

# Kumlfundur á Kálfskinni á Árskógsströnd. Fornleifarannsókn 2006.

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Forsíðumynd: Kuml 1, horft til norðurs.

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Adolf Friðriksson:

## Inngangur

Vettvangsferð sem farin var að Kálfskinni sumarið 2005 var liður í stóru kumlarannsóknarverkefni á landsvísu sem Fornleifastofnun Íslands hóf 10 árum áður. Beindust athuganir í fyrstu að endurskoðun á fyrri rannsóknum og lauk þeim með endurnýjaðri útgáfu á kumlatali Kristjáns Eldjárns árið 2000.<sup>1</sup> Er megináherslan í því riti á lýsingu og greiningu á haugfé sem fundist hefur í heiðnum gröfum á Íslandi, en um aldamótin hófum við nýjar rannsóknir á kumlum og með nýjum áherslum. Síðastliðin ár hafa allir þekktir kumlstaðir verið skoðaðir á vettvangi og hefur sjónum einkum verið beint að staðháttum við greftrunarstaði. Við höfum skráð einkenni kumlstæða, staðsetningu þeirra m.t.t. fornra leiða, afstöðu gagnvart bæjarstæðum, og náttúrulegs umhverfis, s.s. vatnsföll, strandir, hæð yfir sjávarmáli o.fl. Í ljós hefur komið að í fornöld hafi kumlum ekki verið valinn staður á tilviljanakenndan hátt, heldur var fylgt fáum, augljósum og einföldum reglum. Kuml eru oftast um 300-600 m frá bæ, við leiðir eða vegamót, og gjarnan við ystu mörk jarða, við naust og lendingar þar sem við á, og við hvarf eða leiti milli bæja. Þegar þessar almennu niðurstöður lágu fyrir á árunum 2001-2002, ákváðum við að þróa líkan sem segði fyrir um hvar ætti helst að leita kumla, og hefur það líkan verið í stöðugri endurskoðun. Rannsóknin í Kálfskinni var liður í leit okkar að kumlum fornaldar.

Á Reiðmel, innst í landi Kálfskinns eru nokkrar lágur og grónar þústir sem skera sig úr umhverfinu. Hafði Sveinn Jónsson bóndi í Kálfskinni bent Elínu Ósk Hreiðarsdóttur fornleifafræðingi á staðinn er hún var við fornleifaskráningu á Árskógsströnd árið 2003.<sup>2</sup> Ekki er auðvelt að slá tölu á fjölda, en þar á melnum eru nokkrar þústir, áþekkar, um 2 m í þvermál og snúa ýmist N-S, eða A-V. Er ein þústin ofar slóðans á melnum, en hinar neðan. Hrosstönn fannst við skráningu ofan vegar. Algengast er að kuml finnist við fornar leiðir, og bendir örnefnið “Reiðmelur” til að þar hafi lengi verið farin leið sunnan við Kálfskinn. Ekki var kunnugt um að

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<sup>1</sup> Kristján Eldjárn og Adolf Friðriksson (2000). *Kuml og haugfé*. Reykjavík.

<sup>2</sup> Elín Ósk Hreiðarsdóttir (2004). Fornleifaskráning í Eyjafirði XIX: Fornleifar í Þorvaldsdal og syðsta hluta Árskógsstrandar að hreppamörkum. FS256-99095, Reykjavík, s. 91.

mannabein eða gripir hafi fundist á þessum stað, en ólíklegt virtist að þessar þústir væru náttúrulegar, og vegna lögunar sinnar og legu, var ákveðið að kanna þær frekar með grefti sumarið 2005. Rannsóknin fór fram dagana 20. til 24. júní.

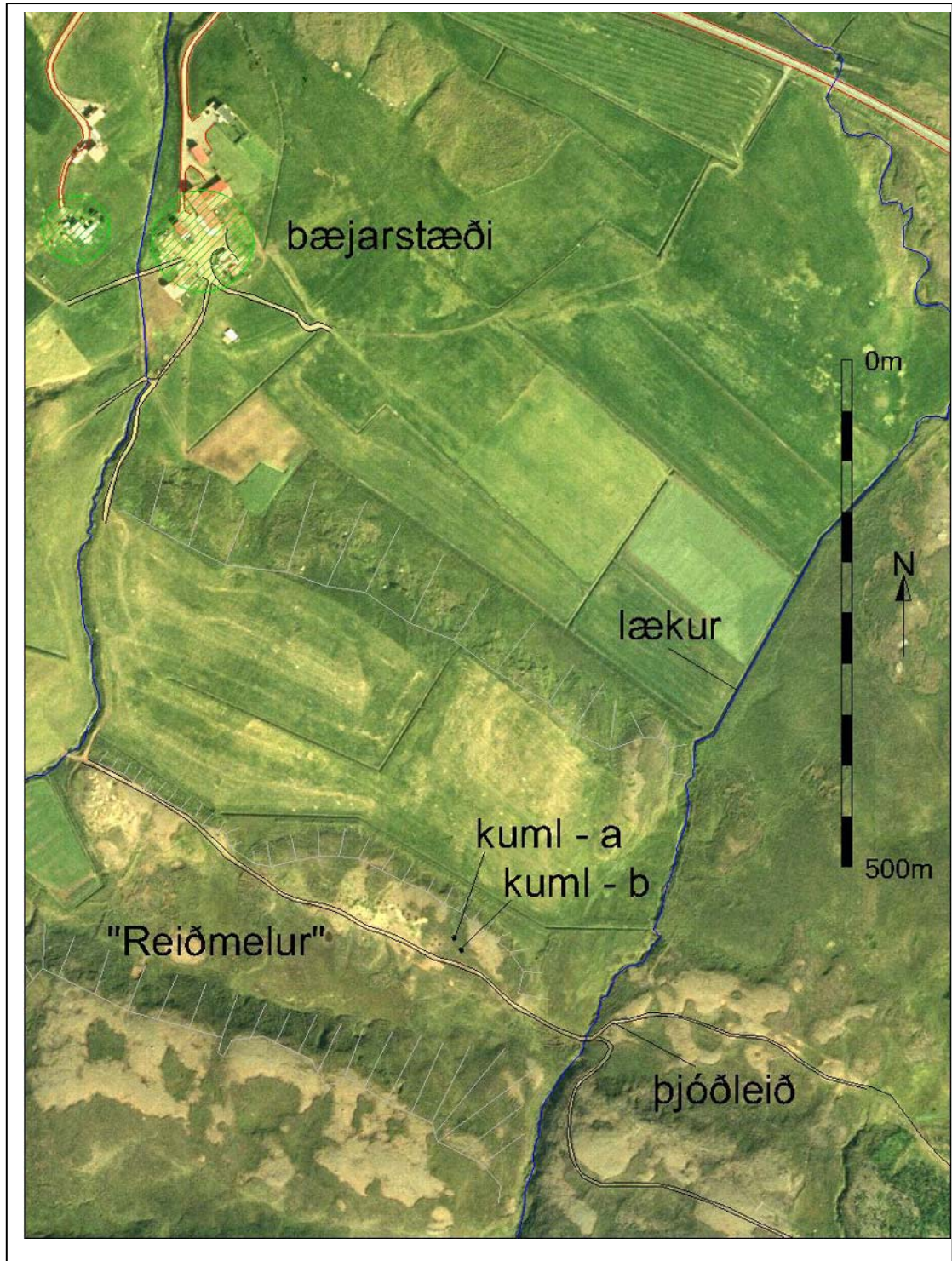
Uppgreftinum stjórnaði Howell Magnús Roberts og aðrir þátttakendur voru Bruno Berson, Guðrún Alda Gísladóttir, James Taylor, Oddgeir Hansson, og Petra Möðlein. Howell sá um úrvinnslu uppgraftargagna, Guðrún Alda greindi forngripi, Hildur Gestsdóttir greindi leifar mannabeina og Dr Lisa Yeomans greindi dýrabein. Adolf Friðriksson, ásamt uppgrftarstjóra og sérfræðingum sömdu þessa skýrslu. Rannsóknin var fjármögnuð af Kristnihátíðarsjóði.

Vilja höfundar þakka Sveini Jónssyni fyrir veitta liðveislu og hlýlegar móttökur.



*Mynd 1. Reiðmelur á Kálfskinni. Horft í NNA. Þústirnar eru fyrir miðri mynd.*





Mynd 2. Rannsóknarsvæði

## Uppgröfturinn 2005

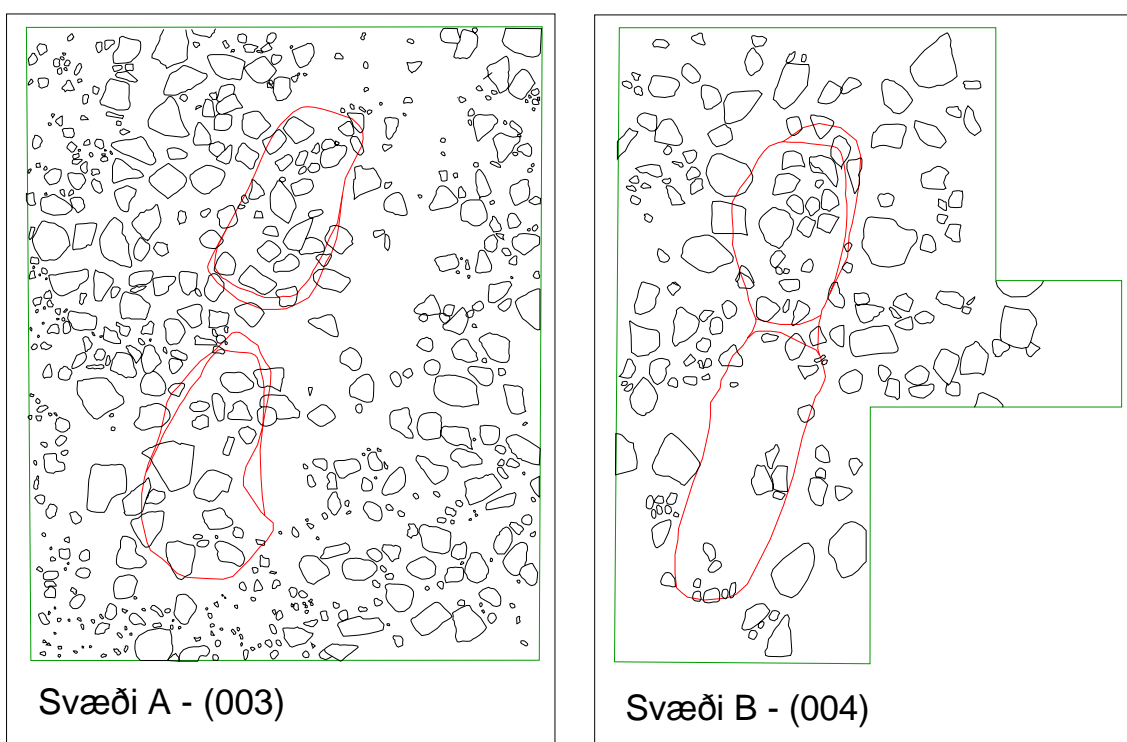
Reiðmelur er um 600-700 m ofan við bæinn í Kálfskinni. Melurinn er lítillaga blásinn í kollinn og þar má sjá þústir og blásið grjót hér og hvar, einkum austast á melnum, rúmum 100 m vestan við landamerkin móti Selárbakka, en þau liggja um Merkjälæk. Um melinn liggur gömul reiðleið, u.þ.b. í NV-SA stefnu (sjá mynd 2). Er vegurinn kallaður Gamllivegur, og var þjóðleið til ársins 1935. Hann lá af melnum suður yfir Merkisklækjarvað, en til norðurs að Kálfaskinnslæk. Reiðmelur er í um 100 m hæð yfir sjávarmáli, og stendur um 50 hærra en bærinn. Ofan við melinn hækkar landið, þar eru Borgir ofan við hlíðardrögin, og enn ofar eru Vatnamýrar, á hjalli í hlíðum Kötluhfjalls.

Um 70 m vestan (VNV) við Merkjälækjargilið var áberandi grjótdreif sem skar sig úr umhverfinu og virtist ekki hafa getað myndast af náttúrulegum orsökum. Til að kanna staðinn nánar voru valin tvö svæði þar sem grjót lá hvað þéttast og eru þau svæði nefnd héreftir A og B. Markað var fyrir reitum, 4 x 1 m að stærð á hvorum rannsóknarstað og eru 9,5 metrar á milli þeirra.

Í fyrstu umferð var gróðurlag og yfirborðsjarðvegur fjarlægður og kom þá í ljós í hvorum reit lítillsháttar grjóthaugur sem færður hefur verið saman af manna höndum. Grjótið lá ofan á og í lagi með dökkleitri mold. Var moldarlaginu fylgt og laus yfirborðsjarðvegur hreinsaður ofan af því. Í moldinni reyndust vera nokkur stórgripabein. Á þessu stigi var óhreyfð steinadreifin innan uppgraftarsvæða skráð og teiknuð (nr 003 í reit 1 og nr. 004 í reit 2). Nú voru valdir steinar sem lágu á yfirborði fjarlægðir og komu þá í ljós ystu mörk dökkleitu moldarinnar í báðum reitum (þ.e. nr 003 í reit 1 og nr. 004 í reit 2). Sjá mátti að dökka moldin sat í tveimur aflöngum gryfjum í hvorum reit ( nr. [001] og [010] í reit 1 og nr. [008] og [009] í reit 2).

Þegar fyllingin í gröfunum fjórum var fjarlægð fannst talsvert af beinagrafli, bæði

manna og dýra. Ljóst var að beinin lágu ekki í upprunalegri legu og jafnframt að talsvert af beinum vantaði í beinagrindurnar. Lega beinanna, eins og hún blasti við í uppgreftinum, var engu að síður teiknuð og mynduð. Á báðum reitum fundust bein manna og dýra og ljóst að öllum þessum gröfum hefur verið stórlega raskað fyrir löngu síðan.

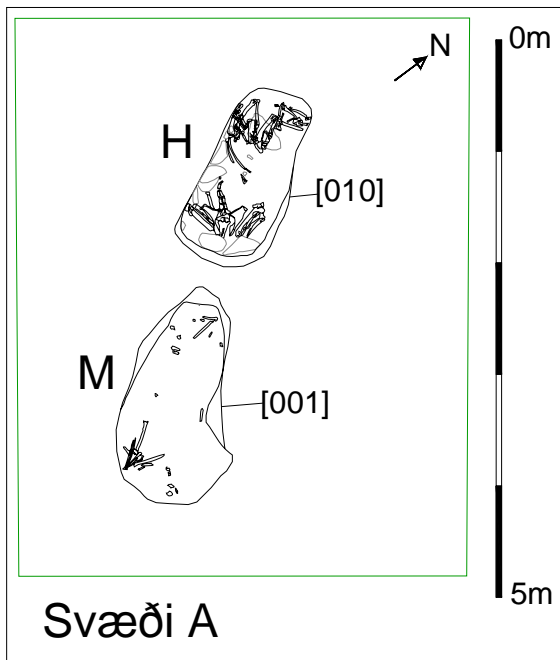


Mynd 3-4. Kuml 1 fannst á svæði A (t.v.) og kuml 2 á svæði B (t.h.)

*Kuml 1.* Syðri gröfin [001] sneri frá NV til SA. Hún var aflöng, um 180 sm löng og 70 sm breið í miðju, en 40 sm breið í norðausturenda og tæplega 50 sm djúp frá yfirborði. Suðausturhornið var skert og hefur líklega verið grafið burtu þegar rjálað var við kumlið. Í gröfinni fundust fáein, hreyfð *mannsbein* og nokkrir járnmunir. Þar eð norðurendi grafar er þröngur og höfuðbein fundust í hinum endanum, er lílegt að maðurinn hafi snúið frá SA til NV, með höfuð í SA.

Hildur Gestsdóttir hefur rannsakað *mannsbeinin* og telur 21 bein og beinaleifar og að auki 21 mannstönn. Varðveisla beinanna leyfði ekki afgerandi úrskurð um kyn einstaklingsins, en þau eru úr fullorðnum einstaklingi, sem látist hefur fyrir 35 ára aldur.



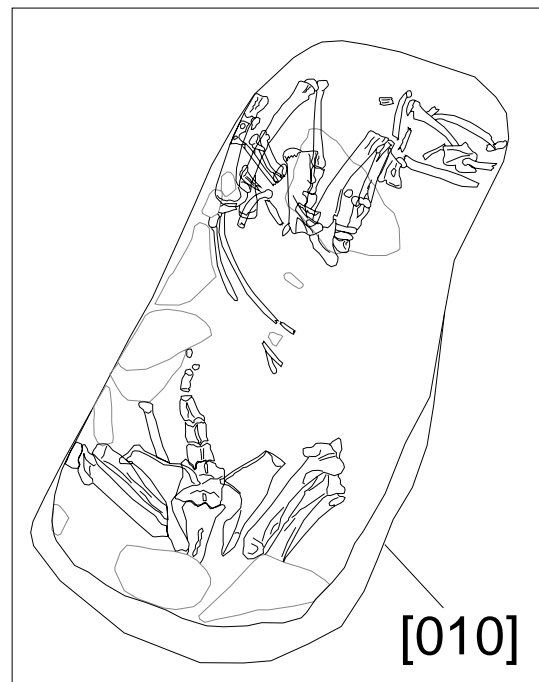
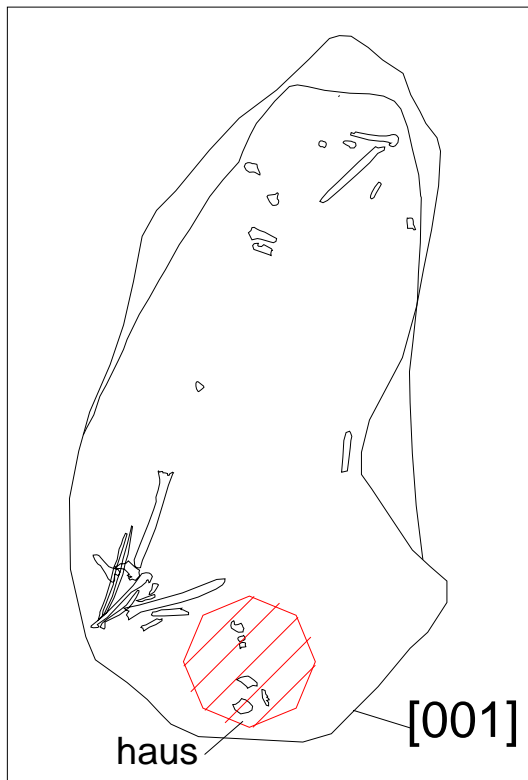


Mynd 5 (t.v.). Innbyrðs afstaða grafa í kumli 1. Mynd 6. Hrossgröf, horft í norður.

Haugfé: Ásamt mannsbeinum fundust allnokkur *bein úr hundi*, öll í slöku ástandi, óheil, hausbein og ýmis fleiri bein vantaði. Samkvæmt athugun Lisa Yeomans eru beinin úr meðalstórum hundi en ekki verður ráðið af þeim um aldur og kyn.

Alls fundust 12 gripir. Þar af voru 8 *rónaglar* og *rær* úr járn, sem fundist höfðu út við brúnir grafarinnar. Vottaði fyrir *viðarleifum* í ryðinu á nöglunum. Heillegustu rónaglarnir sýndu að viðurinn hefur verið um 2 sm þykkur. Auk naglanna fannst lítil *járnkrókur* (fundur nr. 1) og *járnbrott* (nr. 12) sem líkist helst keng. Má vera að naglarnir og járnbrottin séu úr kistli. Í gröfinni fannst einnig dökk og núin *steinvala* (fundur nr. 3).

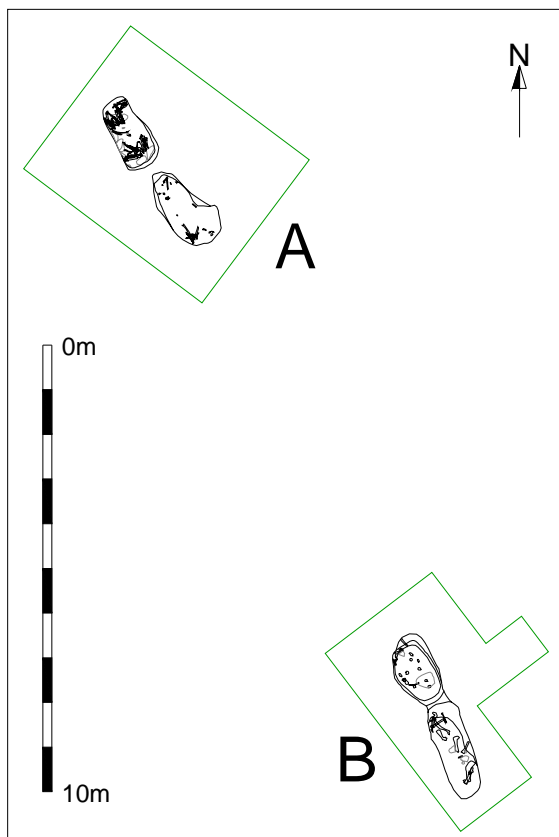
Við norðurenda grafarinnar hafði verið heygður *hestur* í aðskilinni gröf, sem lá 30 sm norðaustar. Hafði hesturinn verið lagður á kvið, sneri lend að manningum, þ.e. í suðurenda, hryggur við SV-hlið, fætarnir krepptir við NA-hlið. Hausbeinin vantaði að mestu, en að öðru leyti var beinagrindin mjög heilleg og lítið hreyfð. Lisa Yeomans hefur rannsakað beinin og telur þau vera úr fullorðnum hesti. Ekkert haugfé fannst í hrossgröfinni. Tvö fótarbein úr sauðkind fundust meðal beinaleifanna auk nokkura beina úr öðrum hesti. Má vera að einhver þessara beina hafi lent í gröfunum þegar þær voru rændar.



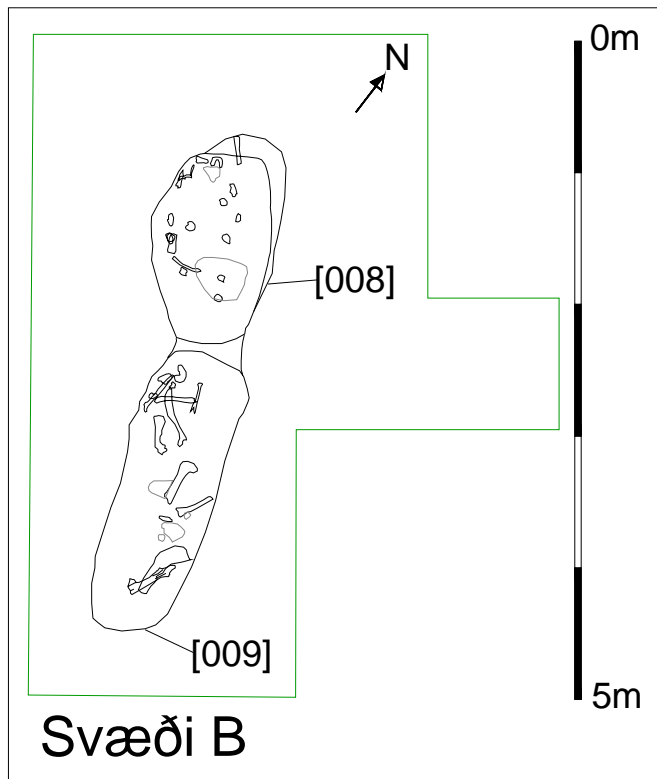
Mynd 7.-8. Mannsgröf (t.v.), hrossgröf (t.h.) í kumli 1.

Mynd 9. Afstaða kumla á Reiðmel.

*Kumli 2.* Þetta kumli var 9,5 m sunnar og austar en 1. kumli. Þar voru 2 grafir með líku sniði og hinar, en ögn grynri, eða um 40 sm djúpar og talsvert meira raskaðar. Syðri gröfin var aflöng, 220 sm löng og 75 sm breið. Hún sneri NNA-SSV. Nyrðri gröfin var 150 sm löng og 90 sm breið. Haftið á milli grafanna var 20 sm. Í báðum gröfunum fundust leifar *mannsbeina* og *hrossbeina*. Öll beinin voru úr lagi færð, en af lögun og stærð grafanna má ætla að maðurinn hafi legið í syðri gröfinni. Alls



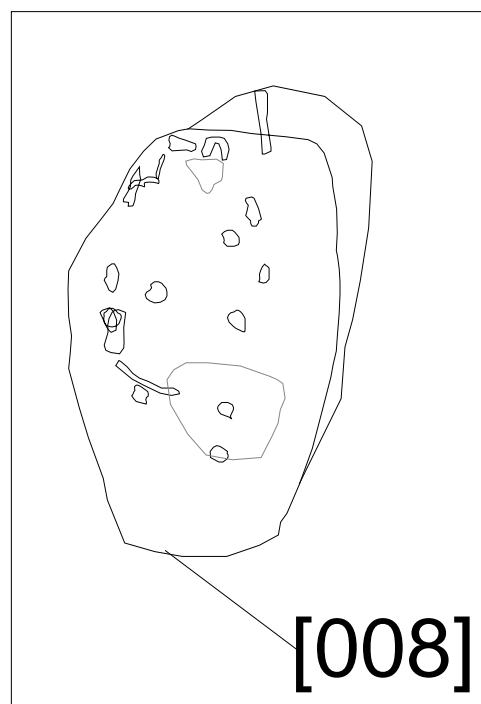
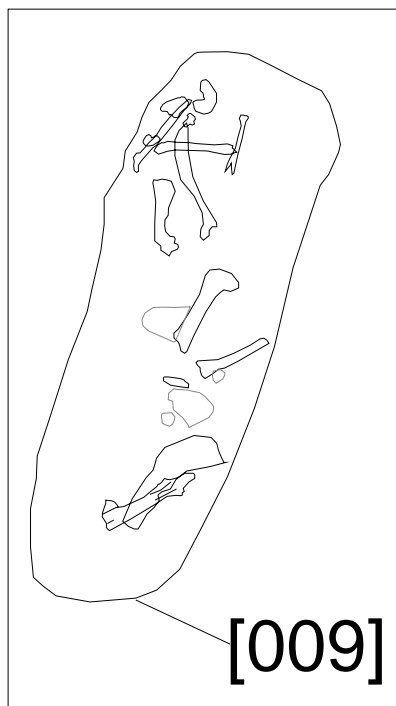
fundust 12 mannsbein eða brot og 10 tennur. Telur Hildur Gestsdóttir beinin vera úr fullorðnum karli, 22-33 ára. Lisa Yeomans hefur athugað dýrabeinin og eru þau úr ungu hrossi.



Í gröfunum voru, eins og í 1. kumli, leifar úr 2 einstaklingum, og virðist á kumlateignum því hafa verið leifar úr a.m.k. 3 hrossum. Þar sem staðurinn er mjög raskaður verður erfitt að fullyrða hvernig í því liggur. Líklegt er að eitt hross hafi verið heygt hjá hvorum manni, en að bein úr öðrum hrossum, einu eða fleirum, tilheyri enn öðru hrosskumli á melnum.

Ekkert haugfé fannst í gröfunum í kumli 2.

Mynd 10-12, kuml 2.



## Niðurstöður

Rannsóknin á Reiðmel í Kálfskinni leiddi í ljós 2 áður óþekkt mannskuml frá heiðni. Ekki verður sagt um umbúnað kumlanna þar sem þau hafa verið rofin og rænd fyrir allöngu síðan. Þó er ljóst að teknar hafa verið grafir, og yfir þær gerður haugur eða lögð breiða af hnefastórum hnallungum. Við rofið má vera að haugfé hafi þá verið fjarlægt. Leifar af kistli eða öðrum grip úr tré, ásamt hundi og hesti fundust með öðru kumlinu, en með hinu var einungis hestur. Öll eru þessi einkenni þekkt og eru hross algengasta tegund haugfjár á Íslandi. Fræðilegt gildi rannsóknarinnar liggur í staðsetningu kumlanna. Uppgröfturinn staðfestir að nýjar hugmyndir um staðfræðileg einkenni kumlstæða geta leitt til nýrra kumlfunda. Kumlin í Kálfskinni eru utan túns, við gamla reiðleið, og nærri merkjum og samræmist það staðarval mörgum öðrum þekktum legstöðum úr heiðni, í öllum landshlutum.

Ekki er útilokað að á Reiðmel leynist fleiri kuml, en gera þyrfti frekari rannsóknir til að ganga úr skugga um stærð kumlategisins.

Howell M. Roberts:

## English Summary

Staff from Fornleifastofnun Íslands carried out a research excavation at Kalfskinn, near Dalvík in Eyjafjörður between 20<sup>th</sup> June-24<sup>th</sup> June 2005. This formed a part of the project “Kuml og samfélag” directed by Adolf Friðriksson, and funded by Kristnihátíðarsjóður (the Millenium fund). Excavation was supervised by Howell M. Roberts, and carried out by Bruno Berson, Guðrún Alda Gísladóttir, James Taylor, Oddgeir Hansson, and Petra Möðlein. Post excavation work was carried out by Howell M. Roberts, and the finds were analysed by Guðrún Alda Gísladóttir. Osteological reports were prepared by Hildur Gestsdóttir (human remains) and Lisa Yeomans (animal remains).

Previous field survey of this farm in 2003, by Elín Ósk Hreiðarsdóttir, had identified a number of locations thought to be the sites of pagan burials.

These were found with the aid of the landowner, Sveinn Jónsson, and comprised anomalous concentrations of exposed stones, on a partially eroded crest (Reiðmelur), some 750m to the southeast of the modern farm buildings.

Two areas in particular were identified, close by an old riding track, and a little way above a small gulley cut by a stream. Immediately to the south of this location, the land rises sharply to heathland and mountains. In order to test these targets, transects 1m wide x 4m in length were laid out across the centre of each concentration of stone. Cleaning removed partial cover of scrub and intermittent turf, exposing slightly raised mounds of stone at the centre of each area. These were also seen to sit over areas of darker soil. At this stage both transects were drawn in detail and photographed. Further test excavation of the darker soil rapidly produced evidence of large animal bones, and the excavation areas were subsequently expanded to encompass the entirety of the areas of darker soil. These areas (A and B) were wholly cleaned of vegetation, photographed, and the stone spreads planned in detail.



After cleaning and detailed recording, surface stones (context 003 in Area A and context 004 in Area B) were selectively removed from both locations, revealing the darker soils filling two pairs of grave cuts (features [001] and [010] in Area A, and features [008] and [009] in Area B).

As excavation proceeded significant quantities of bone came to light, both human and animal. It rapidly became clear that much of the bone was disarticulated and disordered, and that only incomplete remains had survived.

In light of this, each bone or semi-articulated group of bones was planned and numbered individually, such that the layout of all material can be reconstructed.

Both Areas A and B produced both animal and human bones, often within the same grave. Of all of the graves, feature [010] - the northern grave in Area A – proved the most complete, containing substantial parts of the skeleton of a horse, along with other bones.

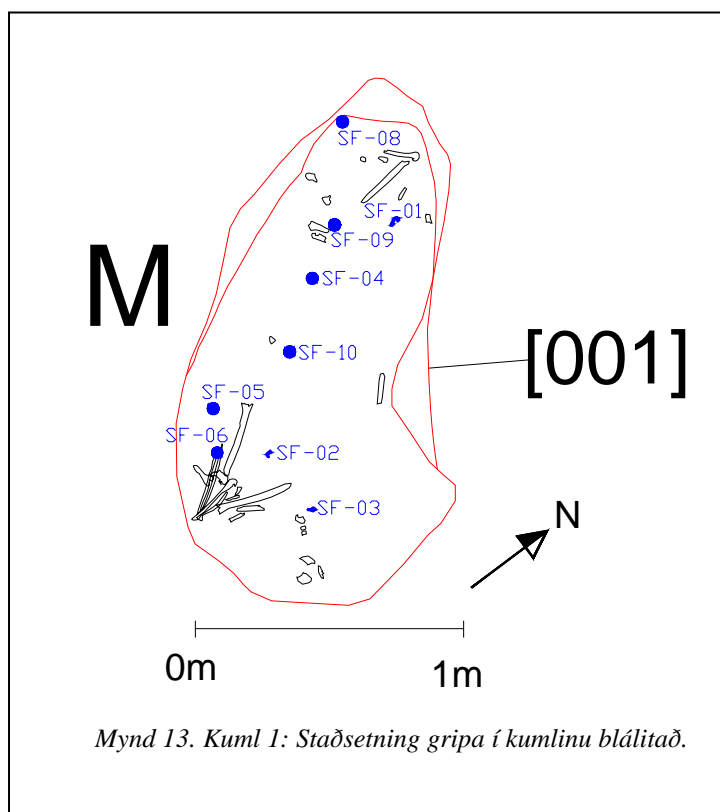
Feature [001] – the southern grave in Area A - produced some human and other bones, but had been extensively disturbed at its centre. This feature also produced a small number of corroded iron objects.

Features [008] (northern) and [009] (southern) within Area B both produced a mixed assemblage of human and animal bone. These had clearly been disturbed. It is difficult to prove with any certainty which grave was originally occupied by the human burial, but the morphology of the graves, and the layout of Area A would suggest that feature [009] was the original human burial.

Both grave groups were aligned broadly north-south. This is particularly clear when one considers the topography of the local landscape. Although the grave groups do not point directly north in the modern map sense, they are more closely aligned with the fjord itself and the valley walls. Both grave groups point “out” of Eyjafjörður, or what might be described as “local” north.

## Gripir

Við rannsókn kumlanna í Kálfskinni fundust 12 gripir. Gröfunum hafði verið raskað og því voru hvorki bein né gripir *in situ* (á sínum upprunulega stað). Allir gripirnir fundust á svæði A í mannsgröfinni í kumli 1.



Gripir 04, 05 og 06 eru naglar en 01 er að líkindum boginn leggur af nagla brotinn í báða enda. Rónaglar eru 4 talsins og bera númerin: 07, 08, 09 og 010. Viðarleifar eru á flestum naglanna. Heilu rónaglarnir gefa vísbendingu um þykkt viðarins, en hún hefur verið um 2 sm. Við nagla nr. 8 loða samsettar viðarleifar. eru naglarnir og viðurinn líklegast úr kistli. Gripur 01 er bogadregið járnbrot, sem gæti verið úr hringju. Svört, lítil og slétt steinvala (gripur 03) hefur án efa verið sett í kumlið af ásettu ráði. Notkun hennar eða merking er þó óráðin gáta. Í kumli 2, á svæði B voru beinaleifar en engir gripir, enda bæði kumlin rænd.

Gripirnir voru meðhöndlaðir og upplýsingar um þá skráðir í gagnagrunn uppgrafterans. Um forvörslu gripanna sá Þjóðminjasafn Íslands.

Hildur Gestsdóttir:

## Human skeletal remains

The human skeletal collection for the excavations in Kálfskinn includes 33 bones or fragments of bones and 31 teeth from two burials. In both cases the graves had been disturbed prior to excavation, and none of the bones appeared to be *in situ*.

### Methods

The main emphasis of the osteological analysis was to ascertain the minimum number of individuals (MNI) in each burial. To achieve this, the bones are sorted by element, and where applicable right and left side. Where possible bones from the same individual are identified, either by matching up articular surfaces, or the right and left side bones. Similarly bones that obviously belonged to different individuals, for example difference in size or robusticity are separated. Where possible, the age and sex of bones is recorded. The MNI is achieved by counting the most frequently occurring bone, and comparisons of size, age and sex.

In three instances it was possible to determine probable sex of the bones based on sexually diagnostic characteristics of the cranium and in one instance of a pelvic fragment (see for example Schwartz, 1995 and Buikstra & Ubelaker, 1994). Age at death could be roughly estimated from dental wear in both burials (Brothwell, 1981) and from suture closure in kuml B (Meindl & Lovejoy, 1985). No long bones were preserved well enough to estimate living stature.

### Results

#### Kuml A

A total of 21 human bones or bone fragments and 21 teeth were recovered from Kuml A, cranial bones, upper and lower long limb bones fragments of os coxa and tarsals (see appendix 1 for detail). On site plans of the bones indicate that none were articulated at the time of excavation. The NMI for Kuml A is one. In two cases, where articular surfaces were preserved bones could be articulated (right and left maxilla and left humerus and ulna and there were several cases where left and right bones could be matched up with some certainty (right and left humeri, femora and

tibiae). In addition, although none of the cranial vault bones articulated they were compatible with all being from a single skull. All these factors indicate that only one individual was buried in Kuml A

Sexually diagnostic characteristics were preserved on several of the cranial fragments and one of the os coxae fragments from Kuml A as indicated in the table below.

<b>Bone</b>	<b>Element</b>	<b>Sex</b>
<b>Cranium</b>	n/a	n/a
<b>Occipital</b>	Nuchal area	Female?
<b>Occipital</b>	External occipital protuberance	Female?
<b>Temporal</b>	Mastoid	Female?
<b>Temporal</b>	Suprameatal crest	Female?
<b>Mandible</b>	Angle of ascending ramus	Male?
<b>Mandible</b>	Lower margin	Male?
<b>Mandible</b>	Width of ascending ramus	Male?
<b>Pelvis</b>	n/a	n/a
<b>Ilium</b>	Greater sciatic notch	Female?

Although a greater number of sexually diagnostic characteristics have a female character it is not possible to state conclusively that this skeleton belonged to a female.

Dental wear was recorded on the mandibular molars present in the collection (Brothwell, 1981). The results are shown in the table below:

<b>Tooth</b>	<b>Side</b>	<b>Grade</b>	<b>Age</b>
<b>M1</b>	Right	3+	17-25
<b>M2</b>	Right	3-	17-25
<b>M1</b>	Left	3	17-25
<b>M2</b>	Left	2+	17-25
<b>M3</b>	Left	2	17-25

The dental wear on all the molars present indicate that this individual was a young adult. Previous studies of human remains in Iceland have indicated that dental wear in archaeological skeletons in Iceland is not consistent with that in the rest of Europe (Hildur Gestsdóttir, 2004) and so established dental wear methods can only serve as a rough estimate to age at death, indicating that this individual was under 35 years of age at the time of death.

The only pathological changes recorded on the human skeletal remains from Kuml A were dental changes. The maxillary left I1-I2 had been lost antemortem, the

mandibular right M3 is not present and appears not to have erupted, possibly missing entirely and there is slight calculus formation on all the teeth present.

### Kuml B

A total of 12 human bones or bone fragments and 10 teeth were recovered from kuml B, cranial fragments and upper and lower long limb bones (see appendix 2 for detail). Site plans show that none of the bones were articulated at the time of excavation. The NMI for kuml B is one. In one case three cranial bones would be articulated (right and left temporal and occipital bone) and the right and left femora are consistent with being from the same individual. All these factors indicate that only one individual was buried in kuml B.

Sexually diagnostic characteristics were preserved on several cranial fragments, see table below:

<b>Bone</b>	<b>Element</b>	<b>Sex</b>
<b>Cranium</b>	n/a	n/a
<b>Occipital</b>	Nuchal area	Male
<b>Occipital</b>	External occipital protuberance	Male
<b>Zygomatic</b>	Shape	Male
<b>Maxilla</b>	Palate	?

Those elements which show male characteristics are extremely robust indicating that this individual was male.

The obelion was preserved in the saggital suture of the temporal bones. The fusion was grade 3 indicating an age of  $44.8 \pm 12.4$  (Meindl & Lovejoy, 1985). No mandibular molars were present, so enamel wear was recorded (Brothwell, 1981) on the maxillary molars. The results are presented in the table below:

<b>Tooth</b>	<b>Side</b>	<b>Grade</b>	<b>Age</b>
<b>M1</b>	Right	5	33-45
<b>M2</b>	Right	3-	17-25
<b>M1</b>	Left	4+	25-35
<b>M2</b>	Left	2+	17-25

The average age based on these results is 23-33. However these are based on the maxillary molars rather than the mandibular and, as already stated archaeological dental wear in Iceland is considerably less than in the rest of Europe, meaning that these standards do tend to underage individuals. Neither method gives conclusive evidence, but they do indicate that this was an older adult, over 35 years at the time of



death.

Two anomalous changes were recorded in the bones from kuml B. One is a hole 16.5mm in diameter in the superior left side of the occipital bone. The hole is very regular, but the weathering of the cortical bone makes it difficult to determine with any certainty whether this is ante-, peri- or postmortem change. At this stage it seems most likely that this is damage caused by the grave robbers who disturbed the burial, but more detailed microscopic analysis would be needed to make a more conclusive diagnosis. The right tibia shows pathological changes with a slight lateral curving of the proximal 1/3 of the shaft. There is no cloaca or thickening of the bone, so the most likely explanation at this stage, without the aid of radiographs, is that this is caused by a long standing well healed fracture with complete apposition and slight lateral malalignment, with a 19° angle of displacement. The lack of callus formation around the fracture line, which runs slightly superiorly from the lateral to the medial side of the shaft, suggests that that this is a possible greenstick fracture which would have occurred when this individual was a child. In addition all the teeth present had grade 1 calculus formation.

#### Discussion

Two non-articulated individuals were recovered from the two burials in Kálfskinn. From kuml A, an adult of undetermined sex, under the age of 35 at the time of death with antemortem tooth loss, non-development of a M3 tooth and slight calculus formation on all the teeth present, and from kuml B a male over the age of 35 at the time of death with a well healed fracture to the right tibia and slight calculus formation on all teeth present.

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Appendix 1 – Kuml A

Bones

Bone	Segment	Side	Comment	Count	NMI	Age	Sex	Code	Unit
Frontal	Fragment of glabella	n/a	Poorly preserved fragment of frontal. Cortical bone entirely missing on ectocranial side.	1	1	?ad	n/a	A-2-01	[2]
Parietal	Fragment	?	Fragments of poorly preserved parietal bone. No cortical bone preserved ectocranially.	2	1	?ad	n/a	A-2-01	[2]
Occipital	Fragment around external occipital protuberance	n/a	Poorly preserved fragment with very little cortical bone ectocranially.	1	1	?ad	?	A-2-01	[2]
Temporal	Tympanic portion	Right	Poorly preserved, very little cortical bone ectocranially.	1	1	?ad	F?	A-2-01	[2]
Zygomatic	Near complete	Right	Most of the ectocranial cortical bone is missing.	1	1	?ad	n/a	A-2-01	[2]
Maxilla	Alveolar bone	Right	Alveolar bone between M1-M3. Fragment of palate still present.					A-2-01	[2]
		Left	Alveolar bone between I1-M3 and small part of palate. Cortical bone mostly missing ectocranially.	2	1	<35	n/a	A-2-01	[2]
Mandible	Near complete, but broken in two	Right	Most of the cortical bone missing.					A-2-03	[2]
		Left	Most of the cortical bone missing.	1	1	<35	M?	A-2-11	[2]
Humerus	Shaft	Right	Both epiphyses missing as well as well as most of the cortical bone.					A-2-09	[2]

Bone	Segment	Side	Comment	Count	NMI	Age	Sex	Code	Unit
		Left	Head missing as well as most of the cortical bone.	2	1	?ad	n/a	A-2-12	[2]
Ulna	Proximal ½	Left	Epiphyses largely damaged and cortical bone mostly missing.	1	1	?ad	n/a	A-2-15	[2]
Os coxa	Fragments of ilium	Right	Small fragment of ilium, around greater sciatic notch. Cortical bone damaged.					A-2-15	[2]
		?	Small fragment of unsided ilium, around greater sciatic notch.	2	1	?ad	?	A-2-16	[2]
Femur	Shaft	Right	Both epiphyses missing, cortical bone heavily weathered.					A-2-12	[2]
		Left	Both epiphyses missing, cortical bone heavily eroded.	2	1	?ad	n/a	A-2-14	[2]
Tibia	Shaft	Right	Epiphyses completely missing, as well as cortical bone.					A-2-02	[2]
		Left	Fragments of epiphyses present, but no joint surfaces. Most of the cortical bone on the posterior border present.	2	1	?ad	n/a	A-2-02	[2]
Fibula	Shaft	?	Both epiphyses missing as well as well as most of the cortical bone.	1	1	?ad	n/a	A-2-14	[2]
Talus	Complete	Left	Head damaged.	1	1	?ad	n/a	A-2-21	[2]
Calcaneus	Fragment	Right	No articular surfaces preserved.	1	1	?ad	n/a	A-2-14	[2]
<b>TOTAL</b>				<b>21</b>	<b>1</b>				

### Teeth

Area	Tooth	Presence	Development	Enamel hypoplasia	Caries	Calculus	Abscess
<b>Maxillary right</b>	M3	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	M2	Present	n/a	0	0	1	0

Area	Tooth	Presence	Development	Enamel hypoplasia	Caries	Calculus	Abscess
<b>Maxillary right</b>	M1	Present	n/a	0	0	1	0
<b>Maxillary right</b>	P2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	P1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	C	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	I2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	I1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	I1	Missing antemortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	I2	Missing antemortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	C	Present	n/a	0	0	1	0
<b>Maxillary left</b>	P1	Present	n/a	0	0	1	0
<b>Maxillary left</b>	P2	Present	n/a	0	0	1	0
<b>Maxillary left</b>	M1	Present	n/a	0	0	1	0
<b>Maxillary left</b>	M2	Present	n/a	0	0	1	0
<b>Maxillary left</b>	M3	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	M3	Abscent	Not developed	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	M2	Present	n/a	0	0	1	0
<b>Mandibular right</b>	M1	Present	n/a	0	0	1	0
<b>Mandibular right</b>	P2	Present	n/a	0	0	1	0
<b>Mandibular right</b>	P1	Present	n/a	0	0	1	0
<b>Mandibular right</b>	C	Present	n/a	0	0	1	0
<b>Mandibular right</b>	I2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	I1	Present	n/a	0	0	1	0
<b>Mandibular left</b>	I1	Present	n/a	0	0	1	0
<b>Mandibular left</b>	I2	Present	n/a	0	0	1	0
<b>Mandibular left</b>	C	Present	n/a	0	0	1	0
<b>Mandibular left</b>	P1	Present	n/a	0	0	1	0
<b>Mandibular left</b>	P2	Present	n/a	0	0	1	0

Area	Tooth	Presence	Development	Enamel hypoplasia	Caries	Calculus	Abscess
Mandibular left	M1	Present	n/a	0	0	1	0
Mandibular left	M2	Present	n/a	0	0	1	0
Mandibular left	M3	Present	n/a	0	0	1	0

## Appendix 2 – Kuml 2

### Bones

Bone	Segment	Side	Comment	Count	NMI	Age	Sex	Code	U nit
Occipital	Fragments	n/a	Two fragments of the same bone.	1	1	?ad	M?	n/a	not rec.
Temporal	Fragments	Both	Both bones, suture closed. Both are damaged with most of the ectocranial bone missing.	2	1	>35	n/a	n/a	not rec.
Frontal	Glabella	n/a	Two fragments of the same bone, include parts of both orbits. Cortical bone largely missing.	1	1	?ad	n/a	B-7-03	[7]
Zygomatic	Near complete	Right	Some damage, cortical bone missing.	1	1	?ad	M?	B-7-02	[7]
Maxilla	Alveolar	Both	Both sides, suture open but articulates. Cortical bone largely missing.	2	1	>35	?	B-7-02	[7]
Humerus	Shaft	Right	Both epiphyses missing, cortical bone largely flaked off.	1	1	?ad	n/a	B-7-04	[7]
Femur	Shaft	Right	Small part of head remains, cortical bone missing.					B-7-05	[7]
		Left	Small part of distal end remains, cortical bone largely missing.	2	1	?ad	n/a	B-7-06	[7]



Tibia	Shaft	Right	Both epiphyses damaged and most of the cortical bone missing.	1	1	?ad	n/a	B-7-07	[7]
Talus	Near complete	Right	Head damaged.	1	1	?ad	n/a	B-7-11	[7]
<b>TOTAL</b>				<b>12</b>	<b>1</b>				

Teeth

Area	Tooth	Presence	Development	Enamel hypoplasia	Caries	Calculus	Abscess
<b>Maxillary right</b>	M3	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	M2	Present	0	0	0	1	0
<b>Maxillary right</b>	M1	Present	0	0	0	1	0
<b>Maxillary right</b>	P2	Present	0	0	0	1	0
<b>Maxillary right</b>	P1	Present	0	0	0	1	0
<b>Maxillary right</b>	C	Present	0	0	0	1	0
<b>Maxillary right</b>	I2	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary right</b>	I1	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	I1	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	I2	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	C	Missing postmortem	n/a	n/a	n/a	n/a	n/a
<b>Maxillary left</b>	P1	Present	0	0	0	1	0
<b>Maxillary left</b>	P2	Present	0	0	0	1	0
<b>Maxillary left</b>	M1	Present	0	0	0	1	0
<b>Maxillary left</b>	M2	Present	0	0	0	1	0
<b>Maxillary left</b>	M3	Bone missing	0	0	0	1	0

<b>Mandibular right</b>	M3	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	M2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	M1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	P2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	P1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	C	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	I2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular right</b>	I1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	I1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	I2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	C	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	P1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	P2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	M1	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	M2	Bone missing	n/a	n/a	n/a	n/a	n/a
<b>Mandibular left</b>	M3	Bone missing	n/a	n/a	n/a	n/a	n/a

Lisa Yeomans:

## **Kalfskinn Animal Bone**

### Trench A

The northern cut [010] in Trench A contained an almost complete skeleton of a horse [011]. A small area of the body in the vicinity of the cervical and thoracic vertebrae, and ribs had been slightly disturbed and the skull of the horse, with the exception of some dentition, was not present. The hind-legs of the animal had been crouched up either side of the pelvis presumably to allow the horse to fit within the grave cut. In addition to the complete horse skeleton, a few duplicate horse elements indicate that the minimum number of individuals is two. Two atlas vertebrae, two sacrum and three upper canines demonstrates that part of a further horse skeleton was mixed within the grave fill probably at a later date when the burials were disturbed. In Trench B the minimum number of horses represented by the bones is also two and no atlas vertebra and no canines were recovered from the disturbed horse burial in Trench B. One possible explanation could be that the bones became mixed during robbing. Comparison of the size and the condition of the horse bones fits this interpretation with the horse in Trench B slightly smaller in size and less well preserved. However, the presence of a left humerus in Trench A and two left humeri in Trench B indicates that the bones of at least one further horse had become mixed in with the horse bones from the excavated graves. Further evidence for the mixing of the bones between deposits are a couple of dog lumbar vertebra in context [011].

The pelvis, in addition to the presence of canines shows that the horse [011] was a male. The animal had reached a mature, but not old, adult when he died. This is based on the wear of the incisors which had worn below the level of the enamel infundibulum. The bones demonstrated no signs of age related pathologies. Infection was probably the cause of the tarsals and third metatarsal of the left leg fusing together. The bone seems to have responded to an infection of the joint by

remodelling with the new bone growth causing the bones above the metatarsal to fuse. A congenital anomaly was probably the reason for the sacrum and the first caudal vertebra to also be fused.

To the south of the horse grave cut was the cut [001] for the human burial. Within the fill [002] were a number of bones of a dog. These were in poor condition, fragmented and, do not represent a complete skeleton. The body parts recovered consisted of the atlas, axis, most of the cervical vertebrae and part of a heavily fragmented pelvis. There was also the right humerus, right proximal ulna and radius, left scapula, left proximal humerus, part of the left ulna shaft and right proximal tibia in addition to parts of three fragmented metapodials. Since the skull was absent and the pelvis was fragmented it is impossible to determine the sex of the dog which was a medium-sized animal. At some point during the dog's life it suffered a fracture to lower portion of the left humerus shaft. This was a spiral fracture that had time, before the dog died, to heal itself. In addition to the dog bones was a left unfused distal tibia of a sheep and the astragali that articulates with this bone.

#### Trench B

The grave to the south in Trench B was more disturbed resulting in the bones being distributed across a number of contexts. In the stone spread [004] sealing the burial both left and right humeri as well as some of the upper incisors were recovered. These bones displayed the longitudinal cracking associated with exposure and weathering presumably caused by the bones being left open to the elements after the burial had been disturbed.

Horse skeletal elements were found mixed with the human bone in the fill of the human grave [006]. Amongst these bones were vertebrae, the left radius and ulna as well as a further left humerus bringing the total minimum number of individuals (MNI) for the site as a whole to 3. The bones from the fill [007] of the horse grave comprise of an almost complete mandible with both sides present. Breakage across the diastema has meant that it is not possible to determine whether there would have been any canines. However the fact that no canines were recovered suggests that the animal was more likely to have been a female.

Based on the tooth wear of the incisors recovered and the fusion of the bones, the horse must have died as a young, but skeletally mature adult. The upper right I4

recovered from the stone spread context [004] was completely unworn. No pathologies were visible on the bones present.

#### Summary

Bones from at least three horses are represented by the faunal assemblage from Kalfskinn based on the left humeri. The assemblage is, however, dominated by a mature adult interred in grave [010] and a young adult in grave [009]. Parts of a disturbed dog were also present in grave [001] interred with the human body there.