

Chalk Hill Quarry, Barton Mills BTM 060

Archaeological Evaluation Report

SCCAS Report No. 2014/013

Client: Needham Chalks (HAM) Ltd

Author: Rob Brooks

February/2014

© Suffolk County Council Archaeological Service

Chalk Hill Quarry, Barton Mills

BTM 060

Archaeological Evaluation Report

SCCAS Report No. 2014/013

Author: Rob Brooks

Contributions By: Cathy Tester

Illustrator: Gemma Adams

Editor: Richenda Goffin

Report Date: February/2014

HER Information

Site Code: BTM 060
Site Name: Chalk Hill Quarry
Report Number 2014/013
Planning Application No: F/2011/0278
Date of Fieldwork: 20th-22nd January, 2014
Grid Reference: TL 7102 7190
Oasis Reference: suffolkc1-167158
Curatorial Officer: Dr Matthew Brudenell
Project Officer: Rob Brooks
Client/Funding Body: Needham Chalks (HAM) Ltd
Client Reference: N/A

Digital report submitted to Archaeological Data Service:

<http://ads.ahds.ac.uk/catalogue/library/greylit>

Disclaimer

Any opinions expressed in this report about the need for further archaeological work are those of the Field Projects Team alone. Ultimately the need for further work will be determined by the Local Planning Authority and its Archaeological Advisors when a planning application is registered. Suffolk County Council's archaeological contracting services cannot accept responsibility for inconvenience caused to the clients should the Planning Authority take a different view to that expressed in the report.

Prepared By: Rob Brooks

Date: 14/02/2014

Approved By: John Craven

Position: Project Officer

Date: 14/02/2014

Signed:

Contents

Summary

Drawing Conventions

1. Introduction	1
2. Geology and topography	1
3. Archaeology and historical background	1
4. Methodology	4
5. Results	5
5.1 Introduction	5
5.2 Features	5
Pit 0001 and context 0005	5
6. Finds and environmental evidence	7
6.1 Introduction	7
6.2 Pottery	7
6.3 Struck flint	8
Introduction and methodology	8
The assemblage	8
Discussion	8
6.4 Heat-altered flint	9
6.5 Plant macrofossils	9
Introduction and methods	9
Results	10
Conclusions and recommendations for further work	10
6.6 Discussion of the finds and environmental evidence	10
7. Discussion	11
8. Conclusions and recommendations for further work	11
9. Archive deposition	12

10. Acknowledgements	12
11. Bibliography	12

List of Figures

Figure 1. Location of the site and selected HER entries as mentioned in the text	2
Figure 2. Trench plan	3
Figure 3. Plans and section	6

List of Tables

Table 1. Finds quantities	7
Table 2. Prehistoric pottery catalogue	7
Table 3. Flint types	8

List of Appendices

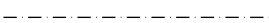









Appendix 1.	Abridged written scheme of investigation
Appendix 2.	Context list
Appendix 3.	OASIS form
Appendix 4.	Trench soil profiles
Appendix 5.	Flint catalogue

Summary




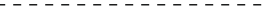


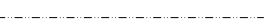





Twenty-six evaluation trenches were excavated on farmland prior to a new phase of chalk quarrying at Chalk Hill quarry, Barton Mills, in Suffolk. One small pit and a possible further cut feature were excavated in a trench near the western edge of the site and the pit produced several fragments of Iron Age pottery, a single worked flint and heated flint. An assemblage of thirty-one struck flints was also recovered from the site as unstratified finds, containing Palaeolithic, Neolithic, Bronze Age and Iron Age pieces. No other features or finds were recorded. Despite intensive ploughing of the site, the geological levels were generally well preserved.

Drawing Conventions

Plans

- Limit of Excavation 
- Features 
- Break of Slope 
- Features - Conjectured 
- Natural Features 
- Sondages/Machine Strip 
- Intrusion/Truncation 
- Illustrated Section  S.14
- Cut Number  0008
- Archaeological Features 

Sections

- Limit of Excavation 
- Cut 
- Modern Cut 
- Cut - Conjectured 
- Deposit Horizon 
- Deposit Horizon - Conjectured 
- Intrusion/Truncation 
- Top of Natural 
- Top Surface 
- Break in Section 
- Cut Number  0008
- Deposit Number 0007
- Ordnance Datum  18.45m OD

1. Introduction

An archaeological evaluation was carried out prior to the continuation of quarrying at the Chalk Hill quarry, in Barton Mills, Suffolk (Fig. 1). The work was carried out to a Brief issued by Dr Matthew Brudenell (SCCAS Conservation Team) and to a Written Scheme of Investigation by John Craven (SCCAS Field Team – Appendix 1) as a condition of planning application F/2011/0278. The work was commissioned by Stephen M Daw Ltd on behalf of Needham Chalks (HAM) Ltd who funded the work that was carried out between the 20th and the 22nd January, 2014. The trenches were located within an area of agricultural land, at grid reference TL 7102 7190.

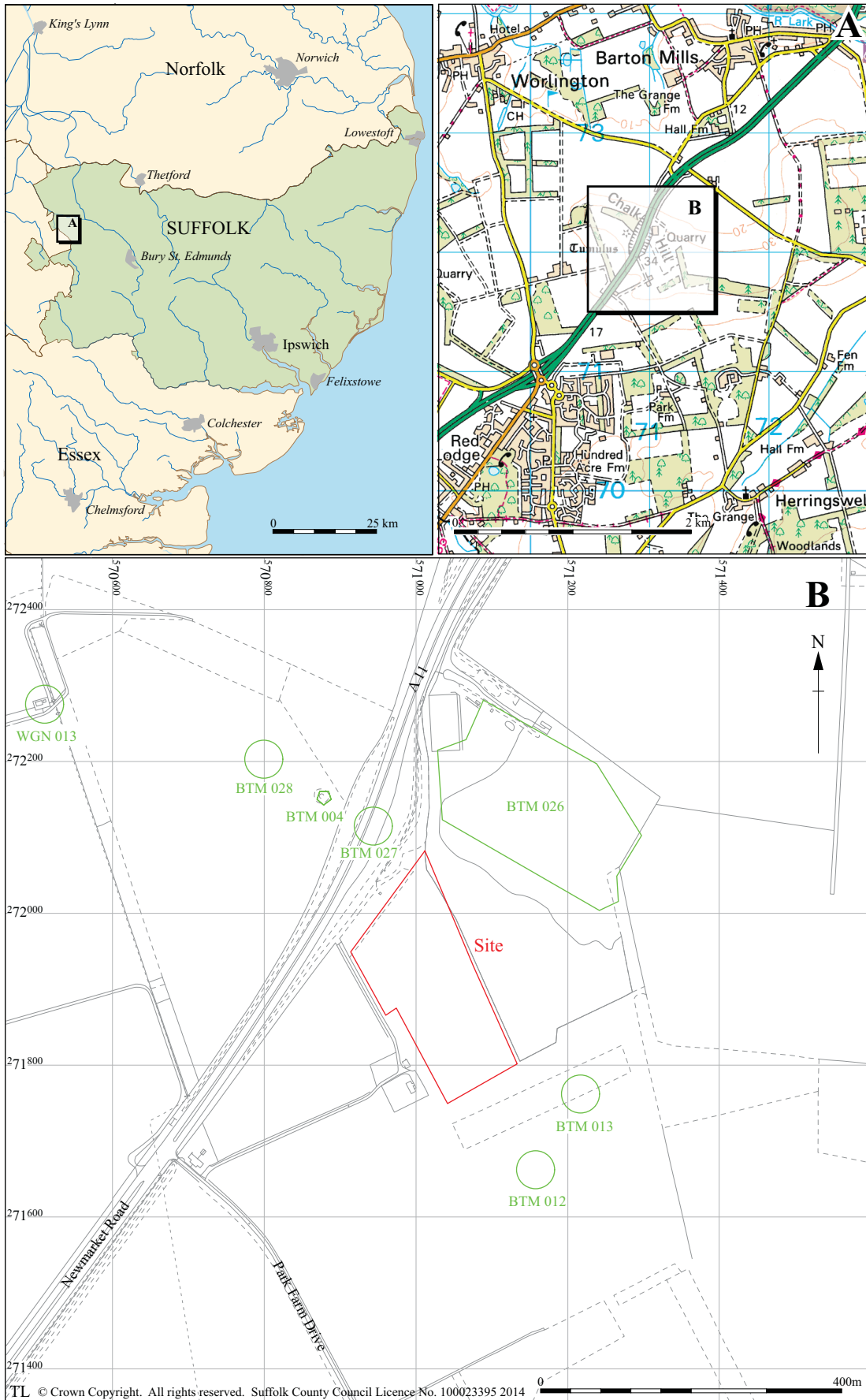
2. Geology and topography

The geology of the area is recorded as deposits of Lowestoft Formation diamicton of silts, sands, gravel and occasional clay, overlying bedrock of Holywell Nodular Chalk and New Pit Chalk (BGS, 2014). On site the geology presented itself as brownish-orange sandy-silt (sometimes with low clay content) and yellowish-orange sand gravel with chalk inclusions, overlying chalk.

The site sits on a promontory of land, overlooking the River Lark valley to the north and the River Kennet valley to the south. The area of trenching sloped down from north to south. Ground levels varied from 38.88m above the Ordnance Datum at the northern end of the site to 33.76m at the western site limit and 34.68m at the southern site limit.

3. Archaeology and historical background

The site lies in an area of high archaeological interest with several sites listed nearby in the County Historic Environment Record (HER). Positioned on high ground to the north and south of the site are two groups of round barrows/ring ditches that are probably Bronze Age. BTM 012 and 013 are positioned to the south, while BTM 004 (Scheduled Monument No. DSF15329) and BTM 027 and 028 are located to the north (Fig. 1). A findspot of human remains is located further to the north-west (WGN 013), whilst the site of a possible Roman settlement/villa is positioned to the north-east (BTM 026).



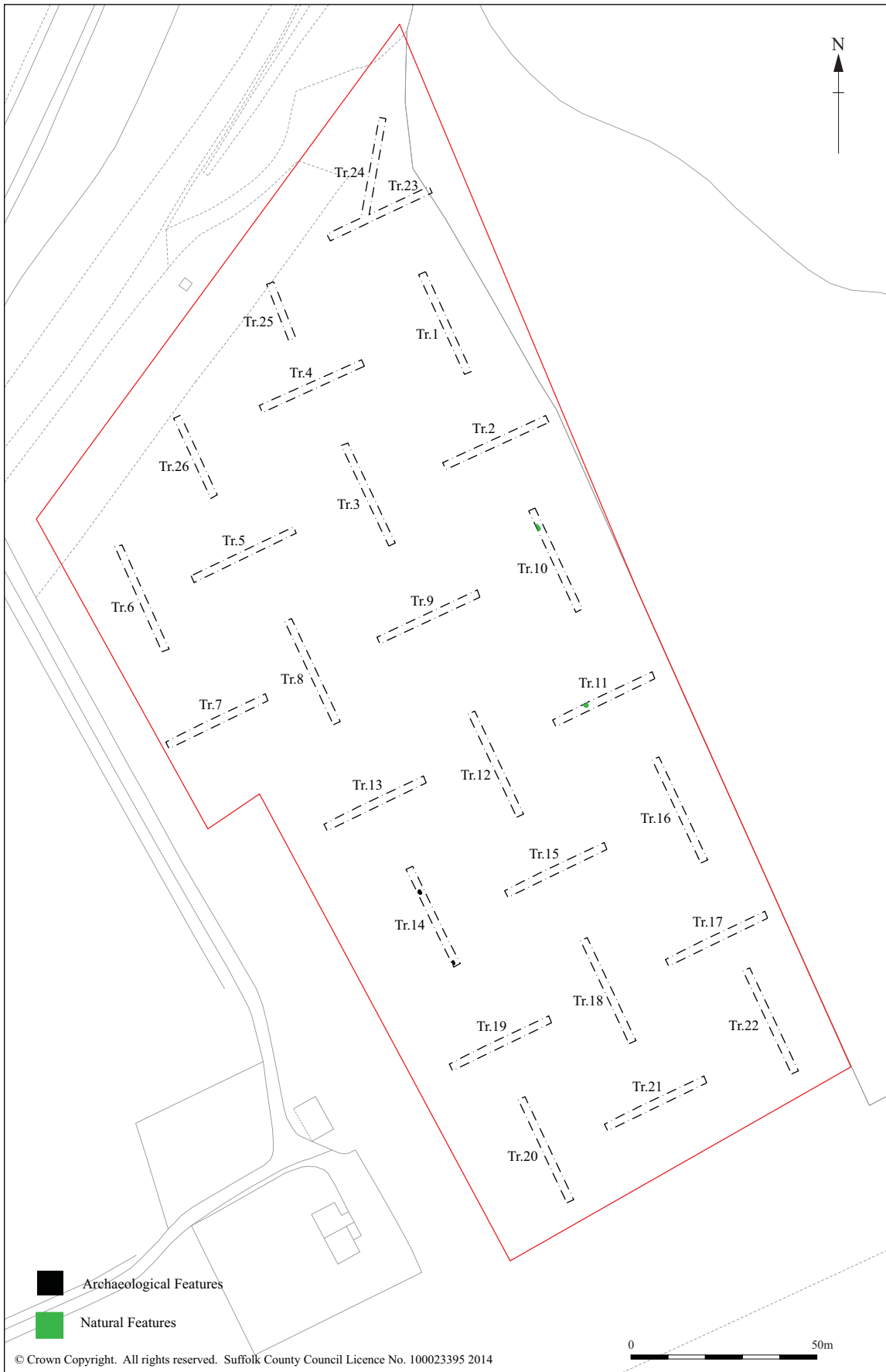


Figure 2. Trench plan

4. Methodology

The trenches were excavated using a machine equipped with a toothless bucket, with the work being constantly monitored and directed by an experienced archaeologist. A layer of ploughsoil was removed, followed by subsoil to expose any cut features and the natural geology. All of the upcast spoil was monitored for finds. The trenches were positioned across the site to sample the whole area, although Trenches 23-26 were slightly amended to avoid a water main near the south-west to north-east boundary of the site (Fig. 2). The trenches were all 1.8m wide and most were 30m long, with the exceptions of Trenches 24-26, which were 26m, 16m and 23.5m long respectively.

When the trench excavations were finished soil profiles were cleaned and then recorded in conjunction with the digging and recording of the contexts. The two features were excavated, whilst several different natural phenomena were also excavated. Colour digital photographs at 4288 x 2848 pixel resolution were taken of the contexts and the trenches. Plans of the features were hand drawn at 1:20 and geo-referenced using an RTK GPS. Sections were drawn at 1:20. Records were made on SCCAS pro forma context sheets. A single environmental sample was taken was taken from pit 0001. No further sealed features were available for sampling. A number of struck flints were recovered from the surface of the field but no consistent strategy such as field walking was employed for this.

Site data has been input onto an MS Access database and recorded using the County HER code BTM 060 (Appendix 2). An OASIS form has been completed for the project (reference no. suffolkc1-167158, Appendix 3) and a digital copy of the report submitted for inclusion on the Archaeology Data Service database (<http://ads.ahds.ac.uk/catalogue/library/greylit>). The archive is kept in the main store of Suffolk County Council Archaeological Service at Bury St Edmunds under HER code BTM 060.

5. Results

5.1 Introduction

The trenches were excavated to depths of c.0.32-0.46m below ground level in order to reveal the natural geology. This involved the removal of varying depths of ploughsoil and varying levels of a subsoil deposit made up of dark purplish-brown silty-sand that was in places heavily disturbed or entirely truncated by ploughing. This subsoil deposit was sterile and was interpreted as buried topsoil. Detailed context descriptions are given in Appendix 2 and trench descriptions are included in Appendix 4. Several natural features were excavated across the site. These included tree root bowls, as well as small solution hollows and channels created by water eroding and infilling channels with silt and sand. Glacial scars were also present across the site. These natural phenomena all had irregular limits, which were typically diffuse and none produced any finds.

5.2 Features

Pit 0001 and context 0005

Near the northern end of Trench 14 was a sub-oval shallow pit with variable sides and a fairly flat base, which measured 1.13m x 0.86m x 0.16m deep. The western edge of the feature was poorly defined and partially disturbed by ploughing. It had a single fill of mottled mid-dark orange-brown clay-silt and chalky mid grey-brown clay-silt with large flints. Fill 0002 produced pottery sherds of Iron Age date, along with a single worked flint and heated flint, whilst the sample had one possible grass or cereal grain present that may have been intrusive.

A shallow sub-rectangular to curvilinear irregular depression with moderately steep sides, an uneven irregular base and poorly defined limits was recorded in the southern end of Trench 14 as cut 0005. It was >0.54m x 0.51m x 0.26m deep and contained a single fill of loose mottled pale to dark grey and firm dark orange-brown sandy-silt inclusions and frequent chalk flecks. These contexts, recorded as cut 0005 and fill 0006 did not produce any finds and were interpreted as a depression or a heavily disturbed shallow pit base that had been partially ploughed and affected by groundwater movement.

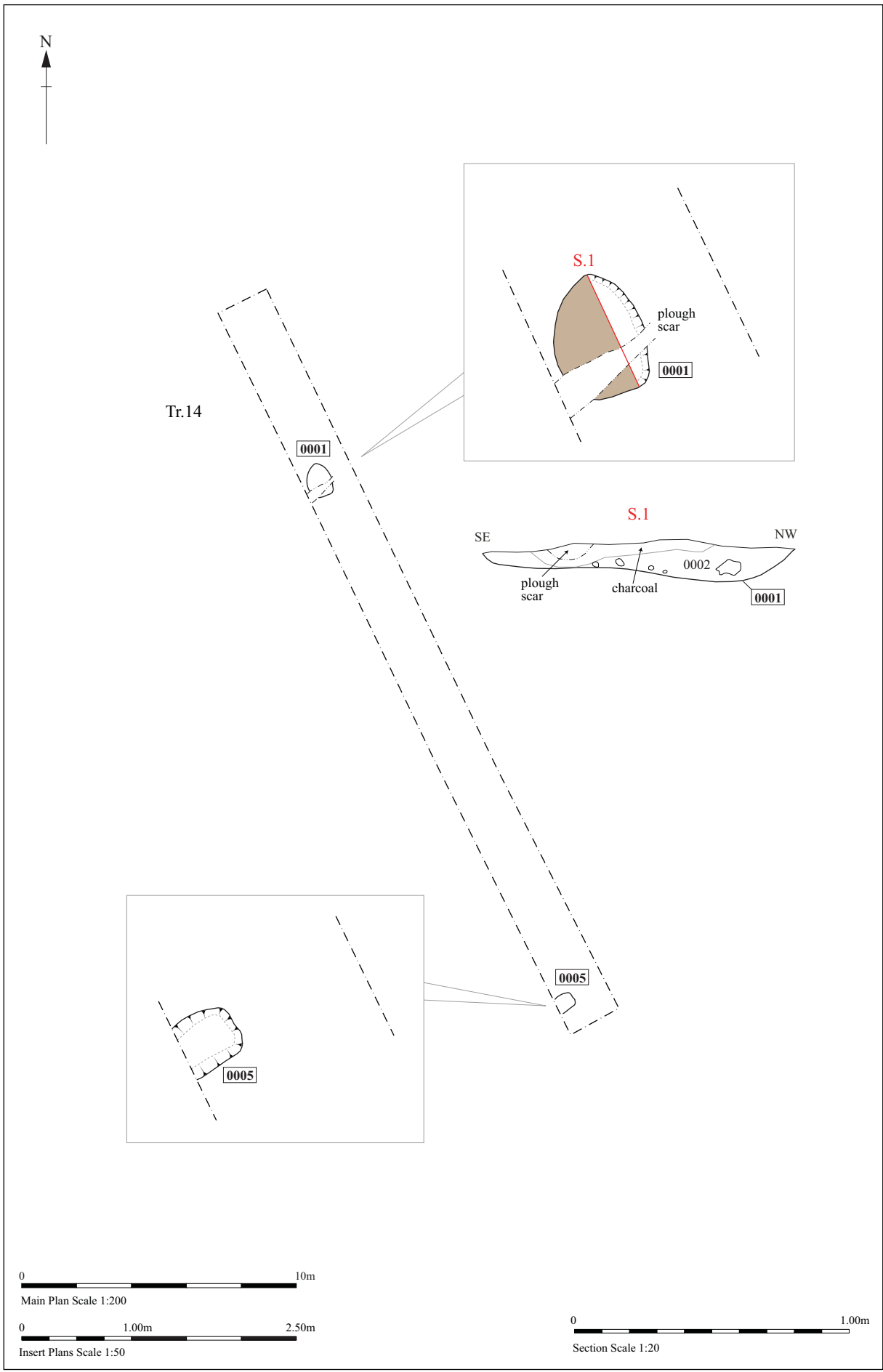


Figure 3. Plans and section

6. Finds and environmental evidence

Cathy Tester

6.1 Introduction

Finds were recovered from two evaluation contexts, one a pit in Trench 14 and the other from unstratified surface collection. The quantities by context are shown in Table 1.

Context	Pottery		Struck flint		Burnt flint		Date Range
	No.	Wt/g	No.	Wt/g	No.	Wt/g	
0002	17	30	1	2	12	18	Iron Age
0007			30	816			Paleo, Neo, BA, IA
Total	17	30	31	818			

Table 1. Finds quantities

6.2 Pottery

Seventeen sherds of hand-made prehistoric pottery which include some very small scraps from the environmental sample processing were recovered from the fill of pit 0001 (0002) in Trench 14. A maximum of five vessels are represented and the sherds are described in Table 2.

Fabric	Sherd	No	Wt/g	Notes	Date
HMF	bodysherd	1	5	Coarse flint, orange-brown surfaces, dark core	IA
HMF	bodysherd	1	4	Smoothed interior/exterior. orange-brown	IA
HMS	bodysherd	1	7	Medium sandy fabric. Smoothed surface	Later IA
HMS	rimsherd	1	4	Plain rounded upright rim. Dark brown surfaces, oxidised core.	Later IA
HMF	bodysherd	13	10	V. fragmentary. Medium-fine flint (SS<1>)	IA
Total		17	30		

Table 2. Prehistoric pottery catalogue

(Key: HMF = hand-made flint tempered, HMS = Handmade sand tempered.)

The assemblage includes flint-tempered (HMF) and sand-tempered (HMS) pieces which are all small, and but for one rim, undiagnostic, but most likely of Iron Age date. The flint-tempered pieces may be earlier Iron Age, although the addition of flint as a tempering agent continued in East Anglia well into the later Iron Age. The presence of sandy fabrics suggests a later Iron Age date. (Sarah Percival, pers. comm.)

6.3 Struck flint

Identified by Colin Pendleton

Introduction and methodology

Thirty-one pieces of struck flint including cores and shatter pieces, flakes and blades were recovered during the evaluation. They were mainly from the unstratified surface collection (0007) and one piece came from pit 0001 in Trench 14. The flints are mid grey to black in colour. Cortex when present is dirty grey or off white. Both patinated and unpatinated pieces are present. The flint was recorded by type and the degree of patination and cortication were also recorded. Other descriptive comments were made as required. The flint types are summarised in Table 3 and the full descriptions are included in Appendix 5.

Type	No
Multiplatform flake core	2
Hammerstone/core	1
Flake core	4
Blade core	1
Flake	5
Blade	1
Notched flake	3
Notched blade	2
Retouched flake	11
Retouched blade	1

Table 3. Flint types

The assemblage

Eight cores or shatterpieces present include two multiplatform flake cores, four simple flake cores and a blade core. A shatterpiece with a few irregular flakes removed has been made from an earlier larger hammerstone. Five unmodified flakes and one blade are present. Fourteen retouched flakes include three with notches and three retouched blades include two with notches.

Discussion

This is a multi-period assemblage with a date range that includes the Palaeolithic, Neolithic, Bronze Age and Iron Age. The earliest pieces are the three which are heavily patinated. The grouping of flints that shows a light patination includes a long blade core and a flake core and a few blade-like pieces which suggest earlier material. However, they have unpatinated retouch which suggests use in two different periods, early and

later. There is a Neolithic element within the unpatinated assemblage. The numerous large flakes as well as the three blades with parallel blade scars on their dorsal faces suggest more careful working characteristic of the earlier period. There are several flints with one patinated and one unpatinated surface which could fit into the later group suggesting that their patination was acquired as much through type of deposition as through time. The majority of the unpatinated assemblage however, could be Bronze Age or Iron Age. These include irregular, squat, and hinge-fractured flakes, irregularities which suggest a later date as does the irregular nature of the unpatinated cores and shatter pieces. The re-use of earlier pieces is also very characteristic of later assemblages.

6.4 Heat-altered flint

A small amount of heat-cracked flint (12 fragments, weighing 18g) was recovered from amongst the non-floating sample processing residues. The material has most likely been heat-altered by proximity to high temperatures, accidentally, rather than deliberately.

6.5 Plant macrofossils

Anna West

Introduction and methods

A single bulk sample was taken from Trench 14 pit 0001, fill 0002 during the evaluation. The entire 40 litre sample was processed to assess the quality of preservation of plant remains and their potential to provide insight into the utilisation of local plant resources in the agricultural and economic activity of the inhabitants of this area.

The sample was processed using manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. Once dried, the flot was scanned using a binocular microscope at x16 magnification. Identification of plant remains is with reference to Stace (2010). The non-floating residues were collected in a 1mm mesh and sorted when dry. All artefacts/ecofacts were retained.

Results

The preservation of the macrofossils within this sample was through charring and was poor. The sample contained a small quantity of wood charcoal fragments between 0-5mm in size. Fibrous rootlets were also common and are modern contaminants. A single fragment of coal was observed and is probably intrusive within the archaeological deposit.

A single charred caryopsis was observed but was too puffed and abraded to identify either as a small cereal grain or a grass seed (*Poaceae*).

Uncharred weed seeds were present within the flot in the form of Clovers (*Trifolium* sp.), Nettle (*Urtica* sp.) and Goosefoot family (*Chenopodium* sp.) The seeds present were from common weeds but as they are uncharred and relatively unabraded, it is possible that these specimens are intrusive within the archaeological deposits.

Conclusions and recommendations for further work

In general, the sample was poor in terms of identifiable material, with only a single indeterminate caryopsis being present. If further interventions are planned at this site, it is recommended that further bulk samples are taken from well-sealed and dated contexts in order to try and improve the quantity and quality of the macrofossil material available for interpretation.

6.6. Discussion of the finds and environmental evidence

A modest group of finds in a limited number of categories was recovered from a pit in Evaluation Trench 14 as well as from site-wide surface collection. The earliest finds are within the struck flint assemblage, which includes material of Palaeolithic, Neolithic, Bronze Age or Iron Age date. However, the bulk of the flint assemblage is unpatinated or reworked earlier material. A small amount of prehistoric pottery includes possible earlier and later Iron Age pieces. No later finds were recovered.

The Environmental sample produced a very poor and sparse macrofossil assemblage much of which could be interpreted as intrusive modern contaminants.

7. Discussion

The evaluation has shown that archaeological deposits have survived in one area of the site. In general the site does not appear to have been too heavily truncated by modern activity, although a small assemblage of unstratified prehistoric flint collected from the ground surface suggests that an archaeological soil horizon has been disturbed by ploughing. The geological levels though were only rarely affected by plough damage. The finds from pit 0001 indicate that it was Iron Age and contained sherds from several vessels. If context 0005 was a cut feature, rather than a natural solution or rooting hollow it is probably associated with pit 0001, given its close proximity. The single pit and context 0005 possibly represent the remains of a scattered Iron Age landscape, with the number of vessels found in the pit suggesting that more intensive settlement may have been located close by.

The flint scatter is of particular interest, given its diverse age range and despite being an unstratified assemblage. The presence of Palaeolithic, Neolithic and later material is unusual and suggests that the area was favoured for occasional occupation throughout prehistory.

8. Conclusions and recommendations for further work

Judging by the deposits encountered within this fieldwork, it is evident that while any former soil horizon has been disturbed by ploughing it is likely that any cut archaeological features will survive intact. The trenching however suggests that the site has only a low density of scattered archaeological remains surviving, with one feature being securely dated as Iron Age, and another probably being contemporary given its position within the prehistoric setting.

The nature of any further work in the area will be determined by Suffolk County Council Archaeological Service Conservation Team. Although the trenching has only identified sparse evidence of prehistoric activity, indicating the possible presence of nearby Iron Age settlement, there is still some potential for further prehistoric evidence to exist, given the site's position within the monumental landscape and the diverse nature of the worked flint assemblage. Any such deposits would be wholly removed by the planned development and archaeological monitoring of groundworks should be considered.

9. Archive deposition

Paper and photographic archive: SCCAS Bury St Edmunds

Digital archive: SCCAS R:\Environmental Protection\Conservation\Archaeology\
Archive\Barton Mills\BTM 060 Chalk Hill quarry evaluation

Digital photographic archive: SCCAS R:\Environmental Protection\Conservation\
Archaeology\Catalogues\Photos\HWA-HWZ\HWO 63-98

Finds and environmental archive: SCCAS Bury St Edmunds.

10. Acknowledgements

The fieldwork was carried out by Rob Brooks, Phil Camps, Preston Boyles and Felix Reeves-Whymark and directed by Rob Brooks.

Project management was undertaken by John Craven who also provided advice during the production of the report.

Post-excavation management was provided by Richenda Goffin. Finds processing was undertaken by Jonathan van Jennians. The specialist finds report was produced by Cathy Tester and additional specialist advice was provided by Colin Pendleton and Anna West.

The report illustrations were created by Gemma Adams and the report was edited by Richenda Goffin.

11. Bibliography

BGS, 2014, Information obtained from http://www.bgs.ac.uk/products/digital_maps/data_625k.html and reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved

Stace, C., 2010. *New Flora of the British Isles*. Third edition. Cambridge University Press

Appendix 1. Abridged written scheme of investigation



Barton Mills Quarry, Suffolk BTM 060

Written Scheme of Investigation and Risk Assessment Archaeological Evaluation

Client: Needham Chalks (HAM) Ltd

Suffolk County Council Archaeological Service Field Team

Author: J. A. Craven

December 2013

Contents

Project details
Project Contacts

1. Introduction	1
2. The site	1
3. Archaeological and historical background	1
4. Project Objectives	2
5. Archaeological method statement	3
5.1 Management	3
5.2 Project preparation	3
5.3 Fieldwork	3
5.4 Post-excavation	4
5.5 Report	5
5.6 Project archive	6
6. Project Staffing	6
6.1 Management	6
6.2 Fieldwork	7
6.3 Post-excavation and report production	7
7. Health and safety	7
7.1 Introduction	7
7.2 Specific site issues	8
Site access	8
Security	8
Welfare facilities	8
First Aid	8
Deep excavation	8
Contaminated ground	8
Hazardous Substances	9
Underground services	9
Overhead Powerlines	9
Personal Protective Equipment (PPE)	9
Environmental impact/constraints	9
8. Bibliography	10

List of Figures

Figure 1. Location map

Error! Bookmark not defined.

Figure 2. Proposed trench plan

2

List of Appendices

Appendix 1. Brief and specification

Appendix 2. Risk Assessments

Project details

Planning Application No:	F/2011/0278
Curatorial Officer:	Dr Matthew Brudenell
Grid Reference:	TL 710 719
Area:	3.4ha
HER Event No/Site Code:	BTM 060
Oasis Reference:	167158
Project Start date:	TBC
Project Duration:	3-5 days
Client/Funding Body:	Needham Chalks (HAM) Ltd (via Agent: Stephen M Daw Ltd)
SCCAS/FT Project Manager:	John Craven
SCCAS/FT Project Officer:	TBC
SCCAS/FT Job Code:	BARTQUA001

Glossary of abbreviations

EAA	East	Anglian Archaeology
HER	Histo	ric Environment Record
ICON	The	Institute of Conservation
IFA		Institute for Archaeologists
LPA	Local	Planning Authority
NHLE		National Heritage List for England
NPPF		National Planning Policy Framework
OD	Ordn	ance Datum
SCCAS/FT		Suffolk Archaeological Service Field Team
SCCAS/CT		Suffolk Archaeological Service Curatorial Team

Project Contacts

SCCAS/FT

SCCAS/FT Manager	Dr Rhodri Gardner	01473 581473
SCCAS/FT Project Manager	John Craven	01284 741249
SCCAS/FT Finds Dept	Richenda Goffin	01284 741233
SCCAS/FT Graphics Dept	Crane Begg	01284 741251
SCCAS/FT H&S	Stuart Boulter	01473 583290
SCCAS/FT EMS	Jezz Meredith	01473 583288
SCCAS/FT Outreach Officer	Duncan Allan	01473 583288

Emergency services

Local Police	Kingsway, Mildenhall, IP28 7HS	101
Local GP	Market Cross Surgery, 7 Market Place, Mildenhall, Bury St. Edmunds, Suffolk, IP28 7EG	01638 713109
Location of nearest A&E	West Suffolk Hospital, Hardwick Lane, Bury St. Edmunds, Suffolk, IP33 2QZ	01284 713000
Environment Agency	Customer Services Line (8am to 6pm) 24 hour Emergency Hotline	03708 506 506 0800 807060
Essex and Suffolk Water	24 hour Emergency Hotline	0845 782 0999

National Gas Emergency Service	Gas emergency hotline	0800 111 999
UK Power Networks	East England electricity emergency hotline	0800 783 8838
Anglian Water	24 hour Emergency Hotline	08457 145 145

Client contacts

Client	Dan Harris – Quarry Manager (Needham Chalks (HAM) Ltd)	07843959334
Client Agent	Stephen M Daw Ltd	01379 788107

Archaeological contacts

Curator	Dr Matthew Brudenell	01284 741227
Consultant		
EH Regional Science Advisor	Dr Helen Chappell	01223 582707

Sub-contractors

Plant hire	TBC	
Misc. Equipment hire		
Toilet/facilities	Barton Mills Quarry	

Other

SCC Press Office	Andrew St Ledger (Chief Press Officer)	01473 264398
SCC Fleet Maintenance		01359 270777
SCC Environment Strategy Manager	Emma Flint	01473 264810
SCC Health and Safety Advisor (ESE)	Mark Ranson	01473 261494
SCC Corporate H&S Manager	Dave Atkinson	01473 260513

1. Introduction

- An archaeological condition has been placed on planning application F/2011/0278 for the expansion of Barton Mills Quarry, Suffolk (Fig. 1 - removed from abridged version). The condition, which has been placed in accordance with paragraph 141 of the National Planning Policy Framework, requires an archaeological program of work to 'record and advance understanding of the significance of any heritage assets (that might be present at this location) before they are damaged or destroyed.'
- The work required is detailed in a Brief and Specification (dated 05/12/2013), produced by the archaeological adviser to the local planning authority, Dr Matthew Brudenell of SCCAS/CT, and is included in Appendix 1 (removed from abridged version).
- SCCAS/FT has been contracted to carry out the project. This document details how the requirements of the Brief and general SCCAS/CT guidelines (SCCAS/CT 2011) will be met, and has been submitted to SCCAS/CT for approval on behalf of the LPA. It provides the basis for measurable standards and will be adhered to in full, unless otherwise agreed with SCCAS/CT.
- It should be noted by the client that the evaluation is only a first stage in a potential program of works and that further fieldwork, reporting and publication may be required if archaeological deposits are identified. Such works could have considerable time and cost implications for the development and the client is advised to consult with SCCAS/CT as to their obligations following receipt of the evaluation report. SCCAS/FT will provide quotes for any further works required on request.

2. The site

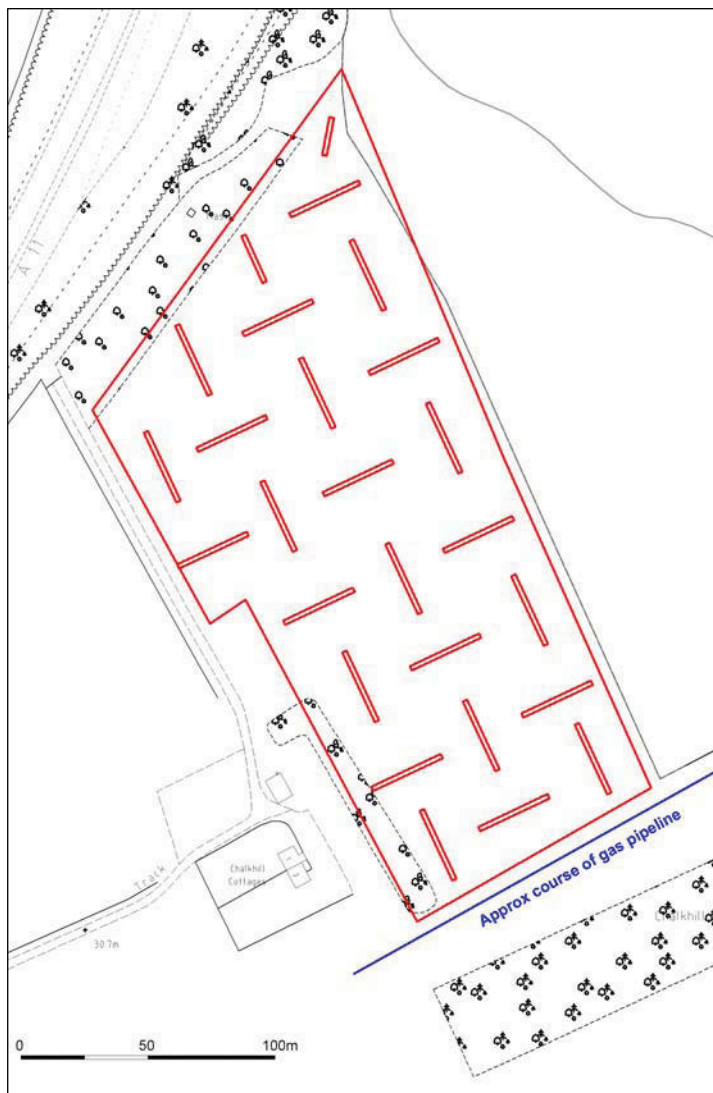
- Barton Mills Quarry lies atop an east-west aligned ridge of high ground, known as Chalk Hill, c.1.6km south of the River Lark and immediately adjacent to the modern A11 dual carriageway.
- The proposed quarry extension is to the south-west of the existing quarry, lying on the upper south-west facing slopes of the ridge, at a height of c.33m-38m above OD. The site is currently in use as open arable farmland.
- The site geology consists of deep, well drained, sandy soils to the south and well drained calcareous coarse and fine loamy soils over chalk rubble to the north (Ordnance Survey 1983). These overlie chalk bedrock of the Holywell Nodular Chalk Formation And New Pit Chalk Formation, there being no superficial deposits recorded (British Geological Survey website).

3. Archaeological and historical background

- The condition has been placed as the site lies in an area of high archaeological interest as defined by information held in the Suffolk Historic Environment Record.
- There are five round barrows/ring ditches of probable Bronze Age date recorded within 250m of the site to the north-west and south-east, along the high ground of Chalk Hill (HER Refs. BTM 004, 012, 013, 027 and 028). Although the site of BTM 027 has been removed by the modern A11 BTM 004 is still extant and is a Scheduled Monument (NHLE ref. 1018097). Slightly further to the north-west, at the end of the Chalk Hill ridge, there is a record of two undated inhumation burial being identified in construction work at Bay Farm, which could possibly indicate another barrow site. There is a strong possibility therefore for further unknown barrows or related features to exist in the development area.
- The existing quarry is also recorded as being the claimed site of a Roman villa, complete with mosaic floors that was supposedly destroyed during early quarry workings.

4. Project Objectives

- The aim of the evaluation is to accurately quantify the quality and extent of the sites archaeological resource so that an assessment of the developments impact upon heritage assets can be made.
- The evaluation will:
 - Establish whether any archaeological deposits exist in the application area, with particular regard to any which are of sufficient importance to merit preservation *in situ*.
 - Identify the date, approximate form and function of any archaeological deposits within the application area.
 - Establish the extent, depth and quality of preservation of any archaeological deposits within the application area.
 - Evaluate the likely impact of past land uses and whether masking alluvial or colluvial deposits are present.
 - Establish the potential for the survival of environmental evidence.
 - Assess the potential of the site to address research aims defined in the Regional Research Framework for the Eastern Counties (Brown and Glazebrook 2000, Medlycott 2011).
 - Provide sufficient information for SCCAS/CT to construct an archaeological conservation strategy dealing with preservation or the further recording of archaeological deposits.
 - Provide sufficient information for the client to establish time and cost implications for the development regarding the application areas heritage assets.



© Crown Copyright. All rights reserved. Suffolk County Council Licence No. 100023395 2013.

Figure 2. Proposed trench plan

5. Archaeological method statement

5.1 Management

- The project will be managed by SCCAS/FT Project Officer John Craven in accordance with the principles of *Management of Research in the Historic Environment* (MoRPHE, English Heritage 2006).
- SCCAS/CT will be given five days notice of the commencement of the fieldwork and arrangements made for SCCAS/CT visits to enable the works to be monitored effectively.
- Full details of project staff, including sub-contractors and specialists are given in section 6 below.

5.2 Project preparation

- A desk-based assessment consisting of consultation of the Suffolk HER and study of readily available historic maps and aerial photographs held by SCCAS will be carried out prior to the start of fieldwork.
- An event number has been obtained from the Suffolk HER Officer (BTM 060) and will be included on all future project documentation.
- An OASIS online record has been initiated and key fields in details, location and creator forms have been completed (No. 167158).
- A pre-site inspection and Risk Assessment for the project has been completed (see Appendix 2).

5.3 Fieldwork

- Fieldwork standards will be guided by 'Standards for Field Archaeology in the East of England', EAA Occasional Papers 14, and the IFA paper 'Standard and Guidance for archaeological field evaluation', revised 2008.
- The archaeological fieldwork will be carried out by members of SCCAS/FT led by a Project Officer (tbc). The fieldwork team will be drawn from a pool of suitable staff at SCCAS/FT and will include an experienced metal detectorist/excavator.
- The project Brief requires 5% of the 3.4ha application area to be evaluated, beginning with a 4% sample of all areas of the site. This amounts to 755m of 1.8m wide trenches, or 1360sqm, and a proposed trench plan, consisting of twenty-four 30m trenches plus two totalling a further 35m, is included below (Fig. 2). If necessary minor modifications to the trench plan may be made onsite to respect any previously unknown buried services, areas of disturbance/contamination or other obstacles.
- The remaining 1% of trenching (190m of trench or 340sqm) is to be reserved as a contingency, for use in further investigation of any identified areas of archaeology if required.
- The trench locations will be marked out using a RTK GPS system.
- The trenches will be excavated using a machine equipped with a back-acting arm and toothless ditching bucket (measuring at least 1.6m wide), under the supervision of an archaeologist. This will involve the removal of an estimated 0.3m-0.5m of ploughsoil until the first visible archaeological surface or subsoil surface is reached.
- Spoilheaps will be created adjacent to each trench and topsoil and subsoil will be kept separate if required. Spoilheaps will be examined and metal-detected for archaeological material.
- The trench sides, base and archaeological surfaces will be cleaned by hand as necessary to identify archaeological deposits and artefacts and allow decisions to be made on the method of further investigation by the Project Officer. Further use of the machine, i.e. to investigate thick sequences of deposits by excavation of test pits etc, may be undertaken as necessary after consultation with SCCAS/CT.
- There will be a presumption that a minimum of disturbance will be caused whilst achieving adequate evaluation of the site, i.e. establishing the period, depth and nature of archaeological deposits. Typically 50% of discrete features such as pits and 1m slots across linear features will be sampled by hand excavation, although in some instances 100% may be removed, with the aim of establishing date and function. All identified features will be investigated by excavation unless otherwise agreed with SCCAS/CT. Significant archaeological features such as solid or bonded structural remains, building slots or postholes will be preserved intact if possible.

- Sieving of deposits using a 10mm mesh will be undertaken if they clearly appear to be occupation deposits or structurally related. Other deposits may be sieved at the judgement of the excavation team or if directed by SCCAS/CT.
- Any fabricated surface (floors, yards etc) will be fully exposed and cleaned.
- The depth and nature of colluvial or other masking deposits across the site will be recorded.
- Metal detector searches of trenches and archaeological deposits will take place throughout the evaluation by an experienced SCCAS/FT metal-detectorist.
- An overall site plan showing trench locations, feature positions, sections and levels will be made using an RTK GPS or Total Station Theodolite. Individual detailed trench or feature plans etc will be recorded by hand at 1:10, 1:20 or 1:50 as appropriate to complexity. All excavated sections will be recorded at a scale of 1:10 or 1:20, also as appropriate to complexity. All such drawings will be in pencil on A3 pro forma gridded permatrace sheets. All levels will refer to Ordnance Datum. Section and plan drawing registers will be maintained.
- All trenches, archaeological features and deposits will be recorded using standard pro forma SCCAS/FT registers and recording sheets and numbering systems. Record keeping will be consistent with the requirements of the Suffolk HER and will be compatible with its archive.
- A photographic record, consisting of high resolution digital images, will be made throughout the evaluation. A number board displaying site code and, if appropriate, context number and a metric scale will be clearly visible in all photographs. A photographic register will be maintained.
- All pre-modern finds will be kept and no discard policy will be considered until all the finds have been processed and assessed. Finds on site will be treated following appropriate guidelines (Watkinson & Neal 2001) and a conservator will be available for on-site consultation as required.
- All finds will be brought back to the SCCAS/FT finds department at the end of each day for processing, quantifying, packing and, where necessary, preliminary conservation. Finds will be processed and receive an initial assessment during the fieldwork phase and this information will be fed back to site to inform the on-site evaluation methodology.
- Environmental sampling of archaeological contexts will, where possible, be carried out to assess the site for palaeoenvironmental remains and will follow appropriate guidance (English Heritage 2011). In order to obtain palaeoenvironmental evidence, bulk soil samples (of at least 40 litres each, or 100% of the context) will be taken using a combination of judgement and systematic sampling from selected archaeological features or natural environmental deposits, particularly those which are both datable and interpretable. All samples will be retained until an appropriate specialist has assessed their potential for palaeoenvironmental remains. Decisions will be made on the need for further analysis following these assessments.
- If necessary, for example if waterlogged peat deposits are encountered, then advice will be sought from the English Heritage Regional Advisor for Archaeological Science (East of England) on the need for specialist environmental techniques such as coring or column sampling.
- If human remains are encountered guidelines from the Ministry of Justice will be followed. Human remains will be treated at all stages with care and respect, and will be dealt with in accordance with the law and the provisions of Section 25 of the Burial Act 1857. The evaluation will attempt to establish the extent, depth and date of burials whilst leaving remains *in situ*. If human remains are to be lifted, for instance if analysis is required to fully evaluate the site, then a Ministry of Justice license for their removal will be obtained in advance. In such cases appropriate guidance (McKinley & Roberts 1993, Brickley & McKinley 2004) will be followed and, on completion of full recording and analysis, the remains, where appropriate, will be reburied or kept as part of the project archive.
- In the event of unexpected or significant deposits being encountered on site, the client and SCCAS/CT will be informed. Such circumstances may necessitate changes to the Brief and hence evaluation methodology, in which case a new archaeological quotation will have to be agreed with the client, to allow for the recording of said unexpected deposits. If an evaluation is aborted, i.e. because unexpected deposits have made development unviable, then all exposed archaeological features will be recorded as usual prior to backfilling and a report produced.
- Trenches will not be backfilled without the prior approval of SCCAS/CT. Trenches will be backfilled, subsoil first then topsoil, and compacted to ground-level, unless otherwise specified by the client. Original ground surfaces will not be reinstated but will left as neat as practicable.

5.4 Post-excavation

- The post-excavation finds work will be managed by the SCCAS/FT Finds Team Manager, Richenda Goffin, with the overall post-excavation managed by John Craven. Specialist finds staff,

whether internal SCCAS/FT personnel or external specialists, are experienced in local and regional types and periods for their field.

- All finds will be processed and marked (HER site code and context number) following ICON guidelines and the requirements of the Suffolk HER. For the duration of the project all finds will be stored according to their material requirements in the SCCAS Archaeological Stores at Bury St. Edmunds or Ipswich. Metal finds will be stored in accordance with ICON guidelines, *initially recorded and assessed for significance* before dispatch to a conservation laboratory within 4 weeks of the end of the excavation. All pre-modern silver, copper alloy and ferrous metal artefacts and coins will be x-rayed if necessary for identification. Sensitive finds will be conserved if necessary and deposited in bags/boxes suitable for long term storage to ICON standards. All coins will be identified to a standard acceptable to normal numismatic research.
- All on-site derived site data will be entered onto a digital (Microsoft Access) SCCAS/FT database compatible with the Suffolk HER.
- Bulk finds will be fully quantified and the subsequent data will be added to the digital site database. Finds quantification will fully cover weights and numbers of finds by context and will include a clear statement for specialists on the degree of apparent residuality observed.
- Assessment reports for all categories of collected bulk finds will be prepared in-house or commissioned as necessary and will meet appropriate regional or national standards. Specialist reports will include sufficient detail and tabulation by context of data to allow assessment of potential for analysis and will include non-technical summaries.
- Representative portions of bulk soil samples will be processed by wet sieving and flotation in-house in order to recover any environmental material which will be assessed by external specialists. The assessment will include a clear statement of potential for further analysis either on the remaining sample material or in future fieldwork.
- All hand drawn site plans and sections will be scanned.
- All raw data from GPS or TST surveys will be uploaded to the project folder, suitably labelled and kept as part of the project archive.
- Selected plan drawings will then be digitised as appropriate for combination with the results of digital site survey to produce a full site plan, compatible with MapInfo GIS software.
- All hand-drawn sections will be digitised using autocad software.
- Digital photographs will be allocated and renumbered with a code from the Suffolk HER photographic index.

5.5 Report

- A full written report on the fieldwork will be produced, consistent with the principles of MoRPHE (English Heritage 2006), to a scale commensurate with the archaeological results. The report will contain a description of the project background, location plans, evaluation methodology, a period by period description of results, finds assessments and a full inventory of finds and contexts. The report will also include scale plans, sections drawings, illustrations and photographic plates as required.
- The objective account of the archaeological evidence will be clearly separated from an interpretation of the results, which will include a discussion of the results in relation to relevant known sites in the region that are recorded in the Suffolk HER and other readily available documentary or cartographic sources.
- The report will include a statement as to the value, significance and potential of the site and its significance in the context of the Regional Research Framework for the East of England (Brown and Glazebrook, 2000, Medlycott 2011). This will include an assessment of potential research aims that could be addressed by the site evidence.
- The report will contain sufficient information to stand as an archive report should further work not be required.
- The report may include SCCAS/FT's opinion as to the necessity for further archaeological work to mitigate the impact of the sites development. The final decision as to whether any recommendations for further work will be made however lies solely with SCCAS/CT and the LPA.
- The report will include a summary in the established format for inclusion in the annual '*Archaeology in Suffolk*' section of the Proceedings of the Suffolk Institute of Archaeology and History.
- A copy of this Written Scheme of investigation will be included as an appendix in the report.
- The report will include a copy of the completed project OASIS form as an appendix.
- An unbound draft copy of the report will be submitted to SCCAS/CT for approval within 4 weeks of completion of fieldwork.

5.6 Project archive

- On approval of the report a printed and bound copy will be lodged with the Suffolk HER. A digital .pdf file will also be supplied, together with a digital and fully georeferenced vector plan showing the application area and trench locations, compatible with MapInfo software.
- The online OASIS form for the project will be completed and a .pdf version of the report uploaded to the OASIS website for online publication by the Archaeological Data Service. A paper copy of the form will be included in the project archive.
- A second bound copy of the report will be included with the project archive (see below).
- Two printed and bound copies of the approved report will be supplied to the client, together with our final invoice for outstanding fees. A digital .pdf copy will be supplied on request.
- The project archive, consisting of the complete artefactual assemblage, and all paper and digital records, will be deposited in the SCCAS Archaeological Store at Bury St Edmunds within 6 months of completion of fieldwork. The project archive will be consistent with MoRPHE (English Heritage 2006) and ICON guidelines. The project archive will also meet the requirements of SCCAS (SCCAS/CT 2010).
- All physical site records and paperwork will be labelled and filed appropriately. Digital files will be stored in the relevant SCCAS archive parish folder on the SCC network site.
- The project costing includes a sum to meet SCCAS archive charges. A form transferring ownership of the archive to SCCAS will be completed and included in the project archive.
- If the client, on completion of the project, does not agree to deposit the archive with, and transfer to, SCCAS, they will be expected to either nominate another suitable depository approved by SCCAS/CT or provide as necessary for additional recording of the finds archive (such as photography and illustration) and analysis. A duplicate copy of the written archive in such circumstances would be deposited with the Suffolk HER.
- Exceptions from the deposition of the archive described above include:
 - Objects that qualify as Treasure, as detailed by the Treasure Act 1996. The client will be informed as soon as possible of any such objects are discovered/identified and the find will be reported to SCCAS/CT and the Suffolk Finds Liaison Officer and hence the Coroner within 14 days of discovery or identification. Treasure objects will immediately be moved to secure storage at SCCAS and appropriate security measures will be taken on site if required. Any material which is eventually declared as Treasure by a Coroners Inquest will, if not acquired by a museum, be returned to the client and/or landowner. Employees of SCCAS, or volunteers etc present on site, will not eligible for any share of a treasure reward.
 - Other items of monetary value in which the landowner or client has expressed an interest. In these circumstances individual arrangements as to the curation and ownership of specific items will be negotiated.
 - Human skeletal remains. The client/landowner by law will have no claim to ownership of human remains and any such will be stored by SCCAS, in accordance with a Ministry of Justice licence, until a decision is reached upon their long term future, i.e. reburial or permanent storage.

6. Project Staffing

6.1 Management

SCCAS/FT Manager Western Office	Dr Rhodri Gardner
SCCAS/FT Project Manager	John Craven
SCCAS/FT Finds Dept	Richenda Goffin
SCCAS/FT Graphics Dept	Crane Begg

6.2 Fieldwork

The fieldwork team will be derived from the following pool of SCCAS/FT staff.

Name	Job Title	First Aid	Other skills/qualifications
John Craven	Project Officer		
Kieron Heard	Project Officer		
Simon Cass	Project Officer	Yes	
Robert Brooks	Project Officer	Yes	Surveyor
Andrew Beverton	Project Officer	Yes	Surveyor
Simon Picard	Supervisor		Surveyor
John Sims	Supervisor	Yes	
Phil Camps	Senior Project Assistant	Yes	Shoring. 360 machine and dumper driver. Mobile tower.
Steve Manthorpe	Senior Project Assistant		
Preston Boyle	Project Assistant		
Tim Carter	Project Assistant		
Felix Reeves-Whymark	Project Assistant		
Alan Smith	Project Assistant		Metal detectorist

6.3 Post-excavation and report production

The production of the site report and submission of the project archive will be carried out by the fieldwork Project Officer. The post-excavation finds analysis will be managed by Richenda Goffin. The following SCCAS/FT specialist staff will contribute to the report as required.

Graphics	Cra	ne Begg
Graphics	Eleano	r Hillen
Illustration	Don	na Wreathall
Post Roman pottery and CBM		Richenda Goffin
Roman Pottery	Cathy	Tester, Stephen Benfield
Environmental sample processing		Anna West
Finds Processing	Jon	athan Van Jennians

SCCAS also uses a range of external consultants for post-excavation analysis who will be sub-contracted as required. The most commonly used of these are listed below.

Sue Anderson	Human skeletal remains	Freelance
Sarah Bates	Lithics	Freelance
Julie Curl	Animal bone	Freelance
Val Fryer	Plant macrofossils	Freelance
Anna Doherty	Prehistoric Pottery	Archaeology South-East
SUERC	Radiocarbon dating	Scottish Universities Environmental Research Centre

7. Health and safety

7.1 Introduction

- The project will be carried out following Suffolk County Council Health and Safety Policies at all times.
- All staff will be aware that they have a responsibility to:
 - Take care of their own health and safety and that of others who maybe affected by what they do, or fail to do, at work.
 - Follow safe systems of work and other precautions identified in the risk assessment.

- Report any changes to personal circumstances that may affect their ability to work safely.
- Report potential hazards, incidents and near misses to the Project Officer/supervisor.
- A pre-site inspection has been made of the site and applicable SCCAS/FT Risk Assessments for the project are included in Appendix 3.
- All SCCAS/FT staff are experienced in working on a variety of archaeological sites and permanent staff all hold a CSCS (Construction Skills Certification Scheme) card. All staff have been shown the SCCAS Health and Safety Manual, copies of which are held at the SCCAS/FT offices in Ipswich and Bury St Edmunds. All staff will read the site WSI and Risk Assessments (see below), will receive a site safety induction from the Project Officer prior to starting work, and sign the site induction register (Appendix 3). All staff will be issued with appropriate PPE.
- From time to time it may be necessary for site visits by other SCCAS/FT staff, external specialists, SCCAS/CT staff or other members of the public. All such staff and visitors will be issued with the appropriate PPE and will undergo the required inductions.
- Site staff, official visitors and volunteers are all covered by Suffolk County Council insurance policies. SCC also has professional negligence insurance. Copies of these policies are available on request.

7.2 Specific site issues

Site access

- Access to the site is via Chalk Hill Quarry and has been agreed with the client. All staff will follow any safety or sign-in procedures requested by the quarry operator.

Security

- Although the site is open it is private farmland with no crossing or nearby Rights of Way. If the trenches are to be left unattended before being backfilled (i.e. overnight) they will be enclosed with high visibility temporary barrier fencing. On completion of the project trenches will be backfilled to ground-level although pre-existing ground surfaces will not be reinstated.

Welfare facilities

- Welfare facilities are available at the adjacent quarry office.

First Aid

- A member of staff with the First Aiders at Work qualification will be on site at all times. A First Aid kit and a fully charged mobile will also be in vehicle/on site at all times.

Deep excavation

- Due to Health and Safety considerations, excavations will be limited to a maximum depth of 1.2m below existing ground level unless the trench is stepped or shored. In practice the trench is likely to be c.0.5m deep unless deep alluvial sequences are encountered.

Contaminated ground

- Details of any ground contamination have not been provided by the client but the risk of such is considered to be low, bearing in mind the sites agricultural use. If any such is identified then groundworks will cease until adequate safety and environmental precautions are in place.
- Advice will be sought from HSE and relevant authorities if required concerning any of these issues.

Hazardous Substances

- No hazardous substances are specifically required in order to undertake the archaeological works.

Underground services

- Details of known services have not been provided by the client. Trench positions will be laid out in advance with reference to any service plan supplied and a CAT scanner used prior to excavation.
- A gas pipeline is known to pass by the southern edge of the site and existing quarry, the route being marked above ground. The proposed trench plan allows for a 15m safety margin between the pipeline and machine operations.

Overhead Power lines

- No overhead power lines cross the site.

Personal Protective Equipment (PPE)

- The following PPE is issued to all site staff as a matter of course. Additional PPE will be provided if deemed necessary.
 - P Hard Hat (to EN397).
 - High Visibility Clothing (EN471 Class 2 or greater).
 - Safety Footwear (EN345/EN ISO 20346 or greater – to include additional penetration-resistant midsole).
 - Gloves (to EN388).
 - Eye Protection (safety glasses to at least EN 166 1F).

Environmental impact/constraints

- Suffolk County Council maintains an internal Environmental Management System run in accordance with the ISO14001 standard by a dedicated EMS officer. The council has a publicly available [Environment Policy](#), which commits us to meeting all relevant regulatory, legislative and other requirements, preventing pollution, and to continually improving our environmental performance.
- All existing and new SCCAS subcontractors are issued annually with the SCC Environmental Guidance Note For Contractors.
- On site the SCCAS Project Officer will monitor environmental issues and will alert staff to possible environmental concerns. In the event of spillage or contamination, e.g. from plant or fuel stores, EMS reporting and procedures will be carried out in consultation with Jezz Meredith (SCCAS/FT EMS Officer).
- The plant machinery will be well serviced and be as quiet a model as is practicable. It will come equipped with appropriate spill kit and drip trays. It will only refuel in a single designated area, as defined by the SCCAS. All refuelling will be carried out using electrically operated pumps and will only be done when drip trays are deployed.
- The client and/or landowner has not informed SCCAS/FT of any environmental constraints upon the development area.
- All rubbish will be bagged and removed either to areas designated by the client or returned to SCCAS for disposal.
- Water will not be pumped into any water course, storm drain etc without prior consent from the Environment Agency. Procedures for dealing with contamination from fuel spills or sediments will be closely followed.
- Trenching will be placed to minimise damage to sensitive flora and fauna or their habitats.

- All trenching will avoid the 'precautionary area' of any trees, this being the distance from the tree equal to 4 times the circumference of the tree at a height of 1.5m above ground level (National Joint Utilities Group 1995).

8. Bibliography

- Brickley, M., and McKinley, J. I., 2004, *Guidelines to the Standards for Recording Human Remains*. IFA Professional Practice Paper No 7.
- Brown, N and Glazebrook, J. (Eds), 2000, *Research and Archaeology: a Framework for the Eastern Counties, 2. Research Agenda and Strategy*. East Anglian Archaeology Occasional Paper No. 8.
- English Heritage, 2006, *Management of Research in the Historic Environment (MoRPHE)*.
- English Heritage, 2011, *Environmental archaeology, A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (2nd Ed)*.
- Gurney, D., 2003, *Standards for Field Archaeology in the East of England*. East Anglian Archaeology Occasional Paper No 14.
- Institute for Archaeologists, 2008, *Standard and Guidance for archaeological field evaluation*.
- McKinley, J., I and Roberts, C., 1993, *Excavation and post-excavation treatment of cremated and inhumed human remains*. IFA Technical Paper No 13.
- Medlycott, M. (Ed), 2011, *Research and Archaeology Revisited: A revised framework for the East of England*. EAA Occasional Paper 24.
- National Joint Utilities Group, 1995, *Guidelines for the planning, installation and maintenance of utility services in proximity to trees*.
- Ordnance Survey, 1983, 'Soils of England and Wales': *Soil survey of England and Wales, sheet 4 Eastern England 1:250,000* Harpenden.
- SCCAS/CT, 2010, *Deposition of Archaeological Archives in Suffolk*.
- SCCAS/CT, 2011, *Requirements for Trenched Archaeological Evaluation 2011, ver 1.2*.
- Watkinson, D. and Neal, V., 2001, *First Aid for Finds*. Third Edition, revised. Rescue/UKIC Archaeology Section, London.

Appendix 2. Context list

Context No	Feature No	Grid Sq.	Feature Type	Description	Length	Width	Depth	Small Finds	Cuts	Cut by	Over	Under	Finds	Sample	Group No	Phase	Spotdate	
0001	0001		Pit Cut	Cut of sub-oval shallow pit with moderate-steep northern and eastern sides, and shallow/gradual southern side. No other associated features/isolated apart from possible pit at south-west end of trench. Pit cut. Contained Bronze Age(?) pottery fragments. Possible waste pit/deposit.	1.13	0.86	0.16					0002	No	No				
0002	0001		Pit Fill	Single fill of pit. Mottled dark brown/mid orange-brown and chalky mid grey-brown clay-silt mix with sand (dependent on variable underlying natural). Firm with occasional large angular flints and small chalk lumps towards base. Single fill of pit. Waste deposit - several Bronze Age pottery fragments recovered.	1.13	0.86	0.16				0001		No	Yes				
0003	0004		Solution hollow Fill	Layers of dark brown, firm sandy-silt containing moderate amounts of small and medium sized rounded, sub-rounded and sub-angular stones, interspersed with layers of mid yellow gravelly sand and chalk. Appears to go beneath natural geological sand. Fills of [washed in] gravel and silt in a solution hollow.							0004		No	No				
0004	0004		Solution hollow Cut	Irregular feature in plan, roughly oval, aligned east to west, with the western edge going beneath the limit of excavation of Trench 1. Has an irregular profile; eastern edge is a shallow concave slope, whereas the southern edge is steep and undercutting in places. The base of the feature has a circular solution hollow which goes under natural sand. Natural solution hollow?								0003	No	No				
0005	0005		Depression Cut	Sub-rectangular/irregular depression with moderate sides and an uneven, irregular base and sides (much leaching - fades to degraded chalk). [Runs into trench edge]. Concave depression with significant leaching surrounding it, with an irregular linear extension to the north (plough damage? Rooting? Leaching?). No finds and mottled fill towards the edges. Possibly natural or a burnt out root ball?	>0.54	0.51	0.26					0006	No	No				
0006	0005		Depression Fill	Loose mottled dark grey/black sandy-silt and firm dark orange-brown sandy-silt, with moderate chalk flecks and occasional charcoal. Several burnt flints (white, medium size, angular/pitted). Single fill of depression [or possible leached pit]. Sifting/colluvial/root ball? Burnt in some areas.	>0.54	0.51	0.26				0005		No	No				
0007			Finds	Unstratified finds recovered from site. These consist entirely of struck flints. Some are possibly not struck, having instead been hit by the plough. Bronze Age/Iron Age flint assemblage?										No	No			

Appendix 3. OASIS form

OASIS DATA COLLECTION FORM: England

[List of Projects](#) | [Manage Projects](#) | [Search Projects](#) | [New project](#) | [Change your details](#) | [HER coverage](#) | [Change country](#) | [Log out](#)

[Printable version](#)

OASIS ID: suffolkc1-167158

Project details

Project name	BTM 060 Chalk Hill quarry evaluation, Barton Mills
Short description of the project	Twenty-six evaluation trenches were excavated on farmland prior to a new phase of chalk quarrying at Chalk Hill quarry, Barton Mills, in Suffolk. One small pit and a possible further cut were excavated in a trench near the western edge of the site and the pit produced several fragments of Iron Age pottery, a single worked flint and heated flint. An assemblage of thirty-one struck flints was also recovered from the site as unstratified finds, containing Palaeolithic, Neolithic, Bronze Age and Iron Age pieces. No other features or finds were recorded. Despite intensive ploughing of the site, the geological levels were generally well preserved.
Project dates	Start: 20-01-2014 End: 22-01-2014
Previous/future work	No / Not known
Any associated project reference codes	BTM 060 - HER event no.
Any associated project reference codes	BTM 060 - Sitecode
Any associated project reference codes	F/2011/0278 - Planning Application No.
Any associated project reference codes	2014/013 - Contracting Unit No.
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	PIT Bronze Age
Monument type	PIT Uncertain
Significant Finds	POT Iron Age
Significant Finds	LITHIC IMPLEMENT Palaeolithic
Significant Finds	LITHIC IMPLEMENT Neolithic
Significant Finds	LITHIC IMPLEMENT Bronze Age
Significant Finds	LITHIC IMPLEMENT Iron Age

Methods & techniques	"Sample Trenches"
Development type	Mineral extraction (e.g. sand, gravel, stone, coal, ore, etc.)
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	SUFFOLK FOREST HEATH BARTON MILLS BTM 060 Chalk Hill quarry evaluation
Postcode	IP28 6BN
Study area	3.40 Hectares
Site coordinates	TL 7102 7190 52.318084192 0.509436647822 52 19 05 N 000 30 33 E Point
Height OD / Depth	Min: 33.30m Max: 38.48m

Project creators

Name of Organisation	Suffolk County Council Archaeological Service
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	Dr Matthew Brudenell
Project director/manager	John Craven
Project supervisor	Rob Brooks
Type of sponsor/funding body	Quarry
Name of sponsor/funding body	Needham Chalk (HAM) Ltd

Project archives

Physical Archive recipient	Suffolk County Council Archaeological Service
Physical Archive ID	BTM 060
Physical Contents	"Ceramics", "Worked stone/lithics"
Digital Archive recipient	Suffolk County Council Archaeological Service
Digital Archive ID	BTM 060
Digital Contents	"Ceramics", "Survey", "Worked stone/lithics", "other"
Digital Media available	"Database", "Images raster / digital photography", "Spreadsheets", "Survey", "Text"
Paper Archive recipient	Suffolk County Council Archaeological Service
Paper Archive ID	BTM 060

Paper Contents "Ceramics","Survey","Worked stone/lithics","other"
Paper Media available "Context sheet","Report","Section","Correspondence","Plan"

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)
Title Chalk Hill Quarry, Barton Mills, BTM 060, Archaeological Evaluation Report
Author(s)/Editor(s) Brooks, R.
Other bibliographic details SCCAS Report No. 2014/013
Date 2014
Issuer or publisher SCCAS
Place of issue or publication Bury St Edmunds
Description A4, comb bond, in colour, with card covers and four appendices. Also available as a pdf.

Entered by Rob Brooks (rob.brooks@suffolk.gov.uk)
Entered on 14 February 2014

OASIS:

Please e-mail [English Heritage](#) for OASIS help and advice
© ADS 1996-2012 Created by [Jo Gilham and Jen Mitcham](#), email Last modified Wednesday 9 May 2012
Cite only: <http://www.oasis.ac.uk/form/print.cfm?ID=171618> for this page

Appendix 4. Trench soil profiles

Trench No	Width in m	Length in m	Orientation	Geology	Area	Topsoil depth in m	Depth to natural in m	Description, archaeological summary and soil profile
01	1.8	30	NNW-SSE	Sand, chalk and silt.		0.3	0.4	Plough soil, over a thin uneven layer of dark greyish-brown silty subsoil. Geology - yellow sand with chalk and gravel outcrops, and dark brown silty hollows in places. Subsoil filled hollows (very shallow) and one solution hollow (recorded as 0004).
02	1.8	30	ENE-WSW	Sand, chalk and silt.		0.36	0.52	Plough soil over subsoil (dark greyish-brown silt). Subsoil is thick in depth at the eastern end of the trench and has been largely ploughed into the topsoil at the western end (plough scars in the natural here too). Geology - yellow sand, chalk outcrops, gravel and brown silt. NA.
03	1.8	30	NNW-SSE	Sand, chalk and silt.		0.35	0.38	Plough soil over a thin layer of dark brown silty subsoil. Geology - yellow sand and silt, with degraded chalk outcrops. NA.
04	1.8	30	WSW-ENE	Chalk, sand and silt.		0.35	0.42	Plough soil over a thin layer of dark brown silty subsoil. Much of the subsoil has been ploughed into the topsoil and is very inconsistent in depth and extent. Geology - degraded clayey-chalk with reddish brown/yellow sand and silt areas. NA.
05	1.8	30	WSW-ENE	Chalk and silt.		0.38	0.4	Plough soil over a thin layer of dark brown silty subsoil. Subsoil barely present in much of the trench, especially the eastern half. Geology - mostly chalk/degraded chalk with red-brown/yellow silt. NA.
06	1.8	30	NNW-SSE	Chalk, clay, sand and silt.		0.28	0.32	Plough soil over dark brown silty subsoil. Subsoil has been ploughed into topsoil in most places (plough scars even truncate natural), meaning that the subsoil is only present as a thin, patchy layer. Tree root throw in northern end of trench. Geology - mostly chalk/chalky-clay, with dark red-brown/yellow sand and silt striations. NA.
07	1.8	30	WSW-ENE	Chalk, sand and silt.		0.32	0.46	Plough soil over subsoil as seen elsewhere. Subsoil is deeper in eastern end of trench. Tree root bowls in centre of trench (not recorded). NA.
08	1.8	30	NNW-SSE	Chalk, sand and silt.		0.36	0.4	Plough soil over subsoil as seen elsewhere, although subsoil is more of a patchy dark greyish-brown here. Geology - most chalk/degraded chalk with reddish-brown/yellow sand and silt. NA.

Trench No	Width in m	Length in m	Orientation	Geology	Area	Topsoil depth in m	Depth to natural in m	Description, archaeological summary and soil profile
09	1.8	30	WSW-ENE	Chalk, sand, silt and gravel.		0.32	0.37	Plough soil over subsoil as seen elsewhere. Geology - degraded chalk, red-brown sand/silt and flinty gravels. NA.
10	1.8	30	NNW-SSE	Sand, silt and chalk.		0.35	0.4	Plough soil over subsoil as seen elsewhere. Geology - pale brownish-reddish orange sand/silt with outcrops of degraded chalk. NA.
11	1.8	30	WSW-ENE	Chalk, silt and sand.		0.25	0.32	Plough soil over subsoil as seen elsewhere. Tree root bowl in centre of trench (photographed). Geology - chalk/degraded chalk with red/brown silt and sand. NA.
12	1.8	30	NNW-SSE	Chalk, sand and silt.		0.3	0.38	Plough soil over subsoil as seen elsewhere. NA.
13	1.8	30	WSW-ENE	Chalk, sand and silt.		0.36	0.38	Plough soil over subsoil as seen elsewhere. Geology - mostly chalk, with red brown sand/silt in glacial scars. NA.
14	1.8	30	NNW-SSE	Chalk, silt and sand.		0.32	0.4	Plough soil over subsoil (which varies in thickness) as seen elsewhere. Subsoil has been heavily damaged by natural - plough scars reach natural. Geology - mostly chalk/degraded chalk with reddish-brown silt/sand. Pit 0001 - sub-oval Bronze Age(?) feature at NNW end and depression 0005 at SSE end.
15	1.8	30	WSW-ENE	Chalk, sand and silt.		0.32	0.36	Plough soil over subsoil as seen elsewhere. NA.
16	1.8	30	NNW-SSE	Chalk, sand and silt.		0.3	0.34	Plough soil over sporadic subsoil as seen elsewhere. Plough scars in natural. Geology - chalk with red-yellow sand/silt filling glacial scars. NA.
17	1.8	30	WSW-ENE	Chalk, silt and sand.		0.32	0.42	Plough soil over subsoil as seen elsewhere, which decreases in depth towards the western end of the trench. NA.
18	1.8	30	NNW-SSE	Chalk, sand and silt.		0.39	0.39	Plough soil over traces/lenses of subsoil as seen elsewhere. Subsoil largely destroyed by ploughing (plough scars seen in natural), but still visible in a few places in the trench. NA.

Trench No	Width in m	Length in m	Orientation	Geology	Area	Topsoil depth in m	Depth to natural in m	Description, archaeological summary and soil profile
19	1.8	30	WSW-ENE	Chalk, sand and silt.		0.3	0.32	Plough soil over subsoil as seen elsewhere. Geology - chalk and degraded chalk with red-brown/yellow sand and silt filling glacial scars. NA.
20	1.8	30	NNW-SSE	Chalk, sand and silt.		0.32	0.4	Plough soil over subsoil as seen elsewhere. Geology - chalk with dark reddish-brown/yellow sand/silt pockets. NA.
21	1.8	30	WSW-ENE	Chalk, sand and silt.		0.32	0.4	Plough soil over subsoil as seen elsewhere. Geology - chalk/degraded chalk with red-yellow/brown sand/silt. NA.
22	1.8	30	NNW-SSE	Chalk, sand and silt.		0.3	0.36	Plough soil over subsoil as seen elsewhere. Geology - chalk with reddish-brown/yellow sand and silt. NA.
23	1.8	30	WSW-ENE	Chalk, flint gravels, sand and silt.		0.32	0.38	Plough soil over subsoil as seen elsewhere. Geology - chalk and flint gravels in yellow/red-brown sand and silt. Adjoins Trench 24. NA.
24	1.8	27	NNE-SSW	Silt, sand, chalk and gravel.		0.32	0.4	Trench very shallow and northern end (thin humic layer over natural - obviously truncated), but increasing in depth to south where a thin layer of disturbed silt subsoil sits beneath the plough soil. Geology - yellow/brown silts and sands with flint gravels and some degraded chalk. Adjoins Trench 23. Trench extended from 15m to 25m and moved 5m to SSW to avoid water main and to allow for shortening of Trenches 25 and 26. NA.
25	1.8	16	NNW-SSE	Chalk, gravel, sand and silt.		0.32	0.4	Plough soil over subsoil as seen elsewhere. Geology - degraded chalk, with flinty gravel and yellow/brown silt and sand deposits. Trench shortened to 15m (reduced at NNW end) to avoid water main. NA.
26	1.8	23.5	NNW-SSE	Chalk, sand and silt.		0.34	0.4	Plough soil over subsoil as seen elsewhere. Geology - chalk/degraded chalk with a few red/yellow sand and silt filled glacial scars. Shortened by 5m at NNW end to avoid water main. NA.

Appendix 5. Flint catalogue

Ctxt	Type	No	Pat	Notes
0002	flake	1	p+	Heavily patinated flake
0007	flake core	1	p	Multiplatform flake core, 3 separate striking platforms. slightly irregular w c. 30% cortex on faces.+ Later unpat. crude irreg. retouch
	blade core	1	p	Long blade core w additional unpat. retouch/damage. One end cortical
	flake core	1	u	Core/shatterpiece, irregular, simple. c. 20% cortex present
	flake core	1	u	Simple flake core, probably a natural flake w a few attempts at flake removal on edge
	flake core	1	u	Small, irreg. multiplatform flake core. Remnants of poss. stained flake scars on 2 faces suggesting a much earlier piece was used.
	flake core	1	u	Shatterpiece w a few long flakes removed. Made from poss. Lower Palaeo. 'rolled' and sl. stained flake core. (Lower Paleolithic)
	flake core	1	sl p	Slightly patinated flake core, irregular, c. 20% cortex
	shatter	1	u	Shatterpiece w a few irregular flakes removed. Made from an earlier large hammerstone
	long flake	1	p+	Heavily pat.(white) long flake w parallel flake scars on dorsal face. no sign of retouch. 1 long edge cortical. (Paleolithic)
	blade	1	p	Snapped blade w parallel blade scars on dorsal face
	notched blade	1	l.p.	Blade w parallel blade scars on dorsal face +some unpat. edge retouch forming crude notches. Small amt of cortex
	retouched flake	1	l.p.	Small flake w parallel flake scars on dorsal face+1 small unpat. flake scar on 1 edge. 10% cortex
	retouched flake	1	p	Squat flake w unpat. flake scars on dorsal face & limited edge retouch. Small amt of cortex
	flake	1	l.p.	light pat. on bulbar face, highly patinated on dorsal face, c. 70% cortex on dorsal face
	flake	1	p	Hinge-fractured flake. Highly pat on Dorsal face, unpat on bulbar face. 50% cortex on dorsal face
	notched blade	1	u	Blade w 2 ret. notches. parallel blade scars on dorsal face. 20% cortex on DF
	retouched blade	1	u	Blade w lim. crude retouch on both long edges. c. 20% cortical on distal end
	retouched flake	1	u	Irregular sub-triang. flake w limited edge retouch. off of a shatterpiece
	retouched flake	1	u	Irregular flake w light crude edge retouch inc 2 broad notches. Distal end of dorsal face = c. 30% cortex
	retouched flake	1	u	Irregular thick flake w natural striking platform & crude edge retouch. 30% cortex
	retouched flake	1	u	Thick flake w. natural striking platform & limited edge retouch. 20% cortex
	retouched flake	1	u	Hinge-fractured flake w limited crude edge retouch & natural striking platform. 40% cortex on dorsal face
	retouched flake	1	u	Irregular flake w limited edge retouch. 20% cortex on dorsal face
	retouched flake	1	u	Squat flake w sub-rectangular x-section.Crude retouch. Also shows small pat. flake scar from earlier piece.Small amt of cortex
	retouched flake	1	u	Squat flake w hinge fracture and limited edge retouch. Small amt of cortex
	flake	1	u	very small flake/spall
	retouched flake	1	u	Snapped flake w central platform. slight retouched notch on 1 edge & limited edge retouch on opposite edge. Waste from platform gun flint production?
	retouched flake	1	u	snapped distal end of flake. Limited edge retouch on distal end. Cortex on 1 face. (gunflint production waste?)
	notched flake	1	u	Natural flint w unpat. retouch forming small notch
	notched flake	1	p	Sub-triangular flake w 2 large unpatinated broad notches

Key: u = unpatinated, p = patinated, p+ = heavily patinated, lp = lightly pat., sl p = slightly patinated

Archaeological Service Field Projects Team

Delivering a full range of archaeological services

- Desk-based assessments and advice
- Site investigation
- Outreach and educational resources
- Historic Building Recording
- Environmental processing
- Finds analysis and photography
- Graphics design and illustration

Contact:

Rhodri Gardner

Tel: 01473 265879

rhodri.gardner@suffolk.gov.uk

www.suffolk.gov.uk/business/business-services/archaeological-services