Tarbiat Modares University

The International Journal of Humanities

Received: 2025/01/31
Accepted: 2025/07/20
Published: 2025/09/22

1. Assosciate Professor, Department of Archaeology, Shahrekord University, Shahrekord, Iran.
*Corresponding Author.
Email:
heydarianm@sku.ac.ir

2. MA Student, Department of Archaeology, Shahrekord University, Shahrekord, Iran.
Email:
norifakhrs@gmail.com

How to cite this article: Heydarian, M., & Nourifakhr, S. (2025). Tepe Khodai, a Settlement of Several Thousand Years in the Eastern Part of Central Zagros. *The International Journal of Humanities* 32(2): 38–58.

RESEARCH ARTICLE

Tepe Khodai, a Settlement of Several Thousand Years in the Eastern Part of Central Zagros

Mahmood Heydarian[* 1], Sahar Nourifakhr [2]

Abstract

Tepe Khodai is located in the central part of Sonqor, about 8.80 meters above the surrounding agricultural land. Besides determining the area and proposing the boundaries of the site, achieving the extent of the site across different ancient periods, preventing further destruction by illegal diggers, implementing a stratigraphic program, and developing long-term plans for the site and an agenda was established to address these issues. Questions were raised regarding the size and extent of the site in different ancient periods, as well as how the cultural evidence from these periods was formed. The systematic survey of the site revealed that over 70% of the original estimated area (13,200 m²) has been destroyed, compared to the remaining "healthy" part. Sixteen trenches were arranged in two rows: the first row consisted of trenches 001 to 008, and the second row included trenches 009 to 016. The size of the site was determined by the excavated trenches. Due to the site's topography and the lack of nearby natural or human-made structures, there were no complications affecting this task. The level 1 area and the tape's privacy based on the excavated trenches is 8,780 square meters, while the boundary line of the site is 24246 square meters. The study revealed that this site holds valuable cultural artefacts from various periods, including the Chalcolithic, Bronze, Historical, and Islamic eras. It features significant artefacts from notable cultures in the Zagros and Northwestern Iran regions, such as Dalma, Seh Gabi, and Kura-Araxes/Early Trans-Caucasian (ETC), from the 1st millennium BC onward. Furthermore, the site's suitable environmental conditions illuminate various cultural changes that occurred during the Chalcolithic and Bronze Ages in the region. By examining the sequence of its distinct cultural periods, it will be possible to review and revise several aspects of the chronology pertaining to the eastern Zagros region.

Keywords: Tepe Khodai; Central Zagros; Chalcolithic Period; Sonqor; Kermanshah

.

Introduction

The Sonqor Plain is situated near the Kangavar-Asadabad valleys, located north of the main highway known as the High Road (also called the Silk/Great Khorasan Road). This route is the most prominent east-west connection through central western Iran, extending from the Iranian

plateau to the Mesopotamian lowlands. (Henrickson, 1986). It lies in the northeastern part of Kermanshah, in western Iran (see Figure 1, top). Although the Sonqor region has received less archaeological attention compared to other areas in Zagros, it is recognized as an archaeological area in central Zagros (Heydarian, 2004; 2009). Among the projects completed in the region, the following can be highlighted: Gholamreza Masoumi (1978) has identified and marked 16 ancient sites in the area, including Gerdaleh, Bavaleh, Paqaleah, Kharmanjah, Aali Bolagh, Afarianaj, Heydargholi, Ebliseh, Kalaveh, Sarokhan, MelehKaow, Kani Golafshan, Safarcheshmeh, Qeshlaq, and Qalakon (Masoumi, 2004: 190). Tepe Janani is a site located 19 kilometers north of Sonqor, where rescue excavation was conducted by Youssef Moradi. The layers at this site have a thickness of one meter and the ceramics found here belong to the Clinky and Sgraffiato type, dating back to the Parthian and Ilkhanid period (according to an interview with the project supervisor 2001). In 2006, a systematic survey was conducted at the prehistoric site of Tepe Khodai (Heydarian, 2006). Subsequently, in 2008, the site's unfinished stratigraphy was examined under the direction of Heydarian. Unfortunately, due to changes in management at the provincial heritage office and insufficient financial support, this project was abandoned after only a few days. As a result, the study of the stratigraphic sequence at this site, which is one of the best locations for such research in the region, remains incomplete (Heydarian, 2008). In August 2018, Amir Beshkani and colleagues surveyed the caves and rock shelters of the region (Beshkani et al., 2011). In 2015, the rescue excavation at Tepe Nadalibaig was one of the last projects completed in the region (Bahranipour, 2016).

Research indicates that human settlements have continuously existed in this area since the Middle Paleolithic, Neolithic, and Early Chalcolithic periods. Based on the distribution of sites, it can be concluded that most prehistoric sites in Sonqor are situated in the most favorable locations with abundant environmental resources. These areas continue to be regarded as suitable for settlement. All of the sites are situated along the banks of the permanent Gavroud River and its sources, or close to springs, aqueducts, and natural water sources. This highlights the crucial role that water plays in supporting human life and habitation (Heydarian, 2014; Heydarian et al., 2014).

The sondage excavation aimed to determine the area and propose the boundaries of Tepe Khodai. This was conducted under the direction of Heydarian on February 17, 2023, and was licensed by the Iranian Center for Archaeological Research (ICAR) under license number 4023930 (Heydarian, 2023). The project's objective was to outline necessary lines, define the boundaries, and establish demarcations for the Tepe Khodai site. This is crucial for improving the management and protection of the site in accordance with legal regulations. When planning for buildings, collections, and historical sites, it is important to define the privacy boundaries of these works as part of the identification and documentation process. Establishing regulations regarding the various elements within these sites is essential for evaluating the legal grounds for protecting the work involved. This evaluation is crucial for addressing issues related to the preservation of these important cultural resources. Arena determination represents the boundary

determined by the trustee of a historical monument, based on legal criteria, to ensure the preservation of the monument. This boundary helps maintain the existence and integrity of the work. According to Clause 12 of Article 3 of the Constitution of the Ministry of Cultural Heritage, Handicrafts, and Tourism, as approved by the Islamic Consultative Assembly, it is the responsibility of the Ministry to define the limits of privacy and protection rules for each work in accordance with the regulations. Besides the legal requirements associated with historical buildings and sites, cultural heritage boundaries are crucial for ensuring their effective management and protection. In addition to achieving this important goal, there are several other objectives to consider. These include determining the size and extent of the site across different ancient periods, preventing further destruction by illegal diggers, implementing a stratigraphic program, and developing long-term plans for the site and an agenda was established to address these issues. Questions were raised regarding the size and extent of the site in different ancient periods, as well as how the cultural evidence from these periods was formed. This site was designated as a national monument in 2005, under registration number 12022.

The Study Area

Tepe Khodai (38 S 751282.98-3844499.13 UTM) is situated in the central part of Sonqor, in the Farsinj district, approximately 1 kilometer northeast of Parsineh village (Figures 1 and 2). The elevation of this site is 1,873 meters above sea level, and it stands approximately 8.80 meters higher than the surrounding agricultural fields to the north. Over the years, much of the area has been leveled and destroyed by local villagers for agricultural purposes. As a result, the dimensions of the remaining healthy part of the site are about 50 meters in length from east to west and around 45 meters in width from north to south. The surface remains indicate that this ancient site measured approximately 120 meters in length in the east-west direction and 110 meters in width in the north-south direction; thus, its area is about 13200 square meters. The Dalekhani mountain range is located southwest of this site, while Kalosh Mountain lies east of modern Parsineh village. The site is situated among the formations of the Zagros Mountains (Braud and Bellon, 1975; Braud and Aghanabati, 1978; Eshraghi et al., 1996; Jafari, 2005). Due to its geological characteristics, this region falls within the Sanandaj-Sirjan Zone according to geological classifications (Stocklin, 1968; Braud and Aghanabati, 1978; Sepahi, 2008; Miri, 2011). The Sanandaj-Sirjan Zone in this region primarily consists of metamorphic and sedimentary rocks formed from limestone and marly limestone. The oldest geological formations in the region date back to the Jurassic period, while the youngest are associated with Quaternary alluvial deposits. Petrographically, the rocks in this area include types of granite, granodiorite, quartz-rich granitoids, and monzodiorite. Additionally, metamorphic rocks such as marble and schist have resulted from intrusions in these geological layers (Miri, 2011; Aliani et al. 2012; Darwishzadeh, 2015). Tepe Khodai is situated in a relatively flat small plain, consisting of thick layers of limestone that form low hills. It rests on the bed of rain-washed clay and limestone sediments. The vegetation of the pasture site and its surroundings is entirely agricultural. Nearby water sources include several aqueducts in the area, which are specifically

designed for agricultural use. One of these aqueducts is situated 45 meters from the western side of the Tepe.

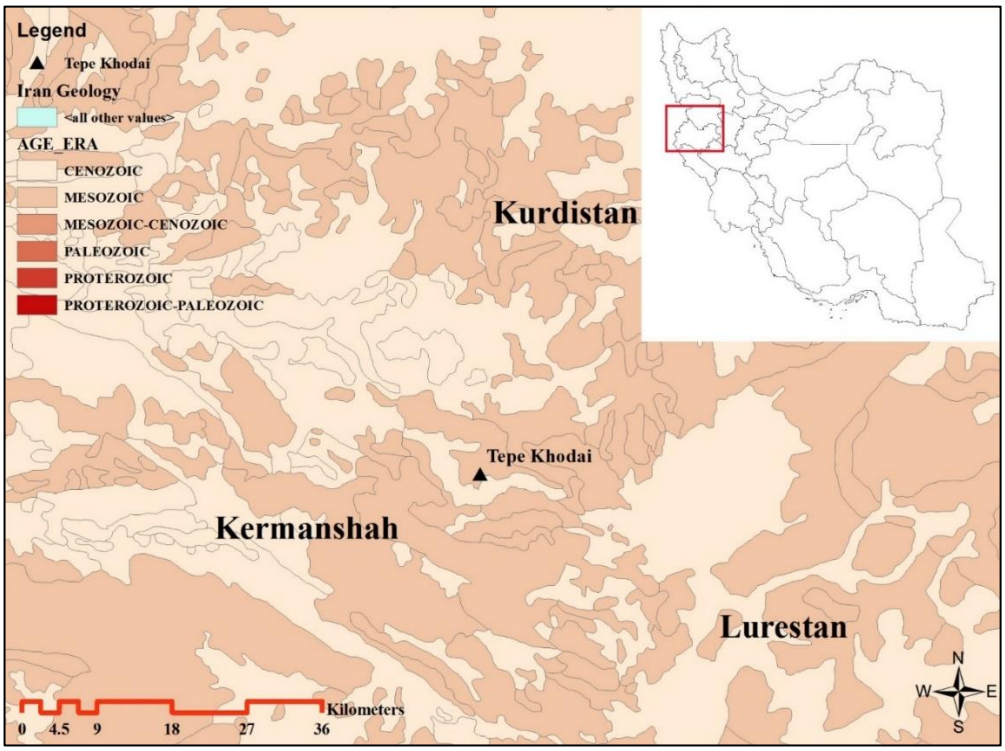

Figure 1. The location of Tepe Khodai relative to Kermanshah and weste Iran.

Figure 2. A general view of Tepe Khodai: A) the southern side, B) the northern side, C) the eastern side and D) the western side (Heydarian, 2023).

Materials and Methodology

In the present study, the initial step in documenting the area involved creating a basic topographic map of the site at a scale of 1:10. The next stage of documentation included establishing the stations, setting up 10 x 10 grids, and determining the locations of the trenches during the excavation process. The surface works indicate that the area of the site measures 220 meters by 180 meters, resulting in a total size of 39,600 square meters. Squares measuring 10 meters by 10 meters were laid out in the southwest part of the site. The western vertical side was labeled with numbers, running from south to north, while the southern horizontal side was labeled with Latin letters, running from west to east. On the western vertical side, the southernmost row of squares was labeled with the number 1, while the westernmost row on the southern horizontal side was labeled with the letter A. To better understand the site's features and landscape, a detailed image of the area was captured using a short-range photogrammetry device, referred to as JL903 MAX, before the excavation of the trenches (see Figure 3). Given the extensive destruction of the site, this work was crucial for establishing the initial placement of trenches in the area. Nearly all the trenches were situated at the site's final boundary, which was evident in the aerial images, approximately 15 to 20 meters from the visible field. To record information and analyze the cultural and natural layers, the standard method of stratigraphy and locus identification was employed. Each distinct layer or entity, whether natural or cultural, that exhibited fixed and stable characteristics about other environmental entities was classified as an independent unit or layer and assigned a locus number. Mathematical numbers were used to designate the trenches, with the first trench assigned the number 001. Each subsequent trench was named according to its specific number, starting from a coefficient of 100. This process was repeated for each additional trench. The first trench, labeled 001, measured 1 x 1 meter and was constructed in the geographical northern direction, located 15 meters east of the designated site. Given the objectives and program outlined, and considering there were no significant obstacles around the site, a total of 16 trenches with identical dimensions were created. Throughout the entire process of working in the trenches, photographs were taken and all relevant information was recorded on forms specific to each trench. After transporting the collected samples to the workshop, representative samples from each trench were selected for the next step, which involved designing and detailed documentation of the work performed.

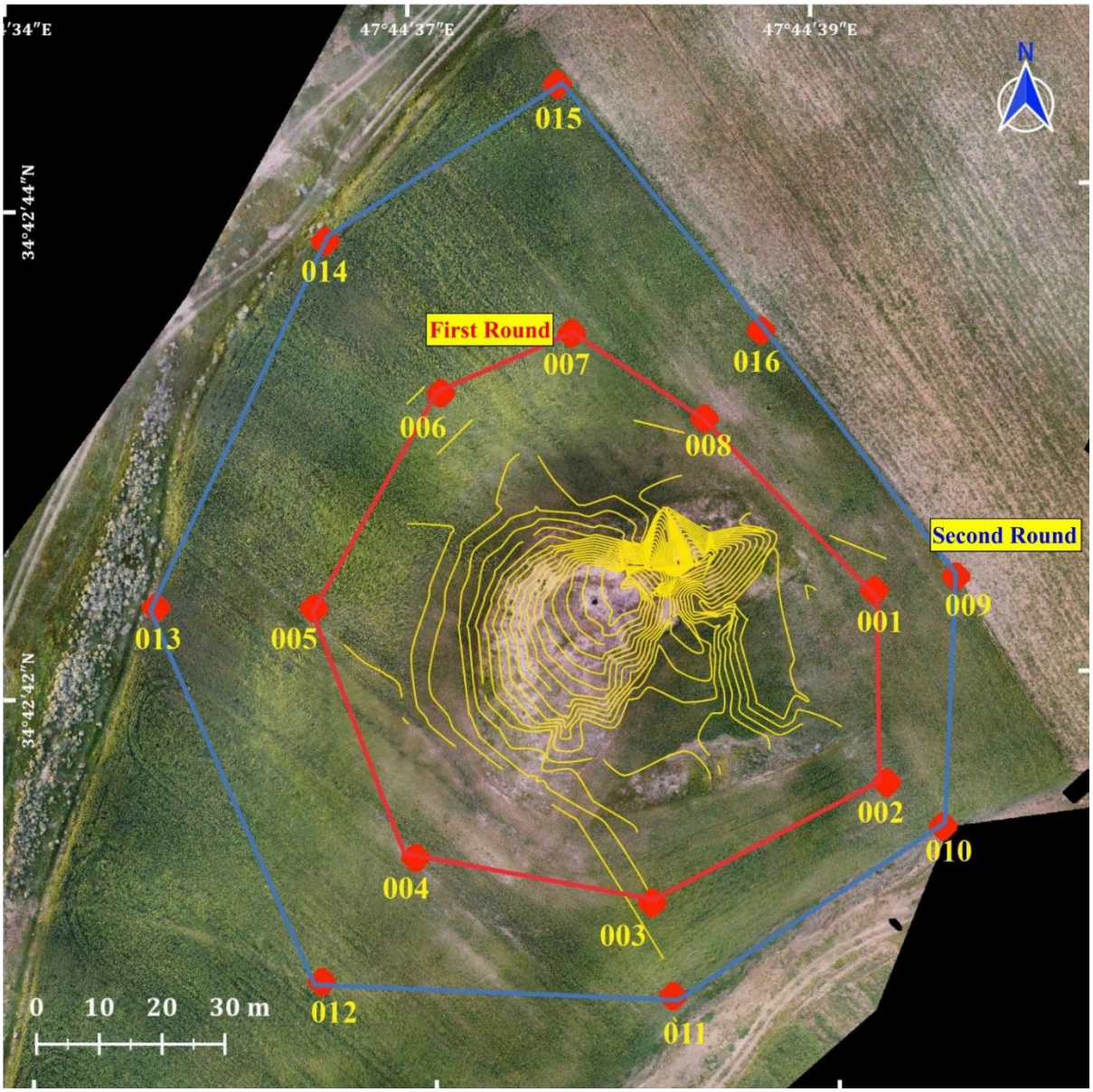

Figure 3. Tepe Khodai, a short-range photogrammetry, trenches were excavated on the site's surface in two rounds, with numbers 1 to 8 for the first round and numbers 9 to 16 for the second round (Heydarian, 2023)

.

Results and Discussion

1: Trenches

Given the extensive destruction of the site, using short-range photogrammetry was crucial for establishing the initial placement of trenches in the area and nearly all the trenches were situated at the site's final boundary, which was evident in the aerial images, approximately 15 to 20 meters from the visible field. Table 1 displays the exact coordinates of all the trenches. The trenches were arranged in two rows: the first row consisted of trenches 001 to 008, and the second row included trenches 009 to 016. According to the regulations of the General Administration, excavation of the trenches was halted at depths of 50 to 60 cm if pottery fragments or cultural artifacts were discovered. In the second round of excavation, most trenches outside the main area were further excavated to ensure the absence of archaeological

remains, with excavation depths extending from one to two meters. All trenches were documented meticulously by recording evidence, and ancient materials, and taking detailed sections. Figure 4 shows a general view and execution method of the first trench as an example. Similarly, Figure 5 displays the layering section image of one of the trenches.

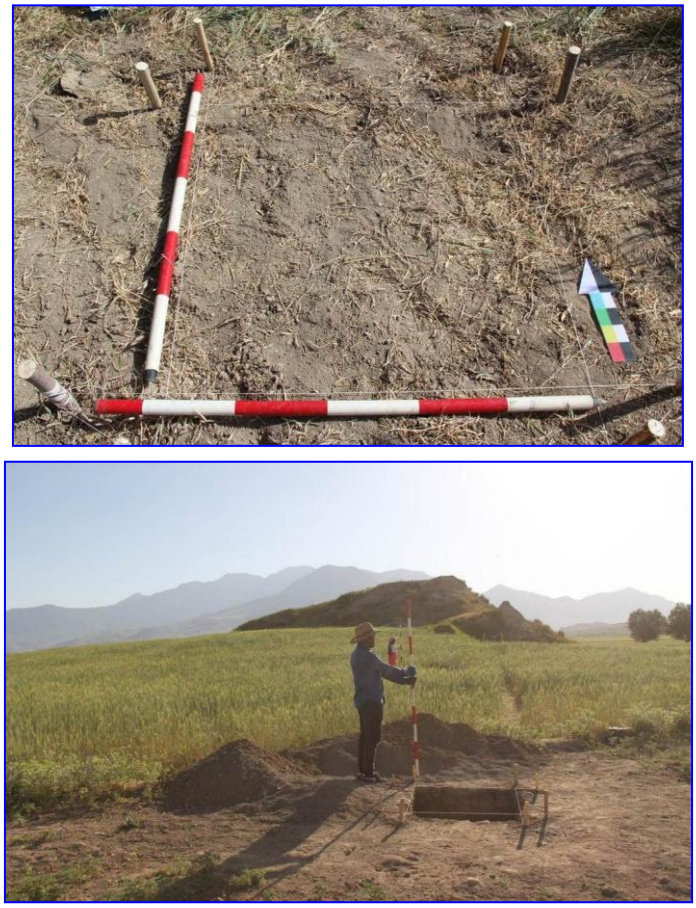

Figure 4. An overview of the site, showing the dimensions and surface soil on the right and the position of the first trench relative to the site on the left.

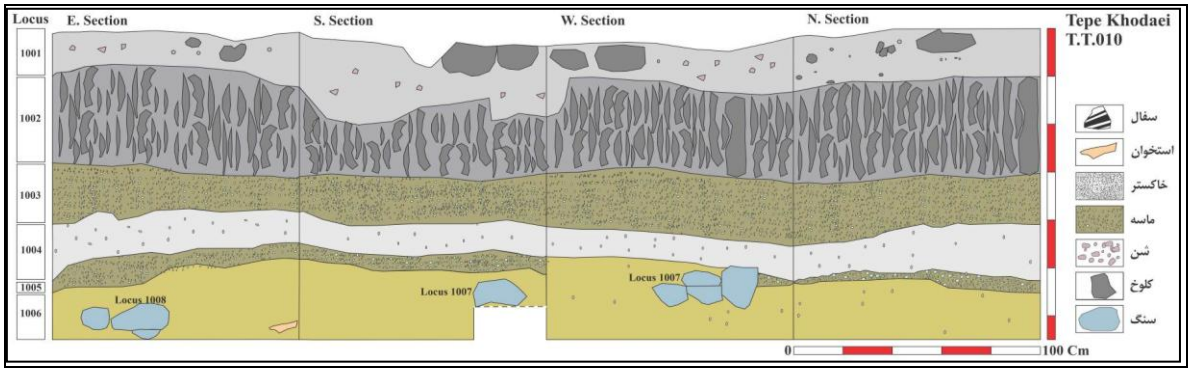

Figure 5. The section is taken from the trench.

A ravine flows along the south side of the site in an east-west direction, presenting a natural complication in that area. To determine the area and boundaries of the site, 16 trenches measuring 1 x 1 meter were created in all main and secondary directions of the site. The level

1 area and privacy of the site were established based on cultural data collected from the drilled trenches and the natural and artificial influences surrounding the tepe. As a result, the first round was defined as the tape's privacy. Due to the absence of cultural layers in trenches numbered 9 to 16, the area marked by these trenches was considered the first-grade boundary line of the site. The inner area within this boundary line was then defined as the legal boundary of the site. Trenches 10 and 11 were situated at the edge of the mentioned ravine on the southern side. Given the frequent accumulations found in the trenches layers on the eastern, southeastern, southern, and southwestern sides, along with the lack of in situ data available for the site, the ravine was considered to mark the extent of ancient artefacts in this part (Figure 3).

Table 1. Geographic information about the trenches placed on the surface of the site Trenches (UTM, 38S).

Trenches	Direction	A (northwest)	B (northeast)	C (southwest)	D (southeast)	Number of identified locus	End depth of excavation
001	East	751329/3844504	751330/3844504	751330/3844503	751329/3844503	3	60 CM
002	Southeast	751330/3844474	751332/3844474	751332/3844472	751330/3844472	2	45 CM
003	South	751293/3844454	751294/3844454	751294/3844453	751293/384453	3	80 CM
004	Southwest	751255/3844462	751257/3844462	751257/3844461	751255/3844461	2	40 CM
005	West	751239/3844501	751240/3844501	751240/3844500	751239/3844500	3	120 CM
006	Northwest	751259/3844535	751261/3844535	751261/3844534	751260/3844534	3	110 CM
007	North	751280/3844545	751281/3844545	751281/3844544	751280/3844544	3	50 CM
008	Northeast	751303/3844532	751303/3844532	751303/3844530	751301/3844530	2	50 CM
009	East	751342/3844506	751343/3844506	751343/3844505	751342/3844505	6	200 CM
010	Southeast	751339/3844467	751341/3844467	751341/3844466	751339/3844466	8	130 CM
011	South	751293/3844454	751294/3844454	751294/3844453	751293/3844453	9	200 CM
012	Southwest	751241/3844442	751242/3844442	751242/3844441	751241/3844440	6	200 CM
013	West	751214/3844501	751215/3844501	751215/3844500	751214/3844500	3	100 CM
014	Northwest	751241/3844560	751242/3844560	751242/3844559	751241/3844559	2	100 CM
015	North	751278/3844585	751279/3844585	751279/3844584	751278/3844584	3	100 CM
016	Northeast	751329/3844504	751330/3844504	751330/3844503	751329/3844503	4	100 CM

2: Archaeological Objects

Another objective of this program was to study and classify the archaeological objects collected from both the excavation and the systematic survey of the site's surface. Accurately calculating the total area of the site was also a key goal. Table 2 outlines the characteristics of several pottery samples and other objects found on the surface as well as inside the trenches (refer to Figures 6 to 9). According to the data obtained from the survey, this site demonstrates a sequence of settlements ranging from the Chalcolithic period to the Islamic era. Consequently, various clay artefacts from this extensive timeline can be identified within the trenches. The pottery dates back to the Chalcolithic, Bronze, Historical, and Islamic periods. However, it appears that there is no in situ data in some trenches; these artifacts likely originate from the surface of the site and have been mixed into different layers due to human activities in later periods. One reason for this is the ongoing agricultural activities that have occurred over time, which have caused artifacts from different periods to mix within the surface layers of the hill. Consequently, the cultural remains from these surface layers were not included in Table 2 or in

the final conclusion. The study only studied materials that were originally found in situ within the trenches. Although there isn't much prehistoric pottery, the shapes and motifs can be compared to Chalcolithic pottery found in sites such as Godin, Sialk, Bakun, and western Iran. Potteries found from the surface are mostly in simple red, painted or incised ones (Figs. 6: 31; 8: 39, 39, 40, 42, 44, 45 and 36). They are all hand-made but their cores are smoked and dark because of not being baked properly. Typologically, the shapes and motifs of these potteries are strikingly similar to those observed in Dalma Tepe (Hamlin, 1975), Seh Gabi (Levine and Young, 1986; Young and Levine, 1974), Siah Bid (Henrickson, 1983; 1985) and some northern sites in Pishkuh of Luristan (Goff, 1971). Pottery motifs (Figs. 7: 31 and 8) are associated with Dalma pottery. It occurs in the pottery found at various archaeological sites, including Tell Oqir, Tellu, Ur, Uruk IV, Gawra, Hasuna, Jamdat al-Nasr, Khafajeh, Yarim, Karkemish, Mersin XXI, the Yanik Chalcolithic layer (Tafel, VII: 141b, VIII: 141c, 141d), Bakun A (Vandenberg, 2000; Alizadeh, 2003: 311. Fig. 42: 4), Shogha, Susa II pottery, (Vandenberg, 2000), Giyan Vc (Vandenberg, 2000: fig. 27: 5, 35, 41), Sialk, Susa pottery, and the pottery from layers 2a, which corresponds to the middle period of Jan Hasan (French, 1962: 31. Fig, 5. 7).

The Red Slip pottery (referenced as numbers 2, 3, and 5 in Figure 6), dating back to the Middle and Late Chalcolithic periods, clearly demonstrates the strong cultural ties of the area with the Hossein Abad and Cheshmenoosh cultures from the Kangavar Valley, specifically between 3200 and 3600 BC. When examining the pottery samples from the 3rd millennium and early 2nd millennium BC (numbers 26 and 28 in Figure 6 and 41 and 47 in Figure 8), one can readily identify distinctive forms and zigzag motifs within these frames that closely resemble the Godin III angular vessels found in Kangavar (Young, 1969: 83, fig. 18: 1). This artistic similarity extends to Class VI b of Haftavan Tepe (Hamlin, 1981: 125, no. 2), Class IV of Dinkhah Tepe (Hamlin, 1974: 139, no. 15b), and various motifs observed in Lorestan (Goff, 1968: 122, fig. 10, nos. 12, 13, 14). These connections not only affirm the significance of these cultures but also highlight the rich tapestry of historical interactions in the region.

Clinki wares (numbers 15 in Figure 6 and 33 in Figure 7) can be compared to samples from several sites, including Khorhe, Noshijan Tepe, the region between Hamadan and Malayer, West Borujerd, Tepe Azna, Noorabad, Tepe Mosala, Asadabad, Kangavar, and Sahne Valleys, as well as Godin Tepe, Bisotun, Holeylan Valley, Mahidasht, around Shahabad, Tepe Azima near Sarpol-e Zahab, Ghaleh Yazdgerd, Central and Northern Kurdistan, and South Azerbaijan, Takht-e Soleyman, Ghaleh Gujar, Ghaleh Zahak, and Mah Neshan. The pottery from these sites generally dates back to the second century BC, with its usage likely declining by the third century AD (Haerinck, 1997: 117). The types of pottery include jars without necks that have outwardly turned edges, necked jars with rounded edges inclined to the outside, bowls with rounded edges, cups with rounded edges featuring several grooves beneath their rims, pots with inwardly bent rounded edges, double-edged vessels inclined outward, and vessels with semi-circular rims turned to the outside (examples no. 11, 12, 16, 17 in Fig. 6, and 20, 24, and 25 in Fig. 7). These pottery styles were common during the Parthian and Sasanian historical periods

and can be compared to samples from Turang Tappe (Lecomte, 1987), Atashkuh (Rahbar, 1998), Kish (Langdon and Harden, 1934), Ghaleh Yazdgerd (Keall and Keall, 1981), Bisotun (Kleiss, 1996), and Mah Neshan (Khosrowzadeh and Aali, 2014).

During the Islamic period, pottery featuring engraved groove motifs became quite prevalent, complementing local styles. Notably, examples such as pottery No. 27 and No. 30 in Figure 7 highlight these decorative elements, predominantly associated with both the early Islamic and late Sassanid periods. The overlap in characteristics from Sasanian pottery to the early Islamic period adds a layer of complexity, making it challenging to definitively classify this pottery as belonging exclusively to one era. The similarities between this type and the late Sasanian pottery (Alizadeh, 2001: 105, Figure 5, No. T1.L59.2) are particularly striking. Furthermore, similar decorative styles have been documented at Tell Madhur in northern Mianrodan, Iraq, reinforcing the significance of this pottery in understanding cultural transitions (Venco Ricciardi, 1970: 71, fig. 87-88 no 7 and fig. 88, no 8-10). This style of decoration is quite common in Ghaleh Yazdgerd (Keall and Keall, 1981: fig. 26). Pottery No. 7 in Figure 6 is an example of simple glazed pottery, which lacks any decorative patterns. Its surface is covered with a single-colored glaze layer. These pottery pieces were produced during the Islamic period using turquoise, blue, green, and brown lead glazes, or a combination of lead glaze and clear alkaline glaze. Such pottery has been found at various sites, including Laodicea Temple Nahavand, Patepe Toisarkan, Kamtepe Kabudarahang, Ecbatana, Qoruq, Ghaleh Babakhanjar in Kabudarahang, Daolat Abad South Qahavand, Dargazin Razan (Zarei and Shabani, 2019: 113-14), Zyenabad (Mohammadi and Shabani, 2016), the Samen Underground City (Hemti Azandariani et al., 2017), Darreh Shahr Ilam (Lakpour, 2014), as well as in areas such as Hamedan, Qorveh, and Sonqor (Bagheri, 2015; Heydarian, 2004, 2008; Zarei and Shabani, 2019; Sharifi and Zarei, 2021). Numerous examples of this type of pottery have been discovered across these locations. Archaeological studies have uncovered various examples of Sgraffito Ware at many Islamic sites throughout Iran, dating from the first to the seventh century Hijri. Sample No. 4 in Figure 10 represents this type of pottery.

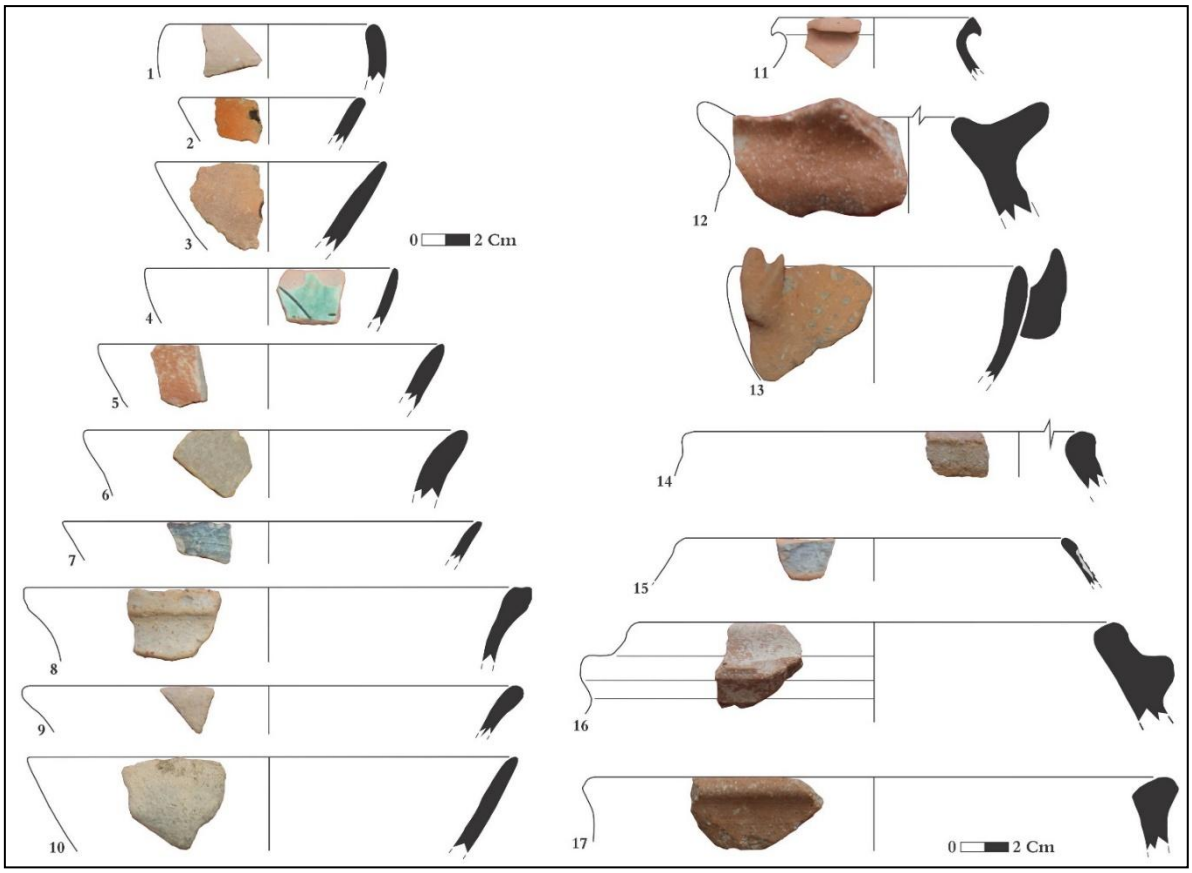

Figure 6. A selection of potteries obtained from the surface and inside different trenches (Heydarian, 2023)

These wares feature a paste that ranges from pale to reddish hues, are wheel-made, and have a colored glaze applied only to the interior. The exterior of the dishes lacks any glaze or decorative elements. While these earthenware are generally well-fired, the quality of most glazes used on them is subpar. The motifs are geometric and include plant designs in a range of glazes: white, milky, green, ocher, and brown. The shapes of the dishes consist mostly of small cups and bowls. These wares were definitively identified in the following locations: Laodicea Temple Nahavand, Patepe Toisarkan, Kamtepe Kabudarahang, Ecbatana, Qoruq, Ghaleh Babakhanjar in Kabudarahang, Daolat Abad South Qahavand, Dargazin Razan (Zarei and Shabani, 2019: 113-14), Zyenabad (Mohammadi and Shabani, 2016), the Samen Underground City (Hemti Azandariani et al., 2017), and Darreh Shahr Ilam (Dolatiari et al., 2016). Additionally, significant findings were noted in areas such as Hamedan, Qorveh, and Sonqor; Qeshlaq, Ibrahim Khan, Parsineh, Qaitasi and Spand (Bagheri, 2015; Heydarian, 2004, 2008; Zarei and Shabani, 2019; Sharifi and Zarei, 2021). Sample No. 32 is an example of black-on-blue painted pottery, commonly found among the pottery from the early and middle centuries of Islam in western Iran. It features underglaze painting techniques (see Figure 13: 32). These pottery types are highly diverse in terms of color and design, including light green patterns on a milky background, black and blue designs on white or milky backgrounds, as well as brown, blue, and black patterns on milky or white surfaces. In Hamadan, Kurdistan, Ilam and Kermanshah regions, in many sites such as Darreh Shahr (Dolatiari et al., 2015), Koltepe

Hamedan, Gabrtepe Famenin, Imam Square Hamedan, Dargazin Razan, Zyenabad, Ecbatana, Arzanfood and Samen, Tepe Ganji and Parsine has been identified (Bagheri, 2015; Heydarian, 2004, 2008; Zarei and Shabani, 2019; Sharifi and Zarei, 2021).

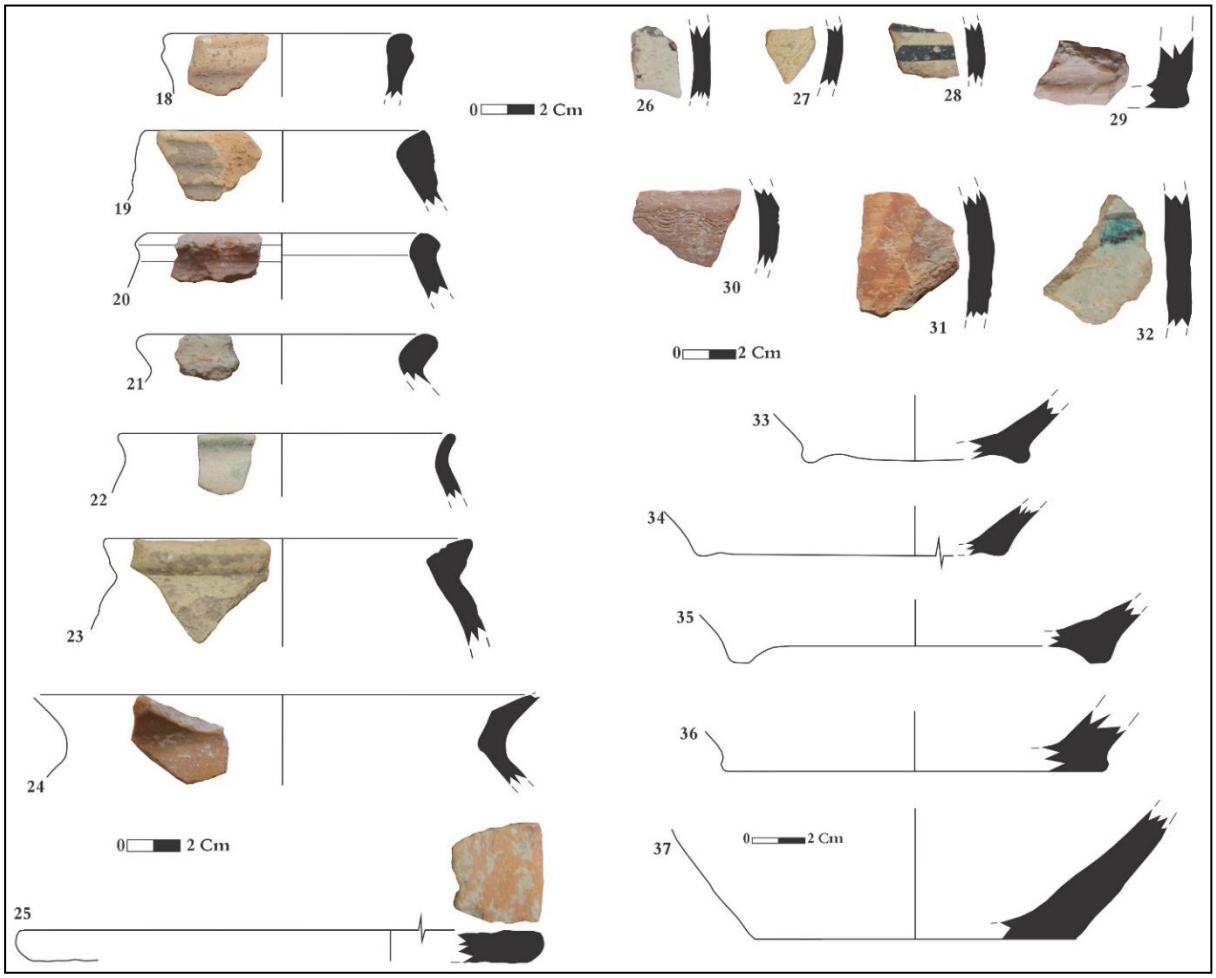

Figure 7. A selection of potteries obtained from the surface and inside different trenches (Heydarian, 2023)

In conclusion, it is important to recognize that Tepe Khodai is one of the most significant archaeological sites in the region. Its large area of 1 hectares, along with the substantial thickness of ancient deposits, reveals a rich cultural sequence that spans from the fifth millennium to the Islamic era. Additionally, its geographical location enhances its value for research. The site offers valuable insights into various periods, including the Chalcolithic, Bronze, historical, and Islamic eras. Furthermore, the surrounding landscape features several prehistoric sites that underscore the cultural importance of this region. The lack of archaeological information and the absence of a comparative chronological framework for the Sonqor plain, coupled with the sequence of cultural materials and the destruction of all sides of Tepe Khodai, present a valuable opportunity to stratify the site. This stratification will help us accurately date the various periods of occupation.

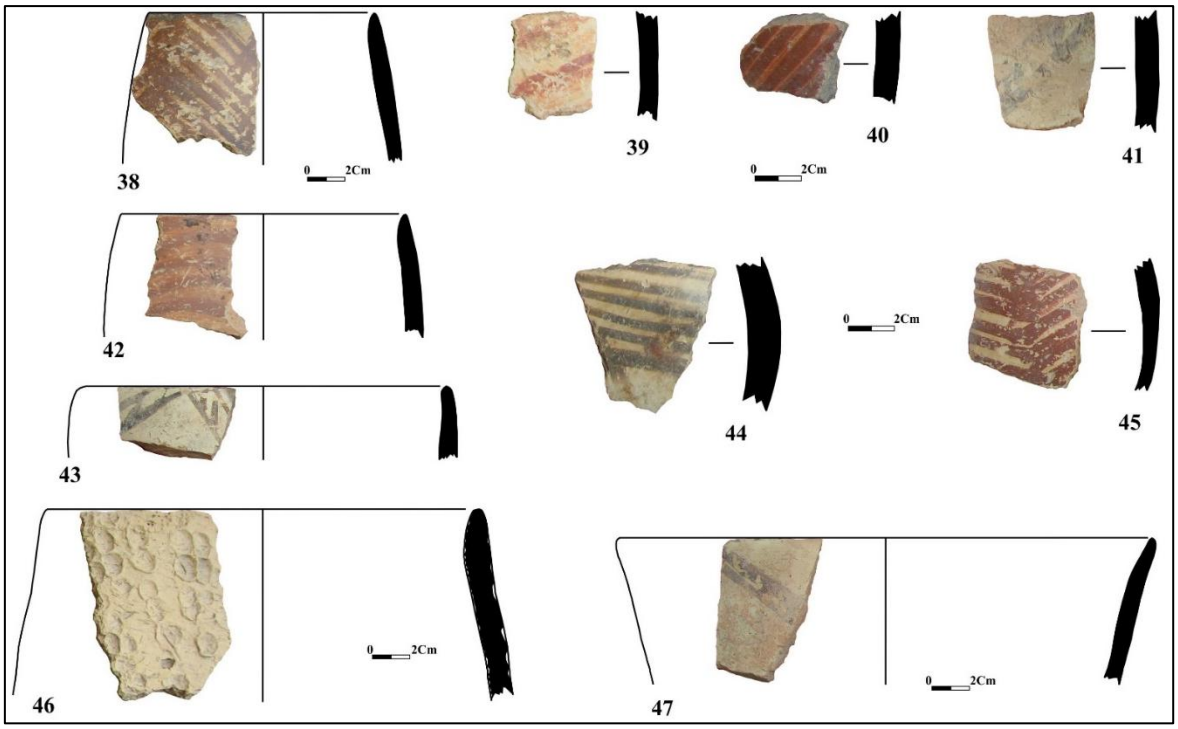

Figure 8. A selection of designs potteries obtained from the surface and inside different trenches (Heydarian, 2023)

Table 2. Characteristics of selected potteries and objects obtained from the surface and inside different trenches

ROW	SQUARE/TRENCH	LOCUS	PART TYPE	CONSTRUCTION TYPE	PASTE	TEMPER	COVERING AND POLISHING THE INNER	COVERING AND POLISHING THE OUTER	THICKNESS	FIRING	MOTIF	PERIOD
١	٠٠٥	٥٠١	Rim	Wheel made	Dark pea	Mineral	Dark pea	Dark pea	Fine	Appropriate	-	*Chalcolithic*
٢	٠٠٩	٩٠٢	Rim	Hand made	Smoky	Coarse straw	Red glaze	Red glaze	Fine	Inappropriate	-	*Middle Chalcolithic*
٣	٠٠٩	٩٠٢	Rim	Hand made	Black/Smoky	Coarse straw	Red glaze	Red glaze	Fine	Inappropriate	-	*Middle Chalcolithic*
٤	٠١١	١١٠٧	Rim	Wheel made	Light orange	Mineral	Green glaze	-	Fine	Appropriate	Engraved and splashed glaze (Sgraffito)	*1st to 7th century*
٥	٠١١	١١٠٧	Rim	Hand made	Smoky	Coarse straw	Red glaze	Red glaze	Fine	Inappropriate	-	*Middle Chalcolithic*
٦	٠٠٧	٧٠١	Rim	Hand made	Smoky	Combined	Light pea	Light pea	Fine	Inappropriate	-	-

٧	٠١١	١١٠٥	Rim	Wheel made	Dark pea	Mineral	Glaze	Glaze	Fine	Appropriate	Monochrome glaze	*Islamic*
٨	٠١١	١١٠٥	Rim	Wheel made	Light orange	Mineral/Silica	Light orange	Light orange	Fine	Appropriate	-	*Parthian/clinki*
٩	٠١١	١١٠٧	Rim	Hand made	Smoky	Combined	Dark orange	Dark orange	Fine	Inappropriate	-	*Middle Chalcolithic*
١٠	٠١١	١١٠٧	Rim	Hand made	Smoky	Coarse straw	Dark beige	Dark beige	Fine	Appropriate	-	*Chalcolithic*
١١	٠٠٨	٨٠١	Rim	Wheel made	Light orange	Mineral	Light orange	Light orange	Fine	Appropriate	-	*Parthian*
١٢	٠٠٥	٥٠١	Rim	Wheel made	Light brown	Mineral/Silica/Mica	Light brown	Light brown	Average	Appropriate	-	*Sasanian*
١٣	٠١١	١١٠٢	Rim	Unknown	Smoky	Coarse straw	Brick red	Brick red	Fine	Inappropriate	-	*Chalcolithic*
١٤	٠٠٢	٢٠١	Rim	Wheel made	Dark beige	Mineral	Dark beige	Dark beige	Fine	Appropriate	-	*Historic*
١٥	٠٠٥	٥٠١	Rim	Wheel made	Smoky	Mineral	Light orange	Light orange	Fine	Appropriate	-	*Parthian/clinki*
١٦	٠٠١	١٠١	Rim	Wheel made	Dark beige	Mineral	Dark beige	Dark beige	Coarse	Appropriate	-	*Sasanian*
١٧	٠٠٦	٦٠٣	Rim	Wheel made	طوسی تیره	Mineral/Silica/Mica	Light brown	Light brown	Average	Appropriate	-	*Historic*
١٨	٠١١	١١٠٥	Rim	Wheel made	Light pea	Mineral	Light pea	Light pea	Fine	Appropriate	-	*Parthian*
١٩	٠٠٧	٧٠٣	Rim	Wheel made	Light orange	Mineral	Light pea	Light pea	Fine	Appropriate	-	*Historic*
٢٠	٠٠٤	٤٠١	Rim	Wheel made	Dark orange	Mineral/Silica/Mica	Light orange	Dark orange	Average	Appropriate	-	*Historic*
٢١	٠٠٣	٣٠٣	Rim	Hand made	Dark orange	Coarse straw	Light pea	Dark orange	Fine	Appropriate	-	*Chalcolithic*
٢٢	٠١١	١١٠٥	Rim	Wheel made	Light pea	Mineral	Glaze	Light pea	Fine	Appropriate	Monochrome glaze	*Islamic*
٢٣	٠١١	١١٠٢	Rim	Wheel made	Dark pea	Mineral/Silica	Light pea	Light pea	Fine	Appropriate	-	*Historic*

٢٤	٠٠٥	٥٠٢	Rim	Wheel made	Dark gray	Mineral/Silica/ Mica	Dark beige	Dark red	Fine	Appropriate	-	*Historic*
٢٥	٠٠٦	٦٠٣	Bung	Unknown	Smoky	Combined	Light red	Light red	Fine	Appropriate	-	*Chalcolithic*
٢٦	٠٠٤	٤٠١	Body	Hand made	Dark pea	Mineral	Light pea	Light pea	Fine	Appropriate	-	*Late Bronze/Godin III*
٢٧	٠٠٩	٩٠٣	Body	Wheel made	Smoky	Mineral	Light beige	Light beige	Fine	Appropriate	Engraved groove motifs	*Islamic*
٢٨	٠٠٦	٦٠٣	Body	Hand made	Dark pea	Mineral	Light pea	Light pea	Fine	Appropriate	Black geometric	*Late Bronze/Godin III*
٢٩	٠٠٢	٢٠١	Bottom	Unknown	Dark beige	Mineral	Dark beige	Dark beige	Average	Appropriate	-	*Historic*
٣٠	٠٠١	١٠١	Body	Wheel made	Dark beige	Mineral/Silica	Light brown	Light brown	Fine	Appropriate	Engraved groove motifs	*Islamic*
٣١	٠٠٣	٣٠٢	Body	Hand made	Dark orange	Combined	Light red	Light red	Fine	Appropriate	Brown geometric	*Dalma*
٣٢	٠٠٩	٩٠٣	Body	Wheel made	Dark beige	Mineral	Milky glaze	Glaze	Average	Appropriate	black-on-blue	*Early and Middle Islamic*
٣٣	٠٠٢	٢٠١	Bottom	Wheel made	Smoky	Mineral	Dark beige	Dark beige	Fine	Appropriate	-	*Parthian/clinki*
٣٤	٠٠٥	٥٠١	Bottom	Wheel made	Unknown	Mineral/Silica	Dark beige	Dark beige	Fine	Appropriate	-	*Historic*
٣٥	٠١٠	١٠٠١	Bottom	Wheel made	Smoky	Mineral	Dark beige	Dark beige	Average	Appropriate	-	*Historic*
٣٦	٠٠٦	٦٠٣	Bottom	Hand made	Smoky	Combined	Dark beige	Dark pea	Average	Inappropriate	-	*Chalcolithic*
٣٧	٠٠٢	٢٠١	Bottom	Hand made	Dark pea	Combined	Light pea	Light pea	Average	Appropriate	-	*Chalcolithic*
٣٨	5G	-	Rim	Hand made	Dark beige	Coarse straw	Light brown	Light brown	Average	Inappropriate	Brown geometric	*Dalma*
٣٩	12 D	-	Body	Hand made	Dark orange	Coarse straw	Light pea	Light pea	Average	Appropriate	Brown geometric	*Dalma*
٤٠	٦F	-	Body	Hand made	Dark beige	Coarse straw	Light brown	Light brown	Average	Inappropriate	Brown geometric	*Dalma*
٤١	8B	-	Body	Wheel made	Light pea	Mineral	Dark pea	Dark pea	Average	Appropriate	Black geometric	*Late Bronze/Godin III*
٤٢	15L	-	Rim	Hand made	Dark orange	Coarse straw	Light pea	Light pea	Average	Appropriate	Brown geometric	*Dalma*

٤٣	14 H	-	Body	Hand made	Dark orange	Coarse straw	Dark pea	Dark pea	Average	Inappropriate	Black geometric	*Late Bronze/Godin III*
٤٤	4M	-	Body	Hand made	Dark orange	Coarse straw	Light brown	Light brown	Average	Inappropriate	Black geometric	*Dalma*
٤٥	9P	-	Body	Hand made	Dark beige	Coarse straw	Light brown	Light brown	Average	Inappropriate	Brown geometric	*Dalma*
٤٦	4D	-	Rim	Hand made	Dark beige	Coarse straw	Dark pea	Dark pea	Average	Inappropriate	Pressed nail-incised, fingertip-pressed, and by pinching	*Dalma*
٤٧	7T	-	Rim	Wheel made	Light pea	Mineral	Dark pea	Dark pea	Fine	Inappropriate	Black geometric	*Late Bronze/Godin III*
٤٨	٠٠٤	٤٠٢	*Metal object*									
٤٩	٠١١	١١٠٩	*Clay Bead*									
٥٠	٠٠٥	٥٠٢	*Stone Tool*									
٥١	٠٠٦	٦٠٣	*Metal object*									
٥٢	٠٠٥	٥٠٢	*Stone Tool*									
٥٣	٠٠٥	٥٠٢	*Clay Spindle*									

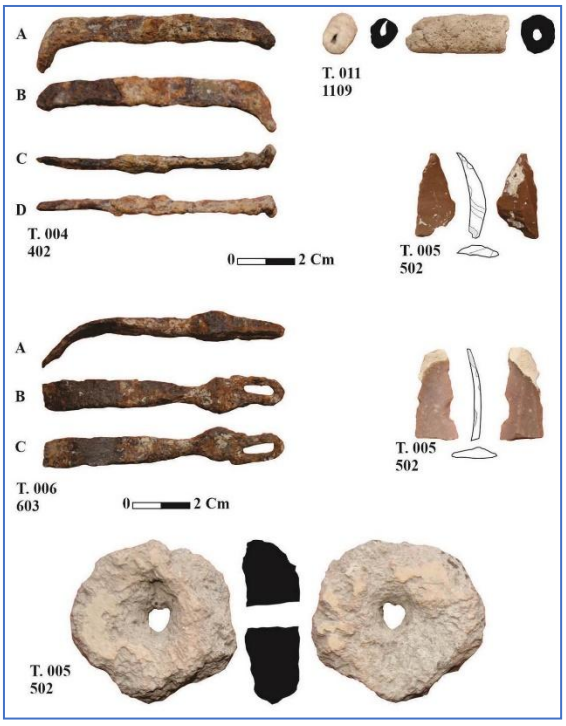

Figure 9. Some selected objects obtained from different trenches

Conclusion

The study revealed that this site holds valuable cultural artefacts from various periods, including the Chalcolithic, Bronze, Historical, and Islamic eras. It features significant artefacts from notable cultures in the Zagros and Northwestern Iran regions, such as Dalma, Seh Gabi, and Kura-Araxes/Early Trans-Caucasian (ETC), the 1st millennium BC onward. While the pottery found at this site shares similarities with pottery from different periods in other regions of Iran, compositional analysis can demonstrate a connection to the region's lithology and the raw materials used to create this pottery. The data from the Early Bronze potteries in Sonqor show slight variations in locally produced ceramics within the area with the other regions. The location of Khodai is in a flat, watery plain surrounded by the highest snow-capped mountains in the province. This geographical setting and access to surface water and rainfall suitable for rain fed agriculture have been crucial for the area's development. Additionally, the site's slope and percentage and the lowlands at its edge have facilitated agricultural practices. The presence of aqueducts in the region has further enabled residents to exploit the surrounding land for farming, encouraging them to settle in this area. All the environmental evidence suggests this, but to confirm it for the prehistoric periods mentioned, excavation of the site is necessary. While laboratory analysis of potential plant samples (e.g., soil analysis, palaeobotanical evidence, if any) from the area could help address the lack of archaeological data, without this, the claim remains unverified. The landscape of the site features several ancient locations that highlight the ecological significance of the area. These include: Tepe Sharak, which is associated with the Late Bronze and Iron Ages. Tepe Ganji, related to the Late Bronze, historical, and Islamic periods. Tepe Parsineh, connected to the Late Bronze, Iron, and Islamic periods. Tepe Kahter and Tepe Kani, both from the historical period. Tepe Dareh Pireh and Tepe Goijeh, which are linked to both the historical and Islamic periods. Based on archaeological and geographical studies conducted in the Sonqor Plain during the formation of Tepe Khodai in the Middle Chalcolithic Age and at the end of the Chalcolithic Age, the number of sites in this area has increased. However, rather than being concentrated in the plain, these sites are distributed along the rivers, situated in the depressions and on the slopes. The current protection status of the site appears unfavourable, primarily due to the local population's lack of awareness about the value of cultural heritage, insufficient protective measures, and the site's distance from the villages of Farsinaj and Choqabala. As a result, the site has suffered from destruction and leveling of significant portions, particularly at the top and on the western and eastern sides, where illegal drilling holes are evident. The most significant natural process contributing to damage is the growth of vegetation, which occurs when there is a sufficient amount of precipitation. Among human factors, vandalism and unauthorized excavations are notable examples. In several instances, vertical and horizontal excavations have been conducted at the top and the western and eastern corners of the hill. Additionally, the destruction and leveling of the hill's sides by the surrounding landowners have further contributed to its deterioration. This damage has been evident since before the investigation conducted in Sonqor in previous years. The size of the site was determined by the excavated trenches. Due to the site's topography and the lack of nearby natural or human-made structures, there were no complications affecting this task. The

level 1 area and the tape's privacy based on the excavated trenches is 8,780 square meters, while the boundary line of the site is 24246 square meters.

Acknowledgements
We would like to express our gratitude to Dariush Farmani for his financial support. We are also thankful to Siavash Shahbazi, Mostafa Dosti, and Kiomars Aazami for their valuable advice during the fieldwork. Additionally, we would like to thank students Hadi Rezaei Taghiabad and Ali Heydari for their assistance.

Authors' contributions
Mahmood Heydarian and Sahar Nourifakhr were responsible for methodology, developing methods, software, writing, and drafting. All authors have read and approved the final version of the manuscript.

Funding
This research is part of the sondage excavation aimed at determining the area and proposing the boundaries of Tepe Khodai. It was conducted under the direction of Mahmood Heydarian on February 17, 2023, with the license number 4023930 from the Iranian Center for Archaeological Research (ICAR) in cooperation with Shahrekord University.

Data availability
Data will be made available on request.

Declarations
Conflict of interest the authors have no competing interests to declare that are relevant to the content of this article.

Competing interest's policy
We declare that the authors have no competing interests as defined by Springer, or other interests that might be perceived to influence the results and/or discussion reported in this paper.

Dual publication
The results/data/figures in this manuscript have not been published elsewhere, nor are they under consideration (from our Contributing Authors) by another publisher.

Authorship
We confirm the corresponding author has read the journal policies and submitted this manuscript under those policies.

Third-party material
All of the material is owned by the authors and/or no permissions are required. We have consent for publication.

References

[1] Aliani, F., Maanijou, M., and Miri, M. M., 2012, Petrology of the Tekyeh-Bala area granite veins (northeast of Sonqor).Some pieces of evidence for A2-type granitoids, Petrology, 3(9), 1–6.

[2] Alizadeh, K., 2001, studying the cultural relations between the two sides of the Aras River: a Systematic study of Tepe Baroj, Master's thesis, University of Tehran, Faculty of Literature and Humanities. (Unpublished). (In Persian).

[3] Alizadeh, K., 2003, Introduction of the pottery of Madian's fortress of Bisotun Kermanshah - Excavation 2002, Archaeological Reports (2): 157-87. Tehran: Iranian Center for Archeological Research. (In Persian).

[4] Bagheri, H., 2014, analysis of the settlement pattern of the southeast of Sonqor-e Kolyaei based on Islamic pottery. Master's thesis in archeology of Shahrekord University. (Unpublished). (In Persian).

[5] Bahranipur, Hanan. 2016. Report on the first season of rescue excavation at Tepe Nad Ali Baig, Sonqor. Tehran: Iranian Center for Archeological Research (unpublished). (In Persian).

[6] Beshkani, A., Jayez, M., Dehqan, M., Jami Alahmadi, M., and Heydari, Y., 2012, An Introduction to caves and rock shelters of Sonqor, Kermanshah Province, Iran. Journal of Archaeological Studies, 4(1), 33-58. doi: 10.22059/jarcs.2012.35375

[7] Braud, J., and Aghanabati, A., 1978, 1:250000 geological maps of Kermanshah, geological survey and Mining of Iran.

[8] Braud, J., and Bellon, H., 1975, Donnees nouvelles sur le domaine metamorphique de Zagros (Zone de Sanandaj-Sirjan) au niveau de Kermanshah-Hamedan (Iran): Nature, age ET in terpretation des series metamorphiques ET des intru-sion, evolution structural, Eclog. Helvet.

[9] Darwishzadeh, A., 2015, Geology of Iran: Stratigraphy, tectonic, metamorphism, and magmatism (in Persian), 5th edn,Amir Kabir Publishing.

[10] Eshraghi, S.A., Jafarian, M.B., and Eghlimi, B., 1996, 1:100000 geological map of Sonqor, geological survey of Iran. (In Persian).

[11] Goff, C. L., 1968, LuristanIn the First millennium B.C." Iran. Vol. VI: 105- 134.

[12] Goff, C. L., 1971, Luristan before the Iron Age. Iran IX: 131-152.

[13] Haerinck, E., 1997, Iran's pottery in the Parthian period, translated by Hamideh Chubak, Publications of Iran's Cultural Heritage Organization (Iranian Center for Archeological Research) (In Persian).

[14] Hamlin, C., 1975, Dalma Tepe. Iran XIII: 111-128.

[15] Hamlin. C., 1974, "The Early second millennium ceramic assemblage of dinkhatepe" Iran. Vol. XII. Pp. 125-153.

[16] Hemati Azandaryani, E., Khaksar, A., and Shabani, M., 2017, Studying and Analyzing the Islamic Potteries from Underground Troglodytic Architecture Complex at Samen, Malayer. *pazhoheshha-ye Bastan shenasi Iran*, *7*(13), 189-206. doi: 10.22084/nbsh.2017.6622.1275

[17] Henrickson, E. F., 1983, Ceramic styles and cultural interaction in the early and middle chalcolithic of the central Zagros. Iran. Ph. D. Thesis. Canada: Department of Anthropology, University of Toronto.

[18] Henrickson, E. F., 1985, An Update Chronology of the early and middle Chalcolithic of the central Zagros Highland, Western Iran. Iran XXIII: 68 -108.

[19] Heydarian, M., 2004, Final Report of Archaeological Survey in Sonqor Koliyaie Plain (first season), Submitted by the Research Center of Iranian Cultural Heritage, Handicrafts and Tourism Organization. Kermanshah. [In Persian]. (Unpublished).

[20] Heydarian, M., 2006, Introduction to Prehistoric Pottery from the Sonqor Intermountain Plain: A Case Study of the Systematic Survey of Tepe Khodai. Master's thesis in Archaeology, Tehran, Tarbiat Modares University (unpublished). (In Persian).

[21] Heydarian, M., 2008, Final Report of Archaeological Survey in Sonqor Koliyaie Plain (second season), Submitted by the Research Center of Iranian Cultural Heritage, Handicrafts and Tourism Organization. Kermanshah. [In Persian]. (Unpublished).

[22] Heydarian, M., 2013, Analyzing the Role of Natural Factors in Spatial Distribution of Prehistoric Sites of Sonqor Plain. *pazhoheshha-ye Bastan shenasi Iran*, *3*(4), 139-152.

[23] Heydarian, M., Abdorrahimian, F., A. Emami, S. M., & Beheshti, S. I. (2020). The provenance and distribution of Early Bronze ceramics in the Kolyaei Plain, central Zagros, Iran. Archaeometry, 62(4), 694-711. https://doi.org/10.1111/arcm.12551

[24] Heydarian, M., Khosrowzadeh, A., Sarikhani, M., and Fathnia, A., 2013, An Assessment on the Spatial-Temporal Patterns of Songhor's Archaeological Sites in GIS. Physical Geography Research, 45(3), 47-64. doi: 10.22059/jphgr.2013.35834

[25] Jafari, A., 2005, Gitā-šenāsi-e Irān, (in Persian), 3rd edn, Vol. 3, Institute of Geography and Cartography Geology,Tehran.

[26] Keall, E. J., and M. J. Keall, 1981, "The Qaleh-i Yazdgird pottery: A Statistical Approach", Iran 19: 33-81.

[27] Khosrowzadeh, A., and Aali, A., 2004, "Description, classification and typological analysis of Parthian and Sassanid period pottery from Mah Nishan region (Zanjan)", Proceedings of International Conference on Archeology of Iran, Publications of Iran's Cultural Heritage Organization (Iranian Center for Archeological Research) (In Persian).

[28] Kleiss, W., 1996, "Die architektur des alten karavanserails", In: W. Kleiss and P. Calmeyer (eds.), Bisutun: Ausgrabungen und forschungen in den jahren 1963-1967, Teheraner Forschungen VII, Gebr. Mann Verlag. Berlin: 131-146.

[29] Lakpour, Simin, 2014, Archaeological Excavation and Research in Darreh Shahr, Pazineh, Tehran.

[30] Langdon, S. and D. Harden, 1934, "Excavation at Kish and Barqhuthiat". Iraq I: 93-113.

[31] Levine, L. D., and Young, Jr. T. C., 1986, A Summary of the Ceramic Assemblages of the Central Western Zagros from the Middle Neolithic to the Late Third Millennium B.C. Colloques Internationaux CNRS, Prehistore De La Mesopotamie 15-53. Paris: editions du CNRS Paris 198b.

[32] Masoumi, GH, 2204, the History of Archeology in Iran, Tehran: Samt Publications. (In Persian).

[33] Miri, M.M., 2011, the petrological and geochemical studies of igneous rocks of Takye Bala area (southeast of Kurdistan) with spatial view on the iron mineralization, (in Persian). Master of Science Thesis. Buali Sina University. Hamedan.Iran. 2011 (Unpublished).

[34] Mohammadi, M., and Shabani, M., 2016, an Introduction and Analyses of Islamic Pottery of Zino-Abad, Bahar County, Hamadan Province. *pazhoheshha-ye Bastan shenasi Iran*, *6*(11), 135-150. doi: 10.22084/nbsh.2016.1744

[35] Parse, Sh., 2014, "Analysis of the Settlement Pattern of the Sassanid Period in Sonqor Plain", Master's thesis in archeology of Shahrekord University (unpublished). (In Persian).

[36] Rahbar, M., 1998, Excavation in the ancient site of Atashkuh in Markzari Province, Tehran: Iranian Center for Archeological Research (unpublished). (In Persian).

[37] Sarikhani, M., Heydarian, M., and Parseh, S., 2016, Analying the Sassanian Settlement Pattern of Sonqor-o Kolyaie Plain. *pazhoheshha-ye Bastan shenasi Iran*, *6*(10), 101-120. doi: 10.22084/nbsh.2016.1549

[38] Sepahi, A. A., 2008, Typology and petrogenesis of granitic rocks in the Sanandaj-Sirjan metamorphic belt, Iran: With em-phasis on the Alvand plutonic complex, Neues Jahrbuch für Geologie und Paläontologie-Abhandlungen, 247(3), 295–312.

[39] Sharifi, F., Zarei, M., 2021, Study of Islamic Period Pottery in Qorveh Plain of Kurdistan Province. Parseh J Archaeol Stud. 5 (15), 189-211. doi:10.30699/PJAS.5.15.189 URL: http://journal.richt.ir/mbp/article-1-442-en.html

[40] Stocklin, J., 1968, Structural history and tectonics of Iran; a review, American Association of Petroleum Geologists Bul-letin, 52, 1229–85.

[41] Vandenberge, L., 2000, Archeology of Ancient Iran, translated by Isa Behnam, second edition, Tehran. Tehran University Press. (In Persian).

[42] Venco Ricciardi, R., 1970/71. 'Sasanian Pottery from Tell Madhur (North Mesopotamia) ‘, Mesopotamia 5/6: 427–82, figs. 87–96.

[43] Young, T. C., and Levine, L. D., 1974, Excavations at Godin Tepe; Secound Progress Report, Occasional Paper 26. Art and Archaeology. Royal Ontario Museum (ROM).

[44] Young. T. Cuyler, jr., 1969, “Excavations at Godin Tepe. First progress Report” Royal Ontario Museum. pp. 3-4.

[45] Zarei, M. E., Shabani, M., 2019, Study and Analysis of Pottery Styles from the Beginning of the Islamic Era to the end of the Safavid Period in Hamadan. Parseh J Archaeol Stud. 3(8), 109-126. doi:10.30699/PJAS.3.8.109 URL: http://journal.richt.ir/mbp/article-1-224-en.html.