

**'BAYERNGRABEN' & 'HEIDENKOPF'
SERRE
FRANCE**

**ARCHAEOLOGICAL
EXCAVATIONS**



February 2005

**NML Report No.2
No Man's Land – YAP Films**

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1. INTRODUCTION

Background

- 1.1 In February 2005 *No Man's Land* (NML) carried out a programme of archaeological works at a site at Lassigny Farm, Beaumont Hamel, France. The project examined two sections of the German trench lines fought over during the Battle of the Somme, in 1916. The work was carried out on behalf of *Yap Films* of Toronto Canada, as part of the production of a television series, "Finding the Fallen", examining the First World War, and in particular telling the story of the war through the medium of archaeological excavation.
- 1.2 The excavations took place between 5-11 February 2005. The work was carried out in accordance with a project design prepared by NML and approved by M. Jean-Luc Collart, Conservateur Regional de l'Archaeologie for the Region Picardie (DRAC).

Location and Topography

- 1.3 The site was located within the Commune of Beaumont Hamel, to the north of the town of Albert in the Somme Departement of Northern France. The excavation areas lay to the south-west of the village of Serre, (UTM WGS84 Grid reference 0475.4 5549.6) (See Fig. 1). The site falls within cadastral plan parcel nos Beaumont X83 and 84, and is in the ownership of M. Jean Claude Samain, of the nearby Ferme de Lassigny.
- 1.4 The site lies on the north-west facing slope of a ridge at a height of 135m above sea level. The excavation was carried out in a cultivated field on the south-eastern side of the Serre to Mailly Maillet road, between Commonwealth War Graves Cemetery Serre No. 2, and a French memorial chapel. In addition to the site area itself, the surrounding land is under agricultural cultivation. The local geology consists clay 'Liman' overlying chalk. The underlying chalk was encountered in the course of the excavation at a depth of between 1.5 and 2m below the modern ground surface.

Historical Background

- 1.5 The site lies within the network of trenches forming the German front line at the time of the battle of the Somme in July-November 1916. The principal German front line trench in 1916 was a substantial construction known as the 'Bayernwerk' or 'Bayerngraben', the excavation of a section across this feature formed one of the

objectives of the project (Fig. 2). The area was also the site of significant earlier fighting between the French army and the Germans in 1915. The capture of parts of the former German line by the French in October of that year had left a section of the German trenches protruding as a salient into the Allied line. This section was christened the 'Quadrilateral' by British forces when they took over the area in later 1915, and became one of the objectives of the attack of 1st July 1916. This section was known on German maps as the 'Heidenkopf', named after one of the officers with responsibility for the sector. A portion of this trench system was also examined during the project.

- 1.6 It was these trenches which were attacked by the British army on 1st July 1916, the first day of the Battle of the Somme. The German position overlooked a small valley along which ran the Serre–Mailly-Maillet road. The British attack was launched from trenches on the opposite side of the valley to the north-west (Fig. 2). The attacks in this area have an important place in British history as the village of Serre a short distance to the north was attacked by some of the newly formed 'Pals' battalions, particularly those from the north of England. These troops suffered massive losses attacking the trenches around Serre. Fighting continued in the site area from July 1916 until the spring of 1917 when the Germans retreated out of the area entirely. Prior to that time the British captured the trenches within both excavation areas and these trenches were the scene of a bitter struggle over the winter of 1916-17.

Aims and Objectives

- 1.7 The principal objective of the excavation was to explore the ground over which the attacks of the 1st July 1916 had taken place, in order to tell the story of that attack through the medium of archaeology for the 'Finding the Fallen' broadcast. However, within that framework a variety of other archaeological objectives were identified;
- The German defences in this area were considered to be particularly formidable and well-built. It was hoped that excavation of a section of these defences would demonstrate the precise scale of these fortifications and the problems they presented to the attacking British troops.
 - It was further hoped that evidence of the subsequent winter struggle in the area might be revealed, and any alterations to the trench system made after its capture by British forces might be uncovered.
 - It is also a long-term objective of NML to examine sections of battlefield from as many parts of the Western Front, and periods of the war as possible, in order to

fulfil their wider academic objective of exploring and analysing the surviving remains of the war over the Western Front as a whole. Little systematic archaeological research has taken place over these battlefields and academic understanding of the archaeology of the conflict remains at an early stage. Thus any excavation of new sites on the western front would provide new and useful archaeological information. The precise character of these discoveries could not be predicted in advance.

Methodology

- 1.8 The two areas were excavated by tracked mechanical digger fitted with a 1.8m wide toothless bucket, to remove topsoil and other overburden until deposits judged to contain archaeological material were exposed. Excavation of features thus exposed continued by hand. In most cases surviving archaeological features were identified at a level equivalent to the base of the plough-soil and the top of the natural clay 'Liman'.
- 1.9 All trenches were planned and recorded in accordance with normal UK archaeological practice; a unique context number was allocated to each individual cut or deposit and full written descriptions of these were recorded on *pro-forma* context sheets. All deposits were also recorded on measured plans (at 1:50 scale) and section and elevation drawings (at 1: 20 or 1:10 where appropriate). The site was photographed both digitally and on colour print film. All artifacts recovered from the site were examined in the course of the excavation and catalogued. Most objects were of generic types and of little intrinsic merit (shell fragments, cartridges etc.). These were left on site after recording. Any objects considered to be of greater interest were taken to the UK for further analysis, and for specialist conservation where required. This was carried out at the laboratories of the Institute of Archaeology, University College London.
- 1.10 Provision was made so that if human remains were uncovered this was reported immediately to the local police, who were given the opportunity to visit the site in accordance with French legal procedure. All human remains uncovered in the course of the excavations would be planned and recorded in detail *in-situ*, and then removed and delivered in the first instance to the Commonwealth War Graves Commission, who would in turn contact the relevant national authorities and pass on the remains. Arrangements were made with the CWGC for full pathological examination of these remains, before their re-interment by the relevant national authorities, CWGC or

VDK. In the event no human remains were uncovered in the course of this excavation.

- 1.11 As a former battlefield, the site had the potential to contain dangerous unexploded munitions. No Man's land is acutely aware of the risk to the group and to the public from such munitions. Work was monitored at all times by professionally qualified Explosive Ordnance Disposal (EOD) staff. All areas to be excavated were swept with ordnance detecting equipment in advance of and during any excavation work.

2. RESULTS

General

- 2.1 Two areas were excavated in the locations shown on Fig.2. The individual features uncovered in each excavation are described in the following sections. The artifacts recovered from each are detailed in Appendix 1.

Area 1 – 'Bayerngraben'

- 2.2 An area was excavated 48m long and 1.5m wide across the line of the German front line trenches as depicted on wartime aerial photographs. A layer of topsoil consisting of mid-brown clayey silt was removed from the excavation area by mechanical excavator to a depth of approximately 0.3-0.5m. Disturbance to the underlying natural clay was identified approximately half way along this excavation, and a western extension was added to the trench measuring 4m in width and 15m in length. A series of archaeological features were identified along the length of the excavated area, and each of these was sampled by hand. The features excavated are shown in plan on Fig. 3 and the relevant numbered sections appear on Fig. 4. General views of the excavation area appear as Figs 7 and 12. Five major areas of hand excavation were carried out;

Sections 1 and 2

- 2.3 Two sections were recorded across a feature at the north-western end of the excavated area (Fig. 8). This proved to be a shallow trench up to 1m deep, which was clearly defined on the eastern side but appeared to have suffered shell damage on the west (Cut 031). This was interpreted as a shallow 'sap' or smaller trench in front of the main German line. The fills of this feature (006) and (027) consisted of undifferentiated brown clayey silts and are likely to have derived from post-war

backfilling. Numerous shell and fuse fragments, and two German 'Stick' type hand grenades were recovered from this feature. One of the fuses carried a British April 1916 date mark.

Section 3

- 2.4 This section was placed across a large sub circular feature at the northern end of the wider section of excavation (Cut 016). This proved to be a large oval shell crater, 4m long and up to 1m deep. Very little artifactual material was recovered from this feature (Fills (002), (014) and (015)), although one unexploded British 18lb shrapnel shell was recovered from the surface of 002. The crater appeared to have been deliberately back-filled with large chalk blocks (fill 002). As the base of the crater had not penetrated through the Liman to expose the underlying chalk, it is possible that this chalk was the product of German mining activity in the area, and was disposed of deliberately in the shell hole (a practice known from historical sources).

Sections 4 and 5

- 2.5 Two sections were recorded across a very large feature running north-east to south-west through the centre of the excavated area (Cut 018). This feature was 4m wide and in excess of 2m deep (Fig. 9). This feature was interpreted as the main German front line trench from 1916, the 'Bayerngraben'. Although very large, this trench was very poorly defined, possibly due to damage from shellfire, and retained no diagnostic trench features such as *in-situ* revetting or trench boarding on the floor. It is possible, however, that the feature was not fully excavated and that such features lay un-excavated lower down. A slight break in the slope on the front (north) side of the feature was interpreted as the highly eroded remains of a fire-step. Several large fragments of iron sheeting were uncovered near the floor of the trench. The lower 0.3m of this feature was cut through solid natural chalk. The fills of this feature consisted of an upper clay layer, (003) probably the result of post-war backfilling, and a series of more mixed clayey deposits in the base of the feature, probably the result of erosion, collapse, and shell damage. These deposits were identified in Section 5 as (037)-(040) but were undifferentiated during excavation. Thus all finds from these layers were recorded within fill (017).
- 2.6 Large numbers of German rifle cartridges, both fired and unfired, as well as shell and fuse fragments were recovered from this feature (fills (003) and (017)). Eleven 'stick' type and six 'egg' type German hand grenades were also found as well as the range

discs from several German rifle grenades. A variety of other items were also recovered including pieces of revetting material; pickets, wire, etc, and domestic items such as bottles, tin cans, a fragment of mirror, and parts of a German 'pickelhaube'-type helmet. A soldier's copper alloy finger-ring was also found in the base of the trench.

Sections 6 and 7

- 2.7 Two sections were cut across a linear feature, which passed along the southern portion of the excavation area. The southern-most of these, Section 7, revealed the partial profile (Cut 020, Fills 019, 020, and 005), and the northern, Section 6, the full profile of a communication trench leading to the front line (Cut 021, Fill 004). This trench was very narrow; only 0.5m wide at its base, but also very deep, being 2m deep from the modern ground surface (Fig.11). The lower 0.3m of this feature was cut through solid natural chalk. *In-situ* wooden trench flooring in the form of trench-boards was uncovered at the base of both sections through the trench (Context 024) (Fig. 10). The fill of Section 6 (004) was formed of undifferentiated brown clayey silt, however in Section 7 several layers could be discerned; a possible collapse layer in the base above the trench boards (019), a layer of naturally eroded material with fewer inclusions (023), and a post-war backfill layer (005).
- 2.8 Items recovered from the portion of the trench excavated at Section 6 included four German and one British rifle cartridges, an unexploded British 'Stokes' mortar round, and a German pattern rectangular electric torch, as well as shell fragments, shrapnel balls, and other trench debris. In the portion excavated as Section 7 a large quantity of German barbed wire was uncovered, much of it still wrapped around a 'knife-rest' angle iron support. A British style screw picket was also found. A single German 7.92mm round was found in this section. This bore a January 1918 manufacturing date.

Other features

- 2.9 Several other features were excavated but these proved to be shallow and amorphous, and were attributed to shell damage. Three shell craters were partially excavated, [025], [028], and [035]. Crater [028] was the result of an impact from an 18pdr, which had only partly discharged its balls. Shell and fuse fragments as well as shrapnel balls were recovered from all of these features. Metal detecting along the excavated area also revealed the presence of several British 18pdr shrapnel shell casings, which after exploding had buried themselves in the soft clay. The locations

of these impacts are shown on Fig. 3. Two further rectangular sondages were excavated. Area (026) was excavated in order to recover a portion of wire entanglement, which had become pushed into the natural clay, it is possible that the remains of a wooden post found nearby were associated with this entanglement. Sondage (022) was dug in order to sample the parados area behind the main German trench. Nothing of significance, apart from a further shrapnel shell casing buried in the natural clay was uncovered in this area.

Area 2 – ‘Heidenkopf’

- 2.10 A second small area was excavated approximately 250m to the south-west of Area 1 (Figs 2 and 5). This consisted of a 1.5m wide strip 17m long, with a rectangular area 7m square at its south-eastern end. The area was positioned in order to uncover the western corner of the ‘Heidenkopf’ salient of trenches. Unfortunately pressure of time and extremely inclement weather meant that this area could not be fully investigated, however a number of features were identified.
- 2.11 The trench forming the corner of the Heidenkopf position itself was uncovered in the south-eastern end of the excavation area [112]. This trench was only partially excavated. A range of British shrapnel shell components were found, as well as German shell fragments and one German 7.92mm casing. Extending north-west from this trench was a narrow communication trench or sap [111], containing further trench debris (104). This feature was not excavated. Two shell-holes were identified nearby, [109] and (110). Of these only [109] was excavated (Fig. 6, Section 3). A few shell fragments were recovered from the fill of this feature (105), which proved to be approximately 1m in diameter and 0.5m deep.
- 2.12 Two further features were identified in the north-western portion of Area 2. These consisted of a length of trench, and a shell crater, which had partially destroyed the trench. The trench itself [107] was quite small, only 0.6m wide and less than 1m deep. It was filled by a deposit of solid crushed chalk, (106) (probably the upcast from mines blown in the area by the Germans on 1 July 1916) (Fig. 6, Section 2). The subsequent shell crater [108] was oval in shape, 2.5m long and 0.75m deep. The crater clearly post-dated that chalk backfill of the trench, which was cut by the shell-blast (Fig. 6, Section 1). A variety of shell fragments were found in the fills of these features.

3. DISCUSSION

- 3.1 The aims of the project were to characterise the German defences in the site area, and to investigate the fighting which took place over them. Significant information relating to both these questions was uncovered by the excavations. In both excavation areas, trenches and other features associated with the fighting of 1916-17 were found, as well as features that may date from other phases of the war. Careful examination of these features and of the associated artifacts, and comparison with the historical record, shows that the archaeological results reveal or confirm several of the characteristics of the fighting in the area, and that the physical evidence supports the documentary record. Table 1 contains a listing of the most significant or datable artifacts recovered from the excavations, sorted according to the trenches or other features from which they were obtained.
- 3.2 The trenches in the vicinity of the excavated areas were principally constructed and occupied by the German army (in particular companies from *121st Reserve Infantry Regiment*). The system was first constructed in 1914. The most significant alteration in layout came after the French offensive of June 1915, after which the Heidenkopf salient was created, and the main Bayerngraben front line was constructed. The main focus of the German territorial loss in June 1915 was north of the Serre road, but fighting also took place in the Heidenkopf area. Previous NML excavations uncovered casualties from this fighting, and in Area 2 a single French round was recovered during machining of the site (100), which may have originated in this battle.
- 3.3 The area was assaulted again on 1 July 1916, by the British 4th Division as part of the first day of the Battle of the Somme. The strength of the German defences is evident from the size of the main front line trench (Sections 4 and 5), which was over 2m deep and up to 4m wide at ground level. Sadly, little *in situ* evidence of trench architecture survived, it is possible this was a result of the heavy bombardment the site received both prior to and during the Somme battles of 1916. The communication trench running south-eastwards behind the front line (Sections 6 and 7) was in a better state of preservation, and retained *in-situ* trench boards. This trench too was well built and although narrower, was nearly 2m deep from the modern ground surface, a depth which would have been increased when the trench was constructed by upcast material forming a parapet/parados on both sides. A third, smaller, and heavily shell damaged trench was uncovered apparently in front of the main

Bayerngraben position. This may represent a sap of some kind out into no-man's-land, or it may be a vestige of the earlier trench system prior to the French gains of 1915 (or perhaps both).

- 3.4 The intensity of the British bombardment of the area was evident from the number of British shell components recovered during excavation (see Table 1.). However although some high explosive shell parts and shell holes were identified, the British concentration on shrapnel bombardment prior to 1 July 1916 was clear from the number of parts of these shells found. In particular a number of spent shrapnel shell casings were found buried in the natural clay of the excavation areas. By contrast far fewer identifiable German shell and fuse fragments resulting from their defensive bombardment were recovered.
- 3.5 During the winter of 1916-17 the British established themselves in the Heidenkopf position and fierce combat took place along the length of the various trenches linking the positions of the two armies. Bombing (use of hand-grenades) was a key part of this fighting, and a significant number of German hand-grenades of various patterns were recovered. Curiously, no British Mills grenades were found during the excavation, and only one British .303 case suggesting that possibly most of this fighting was actually in the Heidenkopf rather than the Bayerngraben. The presence of a heavily wired 'knife-rest' in the communication trench may also reflect a deliberate blocking of the trench during this phase of the battle, however it is also possible that this item was thrown into the trench during post-war back-filling.
- 3.6 Fighting in the area was concluded by the German withdrawal of spring 1917. This is reflected in the available dating recovered from fuses and small-arms ammunition. Those British shell fuses which could be dated carry marks from 1915 and 1916, while the latest manufacturing date found on almost all the German ammunition was March 1916. Only one anomalous round was found bearing a January 1918 date (005). German troops did return briefly to the Serre area during the offensive of March 1918 ('Operation Michael'), and this round may reflect that later presence.
- 3.7 Evidence of the life of the garrison of the trench system was also uncovered. All excavated sections contained fragments of glass bottles, and tin cans of various types. A torch and several small denomination German coins were also found. Perhaps most poignant among these personal items was the copper alloy finger-ring found in the lower fill of the front-line trench (017), however in the absence of any

markings, the origin of this item remains unknown. In comparison with other trenches excavated by NML, the volume of domestic refuse found in the Bayerngraben in particular was quite low, suggesting that activities such as cooking were confined in the German lines at least to support trenches and other areas rather than taking place in the Front line.

4. ACKNOWLEDGEMENTS

- 4.1 NML would like to thank M. Jean-Luc Collart, M. Tahar Ben Redgeb and the staff of the Service Regional d'Archaeologie, and the landowner M. Samain, for their assistance with this project. Fieldwork was carried out by members of NML, directed by Martin Brown. Finds processing was managed by Luke Barber of NML, with conservation services provided by the laboratories of the Institute of Archaeology, University College London. Illustrations were produced by Justin Russell and this report was compiled by David Kenyon, with contributions from Luke Barber. Fieldwork and post-excavation was funded by YAP Films of Toronto Canada.

TABLE 1. List of significant artifacts

Cont.	Description	British Shells				German Shells	German grenades		German Rifle Grenade spacer	Other artifacts (Latest dated small caliber round)
		Fuse frag.	Baseplate	Flash-tube	Casing	Fuse frag	'Stick'	'Egg'		
000	AREA 1 Unstrat	2		1						Pipe bowl
001	Topsoil/cleaning	6	2	4	4	1 (1915)	1			Brit. .303" x 1
006	Fills of trench	2	1		1		2			
027	[031]	1 (April '16)								
003	Fills of Trench [018]	8	5	2		1	7	3		Fr. 8mm x 1 (June '13) Ger. 7.92mm x 47 (Mar '16)
017		5	1	2		2	6	3	1	Ger. 7.92mm x 17 (Aug '15) Finger ring
004	Fills of Communcation Trench	3		1			1		1	Stokes round, Brit. .303" x 1 (1915) Ger. 7.92mm x 4 (Nov '15)
005	[020]/[021]	5		1					1	Ger. 7.92mm x 1 (Jan '18)
019			1							
024		1							1	
002	Fills of shell hole	1			1					
014	[016]	1								
011	Fill of shell hole [025]	1 HE (July '16)								
012	Fill of shell hole [028]	1	1							
022	Fill of sondage				1					
026	Fill of sondage	1								
100	AREA 2 Unstrat	1 (1916)								Fr. 8mm x 1 (1907)
101	Topsoil/cleaning	1 (1915)				1 (1916)			1	Ger. 7.92mm x 1(Nov '11)
102	Fill of Trench [112]	1		2		1				Ger. 7.92mm x 1(July '14)
TOTALS		41	11	13	7	6	17	6	5	

APPENDIX 1 Finds

AREA 1 – BAYERNGRABEN

NB: Full details are housed on pro forma record sheets in the site archive

Context	000: Unstratified – metal detector sweep prior to excavation
Large calibre ammunition	British X2 Cu al fuse frags (timer) X1 Cu al flash tube from 18 pdr shrapnel shell X1 Cu al driving band from 18pdr shell X1 Pb shrapnel ball
Domestic items	German X1 white 'china' tobacco pipe bowl frag (SF 34)

Context	Context 001: Topsoil and cleaning of excavation surface
Large calibre ammunition	British X2 18pdr shrapnel shell cases (fired) X4 Cu al flash tubes from 18 pdr shrapnel shells X2 Fe base plates from 18pdr shrapnel shells X6 Cu al fuse frags (timer) X21 Cu al driving band from 18 pdr X160 Pb shrapnel balls (158 of these were in partially expended 18 pdr shrapnel shell case) Uncertain nationality X14 Fe shell splinters (inc. H.E. and shrapnel) X1 fuse fragment (gain) in white metal
Grenades and Mortars	German X1 stick grenade (wood handle and part of Fe can. Screw base missing)
Small arms ammunition	British 303 fired bullet: x1(1 x Bullet)
Trench related	X1 Fe angle iron frag X8 frags of 2-strand barbed wire X5 frags of Fe screw pickets
Military Equipment	German X1 entrenching tool head (folded in half) (SF 35)
Domestic items	Uncertain nationality X1 long bone fragment

Context	No number: embedded into natural subsoil
Large calibre ammunition	British X1 18 pdr empty shrapnel shell case (100mm into natural) X1 18 pdr shrapnel shell (dud) with fuse missing but Pb balls still inside (50-60mm into natural) X11 Pb shrapnel balls (closely associated) X1 Fe 18 pdr Fe shrapnel shell splinter German X1 Cu al & Fe fuse (H.Z. 14 – probably 10.5cm howitzer H.E. Dated 1915)

Context	Context 002: Fill of Shellhole 016 (Section 3)
Large calibre ammunition	<p>British X1 18 pdr shrapnel shell (dud) with fuse missing but Pb balls still inside X1 Cu al (with Fe tip) impact/graze fuse. Probably No. 101 or 102. H. E.</p> <p>Uncertain nationality X1 Fe shell splinter</p>

Context	Context 003: Upper fill of front line trench [018] (Section 5)
Large calibre ammunition	<p>British X1 Fe shell splinter from 18pdr shrapnel shell X6 Cu al fuse frags from 18pdr shrapnel shells X1 Cu al fuse (graze/impact). Probably No. 101 or 102 X1 Cu al fuse frag from impact/graze fuse X2 Cu al flash tube from 18 pdr shrapnel shell (one still with Fe base plate) X29 Pb shrapnel balls X4 Fe base plates from 18 pdr shrapnel shells X1 Cu al driving band from 18 pdr</p> <p>German X1 Cu al driving band from 77mm X1 Fe & zinc fuse frag</p> <p>Uncertain nationality X46 Fe shell splinters (inc. H.E. and shrapnel) X6 Cu al fuse frags X23 Cu al driving band frags X1 Fe base plate (82mm but with no hole for flash tube)</p>
Grenades and Mortars	<p>German X3 egg grenades (live) X1 frag from disc grenade (1/2 of casing) Unfired X 6 stick grenades (Fe cans with belt clips, some still with part of wooden handles still surviving). Some have wooden blocks in top of can. All live X1 stick grenade frag (base of stick with screw cap still on and ceramic pull inside) X1 Cu al screw top (transit plug?)</p>
Small arms ammunition	<p>French 8mm fired case: Apr-June 1913 x1 (1 x fired case)</p> <p>German 7.92mm unfired complete: x5 [in one charger – different dates – illegible x2, Feb 1907 x1, Apr 1911 x1, Nov 1911 x1] x4 [in one charger – matching dates – illegible x1, Feb 1907 x3] Loose: Apr 1913 x1; 1915 x1; Mar 1915 x1; Apr 1915 x1; May 1915 x1 (14 x unfired complete) 7.92mm unfired case: June 1910 x1; Jan 1912 x1; 1915 x1; Apr 1915 x1; Oct 1915; Nov 1915 x1; (5 x unfired cases) 7.92mm fired case: June 1903 x1; Nov 1912 x5; Feb 1914 x1; May 1914 x1; Oct 1914 x1; Nov 1914 x1; 1915 x1; Apr 1915 x4; May 1915 x7; June 1915 x1; July 1915 x1; Aug 1915 x1; Nov 1915 x1; Feb 1916 x1; Mar 1916 x1 (28 x fired cases)</p>
Trench related	<p>Uncertain nationality X35 frags of single and double strand barbed wire (most definitely German) X3 Fe smooth wire (double strand – each 5mm thick) used for bracing reveting stakes X1 Fe strip from fencing X1 Fe fence picket X1 Fe spike/rod X6 Fe nails</p>

Military Equipment	German X7 Cu al chargers X4 Fe chargers X1 Cu al jacketed detonator X1 brass 1891 chinstrap mount from pickelhaube
Domestic items	German X1 1 Pfennig coin (Dated 1912) (SF 31) Uncertain nationality X1 53mm di plain mirror X1 clear glass jar frag X1 round-sectioned tin can X1 crushed tin (or torch frag)
Miscellaneous	Uncertain nationality X1 Fe ferrule with wood inside. ?Tent peg X1 prehistoric worked flint

Context	Context 004: Fill of communication trench (Section 6)
Large calibre ammunition	British X1 Cu al flash tube from 18pdr shrapnel shell X3 Cu al fuse frag (timer/shrapnel) X1 Cu al driving band from 18pdr X1 Fe 18pdr shell splinter X41 Pb shrapnel balls German X3 Fe fuse frags Uncertain nationality X41 Fe shell splinters (H.E. % shrapnel) X10 Cu al driving band frags X7 Cu al fuse frags
Grenades and Mortars	British X1 Fe 4" Stokes mortar shell (dud). Chemical German X1 stick grenade (part of wooden handle and Fe can) X1 Fe distancing disc from 1914 rifle grenade
Small arms ammunition	British .303 unfired complete: 1915 x1 (1 x unfired complete) German 7.92mm unfired case: Nov 1912 x1 (1 x unfired case) 7.92mm fired cases: Apr 1913 x1; Sept 1914 x1 (from base of context); Nov 1915 x1 (3 x fired cases)
Trench related	Uncertain nationality X24 frags of single-strand and double-strand barbed wire X6 Fe nails
Military Equipment	German Cu al rifle oiler
Domestic items	German X1 Fe rectangular torch with domed lens glass (SF 36) Uncertain nationality X1 clear glass bottle X1 frag dark green wine bottle
Miscellaneous	Uncertain nationality X1 prehistoric flint flake

Context	Context 005: Upper fill of communication trench (Section 7)
Large calibre ammunition	British X5 Cu al fuse frags (timer/shrapnel) X1 Cu al flash tube from 18pdr shrapnel shell X2 Cu al driving bands from 18pdr X38 Pb shrapnel balls Uncertain nationality X21 Fe shell splinters (H.E. and shrapnel) X2 Cu al driving band X1 Cu al ?fuse frag
Grenades and Mortars	German X1 Fe distancing disc from 1914 rifle grenade
Small arms ammunition	German 7.92mm unfired complete: 1918 x1 (odd type with double ?rim on case); Jan 1918 x1 (1 x unfired complete)
Trench related	Uncertain nationality X107 frags of one-strand and two-strand barbed wire (some British?) X2 Fe angle irons set as a knife rest X1 Fe bar with holes for wire X1 Fe screw picket (inverted)
Military Equipment	German X1 Fe catch from ammunition box
Domestic items	Uncertain nationality X1 frag dark green wine bottle

Context	Context 006 Upper fill of trench (Section 1)
Large calibre ammunition	British X1 complete 18pdr shrapnel shell case (fired) X2 Cu al fuse frag from 18pdr shrapnel shell X1 Fe base plate from 18 pdr shrapnel shell X9 Pb shrapnel balls Uncertain nationality X59 Fe shell splinters X7 Cu al driving band frags (x1 large calibre)
Grenades and Mortars	German X1 stick grenade with belt hook. Wood handle nearly complete (live) X1 Fe end plate from can of stick grenade
Trench related	Uncertain nationality X45 Fe one and two-strand barbed wire frags X1 angle iron (distorted)
Domestic items	Uncertain nationality X1 green wine bottle frag
Miscellaneous	Uncertain nationality X1 roof tile frag

Context	Context 007: Fill of Shell hole [035]
Large calibre ammunition	Uncertain nationality X2 Fe shell splinters

Context	Context 011: fill of Shell hole [025]
Large calibre ammunition	British X1 Pb shrapnel ball X1 Cu al graze/impact fuse. No. 100 Mark IIB. Dated July 1916 (H.E.) Uncertain nationality X3 Fe shell splinters X3 Cu al driving band frags

Context	Context 012: Fill of shell hole [028]
Large calibre ammunition	British X1 Cu al fuse frag (timer/shrapnel) X1 Fe shell splinter from 18pdr shrapnel shell X1 Fe base plate from 18pdr shrapnel shell X114 Pb shrapnel balls (NB. All these were in close association: one late firing shell) Uncertain nationality X8 Fe shell splinters (H.E. & shrapnel)
Grenades and Mortars	German X1 Fe distancing disc from 1914 rifle grenade
Trench related	Uncertain nationality X3 single-strand barbed wire frags

Context	Context 013: Area of shrapnel impact
Large calibre ammunition	British X2 Pb shrapnel balls

Context	Context 014: Fill of shell hole (Section 3)
Large calibre ammunition	British X1 Cu al fuse frag from 18pdr shrapnel shell Uncertain nationality X6 Cu al driving band frags (Large calibre)

Context	Context 017: Lower fill of Front line trench (Section 4)
Large calibre ammunition	<p>British X5 Cu al fuse frag (timer/shrapnel) X4 Fe shell splinter from 18pdr shrapnel shell X2 Cu al flash tubes from 18pdr shrapnel shell X1 Fe base plate from 18pdr shrapnel shell X2 Cu al driving band frags from 18pdr shell X21 Pb shrapnel balls</p> <p>German X1 Fe base plate with part of Fe flash tube X2 Fe and zinc fuse frag X1 Cu al driving band frag X1 Fe shrapnel ball</p> <p>Uncertain nationality X41 Fe shell splinters (H.E. & shrapnel)) X7 Cu al fuse frags X1 Fe 88mm di disc from shell interior X5 Cu al driving band frags</p>
Grenades and Mortars	<p>German X4 stick grenades with belt hooks (parts of wooden handles surviving) All with wooden blocks at top of can (live) X1 Fe top from later, thinner stick grenade with no belt hook X1 white metal screw base with cover and ceramic ball still inside X3 egg grenades (live) X1 Fe distancing disc from 1914 rifle grenade</p>
Small arms ammunition	<p>German 7.92mm unfired complete: Sept 1915 x1 (burnt) (1 x Unfired complete) 7.92mm unfired case: Aug 1915 x1; Sept 1915 x1 (burnt) (2 x unfired case) 7.92mm fired cases: Aug 1902 x1; Jan 1910 x2; Jul 1911 x1; Oct 1912 x1; Nov 1912 x1; Aug 1914 x1; Feb 1915 x2; May 1915 x4 (NB x1 with fluted case: trench art SF 33); Aug 1915 x1 (14 x fired cases)</p>
Trench related	<p>Uncertain nationality X12 single and double-strand barbed wire frags (some British) X2 frags of corrugated iron sheet X1 Fe clip to secure cables X1 lump of Fe ?nails X2 Fe nails X7 5mm smooth Fe wire frags X9 pieces of 5.9mm di smooth Fe wire used for reveting. Some still in circle showing diameter of timber posts wire used to brace (55, 73 and 74mm di)</p>
Military Equipment	<p>German X1 Cu al coated detonator X2 Cu al chargers X1 frag of tunic cloth X1 brass buckle from pickelhaube chin strap</p>
Domestic items	<p>Uncertain nationality X2 green wine bottle frags X1 round-sectioned tin can X1 Cu al plain finger ring (internal di 21mm) (SF 32)</p>
Miscellaneous	<p>Uncertain nationality X1 frag of reinforced glass X1 frag of curving timber</p>

Context	Context 019: Lower fill of communication trench (Section 7)
Large calibre ammunition	British X1 Fe base plate from 18pdr shrapnel shell X1 Pb shrapnel ball Uncertain nationality X2 Fe shell splinters (H.E. & shrapnel)
Trench related	Uncertain nationality X1 Fe angle iron frag X1 Fe smooth 4mm di wire frags X2 frags of wooden trench board
Domestic items	Uncertain nationality X1 green wine bottle frag

Context	Context 022: Sondage in Natural clay
Large calibre ammunition	British X1 complete 18pdr shrapnel shell case (fired). Base 200-250mm into natural X11 Pb shrapnel balls Uncertain nationality X6 Fe shell splinters (H.E.) – some 200mm into natural

Context	Context 024: fill surrounding trench boards in communication trench (Section 7)
Large calibre ammunition	British X1 Cu al fuse frag (timer/shrapnel) Uncertain nationality X3 Fe shell splinters
Grenades and Mortars	German X1 Fe distancing disc from 1914 rifle grenade
Trench related	Uncertain nationality Remains of wooden trench boards X7 Fe nails
Miscellaneous	Uncertain nationality X1 gun metal 'plug' with central slot. Unidentified

Context	Context 026: Sondage in natural clay
Large calibre ammunition	British X1 Cu al fuse frag German X9 Fe shrapnel balls Uncertain nationality X6 Fe shell splinters (H.E.)
Trench related	Uncertain nationality X32 frags of 2-strand barbed wire (British?)

Context	Context 027: Lower fill of trench (Section 1)
Large calibre ammunition	British X1 Cu al fuse. No. 100B. Dated. April 1916 Uncertain nationality X67 Fe shell splinters (H.E & shrapnel) X4 Cu al driving band frags (Large calibre)
Trench related	Uncertain nationality X2 frags of 1-strand barbed wire

AREA 2 - HEIDENKOPF

Context	Context 100: Unstratified material collected during machining/cleaning
Large calibre ammunition	British X1 Cu al fuse. No. 85 (timer). Dated 1916 Uncertain nationality X24 Fe shell splinters X2 Cu al driving band frags
Small arms ammunition	French 8mm fired bullet: Oct-Dec 1907 (1 x fired bullet)
Trench related	Uncertain nationality X2 barbed wire frags X1 Fe strip fixing

Context	Context 101: ploughsoil
Large calibre ammunition	British X1 Cu al fuse. Timer ?No. 85? Dated 1915. X1 Pb shrapnel ball German X1 Cu al fuse. Type: HZ.14.Fb (impact – probably 10.5cm howitzer). Dated 1916 Uncertain nationality X5 Fe shell splinters (mixed calibres) X1 Cu al fuse frag
Grenades and Mortars	German X1 Fe distancing disc from 1914 rifle grenade
Small arms ammunition	German 7.92mm unfired case: Nov 1911 x1 (1 x unfired case)
Trench related	Uncertain nationality X2 barbed wire frags X1 Fe 6mm di smooth wire
Domestic items	Uncertain nationality X9 frags of green and brown bottle glass X1 green wine bottle (SF 37)

Context	Context 102: Fill of trench (Heidenkopf)
Large calibre ammunition	<p>British X1 Cu al fuse frag (timer) X2 Cu al flash tubes from 18pdr shrapnel shells X3 Pb shrapnel balls</p> <p>German X1 base from a 77mm shrapnel shell X1 white metal fuse frag X1 Cu al driving band frag from 77mm shell</p> <p>Uncertain nationality X20 Fe shell splinters (H.E. & shrapnel) X5 Cu al fuse frags X3 Cu al driving band frags</p>
Small arms ammunition	<p>German 7.92mm unfired case: Jul 1914 x1 (1 x unfired case)</p>
Trench related	<p>Uncertain nationality X19 frags of barbed wire (inc. British?) X2 Fe sheeting frags</p>
Domestic items	<p>Uncertain nationality X13 green wine bottle frags</p>

Context	Context 103: Fill of shell hole [108]
Large calibre ammunition	<p>Uncertain nationality X31 Fe shell splinters X1 Cu al fuse frag X5 Cu al driving band frags</p>
Trench related	<p>Uncertain nationality X4 barbed wire frags X1 frag of Cu al 7-strand communication wire</p>
Domestic items	<p>Uncertain nationality X8 frags of tin cans</p>

Context	Context 104: Fill of Sap
Large calibre ammunition	<p>Uncertain nationality X4 Fe shell splinters</p>
Trench related	<p>Uncertain nationality X1 barbed wire frag</p>
Domestic items	<p>Uncertain nationality X3 frags of square-sectioned tin can</p>

Context	Context 5: Fill of shell hole [108]
Large calibre ammunition	<p>Uncertain nationality X3 Fe shell splinters (H.E.)</p>

Context	Context 106: Fill of trench [107]
Trench related	<p>Uncertain nationality X1 Fe nail X1 frag of 1mm di single strand Cu al communication wire</p>

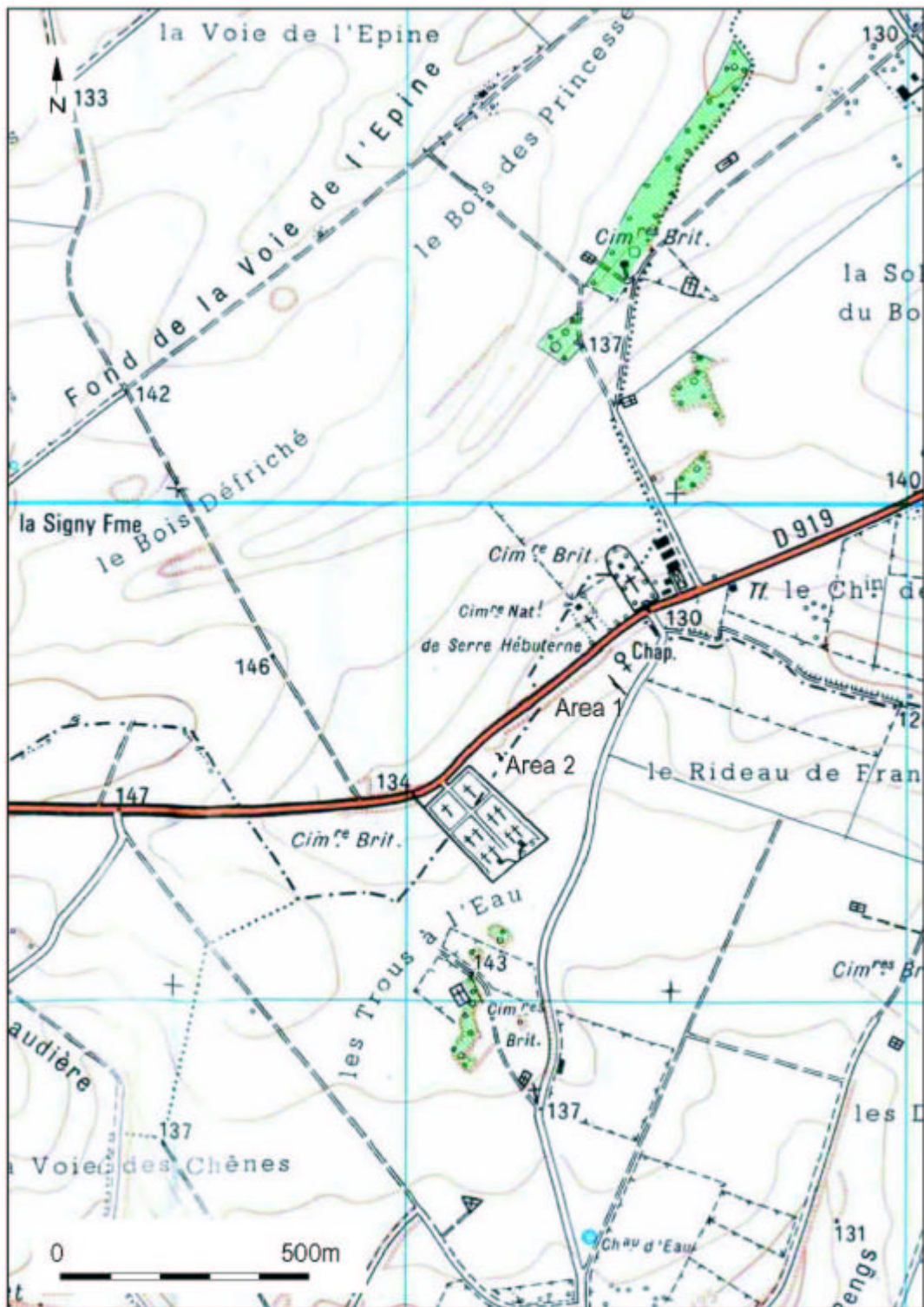


Fig. 1: Site Location (1:10,000)

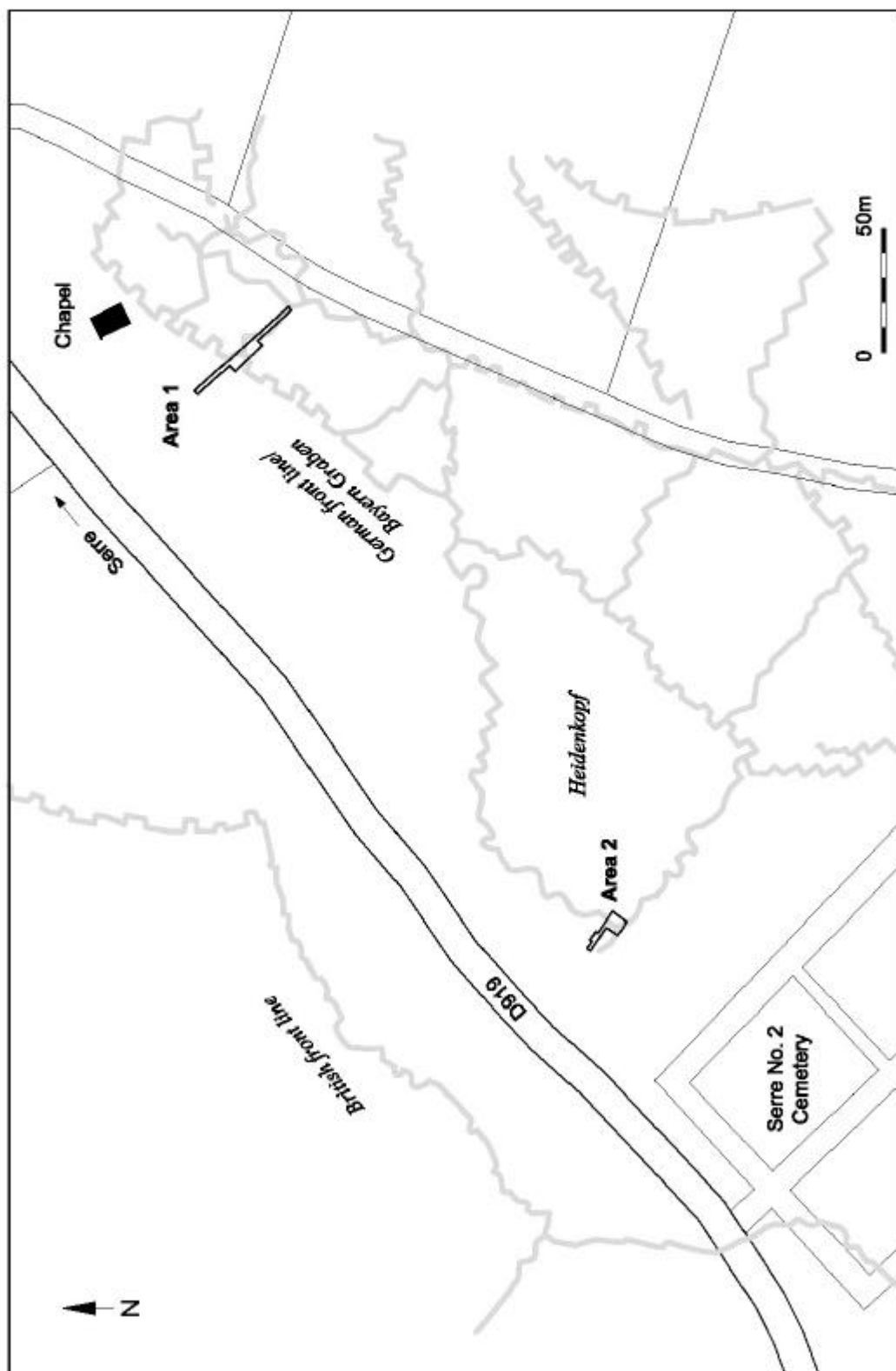


Fig. 2: Excavated Areas and historic map information (1:2000)

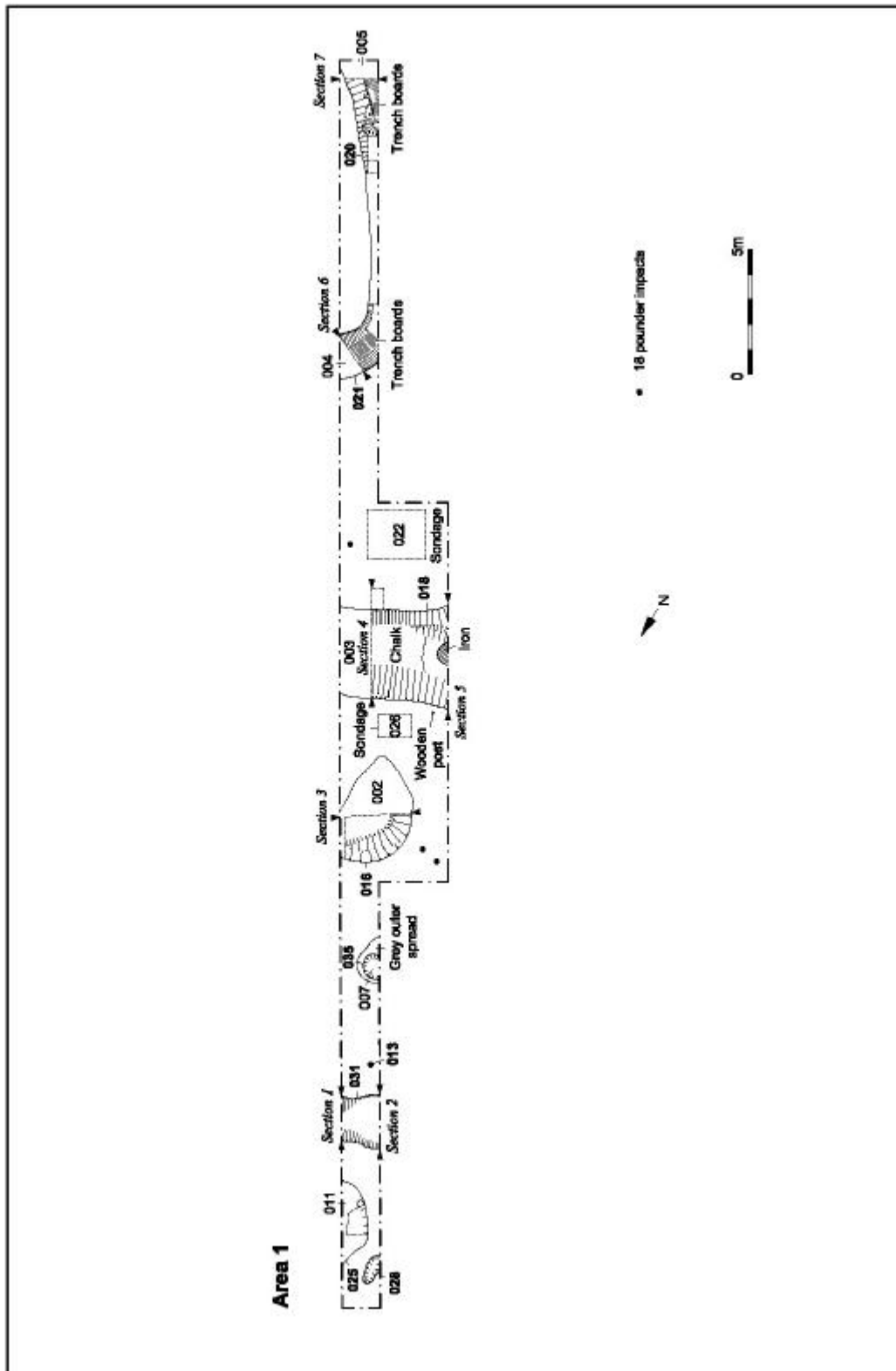


Fig. 3: Area 1 showing excavated features (1:200)

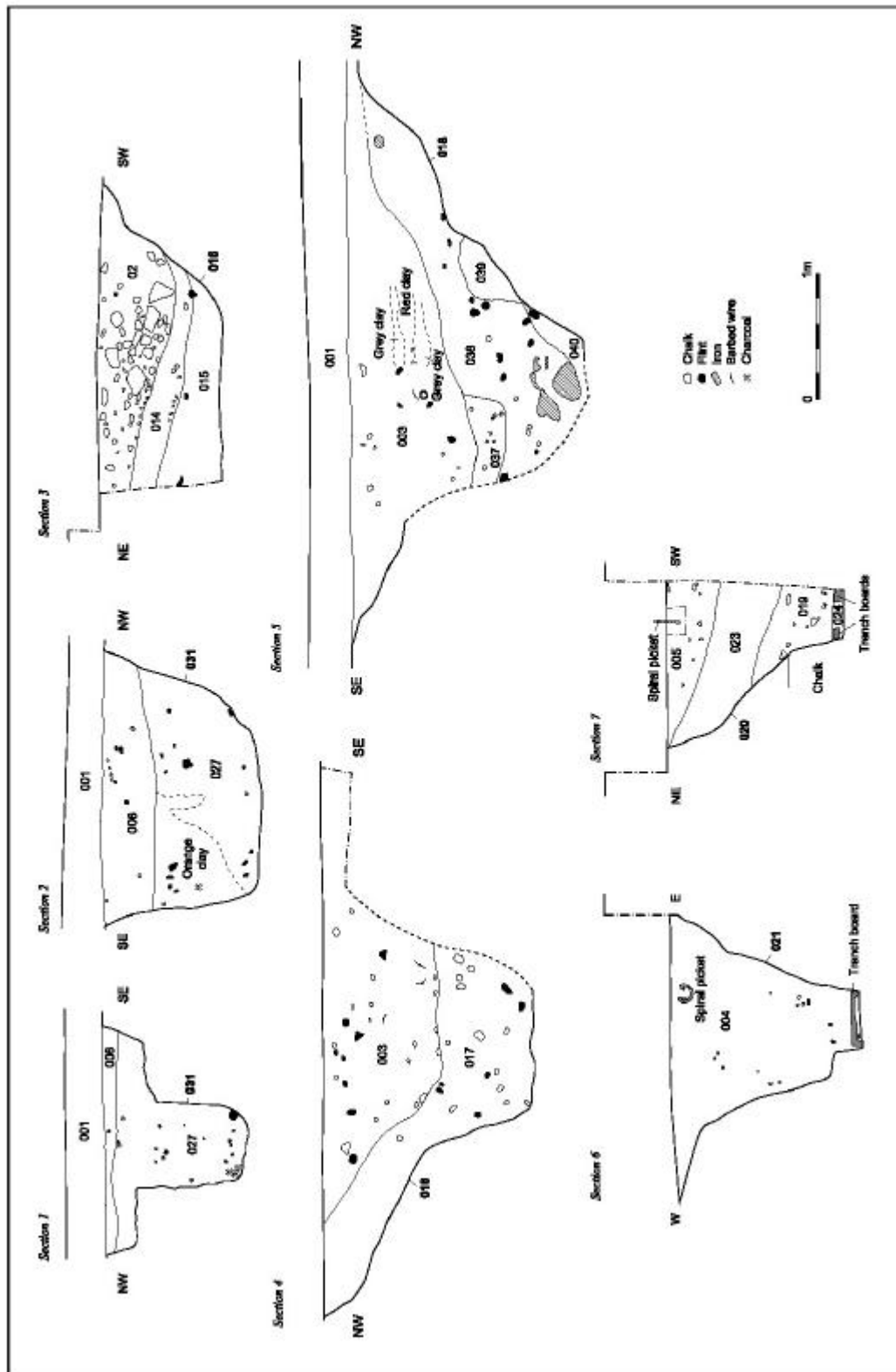


Fig. 4: Area 1 sections (1:40)

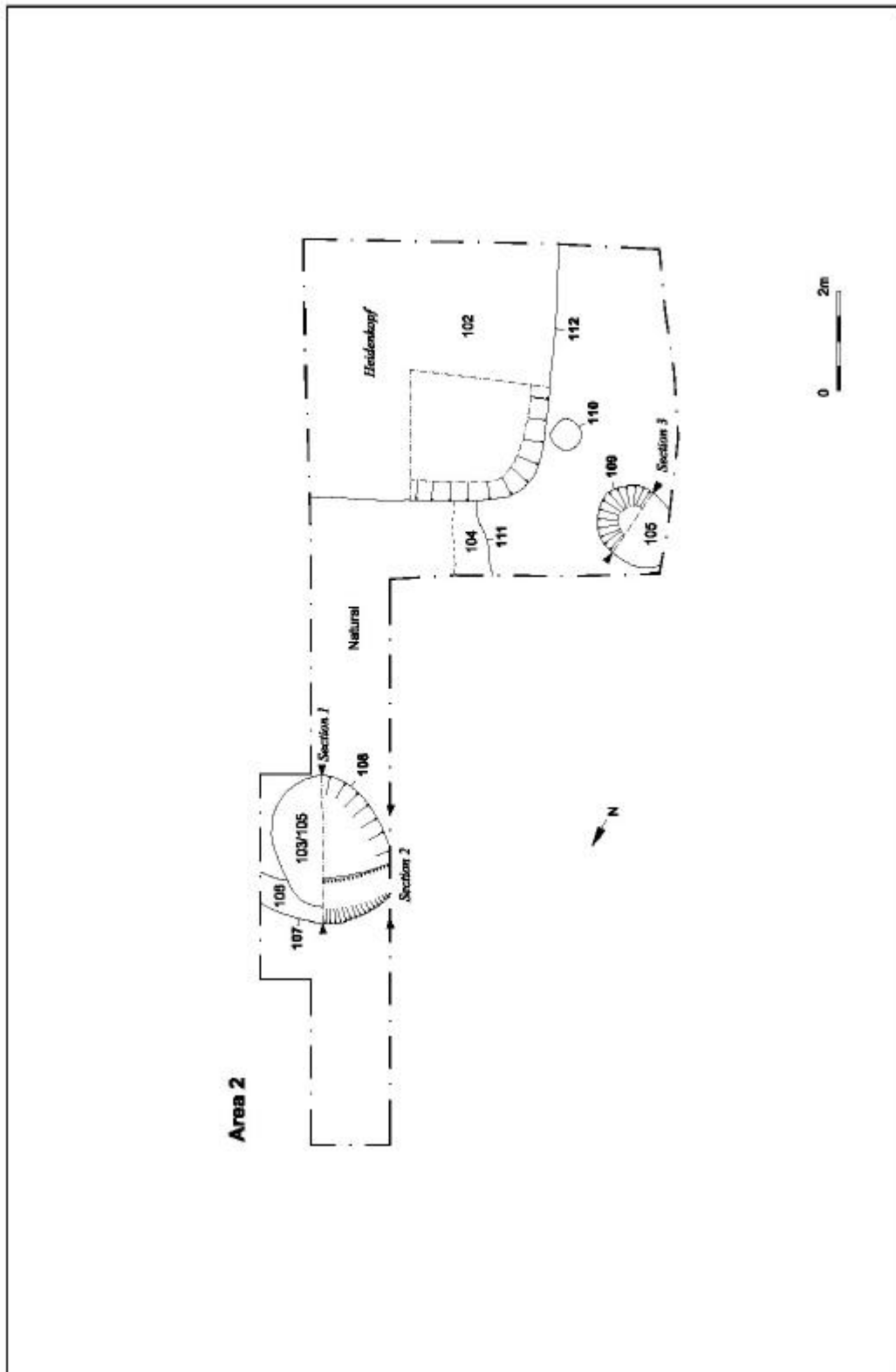


Fig. 5: Area 2 showing excavated features (1:100)

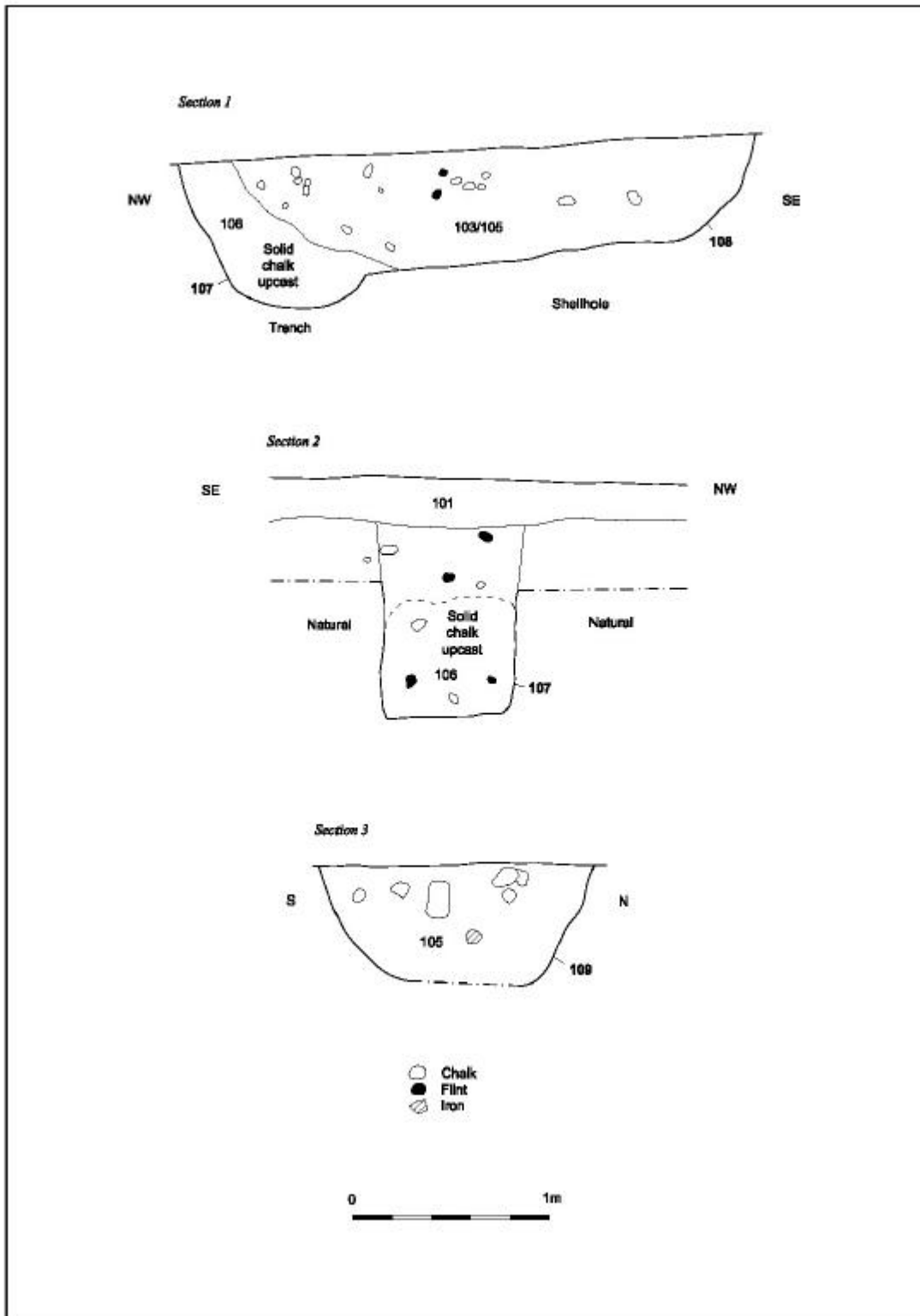


Fig. 6: Area 2, Sections (1:40)



Figure 7. Excavation area 1, *Bayerngraben* from South



Figure 8. Area 1, Section 1 From South-West



Figure 9. Area 1 Section 5 under excavation, from North



Figure 10 Area 1, Section 6 showing trench boards



Figure 11. Area 1, Section 7 from North-West



Figure 12. Area 1, General view from South-East