

ÓLAFSDALUR 2018

AN INTERIM REPORT/FRAMVINDUSKÝRSLA



Howell Magnus Roberts & Birna Lárusdóttir

Aðrir höfundar efnis: Guðrún Alda Gísladóttir & Egill Erlendsson

FORNLEIFASTOFNUN ÍSLANDS

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Birna Lárusdóttir (ritstj). 2018. Fornleifar í Ólafsdal við Gilsfjörð. Fornleifaskráning með landsháttagreiningu. Fornleifastofnun Íslands, FS708-16132.

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Leyfishafi

Howell Roberts

Fjöldi starfsmanna

7 fornleifafræðingar

Útdráttur

Lykilorð: Uppgröftur, víkingaöld, skáli, Vestfirðir

Fyrsti áfangi fornleifauppgrafter í Ólafsdal við Gilsfjörð fór fram dagana 11. júní – 5. júlí 2018 en alls er áætlað að áfangarnir verði þrír. Að jafnaði voru sex manns í uppgrafterliðinu í einu. Grafið var í rúst af skála sem tímasettur hefur verið til víkingaaldar með kolefnisgreiningu. Markmið fyrsta áfanga var að afhjúpa rústina, fjarlægja torf og áfokslög og fletta þannig ofan af yngstu mannvistarlögum. Þetta markmið náðist. Alls var uppgraftersvæðið um 250 m² í upphafi, en var stækkað lítillega eftir því sem á leið. Í ljós kom vel varðveittur skáli sem greinilega samanstendur af fleiri en einu byggingarstigi. Ennfremur var afhjúpað eldstæði, hellulagður inngangur á vesturhlið, mögulegur langeldur, stoðarholur og sáför svo eitthvað sé nefnt en allt bíður þetta uppgrafter. Í ljós komu einnig mannvirki sem ekki sáust á yfirborði, e.t.v. viðbyggingar við vesturlanghlið skálans sem verða kannaðar nánar á næsta uppgraftertímabili.

Mikið var tekið af loftmyndum meðan á uppgrafterinum stóð og voru þær m.a. nýttar til að búa til þrívíddarlíkan af rústinni. Alls voru skráðar 37 einingar (einkum lög sem hafa orðið til eftir að byggingin féll úr notkun) og 14 gripir, en búast má við að þeim fjölgi verulega strax við upphaf næsta uppgraftertímabils, þegar rannsókn hefst á gólflögum og ólíkum byggingarstigum skálans.

Mikill áhugi var á verkefninu meðal almennings. Boðið var upp á tvær gönguferðir meðan á uppgrafteri stóð, aðra í samvinnu við Sauðfjársetur, Byggðasafn Dalamanna o.fl. en hin var farin á Ólafsdalshátíð. Alls munu um 170 manns hafa mætt í gönguferðir. Síðu um verkefnið er haldið úti á Facebook og hefur hún nú um 650 fylgjendur. Þá var áhugi fjölmiðla talsverður og var fjallað um rannsóknina m.a. í Ríkisútvarpinu, Morgunblaðinu, Bændablaðinu og Skessuhorni, svo að dæmi séu nefnd.

INTRODUCTION

Keywords: Viking Age, dwelling, western Iceland, excavation

Permit number 201709-0076

National Museum Research number 2018-26

An archaeological excavation was carried out at Ólafsdalur, Gilsfjörður, western Iceland between the 11th of June and the 5th of July 2018. This worked focused on the remains of a multi-phased bow-sided dwelling dating to the Viking Period. The excavated area measured in total 266m², centred on coordinate E372735 N548570 (ISN93).

The team comprised Howell Magnus Roberts (Site Director), Birna Lárusdóttir (Project Manager), Lilja Björk Pálsdóttir, Guðrún Alda Gísladóttir, Stefán Ólafsson, Lísabet Guðmundsdóttir, Hulda Björk Guðmundsdóttir, Hólmfríður Sveinsdóttir, and Dr. Douglas Bolender. Dr. Egill Erlendsson and Scott Riddell (University of Iceland) also visited to undertake preliminary environmental studies (see Appendix 2). The project was funded by Fornminjasjóður, and Minjavernd. We are very grateful for their support and assistance. We are also thankful to Ólafsdalsfélagið for their, support and enthusiasm.

This work uncovered in its entirety the remains of a well preserved dwelling that plainly has several phases of use. In 2018 work focused on the removal of turf, topsoil, naturally deposited overburden and post abandonment deposits, exposing the uppermost occupation surfaces and internal and external features. It forms the first stage of a 3 year plan to excavate the building, assorted external features and structures, and to place these remains within their broader spatial and temporal context within the valley. Work in 2018 proceeds from a valley wide survey conducted by Birna Lárusdóttir in 2016-17¹, and a trial trench targeting the Viking age remains excavated in 2017.²

It is intended that the main sequence of internal occupational layers will be excavated in 2019, and additional external structures and deposits tested and evaluated in 2020. At least 10 additional ruins are located in the immediate proximity of the excavated area (see Figure 3). The date and function of these awaits further clarification.

As such, this report is preliminary in nature, and proposed sequences are subject to extensive revision as further work will reveal new complexities and developments.

¹ Birna Lárusdóttir 2018b.

² Birna Lárusdóttir 2018a.

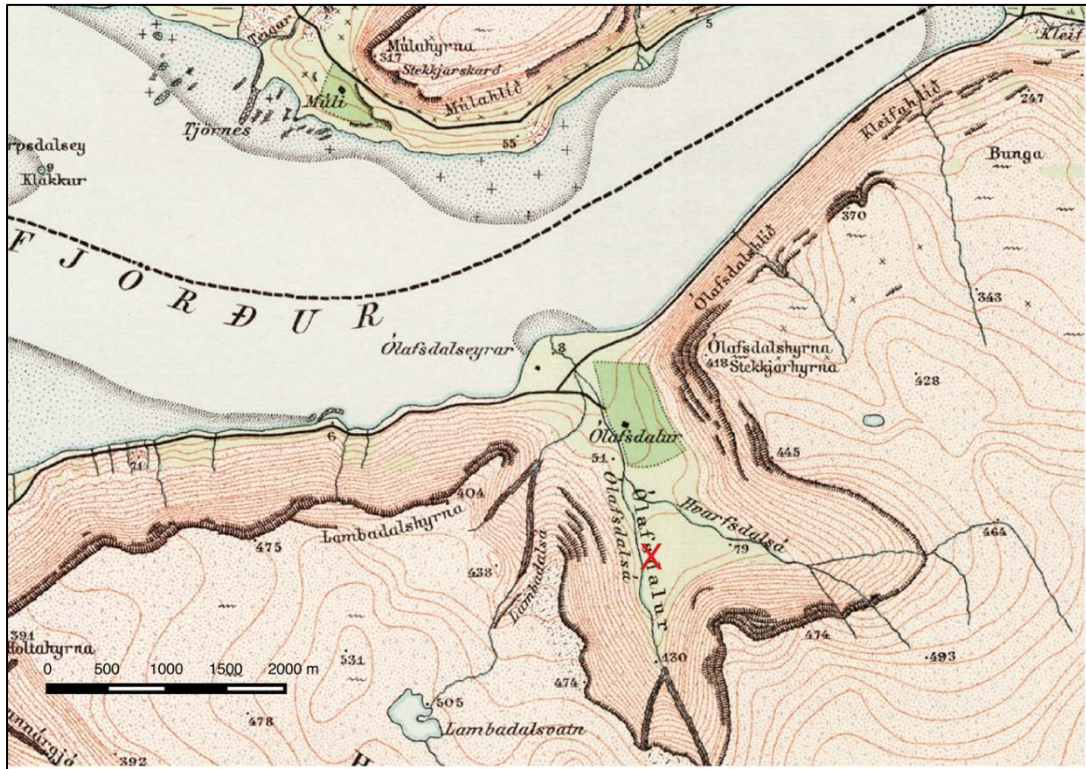


Figure 1 – Location of remains shown with a red cross (map from LMÍ)



Figure 2 – Research Area, shown in pink & surveyed archaeological features (see Birna Lárusdóttir 2018b)

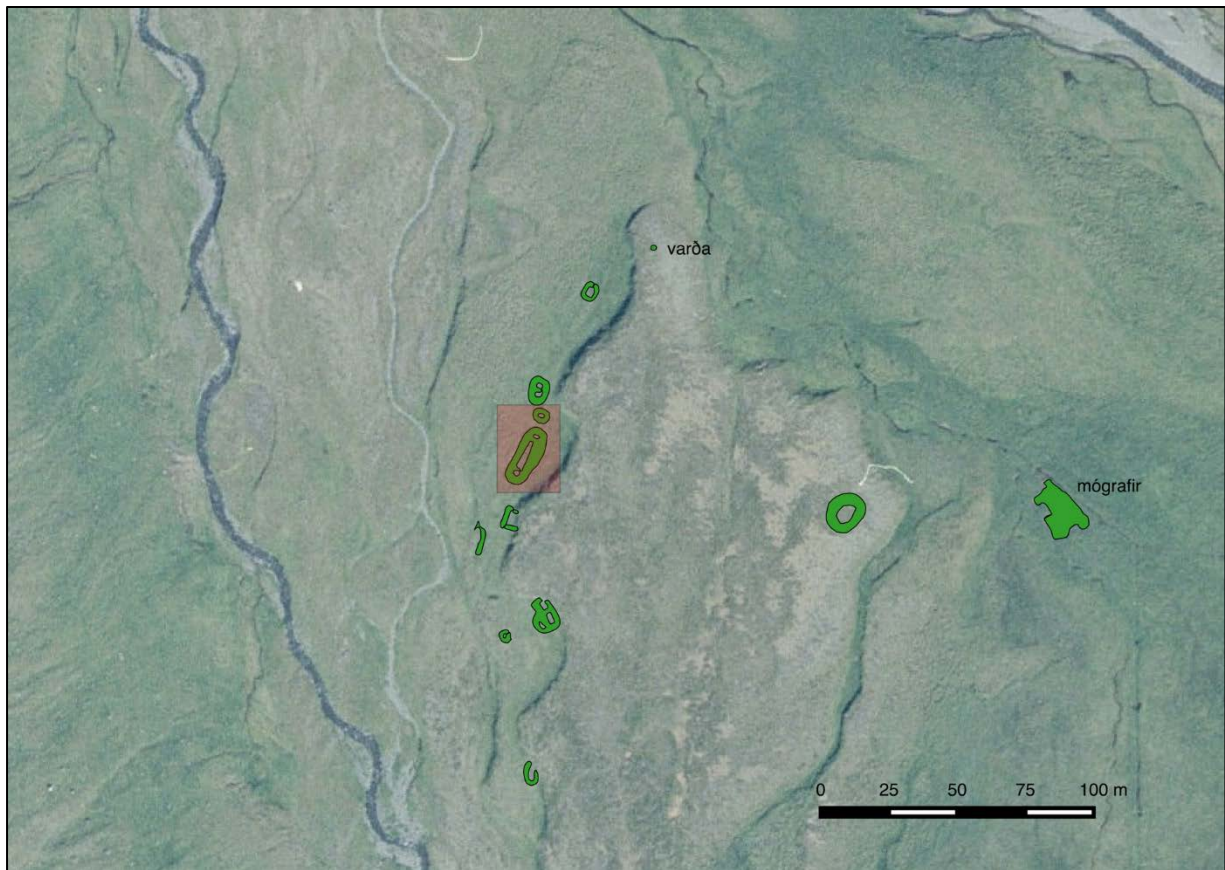


Figure 3 – Structure 1, within pink box and nearby remains (based on records from Birna Lárusdóttir 2018b)

METHOD

A single contiguous rectangular excavation area, measuring initially 250m², was opened, covering the visible extent of an upstanding ruin. This area was subsequently enlarged slightly to the west, totalling 266m², to investigate assorted connected deposits and structures. Removal of turf and topsoil was commenced by hand, but proceeded with the assistance of a small mechanical excavator.

After the removal of turf, topsoil and sterile naturally deposited overburden, excavation proceeded by means of Single Context Planning. A 5m grid square system was established using a Trimble S6 Total station theodolite, with fixed points located using a Trimble GeoExplorer 6000 series GPS. All subsequent deposits were hand-drawn and recorded at a scale of 1:20 using pro-forma recording sheets. These records were supplemented by digital photography (using a Nikon D3200 DSLR with an 18-105mm zoom lens), and by drone photography using a DJI Mavic Pro. Drone photography was processed for 3d modelling using Agisoft Photoscan, and published on the internet in Sketchfab (see Figure 4).

All drawn plans were georeferenced and digitized using QGIS 3.4.2.

The expected spatial precision of these records is circa 10cms (absolute) and circa 2 cms (relative).

Deposits and structures that remain unexcavated were mapped using drone aerial photography and Structure from Motion Photogrammetry. These are interpreted on the basis of field notes and schematic drawings, but await further description and recording upon excavation in the coming years.

Only a few finds were recovered in 2018, owing to the sterile and/or post abandonment nature of the deposits removed (see Appendix 1). Three environmental samples were taken for later study.

The intent of fieldwork in 2018 was to uncover and record the occupational levels of the building (Structure 1) in preparation for a complete in-phase excavation of floor layers and internal features in the future. This goal was achieved.

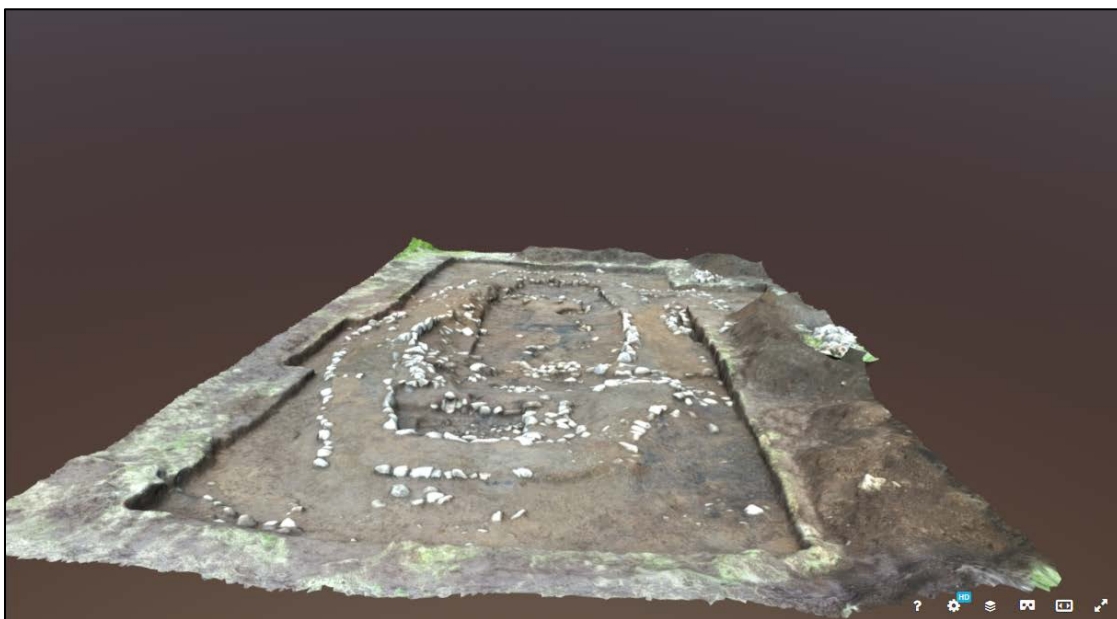


Figure 4 – 3d model of excavated structures (see <https://sketchfab.com/models/98e9308d19234275b2b6ef976973d406>)

RESULTS

A total of 37 separate excavated layers were recorded during the 2018 season. These primarily comprise post abandonment deposits, including aeolian deposits sealing the ruin, turf and stone deposits associated with the collapse of the last phase of the long-house (Structure 1) and well as post abandonment deposits from inside the rooms, sealing the occupation layers. Also recorded were floor deposits and a stone setting for a post-hole in the trial trench from 2017³ as well as deposits associated with a corner oven in the northernmost part of the building. Removal of these overlying deposits proceeded to point just a few centimetres above the uppermost floor surface in the majority of the building. This choice was taken to protect the occupation deposits until such time as their excavation can be attempted in total. A 1m wide evaluation trench, extending from that excavated in 2017, spans the central part of the structure. This trench

³ Birna Lárusdóttir 2018a

proceeded to the surface of the floor layers, as a guide to their depth and preservation. Most of the artefacts recovered during the 2018 season were found in collapse deposits, with the exception of two nails and a knife recovered from the floor deposits in the 2017 trench. For further detail see table 1, figure 5 and appendix 1.

Preliminary environmental studies undertaken by Egill Erlendsson and Scott Riddell (see Appendix 2) indicate a good potential for preservation of some tephra horizons, and of significant organic remains within wetter areas of the valley, hopefully suitable for further study and environmental reconstruction in the future.

Radiocarbon dates obtained from carbonized birch samples recovered in 2017 are appended (Appendix 3). These give dates for the upper floor layers of Structure 1, in a range broadly spanning the later 8th and 9th centuries AD. Whilst these appear surprisingly early for the latest phase of activity within this structure, it must be remembered that the inbuilt age of wood must be accounted for, along with the taphonomic process leading to the deposition of this material. As such, these dates are seen as consistent with occupation in the broader Viking Age, rather than clear indications of exceptionally early settlement in Ólafsdalur.

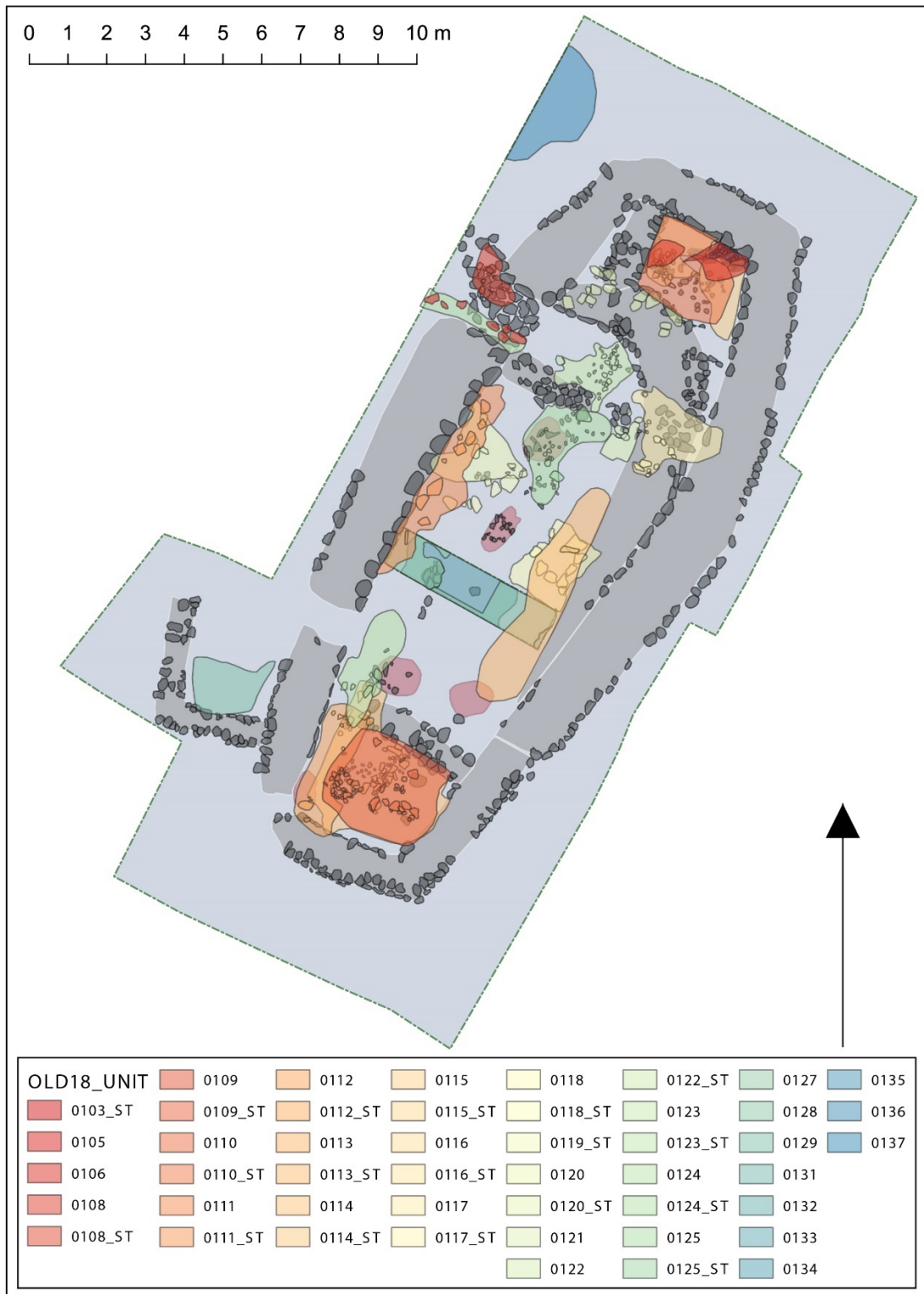


Figure 5 – Excavated Contexts

Table 1 – Excavated Contexts

Unit	Type	Description	Date	ID
0101	Layer	Turf and topsoil - up to 20cms in depth, site wide.	26/6/2018	HMR
0102	Layer	Windblown overburden, orange brown sandy silt, with very occasional turf fragments and gravel. Site wide, up to 30cms.	26/6/2018	HMR
0103	Layer	Wall collapse in the southern part of the northern entrance. Turf fragments with occasional large sub-angular stone in a sandy silt matrix.	26/6/2018	GAG
0104	Group	Post abandonment layers within northern room	26/6/2018	LG
0105	Layer	Wall collapse sealing corner oven in NE corner of northern room [104]. Turfy silt with occasional small burnt stones	26/6/2018	LG
0106	Layer	Charcoal rich grey brown windblown silt in northern room [104]	26/6/2018	LG
0107	Layer	Turf collapse and occasional large stones in northern entrance. Occasional charcoal. In matrix of yellow brown sandy silt.	27/6/2018	GAG
0108	Group	Post abandonment layers within southern room	27/6/2018	LBP
0109	Layer	Mixed aeolian/collapse deposit in southern room [109]. Frequent angular stone 10-40cms in a matrix of mid orange brown sandy silt.	27/6/2018	LBP
0110	Layer	Mixed aeolian/collapse deposit in northern room [104]. Occasional stone, charcoal, in a matrix of grey brown organic silt.	27/6/2018	LG
0111	Layer	Post abandonment collapse alongside western wall of central room. Turf and large sub-angular stones in a sandy silt matrix.	27/6/2018	GAG/ HMR
0112	Layer	Post abandonment collapse alongside western wall of southern room [108]. Turf debris and sand lenses. Occasional stone.	27/6/2018	LBP
0113	Layer	Post abandonment windblown deposit alongside eastern limit of central room. Grey/orange brown sandy silt with occasional stone.	27/6/2018	GAG/ HMR
0114	Layer	Windblown and collapse deposit within southern room [109]. Greenish/grey brown sandy silt with frequent small angular stones.	27/6/2018	LBP
0115	Layer	Compact dark grey brown turf collapse/silt against eastern wall of northern room [104].	27/6/2018	LG
0116	Layer	Dark grey brown silt and turf with frequent small sub-rounded stones, against northern wall of northern room [104]. Occasional charcoal.	28/6/2018	LG
0117	Layer	Dark grey brown turf and stone collapse against eastern wall, northernmost in central room. Frequent large sub-angular stone.	28/6/2018	SÓ
0118	Layer	Aeolian and post abandonment collapse alongside eastern wall of central room. Orange brown sandy silt with frequent large sub-rounded stones.	28/6/2018	HMR

Unit	Type	Description	Date	ID
0119	Layer	Stone collapse inside eastern wall central wall. Sub-angular stone up to 40cms.	28/6/2018	GAG
0120	Layer	Turf and stone collapse against western wall of central room. Grey brown sandy silt, occasional sub-angular stone.	28/6/2018	GAG
0121	Layer	Stone collapse over wall between central and northern rooms. Sub-angular stone up to 40cm.	28/6/2018	LG
0122	Layer	Aeolian deposit with occasional sub-rounded stones against eastern limit of central room.	29/6/2018	SÓ
0123	Layer	Turf collapse and small stones in passage/entrance between central and northern rooms. Equals (125)	2/7/2018	SÓ
0124	Layer	Turf and stone collapse against western wall of central room. Grey brown sandy silt, occasional sub-angular stone.	2/7/2018	LBP
0125	Layer	Turf collapse and small stones in passage/entrance between central and northern rooms. Equals (123).	2/7/2018	GAG
0126	Group	Evaluation trench begun 2017, extended 2018. Includes floor deposits.	3/7/2018	GAG/ SÓ
0127	Layer	Dark reddish brown turf collapse within [126]. Occasional charcoal.	3/7/2018	GAG/ SÓ
0128	Layer	Possible roof collapse within [126].	3/7/2018	GAG/ SÓ
0129	Layer	Grey green windblown sandy silt within [130].	3/7/2018	LBP
0130	Group	Post abandonment layers within external room, west of main building.	3/7/2018	LBP
0131	Layer	Dark grey organic silt within [126]. Floor layer.	3/7/2018	GAG/ SÓ
0132	Layer	Stone setting associated with possible posthole, within [126].	3/8/2018	GAG/ SÓ
0133	Layer	Dark grey organic silt within [126]. Floor layer, likely latest floor surface.	3/9/2018	GAG/ SÓ
0134	Layer	Spread of fire cracked rock, west of corner oven within northern room.	3/9/2018	LG
0135	Fill	Fire cracked rock filling [136].	3/10/2018	LG
0136	Structure	Corner oven built of stone slabs, incorporating elements of wall facing.	3/7/2018	LG
0137	Layer	Dark brown/black, external charcoal rich midden layer with firecracked rock, burnt bone etc in a clay silt matrix. Sampled but unexcavated. NE of building.	4/7/2018	SÓ



Figure 6 – Vertical drone image of the site after excavation

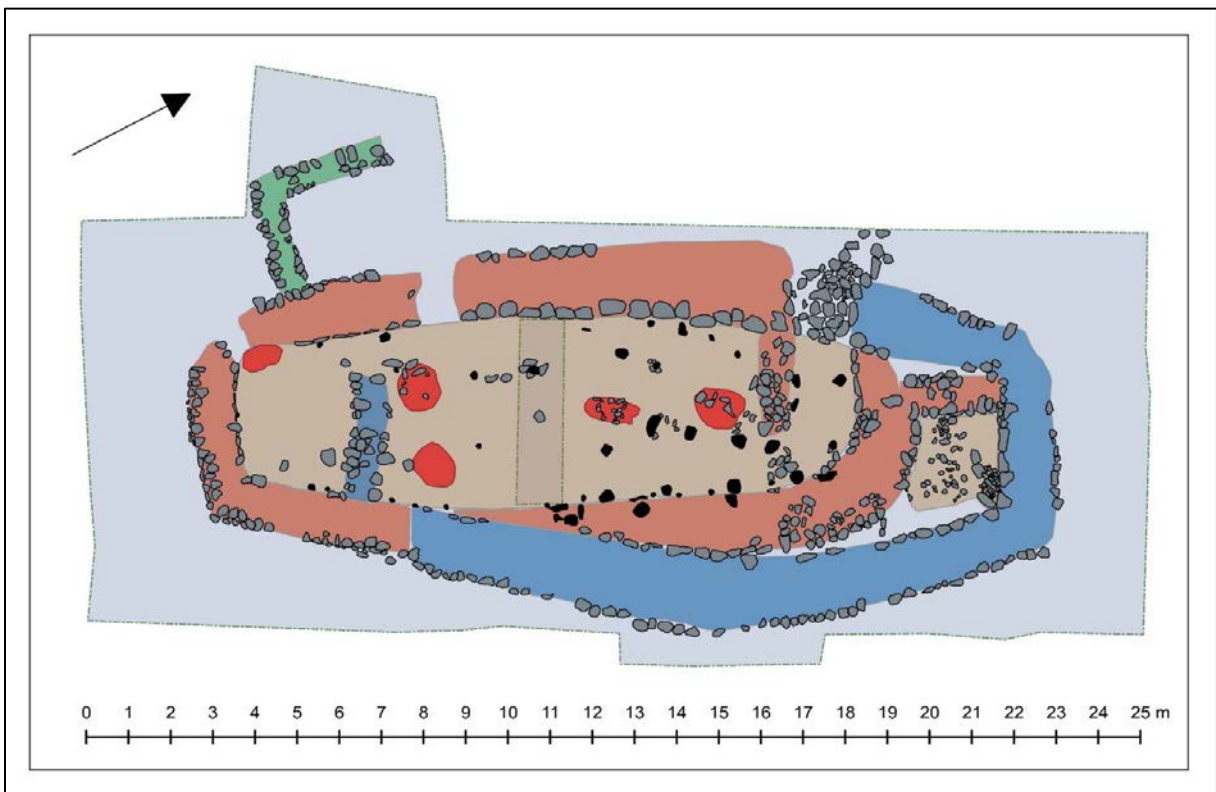


Figure 7 – Primary unexcavated features (colours indicate possible structural phases)

DISCUSSION

The emphasis of the 2018 season was on removing post abandonment deposits, so there is little scope for interpretation of the archaeology at this stage. The structural remains were clearly visible at the end of the season, and some observations can be presented. The preservation of the structural remains is highly variable. The ruin sits beneath a high bank to the northeast, whilst the southern and western parts of the building are much more exposed to the wind and weather. This is thought to account for the much better preservation of the northeastern wall which stands to a height of up to 1m and approaches 2m in width. It is clear from the extent and alignment of the wall remains and apparent floor surface that several phases of construction and occupation can be expected. Figure 7 shows the site as it was at the end of the 2018 season, with possible interpretations of phasing presented in different colours. Several internal features were also noted, the aforementioned oven, a longfire, possible barrel pits as well as post-pads –holes and –settings. These features await further investigation during the 2019 season.

Bibliography

Birna Lárusdóttir (ed.). 2018a. *Fornleifakönnun á víkingaaldarbæjarstæði í Ólafsdal*. Fornleifastofnun Íslands, FS685-17231.

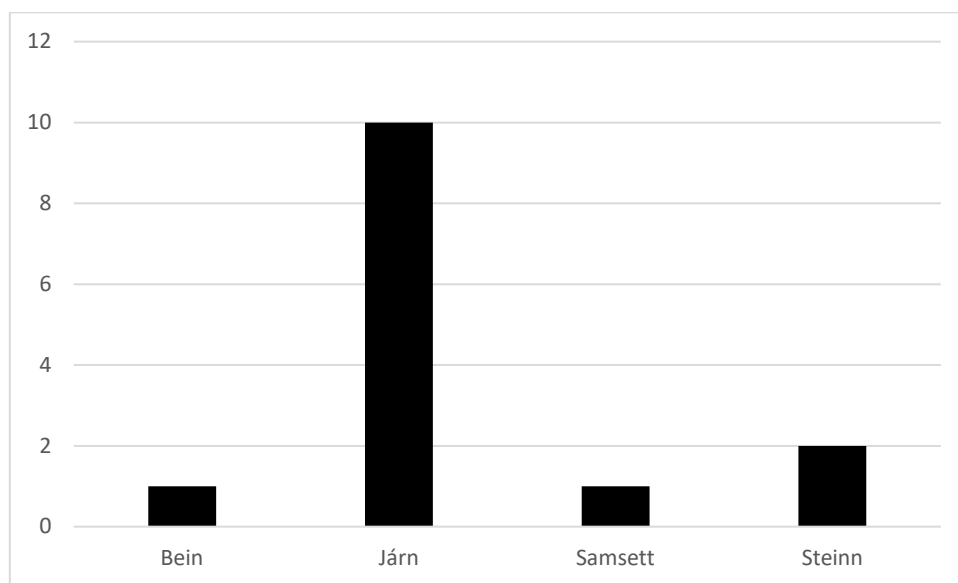
Birna Lárusdóttir (ed.). 2018b. *Fornleifar í Ólafsdal við Gilsfjörð. Fornleifaskráning með landsháttagreiningu*. Fornleifastofnun Íslands, FS708-16132.

Appendix 1 - Gripirnir 2018

Guðrún Alda Gísladóttir

Alls fundust 15 gripir skráðir undir 1 númerum við rannsóknina í Ólafsdal 2018 auk nokkurra tanna úr stórgripum. Allir fundir voru mældir inn með alstöð og skráðir í gagnagrunn rannsóknarinnar. Um forvörslu gripanna sá Jannie Amsgaard Ebsen forvörður hjá Odense Bys Museet. Um frágang, ljósmyndun og skráningu gripanna sá Hulda Björk Guðmundsdóttir fornleifafræðingur.

Varðveisla þeirra gripa sem fundust í þessum efstu og yngstu lögum rannsóknarinnar er nokkuð mismunandi. Járníð er talsvert ryðbrunnið, viðarleifar fundust varðveittar þar sem það lá við járn (skaftleifar á hnífi). Bein fundust ekki en nokkrar tennur. Varðveisluskilyrði lífræna leifa munu skýrast er líða tekur á rannsóknina. Eins og sjá má hér að neðan eru langflestir gripanna úr járn.



Sex gripir fundust í torfhruni veggja úr skálanum og tveir við hreinsun yfirborðslaga í upphafi rannsóknar. Sex gripir auk dýrabeina (tanna) fundust í gólflögum frá yngsta skeiði mannvirkisins. Nokkrir gripir fundust við lok rannsóknar í mannvistarlögum sem ekki eru komin með eininganúmer. Þeir voru skrásettir og mældir inn - og munu fá eininganúmer þegar fram í sækir.

Fundanúmer	Eining		Tegund	Efni	Fjöldi
OLD18-001	107	Hrun - í inngangi skála	Rónagli	Járn	2
OLD18-002	107	Hrun - í inngangi skála	Ógreint	Járn	1
OLD18-003	120	Hrun - úr vesturlangvegg sunnarlega	Nagli	Járn	1
OLD18-004	120	Hrun - úr vesturlangvegg sunnarlega	Nagli	Járn	1
OLD18-005	131	Gólf	Nagli	Járn	1
OLD18-006	133	Gólf	Nagli	Járn	1
OLD18-007	133	Gólf	Hnífur	Samset t	1
OLD18-008	127	Hrun - úr vesturlangvegg	Nagli	Járn	1
OLD18-009	LF	LF - Fundinn við upphaf rannsóknar.	Rónagli	Járn	1
OLD18-010	130	Heinsun í upphafi rannsóknar. Fannst utanvið skálabyggingu - SV til.	Rónagli	Járn	1
OLD18-011	Án 2018	Gólf – við vesturlangvegg	Ógreint, verkfæri?	Járn	1
OLD18-012	Án 2018	Gólf – við vesturlangvegg	Aðfluttur steinn	Steinn	1
OLD18-013	Án 2018	Gólf – við vesturlangvegg	Tennur	Bein	1
OLD18-014	Án 2018	Gólf - norðan sáfars í kolaríku lagi.	Lóð, kljasteinn?	Steinn	1
					15

Rannsóknin er nýhafin og þær vísbendingar sem gripirnir gefa eiga eftir að taka á sig mynd. Naglar og rónaglar eru flestir, eða níu talsins og fundust einkum í veggjahruni og eru því sennilega með einhverjum hætti tengdir timburverki í byggingunni. Þá fannst lítill hnífur, OLD18-007, með heilu blaði og leifum tréskafis, alls 4,92 cm að lengd. Bakki hnífsins er örlítið íhvolfur og sveigist eggin upp að hnífsoddi. Þessi hnífagerð er fremur óvanaleg og þekkjast fá dæmi um íhvolfa bakka, sé t.d. lítið til hnífa sem hafa fundist í víkingaaldarminjum í York í Englandi, en helst kemur til greina gerð B (Ottaway 1992, 559,652). Hnífar voru nauðsynjaverkfæri og eru fremur algengir fornleifafundir. Meðal gripanna er einnig heilt lóð úr mjúkum grænleitum steini, OLD18-014, sem fannst í gólfi norðan sáfars í suðurhluta skálans. Steinninn er ferhyrndur og flatur í þversniði, 11,2 x 6,2 x 2,5 cm stór. Gat til að þræða í er nálægt öðrum enda og fyrir gatinu hefur greinilega verið hoggið báðum megin frá en sjálft gatið er lítið, aðeins um 0,45 cm í þvermál. Steinar með gati voru til margra hluta nýtsamlegir og erfitt að ákvarða hlutverk þeirra er þeir finnast stakir. En stundum má sjá að reynt var að velja steina með flötu þversniði í uppistöðuna í vefstaðnum til að steinarnir lægju betur saman. Ekki er því ósennilegt að OLD18-014 sé kljasteinn.

Þótt gripasafnið sé smátt í sniðum gefur það vísbendingar um timburverk í bænum, vefnað og smáhnífurinn gæti hafa glatast þeim er einna síðastur gekk um skálagólfið í Ólafsdal.



Steinn með gati OLD18-014

Heimildir

Ottaway, Patrick 1992. *Anglo-Scandinavian Ironwork from Coppergate, York. Fascicule 17/6*. York Archaeological Trust/Council for British Archaeology.

Appendix 2

Dr. Egill Erlendsson
Háskóli Íslands
Líf- og umhverfisvísindadeild
Sturlugata 7, 101 Reykjavík
S: 5254474, netf. egille@hi.is
Reykjavík, 05.07.2018

Til: Birna Lárusdóttir

Efni: Skýrsla um vettvangskönnun vegna fyrirhugaðra fornnumhverfisrannsókna í Ólafsdal.

Þann 3. júlí 2018 fóru Egill Erlendsson og Scott Riddell í Ólafsdal og gerðu forkönnun á möguleikum til fornnumhverfisrannsókna í tengslum við rannsóknir á fornminjum og menningarlandslagi í Ólafsdal. Á þessu stigi er verið að grafa upp skála, að öllum líkindum frá landnámsöld innarlega í Ólafsdal. Könnun þessi náði aðallega til nærnumhverfis skálans (sjá yfirlitsmynd).

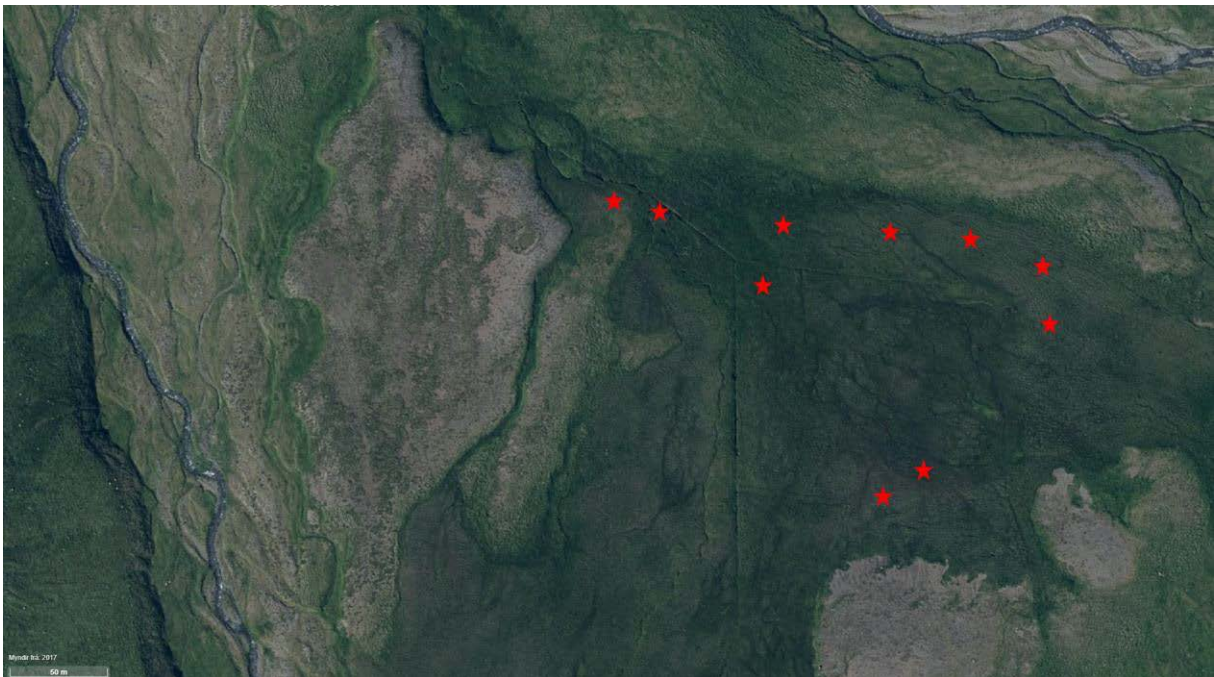
Möguleikar til uppbyggingar aldurslíkana eru, að því er virðist, nokkuð góðir. Ofarlega í jarðvegssniðunum má finna dökkt gjóskulag, að líkindum frá 1693. Þá mátti á allnokkrum stöðum finna landnámsgjósku frá um 877. Á einum stað fannst einnig ljós, grófkornótt gjóskudreif fáeinum sentimetrum neðan við meinta landnámsgjósku sem að líkindum er Snæfellsjökull 1 (Ssn 1) sem er fáeinum öldum eldri en landnámsgjóskan (AD 300-500). Sýni voru tekin úr þessum gjóskulögum og verða þau efnagreind við Jarðvísindastofnun HÍ á næstu mánuðum. Þau snið sem skoðuð voru reyndust afar rík af lífrænum leifum sem henta til aldursgreininga með kolefni-14. Lífrænn jarðvegur, mór, bendir einnig til góðra varðveisluskilyrða frjókorna og fræja og því virðast allar forsendur fyrir fornnumhverfisrannsóknir vera fyrir hendi. Að því sögðu bar mikið á að jarðlög væru röskuð (sem einnig má greina á loftmyndum). Á allnokkrum stöðum voru siltlinsur í jarðveginum sem kunna að benda til torfskurðar án þess að ummerki um slíkt sjáist á yfirborði. Mikilvægt er að huga að þessu við sýnatöku og þar koma umrædd gjóskulög að góðum notum.

Einnig var örsnöggt farið yfir mýrlendi sunnan túngarðs (eða skurðs) við gamla bæjarhólinn í Ólafsdal. Prufuboranir bentu til mikils rasks og flutnings af setefnum, líklega úr nærliggjandi hlíðum. Þessi könnun var þó ekki ítarleg og þarf að kanna það svæði betur áður en dregnar verða ályktanir um möguleika á (forn)umhverfisrannsóknum þar.

Virðingarfyllst,
Egill Erlendsson



Prufubor með sniði sem innheldur meinta landnámsgjósku



Yfirlitsmynd sem sýnir gróflega hvar borað var eftir mósniðum í þessari könnunarferð

Appendix 3 – 14c dates from 2017



Scottish Universities Environmental Research Centre

Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229698 www.glasgow.ac.uk/suerc



RADIOCARBON DATING CERTIFICATE

14 March 2018

Laboratory Code SUERC-77803 (GU46653)

Submitter Hildur Gestdottir
Fornleifastofnun Islands
Barugata 3
101 Reykjavik
Iceland

Site Reference Ólafsdalur
Context Reference 5
Sample Reference OLD2017-51-3-1

Material Wood : Birch

$\delta^{13}\text{C}$ relative to VPDB -26.4 ‰

Radiocarbon Age BP 1231 \pm 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon* 58(1) pp.9-23.

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

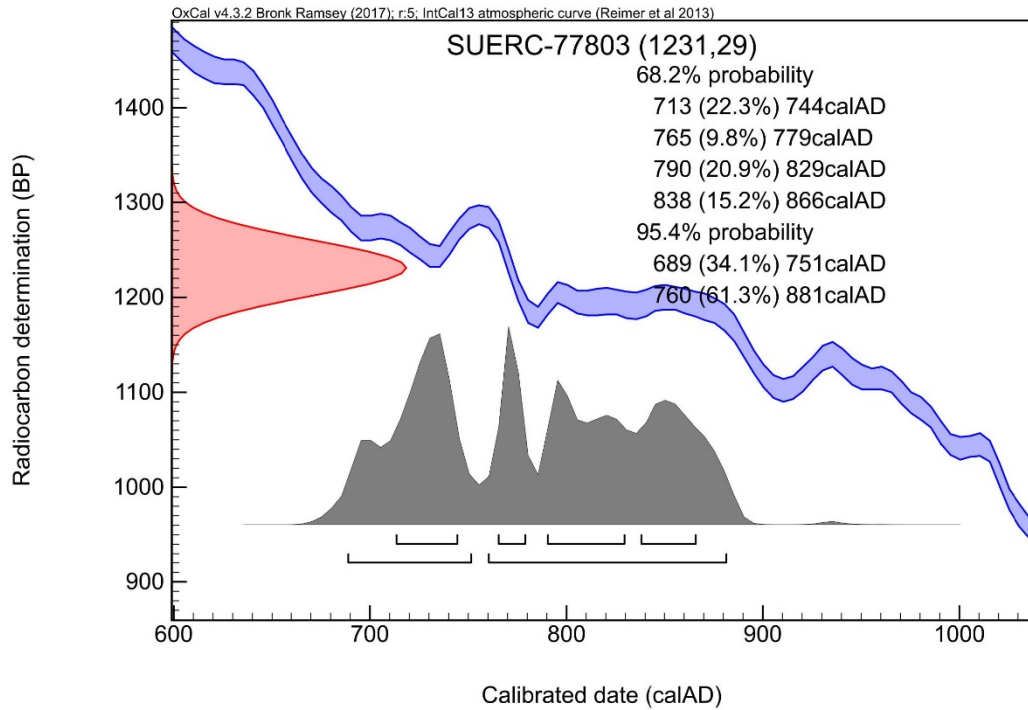
Checked and signed off by : P. Maynard



The University of Glasgow, charity number SC004401



The University of Edinburgh is a charitable body, registered in Scotland, with registration number SC005336



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon* 51(1) pp.337-60

† Reimer et al. (2013) *Radiocarbon* 55(4) pp.1869-87



RADIOCARBON DATING CERTIFICATE
14 March 2018

Laboratory Code SUERC-77804 (GU46654)
Submitter Hildur Gestdottir
Fornleifastofnun Islands
Barugata 3
101 Reykjavik
Iceland
Site Reference Ólafsdalur
Context Reference 5
Sample Reference OLD2017-51-3-2
Material Wood : Birch
 $\delta^{13}\text{C}$ relative to VPDB -30.0 ‰

Radiocarbon Age BP 1184 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

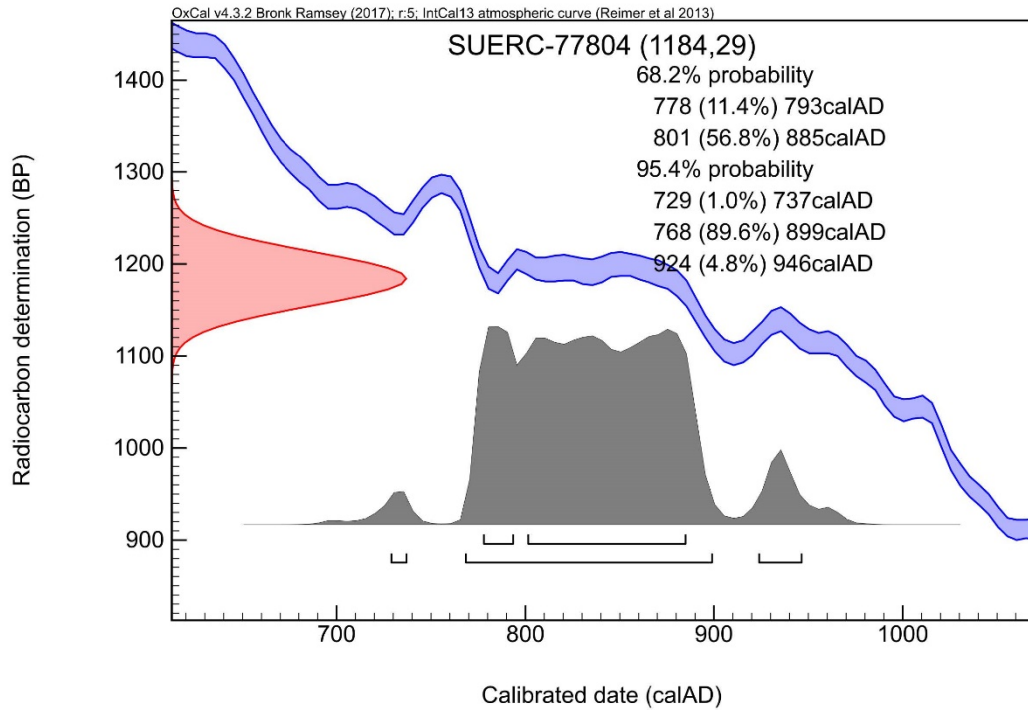
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon* 58(1) pp.9-23.

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : *E. Dunbar*

Checked and signed off by : *P. Nayant*



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

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