

Ancient Monuments Laboratory  
Report No. 49/92

BOWMANS FARM  
ROMSEY EXTRA PARISH, HAMPSHIRE  
REPORT ON GEOPHYSICAL SURVEY  
JUNE 1992

Andy Payne (BSc, PIFA)

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BOWMANS FARM, ROMSEY EXTRA PARISH, HAMPSHIRE.  
REPORT ON GEOPHYSICAL SURVEY, JUNE 1992.

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Summary

The purpose of this magnetometer survey was to attempt to locate any archaeological features associated with a supposed Mesolithic occupation site found and partially excavated during the laying of a British gas pipeline in 1990. The results were inconclusive: magnetic interference from the pipeline was excessive and beyond this no significant features were detectable against a generally quiet magnetic background. A second area was surveyed, closer to the nearby river Blackwater, and this was shown to probably contain both artificial and natural features of unknown age.

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**BOWMANS FARM, NEAR OWER, HAMPSHIRE.**  
**Report on Geophysical Survey, June 1992.**

**INTRODUCTION**

In 1990 a group of four structures of apparently Mesolithic age was uncovered during construction of a British Gas pipeline near Bowmans Farm in the Blackwater River valley, near Ower, Hampshire. At the time of the pipelaying only limited salvage recording of archaeological features under immediate threat was possible. Once the pipe was in place an extended programme of fieldwork was undertaken, aimed at defining the wider extent and density of related Mesolithic activity in the area. It was thought that non-destructive survey techniques could make an important contribution to these aims, but initial tests (using a Philpot AM01 Fluxgate Magnetometer: K. Clark, University of Southampton, Dept. of Archaeology) were not conclusive. It was felt, nevertheless, that more comprehensive survey, by the Ancient Monuments Laboratory, was justified and this is described below.

The bulk of the recent survey was carried out in the field containing the pipeline (Area A) and the known Mesolithic features. It was later extended to sample part of the floodplain (Area B) between the Blackwater channel and the positive lynchet forming the southern boundary of Area A.

The local solid geology is Tertiary sand and clay (Bracklesham Beds: BGS 1:50,000 map 315, 1973), overlain by river terrace gravel (Area A) and alluvium (Area B).

**METHOD**

Two survey grids, based on 30m x 30m squares, were established over Areas A and B and measured in to field boundaries (see location Plans 1 and 2). Each 30m square was then surveyed using a Geoscan FM36 fluxgate gradiometer with readings recorded at 25 cm intervals along traverses 1m apart. Readings were recorded at 0.1 nanotesla (nT) sensitivity and traverses were orientated north-south on the grid. The data was periodically downloaded to a portable computer in the field for storage and monitoring. On returning to the laboratory the data was then transferred to a Tektronics XD88 workstation supporting dedicated image processing software and reassembled to generate the grey-tone and traceplot representations provided (Plans 3 - 5).

The survey was designed to extend outwards from the excavated area, field boundaries permitting. Since ploughing upslope from the floodplain would probably have resulted in the truncation of shallow features (Green pers comm), the survey in Area A was confined to the the southern edge of the field where topsoil could be expected to be deeper.

**RESULTS**

Area A

It is disappointing, but not unexpected, that a high proportion

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of this area is severely magnetically disturbed by the presence of the buried pipeline. The latter has influenced the magnetic response far beyond the area that the pipe actually occupies and has obscured any anomalies from unexcavated archaeological sources in the areas affected. The traceplot of the untreated data (Plan 3) shows the extent of this interference.

Elsewhere in Area A the magnetic signal is quiet. This suggests either that there are no features surviving beyond the area influenced by the pipe or that such features do exist but are not susceptible to detection by magnetic means.

Magnetic Susceptibility (MS) readings were obtained from 16 soil samples collected at 30m intervals on the survey grid and demonstrate a wide range of values:  $15-61 \times 10^{-8}$  SI units/Kg (mean = 36). Such a wide range cannot easily be accounted for, although the higher values at least suggest that archaeological features should be detectable, given sufficient contrast with the subsoil. Relatively high values were obtained for grid squares 10-11 and 3-4 (Plan 1), although the 30m sampling interval precludes the recognition of any more suggestive pattern or detail.

In the attempt to isolate very weak anomalies, the enclosed plots also present the data from Area A with the distorting effect of the pipe reduced (Plan 4), enabling lower magnitude variations to be enhanced. In spite of this treatment there is little of potential archaeological importance visible. A single and very tenuously significant anomaly is visible in the north-east corner of square 04. The majority of other anomalies result from small ferrous objects probably of modern origin.

#### Area B

Once it became apparent that there was little detectable activity in Area A, the survey was extended south of the known site to sample the floodplain area (B). Here, somewhat contrary to expectation, a moderate concentration of subsurface features was detected. Some of the resulting magnetic anomalies (see Plans 5-6) are suggestive of archaeological features such as ditches and large pits (marked P on Plan 6); others, particularly the broader anomalies, may be the response to cultivation activity or previous riverine action.

The apparent archaeological activity detected in this area is of uncertain age and may in part be of natural origin. Perhaps the most distinctive and most certainly artificial of the features are the pair of parallel narrow linear anomalies labelled (d) on Plan 6.

#### **CONCLUSIONS**

In Area A, there is only very slender magnetic evidence for the continuation of occupation activity beyond the area of the pipe trench. It is possible that any surviving archaeological features are not substantial enough to be discriminated from the background by the magnetometer, or that they are confined to the zone of extreme magnetic disturbance around the pipe.

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The response from area B is very different in character from the results obtained from Area A. Here there are signs of cultural activity, but their relationship with the prehistoric features excavated to the north is unclear.

Surveyed by: A Payne  
S Fear

9-12 June 1992

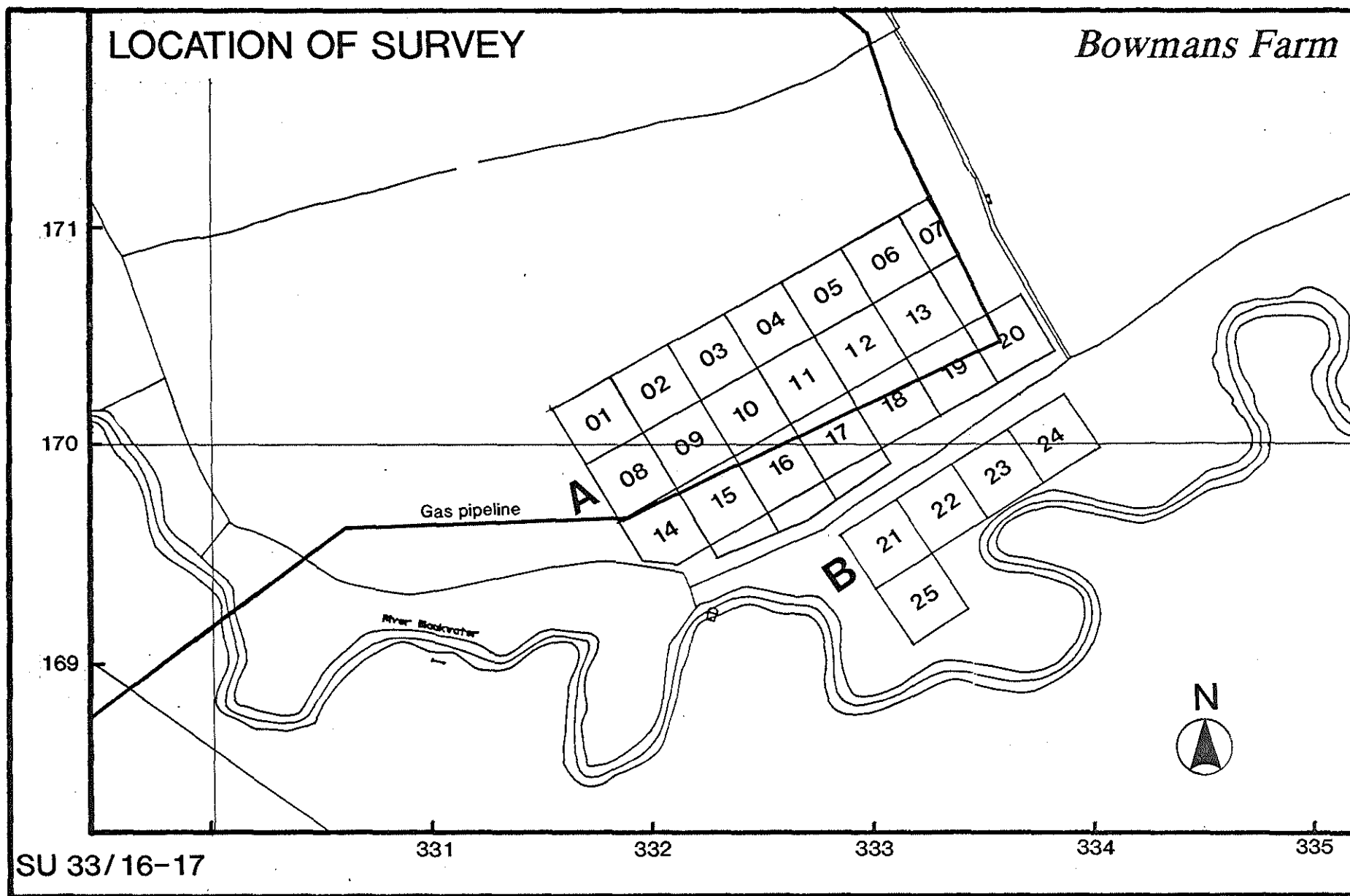
Report by: A Payne

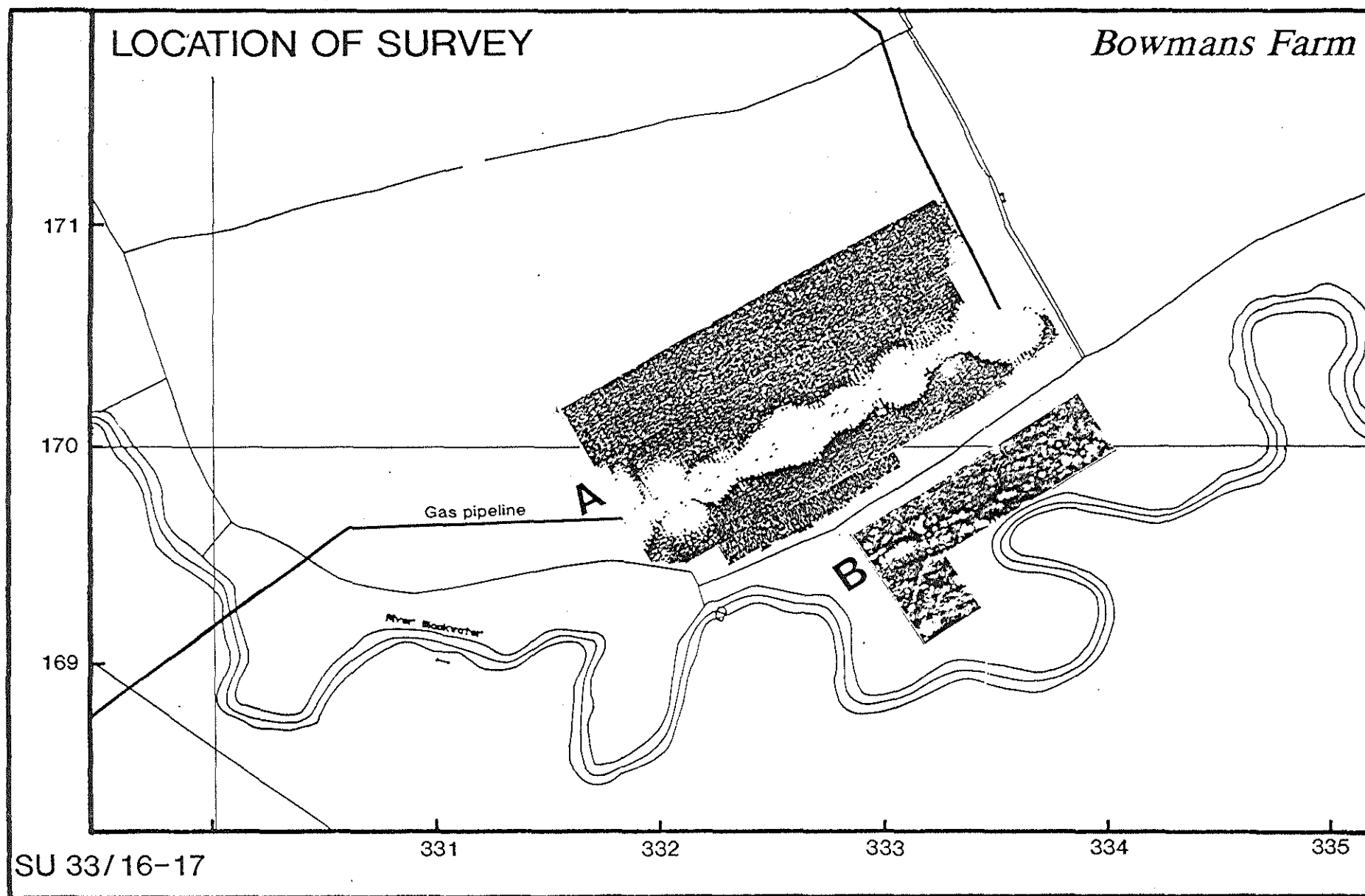
16th Sept 1992

Archaeometry Branch,  
Ancient Monuments Laboratory,  
Science and Conservation Services Division, TSG

#### PLANS ENCLOSED

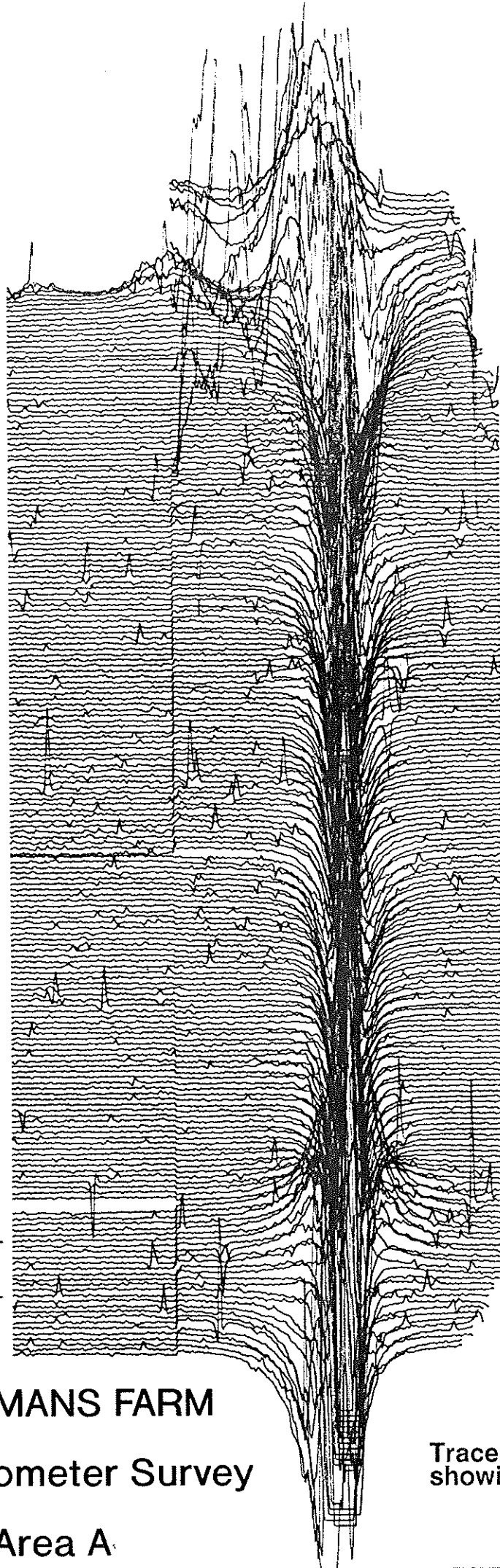
- 1) Location diagram of survey grid in areas A and B, 1:2500 scale.
- 2) Plot of overall magnetometer coverage at 1:2500, showing relationship to pipeline and field boundaries.
- 3) Traceplot of raw data from Area A - the main field. Scale of 1:1000.
- 4) Grey-tone plot and X-Y traceplot of treated data from Area A. Scale of 1:1250.
- 5) 3 versions of the data from floodplain Area B plotted at 1:1000 scale.
- 6) Interpretation of the data from Area B (1:1000).





**BOWMANS FARM**  
**Magnetometer Survey**  
**Area A**

50 nT/cm

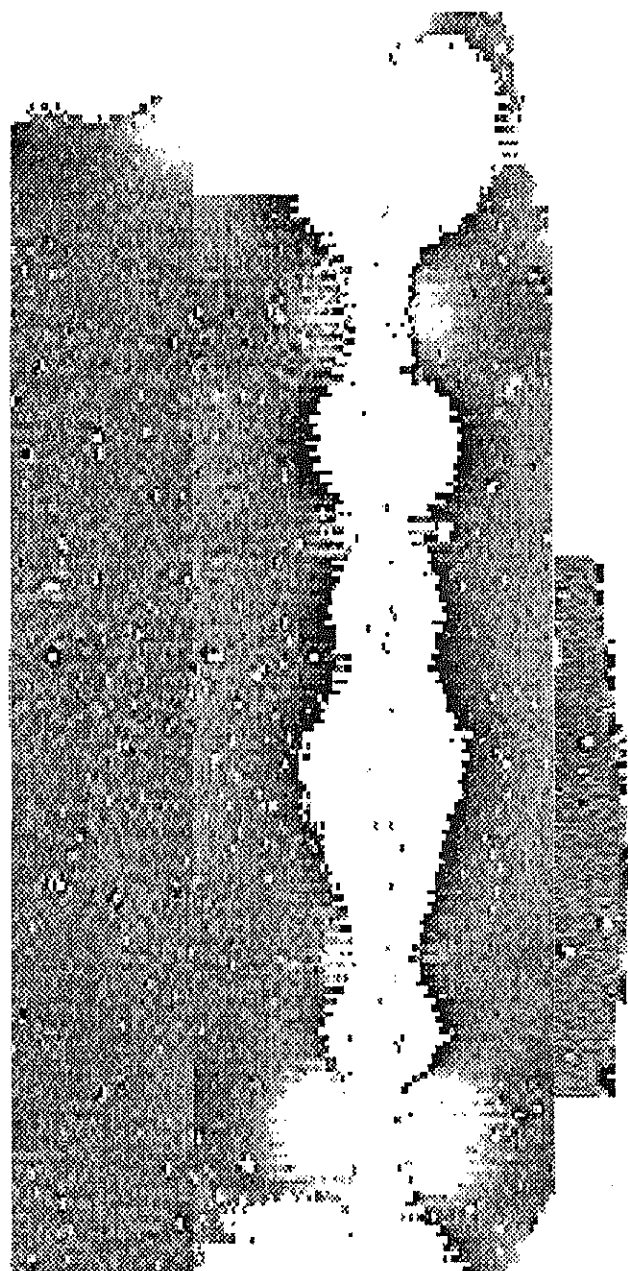


Traceplot of untreated data  
showing extreme effect of pipe.

0 30 90m



# BOWMANS FARM Magnetometer Survey



-2.5 nT ■ ◀ ▶ □ +2.5 nT

(Area A)

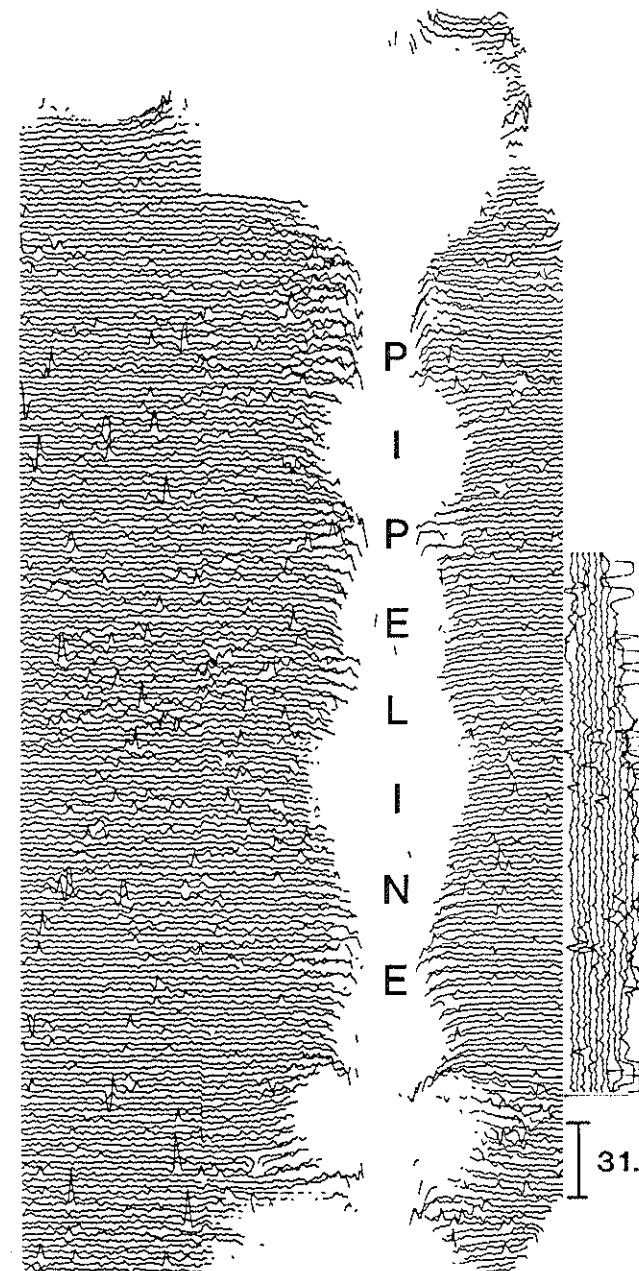
Cleaned data  
with effect of pipeline  
edited out.

← Grey-tone plot

X-Y traceplot →



0 30 90 METRES

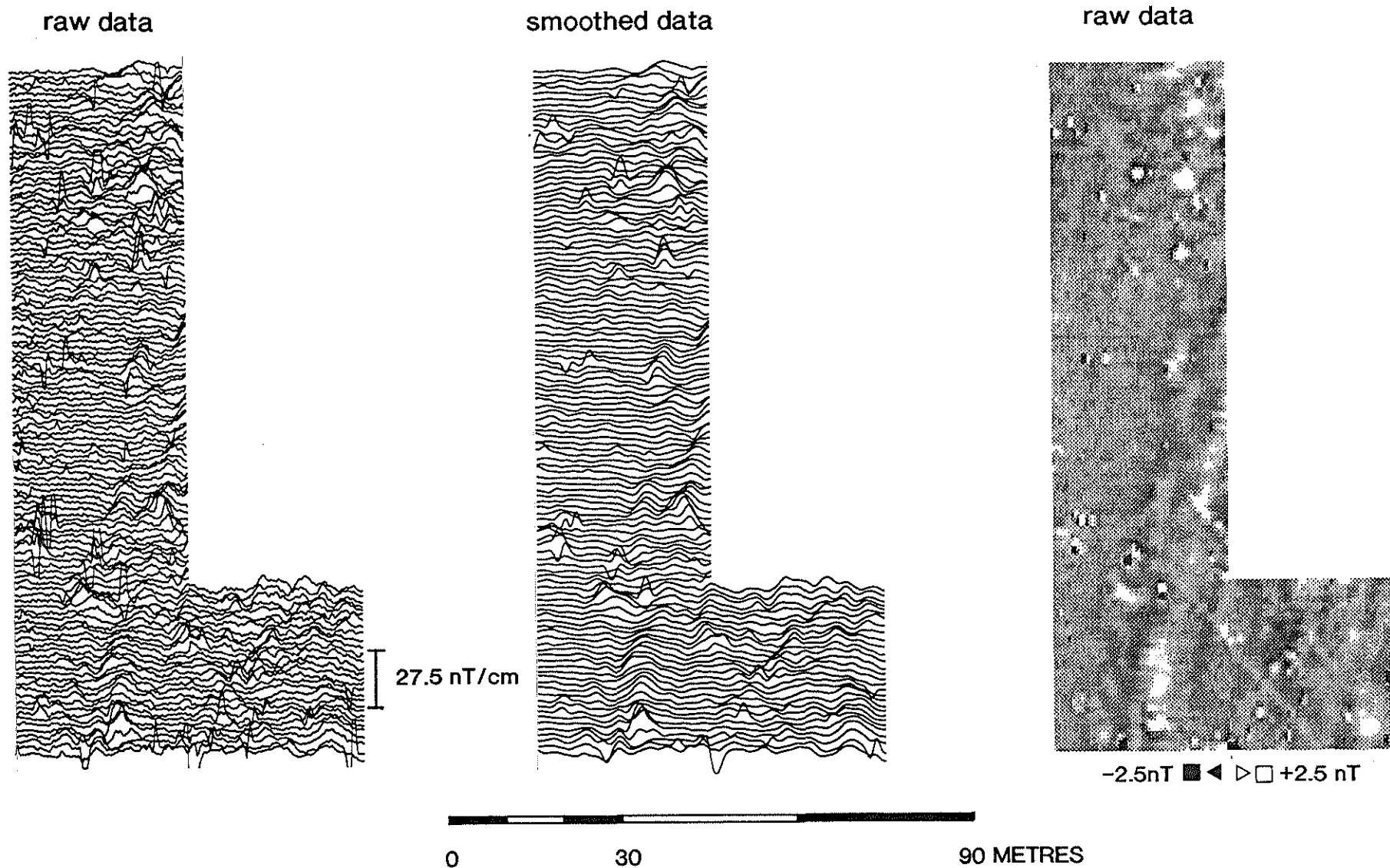


P  
I  
P  
E  
L  
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N  
E

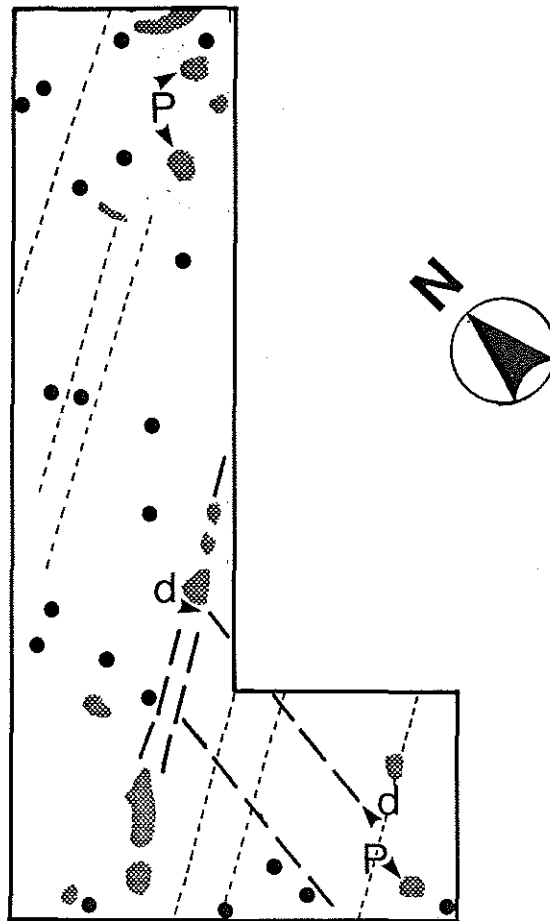
31.25 nT/cm

# BOWMANS FARM, HANTS Magnetometer Survey

## Area B



## AREA (B)



## Interpretation

