

**STRATASCAN**

# Geophysical Survey Report

## Tewitfield Marina, Priest Hutton Lancashire

For

Oxford Archaeology North

May 2006

**J2159**

Hannah Heard BSc (Hons) AIFA



Document Title: **Geophysical Survey Report  
Tewitfield Marina, Priest Hutton, Lancashire**

Client: **Oxford Archaeology North**

Stratascan Job No: **J2159**

Techniques: **Non-ferrous metal detecting survey**

National Grid Ref: **SD 5202 7353**



Field Team: **Luke Brown and Richard Fleming**

Project Manager: **Simon Stowe BSc (Hons)**

Report Written by: **Hannah Heard BSc (Hons) AIFA**

CAD illustration by: **Hannah Heard BSc (Hons) AIFA**

Checked by: **Simon Stowe BSc (Hons)**

Stratascan Ltd.

Vineyard House  
Upper Hook Road  
Upton upon Severn  
WR8 0SA

Tel: 01684 592266  
Fax: 01684 594142  
Email: [ppb@stratascan.co.uk](mailto:ppb@stratascan.co.uk)  
[www.stratascan.co](http://www.stratascan.co)

---

1	SUMMARY OF RESULTS.....	3
2	INTRODUCTION.....	3
2.1	Background synopsis.....	3
2.2	Site location.....	3
2.3	Description of site .....	3
2.4	Geology and soils .....	3
2.5	Site history and archaeological potential .....	4
2.6	Survey objectives .....	4
2.7	Survey method.....	5
3	METHODOLOGY.....	5
3.1	Date of fieldwork .....	5
3.2	Grid locations .....	5
3.3	Survey equipment.....	5
3.4	Sampling interval, depth of scan, resolution and data capture.....	5
3.4.1	Sampling interval .....	5
3.4.2	Depth of scan and resolution .....	5
3.4.3	Data capture.....	6
3.5	Presentation of results and interpretation .....	6
4	RESULTS.....	6
5	CONCLUSION .....	7

## **LIST OF FIGURES**

- Figure 1 1:25 000 General location plan
- Figure 2 1:1000 Plot of non-ferrous metal detecting survey results
- Figure 3 N/A Finds Spreadsheet

## **1 SUMMARY OF RESULTS**

A 40% coverage non-ferrous metal detecting survey was carried out at the proposed development site of Tewitfield Marina. Initial examination of the results reveals the majority of the finds are of modern origin. This could suggest that the possible presence of metallic archaeological remains are beyond the depth of penetration of the metal detector. The construction of the Lancaster Canal and Turnpike road, along with local industrial activity may have covered or removed archaeological deposits. A detailed gradiometer survey may reveal possible archaeological features up to a depth of 1m.

## **2 INTRODUCTION**

### **2.1 Background synopsis**

Stratascan were commissioned by Oxford Archaeology North to undertake a metal detecting survey of an area outlined for development. This survey forms part of an archaeological investigation by Oxford Archaeology North.

### **2.2 Site location**

The site is located immediately south of the crossing between the current A6070 and the Lancaster Canal at OS ref. SD 5202 7353.

### **2.3 Description of site**

The survey area is approximately 2ha of agricultural land currently under pasture. The survey area is located to the west of the Old Turnpike Road and directly behind the Longlands Hotel Public House. It is bounded to the south and west by agricultural land and to the north by the A 6070.

### **2.4 Geology and soils**

The underlying geology is Tournaisian and Visean Carboniferous Limestone with overlying Boulder Clay and Morainic drift. (British Geological Survey South Sheet, Fourth Edition Solid, 2001; First Edition Quaternary, 1977). The overlying soils are known as Denbigh 1 soils which are typical brown earths. These consist of Palaeozoic slaty mudstone and siltstone (Soil Survey of England and Wales, Sheet 1 Northern England).

## 2.5 Site history and archaeological potential

The following information has been provided by Oxford Archaeology North (OA North 2003).

No sites dating to the Palaeolithic, Mesolithic or Neolithic are within the immediate area of proposed development. The archaeological record for the prehistoric period is poorly represented. Prehistoric finds around the area have included a worked flint scatter, a perforated stone hammer with several bronze celts, spearheads and other implements. A Bronze Age socketed spearhead was found near Buckstone House approximately 1km north of the proposed development site.

The Roman period is only represented by findspots and one possible structure. Roman pottery has been found at nearby sites. At Dale Grove House a bow brooch and a single denarius were found by metal detection. A record attests to the find of a lead coffin at Dock Acres containing the daughter of a Roman General. The area of Dock Acre Farm is said to have been a possible Roman dock, although excavations have only revealed medieval pottery.

Early medieval activity is not represented within the survey area, although evidence for Viking colonisation is present in the region. The 'Carnforth Viking Treasure' was discovered by two local metal detectorists approximately 1km west of the site. The hoard consisted of two spreads of finds in the ploughed topsoil of a field. All finds were recovered from the top 80mm of topsoil and date to the tenth century AD. The hoard contained two silver ingots, two fragments of bracelet, three Kufic dirhems and four pieces of hack-silver.

The majority of the towns and villages in the area have origins of at least medieval date. Tewitfield appears to have its origins as an ancient estate of sixty acres belonging to the Croft family of Dalton in the thirteenth century. Thirteenth and fourteenth century pottery was found at Dock Acres Quarry. Medieval coin findspots have been discovered by metal detectorists around the area of Borwick.

During the post-medieval period the Turnpike Road and the Lancaster to Kendal Canal was constructed through Tewitfield. A 'Coal Wharf' is shown on the 1<sup>st</sup> edition OS mapping as well as a warehouse and Tewitfield Reservoir. The area became a concentration of industry connected to the Canal as well as local industry by the presence of limekilns and millraces. The Canal link to Kendal was cut in 1968 with the building to the M6 motorway.

## 2.6 Survey objectives

The objective of the survey was to locate non-ferrous metal objects of possible archaeological significance in order that they may be assessed prior to development.

## 2.7 Survey method

The metal detecting survey can identify key areas of interest by defining the spatial extents of objects unearthed. The recovered finds can provide an indication of earlier land uses. This survey technique allows a rapid assessment of large areas and can lead to targeted areas for detailed geophysical survey, such as gradiometry or resistivity.

## 3 **METHODOLOGY**

### 3.1 Date of fieldwork

The fieldwork was carried out over 3 days from the 30<sup>th</sup> May to the 2<sup>nd</sup> June 2006. Weather conditions during the survey were fine and sunny.

### 3.2 Grid locations

The survey baselines were set out using a Leica total station and referenced to OS coordinates with a Leica system 500 DGPS.

### 3.3 Survey equipment

A Garrett GTAx 750 was used to carry out the metal detecting survey.

### 3.4 Sampling interval, depth of scan, resolution and data capture

#### 3.4.1 Sampling interval

Scanning was carried out along 3m spaced traverses across the survey area. A 0.6m 'sweep' was carried out either side of each traverse, covering a 1.2m wide corridor along every 3m traverse. The coil level is kept at a constant height approximately 3-5cm above the ground.

#### 3.4.2 Depth of scan and resolution

The GTAx 750 has a typical depth of penetration of up to 30cm (depending on size and material). This would be increased if strongly magnetic objects have been buried in the site.

### 3.4.3 Data capture

No automatic find settings were applied to the GtAx 750. The detection of any metal targets is indicated by an increase in sound. The target ID display is used to omit any ferrous objects from the survey, although it is known that a small percentage of responses may still be picked up and subsequently identified as ferrous. Finds are then pinpointed and excavated using the smallest hole possible. The hole is then filled. The find is given an individual ID number, bagged, and its position recorded to OS coordinates using a Leica system 500 DGPS.

### 3.5 Presentation of results and interpretation

The presentation of the data for each site involves a print-out of the finds location (Figure 2) and a spreadsheet containing the object ID, easting, northing and preliminary description (Figure 3).

## 4 RESULTS

A bonfire was situated in the north of the survey area of which a number of metallic responses can be attributed to (53-64). A remaining 52 finds were located and recovered. The finds appear to be evenly spread across the survey area with a slight concentration to the northwest. Eight coins were found within the survey. Seven coins were of modern origin and one dated to the early 19<sup>th</sup> century. From a preliminary examination, the majority of finds can be attributed to modern origin.



**Plate 1:** Showing bonfire situated in the northeast of the survey area



## 5 CONCLUSION

Initial examination of the results reveals the majority of the finds are of modern origin. This could suggest that the possible presence of metallic archaeological remains are beyond the depth of penetration of the metal detector. The construction of the Lancaster Canal and Turnpike road, along with local industrial activity may have covered or removed archaeological deposits. A detailed gradiometer survey may reveal possible archaeological features up to a depth of 1m.