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Ripon Quarry Southern Extension Area of Proposed Soil Storage North Yorkshire

Trial Trench Evaluation

September 2011

Report No. 2253

CLIENT
Hanson Aggregates

Ripon Quarry South

NYCC HER

ENY 5970

Parish 6014

CNY

Rec'd 29/09/11

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29 SEP 2011

North Yorkshire

Ripon Quarry Southern Extension

Area of Proposed Soil Storage

Trial Trench Evaluation

Summary

A trial trench evaluation covering the area proposed for the location of overburden storage mounds and haul roads for the Southern Extension to Ripon Quarry has confirmed the presence of a prehistoric pit alignment and identified an undated ditch feature. Although this latter feature was not identified by a geophysical survey which covered the whole of the field no other archaeological features were identified in the remaining 25 trenches. The evaluation has clearly demonstrated the low archaeological potential of this part of the field and therefore confirmed its suitability for the short term storage of overburden.



Report Information

Client: Hanson Aggregates

Address: Clifford House, York Road, Wetherby, LS22 7NS

Report Type: Trial Trench Evaluation

Location: Ripon Quarry

County: North Yorkshire

Grid Reference: SE 298 764

Period(s) of activity:

represented Iron Age/Romano-British?

Report Number: 2253 Project Number: 3753 Site Code: RIQ11

Planning Application No.: Pre-application

Museum Accession No.: n/a

Date of fieldwork: September 2011 Date of report: September 2011

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1 Introduction

Archaeological Services WYAS (ASWYAS) was commissioned by Andrew Josephs Ltd on behalf of their client Hanson Aggregates to carry out a trial trench evaluation as part of predetermination work at Ripon Quarry, near North Stainley (see Fig. 1). The results of the trial trenching will help assess the extent of the archaeological resource and thereby inform the location of soil and overburden storage. This material will be generated by the Phase 3 soil strip, part of the proposed southern extension to the quarry. An Environmental Impact Assessment (EIA) is in course of being produced for the extension scheme, however, the current area of interest was not initially considered within the EIA scoping, and has been added as a result of the EIA process and design requirements. The scheme of work was undertaken in accordance with the requirements of Planning Policy Statement 5. The trenching was undertaken between September 12th and September 16th 2011.

Site location, topography and land-use

The evaluation area, centred at SE 298 763, comprised the south-western quarter of a triangular-shaped field of about 9 hectares which is currently under arable cultivation having been ploughed and re-seeded just prior to the evaluation. The field is located approximately 0.8km south of the main quarry facility which is 4km north of Ripon (see Fig. 1) on the river Ure. Topographically the field overlooks the floodplain of the Ure on higher ground gently rising from between 34m aOD on the eastern side of the field to 43m aOD in the west (see Fig. 2). The floodplain below is separated from the site by a steep river bluff, and lies at about 28m aOD.

Geology and soils

The underlying bedrock comprises of the Edlington Formation – Calcareous mudstone which is overlain by till (BGS 2001). The soils in this area are classified in the Nercwys soil association, characterised as deep fine loams with slowly permeable sub-soils affected by seasonal waterlogging (SSEW 1983).

2 Archaeological background

A scoping report, undertaken on behalf of Hanson by Andrew Josephs Ltd. as part of the southern extension EIA, noted that the extension area lies in the valley of the river Ure, a rich prehistoric landscape, containing prehistoric monuments of national importance, with scheduled henges at Thornborough to the north and Nunwick and Hutton Moor to the south. A pit alignment (MNY13755) lies 100m north of the existing plant site, with a round barrow (MNY24218) a further 300m north-west. An unusual Roman villa with associated defences, Castle Dykes (HER MNY21030), lies 650m to the south-west of the survey area. A possible rectangular enclosure (MNY19916) and other cropmarks have been recorded within the proposed survey area by the National Mapping Programme (see Fig. 3).

Nevertheless, it was noted that the proposed extension area had only a moderate to low archaeological potential due primarily to the fact that the land is low lying adjacent to the river and therefore likely to have been periodically flooded from the prehistoric period until post-medieval times.

A comprehensive geophysical evaluation, covering the proposed southern extension area (ASWYAS 2009), did not identify any anomalies of archaeological potential, although anomalies due to ploughing, drainage features and palaeochannels were identified. A programme of trial trenching subsequently confirmed the low potential of the southern extension area, as suggested by the scoping report and geophysical survey.

However, the new evaluation area (the subject of this report) is on much higher ground thereby increasing the likelihood of archaeological activity. This increased potential is reflected by the presence of a square cropmark, interpreted as a probable enclosure of late Iron Age or Romano-British date, located towards the eastern edge of the field, with other linear cropmark features noted towards the centre and western side of the same field (see Fig. 2). The location of these features was subsequently confirmed by a geophysical survey (Webb 2011) which also identified a pit alignment, of presumed prehistoric date, traversing northwest/south-east across the centre of the field. However, no anomalies of archaeological potential were identified in the western half of the field, the area evaluated by the programme of trial trenching described below.

3 Aims and Methodology

The aim of the evaluation is to enable a decision to be made finalising the location of the overburden storage mounds and haul roads in areas which will minimise the impact on the archaeological resource.

To achieve this aim the first stage of the evaluation comprised a magnetometer survey to cover the whole of the field where it is proposed to store the topsoil and overburden, an area of approximately 9 hectares; the actual land-take for the soil storage is only approximately 3 hectares. This identified the western half of the field as having a significantly reduced archaeological potential compared to the eastern half of the field. The eastern half of the field was therefore more suitable for the storage of topsoil that can be placed directly onto topsoil.

The principal aim of the trial trenching was therefore to test whether the geophysical survey had given an accurate assessment of the archaeological potential of the south-western corner of the site where overburden would need to be stored.

The trenching proposals were set out in a Written Scheme of Investigation (Appendix 3) and approved and agreed by Lucie Hawkins from North Yorkshire Heritage Environment Section (NYHES) and Neil Redfern from English Heritage (EH).

All trenches were set out and their limits recorded using a Differential GPS (dGPS) accurate to +/- 0.01cm. All trenches were also tied in to local permanent features shown on published Ordnance Survey 1:2500 mapping.

The evaluation trenches were excavated by a 360° mechanical excavator fitted with a 2m wide toothless ditching bucket under the direct supervision of a qualified archaeologist. Overburden was removed in successive spits until the archaeological horizon or natural deposits were encountered. Thereafter, all investigations were undertaken by hand. Artefactual evidence was collected whenever encountered and environmental samples were taken from significant and primary archaeological deposits. All archaeological features and deposits were photographed and drawn to scale as appropriate and recorded using a standardised *pro-forma* system. Feature sections were drawn at a scale of 1:10 and trench plans and sections were drawn at 1:50.

The archaeological evaluation was carried out in accordance with recognised professional standards, specifically *Standards and Guidance for Archaeological Field Evaluation* (Institute for Archaeologists 2008), *Standards and Guidance for Archaeological Excavation* (Institute for Archaeologists 2008) and *Management of Archaeological Projects* (English Heritage 1991). ASWYAS's own methodologies (ASWYAS 2009) were also adhered to.

4 Results (see Figs 2, 3 and 4 and Plates)

Summary

A total of 27 trial trenches were excavated across the proposed location of the overburden storage area (Fig 2; Plate 1). The majority of the trenches were blank and did not contain any archaeological remains. T13 and T22 did, however, contain archaeological features comprising an undated linear ditch feature and a series of pits identified by the geophysical survey. The topsoil and subsoil deposits were broadly similar across the whole of the evaluation area.

The results from each trench are tabulated below with detail on the depths and composition of the topsoil, subsoil and the ground level being noted. The difference in natural geological levels is also recorded. Plans of the two trenches containing archaeological features are presented with relevant sections in Figure 3 and Figure 4. A selection of images of the trenches are presented in Plates 1 to 8 inclusive.

Trench 1

Sample sect	tion: North-west e	nd $(0.00 = 43.76 \text{ aOD})$	
Orientation: Northwest/south-east Dimensions: 2m by 20m			
Context	Depth	Description	
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles	

101	0.30 - 0.40m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.40m+	Natural. Greyish brown clay till deposit, contained mixed mudstone,
		sandstone and limestone inclusions with patches of yellow brown sand

Sample sec	tion: South-west er	ad (0.00 = 42.76 aOD)
Orientation: North-west/south-east		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.60m+	Natural. Greyish brown clay till deposit, contained mixed mudstone, sandstone and limestone inclusions with patches of yellow brown sand

Trench 3

Sample secti	Sample section: Northern end $(0.00 = 42.52 \text{ aOD})$		
Orientation: Square		Dimensions: 4m by 4m	
Context	Depth	Description	
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.30 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.60m+	Natural. Greyish brown clay till deposit, contained mixed mudstone, sandstone and limestone inclusions with patches of yellow brown sand	

Trench 4

Sample sect	Sample section: North-east end $(0.00 = 42.41 \text{ aOD})$		
Orientation: North/south		Dimensions: 2m by 20m	
Context	Depth	Description	
100	0.00 - 0.35m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.35 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.60m+	Natural. Light grey-brown sands and gravels, becoming more stony towards the north	

Trench 5

Sample section: North-east end $(0.00 = 42.76 \text{ aOD})$		
Orientation: East/west		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.40 - 0.70m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.70m+	Natural. Light grey-brown sands and gravels, with bands of sand located in the centre of the trench

Sample sec	Sample section: Northern end $(0.00 = 43.05 \text{ aOD})$		
Orientation: Square		Dimensions: 4m by 4m	
Context	Depth	Description	
100	0.00 - 0.35m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.33 - 0.65m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.65m+	Natural. Light grey-brown sands and gravels	

Trench 7

Sample sect	ion: North-west ei	$\mathbf{nd} \ (0.00 = 42.26 \ \text{aOD})$
Orientation west/south-e		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.65m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.65m+	Natural. Light grey-brown sands and gravels with variable bands of sand

Trench 8

Sample section: Northern end $(0.00 = 42.08 \text{ aOD})$		
Orientation: Square		Dimensions: 4m by 4m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.55m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.55m+	Natural. Light grey-brown sands and gravels

Trench 9

Sample sect	ion: North-wester	n end (0.00 = 41.93 aOD)
Orientation west/south-e		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.50m+	Natural. Light grey-brown, slightly silty sand with cobbles

Trench 10

Sample sec	tion: North-we	est end $(0.00 = 41.82 \text{ aOD})$	
Orientation west/south-e		Dimensions: 2m by 20m	
Context	Depth	Description	

100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.60m+	Natural. Greyish brown clay till deposit, with patches of yellow brown sand

Sample sec	tion: North-east er	ad (0.00 = 41.15 aOD)
Orientation east/south-e		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.40 - 0.90m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.90m+	Natural. Light grey-brown sands and gravels with patches of brown clay, some large sized cobbles

Trench 12

Sample sec	tion: North-east en	ad (0.00 = 41.57 aOD)
Orientation: Square		Dimensions: 4m by 4m
Context	Depth	Description
100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.40 - 0.58m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.58m+	Natural. Light grey-brown sand and gravels

Trench 13 (Fig. 3; Plate 4)

Sample sect	ion: North-east en	$\mathbf{d} \ (0.00 = 41.97 \ \text{aOD})$
Orientation	: East-west	Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.35m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.35 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.60m+	Natural. Light grey-brown sands and gravels

Trench 13 contained a single, linear, ditch feature located 5m from the western end of the trench and orientated north-west/south-east. The ditch (112) was 1.44m wide and 0.69m deep, with a V-shaped profile with near vertical sides into a tapering base. The ditch contained a sequence of three fills with the primary fill (111) comprising light grey brown silty sand. This was overlain by deposit 109 which was a mid orangey brown silty sand with very few inclusions. The final deposit (110) comprised mostly large stones and cobbles, ranging in size from 0.10m to 0.35m in diameter, which was confined to the eastern side of the ditch. No dating evidence was recovered from the ditch although the infill sequence would suggests that the ditch has been filled by cobbles from field clearance and as such

maybe a relict field boundary. The first edition Ordnance Survey mapping does show a boundary on the same alignment but 18m to the east of the recorded feature.

Trench 14

Sample section: Western end $(0.00 = 41.74 \text{ aOD})$			
Orientation: East/west		Dimensions: 2m by 20m	
Context	Depth	Description	
100	0.00 - 0.45m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.45 - 0.70m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.70m+	Natural. Light grey-brown sands and gravels	

Trench 15

Sample sec	tion: South-east en	ad (0.00 = 41.28 aOD)
Orientation	: East/west	Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.50m+	Natural. Light grey-brown sands and gravels

Trench 16

Sample sec	tion: Northern end	1 (0.00 = 41.10 aOD)
Orientation: Square		Dimensions: 4m by 4m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.45m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.45m+	Natural. Light grey-brown sands and gravels

Trench 17

Sample sec	tion: West end (0.	00 = 40.98 aOD)
Orientation: Square		Dimensions: 4m by 4m
Context	Depth	Description
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.30 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.60m+	Natural. Light grey-brown sands and gravels

Trench 18 (Plate 8)

Sample section: North-we	st end $(0.00 = 40.29 \text{ aOD})$	
Orientation: North-	Dimensions: 2m by 20m	
west/south-east		

Context	Depth	Description
100	0.00 - 0.35m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.35 - 0.65m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.65m+	Natural. Light grey-brown sands and gravels

Sample sect	ion: North-west e	nd (0.00 = 40.29 aOD)
Orientation west/south-e		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.40 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.60m+	Natural. Light grey-brown sands and gravels

Trench 20

Sample sect	tion: North-east en	d (0.00 = 39.37 aOD)	
Orientation east/south-w		Dimensions: 2m by 20m	
Context	Depth	Description	
100	0.00 - 0.35m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.35 - 0.60m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.60m+	Natural. Light grey-brown sands and gravels with abundant cobbles	

Trench 21

Sample sec	tion: Eastern end	(0.00 = 40.19 aOD)
Orientation: East/west		Dimensions: 2m by 20m
Context	Depth	Description
100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.40 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.50m+	Natural. Light grey-brown sands and gravels with eastern end of the trench containing a grey clay till deposit.

Trench 22 (Fig. 4; Plates 2, 3 and 5)

Sample sect	ion: North-west er	ad (0.00 = 39.87 aOD)	
Orientation west/south-e		Dimensions: Irregular dumbbell shape with two areas of 4m by 4m linked by a corridor of 2m by 4m.	
Context	Depth	Description	
100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.40 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.50m+	Natural. Light grey-brown sands and gravels	

Trench 22 was located across the line of the proposed haul road over a group of discrete anomalies that were identified by the geophysical survey and interpreted as a pit alignment. Four pits were identified within the trench area with a fifth partly revealed at the southern end of the trench. The three northern pits (103, 105 and 107) were half sectioned and the results summarised in Table 1 below.

Table 1: Summary table of pits within Trench 22.

Pit cut number	Fill number	Diameter (m)	Depth (m)	Finds
103	104	1.55	0.50	None
105	106	1.50	0.35	None
107	108	1.35	0.35	Animal Bone fragments

The fills from each pit were identical comprising light brown slightly sandy silt with frequent amounts of stone that appeared to be packed into the features. No dating evidence was recovered from any of the pits although two small fragments of animal bone were recovered from pit 107.

Trench 23

Sample section: North-east end $(0.00 = 39.66 \text{ aOD})$			
Orientation east/south-w		Dimensions: 2m by 10m	
Context	Depth	Description	
100	0.00 - 0.25m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.25 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.50m+	Natural. Light grey-brown sands and gravels	

Trench 24

Sample sect	tion: North-east en	ad(0.00 = 38.40 aOD)	
Orientation east/south-w		Dimensions: 2m by 10m	
Context	Depth	Description	
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.30 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.50m+	Natural. Light grey-brown sands and gravels	

Trench 25 (Plate 6)

Sample section: North-eastern end (0.00 = 34.83 aOD)				
Orientation east/south-v		Dimensions: 2m by 20m		
Context Depth		Description		

100	0.00 - 0.40m	Topsoil. Dark brown sandy silt with occasional pebbles
101	0.40 - 0.70m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles
102	0.70m+	Natural. Light grey-brown sands and gravels

Sample sect	ion: South-east en	$\mathbf{d} \ (0.00 = 38.82 \ \text{aOD})$	
Orientation west/south-e		Dimensions: 2m by 20m	
Context	Depth	Description	
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.30 - 0.70m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.70m+	Natural. Light grey-brown sands and gravels	

Trench 27 (Plate 7)

Sample sec	tion: North-west e	nd (0.00 = 37.10 aOD)	
Orientation: Northwest/south-east Dimensions: 2m by 20m		Dimensions: 2m by 20m	
Context	Depth	Description	
100	0.00 - 0.30m	Topsoil. Dark brown sandy silt with occasional pebbles	
101	0.30 - 0.50m	Subsoil. Mid orange-red-brown sandy silt with occasional pebbles	
102	0.50m+	Natural. Light grey-brown sands and gravels	

5 Environmental Record

Soil Samples

Thirty litre soil samples were taken from the primary fills of the four archaeological features excavated and are summarised in the table below.

Table 2. Summary of environmental samples taken

Context Number	Sample Number	Type of feature	
104	1	Pit	
106	2	Pit	
108	3	Pit	
111	4	Ditch	

Animal Bone

Two fragments of animal bone were recovered from pit 107, deposit 108. The fragments are likely to be part of the long bones of a medium to large sized mammal but are undiagnostic. No further analysis is possible.

6 Discussion and Conclusions

The evaluation covering the area proposed for the location of the overburden storage bunds and haul roads for the Southern Extension to Ripon Quarry has confirmed the presence of a prehistoric pit alignment identified by the geophysical survey. The evaluation also identified an undated ditch feature that appears to be on a similar alignment to a first edition Ordnance Survey boundary but is depicted 18m to the east of the mapped feature. Although this latter feature was not identified by the earlier magnetometer survey it is not considered to be archaeologically significant. No other archaeological features were identified in the remaining 25 trenches confirming the low archaeological potential of this area as suggested by the geophysical survey.

In conclusion the evaluation has clearly demonstrated the low archaeological potential of this south-western part of the field and therefore confirmed its suitability for the storage of overburden. Whilst the haul road will have to cross the prehistoric pit alignment in order to access the proposed storage areas it is considered that the remaining unexcavated sections of the three pits that fall within the haul road corridor can be protected using a suitable depth of aggregate and a semi-permeable membrane to negate any potential adverse impact of the temporary road construction.