

**A Ground ice synthesis of the Yedoma domain
of Northeastern Siberia**

Master thesis

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Major Abbreviations

Notation	Meaning	Unit
°C	degree Celsius	273.15 K
µm	micrometer	10^{-6} m
bp	before present	
cm	centimeter	10^{-2} m
DTLB	drained thermokarst lake basin	
e.g.	Latin: exempli gratia; for example	
etc.	Latin: et cetera; and so on	
fig.	figure	
Gt	gigatons	10^{12} kg
Ka	Latin: kilo annum; thousand years	3.1536×10^{10} s
km ²	square kilometer	1000000 m ²
m	meter	
mm	millimeter	10^{-3} m
MAAT	mean annual air temperature	
TOC	total organic carbon	
vol%	per cent by volume	
wt%	per cent by weight	
WIV	wedge ice volume	

Abstract

The Yedoma region is unique in the permafrost region of the Northern Hemisphere and is characterized by a particularly high ground ice content in the sediment. These frozen deposits store a large amount of carbon and thus have the potential to influence the global climate. Especially the upper layers are susceptible to thaw processes, as they are exposed to increasingly rising mean annual air temperatures. The Northeastern Siberian Yedoma domain is of particular interest in this study. The morphology of ground ice is highly variable and the exact abundance and distribution is still unknown in large parts of Siberia.

For an accurate overview of the distribution of intrasedimentary ground ice content, data from 26 sites in Northeastern Siberia were examined. The data were taken from data repositories (e.g., PANGAEA), expedition reports, scientific papers etc. and has been synthesized in a template in Excel. Of relevance was the absolute ice content (wt%) at different depths. Five depth classes were investigated: depth class 1: 0-0.99m; depth class 2: 1-1.99m; depth class 3: 2-2.99m; depth class 4: 3-24.99m; depth class 5: 25-65m. Using the mean absolute ice content for each depth class, ArcGIS was used to create a map for the distribution of ice content. R was applied to represent the ground ice content distribution at the different depths. Furthermore, the focus was on other parameters such as stratigraphy, total organic carbon content and landscape types, which were also examined with respect to the absolute ice content.

The ice content is distributed very heterogeneously in Northeastern Siberia, averaging between 30 and 60 wt% over all depths. In large parts of the study area, the ice content in the upper three meters is with 40 to 65 wt% much higher than in the deeper sediment layers. In the depths of 3-65m, the ice content ranges from 20 to 50 wt%.

Investigations of the age classes showed that the mean absolute ice content in thermokarst deposits (MIS 1) is with 48.60 wt% higher than in older sedimentary units. The TOC content also decreases significantly with depth.

The Yedoma sediment composition and depositional regimes are highly variable. Even on a small scale, large differences in ice content could be observed. With the given data basis, no concrete statements about the vertical and horizontal ice content could be made for the whole study area. The model created in this study can be applied to model the absolute ground ice content based on the TOC content. Assessing the nature and content of ground ice in the upper layers in Northeastern Siberia is fundamental to environmental assessment and important for quantifying carbon fluxes and understanding permafrost response to climate change.

Kurzfassung

Die Yedoma Region ist einzigartig in der Permafrost Region der nördlichen Hemisphäre und zeichnet sich durch einen besonders hohen Grundeisgehalt im Sediment aus. Diese gefrorenen Ablagerungen speichern eine große Menge Kohlenstoff und haben somit das Potential das globale Klima zu beeinflussen. Besonders die oberen Schichten sind tauanfällig, da sie zunehmend steigenden Lufttemperaturen ausgesetzt sind. Die nordöstliche sibirische Yedoma Region war in dieser Studie von speziellem Interesse. Die Morphologie von Grundeis ist sehr unterschiedlich und die genaue Häufigkeit und Verteilung ist größtenteils nicht bekannt.

Für einen genauen Überblick über die Verteilung des intrasedimentären Grundeisgehaltes wurden Daten von 26 Standorten in dem Untersuchungsgebiet untersucht. Die Daten wurden von Datenarchiven (z.B. PANGAEA), Expeditionsberichten, wissenschaftlichen Arbeiten etc. entnommen und in einer Datensammlung synthetisiert. Von besonderer Relevanz war der absolute Eisgehalt in wt% in unterschiedlichen Tiefen. Es wurden 5 Tiefenklassen untersucht: Tiefenklasse 1: 0-0.99m; Tiefenklasse 2: 1-1.99m; Tiefenklasse 3: 2-2.99m; Tiefenklasse 4: 3-24.99m; Tiefenklasse 5: 25-65m. Mit Hilfe des gemittelten absoluten Eisgehaltes für jede Tiefenklasse wurde mit ArcGIS eine Karte für die Verteilung der Eisgehalte erstellt. Mit R wurde die Grundeisgehaltsverteilung in den verschiedenen Tiefen dargestellt. Darüber hinaus lag der Schwerpunkt auf anderen Parametern wie Stratigrafie, TOC-Gehalt, sowie Landschaftstypen, welche ebenfalls hinsichtlich des absoluten Eisgehaltes untersucht wurden.

Der Eisgehalt ist in der nordöstlichen sibirischen Yedoma Region sehr heterogen verteilt und lag im Durchschnitt zwischen 30 und 60 wt%. Der Eisgehalt in den oberen drei Metern war in großen Teilen des Untersuchungsgebietes deutlich höher als in den tieferen Sedimentschichten und lag zwischen 40 und 65 wt%. In den Tiefen von 3-65m lag der Eisgehalt zwischen 20 und 50 wt%. Untersuchungen der Altersklassen ergaben, dass der gemittelte absolute Eisgehalt in Thermokarstablagerungen (MIS 1) mit 48.60 wt% höher war als in älteren Sedimenteinheiten. Auch der TOC Gehalt nahm mit der Tiefe deutlich ab.

Die Sedimentzusammensetzung, sowie die Ablagerungsprozesse variieren in der Yedoma Region. Schon auf kleinem Raum konnten große Unterschiede hinsichtlich des Eisgehaltes festgestellt werden. Mit der gegebenen Datengrundlage konnten für das gesamte Untersuchungsgebiet keine belastbaren Aussagen über die vertikalen und horizontalen Eisgehalte gemacht werden. Das in dieser Studie erstellte Modell kann dafür genutzt werden, den absoluten Grundeisgehalt in der Region anhand des TOC Gehaltes zu modellieren.

Eine genaue Übersicht über die Verteilung des Grundeises in der Yedoma Region ist von grundlegender Bedeutung. Die Ermittlung des Grundeisgehaltes in den oberen Sedimentschichten ist wichtig für die Umweltbewertung. Kohlenstoffflüsse können quantifiziert und somit die Reaktion der Permafrost Gebiete auf den Klimawandel verstanden werden.

1 Introduction

1.1 Relevance and background

The climate is changing across the earth and the global surface temperature is rising. In 2019 the global mean annual air temperature (MAAT) was 1.2 °C warmer than in the baseline period from 1880 to 1920, while the rate of warming worldwide has been nearly constant at about 0.18 °C per decade for several decades (Hansen et al., 2020). In contrast to the global mean, high latitudes respond much more quickly to temperature changes. MAAT rose 2.7 °C from 1971 to 2017, 2.4 times faster than the Northern Hemisphere's average (Box et al., 2019). These continuously warming air temperatures cause previously frozen ground to thaw, leading to permafrost degradation (Morgenstern et al., 2011; Turetsky et al., 2020).

Permafrost, defined as ground that remains at or below 0 °C for at least two consecutive years, is a distinct feature of the terrestrial unglaciated Arctic (Harris et al., 1988; van Everdingen, 1998; Zhang et al., 1999; French and Shur, 2010; Schirrmeyer et al., 2012). The average permafrost area is 14.7 % of the exposed land surface of the Northern Hemisphere (Obu et al., 2019).

Large amounts of organic carbon (OC) were incorporated into permafrost during the Quaternary period and the prolonged subzero temperatures prevented the decomposition of the OC (Windirsch et al., 2020). The estimated amount of frozen and unfrozen carbon stored in terrestrial permafrost ranges from 1330 to 1580 Gt (Schuur et al., 2015), representing about 50 % of the global soil carbon pool (Hugelius et al., 2014). Permafrost deposits in boreal and Arctic ecosystems thus represent one of the largest terrestrial carbon reservoirs and play a major role in the global carbon cycle (Schirrmeyer et al., 2011b; Schirrmeyer et al., 2011a; Schirrmeyer et al., 2012; Strauss et al., 2013; Schuur et al., 2015; Schirrmeyer et al., 2017b; Thoman et al., 2020).

The Northeast Siberian Yedoma domain is of special interest since more than 150 years (Shur et al., 2022). This is due to the great thickness of frozen deposits, exceptional preservation of past environmental records and thaw-prone frozen organic matter that has the potential to amplify global warming (Grosse et al., 2007; Schuur et al., 2015; Günther and Morgenstern, 2016; Schirrmeyer et al., 2017d; Windirsch et al., 2020).

A key parameter in a warming Arctic is ground ice. The extent to which permafrost terrain can potentially thaw and collapse is fundamentally controlled by the amount and type of ground ice (Jorgenson et al., 2015). Ice is the cement, which holds the permafrost together. The morphology, abundance and distribution of ground ice in permafrost regions vary widely (Brown et al., 1997; Murton, 2013). Ground ice is susceptible to rapid thaw processes. When ground ice thaws, it has major impacts on the hydrological regime, local ecosystems and infrastructure and leads to massive soil erosion as well as carbon mobilization (Schirrmeyer et al., 2012; Strauss et al., 2013; Schuur et al., 2015).

The Alfred Wegener Institute has been conducting research in the Northeast Siberian Arctic and Central Yakutia since more than two decades. The study region of this project, the Yedoma domain, is highly heterogeneous even over a small area (Strauss et al., 2021b). Even after a long time of researching data on spatial variability of OC, ground ice content and many other parameters, there are still large gaps (Grosse et al., 2013; Strauss et al., 2013).

Because of its OC storing capacity, the ground ice content is of particular interest. Quantitative evaluations of ground ice content and distribution can help predict geomorphological changes, carbon emissions and support infrastructure planning in permafrost regions (Fan et al., 2021).

1.2 Aims

The aim of this study is to deliver a data product: the distribution of sedimentary ground ice in the Yedoma domain of Northeastern Siberia. For this purpose, ice content records collected in the study area are synthesized. The focus is set on intrasedimentary ice (e.g., pore ice and excess ice). Intersedimentary ice, also known as wedge ice, is not included.

1.3 Geographical background and phenomena

The periglacial (composed of Greek *peri* “around” and Latin *glacies* “ice”) domain is part of the cryosphere, which is characterized by intense freezing processes. These include the growth of segregated ice and associated frost heaving, development of cryostructures and cryotextures, thermal-contraction cracking and formation of permafrost (French, 2007). Some of the terms associated with permafrost are explained below.

1.3.1 Permafrost

Ground (soil or rock) that remains at or below 0 °C for at least two consecutive years is called permafrost (Harris et al., 1988; van Everdingen, 1998; Zhang et al., 1999; French and Shur, 2010). It is a widely distributed, climate-induced phenomenon in terrestrial Arctic and subarctic regions (Schirrmeyer et al., 2011c). Permafrost is associated with a long-term negative annual energy balance in the ground. Warming during the summer months is insufficient to thaw the frozen sediments at depth. To the bottom, perennial freezing is limited by geothermal heat flow from the Earth's interior (Schirrmeyer et al., 2012).

Long-term stable cold and dry climatic conditions with low snow depths and the absence of large ice sheets in the Quaternary past are prerequisites for the formation of permafrost (Hubberten et al., 2004). Large lowland areas remained ice-free, exposing them to very cold air temperatures. Over millennia, processes such as cryoturbation, accumulation and repeated deposition of dead vegetation from forest and tundra areas gradually integrated organic material into the perennially frozen region as the thickness of the deposit increased. Since temperatures below freezing largely prevent the decomposition of OC, large amounts of OC

were thus accumulated into permafrost during the Quaternary period (Schirrmeister et al., 2012; Strauss et al., 2013; Hugelius et al., 2014).

Permafrost can develop in different ways. According to Hugh and French (2010) there are two different types of permafrost. Permafrost that forms after deposition of the host sediment or rock is termed *epigenetic*. Between the accumulation and freezing of epigenetic permafrost thousands and millions of years can go by. In contrast, permafrost that forms concurrently with persistent cold climate sedimentation is termed *syngenetic* and is thus (approximately) as old as the sediment in which it formed. It means that transformation of sediments at the bottom of the active layer (described below) into a perennially frozen state occurs simultaneously with sedimentation on the soil surface. This sedimentation can be alluvial, colluvial, aeolian, or lacustrine in nature. *Polygenetic* permafrost is a mixture of both, one part of the frozen body may have been formed syngenetically and the other epigenetically.

The permafrost environment is a system consisting of areas of perennially frozen, seasonally frozen and non-frozen ground. Vertically, permafrost's domain deposits can be divided into three layers (Shur et al., 2005) (Fig. 1-1). The first and *active layer* is the uppermost part and due to the temperature definition not part of the permafrost. This layer is affected by the seasonal cycle of air temperature. It thaws in summer and refreezes in winter (Harris et al., 1988; Pollard, 2018). In general, the active layer thickness can vary from less than 15.0-30.0 cm to more than 5.0 m but also varies from year to year and from locality to locality (French and Shur, 2010). The bottom of the active layer represents the top of the permafrost. At this point the second layer, *the transition zone* begins. This zone experiences the influence of the active layer and the underlying ice-rich permafrost and is of great importance for the stability of the permafrost, as it acts as a buffer zone between both layers (Shur et al., 2005). The underlying permafrost is the perennially frozen ground that freezes and thaws on century to millennium scales. The unfrozen zones within the permafrost are termed *taliks*, which are usually located below lakes and river courses (French, 2007).

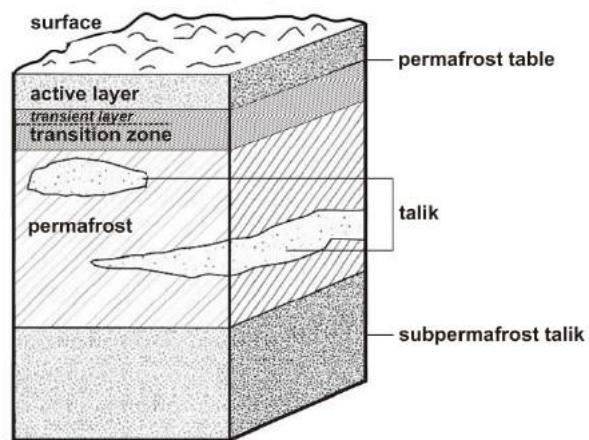


FIGURE 1-1: Vertical cut through the permafrost zones according to French (2007) and Shur (2005).

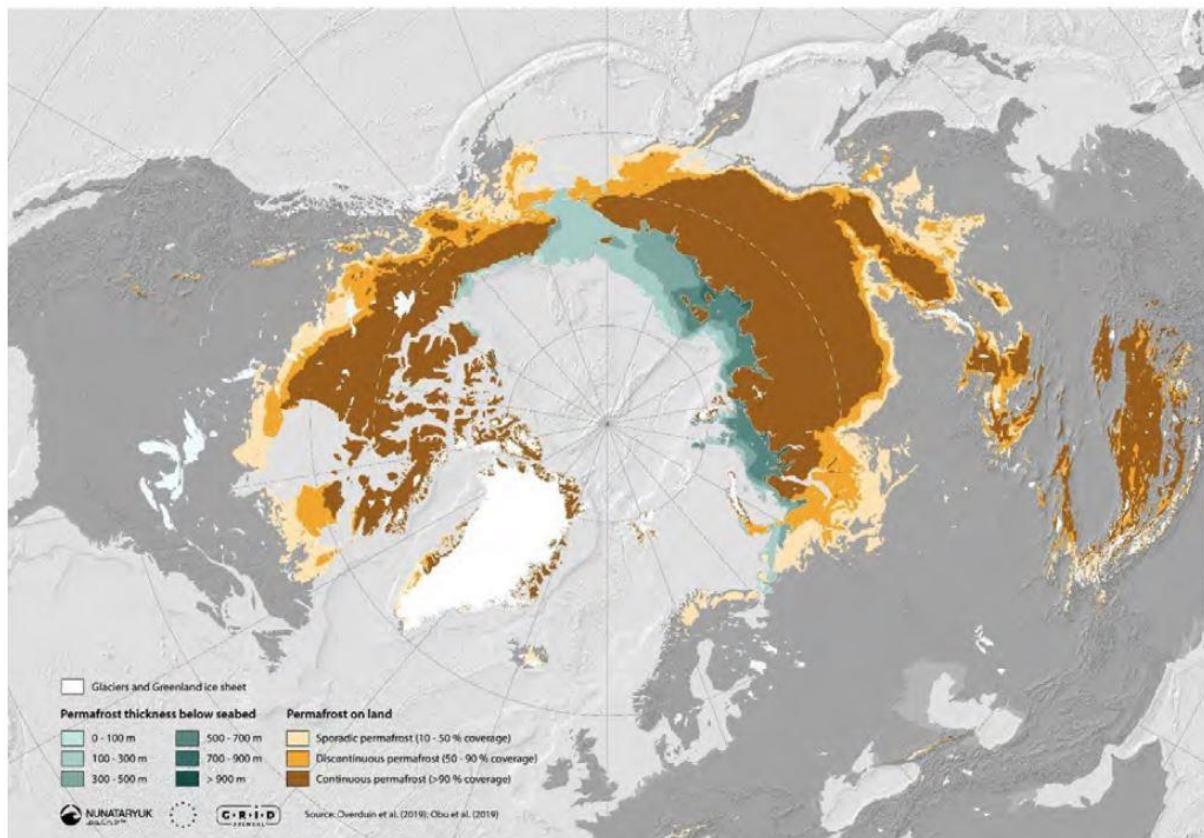


FIGURE 1-2: Permafrost distribution in the Northern Hemisphere. In Strauss et al. (2021a).

Several studies including distribution maps have been made on the distribution of permafrost in high latitudes (Hedingbottom et al., 1993; Brown et al., 1997; Fedorov et al., 2018; Obu et al., 2019; Strauss et al., 2021b). Zhang et al. (1999) additionally studied the distribution of ground ice in the permafrost region of the Northern Hemisphere. According to Zhang (1999) the following forms of permafrost are differentiated due to the permafrost covering: the continuous and the discontinuous zone. Continuous permafrost covers over 90 % of the permafrost region (Fig. 1-2). Discontinuous permafrost zones (50-90 % coverage) are separated by areas of unfrozen ground. Where permafrost occurs sporadically (10-50 %) or as isolated patches (0-10 %), it is usually confined to individual "islands", often beneath peaty organic sediments (French, 2007; Strauss et al., 2021a).

Figure 1-2 shows the permafrost distribution in the Northern Hemisphere. The area from eastern Siberia through Alaska to westernmost northwestern Canada remained unglaciated during the last glacial period and is referred to as Beringia (Strauss et al., 2017). The map shows that the year-round frozen ground in the continuous permafrost zone in northern Eurasia covers more area than the part in North America. The frozen ground in northern Eurasia is also much thicker. The known maximum thickness is about 1 500 m (Schirrmeister et al., 2012; Williams and Ferrigno, 2012). According to Obu (2019) the combined extent of all permafrost zones is $20.8 \times 10^6 \text{ km}^2$. Regions with particularly ice-rich deposits are termed as the Yedoma domain (Ice Complex, explained in more detail in the chapter 2.2).

1.3.2 Intrasedimentary ground ice

The presence of ground ice is one of the most important features of permafrost soils (Mackay, 1972). The permafrost region is strongly dependent on ground ice content as it stabilizes the sediment. The freezing is accompanied by a volume expansion of 9.05 % (French and Shur, 2010). Harris et al. (1988) defines the term ground ice as all types of ice formed in freezing and frozen ground. The study of the chemistry, stratigraphic characteristics, form and structure of ground ice is termed Cryostratigraphy (Gilbert et al., 2016; Pollard, 2018; Fan et al., 2021).

Cryostructures are formed by the shape, distribution and proportion of ice, sediment, or rock in frozen soil, thereby offering insights into various soil freezing processes (Murton, 2013).

These structures reflect the amount and distribution of ice within the sediment and can be seen with the bare eye (French and Shur, 2010) (Fig. 1-3).

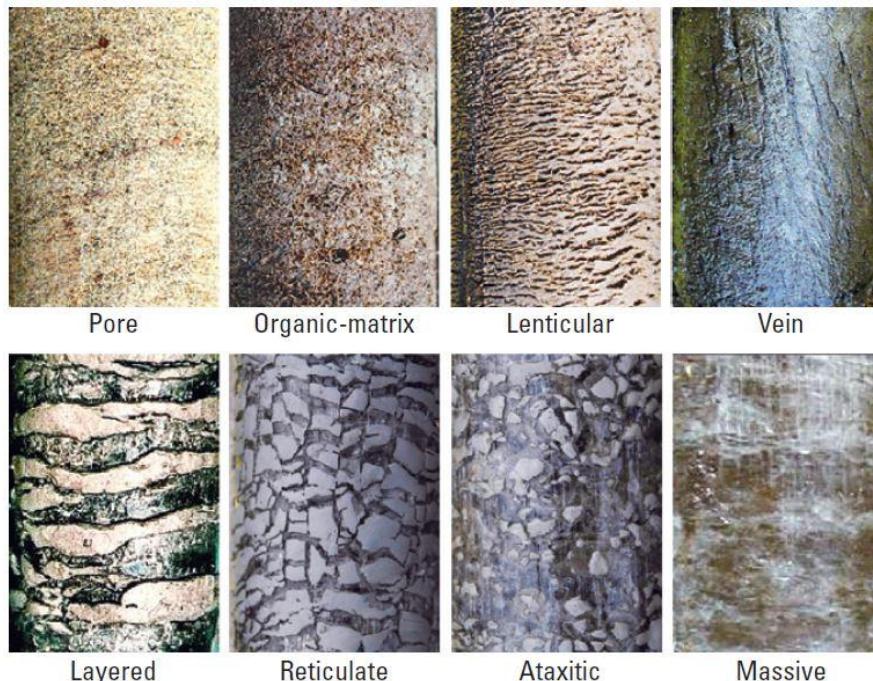


FIGURE 1-3: Eight different types of cryostructures (provided by M.T. Jorgenson, ABR, Inc., Fairbanks, Alaska). In Williams and Ferrigno (2012).

The development of cryostructures depends on three main factors: (1) the physical properties of soil, sediment, or bedrock; (2) the availability of moisture and (3) the formation of frozen soil (Gilbert et al., 2016; Fan et al., 2021).

Many scientists tried to classify ground ice. In Russia, the first classification was developed by Shumskii (1959). He identified over 20 different types of ground ice. Many other classifications followed (Mackay, 1972; Pollard, 1990; French and Shur, 2010; Vasil'chuk, 2012; Kanevskiy et al., 2013; Murton, 2013; Gilbert et al., 2016; Pollard, 2018).

Today, ground ice is usually classified in North America on the basis of the water source and the principal transfer process at the time of freezing (French and Shur, 2010). Depending on how the cryostructures were formed, they are classified into different types of ground ice. Cryostructures like for example lenticular, layered, reticulate and crustal are described as segregated ice (French and Shur, 2010). Segregated ice, pore ice, vein ice and buried ice are of particular importance in terms of their potential volume and widespread occurrence (Pollard, 2018). Buried ice is not relevant in the context of ground ice (Harris et al., 1988) because it is largely buried sea, lake, river and glacier ice (Mackay, 1972).

French and Shur (2010) describe the most widespread forms of ground ice as follows.

Segregated ice forms when unfrozen water migrates through soil pores toward the freezing zone by cryosuction. Lenses are formed with thicknesses ranging from a few millimeters to massive ice bodies tens of meters thick. Fine-grained sediments are particularly susceptible to ice segregation and frost heave at the ground surface (e.g., pingos). When segregated ice thaws, it releases excess water and can cause ground subsidence.

Pore ice, also known as cement ice, is the bonding material that holds the soil grains together. It is formed in capillary spaces by the freezing of moisture present in the sediment. Soil held together by pore ice does not release excess water during thawing. Therefore, thawing of pore ice does not cause the soil to sink, although there may be a loss of bearing capacity (Mackay, 1972).

Vein ice, also termed wedge ice, forms when heat contraction cracks or “frost cracks” at the surface are filled with a combination of blown snow and meltwater in the spring and re-freeze in the ground during the winter. Repeated occurrence of cracks over a long time in the same place create wedge-shaped ice bodies, called ice wedges (Liljedahl et al., 2016) (Fig. 1-4). In this study, the focus is on segregated and pore ice. Wedge ice is not part of this synthesis.

1.3.3 Ice wedges

The formation and degradation of permafrost and associated changes in ground ice conditions can form unique landscape features (Fan et al., 2021). Ice wedges are the most widely distributed type of ground ice here (Mackay, 1972) and a prominent feature of permafrost in the Siberian Arctic. Ice wedges are formed over a long period by the repeated thermal contraction of the soil due to temperature changes at the surface. The frost cracks arrange themselves in polygonal structures.

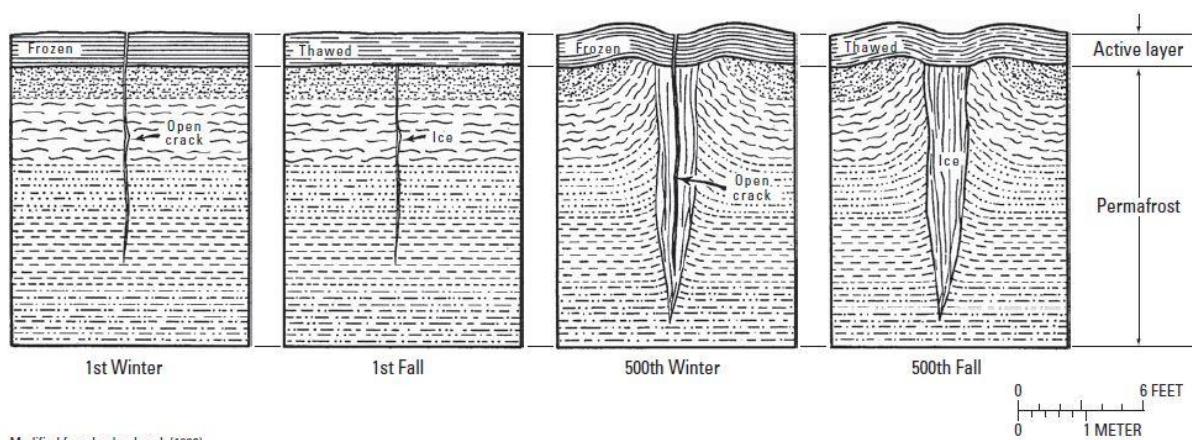


FIGURE 1-4: Schematic drawing of the evolution of an ice wedge according to the contraction-crack theory (Lachenbruch, 1962). In Williams and Ferrigno (2012).

Thermal expansion pushes the sediment up over the shoulders of the ice wedge (French, 2007) and a sediment mound forms along the ice wedge (Fig. 1-4). The elevated ridges result in polygonal relief formation. The diameter of a polygon can be 5.0 m to several decameters (Liljedahl et al., 2016). The size of the polygon depends on the temperature. The harsher the climate, the larger the temperature gradient, the smaller are the polygons. The size also depends on the lithology because the heat conductivity depends on the grain size and the ice content.

Ice wedge polygons are typical of lowlands tundra in the continuous permafrost zone (Nitzbon et al., 2019). The calculated maximum volume of wedge ice ranges from 31.4 to 63.2 vol% for Yedoma deposits and from 6.6 to 13.2. vol% for Alas deposits (Ulrich et al., 2014a).

These structures are clearly visible especially when viewed from high above (Fig. 1-5). The harsh continental climatic conditions over thousands of years have led to the formation of huge wedge-shaped bodies of vertically foliated ice (French and Shur, 2010) (Fig. 1-6). The presence of massive syngenetic ice wedges (up to decameters tall and meters wide) dominate the permafrost region consisting of Siberia, Yukon and Alaska (Lachenbruch, 1962; Schirrmeister et al., 2017d). In this region ice wedges make up about 50 % of the ground volume (Schirrmeister et al., 2013).

The presence of permafrost with ice-rich surficial deposits does make landscapes vulnerable to climate warming (Fedorov, 2019). The ice wedges are particularly susceptible to thawing due to their high excess ice volume. Increases in active layer depths lead to thawing of the ground ice and eventually to ground subsidence, as well as low-centered polygons (well seen in Figure 1-5). Further degradation leads to high-centered polygons accompanied by thaw lakes.



FIGURE 1-5: Polygonal networks in the Arctic tundra. Photo by J. Lenz.



FIGURE 1-6: Syngenetic ice wedges. Person for scale. Photo by V. Tumskoy. In Schirrmeister et al. (2013).

1.3.4 Thermokarst and Alases

Thermokarst is one of the most obvious forms of permafrost degradation in periglacial landscapes. Thermokarst processes depend upon temperature and precipitation as well as local permafrost characteristics (Bouchard et al., 2017). These processes occur mostly in flat lowlands terrain with low hydraulic gradients and is defined as the process by which characteristic landforms are formed by the thawing of ice-rich permafrost or massive ice (van Everdingen, 1998; Morgenstern et al., 2011; Morgenstern et al., 2020).

Figure 1-7 shows the thermokarst degradation initially described by Soloviev (1962). The initial thermokarst lake development results from thawing of excess ice in the form of syngenetic ice wedges. After thawing, the water collects in ponds. Due to the low albedo of the dark water surfaces, these areas get warm. Further degradation of the ice-rich deposits below causes ground subsidence. The ponds can coalesce into large thaw lakes, which are a dominant feature of the wet polygonal tundra of the Northern Siberian lowlands (Schirrmeyer et al., 2017d). The largest lakes existed during the Early Holocene Optimum, when Thermokarst activity was at its highest (Harris et al., 1988; French, 2007).

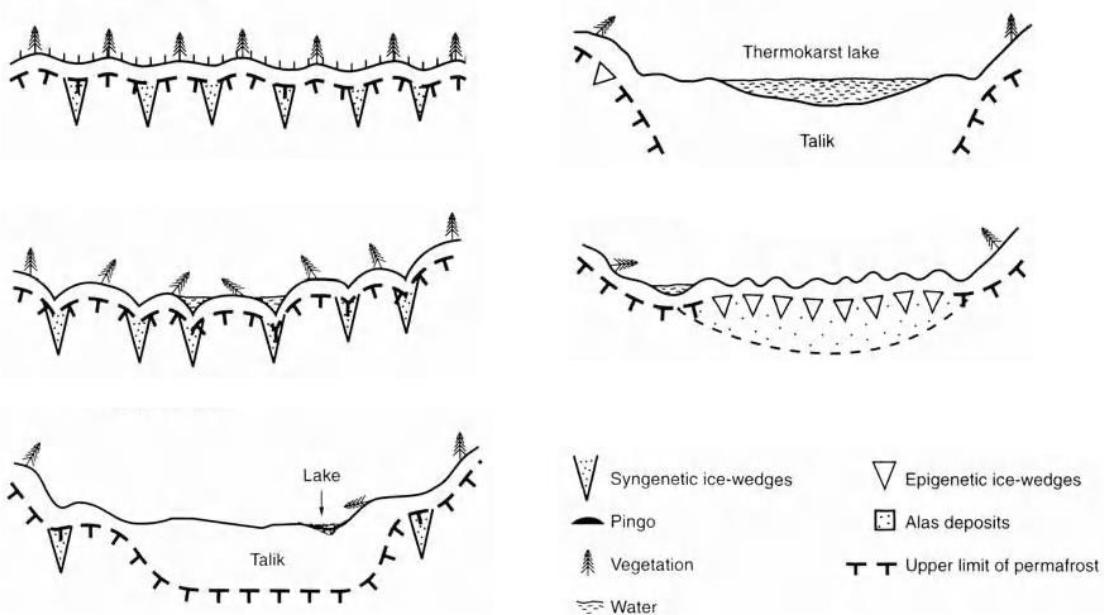


FIGURE 1-7: Thermokarst degradation and Alas formation. Excerpt from French (2007)

Next, the lakes drain along the gradient into nearby rivers, other thermokarst lakes or the sea. The drainage of a lake exposes the lake bottom to subfreezing winter air temperatures (Samsonov et al., 2016). Renewed permafrost aggradation can occur under new soil development in the drained thermokarst lake basin (DTLB). These thermokarst depressions are also called “Alas” (Morgenstern et al., 2020). Permafrost aggradation and lake bottom heave occur in these thermokarst depressions and epigenetic ice wedges can form.

Thermokarst has a major impact on the permafrost-stored OC, local hydrology, sediment deposition and the composition of arctic ecosystems (Morgenstern et al., 2011).

1.3.5 Pingos

Another ice-rich landform occurring in permafrost regions is called pingo. According to Mackay (1972) a pingo (the Russian equivalent is bulgunniakh) is a conical ice cored hill which is domed up by intrusion of water under pressure. Pingos can be distinguished by their water source and ice type (French, 2007). The characteristics of the two main types of pingos, hydrologically open- and closed-systems, are briefly described.

The open-system (or hydraulic) pingos appear mostly in the discontinuous permafrost zone and are smaller than closed-system pingos (Mackay, 1972; Grosse and Jones, 2011; Encyclopedia Britannica, 2021). These pingos are hydrological phenomena that form in areas with topographic relief due to a high hydraulic potential of unfrozen groundwater originating from the highlands. The water penetrates the permafrost under artesian pressure and reaches the surface where it freezes. An ice lens forms and heaves the overlying ground to produce a mound. According to Samsonov et al. (2016) the growth of the pingo can continue as long as the area under the pingo is supplied with groundwater. Thus, a pingo can continue to grow for hundreds to thousands of years.

The closed-system (or hydrostatic) pingos are typically found in areas of low-lying, poorly drained terrain in regions of continuous permafrost (Fedorov, 2019). This type develops mostly in drained lake basins, often formed by thermal erosion of ice wedges. The pores of the unfrozen sandy lake sediments beneath the lake basin are saturated. The permafrost aggradation creates hydrostatic pressure on the pore water from the outside. In this case, the increasing pressure can lift the relatively small area of thin permafrost beneath the remnant lake and trigger pingo growth (Samsonov et al., 2016).

Pingos can reach heights up to several tens of meters and diameters of up to 600 meters (Grosse and Jones, 2011). The considerable amount of ground ice stored in pingos makes these frost hills susceptible to surface disturbance. When excess ice melts, the ground loses volume and can subside, causing damage to the tundra surface (Mackay, 1972).

2 Study Area

This study focuses on data collected in the Yedoma domain of the Sakha Republic in Northeastern Siberia (Fig. 2-1), for which Strauss et al. (2021b) estimated a total extent of 1 957 885 km². The data used for synthesis in this study are from sites between ~61° - 77°N and ~117° – 162°E.

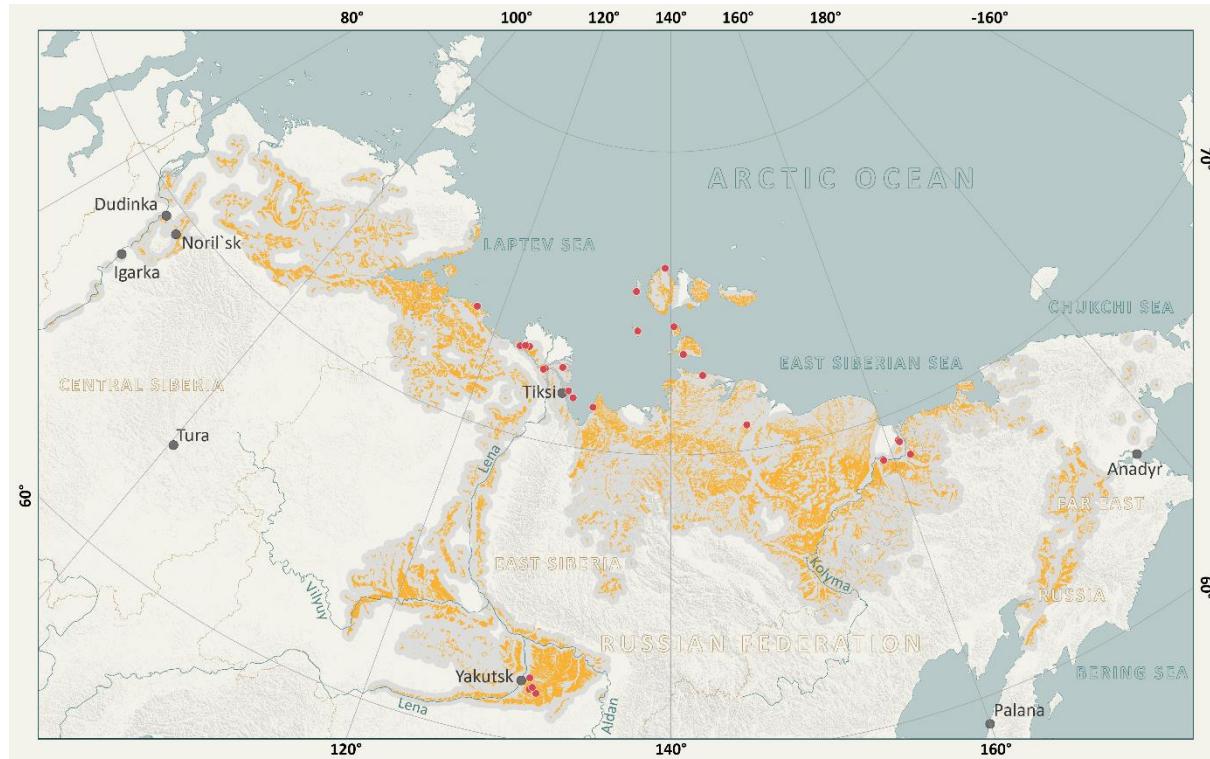


FIGURE 2-1: Distribution of the Siberian Yedoma domain with the 26 sites studied (more information in table 3-4). 83 % of the yellow areas are confirmed. The grey area shows the Yedoma domain outline visualized with a 20 km buffer around all digitized areas. In Strauss et al., 2021b.

2.1 Climate

Siberia is characterized by continental subarctic climate with long and dry winters, short and cold summers, little precipitation and low humidity (Encyclopedia Britannica, 2022). The Siberian winter becomes colder from west to east, as the western part of Russia is more often influenced by currents of Atlantic origin. The coldest area is therefore the Sakha Republic in Northeastern Siberia, the study area of this work. An important feature of the Siberian climate in general is the strong temperature variations from year to year, even in the annual mean values, which are mainly determined by cold season temperatures (Groisman et al., 2013). Along the north coast and overlooking the Arctic Ocean, there is polar climate. According to the Köppen-Geiger system, the climate here is classified as polar tundra (Kottek et al., 2006). The meteorological station in Tiksi, located about 100 km southeast of the Lena Delta, has measurement data for the 30-year period 1961-1990. For this reference period, a mean daily minimum temperature of -36.1 °C was measured in January and a mean daily maximum

temperature of 10.6°C was measured in July (ROSHYDROMET, 2021). The region is characterized by a low precipitation rate. The mean annual precipitation is 26.9 mm. Almost half of the precipitation falls as rain during the growing season from mid-June to mid-September. The other half falls as snow during the rest of the year (Boike et al., 2008b).

The north and the south of Eastern Siberia differ in maximum temperatures in summer. Along the Arctic coast, the average daily temperature is about 0°C , while in the southernmost areas it is as high as 20°C . The southern half of the Sakha Republic is characterized by a subpolar climate. The climate around Yakutsk is classified as extremely continental by the Köppen-Geiger system (Kottek et al., 2006; Climate-Data, 2021). Yakutsk is considered the coldest city in the world, reaching a mean daily minimum temperature of -36°C in January and a mean daily maximum temperature of 25°C in July (Fig. 2-2). Thus, the temperature amplitude between January and July can reach about 60°C , indicating strong continental conditions. The mean annual precipitation is 20 mm.

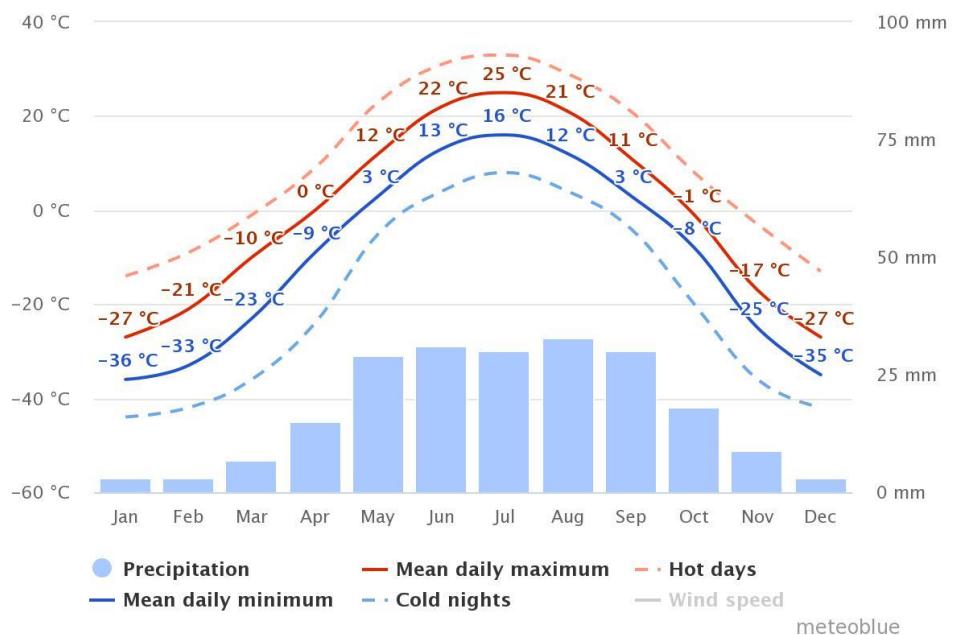


FIGURE 2-2: Average temperatures and precipitation in Yakutsk. The Figure shows the average of the hottest day and coldest night of each month of the last 30 years (meteoblue, 2021).

The Arctic climate is changing and Siberia is the region with the largest surface air temperatures anomalies in recent years (Fig. 2-3). The region reaches new record temperatures every year. For example, the maximum temperature in June 2020 rose to 38°C . At the same time, the number and intensity of wildfires in the Sakha Republic increased (Copernicus, 2020). Siberia is the region with the largest temperature changes within the Northern Hemisphere ($1.39^{\circ}\text{C}/100$ years). The changes here are higher than in Northern Eurasia and Northern Asia ($1.29^{\circ}\text{C}/100$ years), the Arctic ($1.28^{\circ}\text{C}/100$ years), or the entire hemisphere ($0.77^{\circ}\text{C}/100$ years) (Groisman et al., 2013).

According to Groisman et al. (2013), systematic temperature changes in Siberia will continue to be among the largest in the world. These anomalies are favored by the decrease in Arctic sea ice observed in recent decades (Wegmann et al., 2018). These changes in sea ice thickness are among the most important signs of ongoing global climate change (Groisman et al., 2013). The disappearance of the ice sheet in the fall allows the warm ocean currents from the Atlantic to enter the Barents Sea. This warms the lower troposphere, which has a great impact on the temperatures and climate in Siberia, especially in the winter months.

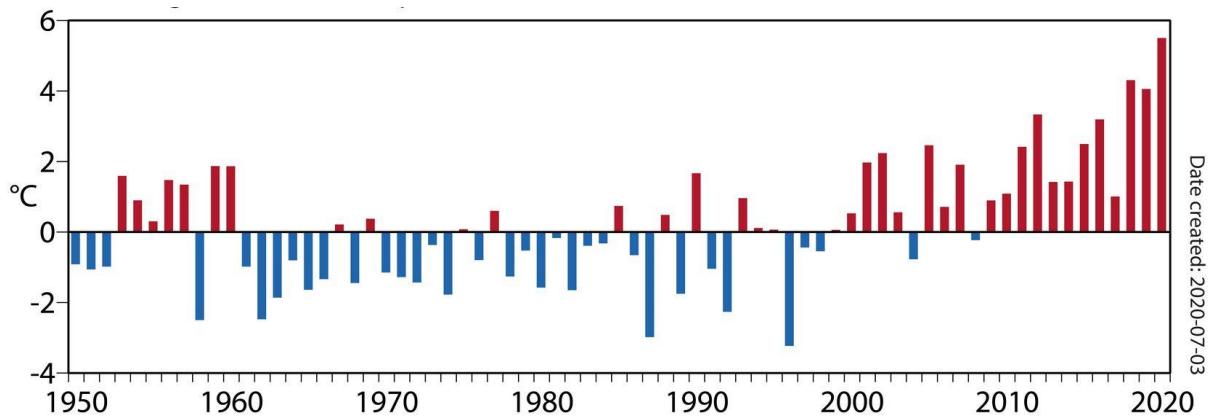


FIGURE 2-3: Time series of annual mean surface air temperature anomalies from 1979 to 2020 averaged over Arctic Siberia. Source: ERA5. Credit: Copernicus Climate Change Service, ECMWF. In Copernicus (2020).

Consequences can be the influence on the energy and water vapor supply of the polar atmosphere. Turbulent heat fluxes as well as cold outbreaks may be the result. The formation of an intense northwesterly transfer of moist air masses is favored, which may increase precipitation in Siberia. Future anomalies and extreme weather events are therefore expected (Groisman et al., 2013; Wegmann et al., 2018).

2.2 Characteristics of the Yedoma domain

The Yedoma domain is part of the continuous permafrost region of the Northern hemisphere. Yedoma has been known to native people for centuries (Shur et al., 2022). The term "Ice Complex" was introduced in 1940s by P.A. Soloviev to refer to the year-round frozen ground of various age, composition, genesis and thickness (Schirrmeyer et al., 2013).

The Yedoma Ice Complex occurs in regions that were unglaciated during the late Pleistocene, also known as Beringia (Strauss et al., 2017). It stretches from the Taymyr Peninsula in North Siberia across Alaska to the Yukon Territory in Canada (Schirrmeyer et al., 2013). In Siberia, the Yedoma deposits are widespread in large parts of the Northeastern islands and coastal lowlands of the Laptev and East Siberian seas and further south in the Yana-Indigirka and Kolyma lowlands, in Central Yakutia and in Far East areas (Strauss et al., 2021b), making it a characteristic feature of Siberia (Hubberten et al., 2004; Grosse et al., 2007; Morgenstern et al., 2011; Schirrmeyer et al., 2017d).

The term “Yedoma domain” refers to the region where Yedoma deposits are expected to occur (Strauss et al., 2021b). It was also used to describe these deposits because they have a very high ice content compared to other permafrost deposits (Grosse et al., 2013; Monhonval et al., 2020). They once formed under specific climate and environmental conditions (Hubberten et al., 2004; Günther and Morgenstern, 2016; Shur et al., 2022).

There are many hypotheses on late Pleistocene depositional processes in the Siberian Yedoma region. According to Schirrmeister et al. (2020), Yedoma sedimentation was controlled by local conditions such as source rock, weathering processes and various sediment transport processes. The hypothesis that Yedoma has polygenetic origin is widely supported (Schirrmeister et al., 2020; Shur et al., 2022). Alluvial, fluvial and nivo-aeolian transport, accumulation in polygonal ponds and continued in-situ frost weathering are thought to have been involved in the formation (Günther and Morgenstern, 2016; Schirrmeister et al., 2020). Yedoma deposits accumulated under cold-arid climate conditions in the late Pleistocene during Marine Isotope Stage (MIS) 3 to MIS 2 (Schirrmeister et al., 2022) (see Chapter 3.1.4). Over millennia, continuous sedimentation led to the accumulation of permafrost deposits several tens of meters thick (Schirrmeister et al., 2013). Other important post-depositional processes that influenced the Yedoma IC deposits include solifluction, cryoturbation and pedogenesis (Grosse et al., 2007; Grosse et al., 2020; Schirrmeister et al., 2020).

The material contains poorly sorted silt and fine-grained sands with an enormous ground ice content of 80-90 vol% (Grosse et al., 2007; Schirrmeister et al., 2017d) in the form of huge syngenetic ice wedges and intrasedimental ice (Schirrmeister et al., 2013; Gilbert et al., 2016; Günther and Morgenstern, 2016; Schirrmeister et al., 2020; Wetterich et al., 2020; Windirsch et al., 2020). Ground ice in permafrost can last hundreds or thousands of years and represents an important archive of environmental change (Murton, 2013). In addition, these deposits are unique because they contain a deep reservoir of OC that is only weakly decomposed (Strauss et al., 2012; Schirrmeister et al., 2013; Strauss et al., 2017; Wetterich et al., 2020). When excess ground ice degrades, deep sediments are subsidized and partly exposed and their OC stocks can be mobilized (Strauss et al., 2013; Schuur et al., 2015). The current pan-Arctic Yedoma domain is 2 587 000 km² in extent and contains between 327 and 466 Gt OC (Strauss et al., 2017; Strauss et al., 2021b).

The Yedoma domain consist of hill-like landforms as high as 50 m above river level (a.r.l.) dissected by deep thermo-erosional valleys and thermokarst depressions (Strauss et al., 2012; Grosse et al., 2013; Strauss et al., 2017). In addition, the Yedoma domain is characterized by numerous lakes, which are the result of various thawing processes (Morgenstern et al., 2011). During the late glacial and Holocene warming periods, permafrost began to degrade. According to Strauss et al. (2013), 56 % of the Yedoma area consists of frozen thermokarst deposits, corresponding to an area of 775 000 km².

The composition of the Yedoma sediments and the depositional regimes in the Yedoma area differ considerably (Windirsch et al., 2020). Today, the area includes deposits that were never

affected by the thaw, on the one hand and frozen deposits that accumulated in Alas landforms after Yedoma degradation, on the other hand (Olefeldt et al., 2016; Strauss et al., 2017). These Holocene deposits (colored in green in Fig. 2-4) are mostly between 5 and 10 m thick (Schirrmüller et al., 2011c). Morphologically, the lowlands are dominated by Holocene thermokarst basins. Only remnants of the late Pleistocene Yedoma hills are preserved (Grosse et al., 2007; Schirrmüller et al., 2011b). The Yedoma domain can therefore also be described as a periglacial relief type formed by thermokarst processes.

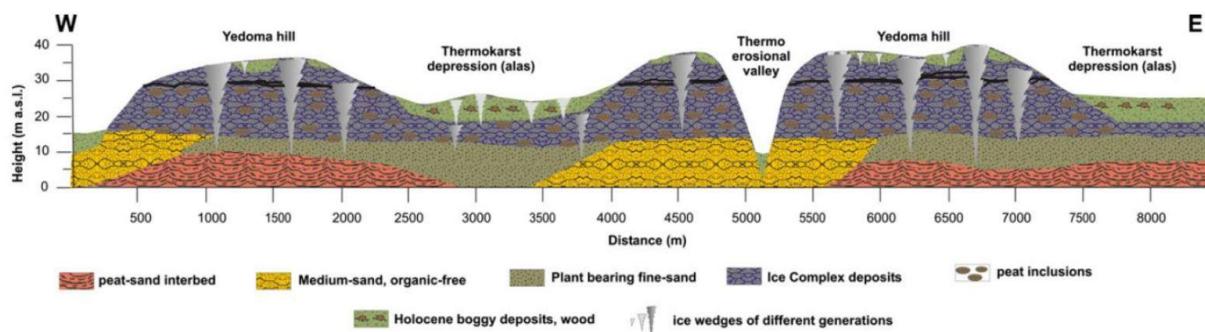


FIGURE 2-4: A schematic cross section of Kurugnakh Sise Island (Lena Delta) representative of Yedoma and Alas deposits, showing the composition of the various deposits and the morphology of an Ice Complex with numerous syngenetic ice wedges in Yedoma hills, thermokarst depressions where new ice wedges had already formed and thermo-erosional valleys. In Schirrmüller et al. (2011b).

3 Data and Methods

For the ground ice synthesis, data are required that include an ice or water content. Available data on ground ice and related parameters, such as total organic carbon (TOC) and grain size, will be compiled and harmonized. One major objective of this study is to collect and synthesize all the available data from

- (1) data repositories (e.g., PANGAEA),
- (2) expedition reports (e.g., Reports on Polar and Marine Research),
- (3) scientific papers,
- (4) student projects (e.g., diploma and master thesis)
- (5) and PhD theses.

The dataset itself, based on those sources is then used to

- (1) visualize this ground ice information on a map using desktop geoinformation systems (ArcGIS) to provide a clearer overview of the distribution and content of ground ice in the study area,
- (2) decipher the dependence of ice content, TOC and grain size,
- (3) visualize the distribution of the mean ice content over different depths with RStudio,
- (4) identify local differences and patterns.

3.1 Important parameters

The main parameters needed for this study are briefly explained in the following. Since this study deals exclusively with intrasedimental ice, ice wedges are not considered in this paper. Initial studies of ice content in wedge ice were conducted by Ulrich et al. (2014) and Strauss et al. (2013).

3.1.1 Ice content types

This study is all about ice content, so this is the most important parameter. There are different types of ice contents. The most relevant to this study are explained and calculated after Murton (2013) as follows.

The common ice content, which is used in this study, is the *absolute ice content*. The absolute ice content is related to the wet sample weight and thus could reach 100 % in a pure water or ice sample in maximum.

$$\text{absolute ice content [wt \%]} = \frac{\text{mass of water (g)}}{\text{mass of wet sample (g)}} \times 100$$

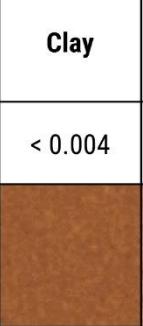
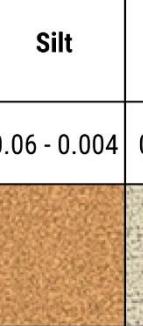
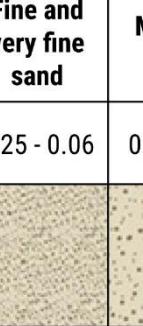
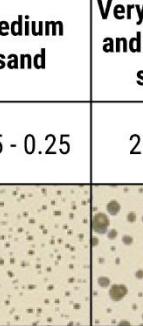
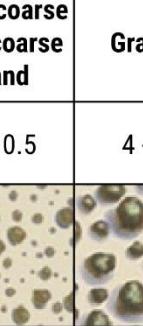
The *gravimetric ice content* denotes the ratio of the mass of ice in a sample to the mass of the dry sample (expressed in %). For the synthesis, the absolute ice content in percentage was needed. If the ice content data was given in gravimetric it was transformed to the absolute ice content using the formula

$$\text{absolute ice content [wt \%]} = \frac{\text{gravimetric ice content [wt\%]}}{100 + \text{gravimetric ice content [wt\%]}} \times 100$$

3.1.2 Grain size

Grain-size analysis is a sedimentological analysis used to determine the size of the various particles that make up a given unconsolidated sedimentary deposit or soil unit. Grain-size parameters are fundamental in describing sediment structure and its variations. Determining the fraction of grain particles of different sizes in a sediment sample offers the possibility to reconstruct environmental and energy conditions and thus to draw conclusions about the transport medium (e.g., glacier, water, or wind) and the depositional process (López, 2017). Depending on the grain size, their determination is made by direct macroscopic measurement, by sieving, by elutriation, laser measurement or by measurement under the binocular microscope or the scanning electron microscope (Füchtbauer, 1988).

TABLE 3-1: Table showing the different ranges of particle size; after Wentworth (1922) in López (2017), modified.

							Boulder > 256 mm (-8 to -12 φ)	
Clay	Silt	Fine and very fine sand	Medium sand	Very coarse and coarse sand	Gravel	Pebbles		Wentworth size class
< 0.004	0.06 - 0.004	0.25 - 0.06	0.5 - 0.25	2 - 0.5	4 - 2	256 - 4		mm scale
								
< 8.00	4 to 8	2 to 4	1 to 2	-1 to 1	-2 to -1	-8 to -2		phi scale

Since large pores drain better due to gravity, smaller pores store more water and thus have a higher ice content. Since the ice-rich Yedoma region has predominantly very fine silty- to medium-grained sandy deposits (Schirrmeyer et al., 2003; Grosse et al., 2007; Strauss et al., 2012; Schirrmeyer et al., 2017d), the data collection for this study focuses mainly on grain sizes up to 2000 µm.

3.1.3 Total organic carbon (TOC)

Total organic carbon (TOC) is the carbon stored in organic matter. Organic carbon enters the soil through the decomposition of plant and animal residues, root exudates, living and dead microorganisms and soil biota (USDA, 2009). Therefore, TOC values reflect variations in bioproduction and organic matter accumulation. The TOC to total nitrogen (TN) ratio, for example, enables statements to be made about the degree of composition and degradation of a soil unit (Schirrmeister et al., 2011b; Strauss et al., 2012).

One method of determining the TOC content is by combustion and analysis of the resulting gases, e.g. measured with a “CNS Analyser Elementar Vario EL III” and a “VarioMAX C elemental analyzer” (Windirsch et al., 2020). Other devices used for the TOC determination are „CS-Autoanalyzer (ELTRA CS 100/1000 S)” and „CNS Microanalyzer (LECO 932)“.

Buried cryosols enriched in organic matter are predominant in Yedoma deposits and according to Strauss et al. (2013) and Schirrmeister et al. (2011a), the TOC content varies between < 1 to > 20 wt% with site specific average values between 1.2 to 4.8 wt% (Schirrmeister et al., 2013). This study also investigates whether there is a dependence between ice content and other parameters such as TOC, ice content, or grain size.

3.1.4 Stratigraphy

Additional stratigraphy information was contributed to better classify the ice content data. According to the generally known stratigraphic principle, the lower sedimentary layers are older than those above (Litt et al., 2007). Thus, by analyzing the deeper layers, one can determine the age sequences. The aim of stratigraphic classification is to order sediment layers relatively in time based on the organic and inorganic features they contain and to relate even spatially distant sedimentary units to each other in time (Astakhov and Nazarov, 2010; Hurka et al., 2019).

The stratigraphic classification of the middle Pleistocene to Holocene in the East Siberian Arctic lowlands is based mainly on palynological, paleozoological, cryolithological and geochronological data. Different dating methods were used: Radiocarbon ages (^{14}C) are shown as uncalibrated ages, IRSL - Infrared-stimulated luminescence dating, OSL – optically-stimulated luminescence, Th/U - Thorium/Uranium radiometric disequilibria dating and TL—thermoluminescence dating (Schirrmeister et al., 2022). The results of the analyses of e.g., sediments, ice, isotope ratios, pollen and fossils etc. are summarized as Marine Isotope Stages (MIS).

The oldest permafrost deposits discovered by this method in Northeast Siberia are estimated to be about 650 000 years old, corresponding to MIS 16 (Murton et al., 2020).

This study analyzes data from sediment samples that have been assigned to MIS 1 through MIS 8. Table 3-2 shows which ages can be assigned to the MIS classes in Northeastern Siberia. The even numbers represent a cold period, the odd numbers a warm period.

TABLE 3-2: The regional Quaternary stratigraphic schemes and the corresponding Marine Isotope Stage (MIS). In Schirrmüller et al. (2022), modified.

Epoch	Marine Isotope Stages	Ages (kyr)	Siberian nomenclature
Holocene	MIS 1	0 to 11.7	Holocene
Late Pleistocene	MIS 2	11.7 to 29	Sartan
	MIS 3	29 to 57	Molotkov (Kargin)
	MIS 4	57 to 71	Zyryan (Ermakovo)
	MIS 5 a – d	71 to 115	Buchchagy/Kuchchugui stratum
	MIS 5 e	115 to 130	Krest Yuryakh (Kazantsevo)
Middle Pleistocene	MIS 6	130 to 191	Zimové stratum
	MIS 7	191 to 243	Yukagir (Tazov)
	MIS 8	243 to 300	

3.2 Data compilation

For the ground ice synthesis, I collected data from the study area that included ice or water contents. Additional data such as TOC and grain size were also collected. Scientists who have sampled permafrost in Northeastern Siberia since the 1990s were asked to contribute their data. Furthermore, the data were taken from data repositories (e.g., PANGAEA), expedition reports (e.g., Reports on Polar and Marine Research), scientific papers, student projects (e.g., diploma and master theses) and PhD theses. All in all, within this study the datasets from 28 different sites were collected.

All data was harmonized before being merged into a comprehensive database. For the work with ArcGIS and RStudio all data from the created database can be used that have a depth - as well as an absolute ice content value. This was the case on 26 sites for 2129 out of 2854 available samples.

Each data set has its own sediment sample designation. In the template, all samples were numbered. Information such as location, year and month were given or still had to be added in some cases. The exact longitude and latitude of the sampling location were given, which still had to be converted to decimals.

The different landscape types were grouped into classes to make the dataset clearer and easier to understand. All Yedoma related landscape types were changed to "Yedoma upland". Subsea sand deposits and marine deposits were changed to "subsea" and sand plain became "Non-Yedoma upland". Furthermore, "Pingo" and Drained Thermokarst Lake Basins, abbreviated in the template as "DTLB", were given as landscape types.

The height was given in meters above sea level (m.a.s.l.) and the depth in meters below surface (m.b.s.). For the work with ArcGIS, I had to make the elevation data comparable. To make this possible, I had to convert all height data to depth data. To obtain the missing depth measurement data, I searched the expedition reports. Sometimes the corresponding values were listed in tables, or the soil profiles were shown in a schematic figure, so that the height could be converted into depth using a new anchor point that served as a basis for the conversion.

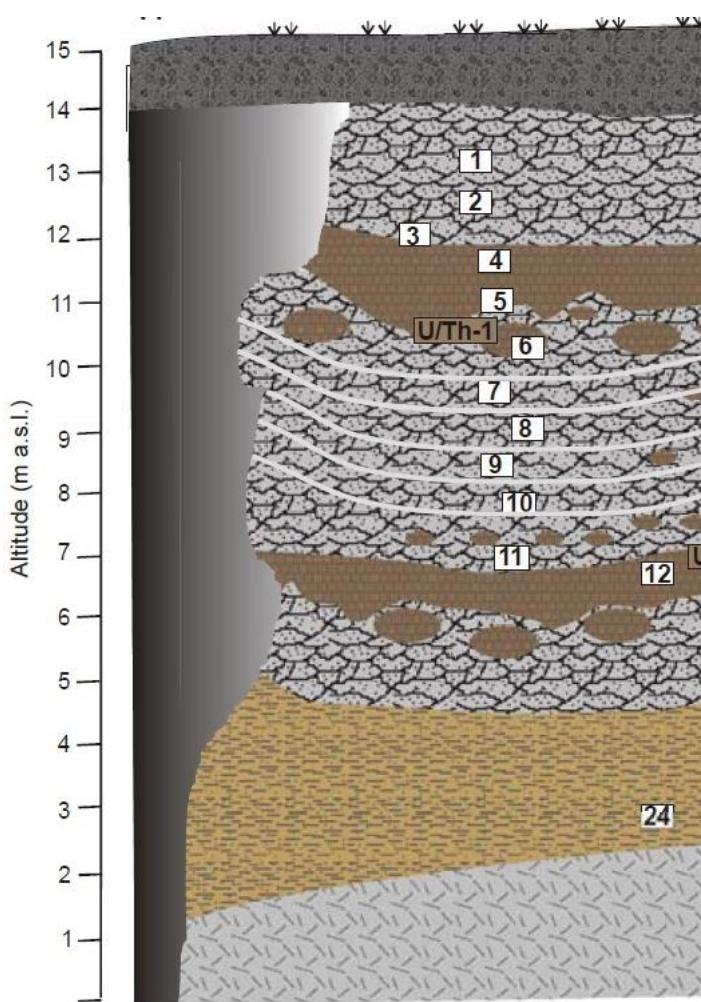


FIGURE 3-1: Section of a scheme of the subprofile L7-15-A (Boike et al., 2008a).

An example how the conversion of height to depth was done, is described briefly. Figure 3-1 shows a section of scheme for explanation. If in the profile sketch the altitude scale goes from 0-15 (m.a.s.l.), 0 is the sea level height and 15 is the ground surface of the profile. Here I set the anchor point at the surface as the beginning of the depth measurement. 15 m in height is now 0 m in depth. 14 m in height is 1 m in depth and so on. The depths for the samples can now be converted or read off the scale. Based on the example in figure 3-1, sample 1 is located at a depth of 2 m.

The grain size was given in μm and in percent. Many datasets contained more detailed grain-size measurements. For example, some datasets included a detailed breakdown of samples such as:

Grain size (mean); <2 μm ; 2-20 μm ; 20-63 μm ; 63-200 μm ; 0.2-1 mm; and 1-2 mm.

For this study, I compiled a summary of fine, medium and coarse sand. Therefore, some values had to be summarized so that the values for clay (<2 μm), silt (2-63 μm), sand (63-2000 μm) and gravel (>2000 μm) were given.

For example, to obtain the value of silt (<2 – 63 μm), I subtracted the grain size value of 20 – 63 μm with the value of <2 μm from the dataset. To obtain the value of sand (63 - 2000 μm), the grain size value of 1 - 2 mm had to be subtracted from the value of 20 - 63 μm .

Because the values were percentages, it was important that all grain size data (except the mean value) together resulted in 100 in the end. Unfortunately, grain size distribution data were not collected at all sites, so these data are not available for each data set.

The total organic carbon was reported as a percentage. The data in Excel had to be adjusted so that ArcGIS and RStudio recognizes the numbers. Therefore, no special characters were allowed to be included. Numerical values such as <0.10 (e.g., in TOC %) therefore had to be changed to 0.05. Unfortunately, TOC was not analyzed in every sediment sample.

3.3 Working with ArcGIS

After the data compilation and harmonization, the second aim of this study was to display the mean ice contents in a selected depth over the study area, the Siberian Yedoma domain. The implementation was tested with Esri ArcGIS 10.8 with an interpolation method called “Kriging”.

The Kriging method

I tested the applicability of geostatistical methods (such as the Kriging method) for my dataset. These methods are based on statistical methods and work with autocorrelation, i.e., with the statistical relationships between the measured points. Spatial autocorrelation quantifies a basic principle of geography: things closer together are more similar than things farther apart.

Kriging is an advanced geostatistical method that uses a group of distributed points with Z-values to generate an estimated surface. The main purpose of the Kriging method is to predict attribute values at unsampled positions. This method is based on the regionalized variable theory, which assumes that spatial variation in the phenomenon represented by the Z-values is statistically homogeneous across the surface. Which means, for example, that the same pattern of variation can be observed at all positions on the surface.

The Kriging tool fits a mathematical function to a specified number of points at a specified radius to determine the output value for each position.

In Kriging the surrounding measured values are weighted to derive a prediction for an unmeasured position. The general formula for both interpolators is formed as a weighted sum of the data:

$$\hat{Z}(s_0) = \sum_{i=1}^N \lambda_i Z(s_i)$$

s₀ = the predicted position
 Z(s_i) = measured value at the i-th position
 λ_i = an unknown weighting for the value measured at the i-th position
 N = the number of measured values

Creating an ice content map

The shapefile of the Yedoma map of Strauss et al. (2021) was used as the framework for the

interpolation in ArcGIS. Areas not belonging to the study area (such as West Siberia or Alaska) were clipped. This left the area of northeast Siberia for which sediment samples were available. The dataset provided ice contents down to a depth of 65 meters. In order to be able to make as accurate statements as possible for different depth layers, several depth classes had to be formed within these 65 meters.

Since most measurements were carried out in the first three meters of the sampling points, most data were available for these depths. Therefore, a class was assigned to each meter. Because measurements at greater depths are not as common, there were significantly fewer data available for the other two depth classes. The depths were divided into the following classes:

TABLE 3-3: Overview of the depth classes with the assigned depths.

Depth class	1	2	3	4	5
Depth (m)	0 – 0.99	1 – 1.99	2 – 2.99	3 – 19.99	20 - 65

The respective depth classes were exported to ArcGIS as extra shapefiles. Within these new shapefiles, the mean values of the ice contents could now be generated using the function “Dissolve”. With the averaged ice contents, it was now possible to perform a Kriging with the identically named spatial analysis tool for the study area within the five depth classes. The results can be seen in 4.1.

3.4 Working with R

R has the core functions to evaluate and visualize data statistically. I used RStudio as an interface for applying R. To get a first overview, a scatterplot matrix of all relevant data was useful.

There are 26 sites where a depth value with an associated ice content was determined. To subdivide the ice contents for a better overview, the determined depths had to be divided into depth classes. The depth classes are the same as those used in ArcGIS (see table 3-3).

Since different depth classes were to be displayed in R, a color was assigned to each class for better clarity and comparability. Warm colors were assigned to the first three classes, which are exposed to warmer air temperatures. Class 4 and 5 indicate the ice content in the greater depths and were kept in blue.

Some of the sites were sampled multiple times. Since the position changes with each new sampling, there are multiple values for latitude and longitude for a site. Therefore, these values had to be averaged in R to obtain a latitude and longitude for each site. The longitude and latitude assigned to each site have been summarized for reference in table 3-4.

Next, the ice contents measured in a depth class were averaged to allow comparability between the different sites. In the end, there was one mean ice content value per site and per depth class.

After installing the packages “ggplot2”, “ggplot.multistats”, “fields” and “reshape2”, the averaged latitudes could be plotted with the mean absolute ice contents. Two different presentations were chosen using the ggplot function “geom_bar” for a bar plot and “geom_point” for a scatterplot. For each type of presentation, one graph was created for the north-south ice content distribution one for the west-east distribution, so that there are four graphs at the end. In the scatterplots, the data points of a depth class were connected to each other to make the plot clearer and to allow comparability between classes.

After completion of the graphs, I decided to additionally display the active layer thickness (ALT). The data from Obu et al (2022) was taken from the Centre for Environmental Data Analysis (CEDA) Archive. This collection of rasterized data includes ground temperature, active layer thickness and permafrost extent for the Northern Hemisphere for the period from 1998 to 2019, derived from a thermal model driven and constrained by satellite data.

The data was too large for R, so it first had to be processed with CDO (Climate Data Operators) to get a compact data set that R could work with. CDO provides a range of climate data-related operations through the command-line and is suitable for handling gridded data.

The data were obtained from a model whose grid cells are 1 km^2 in size. In these cells, the boundaries between land and water become blurred. Thus, at the coastline, land areas are classified as water areas and vice versa. Since the model calculated the ALT data only for land areas, there is a loss of data. Because of this, the ALT data of some sites on the coastline are unfortunately lost.

Next, an average ALT was taken over all years. Then the new data set was interpolated in a regular grid of longitude and latitude. The longitudes and latitudes that were outside the study area were cut out to make the data set even smaller. Now the data set was read into R. Further packages had to be installed: “ncdf4”, “reshape2”, “raster” and “rgdal”. Using a second x-axis, the mean ALT was added to the existing scatter plot from north to south.

TABLE 3-4: Overview of mean latitude and longitude assigned to each location in decimal numbers.

Location	Latitude	Longitude
Bel'kovsky Island	73.365	135.58
Bol'shoy Lyakhovsky	73.324	141.39
Buor Khaya Peninsula	71.406	132.09
Bykovsky Peninsula	71.811	129.35
Cape Mammontov Klyk	73.636	117.17
Chersky	68.512	161.5
Duvanny Yar	68.631	159.11
Ebe-Sise Island	72.946	123.75
Khara Bulgunyakh	61.837	130.64
Khardang Island	72.950	124.21
Kolyma Delta	69.038	161.00
Kotel'ny South	76.172	139.22
Kurungnakh Island	72.339	126.3
Kytalyk	70.836	147.47
Maly Lyakhovsky Island	74.246	140.35
Muostakh Island	71.612	129.94
Olenyok Channel	72.880	123.21
Oyogos Yar Coast	72.603	143.43
Pokhodsk	69.094	160.95
Samoylov	72.373	126.48
Sobo-Sise Island	72.538	128.28
Stolbovoy Island	74.066	136.08
Tabaga	61.664	130.94
Turakh Island	72.974	123.79
Yakutsk area	62.142	130.37
Yukechi	61.763	130.46

4 Results

In the following, I present the results of my work with Excel, ArcGis Desktop and RStudio.

4.1 The data template

After harmonizing the data, the template labels in Excel are like this.

The whole Excel sheet can be seen in the Appendix.

TABLE 4-1: Labeling of the parameters of the template in Excel.

A	B	C	D	E	F	G	H	I	J
ID	Site	Year	Month	Location	Lat_Decimal	Long_Decimal	Landscape type	Height (m)	Depth (m)
K	L	M	N	O	P	Q	R	S	T
Absolute ice content (%)	TOC (%)	Grain size, mean (μm)	Clay (<2 μm) [%]	Silt (>2 - 63 μm) [%]	Sand (>63 - 2000 μm) [%]	>2000 μm [%]	Formation process	Stratigraphy	age (ka BP)

Table 4-2 shows how the 2129 samples are distributed among the selected depth classes.

TABLE 4-2: Overview of the distribution of the samples among the different depth classes.

Depth class	1	2	3	4	5
Sample count	615	239	148	670	457

The data were collected in the years 1998 to 2019. Sampling occurred in April, July, August and September, but mainly during the summer.

Different landscape types have been assigned to the data, as follows:

TABLE 4-3: Breakdown of landscape types in percent.

Landscape type	DTLB	Flood plain	Non-Yedoma upland	Pingo	Subsea	Yedoma upland
%	19.5	11.9	6	2.7	12	47.9

4.2 Ground ice content map

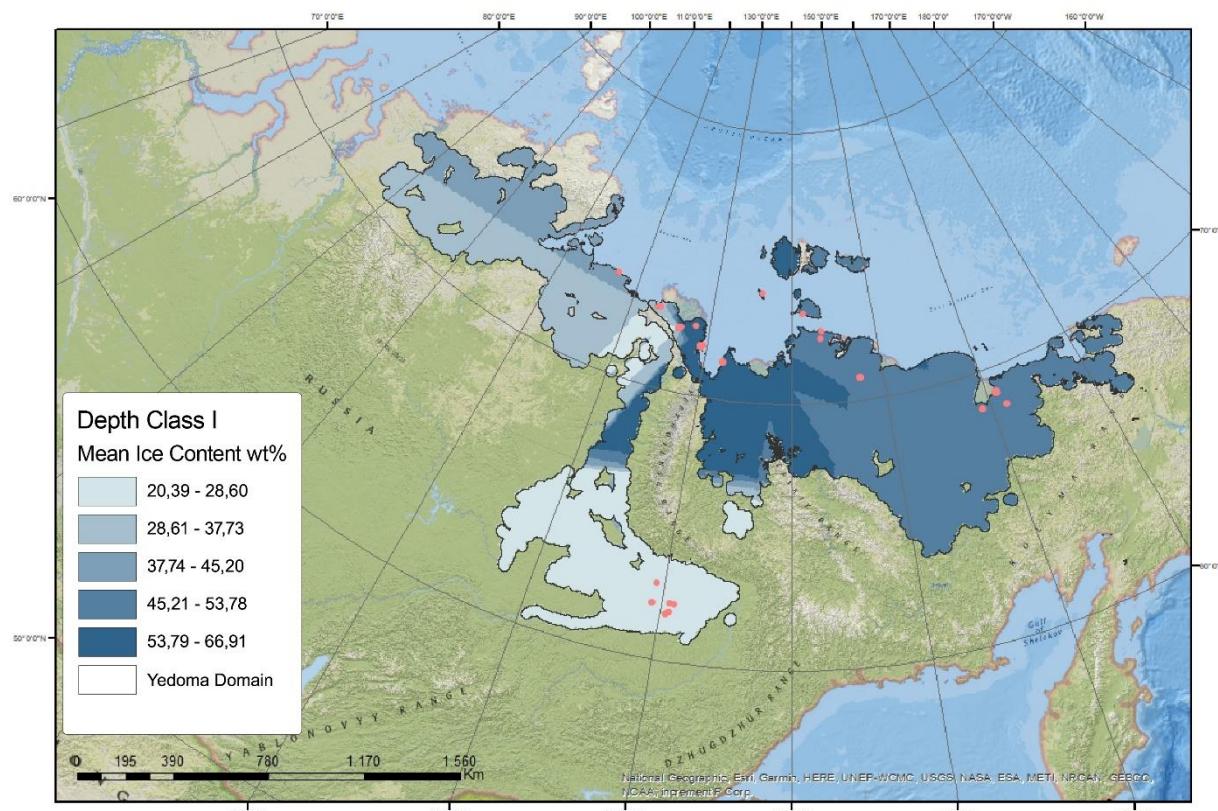


FIGURE 4-1: Distribution map showing the ground ice content in the study area for the depth class 1 (0 - 0.99 m). The mean ice content is given as a percentage. Created with ArcGIS.

Figure 4-1 shows the test run for the map created with ArcGIS Desktop for the depth class 1, i.e., for depths 0 - 0.99 m. The gradual color gradient shows the mean ice content divided in six classes in percent. The darker the shade of blue, the higher the mean ice content. Most measurement points were available for this depth class, so that the mean ice content could be determined for 98 sediment samples.

This map shows that the south of the study area has a much lower ice content than the north. The distribution of the sample points used for the calculation is very irregular. Most of the sediment samples are in the north along the coast and in the south of the Yedoma domain, around the city Yakutsk. In this picture it is clearly visible that large parts of the study area were not sampled, for example in the western part of the Siberian Yedoma domain and in the south east. In these parts of the map, only one ice content class is given for large areas. The area along the Lena River is also striking: the long and thin section that connects the southern part of the Yedoma domain with the north. Although no samples were taken here either, the spatial analyst tool calculated that a very high ice content was prevalent there.

4.3 Ground ice synthesis in R

4.3.1 Scatterplot matrix

The scatterplot matrix (figure 4-2) gives a good overview about the relevant data used in this study. The purpose of the matrix was to briefly show the interdependencies of the various parameters such as absolute ice content, TOC, mean grain size, clay, silt and sand. In the upper panel I added the correlation index to see how exactly the data correlate with each other. The focus was on how these parameters relate to absolute ice content in particular.

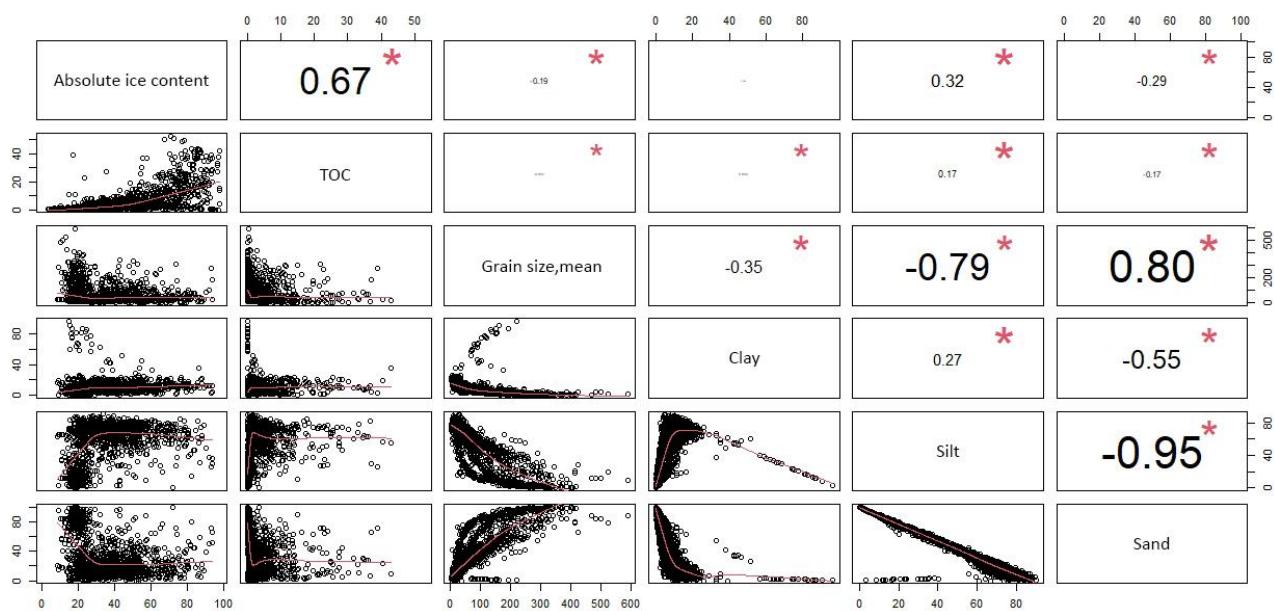


FIGURE 4-2: Scatterplot matrix. Created with RStudio.

The correlation index makes clear which data correlate positively or negatively with each other. The asterisk indicates that the values are significant with each other, i.e., they influence each other. A positive correlation is present for absolute ice content and TOC with a value of 0.67. Mean grain size and sand are also positively strongly correlated, as indicated by the correlation coefficient of 0.80.

Particularly high negative correlations are present for sand and silt and for mean grain size and silt. The correlations between mean grain size, clay, silt and sand are necessarily very strong because these values are interdependent percentages. Together, clay, silt and sand add up to 100 %, which explains the partially mirrored regression line and thus the strict linear relationship evident in figure 4-2.

The positive dependence of absolute ice content on TOC is of particular interest since ice is the main subject of this study. Therefore, I constructed a linear regression model for further analysis (fig. 4-3).

The linear function for the correlation between a dependent and an independent variable is as follows:

$$y = \alpha x + b$$

α = the gradient of the regression line

b = describes the y-intercept

The formula created for this model in Excel is as follows:

$$y = 1.84x + 31.22$$

Thus, to obtain the ice content, one must substitute the TOC value for x. R^2 describes the coefficient of determination and indicates how much data can be explained by the regression model, in this case it is 44.7 %.

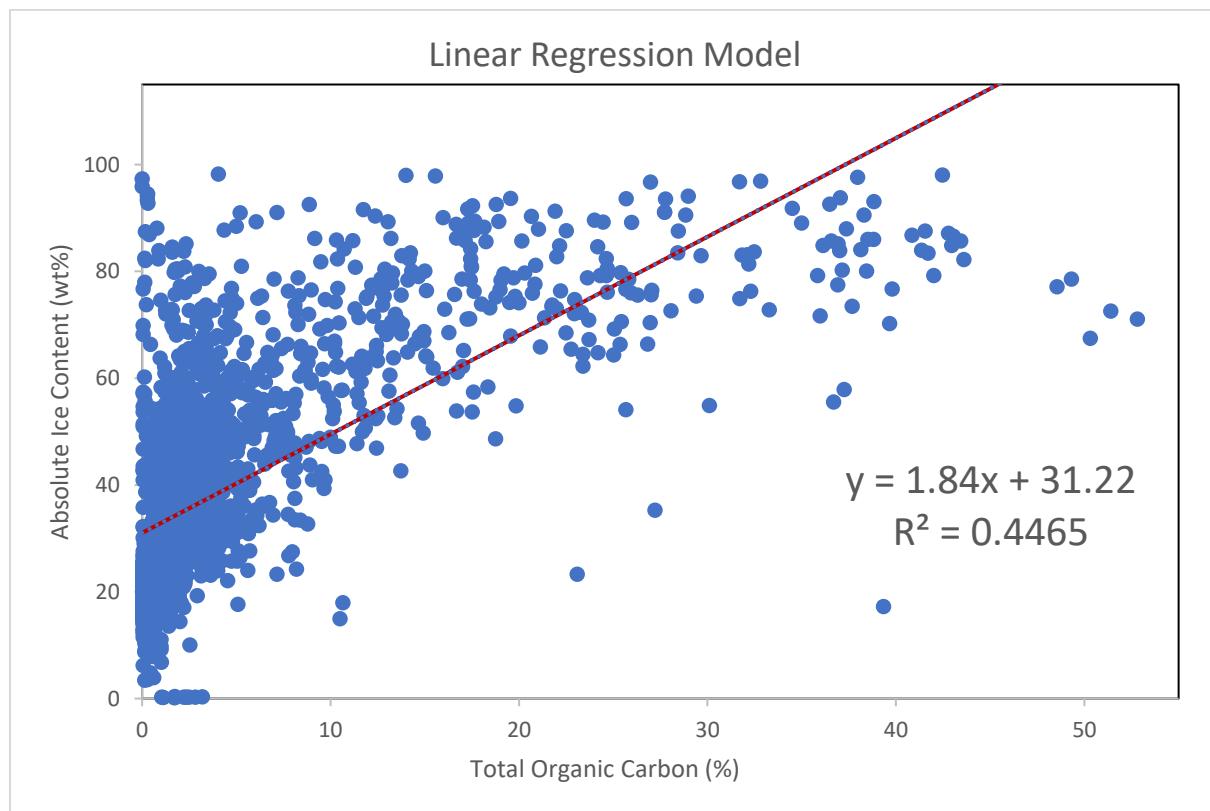


FIGURE 4-3: Linear regression model with the formula describing the regression line.

4.3.2 Distribution from north to south

The following figures show the ice contents measured in the study area in the various depth classes. I decided to show the ice content distribution from north to south and from west to east. Figures 4-4 and 4-5 show a bar graph and a scatterplot, respectively, in which the ice contents measured in the study area are oriented from north to south.

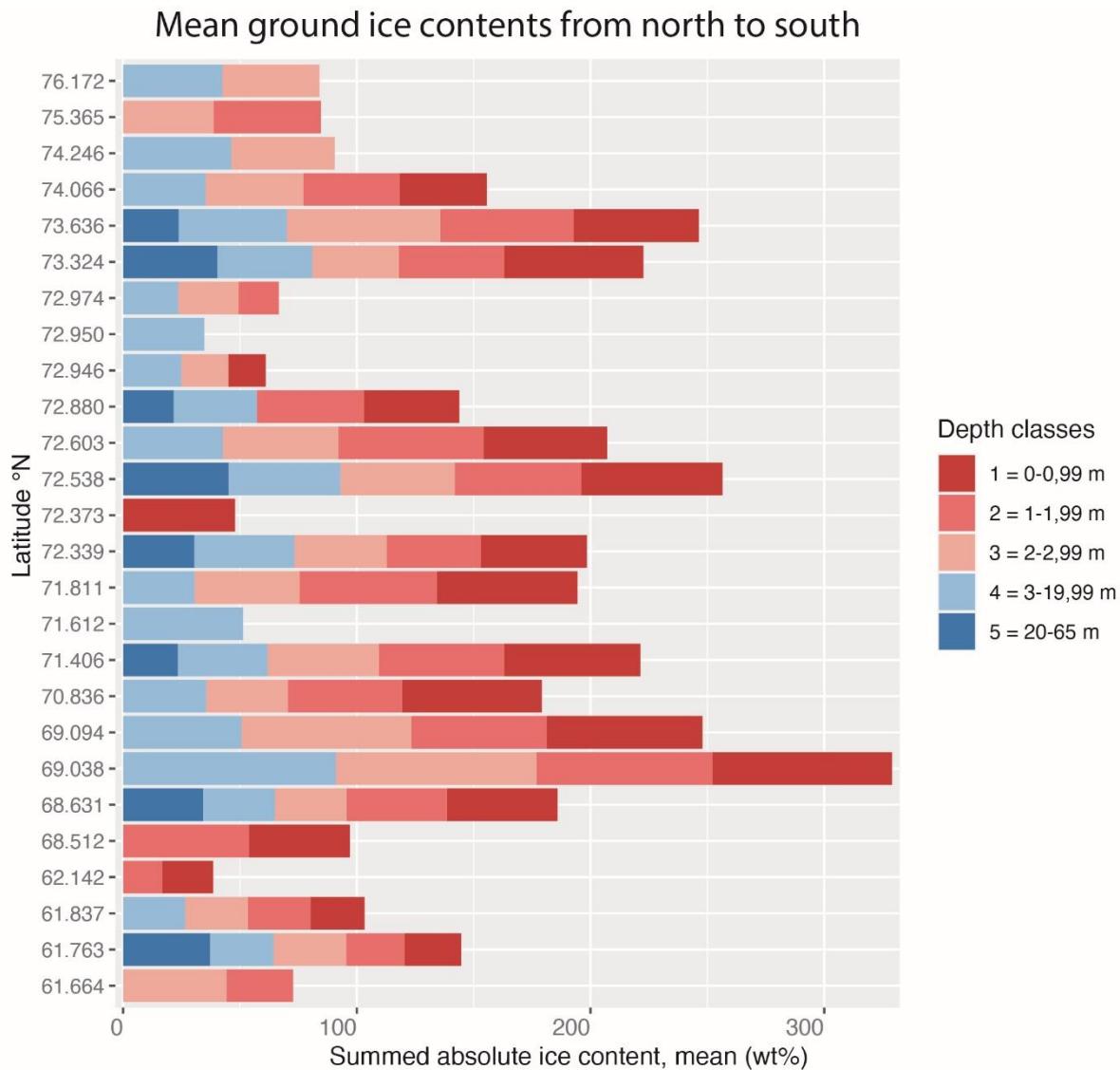


FIGURE 4-4: Bar plot showing the distribution of the ground ice content in the study area from north to south in the different depth classes. Table 3-4 shows which latitude belongs to which location. Created with RStudio.

The x-axes of figure 4-4 represents the mean ice content in weight percent and is given as a percentage. On the y-axes the latitudes are shown in decimals. One latitude stands for one site (see table 3-4). The colors indicate the different depth classes in which the ice contents were divided. Each bar in the bar chart shows the mean ice content measured at a site. The ice contents from the different depth classes were placed next to each other, which is why the mean absolute ice content on the x-axis goes over 300 %.

At the site Stolbovoy Island for example, the mean ice content is 37 % for depth class 1. For the following classes it continues to 41 % for class 2, 42 % for class 3 and 35 % for class 4 and finally adds up to an overall ice content of 155 %.

The length of each bar shows where the ice content is higher and where it is lower, but with this presentation it is difficult to see how exactly the values differ within a depth class. Therefore, I chose a different presentation in a scatterplot.

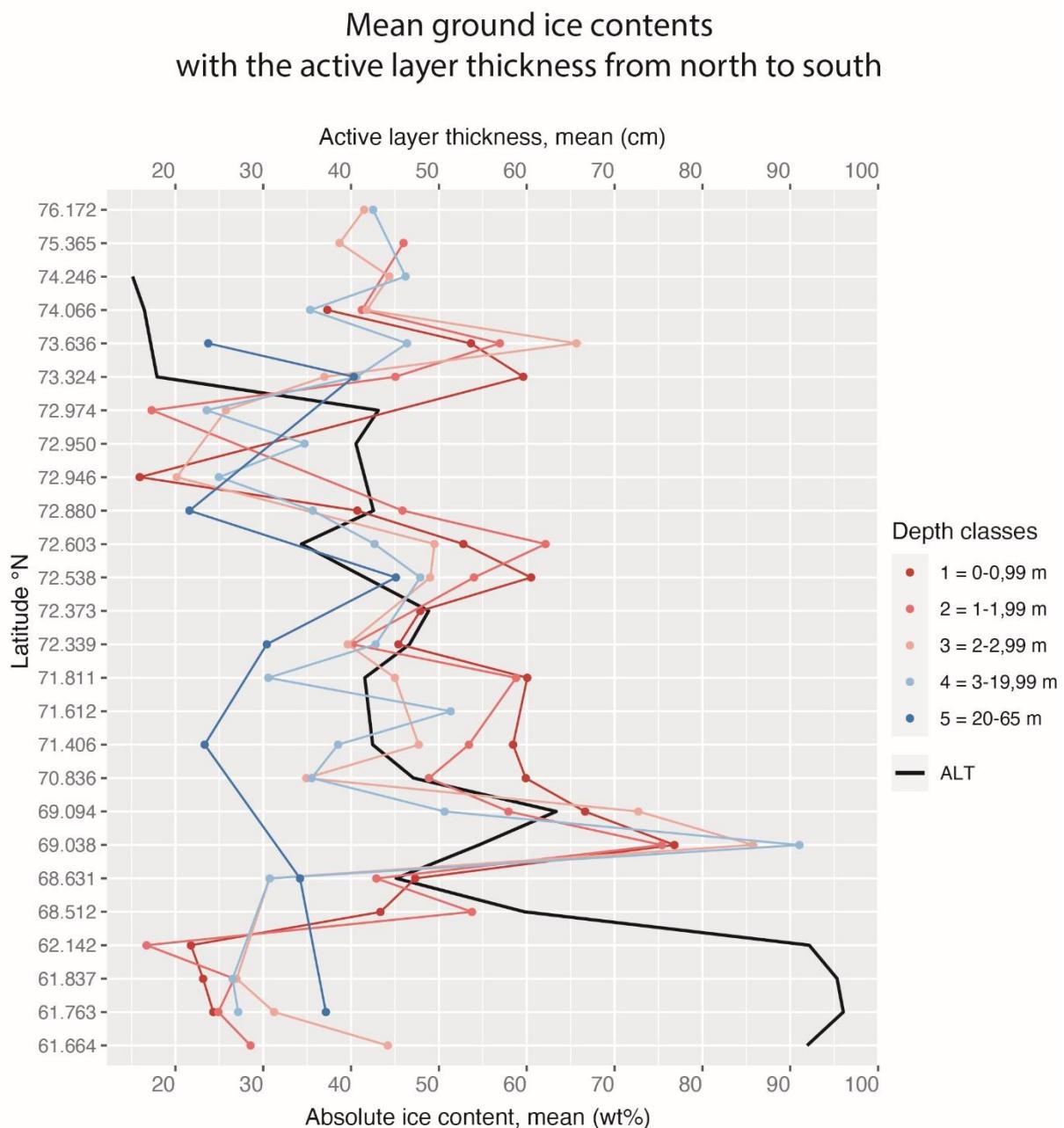


FIGURE 4-5: Scatterplot showing the mean ground ice content in the study area from north to south in the different depth classes. The scatterplot is not an interpolation, the points have been connected for clarity only. If a color is missing at a site, it means that there are no samples for this class. The active layer thickness (ALT) data were taken from <https://catalogue.ceda.ac.uk/uuid/8239d5f6263f4551bf2bd100d3ecbead> (Obu et al., 2022). Table 3-4 shows which latitude belongs to which location. Created with RStudio.

In figure 4-5 on the x-axis the scaling has changed: here the mean ice content goes up to 100 %. The data points are distributed within this 100 %, which makes it easier to compare them. By connecting the data points of the individual depth classes, the differences and similarities between the depth classes are thus made clear.

The mean ice contents of the first three meters range for the most part from about 40 to 65 %. Looking at the area outside this range, three outliers also stand out in this presentation. The northern sites Turakh Island and Ebe Sise Island and the southern sites near Yakutsk: Khara Bulgunyakh and Yukechi have lower ice contents of about 15 to 30 % at these depths. The high ice contents sampled in the Kolyma Delta are also striking. Within the first three meters, the ice contents range between 75 and about 85 %.

If we look at the depth classes 4 and 5, we get a different picture. On average, the ice contents in the depths from 3 to 65 meters range between 20 and 50 %. Also, in these depth classes the outlier in the Kolyma Delta is clearly visible. Here the averaged ice content of depth class 4 is over 90 %. For the 5th depth class there is no data available.

A black line runs across the plot. This line represents the active layer thickness (ALT) averaged over the study area from north to south. On a second x-axis the ALT ranges from 0 to 100 cm. The line illustrates that the depths are increasing from north to south. A mean value of about 14 cm was determined on Maly Lyakhovsky Island and 96 cm in Yukechi. On average, the ALT in the study area ranges between 35 and 65 cm.

4.3.3 Distribution from west to east

Figures 4-6 and 4-7 show the distribution of the mean ground ice contents in the study area from west to east.

Figure 4-6 shows a bar graph. Also shown here is the distribution of the ice contents measured in their various depth classes, but in a west to east orientation. Consequently, on the x-axis are the longitudes in decimal numbers and on the y-axis the mean absolute ice content in weight percent. The bar chart clearly shows which sites were sampled intensively. At several sites, only one or two depth classes were sampled. At 7 sites all depth classes were sampled. The scatterplot allows better comparability due to a different scaling of the y-axis.

Both presentations show where significantly lower ice contents were measured. As in the north-south orientation, the averaged ice contents of the first three classes are mostly between 40 and 65 wt%. The same outliers like in the other two figures stand out: Ebe-Sise Island, Turakh Island and the sites near Yakutsk Khara Bulgunyakh and Yukechi have under-average ice contents of about 15 to 30 wt%. The ice contents in the Kolyma Delta and in Pokhodsk are above average and range between 75 and 85 wt%.

Looking at depth classes 4 and 5, the picture is the same as in the scatterplot with the north-south orientation. On average, the ice contents in these classes range between 20 and 50 wt% and here again the peak is clearly visible at the Kolyma delta with an ice content of about 90 wt%.

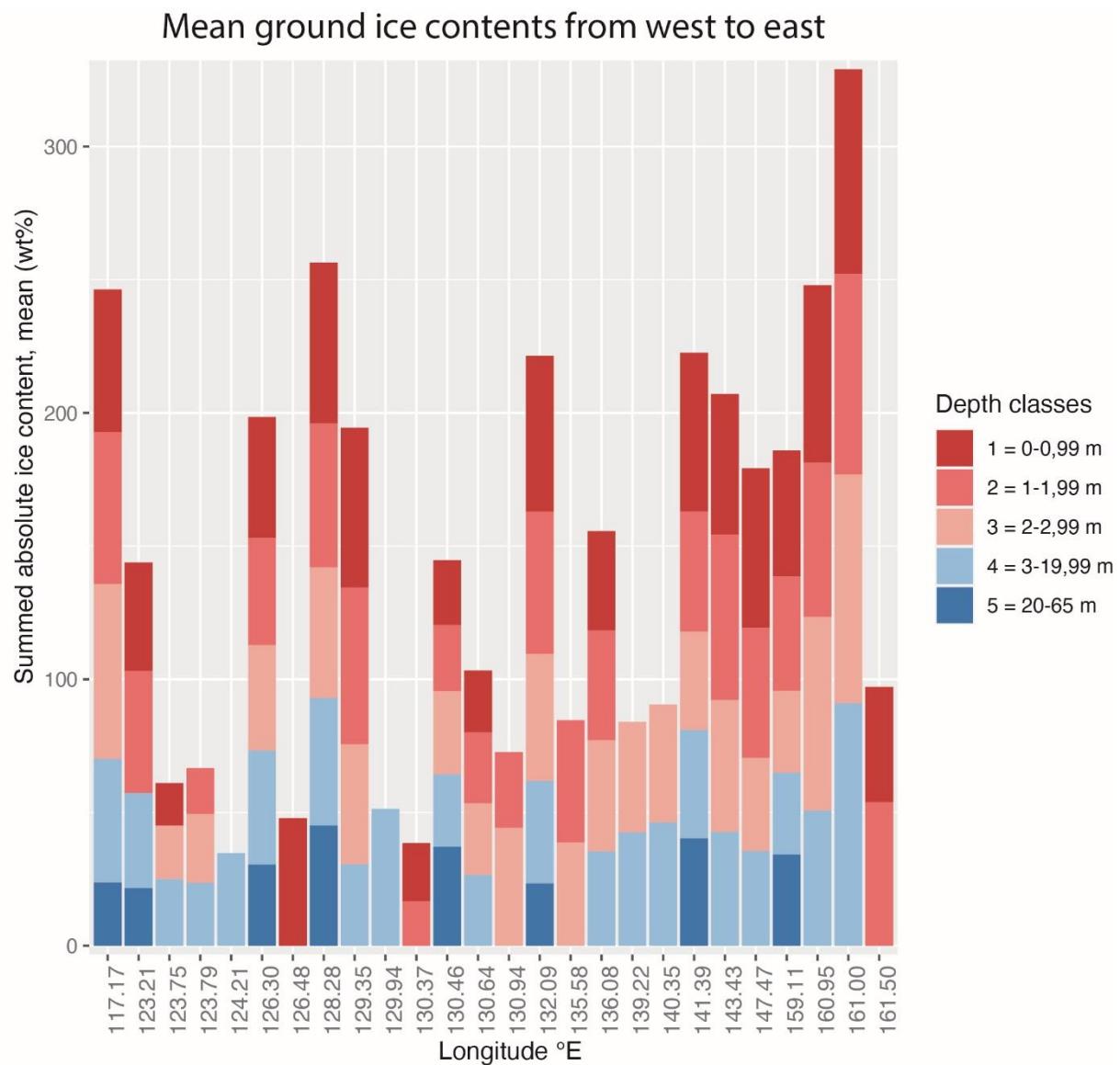


FIGURE 4-6: Bar plot showing the ground ice content in the study area from west to east in the different depth classes. Table 3-4 shows which longitude belongs to which location. Created with RStudio.

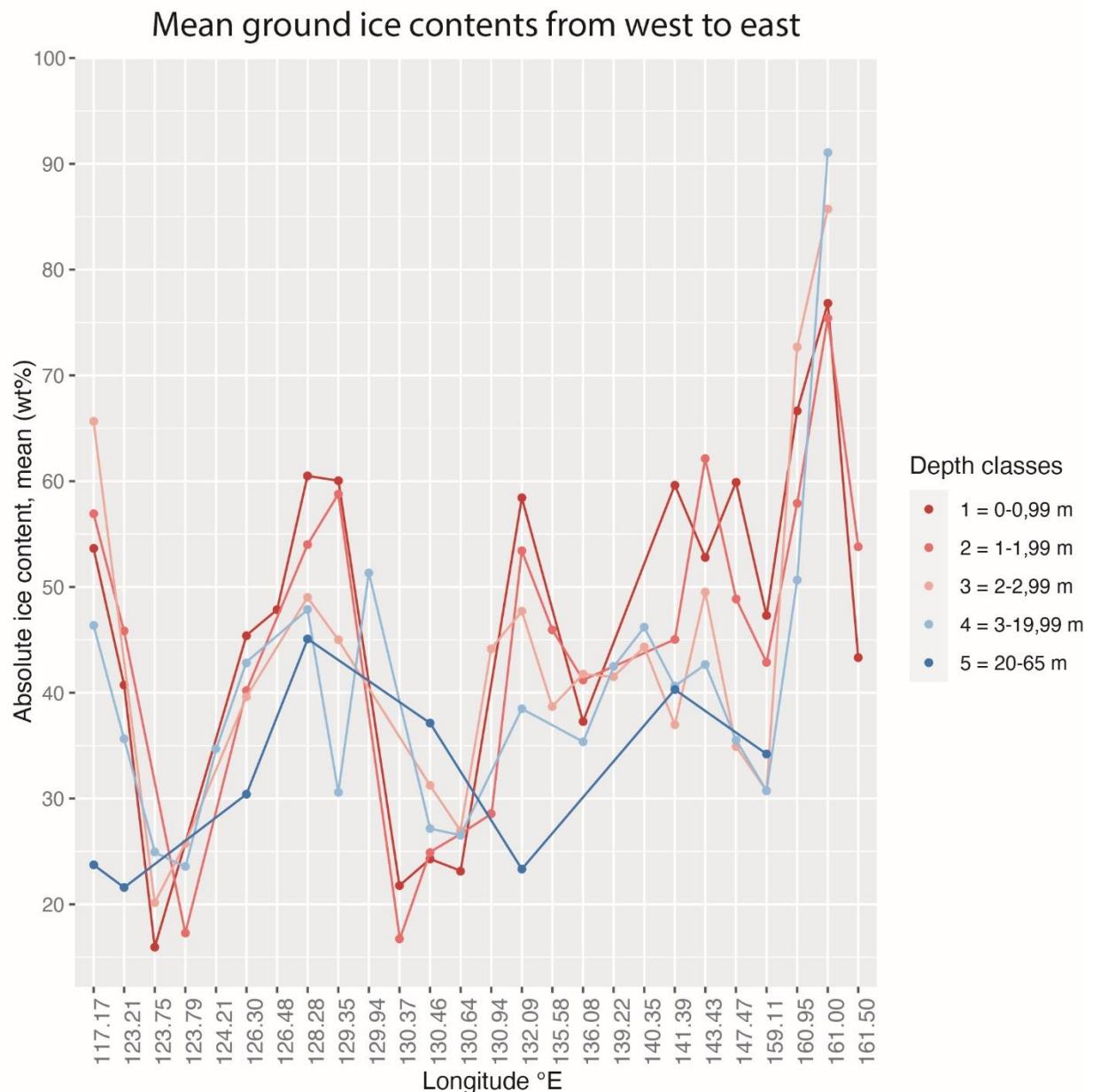


FIGURE 4-7: Scatterplot showing the ground ice content in the study area from west to east in the different depth classes. The scatterplot is not an interpolation, the points have been connected for clarity only. If a color is missing at a site, it means that there are no samples for this class. Table 3-4 shows which longitude belongs to which location. Created with RStudio.

5 Discussion

5.1 Ground ice content map

Since the Kriging method is based on the statistical relationship between the points, the prediction of the ice contents of the unsampled positions is based on the measured values. The closer the measured points are to each other, the more similar they are. The further the unsampled areas are away from the sampled ones, the less accurate the prediction becomes. For the areas where no values were measured, i.e., in the west and the southeast, only one ice content was available for very large areas, which is very unrealistic for a heterogeneous region like this. Also, having a look at the unsampled area along the Lena River, one can see that these values were calculated based on the values from the east riverside.

The maps that were created in the different depth classes do not allow a comprehensive comparison. However, one statement seems to be visible on this map is that the south has lower ice content than the north. The maps of the other depth classes (see appendix) show the same trend.

Unfortunately, 25 % of the data were not used for the calculation because either the depth or the ice content could not be determined. Possibly the validity of the map would have increased if more data could have been contributed to the calculation. Sampling of the previously unsampled parts of the Yedoma region would be necessary to increase the validity of the distribution map.

The Kriging method was an idea to visualize the collected data. For this method, the data are not sufficiently distributed in the study area. They occur in nests, which makes the kriging useless because the data are too far apart. Thus, unfortunately, no valid result could be obtained by this test.

5.2 Ground ice content distribution

The figures 4-4 to 4-7 represent the same content in different ways. The bar charts give a good overview of which sites are sampled more or less frequently at which depths. Based on the bar length, one can see at which site or at which depth class generally high and where low ice contents prevail. Comparisons within a depth class across many sites are difficult, however, because the minimal differences are hardly visible to the bare eye and therefore only imprecise statements can be made. Ice content data for all depth classes are available at 26.9 % of the sites. Due to the uneven sampling in the study area, bars of different lengths result, since one or more depth classes are mostly missing at the other sites.

In contrast to the bar charts, the scatterplots clearly show where and how the mean ice contents differ in the study area. Thus, the differences and similarities between the depth classes can be made clear. The scatterplots indicate that the ice contents differ greatly between the different sites. Still the ice contents measured in the first four depth classes often follow the same trend at one site. Especially, the data points of depth classes 1 to 3 follow a similar course across the study area and thus often have similar high or low ice contents at the same site.

This is possibly because the depth classes 1 to 3, each representing the first three meters, are close to each other and stratigraphically little changes are within the first three meters. They are interdependent, so the sediment composition, such as e.g., bulk density or grain size distribution, may be similar, which could ensure that a similar amount of water is held in the pores and thus (after freezing) the ice content is similar in the layers that are close to each other.

While the data points of depth class 4 are distributed similarly to those of classes 1 to 3, the data points of depth class 5 are distributed independently. Comparing depth classes 1 to 3 with 4 and 5, the scatterplots show that the ice content decreases at greater depths. The mean absolute ice contents of depth classes 1 to 3 are on average from about 40 to 65 wt%, while depths of classes 4 and 5 range from 20 to 50 wt%.

Whether bar chart or scatterplot, each method of presentation has its advantages and disadvantages, but looking at all four presentations, the same outliers become clear. The outliers are evident at the following sites: Ebe-Sise, Turakh Island, the area around Yakutsk, Khara Bulgunyakh and Yukechi show strikingly lower ice contents. In contrast, above-average ice contents prevail in the Kolyma Delta and Pokhodsk.

Landforms are indicators for permafrost conditions and play an important role in the variations of cryostructure and ground ice volumes (Kanevskiy et al., 2013; Wang et al., 2018; Fedorov, 2019). To find possible explanations for the above- or below-average ice contents, I prepared an overview, which shows the mean ice contents of the different landscape types.

TABLE 5-1: Landscape types with associated mean absolute ice contents.

Landscape type	DTLB	Flood plain	Non-Yedoma upland	Pingo	Subsea	Yedoma upland
Number of samples	453	311	57	65	241	1050
Mean abs. ice content (wt%)	36.14	56.87	23.79	40.83	28.55	41.35
Median abs. ice content (wt%)	27.41	61.88	19.42	32.4	20.92	38.0

Table 5-1 shows the mean ice contents of the respective landscape type. It is visible that the highest ice contents are present in flood plains (mean: 56.87 wt%; median: 61.88 wt%) and the lowest ice contents are found in the Non-Yedoma uplands (mean: 23.79 wt%; median: 19.42 wt%). This landscape type was assigned to the samples in the northwest of the study area at the sites Ebe-Sise Island and Turakh Island. The table confirms the low ice contents of these two sites, which can be found in the figures (15-25 wt%). At the sites in the south of the study area around Yakutsk, Khara Bulgunyakh and Yukechi the ice contents are also significantly lower than compared to the rest (17-37 wt%). The averaged ice content for DTLB is comparatively low at 36.14 wt% and was assigned to all these outliers. In addition, Khara Bulgunyakh was assigned to the landscape type pingo (40.83 wt%) and Yukechi was assigned to the Yedoma uplands (41.35 wt%).

In contrast, the ice contents measured at the site Kolyma Delta are the highest in the entire study area and are between 75 and 92 wt% in all depth classes. That may be related to the fact that all samples at this site were collected from a pingo, which explains the high ice content typical of segregated ice known to occur in pingos. The table indicates that the mean ice content value of 40.83 wt% for pingos is among the highest.

The mean ice contents calculated for the site Pokhodsk are also higher compared to the average for the study area (50-73 wt%). The higher ice content may be explained by the fact that some of the samples for Pokhodsk were also collected on a Pingo. The other part originates from flood plains (56.87 wt%) and Non-Yedoma uplands (23.79 wt%).

The mean active layer thickness increases from north to south (fig. 4-5). In the north at the site Maly Lyakhovsky Island, the ALT is 14 cm and in the very south, in Yukechi, the ALT is nearly 1 m. A remarkable feature of this site is the low ice content in the first meter. Whether there is a connection to the thaw depth is questionable since water contents were also used for the synthesis. In principle, sampling is done in summer when the upper layer is thawed. At the end, the water contents are counted as ice contents.

The TOC values in this study range up to 50 wt%, with most of the data falling within a range of 0 to 10 wt%. Looking at the TOC content in the different depth classes, it becomes clear that the values decrease with depth. Table 5-2 gives an overview of how the TOC values are distributed in the different depth classes.

TABLE 5-2: Mean TOC values of the depth classes

Depth classes	1	2	3	4	5
Number of samples	703	311	203	1015	369
Mean TOC (wt%)	9.85	4.17	2.63	2.20	1.20
Median TOC (wt%)	4.89	1.9	1.3	1.42	0.15

In the first three meters the TOC is at its highest with a mean value of 2.6-9.8 wt% and a median value of 1.3-4.89 wt%. The older the deposits are, the less TOC is contained. Strauss et al. (2013, 2017) confirmed that more OC was estimated in the thermokarst deposits compared to the original Yedoma deposits. An average TOC content of 6.5 wt% was determined for the thermokarst deposits, which is twice as much as for the Yedoma deposits (3.0 wt%) (Strauss et al., 2013).

Generally speaking, the ice contents in the study area are rather heterogeneously distributed. The Yedoma domain is heterogeneous. Windirsch et al. (2020) and Wetterich et al. (2008) confirm that Yedoma sediment composition and depositional regimes are highly variable. Looking at the outliers of the study area, it is visible that most of the depth classes have rather high or rather low ice content. Therefore, one could assume that the same conditions prevail at a site and result in a similar ice content over depths. In a heterogeneous region the conditions can vary greatly in a small area, which can also be attributed to the ice contents.

For further explanation of the different extremes of ice content in the study area, a closer look at the different ice content in thermokarst and Yedoma deposits might be interesting. Strauss et al. (2013) provides a good overview of the extensive differences between these depositional types for Siberia and Alaska, e.g., in terms of coverage (Yedoma: 0.41 million km²; thermokarst: 0.78 million km²), thickness (Yedoma: 15.1 m; thermokarst: 4.6 m), TOC content (Yedoma: 1.89 wt%; thermokarst: 2.59 wt%) and wedge ice volume (WIV) (Yedoma: 52 vol%; thermokarst: 7 vol%).

According to the ice content a direct comparison with this study cannot be made with respect to the WIV, since this study deals exclusively with intrasedimental ice. Therefore, an informative comparison of the absolute ice contents of thermokarst- and Yedoma deposits is shown. An overview of the stratigraphy of the study area was created with R to establish possible relationships between ice content and age in a sedimentary unit.

Figure 5-1 shows the stratigraphic units that occur in the study area. It is constructed in the same way as figure 4-5, except that the ice contents were not averaged with the five depth classes, but with the respective Marine Isotope Stages (MIS). The figure thus provides an overview of the time at which the deposits were formed at the various sites.

The most common stratigraphic units are MIS 1, 2 and 3, which occur continuously from north to south. MIS 1 (11.7 ka – present) belongs to the Holocene and is assigned to thermokarst deposits. MIS 2 and 3 (57 ka - 11.7 ka) belong to the late Pleistocene and represent the time when Yedoma deposits were formed. For further temporal information, see table 3-2.

Comparing figures 4-5 with 5-1, it is noticeable that the course of the data points of MIS 1 largely follows the course of the first three depth classes. Thus, most of the samples are chronologically related to the Holocene. In general, the first three depth classes were investigated most frequently, since the sampling effort increases with depth.

Furthermore, the figure illustrates that the ice content is often highest in the stratigraphic unit MIS 1, which is related to thermokarst deposits. These younger deposits are mostly found at the surface, since the older layers are known to be further down. The surface is regularly supplied with water resulting in a higher ice content in the first three depth classes and also in the unit MIS 1.

Table 5-3 shows the mean ice contents of the respective stratigraphic units and supports the statement that the ice content is highest in MIS 1.

TABLE 5-3: Stratigraphic units with associated mean absolute ice contents.

Stratigraphic unit	MIS 1	MIS 2	MIS 3	MIS 4	MIS 5	MIS 6	MIS 7	MIS 8	MIS 9
Number of samples	835	229	827	32	19	2	2	2	1
Mean abs. ice content (wt%)	48.60	43.48	33.58	25.14	38.98	30.15	29.70	26.27	30.96
Median abs. ice content (wt%)	47	41.6	30.19	21.57	37	30.15	29.70	26.27	30.96

Exceptions are observed at the southern sites, where it is noticeable that the ice content of MIS 1 is lower than in the older stratigraphic units. At these sites and at Bol'shoy Lyakhovsky Island, ice content in Yedoma deposits predominates over that in younger deposits.

The data points assigned to MIS 4 (when comparing fig. 5-1 with fig. 4-5) can be associated with ice contents at greater depths. MIS 5 to 8 were detected very infrequently and occur only at the sites Olenyok Channel (72.880 °N and 123.21 °E) and Bol'shoy Lyakhovsky (73.324 °N and 141.39 °E). The site Bol'shoy Lyakhovsky stands out. This site was sampled very frequently and numerous data are available from multiple, detailed datasets from different sample collections in 1999 and 2007 of various landscape types. It is striking that the ice contents of depth classes 4 and 5 exceed that of depth class 3 (Fig. 4-5) and that all stratigraphic units (except for MIS 4) occurring in the study area were detected at this site. Whereby MIS 5e to MIS 8 could be assigned exclusively to the sediments there (MIS 6 is hidden behind MIS 7 and 8).

Stratigraphic units in the Siberian Yedoma domain

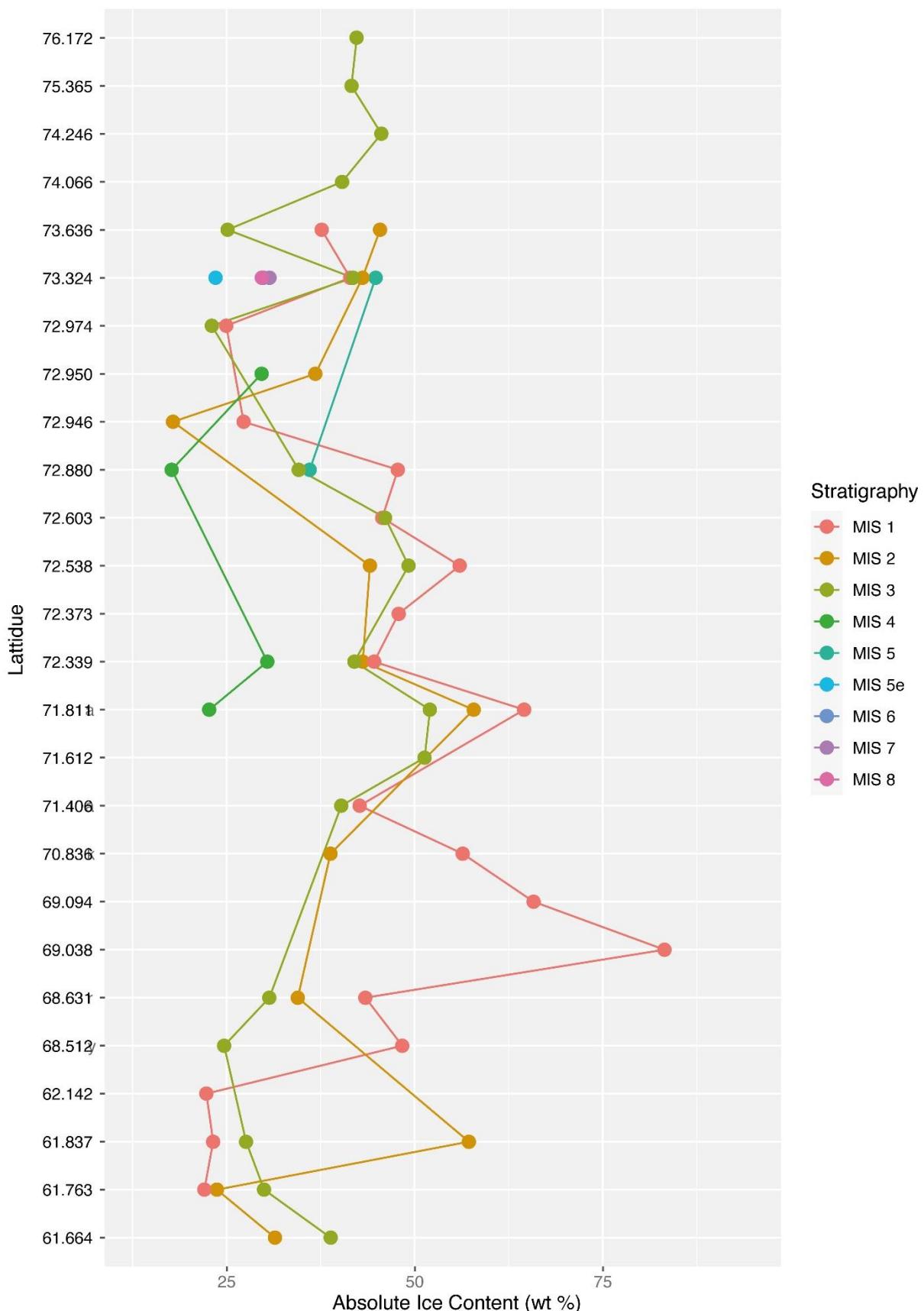


FIGURE 5-1: Figure showing the stratigraphic units (MIS) detected for the study area. Created with RStudio.

The overview of stratigraphic units for the study area indicates that a large proportion of the samples can be associated with Holocene deposits. This is not surprising, since up to 70 % of the original distribution of the Yedoma deposits has already been altered and eroded by Holocene thaw processes (Strauss et al., 2013). According to Strauss et al. (2021b) many studies showed very different partitioning within the Yedoma domain for Thermokarst- and Yedoma deposits. Whereby the share of Thermokarst deposits clearly exceeds the share of Yedoma deposits (Grosse et al., 2006; Morgenstern et al., 2011; Strauss et al., 2013; Strauss et al., 2021b).

In this study, most data points indicate that the ice content is higher in the younger deposits than in the older Yedoma deposits, which is surprising because some studies (Strauss et al., 2013; Ulrich et al., 2014b)

referencing the Yedoma domain say the opposite. However, the data from these studies also include the WIV. According to Ulrich et al. (2014) ice wedges occupy a volume of 6.6 to 13.2 vol% in thermokarst deposits and 31.4 to 63.3 vol% in Yedoma deposits. Strauss et al. (2013) calculated a WIV of 7 vol% for Thermokarst- and 52 vol% for Yedoma deposits.

In this study wedge ice was not included in the calculation, because the focus was on the ice content at the different depths. Mean absolute ice contents in the first three meters range between 40 and 65 wt%, while ice contents between 3.0 and 65.0 m range from 20 to 50 wt%. The calculated mean absolute ice contents represent the distribution in different depths. Also, the representation of the distribution of the stratigraphic units gives a good overview of the ice contents of the different old sediment layers. Nevertheless, the applied methods must be questioned critically.

The depth classes 4 (3.0-19.99 m) and 5 (20.0-65 m) represent the ice contents from a larger depth range. This means that ice contents measured within a range of 17.0 m and 45.0 m were averaged together, resulting in a loss of data, which makes the significance of these depth classes less accurate. A more precise picture of the distribution in depth could have been obtained if the range had been minimized. It would be interesting to know how the values for the ice content differ if I would have taken a closer look at the depths.

The samples used for this study were taken over a period from 1999 to 2019. Presumably not much has changed at greater depths over this time. The upper layers, however, have been exposed to increasingly rising temperatures in recent years. Therefore, it is questionable whether the values determined for these depths 20 years ago are still valid today.

As a detailed collection of data, the template provides a good basis for further syntheses on the collected parameters such as ice content, TOC or grain sizes. The addition of further relevant data will increase the validity of further investigations. Of particular interest would be data from previously untested sites, as well as data from greater depths, to allow more precise statements about the vertical and horizontal ice content distribution for the region. The ground ice content map produced with ArcGIS could then probably have provided better information.

This work is a synthesis of intrasedimental ground ice measurements for the Siberian Yedoma domain.

Wang et al. (2018) investigated the ground ice volume in permafrost layers at 3.0-10.0 m depth on the Qinghai-Tibet Plateau by considering landform types. They assume that there are similarities in lithological composition and water content within a unified landform. The ground ice volumes are highest in fine-grained sediments and were closely related to the genetic categories and sediments of the landforms (Wang et al., 2018). They state that the ground ice volume of permafrost was distributed mainly in the landforms of periglacial mountains, periglacial hills, alluvial-lacustrine plains and lacustrine-marshland plains. Wang et al. also confirmed that ice content was among the highest in the upper sedimentary layers.

Kanevskiy et al. (2013) conducted a ground ice synthesis in the Yedoma domain of Alaska. They investigated ground ice in the upper permafrost and sampled the Beaufort Sea coast of Alaska. In addition to wedge ice, also segregated ice and pore ice were studied. The total volumetric ice content in the depths from 2-4 m was investigated. For the Beaufort Sea coast a total volumetric ice content of 80-86 vol% is given. Furthermore, the ice contents in the different terrain units were investigated: Yedoma (89 vol%), drained lake basin (82 vol%), deltas and tidal flats (73 vol%) and eolian dunes (43 vol%).

In this study, other, however similar, terrain units were determined as those defined for the study by Kanevskiy et al. (2013) of Wang et al. (2018). The landscape types with the highest ice content are found in the flood plains. They are followed by Yedoma uplands, pingos and DTLB (table 5-1).

It is confirmed that the ice content in the uppermost sediment layers is very high. Based on the fact that gradual permafrost losses of up to 70 % are expected in the uppermost three meters by 2100 (Windirsch et al., 2020), these results are of particular relevance.

Since sampling over such large areas is difficult to realize, it is common to work with models to calculate permafrost distribution and ice contents. The model developed in this study to calculate the absolute ice content can be used in further studies on the distribution of ice content in the Sakha region. This model may be used for calculations of the ice contents using the TOC data. Since many data sets have TOC value but lack ice content, this allows more ice content data to be included in the calculation, even from sites outside this study.

6 Conclusion

This study provides a first overview of ice content at various depths at 26 sites in Northeastern Siberia. The database shows that the ice contents differ greatly in the study area. Even at short distances, large differences in ice content could be observed. Throughout the study area, mean ice contents in the first three meters range from 40 to 65 wt%. In the deeper layers at depths from 3 to 65 m the ice contents range from 20 to 50 wt%. Thus, the ice content at greater depths is on average lower than in upper sedimentary units.

Some sites have ice contents clearly outside the average values. The sites with extraordinary high mean ice contents were assigned to the landscape types “Flood plain” and “Pingo”, which have average ice contents between 41 and 57 wt%. The outliers with significantly low ice contents were for the most part assigned to the landscape types “Non-Yedoma uplands” and “DTLB”, which have ice contents between 24 and 36 wt%.

With regard to the ice content, a closer look at the genesis of the sediments is also essential. The depositional processes differ greatly in the Yedoma domain. It is generally accepted that the ice content in the Yedoma sediments (MIS 2 and MIS 3) is exceptionally high. Most of the data collected in this study belong to younger Holocene deposits (MIS 1). Examination of the stratigraphic units show that the ice content in the MIS 1 unit is higher than in MIS 2 and MIS 3. Thus, the younger and consequently upper deposits have a higher ice content than the older, underlying deposits. Please remind that wedge ice is not included here, so overall Yedoma bear more ice than the Holocene deposits.

This study shows that the ice contents have a positive correlation with TOC. High ice contents in a sedimentary unit therefore also have high TOC values. Thus, TOC is particularly high in the first three meters and decreases with depth. The carbon pool of the Holocene deposits thus exceeds that of the Yedoma deposits, as already sufficiently confirmed.

Ice-rich sediments in deeper layers are not exposed to surface air temperatures and therefore are not as vulnerable as sediments in upper layers. The mean ice content in intrasedimentary ice is particularly high in the first three meters. Permafrost with ice-rich surficial deposits makes the landscapes vulnerable to climate warming. Permafrost in the uppermost three meters is expected to gradually decrease up to 70 % by 2100. The Yedoma domain belongs to one of the hotspots of warming. Temperature anomalies in Siberia have intensified in recent years and will continue to cause exceptionally high temperatures in the region in the future. The result will be a deepening of the ALT.

The thawing of excess ice is accompanied by volume loss and makes the ground unstable, which can have extensive consequences for the permafrost region. Thaw-induced volume loss causes ground subsidence and has major consequences for the infrastructure in the region.

The Yedoma domain is unique in the world's permafrost region. The thawing even of some portions of the first three meters may have a large climate impact. A comprehensive sampling in this region is complex, expensive and very difficult to manage due to the current situation in Russia.

Models are very helpful to evaluate the ice content and with the one presented in this study, the ice content can be estimated and modeled based on the TOC content of a sediment unit.

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Appendix

A digital version with the full data table will soon be available for download at <https://epic.awi.de/>.

ID	Site	Year	Month	Location	Lat_Decimal	Long_Decimal	Landscape type	Height (m)	Depth (m)	Absolute ice content (%)	TOC (%)	Grain size. mean (μm)	Clay (<2 μm) [%]	Silt (>Clay - <63 μm) [%]	Sand (>Silt - <2000 μm) [%]	>2000 μm [%]	Formation process	Stratigraphy	age (ka BP)	remarks	Reference
1	11KH-2607-1-1	2011	July	Kytalyk	70.8269	147.49153	Yedoma upland	4.5		4.3	37.37	11.6	27.2	61.2	0	Yedoma upland	MIS 3	31			
2	11KH-2807-1-1	2011	July	Kytalyk	70.8603	147.49753	Pingo	4.25	0.25		3.9	46.26	14.4	62.9	22.7	0	thermokarst	MIS 1	3-4		
3	11KH-2807-1-2	2011	July	Kytalyk	70.8603	147.49753	Pingo	3.95	0.55		4.1	40.12	15	64.2	20.8	0	thermokarst	MIS 1	3-4		
4	11KH-2807-1-3	2011	July	Kytalyk	70.8603	147.49753	Pingo	3.55	0.95	45.5	4.1	82.33	10.6	51	38.4	0	thermokarst	MIS 1	3-4		
5	11KH-2807-1-4	2011	July	Kytalyk	70.8603	147.49753	Pingo	3.15	1.35	43	4.6	30.94	14.9	71.9	13.2	0	thermokarst	MIS 1	3-4		
6	11KH-2807-1-5	2011	July	Kytalyk	70.8603	147.49753	Pingo	2.75	1.75	33.7	4.5	32.6	14.8	68.9	16.3	0	thermokarst	MIS 1	3-4		
7	11KH-2807-1-6	2011	July	Kytalyk	70.8603	147.49753	Pingo	2.35	2.15	28.1	3.2	55.45	12.3	60.9	26.8	0	thermokarst	MIS 1	3-4		
8	11KH-2807-1-7	2011	July	Kytalyk	70.8603	147.49753	Pingo	2.05	2.45	38.4	4	56.77	12.5	59.7	27.8	0	thermokarst	MIS 1	3-4		
9	11KH-2807-1-8	2011	July	Kytalyk	70.8603	147.49753	Pingo	1.65	2.85	32.6	3.1	58.03	10.4	62	27.6	0	thermokarst	MIS 1	3-4		
10	11KH-2807-1-9	2011	July	Kytalyk	70.8603	147.49753	Pingo	1.25	3.25	35.3	3.1	27.96	15.4	71.3	13.3	0	thermokarst	MIS 1	3-4		
11	11KH-2807-1-10	2011	July	Kytalyk	70.8603	147.49753	Pingo	0.85	3.65	31.1	2.8	41.66	14.5	64.1	21.4	0	thermokarst	MIS 1	3-4		
12	11KH-2807-1-11	2011	July	Kytalyk	70.8603	147.49753	Pingo	0.55	3.95	32.4	3.1	32.13	13.7	70.7	15.6	0	thermokarst	MIS 1	3-4		
13	11KH-2807-1-12	2011	July	Kytalyk	70.8603	147.49753	Pingo	0.15	4.35	46.8	2.8	30.09	13.6	72.3	14.1	0	thermokarst	MIS 1	3-4		
14	11KH-2807-1-13	2011	July	Kytalyk	70.8603	147.49753	Pingo	0.05	4.45	32.4	3	51.37	13	60.5	26.5	0	thermokarst	MIS 1	3-4		
15	11KH-3007-1-1	2011	July	Kytalyk	70.8413	147.4384	Yedoma upland	0.01		2.8	28.19	14.2	74.9	10.9	0	Holocene cover	MIS 1	0			
16	11KH-3007-1-2	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	0.05		50.7	4.3	19.64	15	80.3	4.7	0	Holocene cover	MIS 1	10		
17	11KH-3007-1-3	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	0.15		52.5	7.5	41.72	12.3	68.3	19.4	0	Holocene cover	MIS 1	10		
18	11KH-3007-1-4	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	0.25		60.1	1.6	28.15	12	77.4	10.6	0	Holocene cover	MIS 1	10		
19	11KH-3007-1-5	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	0.5		35.1	2.4	33.79	12.5	73.4	14.1	0	Holocene cover	MIS 1	10		
20	11KH-3007-1-6	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	0.65		57.4	1.2	36.87	9.26	75.04	15.7	0	Holocene cover	MIS 1	10		
21	11KH-3007-1-7	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	1		35.3	1.3	21.63	14.1	79.9	6	0	Holocene cover	MIS 1	10		
22	11KH-3007-1-8	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	1.3		42.7	1	23.31	13.3	79.9	6.8	0	Yedoma upland	MIS 2	15-20		
23	11KH-3007-1-9	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	1.55		53.8	0.7	23.7	14.1	78.8	7.1	0	Yedoma upland	MIS 2	15-20		
24	11KH-3007-1-10	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	2		40	1.4	38.27	10.8	71.7	17.5	0	Yedoma upland	MIS 2	15-20		
25	11KH-3007-1-11	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	2.15		32.6	1.4	21.66	14.7	79.1	6.2	0	Yedoma upland	MIS 2	15-20		
26	11KH-3007-1-12	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	2.4		33.5	1.2	26.11	12.2	79.5	8.3	0	Yedoma upland	MIS 2	15-20		
27	11KH-3007-1-13	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	2.55		43.4	1.5	26.6	12	78.5	9.5	0	Yedoma upland	MIS 2	15-20		
28	11KH-3007-1-14	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	2.85		35.8	1.3	36.23	11.4	72.8	15.8	0	Yedoma upland	MIS 2	15-20		
29	11KH-3007-1-15	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	4.2		32.5	1.4	40.15	11.2	70.5	18.3	0	Yedoma upland	MIS 2	15-20		
30	11KH-3007-1-16	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	4.4		36.9	1.4	27.95	10.8	79.4	9.8	0	Yedoma upland	MIS 2	15-20		
31	11KH-3007-1-17	2001	July	Kytalyk	70.8413	147.4384	Yedoma upland	4.6		36.9	1.4	31.58	11.8	75	13.2	0	Yedoma upland	MIS 2	15-20		
32	12-KYT-0507-1-1	2012	July	Kytalyk	70.829367	147.483233	DTLB	0.09	24.2	1.53	24.36	12.4	81.1	6.5	0	thermokarst	MIS 1	0-6			
33	12-KYT-0507-1-2	2012	July	Kytalyk	70.829367	147.483233	DTLB	0.46	48.7	1.94	29.79	10.6	81	8.4	0	thermokarst	MIS 1	0-6			
34	12-KYT-0607-1-1	2012	July	Kytalyk	70.829483	147.483	DTLB	0.07		39.17					0	thermokarst	MIS 1	0-6			
35	12-KYT-0607-1-2	2012	July	Kytalyk	70.829483	147.483	DTLB	0.18		35.35	69.29	8.74	63.46	27.8	0	thermokarst	MIS 1	0-6			
36	12-KYT-0607-1-3	2012	July	Kytalyk	70.829483	147.483	DTLB	0.37		28.6	2.22	46.77	8.47	68.53	23	0	thermokarst	MIS 1	0-6		
37	12-KYT-0607-1-4	2012	July	Kytalyk	70.829483	147.483	DTLB	0.49		72.8	33.27	30.94	11.3	78.3	10.4	0	thermokarst	MIS 1	0-6		
38	1																				

74	12-P-1008-1-6	2012	August	Pokhodsk	69.05617	160.85904	Non-Yedoma upland	0.65	18.3	0.05	131.6	4.32	17.68	78	0	flood plain	MIS 1	0-8	
75	12-P-1008-1-7	2012	August	Pokhodsk	69.05617	160.85904	Non-Yedoma upland	0.74	19.9	0.05	126.8	4.27	19.53	76.2	0	flood plain	MIS 1	0-8	
76	12-P-1008-1-8	2012	August	Pokhodsk	69.05617	160.85904	Non-Yedoma upland	0.84	20.5	0.05	124.2	4.24	21.96	73.8	0	flood plain	MIS 1	0-8	
77	12-P-1008-1-9	2012	August	Pokhodsk	69.05617	160.85904	Non-Yedoma upland	0.94	21.1	0.05	110.6	6.01	27.09	66.9	0	flood plain	MIS 1	0-3	
78	12-P-1607-1-1	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.33	0.74	44.22	11.2	61.3	27.5	0	flood plain (Kolyma delta)	MIS 1	0-3		
79	12-P-1607-1-2	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.36	24.2	0.15	56.39	10.4	53.1	36.5	0	flood plain (Kolyma delta)	MIS 1	0-3	
80	12-P-1607-1-3	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.56		10.72	57.06	12.7	56.2	31.1	0	flood plain (Kolyma delta)	MIS 1	0-3	
81	12-P-1607-1-4	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.64		75.2	18.76	100.2	8.01	48.49	0	flood plain (Kolyma delta)	MIS 1	0-3	
82	12-P-1607-1-5	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.72		27.53	69.64	11.7	55.7	32.6	0	flood plain (Kolyma delta)	MIS 1	0-3	
83	12-P-1607-1-6	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.81		7.09	51.41	16	55.2	28.8	0	flood plain (Kolyma delta)	MIS 1	0-3	
84	12-P-1607-1-7	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.85		5.97	49.87	16.4	55.6	28	0	flood plain (Kolyma delta)	MIS 1	0-3	
85	12-P-1607-1-8	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.96		4.22	75.23	12	51.9	36.1	0	flood plain (Kolyma delta)	MIS 1	0-3	
86	12-P-1607-1-9	2012	July	Pokhodsk	69.09515	160.938733	flood plain	1.04	72.3	4.67	58.96	13.6	58.6	27.8	0	flood plain (Kolyma delta)	MIS 1	0-3	
87	12-P-1707-1-1	2012	July	Pokhodsk	69.095033	160.9389	flood plain	0.54		14.11	66.64	12.1	53.1	34.8	0	flood plain (Kolyma delta)	MIS 1	0-3	
88	12-P-1707-1-2	2012	July	Pokhodsk	69.095033	160.9389	flood plain	0.61		27.46	71.11	9.5	51.8	38.7	0	flood plain (Kolyma delta)	MIS 1	0-3	
89	12-P-1707-1-3	2012	July	Pokhodsk	69.095033	160.9389	flood plain	0.69	75.6	13.73	62.99	11.1	55.5	33.4	0	flood plain (Kolyma delta)	MIS 1	0-3	
90	12-P-1707-1-4	2012	July	Pokhodsk	69.095033	160.9389	flood plain	0.78		9.86	42.02	13.3	63.8	22.9	0	flood plain (Kolyma delta)	MIS 1	0-3	
91	12-P-1707-1-5	2012	July	Pokhodsk	69.095033	160.9389	flood plain	0.87		11.95	55.75	12.4	57.3	30.3	0	flood plain (Kolyma delta)	MIS 1	0-3	
92	12-P-1707-1-6	2012	July	Pokhodsk	69.095033	160.9389	flood plain	0.95		8.1	63.55	13.1	53.7	33.2	0	flood plain (Kolyma delta)	MIS 1	0-3	
93	12-P-1707-1-7	2012	July	Pokhodsk	69.095033	160.9389	flood plain	1.06		6.88	62.81	11.7	54.8	33.5	0	flood plain (Kolyma delta)	MIS 1	0-3	
94	12-P-1707-1-8	2012	July	Pokhodsk	69.095033	160.9389	flood plain	1.16		6.46	68.03	11.6	53.5	34.9	0	flood plain (Kolyma delta)	MIS 1	0-3	
95	12-P-1707-1-9	2012	July	Pokhodsk	69.095033	160.9389	flood plain	1.25	71.4	6.4	61.62	12.2	54.2	33.6	0	flood plain (Kolyma delta)	MIS 1	0-3	
96	12-P-1907-1-1	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.28		22.32	75.08	12.9	49.9	37.2	0	flood plain (Kolyma delta)	MIS 1	0-3	
97	12-P-1907-1-2	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.32		5.09	76.26	9.82	51.68	38.5	0	flood plain (Kolyma delta)	MIS 1	0-3	
98	12-P-1907-1-3	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.42	63.8	11.91	60.25	12	55	33	0	flood plain (Kolyma delta)	MIS 1	0-3	
99	12-P-1907-2-1	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.33		27.45	31.68	20.8	61.2	18	0	flood plain (Kolyma delta)	MIS 1	0-3	
100	12-P-1907-2-2	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.41	83.5	28.42	79.7	9.42	46.38	44.2	0	flood plain (Kolyma delta)	MIS 1	0-3	
101	12-P-1907-2-3	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.58	78.8	23.63	74.25	11.1	51.4	37.5	0	flood plain (Kolyma delta)	MIS 1	0-3	
102	12-P-1907-2-4	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.75	76.9	12.22	33.68	21.1	59.3	19.6	0	flood plain (Kolyma delta)	MIS 1	0-3	
103	12-P-1907-2-5	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.9	78.6	6.99	69.77	9.96	51.24	38.8	0	flood plain (Kolyma delta)	MIS 1	0-3	
104	12-P-1907-2-6	2012	July	Pokhodsk	69.094783	160.9407	flood plain	1.03		6.98	73.98	10.3	50.5	39.2	0	flood plain (Kolyma delta)	MIS 1	0-3	
105	12-P-1907-2-7	2012	July	Pokhodsk	69.094783	160.9407	flood plain	1.06		6.78	89.73	9.22	39.88	50.9	0	flood plain (Kolyma delta)	MIS 1	0-3	
106	12-P-1907-2-8	2012	July	Pokhodsk	69.094783	160.9407	flood plain	1.15		3.36	122	7.21	33.89	58.9	0	flood plain (Kolyma delta)	MIS 1	0-3	
107	12-P-1907-2-9	2012	July	Pokhodsk	69.094783	160.9407	flood plain	1.2		4.62	92.57	9.96	45.74	44.3	0	flood plain (Kolyma delta)	MIS 1	0-3	
108	12P-1908-A-08	2012	August	Kolyma Delta	69.03836	161.00642	Pingo	6.9	0.1		10.2	26.89	16.71	68.6	14.71	0	thermokarst	MIS 1	4-9
109	12P-1908-A-09	2012	August	Kolyma Delta	69.03836	161.00642	Pingo	6.5	0.5	87.6	28.44	15.44	20.02	74.63	5.36	0	thermokarst	MIS 1	4-9
110	12P-1908-A-10	2012	August	Kolyma Delta	69.03836	161.00642	Pingo	6	1	66	8.42	29.79	12.91	71.5	15.58	0	thermokarst	MIS 1	4-9
111	12P-1908-A-11	2012	August	Kolyma Delta	69.03836	161.00642	Pingo	5.5	1.5		6.55	43.51	11.81	61.7	26.49	0	thermokarst	MIS 1	4-9
112	12P-1908-A-12	2012	August	Kolyma Delta	69.03836	161.00642	Pingo	5.2	1.8	75.4	6.34	36.3	12.1	65.5	22.4	0	thermokarst	MIS 1	4-9
113	12P-1908-A-13	2012	August	Kolyma Delta	69.03836	161.00642	Pingo	4.6	2.4	93.1	38.82	273	3.35	25.4	71.26	0	thermokarst	MIS 1	4-9
114	12P-1908-A-14	2012	August	Kolyma Delta	69.03836	161.0													

151	12-P-3007-1-5	2012	July	Pokhodsk	69.076583	160.970367	flood plain	1.09		1.81	26.19	20.2	68.2	11.6	0	flood plain (Kolyma delta) MIS 1	0-3	
152	12-P-3007-1-6	2012	July	Pokhodsk	69.076583	160.970367	flood plain	1.18	57.4	2.13	23.07	20.5	69.9	9.6	0	flood plain (Kolyma delta) MIS 1	0-3	
153	12-P-3007-1-7	2012	July	Pokhodsk	69.076583	160.970367	flood plain	1.31	35.3	2.07	28.37	19	68.6	12.4	0	flood plain (Kolyma delta) MIS 1	0-3	
154	12-P-3007-1-8	2012	July	Pokhodsk	69.076583	160.970367	flood plain	1.1	42.7	13.72	34.12	15.5	68.3	16.2	0	flood plain (Kolyma delta) MIS 1	0-3	
155	12-P-3007-1-9	2012	July	Pokhodsk	69.076583	160.970367	flood plain	1.3	53.8	10.18	31.88	15.6	70.3	14.1	0	flood plain (Kolyma delta) MIS 1	0-3	
156	1TZ-1-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	22	13	61.9	3.31	73.01	6.59	68.99	24.42	0	Yedoma upland	MIS 3	35-55
157	1TZ-1-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	22.25	12.8	41.9	1.64	21.03	9.73	74.27	16	0	Yedoma upland	MIS 3	35-55
158	1TZ-1-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	22.35	12.7	33.2	3.02	93.18	8.08	63.24	28.68	0	Yedoma upland	MIS 3	35-55
159	1TZ-1-4	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	22.8	12.2	52.7	2.36	41.62	8.48	64.92	26.6	0	Yedoma upland	MIS 3	35-55
160	1TZ-1-5	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	23.4	11.6	43.4	5.07						Yedoma upland	MIS 3	35-55
161	1TZ-1-6	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	23.7	11.3	49.2	2.75	52.47	6.31	71.38	22.31	0	Yedoma upland	MIS 3	35-55
162	1TZ-2-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17	18	44.4	3.4	70.81	5.22	66.37	28.41	0	Yedoma upland	MIS 3	35-55
163	1TZ-2-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.65	17.4	32.8	1.73	46.2	7.86	76.52	15.62	0	Yedoma upland	MIS 3	35-55
164	1TZ-2-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	18.3	16.7	43.4	1.59	74.05	5.28	69.23	25.49	0	Yedoma upland	MIS 3	35-55
165	1TZ-3-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	13	22	50.3	3.46	48.67	6.39	74.38	19.23	0	Yedoma upland	MIS 3	35-55
166	1TZ-3-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	13.2	21.8	43.1	3.92	50.69	8.19	73.56	18.25	0	Yedoma upland	MIS 3	35-55
167	1TZ-3-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	13.7	21.3	46	1.85	65.57	6.98	70.09	22.93	0	Yedoma upland	MIS 3	35-55
168	2TZ-1-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	20.3	14.7	62.4	4.01	70.15	4.64	68.46	26.9	0	Yedoma upland	MIS 3	35-55
169	2TZ-1-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	20.45	14.6	49.4	1.21	37.38	7.87	79.83	12.3	0	Yedoma upland	MIS 3	35-55
170	2TZ-1-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	20.8	14.2	58.2	4.49	87.44	5.17	59.43	35.4	0	Yedoma upland	MIS 3	35-55
171	2TZ-1-4	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	21.35	13.7	31.8	1.66	33.4	9.33	76.67	14	0	Yedoma upland	MIS 3	35-55
172	2TZ-1-5	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	20.6	14.4	37.9		56.98	4.26	72.34	23.4	0	Yedoma upland	MIS 3	35-55
173	2TZ-2-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	21.8	13.2	42.7	1.92	33.37	9.12	76.48	14.4	0	Yedoma upland	MIS 3	35-55
174	2TZ-2-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	22.3	12.7	45.6	1.71	64.69	6.58	72.42	21	0	Yedoma upland	MIS 3	35-55
175	2TZ-2-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	23.1	11.9	33.3	2.28	73.89	4.46	68.24	27.3	0	Yedoma upland	MIS 3	35-55
176	2TZ-2-4	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	24.1	10.9	37.4	1.57	55.38	5.43	74.57	20	0	Yedoma upland	MIS 3	35-55
177	2TZ-2-5	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	24.8	10.2	31.8	0.91	33.18	7.21	79.89	12.9	0	Yedoma upland	MIS 3	35-55
178	2TZ-2-6	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	25.5	9.5	33.9	0.92	42.17	6.29	78.71	15	0	Yedoma upland	MIS 3	35-55
179	2TZ-3-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	22	13	57	1.77	32.69	8.82	79.68	11.5	0	Yedoma upland	MIS 3	35-55
180	2TZ-3-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	23.3	11.7	28.6	1.21	56.45	4.67	76.13	19.2	0	Yedoma upland	MIS 3	35-55
181	2TZ-3-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	24.4	10.6	31.1	1.33	53.22	4.91	75.79	19.3	0	Yedoma upland	MIS 3	35-55
182	2TZ-5-2.6	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	19	16	45.2	3.04	107.5	2.42	55.78	41.8	0	Yedoma upland	MIS 3	35-55
183	3TZ-1-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	16.8	18.2	44	2.5	62.45	6.31	72.39	21.3	0	Yedoma upland	MIS 3	35-55
184	3TZ-1-2	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.1	17.9	42.9	4.8	77.99	6.16	66.94	26.9	0	Yedoma upland	MIS 3	35-55
185	3TZ-1-3	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.2	17.8	51.7	2.8	49.41	7.25	72.55	20.2	0	Yedoma upland	MIS 3	35-55
186	3TZ-1-4	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.4	17.6	53.7	17.5						Yedoma upland	MIS 3	35-55
187	3TZ-1-5	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.45	17.6	62.2	17						Yedoma upland	MIS 3	35-55
188	3TZ-1-6	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.8	17.2	47.3	10.4						Yedoma upland	MIS 3	35-55
189	3TZ-1-7	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	17.9	17.1	44	2.3	63.53	7.51	68.19	24.3	0	Yedoma upland	MIS 3	35-55
190	3TZ-2-1	1999	Bol'shoy Lyakhovsky	73.33044	141.34541	Yedoma upland	16.6	18.4	47.8	2.6	76.88	6.05	68.75	25.2	0			

228	Bel-8b	2002	August	Bel'kovsky Island	75.3658	135.58895	DTLB	2.1	2.75		254.9	2.24	39.06	58.7	thermokarst	MIS 1	8-9
229	Bel-8d	2002	August	Bel'kovsky Island	75.3658	135.58895	DTLB	3	1.1	4.73	205.7	2.89	45.61	51.5	thermokarst	MIS 1	8-9
230	BH1-0.3			Yakutsk area	62.08809	129.28136	DTLB		0.3	42.61	7.78				thermokarst	MIS 1	
231	BH1-0.6			Yakutsk area	62.08809	129.28136	DTLB		0.6	0.59				thermokarst	MIS 1		
232	BH2-0 -TOP			Yakutsk area	62.15395	130.96512	DTLB		0	17.27				thermokarst	MIS 1		
233	BH2-0.1			Yakutsk area	62.15395	130.96512	DTLB		0.1	17.98	10.65			thermokarst	MIS 1		
234	BH2-0.6			Yakutsk area	62.15395	130.96512	DTLB		0.6	26.91	0.97			thermokarst	MIS 1		
235	BH2-0.99			Yakutsk area	62.15395	130.96512	DTLB		0.99	21.37	1.12			thermokarst	MIS 1		
236	BH2-1.1			Yakutsk area	62.15395	130.96512	DTLB		1.1	23.88	2.1			thermokarst	MIS 1		
237	BH3- 0 -TOP			Yakutsk area	62.16251	130.63159	DTLB		0	54.82	19.84			thermokarst	MIS 1		
238	BH3-0.1			Yakutsk area	62.16251	130.63159	DTLB		0.1	31.18	4.27			thermokarst	MIS 1		
239	BH3-0.3			Yakutsk area	62.16251	130.63159	DTLB		0.3	20.48	0.21			thermokarst	MIS 1		
240	BH3-0.6			Yakutsk area	62.16251	130.63159	DTLB		0.6	14.73				thermokarst	MIS 1		
241	BH3-0.9			Yakutsk area	62.16251	130.63159	DTLB		0.9	20.07	0.2			thermokarst	MIS 1		
242	BH3-1.3			Yakutsk area	62.16251	130.63159	DTLB		1.3	8.5				thermokarst	MIS 1		
243	BH4- 0 -TOP			Yakutsk area	62.16222	130.63004	DTLB		0	5.05				thermokarst	MIS 1		
244	BH4-1-1.3			Yakutsk area	62.16222	130.63004	DTLB		1	3.97	0.6			thermokarst	MIS 1		
245	BH4-1.3			Yakutsk area	62.16222	130.63004	DTLB		1.3	17.8	0.6			thermokarst	MIS 1		
246	BH5- 0 -TOP			Yakutsk area	62.16143	130.62437	DTLB		0	48.13				thermokarst	MIS 1		
247	BH5-0.1			Yakutsk area	62.16143	130.62437	DTLB		0.1	29.56				thermokarst	MIS 1		
248	BH5-0.3			Yakutsk area	62.16143	130.62437	DTLB		0.3	15.53	0.4			thermokarst	MIS 1		
249	BH5-0.6			Yakutsk area	62.16143	130.62437	DTLB		0.6	26.25	1.32			thermokarst	MIS 1		
250	BH5-0.8			Yakutsk area	62.16143	130.62437	DTLB		0.8	20.9	0.72			thermokarst	MIS 1		
251	Bhs002-0	2011	April	Samoylov	72.36999	126.47466	flood plain	0	51.62	14.66				flood plain (Lena Delta)	MIS 1	Zubrzycki et al. (2013) https://doi.org/10.5194/bg-10-3507-201	
252	Bhs002-10	2011	April	Samoylov	72.36999	126.47466	flood plain	0.1	22.42	0.76				flood plain (Lena Delta)	MIS 1		
253	Bhs002-30	2011	April	Samoylov	72.36999	126.47466	flood plain	0.3	23.7	1.29				flood plain (Lena Delta)	MIS 1		
254	Bhs002-50	2011	April	Samoylov	72.36999	126.47466	flood plain	0.5	23.5	1.26				flood plain (Lena Delta)	MIS 1		
255	Bhs002-75	2011	April	Samoylov	72.36999	126.47466	flood plain	0.75	22.26	1.18				flood plain (Lena Delta)	MIS 1		
256	Bhs002-99	2011	April	Samoylov	72.36999	126.47466	flood plain	0.99	55.46	11.51				flood plain (Lena Delta)	MIS 1		
257	Bhs003-0	2011	April	Samoylov	72.36815	126.47511	flood plain	0	10.87	0.45				flood plain (Lena Delta)	MIS 1		
258	Bhs003-10	2011	April	Samoylov	72.36815	126.47511	flood plain	0.1	12.18	0.42				flood plain (Lena Delta)	MIS 1		
259	Bhs003-30	2011	April	Samoylov	72.36815	126.47511	flood plain	0.3	10.78	0.74				flood plain (Lena Delta)	MIS 1		
260	Bhs003-50	2011	April	Samoylov	72.36815	126.47511	flood plain	0.5	17.75	0.92				flood plain (Lena Delta)	MIS 1		
261	Bhs003-75	2011	April	Samoylov	72.36815	126.47511	flood plain	0.75	13.5	0.47				flood plain (Lena Delta)	MIS 1		
262	Bhs003-99	2011	April	Samoylov	72.36815	126.47511	flood plain	0.99	14.89	0.39				flood plain (Lena Delta)	MIS 1		
263	Bhs004-0	2011	April	Samoylov	72.36886	126.48051	flood plain	0	64.47	23.39				flood plain (Lena Delta)	MIS 1		
264	Bhs004-10	2011	April	Samoylov	72.36886	126.48051	flood plain	0.1	73.73	12.75				flood plain (Lena Delta)	MIS 1		
265	Bhs004-30	2011	April	Samoylov	72.36886	126.48051	flood plain	0.3	25.24	2.18				flood plain (Lena Delta)	MIS 1		
266	Bhs004-50	2011	April	Samoylov	72.36886	126.48051	flood plain	0.5	41.38	2.31				flood plain (Lena Delta)	MIS 1		
267	Bhs004-75	2011	April	Samoylov	72.36886	126.48051	flood plain	0.75	52.85	2.32				flood plain (Lena Delta)	MIS 1		
268	Bhs004-99	2011	April	Samoylov	72.36886	126.48051	flood plain	0.99	35.92	1.15				flood plain (Lena Delta)	MIS 1		
269	Bhs005-0	2011	April	Samoylov	72.36885	126.47951	flood plain	0	61.26	11.34				flood plain (Lena Delta)	MIS 1		
270	Bhs005-10	2011	April	Samoylov	72.36885	126.47951	flood plain	0.1	39.01	2.45				flood plain (Lena Delta)	MIS 1		
271	Bhs005-30	2011	April	Samoylov	72.36885	126.47951	flood plain	0.3	27.31	1.79				flood plain (Lena Delta)	MIS 1		
272	Bhs005-50	2011	April	Samoylov	72.36885	126.47951	flood plain	0.5	24.79	1.71				flood plain (Lena Delta)	MIS 1		
273	Bhs005-75	2011	April	Samoylov	72.36885	126.47951	flood plain	0.75	41.81	1.29				flood plain (Lena Delta)	MIS 1		
274	Bhs005-99	2011	April	Samoylov	72.36885	126.47951	flood plain	0.99	42.09	1.73				flood plain (Lena Delta)	MIS 1		
275	Bhs006-0-10	2011	April	Samoylov	72.37022	126.47355	flood plain	0.1	17.15	0.49				flood plain (Lena Delta)	MIS 1		
276	Bhs006-10-100	2011	April	Samoylov	72.37022	126.47355	flood plain	1	12.3	0.39				flood plain (Lena Delta)	MIS 1		
277	Bhs007-0	2011	April	Samoylov	72.37021	126.47394	flood plain	0	75.39	29.4				flood plain (Lena Delta)	MIS 1		
278	Bhs007-10	2011	April	Samoylov	72.37021	126.47394	flood plain	0.1	21.32	0.93				flood plain (Lena Delta)	MIS 1		
279	Bhs007-30	2011	April	Samoylov	72.37021	126.47394	flood plain	0.3	20.15	0.74				flood plain (Lena Delta)	MIS 1		
280	Bhs007-50	2011	April	Samoylov													

305	Bhs012-0	2011	April	Samoylov	72.37038	126.48481	flood plain	0	57.89	37.24	flood plain (Lena Delta)	MIS 1
306	Bhs012-10	2011	April	Samoylov	72.37038	126.48481	flood plain	0.1	85.71	20.14	flood plain (Lena Delta)	MIS 1
307	Bhs012-30	2011	April	Samoylov	72.37038	126.48481	flood plain	0.3	86.22	9.15	flood plain (Lena Delta)	MIS 1
308	Bhs012-30	2011	April	Samoylov	72.37038	126.48481	flood plain	0.3			flood plain (Lena Delta)	MIS 1
309	Bhs012-50	2011	April	Samoylov	72.37038	126.48481	flood plain	0.5	60.43	8.35	flood plain (Lena Delta)	MIS 1
310	Bhs012-75	2011	April	Samoylov	72.37038	126.48481	flood plain	0.75	70.05	8.27	flood plain (Lena Delta)	MIS 1
311	Bhs012-75	2011	April	Samoylov	72.37038	126.48481	flood plain	0.75			flood plain (Lena Delta)	MIS 1
312	Bhs012-99	2011	April	Samoylov	72.37038	126.48481	flood plain	0.99	40.87	5.12	flood plain (Lena Delta)	MIS 1
313	Bhs013-100-150	2011	April	Samoylov	72.37057	126.48466	flood plain	1	48.17	8.84	flood plain (Lena Delta)	MIS 1
314	Bhs015-0	2011	April	Samoylov	72.36914	126.47511	flood plain	0	91.11	27.71	flood plain (Lena Delta)	MIS 1
315	Bhs015-10	2011	April	Samoylov	72.36914	126.47511	flood plain	0.1	26.51	1.32	flood plain (Lena Delta)	MIS 1
316	Bhs015-30	2011	April	Samoylov	72.36914	126.47511	flood plain	0.3	26.15	1.37	flood plain (Lena Delta)	MIS 1
317	Bhs015-50	2011	April	Samoylov	72.36914	126.47511	flood plain	0.5	15.74	0.5	flood plain (Lena Delta)	MIS 1
318	Bhs015-50	2011	April	Samoylov	72.36914	126.47511	flood plain	0.5		0.48	flood plain (Lena Delta)	MIS 1
319	Bhs015-75	2011	April	Samoylov	72.36914	126.47511	flood plain	0.75	14.15	0.81	flood plain (Lena Delta)	MIS 1
320	Bhs015-99	2011	April	Samoylov	72.36914	126.47511	flood plain	0.99	19.26	1.07	flood plain (Lena Delta)	MIS 1
321	Bhs016-0	2011	April	Samoylov	72.36914	126.47511	flood plain	0	38.64	4.28	flood plain (Lena Delta)	MIS 1
322	Bhs016-10	2011	April	Samoylov	72.36914	126.47511	flood plain	0.1	21.82	1.86	flood plain (Lena Delta)	MIS 1
323	Bhs016-30	2011	April	Samoylov	72.36914	126.47511	flood plain	0.3	6.8	1.01	flood plain (Lena Delta)	MIS 1
324	Bhs016-40-100	2011	April	Samoylov	72.36914	126.47511	flood plain	0.4	7.92	0.57	flood plain (Lena Delta)	MIS 1
325	Bhs017-0	2011	April	Samoylov	72.38217	126.50655	flood plain	0	91.11	27.71	flood plain (Lena Delta)	MIS 1
326	Bhs017-10	2011	April	Samoylov	72.38217	126.50655	flood plain	0.1	91.27	21.91	flood plain (Lena Delta)	MIS 1
327	Bhs017-30	2011	April	Samoylov	72.38217	126.50655	flood plain	0.3	40.98	9.04	flood plain (Lena Delta)	MIS 1
328	Bhs017-50	2011	April	Samoylov	72.38217	126.50655	flood plain	0.5	35.85	1.43	flood plain (Lena Delta)	MIS 1
329	Bhs017-75	2011	April	Samoylov	72.38217	126.50655	flood plain	0.75	29.45	2	flood plain (Lena Delta)	MIS 1
330	Bhs017-99	2011	April	Samoylov	72.38217	126.50655	flood plain	0.99	18.85	0.61	flood plain (Lena Delta)	MIS 1
331	Bhs018-0	2011	April	Samoylov	72.38702	126.49208	flood plain	0	70.4	26.96	flood plain (Lena Delta)	MIS 1
332	Bhs018-10	2011	April	Samoylov	72.38702	126.49208	flood plain	0.1	43.82	4.26	flood plain (Lena Delta)	MIS 1
333	Bhs018-30	2011	April	Samoylov	72.38702	126.49208	flood plain	0.3	25.57	3.38	flood plain (Lena Delta)	MIS 1
334	Bhs018-50	2011	April	Samoylov	72.38702	126.49208	flood plain	0.5	18.82	0.31	flood plain (Lena Delta)	MIS 1
335	Bhs018-75	2011	April	Samoylov	72.38702	126.49208	flood plain	0.75	14.71	0.28	flood plain (Lena Delta)	MIS 1
336	Bhs018-99	2011	April	Samoylov	72.38702	126.49208	flood plain	0.99	15.99	0.17	flood plain (Lena Delta)	MIS 1
337	Bhs019-0	2011	April	Samoylov	72.37439	126.51524	flood plain	0	87.96	21.03	flood plain (Lena Delta)	MIS 1
338	Bhs019-10	2011	April	Samoylov	72.37439	126.51524	flood plain	0.1	85.58	18.24	flood plain (Lena Delta)	MIS 1
339	Bhs019-30	2011	April	Samoylov	72.37439	126.51524	flood plain	0.3	56.23	7.64	flood plain (Lena Delta)	MIS 1
340	Bhs019-50	2011	April	Samoylov	72.37439	126.51524	flood plain	0.5	73.66	8.1	flood plain (Lena Delta)	MIS 1
341	Bhs019-75	2011	April	Samoylov	72.37439	126.51524	flood plain	0.75	59.65	5.92	flood plain (Lena Delta)	MIS 1
342	Bhs019-92	2011	April	Samoylov	72.37439	126.51524	flood plain	0.99	76.54	8.97	flood plain (Lena Delta)	MIS 1
343	Bhs020-0	2011	April	Samoylov	72.37565	126.52144	flood plain	0	89.45	17.64	flood plain (Lena Delta)	MIS 1
344	Bhs020-10	2011	April	Samoylov	72.37565	126.52144	flood plain	0.1	79.07	14.65	flood plain (Lena Delta)	MIS 1
345	Bhs020-30	2011	April	Samoylov	72.37565	126.52144	flood plain	0.3	71.64	12.27	flood plain (Lena Delta)	MIS 1
346	Bhs020-50	2011	April	Samoylov	72.37565	126.52144	flood plain	0.5	46.2	5.04	flood plain (Lena Delta)	MIS 1
347	Bhs020-75	2011	April	Samoylov	72.37565	126.52144	flood plain	0.75	18.27	0.18	flood plain (Lena Delta)	MIS 1
348	Bhs020-99	2011	April	Samoylov	72.37565	126.52144	flood plain	0.99	38.18	2.49	flood plain (Lena Delta)	MIS 1
349	Bhs021-0	2011	April	Samoylov	72.38641	126.4901	flood plain	0	89.26	24.46	flood plain (Lena Delta)	MIS 1
350	Bhs021-10	2011	April	Samoylov	72.38641	126.4901	flood plain	0.1	55.2	6.33	flood plain (Lena Delta)	MIS 1
351	Bhs021-30	2011	April	Samoylov	72.38641	126.4901	flood plain	0.3	55.54	7.36	flood plain (Lena Delta)	MIS 1
352	Bhs021-50	2011	April	Samoylov	72.38641	126.4901	flood plain	0.5	50.18	4.51	flood plain (Lena Delta)	MIS 1
353	Bhs021-75	2011	April	Samoylov	72.38641	126.4901	flood plain	0.75	66.52	10.2	flood plain (Lena Delta)	MIS 1
354	Bhs021-99	2011	April	Samoylov	72.38641	126.4901	flood plain	0.99	62.77	6.53	flood plain (Lena Delta)	MIS 1
355	Bhs022-0	2011	April	Samoylov	72.38594	126.48174	flood plain	0	39.08	3.16	flood plain (Lena Delta)	MIS 1
356	Bhs022-10	2011	April	Samoylov	72.38594	126.48174	flood plain	0.1	43.71	3.63	flood plain (Lena Delta)	MIS 1
357	Bhs022-30	2011	April	Samoylov	72.38594	126.48174	flood plain	0.3	35.22	3.62	flood plain (Lena Delta)	MIS 1
358	Bhs022-50	2011	April	Samoylov	72.38594	126.48174	flood plain	0.5	23.46	2.26	flood plain (Lena Delta)	MIS 1
359	Bhs022-75	2011	April	Samoylov	72.38594	126.48174	flood plain	0.75	47.14	2.25	flood plain (Lena Delta)	MIS 1
360	Bhs022-99	2011	April	Samoylov	72.38594	126.48174	flood plain	0.99	53.67	2.91	flood plain (Lena Delta)	MIS 1
361	Bhs023-0	2011	April	Samoylov	72.3794	126.49638	flood plain	0	91.85	34.5	flood plain (Lena Delta)	MIS 1
362	Bhs023-10	2011	April	Samoylov	72.3794	126.49638	flood plain	0.1	86.28	16.67	flood plain (Lena Delta)	MIS 1
363	Bhs023-30	2011	April	Samoylov	72.3794	126.49638	flood plain	0.3	49.05	5.26	flood plain (Lena Delta)	M

382	Bhs026-50	2011	April	Samoylov	72.37365	126.47928	flood plain	0.5	78.33	19.04		flood plain (Lena Delta)	MIS 1						
383	Bhs026-75	2011	April	Samoylov	72.37365	126.47928	flood plain	0.75	40.34	2.23		flood plain (Lena Delta)	MIS 1						
384	Bhs026-99	2011	April	Samoylov	72.37365	126.47928	flood plain	0.99	43.75	8.9		flood plain (Lena Delta)	MIS 1						
385	Bhs027-0	2011	April	Samoylov	72.37499	126.48884	flood plain	0	93.57	27.77		flood plain (Lena Delta)	MIS 1						
386	Bhs027-10	2011	April	Samoylov	72.37499	126.48884	flood plain	0.1	85.76	17.13		flood plain (Lena Delta)	MIS 1						
387	Bhs027-30	2011	April	Samoylov	72.37499	126.48884	flood plain	0.3	68.56	16.26		flood plain (Lena Delta)	MIS 1						
388	Bhs027-50	2011	April	Samoylov	72.37499	126.48884	flood plain	0.5	48.72	5.92		flood plain (Lena Delta)	MIS 1						
389	Bhs027-75	2011	April	Samoylov	72.37499	126.48884	flood plain	0.75	64.12	11.64		flood plain (Lena Delta)	MIS 1						
390	Bhs027-99	2011	April	Samoylov	72.37499	126.48884	flood plain	0.99	46.98	3.43		flood plain (Lena Delta)	MIS 1						
391	Bhs028-0	2011	April	Samoylov	72.37091	126.47847	flood plain	0	79.71	20.3		flood plain (Lena Delta)	MIS 1						
392	Bhs028-10	2011	April	Samoylov	72.37091	126.47847	flood plain	0.1	89.3	13.04		flood plain (Lena Delta)	MIS 1						
393	Bhs028-30	2011	April	Samoylov	72.37091	126.47847	flood plain	0.3	82.33	14.17		flood plain (Lena Delta)	MIS 1						
394	Bhs028-50	2011	April	Samoylov	72.37091	126.47847	flood plain	0.5	48.89	3.86		flood plain (Lena Delta)	MIS 1						
395	Bhs028-75	2011	April	Samoylov	72.37091	126.47847	flood plain	0.75	50.62	4.84		flood plain (Lena Delta)	MIS 1						
396	Bhs028-99	2011	April	Samoylov	72.37091	126.47847	flood plain	0.99	39.54	2.93		flood plain (Lena Delta)	MIS 1						
397	Bhs029-0	2011	April	Samoylov	72.37209	126.47333	flood plain	0	68.12	6.95		flood plain (Lena Delta)	MIS 1						
398	Bhs029-10	2011	April	Samoylov	72.37209	126.47333	flood plain	0.1	41.72	2.99		flood plain (Lena Delta)	MIS 1						
399	Bhs029-30	2011	April	Samoylov	72.37209	126.47333	flood plain	0.3	24.47	1.12		flood plain (Lena Delta)	MIS 1						
400	Bhs029-50	2011	April	Samoylov	72.37209	126.47333	flood plain	0.5	18.52	0.37		flood plain (Lena Delta)	MIS 1						
401	Bhs029-75	2011	April	Samoylov	72.37209	126.47333	flood plain	0.75	20.24	0.59		flood plain (Lena Delta)	MIS 1						
402	Bhs029-99	2011	April	Samoylov	72.37209	126.47333	flood plain	0.99	18.43	0.2		flood plain (Lena Delta)	MIS 1						
403	Bhs031-0	2011	April	Samoylov	72.36758	126.49141	flood plain	0	70.76	13.58		flood plain (Lena Delta)	MIS 1						
404	Bhs031-10	2011	April	Samoylov	72.36758	126.49141	flood plain	0.1	80.97	17.45		flood plain (Lena Delta)	MIS 1						
405	Bhs031-30	2011	April	Samoylov	72.36758	126.49141	flood plain	0.3	64.71	8.93		flood plain (Lena Delta)	MIS 1						
406	Bhs031-50	2011	April	Samoylov	72.36758	126.49141	flood plain	0.5	61.4	8.64		flood plain (Lena Delta)	MIS 1						
407	Bhs031-75	2011	April	Samoylov	72.36758	126.49141	flood plain	0.75	73.92	18		flood plain (Lena Delta)	MIS 1						
408	Bhs031-99	2011	April	Samoylov	72.36758	126.49141	flood plain	0.99	77.84	13.25		flood plain (Lena Delta)	MIS 1						
409	Bhs032-0	2011	April	Samoylov	72.37132	126.46893	flood plain	0	20.54	0.82		flood plain (Lena Delta)	MIS 1						
410	Bhs032-10	2011	April	Samoylov	72.37132	126.46893	flood plain	0.1	23.96	0.86		flood plain (Lena Delta)	MIS 1						
411	Bhs032-30	2011	April	Samoylov	72.37132	126.46893	flood plain	0.3	11.83	0.72		flood plain (Lena Delta)	MIS 1						
412	Bhs032-50	2011	April	Samoylov	72.37132	126.46893	flood plain	0.5	3.49	0.13		flood plain (Lena Delta)	MIS 1						
413	Bhs032-75	2011	April	Samoylov	72.37132	126.46893	flood plain	0.75	10.52	0.22		flood plain (Lena Delta)	MIS 1						
414	Bhs032-99	2011	April	Samoylov	72.37132	126.46893	flood plain	0.99	9.12	0.15		flood plain (Lena Delta)	MIS 1						
415	Bhs033-0	2011	April	Samoylov	72.37084	126.46565	flood plain	0	23.42	1.57		flood plain (Lena Delta)	MIS 1						
416	Bhs033-10	2011	April	Samoylov	72.37084	126.46565	flood plain	0.1	33.48	2.03		flood plain (Lena Delta)	MIS 1						
417	Bhs033-30	2011	April	Samoylov	72.37084	126.46565	flood plain	0.3	25	1.56		flood plain (Lena Delta)	MIS 1						
418	Bhs033-50	2011	April	Samoylov	72.37084	126.46565	flood plain	0.5	21.63	1		flood plain (Lena Delta)	MIS 1						
419	Bhs033-75	2011	April	Samoylov	72.37084	126.46565	flood plain	0.75	19.3	2.91		flood plain (Lena Delta)	MIS 1						
420	Bhs033-99	2011	April	Samoylov	72.37084	126.46565	flood plain	0.99	28.54	1.46		flood plain (Lena Delta)	MIS 1						
421	Bhs035-0	2011	April	Samoylov	72.37524	126.49209	flood plain	0	88.35	17.02		flood plain (Lena Delta)	MIS 1						
422	Bhs035-10	2011	April	Samoylov	72.37524	126.49209	flood plain	0.1	92.52	18.79		flood plain (Lena Delta)	MIS 1						
423	Bhs035-30	2011	April	Samoylov	72.37524	126.49209	flood plain	0.3	62.56	6.89		flood plain (Lena Delta)	MIS 1						
424	Bhs035-50	2011	April	Samoylov	72.37524	126.49209	flood plain	0.5	56.9	5.61		flood plain (Lena Delta)	MIS 1						
425	Bhs035-75	2011	April	Samoylov	72.37524	126.49209	flood plain	0.75	59.76	8.96		flood plain (Lena Delta)	MIS 1						
426	Bhs035-99	2011	April	Samoylov	72.37524	126.49209	flood plain	0.99	45.62	6.62		flood plain (Lena Delta)	MIS 1						
427	Bhs036-0	2011	April	Samoylov	72.37519	126.492	flood plain	0	98.08	42.46		flood plain (Lena Delta)	MIS 1						
428	Bhs036-10	2011	April	Samoylov	72.37519	126.492	flood plain	0.1	97.65	37.96		flood plain (Lena Delta)	MIS 1						
429	Bhs036-30	2011	April	Samoylov	72.37519	126.492	flood plain	0.3	93.67	19.54		flood plain (Lena Delta)	MIS 1						
430	Bhs036-50	2011	April	Samoylov	72.37519	126.492	flood plain	0.5	89.19	25.97		flood plain (Lena Delta)	MIS 1						
431	Bhs036-75	2011	April	Samoylov	72.37519	126.492	flood plain	0.75	70.58	4.42		flood plain (Lena Delta)	MIS 1						
432	Bhs036-99	2011	April	Samoylov	72.37519	126.492	flood plain	0.99	56.99	4.11		flood plain (Lena Delta)	MIS 1						
433	Birke- 0 -TOP			Yakutsk area	62.08511	129.32053		0	23.33	23.08		flood plain (Lena Delta)	MIS 1						
434	Birke-0.1			Yakutsk area	62.08511	129.32053		0.1	14.41	2									
435	Birke-0.3			Yakutsk area	62.08511	129.32053		0.3	13.6	0.7									
436	Birke-0.6			Yakutsk area	62.08511	129.32053		0.6	10.6	0.35									
437	BK 2-1 6.05-6.00 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	6.03	17.11	0.05	69.14	10.56	40.39	49.05	0	fluvial	MIS 3	40-45	https://doi.org/10.2312/BzPM_0664_20
438	BK 2-1 6.15-6.25 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	6.2	16.86	0.29	35.26	13.28	70.1	16.63	0	fluvial	MIS 3	40-45	https://doi.org/10.1594/PANGAEA.846
439	BK 2-1 6.36-6.44 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	6.4	16.84	0.65	77.91	7.35	51.83	40.82	0	fluvial	MIS 3	40-45	https://doi:10.1002/2014JG002862
440	BK 2-10 20.35-20.25 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	20.3	14.24	0.13	196.97	3.65	23.54	72.81	0	fluvial	MIS		

459	BK 2-12	29.49-29.40 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	29.45	22.13	0.05	298.64	1.16	6.6	92.24	0	fluvial	MIS 3	40-45
460	BK 2-13	29.75-29.65 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	29.7	23.71	0.95	160.59	3.52	12.8	83.69	0	fluvial	MIS 3	40-45
461	BK 2-13	30.18-30.09 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	30.14	20.54	0.05	217.07	6.6	21.77	71.63	0	fluvial	MIS 3	40-45
462	BK 2-13	30.95-30.85 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	30.9	21.16	0.05	303.73	0.42	3.29	96.29	0	fluvial	MIS 3	40-45
463	BK 2-13	31.60-31.45 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	31.53	18.91	0.05	275.63	0.89	17.73	81.38	0	fluvial	MIS 7 - MIS 4	100-170
464	BK 2-13	32.15-32.00 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	32.08	22.25	0.66	133.54	8.46	28.61	62.93	0	fluvial	MIS 7 - MIS 4	100-170
465	BK 2-14	34.04-33.93 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	33.99	26.18	2.13	108.03	5.91	32.47	61.61	0	fluvial	MIS 7 - MIS 4	100-170
466	BK 2-14	34.20-34.13 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	34.17	24.77	3.14	101.09	9.27	40.33	50.4	0	fluvial	MIS 7 - MIS 4	100-170
467	BK 2-15	34.66-34.56 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	34.61	24.03	0.05	135.71	1.23	19.69	79.08	0	fluvial	MIS 7 - MIS 4	100-170
468	BK 2-15	35.31-35.19 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	35.25	23.77	0.51	103.05	5.89	24.36	69.74	0	fluvial	MIS 7 - MIS 4	100-170
469	BK 2-15	36.15-36.00 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	36.08	22.13	0.05	183.55	1.26	24.94	73.8	0	fluvial	MIS 7 - MIS 4	100-170
470	BK 2-16	38.02-37.85 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	37.94	26.31	2.26	59.82	12.07	57.3	30.63	0	fluvial	MIS 7 - MIS 4	100-170
471	BK 2-16	38.11-38.05 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	38.08	26.95	1.97	55.95	10.89	59.68	29.43	0	fluvial	MIS 7 - MIS 4	100-170
472	BK 2-16	38.44-38.28 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	38.36	22.26	0.05	216.89	1.52	7.54	90.94	0	fluvial	MIS 7 - MIS 4	100-170
473	BK 2-16	39.03-38.87 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	38.95	23.66	0.05	120.82	2.26	27.86	69.88	0	fluvial	MIS 7 - MIS 4	100-170
474	BK 2-16	39.70-39.57 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	39.64	24.18	0.05	198.41	3.25	8.73	88.02	0	fluvial	MIS 7 - MIS 4	100-170
475	BK 2-16	39.89-39.82 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	39.86	26.09	2.1	28.01	16.04	71.32	12.64	0	fluvial	MIS 7 - MIS 4	100-170
476	BK 2-16	40.05-39.96 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	40.01	22.24	0.69	62.7	9.75	48.35	41.9	0	fluvial	MIS 7 - MIS 4	100-170
477	BK 2-16	40.40-40.30 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	40.35	22.72	0.05	212.06	1.2	6.04	92.77	0	fluvial	MIS 7 - MIS 4	100-170
478	BK 2-16	40.55-40.50 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	40.53	23.3	1.06	42.64	14.07	61.3	24.63	0	fluvial	MIS 7 - MIS 4	100-170
479	BK 2-18	40.95-40.78 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	40.87	25.38	0.05	175.98	3.44	15.25	81.31	0	fluvial	MIS 7 - MIS 4	100-170
480	BK 2-18	41.77-41.64 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	41.71	21.93	0.8	51.98	7.87	58.62	33.5	0	fluvial	MIS 7 - MIS 4	100-170
481	BK 2-18	41.97-41.86 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	41.92	24.22	0.73	196.54	0.89	16.26	82.84	0	fluvial	MIS 7 - MIS 4	100-170
482	BK 2-18	42.77-42.62 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	42.7	24.28	0.05	200.41	1.34	7.62	91.04	0	fluvial	MIS 7 - MIS 4	100-170
483	BK 2-18	43.40-43.30 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	43.35	22.7	0.05	230.31	1.07	5.67	93.26	0	fluvial	MIS 7 - MIS 4	100-170
484	BK 2-18	43.62-43.51 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	43.57	22.59	0.05	203.72	3.49	10.89	85.62	0	fluvial	MIS 7 - MIS 4	100-170
485	BK 2-18	43.83-43.72 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	43.78	19.35	0.05	194.11	0.58	14.4	85.02	0	fluvial	MIS 7 - MIS 4	100-170
486	BK 2-19	45.42-45.24 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	45.33	21.76	0.05	209.3	3.9	9.92	86.18	0	fluvial	MIS 7 - MIS 4	100-170
487	BK 2-19	46.10-45.95 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	46.03	23.05	0.05	240.84	1.14	4.74	94.12	0	fluvial	MIS 7 - MIS 4	100-170
488	BK 2-19	46.40-46.25 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	46.33	22	0.05	218.87	0.99	5.87	93.14	0	fluvial	MIS 7 - MIS 4	100-170
489	BK 2-19	47.17-47.00 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	47.09	20.07	0.05	315.99	0.53	17.01	82.46	0	fluvial	MIS 7 - MIS 4	100-170
490	BK 2-19	47.72-47.63 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	47.68	22.54	1.64	90.22	8.19	41.31	50.5	0	fluvial	MIS 7 - MIS 4	100-170
491	BK 2-19	48.05-47.95 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	48	20.84	0.05	317.17	1.03	6.04	92.93	0	fluvial	MIS 7 - MIS 4	100-170
492	BK 2-2	8.57-8.69 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	8.63	23.08	0.81	71.32	8.87	59.49	31.63	0	fluvial	MIS 7 - MIS 4	100-170
493	BK 2-2	8.84-8.75 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	8.8	20.93	0.97	110.01	4.1	26.89	69.01	0	fluvial	MIS 7 - MIS 4	100-170
494	BK 2-2	8.95-9.08 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	9.02	17.79	0.05	108.27	3.01	28.03	68.96	0	fluvial	MIS 7 - MIS 4	100-170
495	BK 2-2	9.25-9.29 m	2012	April	Buor Khaya Peninsula	71.4223	132.0848	subsea	9.27	21.99</td									

613	Bkh 3-S-9	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	15.7	17.8	7.87	257.7	1.69	31.81	66.5	0	Yedoma upland	MIS 3	30-50	
614	Bkh 3-S-10	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	15.9	17.6		300.7	1.48	25.82	72.7	0	Yedoma upland	MIS 3	30-50	
615	Bkh 3-S-11	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	18	15.5	6.46	220.5	1.63	37.57	60.8	0	Yedoma upland	MIS 3	30-50	
616	Bkh 3-S-12	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	19	14.5	2.72	78.36	5.89	58.81	35.3	0	Yedoma upland	MIS 3	30-50	
617	Bkh 3-S-13	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	20	13.5	3.63	86.04	4.53	58.87	36.6	0	Yedoma upland	MIS 3	30-50	
618	Bkh 3-S-14	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	21	12.5		467	0.36	11.84	87.8	0	Yedoma upland	MIS 3	30-50	
619	Bkh 3-S-15	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	21.5	12							Yedoma upland	MIS 3	30-50	
620	Bkh 3-S-16	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	22	11.5							Yedoma upland	MIS 3	30-50	
621	Bkh 3-S-17	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	22.2	11.3	5.82	145.5	2.17	42.63	55.2	0	Yedoma upland	MIS 3	30-50	
622	Bkh 3-S-18	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	23	10.5	2.89	83.49	5.85	60.95	33.2	0	Yedoma upland	MIS 3	30-50	
623	Bkh 3-S-19	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	24	9.5							Yedoma upland	MIS 3	30-50	
624	Bkh 3-S-20	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	24.5	9							Yedoma upland	MIS 3	30-50	
625	Bkh 3-S-21	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	25	8.5	4.74	146.7	3.36	49.24	47.4	0	Yedoma upland	MIS 3	30-50	
626	Bkh 3-S-22	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	27.5	6	4.03	143.3	3.67	52.03	44.3	0	Yedoma upland	MIS 3	30-50	
627	Bkh 3-S-23	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	28.5	5							Yedoma upland	MIS 3	30-50	
628	Bkh 3-S-24	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	29.5	4	5.04	146.7	2.75	41.85	55.4	0	Yedoma upland	MIS 3	30-50	
629	Bkh 3-S-25	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	31	2.5		2.06	143.3	4.94	43.56	51.5	0	Yedoma upland	MIS 3	30-50
630	Bkh 3-S-26	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	32	1.5	4.25	162.7	3.22	43.28	53.5	0	Yedoma upland	MIS 3	30-50	
631	Bkh 3-S-27	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	34	1.5		298.8	0.8	17.8	81.4	0	Yedoma upland	MIS 3	30-50	
632	Bkh 3-S-28	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	33	0.5	2.64	82.16	8.12	62.18	29.7	0	Yedoma upland	MIS 3	30-50	
633	Bkh 3-S-29	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	35	2.5		370.1	0.59	15.11	84.3	0	Yedoma upland	MIS 3	30-50	
634	Bkh 3-Boden-A	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	35.98	3.48	4.09	139.3	4.96	54.24	40.8	0	Holocene cover	MIS 1	7-10	
635	Bkh 3-Boden-B	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	35.88	3.38	3.08	85.22	7.69	60.01	32.3	0	Holocene cover	MIS 1	7-10	
636	Bkh 3-Boden-C	2000	August	Kurungnakh Island	72.3445	126.309167	Yedoma upland	35.77	3.27	7.68	213.6	2.46	39.84	57.7	0	Holocene cover	MIS 1	7-10	
637	Bkh 4-S-1	2000	August	Kurungnakh Island	72.3505	126.321167	Yedoma upland	32	1.5	0.64	181.6	5.12	28.38	66.5	0	Holocene cover	MIS 1	7-10	
638	Bkh 4-S-2	2000	August	Kurungnakh Island	72.3505	126.321167	Yedoma upland	32.5	1	3.36	86.84	7.74	59.96	32.3	0	Holocene cover	MIS 1	7-10	
639	Bkh 4-S-3	2000	August	Kurungnakh Island	72.3505	126.321167	Yedoma upland	33	0.5		296.1	0.52	17.38	82.1	0	Holocene cover	MIS 1	7-10	
640	Bkh 4-S-4	2000	August	Kurungnakh Island	72.3505	126.321167	Yedoma upland	33.5	1	2.8	62.93	9.25	63.95	26.8	0	Holocene cover	MIS 1	7-10	
641	Bkh 4-S-5	2000	August	Kurungnakh Island	72.3505	126.321167	Yedoma upland	34	1.5	4.71	175.7	4.79	51.81	43.4	0	Holocene cover	MIS 1	7-10	
642	Bkh2002 S02	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	35.75	0.25	50	5.14	63.02	12.38	63.07	24.58	0	Holocene cover	MIS 1	2-8
643	Bkh2002 S04	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	35	1	36.22	3.01	98.09	10.93	56.78	32.29	0	Holocene cover	MIS 1	2-8
644	Bkh2002 S05	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	35.2	0.8	50	11.68	118.1	9.2	57.85	32.96	0	Holocene cover	MIS 1	2-8
645	Bkh2002 S06	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	33.2	2.8	42.23	1.67	78.08	10.16	60.59	29.27	0	Holocene cover	MIS 1	2-8
646	Bkh2002 S07	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	32.8	3.2	60	1.65	90.57	11.6	58.2	30.17	0	Yedoma upland	MIS 2	15-20
647	Bkh2002 S08	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	31.7	4.3	54.9	2	104.1	44.96	53.22	34.51	0	Yedoma upland	MIS 2	15-20
648	Bkh2002 S09	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	32.2	3.8	43.9	1.6	68.62	51.35	60.79	25.67	0	Yedoma upland	MIS 2	15-20
649	Bkh2002 S10	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	31.5	4.5	36.7	2.1	88.69	46.44	57.84	31.96	0	Yedoma upland	MIS 2	15-20
650	Bkh2002 S11	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	31	5	37.2	1.5	92.04	42.46	53.97	34.77	0	Yedoma upland	MIS 2	15-20
651	Bkh2002 S12	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	30.5	5.5	39	1.1	174.8	32.71	37.49	53.91	0	Yedoma upland	MIS 2	15-20
652	Bkh2002 S13	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	31	5		1.7	133.3	38.18	48.33	41.34	0	Yedoma upland	MIS 2	15-20
653	Bkh2002 S14	2002	August	Kurungnakh Island	72.3344	126.3092	Yedoma upland	30	6	35.6	1.4	95.13	43.5	55.53	32.78	0	Yedoma upland	MIS 2	15-20
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690	Buo-02-A-06	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	27.8	2.2	40.1	2.1	30.35	11.79	72.64	15.57	0	Yedoma upland	MIS 3	30-45
691	Buo-02-B-07	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	27.5	2.5	41.3	2.2	41.03	10.69	62.46	26.84	0	Yedoma upland	MIS 3	30-45
692	Buo-02-B-08	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	27	3	38.8	0.6	48.13	8.65	59.77	31.58	0	Yedoma upland	MIS 3	30-45
693	Buo-02-B-09	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	26.5	3.5	50.4	0.6	51.17	7.77	57.22	35.01	0	Yedoma upland	MIS 3	30-45
694	Buo-02-B-10	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	26	4	42.7	1	47.31	8.79	59.06	32.16	0	Yedoma upland	MIS 3	30-45
695	Buo-02-B-11	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	25.5	4.5	39.2	0.6	69.76	6.71	37.63	55.65	0	Yedoma upland	MIS 3	30-45
696	Buo-02-B-12	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	25	5	37.9	2.1	41.44	10.88	62.76	26.36	0	Yedoma upland	MIS 3	30-45
697	Buo-02-B-13	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	24.5	5.5	33.2	0.8	28.7	13.13	70.69	16.18	0	Yedoma upland	MIS 3	30-45
698	Buo-02-C-14	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	24.8	5.2	55.7	2.5	32.21	12.47	69.7	17.83	0	Yedoma upland	MIS 3	30-45
699	Buo-02-C-15	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	24.3	5.7	31.4	0.3	55.8	7.65	46.95	45.4	0	Yedoma upland	MIS 3	30-45
700	Buo-02-C-16	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	23.7	6.3	36.5	0.4	69.02	6.73	35.74	57.53	0	Yedoma upland	MIS 3	30-45
701	Buo-02-C-17	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	23.1	6.9	39.5	0.5	49.08	7.99	55.02	36.99	0	Yedoma upland	MIS 3	30-45
702	Buo-02-D-18	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	25.5	4.5	31	4.1	33.85	11.89	69.4	18.71	0	Yedoma upland	MIS 3	30-45
703	Buo-02-D-19	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	25	5	48.3	7	35.5	11.29	68.69	20.02	0	Yedoma upland	MIS 3	30-45
704	Buo-02-D-20	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	24.5	5.5	78.8	19.7	27.51	11.87	74.81	13.32	0	Yedoma upland	MIS 3	30-45
705	Buo-02-D-21	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	24	6	89.6	24	27.32	10.19	76.51	13.3	0	Yedoma upland	MIS 3	30-45
706	Buo-02-D-22	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	23.5	6.5	69.1	4.9	38.8	12.14	66.12	21.74	0	Yedoma upland	MIS 3	30-45
707	Buo-02-D-23	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	23	7	34.4	0.6	61.9	6.91	48.93	44.16	0	Yedoma upland	MIS 3	30-45
708	Buo-02-D-24	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	22.5	7.5	44.2	0.3	65.45	6.59	40.2	53.21	0	Yedoma upland	MIS 3	30-45
709	Buo-03-A-01	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	29.5	0.5		1.09	29.72	14.22	71.52	14.26	0	Holocene cover	MIS 1	0-5
710	Buo-03-A-02	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	29.2	0.7	71.3	21.34	23.08	15.23	76.12	8.65	0	Holocene cover	MIS 1	0-5
711	Buo-03-A-03	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	28.7	1.3	72.1	22.93	22.12	15.12	76.05	8.83	0	Holocene cover	MIS 1	0-5
712	Buo-03-A-04	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	28.4	1.6		1.2	44.06	10.24	63.28	26.49	0	Holocene cover	MIS 1	0-5
713	Buo-04-A-00	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	18.5	0.1		0.9	22.11	12.41	82.11	5.48	0	Yedoma upland	MIS 3	35-60
714	Buo-04-A-01	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	17.6	1	47.4	0.9	21.16	11.26	84.72	4.02	0	Yedoma upland	MIS 3	35-60
715	Buo-04-A-02	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	17.1	1.5	31	1	21.32	14	81.39	4.6	0	Yedoma upland	MIS 3	35-60
716	Buo-04-A-03	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	16.6	2	39.6	1	22.93	11.79	82.51	5.7	0	Yedoma upland	MIS 3	35-60
717	Buo-04-A-04	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	16.1	2.5	37.9	0.9	22.11	12.9	81.82	5.28	0	Yedoma upland	MIS 3	35-60
718	Buo-04-A-05	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	15.6	3	37.9	1.1	23.31	10.85	83.31	5.85	0	Yedoma upland	MIS 3	35-60
719	Buo-04-A-06	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	15.1	3.5	38.3	0.9	23.78	11.25	82.35	6.41	0	Yedoma upland	MIS 3	35-60
720	Buo-04-A-07	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	14.1	4.5	50	1.4	21.23	13.08	81.01	5.9	0	Yedoma upland	MIS 3	35-60
721	Buo-04-A-08	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	13.6	5	39.5	0.7	27.49	12.38	77.68	9.94	0	Yedoma upland	MIS 3	35-60
722	Buo-04-B-09	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	9.6	8	37.3	1.5	39.29	8.8	65.77	25.43	0	Yedoma upland	MIS 3	35-60
723	Buo-04-B-10	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	9.1	8.5	36.4	1.6	45.24	7.41	61.98	30.61	0	Yedoma upland	MIS 3	35-60
724	Buo-04-B-11	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	8.6	9	34.9	1.9	42.18	7.18	66.23	26.58	0	Yedoma upland	MIS 3	35-60
725	Buo-04-B-12	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	8.1	9.5	41.2	0.9	41.19	7.84	65.21	26.96	0	Yedoma upland	MIS 3	35-60
726	Buo-04-B-13	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	7.6	10	31.3	0.5	38.69	8.35	67.29	24.37	0	Yedoma upland	MIS 3	35-60
727	Buo-04-C-14	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	9	9.5	31.8	2.4	37.98	8.76	67.49	23.75	0	Yedoma upland	MIS 3	35-60
728	Buo-04-C-15	2010	August	Buor Khaya Peninsula	71.38361	132.08397	Yedoma upland	8.5											

767	Buo-05-B-20	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	3.1	6.4	23	1.49	27.67	9.69	82.74	7.56	0	thermokarst	MIS 1	6-8
768	Buo-05-B-20 u	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	3.1	6.4	1.78							thermokarst	MIS 1	6-8
769	Buo-05-C-21	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	2.8	6.7	27.2	1.98	30.46	10.89	75.47	13.63	0	thermokarst	MIS 1	6-8
770	Buo-05-C-22	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	2.5	7	27.3	1.92	22.51	10.08	87.03	2.89	0	thermokarst	MIS 1	6-8
771	Buo-05-C-23	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	2.2	7.3	29.7	1.44	24.58	12.27	80.73	7	0	thermokarst	MIS 1	6-8
772	Buo-05-C-24	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	1.9	7.6	27.3	1.67	22.12	11.79	84.51	3.7	0	thermokarst	MIS 1	6-8
773	Buo-05-C-25	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	1.5	8	30.1	1.69	22.88	12.43	82.53	5.04	0	thermokarst	MIS 1	6-8
774	Buo-05-C-26	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	1.2	8.3	22.7	1.64	21.67	11.52	85.22	3.26	0	thermokarst	MIS 1	6-8
775	Buo-05-C-27	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	0.9	8.6	23.9	1.71	31.7	10	75.38	14.63	0	thermokarst	MIS 1	6-8
776	Buo-05-C-28	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	0.6	8.9	23.9	1.96	25.57	12.2	78.75	9.05	0	thermokarst	MIS 1	6-8
777	Buo-05-C-29	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	0.3	9.2	25.9	1.51	25.25	11.08	82.86	6.06	0	thermokarst	MIS 1	6-8
778	Buo-05-C-30	2010	August	Buor Khaya Peninsula	71.38361	132.08397	DTLB	0.1	9.4	31.3	2	22.54	10.89	86.6	2.52	0	thermokarst	MIS 1	6-8
779	BYK14-T2-2-04	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.61	40.84	0.7						thermokarst	MIS 1	0-10
780	BYK14-T2-2-05	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.66	64.82	4.14						thermokarst	MIS 1	0-10
781	BYK14-T2-2-06	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.71	34.55	0.69						thermokarst	MIS 1	0-10
782	BYK14-T2-2-07	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.74	80.49	1.84						thermokarst	MIS 1	0-10
783	BYK14-T2-2-08	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.79	43.25	0.86						thermokarst	MIS 1	0-10
784	BYK14-T2-2-09	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.88	57.61	1.92						thermokarst	MIS 1	0-10
785	BYK14-T2-2-10	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		0.98	52.88	2.48						thermokarst	MIS 1	0-10
786	BYK14-T2-2-11	2014		Bykovsky Peninsula	71.8595	129.2897	Yedoma upland		1.07	68.65	2.45						thermokarst	MIS 1	0-10
787	BYK14-T2-3-05	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.49	57.42	17.58						thermokarst	MIS 1	0-10
788	BYK14-T2-3-06	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.55	97.86	15.56						thermokarst	MIS 1	0-10
789	BYK14-T2-3-07	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.63	70.39	10.45						thermokarst	MIS 1	0-10
790	BYK14-T2-3-08	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.72	72.97	16.04						thermokarst	MIS 1	0-10
791	BYK14-T2-3-09	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.77	67.43	3.8						thermokarst	MIS 1	0-10
792	BYK14-T2-3-10	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.82	75.47	8.32						thermokarst	MIS 1	0-10
793	BYK14-T2-3-11	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.89	61.51	6.96						thermokarst	MIS 1	0-10
794	BYK14-T2-3-12	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		0.96	55.38	8.06						thermokarst	MIS 1	0-10
795	BYK14-T2-3-13	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.04	69.91	9.82						thermokarst	MIS 1	0-10
796	BYK14-T2-3-14	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.13	64.84	6.66						thermokarst	MIS 1	0-10
797	BYK14-T2-3-15	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.23	54.61	3.66						thermokarst	MIS 1	0-10
798	BYK14-T2-3-16	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.33	64.94	2.32						thermokarst	MIS 1	0-10
799	BYK14-T2-3-17	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.44	65.53	3.03						thermokarst	MIS 1	0-10
800	BYK14-T2-3-18	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.55	60.84	4.73						thermokarst	MIS 1	0-10
801	BYK14-T2-3-19	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.63	53.85	2.3						thermokarst	MIS 1	0-10
802	BYK14-T2-3-20	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.74	61.82	7.09						thermokarst	MIS 1	0-10
803	BYK14-T2-3-21	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.84	61.13	2.07						thermokarst	MIS 1	0-10
804	BYK14-T2-3-22	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.91	77.84	2.64						thermokarst	MIS 1	0-10
805	BYK14-T2-3-23	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		1.99	63.56	2.02						thermokarst	MIS 1	0-10
806	BYK14-T2-3-24	2014		Bykovsky Peninsula	71.8605	129.2928	Yedoma upland		2.07	60.45	2.18						thermokarst	MIS 1	0-10
807	BYK14-T2-4-06	2014		Bykovsky Peninsula	71.8614	129.2953	Yedoma upland		0.27	66.73	5.53						thermokarst	MIS 1	0-10
808	BYK14-T2-4-07	2014		Bykovsky Peninsula	71.8614	129.2953	Yedoma upland		0.33	66.93	10.21						thermokarst	MIS 1	0-10
809	BYK14-T2-4-08	2014		Bykovsky Peninsula	71.8614	129.2953	Yedoma upland		0.37		9.74						thermokarst	MIS 1	0-10
810	BYK14-T2-4-09	2014		Bykovsky Peninsula	71.8614	129.2953	Yedoma upland</td												

844	BYK14-T3-2-11	2014	Bykovsky Peninsula	71.8197	129.3232	Yedoma upland	0.73	50.91	0.71				thermokarst	MIS 1	0-10
845	BYK14-T3-2-12	2014	Bykovsky Peninsula	71.8197	129.3232	Yedoma upland	0.81	40.03	1.52				thermokarst	MIS 1	0-10
846	BYK14-T3-2-13	2014	Bykovsky Peninsula	71.8197	129.3232	Yedoma upland	0.89	65.01	2.24				thermokarst	MIS 1	0-10
847	BYK14-T3-2-14	2014	Bykovsky Peninsula	71.8197	129.3232	Yedoma upland	0.97	57.5	1.79				thermokarst	MIS 1	0-10
848	BYK14-T3-3-06	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.34	57.87	2.47				thermokarst	MIS 1	0-10
849	BYK14-T3-3-07	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.43	56.12	2.89				thermokarst	MIS 1	0-10
850	BYK14-T3-3-08	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.52	88.47	4.99				thermokarst	MIS 1	0-10
851	BYK14-T3-3-09	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.6	72.35	8.15				thermokarst	MIS 1	0-10
852	BYK14-T3-3-10	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.67	64.87	10.25				thermokarst	MIS 1	0-10
853	BYK14-T3-3-11	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.72		11.26				thermokarst	MIS 1	0-10
854	BYK14-T3-3-12	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.78	78.8	8.27				thermokarst	MIS 1	0-10
855	BYK14-T3-3-13	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.84	85.77	11.17				thermokarst	MIS 1	0-10
856	BYK14-T3-3-14	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.88	61.93	15.43				thermokarst	MIS 1	0-10
857	BYK14-T3-3-15	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.93	73.18	18.45				thermokarst	MIS 1	0-10
858	BYK14-T3-3-16	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	0.97		17.89				thermokarst	MIS 1	0-10
859	BYK14-T3-3-17	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1	89.37	18.92				thermokarst	MIS 1	0-10
860	BYK14-T3-3-18	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.04	88.81	16.66				thermokarst	MIS 1	0-10
861	BYK14-T3-3-19	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.08	59.92	15.94				thermokarst	MIS 1	0-10
862	BYK14-T3-3-20	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.13	61.67	9.58				thermokarst	MIS 1	0-10
863	BYK14-T3-3-21	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.18	74.96	6.12				thermokarst	MIS 1	0-10
864	BYK14-T3-3-22	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.25	92.55	8.86				thermokarst	MIS 1	0-10
865	BYK14-T3-3-23	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.33	74.75	9.72				thermokarst	MIS 1	0-10
866	BYK14-T3-3-24	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.39	91.02	7.14				thermokarst	MIS 1	0-10
867	BYK14-T3-3-25	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.46	51.17	4.87				thermokarst	MIS 1	0-10
868	BYK14-T3-3-26	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.54	69.63	4.66				thermokarst	MIS 1	0-10
869	BYK14-T3-3-27	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.64	76.83	4.74				thermokarst	MIS 1	0-10
870	BYK14-T3-3-28	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.74	60.25	4.67				thermokarst	MIS 1	0-10
871	BYK14-T3-3-29	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.82	90.97	5.19				thermokarst	MIS 1	0-10
872	BYK14-T3-3-30	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	1.92	61.16	5.06				thermokarst	MIS 1	0-10
873	BYK14-T3-3-31	2014	Bykovsky Peninsula	71.8206	129.3213	Yedoma upland	2.03	58.12	5.6				thermokarst	MIS 1	0-10
874	BYK14-T3-4-07	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	0.7	41.73	1.32				Yedoma upland	MIS 2	15-20
875	BYK14-T3-4-08	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	0.8	48.46	1.28				Yedoma upland	MIS 2	15-20
876	BYK14-T3-4-09	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	0.88	53.18	1.75				Yedoma upland	MIS 2	15-20
877	BYK14-T3-4-10	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	0.94	85.15	2.32				Yedoma upland	MIS 2	15-20
878	BYK14-T3-4-11	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.02	54.95	3.36				Yedoma upland	MIS 2	15-20
879	BYK14-T3-4-12	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.12	62.68	3.39				Yedoma upland	MIS 2	15-20
880	BYK14-T3-4-13	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.21	10.04	2.53				Yedoma upland	MIS 2	15-20
881	BYK14-T3-4-14	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.31	61.43	2.94				Yedoma upland	MIS 2	15-20
882	BYK14-T3-4-15	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.39	61.14	3.17				Yedoma upland	MIS 2	15-20
883	BYK14-T3-4-16	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.47	80.35	1.75				Yedoma upland	MIS 2	15-20
884	BYK14-T3-4-17	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.56	72.9	1.54				Yedoma upland	MIS 2	15-20
885	BYK14-T3-4-18	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.65	50.03	1.78				Yedoma upland	MIS 2	15-20
886	BYK14-T3-4-19	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.73	46.47	1.88				Yedoma upland	MIS 2	15-20
887	BYK14-T3-4-20	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.79	70.97	1.65				Yedoma upland	MIS 2	15-20
888	BYK14-T3-4-21	2014	Bykovsky Peninsula	71.8212	129.3194	Yedoma upland	1.85	83.64	1.6				Yedoma upland	MIS 2	15-20
889	BYK14-T3-5-05	2014	Bykovsky Peninsula	71.8218	129.3172	Yedoma upland	0.42	49.01	4.01				Yedoma upland	MIS 2	15-20
890	BYK14-T3-5-06	2014	Bykovsky Peninsula	71.8218	129.3172	Yedoma upland	0.47	61.63	5.32				Yedoma upland	MIS 2	15-20
891	BYK14-T3-5-07	2014	Bykovsky Peninsula	71.8218	129.3172	Yedoma upland	0.52		8.94				Yedoma upland	MIS 2	15-20
892	BYK14-T3-6-06	2014	Bykovsky Peninsula	71.8224	129.3152	Yedoma upland	0.5	74.32	10.24				Yedoma upland	MIS 2	15-20
893	BYK14-T3-6B-05	2014	Bykovsky Peninsula	71.8224	129.3154	Yedoma upland	0.43	59.39	3.75				Yedoma upland	MIS 2	15-20
894	BYK14-T3-6														

921	BYK-BH2-10	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	2.7	1.03						fluvial	MIS 4	> 50		
922	BYK-BH2-11	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	25.15	2.85	22.48	0.87	100.9	8.99	55.31	35.7	0	fluvial	MIS 4	> 50
923	BYK-BH2-12	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	24.95	3.05	18.03	1.24	67.8	8.23	66.27	25.5	0	fluvial	MIS 4	> 50
924	BYK-BH2-13	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	24.85	3.15	11.5	0.6	498.1	4.11	11.69	84.2	0	fluvial	MIS 4	> 50
925	BYK-BH2-14	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	24.75	3.25	20.63	0.59	322.7	4.58	15.22	80.2	0	fluvial	MIS 4	> 50
926	BYK-BH2-15	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	24.25	3.75	19.35	0.63	87.53	6.65	52.65	40.7	0	fluvial	MIS 4	> 50
927	BYK-BH2-16	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	24.1	3.9	20	0.82	93.43	8.49	53.41	38.1	0	fluvial	MIS 4	> 50
928	BYK-BH2-17	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	23.7	4.3	20	0.67	208.2	6.83	33.67	59.5	0	fluvial	MIS 4	> 50
929	BYK-BH2-18	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	23.6	4.4		0.73	196.8	6.25	38.05	55.7	0	fluvial	MIS 4	> 50
930	BYK-BH2-19	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	23.4	4.6	18.03	0.89	68.17	8.54	67.56	23.9	0	fluvial	MIS 4	> 50
931	BYK-BH2-20	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	23	5	20.63	0.94	82.21	8.3	57.1	34.6	0	fluvial	MIS 4	> 50
932	BYK-BH2-21	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	22.4	5.6	21.26	1.94	100.6	5.36	58.94	35.7	0	fluvial	MIS 4	> 50
933	BYK-BH2-22	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	22.1	5.9	21.88	1.22	99.83	5.91	50.59	43.5	0	fluvial	MIS 4	> 50
934	BYK-BH2-23	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	21.7	6.3		1.36	135	3.86	52.04	44.1	0	fluvial	MIS 4	> 50
935	BYK-BH2-24	1998	August	Bykovsky Peninsula	71.78882	129.38097	Pingo	21.5	6.5	21.88	0.87	74.54	9.26	61.14	29.6	0	fluvial	MIS 4	> 50
936	C1 00.00 - 00.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.05	65.05	12.42					Holocene cover	MIS 1	0-10		
937	C1 00.10 - 00.20	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.15	35.49	5.06	28	9.01	52.55	38.45	0	Holocene cover	MIS 1	0-10	
938	C1 00.20 - 00.30	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.25	40.46	4.48					Holocene cover	MIS 1	0-10		
939	C1 00.32 - 00.42	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.37	44.42	6.63	23.9	10.5	52.83	36.65	0	Holocene cover	MIS 1	0-10	
940	C1 00.42 - 00.55	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.49	45.69	5.95					Holocene cover	MIS 1	0-10		
941	C1 00.55 - 00.62	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.59	59.07	8.96					Holocene cover	MIS 1	0-10		
942	C1 00.62 - 00.70	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.66	71.97	8.83	16.11	11	70.52	18.47	0	Holocene cover	MIS 1	0-10	
943	C1 00.70 - 00.75	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	0.73	95.89	0					Yedoma upland ice wedge MIS 2		15-25		
944	C1 03.65 - 03.70	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	3.68	97.35	0					Yedoma upland ice wedge MIS 2		15-25		
945	C1 05.00 IW	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	5.03	93.55						Yedoma upland ice wedge MIS 2		15-25		
946	C1 10.00 IW	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	10.03	86.26						Yedoma upland ice wedge MIS 2		15-25		
947	C1 14.00 IW	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	14.03	67.82						Yedoma upland ice wedge MIS 2		15-25		
948	C1 16.80 IW	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	16.83	91.42						Yedoma upland ice wedge MIS 2		15-25		
949	C1 17.60 IW	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	17.63	92.18						Yedoma upland ice wedge MIS 2		15-25		
950	C1 19.00 IW	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	19.03	81.76						Yedoma upland ice wedge MIS 2		15-25		
951	C1 21.80	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	21.83	46.91	0.23	66.71	5.88	18.09	76.05	0	Yedoma upland	MIS 2	15-25	
952	C1 22.10 - 22.22	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	22.16	42.74	0.27					Yedoma upland	MIS 2	15-25		
953	C1 22.22 - 22.34	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	22.28	40.38	0.42					Yedoma upland	MIS 2	15-25		
954	C1 22.65 - 22.78	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	22.72	40.11	0.66					Yedoma upland	MIS 2	15-25		
955	C1 22.78 - 22.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	22.84	22.66	0.19					Yedoma upland	MIS 2	15-25		
956	C1 22.90 - 22.99	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	22.95	19.84	0.21	75.12	3.78	17.64	78.53	0	Yedoma upland	MIS 2	15-25	
957	C1 22.99 - 23.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.05	16.05	0.22					Yedoma upland	MIS 2	15-25		
958	C1 23.10 - 23.14	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.12	21.25	0.33					Yedoma upland	MIS 2	15-25		
959	C1 23.14 - 23.19	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.17	21.21	0.34					Yedoma upland	MIS 2	15-25		
960	C1 23.19 - 23.32	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.26	19.16	0.25					Yedoma upland	MIS 2	15-25		
961	C1 23.32 - 23.46	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.39	19.2	0.22					Yedoma upland	MIS 2	15-25		
962	C1 23.46 - 23.60	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.53	20.76	0.29					Yedoma upland	MIS 2	15-25		
963	C1 23.60 - 23.73	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.67	20.94	0.19					Yedoma upland	MIS 2	15-25		
964	C1 23.73 - 23.80	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.77	15.04	0.25					Yedoma upland	MIS 2	15-25		
965	C1 23.80 - 23.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.85	20.41	0.23					Yedoma upland	MIS 2	15-25		
966	C1 23.90 - 24.00	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	23.95	23.16	0.36					Yedoma upland	MIS 2	15-25		
967	C1 24.00 - 24.11	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	24.06	21.44	0.27					Yedoma upland	MIS 2	15-25		
968	C1 24.11 - 24.26	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	24.19	20.65	0.34		</td							

998	C1 38.60 - 38.73	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	38.67	25.49	0.05						fluvial	MIS 3	30-50
999	C1 38.73 - 38.84	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	38.79	24.46	0.05						fluvial	MIS 3	30-50
1000	C1 38.84 - 39.00	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	38.92	17.28	0.11						fluvial	MIS 3	30-50
1001	C1 39.00 - 39.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.05	18.11	0.14						fluvial	MIS 3	30-50
1002	C1 39.10 - 39.17	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.14	17.72	0.12						fluvial	MIS 3	30-50
1003	C1 39.27 - 39.38	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.33	17	0.05						fluvial	MIS 3	30-50
1004	C1 39.38 - 39.50	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.44	17.05	0.11	78.04	3.76	17.12	79.13	0	fluvial	MIS 3	30-50
1005	C1 39.60 - 39.68	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.64	20.27	0.05	80.8	3.34	13.91	82.76	0	fluvial	MIS 3	30-50
1006	C1 39.68 - 39.73	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.71	68.9							fluvial	MIS 3	30-50
1007	C1 39.73 - 39.88	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.81	21.61	0.16						fluvial	MIS 3	30-50
1008	C1 39.88 - 39.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.89	65.79							fluvial	MIS 3	30-50
1009	C1 39.90 - 39.94	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.92	23.02	0.18	44.74	5.43	32.33	62.21	0	fluvial	MIS 3	30-50
1010	C1 39.94 - 40.04	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	39.99	18.65	0.05						fluvial	MIS 3	30-50
1011	C1 40.04 - 40.15	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.1	19.16	0.05						fluvial	MIS 3	30-50
1012	C1 40.15 - 40.30	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.23	20	0.28						fluvial	MIS 3	30-50
1013	C1 40.30 - 40.41	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.36	20.57	0.11						fluvial	MIS 3	30-50
1014	C1 40.41 - 40.53	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.47	21.27	0.05						fluvial	MIS 3	30-50
1015	C1 40.53 - 40.66	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.6	21.75	0.05	103.63	3.69	11.94	84.35	0	fluvial	MIS 3	30-50
1016	C1 40.66 - 40.76	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.71	25.34	0.05	111.05	2.77	9.29	87.96	0	fluvial	MIS 3	30-50
1017	C1 40.76 - 40.87	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.82	23.11	0.21						fluvial	MIS 3	30-50
1018	C1 40.87 - 41.00	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	40.94	23.63	0.05						fluvial	MIS 3	30-50
1019	C1 41.55 - 41.74	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	41.65	22.46	0.05	169.66	1.76	5.28	92.98	0	fluvial	MIS 3	30-50
1020	C1 41.74 - 41.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	41.82	25.05	0.05						fluvial	MIS 3	30-50
1021	C1 41.90 - 42.00	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	41.95	30.14	0.05						fluvial	MIS 3	30-50
1022	C1 42.00 - 42.14	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.07	26.22	0.05						fluvial	MIS 3	30-50
1023	C1 42.14 - 42.30	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.22	32.24	0.05	112.69	2.64	8.15	89.23	0	fluvial	MIS 3	30-50
1024	C1 42.50 - 42.53	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.52	24.36	0.05						fluvial	MIS 3	30-50
1025	C1 42.53 - 42.67	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.6	24.9	0.11						fluvial	MIS 3	30-50
1026	C1 42.67 - 42.80	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.74	26.38	0.11						fluvial	MIS 3	30-50
1027	C1 42.80 - 42.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.85	37.53	1.86						fluvial	MIS 3	30-50
1028	C1 42.90 - 43.05	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	42.98	21.87	0.35						fluvial	MIS 3	30-50
1029	C1 43.05 - 43.30	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	43.18	19.78	0.11						fluvial	MIS 3	30-50
1030	C1 43.30 - 43.41	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	43.36	16.85	0.05						fluvial	MIS 3	30-50
1031	C1 43.41 - 43.56	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	43.49	16.51	0.05						fluvial	MIS 3	30-50
1032	C1 43.56 - 43.72	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	43.64	17.19	0.13						fluvial	MIS 3	30-50
1033	C1 43.72 - 43.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	43.81	17.72	0.15						fluvial	MIS 3	30-50
1034	C1 43.90 - 44.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	44	17.03	0.12						fluvial	MIS 3	30-50
1035	C1 44.10 - 44.25	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	44.18	17.19	0.12	112.24	2.24	8.53	89.22	0	fluvial	MIS 3	30-50
1036	C1 44.25 - 44.40	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	44.33	20.2	0.05						fluvial	MIS 3	30-50
1037	C1 44.40 - 44.60	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	44.5	18.34	0.14						fluvial	MIS 3	30-50
1038	C1 44.60 - 44.80	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	44.7	18.73	0.11						fluvial	MIS 3	30-50
1039	C1 44.80 - 45.00	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	44.9	19.5	0.05						fluvial	MIS 3	30-50
1040	C1 45.00 - 45.12	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	45.06	18	0.05						fluvial	MIS 3	30-50
1041	C1 45.12 - 45.24	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	45.18	17.64	0.05						fluvial	MIS 3	30-50
1042	C1 45.24 - 45.34	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	45.29	18.82	0.13						fluvial	MIS 3	30-50
1043	C1 45.34 - 45.50	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	45.42	16.89	0.05						fluvial	MIS 3	30-50
1044	C1 45.84 - 45.98	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	45.91	16.07	0.05						fluvial	MIS 3	30-50
1045	C1 45.98 - 46.11	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.05	16.08	0.05						fluvial	MIS 3	30-50
1046	C1 46.11 - 46.24	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.18	16.57	0.05						fluvial	MIS 3	30-50
1047	C1 46.24 - 46.43	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.34	16.95	0.05						fluvial	MIS 3	30-50
1048	C1 46.43 - 46.57	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.5	16.58	0.05						fluvial	MIS 3	30-50
1049	C1 46.57 - 46.71	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.64	16.57	0.05						fluvial	MIS 3	30-50
1050	C1 46.71 - 46.85	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.78	6.21	0.05						fluvial	MIS 3	30-50
1051	C1 46.85 - 47.02	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	46.94	15.78	0.05						fluvial	MIS 3	30-50
1052	C1 47.02 - 47.20	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland											

1075	C1 50.00 - 50.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	50.05	17.68	0.15						fluvial	MIS 3	30-50
1076	C1 50.25 - 50.40	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	50.33	16.47	0.12						fluvial	MIS 3	30-50
1077	C1 50.40 - 50.55	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	50.48	17.34	0.14						fluvial	MIS 3	30-50
1078	C1 50.55 - 50.70	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	50.63	17.08	0.15	74.03	4.92	17.81	77.25	0	fluvial	MIS 3	30-50
1079	C1 50.80 - 50.95	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	50.88	16.21	0.16	73.78	6.77	19.6	73.63	0	fluvial	MIS 3	30-50
1080	C1 50.95 - 51.06	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.01	16.35	0.18						fluvial	MIS 3	30-50
1081	C1 51.06 - 51.20	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.13	15.57	0.27	49.48	6.58	30.17	63.22	0	fluvial	MIS 3	30-50
1082	C1 51.20 - 51.30	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.25	16.32	0.21	57.71	8.4	22.12	69.49	0	fluvial	MIS 3	30-50
1083	C1 51.30 - 51.40	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.35	17.06	0.14						fluvial	MIS 3	30-50
1084	C1 51.40 - 51.59	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.5	16.58	0.2	57.46	6.61	22.88	70.5	0	fluvial	MIS 3	30-50
1085	C1 51.59 - 51.74	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.67	16.92	0.18						fluvial	MIS 3	30-50
1086	C1 51.74 - 51.90	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	51.82	16.72	0.19	67.22	5.61	20	74.37	0	fluvial	MIS 3	30-50
1087	C1 52.00 - 52.15	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.08	16.57	0.21						fluvial	MIS 3	30-50
1088	C1 52.15 - 52.32	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.24	16.13	0.17						fluvial	MIS 3	30-50
1089	C1 52.32 - 52.50	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.41	17.25	0.22						fluvial	MIS 3	30-50
1090	C1 52.50 - 52.65	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.58	15.87	0.18						fluvial	MIS 3	30-50
1091	C1 52.65 - 52.80	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.73	16.26	0.21	69.69	6.03	18.98	75.05	0	fluvial	MIS 3	30-50
1092	C1 52.80 - 52.91	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.86	16.06	0.25						fluvial	MIS 3	30-50
1093	C1 52.91 - 53.05	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	52.98	16.27	0.21	57.83	5.99	21.56	72.49	0	fluvial	MIS 3	30-50
1094	C1 53.05 - 53.20	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.13	16.21	0.17						fluvial	MIS 3	30-50
1095	C1 53.20 - 53.40	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.3	16.3	0.18						fluvial	MIS 3	30-50
1096	C1 53.40 - 53.52	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.46	15.31	0.2	71.57	6.89	15.5	77.62	0	fluvial	MIS 3	30-50
1097	C1 53.52 - 53.64	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.58	18.49	0.19	72.41	5.18	18.3	76.5	0	fluvial	MIS 3	30-50
1098	C1 53.64 - 53.75	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.7	15.1	0.19	61.36	7.02	21.99	70.95	0	fluvial	MIS 3	30-50
1099	C1 53.75 - 53.89	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.82	14.17	0.21						fluvial	MIS 3	30-50
1100	C1 53.89 - 53.99	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	53.94		0.13						fluvial	MIS 3	30-50
1101	C1 53.99 - 54.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	54.05	16.41	0.17						fluvial	MIS 3	30-50
1102	C1 54.86 - 55.00	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	54.93	15.51	0.13						fluvial	MIS 3	30-50
1103	C1 55.00 - 55.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	55.05	16.05	0.12	114.8	3	10.26	86.75	0	fluvial	MIS 3	30-50
1104	C1 55.10 - 55.30	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	55.2	16.15	0.12						fluvial	MIS 3	30-50
1105	C1 55.35 - 55.53	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	55.44	17.97	0.22						fluvial	MIS 3	30-50
1106	C1 55.59 - 55.70	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	55.65	15.72	0.18	95.24	4.45	12.99	82.61	0	fluvial	MIS 3	30-50
1107	C1 55.70 - 55.81	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	55.76	15.99	0.15						fluvial	MIS 3	30-50
1108	C1 55.81 - 55.93	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	55.87	16.44	0.15						fluvial	MIS 3	30-50
1109	C1 55.93 - 56.10	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	56.02	19.67	0.67	28.34	9.12	52.02	38.84	0	fluvial	MIS 3	30-50
1110	C1 56.52 - 56.55	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	56.54	18.31	0.63						fluvial	MIS 3	30-50
1111	C1 56.55 - 56.66	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	56.61	17.61	0.18	81.7	4.54	13.7	81.77	0	fluvial	MIS 3	30-50
1112	C1 56.66 - 56.80	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	56.73	15.94	0.17	84.3	5.48	12.75	81.79	0	fluvial	MIS 3	30-50
1113	C1 56.80 - 56.94	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	56.87	15.12	0.15						fluvial	MIS 3	30-50
1114	C1 56.94 - 57.07	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	57.01	14.89	0.19						fluvial	MIS 3	30-50
1115	C1 57.07 - 57.19	2005	April	Cape Mammontov Klyk	73.60597	117.17736	Yedoma upland	57.13	15.16	0.17	88.28	4.58	1					

1229	C2 53.83 - 54.12	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	53.98	16.09	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1230	C2 54.12 - 54.25	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	54.19	20.56	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1231	C2 54.12 - 54.40 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	25.86							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1232	C2 54.50 - 54.58	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	54.54	29	1.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1233	C2 54.50 - 55.10 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	64.3							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1234	C2 54.68 - 54.90	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	54.79	45.95	3.89	69.57	6.22	26.61	67.17	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1235	C2 55.10 - 55.24	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	55.17	23.45	0.75	148.48	3.44	10.34	86.33	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1236	C2 55.10 - 55.40 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	23.92							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1237	C2 55.40 - 55.51	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	55.46	19.94	0.05	238.25	1.55	2.64	95.85	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1238	C2 55.40 - 55.70 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	53.02							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1239	C2 55.60 - 55.72	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	55.66	20.2	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1240	C2 55.70 - 55.79	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	55.75	17.44	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1241	C2 55.70 - 56.20 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea								fluvial	MIS 3	30-50	or older, according to luminescence datings	
1242	C2 55.79 - 55.91	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	55.85	42.54	2.08	53.92	5.27	27.42	67.33	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1243	C2 55.91 - 56.05	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	55.98	19.74	0.25					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1244	C2 56.40 - 56.68	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	56.54	19.41	0.27					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1245	C2 56.40 - 56.85 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	84.02							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1246	C2 56.85 - 57.20	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	57.03	20.62	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1247	C2 57.50 - 57.88 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea								fluvial	MIS 3	30-50	or older, according to luminescence datings	
1248	C2 57.75 - 57.88	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	57.82	24.05	0.71					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1249	C2 57.88 - 58.04	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	57.96	28.13	1.92	111.51	4.72	16.17	79.1	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1250	C2 57.88 - 58.30 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	54.42							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1251	C2 58.30 - 58.47	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	58.39	25.98	1.54	129.15	3.48	12.06	84.5	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1252	C2 58.30 - 58.65 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	27.39							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1253	C2 58.47 - 58.65	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	58.56	18.67	0.11					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1254	C2 58.65 - 58.95	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	58.8	18.67	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1255	C2 58.65 - 59.10 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	27.17							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1256	C2 58.95 - 59.10	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	59.03	17.42	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1257	C2 59.37 - 59.60	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	59.49	19.97	0.16					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1258	C2 59.37 - 59.85 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	23.7							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1259	C2 59.85 - 61.10	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	60.48	18.3	0.11	143.38	3.75	13.55	82.68	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1260	C2 61.40 - 61.70	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	61.55	22.69	0.95	91.61	4.77	16.02	79.24	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1261	C2 61.70 - 62.20 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	36.2							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1262	C2 61.95 - 62.20	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	62.08	16.84	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1263	C2 62.20 - 62.38	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	62.29	17.06	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1264	C2 62.20 - 62.50 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea								fluvial	MIS 3	30-50	or older, according to luminescence datings	
1265	C2 62.60 - 62.76	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	62.68	17.07	0.12	110.77	5.03	13.49	81.47	0	fluvial	MIS 3	30-50	or older, according to luminescence datings
1266	C2 62.60 - 63.00 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	63.97							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1267	C2 63.00 - 63.13	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	63.07	19.82	0.05					fluvial	MIS 3	30-50	or older, according to luminescence datings	
1268	C2 63.00 - 63.50 - collec	2005	April	Cape Mammontov Klyk	73.710028	117.17736	subsea	24.55							fluvial	MIS 3	30-50	or older, according to luminescence datings	
1269	C2 63.25 - 63.50	2005	April	Cape Mammontov Klyk	73.710028														

1306	C3 16.00 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	16	0.19								fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings
1307	C3 17.00 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	17	0.05	57.61	6.4	21.02	72.56	0		fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1308	C3 19.00 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	19	0.05							fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1309	C3 20.00 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	20	0.13							fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1310	C3 20.25 - 20.34	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	20.3	19.25	0.05						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1311	C3 20.43 - 20.60	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	20.52	19.11	0.1	126.15	2.7	9.84	87.48	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1312	C3 21.30 - 21.42	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	21.36	22.45	0.53						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1313	C3 21.54 - 21.70	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	21.62	20.76	0.12	63.13	5.26	16.64	78.1	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1314	C3 22.50 - 22.62	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	22.56	19.28	0.05						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1315	C3 22.74 - 22.90	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	22.82	17.8	0.05						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1316	C3 22.90 - 23.05	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	22.98	16.68	0.12						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1317	C3 23.05 - 23.20	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	23.13	14.58	0.27						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1318	C3 23.35 - 23.47	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	23.41	15.76	0.12						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1319	C3 23.59 - 23.71	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	23.65	15.6	0.14						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1320	C3 23.71 - 23.83	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	23.77	16.41	0.12						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1321	C3 23.94 - 24.10	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	24.02	15.2	0.14						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1322	C3 24.10 - 24.23	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	24.17	16.5	0.13						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1323	C3 24.36 - 24.45	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	24.41	15.88	0.15	76.42	4.64	14.81	80.6	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1324	C3 24.45 - 24.63	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	24.54	16.14	0.12						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1325	C3 24.63 - 24.80	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	24.72	16.5	0.2						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1326	C3 26.00 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	26		0.13						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1327	C3 27.00 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	27	0.15	28.22	11.08	35.25	53.65	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings		
1328	C3 27.80 - 27.92	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	27.86	15.2	0.21						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1329	C3 28.03 - 28.14	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	28.09	15.01	0.23						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1330	C3 28.14 - 28.30	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	28.22	15.71	0.16						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1331	C3 29.00 - 29.12	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	29.06	15.97	0.15						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1332	C3 29.25 - 29.40	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	29.33	16.5	0.18						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1333	C3 29.40 - 29.51	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	29.46	15.87	0.17						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1334	C3 29.64 - 29.80	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	29.72	16.07	0.17	84.48	4.35	14.44	81.22	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1335	C3 30.00	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	30								fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1336	C3 30.30 - 30.48	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	30.39	16.39	0.13	71.35	6.68	16.26	77.06	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1337	C3 30.70 - 30.90	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	30.8	17.27	0.14						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1338	C3 31.00 - 31.12	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	31.06	17.77	0.39	26.67	9.38	51.67	38.93	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1339	C3 31.21 - 31.25	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	31.23	18.35	0.32						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1340	C3 31.29 - 31.33	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	31.31	18.64	0.41						fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1341	C3 31.33 - 31.40	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	31.37	17.99	0.17	42.64	7.63	34.23	58.11	0	fluvial	MIS 3	30-50	or MIS 6, according to luminescence datings	
1342	C4 02.20 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	2.2	0.17	53.19	6.29	23.82	69.89	0	marine	MIS 1	0-10	https://doi.org/10.1594/PANGAEA.6151		
1343	C4 02.45 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	2.45	0.17							marine	MIS 1	0-10		
1344	C4 02.70 FM	2005	April	Cape Mammontov Klyk	73.612194	117.17736	subsea	2.7	1.11							marine	MIS 1	0-10		
1345	C4 02.95 FM	2005	April	Cape Mammontov Klyk	73.6															

1460	CH19-UP-IN 70 - 75	2019	Cherskiy	68.512778	161.514611	Yedoma upland	0.73	26.65	1.38	13.91	9.22	83.43	7.35	0	Yedoma upland	MIS 3	30-35	U 3		
1461	CH19-UP-IN 75 - 80	2019	Cherskiy	68.512778	161.514611	Yedoma upland	0.78	23.44	1.31	12.37	10.66	83.27	6.07	0	Yedoma upland	MIS 3	30-35	U 3		
1462	CH19-UP-IN 80 - 85	2019	Cherskiy	68.512778	161.514611	Yedoma upland	0.83	19.14	1.05	12.56	8.7	87.28	4.02	0	Yedoma upland	MIS 3	30-35	U 3		
1463	CH19-UP-IN 85 - 90	2019	Cherskiy	68.512778	161.514611	Yedoma upland	0.88	15.59	1.05	13.54	10.28	82.83	6.89	0	Yedoma upland	MIS 3	30-35	U 3		
1464	CH19-UP-IN 90 - 96	2019	Cherskiy	68.512778	161.514611	Yedoma upland	0.93	17.93	1.1	13.49	7.99	87.1	4.91	0	Yedoma upland	MIS 3	30-35	U 3		
1465	CH19-UP-IN 96 - 101	2019	Cherskiy	68.512778	161.514611	Yedoma upland	0.99	22.49	1.03	15.47	8.09	84.12	7.79	0	Yedoma upland	MIS 3	30-35	U 3		
1466	CH19-UP-IN 101 - 106	2019	Cherskiy	68.512778	161.514611	Yedoma upland	1.04	27.5	1.01	20.15	6.78	81.7	11.52	0	Yedoma upland	MIS 3	30-35	U 3		
1467	CH19-UP-IN 106 - 110	2019	Cherskiy	68.512778	161.514611	Yedoma upland	1.08	31.52	1.07	14.31	8.53	84.56	6.92	0	Yedoma upland	MIS 3	30-35	U 3		
1468	CH19-UP-IN 110 - 114	2019	Cherskiy	68.512778	161.514611	Yedoma upland	1.12	31.93	1.19	19.22	6.34	84.41	9.25	0	Yedoma upland	MIS 3	30-35	U 3		
1469	DUV-12-1a		Duvanny Yar	68.58466	159.44044	Yedoma upland		30.92	2.52									no depth		
1470	DUV-12-2a		Duvanny Yar	68.58466	159.44044	Yedoma upland		31.42	2											
1471	DUV-12-3a		Duvanny Yar	68.58466	159.44044	Yedoma upland		31.27	4.82											
1472	DUV-28-1a		Duvanny Yar	68.61627	159.31019	Yedoma upland		29.55	4.05											
1473	DUV-28-2a		Duvanny Yar	68.61627	159.31019	Yedoma upland		28.12	1.75											
1474	DUV-28-3a		Duvanny Yar	68.61627	159.31019	Yedoma upland		34	2.64											
1475	DUV-28-4a		Duvanny Yar	68.61627	159.31019	Yedoma upland		30.15	2.58											
1476	DUV-30-1a: sandy! observed in lab		Duvanny Yar	68.63418	159.08699	Yedoma upland		26.35	1.78											
1477	DY-01-A-01	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	43.45	0.05		34.48	84.86	7.93	61.42	30.64	0	Holocen cover	MIS 1	0-10	
1478	DY-01-A-02	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	43.3	0.2		1.29	36.91	9.57	68.31	22.14	0	Holocen cover	MIS 1	0-10	
1479	DY-01-A-03	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	42.75	0.75		36.45	0.79	30.29	13.65	69.32	17.04	0	Holocen cover	MIS 1	0-10
1480	DY-01-A-04	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	42.1	1.4		32.16	0.46	33.89	11.18	69.48	19.36	0	Holocen cover	MIS 1	0-10
1481	DY-01-A-05	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	41.7	1.8		41.18	1.43	30.24	13.87	68.72	17.39	0	Holocen cover	MIS 1	0-10
1482	DY-01-B-06	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	41.25	2.25		32.3	0.9	29	17	64.01	18.99	0	Holocen cover	MIS 1	0-10
1483	DY-01-B-07	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	40.75	2.75		1.3	21		21.01	67	12	0	Yedoma upland	MIS 2	10-25
1484	DY-01-B-08	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	40.25	3.25		39.7	2	23	20	66.01	13.99	0	Yedoma upland	MIS 2	10-25
1485	DY-01-B-09	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	39.75	3.75		35.2	1.4	26	18.99	65	16.01	0	Yedoma upland	MIS 2	10-25
1486	DY-01-B-10	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	39.25	4.25		33.1	1.4	23	20	68	12	0	Yedoma upland	MIS 2	10-25
1487	DY-01-B-11	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	38.75	4.75		35.1	1.3	25	17	69.01	13.99	0	Yedoma upland	MIS 2	10-25
1488	DY-01-B-12	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	38.25	5.25		35.9	1.2	21	21.01	67	12	0	Yedoma upland	MIS 2	10-25
1489	DY-01-B-13	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	37.75	5.75		33.7	1.2	28	17	65	18	0	Yedoma upland	MIS 2	10-25
1490	DY-01-B-14	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	37.25	6.25		41.7	1.3	23	20	67	13	0	Yedoma upland	MIS 3	30-45
1491	DY-01-C-15	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	37.5	6			1.3	22	21.01	65.99	13	0	Yedoma upland	MIS 3	30-45
1492	DY-01-C-16	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	37	6.5		33.8	0.8	24	18	68	13.99	0	Yedoma upland	MIS 3	30-45
1493	DY-01-C-17	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	36.5	7		35.4	0.9	26	18.99	65	16.01	0	Yedoma upland	MIS 3	30-45
1494	DY-01-C-18	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	36	7.5		35.1	0.7	28	18	63.99	18	0	Yedoma upland	MIS 3	30-45
1495	DY-01-C-19	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	35.5	8			1.5	20	21.01	68.99	10	0	Yedoma upland	MIS 3	30-45
1496	DY-01-D-20	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	35.3	8.2		32.1	1.1	29	16.01	65	18.99	0	Yedoma upland	MIS 3	30-45
1497	DY-01-D-21	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	34.8	8.7			1.4	21	21.01	67	12	0	Yedoma upland	MIS 3	30-45
1498	DY-01-D-22	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	34.3	9.2		13.6	1.4	20	23.99	64.01	12	0	Yedoma upland	MIS 3	30-45
1499	DY-01-D-23	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	34	9.5		17	1.4	23	18.99	68	13	0	Yedoma upland	MIS 3	30-45
1500	DY-01-D-24	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	33.5	10		19.2	1.2	2							

1537	DY-05-A-02	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	1.8	24.2	43	0.8	29	16.01	65.99	18	0	Yedoma upland	MIS 3	30-45
1538	DY-05-B-03	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	1.5	24.5	37.9	3.3	18	21.01	70.99	8	0	Yedoma upland	MIS 3	30-45
1539	DY-05-B-04	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	2.2	23.8	37.2	1.6	25	16.01	70.99	13	0	Yedoma upland	MIS 3	30-45
1540	DY-05-B-05	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	2.7	23.3	42.1	4.4	26	15	72	13	0	Yedoma upland	MIS 3	30-45
1541	DY-05-B-06	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	3.2	22.8	29.6	1.3	32	17	60	23	0	Yedoma upland	MIS 3	30-45
1542	DY-05-B-07	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	3.7	22.3	47.8	2.5	28	15	68.99	16.01	0	Yedoma upland	MIS 3	30-45
1543	DY-05-B-08	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	4.2	21.8	47.8	4.5	22	18	70.99	11.01	0	Yedoma upland	MIS 3	30-45
1544	DY-05-B-09	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	4.6	21.4	41.4	2.2	24	17	71.01	12	0	Yedoma upland	MIS 3	30-45
1545	DY-05-B-10	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	5	21	39.1	1.5	24	17	71.01	12	0	Yedoma upland	MIS 3	30-45
1546	DY-05-B-11	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	5.5	20.5	50.3	2.3	22	18.99	71.01	10	0	Yedoma upland	MIS 3	30-45
1547	DY-05-B-12	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	6	20	37.9	1.3	28	16.01	67	17	0	Yedoma upland	MIS 3	30-45
1548	DY-05-C-13	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	6.1	19.9	34.5	0.8	38	12	59.01	28.99	0	Yedoma upland	MIS 3	30-45
1549	DY-05-C-14	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	6.6	19.4	43.5	1.7	23	20	68	12	0	Yedoma upland	MIS 3	30-45
1550	DY-05-C-15	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	6.8	19.2	64.6	8.4	17	23	70	7	0	Yedoma upland	MIS 3	30-45
1551	DY-05-D-16	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	9	17	28.1	1.2	27	16.01	67	17	0	Yedoma upland	MIS 3	30-45
1552	DY-05-D-17	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	9.5	16.5	32.3	1.2	30	13	68	18.99	0	Yedoma upland	MIS 3	30-45
1553	DY-05-D-18	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	10	16	27.7	1.5	20	22	67	11.01	0	Yedoma upland	MIS 3	30-45
1554	DY-05-D-19	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	10.5	15.5	38.2	1.5	21	20	70	10	0	Yedoma upland	MIS 3	30-45
1555	DY-05-E-20	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	10.3	15.7	41.5	1.3	21	20	68.99	11.01	0	Yedoma upland	MIS 3	30-45
1556	DY-05-E-21	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	10.8	15.2	41.9	3.7	21	21.01	67	12	0	Yedoma upland	MIS 3	30-45
1557	DY-05-E-22	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	11.3	14.7	30.8	0.8	28	18	65	17	0	Yedoma upland	MIS 3	30-45
1558	DY-05-E-23	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	11.8	14.2	31.4	0.7	26	20	63.99	16.01	0	Yedoma upland	MIS 3	30-45
1559	DY-05-E-24	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	12.3	13.7	30.2	0.8	27	17	66.01	17	0	Yedoma upland	MIS 3	30-45
1560	DY-05-E-25	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	12.8	13.2	14.7	0.8	26	20	63	17	0	Yedoma upland	MIS 3	30-45
1561	DY-05-E-26	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	13.3	12.7	31.1	0.7	27	15	68.99	16.01	0	Yedoma upland	MIS 3	30-45
1562	DY-05-E-27	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	13.8	12.2	27.5	0.8	24	18.99	66.01	15	0	Yedoma upland	MIS 3	30-45
1563	DY-05-E-28	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	15	11	27.9	0.7	26	18	65	17	0	Yedoma upland	MIS 3	30-45
1564	DY-05-F-29	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	15.5	10.5	29.6	0.7	25	18	65.99	16.01	0	Yedoma upland	MIS 3	30-45
1565	DY-05-F-30	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	16	10	33.1	1	26	17	65	18	0	Yedoma upland	MIS 3	30-45
1566	DY-05-F-31	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	16.5	9.5	29.8	0.8	29	17	64.01	18.99	0	Yedoma upland	MIS 3	30-45
1567	DY-05-F-32	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	17	9	27.8	0.7	27	18	65	17	0	Yedoma upland	MIS 3	30-45
1568	DY-05-F-33	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	17.5	8.5	29.1	0.7	30	17	62	21.01	0	Yedoma upland	MIS 3	30-45
1569	DY-05-F-34	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	18	8	29.5	0.7	26	18	65	17	0	Yedoma upland	MIS 3	30-45
1570	DY-05-F-35	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	18.4	7.6	30.4	0.8	29	16.01	65	18.99	0	Yedoma upland	MIS 3	30-45
1571	DY-05-F-36	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	19	7	32.4	0.8	25	17	67	16.01	0	Yedoma upland	MIS 3	30-45
1572	DY-05-F-37	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	19.5	6.5	32.6	1	22	20	68	12	0	Yedoma upland	MIS 3	30-45
1573	DY-05-F-38	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	20	6	44.4	1.2	23	18.99	69.01	12	0	Yedoma upland	MIS 3	30-45
1574	DY-05-F-39	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	20.5	5.5	44.3	1	19	21.01	68.99	10	0	Yedoma upland	MIS 3	30-45
1575	DY-05-G-40	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	21	5	40.6	1	24	18	68	13.99	0	Yedoma upland	MIS 3	30-45
1576	DY-05-G-41	2008	August	Duvanny Yar	68.63284	159.08755	Yedoma upland	21.5	4.5	33.8	1.9	16	23	70.99	6.01	0			

1614	DY-31	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	17.8	20.8	26.12	3.1	40.21				
1615	DY-32	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	17.3	21.3	27.38	2.69	40.54				
1616	DY-33	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	16.8	21.8	29.16	2.7	39.22				
1617	DY-34	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	22.8	15.8	32.98	4.32	25.83				
1618	DY-35	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	22.3	16.3	32.23	4.16	28.86				
1619	DY-36	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	21.8	16.8	32.96	5.35	25.6				
1620	DY-37	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	21.3	17.3	40.65	8.03	35.41				
1621	DY-38	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	20.8	17.8	36.72	6.75	25.85				
1622	DY-39	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	20.3	18.3	43.1	3.11	44.01				
1623	DY-40	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	23.7	14.9	34.66	4.82	31.16				
1624	DY-41	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	23.2	15.4	27.07	3.69	36.14				
1625	DY-42	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	25.9	12.7	34.38	6.94	24.45				
1626	DY-43	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	25.4	13.2	42.56	9.53	24.23				
1627	DY-44	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	24.9	13.7	29.55	3.83	35.77				
1628	DY-45	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	24.4	14.2	33.46	3.74	37.9				
1629	DY-46	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	27.9	10.7	34.31	4.18	27.53				
1630	DY-47	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	27.4	11.2	31.08	3.17	47.58				
1631	DY-48	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	26.9	11.7	30.02	3.54	44.75				
1632	DY-49	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	26.4	12.2	34.37	5.08	32.38				
1633	DY-50	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	31	7.6	37.51	8.09	25.38				
1634	DY-51	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	30.5	8.1	33.45	8.39	35.08				
1635	DY-52	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	30	8.6	27.5	7.97	19.31				
1636	DY-53	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	29.5	9.1	32.7	8.78	28.75				
1637	DY-54	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	29	9.6	36.09	3.9	26.28				
1638	DY-55	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	28.5	10.1	31.25	5.16	34.42				
1639	DY-56	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	28.4	10.2	32.75	3.63	36.07				
1640	DY-57	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	35.9	2.7	27.36	3.25	38.48				
1641	DY-58	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	35.4	3.2	28.12	3.08	33.15				
1642	DY-59	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	34.9	3.7	29.63	3.01	42.23				
1643	DY-60	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	34.4	4.2	32.13	3.39	38.16				
1644	DY-61	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	33.9	4.7	33.76	4.41	32.08				
1645	DY-62	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	33.4	5.2	33.54	3.53	29.31				
1646	DY-63	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	32.9	5.7	30.85	2.43	41.52				
1647	DY-64	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	32.4	6.2	29.76	4.06	42.53				
1648	DY-65	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	31.9	6.7	29.44	4.78	30.2				
1649	DY-66	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	31.4	7.2	29.3	3.46	38.89				
1650	DY-67	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	30.9	7.7	30.6	4.87	36.78				
1651	DY-68	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	30.4	8.2	32.2	5.01	29.26				
1652	DY-69	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	36.7	1.9	29.43	2.48	34.09				
1653	DY-70	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	36.2	2.4	29.15	4	41.51				
1654	DY-71	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	38.3	0.29	49.72	14.91	27.17				
1655	DY-72	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	38.1	0.49	40.43	3.97	35.61				
1656	DY-73	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	37.9	0.72	47.08	4.43	33.93				
1657	DY-74	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	37.6	0.97	40.92	2.46	34.9				
1658	DY-75	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	37.4	1.2	51.91	4.42	46.84				
1659	DY-76	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	37.3	1.34	47.05	7.32	40.97				
1660	DY-77	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	8.1	30.5	47.81	4.43	36.87				
1661	DY-78	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	7.6	31	32.16	4.27	38.62				
1662	DY-79	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	7.1	31.5	29.48	4.34	32.69				
1663	DY-80	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	6.6	32	36.42	6.36	23.93				
1664	DY-81	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	8.6	30	43.08	3.02	37.91				
1665	DY-82	2009	August	Duvanny Yar	68.6309	159.1519	Yedoma upland	9.1	29.5	43.18	3.27	34.8			</	

1691	Ebe-4-17	2005	August	Ebe Sise Island	72.9653	124.8071	Non-Yedoma upland	1.911	5.09	19.29	0.05	309.4	0.21	1.45	98.34	0	fluvial	MIS 2	15
1692	Ebe-5-1	2005	August	Ebe Sise Island	72.92	123.68	Non-Yedoma upland	3.2	2.8		0.12					0	fluvial	MIS 2	
1693	Ebe-5-2	2005	August	Ebe Sise Island	72.92	123.68	Non-Yedoma upland	3.6	2.4		0.12	226.8	1.07	3.13	95.8	0	fluvial	MIS 2	
1694	Ebe-5-3	2005	August	Ebe Sise Island	72.92	123.68	Non-Yedoma upland	3.9	2.1		0.15	218.9	0.71	2.23	97.06	0	fluvial	MIS 2	
1695	Ebe-5-4	2005	August	Ebe Sise Island	72.92	123.68	Non-Yedoma upland	4.05	1.95		0.12	229.8	0.57	2.13	97.3	0	fluvial	MIS 2	
1696	Ebe-5-5	2005	August	Ebe Sise Island	72.92	123.68	Non-Yedoma upland	4.75	1.25		0.12	212.3	1.05	3.07	95.88	0	fluvial	MIS 2	
1697	Ebe-5-6	2005	August	Ebe Sise Island	72.92	123.68	Non-Yedoma upland	5	1		0.17	254.7	1.08	4.28	94.64	0	fluvial	MIS 2	
1698	INU-01-1a			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		29	2.03							no depth	Walter Anthony et al. 2014 doi:10.1038/nature13560	
1699	INU-01-2a			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		35	2.43									
1700	INU-01-3			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		41	5.79									
1701	INU-01-4			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		25	1.03									
1702	INU-01-5			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		51	5.71									
1703	INU-01-6a			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		27	1.78									
1704	INU-01-7a			Anuisk (Inuiy)	68.24233333	161.8941	Yedoma upland		35	1.94									
1705	J18.80 0-60 0-5	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.03	77.12	48.54						thermokarst	MIS 1	0-4
1706	J18.80 0-60 5-10	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.08	78.6	49.31						thermokarst	MIS 1	0-4
1707	J18.80 0-60 10-15	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.13	79.26	42.01						thermokarst	MIS 1	0-4
1708	J18.80 0-60 15-20	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.18	66.36	25.35						thermokarst	MIS 1	0-4
1709	J18.80 0-60 20-25	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.23	64.82	24.19						thermokarst	MIS 1	0-4
1710	J18.80 0-60 25-30	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.28	70.62	25.42						thermokarst	MIS 1	0-4
1711	J18.80 0-60 30-35	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.33	72.37	23.3						thermokarst	MIS 1	0-4
1712	J18.80 0-60 35-40	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.38	83.65	32.47						thermokarst	MIS 1	0-4
1713	J18.80 0-60 40-45	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.43	82.26	43.59						thermokarst	MIS 1	0-4
1714	J18.80 0-60 45-50	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.48	83.96	41.35						thermokarst	MIS 1	0-4
1715	J18.80 0-60 50-55	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.53	83.44	41.69						thermokarst	MIS 1	0-4
1716	J18.80 60-120 100-105	2011	August	Kytalyk	70.83069	147.48115	DTLB		1.03	80.08	38.44						thermokarst	MIS 1	0-4
1717	J18.80 60-120 60-65	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.63	84.88	42.96						thermokarst	MIS 1	0-4
1718	J18.80 60-120 65-70	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.68	85.71	43.43						thermokarst	MIS 1	0-4
1719	J18.80 60-120 70-75	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.73	87.14	42.78						thermokarst	MIS 1	0-4
1720	J18.80 60-120 75-80	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.78	87.56	41.55						thermokarst	MIS 1	0-4
1721	J18.80 60-120 80-85	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.83	88.01	37.37						thermokarst	MIS 1	0-4
1722	J18.80 60-120 85-90	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.88	85.2	36.92						thermokarst	MIS 1	0-4
1723	J18.80 60-120 90-95	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.93	86	38.51						thermokarst	MIS 1	0-4
1724	J18.80 60-120 95-100	2011	August	Kytalyk	70.83069	147.48115	DTLB		0.98	80.25	37.14						thermokarst	MIS 1	0-4
1725	K1 (0.15-0.30)	1998		Bykovsky Peninsula	71.89	129.6252	Yedoma upland	9		60.8							no depth	https://doi.org/10.2312/BzP_0315_1_1	
1726	K1 (0.45-0.53)	1998		Bykovsky Peninsula	71.89	129.6252	Yedoma upland	9.2		59								no depth	doi.org/10.1016/S1040-6182(01)00083 https://doi.org/10.1016/j.quascirev.201
1727	KB1-1	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		0.45	17.36	0.53	26.43	7.4	66.3	26.3	0	thermokarst	MIS 1	2-10
1728	KB1-10	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		2.47	21.49	0.66	18.55	9.9	71.6	18.5	0	thermokarst	MIS 1	2-10
1729	KB1-11	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		2.57	31.65	0.63	24.83	8.2	63.6	28.2	0	thermokarst	MIS 1	2-10
1730	KB1-12	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		2.69	21.49	0.62	19.44	9.6	69.1	21.3	0	thermokarst	MIS 1	2-10
1731	KB1-13	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		2.81	26.82	0.78	20.16	9.6	68	22.4	0	thermokarst	MIS 1	2-10
1732	KB1-14	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		2.92	25.69	1	21.24	9.3	65.4	25.3	0	thermokarst	MIS 1	2-10
1733	KB1-15	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB		3.03	23.95	0.64	38.53	6.2	45.5	48.3	0	thermokarst	MIS 1	2-10
1734	KB1-2	2013	August	Khara Bulgunyakh	61.835956	130.658914	DTLB	</td											

1768	KB4-11	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.99	19.81	0.56	18.16	9.8	72.6	17.6	0	thermokarst	MIS 1	0-10
1769	KB4-12	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	2.1	23.4	0.58	18.14	9.5	73.1	17.4	0	thermokarst	MIS 1	0-10
1770	KB4-13	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	2.23	27.18	0.54	21.07	9.6	64.9	25.5	0	thermokarst	MIS 1	0-10
1771	KB4-14	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	2.37	23.28	0.51	17.81	10.4	69.7	19.9	0	thermokarst	MIS 1	0-10
1772	KB4-15	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	2.62	23.74	0.55	17.88	10.3	69.7	20	0	thermokarst	MIS 1	0-10
1773	KB4-16	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	2.78	23.39	0.54	16.88	11.8	68.2	20	0	thermokarst	MIS 1	0-10
1774	KB4-17	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	2.92	28.1	0.61	18.85	10.7	66.2	23.1	0	thermokarst	MIS 1	0-10
1775	KB4-18	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	3.04	23.43	0.59	16.75	12.4	67.1	20.5	0	thermokarst	MIS 1	0-10
1776	KB4-2	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	0.79	19.76	0.33	16.91	10.9	69.5	19.6	0	thermokarst	MIS 1	0-10
1777	KB4-3	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	0.95	19.45	0.33	22.47	9	60.5	30.5	0	thermokarst	MIS 1	0-10
1778	KB4-4	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.15	24.17	0.43	16.96	10.6	70.2	19.2	0	thermokarst	MIS 1	0-10
1779	KB4-5	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.28	21.44	0.33	19.95	9.7	67	23.3	0	thermokarst	MIS 1	0-10
1780	KB4-6	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.38	18.03	0.32	17	11.4	66.5	22.1	0	thermokarst	MIS 1	0-10
1781	KB4-7	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.48	20.82	0.44	21.05	9.7	66	24.3	0	thermokarst	MIS 1	0-10
1782	KB4-8	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.55	22.99	0.38	14.54	13.2	71.1	15.7	0	thermokarst	MIS 1	0-10
1783	KB4-9	2013	August	Khara Bulgunyakh	61.838409	130.644404	DTLB	1.66	20.69	0.42	18.68	10	70	20	0	thermokarst	MIS 1	0-10
1784	KB6-1	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	0.39	22.84	0.72	19.69	8.3	72.6	19.1	0	thermokarst	MIS 1	0-10
1785	KB6-10	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.75	14.99	0.69	18.13	9.1	73.1	17.8	0	thermokarst	MIS 1	0-10
1786	KB6-11	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.79	16.18	0.71	15.4	11.8	73.5	14.7	0	thermokarst	MIS 1	0-10
1787	KB6-12	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.91	19.12	0.73	14.82	11.8	74.4	13.8	0	thermokarst	MIS 1	0-10
1788	KB6-13	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.08	20.77	0.72	16.56	10.7	73.5	15.8	0	thermokarst	MIS 1	0-10
1789	KB6-14	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.24	20.35	0.82	16.85	10.4	73	16.6	0	thermokarst	MIS 1	0-10
1790	KB6-15	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.4	20.02	0.93	15.31	11.7	73.7	14.6	0	thermokarst	MIS 1	0-10
1791	KB6-16	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.52	22.93	0.93	16.35	10.2	74.6	15.2	0	thermokarst	MIS 1	0-10
1792	KB6-17	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.61	23.96	1.01	14.53	12.6	74.4	13	0	thermokarst	MIS 1	0-10
1793	KB6-18	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.74	26.3	1	17.29	9.8	75.6	14.6	0	thermokarst	MIS 1	0-10
1794	KB6-19	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	2.88	28.95	0.98	24.89	8	63.7	28.3	0	Yedoma upland	MIS 3	30-35
1795	KB6-2	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	0.54	23.91	0.59	44.04	5.3	51.7	43	0	thermokarst	MIS 1	0-10
1796	KB6-20	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	3	19.17	0.54	36.98	5.9	55	39.1	0	Yedoma upland	MIS 3	30-35
1797	KB6-21	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	3.11	23.76	0.58	32.71	6.5	55.8	37.7	0	Yedoma upland	MIS 3	30-35
1798	KB6-3	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	0.63	21.25	0.38	28.41	7.1	61.3	31.6	0	thermokarst	MIS 1	0-10
1799	KB6-4	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.01	21.18	0.33	17.89	9.5	72.7	17.8	0	thermokarst	MIS 1	0-10
1800	KB6-5	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.1	21.01	0.35	39.27	6.2	51.7	42.1	0	thermokarst	MIS 1	0-10
1801	KB6-6	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.42	24.61	0.69	28.77	6.4	62.1	31.5	0	thermokarst	MIS 1	0-10
1802	KB6-7	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.52	20.98	0.88	18.34	9.2	73.3	17.5	0	thermokarst	MIS 1	0-10
1803	KB6-8	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.62	21.23	0.81	29.8	7.1	58	34.9	0	thermokarst	MIS 1	0-10
1804	KB6-9	2013	August	Khara Bulgunyakh	61.84254	130.634101	DTLB	1.69	14.92	0.77	23.61	8.6	62.8	28.6	0	thermokarst	MIS 1	0-10
1805	KB7-1	2013	August	Khara Bulgunyakh	61.832872	130.642857	Pingo	0.5	17.65	5.07	37.06	8.5	42.2	49.3	0	thermokarst	MIS 1	0-10
1806	KB7-10	2013	August	Khara Bulgunyakh	61.832872	130.642857	Pingo	2.2	38.09	2.06	28.88	8.2	53.8	38	0	thermokarst	MIS 1	0-10
1807	KB7-11	2013	August	Khara Bulgunyakh	61.832872	130.642857	Pingo	2.29	28.38	1.09	25.02	8.4	59.8	31.8	0	thermokarst	MIS 1	0-10
1808	KB7-12	2013	August	Khara Bulgunyakh	61.832872	130.642857	Pingo	2.51	26.18	1.17	31.2	6.8	55.8	37.4	0	thermokarst	MIS 1	0-10

1845	Kha-2-16	2005	August	Khardang Island	72.951	124.222	Yedoma upland	7.8	12.2	20.83	0.31	176.7	2.37	17.33	80.3	0	Yedoma upland	MIS 2	20-30
1846	Kha-2-17	2005	August	Khardang Island	72.951	124.222	Yedoma upland	8.2	11.8	0.18	195.6	1.23	5.26	93.5	0	Yedoma upland	MIS 2	20-30	
1847	Kha-2-18	2005	August	Khardang Island	72.951	124.222	Yedoma upland	8.6	11.4	49.06	0.78	150.3	5.17	39.43	55.4	0	Yedoma upland	MIS 2	20-30
1848	Kha-2-19	2005	August	Khardang Island	72.951	124.222	Yedoma upland	7.7	12.3	30.52	0.39	238.2	2.6	20.9	76.5	0	Yedoma upland	MIS 2	20-30
1849	Kha-2-20	2005	August	Khardang Island	72.951	124.222	Yedoma upland	8.2	11.8	27.4	0.76	135.7	2.33	30.17	67.5	0	Yedoma upland	MIS 2	20-30
1850	Kha-2-21	2005	August	Khardang Island	72.951	124.222	Yedoma upland	8.7	11.3	0.87	237.8	1.74	12.56	85.7	0	Yedoma upland	MIS 2	20-30	
1851	Kha-2-22	2005	August	Khardang Island	72.951	124.222	Yedoma upland	9.2	10.8	32.26	0.76	150.3	3.74	35.76	60.5	0	Yedoma upland	MIS 2	20-30
1852	Kha-2-23	2005	August	Khardang Island	72.951	124.222	Yedoma upland	9.8	10.2	1.01	131	4.72	38.38	56.9	0	Yedoma upland	MIS 2	20-30	
1853	Kha-2-24	2005	August	Khardang Island	72.951	124.222	Yedoma upland	10.1	9.9	18.61	1.97	126.4	4.79	42.21	53	0	Yedoma upland	MIS 2	20-30
1854	Kha-2-25	2005	August	Khardang Island	72.951	124.222	Yedoma upland	10.5	9.5	0.41	178.5	2.59	12.31	85.1	0	Yedoma upland	MIS 2	20-30	
1855	Kha-2-26	2005	August	Khardang Island	72.951	124.222	Yedoma upland	11	9	47.8	1.24	104.6	5.42	51.68	42.9	0	Yedoma upland	MIS 2	20-30
1856	Kha-2-27	2005	August	Khardang Island	72.951	124.222	Yedoma upland	11.4	8.6	33.17	1.79	180.9	4.02	41.88	54.1	0	Yedoma upland	MIS 2	20-30
1857	Kha-2-28	2005	August	Khardang Island	72.951	124.222	Yedoma upland	14.5	5.5	49.25	2.57	39.36	10.4	70.7	18.9	0	Yedoma upland	MIS 2	20-30
1858	Kha-2-29	2005	August	Khardang Island	72.951	124.222	Yedoma upland	15.1	4.9	1.48	79.19	6.95	66.35	26.7	0	Yedoma upland	MIS 2	20-30	
1859	Kha-2-30	2005	August	Khardang Island	72.951	124.222	Yedoma upland	15.5	4.5	53.18	3.17	37.88	10.2	71.2	18.6	0	Yedoma upland	MIS 2	20-30
1860	Kha-2-31	2005	August	Khardang Island	72.951	124.222	Yedoma upland	16	4	33.67	0.97	106.8	5.66	47.64	46.7	0	Yedoma upland	MIS 2	20-30
1861	Kha-2-32	2005	August	Khardang Island	72.951	124.222	Yedoma upland	16.5	3.5	46.06	0.95	112.3	4.29	49.71	46	0	Yedoma upland	MIS 2	20-30
1862	Kha-2-33	2005	August	Khardang Island	72.951	124.222	Yedoma upland	16.9	3.1	0.85	100.9	4.99	45.51	49.5	0	Yedoma upland	MIS 2	20-30	
1863	Kly-1-1	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	9	5	42.4	1.8	21.13	10.7	85	4.3	0	Yedoma upland	MIS 3	30-40	
1864	Kly-1-2	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	9.5	4.5	37.3	1.6						Yedoma upland	MIS 3	30-40	
1865	Kly-1-3	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	10	4	57	1.6	14.52	15.2	82.6	2.2	0	Yedoma upland	MIS 3	30-40	
1866	Kly-1-4	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	10.7	3.3	48.1	1.8	29.27	9.44	81.36	9.2	0	Yedoma upland	MIS 3	30-40	
1867	Kly-1-5	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	11.2	2.8	45	1.7	25.49	10.7	81.3	8	0	Yedoma upland	MIS 3	30-40	
1868	Kly-1-6	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	11.9	2.1	43.7	3.3	33.72	8.81	80.29	10.9	0	Yedoma upland	MIS 3	30-40	
1869	Kly-1-7	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	12	2		5.3	24.55	12	82.1	5.9	0	Yedoma upland	MIS 3	30-40	
1870	Kly-1-8	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	12.2	1.8		1.8	26.2	11.3	81.2	7.5	0	Yedoma upland	MIS 3	30-40	
1871	Kly-1-9	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	12.5	1.5		1.6	26.66	10.4	82.3	7.3		Yedoma upland	MIS 3	30-40	
1872	Kly-1-10	2002	August	Maly Lyakhovsky Island (Karg 74.24605	140.3509	Yedoma upland	13.95	0.05		8.3						Yedoma upland	MIS 3	30-40	
1873	KyS-2-1	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	1.6	9.4	48.4	1	50.85	5.28	80.32	14.4	0	Yedoma upland	MIS 3	35-55
1874	KyS-2-2	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	2.1	8.9	33.7	0.7	17.1	9.46	90.34	0.2	0	Yedoma upland	MIS 3	35-55
1875	KyS-2-3	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	2.35	8.65	39.2	1.4					Yedoma upland	MIS 3	35-55	
1876	KyS-2-4	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	2.7	8.3	46.5	2.8	22.5	13.7	80.6	5.7	0	Yedoma upland	MIS 3	35-55
1877	KyS-2-5	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	3	8	49.4	3.7	28.88	12.1	79.6	8.3	0	Yedoma upland	MIS 3	35-55
1878	KyS-2-6	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	4	7	60.8	5.3	33.63	7.2	82.9	9.9	0	Yedoma upland	MIS 3	35-55
1879	KyS-2-8	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	1.5	9.5	28.4						Yedoma upland	MIS 3	35-55	
1880	KyS-2-9	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	7.3	3.7	33.6		20.61	12.1	82.6	5.3	0	Yedoma upland	MIS 3	35-55
1881	KyS-2-10	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	8.4	2.6	45		28.43	7.49	85.61	6.9	0	Yedoma upland	MIS 3	35-55
1882	KyS-2-11	2002	August	Kotel'ny South (Kargin)	76.1727	139.2266	Yedoma upland	8.1	2.9	38		26	8.35	85.55	6.1	0	Yedoma upland	MIS 3	35-55
1883	L21+50-S-1	1999	August	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	2.5	9.5	23.08	0.57	47.91	3.91	72.19	23.9	0	Yedoma upland	MIS 3	30-50
1884	L21+50-S-2	1999	August	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	3.1	8.9	19.74	0.38	49.58	4.04	68.36	27.6	0	Yedoma upland	MIS 3	30-50
1885	L21+50-S-3	1999	August	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	3.6											

1922	L7-08-09	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	5.9	6.1	22.6	1.43	41.48	9.16	66.04	24.8	0	thermokarst	MIS 1	4-12
1923	L7-08-10	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	6	6		1.54	43.06	7.69	72.01	20.3	0	thermokarst	MIS 1	4-12
1924	L7-08-11	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	6.4	5.6	29.63	1.53	14.1	19.8	77.1	3.1	0	thermokarst	MIS 1	4-12
1925	L7-08-12	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	6.8	5.2		1.72	40.35	11.4	65.2	23.4	0	thermokarst	MIS 1	4-12
1926	L7-08-13	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	7.2	4.8		1.75	11.87	17.4	81.2	1.4	0	thermokarst	MIS 1	4-12
1927	L7-08-14	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	7.5	4.5		1.59	14.13	24	72	4	0	thermokarst	MIS 1	4-12
1928	L7-08-15	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	7.6	4.4	31.18	1.61	16.56	15.6	80.2	4.2	0	thermokarst	MIS 1	4-12
1929	L7-08-16	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	7.9	4.1		1.68	49.32	10.5	60.8	28.7	0	thermokarst	MIS 1	4-12
1930	L7-08-17	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	8.4	3.6		1.62	24.81	24.9	63.6	11.5	0	thermokarst	MIS 1	4-12
1931	L7-08-18	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	8.7	3.3		1.99	21.16	24.9	62.6	12.5	0	thermokarst	MIS 1	4-12
1932	L7-08-19	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	9	3	30.65	1.67	19.16	17.3	76.5	6.2	0	thermokarst	MIS 1	4-12
1933	L7-08-20	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	9.2	2.8		1.33	36.33	13.2	69.8	17	0	thermokarst	MIS 1	4-12
1934	L7-08-21	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	9.6	2.2		1.36	52.15	7.95	65.95	26.1	0	thermokarst	MIS 1	4-12
1935	L7-08-22	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	10	1.8	27.22	0.68	23.95	14.5	80.2	5.3	0	thermokarst	MIS 1	4-12
1936	L7-08-23	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	10.3	1.5		3.81	47.54	6.34	75.16	18.5	0	thermokarst	MIS 1	4-12
1937	L7-08-24	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	10.5	1.3	42.5	0.38	57.51	4.89	71.81	23.3	0	thermokarst	MIS 1	4-12
1938	L7-08-25	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	10.7	1.1		0.19	31.33	4.95	89.55	5.5	0	thermokarst	MIS 1	4-12
1939	L7-08-26	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	10.9	0.9		0.22	42.36	5.23	83.67	11.1	0	thermokarst	MIS 1	4-12
1940	L7-08-27	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	11.1	0.7		13.6	37.48	12.7	66.8	20.5	0	thermokarst	MIS 1	4-12
1941	L7-08-28	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	11.5	0.3		7.94	31.51	12.9	70.6	16.5	0	thermokarst	MIS 1	4-12
1942	L7-08-29	2007	July	Bol'shoy Lyakhovsky	73.33044	141.34541	DTLB	11.7	0.1		9.05	23.11	16.1	73.2	10.7	0	thermokarst	MIS 1	4-12
1943	L7-11-02	2007	July	Bol'shoy Lyakhovsky	73.31672	141.42628	Yedoma upland	3.5	2.5	21.2	0.96	27.52	16.10	71.50	12.40	0	thermokarst	MIS 5e	125 ?
1944	L7-11-04	2007	July	Bol'shoy Lyakhovsky	73.31672	141.42628	Yedoma upland	4.5	1.5	21.8	0.87	44.81	2.70	79.60	17.70	0	thermokarst	MIS 5e	125 ?
1945	L7-11-08	2007	July	Bol'shoy Lyakhovsky	73.31672	141.42628	Yedoma upland	4.3	1.7	23.1	1.60	12.92	18.00	82.00	0.00	0	thermokarst	MIS 5e	125 ?
1946	L7-11-11	2007	July	Bol'shoy Lyakhovsky	73.31672	141.42628	Yedoma upland	5	1	28	1.88	48.63	10.20	67.90	21.90	0	thermokarst	MIS 5e	125 ?
1947	L7-12-02	2007	July	Bol'shoy Lyakhovsky	73.2876	141.69351	Yedoma upland	1.5	4	29.9	0.58						flood plain	MIS 6	> 125
1948	L7-12-05	2007	July	Bol'shoy Lyakhovsky	73.2876	141.69351	Yedoma upland	2.9	2.6	30.7	0.55						flood plain	MIS 7	> 126
1949	L7-12-06	2007	July	Bol'shoy Lyakhovsky	73.2876	141.69351	Yedoma upland	2	3.5	29.7	0.59						flood plain	MIS 8	> 127
1950	L7-15-01-T	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	2			1.19	26.61	11.10	81.70	7.20	0	Ice Complex	MIS 5	140-90
1951	L7-15-02	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	2.5		27.5	1.12	26.86	11.00	81.30	7.70	0	Ice Complex	MIS 5	140-90
1952	L7-15-03	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	3.2			1.60	26.18	11.60	80.10	8.30	0	Ice Complex	MIS 5	140-90
1953	L7-15-04	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	3.7		34.9	1.72	26.29	12.70	78.30	9.00	0	Ice Complex	MIS 5	140-90
1954	L7-15-05	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	4			9.14	35.87	10.50	72.00	17.50	0	Ice Complex	MIS 5	140-90
1955	L7-15-06	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	5		45.8	7.27	32.35	10.80	73.90	15.30	0	Ice Complex	MIS 5	140-90
1956	L7-15-07	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	5.1		40.8	1.82	30.69	11.20	76.50	12.30	0	Ice Complex	MIS 5	140-90
1957	L7-15-08	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	5.8		51.4	1.12	30.29	11.20	77.90	10.90	0	Ice Complex	MIS 5	140-90
1958	L7-15-09	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	6.5		41.9	1.58	29.27	11.00	78.10	10.90	0	Ice Complex	MIS 5	140-90
1959	L7-15-10	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	7.1		40.7	3.63	32.85	11.20	74.80	14.00	0	Ice Complex	MIS 5	140-90
1960	L7-15-11	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	7.9			0.61	29.52	8.97	83.13	7.90	0	Ice Complex	MIS 5	140-90
1961	L7-15-12	2007	July	Bol'shoy Lyakhovsky	73.28661	141.7052	Yedoma upland	8.2			0.64	32.83	8.78						

2076	MKh-3-S-5	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	11.9		2.9	58.31	10.2	63.4	26.4	0	Yedoma upland	MIS 3	45	
2077	MKh-4.2-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	33	1.8	42	1.4	104.7	9.02	48.58	42.4	0	Yedoma upland	MIS 2	12,5
2078	MKh-4.2-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	34	0.8	37	2.9	168.2	4.22	42.18	53.6	0	Yedoma upland	MIS 2	12,5
2079	MKh-4.2-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	34.1	0.7	2.8	143.6	4.03	47.37	48.6	0	Yedoma upland	MIS 2	12,5	
2080	MKh-4.2-4	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	34.3	0.5	29	1.3	283.1	4.1	20.5	75.4	0	Yedoma upland	MIS 2	12,5
2081	MKh-4.2-5	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	34.5	0.3	42	1.4	170.2	8.14	42.76	49.1	0	Yedoma upland	MIS 2	12,5
2082	MKh-4.3-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	35.7	0.9	51	7.6	146.1	4.64	49.86	45.5	0	Yedoma upland	MIS 2	12,5
2083	MKh-4.3-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	36	0.6	70	3.3	104.1	8.24	54.36	37.4	0	Yedoma upland	MIS 2	12,5
2084	MKh-4.3-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	36.3	0.3	53	12.5	121.9	2.83	51.47	45.7	0	Yedoma upland	MIS 2	12,5
2085	MKh-4.3-4	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	36.4	0.1		27					Yedoma upland	MIS 2	12,5	
2086	MKh-4.6-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	37		74.23	19.49	175.2	2.38	37.12	62.88	0	Holocene cover	MIS 1	8-0
2087	MKh-4.6-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	36.65		23	164.1	1.21	35.49	64.51	0	Holocene cover	MIS 1	8-0	
2088	MKh-4.6-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	36.6		67.43	4.43	109.7	6.46	55.64	44.36	0	Holocene cover	MIS 1	8-0
2089	MKh-6.2-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	0.75	0.65	25	0.96					thermokarst	MIS 1	7-3	
2090	MKh-6.2-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	1.5	0.9	37	0.77	174.2	4.22	23.78	72		thermokarst	MIS 1	7-3
2091	MKh-6.2-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	0.5	0.45		5.54	286.2	2.72	30.48	66.8		thermokarst	MIS 1	7-3
2092	MKh-6.2-4	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	0.4	0.3	38	3.37	184.7	7.28	43.92	48.8		thermokarst	MIS 1	7-3
2093	MKh-6.2-6	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.1			16.04					thermokarst	MIS 1	7-3	
2094	MKh-6.2-7	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.15	2.15		16.49					thermokarst	MIS 1	7-3	
2095	MKh-6.2-8	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.25	2.25		9.66					thermokarst	MIS 1	7-3	
2096	MKh-6.2-9	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.35	2.35		9.52					thermokarst	MIS 1	7-3	
2097	MKh-6.2-10	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.43	2.43		8.64					thermokarst	MIS 1	7-3	
2098	MKh-6.2-11	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.38	2.38		9.81					thermokarst	MIS 1	7-3	
2099	MKh-6.2-12	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.53	2.53		8.63					thermokarst	MIS 1	7-3	
2100	MKh-6.2-13	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.58	2.58		6.98					thermokarst	MIS 1	7-3	
2101	MKh-6.2-14	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.63	2.63		5.68					thermokarst	MIS 1	7-3	
2102	MKh-6.2-15	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.68	2.68		6.79					thermokarst	MIS 1	7-3	
2103	MKh-6.2-16	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.73	2.73		7.07					thermokarst	MIS 1	7-3	
2104	MKh-6.2-17	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.78	2.78		5.21					thermokarst	MIS 1	7-3	
2105	MKh-6.2-18	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.83	2.83		5.77					thermokarst	MIS 1	7-3	
2106	mkh-6.2-19	1998	August	Bykovsky Peninsula	71.783366	129.415005	DTLB	2.88	2.88		4.8					thermokarst	MIS 1	7-3	
2107	MKh-B-Rippe2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	16.8	1.5	5.6	114.9	3.55	52.25	44.2	0	Yedoma upland	MIS 3	35	
2108	MKh-HB-2-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15	1.4	39.4	2.9	76.02	7.32	57.98	34.7	0	Yedoma upland	MIS 3	41
2109	MKh-HB-2-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.05	1.45		6.9	259.1	2.63	36.27	61.1	0	Yedoma upland	MIS 3	41
2110	MKh-HB-2-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.15	1.55		13.5					Yedoma upland	MIS 3	41	
2111	MKh-HB-2-4	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.25	1.65		13.3					Yedoma upland	MIS 3	41	
2112	MKh-HB-2-5	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.35	1.75		12.6					Yedoma upland	MIS 3	41	
2113	MKh-HB-2-6	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.45	1.85		11.4					Yedoma upland	MIS 3	41	
2114	MKh-HB-2-7	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.55	1.95		9.8					Yedoma upland	MIS 3	41	
2115	MKh-HB-2-8	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.65	2.15		10.3					Yedoma upland	MIS 3	41	
2116	MKh-HB-2-9	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.75	2.25		9.2					Yedoma upland	MIS 3	41	
2117	MKh-HB-2-10	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	15.85	2.35		12.1					Yedoma upland	MIS 3	41	
2118	MKh-k1-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	8.8	1.1	2.7	39.25	39	61	0	0	Yedoma upland	MIS 3	48-42	
2119	MKh-k1-2	1998	August	Bykovsky															

2153	MKh-KB6-9	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	19.8		52.61	13.4	167.3	3.92	45.18	50.9	0	Yedoma upland	MIS 3	36
2154	MKh-KB6-10	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	19.6		7.3	183.2	1.75	34.25	64	0	Yedoma upland	MIS 3	36	
2155	MKh-KB6-11	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	20.2		4.5	108.6	5.27	52.03	42.7	0	Yedoma upland	MIS 3	36	
2156	MKh-KB7-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	19.5	0.6	3.5	90.81	6.48	54.22	39.3	0	Yedoma upland	MIS 3	34	
2157	MKh-KB7-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	20.65	1.4	47.09	8.7	180.5	3	45.5	51.5	0	Yedoma upland	MIS 3	34
2158	MKh-KB7-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	20.7		12.4	212.4	2.13	36.67	61.2	0	Yedoma upland	MIS 3	34	
2159	MKh-KB7-4	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	21.7	2.15	44.75	2.9	39.66	12.8	67.4	19.8	0	Yedoma upland	MIS 3	34
2160	MKh-KB7-5	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	22.5	2.8		13.8	210	1.91	35.69	62.4	0	Yedoma upland	MIS 3	34
2161	MKh-KB7-6	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	22.35		3.9	111.1	6.36	53.14	40.5	0	Yedoma upland	MIS 3	34	
2162	MKh-KB8-1	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	17.5	0.8	55.8	6.3	110.2	5.45	55.35	39.2	0	Yedoma upland	MIS 3	35
2163	MKh-KB8-2	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	18	1.15	50.2	4.3	98.08	5.95	58.05	36	0	Yedoma upland	MIS 3	36
2164	MKh-KB8-3	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	18.5	1.4	57.1	7.1	192.4	3.54	41.86	54.6	0	Yedoma upland	MIS 3	35
2165	MKh-KB9-4	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	23	1.15	62.8	2.7	59.94	9.06	64.24	26.7	0	Yedoma upland	MIS 3	28
2166	MKh-KB9-5	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	23.2	1.8	43.18	2.8	90.18	6.04	58.16	35.8	0	Yedoma upland	MIS 3	28
2167	MKh-KB9-6	1998	August	Bykovsky Peninsula	71.783366	129.415005	Yedoma upland	23.25	1.85	43.2	2.7	76.64	7.4	60	32.6	0	Yedoma upland	MIS 3	28
2168	Muo-3-1	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	0.5	11.5	49.3	2.1	140.3	7.49	54.91	37.6	0	Yedoma upland	MIS 3	47-38
2169	Muo-3-2	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	1	11	53.4	8	122	8.44	54.06	37.5	0	Yedoma upland	MIS 3	47-38
2170	Muo-3-3	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	1.5	10.5	57.6	1.3	158.5	8.01	46.85	45.13	0	Yedoma upland	MIS 3	47-38
2171	Muo-3-4	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	2	10	54.5	2.6	158.4	6.65	49.65	43.7	0	Yedoma upland	MIS 3	47-38
2172	Muo-3-5	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	1	11		2.4	247.2	2	37.3	60.7	0	Yedoma upland	MIS 3	47-38
2173	Muo-3-6	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	2.5	9.5	55	3.9	185.6	4.81	47.19	48	0	Yedoma upland	MIS 3	47-38
2174	Muo-3-7	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	3	9		4.7	149.6	5.73	47.57	46.7	0	Yedoma upland	MIS 3	47-38
2175	Muo-3-8	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	5	7	37	1.8	225.9	3.22	41.68	55.1	0	Yedoma upland	MIS 3	47-38
2176	Muo-3-9	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	7.5	4.5		11.1	301.1	0.86	21.44	77.7	0	Yedoma upland	MIS 3	47-38
2177	Muo-3-10	2002	September	Muostakh Island (Kargin)	71.6129	129.94358	Yedoma upland	6.5	5.5	52.5	1.3	306.4	5.03	32.77	62.2	0	Yedoma upland	MIS 3	47-38
2178	Nadel-0-TOP			Yakutsk area	62.8696	129.38477			0	28.27	3.79							no doi	
2179	Nadel-5-100			Yakutsk area	62.8696	129.38477		0.05		17.19	0.26								
2180	Nag 1+80-S-1	2000	August	Olenyok Channel	72.8792	123.2062	Yedoma upland	21	7	47.78	11.4	289.2	2.61	25.39	72	0	Holocene cover	MIS 1	5
2181	Nag 1+80-S-2	2000	August	Olenyok Channel	72.8792	123.2062	Yedoma upland	22	6		6.64	236.3	0.94	24.36	74.7	0	Holocene cover	MIS 1	5
2182	Nag 4+50-B-Horizont	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland				2.95				0	Yedoma upland	MIS 3	55-44	
2183	Nag 4+50-C-Horizont	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland				0.14			0	Yedoma upland	MIS 3	55-44		
2184	Nag 4+50-S-1	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	1.5	26.5		3.47	292.8	1.22	15.18	83.6	0	fluvial	MIS 3	60-50
2185	Nag 4+50-S-2	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	1.6	26.4	27.11	3.13					0	fluvial	MIS 3	60-50
2186	Nag 4+50-S-3	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	1.4	26.6		0.26	234.7	1.4	4.88	93.72	0	fluvial	MIS 3	60-50
2187	Nag 4+50-S-4	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	3	25	20.38	0.43	143.1	2.35	14.25	83.4	0	fluvial	MIS 3	60-50
2188	Nag 4+50-S-5	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	4	24	19.81	0.3	184.6	1.89	11.71	86.4	0	fluvial	MIS 3	60-50
2189	Nag 4+50-S-6	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	6.8	21.2	19.09	0.23					0	fluvial	MIS 3	60-50
2190	Nag 4+50-S-7	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	7	21		3.19	339.4	0.96	10.14	88.9	0	fluvial	MIS 3	60-50
2191	Nag 4+50-S-8	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	7.4	20.6		0.13	234	0.74	2.57	96.69	0	fluvial	MIS 3	60-50
2192	Nag 4+50-S-9 (Ole-5)	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	9	19	22.24	0.23	163	2.26	8.54	89.2	0	fluvial	MIS 3	60-50
2193	Nag 4+50-S-10	2000	August	Olenyok Channel	72.880333	123.212	Yedoma upland	10	18	20.57	0.24	163.5	2.29	7.46	90.25				

2230	Oya-2-5	2002	Oyogos Yar coast	72.39166	143.33500	Yedoma upland	1.95		2.13					Holocen cover	MIS 1	8-9			
2231	Oya-2-6	2002	Oyogos Yar coast	72.39166	143.33500	Yedoma upland	2.25		6.61					Holocen cover	MIS 1	8-9			
2232	Oya-2-7	2002	Oyogos Yar coast	72.39166	143.33500	Yedoma upland	2.35		6.54					Holocen cover	MIS 1	8-9			
2233	Oya-2-8	2002	Oyogos Yar coast	72.39166	143.33500	Yedoma upland	3.05		18.72					Holocen cover	MIS 1	8-9			
2234	Oya-2-9	2002	Oyogos Yar coast	72.39166	143.33500	Yedoma upland	0.03		4.20					Holocen cover	MIS 1	8-9			
2235	Oya-3-2	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	1.4			7.03	27.63	7.71	84.29	8	0 Yedoma upland	MIS 3	48		
2236	Oya-3-3	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	2.4	49.7						Yedoma upland	MIS 3	48			
2237	Oya-3-4	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	3	36.7			15.8	11.9	86.7	1.4	0 Yedoma upland	MIS 3	48		
2238	Oya-3-5	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	3.6	35.9						Yedoma upland	MIS 3	48			
2239	Oya-3-6	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	4.1	32.2			17.82	11	86.4	2.6	0 Yedoma upland	MIS 3	48		
2240	Oya-3-8	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	5.8	27.6						Yedoma upland	MIS 3	48			
2241	Oya-3-9	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	6.4	49.1			15.72	16.1	81.5	2.4	0 Yedoma upland	MIS 3	48		
2242	Oya-3-10	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	7.4				19.94	14.5	79.3	6.2	0 Yedoma upland	MIS 3	48		
2243	Oya-3-11	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	7.4							Yedoma upland	MIS 3	48			
2244	Oya-3-12	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland	8.2				20.89	11.8	82.6	5.6	0 Yedoma upland	MIS 3	48		
2245	Oya-3-13	2002	Oyogos Yar coast	72.40759	143.33085	Yedoma upland								Yedoma upland	MIS 3	48			
2246	Oy7-08-32-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	9.5	18.5	40.9	1.6	21.15	12.7	80.3	7	0	Yedoma upland	MIS 3	48-32
2247	Oy7-08-33-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	10	18	42.2	2.5	24.33	18.6	70.6	10.8	0	Yedoma upland	MIS 3	48-32
2248	Oy7-08-34-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	10.5	17.5	52.2	3.3	29.78	20.5	63.5	16	0	Yedoma upland	MIS 3	48-32
2249	Oy7-08-35-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	11	17		3.6	34.3	15.5	66	18.5	0	Yedoma upland	MIS 3	48-32
2250	Oy7-08-36-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	11.5	16.5	62.5	3.8	52.61	13.9	65.6	20.5	0	Yedoma upland	MIS 3	48-32
2251	Oy7-08-37-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	12	16		4.5	35.01	13.9	70.7	15.4	0	Yedoma upland	MIS 3	48-32
2252	Oy7-08-38-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	15.5	12.5	67.9	4.5	30	17.5	68.7	13.8	0	Yedoma upland	MIS 3	48-32
2253	Oy7-08-39-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	15.8	12.2	45.2	8.1	24.76	15	74.7	10.3	0	Yedoma upland	MIS 3	48-32
2254	Oy7-08-40-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	16.2	11.8		2.5	38.49	9.41	74.09	16.5	0	Yedoma upland	MIS 3	48-32
2255	Oy7-08-41-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	16.7	11.3	54.4	2.1	25.27	16.2	73	10.8	0	Yedoma upland	MIS 3	48-32
2256	Oy7-08-42-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	17.1	10.9		2.7	26.02	13.8	76.1	10.1	0	Yedoma upland	MIS 3	48-32
2257	Oy7-08-43-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	17.4	10.6	56.1	1.4	19.71	17.2	76.3	6.5	0	Yedoma upland	MIS 3	48-32
2258	Oy7-08-44-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	17.9	10.1	51.1	1.4	31.46	17.7	67.2	15.1	0	Yedoma upland	MIS 3	48-32
2259	Oy7-08-45-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	18.4	9.6		1.5	20.56	16.9	74.7	8.4	0	Yedoma upland	MIS 3	48-32
2260	Oy7-08-46-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	18.7	9.3	41.4	1.7	17.72	16.4	78.2	5.4	0	Yedoma upland	MIS 3	48-32
2261	Oy7-08-47-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	19.2	8.8		1.7	23.85	15.7	75.2	9.1	0	Yedoma upland	MIS 3	48-32
2262	Oy7-08-48-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	19.7	8.3	19.7	1.5	22.34	15.4	76.6	8	0	Yedoma upland	MIS 3	48-32
2263	Oy7-08-49-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	20.2	7.8		1.2	23.62	12.7	78.8	8.5	0	Yedoma upland	MIS 3	48-32
2264	Oy7-08-50-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	20.7	7.3	44.8	1.3	30.95	14.2	72.9	12.9	0	Yedoma upland	MIS 3	48-32
2265	Oy7-08-51-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	21.2	6.8		1.2	32.54	12.7	73.7	13.6	0	Yedoma upland	MIS 3	48-32
2266	Oy7-08-52-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	21.5	6.5	40.7	1.2	33.6	11.3	73.7	15	0	Yedoma upland	MIS 3	48-32
2267	Oy7-08-53-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	22	6		6.5	32.54	14.9	69.4	15.7	0	Yedoma upland	MIS 3	48-32
2268	Oy7-08-54-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	22.5	5.5	46.3	4.6	29.95	11.4	76.4	12.2	0	Yedoma upland	MIS 3	48-32
2269	Oy7-08-55-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	23	5		5.4	33.99	13.7	68.4	17.9	0	Yedoma upland	MIS 3	48-32
2270	Oy7-08-56-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	23.5	4.5	47.2	1.2	36.96	12.2	67.9	19.9	0	Yedoma upland	MIS 3	48-32
2271	Oy7-08-57-S	2007	August	Oyogos Yar coast	72.68347	143.47526	Yedoma upland	24	4		7.2	44.98	10.1	68.9	21	0	Yedoma upland	MIS 3	48-32
2272	Oy7-08-58-S	2007	August	Oyogos Yar coast															

2307	POKF1 Wall 54-60	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.58	65.22	17.05	flood plain (Kolyma delta) MIS 1	0-3	https://doi.org/10.2312/BzPM_0697_21
2308	POKF1 Wall 60-65	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.63	71.7	35.97	flood plain (Kolyma delta) MIS 1	0-3	(p 245-250)
2309	POKF1 Wall 65-70	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.68	78.38	17.4	flood plain (Kolyma delta) MIS 1	0-3	
2310	POKF1 Wall 70-75	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.73	73.42	21.74	flood plain (Kolyma delta) MIS 1	0-3	
2311	POKF1 Wall 75-80	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.78	82.35	17.43	flood plain (Kolyma delta) MIS 1	0-3	
2312	POKF1 Wall 80-86	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.83	52.46	5.66	flood plain (Kolyma delta) MIS 1	0-3	
2313	POKF1 Centre Al I	2012	July	Pokhodsk	69.09515	160.938733	flood plain		77.6	20.83	flood plain (Kolyma delta) MIS 1	0-3	
2314	POKF1 Centre AL II	2012	July	Pokhodsk	69.09515	160.938733	flood plain		86.79	40.84	flood plain (Kolyma delta) MIS 1	0-3	
2315	POKF1 Centre AL III	2012	July	Pokhodsk	69.09515	160.938733	flood plain		73.47	37.67	flood plain (Kolyma delta) MIS 1	0-3	
2316	POKF1 Centre 50-55	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.53	82.93	29.66	flood plain (Kolyma delta) MIS 1	0-3	
2317	POKF1 Centre 55	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.58	62.28	23.38	flood plain (Kolyma delta) MIS 1	0-3	
2318	POKF1 Centre 60-65	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.63	79.22	24.3	flood plain (Kolyma delta) MIS 1	0-3	
2319	POKF1 Centre 65-70	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.68	74.74	22.94	flood plain (Kolyma delta) MIS 1	0-3	
2320	POKF1 Centre 70-75	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.73	73.05	21.97	flood plain (Kolyma delta) MIS 1	0-3	
2321	POKF1 Centre 75-80	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.78	80.56	24.68	flood plain (Kolyma delta) MIS 1	0-3	
2322	POKF1 Centre 80-85	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.83	80.09	15	flood plain (Kolyma delta) MIS 1	0-3	
2323	POKF1 Centre 85-90	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.88	82.94	13.77	flood plain (Kolyma delta) MIS 1	0-3	
2324	POKF1 Centre 90-95	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.93	69.46	12.71	flood plain (Kolyma delta) MIS 1	0-3	
2325	POKF1 Centre 95-100	2012	July	Pokhodsk	69.09515	160.938733	flood plain	0.98	76.63	12.65	flood plain (Kolyma delta) MIS 1	0-3	
2326	POKF3 Wall 0-5	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.03	89.09	34.98	flood plain (Kolyma delta) MIS 1	0-3	
2327	POKF3 Wall 5-10	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.08	84.89	36.13	flood plain (Kolyma delta) MIS 1	0-3	
2328	POKF3 Wall 10-15	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.13	76.51	27.03	flood plain (Kolyma delta) MIS 1	0-3	
2329	POKF3 Wall 15-20	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.18	76.34	22.2	flood plain (Kolyma delta) MIS 1	0-3	
2330	POKF3 Wall 20-25	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.23	76.12	24.67	flood plain (Kolyma delta) MIS 1	0-3	
2331	POKF3 Wall 25-30	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.28	81.15	20.87	flood plain (Kolyma delta) MIS 1	0-3	
2332	POKF3 Wall 30-35	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.33	40.04	0.52	flood plain (Kolyma delta) MIS 1	0-3	
2333	POKF3 Wall 35-40	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.38	31.93	2.8	flood plain (Kolyma delta) MIS 1	0-3	
2334	POKF3 Wall 40-45	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.43	36.23	1.38	flood plain (Kolyma delta) MIS 1	0-3	
2335	POKF3 Wall 45-50	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.48	48.54	7.39	flood plain (Kolyma delta) MIS 1	0-3	
2336	POKF3 Wall 50-55	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.53	59.25	11.61	flood plain (Kolyma delta) MIS 1	0-3	
2337	POKF3 Wall 55-60	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.58	61.88	11.81	flood plain (Kolyma delta) MIS 1	0-3	
2338	POKF3 Wall 60-65	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.63	63.83	13.33	flood plain (Kolyma delta) MIS 1	0-3	
2339	POKF3 Wall 65-70	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.68	70.55	13.23	flood plain (Kolyma delta) MIS 1	0-3	
2340	POKF3 Wall 70-75	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.73	98	14	flood plain (Kolyma delta) MIS 1	0-3	
2341	POKF3 Wall 75-80	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.78	98.25	4.04	flood plain (Kolyma delta) MIS 1	0-3	
2342	POKF3 Wall 80-85	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.83	89.31	6.05	flood plain (Kolyma delta) MIS 1	0-3	
2343	POKF3 Wall 85-90	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.88	40.73	1.55	flood plain (Kolyma delta) MIS 1	0-3	
2344	POKF3 Wall 90-95	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.93	28.69	0.47	flood plain (Kolyma delta) MIS 1	0-3	
2345	POKF3 Center 0-5	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.03	92.62	36.48	flood plain (Kolyma delta) MIS 1	0-3	
2346	POKF3 Center 5-10	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.08	83.93	37	flood plain (Kolyma delta) MIS 1	0-3	
2347	POKF3 Center 10-15	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.13	79.25	35.84	flood plain (Kolyma delta) MIS 1	0-3	
2348	POKF3 Center 15-20	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.18	75.66	27	flood plain (Kolyma delta) MIS 1	0-3	
2349	POKF3 Center 20-25	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.23	83.08	31.83	flood plain (Kolyma delta) MIS 1	0-3	
2350	POKF3 Center 25-30	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.28	83.16	32.12	flood plain (Kolyma delta) MIS 1	0-3	
2351	POKF3 Center 30-35	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.33	81.37	32.19	flood plain (Kolyma delta) MIS 1	0-3	
2352	POKF3 Center 35-40	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.38	76.33	32.28	flood plain (Kolyma delta) MIS 1	0-3	
2353	POKF3 Center 40-45	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.43	77.53	36.91	flood plain (Kolyma delta) MIS 1	0-3	
2354	POKF3 Center 45-50	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.48	72.66	28.05	flood plain (Kolyma delta) MIS 1	0-3	
2355	POKF3 Center 50-55	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.53	76.02	25.94	flood plain (Kolyma delta) MIS 1	0-3	
2356	POKF3 Center 55-60	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.58	74.15	19.99	flood plain (Kolyma delta) MIS 1	0-3	
2357	POKF3 Center 60-65	2012	July	Pokhodsk	69.094783	160.9407	flood plain	0.63	79.78	25.39	flood plain (Kolyma delta) MIS 1	0-3	
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2461	SOB18-03-04	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	16.7	7.5	24	5.6	28	10.86	80.26	8.88	0	Yedoma upland	MIS 3	36-34
2462	SOB18-03-05	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	16.2	8	73	11.3	48	11.47	71.15	17.43	0	Yedoma upland	MIS 3	36-34
2463	SOB18-03-06	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	15.7	8.5	55	2.3	34	10.89	77.71	11.37	0	Yedoma upland	MIS 3	36-34
2464	SOB18-03-07	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	15.2	9	49	3.7	35	10.64	76.17	13.18	0	Yedoma upland	MIS 3	36-34
2465	SOB18-03-08	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	14.7	9.5	74	5	35	10.83	78.33	10.86	0	Yedoma upland	MIS 3	36-34
2466	SOB18-03-09	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	14.2	10	54	3.8	28	10.51	81.3	8.22	0	Yedoma upland	MIS 3	36-34
2467	SOB18-03-10	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	13.7	10.5	45	4	31	11.34	78.6	10.06	0	Yedoma upland	MIS 3	36-34
2468	SOB18-03-11	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	13.2	11	51	7	33	11.28	77.24	11.49	0	Yedoma upland	MIS 3	36-34
2469	SOB18-03-12	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	12.7	11.5	65	2.7	37	9.9	77.01	13.1	0	Yedoma upland	MIS 3	36-34
2470	SOB18-03-13	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	12.2	12	39	5.7	37	9.98	76.08	13.97	0	Yedoma upland	MIS 3	36-34
2471	SOB18-03-14	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	11.7	12.5	51	3.8	38	9.75	76.63	13.58	0	Yedoma upland	MIS 3	36-34
2472	SOB18-03-15	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	11.2	13	48	3	31	9.91	80.8	9.27	0	Yedoma upland	MIS 3	36-34
2473	SOB18-03-16	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	10.7	13.5	51	2.1	38	10.06	76.77	13.16	0	Yedoma upland	MIS 3	36-34
2474	SOB18-03-17	2018	July	Sobo-Sise Island	72.5387	128.28012	Yedoma upland	10.2	14	51	1.8	46	8.54	75.95	15.49	0	Yedoma upland	MIS 3	36-34
2475	SOB18-06-01	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	13.4	12.6	37	4	42	9.68	74.51	15.79	0	Yedoma upland	MIS 3	47-36
2476	SOB18-06-02	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	13	13.2	50	7.7	39	10.03	75.75	14.2	0	Yedoma upland	MIS 3	47-36
2477	SOB18-06-03	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	12.5	13.7	36	3.7	51	8.4	71.02	20.57	0	Yedoma upland	MIS 3	47-36
2478	SOB18-06-04	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	12	14	44	1.7	50	8.26	73.91	17.85	0	Yedoma upland	MIS 3	47-36
2479	SOB18-06-05	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	11.5	14.5	42	3.5	55	7.03	72.2	20.8	0	Yedoma upland	MIS 3	47-36
2480	SOB18-06-06	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	11	15	58	2.7	44	9.33	73.67	17.03	0	Yedoma upland	MIS 3	47-36
2481	SOB18-06-07	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	10.5	15.5	51	4	40	9.06	75.32	15.65	0	Yedoma upland	MIS 3	47-36
2482	SOB18-06-08	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	10	16	48	7.3	40	9.21	75.01	15.81	0	Yedoma upland	MIS 3	47-36
2483	SOB18-06-09	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	9.5	16.5	56	6.9	39	10.23	76.14	13.61	0	Yedoma upland	MIS 3	47-36
2484	SOB18-06-10	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	9	17	60	4.5	47	9.68	74.79	15.55	0	Yedoma upland	MIS 3	47-36
2485	SOB18-06-11	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	8.5	17.5	52	6.1	38	10.21	76.04	13.74	0	Yedoma upland	MIS 3	47-36
2486	SOB18-06-12	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	8	18	64	15.1	45	10.32	74.01	15.67	0	Yedoma upland	MIS 3	47-36
2487	SOB18-06-13	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	7.5	18.5	54	5.7	52	8.94	73.21	17.86	0	Yedoma upland	MIS 3	47-36
2488	SOB18-06-14	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	7	19	50	2.9	57	8.35	72.15	19.49	0	Yedoma upland	MIS 3	47-36
2489	SOB18-06-15	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	6.5	19.5	42	3.7	54	8.44	73.33	18.24	0	Yedoma upland	MIS 3	47-36
2490	SOB18-06-16	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	6	20	43	2.3	60	7.62	71.37	20.99	0	Yedoma upland	MIS 3	47-36
2491	SOB18-06-17	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	5.5	20.5	52	3.4	68	7.35	68.34	24.32	0	Yedoma upland	MIS 3	47-36
2492	SOB18-06-18	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	5	21	40	2.1	45	7.97	74.47	17.56	0	Yedoma upland	MIS 3	47-36
2493	SOB18-06-19	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	4.5	21.5	39	3.6	44	9.74	74.06	16.21	0	Yedoma upland	MIS 3	47-36
2494	SOB18-06-20	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	4	22	36	6.4	51	10.25	71.07	18.71	0	Yedoma upland	MIS 3	47-36
2495	SOB18-06-30	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	3.2	22.8	43	5.6	54	8.98	72.97	18.05	0	Yedoma upland	MIS 3	47-36
2496	SOB18-06-31	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	2.7	23.3	43	2.2	58	8.83	71.69	19.47	0	Yedoma upland	MIS 3	47-36
2497	SOB18-06-32	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	2.2	23.8	43	2	58	9.12	70.61	20.28	0	Yedoma upland	MIS 3	47-36
2498	SOB18-06-33	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	1.9	24.1	55	2.1	75	7.39	67.83	24.76	0	Yedoma upland	MIS 3	47-36
2499	SOB18-06-34	2018	July	Sobo-Sise Island	72.53812	128.28267	Yedoma upland	1.4	24.6	47	2.5	64	9.5	68.74	21.73	0	Yedoma upland	MIS 3	

2538	Tur-1-S-16	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.884	4.62	0.11	250.7	0.25	1.42	98.3	0	fluvial	MIS 2	15	
2539	Tur-2-1	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.477	1.04	0.14	268.3	0.43	1.24	98.3	0	fluvial	MIS 3	52-29	
2540	Tur-2-2	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.317	1.2	324	0.01	1.03	99	0	fluvial	MIS 3	52-29		
2541	Tur-2-3	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.227	1.29	0.1	337.9	0.45	1.5	98.1	0	fluvial	MIS 3	52-29	
2542	Tur-2-4	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.147	1.37	0.05	299.6	1.02	1.84	97.1	0	fluvial	MIS 3	52-29	
2543	Tur-2-5	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.067	1.45	0.11	290	0.22	1.12	98.7	0	fluvial	MIS 3	52-29	
2544	Tur-2-6	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	0.007	1.52	340.5	0.64	1.47	97.9	0	fluvial	MIS 3	52-29		
2545	Tur-2-7	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.033	1.55	0.05	319.5	1.06	4.17	94.8	0	fluvial	MIS 3	52-29	
2546	Tur-2-8	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.123	1.64	16.25	0.05	280.7	0.45	1.11	98.4	0	fluvial	MIS 3	52-29
2547	Tur-2-9	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.353	1.87	0.12	260.7	0.06	0.57	99.4	0	fluvial	MIS 3	52-29	
2548	Tur-2-10	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.433	1.95	0.05	289.3	0.4	1.64	98	0	fluvial	MIS 3	52-29	
2549	Tur-2-11	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.523	2.04	13.12	0.05	222.5	3.95	11.71	84.3	0	fluvial	MIS 3	52-29
2550	Tur-2-12	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.633	2.15	0.05	200.4	3.77	11.03	85.2	0	fluvial	MIS 3	52-29	
2551	Tur-2-13	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.733	2.25	0.05	233.5	1.1	3.71	95.2	0	fluvial	MIS 3	52-29	
2552	Tur-2-14	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.823	2.34	0.05	228	2.04	6.08	91.9	0	fluvial	MIS 3	52-29	
2553	Tur-2-15	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-0.913	2.43	18.63	0.12	244.4	0.7	2.62	96.7	0	fluvial	MIS 3	52-29
2554	Tur-2-16	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-1.043	2.56	0.11	277.8	0.4	1.44	98.2	0	fluvial	MIS 3	52-29	
2555	Tur-2-17	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-1.093	2.61	0.13	259.4	0.39	2.16	97.5	0	fluvial	MIS 3	52-29	
2556	Tur-2-18	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-1.273	2.79	0.14	271.2	0.44	2.88	96.7	0	fluvial	MIS 3	52-29	
2557	Tur-2-19	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-1.883	3.4	0.13	232.1	0.81	3.05	96.1	0	fluvial	MIS 3	52-29	
2558	Tur-2-20	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.023	3.54	19.09	0.12	286.4	0.46	2.67	96.9	0	fluvial	MIS 3	52-29
2559	Tur-2-21	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.303	3.82	0.11	172.4	8.36	28.74	62.9	0	fluvial	MIS 3	52-29	
2560	Tur-2-22	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.383	3.9	18.43	0.05	284	1.16	4.28	94.6	0	fluvial	MIS 3	52-29
2561	Tur-2-23	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.493	4.01	0.15	189.2	1.06	2.67	96.3	0	fluvial	MIS 3	52-29	
2562	Tur-2-24	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.593	4.11	0.05	373.3	0.09	0.84	99.1	0	fluvial	MIS 3	52-29	
2563	Tur-2-25	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.633	4.15	18.83	0.1	299.9	0.95	1.73	97.3	0	fluvial	MIS 3	52-29
2564	Tur-2-26	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.693	4.21	0.11	416.2	0.18	1.26	98.6	0	fluvial	MIS 3	52-29	
2565	Tur-2-27	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.803	4.32	14.82	0.11	321.3	0.41	1.79	97.8	0	fluvial	MIS 3	52-29
2566	Tur-2-28	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-2.993	4.51	0.12	289.1	1.03	1.57	97.4	0	fluvial	MIS 3	52-29	
2567	Tur-2-29	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-3.173	4.69	18.43	0.1	240.5	0.67	1.12	98.2	0	fluvial	MIS 3	52-29
2568	Tur-2-30	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-3.363	4.88	0.2	238	2.05	6	92	0	fluvial	MIS 3	52-29	
2569	Tur-2-31	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-3.633	5.15	0.05	401.6	0.05	1.01	98.9	0	fluvial	MIS 3	52-29	
2570	Tur-2-32	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-3.693	5.21	17.36	0.05	405.8	0.11	1.08	98.8	0	fluvial	MIS 3	52-29
2571	Tur-2-33	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-3.823	5.34	0.05	367.1	0.11	1.18	98.7	0	fluvial	MIS 3	52-29	
2572	Tur-2-34	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-3.883	5.4	19.35	0.05	366.2	0	0.37	99.6	0	fluvial	MIS 3	52-29
2573	Tur-2-35	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-4.053	5.57	0.05	398.5	0.02	0.7	99.3	0	fluvial	MIS 3	52-29	
2574	Tur-2-36	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-4.133	5.65	19.16	0.05	385.9	0.15	1.11	98.7	0	fluvial	MIS 3	52-29
2575	Tur-2-37	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-4.213	5.73	0.13	266.7	1.08	2.41	96.5	0	fluvial	MIS 3	52-29	
2576	Tur-2-38	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-4.283	5.8	0.11	271.4	1.47	3.8	94.7	0	fluvial	MIS 3	52-29	
2577	Tur-2-40	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-4.383	5.9	42.73	0.2	153.6	2.26	9.24	88.5	0	fluvial	MIS 3	52-29
2578	Tur-2-41	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-4.483	6	0.44	168.9	2.12	13.78	84.1	0	fluvial	MIS 3	52-29	

2615	Tur-2-78	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-7.623	9.14	22.96	1.49	94.11	3.4	29.6	67	0	fluvial	MIS 3	52-29
2616	Tur-2-79	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-7.733	9.25	0.66	171.1	1.34	8.66	90	0	fluvial	MIS 3	52-29	
2617	Tur-2-80	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-7.783	9.3	0.52	128.4	2.72	18.28	79	0	fluvial	MIS 3	52-29	
2618	Tur-2-81	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-7.833	9.35	0.36	119.9	1.71	13.59	84.7	0	fluvial	MIS 3	52-29	
2619	Tur-2-82	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-7.873	9.39	0.27	119	1.92	13.28	84.8	0	fluvial	MIS 3	52-29	
2620	Tur-2-83	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-7.953	9.47	0.33	91.59	3.37	31.13	65.5	0	fluvial	MIS 3	52-29	
2621	Tur-2-84	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.033	9.55	0.3	134.3	1.87	12.13	86	0	fluvial	MIS 3	52-29	
2622	Tur-2-85	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.303	9.82	0.36	122.6	1.82	12.78	85.4	0	fluvial	MIS 3	52-29	
2623	Tur-2-86	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.373	9.89	0.18	130.3	1.59	11.11	87.3	0	fluvial	MIS 3	52-29	
2624	Tur-2-87	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.483	10	26.36	0.26	146.1	1.41	9.09	89.5	0	fluvial	MIS 3	52-29
2625	Tur-2-88	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.503	10.02	0.16	178.5	1.09	3.59	95.3	0	fluvial	MIS 3	52-29	
2626	Tur-2-89	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.563	10.08	0.34	153.5	1.32	6.4	92.3	0	fluvial	MIS 3	52-29	
2627	Tur-2-90	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.653	10.17	0.37	131.7	1.77	11.43	86.8	0	fluvial	MIS 3	52-29	
2628	Tur-2-91	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.713	10.23	0.23	152.5	1.15	6.8	92.1	0	fluvial	MIS 3	52-29	
2629	Tur-2-92	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.783	10.03	21.88	0.17	171.8	1.12	5.79	93.1	0	fluvial	MIS 3	52-29
2630	Tur-2-93	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.853	10.37	0.27	163.3	1.24	8.76	90	0	fluvial	MIS 3	52-29	
2631	Tur-2-94	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-8.933	10.45	0.26	155.1	1.76	13.04	85.2	0	fluvial	MIS 3	52-29	
2632	Tur-2-95	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.013	10.53	21.63	0.19	169.1	1.41	7.94	90.7	0	fluvial	MIS 3	52-29
2633	Tur-2-96	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.083	10.6	0.22	178.9	0.88	3.98	95.1	0	fluvial	MIS 3	52-29	
2634	Tur-2-97	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.143	10.66	0.17	141.8	1	4.96	94	0	fluvial	MIS 3	52-29	
2635	Tur-2-98	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.213	10.73	18.17	0.15	198.4	1.06	5.66	93.3	0	fluvial	MIS 3	52-29
2636	Tur-2-99	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.303	10.82	0.28	140.9	1.31	8.89	89.8	0	fluvial	MIS 3	52-29	
2637	Tur-2-100	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.363	10.88	0.37	148.3	1.52	10.18	88.3	0	fluvial	MIS 3	52-29	
2638	Tur-2-101	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.403	10.92	0.22	219	1.03	4.3	94.7	0	fluvial	MIS 3	52-29	
2639	Tur-2-102	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.483	11	17.63	0.11	268.6	0.17	1.59	98.2	0	fluvial	MIS 3	52-29
2640	Tur-2-103	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.583	11.1	0.05	311	0.01	1.42	98.6	0	fluvial	MIS 3	52-29	
2641	Tur-2-104	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.653	11.17	0.05	228.5	1.32	6.35	92.3	0	fluvial	MIS 3	52-29	
2642	Tur-2-105	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.713	11.23	0.11	247.6	0.76	1.76	97.5	0	fluvial	MIS 3	52-29	
2643	Tur-2-106	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.783	11.3	0.13	261.9	0.37	1.94	97.7	0	fluvial	MIS 3	52-29	
2644	Tur-2-107	2005	August	Turakh Island	72.974	123.7986	Non-Yedoma upland	-9.853	11.37	17.63	0.17	185.9	0.28	3.26	96.5	0	fluvial	MIS 3	52-29
2645	YU1-1	2013	August	Yukechi	61.763267	130.467736	DTLB	0.1	23.97	4.01	30.2	7.6	58.6	33.8	0	thermokarst	MIS 1	4-10	
2646	YU1-10	2013	August	Yukechi	61.763267	130.467736	DTLB	1.79	22.03	0.52	18.51	10.6	68.7	20.7	0	thermokarst	MIS 3	30	
2647	YU1-11	2013	August	Yukechi	61.763267	130.467736	DTLB	1.87	22.46	0.52	21.09	9	70	21	0	thermokarst	MIS 3	30	
2648	YU1-12	2013	August	Yukechi	61.763267	130.467736	DTLB	1.97	22.98	0.55	17.89	10.5	69.2	20.3	0	thermokarst	MIS 3	30	
2649	YU1-13	2013	August	Yukechi	61.763267	130.467736	DTLB	2.13	29.76	1.4	16.63	9.8	77.1	13.1	0	thermokarst	MIS 3	30	
2650	YU1-14	2013	August	Yukechi	61.763267	130.467736	DTLB	2.26	29.5	1.35	17.42	10.3	71.4	18.3	0	thermokarst	MIS 3	30	
2651	YU1-15	2013	August	Yukechi	61.763267	130.467736	DTLB	2.42	29.31	1.26	14.96	10.9	74.2	14.9	0	thermokarst	MIS 3	30	
2652	YU1-16	2013	August	Yukechi	61.763267	130.467736	DTLB	2.57	37.67	1.1	16.39	10.9	72.1	17	0	thermokarst	MIS 3	30	
2653	YU1-17	2013	August	Yukechi	61.763267	130.467736	DTLB	2.69	45	1.16	16.1	10.8	74.7	14.5	0	thermokarst	MIS 3	30	
2654	YU1-18	2013	August	Yukechi	61.763267	130.467736	DTLB	2.82	40.48	1.1	31.39	7.6	59.3	33.1	0	thermokarst	MIS 3	30	
2655	YU1-19	2013	August	Yukechi	61.763267	130.467736	DTLB	2.97	36.39	0.78	15.16	11.4	75	13.6	0	thermokarst	MIS 3	3	

2692	YU3-2	2013	August	Yukechi	61.764952	130.465249	DTLB	0.38	22.74	0.38	17.39	10.3	72.4	17.3	0	thermokarst	MIS 1	0-10
2693	YU3-3	2013	August	Yukechi	61.764952	130.465249	DTLB	0.81	24.27	0.55	15.55	10.7	74.6	14.7	0	thermokarst	MIS 1	0-10
2694	YU3-4	2013	August	Yukechi	61.764952	130.465249	DTLB	0.92	25.16	0.57	17.34	10.4	71.5	18.1	0	thermokarst	MIS 1	0-10
2695	YU3-5	2013	August	Yukechi	61.764952	130.465249	DTLB	1	26.36	0.7	16.07	11.2	72.9	15.9	0	thermokarst	MIS 1	0-10
2696	YU3-6	2013	August	Yukechi	61.764952	130.465249	DTLB	1.13	26.09	0.62	16.65	11.3	70.5	18.2	0	thermokarst	MIS 3	30-35
2697	YU3-7	2013	August	Yukechi	61.764952	130.465249	DTLB	1.49	28.51	0.93	13.71	12.1	73.4	14.5	0	thermokarst	MIS 3	30-35
2698	YU3-8	2013	August	Yukechi	61.764952	130.465249	DTLB	1.78	30.24	1.34	14.44	12.1	71.6	16.3	0	thermokarst	MIS 3	30-35
2699	YU3-9	2013	August	Yukechi	61.764952	130.465249	DTLB	1.9	27.78	0.97	14.26	11.8	75.8	12.4	0	thermokarst	MIS 3	30-35
2700	YU4-1	2013	August	Yukechi	61.765013	130.464312	DTLB	0.23	20.8	0.72	14.4	12.3	72.1	15.6	0	thermokarst		
2701	YU4-10	2013	August	Yukechi	61.765013	130.464312	DTLB	2	30.09	1.37	16.16	11.1	72.4	16.5	0	thermokarst		
2702	YU4-11	2013	August	Yukechi	61.765013	130.464312	DTLB	2.19	30.55	1.7	18.93	9.7	69.8	20.5	0	thermokarst		
2703	YU4-12	2013	August	Yukechi	61.765013	130.464312	DTLB	2.28	29.52	1.94	19.28	10.3	67.5	22.2	0	thermokarst		
2704	YU4-13	2013	August	Yukechi	61.765013	130.464312	DTLB	2.56	33.39	2.58	16.64	11.2	70	18.8	0	thermokarst		
2705	YU4-14	2013	August	Yukechi	61.765013	130.464312	DTLB	2.74	30.56	1.56	18.2	9.8	71.6	18.6	0	thermokarst		
2706	YU4-15	2013	August	Yukechi	61.765013	130.464312	DTLB	2.9	32.93	1.94	19.61	9.8	68.4	21.8	0	thermokarst		
2707	YU4-16	2013	August	Yukechi	61.765013	130.464312	DTLB	3.16	30.87	1.85	15.84	11.7	73	15.3	0	thermokarst		
2708	YU4-17	2013	August	Yukechi	61.765013	130.464312	DTLB	3.24	30.93	1.49	20.83	9.7	64.6	25.7	0	thermokarst		
2709	YU4-2	2013	August	Yukechi	61.765013	130.464312	DTLB	0.47	22.9	0.44	16.99	10.3	72.3	17.4	0	thermokarst		
2710	YU4-3	2013	August	Yukechi	61.765013	130.464312	DTLB	0.8	22.36	0.32	25.22	8.8	59.6	31.6	0	thermokarst		
2711	YU4-4	2013	August	Yukechi	61.765013	130.464312	DTLB	0.9	20.97	0.32	22.18	8.7	65.6	25.7	0	thermokarst		
2712	YU4-5	2013	August	Yukechi	61.765013	130.464312	DTLB	1.15	19.47	0.32	20.46	8.6	72.3	19.1	0	thermokarst		
2713	YU4-6	2013	August	Yukechi	61.765013	130.464312	DTLB	1.27	21.15	0.34	22.01	9.8	62.9	27.3	0	thermokarst		
2714	YU4-7	2013	August	Yukechi	61.765013	130.464312	DTLB	1.5	22.2	0.39	15.56	11.7	72.7	15.6	0	thermokarst		
2715	YU4-8	2013	August	Yukechi	61.765013	130.464312	DTLB	1.75	23.11	0.75	29.13	7.7	58.1	34.2	0	thermokarst		
2716	YU4-9	2013	August	Yukechi	61.765013	130.464312	DTLB	1.85	25.34	0.92	25.24	8.6	59.3	32.1	0	thermokarst		
2717	YU5-1	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	0.1	30.88	1.34	17.81	10.7	69.1	20.2	0	Yedoma upland		
2718	YU5-10	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.05	36.19	2.28	24.4	9.6	59.7	30.7	0	Yedoma upland	MIS 3	30-45
2719	YU5-11	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.16	39.21	2.44	19.17	10.4	66.5	23.1	0	Yedoma upland	MIS 3	30-45
2720	YU5-12	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.32	35.34	1.64	17.69	10.9	67.9	21.2	0	Yedoma upland	MIS 3	30-45
2721	YU5-13	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.42	33.51	1.72	27.45	8.1	58.8	33.1	0	Yedoma upland	MIS 3	30-45
2722	YU5-14	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.52	33	1.63	17.76	10.8	70.2	19	0	Yedoma upland	MIS 3	30-45
2723	YU5-15	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.72	31.62	1.7	21.16	9.5	65.2	25.3	0	Yedoma upland	MIS 3	30-45
2724	YU5-16	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	2.91	31.89	1.8	19.38	10.1	66.1	23.8	0	Yedoma upland	MIS 3	30-45
2725	YU5-17	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	3.09	30.14	1.33	18.98	10.7	66.5	22.8	0	Yedoma upland	MIS 3	30-45
2726	YU5-2	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	0.3	37.38	2.06	18.16	11.1	67.6	21.3	0	Yedoma upland	MIS 3	30-45
2727	YU5-3	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	0.5	41.81	1.8	16.02	11.6	71.9	16.5	0	Yedoma upland	MIS 3	30-45
2728	YU5-4	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	0.8	41.39	2.52	16.06	10.8	73.6	15.6	0	Yedoma upland	MIS 3	30-45
2729	YU5-5	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	1.04	42.56	2.36	16.93	11.2	70.6	18.2	0	Yedoma upland	MIS 3	30-45
2730	YU5-6	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	1.5	38.15	2.46	16.36	11.4	70.4	18.2	0	Yedoma upland	MIS 3	30-45
2731	YU5-7	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	1.6	31.19	2	17.33	11.5	66.4	22.1	0	Yedoma upland	MIS 3	30-45
2732	YU5-8	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	1.76	32.12	1.62	17.01	10.8	71.2	18	0	Yedoma upland	MIS 3	30-45
2733	YU5-9	2013	August	Yukechi	61.766853	130.469527	Yedoma upland	1.88	31.17	1.66	20.96	10.2	63.2	26				

2769	YUK15-YED1 I 19 - 23	2015	Yukechi	61.75967	130.47438	Yedoma upland	0.21	20	1.25	10.17	8.06	76.46	15.49	0	Yedoma upland	MIS 2	26-18	hdl:10013/epic.2e1a8ca1-3b83-4d7f-8c
2770	YUK15-YED1 I 54 - 57	2015	Yukechi	61.75967	130.47438	Yedoma upland	0.56	25.62	0.05	24.45	18.29	75.52	6.19	0	Yedoma upland	MIS 2	26-18	
2771	YUK15-YED1 II 295 - 301	2015	Yukechi	61.75967	130.47438	Yedoma upland	2.98	29.39	1.41	27.41	19.62	74.98	5.4	0	Yedoma upland	MIS 2	26-18	
2772	YUK15-YED1 III 409 - 41'	2015	Yukechi	61.75967	130.47438	Yedoma upland	4.13	34.77	1.32	20.27	18.01	75.12	6.87	0	Yedoma upland	MIS 2	26-18	
2773	YUK15-YED1 IV 450 - 45	2015	Yukechi	61.75967	130.47438	Yedoma upland	4.54	35.63	1.29	20.62	20.82	71.69	7.49	0	Yedoma upland	MIS 2	26-18	
2774	YUK15-YED1 V 548 - 557	2015	Yukechi	61.75967	130.47438	Yedoma upland	5.53	40.76	1.31	16.34	13.95	76.87	9.18	0	Yedoma upland	MIS 2	26-18	
2775	YUK15-YED1 V 586 - 593	2015	Yukechi	61.75967	130.47438	Yedoma upland	5.9	30.73	1.06	21.18	21.85	70.55	7.6	0	Yedoma upland	MIS 3	50-36	
2776	YUK15-YED1 VI 655 - 66	2015	Yukechi	61.75967	130.47438	Yedoma upland	6.59	30.94	1.11	18.07	16.69	74.91	8.41	0	Yedoma upland	MIS 3	50-36	
2777	YUK15-YED1 VI 685-691	2015	Yukechi	61.75967	130.47438	Yedoma upland	6.88	57.4	0.05	15.32	12.83	77.64	9.52	0	Yedoma upland	MIS 3	50-36	
2778	YUK15-YED1 XII 1005 - 1	2015	Yukechi	61.75967	130.47438	Yedoma upland	10.08	53.68	0.05	33.25	35.15	59.52	5.33	0	Yedoma upland	MIS 3	50-36	
2779	YUK15-YED1 XIII 1069 - :	2015	Yukechi	61.75967	130.47438	Yedoma upland	10.72	32.12	0.05	88.55	62.43	35.05	2.47	0	Yedoma upland	MIS 3	50-36	
2780	YUK15-YED1 XIV 1163 -	2015	Yukechi	61.75967	130.47438	Yedoma upland	11.65	23.67	0.05	137.8	82.42	16.22	1.37	0	Yedoma upland	MIS 3	50-36	
2781	YUK15-YED1 XV 1206 - 1	2015	Yukechi	61.75967	130.47438	Yedoma upland	12.09	24.68	0.05	119.5	74.13	23.72	2.15	0	Yedoma upland	MIS 3	50-36	
2782	YUK15-YED1 XVI 1256 -	2015	Yukechi	61.75967	130.47438	Yedoma upland	12.58	26.8	0.05	114.5	77.51	20.45	2.05	0	Yedoma upland	MIS 3	50-36	
2783	YUK15-YED1 XVII 1315 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	13.19	21.69	0.05	156.3	81.41	16.89	1.68	0	Yedoma upland	MIS 3	50-36		
2784	YUK15-YED1 XVII 1364 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	13.69	24.31	0.05	135.6	85.56	12.99	1.45	0	Yedoma upland	MIS 3	50-36		
2785	YUK15-YED1 XVIII 1414 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	14.17	27.61	0.05	79.14	65.77	31.61	2.62	0	Yedoma upland	MIS 3	50-36		
2786	YUK15-YED1 XVIII 1467 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	14.7	15.82	0.05	152	80.6	17.6	1.8	0	Yedoma upland	MIS 3	50-36		
2787	YUK15-YED1 XIX 1560 - :	2015	Yukechi	61.75967	130.47438	Yedoma upland	15.63	18.99	0.05	151.1	81.06	17.16	1.79	0	Yedoma upland	MIS 3	50-36	
2788	YUK15-YED1 XX 1632 - 1	2015	Yukechi	61.75967	130.47438	Yedoma upland	16.36	20.4	0.05	72.05	58.62	38.22	3.16	0	Yedoma upland	MIS 3	50-36	
2789	YUK15-YED1 XX 1677 - 1	2015	Yukechi	61.75967	130.47438	Yedoma upland	16.79	19.75	0.05	88.95	66.53	31.1	2.38	0	Yedoma upland	MIS 3	50-36	
2790	YUK15-YED1 XX 1711 - 1	2015	Yukechi	61.75967	130.47438	Yedoma upland	17.14	19.06	0.05	91.77	68.24	29.48	2.29	0	Yedoma upland	MIS 3	50-36	
2791	YUK15-YED1 XXI 1758 - :	2015	Yukechi	61.75967	130.47438	Yedoma upland	17.6	16.53	0.05	116.4	75.24	22.6	2.16	0	Yedoma upland	MIS 3	50-36	
2792	YUK15-YED1 XXI 1820 - :	2015	Yukechi	61.75967	130.47438	Yedoma upland	18.24	26.84	0.05	69.02	56.87	40.44	2.69	0	Yedoma upland	MIS 3	50-36	
2793	YUK15-YED1 XXI 1853 - :	2015	Yukechi	61.75967	130.47438	Yedoma upland	18.56	15.51	0.05	163.2	90.34	8.53	1.13	0	Yedoma upland	MIS 3	50-36	
2794	YUK15-YED1 XXII 1920 -	2015	Yukechi	61.75967	130.47438	Yedoma upland	19.24	22.28	0.05	191.6	86.99	11.41	1.6	0	Yedoma upland	MIS 3	50-36	
2795	YUK15-YED1 XXII 1920 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	19.24	36.29	0.88	26.36	18.76	76.43	4.81	0	Yedoma upland	MIS 3	50-36		
2796	YUK15-YED1 XXII 1996 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	19.99	53.59	1.01	25.75	15.35	79.41	5.24	0	Yedoma upland	MIS 3	50-36		
2797	YUK15-YED1 XXII 2033 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	20.36	35.22	1.7	26.69	18.5	76.73	4.77	0	Yedoma upland	MIS 3	50-36		
2798	YUK15-YED1 XXII 2076 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	20.79	46.77	1.53	24.8	15.65	79.03	5.32	0	Yedoma upland	MIS 3	50-36		
2799	YUK15-YED1 XXIII 2135 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	21.4	30.71	1.39	24.47	15.66	78.6	5.74	0	Yedoma upland	MIS 3	50-36		
2800	YUK15-YED1 XXIII 2207 - 2015	Yukechi	61.75967	130.47438	Yedoma upland	22.1	35.82	0.05	17.71	11.98	79.56	8.46	0	Yedoma upland	MIS 3	50-36		
2801	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	8.36	17.07	0.05						thermokarst			no datings available https://doi.pangaea.de/10.1594/PANG
2802	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	8.52	16	0.05						thermokarst			
2803	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	8.64	13.97	0.05						thermokarst			
2804	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	8.87	16.15	0.05						thermokarst			
2805	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	9.04	16.73	0.05						thermokarst			
2806	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	9.3	19.05	0.05						thermokarst			
2807	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	9.48	19.67	0.05						thermokarst			
2808	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	9.73	17.01	0.05						thermokarst			

2846	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	16.7	43.51	0.05	thermokarst	
2847	YUK15-YUL15	2015	Yukechi	61.76397	130.46442	DTLB	16.94	46.76	0.05	thermokarst	
2848	YU7-1	2013	August	Yukechi	61.763349	130.472691	DTLB	0.8	20.26	0.43	Yedoma upland
2849	YU7-2	2013	August	Yukechi	61.763349	130.472691	DTLB	1.35	22.32	0.33	Yedoma upland
2850	YU7-3	2013	August	Yukechi	61.763349	130.472691	DTLB	1.65	29.35	0.57	Yedoma upland
2851	YU7-4	2013	August	Yukechi	61.763349	130.472691	DTLB	1.95	32.56	0.78	Yedoma upland
2852	YU7-5	2013	August	Yukechi	61.763349	130.472691	DTLB	2.25	31.91	0.89	Yedoma upland
2853	YU7-6	2013	August	Yukechi	61.763349	130.472691	DTLB	2.45	31.92	0.89	Yedoma upland
2854	YU7-7	2013	August	Yukechi	61.763349	130.472691	DTLB	2.75	36.59	1.03	Yedoma upland

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Selbstständigkeitserklärung

Hiermit versichere ich, dass ich die vorliegende Arbeit ohne Hilfe Dritter und ohne Zuhilfenahme anderer als der angegebenen Quellen und Hilfsmittel angefertigt habe. Die den benutzten Quellen wörtlich oder inhaltlich entnommenen Stellen sind als solche kenntlich gemacht.

Die „Richtlinie zur Sicherung guter wissenschaftlicher Praxis für Studierende an der Universität Potsdam (Plagiatsrichtlinie) - Vom 20. Oktober 2010“, im Internet unter <http://uni-potsdam.de/ambek/ambek2011/1/Seite7.pdf>, habe ich zur Kenntnis genommen.

Ort, Datum

Unterschrift