4.1882	0.48624	1.62715	0.88581	2554.39	34.3172	2671.75	39.4849	2761.81	63.3837	2761.81	63.3837	92.4898
GBR-HW39-22	410.009	22314	3.73152	12.673	0.44458	1.89075	0.91799	0.17704	0.80173	0.87335	1050.76	7.77353	1077.85	0.69673	1133.01	8.89148	1133.01	8.89148	92.71
GBR-HW39-22	132.393	35875.8	2.73228	12.8273	0.60262	1.86789	1.22428	0.16757	0.58612	0.86714	1043.71	10.2298	1069.78	8.09668	1123.34	12.1743	1123.34	12.1743	92.9407
GBR-HW39-22	408.966	39028	9.70678	10.9739	0.592	2.86733	1.28117	0.23028	1.13615	0.88681	1335.96	13.7089	1373.37	9.64529	1432.01	11.2978	1432.01	11.2978	93.2926
GBR-HW39-22	190.924	95250.6	4.59894	11.9398	0.45007	2.31545	0.83707	0.20209	0.70575	0.84312	1186.55	7.64858	1217.03	5.93595	1271.5	8.78336	1271.5	8.78336	93.1819
GBR-HW39-22	171.094	15269	1.84124	9.39136	3.11667	4.10668	1.53262	0.28287	0.7317	0.47742	1605.8	10.4005	1655.63	12.5152	1719.44	24.7469	1719.44	24.7469	93.3907
GBR-HW39-22	165.014	16808.5	2.62779	12.0819	0.43147	2.18268	0.78282	0.19494	0.65066	0.83118	1148.07	6.84262	1175.53	5.51459	1226.44	8.54908	1226.44	8.54908	93.6993
GBR-HW39-22	406.999	131																	

GBR-HW39-22	469.403	207620	9.34704	3.67767	3.16343	24.2458	3.31318	0.64994	0.98481	0.29724	3227.97	25.0079	3278.33	32.3198	3309.26	49.6082	3309.26	49.6082	97.5436
GBR-HW39-22	114.888	155763	3.51291	12.7522	0.70136	2.01108	0.9829	0.18787	0.6886	0.70057	1109.84	7.02065	1119.25	6.66581	1137.55	13.9417	1137.55	13.9417	97.5643
GBR-HW39-22	298.404	22912.6	2.81459	15.0984	0.54773	1.12603	0.79997	0.12531	0.57222	0.7153	761.027	4.10751	765.861	4.30217	779.972	11.7513	761.027	4.10751	97.5711
GBR-HW39-22	528.43	35278.2	1.90084	16.9479	0.6167	0.6775	0.98166	0.08449	0.75784	0.772	522.87	3.8061	525.261	4.02568	535.681	13.6632	522.87	3.8061	97.6086
GBR-HW39-22	449.284	101992	1.10794	10.182	0.39133	3.58695	1.22813	0.26809	1.16405	0.94782	1531.12	15.8645	1546.65	9.75192	1567.92	7.33674	1567.92	7.33674	97.6531
GBR-HW39-22	77.6021	32962.5	2.11816	5.29645	0.40383	13.0902	0.75409	0.50845	0.65852	0.84316	2650.03	13.8157	2686.17	7.11359	2713.48	6.68675	2713.48	6.68675	97.6618
GBR-HW39-22	218.217	30323.5	2.03218	13.2822	0.43595	1.77622	0.73278	0.17306	0.58504	0.79838	1028.93	5.56378	1036.8	4.76048	1053.45	8.88828	1053.45	8.88828	97.673
GBR-HW39-22	273.864	255869	3.43067	9.1745	0.47559	4.59294	0.75122	0.30769	0.5815	0.77407	1729.33	8.82014	1747.99	6.26402	1770.36	8.68519	1770.36	8.68519	97.6828
GBR-HW39-22	348.433	159083	4.64035	9.03636	0.47973	4.74606	1.04548	0.31325	0.9289	0.8885	1756.68	14.2834	1775.41	8.76835	1797.5	8.73178	1797.5	8.73178	97.7293
GBR-HW39-22	552.725	64181.7	4.89754	8.95403	0.38654	4.86702	0.73884	0.31762	0.62961	0.85216	1778.07	9.78363	1796.56	6.22343	1818.08	7.01724	1818.08	7.01724	97.7994
GBR-HW39-22	391.46	117242	3.00524	9.15619	0.43986	4.60199	0.90473	0.30823	0.79058	0.87382	1732.01	12.0076	1749.63	7.54677	1770.73	8.03327	1770.73	8.03327	97.8135
GBR-HW39-22	279.991	19376.4	2.83066	11.6511	0.91402	2.5432	1.24015	0.21853	0.78316	0.6315	1274.12	9.05416	1284.49	9.03857	1301.86	18.6822	1301.86	18.6822	97.8693
GBR-HW39-22	242.492	55219.7	2.06025	8.96113	0.36588	4.80843	0.76047	0.31576	0.66577	0.87547	1769.01	10.2997	1786.37	6.39238	1806.7	6.68149	1806.7	6.68149	97.9138
GBR-HW39-22	86.7589	83324.6	0.91794	5.50449	0.46896	12.3781	1.09989	0.49755	0.99489	0.90453	2603.27	21.3083	2633.52	10.3337	2656.83	7.77645	2656.83	7.77645	97.9838
GBR-HW39-22	255.336	27668.7	2.70164	9.09078	0.56462	4.66488	0.93792	0.31081	0.74272	0.79188	1744.71	11.3528	1760.96	7.84248	1780.28	10.4451	1780.28	10.4451	98.0022
GBR-HW39-22	252.018	168784	4.34317	13.2625	0.71582	1.80385	0.90984	0.17508	0.56161	0.61726	1040.03	5.39406	1046.85	5.94356	1061.14	14.3837	1061.14	14.3837	98.0104
GBR-HW39-22	91.6122	39828.5	5.04535	13.0244	0.68387	1.88681	1.00437	0.1805	0.73159	0.72841	1069.69	7.21092	1076.46	6.66563	1090.19	13.7813	1090.19	13.7813	98.1197
GBR-HW39-22	456.859	166676	9.64295	12.5528	0.34955	2.11938	0.82934	0.19488	0.75206	0.90682	1147.76	7.90708	1155.13	5.72149	1169.01	6.94145	1169.01	6.94145	98.1819
GBR-HW39-22	259.709	2388477	1.24303	8.56708	0.36584	5.35916	0.63643	0.33498	0.52077	0.81827	1862.46	8.42371	1878.35	5.44602	1895.96	6.57768	1895.96	6.57768	98.2332
GBR-HW39-22	450.796	113148	12.6231	12.5388	0.46229	2.14431	1.11453	0.19641	0.41004	0.90884	1156	10.7314	1163.22	7.17175	1176.11	9.16711	1176.11	9.16711	98.2413
GBR-HW39-22	348.822	9869.07	14.1895	17.6634	0.58561	0.49266	1.05275	0.06495	0.87295	0.82921	405.639	3.43192	406.721	3.52813	412.848	13.1546	405.639	3.43192	98.2536
GBR-HW39-22	130.871	36880.5	1.63036	9.26863	0.46883	4.47356	0.72244	0.30426	0.61392	0.79478	1712.38	9.23214	1726.08	6.41037	1742.72	8.58874	1742.72	8.58874	98.2588
GBR-HW39-22	262.897	45320.5	2.78384	9.34317	0.38951	4.39284	0.64338	0.30133	0.51111	0.79441	1697.9	7.62996	1710.99	5.32146	1727.04	7.1749	1727.04	7.1749	98.3126
GBR-HW39-22	39.2944	140422	1.01782	13.3981	0.71733	1.75291	1.02865	0.17194	0.73726	0.71672	1022.79	6.97286	1028.24	6.65079	1039.83	14.4985	1039.83	14.4985	98.3166
GBR-HW39-22	234.004	38312.5	2.05993	11.2936	0.4994	2.80193	0.8072	0.23246	0.63075	0.78141	1347.37	7.66914	1356.05	6.04042	1369.76	9.6947	1369.76	9.6947	98.3655
GBR-HW39-22	242.856	230060	2.73061	12.5213	0.46983	2.13905	0.75388	0.19621	0.58957	0.78205	1154.91	6.2339	1161.52	5.21624	1173.88	9.31593	1173.88	9.31593	98.384
GBR-HW39-22	180.804	56687.8	2.81615	10.3434	0.43504	3.5147	0.74993	0.26593	0.61042	0.81396	1520.11	8.26613	1530.53	5.92809	1544.94	8.18821	1544.94	8.18821	98.3928
GBR-HW39-22	310.016	210803	11.8886	13.349	0.4938	1.77528	0.99868	0.17345	0.88806	0.86922	1031.11	8.27149	1036.45	6.48669	1047.76	9.97518	1047.76	9.97518	98.4108
GBR-HW39-22	15.5683	7406.97	0.59766	5.27412	0.63983	13.1916	1.18556	0.51297	0.93925	0.79249	2669.33	20.5353	2693.46	11.1902	2711.62	11.9271	2711.62	11.9271	98.4394
GBR-HW39-22	85.2539	33157.3	1.87092	9.82656	0.48388	3.95638	0.84932	0.28456	0.6954	0.81878	1614.31	9.93069	1625.3	6.88398	1639.54	9.05263	1639.54	9.05263	98.4641
GBR-HW39-22	45.2355	36443.5	2.60285	13.2966	0.81285	1.77111	1.00594	0.17324	0.58716	0.58369	1029.92	5.58889	1034.93	6.52833	1045.55	16.4933	1045.55	16.4933	98.5061
GBR-HW39-22	33.8642	11072	5.44449	5.1883	0.5158	13.6988	0.91634	0.52159	0.7551	0.82404	2705.93	16.6861	2729.11	8.67153	2746.29	8.53609	2746.29	8.53609	98.5303
GBR-HW39-22	276.582	94135.5	1.61748	9.7164	0.50213	4.06713	1.0137	0.28918	0.98274	0.80491	1637.43	14.2106	1647.74	8.99535	1660.9	9.29959	1660.9	9.29959	98.5808
GBR-HW39-22	334.362	102219	1.96038	5.2128	0.46204	13.6258	0.98519	0.52067	0.87012	0.8832	2702	19.2055	2724.06	9.31978	2740.44	7.5982	2740.44	7.5982	98.5976
GBR-HW39-22	150.067	42816.6	1.81995	11.3096	0.6004	2.84263	0.92864	0.23476	0.7059	0.76015	1359.39	8.65173	1366.86	6.97549	1378.55	11.5975	1378.55	11.5975	98.6101
GBR-HW39-22	193.431	48711	2.63452	10.1652	0.43585	3.67029	0.79631	0.27292	0.66479	0.83483	1555.61	9.18833	1564.93	6.35441	1577.5	8.20276	1577.5	8.20276	98.6125
GBR-HW39-22	408.48	239028	4.19918	13.3373	0.36924	1.79657	0.8742	0.17498	0.79238	0.90641	1039.52	7.60711	1044.22	5.70246	1054.07	7.43874	1054.07	7.43874	98.6191
GBR-HW39-22	148.059	32496.7	2.42987	11.2181	0.8392	2.85606	1.28555	0.23551	0.97127	0.55523	1363.32	11.935	1370.41	9.66844	1381.45	16.1813	1381.45	16.1813	98.6877
GBR-HW39-22	523.829	118270	3.18883	10.546	0.55157	3.35413	1.20082	0.25929	1.06658	0.88821	1486.21	14.1571	1493.76	9.39288	1504.46	10.4252	1504.46	10.4252	98.7867
GBR-HW39-22	167.003	141844	3.93521	13.7048	0.60512	1.66577	0.8328	0.16632	0.57212	0.68699	991.783	5.25299	995.575	5.28404	1003.92	12.2823	1003.92	12.2823	98.7911
GBR-HW39-22	209.484	112789	4.95015	12.1967	0.63312	2.34958	0.86084	0.20873	0.58322	0.6775	1222.05	6.49245	1227.43	6.13137	1236.89	12.4185	1236.89	12.4185	98.8007
GBR-HW39-22	16.7819	17856.4	1.49062	17.2574	2.19287	0.60604	2.3057	0.07675	0.71208	0.30884	476.688	3.27196	477.642	8.78547	482.243	48.4656	482.243	48.4656	98.8482
GBR-HW39-22	127.98	76453.5	1.19805	9.72566	0.51348	4.12278	0.79976	0.29197	0.61291	0.76637	1651.36	8.9289	1658.83	6.53553	1668.28	9.50179	1668.28	9.50179	98.9852
GBR-HW39-22	133.833	39622.1	1.91629	7.76947	0.51857	4.04765	0.69022	0.28912	0.45462	0.65866	1637.11	6.57274	1643.83	5.61996	1652.41	9.62609	1652.41	9.62609	99.0745
GBR-HW39-22	354.493	4295157	3.05221	12.6826	0.33082	2.10172	0.73211	0.19451	0.6531	0.89208	1145.78	6.85575	1149.37	5.03709	1156.14	6.56261	1156.14	6.56261	99.1042
GBR-HW39-22	135.6	28581.9	2.70623	13.4431	0.51431	1.71265	0.84984	0.16974	0.65236	0.76763	1010.69	6.10245	1013.28	5.4481	1018.85	11.0304	1018.85	11.0304	99.1394
GBR-HW39-22	89.1247	149583	1.87238	12.6372	0.67145	2.09243	0.94244	0.19412	0.6613	0.70169	1143.67	6.9302	1146.32	6.475	1151.32	13.3217	1151.32	13.3217	99.3352
GBR-HW39-22	145.542	440296	4.86236	10.5683	0.45481	3.38942	0.68753	0.26158	0.51559	0.74993	1497.93	6.89156	1501.95	5.39066	1507.62	8.59084	1507.62	8.59084	99.3574
GBR-HW39-22	80.4045	42535.5	1.75931	12.3984	0.60794	2.24649	1.09424	0.20329	0.9085	0.83025	1192.95	9.89423	1195.69	7.68848	1200.62	12.0412	1200.62	12.0412	99.3617
GBR-HW39-22	60.8656	37848	3.18067	5.06982	0.54204	14.5052	0.87303	0.53757	0.68399	0.78346	2773.28	15.4159	2783.35	8.29307	2790.64	8.88119	2790.64	8.88119	99.3778
GBR-HW39-22	39.9585	15450	2.41108	11.5181	0.75323	2.69488	1.26461	0											

GBR-HW39-22	81.8438	64144.8	2.99997	9.93723	1.73882	3.98888	2.59766	0.28905	1.92975	0.74288	1636.78	27.8949	1631.93	21.0922	1625.68	32.3426	1625.68	32.3426	100.683
GBR-HW39-22	273.812	201293	4.83903	8.90451	0.39165	5.02756	0.9979	0.3283	0.91782	0.91976	1830.14	14.6235	1823.98	8.45163	1816.93	7.10974	1816.93	7.10974	100.727
GBR-HW39-22	144.255	22681.8	1.60799	12.6088	0.6714	2.12186	1.03503	0.19694	0.77303	0.74687	1158.86	8.19925	1155.94	7.14318	1150.45	13.6604	1150.45	13.6604	100.773
GBR-HW39-22	239.107	285935	0.88398	9.87906	0.62854	3.98493	1.04003	0.28901	0.82861	0.79672	1636.61	11.9765	1631.13	8.44204	1624.06	11.6911	1624.06	11.6911	100.772
GBR-HW39-22	140.049	27680.1	2.33232	14.0962	0.66666	1.4976	0.94299	0.15547	0.65483	0.69442	931.565	5.67989	929.413	5.74134	924.292	13.9415	924.292	13.9415	100.787
GBR-HW39-22	158.13	46056.5	1.55221	8.52213	0.49011	5.58695	0.85782	0.34726	0.70259	0.81904	1921.49	11.674	1914.09	7.38793	1906.06	8.84075	1906.06	8.84075	100.81
GBR-HW39-22	276.651	68832.2	5.08743	13.2005	0.39635	1.87695	0.66201	0.18163	0.52943	0.79974	1075.88	5.24612	1072.99	4.38456	1067.13	10.97113	1067.13	10.97113	100.82
GBR-HW39-22	59.7524	28728.3	1.79167	13.0393	0.76279	1.96	1.04781	0.18697	0.71821	0.68544	1104.92	7.29286	1101.88	7.04502	1095.86	15.2728	1095.86	15.2728	100.827
GBR-HW39-22	256.366	42872.1	2.18936	12.7647	0.45005	2.06072	0.92046	0.19328	0.80096	0.87018	1139.13	8.36331	1135.86	6.29265	1129.59	9.03258	1129.59	9.03258	100.845
GBR-HW39-22	83.0006	63179.7	1.95645	8.45273	0.46199	5.59268	0.77423	0.34751	0.62094	0.80202	1922.72	10.3231	1914.97	6.66901	1906.58	8.30647	1906.58	8.30647	100.847
GBR-HW39-22	162.295	55583.9	2.7615	11.6932	0.49427	2.62704	0.78715	0.2258	0.61152	0.77688	1312.43	7.26151	1308.24	5.78901	1301.35	9.63034	1301.35	9.63034	100.851
GBR-HW39-22	79.9532	10004.5	1.49329	13.4087	0.73604	1.72757	1.00412	0.17174	0.66825	0.66551	1021.71	6.31404	1018.84	6.45772	1012.68	15.1913	1012.68	15.1913	100.892
GBR-HW39-22	91.3757	13135.8	2.42714	12.5944	0.6424	2.08929	1.09371	0.19507	0.80263	0.73386	1148.8	8.44575	1145.29	7.5107	1138.64	14.7779	1138.64	14.7779	100.892
GBR-HW39-22	87.9344	86310.6	2.9141	12.8346	0.64783	2.03764	0.87837	0.1919	0.59298	0.67508	1131.64	6.15436	1128.17	5.98281	1121.48	12.941	1121.48	12.941	100.907
GBR-HW39-22	235.062	83872.2	1.68105	10.2978	0.57473	3.61231	0.9537	0.27343	0.76084	0.79778	1558.17	10.5312	1552.24	7.58428	1544.17	10.8091	1544.17	10.8091	100.906
GBR-HW39-22	189.992	80653.2	1.60533	9.64236	0.44716	4.23663	0.9236	0.29941	0.80793	0.87475	1688.38	12.0008	1681.15	7.58739	1672.11	8.27454	1672.11	8.27454	100.973
GBR-HW39-22	59.1525	25262.9	3.16748	12.7699	0.74226	2.06221	1.05417	0.19351	0.72855	0.69111	1140.36	7.61472	1136.35	7.20853	1128.72	15.1703	1128.72	15.1703	101.031
GBR-HW39-22	552.472	38317.4	5.38337	14.304	0.49274	1.4658	0.91853	0.15329	0.77492	0.84366	919.371	6.63997	916.401	5.54426	909.236	10.1744	909.236	10.1744	101.115
GBR-HW39-22	136.547	53011.1	1.61109	9.78629	0.41131	4.09308	0.65782	0.29392	0.51271	0.7794	1661.08	7.5077	1652.93	5.36799	1642.55	7.64873	1642.55	7.64873	101.129
GBR-HW39-22	221.247	38016.5	5.98121	13.3812	0.409	1.79	0.91013	0.1761	0.811	0.89108	1045.62	7.82802	1041.83	5.92909	1033.85	8.34454	1033.85	8.34454	101.138
GBR-HW39-22	111.207	19712.1	1.03213	12.6759	0.57614	2.12082	0.78422	0.19722	0.52083	0.66413	1160.35	5.5307	1155.6	5.41138	1146.74	11.63	1146.74	11.63	101.187
GBR-HW39-22	148.297	27752	3.56502	16.2609	0.67802	0.86016	1.06518	0.10298	0.80904	0.79554	631.842	4.86936	630.208	5.00131	624.329	14.9601	624.329	14.9601	101.203
GBR-HW39-22	106.557	34990.2	1.89226	13.593	0.63582	1.72796	0.88373	0.172	0.60998	0.6891	1023.12	5.76129	1018.99	5.68993	1010.12	12.9856	1010.12	12.9856	101.287
GBR-HW39-22	110.617	71991.4	2.54394	9.01315	0.56391	4.93466	0.89749	0.32601	0.69799	0.77771	1818.99	11.0623	1808.2	7.57757	1795.77	10.2709	1795.77	10.2709	101.293
GBR-HW39-22	97.478	321769	1.64555	5.39772	0.44931	13.3136	0.83257	0.52544	0.70093	0.84188	2722.23	15.564	2702.14	7.86334	2687.15	7.42524	2687.15	7.42524	101.306
GBR-HW39-22	127.7	31129.2	1.37735	8.84401	0.45066	5.15438	0.70328	0.33376	0.53638	0.76268	1856.57	8.65252	1845.12	5.98071	1832.21	8.24373	1832.21	8.24373	101.33
GBR-HW39-22	245.918	58718.2	3.32136	13.7205	0.55348	1.66342	0.92164	0.16758	0.73524	0.79776	998.778	6.80281	994.679	5.84461	985.652	11.2917	985.652	11.2917	101.332
GBR-HW39-22	106.008	28370.7	1.25177	9.88065	0.42236	4.96301	0.75713	0.3271	0.62783	0.82923	1824.29	9.97551	1813.04	6.3986	1800.12	7.69947	1800.12	7.69947	101.343
GBR-HW39-22	130.778	47201	2.24762	12.8092	0.60251	2.05291	1.88229	0.19316	1.78285	0.94717	1138.47	18.606	1133.27	12.8528	1123.32	12.0543	1123.32	12.0543	101.349
GBR-HW39-22	342.051	48025.8	2.78628	14.0621	0.49337	1.5448	0.94939	0.1592	0.84011	0.88489	952.315	7.43756	948.42	5.85192	939.413	9.06016	939.413	9.06016	101.373
GBR-HW39-22	160.71	208667	3.31346	11.3066	0.44208	2.96188	0.70984	0.24367	0.55535	0.76723	1405.76	7.01439	1397.9	5.38839	1385.9	8.4889	1385.9	8.4889	101.433
GBR-HW39-22	112.136	91573	2.05618	10.7053	0.50811	3.33133	0.88202	0.26148	0.7208	0.81722	1497.41	9.63448	1488.42	6.88831	1475.63	9.64294	1475.63	9.64294	101.476
GBR-HW39-22	202.732	59081	3.08793	14.0208	0.43455	1.58436	0.7936	0.16209	0.6633	0.83581	968.376	5.93407	964.085	4.94012	954.293	8.93011	954.293	8.93011	101.476
GBR-HW39-22	33.7543	6917.85	1.44238	13.4292	0.95521	1.65311	1.27112	0.16696	0.82614	0.64993	995.326	7.61941	990.743	8.04212	980.626	19.6581	980.626	19.6581	101.499
GBR-HW39-22	255.413	80680	8.0541	13.179	0.44177	1.91935	0.67376	0.18483	0.50787	0.75379	1093.29	5.10722	1087.84	4.49786	1076.97	8.872	1076.97	8.872	101.515
GBR-HW39-22	135.327	83712.5	0.99183	13.2777	0.52886	1.87425	0.86963	0.18194	0.69	0.79344	1077.54	6.84685	1072.03	5.758	1060.87	10.6507	1060.87	10.6507	101.571
GBR-HW39-22	219.372	20940	4.16713	13.5317	0.40015	1.7172	0.6489	0.17144	0.46902	0.72279	1020.06	4.42495	1014.98	4.164	1004.01	9.08209	1004.01	9.08209	101.598
GBR-HW39-22	146.298	27350.9	2.58456	13.4233	0.57639	1.79038	0.81793	0.17643	0.56659	0.69271	1047.43	5.47759	1041.96	5.32883	1030.49	11.9239	1030.49	11.9239	101.644
GBR-HW39-22	71.4333	102684	2.12163	13.6505	0.86003	1.72054	1.15536	0.1717	0.7714	0.66768	1021.49	7.28119	1016.23	7.4193	1004.89	17.4554	1004.89	17.4554	101.652
GBR-HW39-22	69.4076	16576	0.65206	11.9207	0.67856	2.52013	0.94546	0.22072	0.60183	0.63655	1285.67	7.01487	1277.86	6.87294	1264.76	14.2418	1264.76	14.2418	101.654
GBR-HW39-22	86.057	69742.6	3.63072	5.48479	0.52569	12.9962	0.82365	0.52136	0.634	0.76975	2704.93	14.006	2679.38	7.76583	2660.14	8.7151	2660.14	8.7151	101.684
GBR-HW39-22	25.088	9187.14	1.74098	13.3038	1.00694	1.74097	1.37347	0.17315	0.85621	0.62339	1029.43	8.14633	1023.82	8.85826	1011.84	21.7689	1011.84	21.7689	101.738
GBR-HW39-22	82.4061	14381.4	3.15402	12.8322	0.62171	2.01417	0.9953	0.1911	0.68799	0.69124	1127.32	7.11559	1120.3	6.75331	1106.68	14.3543	1106.68	14.3543	101.865
GBR-HW39-22	215.948	30159.7	4.27395	12.6865	0.49054	2.09774	0.87377	0.19631	0.71427	0.81745	1155.46	7.55573	1148.07	6.00813	1134.14	10.0127	1134.14	10.0127	101.881
GBR-HW39-22	203.704	41324.6	1.99163	13.3417	0.6637	1.84582	1.34414	0.18027	1.16855	0.86937	1068.45	11.5057	1061.94	8.85256	1048.6	13.41	1048.6	13.41	101.894
GBR-HW39-22	32.4146	7904.16	2.30371	13.5279	0.99066	1.67274	1.23872	0.16861	0.73159	0.5906	1004.42	8.8044	998.227	7.87195	984.663	20.3283	984.663	20.3283	102.007
GBR-HW39-22	88.6321	30181.7	1.73417	9.73866	0.49509	4.20482	0.75611	0.29971	0.56672	0.74952	1689.86	8.42442	1674.96	6.20241	1656.33	9.27092	1656.33	9.27092	102.024
GBR-HW39-22	89.1768	16356	2.25609	13.6616	0.59759	1.66356	1.01229	0.16798	0.80804	0.79823	1000.97	7.4916	994.735	6.41974	981.034	12.4194	981.034	12.4194	102.032
GBR-HW39-22	100.406	676037	3.27648	12.6638	0.66345	2.16055	1.01367	0.20026	0.76639	0.75605	1176.71	8.24295	1168.45	7.03164	1153.15	13.1634	1153.15	13.1634	102.043
GBR-HW39-22	76.9594	19026.4	3.55036	13.4029	0.57295	1.7788	0.81966	0.17952	0.49121	0.59928	1044.65	4.7372	1037.74	5.32768	1023.2	13.2799	1023.2	13.2799	102.097
GBR-HW39-22	128.271	19170.1	2.96505	12.8109	0.57527	2.03467	0.97102	0.19255	0.75166</										

GBR-HW39-22	114.563	30395.7	2.32927	17.9572	0.86158	0.5394	1.21585	0.07129	0.85478	0.70303	443.946	3.66704	438.026	4.32585	407.011	19.3507	443.946	3.66704	109.075
GBR-HW39-22	206.313	20814.6	1.59328	18.0573	0.74175	0.5075	1.06358	0.06773	0.69126	0.64993	422.464	2.82668	416.768	3.63566	385.338	18.1581	422.464	2.82668	109.635
GBR-HW39-22	180.512	10833.9	1.23276	17.8584	0.86156	0.53366	1.40327	0.0712	0.74886	0.53365	443.352	3.2085	434.236	4.95805	386.151	26.6555	443.352	3.2085	114.813
GBR-HW39-22	359.392	9250.74	1.78034	17.8638	0.65755	0.51405	1.02796	0.06898	0.7886	0.76715	430.008	3.28043	421.167	3.54383	373.023	14.8445	430.008	3.28043	115.276
GBR-HW39-22	240.454	9708.99	1.50625	17.9961	0.66942	0.49446	0.92789	0.06696	0.58988	0.63572	417.828	2.38651	407.945	3.11727	352.401	16.1846	417.828	2.38651	118.566
GBR-HW39-22	119.795	8971.31	1.28846	18.0963	0.85487	0.47414	1.54457	0.06471	0.51099	0.33083	404.228	2.00212	394.047	5.04442	334.732	33.0304	404.228	2.00212	120.762
GBR-HW39-22	65.0464	3594.61	1.35054	16.3211	0.74679	0.77983	1.17965	0.09966	0.87108	0.73842	612.413	5.08907	585.384	5.24818	481.916	17.5828	612.413	5.08907	127.079
GBR-HW39-22	60.1138	4622.58	1.07274	17.1002	0.97705	0.6409	1.36263	0.08455	0.80329	0.58952	523.254	4.03719	502.864	5.40406	411.114	24.6144	523.254	4.03719	127.277
GBR-HW39-22	67.1276	4204.47	1.53723	17.5718	1.5381	0.48919	2.65326	0.06703	0.70593	0.26606	418.21	2.85855	404.362	8.85017	325.979	58.0685	418.21	2.85855	128.293
GBR-HW39-22	66.9195	6218.76	1.90116	17.3939	1.08103	0.64668	1.44903	0.08569	0.77793	0.53686	529.978	3.95793	506.434	5.77821	401.442	27.3854	529.978	3.95793	132.018
GBR-HW39-22	61.1266	5457.46	2.10538	18.0689	1.47128	0.45157	1.71048	0.06271	0.83899	0.4905	392.092	3.19158	378.377	5.40303	295.275	34.0058	392.092	3.19158	132.789
GBR-HW39-22	57.6583	3299.95	3.15099	17.8037	1.52266	0.47368	2.18502	0.06684	0.7127	0.32617	417.071	2.87833	393.728	7.13141	258.842	47.4737	417.071	2.87833	161.13
GBR-HW39-22	76.4035	3523	0.74803	17.9064	1.22518	0.48118	2.07657	0.06792	0.75803	0.36504	423.629	3.108	398.879	6.84984	257.88	44.4291	423.629	3.108	164.274
GBR-HW39-22	55.0918	2915.95	1.59055	17.5312	1.35791	0.49309	1.56026	0.06947	0.55691	0.35693	432.936	2.33188	407.012	5.232	262.457	33.4788	432.936	2.33188	164.955

GBR-NTB-22

Sample	U (ppm)	206Pb 204Pb	U/Th	206Pb* 207Pb*	Δz (%)	207Pb* 235U	Δz (%)	206Pb* 238U	Δz (%)	error corr.	206Pb* 238U	Δz (Ma)	207Pb* 235U	Δz (Ma)	206Pb* 207Pb*	Δz (Ma)	Best age (Ma)	Δz (Ma)	Conc (%)
GBR-NTB-22	271.515	2976.12	2.17032	10.6018	7.92958	0.91282	8.6646	0.07465	2.30576	0.26611	464.089	10.3247	658.556	42.0085	1397.46	160.403	1397.46	160.403	33.2096
GBR-NTB-22	434.137	17739.9	12.6615	15.1265	0.74573	0.61815	1.00544	0.06908	0.67372	0.67008	430.621	2.80642	488.688	3.9	771.006	15.7115	430.621	2.80642	55.8519
GBR-NTB-22	365.481	8404.81	2.43318	14.4645	3.36371	0.70987	3.68509	0.07703	0.81156	0.22023	478.382	3.74178	544.668	15.5356	832.649	74.9484	478.382	3.74178	57.453
GBR-NTB-22	230.728	15947.2	2.60957	14.5917	1.41327	0.77151	2.13763	0.08343	1.50586	0.70446	516.535	4.74485	580.63	9.45307	840.042	31.5899	516.535	4.74485	61.4893
GBR-NTB-22	464.648	16325.8	2.74338	16.1458	1.20824	0.53607	1.56149	0.06417	0.98697	0.63207	400.957	3.83675	435.832	5.53332	624.523	26.091	400.957	3.83675	64.2021
GBR-NTB-22	564.725	11662.4	4.52346	15.8317	1.15683	0.57178	1.98261	0.06756	1.60643	0.81026	421.42	6.55329	459.166	7.32341	652.725	24.9374	421.42	6.55329	64.5631
GBR-NTB-22	197.221	1834794	1.48131	16.9136	1.1041	0.54674	1.32244	0.06768	0.72788	0.55041	422.192	2.9746	442.86	4.7465	551.731	24.0799	422.192	2.9746	76.5214
GBR-NTB-22	746.362	31818	7.97353	14.6778	1.19339	1.01396	2.04617	0.10952	1.64674	0.80479	669.96	10.4785	710.872	10.4606	842.34	25.2756	669.96	10.4785	79.5355
GBR-NTB-22	161.024	95555	3.12135	9.32303	0.50079	3.50762	0.98658	0.24019	0.8498	0.86136	1387.69	10.6098	1528.93	7.79535	1730.22	9.19815	1730.22	9.19815	80.2035
GBR-NTB-22	850.707	32934.8	12.0978	11.582	0.51632	2.13153	1.20808	0.18158	1.08435	0.89758	1075.63	10.7424	1159.08	8.34968	1318.61	10.3228	1318.61	10.3228	81.5728
GBR-NTB-22	203.843	523863	7.15536	7.30234	2.13933	5.92216	2.30908	0.31673	0.86899	0.37633	1773.72	13.4747	1964.49	20.0615	2171.87	37.276	2171.87	37.276	81.6675
GBR-NTB-22	183.548	18408.8	1.42705	16.5532	1.18284	0.61592	1.34214	0.07547	0.55592	0.41421	469.02	2.5148	487.288	5.1944	574.134	26.5436	469.02	2.5148	81.6917
GBR-NTB-22	173.064	4402.95	5.29789	7.0445	2.1201	5.14218	2.9742	0.29577	0.55349	0.38456	1670.28	12.9999	1843.1	19.5231	2044.21	37.4859	2044.21	37.4859	81.7076
GBR-NTB-22	127.119	49276.2	1.54049	5.91678	2.60444	8.95621	2.95771	0.38796	1.40153	0.47895	2113.35	25.254	2333.55	17.0221	2532.12	43.7115	2532.12	43.7115	83.4616
GBR-NTB-22	459.379	9437.77	2.27284	11.1788	1.60404	2.32665	1.85082	0.19344	0.92081	0.49752	1139.98	9.62133	1220.46	13.1445	1365.65	30.9177	1365.65	30.9177	83.4757
GBR-NTB-22	204.825	121612	4.4529	11.297	0.58225	2.36537	2.2766	0.19572	2.20083	0.96672	1152.29	23.2227	1232.21	16.2487	1374.85	11.2006	1374.85	11.2006	83.8116
GBR-NTB-22	185.139	4816.31	1.60237	4.94688	2.17075	12.0398	3.50267	0.44121	2.67679	0.76422	2356.07	52.8278	2607.51	32.8495	2809.04	36.931	2809.04	36.931	83.8746
GBR-NTB-22	625.828	31493	3.76326	12.5583	0.45443	1.78016	0.77543	0.16428	0.62825	0.81019	980.545	5.71464	1038.24	5.04158	1161.78	9.02916	1161.78	9.02916	84.4002
GBR-NTB-22	287.752	33642.5	5.02816	17.0336	0.94031	0.56081	1.38814	0.07053	1.01272	0.72955	439.335	4.30099	452.051	5.06444	517.232	20.8284	439.335	4.30099	84.9396
GBR-NTB-22	333.166	25922.9	3.07476	12.1336	0.97552	2.00006	2.1159	0.1782	1.85966	0.8789	1057.13	18.1318	1115.53	14.3241	1231.18	19.8073	1231.18	19.8073	85.8631
GBR-NTB-22	160.767	50934.6	2.25051	17.3172	1.04659	0.52629	1.254	0.06709	0.69012	0.55033	418.612	2.79712	429.346	4.39056	487.344	23.1079	487.344	23.1079	85.8968
GBR-NTB-22	624.092	166324	27.4843	17.2304	0.96595	0.56092	1.26897	0.07079	0.82285	0.64844	440.888	3.50659	452.127	4.63027	540.641	21.2473	440.888	3.50659	86.5004
GBR-NTB-22	121.041	136836	1.64132	6.25293	0.58528	8.56166	0.95703	0.39165	0.75716	0.91155	2130.47	13.7364	2292.49	8.70144	2449.21	9.91383	2449.21	9.91383	87.3067
GBR-NTB-22	71.887	22379.8	2.90613	12.6876	0.91051	1.78686	1.14237	0.16687	0.6536	0.57214	994.85	6.02543	1040.68	7.43735	1138.25	18.2382	1138.25	18.2382	87.4015
GBR-NTB-22	268.562	11463.7	1.68178	11.4804	2.59872	2.31718	2.83925	0.1973	0.89495	0.51521	1160.78	9.50685	1217.56	20.141	1319.62	52.2302	1319.62	52.2302	87.9636
GBR-NTB-22	114.22	319262	1.12296	17.4398	1.01159	0.54246	1.20332	0.06913	0.61516	0.34515	430.918	2.71631	440.048	4.29703	488.086	22.3011	488.086	22.3011	88.2873
GBR-NTB-22	400.668	29843.1	4.56755	13.0353	0.56349	1.66972	1.03648	0.16059	0.86487	0.83442	960.065	7.71455	997.078	6.58227	1079.38	11.4445	1079.38	11.4445	88.9458
GBR-NTB-22	224.404	26758.9	4.12535	12.9704	0.7483	1.7043	1.22995	0.1633	0.95989	0.87043	975.062	8.6861	1010.15	7.87079	1087.03	15.395	1087.03	15.395	89.6959
GBR-NTB-22	120.293	79323.3	0.84158	17.1815	1.24269	0.58244	2.11569	0.07351	1.71222	0.8093	457.288	7.58584	466.029	7.90704	509.326	27.3139	466.029	7.90704	89.783
GBR-NTB-22	220.024	35061.6	1.21465	6.99575	0.51643	3.68058	1.55883	0.26134	1.47075	0.9435	1496.69	19.6441	1567.17	12.447	1663.42	9.55914	1663.42	9.55914	89.977
GBR-NTB-22	642.977	78640.8	8.48934	13.2867	0.37891	1.64401	0.8096	0.15977	1.71545	0.88371	955.494	6.35359	987.254	5.11146	1058.56	7.62701	1058.56	7.62701	90.2635
GBR-NTB-22	117.891	59715.2	0.96474	8.90626	0.49545	4.43976	0.97716	0.20204	0.84207	0.86175	1642.72	12.211	1719.79	8.0981	1814.93	9.00166	1814.93	9.00166	90.5154
GBR-NTB-22	319.923	72291.1	5.4883	5.26233	0.39358	11.1556	1.03903	0.45117	0.96139	0.92527	2400.43	19.268	2536.21	9.68249	2646.67	6.53771	2646.67	6.53771	90.6962
GBR-NTB-22	305.721	180234	3.28642	5.61656	0.33284	10.9212	0.65486	0.44779	0.56395	0.86118	2385.42	11.2443	2516.45	6.09163	2623.88	5.53637	2623.88	5.53637	90.9119
GBR-NTB-22	335.108	57088.9	1.70125	17.5993	0.80639	0.50911	1.17103	0.06596	0.84393	0.72608	411.77	3.36639	417.84	4.01126	451.472	18.0281	451.472	18.0281	91.206
GBR-NTB-22	133.108	13502.2	1.44632	8.69642	2.0452	4.69114	2.22846	0.30032	0.83878	0.37639	1692.87	12.4881	1765.66	18.6536	1852.86	37.3241	1852.86	37.3241	91.3653
GBR-NTB-22	38.7797	54689.5	0.8595	5.60761	0.60534	11.0016	1.01843	0.45096	0.81868	0.80366	1399.5	16.4025	2523.27	9.47957	2624.36	10.0752	2624.36	10.0752	91.3653
GBR-NTB-22	177.925	72054.4	5.89936	5.94994	0.76842	9.92104	0.96226	0.43214	0.57921	0.61292	2315.37	11.2666	2427.47	8.87622	2522.81	12.9076	2522.81	12.9076	91.7773
GBR-NTB-22	150.252	294991	1.8414	11.2132	0.52566	2.65662	0.75172	0.21877	0.53736	0.71084	1275.39	6.21812	1316.48	5.54552	1384.02	10.0962	1384.02	10.0962	92.1512
GBR-NTB-22	219.843	183832	2.43484	9.75576	0.61703	3.74491	1.17781	0.26751	1.00323	0.85177	1528.13	13.6491	1581.03	9.43914	1652.32	11.4358	1652.32	11.4358	92.484
GBR-NTB-22	129.132	18215.7	0.20897	17.0561	0.97552	0.5997	1.28236	0.07577	0.7379	0.60072	470.827	3.3504	477.045	4.67584	507.072	21.6106	470.827	3.3504	92.8522
GBR-NTB-22	430.426	270470	1.50214	9.56927	0.37891	3.9503	1.0158	0.27612	0.94248	0.92782	1571.79	13.1461	1624.05	8.23088	1692.43	6.98767	1692.43	6.98767	92.8176
GBR-NTB-22	32.2032	3071.11	0.92788	16.2536	1.98609	0.53906	2.26637	0.06942	0.86848	0.3833	432.642	6.3409	437.808	8.06034	465.066	46.3917	432.642	6.3409	93.028
GBR-NTB-22	177.377	71514.3	4.4396	10.901	1.83565	2.89482	2.03232	0.23141	0.87152	0.42883	1341.89	10.5379	1380.56	15.3387	1440.87	34.9936	1440.87	34.9936	93.1304
GBR-NTB-22	505.622	113870	12.1224	10.1067	2.25337	3.48973	2.7655	0.25823	1.60322	0.57972	1480.78	21.2109	1524.9	21.8294	1586.64	42.1246	1586.64	42.1246	93.328
GBR-NTB-22	515.333	60343.9	2.75364	11.9021	0.42966	2.31902	1.29873	0.2023	1.22554	0.94364	1187.69	13.2934	1218.12	9.21415	1272.43	8.36744	1272.43	8.36744	93.4305
GBR-NTB-22	273.836	68876.1	1.15084	9.84743	0.40877	3.67986	0.26614	0.63929	0.84221	1521.2	8.66266	1567.01	6.06052	1629.25	7.60799	1629.25	7.60799	93.3682	
GBR-NTB-22	183.656	33250.9	2.82695	11.9957	0.55686	2.26001	1.25193	0.19928	1.12003	0.89464	1171.45	11.9975	1199.91	8.81278	1251.51	10.9395	1251.51	10.9395	93.6262
GBR-NTB-22	36.7529	11109.6	2.74889	13.2995	1.03693	1.60754	1.21842	0.1594	0.62757	0.51507	953.468	5.5622	973.149	6.72718	1017.83	21.1527	1017.83	21.1527	93.6764
GBR-NTB-22	225.589	99826.2	0.40452	17.2578	0.														

GBR-NTB-22	19.3031	26987.2	1.47243	5.21305	0.65028	13.3914	0.94209	0.51133	0.68125	0.72312	2662.31	14.8582	2707.65	8.90138	2741.65	10.7009	2741.65	10.7009	97.1059
GBR-NTB-22	116.15	53398.5	296935	11.1163	0.52168	2.88521	0.90245	0.23536	0.73524	0.81472	1362.51	9.02988	1378.06	6.80492	1402.21	10.0256	1402.21	10.0256	97.1684
GBR-NTB-22	150.663	357544	1.12266	5.04315	0.92418	14.2506	1.21913	0.52523	0.79509	0.65218	2721.31	17.6502	2766.53	11.5677	2799.68	15.1225	2799.68	15.1225	97.2009
GBR-NTB-22	554.845	291130	2.91404	14.0671	0.45256	1.48316	0.84965	0.15272	0.71909	0.84633	916.204	6.14154	923.523	5.15297	941.028	9.26851	941.028	9.26851	97.3621
GBR-NTB-22	299.606	134374	1.45436	9.28101	0.57139	4.45382	0.87847	0.30213	0.66719	0.75949	1701.87	9.97952	1722.41	7.28444	1747.45	10.4639	1747.45	10.4639	97.3919
GBR-NTB-22	21.202	9399.61	1.94094	10.669	0.87195	3.12624	1.22263	0.2472	0.80718	0.6602	1424.01	10.3133	1439.17	9.40603	1461.63	17.4531	1461.63	17.4531	97.4262
GBR-NTB-22	114.468	142074	1.0866	17.8076	0.89755	0.51914	1.11783	0.0678	0.66624	0.59601	422.864	2.72687	424.577	3.87876	433.868	20.0057	422.864	2.72687	97.4637
GBR-NTB-22	572.881	170785	6.37657	13.2224	0.44192	1.80885	0.86663	0.17506	0.74545	0.86017	1039.94	7.15928	1048.66	5.66688	1066.89	8.87998	1066.89	8.87998	97.4737
GBR-NTB-22	81.6738	19559.1	1.435314	8.99385	0.73634	4.70355	0.94455	0.31131	0.58693	0.62139	1747.17	8.98245	1767.87	7.90938	1792.4	13.4763	1792.4	13.4763	97.4766
GBR-NTB-22	37.7615	295045	1.45996	12.4203	1.30477	2.17323	1.45827	0.19752	0.65124	0.44659	1161.97	6.92443	1172.51	10.1411	1192.01	25.7708	1192.01	25.7708	97.4796
GBR-NTB-22	374.765	84545.7	6.11024	13.2005	0.45059	1.8084	0.98037	0.17505	0.87031	0.88774	1039.85	8.35777	1048.5	6.41005	1066.58	9.06483	1066.58	9.06483	97.4945
GBR-NTB-22	168.119	310394	2.59836	13.4169	0.54829	1.74171	0.86219	0.1707	0.66539	0.77175	1015.99	6.25452	1024.1	5.56149	1041.43	11.0843	1041.43	11.0843	97.5574
GBR-NTB-22	467.691	277413	5.66152	13.3379	0.4435	1.7647	0.82124	0.17224	0.69118	0.84163	1024.44	6.54673	1032.58	5.32264	1049.88	9.95827	1049.88	9.95827	97.5769
GBR-NTB-22	106.465	115376	2.33267	13.633	0.54956	1.63395	0.7902	0.16345	0.56733	0.71795	975.905	5.13787	983.382	4.97739	1000.09	11.1507	1000.09	11.1507	97.5815
GBR-NTB-22	312.946	73281.6	3.0037	13.3862	0.57277	1.72603	1.47606	0.16968	1.35742	0.91962	1010.34	12.6939	1018.27	9.48997	1035.34	11.7316	1035.34	11.7316	97.5856
GBR-NTB-22	91.4226	55948.3	2.12609	9.84911	0.53093	3.87837	0.90764	0.28023	0.73452	0.80926	1592.51	10.3644	1609.19	7.32701	1631.07	9.90829	1631.07	9.90829	97.6357
GBR-NTB-22	236.962	153766	1.26041	10.5261	0.37357	3.32115	0.79121	0.2565	0.69742	0.88146	1471.89	9.17763	1486.04	6.14742	1506.27	7.05924	1506.27	7.05924	97.7117
GBR-NTB-22	499.498	1042834	5.96731	9.0575	0.38827	4.72539	0.88458	0.31254	0.79481	0.89852	1753.22	12.2006	1771.75	7.41321	1793.65	10.07006	1793.65	10.07006	97.7575
GBR-NTB-22	190.842	182127	3.73094	12.0599	0.56622	2.34606	1.26084	0.20764	1.12652	0.89347	1216.21	12.4861	1226.36	8.97649	1244.24	11.0927	1244.24	11.0927	97.7478
GBR-NTB-22	362.301	367996	1.07181	9.95943	0.44767	3.8154	0.87465	0.27791	0.7514	0.85908	1580.81	10.5339	1596.7	7.0369	1616.1	8.33492	1616.1	8.33492	97.8163
GBR-NTB-22	433.407	67220.9	3.52545	13.2848	0.43612	1.77432	0.95177	0.17306	0.84589	0.88876	1028.96	8.04477	1036.1	6.18078	1051.23	8.81113	1051.23	8.81113	97.8616
GBR-NTB-22	92.112	85215.4	1.27019	6.34094	0.431	9.52002	1.13429	0.44276	2.09028	0.97938	2363.01	41.3528	2389.48	19.6137	2412.12	24.112	2412.12	24.112	97.9319
GBR-NTB-22	97.4076	52097.7	3.32039	13.4218	0.72918	1.71856	1.32105	0.16941	1.09882	0.83178	1008.85	10.2616	1015.49	8.47978	1029.8	14.8443	1029.8	14.8443	97.9657
GBR-NTB-22	186.361	87461.7	1.77977	9.65015	0.51935	4.11588	3.17883	0.29021	3.13595	0.98651	1642.57	45.472	1657.46	25.9737	1676.36	9.61518	1676.36	9.61518	97.9841
GBR-NTB-22	164.714	102924	8.08218	13.3412	0.60228	1.75946	0.79082	0.17215	0.51171	0.64706	1023.93	8.4446	1030.65	5.11995	1044.97	12.1803	1044.97	12.1803	97.9864
GBR-NTB-22	309.217	75668.3	3.35967	13.5174	0.4242	1.69074	0.67713	0.16757	0.52596	0.77676	998.686	4.86607	1005.04	4.32026	1018.92	8.63529	1018.92	8.63529	98.0144
GBR-NTB-22	468.809	120721	3.61714	10.5868	0.39196	3.32813	0.73584	0.25733	0.62261	0.84612	1476.18	8.21448	1487.67	5.7454	1504.09	7.41156	1504.09	7.41156	98.0146
GBR-NTB-22	30.4013	8110.07	2.63223	13.3292	1.16928	1.66902	1.66145	0.16621	0.87034	0.52384	991.195	7.99628	996.814	10.5498	1009.18	28.684	1009.18	28.684	98.2109
GBR-NTB-22	183.981	187268	1.17239	9.93621	0.51716	3.84878	0.85054	0.27986	0.67524	0.93988	1590.64	9.51808	1603.01	6.85526	1619.29	9.62534	1619.29	9.62534	98.2379
GBR-NTB-22	46.2885	53702.6	3.15771	13.1176	1.18931	1.85874	1.41297	0.17878	0.76245	0.53961	1060.3	7.45442	1066.54	9.32864	1079.3	23.8712	1079.3	23.8712	98.2404
GBR-NTB-22	236.345	142095	3.12835	9.89167	0.42132	3.87856	0.77365	0.28114	0.64881	0.83863	1597.11	9.17835	1609.23	6.24542	1625.11	8.87665	1625.11	8.87665	98.2477
GBR-NTB-22	170.509	333684	3.60704	7.97644	0.43595	6.16775	0.98631	0.36018	0.88474	0.89702	1983.01	15.1026	1999.89	8.61785	2017.36	7.72957	2017.36	7.72957	98.2969
GBR-NTB-22	43.4551	16445.1	2.11294	9.69344	0.64943	3.98896	0.97104	0.28573	0.70057	0.72146	1620.18	10.0364	1631.95	7.88565	1647.14	12.4716	1647.14	12.4716	98.3627
GBR-NTB-22	218.993	108017	2.04735	11.8652	0.57357	2.46249	0.83722	0.21462	0.60951	0.72102	1253.41	6.94287	1261.09	6.04588	1274.21	11.195	1274.21	11.195	98.3675
GBR-NTB-22	52.7788	109488	1.8414	14.2506	0.89051	1.42428	1.07676	0.14895	0.60509	0.56195	895.097	5.05694	899.157	6.42346	909.13	18.3434	909.13	18.3434	98.4565
GBR-NTB-22	188.615	93333	2.86582	11.7459	0.50827	2.55076	0.80405	0.2195	0.62349	0.7175	1279.24	7.23439	1286.65	5.86825	1299.04	9.88264	1299.04	9.88264	98.4561
GBR-NTB-22	91.9623	24054.1	5.04789	13.1265	0.83068	1.8325	1.31714	0.17727	1.02063	0.77488	1052.02	9.90686	1057.18	6.85262	1067.86	16.1719	1067.86	16.1719	98.516
GBR-NTB-22	94.2315	57162.6	3.47703	13.2981	0.79787	1.79732	1.08421	0.17498	0.732	0.67514	1039.47	7.02713	1044.49	7.07349	1055.02	16.1274	1055.02	16.1274	98.5216
GBR-NTB-22	166.564	385694	3.90487	11.8213	0.89519	2.52553	1.12731	0.21819	0.68517	0.60779	1272.32	7.91124	1279.41	8.19997	1291.32	17.4195	1291.32	17.4195	98.5286
GBR-NTB-22	98.2265	408305	4.86392	13.607	0.80019	1.64461	1.18317	0.16473	0.86481	0.73093	983.017	7.88482	987.484	7.47113	997.407	16.3856	997.407	16.3856	98.5573
GBR-NTB-22	257.044	1206341	3.53341	17.5797	0.77938	5.37856	1.05515	0.07436	0.71127	0.67409	462.399	3.17371	463.533	3.92673	469.132	17.2612	462.399	3.17371	98.5648
GBR-NTB-22	529.881	85856.7	2.95438	13.1908	0.45918	1.83798	0.8847	0.17768	0.75546	0.85392	1054.26	7.34739	1059.14	5.81783	1069.22	9.23343	1069.22	9.23343	98.6017
GBR-NTB-22	62.1554	9874.76	1.36068	17.4267	1.26824	0.5162	1.61394	0.0676	0.69731	0.43206	421.688	2.84637	422.612	5.57936	427.636	32.4565	421.688	2.84637	98.6092
GBR-NTB-22	454.745	245612	2.12381	11.2081	0.3089	2.89986	0.89262	0.23767	0.83746	0.9382	1374.58	10.367	1381.88	6.73954	1393.15	9.52859	1393.15	9.52859	98.6671
GBR-NTB-22	90.7423	73413	4.10604	13.4724	0.66106	1.71979	0.97859	0.16991	0.72091	0.63682	1011.63	6.7495	1015.95	6.28315	1025.24	13.3885	1025.24	13.3885	98.6722
GBR-NTB-22	389.501	78734.4	4.30978	13.0255	0.54909	1.8947	1.06338	0.18138	0.91015	0.8559	1074.51	9.00808	1079.23	7.06745	1088.76	11.038	1088.76	11.038	98.6791
GBR-NTB-22	374.316	124599	1.50447	9.75504	0.52213	4.02539	0.9371	0.28768	0.78006	0.83028	1629.95	11.2057	1639.34	7.62192	1651.39	9.68188	1651.39	9.68188	98.6818
GBR-NTB-22	180.128	62481.1	3.36482	13.7016	0.50947	1.62223	1.50326	0.16328	1.41287	0.93987	974.97	12.784	978.856	9.4432	987.564	10.4469	987.564	10.4469	98.7248
GBR-NTB-22	147.163	116516	3.72226	5.51477	0.46048	12.3963	0.50056	0.64876	0.81544	0.2616.21	13.951	2634.9	7.47544	2649.27	7.63829	2649.27	7.63829	2649.27	98.7523
GBR-NTB-22	271.467	32254.2	1.08481	17.8403	0.70464	0.49506	1.19537	0.06527	0.96421	0.80662	407.607	3.8085	408.354	4.01915	412.557	15.7963	407.607	3.8085	98.8001
GBR-NTB-22	53.8611	98968.2	2.39906	13.1774	0.68025	1.83881	0.94817	0.17788	0.66049	0.96959	1055.3								

GBR-NTB-22	65.4458	86624.4	2.44054	13.1096	0.91625	1.89307	1.31629	0.18193	0.94501	0.71794	1077.49	9.37696	1078.66	8.74579	1080.99	18.3817	1080.99	18.3817	99.6763
GBR-NTB-22	308.908	486650	3.22472	11.2576	0.39727	2.89947	0.8732	0.23873	0.67974	0.86336	1380.1	8.44483	1381.77	5.94424	1384.34	7.6298	1384.34	7.6298	99.6935
GBR-NTB-22	136.826	529510	2.95286	10.9067	0.5519	3.12309	0.70843	0.24972	0.44417	0.62697	1437.02	5.72141	1438.39	5.44872	1440.0	10.5191	1440.0	10.5191	99.7654
GBR-NTB-22	148.953	274363	2.20762	10.6667	0.47331	3.31564	0.7048	0.25872	0.52223	0.74096	1483.31	6.91965	1484.74	5.49824	1486.77	9.6515	1486.77	9.6515	99.7672
GBR-NTB-22	233.906	179276	5.37095	12.8494	0.58475	2.01494	0.87834	0.18972	0.65536	0.74613	1119.85	6.73695	1120.56	5.96047	1121.94	11.6791	1121.94	11.6791	99.8141
GBR-NTB-22	47.0039	251760	3.22947	5.29049	0.42419	13.5514	0.65329	0.52399	0.49684	0.76052	2716.1	11.0123	2718.88	6.17764	2720.94	6.99112	2720.94	6.99112	99.8222
GBR-NTB-22	53.6356	34634.4	0.85784	13.2365	0.79712	1.82959	1.03506	0.17792	0.63867	0.56587	1055.61	6.4106	1056.13	6.79565	1057.24	16.0992	1057.24	16.0992	99.8459
GBR-NTB-22	97.4632	693144	2.50841	10.5073	0.68522	3.44665	0.93263	0.26476	0.63267	0.78837	1514.16	8.5378	1515.1	7.34028	1516.41	12.9263	1516.41	12.9263	99.8517
GBR-NTB-22	459.732	140125	7.41892	13.4841	0.40989	1.72485	0.92648	0.17095	0.83087	0.8968	1017.35	7.81965	1017.83	5.955	1018.85	8.30051	1018.85	8.30051	99.8532
GBR-NTB-22	155.245	69999.4	2.53324	9.00879	0.46546	4.85193	0.7993	0.32063	0.6497	0.81283	1792.79	10.1683	1793.95	6.72916	1795.28	8.4764	1795.28	8.4764	99.8608
GBR-NTB-22	104.945	57540.4	2.01756	9.74499	0.65018	4.08348	0.86505	0.29176	0.56908	0.65786	1650.31	8.28582	1651.01	7.05585	1651.88	12.0749	1651.88	12.0749	99.905
GBR-NTB-22	265.181	341630	1.76659	11.9306	0.41452	2.48545	1.12883	0.21731	1.04997	0.93014	1267.63	12.0829	1267.8	8.17362	1268.08	8.07375	1268.08	8.07375	99.9649
GBR-NTB-22	38.0341	78237.7	6.39424	9.07719	0.77669	4.80321	0.97556	0.31908	0.59023	0.60502	1785.25	9.20392	1785.46	8.19889	1785.69	14.1563	1785.69	14.1563	99.9751
GBR-NTB-22	182.544	127879	1.91142	10.5542	0.57355	3.3972	0.77041	0.26272	0.51427	0.66752	1503.72	6.89741	1503.75	6.04368	1503.78	10.8408	1503.78	10.8408	99.996
GBR-NTB-22	124.368	112021	1.80302	12.7851	0.52805	2.05158	0.77233	0.19212	0.56324	0.72926	1132.86	5.85147	1132.82	5.27233	1132.73	10.5279	1132.73	10.5279	100.012
GBR-NTB-22	187.084	2781358	2.19699	13.3477	0.43573	1.79908	0.86164	0.17603	0.74335	0.86271	1045.25	7.17266	1045.12	6.62337	1044.87	8.80758	1044.87	8.80758	100.037
GBR-NTB-22	198.389	715307	1.81147	13.7776	0.56253	1.64011	0.9799	0.16533	0.80234	0.81881	986.323	7.33803	985.753	6.18111	984.465	11.4429	984.465	11.4429	100.189
GBR-NTB-22	37.7544	230468	19.9678	13.5276	1.20511	1.73053	1.439	0.17154	0.78639	0.54648	1020.57	7.4226	1019.95	9.26048	1018.59	24.4044	1018.59	24.4044	100.195
GBR-NTB-22	83.8456	16+07	3.22906	11.6184	0.58301	2.67365	0.86076	0.22766	0.63326	0.73569	1322.24	7.57028	1321.2	6.36101	1319.5	11.2986	1319.5	11.2986	100.207
GBR-NTB-22	181.463	182766	2.31648	8.85666	0.45242	5.09347	0.73028	0.32976	0.57323	0.78494	1837.24	9.16381	1835.02	6.19832	1832.48	8.19992	1832.48	8.19992	100.226
GBR-NTB-22	223.905	1002561	3.47279	13.3377	0.4055	1.8208	0.77557	0.17763	0.66112	0.85243	1054.03	6.42852	1052.97	5.08329	1050.81	8.18977	1050.81	8.18977	100.306
GBR-NTB-22	117.127	92869.2	3.97056	13.2323	0.82367	1.85224	1.19388	0.1797	0.86409	0.72377	1065.31	8.48488	1064.23	7.87245	1062.02	16.5641	1062.02	16.5641	100.31
GBR-NTB-22	147.532	73921.9	2.9716	16.5597	0.74847	0.78787	1.00953	0.09591	0.6754	0.66902	590.367	3.81022	589.961	4.51721	588.377	16.2771	590.367	3.81022	100.338
GBR-NTB-22	240.221	95826	2.40953	13.3514	0.4599	1.80119	1.09962	0.17636	0.99868	0.9082	1047.07	9.65183	1045.89	7.17953	1043.44	9.30481	1043.44	9.30481	100.348
GBR-NTB-22	114.391	141125	1.99141	13.2272	0.58996	1.85327	0.85245	0.1798	0.62102	0.72851	1065.86	6.10093	1064.59	5.62213	1062.02	11.7487	1062.02	11.7487	100.361
GBR-NTB-22	207.973	129271	2.90343	10.5507	0.38058	3.39848	0.64017	0.26322	0.51461	0.80386	1506.29	6.91249	1504.04	5.02238	1500.86	7.19891	1500.86	7.19891	100.362
GBR-NTB-22	91.9374	52505.5	1.35082	10.2698	0.57557	3.6186	0.9249	0.273	0.72429	0.78164	1556.01	9.99439	1553.63	7.35807	1550.38	10.8352	1550.38	10.8352	100.363
GBR-NTB-22	307.962	531831	21.3676	16.2548	0.74693	0.87785	0.92571	0.10443	0.54684	0.59073	640.341	3.33336	639.823	4.39409	638.015	10.6697	640.341	3.33336	100.365
GBR-NTB-22	139.863	33265.1	0.40106	13.5725	0.61819	1.868	1.12707	0.1682	0.94158	0.83542	1002.21	8.73958	1000.98	7.17399	998.285	12.5681	998.285	12.5681	100.393
GBR-NTB-22	133.454	112205	1.45906	9.27423	0.44339	4.58778	0.78314	0.31196	0.64545	0.82419	1750.32	8.99365	1747.05	6.52888	1743.12	8.12493	1743.12	8.12493	100.413
GBR-NTB-22	97.045	23567.4	4.44378	12.6545	0.67067	2.10058	0.96717	0.19544	0.69674	0.72059	1150.76	7.34288	1149	6.65326	1145.67	13.3284	1145.67	13.3284	100.444
GBR-NTB-22	34.934	20373.2	0.92766	11.5074	0.84291	2.69609	1.11307	0.22908	0.71601	0.64328	1329.67	8.60289	1327.39	8.2443	1323.68	16.508	1323.68	16.508	100.453
GBR-NTB-22	160.13	64026.8	1.81953	9.8198	0.49537	4.0207	1.16613	0.29002	1.05631	0.90582	1641.63	15.3088	1638.39	9.48257	1634.22	9.17838	1634.22	9.17838	100.454
GBR-NTB-22	86.5759	101116	3.04156	10.0055	0.44837	3.8599	1.71085	0.28343	0.55134	0.79526	1608.59	7.84886	1605.34	5.73275	1601.05	8.37201	1601.05	8.37201	100.471
GBR-NTB-22	180.077	76344	2.59784	13.3818	0.38391	1.78725	0.78902	0.17553	0.68854	0.87265	1042.51	6.62771	1040.83	5.13725	1037.27	7.80061	1037.27	7.80061	100.506
GBR-NTB-22	202.664	40755.9	1.77713	17.2192	0.66321	0.64484	0.90663	0.08162	0.61151	0.67449	505.758	2.97455	505.297	3.60903	503.198	14.7196	505.758	2.97455	100.509
GBR-NTB-22	178.99	51581.6	3.80435	13.8053	0.5156	1.62531	0.77724	0.16448	0.58125	0.74784	981.605	5.29239	980.047	4.88587	976.578	10.5047	976.578	10.5047	100.515
GBR-NTB-22	329.649	747191	2.31737	10.6031	0.42142	3.40036	0.91335	0.26352	0.81032	0.88719	1507.8	10.8944	1504.48	7.16658	1499.79	7.96831	1499.79	7.96831	100.535
GBR-NTB-22	89.7592	30368.3	2.57372	12.7772	0.68604	2.02863	0.96994	0.1911	0.67493	0.69584	1127.34	6.9806	1125.16	6.5969	1120.96	13.9108	1120.96	13.9108	100.569
GBR-NTB-22	334.444	68856.7	8.67894	17.5313	0.72358	0.59143	1.32597	0.07601	1.11041	0.83744	472.242	5.05636	471.779	5.00358	469.509	16.0385	472.242	5.05636	100.582
GBR-NTB-22	79.0833	58779.9	1.00641	13.6057	0.6712	1.69688	0.88358	0.16949	0.57325	0.64878	1009.27	5.35553	1007.36	5.64509	1003.17	13.6394	1003.17	13.6394	100.608
GBR-NTB-22	43.7157	11104.8	1.21313	12.0395	0.80382	2.3608	1.03999	0.2109	0.65889	0.63356	1233.63	7.39788	1230.83	7.41793	1225.9	15.7944	1225.9	15.7944	100.643
GBR-NTB-22	20.1095	64370.6	5.57051	9.8903	0.82508	3.97771	1.07867	0.28854	0.69389	0.64328	1634.21	10.0164	1629.66	8.75254	1623.77	15.3625	1623.77	15.3625	100.663
GBR-NTB-22	135.029	74544.4	4.85637	12.5718	0.50383	2.16678	0.77577	0.1996	0.71257	0.81707	1173.19	6.67539	1170.45	6.08446	1165.36	10.023	1165.36	10.023	100.672
GBR-NTB-22	69.2997	34266.3	3.00004	13.9596	0.89192	1.53271	1.16083	0.15797	0.72627	0.62565	945.502	6.38704	943.586	7.13312	939.136	18.5442	939.136	18.5442	100.678
GBR-NTB-22	162.739	68237.8	2.58915	11.372	0.51263	2.82948	0.75795	0.23625	0.55708	0.73498	1367.17	6.86276	1363.38	5.68646	1357.43	9.90861	1357.43	9.90861	100.718
GBR-NTB-22	634.102	1349015	5.25812	17.9576	0.46099	0.51768	0.85058	0.068	0.71482	0.8404	424.079	2.93385	423.601	2.94595	420.977	10.2906	420.977	10.2906	100.737
GBR-NTB-22	73.3137	28110.7	1.47626	13.2603	0.72361	1.81183	0.97647	0.17731	0.61802	0.63291	1052.27	6.00019	1049.74	6.38882	1044.49	15.2699	1044.49	15.2699	100.746
GBR-NTB-22	129.37	448524	3.57308	13.2904	0.60926	1.83986	1.00223	0.17917	0.79578	0.79401	1062.44	7.79476	1059.81	6.59314	1054.42	12.2914	1054.42	12.2914	100.761
GBR-NTB-22	71.4665	47911	1.51591	11.3652	0.67826	2.84561	0.93053	0.23712	0.63159	0.68784	1371.72	7.80391	1367.65	6.99162	1361.28	13.1672	1361.28	13.1672	100.767
GBR-NTB-22	327.281	133343	2.62728	12.0637	0.47257	2.44951	0.76652	0.21606	0.60333	0.78111	1261.02	6.910							

GBR-NTB-22	106.047	221143	2.49856	12.7025	0.51673	2.16558	0.92794	0.20123	0.77073	0.83058	1181.92	8.32312	1170.06	6.44577	1148.19	10.2648	1148.19	10.2648	102.938
GBR-NTB-22	101.921	45127.4	2.91136	12.9196	0.6541	2.03256	0.97957	0.19301	0.72895	0.74415	1137.66	7.60243	1126.47	6.66661	1104.98	13.0813	1104.98	13.0813	102.958
GBR-NTB-22	152.298	389391	3.05556	10.8818	0.48078	3.27021	0.82616	0.26035	0.67185	0.81323	1491.64	8.94666	1473.99	6.4243	1448.66	9.15338	1448.66	9.15338	102.966
GBR-NTB-22	65.2762	21307.9	1.73246	10.8106	0.69129	3.25956	1.01162	0.25993	0.73489	0.72645	1489.5	9.7736	1471.46	7.86047	1445.5	13.2414	1445.5	13.2414	103.044
GBR-NTB-22	117.367	63533.6	2.37211	11.6532	0.66606	2.75566	0.96733	0.23475	0.70042	0.72407	1359.37	8.58441	1343.62	7.20697	1318.6	12.9326	1318.6	12.9326	103.092
GBR-NTB-22	69.1604	19369.4	1.95873	17.4475	1.26408	0.58434	1.5299	0.07557	0.77557	0.50694	469.651	3.51296	467.246	5.72948	455.465	29.2674	469.651	3.51296	103.115
GBR-NTB-22	87.386	13088.1	3.90093	16.661	0.91739	0.73576	1.02316	0.09134	0.45136	0.44114	563.43	2.43512	559.926	4.40373	545.689	20.0634	563.43	2.43512	103.251
GBR-NTB-22	135.283	78638.4	1.45699	13.6464	0.70595	1.74636	0.92312	0.17447	0.59441	0.64391	1036.68	5.69216	1025.82	5.96028	1002.69	14.3178	1002.69	14.3178	103.391
GBR-NTB-22	168.655	315966	2.72357	13.4687	0.51938	1.83414	0.99364	0.18048	0.84708	0.8525	1069.61	8.34873	1057.77	6.52943	1033.37	10.5142	1033.37	10.5142	103.507
GBR-NTB-22	92.9534	72293.6	2.03141	12.7015	0.60215	2.16293	0.88832	0.20155	0.65278	0.73485	1183.66	7.05886	1169.21	6.1682	1142.57	11.9629	1142.57	11.9629	103.596
GBR-NTB-22	78.1958	23477.4	2.15611	12.7987	0.66066	2.09254	0.88512	0.1973	0.56257	0.63559	1160.81	5.97618	1146.36	6.08127	1119.15	13.6307	1119.15	13.6307	103.723
GBR-NTB-22	150.517	26950.3	1.88704	13.7595	0.66489	1.67279	0.97473	0.16959	0.71252	0.731	1009.88	6.66031	998.247	6.19434	972.799	13.5536	972.799	13.5536	103.812
GBR-NTB-22	14.1347	13058.2	3.45547	9.88526	0.95611	4.03569	1.2413	0.2956	0.76514	0.6164	1669.45	11.2536	1641.42	10.1013	1605.69	18.2248	1605.69	18.2248	103.971
GBR-NTB-22	61.4557	63345.8	3.46407	13.62	0.85211	1.75567	1.06961	0.1755	0.64645	0.60438	1042.34	6.22165	1029.25	6.91952	1001.52	17.3028	1001.52	17.3028	104.075
GBR-NTB-22	20.2821	4628.36	1.08986	13.1194	1.28523	1.7747	2.0116	0.17698	0.81228	0.4038	1050.45	7.87364	1036.24	13.0649	1006.36	37.3598	1006.36	37.3598	104.381
GBR-NTB-22	26.8417	11080.8	4.60027	13.3875	1.0681	1.78057	2.09086	0.1775	1.57006	0.75092	1053.31	15.2572	1038.39	13.5958	1007.09	27.993	1007.09	27.993	104.59
GBR-NTB-22	31.9932	7830.05	2.81963	13.5247	1.09373	1.67624	1.31879	0.17028	0.72288	0.54814	1013.68	6.78062	999.557	8.38737	968.711	22.5021	968.711	22.5021	104.642
GBR-NTB-22	79.9257	42464	2.71209	13.7729	0.85174	1.69422	1.1001	0.17167	0.68903	0.62633	1021.3	6.50794	1006.36	7.02437	973.933	17.5051	973.933	17.5051	104.864
GBR-NTB-22	123.074	17963.5	1.44037	17.7872	0.80437	0.52645	0.98551	0.06952	0.51893	0.52656	433.254	2.17441	429.451	3.45118	409.076	18.7428	433.254	2.17441	105.91
GBR-NTB-22	121.49	13272.8	1.05554	17.7357	0.84543	0.52614	1.17674	0.0696	0.73007	0.62042	433.745	3.06247	429.247	4.11927	405.149	20.6601	433.745	3.06247	107.058
GBR-NTB-22	78.1589	65549.3	1.9817	18.2054	1.14809	0.49292	1.37343	0.06585	0.75181	0.5474	411.079	2.99407	406.897	4.60446	383.209	25.8306	411.079	2.99407	107.273
GBR-NTB-22	341.282	21023.4	2.70017	18.4314	0.63951	0.42325	1.1486	0.05774	0.91942	0.80047	361.897	3.23569	358.369	3.46828	335.569	15.6016	361.897	3.23569	107.846
GBR-NTB-22	122.221	10671.5	2.3903	17.8189	0.97244	0.50765	1.2943	0.06775	0.80156	0.6193	422.567	3.27848	416.868	4.42519	385.429	22.8283	422.567	3.27848	109.635
GBR-NTB-22	154.591	20834.1	1.12952	17.9396	0.94231	0.52168	1.45289	0.06944	1.09208	0.75166	432.762	4.57095	426.275	5.05764	391.322	21.5036	432.762	4.57095	110.59
GBR-NTB-22	114.393	11312.7	2.14033	17.588	0.98862	0.59525	1.7447	0.07832	0.85008	0.48724	486.077	3.98012	474.215	6.61039	417.208	34.0365	486.077	3.98012	116.507
GBR-NTB-22	178.952	15911.5	2.96549	17.8168	0.81442	0.55895	1.02854	0.07425	0.61808	0.60093	461.72	2.754	450.841	3.74451	395.71	18.4342	461.72	2.754	116.681

GBR-COVI-22

Sample	206Pb 204Pb	U/Th	206Pb* 207Pb*	Â± (%)	207Pb* 235U	Â± (%)	206Pb* 238U	Â± (%)	error corr.	206Pb* 238U	Â± (Ma)	207Pb* 235U	Â± (Ma)	206Pb* 207Pb*	Â± (Ma)	Best age (Ma)	Â± (Ma)	Conc (%)
GBR-COVI-22	6648.05	2.81669	12.6675	5.50311	0.46308	7.57134	0.04407	5.01035	0.66175	277.999	13.6327	386.396	24.3373	1100.67	113.638	277.999	13.6327	25.2572
GBR-COVI-22	96169.7	1.99184	10.2527	4.85325	0.95689	5.23065	0.07181	1.95074	0.37294	447.026	8.42481	681.683	25.9762	1560.42	91.0834	1560.42	91.0834	28.6478
GBR-COVI-22	16067.8	1.61754	15.5748	0.79162	0.62276	1.40489	0.07197	1.16021	0.82584	448.01	5.02136	491.573	5.47448	700.018	16.8509	448.01	5.02136	63.9998
GBR-COVI-22	19723	1.66304	16.5717	0.95588	0.5459	1.6228	0.06691	1.3112	0.80799	417.501	5.30078	442.309	5.81879	573.529	20.7927	417.501	5.30078	72.795
GBR-COVI-22	20571.3	3.98124	16.8091	2.11035	0.51046	2.37556	0.06361	1.05139	0.44259	397.521	4.05324	418.761	8.15193	537.505	46.6152	397.521	4.05324	73.5666
GBR-COVI-22	10716.8	2.40738	9.77828	2.11002	3.14982	2.62501	0.22812	1.45405	0.55392	1324.62	17.4107	1444.96	20.2337	1626.75	40.6433	1626.75	40.6433	81.4271
GBR-COVI-22	9340.99	1.46665	15.9244	2.92293	0.69125	3.05033	0.08262	0.86122	0.28233	511.715	4.2366	533.551	12.6598	628.024	63.0507	511.715	4.2366	81.4802
GBR-COVI-22	37008.3	4.33575	17.3302	1.11663	0.50057	1.45083	0.06391	0.9235	0.63653	399.346	3.57603	412.089	4.91428	484.125	24.714	399.346	3.57603	82.4882
GBR-COVI-22	59563.7	4.09029	7.48415	2.00284	5.79615	2.55008	0.31813	1.57844	0.61898	1780.59	24.5582	1945.84	22.0866	2126.57	35.0732	2126.57	35.0732	83.7307
GBR-COVI-22	373072	7.17509	16.3238	1.41427	0.73227	2.7023	0.08749	2.30267	0.85211	540.688	11.9424	557.886	11.5995	628.668	30.4758	540.688	11.9424	86.0053
GBR-COVI-22	98819.3	1.14365	6.23022	0.53501	8.49377	0.97501	0.38807	0.81506	0.83595	2113.88	14.6896	2285.26	8.85748	2442.27	9.06078	2442.27	9.06078	86.5539
GBR-COVI-22	9142.41	3.79882	11.6242	1.37845	2.17268	1.60948	0.1885	0.82938	0.51531	1113.23	8.47972	1172.34	11.1918	1283.16	26.8519	1283.16	26.8519	86.7575
GBR-COVI-22	33069.1	27.8363	11.6031	1.53844	2.29776	1.7723	0.1957	0.86585	0.48855	1152.19	9.1356	1211.6	12.5394	1319.04	29.9743	1319.04	29.9743	87.3507
GBR-COVI-22	32749.4	3.31384	12.6141	0.65172	1.83856	1.05486	0.1708	0.82934	0.78621	1016.51	7.79925	1059.35	6.9376	1148.67	12.929	1148.67	12.929	88.9443
GBR-COVI-22	64846.6	1.3045	13.4478	0.46565	1.53229	1.06747	0.15133	0.95921	0.89858	908.408	8.12746	943.417	6.55873	1026.03	9.47588	1026.03	9.47588	88.5357
GBR-COVI-22	131914	2.57692	5.86458	1.89205	10.1185	2.17212	0.43442	1.06688	0.49117	2325.59	20.8289	2445.66	20.0743	2547.06	31.7055	2547.06	31.7055	91.3049
GBR-COVI-22	79306.7	2.72332	3.26546	0.45555	26.8882	0.96654	0.64171	0.85245	0.88196	3195.73	21.4797	3379.4	4.96243	3490.18	7.04779	3490.18	7.04779	91.5636
GBR-COVI-22	12010.7	3.24739	16.8702	1.5139	0.60469	1.72914	0.0761	0.6888	0.39835	472.78	3.13995	480.206	6.61619	515.799	34.8224	472.78	3.13995	91.6596
GBR-COVI-22	235372	5.46201	17.6361	0.98251	0.5301	3.31105	0.0683	3.16192	0.95496	425.896	13.0313	431.876	11.648	463.879	21.7721	425.896	13.0313	91.8119
GBR-COVI-22	26034	4.46778	8.83993	0.4991	4.57576	0.90567	0.29758	0.75572	0.83444	1679.31	11.1726	1744.86	7.54687	1824.33	9.05271	1824.33	9.05271	92.9079
GBR-COVI-22	101813	2.55595	17.0537	0.76001	0.63975	1.03419	0.07988	0.70074	0.67777	495.433	3.34262	502.149	4.09699	532.892	16.6638	495.433	3.34262	92.0507
GBR-COVI-22	6956.34	0.67795	12.8558	1.31962	1.72559	1.59371	0.16685	0.87963	0.55194	994.709	8.10811	1018.11	10.2454	1068.8	26.7122	1068.8	26.7122	93.068
GBR-COVI-22	60136.1	4.94248	10.7257	0.4569	3.03254	1.05661	0.23689	0.95269	0.90165	1379.87	11.8342	1415.85	8.06829	1470.37	8.67436	1470.37	8.67436	93.8451
GBR-COVI-22	171601	3.48265	10.2818	0.498	3.80881	1.24371	0.25438	1.13961	0.91663	1461.01	14.8978	1499.96	9.74602	1555.41	19.34916	1555.41	19.34916	93.9307
GBR-COVI-22	71587.8	2.23241	13.0173	0.88845	1.80758	1.16819	0.17278	0.75726	0.64823	1027.44	7.192	1048.2	7.63687	1091.76	17.7973	1091.76	17.7973	94.1087
GBR-COVI-22	329863	3.2154	14.122	0.58676	1.41232	1.1052	0.14617	0.93657	0.84743	879.486	7.69986	894.133	6.57013	990.544	12.0245	990.544	12.0245	94.5131
GBR-COVI-22	87516	1.93619	12.4455	0.86532	2.08413	1.07959	0.1902	0.64507	0.59751	1122.48	6.64548	1143.6	7.4078	1183.88	17.1067	1183.88	17.1067	94.8184
GBR-COVI-22	17313.9	2.07781	17.8716	1.05552	0.45726	1.29568	0.06063	0.59344	0.45802	379.465	2.1869	382.349	4.12814	399.829	25.8086	379.465	2.1869	94.9068
GBR-COVI-22	61982.4	2.607	12.4581	0.76096	2.06836	1.4173	0.18943	1.1946	0.84287	1118.29	12.2646	1138.39	9.70119	1176.93	15.0853	1176.93	15.0853	95.0176
GBR-COVI-22	56708.5	1.49807	9.74104	0.62592	3.87103	1.60865	0.2762	1.48149	0.92095	1572.18	20.669	1607.66	12.9814	1654.44	11.6142	1654.44	11.6142	95.0278
GBR-COVI-22	60359.9	1.31641	11.348	1.34322	2.66782	1.59462	0.22242	0.85933	0.53889	1294.65	10.0793	1319.59	11.7775	1360.3	25.8865	1360.3	25.8865	95.1737
GBR-COVI-22	62112.8	2.92389	12.3215	0.68365	2.15343	0.97481	0.19458	0.69263	0.71052	1146.15	7.27286	1166.16	6.75936	1203.5	13.527	1203.5	13.527	95.235
GBR-COVI-22	101169	3.32598	13.1863	0.75789	1.76508	1.07764	0.17083	0.76607	0.71088	1016.67	7.20532	1032.72	6.98502	1066.87	15.2373	1066.87	15.2373	95.2948
GBR-COVI-22	582449	5.61221	13.7811	1.05977	1.54616	1.67839	0.15615	1.3015	0.77544	935.357	11.3317	948.962	10.3492	980.676	21.567	980.676	21.567	95.3787
GBR-COVI-22	126154	6.32398	5.30575	0.6149	12.7376	1.10935	0.4944	0.92333	0.83232	1192.94	19.6921	2660.44	10.4446	2714.67	10.1404	2714.67	10.1404	95.3966
GBR-COVI-22	510028	0.9699	10.4482	0.52541	3.31018	0.85909	0.25318	0.67969	0.79117	1454.84	8.85202	1483.46	6.69932	1524.59	9.90046	1524.59	9.90046	95.4253
GBR-COVI-22	30302.6	2.81107	10.2787	0.88653	3.39292	1.48223	0.25686	1.17643	0.79369	1473.74	15.4985	1502.76	11.6248	1543.9	16.95	1543.9	16.95	95.456
GBR-COVI-22	2902964	4.53527	9.23359	0.5126	4.38755	0.95813	0.29677	0.80948	0.84485	1675.28	11.9422	1710	7.92307	1752.77	9.38144	1752.77	9.38144	95.5788
GBR-COVI-22	22380.9	2.60217	11.2457	0.81966	2.73567	1.13943	0.22627	0.79014	0.69345	1314.9	9.39843	1338.2	8.47272	1375.65	15.7874	1375.65	15.7874	95.6839
GBR-COVI-22	267456	3.14854	14.0962	0.69329	1.449	1.21721	0.14938	1.00046	0.82193	897.471	8.38188	909.457	7.31277	938.691	14.1931	938.691	14.1931	95.5099
GBR-COVI-22	161981	3.86915	9.12676	0.52532	4.50716	1.11569	0.30127	0.98426	0.8822	1697.61	14.6899	1732.29	9.27169	1774.43	9.58707	1774.43	9.58707	95.671
GBR-COVI-22	1978402	4.14011	12.6794	0.45907	2.01257	0.78823	0.1866	0.64076	0.8129	1102.94	6.49569	1119.76	5.34691	1152.52	9.0941	1152.52	9.0941	95.6987
GBR-COVI-22	49432	0.22918	9.3743	1.58574	4.23452	1.99884	0.29134	1.21688	0.60879	1648.22	17.698	1680.74	16.42	1721.56	29.1334	1721.56	29.1334	95.7399
GBR-COVI-22	24200.3	1.75451	13.0168	0.5852	1.82766	0.96119	0.17518	0.76245	0.79324	1161.85	6.732687	1055.44	6.30833	1086.26	11.7146	1086.26	11.7146	95.7966
GBR-COVI-22	298463	2.19498	5.4151	0.42197	12.3483	0.78029	0.48938	0.65634	0.84116	2568	13.9025	2631.25	7.3295	2680.27	6.981	2680.27	6.981	95.8115
GBR-COVI-22	142022	1.93281	17.4319	0.91049	0.58113	1.201	0.07429	0.78309	0.65203	461.944	3.49086	465.187	4.4821	481.249	20.1191	461.944	3.49086	95.9884
GBR-COVI-22	159923	11.1443	6.91152	0.8247	7.95311	1.17855	0.40232	0.84191	0.71436	2179.7	15.5707	2225.72	10.6305	2268.33	14.2182	2268.33	14.2182	96.0925
GBR-COVI-22	4.3E+07	45.5702	12.8747	0.60052	1.94256	1.21583	0.18266	1.05718	0.86951	1081.48	10.5255	1095.88	8.15009	1124.59	11.988	1124.59	11.988	96.1659
GBR-COVI-22	67177.7	2.82608	17.9059	0.78281	0.48643	1.30877	0.06403	1.04878	0.80134	400.116	4.06874	402.472	4.3488	415.996	17.4938	400.116	4.06874	96.1827
GBR-COVI-22	185181	2.11531	17.8265	0.65743	0.51657	1.0805	0.06737	0.8574	0.79352	420.285	3.48856	422.856	3.73699	436.88	14.6386	420.285	3.48856	96.2013
GBR-COVI-22	78123.6	2.49167	9.2544	0.39847	4.41596	0.68812	0.29896	0.56095	0.8152	1686.15	8.32266	1715.34	5.69701	1751.14	7.29558	1751.14	7.29558	96.289
GBR-COVI-22	90334.9	0.89629	17.5193	0.78589	0.57155	1.07597	0.07335	0.7347	0.68283	456.28	3.23641	459.016	3.97337	472.737	17.3892	456.28	3.236	

GBR-COVI-22	26082.9	1.82209	13.2155	0.66238	1.78772	2.28394	0.17414	2.18314	0.95587	1034.87	20.8726	1040.99	14.8729	1053.88	13.5353	1053.88	13.5353	98.1961
GBR-COVI-22	25117	2.50474	18.0346	0.7318	0.45317	0.96089	0.06048	0.62241	0.64774	378.521	2.28812	379.497	3.04262	385.431	16.4448	378.521	2.28812	98.2073
GBR-COVI-22	250196	5.6404	10.9886	0.54361	3.02101	1.1335	0.2431	0.99463	0.87749	1402.77	12.5387	1412.94	8.64726	1428.29	10.3783	1428.29	10.3783	98.2133
GBR-COVI-22	169147	1.51317	5.35823	0.58855	12.9727	0.96194	0.50856	0.76087	0.79098	2650.48	16.5353	2677.67	9.06859	2698.26	9.72089	2698.26	9.72089	98.2291
GBR-COVI-22	73536.4	2.06891	10.5918	0.64644	3.29686	1.08538	0.25604	0.87171	0.80314	1469.57	11.4551	1480.31	8.45611	1495.72	12.2341	1495.72	12.2341	98.2515
GBR-COVI-22	63141.7	1.83633	10.1063	0.55857	3.71726	0.98889	0.27445	0.81477	0.82392	1563.37	11.311	1575.09	7.91265	1590.81	10.4702	1590.81	10.4702	98.2752
GBR-COVI-22	2809696	3.49383	11.8976	0.52128	2.48223	0.8996	0.21569	0.73318	0.81501	1259.06	8.38565	1266.87	6.51135	1280.13	10.1481	1280.13	10.1481	98.3543
GBR-COVI-22	256322	4.04379	14.1286	0.60077	1.48638	0.89217	0.15346	0.65956	0.73927	920.302	5.65657	924.838	5.41557	935.654	12.3177	935.654	12.3177	98.3593
GBR-COVI-22	32548.2	3.1041	10.5215	0.90537	3.35455	1.32197	0.25891	0.96295	0.72842	1484.27	12.7667	1493.85	10.3409	1507.47	17.1068	1507.47	17.1068	98.4611
GBR-COVI-22	764002	8.61744	8.83084	0.45438	5.00647	0.91679	0.32361	0.79626	0.86854	1807.32	12.5497	1820.42	7.75922	1835.42	8.23178	1835.42	8.23178	98.4688
GBR-COVI-22	639255	3.63394	12.7012	0.44542	2.06628	1.00978	0.19191	0.90623	0.89746	1131.7	9.40603	1137.7	6.90938	1149.15	8.84182	1149.15	8.84182	98.4819
GBR-COVI-22	206203	2.36025	9.19845	0.46949	4.59256	0.98769	0.30912	0.86895	0.87978	1736.35	13.2269	1747.92	8.23575	1761.76	8.58347	1761.76	8.58347	98.5578
GBR-COVI-22	104666	2.83886	10.2554	0.42959	3.57375	1.01968	0.26873	0.81306	0.88407	1534.33	11.1015	1543.72	7.2967	1556.59	8.06632	1556.59	8.06632	98.5704
GBR-COVI-22	28552.4	3.28045	13.3432	0.85899	1.75762	1.04984	0.17238	0.57325	0.54603	1025.22	5.43354	1029.97	6.7944	1040.07	17.7727	1040.07	17.7727	98.5722
GBR-COVI-22	911310	2.57493	5.26848	0.52884	13.4458	1.00464	0.51769	0.85419	0.85024	2689.38	18.7829	2711.48	9.49511	2727.98	8.70662	2727.98	8.70662	98.5852
GBR-COVI-22	209371	2.68435	10.2067	0.52774	3.63364	0.91928	0.27134	0.7527	0.8188	1547.6	10.356	1556.93	7.31988	1569.59	9.88559	1569.59	9.88559	98.5991
GBR-COVI-22	65581.8	2.29993	17.8155	0.74571	0.52073	1.02608	0.0681	0.69933	0.68156	424.712	2.87442	425.64	3.56759	430.648	16.7345	424.712	2.87442	98.6218
GBR-COVI-22	50643.1	3.62069	11.652	0.5124	2.59783	0.77071	0.22218	0.57559	0.74683	1293.38	6.74525	1300.03	6.5606	1311	9.94552	1311	9.94552	98.6566
GBR-COVI-22	2631605	4.11953	12.0921	0.52718	2.37577	0.82613	0.21009	0.63606	0.76993	1229.29	7.11868	1235.34	5.90357	1245.9	10.3234	1245.9	10.3234	98.6667
GBR-COVI-22	92313.9	2.07125	10.2721	0.40923	3.58777	0.72227	0.2695	0.5945	0.8321	1538.28	8.13583	1546.83	5.73532	1558.52	7.69568	1558.52	7.69568	98.7014
GBR-COVI-22	9747.26	1.3576	13.3081	1.40877	1.69542	1.58143	0.16831	0.68436	0.42375	1002.79	6.35558	1006.81	10.1006	1015.54	28.8939	1015.54	28.8939	98.7542
GBR-COVI-22	41835.9	3.26466	14.0194	0.69125	1.496	0.97972	0.15435	0.69383	0.70819	925.275	5.98038	928.76	5.96242	937.023	14.1837	937.023	14.1837	98.7462
GBR-COVI-22	69284	4.31316	12.4698	0.9526	2.17577	1.23126	0.19866	0.77929	0.63292	1168.14	8.32607	1173.33	8.56555	1182.93	18.8991	1182.93	18.8991	98.7495
GBR-COVI-22	475063	1.51692	13.2945	0.5517	1.80594	0.85798	0.1757	0.65708	0.76585	1043.46	6.33027	1047.61	5.60708	1056.29	11.1086	1056.29	11.1086	98.7585
GBR-COVI-22	169118	2.04731	17.5239	0.59156	0.58347	1.01567	0.07492	0.82555	0.81281	465.74	3.70929	466.692	3.8001	471.4	13.0984	465.74	3.70929	98.7993
GBR-COVI-22	324727	3.6555	9.7862	0.63719	4.00493	2.00557	0.28707	1.90165	0.94819	1626.86	27.3423	1635.2	16.2968	1645.92	11.8202	1645.92	11.8202	98.8424
GBR-COVI-22	62556.5	1.33936	18.6195	0.75965	0.37513	1.13741	0.05138	0.84335	0.74147	323	2.6569	323.45	3.15055	326.695	17.3455	323	2.6569	98.8692
GBR-COVI-22	55786.5	2.76029	13.5864	0.59279	1.67777	0.91525	0.1672	0.69366	0.75789	996.684	6.40566	1000.13	5.82281	1007.69	12.112	1007.69	12.112	98.908
GBR-COVI-22	1015442	2.05557	10.1294	0.43775	3.72435	0.99646	0.27561	0.89516	0.89834	1569.22	12.468	1576.61	7.97642	1586.51	8.18311	1586.51	8.18311	98.9102
GBR-COVI-22	70618.5	1.88379	10.0165	0.43843	3.78421	0.77257	0.27813	0.63517	0.82215	1581.94	8.91008	1589.4	6.20493	1599.29	8.20768	1599.29	8.20768	98.9156
GBR-COVI-22	174141	1.85512	10.1809	0.47015	3.67538	0.75671	0.27356	0.59291	0.83354	1558.85	8.20996	1566.04	6.04015	1575.72	8.79993	1575.72	8.79993	98.9266
GBR-COVI-22	157675	6.59802	8.27707	0.56788	5.0264	0.91269	0.32512	0.71447	0.78281	1814.7	11.3004	1823.78	7.72968	1834.15	10.2905	1834.15	10.2905	98.9394
GBR-COVI-22	1940011	5.54946	13.2853	0.40271	1.80805	0.85494	0.17594	0.75416	0.88211	1044.78	7.27389	1048.37	5.58954	1055.89	8.10873	1055.89	8.10873	98.9476
GBR-COVI-22	45036.6	4.54542	11.1831	0.70108	2.92353	1.01963	0.23915	0.74001	0.72576	1382.28	9.20665	1388.02	7.71459	1396.83	13.449	1396.83	13.449	98.9585
GBR-COVI-22	372486	1.392	17.9051	0.55127	0.5116	1.1155	0.06713	0.96976	0.86935	418.848	3.93268	419.524	3.8335	423.221	12.302	418.848	3.93268	98.9667
GBR-COVI-22	149888	3.91115	12.7728	0.54938	2.03469	0.85971	0.19034	0.66117	0.76906	1123.2	6.81535	1127.19	5.85291	1134.89	10.9332	1134.89	10.9332	98.9704
GBR-COVI-22	31334.8	3.45421	13.9672	0.7697	1.51059	1.03281	0.15552	0.68227	0.66059	931.843	5.9195	934.678	6.30995	941.36	15.8711	941.36	15.8711	98.989
GBR-COVI-22	254327	2.36845	9.3272	0.45727	4.46888	0.8315	0.30528	0.69447	0.8352	1717.44	10.4705	1725.21	6.89925	1734.64	8.38626	1734.64	8.38626	99.0083
GBR-COVI-22	75016.7	1.1004	9.76357	0.53996	4.03606	0.80047	0.28856	0.59012	0.73722	1634.35	8.51917	1641.49	6.51399	1650.63	10.0267	1650.63	10.0267	99.0137
GBR-COVI-22	80362.2	40.7601	16.1263	0.64003	0.88276	1.05794	0.10457	0.84183	0.97522	641.107	5.13735	642.471	5.03667	647.293	13.7436	641.107	5.13735	99.0443
GBR-COVI-22	1.9E+07	2.98482	10.3949	0.53532	3.51232	0.98127	0.26673	0.82239	0.83808	1524.19	11.1631	1529.99	7.75573	1538	10.071	1538	10.071	99.1017
GBR-COVI-22	72778.3	5.80516	13.4111	0.61111	1.7505	0.94951	0.17223	0.72559	0.76417	1024.39	6.87238	1027.35	6.136	1033.64	12.3926	1033.64	12.3926	99.1052
GBR-COVI-22	545710	1.86536	9.62607	0.43561	4.19374	0.88057	0.29494	0.76277	0.86907	1666.17	11.2362	1672.8	7.21972	1681.1	8.0446	1681.1	8.0446	99.1122
GBR-COVI-22	12354.1	2.6894	13.213	0.59225	1.85289	1.12287	0.17903	0.95391	0.84953	1061.66	6.93373	1064.46	7.40511	1070.22	11.9027	1070.22	11.9027	99.2005
GBR-COVI-22	65065.4	3.38272	13.3414	0.67688	1.77736	1.02661	0.17409	0.77033	0.70336	1034.61	7.36324	1037.21	6.67091	1042.69	13.712	1042.69	13.712	99.2242
GBR-COVI-22	71267.1	4.0048	11.0706	0.67051	2.99547	1.01786	0.243	0.76468	0.75126	1402.26	9.63672	1406.47	7.74863	1412.84	12.8522	1412.84	12.8522	99.2513
GBR-COVI-22	196674	2.95718	4.55163	0.36047	17.4032	0.90567	0.5789	0.83083	0.91737	2944.25	19.6373	2957.33	8.6965	2966.23	5.81224	2966.23	5.81224	99.2589
GBR-COVI-22	61773.3	1.27426	10.7294	0.66567	3.23735	0.99513	0.25457	0.73933	0.74295	1462	9.67101	1466.15	7.71996	1472.14	12.6415	1472.14	12.6415	99.3114
GBR-COVI-22	247006	2.90809	5.11229	0.51581	14.2359	0.95544	0.53315	0.80424	0.84175	2754.69	18.0289	2765.55	9.06486	2773.48	8.45993	2773.48	8.45993	99.3227
GBR-COVI-22	2922118	2.43908	8.65836	0.4814	5.29482	0.75592	0.3349	0.58281	0.771	1862.07	9.42566	1868.03	6.45626	1874.64	6.88008	1874.64	6.88008	99.3295
GBR-COVI-22	88804.2	3.88844	12.7803	0.62561	2.04232	0.92467	0.19108	0.68047	0.73591	1127.2	7.03713	1129.74	6.30288	1134.63	12.456	1134.63	12.456	99.3447
GBR-COVI-22	16042	0.69432	8.86266	0.82565	4.96073	1.21657	0.32359	0.89145	0.73275	1807.25	14.0496	1812.66	10.2809	1818.86	15.0267	1818.86	15.0267	99.3618
GBR-COVI-22	39468.4	1.75436	17.0825	0.58036	0.66319	1.24901	0.08333	1.09541	0.87702	515.962	5.43162	516.564	5.05702	519.209	13.172	515.962	5.43162	99.3745
GBR-COVI-22	111478	0.88978	9.82855	0.53396	3.99577	1.03535												

GBR-COVI-22	75636.6	4.75251	12.9514	0.66565	1.97008	1.12825	0.18731	0.91006	0.80662	1106.81	9.25541	1105.34	7.59905	1102.43	13.3552	1102.43	13.3552	1102.43	100.397
GBR-COVI-22	211312	1.874	5.225	0.45148	13.8848	0.80271	0.53164	0.66371	0.26883	2748.34	14.851	2741.88	7.60318	2737.11	7.42657	2737.11	7.42657	2737.11	100.41
GBR-COVI-22	25598.8	1.30929	9.9687	0.90134	3.85232	1.44521	0.28303	1.11637	0.77247	1606.6	15.8753	1603.75	11.6507	1600	17.1268	1600	17.1268	1600	100.412
GBR-COVI-22	64554.7	3.73484	10.876	0.58607	3.15524	0.99802	0.25199	0.80773	0.80933	1448.73	10.4802	1446.28	7.69513	1442.67	11.1692	1442.67	11.1692	1442.67	100.42
GBR-COVI-22	102187	1.20993	8.16598	0.53526	6.01179	2.14965	0.35995	2.08189	0.96848	1981.93	35.5221	1977.55	18.7164	1972.96	9.54328	1972.96	9.54328	1972.96	100.454
GBR-COVI-22	296086	2.44676	12.7908	0.53839	2.06247	0.92059	0.19313	0.74674	0.81115	1138.29	7.79187	1136.44	6.29534	1132.89	10.7207	1132.89	10.7207	1132.89	100.476
GBR-COVI-22	70729.4	1.8935	13.5704	0.68636	1.71869	0.94791	0.1709	0.65247	0.68833	1017.07	6.13907	1015.54	6.08471	1012.22	13.9939	1012.22	13.9939	1012.22	100.478
GBR-COVI-22	99289.2	2.5244	13.6564	0.57883	1.69366	0.83149	0.16922	0.59618	0.717	1007.84	5.56241	1006.14	5.30855	1002.44	11.7653	1002.44	11.7653	1002.44	100.538
GBR-COVI-22	36980.4	3.60422	13.3829	0.67701	1.79759	1.03351	0.17627	0.77228	0.74724	1046.56	7.46045	1044.59	6.74306	1040.43	13.8815	1040.43	13.8815	1040.43	100.589
GBR-COVI-22	66667.7	1.82238	12.6071	0.9708	2.15449	1.31402	0.19881	0.88551	0.67389	1168.92	9.46669	1166.5	9.11297	1161.99	19.2453	1161.99	19.2453	1161.99	100.597
GBR-COVI-22	402620	2.53725	9.98211	0.67098	3.9263	1.00228	0.28639	0.74454	0.74285	1623.45	10.6854	1619.12	8.11129	1613.47	12.4976	1613.47	12.4976	1613.47	100.619
GBR-COVI-22	77714.4	0.89262	13.3789	0.95538	1.79379	1.27735	0.17606	0.84781	0.66373	1045.43	8.18192	1043.21	8.32778	1038.53	19.3097	1038.53	19.3097	1038.53	100.664
GBR-COVI-22	21847	3.03916	13.6762	0.84514	1.64987	1.09125	0.16628	0.68518	0.62788	991.56	6.29726	989.503	6.89902	984.938	17.2775	984.938	17.2775	984.938	100.672
GBR-COVI-22	32348.5	2.328	14.1494	0.66054	1.48202	1.01673	0.15428	0.75497	0.74255	924.906	6.50493	923.056	6.16435	918.658	14.0177	918.658	14.0177	918.658	100.68
GBR-COVI-22	64524.1	3.46686	13.4842	0.61809	1.76367	1.10436	0.17407	0.91375	0.82741	1034.47	8.73307	1032.2	7.15613	1027.37	12.5426	1027.37	12.5426	1027.37	100.691
GBR-COVI-22	60020.6	1.07967	11.3136	0.76839	2.87567	1.04795	0.23858	0.71123	0.67869	1379.32	8.83167	1375.56	7.89536	1369.71	14.8124	1369.71	14.8124	1369.71	100.701
GBR-COVI-22	83264.4	3.3376	13.5473	0.61583	1.73223	0.98667	0.17195	0.7708	0.81722	1022.84	7.29045	1020.58	6.35177	1015.71	12.4784	1015.71	12.4784	1015.71	100.702
GBR-COVI-22	93611.8	4.94374	10.5472	0.35211	3.43367	1.01995	0.26539	0.95686	0.93815	1517.36	12.9369	1512.14	8.02067	1504.81	6.62775	1504.81	6.62775	1504.81	100.835
GBR-COVI-22	26314.7	4.05773	10.4096	0.70084	3.5055	1.1414	0.26869	0.90082	0.78922	1534.17	12.2987	1528.45	9.01752	1520.53	13.2157	1520.53	13.2157	1520.53	100.897
GBR-COVI-22	35227.7	1.90246	13.415	0.7452	1.77107	1.15836	0.17472	0.88537	0.76433	1038.05	8.48883	1034.91	7.51745	1028.26	15.1238	1028.26	15.1238	1028.26	100.952
GBR-COVI-22	20374.2	1.20699	9.33766	0.65978	4.49368	1.03609	0.30929	0.79707	0.76931	1737.22	12.138	1729.81	8.60547	1720.83	12.163	1720.83	12.163	1720.83	100.953
GBR-COVI-22	1312799	2.22369	7.19554	0.45168	7.83935	0.89857	0.41212	0.7768	0.86448	2224.61	14.6144	2212.74	8.09193	2201.74	7.84454	2201.74	7.84454	2201.74	101.039
GBR-COVI-22	347113	2.57903	13.2462	0.50653	1.86931	0.83997	0.18128	0.66251	0.79441	1073.95	6.53997	1070.29	5.51679	1062.85	10.1891	1062.85	10.1891	1062.85	101.045
GBR-COVI-22	59857.7	2.56018	17.8777	0.63532	0.52042	1.10268	0.06834	0.89853	0.81486	426.126	3.70506	425.434	3.83242	421.664	14.2678	421.664	14.2678	421.664	101.058
GBR-COVI-22	70229.8	0.80457	5.0925	0.57869	14.665	0.92998	0.54666	0.72794	0.78274	2811.26	16.5857	2793.76	8.84028	2781.13	9.48254	2781.13	9.48254	2781.13	101.083
GBR-COVI-22	48409.2	3.35193	14.1044	0.77567	1.51393	1.15104	0.15684	0.8444	0.7336	939.217	7.38004	936.027	7.03848	928.546	16.0513	928.546	16.0513	928.546	101.149
GBR-COVI-22	50289.8	0.5803	16.6429	0.89783	0.77493	1.14005	0.09482	0.69278	0.60768	583.99	3.86794	582.585	5.05402	577.119	19.6794	577.119	19.6794	577.119	101.191
GBR-COVI-22	237413	2.66336	12.3511	0.50305	2.28444	0.79352	0.20698	0.61367	0.77335	1212.71	6.78394	1207.49	5.60416	1198.17	9.92365	1198.17	9.92365	1198.17	101.214
GBR-COVI-22	81481	4.06157	12.5811	0.54141	2.18181	0.90442	0.20096	0.72321	0.79964	1180.45	7.80114	1175.26	6.29721	1165.68	10.7773	1165.68	10.7773	1165.68	101.267
GBR-COVI-22	37812.4	3.35196	11.4238	0.83725	2.81888	1.11616	0.23627	0.73174	0.65559	1367.27	9.01508	1360.57	8.36578	1350.03	16.266	1350.03	16.266	1350.03	101.277
GBR-COVI-22	68265.1	4.56645	13.5175	0.69714	1.75882	0.9961	0.17411	0.70269	0.70907	1034.72	6.71738	1030.41	6.41519	1021.27	14.1461	1021.27	14.1461	1021.27	101.317
GBR-COVI-22	13007.1	3.15763	9.93257	0.8926	3.89452	1.24426	0.28617	0.85181	0.68459	1622.38	11.2178	1612.55	10.0531	1599.71	16.9256	1599.71	16.9256	1599.71	101.447
GBR-COVI-22	13717.7	2.27868	9.39082	0.74956	4.46292	1.05817	0.30889	0.73337	0.69306	1735.23	11.1569	1724.1	8.77791	1710.6	14.0332	1710.6	14.0332	1710.6	101.414
GBR-COVI-22	55085.7	3.52729	13.1717	0.65604	1.9039	0.99213	0.18378	0.7406	0.74648	1087.62	7.41204	1082.45	6.60489	1072.09	13.2622	1072.09	13.2622	1072.09	101.448
GBR-COVI-22	51356	2.22092	16.3291	0.75313	0.85198	0.97488	0.10229	0.61837	0.63431	627.804	3.69913	625.737	4.55384	618.252	16.2881	618.252	16.2881	618.252	101.545
GBR-COVI-22	14471.3	3.49052	14.0411	0.8922	1.50126	1.34737	0.15612	0.92251	0.68467	995.183	8.03055	990.9	8.21154	920.79	20.1929	920.79	20.1929	920.79	101.563
GBR-COVI-22	95861.4	2.97271	13.1031	0.55085	1.9462	1.01029	0.1866	0.84681	0.83818	1102.94	8.5845	1097.14	6.77656	1085.66	11.0354	1085.66	11.0354	1085.66	101.593
GBR-COVI-22	90187.9	5.76565	9.19934	0.57897	4.75731	0.9877	0.32017	0.8002	0.81107	1790.54	12.5102	1777.4	8.28714	1761.98	10.5844	1761.98	10.5844	1761.98	101.621
GBR-COVI-22	74488.6	1.47939	9.74433	0.59822	4.15999	0.84477	0.29738	0.95588	0.70537	1678.33	8.80492	1666.18	6.91542	1650.89	11.101	1650.89	11.101	1650.89	101.662
GBR-COVI-22	66914.4	3.07563	13.3249	1.00787	1.84749	1.32256	0.18026	0.8561	0.6373	1068.37	8.42854	1062.54	8.71318	1050.6	20.3351	1050.6	20.3351	1050.6	101.692
GBR-COVI-22	28870.4	2.28752	17.7228	0.67624	0.53869	0.96153	0.07043	0.68296	0.71029	438.753	2.89681	437.561	3.41807	431.271	15.0826	431.271	15.0826	431.271	101.735
GBR-COVI-22	110262	2.86648	11.3442	0.50059	2.92478	0.8357	0.24223	0.66919	0.80075	1398.3	8.41194	1388.34	6.32362	1373.06	9.62893	1373.06	9.62893	1373.06	101.838
GBR-COVI-22	483960	2.48	10.0697	0.43551	3.87948	0.73379	0.28616	0.59058	0.80843	1622.33	8.47057	1609.42	5.92392	1592.56	8.13489	1592.56	8.13489	1592.56	101.869
GBR-COVI-22	62562.6	3.8631	9.07354	0.37632	4.90201	0.73693	0.32589	0.63336	0.85946	1818.43	10.0354	1802.6	6.21493	1784.32	6.86598	1784.32	6.86598	1784.32	101.912
GBR-COVI-22	113725	4.62344	12.7771	0.7366	2.08381	1.17175	0.19548	0.91119	0.77764	1151	9.60492	1143.49	8.03978	1129.26	14.6614	1129.26	14.6614	1129.26	101.925
GBR-COVI-22	198729	1.51985	13.4205	0.60649	1.80595	0.98445	0.17766	0.7754	0.78765	1054.21	7.54091	1047.61	6.43361	1033.87	12.2731	1033.87	12.2731	1033.87	101.967
GBR-COVI-22	21800.6	1.28479	10.0269	0.62598	3.8924	1.11015	0.28684	0.88963	0.80137	1625.72	12.7834	1612.11	8.96843	1594.35	12.401	1594.35	12.401	1594.35	101.968
GBR-COVI-22	270537	2.48651	16.6933	0.49689	0.79104	0.98532	0.09655	0.85084	0.86352	594.133	4.82914	591.763	4.41878	582.666	10.7871	582.666	10.7871	582.666	101.968
GBR-COVI-22	719892	3.06073	10.7037	0.54354	3.36449	0.96967	0.26361	0.80302	0.82813	1508.28	10.7992	1496.17	7.59014	1479.04	10.306	1479.04	10.306	1479.04	101.977
GBR-COVI-22	54900	2.32225	10.6337	0.53101	3.40261	0.95104	0.26538	0.78672	0.82722	1517.28	10.636	1505	7.4634	1487.73	10.1203	1487.73	10.1203	1487.73	101.987
GBR-COVI-22	490831	3.15352	12.8222	0.64441	2.08398	0.96404	0.19556	0.71701	0.74375	1151.4	5.56037	1143.54	6.614						

GBR-COV1-22	25131.5	3.46119	17.7074	0.8797	0.54097	1.15365	0.07095	0.67306	0.58342	441.847	2.87424	439.064	4.11229	424.481	20.9042	441.847	2.87424	104.091
GBR-COV1-22	8391.07	2.35115	13.1297	1.03427	1.86206	1.29325	0.18271	0.76726	0.59328	1081.78	7.64109	1067.72	8.54352	1039.07	21.0362	1039.07	21.0362	104.111
GBR-COV1-22	291625	3.26718	12.8768	0.55636	2.10823	0.91912	0.19858	0.73159	0.79597	1167.69	7.8137	1151.5	6.33011	1121.14	11.096	1121.14	11.096	104.152
GBR-COV1-22	8190.99	3.03252	13.2401	0.88878	1.82342	1.2105	0.18017	0.82003	0.67743	1067.93	8.07043	1053.91	7.93808	1024.98	18.0332	1024.98	18.0332	104.19
GBR-COV1-22	46032.1	1.41828	8.25842	0.67736	6.15889	1.05989	0.37232	0.81327	0.76732	2040.32	14.2238	1998.63	9.25887	1955.8	12.1355	1955.8	12.1355	104.321
GBR-COV1-22	30499.2	3.03192	11.6511	0.58732	2.76785	0.7882	0.23675	0.52154	0.66169	1369.78	6.43595	1346.91	5.8792	1310.76	11.4673	1310.76	11.4673	104.503
GBR-COV1-22	271370	1.80707	9.93521	0.5729	4.14694	0.94764	0.30117	0.75485	0.79656	1697.12	11.2631	1663.61	7.7528	1621.55	10.6593	1621.55	10.6593	104.66
GBR-COV1-22	87333.8	1.18394	11.4994	0.56345	2.87182	0.8865	0.24253	0.68368	0.77121	1399.81	8.60244	1374.55	6.67662	1335.49	10.9134	1335.49	10.9134	104.816
GBR-COV1-22	35993.5	2.33157	11.3782	0.66612	2.93255	0.99447	0.2457	0.73024	0.7343	1416.28	9.28494	1390.35	7.5301	1350.77	13.0275	1350.77	13.0275	104.849
GBR-COV1-22	26230.4	3.03306	18.0521	0.7785	0.49122	1.14942	0.06544	0.83484	0.72632	408.606	3.30536	405.744	3.84455	389.459	17.7354	408.606	3.30536	104.916
GBR-COV1-22	18896.9	1.48304	17.4459	1.00391	0.58692	1.40305	0.07608	0.89725	0.6395	472.698	4.08952	468.899	5.26903	450.322	23.9769	472.698	4.08952	104.969
GBR-COV1-22	39337	5.38218	18.2899	0.74297	0.46468	1.28828	0.0626	1.03872	0.80628	391.406	3.94465	387.511	4.15009	364.295	17.178	391.406	3.94465	107.442
GBR-COV1-22	8488.62	0.55347	17.771	1.30279	0.47702	1.59794	0.06404	0.92136	0.57659	400.135	3.5746	396.029	5.24019	372.108	29.3901	400.135	3.5746	107.532
GBR-COV1-22	115465	24.4027	16.7109	0.42212	0.83176	0.99063	0.10192	0.89607	0.90455	625.64	5.34271	614.586	4.56742	574.054	9.18435	625.64	5.34271	108.986
GBR-COV1-22	11482.4	0.98479	17.7726	1.80936	0.52044	1.99621	0.06917	0.82654	0.41405	431.143	3.447	425.448	6.93819	394.687	40.7537	431.143	3.447	109.237
GBR-COV1-22	25695.2	1.6499	17.8752	0.79683	0.54612	1.14305	0.07206	0.81516	0.71315	448.583	3.53235	442.45	4.09959	410.652	17.9204	448.583	3.53235	109.237
GBR-COV1-22	18088.5	1.73838	17.8095	1.03388	0.53918	1.54382	0.07134	1.14144	0.73936	444.25	4.90005	437.887	5.49133	404.544	23.2724	444.25	4.90005	109.815
GBR-COV1-22	14241.5	2.08613	17.9934	0.83166	0.48902	1.25308	0.06567	0.92639	0.73929	410.043	3.68032	404.244	4.17866	371.213	18.9802	410.043	3.68032	110.46
GBR-COV1-22	18467.3	1.85584	17.9825	1.00485	0.51307	1.30302	0.06844	0.80942	0.62119	426.764	3.34245	420.509	4.48643	386.33	22.935	426.764	3.34245	110.466
GBR-COV1-22	10577.6	1.4519	18.4542	1.48329	0.38271	1.72997	0.05308	0.84552	0.48875	333.432	2.74757	329.029	4.86194	297.979	34.4273	333.432	2.74757	111.898
GBR-COV1-22	28077.7	6.86125	17.4383	0.79971	0.6704	1.06974	0.08612	0.70951	0.66325	532.546	3.6266	520.957	4.35937	470.486	17.7251	532.546	3.6266	113.191
GBR-COV1-22	6575.87	4.65102	17.1972	1.9119	0.60532	2.3423	0.07918	0.89771	0.38326	491.251	4.24617	480.604	8.96822	430.103	48.2252	491.251	4.24617	114.217
GBR-COV1-22	6669.42	3.25496	17.4621	1.64752	0.56541	2.44093	0.07509	0.89834	0.36803	466.744	4.04474	455.04	8.95221	396.326	50.8694	466.744	4.04474	117.768

GBR-COV2-22

Sample	U (ppm)	206Pb 204Pb	U/Th	206Pb* 207Pb*	Δ± (%)	207Pb* 235U	Δ± (%)	206Pb* 238U	Δ± (%)	error corr.	206Pb* 238U	Δ± (Ma)	207Pb* 235U	Δ± (Ma)	206Pb* 207Pb*	Δ± (Ma)	Best age (Ma)	Δ± (Ma)	Conc (%)
GBR-COV2-22	839.136	9618.12	7.51509	13.4981	2.17488	0.49441	3.31616	0.0498	2.50132	0.75428	313.273	7.64861	407.914	11.1404	986.19	44.311	313.273	7.64861	31.766
GBR-COV2-22	268.726	3085.36	2.254	9.31564	9.66055	0.88026	10.3849	0.06254	3.13494	0.30187	391.057	11.895	641.121	49.4046	1662.29	183.717	391.057	11.895	23.5252
GBR-COV2-22	628.366	12274.7	2.83051	14.1938	2.07415	0.51127	2.52864	0.05394	1.43238	0.56646	338.685	4.72601	419.301	8.6863	890.943	43.0426	338.685	4.72601	38.0142
GBR-COV2-22	94.366	66573.7	3.55508	14.908	2.55573	0.67067	2.75548	0.07325	1.029	0.37344	455.698	4.52725	521.117	11.2321	819.207	53.4025	455.698	4.52725	55.6267
GBR-COV2-22	137.309	27574	1.27797	16.2219	2.5721	0.53739	2.86928	0.06433	1.22448	0.42676	401.894	4.77087	436.701	10.1841	624.613	55.938	401.894	4.77087	64.3429
GBR-COV2-22	189.72	53642.2	1.3638	16.3538	1.81788	0.56756	2.19961	0.06815	1.23832	0.56297	424.999	5.09314	456.434	8.08669	617.949	39.228	424.999	5.09314	68.7758
GBR-COV2-22	415.501	43633	88.9436	16.7008	0.90182	0.53409	1.42392	0.06545	1.10189	0.77384	408.659	4.36323	434.52	5.03365	574.015	19.6248	408.659	4.36323	71.1932
GBR-COV2-22	101.646	31004.7	1.71415	16.4328	1.36894	0.57877	1.77684	0.07004	1.12607	0.63375	436.406	4.75157	463.672	6.61444	601.063	29.7713	436.406	4.75157	72.6057
GBR-COV2-22	93.4832	322186	2.22439	16.6327	1.0682	0.59156	1.28301	0.07191	0.71067	0.55391	447.626	3.0732	471.863	4.84215	591.506	23.1401	447.626	3.0732	75.6757
GBR-COV2-22	265.125	34425.7	8.86367	15.1263	1.86034	0.86523	3.49397	0.09626	2.95747	0.84645	592.459	16.7408	632.971	16.4583	780.44	39.1274	592.459	16.4583	75.9135
GBR-COV2-22	379.801	44585.4	1.541	16.9508	0.54424	0.52633	1.43702	0.06566	1.32982	0.9254	409.968	5.28209	429.369	5.03156	534.863	11.9212	409.968	5.28209	76.6492
GBR-COV2-22	92.3529	111177	1.99236	16.2219	0.37228	10.3735	1.02263	0.14077	0.95243	0.93135	2175.82	17.5883	2468.69	9.47096	2719.46	6.1378	2719.46	6.1378	80.0092
GBR-COV2-22	17.7884	22452.6	2.24591	11.1742	1.58596	2.28909	1.77806	0.18837	0.80302	0.45163	1112.56	8.20562	1208.93	12.5657	1385.38	30.4663	1385.38	30.4663	80.3076
GBR-COV2-22	352.292	48955.3	2.75004	9.35808	0.41843	3.56608	0.06484	0.24437	0.98313	0.92012	1409.4	12.4462	1542.02	8.47331	1728.87	7.68113	1728.87	7.68113	81.5215
GBR-COV2-22	186.823	680804	4.34684	12.4618	0.46241	1.78819	1.13615	0.16269	1.03779	0.91343	971.712	9.36105	1041.17	7.39883	1189.97	9.11133	1189.97	9.11133	81.6555
GBR-COV2-22	136.429	119798	2.5119	9.54477	0.51495	3.43308	1.68835	0.23972	1.60779	0.95228	1385.22	20.0412	1512	13.2769	1694.36	9.49876	1694.36	9.49876	81.7581
GBR-COV2-22	137.404	245990	1.27743	17.1801	0.6749	0.54751	1.24375	0.06877	1.04471	0.83997	428.294	4.32903	443.366	4.46814	522.339	14.8051	428.294	4.32903	81.9955
GBR-COV2-22	46.0547	75964.9	2.23423	13.0911	2.25248	1.58409	2.36598	0.15199	0.72388	0.80596	912.094	6.15669	963.978	14.728	1084.27	45.1847	1084.27	45.1847	84.1205
GBR-COV2-22	190.018	85606.7	1.29382	17.2203	0.66981	0.54346	1.31158	0.06866	1.12711	0.35359	428.104	4.66846	440.701	4.6892	507.577	14.7455	428.104	4.66846	84.4292
GBR-COV2-22	296.762	88176.1	5.344	17.2784	0.51616	0.53517	1.15014	0.06783	1.02568	0.89179	423.059	4.19992	435.238	4.07117	500.222	11.4506	423.059	4.19992	84.5741
GBR-COV2-22	186.106	242476	1.31713	13.6888	3.00056	1.40382	3.22563	0.14077	1.18376	0.36699	848.994	9.41641	890.553	19.1296	995.197	61.0005	995.197	61.0005	85.3019
GBR-COV2-22	361.845	32996.5	3.13756	12.949	0.50963	1.67306	0.9508	0.15885	0.80218	0.8437	950.384	7.08848	998.351	6.04264	1105.25	10.2169	1105.25	10.2169	85.9881
GBR-COV2-22	121.632	311754	2.21374	9.04143	0.47004	4.08916	0.81753	0.27045	0.66889	0.81818	1543.11	9.17929	1652.14	6.67003	1793.71	8.55914	1793.71	8.55914	86.029
GBR-COV2-22	146.376	39620.6	2.01217	10.3665	0.48378	3.05987	0.67598	0.23245	0.47206	0.69833	1347.3	5.7394	1422.71	5.1732	1537.4	9.10335	1537.4	9.10335	87.6531
GBR-COV2-22	426.324	105839	1.67899	9.31068	0.32577	3.98884	0.67464	0.27163	0.59077	0.87568	1549.05	8.1348	1631.93	5.47711	1740.45	9.56957	1740.45	9.56957	89.0027
GBR-COV2-22	63.6115	113435	2.12753	5.38643	1.3928	11.5048	1.57697	0.45367	0.73948	0.46893	2411.55	14.8772	2564.97	14.7329	2688.55	23.0231	2688.55	23.0231	89.697
GBR-COV2-22	30.5038	71154.8	1.90162	13.63	0.97478	1.50441	1.29514	0.15022	0.85271	0.6584	902.194	7.17906	932.176	7.89981	1003.73	19.7762	932.176	7.89981	89.8839
GBR-COV2-22	173.069	69068	1.37126	13.0688	0.59063	1.70324	1.00147	0.16341	0.8086	0.80742	975.704	7.32152	1009.75	6.40714	1084.38	11.848	1084.38	11.848	89.9782
GBR-COV2-22	93.9858	597229	3.1992	5.48359	0.43396	11.2634	0.84973	0.45154	0.73056	0.85976	2402.08	14.65	2545.18	7.92457	2661.26	7.19228	2661.26	7.19228	90.2608
GBR-COV2-22	439.748	230680	4.64677	13.6795	0.38669	1.50014	3.15122	0.15027	1.25708	0.95579	902.489	10.5866	930.442	8.0132	997.246	7.83812	997.246	7.83812	90.4981
GBR-COV2-22	292.568	468768	4.56813	5.63869	0.42794	10.7783	1.17118	0.14504	1.09019	0.93085	2373.14	21.6441	2504.19	10.8827	2612.22	7.12592	2612.22	7.12592	90.8475
GBR-COV2-22	398.562	219087	4.17199	12.9218	0.38301	1.79655	0.67962	0.1699	0.56138	0.82602	1011.58	5.2557	1044.21	4.43321	1113.1	7.6674	1113.1	7.6674	80.8803
GBR-COV2-22	165.093	185436	4.62045	12.4085	0.50954	2.02709	1.54384	0.18386	1.45728	0.94393	1088.05	14.5901	1124.64	10.4977	1196.03	10.0531	1196.03	10.0531	90.9712
GBR-COV2-22	276.682	153824	3.72487	12.5287	0.47669	1.96657	3.19767	0.1804	3.1619	0.98881	1069.14	31.1509	1104.13	21.527	1173.76	9.45636	1173.76	9.45636	91.8072
GBR-COV2-22	29.4613	30562.9	2.31781	13.4378	0.90716	1.59003	1.25619	0.1568	0.83952	0.6683	938.474	7.33562	966.311	7.83058	1029.01	18.9129	1029.01	18.9129	91.2566
GBR-COV2-22	52.6217	74534.5	1.34446	17.7428	1.28064	0.49724	1.48188	0.06471	0.74534	0.50297	404.23	2.92035	409.835	4.99716	441.508	28.5126	404.23	2.92035	91.5507
GBR-COV2-22	134.216	68125.6	2.18285	17.8816	0.67336	0.47011	1.25186	0.06176	1.05354	0.84158	386.349	3.95076	391.266	4.0648	420.419	15.0966	386.349	3.95076	91.8962
GBR-COV2-22	71.5735	364403	1.63054	9.87907	0.43043	3.63711	0.93396	0.2625	0.82885	0.86746	1502.62	11.1095	1557.69	7.43829	1633.17	7.99795	1633.17	7.99795	92.0062
GBR-COV2-22	43.7338	106926	1.63495	11.8011	0.71066	2.34378	2.9116	0.20246	2.82346	0.98973	1188.51	30.6455	1225.67	20.7253	1291.65	18.8329	1291.65	18.8329	92.0143
GBR-COV2-22	182.074	117732	1.88199	9.42495	0.47781	4.03181	0.72112	0.27793	0.53976	0.74851	1580.94	7.56747	1640.63	5.86699	1717.98	7.89891	1717.98	7.89891	92.0235
GBR-COV2-22	70.0475	168702	1.70121	5.52803	0.66492	11.3957	1.13591	0.46033	0.92094	0.81076	2441	18.7141	2556.07	6.0307	2648.66	11.0308	2648.66	11.0308	92.1599
GBR-COV2-22	76.0437	118654	1.72046	13.3983	0.66264	1.64749	0.96785	0.16145	0.70476	0.72817	964.85	6.31548	988.589	6.11548	1041.64	13.4067	1041.64	13.4067	92.6276
GBR-COV2-22	366.643	541491	2.04671	17.4367	0.68138	0.57087	0.94334	0.07279	0.65238	0.95127	452.914	2.85333	458.577	3.48094	487.049	15.0435	452.914	2.85333	92.9414
GBR-COV2-22	55.684	83487.9	3.23158	10.8775	0.61091	2.92277	0.93598	0.2326	0.70388	0.75683	1348.09	8.61724	1387.82	7.08117	1449.43	11.6459	1449.43	11.6459	93.0089
GBR-COV2-22	160.366	42569.2	2.15489	8.84209	0.74119	4.68408	1.1783	0.30308	0.10558	0.72727	1706.55	13.6527	1764.4	9.85356	1833.57	13.551	1833.57	13.551	93.0729
GBR-COV2-22	47.8634	24293.6	1.76457	15.9904	0.97932	0.84162	1.13965	0.09931	0.54567	0.4788	610.382	3.17782	620.04	5.28836	655.451	21.4594	610.382	3.17782	93.1241
GBR-COV2-22	96.1668	141451	1.39047	9.71583	0.4882	3.84979	0.81337	0.27376	0.65039	0.79963	1559.84	9.01102	1603.22	6.55598	1660.69	9.04163	1660.69	9.04163	93.9276
GBR-COV2-22	44.004	39171.1	1.91704	12.8489	1.93838	1.88406	2.11863	0.17755	0.85514	0.40563	1053.59	8.31189	1075.49	14.0559	1120.16	38.665	1120.16	38.665	94.0566
GBR-COV2-22	27.8868	25310.8	1.53324	12.6132	0.98362	1.96238	1.2826	0.1824	0.82194	0.64084	1080.07	8.17368	1102.7	8.62727	1147.63	19.543	1147.63	19.543	94.1128
GBR-COV2-22	176.71	92017.6	1.60127	9.8916	0.39														

GBR-COV2-22	46.2023	155316	2.04715	9.87675	0.60194	3.84402	0.92912	0.27772	0.70776	0.76175	1579.87	9.9169	1602.02	7.48671	1631.25	11.186	1631.25	11.186	96.8503
GBR-COV2-22	507.344	799123	20.6605	13.5104	0.47087	1.69427	1.12347	0.16715	1.02003	0.90793	996.367	9.41682	1006.37	7.17367	1028.21	9.52185	1028.21	9.52185	96.9035
GBR-COV2-22	35.2243	26511.8	2.4991	13.1303	1.46637	1.80749	1.71826	0.17474	0.88912	0.51745	1038.16	8.52557	1048.17	11.2329	1069.1	29.5518	1069.1	29.5518	97.1068
GBR-COV2-22	12.2678	1233.7	3.15395	12.5238	0.81368	2.03672	1.12957	0.18911	0.77739	0.68822	1112.87	7.69269	1149.67	11.2657	1149.67	16.2746	1149.67	16.2746	97.1268
GBR-COV2-22	531.801	372836	4.62952	13.8425	0.30627	1.5635	0.77609	0.15832	0.71309	0.91882	947.425	6.28295	955.854	4.80626	975.321	6.2554	975.321	6.2554	97.1397
GBR-COV2-22	234.412	2952415	3.61671	10.7749	0.36977	3.15165	2.31867	0.24817	2.289	0.9872	1429.03	29.3387	1445.4	17.8744	1469.56	7.02003	1469.56	7.02003	97.2518
GBR-COV2-22	89.8398	92313.3	1.45753	13.7704	1.07743	1.5897	1.25734	0.16021	0.60689	0.49048	957.925	5.40222	966.181	7.71246	984.995	21.9296	984.995	21.9296	97.2417
GBR-COV2-22	145.655	1.2E+08	2.76783	10.7761	0.4645	3.14829	1.0829	0.24804	0.97821	0.90333	1428.37	12.5328	1444.58	8.34512	1468.51	8.81989	1468.51	8.81989	97.2671
GBR-COV2-22	83.2562	173296	2.53038	9.95029	0.49065	3.78341	0.81687	0.27584	0.65304	0.79944	1570.4	9.10178	1589.23	6.56047	1614.28	9.13869	1614.28	9.13869	97.2815
GBR-COV2-22	174.308	169075	2.54065	5.02462	0.35442	14.3739	0.75155	0.52761	0.66272	0.8818	2731.37	14.7553	2774.71	7.13489	2806.36	5.79625	2806.36	5.79625	97.3279
GBR-COV2-22	142.018	115222	2.78928	9.50529	0.44513	4.22761	0.70651	0.29354	0.54832	0.77609	1659.18	8.0211	1679.4	5.80159	1704.73	8.20173	1704.73	8.20173	97.3279
GBR-COV2-22	108.021	685288	1.8973	10.3681	0.65202	3.46508	1.13148	0.26245	0.92472	0.81727	1502.35	12.3925	1519.3	8.91601	1542.98	12.2584	1542.98	12.2584	97.3667
GBR-COV2-22	69.524	98548.3	1.39241	11.6475	0.56647	2.57861	0.78251	0.21995	0.53901	0.68882	1281.62	6.2647	1294.59	5.72529	1316.14	10.9999	1316.14	10.9999	97.3768
GBR-COV2-22	234.667	2519990	3.19659	8.99919	0.38217	4.76557	0.97656	0.31336	0.89867	0.92024	1757.23	18.8223	1778.85	8.19616	1804.31	6.94994	1804.31	6.94994	97.3904
GBR-COV2-22	153.318	317397	2.93362	10.4944	0.51666	3.35531	1.18376	0.25765	1.06505	0.89972	1477.81	14.0657	1494.03	9.26017	1517.1	9.74545	1517.1	9.74545	97.4105
GBR-COV2-22	675.187	1204907	5.4276	12.0197	0.37512	2.38514	0.84634	0.20962	0.75867	0.86941	1226.81	8.47541	1238.15	6.55505	1257.96	7.35186	1257.96	7.35186	97.524
GBR-COV2-22	83.0151	86036.6	1.79672	9.81374	0.61735	3.93677	1.03114	0.28249	0.82588	0.80094	1603.87	11.7269	1621.27	8.34942	1643.92	11.4559	1643.92	11.4559	97.5638
GBR-COV2-22	138.047	106763	2.44718	10.4978	0.50642	3.364	0.9664	0.25826	0.82309	0.8517	1480.92	10.8905	1496.05	7.56429	1517.55	9.55152	1517.55	9.55152	97.5863
GBR-COV2-22	87.2409	302045	1.92161	9.74025	0.49051	4.03372	0.90823	0.28648	0.76437	0.84161	1623.9	10.9727	1641.02	7.39009	1663.01	9.07788	1663.01	9.07788	97.6483
GBR-COV2-22	173.813	278965	1.46186	9.7438	0.38171	3.99462	0.78887	0.28493	0.69036	0.87512	1616.15	9.86852	1633.1	6.40639	1654.99	7.07313	1654.99	7.07313	97.6532
GBR-COV2-22	91.766	104639	3.31151	10.8235	0.56639	3.10917	0.84718	0.24672	0.62966	0.74325	1421.52	8.03261	1434.96	6.50881	1454.93	10.7815	1454.93	10.7815	97.7031
GBR-COV2-22	241.584	120172	4.72056	12.7897	0.48834	2.008	1.33533	0.18784	1.24263	0.93058	1109.64	12.6673	1118.21	9.05137	1134.94	9.73131	1134.94	9.73131	97.7303
GBR-COV2-22	132.24	199289	2.5141	11.9362	0.53148	2.44019	1.15443	0.21289	1.02479	0.8817	1244.18	11.5953	1254.53	8.31476	1272.32	10.3712	1272.32	10.3712	97.7856
GBR-COV2-22	56.8168	135444	2.64317	13.6678	0.62923	1.6359	0.83411	0.16371	0.54744	0.65632	977.382	4.96471	984.136	5.25637	999.211	12.767	999.211	12.767	97.8184
GBR-COV2-22	89.2717	909198	0.90994	10.1683	0.49086	3.64028	0.98274	0.27062	0.85137	0.86632	1543.96	11.6892	1558.39	7.82828	1577.97	9.18448	1577.97	9.18448	97.8448
GBR-COV2-22	51.6199	99081.1	1.40427	13.8014	0.85688	1.58631	1.19918	0.16031	0.83826	0.69903	958.503	7.46596	964.849	7.46841	979.355	17.4514	979.355	17.4514	97.8708
GBR-COV2-22	99.9109	214861	1.7745	12.5062	0.52929	2.14263	0.7925	0.19605	0.58973	0.74413	1154.06	6.2314	1162.68	5.48643	1178.79	10.4541	1178.79	10.4541	97.9019
GBR-COV2-22	147.265	221878	1.8093	9.87927	0.44548	3.90707	0.78014	0.28181	0.64042	0.8209	1600.46	9.07642	1615.15	6.30724	1634.32	8.27692	1634.32	8.27692	97.9283
GBR-COV2-22	57.9923	369739	2.50494	10.0838	0.38755	3.73005	0.81411	0.27455	0.71594	0.87942	1563.87	9.94183	1577.84	6.51878	1596.55	7.2352	1596.55	7.2352	97.9535
GBR-COV2-22	323.363	4269644	1.91732	10.5975	0.36362	3.30856	0.9407	0.2563	0.86758	0.92227	1470.9	11.4101	1483.07	7.33494	1500.51	6.87481	1500.51	6.87481	98.0269
GBR-COV2-22	437.685	260942	3.23138	11.828	0.37702	2.51511	0.86462	0.2172	0.77806	0.89989	1267.06	8.95015	1276.41	6.28173	1292.17	7.33546	1292.17	7.33546	98.0567
GBR-COV2-22	338.483	117864	2.42759	13.0369	0.47088	1.89275	0.85416	0.18084	0.71254	0.83419	1071.55	7.03438	1078.55	5.67489	1092.73	8.43234	1092.73	8.43234	98.0632
GBR-COV2-22	230.414	274477	3.30532	13.482	0.43518	1.72068	0.76637	0.16962	0.6308	0.8231	1009.99	5.89702	1016.28	4.92148	1029.83	8.79818	1029.83	8.79818	98.0722
GBR-COV2-22	62.4187	359307	3.44552	9.84063	0.53437	3.93464	0.85864	0.28327	0.6721	0.78274	1607.8	9.56378	1620.84	6.95182	1637.79	9.9232	1637.79	9.9232	98.1686
GBR-COV2-22	32.3839	54687.4	1.99508	13.5194	0.80095	1.69496	1.05203	0.16795	0.67955	0.64594	1000.83	6.29947	1006.63	6.7185	1019.28	16.2625	1019.28	16.2625	98.1893
GBR-COV2-22	50.4727	79838.5	1.32198	10.0822	0.62878	3.7123	1.17951	0.27417	0.97942	0.84562	1561.93	13.8352	1574.02	9.43527	1590.26	11.7639	1590.26	11.7639	98.2185
GBR-COV2-22	168.434	97952.6	2.94412	12.6476	0.53781	2.0757	1.172	0.19229	1.04096	0.88819	1133.77	10.8225	1140.82	8.0313	1154.23	10.6673	1154.23	10.6673	98.2266
GBR-COV2-22	69.0753	102087	3.43014	12.3138	0.6295	2.24694	1.03609	0.2024	0.82246	0.79382	1188.21	8.92483	1195.83	7.28032	1209.65	12.3977	1209.65	12.3977	98.2562
GBR-COV2-22	88.0193	110748	0.56276	17.6883	0.94379	0.54893	1.21171	0.07114	0.75989	0.62712	443.032	3.25348	444.292	4.36028	450.804	20.9621	443.032	3.25348	98.2796
GBR-COV2-22	53.8509	76163.7	1.5104	5.82043	0.49891	11.2253	0.85737	0.4778	0.697	0.81295	2517.67	14.5271	2542.02	7.99365	2561.49	8.35486	2561.49	8.35486	98.2876
GBR-COV2-22	88.9357	130319	2.4194	13.4554	0.49568	1.72624	0.79428	0.17012	0.62004	0.78064	1012.76	5.81114	1018.35	5.10673	1030.37	10.0351	1030.37	10.0351	98.2921
GBR-COV2-22	80.2663	48208.2	3.07682	12.4717	0.59062	2.16481	0.87141	0.19766	0.6404	0.73469	1162.74	6.81328	1169.82	6.05241	1182.95	11.6791	1182.95	11.6791	98.2992
GBR-COV2-22	83.0125	294166	1.81701	13.5879	0.47268	1.69428	0.83268	0.16797	0.68855	0.82325	1000.9	6.35511	1006.38	5.31686	1018.29	9.57269	1018.29	9.57269	98.2921
GBR-COV2-22	100.002	1998187	0.66605	5.24773	0.38381	13.4758	0.80601	0.51727	0.70876	0.87934	2687.59	15.5767	2713.59	7.6189	2733	6.31514	2733	6.31514	98.3386
GBR-COV2-22	126.615	257202	3.10385	13.1923	0.51144	1.84236	0.84076	0.1778	0.66731	0.7937	1054.93	6.49885	1060.7	5.53532	1072.62	10.2626	1072.62	10.2626	98.3512
GBR-COV2-22	106.717	248086	2.52555	10.7509	0.41227	3.20049	0.86145	0.25174	0.75639	0.87804	1447.44	9.80623	1457.28	6.66475	1471.63	8.72492	1471.63	8.72492	98.3561
GBR-COV2-22	192.473	402342	1.83209	9.69337	0.41407	4.08361	1.13137	0.28949	0.95287	0.93062	1638.99	15.2374	1651.03	9.22823	1666.38	7.6596	1666.38	7.6596	98.3561
GBR-COV2-22	276.472	331957	4.55248	9.23154	0.42949	4.56503	0.93178	0.30788	0.82689	0.88743	1730.25	12.548	1742.91	7.76118	1758.11	7.85529	1758.11	7.85529	98.4152
GBR-COV2-22	228.306	2080057	2.90787	9.23197	0.35751	4.57435	0.65528	0.30824	0.54916	0.83806	1732.05	8.34112	1744.61	5.46007	1759.67	6.53746	1759.67	6.53746	98.4152
GBR-COV2-22	178.113	106805	2.07119	10.8672	0.42658	3.13066	0.98254	0.24864	0.8851	0.90083	1431.47	11.3619	1440.26	7.56145	1453.23	8.11656	1453.23	8.11656	98.5029
GBR-COV2-22	16.33	95635.3	1.33538	9.22776	0.80686	4.54281	1.07667	0.30723	0.71284	0.66208	1727.04	10.7998	1738.85						

GBR-COV2-22	87.0493	67436	3.4687	12.696	0.73908	2.07315	1.22664	0.19294	0.97788	0.7972	1137.3	10.1957	1139.97	8.40242	1145.05	14.6984	1145.05	14.6984	99.3228
GBR-COV2-22	61.627	222311	3.89206	12.6086	1.46177	2.13111	2.94977	0.19646	2.5621	0.86858	1156.28	27.1203	1158.94	20.3884	1163.91	28.9516	1163.91	28.9516	99.3445
GBR-COV2-22	146.471	87496.7	1.61375	13.7809	0.67462	1.62827	1.00728	0.16405	0.74792	0.74252	979.225	6.79469	981.191	6.33637	985.591	13.7266	985.591	13.7266	99.354
GBR-COV2-22	61.6938	68599.5	2.2936	10.0199	0.66558	3.80458	0.83851	0.27958	0.5092	0.60727	1589.26	7.17221	1593.71	6.7421	1599.59	12.4323	1599.59	12.4323	99.3544
GBR-COV2-22	48.7808	27661	5.79344	12.6073	0.66009	2.09064	0.88924	0.19404	0.56871	0.63955	1143.24	5.95786	1145.73	6.10781	1150.44	13.5555	1150.44	13.5555	99.3742
GBR-COV2-22	20.0708	25761.6	3.86942	9.91471	0.6895	3.8775	0.98973	0.28269	0.69697	0.70421	1604.89	9.90201	1609.01	7.98929	1614.38	13.0868	1614.38	13.0868	99.4121
GBR-COV2-22	18.6122	107908	3.84547	12.6942	1.0306	2.09178	1.24242	0.19417	0.69356	0.55823	1143.94	7.26978	1146.11	8.53526	1150.2	20.4795	1150.2	20.4795	99.456
GBR-COV2-22	196.383	157673	3.64668	9.07724	0.4132	4.78976	0.74685	0.31776	0.62202	0.83286	1778.78	9.66912	1783.1	6.27365	1788.15	7.53221	1788.15	7.53221	99.4761
GBR-COV2-22	67.3248	294092	2.56	13.133	0.69817	1.89611	0.97944	0.18201	0.68691	0.70133	1077.93	6.81844	1079.73	6.51124	1083.37	14.0023	1083.37	14.0023	99.4975
GBR-COV2-22	95.7915	310194	1.0912	8.78885	0.45067	5.14532	0.87516	0.3302	0.75019	0.85721	1839.33	12.0046	1843.62	7.44032	1848.45	8.14995	1848.45	8.14995	99.5064
GBR-COV2-22	69.0551	33564.3	3.27976	12.4298	0.73094	2.1931	0.93866	0.20028	0.58622	0.62453	1176.82	6.30566	1178.85	6.54619	1182.61	14.4782	1182.61	14.4782	99.5107
GBR-COV2-22	86.4277	99164.2	2.52287	10.845	0.52512	3.19218	0.77618	0.2527	0.57152	0.73632	1452.36	7.43192	1455.27	6.0013	1459.49	9.98424	1459.49	9.98424	99.5114
GBR-COV2-22	151.887	513883	1.2239	9.99632	0.41324	3.85272	0.74891	0.2818	0.62458	0.83398	1600.44	8.85183	1603.84	6.03737	1608.28	7.70304	1608.28	7.70304	99.5126
GBR-COV2-22	99.3544	253003	2.87954	12.1581	0.50112	2.36096	0.88245	0.20999	0.72634	0.82309	1228.74	8.12582	1230.88	6.29437	1234.63	9.84113	1234.63	9.84113	99.5231
GBR-COV2-22	124.963	118500	2.99412	9.30163	0.45278	4.53314	1.01413	0.30853	0.90735	0.89471	1733.49	13.7916	1737.07	8.4365	1741.37	8.30001	1741.37	8.30001	99.5472
GBR-COV2-22	47.3369	164782	0.93799	5.41872	0.41135	12.985	0.83544	0.5136	0.72715	0.87038	2671.98	15.9059	2678.57	7.87655	2683.54	6.79998	2683.54	6.79998	99.5692
GBR-COV2-22	120.405	253320	3.80834	11.8529	0.4537	2.52887	0.84773	0.21937	0.71607	0.84469	1278.56	8.30461	1280.37	6.16855	1283.41	8.83813	1283.41	8.83813	99.6223
GBR-COV2-22	41.559	113632	1.79713	13.2329	0.73215	1.85187	0.99636	0.17928	0.67575	0.78622	1063.03	6.62245	1064.1	6.56954	1066.29	14.7026	1066.29	14.7026	99.6941
GBR-COV2-22	186.484	97292	4.14233	13.4867	0.52588	1.74067	0.8017	0.17193	0.60204	0.75096	1022.75	5.69377	1023.71	5.17016	1025.74	10.7094	1025.74	10.7094	99.7086
GBR-COV2-22	99.7724	118779	7.67386	13.8475	0.61439	1.60174	1.02575	0.1624	0.81009	0.64047	970.091	7.39492	970.891	6.41219	972.721	12.5309	972.721	12.5309	99.7297
GBR-COV2-22	117.546	100701	1.8249	7.78682	0.42341	6.60645	0.66919	0.37607	0.51806	0.77417	2057.9	9.127	2060.21	5.90159	2062.5	7.47154	2062.5	7.47154	99.7767
GBR-COV2-22	229.609	97822.3	4.09194	13.5404	0.49532	1.7272	1.04427	0.17107	0.91923	0.88026	1018	8.65625	1018.71	6.71543	1020.21	10.032	1020.21	10.032	99.7834
GBR-COV2-22	252.438	86843.2	3.45315	13.388	0.51962	1.78996	1.25259	0.17528	1.19354	0.90975	1041.11	10.9554	1041.81	8.16004	1043.29	10.5108	1043.29	10.5108	99.7913
GBR-COV2-22	153.725	175120	2.86036	13.7668	0.5744	1.63647	1.80172	0.16487	1.70764	0.94778	983.776	15.5803	984.352	11.3559	985.639	11.695	985.639	11.695	99.811
GBR-COV2-22	194.605	116551	2.72468	14.1418	0.56567	1.50476	1.04595	0.15554	0.87967	0.84103	931.93	7.63294	932.318	6.38043	933.256	11.5956	933.256	11.5956	99.8579
GBR-COV2-22	197.176	157014	4.03	13.4101	0.59626	1.77718	0.88822	0.17447	0.65825	0.74108	1036.71	6.30367	1037.15	5.77143	1038.05	12.0606	1038.05	12.0606	99.8712
GBR-COV2-22	701.127	407811	2.29261	17.999	0.50018	0.50117	0.9604	0.06607	0.81986	0.85366	412.418	3.27535	412.495	3.25567	412.905	11.1829	412.905	11.1829	99.8819
GBR-COV2-22	183.663	367813	1.15295	10.6286	0.41648	3.35025	0.7288	0.26046	0.59807	0.82063	1492.17	7.96671	1492.85	5.69908	1493.8	7.88125	1493.8	7.88125	99.8911
GBR-COV2-22	154.061	550271	2.11018	11.2489	0.51134	2.90983	1.38017	0.23947	1.28195	0.92884	1383.93	15.9662	1384.47	10.4301	1385.28	9.81925	1385.28	9.81925	99.902
GBR-COV2-22	275.279	195639	1.74343	9.76065	0.38833	4.08886	0.79603	0.29198	0.69481	0.87285	1651.41	10.1223	1652.08	6.49449	1652.92	7.19951	1652.92	7.19951	99.9088
GBR-COV2-22	342.518	494533	4.64618	10.969	0.38381	3.1047	0.87448	0.249	0.78575	0.89853	1433.33	10.0981	1433.86	6.74621	1434.62	7.3212	1434.62	7.3212	99.9099
GBR-COV2-22	112.803	79197.2	1.8113	13.9471	0.58659	1.55872	0.83579	0.15945	0.59366	0.7103	953.699	5.26284	953.959	5.16985	954.539	12.0399	954.539	12.0399	99.9124
GBR-COV2-22	242.036	113947	3.91476	8.97145	0.34683	4.92985	0.65051	0.32348	0.5508	0.84627	1806.69	8.6784	1807.38	5.4947	1808.16	6.30453	1808.16	6.30453	99.9181
GBR-COV2-22	131.143	147159	2.57955	10.6645	0.45672	3.32708	0.82094	0.25943	0.68204	0.83081	1486.92	9.05679	1487.43	6.40934	1488.13	8.65267	1488.13	8.65267	99.9189
GBR-COV2-22	159.19	109525	2.36376	10.0948	0.44523	3.7896	0.80659	0.27974	0.67223	0.8342	1590.06	9.47267	1590.54	6.48014	1591.16	8.3277	1591.16	8.3277	99.9311
GBR-COV2-22	112.726	303959	5.00916	13.1534	0.50896	1.88485	0.7592	0.18157	0.56333	0.732	1075.56	5.58041	1075.77	5.03669	1076.19	10.2079	1076.19	10.2079	99.9414
GBR-COV2-22	73.5078	76984.4	4.64895	8.98638	0.45408	4.89696	0.84022	0.32244	0.7064	0.84073	1801.64	11.1031	1801.73	7.08485	1801.82	8.27592	1801.82	8.27592	99.9901
GBR-COV2-22	56.2208	527511	2.60582	11.4727	0.63009	2.78564	0.96634	0.23327	0.73267	0.75819	1351.64	8.93382	1351.69	7.22029	1351.76	12.1565	1351.76	12.1565	99.9911
GBR-COV2-22	196.66	391394	1.53041	13.5341	0.59456	1.73455	1.40924	0.1717	1.27768	0.90664	1021.47	12.0697	1021.44	9.07671	1021.35	12.0354	1021.35	12.0354	100.012
GBR-COV2-22	63.7035	102572	2.44055	14.384	0.65019	1.41301	0.82715	0.14887	0.50945	0.61519	894.604	4.25544	894.424	4.91819	894	13.4328	894.604	4.25544	100.068
GBR-COV2-22	162.803	142691	3.85499	12.5898	0.52037	2.15529	0.74469	0.19846	0.53254	0.71511	1167.05	5.6849	1166.76	5.16508	1166.2	10.33	1166.2	10.33	100.073
GBR-COV2-22	30.3175	154446	1.07689	5.05763	0.52688	14.6708	0.80971	0.54284	0.61482	0.75931	2795.33	13.945	2794.13	7.69714	2793.25	8.62671	2793.25	8.62671	100.074
GBR-COV2-22	14.2761	97514.5	5.3444	10.9625	1.25372	3.11676	1.74368	0.24978	1.21183	0.69499	1437.33	15.6129	1436.83	13.4051	1436.08	23.9108	1436.08	23.9108	100.087
GBR-COV2-22	84.3934	44887.1	1.95044	13.1542	0.53493	1.87492	0.86394	0.18104	0.67829	0.65111	1072.64	6.70251	1072.27	5.72102	1071.54	10.7501	1071.54	10.7501	100.103
GBR-COV2-22	176.068	676593	2.74863	13.3526	0.47182	1.82045	0.89968	0.17752	0.76603	0.85145	1053.42	7.44474	1052.85	5.89633	1051.67	9.52715	1051.67	9.52715	100.167
GBR-COV2-22	223.264	206846	1.33995	17.7786	0.49028	0.54678	0.60741	0.07114	0.35843	0.59009	443.02	1.53458	442.888	2.18021	442.179	10.9288	442.179	10.9288	100.19
GBR-COV2-22	73.8306	1267446	1.79827	13.6639	1.36238	1.68772	1.55246	0.16863	0.74434	0.47946	1004.58	6.92402	1003.9	9.89873	1002.4	27.6521	1002.4	27.6521	100.217
GBR-COV2-22	84.3678	51835.3	2.22864	9.83632	0.45936	4.0121	0.83576	0.28933	0.69819	0.83539	1638.22	10.1002	1636.65	6.79316	1634.64	8.53404	1634.64	8.53404	100.218
GBR-COV2-22	173.018	88829.9	5.26342	13.4896	0.50894	1.75965	0.81584	0.17355	0.63755	0.78157	1031.66	6.07802	1030.72	5.28214	1028.7	10.2926	1028.7	10.2926	100.287
GBR-COV2-22	60.5332	65344.2	2.62944	11.6668	0.71627	2.6493	0.98817	0.22646	0.68069	0.68885	1315.91	8.10228	1314.45	7.28431	1312.04	13.8979	1312.04	13.8979	100.295
GBR-COV2-22	78.7728	103039	2.17818	10.6923	0.57848	3.32689	1.56381	0.25995	1.45273	0.93979	1489.58	19.3215	1487.38	12.2095	1484.23				

GBR-COV2-22	163.509	22046	2.43405	17.97	0.84571	0.4965	1.15249	0.06588	0.78272	0.67915	411.307	3.11881	409.333	3.88253	398.192	18.9604	411.307	3.11881	103.294
GBR-COV2-22	56.7075	74182.9	5.50313	13.853	0.71006	1.65802	1.07426	0.16834	0.80459	0.74897	1002.96	7.47328	992.618	6.80417	969.805	14.5226	969.805	14.5226	103.419
GBR-COV2-22	74.593	45078.7	0.81207	13.6188	0.59225	1.76267	0.8384	0.17595	0.5802	0.69203	1044.81	5.59624	1031.83	5.43161	1004.39	12.263	1004.39	12.263	104.024
GBR-COV2-22	114.56	238592	1.99162	14.093	2.77918	1.58356	5.30018	0.16335	4.5131	0.8515	975.367	40.8515	963.769	32.9981	937.384	56.9875	937.384	56.9875	104.052
GBR-COV2-22	79.7251	330806	2.74222	12.8619	0.5679	2.13132	0.99088	0.19999	0.81199	0.81946	1175.27	8.72368	1159.01	6.84826	1128.77	11.2942	1128.77	11.2942	104.12
GBR-COV2-22	197.704	66913.3	1.17667	18.1154	0.74049	0.49668	0.9715	0.066	0.62399	0.64229	411.996	2.49038	409.451	3.27356	395.105	16.698	411.996	2.49038	104.275
GBR-COV2-22	79.4691	267749	3.19214	12.2558	0.47699	2.42963	0.65568	0.21791	0.44987	0.68611	1270.82	5.18876	1251.41	4.71647	1218.18	9.39707	1218.18	9.39707	104.321
GBR-COV2-22	30.7144	15607.5	2.75962	13.6214	1.11215	1.70906	1.30183	0.17244	0.67583	0.51914	1025.54	6.40773	1011.93	8.33937	982.609	22.6386	982.609	22.6386	104.369
GBR-COV2-22	160.231	105677	2.15633	17.9268	0.77847	0.53931	1.13169	0.07079	0.82112	0.72557	440.942	3.49962	437.971	4.02598	422.359	17.3808	440.942	3.49962	104.4
GBR-COV2-22	157.029	117619	3.03719	11.8822	0.33823	2.65417	0.61723	0.23074	0.51621	0.83634	1338.38	6.23889	1315.8	4.55218	1279.18	6.59554	1279.18	6.59554	104.628
GBR-COV2-22	153.637	29959.4	1.89438	17.5386	0.8005	0.6024	1.13543	0.07777	0.80031	0.70486	482.788	3.72268	478.755	4.33417	459.486	17.8609	482.788	3.72268	105.071
GBR-COV2-22	100.43	86292.4	1.31019	17.9931	0.88664	0.52534	1.15198	0.06935	0.73464	0.63772	432.25	3.07135	428.712	4.02857	409.717	19.8481	432.25	3.07135	105.5
GBR-COV2-22	102.341	394853	2.0331	18.1023	0.8109	0.51474	2.16855	0.06825	2.01123	0.92745	425.581	8.28301	421.632	7.4827	400.069	18.1695	425.581	8.28301	106.377
GBR-COV2-22	180.091	47169.6	3.85754	18.0222	0.63688	0.52166	0.8075	0.06907	0.49109	0.60817	430.556	2.04538	426.258	2.81086	403.056	14.3545	430.556	2.04538	106.823
GBR-COV2-22	146.76	111346	1.70374	17.2907	0.7162	0.68796	1.48542	0.0871	1.30125	0.87601	538.383	6.72114	531.576	6.14732	502.438	15.7527	538.383	6.72114	107.154
GBR-COV2-22	101.288	52238.4	3.49538	17.6982	0.84277	0.5889	1.13068	0.0766	0.75169	0.66481	475.8	3.44772	470.166	4.25518	442.731	18.7842	475.8	3.44772	107.469
GBR-COV2-22	249.791	93324.8	2.51439	17.7631	0.61671	0.58609	1.2295	0.07641	1.06214	0.86388	474.638	4.8602	468.37	4.61317	437.746	13.7847	474.638	4.8602	108.428
GBR-COV2-22	149.169	69615	2.6096	18.2654	0.81338	0.48709	1.11726	0.0653	0.76269	0.68264	407.748	3.01353	402.928	3.71587	375.363	18.373	407.748	3.01353	108.628
GBR-COV2-22	73.1989	18155.6	4.38141	18.0424	0.82415	0.4999	1.15483	0.0669	0.74029	0.64104	417.438	2.99234	411.632	3.90814	379.183	19.9327	417.438	2.99234	110.089
GBR-COV2-22	138.739	18955.7	1.15059	17.8441	0.625	0.554	1.02043	0.07329	0.79069	0.77485	455.939	3.48051	447.616	3.69383	405.049	14.4407	455.939	3.48051	112.564
GBR-COV2-22	48.241	6319.87	1.44611	17.7573	1.13727	0.53667	1.31736	0.07264	0.65991	0.50093	452.011	2.88068	436.223	4.67154	353.706	25.7559	452.011	2.88068	127.793
GBR-COV2-22	104.48	75609.7	1.68165	18.6815	1.17366	0.58082	3.43336	0.07964	3.22634	0.9397	493.978	15.3421	464.986	12.8094	324.207	26.6683	493.978	15.3421	152.365

WELL-20 (used in complied Garber-Wellington dataset) (35.623088°/-97.999700°)

Sample	206Pb 204Pb	U/Th	206Pb* ± 207Pb* ±	± (%)	207Pb* ± 235U ±	± (%)	206Pb* ± 238U ±	± (%)	error corr.	206Pb* ± 238U ±	± (Ma)	207Pb* ± 235U ±	± (Ma)	206Pb* ± 207Pb* ±	± (Ma)	Best age ± (Ma)	± (Ma)	Conc (%)
WELL-20	90680.9	1.95843	13.6197	0.93398	1.69881	1.67749	0.16726	1.39296	0.83038	997.01	12.8673	1008.08	10.7221	1032.21	18.9087	1032.21	18.9087	96.5901
WELL-20	97029.8	1.77176	7.87064	0.8218	6.57802	1.56505	0.37388	1.33182	0.85097	2047.61	23.3639	2056.41	13.7951	2065.22	14.4923	2065.22	14.4923	99.1474
WELL-20	176978	1.07032	13.2516	1.49087	1.86382	1.8821	0.17836	1.14873	0.61034	1058	11.2086	1068.34	12.4381	1089.5	29.8609	1089.5	29.8609	97.1081
WELL-20	114670	1.49151	10.8105	0.88264	3.32291	1.47255	0.25947	1.17849	0.8003	1487.14	15.6511	1486.45	11.4937	1485.45	16.7271	1485.45	16.7271	100.113
WELL-20	3097750	1.35728	10.7347	0.77839	3.36477	1.43312	0.26094	1.20331	0.83964	1494.63	16.0524	1496.23	11.2183	1498.48	14.7208	1498.48	14.7208	99.7429
WELL-20	27019.4	2.83669	9.63185	1.05697	3.99274	1.49572	0.27917	1.05793	0.70731	1587.2	14.8841	1632.72	12.146	1691.85	19.4983	1691.85	19.4983	93.8142
WELL-20	1689873	1.5438	9.75124	0.89949	4.1288	1.34328	0.29086	0.99766	0.7427	1645.83	14.4913	1660.02	10.9805	1678	16.6163	1678	16.6163	98.0832
WELL-20	50394.9	2.17115	13.4548	0.74216	1.85086	1.46782	0.18058	1.26546	0.86214	1070.14	12.478	1063.73	9.67637	1050.63	15.0067	1050.63	15.0067	101.857
WELL-20	42762.6	0.9391	13.3298	1.19153	1.8393	1.84853	0.17763	1.41143	0.76354	1054.03	13.7243	1059.61	12.1596	1071.15	23.9679	1071.15	23.9679	98.401
WELL-20	21047.8	2.41739	13.5177	0.94012	1.77999	1.52545	0.1752	1.20125	0.78747	1040.68	11.5443	1038.18	9.91783	1032.89	19.0184	1032.89	19.0184	100.754
WELL-20	8181.19	1.63056	13.6149	1.40573	1.67314	2.23405	0.16834	1.54381	0.69104	1002.97	14.3396	998.377	14.1991	988.322	32.855	988.322	32.855	101.482
WELL-20	296707	0.6741	10.7374	0.9534	3.38959	1.52827	0.26271	1.19442	0.75185	1503.71	16.0197	1501.99	11.9832	1499.55	18.0282	1499.55	18.0282	100.277
WELL-20	171729	0.99017	5.75075	0.95565	11.3846	1.62038	0.4732	1.30856	0.80756	2497.6	27.0956	2555.17	15.1257	2601.16	15.9276	2601.16	15.9276	96.0187
WELL-20	374847	4.59319	8.42044	0.91128	5.73078	1.60649	0.34874	1.32302	0.82355	1928.59	22.0527	1936.02	13.8894	1943.96	20.2965	1943.96	20.2965	99.2094
WELL-20	205232	3.04984	12.3679	1.02825	2.36744	1.68323	0.21172	1.33263	0.79171	1238	15.0105	1232.83	12.0164	1223.79	21.8183	1223.79	21.8183	101.161
WELL-20	194431	2.26241	5.8574	0.65054	11.8922	1.19907	0.50345	1.00725	0.84003	2628.6	21.7432	2595.95	11.2312	2570.56	10.8764	2570.56	10.8764	102.258
WELL-20	56853.9	2.66489	13.5067	1.00336	1.83752	1.65837	0.17992	1.32026	0.79612	1066.53	12.9779	1058.98	10.9049	1043.45	20.2659	1043.45	20.2659	102.213
WELL-20	104370	3.68457	9.12285	0.94373	5.08229	1.44815	0.33489	1.0984	0.75849	1862.04	17.7639	1833.15	12.2873	1800.49	17.1688	1800.49	17.1688	103.419
WELL-20	15613.2	6.05886	12.9418	1.26555	2.02101	2.08954	0.19094	1.64685	0.78814	1126.46	17.0207	1122.6	14.1947	1115.16	25.6833	1115.16	25.6833	101.013
WELL-20	31414.4	2.10507	13.408	0.5634	1.84003	1.51384	0.17907	1.08343	0.71568	1061.9	10.6074	1059.87	9.95922	1055.7	21.2968	1055.7	21.2968	100.587
WELL-20	442351	0.65715	10.6198	0.97105	3.38407	1.50003	0.25936	1.14331	0.76219	1486.55	15.1786	1500.71	11.7574	1520.76	18.3088	1520.76	18.3088	97.7504
WELL-20	32221.2	0.72697	14.1833	2.51753	0.67787	2.89942	0.0698	1.4364	0.49541	434.961	6.04166	525.487	11.8946	941.012	51.6174	941.012	51.6174	96.4227
WELL-20	1316174	2.63067	11.2181	0.78337	2.94492	1.43918	0.23837	1.2073	0.83888	1178.19	14.9806	1393.54	10.9093	1417.09	14.9782	1417.09	14.9782	97.2553
WELL-20	48981.6	3.2173	12.9454	1.03229	2.08621	1.53802	0.19548	1.13493	0.73792	1358.15	11.9633	1144.28	10.557	1131.55	20.6681	1131.55	20.6681	101.719
WELL-20	161884	2.61607	13.4008	0.75243	1.88215	1.4135	0.1821	1.1964	0.8464	1078.41	11.8807	1074.82	9.37295	1067.55	15.1331	1067.55	15.1331	101.018
WELL-20	573786	3.20913	12.5875	0.81603	2.23747	1.34929	0.20316	1.07455	0.79639	1192.27	11.6966	1192.86	9.46887	1193.93	16.0982	1193.93	16.0982	99.8605
WELL-20	116718	2.75282	10.9318	0.81801	3.28425	1.45464	0.25924	1.20272	0.82681	1485.93	15.9614	1477.33	11.3231	1464.97	15.5433	1464.97	15.5433	101.431
WELL-20	2641624	3.58729	11.0764	0.78192	3.25647	1.59308	0.26013	1.38799	0.87126	1490.52	18.4708	1470.72	12.3762	1442.23	14.8996	1442.23	14.8996	103.348
WELL-20	34098.3	1.17309	9.7499	1.1657	4.17038	1.71699	0.29438	1.25006	0.72805	1663.17	18.3271	1668.22	14.063	1674.31	21.7545	1674.31	21.7545	99.3462
WELL-20	147850	1.61222	9.8203	0.79572	4.16779	1.34321	0.29543	1.08213	0.80563	1668.59	15.9088	1667.71	11	1666.58	14.7207	1666.58	14.7207	100.121
WELL-20	175282	2.60562	12.1165	0.95184	2.41229	1.65822	0.21099	1.35778	0.81882	1234.07	15.2498	1246.27	11.9036	1267.39	18.5695	1267.39	18.5695	97.3716
WELL-20	43508.8	2.82285	13.0874	0.90683	2.04529	1.60997	0.194	1.32841	0.82512	1142.99	13.9137	1130.73	10.9797	1107.24	18.195	1107.24	18.195	103.229
WELL-20	92963.1	5.24417	13.5252	1.04127	1.7958	1.6812	0.17564	1.31972	0.78498	1043.13	12.7103	1043.93	10.9652	1045.64	21.0263	1045.64	21.0263	99.76
WELL-20	254992	2.85603	13.3673	1.0496	1.83257	1.59115	0.17698	1.19586	0.75157	1050.45	11.5918	1057.2	10.4529	1071.19	21.0876	1071.19	21.0876	98.0638
WELL-20	123346	4.14805	13.9171	1.1189	1.5476	1.96577	0.15574	1.16108	0.82211	933.052	14.0385	949.536	12.1258	987.924	22.7656	987.924	22.7656	94.4458
WELL-20	46995.4	2.2209	13.5894	1.11348	1.71772	1.64063	0.16921	1.20445	0.73414	1007.78	11.237	1015.17	10.5294	1031.15	22.5358	1031.15	22.5358	97.7304
WELL-20	49021.7	3.3972	13.8276	0.93119	1.70107	1.47534	0.17063	1.13434	0.76887	1015.59	10.6586	1008.93	9.43453	994.529	19.1693	994.529	19.1693	102.117
WELL-20	96120.9	2.44101	17.916	0.91558	0.58168	1.50477	0.07552	1.19338	0.79707	469.346	5.40206	465.541	5.61915	446.798	20.3715	446.798	20.3715	105.047
WELL-20	80672.1	1.02981	10.7275	0.77777	3.42687	1.23208	0.26589	0.95531	0.77536	1519.89	12.9349	1510.58	9.68464	1497.53	14.7169	1497.53	14.7169	101.493
WELL-20	100150	2.00269	18.0671	0.80728	5.20006	1.71065	0.06801	1.50768	0.88135	424.165	6.18921	425.19	5.94276	430.729	18.0127	424.165	18.0127	98.4762
WELL-20	252270	3.09367	17.8537	1.09395	0.96399	1.75806	0.07695	1.37624	0.78281	477.888	6.33901	474.94	6.66902	460.705	24.2542	477.888	6.33901	103.73
WELL-20	78746.7	3.26566	10.7789	0.86109	3.40774	1.36062	0.26568	1.05345	0.77424	1518.85	14.2551	1506.18	10.6816	1488.39	16.3076	1488.39	16.3076	102.046
WELL-20	52642.7	1.42048	9.70889	0.9222	4.15736	1.4793	0.29194	1.15643	0.71174	1651.22	16.8458	1665.66	12.1087	1683.89	17.0304	1683.89	17.0304	98.0597
WELL-20	134464	1.97006	18.0721	1.17736	0.56373	1.63177	0.07364	1.12961	0.69226	458.072	4.99488	453.949	5.97313	433.105	26.24	458.072	4.99488	105.765
WELL-20	26969.3	1.93252	17.6909	1.6514	0.57871	2.10668	0.07463	1.30726	0.62053	464.003	5.85259	463.631	7.84142	461.809	36.6219	464.003	36.6219	105.475
WELL-20	86564.1	2.83048	10.9196	0.83086	3.23836	1.48902	0.25577	1.23563	0.82983	1468.15	16.2235	1466.39	11.5525	1463.83	15.787	1463.83	15.787	100.295
WELL-20	91167.4	1.87923	9.50336	0.88842	4.52793	1.79805	0.31113	1.56314	0.86935	1746.28	23.9121	1736.12	14.9555	1723.88	16.3216	1723.88	16.3216	101.299
WELL-20	74800	1.19076	13.4804	1.26093	1.84503	1.79292	0.18026	1.27343	0.71026	1068.39	12.5376	1061.66	11.8066	1047.86	25.4666	1047.86	25.4666	101.96
WELL-20	35881.8	2.09071	13.9682	1.00437	1.66688	1.59762	0.16927	1.23945	0.77581	1008.1	11.5669	996	10.1395	969.444	20.5652	969.444	20.5652	103.987
WELL-20	47851.6	1.29404	13.0767	1.18494	1.92331	2.30898	0.18254	1.98015	0.85759	1080.83	19.7041	1089.22	15.4262	1106.02	23.7213	1106.02	23.7213	97.7221
WELL-20	76060.7	1.70962	12.6374	1.17127	2.30832	1.67845	0.21121	1.2022	0.71626	1235.29	13.5145	1214.85	11.8918	1178.73	23.163	1178.73	23.163	104.041
WELL-20	196023	1.3581	9.48887	0.98984	4.4819	1.61151	0.30741	1.27166	0.78911	1727.94	19.2751	1727.63	13.3788	1727.23	18.1726	1727.23	18.1726	100.978
WELL-20	108370	2.48241	11.4356	1.34172	2.88555	1.839												

WELL-20	17208.1	1.51184	13.5985	1.17671	1.75578	1.65467	0.17433	1.15891	0.70039	1035.94	11.0906	1029.29	10.7049	1015.19	23.917	1015.19	23.917	102.044
WELL-20	77694.4	4.65189	13.4574	0.7836	1.83695	1.34922	0.17891	1.09798	0.81379	1061.01	10.7415	1058.77	8.87092	1054.18	15.8132	1054.18	15.8132	100.648
WELL-20	196340	3.92468	12.2325	0.83367	2.46377	1.50085	0.2177	1.24801	0.83153	1269.73	14.3833	1261.47	10.8402	1247.43	16.3242	1247.43	16.3242	101.788
WELL-20	45540.8	3.73301	11.7236	0.78604	2.64902	1.46602	0.22495	1.23576	0.84294	1307.98	14.6293	1314.37	10.8068	1324.79	15.2753	1324.79	15.2753	98.7314
WELL-20	108711	1.74798	9.19564	0.76787	4.92856	1.36378	0.32747	1.12701	0.82639	1826.11	17.9223	1807.16	11.5124	1785.36	13.9965	1785.36	13.9965	102.282
WELL-20	84091.2	2.50844	11.1091	0.88201	3.15535	1.28661	0.25366	0.93652	0.7279	1457.35	12.2156	1446.31	9.92047	1430.1	16.8385	1430.1	16.8385	101.905
WELL-20	47462.5	1.48583	12.7018	1.00868	2.1725	1.54028	0.20027	1.16251	0.75447	1172.28	12.4996	1172.28	10.7104	1163.99	20.0465	1163.99	20.0465	101.098
WELL-20	1884256	2.16047	13.4128	0.96102	1.84403	1.55086	0.17884	1.21271	0.78486	1060.66	11.9043	1061.3	10.2106	1062.64	19.3334	1062.64	19.3334	99.8138
WELL-20	1610202	0.62144	5.34548	0.92604	13.3692	1.40589	0.51672	1.05782	0.75242	2685.24	23.2317	2706.08	13.2825	2721.67	15.2579	2721.67	15.2579	98.6615
WELL-20	107147	2.59901	11.4565	0.82683	2.78951	1.49723	0.23141	1.2479	0.83347	1341.86	15.1171	1352.73	11.1913	1369.94	15.922	1369.94	15.922	97.95
WELL-20	55993.3	2.19223	5.29163	0.93254	14.0129	1.6887	0.53601	1.40783	0.83367	2766.73	31.6704	2750.58	16.006	2738.73	15.3417	2738.73	15.3417	101.922
WELL-20	37605.3	2.4437	12.8416	1.26263	1.17551	2.06348	0.10946	1.62769	0.78881	669.593	10.352	789.22	11.3217	1144.09	25.2074	1144.09	25.2074	58.5264
WELL-20	42679.3	1.83387	13.6629	1.28524	1.81632	1.88206	0.17989	1.36722	0.72645	1066.38	13.4377	1051.36	12.3252	1020.27	26.1972	1020.27	26.1972	104.519
WELL-20	158759	3.41541	9.35588	0.84335	4.66551	1.40765	0.31523	1.12702	0.80064	1766.38	17.4131	1761.08	11.7708	1754.78	15.43	1754.78	15.43	100.619
WELL-20	25901.6	1.91347	13.5087	0.94238	1.84452	1.59058	0.18102	1.28038	0.80498	1072.55	12.6511	1061.47	10.4731	1038.76	19.0723	1038.76	19.0723	103.252
WELL-20	135023	1.79562	10.8265	1.08456	3.48567	1.73999	0.27243	1.36061	0.78196	1553.12	18.7791	1523.98	13.7297	1483.71	20.5522	1483.71	20.5522	104.678
WELL-20	37082.2	3.33941	13.9681	1.19801	1.66452	1.91711	0.16851	1.48707	0.77959	1003.91	13.8245	995.1	12.161	975.738	24.6648	975.738	24.6648	102.887
WELL-20	123349	2.91376	14.4773	0.93049	1.45346	1.51958	0.15194	1.201	0.70563	911.85	10.2121	911.305	9.14093	909.962	19.1546	909.962	19.1546	100.207
WELL-20	15364	1.0305	17.784	1.90923	0.55285	2.37908	0.07209	1.40574	0.59087	448.747	6.09366	446.863	8.60059	437.155	42.7313	448.747	6.09366	102.652
WELL-20	315304	2.51319	10.6455	1.03328	3.44466	1.45388	0.26453	1.02279	0.70349	1512.96	13.7926	1514.65	11.4415	1517	19.4919	1517	19.4919	97.7399
WELL-20	99329.2	3.37098	13.1182	1.01993	2.04794	1.68464	0.19407	1.34022	0.79555	1143.39	14.0419	1131.61	11.4939	1109.05	20.3998	1109.05	20.3998	103.906
WELL-20	250624	3.26293	13.7732	0.99774	1.75294	1.74587	0.17434	1.43268	0.82061	1035.99	13.7113	1028.25	11.2884	1011.79	20.2264	1011.79	20.2264	102.392
WELL-20	32323.2	2.19982	12.8648	0.99962	2.04163	1.66463	0.19059	1.31659	0.79092	1124.58	13.5866	1129.51	11.3458	1138.97	20.2408	1138.97	20.2408	98.7361
WELL-20	30597.2	2.23519	18.0573	1.10259	0.52355	1.7127	0.06877	1.27168	0.7425	428.758	5.27508	427.522	5.97612	420.846	25.6122	428.758	5.27508	101.88
WELL-20	35700.4	3.66384	13.4822	0.9174	1.79725	1.652	0.17569	1.37282	0.831	1043.41	13.225	1044.46	10.7779	1046.67	18.5499	1046.67	18.5499	99.6882
WELL-20	120689	4.29598	11.6194	1.99552	2.60972	2.58072	0.21898	1.63887	0.63504	1276.5	18.9792	1303.38	18.947	1347.87	38.4862	1347.87	38.4862	94.7051
WELL-20	40501.1	2.18331	11.9211	0.82755	2.64177	1.55136	0.22822	1.30653	0.84218	1325.18	15.6503	1312.35	11.4273	1291.43	16.2768	1291.43	16.2768	102.614
WELL-20	30165.1	1.51934	9.29765	0.84662	4.54105	1.51733	0.30602	1.25904	0.82977	1721.08	19.0177	1738.52	15.4855	1759.55	15.4855	1759.55	15.4855	97.8138
WELL-20	52149.9	1.663	18.744	1.18143	0.44824	1.72605	0.06096	1.25671	0.72808	381.469	4.65488	376.046	5.42447	342.782	26.7804	381.469	4.65488	111.286
WELL-20	124543	4.37403	15.376	0.93446	1.11206	1.7972	0.12363	1.53495	0.85408	751.445	10.8875	759.165	9.60862	781.949	19.6433	781.949	19.6433	95.099
WELL-20	42076.4	2.01452	17.4657	1.28253	0.61525	1.8441	0.07805	1.32387	0.7179	484.486	6.17888	486.868	7.13239	498.079	28.2808	484.486	6.17888	97.2709
WELL-20	252331	3.01875	10.5848	0.88077	3.36672	1.52262	0.25743	1.242	0.8157	1476.68	16.3914	1496.69	11.9204	1525.13	16.5971	1525.13	16.5971	96.8231
WELL-20	77319	2.81396	11.1644	0.95998	2.92336	1.51487	0.23611	1.17185	0.77356	1366.42	14.4291	1387.98	11.4617	1421.26	18.3454	1421.26	18.3454	96.1414
WELL-20	262661	3.90866	13.3977	0.92354	1.90848	1.5266	0.18492	1.21557	0.79625	1093.82	12.2293	1084.05	10.1717	1064.5	18.5638	1064.5	18.5638	102.755
WELL-20	62503.8	2.10807	12.2138	0.86291	2.40185	1.50076	0.2126	1.22782	0.81813	1242.63	13.8769	1243.15	10.7594	1244.08	16.8878	1244.08	16.8878	99.8873
WELL-20	73050.9	4.9737	9.44727	1.09107	4.55853	1.66944	0.31154	1.26338	0.75677	1748.26	19.3456	1741.72	13.9025	1733.87	20.0183	1733.87	20.0183	100.83
WELL-20	95968.1	3.32728	13.6336	1.05142	1.71382	1.85135	0.16932	1.52373	0.82304	1008.35	14.2232	1013.72	11.872	1025.31	21.2918	1025.31	21.2918	98.3453
WELL-20	50137.7	0.78561	16.8479	1.21291	0.62531	1.7665	0.07662	1.28375	0.72672	475.889	5.88917	493.173	6.901	574.246	26.3667	475.889	5.88917	82.8719
WELL-20	51061.7	2.02405	13.3004	0.72056	1.86949	1.42135	0.18061	1.22431	0.86137	1207.4	10.7035	9.40293	10.7042	14.4905	17.0782	14.4905	17.0782	99.9070
WELL-20	48032	2.19032	9.46958	1.01145	4.4995	1.65404	0.30918	1.3068	0.79006	1736.68	19.8949	1730.88	13.7418	1723.86	18.6232	1723.86	18.6232	100.744
WELL-20	291811	2.50725	8.87154	0.73671	5.21475	1.26043	0.33494	1.0227	0.81139	1862.26	16.5412	1855.03	10.7392	1846.92	13.3265	1846.92	13.3265	100.831
WELL-20	55951.2	10.4193	16.671	1.03968	0.83719	1.53887	0.10139	1.13385	0.73831	622.557	6.72874	617.595	7.1205	599.43	22.5227	622.557	6.72874	103.858
WELL-20	42765.3	0.92786	9.53532	1.27829	4.1003	1.73335	0.28392	1.1706	0.67534	1611.07	16.6872	1654.36	14.1502	1709.77	23.5215	1709.77	23.5215	94.2273
WELL-20	62533.6	2.47255	11.8329	0.83946	2.61122	1.49905	0.22429	1.24194	0.82848	1304.5	14.667	1303.8	11.0066	1302.63	16.3092	1302.63	16.3092	100.143
WELL-20	58440.2	1.58654	9.10861	0.94038	4.88762	1.55055	0.32299	1.23033	0.79348	1804.3	19.3629	1800.12	13.0706	1795.27	17.1785	1795.27	17.1785	100.508
WELL-20	72168.1	5.18529	11.524	0.98685	2.73297	1.42923	0.22852	1.03349	0.72311	1326.75	12.3928	1337.47	10.625	1354.64	19.0403	1354.64	19.0403	97.9403
WELL-20	350176	1.57235	5.90388	0.85189	11.5596	1.35736	0.49451	1.05675	0.77853	2590.18	22.5409	2569.41	12.6857	2553.05	14.2641	2553.05	14.2641	101.454
WELL-20	64186.4	1.17602	14.0226	1.03488	1.4683	1.7171	0.14938	1.36871	0.79711	897.495	11.4674	917.431	10.3719	965.711	21.1615	965.711	21.1615	92.9362
WELL-20	80107.2	2.29985	13.2067	0.85453	1.99086	1.45069	0.19061	1.17157	0.80759	1124.68	12.091	1112.41	9.80534	1088.49	17.1259	1088.49	17.1259	103.325
WELL-20	83705.8	1.89775	12.6639	1.13356	2.12232	1.63024	0.19481	1.17108	0.71835	1147.36	12.3086	1156.09	11.2521	1172.52	22.4677	1172.52	22.4677	97.8544
WELL-20	26744.3	0.64654	18.0902	1.42979	0.52856	1.92153	0.06984	1.28338	0.66789	435.221	5.40116	430.851	6.74674	407.525	32.0023	435.221	32.0023	106.796
WELL-20	412054	2.23104	17.0158	1.10942	0.76106	1.61183	0.09372	1.16927	0.72543	577.494	6.45882	574.622	7.07298	563.261	24.1622	577.494	6.45882	102.527
WELL-20	34618.9	1.2492	17.5718	0.75801	0.59766	1.51381	0.07653	1.28551	0.84919	475.365	5.89101	475.744	5.75006	477.551	17.6897	475.365	5.89101	99.5422
WELL-20	92994.2	2.4229	9.17223	0.90609	4.82318	1.30161	0.3206	0.93443	0.71791	1792.65	14.6237	1788.95	10.9471	1784.62	16.5163	1784.62	16.5163	

WELL-20	339771	2.44267	11.3937	0.92536	2.91046	1.37376	0.24004	1.01534	0.73909	1386.88	12.6698	1384.63	10.3822	1381.15	17.7802	1381.15	17.7802	100.415
WELL-20	201088	1.43398	12.4964	0.82841	2.28092	1.44618	0.20641	1.1854	0.81967	1209.64	13.074	1206.4	10.209	1200.59	16.33	1200.59	16.33	100.754
WELL-20	61378.5	3.00496	12.9432	0.992	1.23243	1.43826	0.20029	1.03942	0.72269	1176.89	11.811	1159.37	9.94202	1126.79	19.8274	1126.79	19.8274	104.446
WELL-20	50027.2	3.23386	13.1888	0.87249	1.86532	1.45088	0.18043	1.15922	0.79898	1069.33	11.4233	1068.87	9.59078	1067.96	17.5385	1067.96	17.5385	100.128
WELL-20	116700	3.45737	12.4737	0.95234	2.3556	1.46753	0.21282	1.1162	0.7606	1243.82	12.6263	1229.56	10.4621	1204.65	18.7527	1204.65	18.7527	103.252
WELL-20	99266.7	3.42213	9.79286	0.99102	4.09476	1.52878	0.29003	1.164	0.76139	1641.7	16.8702	1653.26	12.4767	1667.96	18.3321	1667.96	18.3321	98.4527
WELL-20	89834.9	1.73497	10.785	0.93037	3.26863	1.58949	0.25506	1.28806	0.81036	1464.5	16.8744	1473.62	12.3591	1486.76	17.6409	1486.76	17.6409	100.504
WELL-20	253262	2.53359	13.6854	0.77481	1.74657	1.31673	0.17278	1.06462	0.80854	1027.43	10.1111	1025.9	8.50222	1022.61	15.6815	1022.61	15.6815	100.471
WELL-20	131863	2.11241	12.2079	0.8839	2.43102	1.67479	0.21465	1.42244	0.84932	1253.52	16.204	1251.82	12.0497	1248.91	17.3057	1248.91	17.3057	100.369
WELL-20	70618.4	4.40752	12.0974	1.13225	2.37306	1.76668	0.20807	1.35613	0.76762	1218.54	15.0572	1234.52	12.621	1262.52	22.105	1262.52	22.105	96.5171
WELL-20	414981	1.94786	12.6891	0.72191	2.19018	1.72168	0.20083	1.56302	0.90784	1179.77	16.851	1177.92	12.0024	1174.55	14.2961	1174.55	14.2961	100.444
WELL-20	57970.1	1.6222	17.437	1.29287	0.59242	1.90102	0.07494	1.39311	0.73283	465.869	6.26113	472.415	7.18121	504.328	28.4705	465.869	6.26113	92.3743
WELL-20	367992	3.38943	13.7379	0.85626	1.73486	1.25192	0.17224	0.91329	0.72951	1024.46	8.65071	1021.56	8.06389	1015.33	17.3489	1015.33	17.3489	100.899
WELL-20	76788.3	0.64583	14.1528	1.04484	1.60921	1.63443	0.16494	1.25575	0.76831	984.168	11.4615	973.801	10.2356	950.505	21.422	950.505	21.422	102.542
WELL-20	3977.6	2.81444	12.5998	2.59717	1.86422	3.06245	0.17779	1.57382	0.51391	1054.91	15.3151	1068.48	20.2417	1096.32	52.5732	1096.32	52.5732	96.2223
WELL-20	184219	1.63082	5.31433	0.85207	13.7899	1.61754	0.53025	1.37492	0.85001	2745.20	30.7125	2735.38	15.3149	2730.13	14.028	2730.13	14.028	100.453
WELL-20	18900.7	1.95741	17.6236	1.08379	0.53192	1.43098	0.06874	0.93229	0.65151	428.554	3.86547	433.086	5.04523	457.256	24.1042	428.554	3.86547	93.7229
WELL-20	945239	2.3192	11.1549	0.94351	3.07821	1.5529	0.24856	1.23338	0.79424	1431.06	15.8285	1427.28	11.9021	1421.64	18.0299	1421.64	18.0299	100.662
WELL-20	3429.2	1.18851	13.4555	0.85535	1.80947	1.2774	0.17709	0.94872	0.7427	1051.03	9.20098	1048.88	8.35396	1044.43	17.274	1044.43	17.274	100.632
WELL-20	10956.2	1.0358	9.1864	1.1973	4.71155	2.05262	0.31671	1.65027	0.80399	1773.65	25.5888	1769.3	17.1945	1764.14	22.3044	1764.14	22.3044	100.539
WELL-20	35969.8	2.73408	11.7923	0.97113	2.64873	1.48318	0.22685	1.11118	1.17918	1317.96	13.2448	1314.29	10.9329	1308.29	19.0709	1308.29	19.0709	100.739
WELL-20	55174.4	2.48303	13.6661	1.43061	1.74269	2.02071	0.17278	1.42706	0.70622	1027.42	13.5531	1024.46	13.0377	1018.14	28.986	1018.14	28.986	100.911
WELL-20	2141657	0.5428	6.05603	0.75107	10.6517	1.52978	0.46636	1.33271	0.87118	2467.56	27.3233	2493.22	14.2009	2514.18	12.624	2514.18	12.624	98.1459
WELL-20	34034.1	3.65805	13.6575	0.92104	1.79918	1.50401	0.17872	1.18898	0.79054	1060	11.6215	1045.16	9.81608	1014.25	18.6652	1014.25	18.6652	104.511
WELL-20	167015	3.10678	14.0377	0.72373	1.61714	1.40168	0.16445	1.20033	0.85635	981.461	10.9278	976.881	8.79447	966.611	14.7897	966.611	14.7897	101.536
WELL-20	34047.2	2.69439	13.698	1.12557	1.74692	1.69297	0.17414	1.26433	0.74681	1034.87	12.088	1026.02	10.9326	1007.18	22.8415	1007.18	22.8415	102.749
WELL-20	94333.1	1.86468	9.95065	0.93799	4.21152	1.52713	0.30366	1.20485	0.78897	1709.44	18.0916	1676.27	12.5314	1634.98	17.4294	1634.98	17.4294	100.854
WELL-20	3518562	1.69085	11.6661	0.92991	2.70437	1.58237	0.22829	1.2803	0.8091	1325.51	15.3395	1329.66	11.7303	1336.32	17.9796	1336.32	17.9796	99.1514
WELL-20	7865.41	3.45342	13.4345	1.66897	1.66692	2.15717	0.16587	1.34754	0.62468	989.316	12.3589	996.016	13.6913	1010.78	34.1743	1010.78	34.1743	97.8767
WELL-20	472018	1.06628	12.4038	0.83722	2.34043	1.6396	0.20964	1.40973	0.8598	1226.91	15.7499	1224.65	11.6649	1220.65	16.4371	1220.65	16.4371	100.513
WELL-20	80811.2	2.2709	13.1473	0.97509	1.94685	1.62151	0.1852	1.29469	0.79845	1095.32	13.0417	1097.36	10.8778	1101.39	19.5188	1101.39	19.5188	99.449
WELL-20	121077	1.0199	5.76927	0.91036	11.8547	1.54616	0.49401	1.2497	0.80828	2587.99	26.6384	2592.99	14.4791	2596.88	15.1793	2596.88	15.1793	99.6577
WELL-20	114059	0.97182	10.835	0.68772	3.24065	1.38541	0.25381	1.20236	0.86787	1458.08	15.6901	1466.94	10.7504	1479.77	13.049	1479.77	13.049	98.5346
WELL-20	799117	2.09761	11.4639	0.68603	2.93032	1.38479	0.2423	1.20291	0.86866	1398.64	15.1244	1389.78	10.4837	1376.18	13.1903	1376.18	13.1903	101.632
WELL-20	40005	2.92529	13.6877	1.07466	1.73383	1.52787	0.17191	1.07623	0.7044	1022.61	10.1771	1021.18	9.83931	1018.09	21.9643	1018.09	21.9643	100.443
WELL-20	66494.6	3.77456	12.264	0.69318	2.36119	1.2199	0.20928	1.0021	0.82146	1224.98	11.1797	1230.94	8.70165	1241.4	13.633	1241.4	13.633	98.6773
WELL-20	12423.4	3.05995	12.8509	1.89901	2.11063	2.39964	0.19842	1.45662	0.67072	1166.84	15.547	1152.28	16.534	1124.98	38.0058	1124.98	38.0058	103.721
WELL-20	5180373	3.558	10.9045	0.78212	3.29517	1.81917	0.25902	1.64246	0.90286	1484.82	21.7828	1479.91	14.172	1472.87	14.8422	1472.87	14.8422	100.811
WELL-20	18751	1.29392	10.0111	1.09475	1.54193	1.92215	0.1573	1.48499	0.77256	941.756	13.0114	947.274	11.8396	960.139	24.943	960.139	24.943	100.0854
WELL-20	74744.3	1.25652	10.1228	0.80403	3.88431	1.48821	0.28389	1.25224	0.84144	1610.94	17.8499	1610.43	12.0178	1609.73	14.9857	1609.73	14.9857	100.875
WELL-20	344829	2.43048	11.651	1.03611	2.68407	1.72231	0.22547	1.3758	0.79881	1310.72	16.3178	1324.08	12.7418	1345.74	20.0072	1345.74	20.0072	97.3973
WELL-20	31658.8	1.17955	10.7081	1.11698	3.46903	1.83955	0.26896	1.4425	0.78416	1535.54	19.7096	1520.2	14.4999	1498.89	21.5881	1498.89	21.5881	102.445
WELL-20	66714.9	1.52868	10.8732	1.04611	3.27635	1.85266	0.25731	1.52791	0.82471	1476.08	20.1575	1475.45	14.4136	1474.53	19.8792	1474.53	19.8792	100.105
WELL-20	290056	2.75487	13.2709	1.11282	1.87934	1.73367	0.17978	1.32936	0.76679	1065.78	13.0588	1073.83	11.4902	1090.19	22.2762	1090.19	22.2762	97.7605
WELL-20	99801.2	1.84575	12.9316	1.07527	2.1161	1.75322	0.19732	1.38465	0.87897	1160.9	14.7101	1154.07	12.0896	1141.26	21.3846	1141.26	21.3846	101.702
WELL-20	11866.2	0.88388	13.5343	1.18161	1.68092	1.67791	0.16645	1.17627	0.70103	992.507	10.8203	1001.33	10.6826	1020.68	24.2441	1020.68	24.2441	97.2396
WELL-20	19792	1.79435	15.253	1.29664	1.15698	1.84901	0.12844	1.31674	0.71213	778.967	9.66147	780.535	10.0708	785	27.2858	778.967	9.66147	99.2315
WELL-20	116358	1.52216	10.7407	0.7948	3.44678	1.37248	0.2668	1.11871	0.8151	1524.53	15.1884	1515.13	10.8024	1502.02	15.0298	1502.02	15.0298	101.499
WELL-20	29941.3	4.10231	13.1139	0.90716	1.99786	1.44401	0.1898	1.12234	0.77723	1120.31	11.5418	1114.79	9.77166	1104.02	18.1626	1104.02	18.1626	101.475
WELL-20	262652	3.62857	13.2774	0.88969	1.95799	1.44409	0.18725	1.13747	0.78767	1106.46	11.5647	1101.19	9.70624	1090.79	17.8048	1090.79	17.8048	101.437
WELL-20	7663.1	2.14767	13.665	1.37673	1.68236	2.40187	0.16979	1.47204	0.61287	1010.93	13.7732	1001.88	15.2973	982.108	38.6471	982.108	38.6471	102.935
WELL-20	105275	3.18413	13.648	1.01975	1.77639	1.41651	0.17482	0.98278	0.93981	1038.62	9.42756	1036.86	9.20276	1033.12	20.6319	1033.12	20.6319	100.532
WELL-20	712229	1.9296	12.7274	0.86816	2.13606	1.63163	0.19572	1.38149	0.84669	1152.3	14.5773	1160.55	11.2849	1176.01	17.1742	1176.01	17.1742	97.9831
WELL-20	116268	3.07872	14.2105	0.91589	1.41859	1.59302	0.1454	1.30304	0.91797	875.11	10.6629	896.772	9.48765	950.552	18.7515	950.552	18.7515	92.0634

WELL-20	99844.7	3.89921	13.1723	0.82714	1.94513	1.38184	0.18459	1.10622	0.80054	1092.02	11.1123	1096.77	9.26711	1106.19	16.5523	1106.19	16.5523	98.7193
WELL-20	447180	1.92661	12.0962	0.77426	2.45538	1.16221	0.21381	0.86674	0.74577	1249.06	9.8419	1259.01	8.38582	1276.02	15.0954	1276.02	15.0954	97.8872
WELL-20	31588.5	2.14831	13.7578	1.03422	1.62811	1.56186	0.16219	1.15257	0.73794	968.932	10.3688	981.128	9.82484	1008.5	21.3791	1008.5	21.3791	96.0762
WELL-20	1477906	2.50166	9.20292	1.12309	4.90398	1.63238	0.32505	1.18463	0.7257	1814.37	18.7337	1802.94	13.7684	1789.74	20.4593	1789.74	20.4593	101.376
WELL-20	25393.6	0.98309	13.9468	0.91841	1.61809	1.50788	0.16381	1.19458	0.79223	977.913	10.8391	977.249	9.46294	975.75	18.7649	975.75	18.7649	100.222
WELL-20	237829	2.44369	12.6048	0.88392	2.1495	1.73028	0.19527	1.48744	0.85965	1149.89	15.6653	1164.89	11.9912	1192.89	17.4436	1192.89	17.4436	96.3952
WELL-20	137759	1.5403	13.3596	1.70661	1.7972	2.17612	0.1733	1.35019	0.62046	1030.26	12.8558	1044.44	14.1976	1074.25	34.2751	1074.25	34.2751	95.905
WELL-20	182462	2.40977	5.36623	0.79198	13.602	1.35264	0.52639	1.09653	0.81066	2726.23	24.3772	2722.4	12.7945	2719.55	13.0546	2719.55	13.0546	100.246
WELL-20	97257.2	1.88173	13.2289	0.9041	1.86705	1.5282	0.17873	1.23169	0.80598	1060.01	12.0391	1069.48	10.1052	1088.84	18.108	1088.84	18.108	97.3522
WELL-20	85937	2.5427	13.4962	1.05199	1.69827	1.80944	0.16586	1.4722	0.81362	989.282	13.5017	1007.88	11.5642	1048.55	21.2282	1048.55	21.2282	94.3475
WELL-20	97556.8	1.06107	9.38289	1.08969	4.49642	1.5118	0.30503	1.0476	0.69295	1716.18	15.7846	1730.31	12.5584	1747.42	19.9605	1747.42	19.9605	98.2125
WELL-20	305694	2.89777	12.5179	0.8034	2.23794	1.4415	0.20239	1.19684	0.83028	1188.16	12.9868	1193.01	10.1167	1201.8	15.8161	1201.8	15.8161	98.8652
WELL-20	7818.74	0.8433	12.9176	1.49881	1.85409	1.94477	0.17708	1.20979	0.62207	1051.02	11.7327	1064.89	12.8287	1093.42	30.4925	1093.42	30.4925	96.1222
WELL-20	438267	2.91311	10.5272	0.85092	3.64498	1.72975	0.2773	1.50598	0.87063	1577.74	21.0763	1559.41	13.7832	1534.66	16.0139	1534.66	16.0139	102.807
WELL-20	23964.6	1.54536	13.7728	1.22103	1.63847	1.8244	0.16437	1.33515	0.73183	981.024	12.1502	985.124	11.5041	994.258	25.2696	994.258	25.2696	98.669
WELL-20	199952	1.50658	11.7784	1.05518	2.65942	1.95029	0.22648	1.64019	0.841	1316.01	19.5244	1317.26	14.3924	1319.27	20.4519	1319.27	20.4519	99.7529
WELL-20	119030	1.86716	9.99096	0.96821	3.94325	1.74783	0.28494	1.45506	0.83249	1616.21	20.8005	1622.61	14.1579	1630.9	17.9969	1630.9	17.9969	99.0991
WELL-20	70153	2.12376	13.3109	0.93746	1.87087	1.32368	0.18039	0.93235	0.70436	1069.11	9.18521	1070.84	8.75901	1074.37	18.8694	1074.37	18.8694	99.5107
WELL-20	125648	3.34222	13.7038	0.88758	1.71864	1.45099	0.17042	1.1477	0.79098	1014.42	10.7727	1015.52	9.31407	1017.85	17.981	1017.85	17.981	99.6631
WELL-20	206532	1.41607	5.62672	0.82134	12.5801	1.42335	0.51157	1.16246	0.81671	2663.32	25.3614	2648.73	13.389	2637.6	13.6404	2637.6	13.6404	100.975
WELL-20	96758.8	4.05842	13.0558	0.97666	1.96391	1.74895	0.1856	1.45038	0.82929	1097.5	14.6366	1103.22	11.7675	1114.56	19.5114	1114.56	19.5114	98.4693
WELL-20	91428.4	1.62149	9.6659	0.95029	4.29152	1.6003	0.30013	1.28754	0.80456	1691.93	19.16	1691.74	13.1791	1691.48	17.5263	1691.48	17.5263	100.026
WELL-20	17993	2.15487	10.594	0.73573	3.14608	1.35166	0.24278	1.13377	0.83879	1401.12	14.2777	1444.04	10.4147	1507.8	13.8986	1507.8	13.8986	92.9249
WELL-20	31147.8	0.72235	13.1662	0.97114	1.81666	1.68715	0.17386	1.36312	0.80794	1033.34	13.0148	1051.48	11.0495	1089.34	19.9016	1089.34	19.9016	94.8593
WELL-20	71171.3	10.6111	13.4595	0.89041	1.80048	1.27002	0.17557	0.90534	0.71286	1042.7	8.71613	1045.63	8.29097	1051.78	17.9659	1051.78	17.9659	99.1369
WELL-20	193701	3.23191	13.1133	0.9962	1.92303	1.57713	0.18238	1.22265	0.77523	1079.94	12.1571	1089.12	10.5358	1107.51	19.9002	1107.51	19.9002	97.5103
WELL-20	45490.4	2.17925	13.9385	0.96961	1.57742	1.44698	0.15956	1.06642	0.73699	954.312	9.45951	961.353	8.9922	977.473	19.9304	977.473	19.9304	97.6306
WELL-20	303551	5.08723	13.5556	0.5879	1.70493	1.22749	0.16709	1.07754	0.87784	996.06	9.94491	1010.38	7.85612	1041.54	11.8831	1041.54	11.8831	95.633
WELL-20	47540.6	2.40888	12.8173	0.9842	2.0835	1.39903	0.1939	0.99428	0.71069	1142.49	10.4099	1143.39	9.59887	1145.07	19.5404	1145.07	19.5404	99.7754
WELL-20	85874.7	4.38077	12.7962	0.88718	1.98989	1.34615	0.18457	1.01163	0.7515	1091.9	10.1612	1112.09	9.09723	1151.74	17.6302	1151.74	17.6302	94.8047
WELL-20	523577	6.75206	12.6065	1.10345	2.13433	1.55721	0.19469	1.09877	0.7056	1146.73	11.5428	1159.99	10.7674	1184.86	21.8092	1184.86	21.8092	96.7815
WELL-20	2146376	3.59419	12.5636	0.95303	2.2275	1.50815	0.20244	1.16886	0.77503	1188.44	12.6859	1189.73	10.5692	1192.09	18.8025	1192.09	18.8025	99.6938
WELL-20	78177.7	2.65509	11.3613	0.78254	2.80369	1.55211	0.23088	1.34038	0.86359	1339.09	16.2073	1356.52	11.6171	1384.09	15.0305	1384.09	15.0305	96.7481
WELL-20	227305	2.32296	11.234	1.10234	2.90214	1.67759	0.23614	1.26455	0.75379	1366.59	15.5724	1382.47	12.6693	1407.05	21.1065	1407.05	21.1065	97.124
WELL-20	305648	2.93437	12.8956	0.89125	2.06473	1.67971	0.19283	1.42376	0.84762	1136.7	14.8373	1137.19	11.4909	1138.13	17.7112	1138.13	17.7112	99.8743
WELL-20	46121.2	2.31963	13.3723	1.24398	1.80872	1.78417	0.17579	1.27696	0.71572	1043.91	12.307	1048.61	11.6667	1058.44	25.0901	1058.44	25.0901	98.6271
WELL-20	133289	5.54716	10.1778	0.88821	3.99301	1.65985	0.2942	1.4022	0.84478	1662.46	20.5479	1632.78	13.4791	1594.72	16.5863	1594.72	16.5863	104.248

WELL-22 (used in complied Garber-Wellington dataset) (35.213306°/-97.106472°)

Sample	206Pb 204Pb	U/Th	206Pb* 207Pb*	± (%)	207Pb* 235U	± (%)	206Pb* 238U	± (%)	error corr.	206Pb* 238U	± (Ma)	207Pb* 235U	± (Ma)	206Pb* 238U	± (Ma)	Best age (Ma)	± (Ma)	Conc (%)
WELL-22	44795.2	2.27455	10.6022	0.34091	3.28517	1.76598	0.25554	1.73265	0.98112	1466.97	22.7329	1477.55	13.7478	1492.75	6.46333	1492.75	6.46333	98.2731
WELL-22	44053.9	4.0643	9.76846	0.41643	3.99067	2.33117	0.28594	2.2935	0.98384	1621.18	32.8753	1632.3	18.9296	1646.63	7.74144	1646.63	7.74144	98.4544
WELL-22	32684.4	2.77411	10.6575	0.49728	3.27127	0.88169	0.2561	0.72369	0.8208	1469.87	9.51176	1474.24	6.85667	1480.53	9.5476	1480.53	9.5476	99.2801
WELL-22	136761	1.51218	15.4042	0.70236	1.04762	0.96389	0.1182	0.66011	0.68484	720.201	4.49817	727.702	5.00745	750.857	14.8338	720.201	4.49817	95.9172
WELL-22	39066.5	2.2005	12.6838	0.73009	2.11084	1.04854	0.19647	0.74663	0.71207	1156.32	7.90336	1152.35	7.22435	1144.92	14.6213	1144.92	14.6213	100.995
WELL-22	157470	1.09415	13.1755	0.76992	1.83038	1.16174	0.17637	0.86997	0.74885	1047.09	8.40805	1056.42	7.62858	1075.72	15.4581	1075.72	15.4581	97.338
WELL-22	148393	3.25861	12.7993	0.44227	2.04067	1.02528	0.19102	0.92496	0.90215	1126.9	9.56315	1129.18	6.98685	1133.6	8.80531	1133.6	8.80531	99.4089
WELL-22	35856.8	0.93756	13.4604	0.68381	1.77746	0.9202	0.1757	0.61549	0.66886	1043.44	5.92944	1037.25	5.97958	1024.21	13.8412	1024.21	13.8412	101.878
WELL-22	15893	1.81723	11.1164	0.59098	2.90221	0.82967	0.23798	0.56566	0.68179	1376.18	7.00969	1382.49	6.26553	1392.22	11.6441	1392.22	11.6441	98.8476
WELL-22	25258.1	2.97611	12.1703	0.58267	2.32487	0.79064	0.2076	0.53265	0.6737	1216	5.90288	1219.91	5.61357	1226.85	11.4636	1226.85	11.4636	99.1163
WELL-22	142725	3.1438	12.7468	0.64572	2.09958	1.02863	0.19528	0.8007	0.77841	1149.89	8.43271	1148.67	7.07502	1146.38	12.8107	1146.38	12.8107	100.306
WELL-22	69984.1	1.91012	10.6043	0.5488	3.36009	0.80597	0.2602	0.59002	0.73206	1490.89	7.85341	1495.14	6.30685	1501.17	10.38	1501.17	10.38	99.3149
WELL-22	1800.7	3.17476	17.8815	1.17912	0.42365	1.45979	0.06465	0.65347	0.44765	403.837	2.558	358.655	4.41086	75.757	31.0329	403.837	2.558	533.069
WELL-22	61095.1	0.76232	16.0728	1.3726	0.56754	1.51957	0.06674	0.65194	0.42903	416.497	2.62944	456.423	5.58642	662.781	29.3894	416.497	2.62944	62.8407
WELL-22	50865.1	1.31674	14.9476	0.76247	1.19731	0.93889	0.131	0.54487	0.58033	793.565	4.06835	799.346	5.19476	815.512	15.9868	799.565	4.06835	97.3088
WELL-22	30088.1	6.40967	13.6876	0.52453	1.66223	0.7282	0.16692	0.68967	0.95903	995.093	4.63093	994.228	4.61667	992.339	10.7003	992.339	10.7003	100.278
WELL-22	13509.7	2.64743	13.4067	0.77877	1.67207	3.06363	0.16573	2.91635	0.95129	988.554	26.7281	997.972	19.4682	1018.71	19.0061	1018.71	19.0061	97.04
WELL-22	148431	1.72314	9.86532	0.54938	4.14618	0.87157	0.29873	0.67662	0.77632	1685.01	10.0328	1663.46	7.13023	1636.33	10.204	1636.33	10.204	102.975
WELL-22	40823.3	1.53131	17.7034	0.56405	0.52774	1.02047	0.0686	0.84209	0.8252	427.74	3.48508	430.307	3.57933	444.053	12.8382	427.74	3.48508	96.3264
WELL-22	15692.8	0.77642	11.7434	0.88173	2.59042	1.15174	0.22432	0.73879	0.64146	1304.67	8.726	1297.93	8.4376	1286.79	17.1958	1286.79	17.1958	101.39
WELL-22	37388.2	4.12888	13.0278	0.64788	1.95284	0.88609	0.18656	0.60268	0.68015	1102.7	6.10842	1099.43	5.95032	1092.96	12.9949	1092.96	12.9949	100.892
WELL-22	45891.9	84.8651	13.2874	0.73547	1.79919	0.98008	0.17516	0.64773	0.66089	1040.17	6.22369	1045.17	6.39652	1055.01	14.8335	1055.01	14.8335	98.6218
WELL-22	32698.4	1.04376	13.4652	0.75562	1.68676	1.06375	0.1667	0.74774	0.70239	993.917	6.88736	1003.54	6.78113	1024.6	15.3083	1024.6	15.3083	97.0056
WELL-22	22448.3	1.45618	17.9691	0.83819	0.50558	2.39081	0.06707	2.2634	0.93539	1458.503	9.06183	415.47	8.15208	398.637	18.948	418.503	9.06183	104.984
WELL-22	104724	1.07407	13.7799	0.67275	1.63327	1.09538	0.16454	0.86435	0.78909	981.94	7.87262	983.121	6.89867	985.767	13.679	985.767	13.679	99.6117
WELL-22	73647.3	0.89892	11.8345	0.53382	2.49837	0.84984	0.21624	0.66116	0.77798	1261.97	7.57776	1271.56	6.16261	1287.8	10.3952	1287.8	10.3952	97.9938
WELL-22	78814.4	1.11325	9.98928	0.39275	3.77762	0.75172	0.27584	0.64078	0.85241	1570.37	8.93063	1588	6.03531	1611.48	7.3238	1611.48	7.3238	97.4486
WELL-22	17226.3	0.63937	13.29	0.73556	1.75484	0.96691	0.17201	0.61692	0.68803	1023.17	5.8367	1028.95	6.2541	1041.23	15.0448	1041.23	15.0448	98.2658
WELL-22	18928.7	0.7976	13.4139	0.71537	1.73116	1.01561	0.17112	0.67847	0.66084	1108.26	6.39055	1102.18	6.53662	1024.29	15.2914	1024.29	15.2914	99.4116
WELL-22	24348.4	1.1352	14.8201	0.8164	1.02719	1.37425	0.11203	0.84727	0.61653	684.5	5.5023	717.523	7.07067	822.234	22.604	684.5	5.5023	83.2488
WELL-22	39206.5	2.59869	11.2466	0.53344	2.88739	0.86386	0.23783	0.67604	0.78258	1375.142	8.37336	1378.62	6.51518	1383.57	10.3298	1383.57	10.3298	99.4107
WELL-22	239795	3.09098	9.15981	0.3521	12.1801	0.77163	0.46205	0.68661	0.88982	2448.6	13.988	2618.38	7.24064	2752.4	5.78621	2752.4	5.78621	88.9623
WELL-22	57535.8	0.39443	9.79488	0.34832	4.01142	0.73869	0.28746	0.65074	0.88094	1628.84	9.36647	1636.51	6.0039	1646.37	6.48413	1646.37	6.48413	98.9352
WELL-22	120933	1.98767	9.78345	0.38646	4.00823	0.66495	0.28683	0.54106	0.81869	1625.67	7.77447	1635.87	5.40368	1648.98	7.16746	1648.98	7.16746	98.5863
WELL-22	402208	1.45556	9.46912	0.41574	4.38724	0.71846	0.30363	0.58996	0.81558	1709.27	8.79776	1709.94	5.94105	1710.75	7.64713	1710.75	7.64713	99.9134
WELL-22	58235.9	2.6427	17.664	0.64383	0.53694	0.91672	0.0696	0.65034	0.70943	433.766	2.72815	436.402	3.25187	450.311	14.3707	433.766	2.72815	96.326
WELL-22	118348	1.58688	11.1996	0.57831	2.8158	0.93438	0.23072	0.73889	0.78543	1338.25	8.86892	1359.75	7.00129	1393.7	11.0931	1393.7	11.0931	96.0215
WELL-22	145664	3.24713	8.82047	0.45871	5.07074	0.9049	0.78002	0.86199	1824.04	12.3921	1831.22	6.74881	1839.38	8.30622	1839.38	8.30622	99.166	
WELL-22	169925	0.8484	9.76595	0.43539	4.02804	0.83611	0.28777	0.71378	0.85369	1630.36	10.2822	1639.88	6.80132	1652.09	8.07089	1652.09	8.07089	98.6846
WELL-22	188791	3.11336	12.339	0.47822	2.26424	0.96463	0.20441	0.83773	0.68645	1198.94	9.16514	1201.23	6.79416	1205.35	9.42139	1205.35	9.42139	99.4679
WELL-22	256299	0.98253	13.0458	0.74596	1.91668	1.03477	0.1829	0.71714	0.69905	1082.82	7.14821	1086.91	6.90462	1095.13	14.9336	1095.13	14.9336	98.8759
WELL-22	38047.1	2.06926	9.87169	0.48563	3.91708	0.74057	0.28366	0.55744	0.75271	1609.75	7.94065	1617.22	5.99044	1626.93	9.06497	1626.93	9.06497	98.9437
WELL-22	4634.62	3.03179	12.1854	1.52538	2.22143	2.24252	0.20542	0.84915	0.37866	1204.35	9.3283	1187.82	15.7031	1157.84	41.1673	1157.84	41.1673	104.017
WELL-22	60184.3	2.73949	8.74032	0.55189	5.21787	0.85722	0.33393	0.6556	0.7648	1857.42	10.5799	1855.54	7.30433	1853.42	9.98175	1853.42	9.98175	100.216
WELL-22	127357	1.63413	13.1071	0.55621	1.94421	0.70989	0.1865	0.4411	0.62137	1102.37	4.46955	1096.45	4.75991	1084.71	11.1326	1084.71	11.1326	101.628
WELL-22	13594.2	1.51441	16.9927	1.29025	0.5455	1.55217	0.06899	0.85696	0.5521	430.084	3.56539	442.043	5.56286	504.787	28.8747	430.084	3.56539	85.201
WELL-22	111634	5.13733	11.8779	0.71563	2.56345	1.24539	0.22299	1.01925	0.81841	1297.68	11.9803	1290.28	9.09707	1277.97	13.9327	1277.97	13.9327	101.542
WELL-22	74522.2	3.90959	13.26	0.5306	1.78902	0.81774	0.17392	0.62134	0.75982	1033.65	5.93401	1041.47	5.32616	1057.95	10.7022	1057.95	10.7022	97.7031
WELL-22	19801.2	2.97287	13.1048	0.74521	1.86349	0.93373	0.18029	0.52161	0.55863	1068.58	5.1363	1068.23	6.17002	1067.53	15.5577	1067.53	15.5577	100.098
WELL-22	53272.2	3.14643	10.7637	0.38485	0.74223	0.83946	0.09109	0.74362	0.88584	561.959	4.00187	563.706	3.6313	570.744	8.47516	561.959	4.00187	98.4607
WELL-22	15914.7	5.59544	14.2379	0.47071	1.19057	0.81388	0.12566	0.66349	0.81522	763.037	4.77453	796.224	4.49147	890.265	9.71554	763.037	4.77453	85.709
WELL-22	81739.9	3.65874	5.25388	0.43707	1.28736	0.7816	0.49534	0.64794	0.82	259.735	13.8363	2670.44	7.36429	2729.04	7.19507	2729.04	7.19507	95.0426
WELL-22	52594.1	3.25433	12.8365	0.48727	2.05454	1.1336	0.19367	1.02552	0.90202									

WELL-22	144214	1.20086	10.4202	0.47337	3.24009	1.02752	0.24735	0.91198	0.88755	1424.82	11.6582	1466.81	7.97284	1528.11	8.91601	1528.11	8.91601	93.2407
WELL-22	30386.1	1.93565	13.2207	0.4304	1.83195	0.72013	0.17837	0.57653	0.80059	1058.04	5.6256	1056.98	4.73011	1054.81	8.69105	1054.81	8.69105	100.306
WELL-22	32220.1	2.53458	10.7844	0.48465	3.21993	0.81317	0.25534	0.64738	0.79612	1465.95	8.48851	1461.97	6.30022	1456.17	9.35898	1456.17	9.35898	100.672
WELL-22	50363.8	2.01384	8.11042	0.37302	6.08299	0.73961	0.3618	0.63814	0.86281	1990.72	10.9293	1987.81	6.44965	1984.78	6.65433	1984.78	6.65433	100.299
WELL-22	124103	1.34777	16.9322	0.67225	0.63721	1.09879	0.07909	0.86904	0.7909	490.698	4.10608	500.577	4.34234	545.978	14.6913	490.698	4.10608	89.8751
WELL-22	548610	1.86685	18.071	0.72579	0.48778	0.93089	0.06452	0.5829	0.62618	403.054	2.27747	403.399	3.09895	405.355	16.2466	403.054	2.27747	99.4323
WELL-22	50740.6	1.29523	17.6937	0.80068	0.53325	1.22953	0.06938	0.93282	0.75868	432.416	3.90135	433.962	4.34197	442.157	17.8159	432.416	3.90135	97.7968
WELL-22	57677.8	1.75287	10.1724	0.47377	3.68651	0.75832	0.27503	0.59104	0.77941	1566.28	8.21858	1568.45	6.05695	1571.36	8.8972	1571.36	8.8972	99.6767
WELL-22	759793	0.95131	6.40984	0.35156	9.40979	0.63975	0.44132	0.5345	0.83548	2356.55	10.5502	2378.79	5.872	2397.88	5.98014	2397.88	5.98014	98.2765
WELL-22	115947	3.34456	8.9574	0.38735	4.63375	0.88381	0.30398	0.79436	0.89879	1711.03	11.9376	1755.37	7.38131	1808.55	7.04213	1808.55	7.04213	94.6075
WELL-22	43191.1	1.35666	12.305	0.51381	2.32732	0.87759	0.21036	0.70952	0.80848	1230.74	7.94939	1220.66	6.23289	1202.86	10.1774	1202.86	10.1774	102.318
WELL-22	46260.1	1.26629	11.2162	0.51774	2.8808	0.80005	0.2372	0.60966	0.76203	1372.11	7.53493	1376.9	6.03036	1384.32	9.94974	1384.32	9.94974	99.1185
WELL-22	34278	1.46677	17.3769	0.75727	0.56738	1.01706	0.07265	0.66883	0.65761	452.08	2.92004	456.321	3.73833	477.175	16.9533	452.08	2.92004	94.6337
WELL-22	44300.8	2.25314	11.9732	0.4955	2.47953	0.9988	0.21796	0.86587	0.86691	1271.11	9.98894	1266.08	7.22712	1257.57	9.73754	1257.57	9.73754	101.077
WELL-22	25408.3	1.99063	10.1057	0.47844	3.78376	0.81495	0.28121	0.6582	0.80766	1597.44	9.31285	1589.3	6.54515	1578.5	8.99072	1578.5	8.99072	101.2
WELL-22	36615.9	1.21371	17.5164	1.10495	0.54987	1.31913	0.07094	0.71441	0.54157	441.818	3.05064	444.912	4.75211	460.924	24.6008	441.818	3.05064	95.8548
WELL-22	18911.9	1.54773	17.0129	0.69568	0.65699	1.02565	0.08283	0.73341	0.71507	512.972	3.61639	512.771	4.12924	511.874	15.7778	512.972	3.61639	100.214
WELL-22	57050	1.9545	10.691	0.41658	3.29509	0.76969	0.25821	0.64672	0.84024	1480.67	8.55665	1479.89	5.99578	1478.77	7.91344	1478.77	7.91344	100.129
WELL-22	54765.5	4.49251	12.9877	0.34622	1.90983	0.80295	0.18195	0.72375	0.90136	1077.59	7.18207	1084.52	5.35117	1098.45	6.94494	1098.45	6.94494	98.1012
WELL-22	16543.9	1.60063	17.812	0.79359	0.56978	1.16003	0.07538	0.73319	0.63205	468.473	3.31297	457.875	4.27536	405.01	20.1249	468.473	3.31297	115.669
WELL-22	30840.3	1.49369	17.3296	0.73298	0.54538	1.04349	0.06968	0.73168	0.70119	434.246	3.07264	441.962	3.73922	482.368	16.4548	434.246	3.07264	90.0239
WELL-22	35654	0.98376	10.8799	0.59692	3.16497	0.87146	0.25288	0.63412	0.72765	1453.33	8.2508	1448.66	6.72421	1441.79	11.3914	1441.79	11.3914	100.8
WELL-22	32822.4	3.11974	12.5883	0.44863	2.14448	0.81981	0.1985	0.67837	0.82746	1167.28	7.24291	1163.27	5.67706	1155.8	9.11392	1155.8	9.11392	100.993
WELL-22	1504.03	2.86445	7.13937	4.98721	5.60593	6.46995	0.3123	2.38061	0.36795	1752.01	36.5215	1917.01	55.8061	2100.51	105.749	2100.51	105.749	83.4086
WELL-22	69038.5	3.50231	12.8281	0.73058	2.08586	1.17892	0.19621	0.92488	0.78451	1154.91	9.77936	1144.16	8.09158	1123.84	14.5853	1123.84	14.5853	102.764
WELL-22	8229231	2.62352	12.3768	0.76885	2.26111	1.02691	0.20469	0.68075	0.66291	1200.44	7.4562	1200.25	7.22982	1199.89	15.1371	1199.89	15.1371	100.046
WELL-22	144760	1.85399	10.7976	0.39678	3.17635	0.72664	0.25123	0.60871	0.8377	1444.82	7.87886	1451.43	5.61157	1461.09	7.54251	1461.09	7.54251	98.8663
WELL-22	7953.37	2.75355	13.8964	0.78519	1.50252	1.18167	0.1567	0.88268	0.74698	938.411	7.70851	931.408	7.20402	914.889	16.1666	914.889	16.1666	102.571
WELL-22	109186	2.98327	11.8812	0.3911	2.47059	0.8322	0.21512	0.73449	0.88259	1256.06	8.38253	1263.46	6.01535	1276.07	7.61083	1276.07	7.61083	98.4322
WELL-22	414388	2.48843	11.2447	0.35895	2.84212	0.85201	0.23395	0.7727	0.90692	1355.17	9.44401	1366.73	6.39955	1384.83	6.89339	1384.83	6.89339	97.8583
WELL-22	11227.4	2.06378	14.2552	0.58326	1.43082	0.86073	0.15199	0.60681	0.705	912.099	5.16103	901.893	5.14437	876.996	12.6349	912.099	5.16103	104.003
WELL-22	14229.9	1.63433	17.4939	0.83563	0.56836	1.24214	0.07409	0.75894	0.61099	460.728	3.37461	456.956	4.5707	438.01	21.8867	460.728	3.37461	105.187
WELL-22	102291	2.41357	10.9362	0.56085	2.96894	0.95416	0.23796	0.71184	0.80892	1376.06	9.56393	1399.7	7.24746	1435.88	10.6986	1435.88	10.6986	95.8342
WELL-22	7049.22	1.00248	16.0157	0.74684	0.507	1.04136	0.06144	0.72169	0.69303	384.395	2.69307	416.431	3.55735	597.994	16.2458	384.395	2.69307	64.2808
WELL-22	25485.2	2.21981	13.1746	0.47576	1.90941	0.74328	0.1854	0.53618	0.72137	1096.38	5.40586	1084.38	4.95311	1060.36	10.3583	1060.36	10.3583	103.397
WELL-22	35156.2	2.63151	13.7039	0.87872	1.41504	1.26128	0.14261	0.90317	0.71607	859.411	7.26679	895.28	7.50402	984.921	17.9203	984.921	17.9203	87.2569
WELL-22	5064.26	2.14557	11.9874	1.00682	2.31972	1.29864	0.21031	0.77082	0.59356	1230.49	8.63464	1218.34	9.21434	1196.88	20.6032	1196.88	20.6032	102.808
WELL-22	37331.1	3.54588	12.7833	0.58411	2.00504	0.77417	0.1883	0.50677	0.6546	1112.15	5.17667	1117.22	5.24498	1127.1	11.6426	1127.1	11.6426	98.673
WELL-22	64471.8	1.96167	9.83772	0.37815	3.80328	0.71603	0.27393	0.60764	0.84863	1560.73	8.42296	1593.44	5.75684	1636.96	7.03437	1636.96	7.03437	93.3435
WELL-22	93765.4	0.70345	5.23444	0.40444	13.8924	0.70891	0.53164	0.5822	0.82125	2748.36	13.0271	2742.4	6.71495	2738	6.65253	2738	6.65253	100.378
WELL-22	40255.7	6.02646	13.4593	0.55307	1.71941	0.81681	0.16988	0.59807	0.7322	1011.47	5.98588	1015.8	5.24397	1025.14	11.2557	1025.14	11.2557	98.6668
WELL-22	19183.3	2.16425	10.6244	0.45888	3.32168	0.80616	0.25983	0.66267	0.822	1488.97	8.10334	1486.16	6.29163	1482.13	8.70124	1482.13	8.70124	100.461
WELL-22	23948.3	3.09645	10.3403	0.53936	3.55453	0.99914	0.27019	0.83874	0.83947	154.716	11.5013	1539.45	7.91776	1536.25	10.2167	1536.25	10.2167	100.359
WELL-22	63062.1	2.99612	17.8583	0.63984	0.5756	1.01548	0.0754	0.78767	0.77566	468.601	3.56008	461.63	3.76686	427.608	14.2927	468.601	3.56008	109.725
WELL-22	113967	3.07181	10.7476	0.54777	3.25451	0.81178	0.25584	0.59902	0.7379	1468.55	7.86679	1470.25	6.30536	1472.7	10.3971	1472.7	10.3971	99.718
WELL-22	9943.18	1.07116	13.1129	0.925	1.83604	2.44261	0.17923	2.2368	0.91574	1062.75	21.9155	1058.44	16.058	1049.6	19.7999	1049.6	19.7999	101.253
WELL-22	16689.9	1.47768	17.088	0.98817	0.59962	1.25138	0.07598	0.66492	0.53135	472.073	3.02672	476.995	4.76303	500.723	23.3427	472.073	3.02672	94.2781
WELL-22	237242	1.98072	11.4291	0.48194	2.74904	0.8298	0.22955	0.6755	0.81405	1332.12	8.12955	1341.83	6.1783	1357.33	9.29159	1357.33	9.29159	98.1427
WELL-22	19899.9	2.54213	5.2402	0.42466	13.9832	1.06737	0.53665	0.9784	0.91664	2769.43	22.0269	2748.57	10.1149	2733.28	7.02	2733.28	7.02	101.062
WELL-22	25059.9	2.68791	4.98665	0.66425	14.8266	0.89997	0.54107	0.60721	0.6747	2787.91	13.7432	2804.18	8.56098	2815.89	10.8531	2815.89	10.8531	99.0065
WELL-22	131452	1.18242	9.83855	0.55877	4.1521	0.93664	0.29856	0.7517	0.80255	1684.15	11.1412	1664.62	7.6647	1640.06	10.3736	1640.06	10.3736	102.689
WELL-22	53528.8	0.80188	5.34344	0.36944	13.2801	0.71415	0.51871	0.61105	0.85563	2693.71	13.4538	2699.77	6.74364	2704.29	6.10143	2704.29	6.10143	99.6088
WELL-22	55870.7	2.44894	11.1272	0.55442	2.99359	0.70175	0.24388	0.42805	0.60998	1406.81	5.41013	1405.99	5.34131	1404.73	10.6503	1404.73	10.6503	100.148
WELL-22	24087.9	1.79657	12.4886	0.49638	2.22704	0.83229	0.20456	0.66526	0.79932	1199.76	7.28287	1189.59	5.83219	1171.16	9.91839	1171.16	9.91839	

WELL-22	61603.8	2.86496	8.82391	0.35969	5.0406	0.58091	0.32616	0.45557	0.78424	1819.74	7.22288	1826.17	4.92204	1833.49	6.53133	1833.49	6.53133	99.2502
WELL-22	16590.2	1.79916	10.2949	0.72753	3.58211	1.01494	0.27224	0.68947	0.67932	1552.14	9.51066	1545.58	8.05666	1536.6	14.0147	1536.6	14.0147	101.011
WELL-22	76135.6	1.08791	10.2099	0.40475	3.44417	0.63282	0.25784	0.48619	0.76829	1478.81	6.42473	1514.54	4.97976	1564.84	7.59365	1564.84	7.59365	94.5018
WELL-22	35267.7	2.19237	10.5359	0.61737	3.79299	0.97421	0.26167	0.75033	0.77019	1498.36	10.0316	1499.61	7.63329	1501.36	11.7466	1501.36	11.7466	99.8003
WELL-22	10070.3	1.60239	17.5351	0.83639	0.53934	1.12898	0.07103	0.6953	0.61586	442.372	2.97264	437.99	4.01649	415	19.8774	442.372	2.97264	106.596
WELL-22	30321.8	2.06594	12.6514	0.45202	2.10723	0.97672	0.19631	0.86049	0.881	1155.48	9.10261	1151.17	6.72579	1143.1	9.16648	1143.1	9.16648	101.083
WELL-22	11270.9	1.73675	12.0096	0.91254	2.34247	1.36181	0.20907	0.91858	0.67452	1223.85	10.2393	1225.27	9.69098	1227.8	19.7276	1227.8	19.7276	99.6787
WELL-22	68471.1	5.6604	8.48489	0.36925	4.56538	0.75733	0.28404	0.66096	0.87275	1611.66	9.42516	1742.97	6.30812	1904.33	6.64234	1904.33	6.64234	84.6313
WELL-22	543600	4.08667	12.4009	0.58291	2.23744	0.83654	0.20318	0.60001	0.71725	1192.36	6.53162	1192.86	5.87047	1193.74	11.5009	1193.74	11.5009	99.8839
WELL-22	17625.2	2.54815	12.6525	0.76075	2.09402	1.08116	0.19595	0.70262	0.64987	1153.51	7.42101	1146.85	7.42997	1134.29	16.3369	1134.29	16.3369	101.695
WELL-22	61198.2	2.13502	11.0339	0.52861	3.0812	0.97331	0.24951	0.81655	0.83894	1435.95	10.5112	1428.03	7.46144	1416.21	10.1291	1416.21	10.1291	101.394
WELL-22	38440.4	1.98035	17.5371	0.88109	0.5241	1.05768	0.06773	0.57792	0.5464	422.491	2.36337	427.883	3.69305	457.054	19.6521	422.491	2.36337	92.4379
WELL-22	21490.4	1.54291	17.2168	0.47732	0.65132	0.95333	0.08306	0.82487	0.86525	514.345	4.07783	509.288	3.81802	486.649	10.5456	514.345	4.07783	105.691
WELL-22	29715.1	1.14845	9.71503	1.07657	3.81392	1.95908	0.27247	1.6367	0.83544	1553.32	22.5922	1595.69	15.7612	1652.09	19.9556	1652.09	19.9556	94.0214
WELL-22	218356	1.35015	13.0137	0.42084	1.97158	0.69266	0.18799	0.55015	0.79426	1110.47	5.61203	1105.85	4.66639	1096.78	8.42979	1096.78	8.42979	101.248
WELL-22	124087	5.14222	12.6638	0.7226	2.10678	0.95359	0.19548	0.62224	0.56252	1150.97	6.55884	1151.03	6.56607	1151.1	14.3385	1151.1	14.3385	99.9887
WELL-22	27993.9	2.331	11.3808	0.47441	2.77628	0.88428	0.23263	0.73846	0.8351	1348.25	8.98409	1349.18	6.60121	1350.64	9.38528	1350.64	9.38528	99.8232
WELL-22	457658	2.31802	17.8121	0.61456	0.4795	0.91232	0.06256	0.67427	0.73907	391.177	2.55916	397.729	3.00229	435.96	13.6844	391.177	2.55916	89.7277
WELL-22	16765.2	2.0219	17.7349	1.12451	0.52976	1.42592	0.06979	0.85067	0.59658	434.92	3.57771	431.649	5.01399	414.205	25.5777	434.92	3.57771	105.001
WELL-22	4214.82	3.06437	11.312	1.44708	1.26111	3.17391	0.10843	2.78003	0.97859	663.605	17.5307	828.407	17.9763	1300.76	29.7459	1300.76	29.7459	51.0169
WELL-22	93544.9	4.21312	10.1391	0.63665	3.40989	1.52081	0.25326	1.38107	0.80811	1455.25	17.991	1506.68	11.9409	1579.73	11.9131	1579.73	11.9131	92.112
WELL-22	114065	3.30297	13.8368	0.56355	1.59244	0.83213	0.16144	0.61208	0.73556	964.798	5.48464	967.252	5.19012	972.834	11.4772	972.834	11.4772	99.174
WELL-22	574752	3.87427	10.8464	0.44835	3.20519	0.84388	0.25433	0.71492	0.84718	1460.77	9.34461	1458.41	6.53105	1454.96	8.52874	1454.96	8.52874	100.399
WELL-22	36835.5	5.63188	9.59499	0.58911	9.98731	1.0381	0.43587	0.85468	0.82331	2332.11	16.7248	2433.61	9.58165	2519.58	9.90065	2519.58	9.90065	92.5595
WELL-22	12452	1.18653	17.8623	0.6785	0.47597	1.00137	0.06351	0.62605	0.62519	396.938	2.41006	395.303	3.2789	385.733	17.5555	396.938	2.41006	102.905
WELL-22	26466.2	2.07397	10.4132	0.59323	3.41238	0.9485	0.26131	0.73292	0.77272	1496.54	9.78835	1507.25	7.44833	1522.31	11.3485	1522.31	11.3485	98.3071
WELL-22	17836.9	1.43968	14.5779	0.84464	1.34653	1.16572	0.14527	0.79345	0.68066	874.386	6.48789	866.058	6.79234	844.82	17.7835	874.386	6.48789	103.5
WELL-22	66308.7	2.85743	13.554	0.49976	1.70783	0.83065	0.16974	0.66315	0.78935	1010.68	6.20338	1011.47	5.31958	1013.17	10.1376	1013.17	10.1376	99.7476
WELL-22	31861.8	1.9448	9.92539	0.49365	3.98223	3.15089	0.29023	3.1108	0.98728	1642.68	45.1101	1630.58	25.5775	1614.99	9.32953	1614.99	9.32953	101.715
WELL-22	43589	2.62476	11.2033	0.34376	2.87217	0.662	0.23612	0.56562	0.85441	1366.48	6.96487	1374.64	4.98597	1387.33	6.6035	1387.33	6.6035	98.4965
WELL-22	466620	0.96615	10.3114	0.52266	3.4518	0.89784	0.26032	0.73003	0.8131	1491.46	9.72034	1516.28	7.06879	1551.08	9.81573	1551.08	9.81573	96.1563
WELL-22	17357	1.29403	11.597	1.29777	2.58186	1.76124	0.22099	1.16785	0.66309	1287.1	13.626	1295.51	12.8913	1309.45	25.5877	1309.45	25.5877	98.2937
WELL-22	35993.8	1.22943	9.10376	0.36694	4.81915	0.73672	0.32167	0.63723	0.86495	1797.9	9.99777	1788.25	6.19508	1776.99	6.74442	1776.99	6.74442	101.177
WELL-22	22509.6	1.25966	10.916	0.7405	3.18153	0.97538	0.25549	0.63323	0.64921	1466.71	8.30681	1452.69	7.53554	1432.2	14.156	1432.2	14.156	102.41
WELL-22	101117	2.02729	11.5949	0.74205	2.59922	1.00217	0.22381	0.64185	0.64046	3901.98	7.56691	1300.42	7.34875	1297.82	14.9614	1297.82	14.9614	100.321
WELL-22	125003	2.55874	13.3936	0.59435	1.73729	0.80527	0.17028	0.54325	0.67462	1013.66	5.09558	1022.46	5.18951	1041.33	12.016	1041.33	12.016	97.3431
WELL-22	2589990	0.50454	15.8655	0.544	0.8968	0.84556	0.10408	0.64733	0.76557	638.294	3.93931	650.016	4.0593	690.956	11.6131	638.294	3.93931	92.3785
WELL-22	35988.2	1.03758	11.1177	0.51332	2.72075	0.92607	0.22221	0.76524	0.82633	1293.56	9.96894	1334.14	6.87605	1399.85	9.99537	1399.85	9.99537	92.4066
WELL-22	33817.5	0.96928	17.1199	0.68038	0.6311	0.97755	0.07962	0.694	0.70993	493.827	3.29916	496.783	3.84053	510.409	15.444	493.827	3.29916	96.7512
WELL-22	33579.3	3.88612	9.15921	0.43806	4.56815	0.82593	0.30719	0.70013	0.84769	1726.85	10.6062	1743.48	6.88031	1763.46	8.0083	1763.46	8.0083	97.9236
WELL-22	109831	1.89148	10.7591	0.451	3.24874	0.72607	0.25602	0.56893	0.78358	1469.44	7.47575	1468.88	5.63726	1468.04	8.56601	1468.04	8.56601	100.096
WELL-22	50021.7	1.3227	17.6514	0.75886	0.54267	0.93113	0.07039	0.53637	0.57604	438.497	2.27374	440.187	3.32588	449.008	16.9083	438.497	2.27374	97.6591
WELL-22	48571.1	0.93988	9.72652	0.53185	4.10096	0.97036	0.2924	0.8104	0.83515	1653.53	11.8196	1654.5	7.92148	1655.71	9.88655	1655.71	9.88655	99.8686
WELL-22	25149.8	1.46482	9.50715	0.46437	4.50135	0.79186	0.31447	0.63067	0.79644	1762.68	9.72639	1731.22	6.57896	1693.39	8.82934	1693.39	8.82934	104.092
WELL-22	31707.8	1.90509	12.773	0.52946	1.92212	1.18912	0.18051	0.106391	0.8947	1069.76	10.4871	1088.81	7.94228	1127.1	10.5828	1127.1	10.5828	94.9126
WELL-22	12211.6	0.98359	9.76535	0.53688	4.0597	0.89625	0.2931	0.70298	0.78436	1657	10.2718	1646.25	7.30194	1632.53	10.331	1632.53	10.331	101.149
WELL-22	202719	2.91233	11.3866	0.71131	2.78928	1.07351	0.23235	0.80402	0.74896	1346.82	9.77232	1352.67	8.02379	1361.91	13.7047	1361.91	13.7047	98.8922
WELL-22	34482.5	1.94401	16.1034	0.65691	0.88689	0.94397	0.10498	0.6686	0.70288	643.538	4.0949	644.695	4.50519	648.751	14.3107	643.538	4.0949	99.1965
WELL-22	38666.6	2.73798	11.2464	0.73362	2.91441	2.70473	0.24028	2.60328	0.95249	1388.16	32.5118	1385.66	20.4501	1381.79	14.0986	1381.79	14.0986	100.461
WELL-22	6828.79	1.80333	17.1334	0.95825	0.55746	1.50384	0.0724	0.66888	0.44478	450.619	2.91116	449.874	5.46554	446.046	29.9441	450.619	2.91116	101.025
WELL-22	122639	1.5606	13.6634	0.5943	1.71739	0.94174	0.17166	0.73047	0.77566	1021.23	6.89891	1015.05	6.04342	1001.72	12.0536	1001.72	12.0536	101.948
WELL-22	18397.1	1.40953	10.5137	0.66305	3.41498	1.00755	0.26424	0.71588	0.71052	1511.49	9.6455	1507.85	7.9134	1502.72	13.4007	1502.72	13.4007	100.583
WELL-22	7595.04	1.48988	12.9466	0.95177	1.90597	1.24243	0.1847	0.75128	0.60469	1092.62	7.55072	1083.18	8.2744	1064.25	19.8829	1064.25	19.8829	102.666
WELL-22	49269	1.58747	3.42355	0.36579	21.4165	0.69206	0.53594	0.58736	0.84871	2766.41	13.2118	3157.64	6.71367	3416.66	5.69303	3416.66	5.69303	80.9

WELL-22	79033.2	2.42402	12.2552	0.47015	2.24763	0.81802	0.20179	0.66912	0.81797	1184.9	7.24241	1196.05	5.74856	1216.26	9.24415	1216.26	9.24415	97.4223
WELL-22	46431.6	1.22171	13.2213	0.82524	1.83537	1.44557	0.17809	1.18668	0.82091	1056.55	11.5644	1058.2	9.50157	1061.63	16.6091	1061.63	16.6091	99.5215
WELL-22	165204	1.47587	13.3524	0.98859	1.83783	1.27589	0.17958	0.80658	0.63217	1064.68	7.91579	1059.08	8.39017	1047.6	19.9524	1047.6	19.9524	101.63
WELL-22	41898.8	16.1362	11.7888	0.47247	2.48068	0.86083	0.21461	0.71804	0.83412	1253.34	8.17863	1266.41	6.22962	1288.67	9.24317	1288.67	9.24317	97.2582
WELL-22	6255.91	1.66445	17.8147	1.00662	0.49615	1.27796	0.06741	0.70207	0.54937	420.539	2.85825	409.095	4.30319	344.987	24.1374	420.539	2.85825	121.9
WELL-22	14349.6	2.57173	16.8003	2.21631	0.51731	3.44641	0.06466	2.63902	0.76573	403.883	10.3316	423.356	11.9315	530.851	48.5431	403.883	10.3316	76.0823
WELL-22	89470.8	1.9217	10.7657	0.42498	3.1651	1.06392	0.2496	0.97524	0.91665	1436.44	12.5577	1448.69	8.20937	1466.69	8.0765	1466.69	8.0765	97.9375
WELL-22	39126.3	1.17074	10.6505	0.55588	3.42659	0.87699	0.2679	0.67445	0.76905	1530.12	9.18648	1510.51	6.89324	1483.12	10.623	1483.12	10.623	103.169
WELL-22	79027.1	3.12164	11.3529	0.46378	2.83769	0.75186	0.23603	0.59131	0.78645	1366.03	7.27896	1365.56	5.64506	1364.81	8.94407	1364.81	8.94407	100.089
WELL-22	38052.4	4.01429	13.4039	0.56728	1.77395	1.03656	0.17473	0.86619	0.83563	1038.14	8.30554	1035.97	6.73091	1031.36	11.5269	1031.36	11.5269	100.658
WELL-22	100226	1.86077	17.2311	0.7336	0.58385	0.99746	0.07374	0.6757	0.67742	458.668	2.99153	466.931	3.73348	507.789	16.1229	458.668	2.99153	90.3265
WELL-22	195647	1.99313	8.44319	0.39779	5.59442	0.64524	0.34557	0.50803	0.78734	1913.41	8.41074	1915.24	5.55819	1917.2	7.13623	1917.2	7.13623	99.8023
WELL-22	35421	0.78148	5.71253	0.53833	11.5639	0.88203	0.48397	0.69829	0.79168	2544.54	14.6807	2569.76	8.24335	2589.71	8.98922	2589.71	8.98922	98.2556
WELL-22	19890	2.04464	10.0094	0.53594	3.50275	0.90723	0.25805	0.73154	0.80635	1479.87	9.67314	1527.83	7.16612	1594.88	10.0194	1594.88	10.0194	92.7886
WELL-22	4986.55	1.88439	17.3658	1.48568	0.54021	2.2453	0.07224	1.67333	0.74526	449.627	7.26737	438.565	7.99645	380.887	33.6581	449.627	7.26737	118.047
WELL-22	13288.8	0.54594	16.2001	1.13557	0.82036	1.43894	0.09888	0.87467	0.60785	607.859	5.07376	608.248	6.58453	609.678	24.6985	607.859	5.07376	99.7016
WELL-22	177178	1.26181	9.89386	0.47936	3.94861	0.73568	0.28577	0.55806	0.75856	1620.35	7.99556	1623.71	5.96052	1628.04	8.9114	1628.04	8.9114	99.5279
WELL-22	60683	2.66761	12.1666	0.65049	2.33183	0.94046	0.20784	0.67871	0.72168	1217.32	7.52889	1222.03	6.6833	1230.39	12.7945	1230.39	12.7945	98.9379
WELL-22	370530	1.59577	13.4166	0.73907	1.81735	0.95068	0.17822	0.59797	0.62899	1057.23	5.8307	1051.73	6.22682	1040.31	14.9369	1040.31	14.9369	101.626
WELL-22	541254	2.44417	10.835	0.46995	3.16281	0.8766	0.25042	0.73998	0.84415	1440.63	9.55326	1448.13	6.76276	1459.13	8.93452	1459.13	8.93452	98.7325
WELL-22	30896.1	2.48138	11.2937	0.53022	2.80663	0.90879	0.23275	0.73247	0.80598	1348.89	8.91496	1357.31	6.8037	1370.57	10.3526	1370.57	10.3526	98.4179
WELL-22	58168.9	2.37292	11.2793	0.59826	2.83876	1.10554	0.23455	0.92914	0.84044	1358.29	11.3795	1365.84	8.30141	1377.66	11.5165	1377.66	11.5165	98.5942
WELL-22	34591.5	1.6891	9.84545	0.54717	4.07439	0.91294	0.29438	0.73071	0.8004	1663.4	10.7132	1649.19	7.44314	1631.11	10.1699	1631.11	10.1699	101.98