

99/6

**ARCHAEOLOGICAL FIELD EVALUATION
LAND NORTH OF GROOSE LANE
WAINFLEET ST MARY, LINCOLNSHIRE**

Site Code: GLM 99
LCNCC: 66.99
NGR: TF 4990 57779

Lincolnshire County Council
Archaeology Section

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Summary

- * *An archaeological field evaluation took place on land north of Goose Lane, Wainfleet St Mary, Lincolnshire; close to an area of known late medieval salt-making activity (Fig. 1)*
- * *One trench was excavated to establish the presence / absence of archaeological remains*
- * *A single filtration unit associated with the salt-making process was exposed, but no definitive traces of waste mounds were identified.*
- * *A large hollow or water channel containing laminated deposits was also identified on the west side of the trench.*

1.0 Introduction

A three-day programme of archaeological trial excavation was carried out on a site north of Goose Lane, Wainfleet St. Mary, Lincolnshire (Fig. 1). The work was commissioned by Mr T. Young to fulfil a planning requirement issued by East Lindsey District Council (*Ref.* S/195/0167/97).

The results of this report will assist the client and the local planning authority to assess the archaeological significance of the site, the potential impacts which may be imposed by a development, and the requirement or non-requirement of further archaeological intervention in advance of or during development.

A copy of this report will be deposited at the County SMR, and a short text will be submitted to the editor of the county journal, *Lincolnshire History and Archaeology*; effectively placing the information in the public domain. Reports will be deposited at the City and County Museum, Lincoln, accompanied with an ordered project archive.

2.0 Location and Description

Wainfleet St. Mary is in the administrative district of East Lindsey, approximately 9km. south-west of Skegness, 22 km north-east of Boston. The site centres on NGR TF 499² 577⁹, where the mean elevation above sea level is approximately 4 m.OD. It falls within the angle of the A52 and Goose Lane and has recently been used for arable cultivation. It forms part of a low strip of land (Wainfleet Tofts) which separates the marshlands of the Wash from those of the River Steeping.

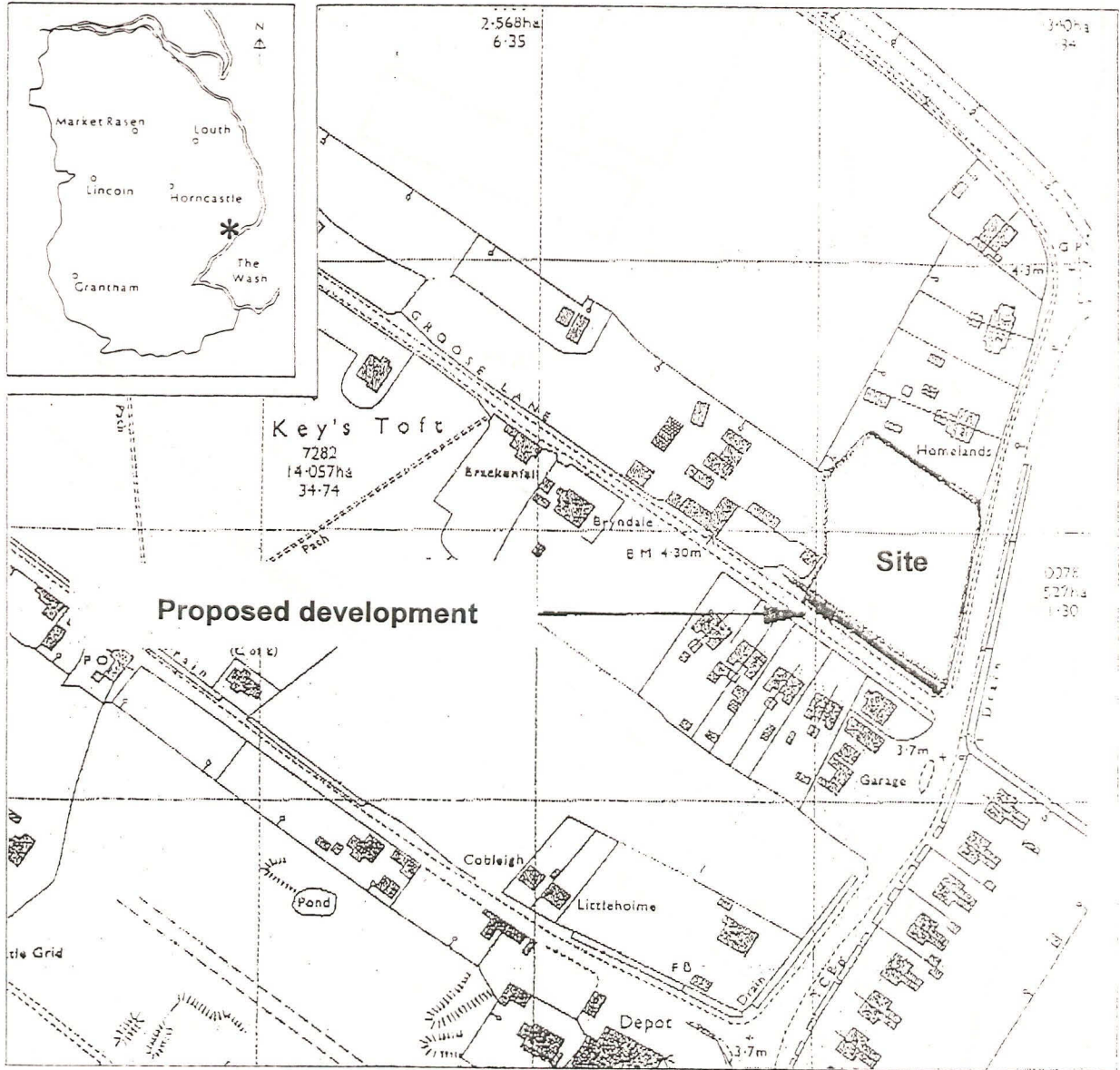
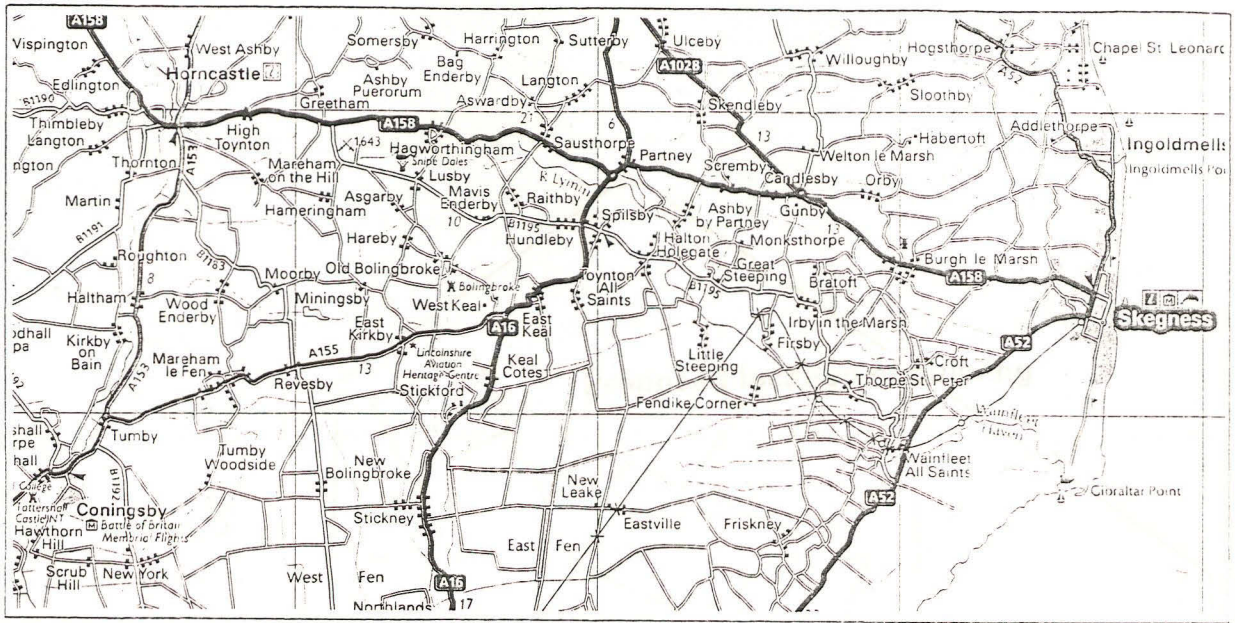


Fig. 1: Site location.

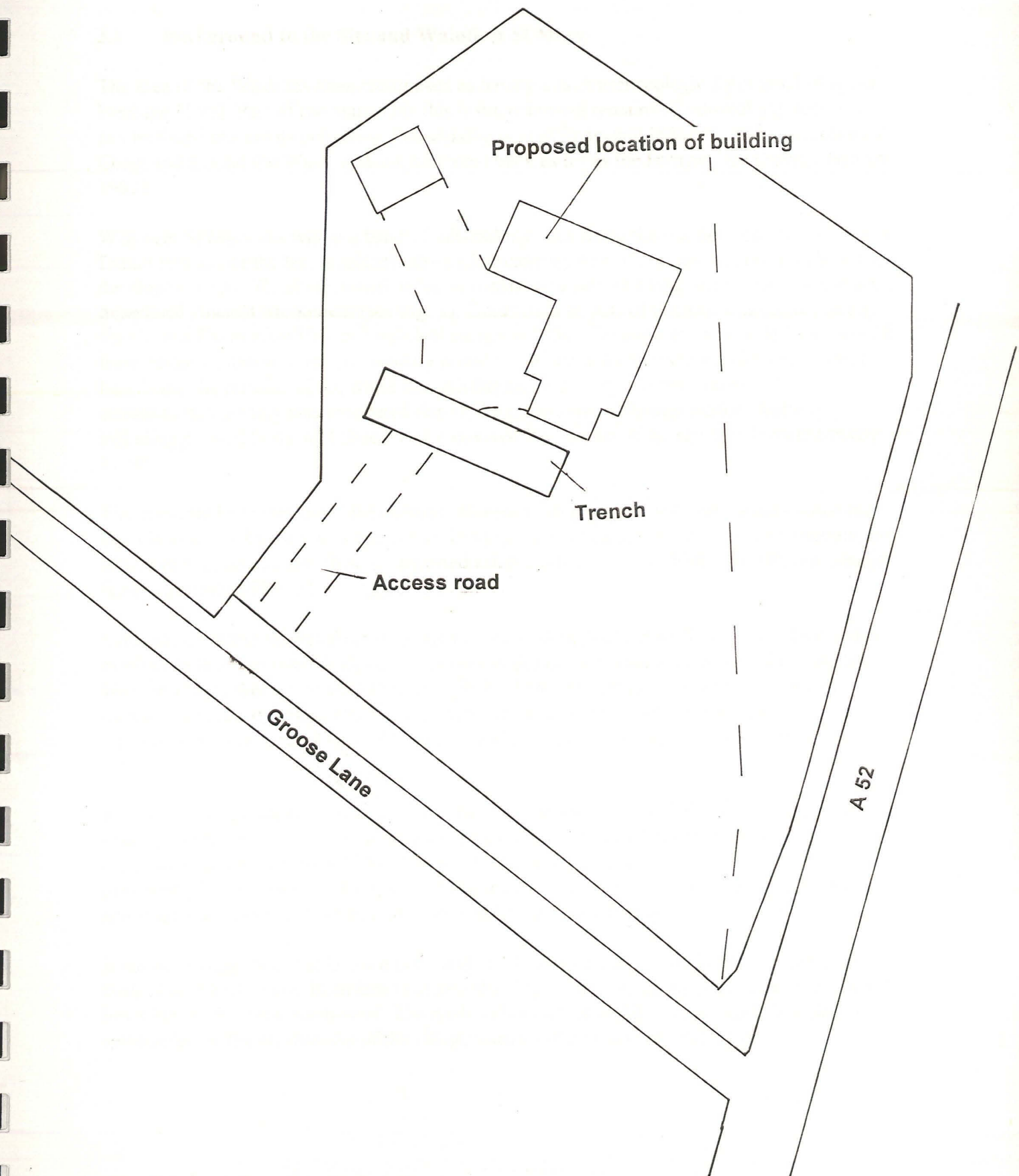


Fig. 2: Trench location. Scale 1.500.

3.0 Archaeological and Historical Background

3.1 Background to the Site and Wainfleet St Mary

The area of the Wash has been recognised as having a high archaeological potential (English Heritage 1996). Part of the reason for this is the extensive remains of salt-making sites which can be found around its periphery. Salt-making was an important industry on the Lincolnshire Coast and around the Wash, and can be traced back as far as the Bronze Age (Palmer-Brown 1993).

Wainfleet St Mary lies within a band of salt-making sites along the northern edge of the Wash. Extant remains of the late medieval salt-making industry lie c.350 m. to the south-west of the development site. These earthwork remains consist of a series of long waste mounds and are a Scheduled Ancient Monument (see Fig. 1). Excavation of part of this site was carried out by the Central Excavation Unit of English Heritage in 1984. The excavation revealed a variety of features associated with the salt-making industry, including filtration units, clay-lined pits, a hearth and the remains of the waste mounds themselves. Only a small quantity of contemporary pottery was recovered during the excavation, although worked leather, including parts of boots and shoes, was recovered from some of the clay lined pits (McAvoy 1994)

The excavated site was dated between the fifteenth and sixteenth centuries; a time when the Lincolnshire salt industry was in decline. The precise reasons for this decline are uncertain, but it has been suggested that cheaper imported salt from the Tyne and Firth of Forth was a major factor (Sturman 1984, 54).

Evidence of earlier medieval salt-making activity at Wainfleet can be found in the Domesday Book (1086) which records eleven salterns in Wainfleet and twenty more associated with Wainfleet and other settlements (McAvoy 1994, 138). The importance of the Wainfleet salterns during the twelfth and thirteenth centuries is shown by the involvement of religious establishments such as the abbeys of Bardney, Revesby and Bury St Edmunds (Hallam 1960, 108-109).

The development site lies close to an area of land known as Key's Toft. Earthwork remains relating to the latter are shown on the 25" to the mile Ordnance Survey map of 1905, and archaeological evaluation in 1998 (Albone 1998) has confirmed the use of this site for salt processing in the medieval and post-medieval periods. The results of a more comprehensive investigation during the back end of 1998 will be published shortly.

It has been suggested that Goose Lane and St Michael's Lane (formerly Mouse lane), are both of medieval origin. Both lanes connect the Key's Toft area to the settlement focus, which lies 3 km. to the west-north-west. The medieval church of St Mary now stands in isolation, surrounded by the earthworks of the village remains (Pevsner et al 1995, 778).

3.2 A Summary Account of the Salt-Making Process

Although much has been written about the processes involved in salt-making in the medieval and early post-medieval periods, a brief summary is included to allow for easier interpretation of the results of the evaluation. The following summary is based principally on McAvoy (1994) and Sturman (1984); both of whom refer to contemporary post-medieval accounts of salt-making.

The salt-making process usually comprised three main phases; (i) collection of salt-impregnated sand; (ii) filtration; (iii) evaporation of the brine. Collection of the upper layer of sand from the beach was carried out after the high spring tides, when the surface had already undergone some evaporation by the sun, thus concentrating the salt in this layer. The sand was carried to the saltern site and stored until ready for processing.

The next stage was filtration; to wash the salt out of the sand. The filtration units consisted of clay-lined rectangular filter beds which contained a layer of turves (to act as the filter). The sloping base of the filter bed led to a pipe which ran into a round clay and turf-lined collecting vat. The salt impregnated sand was placed in the filter bed and water was poured in which carried the salt with it through into the collecting vat. The filter beds had wooden frames around them to increase the volume of sand which could be processed and to prevent overflow directly into the collecting vat. The brine was taken from the collecting vats and boiled in large rectangular lead trays (approximately 1.2 m. x 0.9 m. and 0.1 m. deep). These pans were raised on bricks to allow a fire to be lit beneath them.

Twenty four filtration units were identified during the 1984 excavation, although only two were completely excavated. Only one clay hearth was identified, so there are obvious possible pitfalls to be considered if we assume that there was only one means of processing coastal salt in the medieval period. Clearly, this was not so, but many of processes described by Sturman do appear to tally with the excavated remains thus far examined at Wainfleet.

4.0 Methodology

A single trench, 20 m.x 5 m., was considered to be the most appropriate evaluation technique; based on a recommendation by the Assistant County Archaeologist. The location of the trench is shown in Fig. 2.

Preliminary excavation was carried out by a mechanical excavator fitted with a toothless ditching blade: within the overall trench area, a 1.50 m. wide slot, c.1 m. deep, was excavated by machine to assist with the interpretation of the site. At the east end of the slot a sondage was positioned to determine the depth of sand deposits.

Brief fieldwalking was undertaken as part of the evaluation to recover surface pottery (which was not recovered from any of the features exposed during controlled excavations).

Recording was undertaken using standard context record sheets (incorporating physical descriptions, interpretations, and stratigraphic relationships). Features were drawn to scale in plan and section, and photographic recording was also undertaken (some prints are

reproduced in this report). The drawings, and the rest of the paper record, will form the basis for a long-term project archive. A temporary bench mark was placed on the site, transferred from a bench mark located on the south-east corner of a building on Goose Lane, north-west of the site (4.30 m. O.D.).

The evaluation was supervised by the writer, assisted by one experienced field archaeologist (Rob Armour-Chelu) between 7 – 9th April 1999.

5.0 Results

5.1 The Excavation (Pl.2)

5.1.1 Late post-medieval activity

Following machining of the 1.50 m. slot on the south side of the trench, 0.30 m. of topsoil (1) was removed from the remaining trench area. Two finds were retrieved from this layer; a sherd of Toynton ware pottery and one piece of medieval green glaze pottery. In the south-west corner of the trench, the topsoil sealed a 0.10 m. layer of brick rubble within a black silt clay (23) (Pl.3). The dark colour resulted from a high charcoal content within the deposit. Beneath this was a possible pit (24) (Pl.3). The absolute plan dimensions of the pit were not determined, but its depth was 0.50 m. The pit contained an homogenous fill, (28), a firm light grey brown silt clay, devoid of finds.

Pit 24 cut through a subsoil deposit (2), consisting of 0.18 m. of light yellow brown clay silt, which extended across the trench. Four pieces of fired clay (?hearth debris) were recovered from this layer (from above the saltern) and a piece of Toynton ware pottery from the same vessel as that recovered from context 1. Also cutting the subsoil was a roughly circular posthole (25) (Pl.5), 0.44 m. in diameter. A piece of concrete was recovered from its brown silt-clay fill (26).

Tree disturbance (19) (Pl.4) was noted at the east end of the trench. The tree bole extended c.6.50 m. into the trench and was 1 m. deep. It was filled with a mid orange-grey silt-clay (20); root disturbance (21) was also noted.

5.1.2 The Filtration Unit

The filter bed exposed (6) (Pl.5) was similar to those excavated in 1984 and 1998, but had two courses of dirty white clay blocks (27), average size 0.20 m x 0.13 m. x 0.08 m., outlining the tank (10) (Pl.6). The blocks survived on the east and south sides of the unit, placed over blue-grey clay lining (11). The blocks were sealed by an intermittent deposit of mid to dark red-brown silt-clay incorporating iron pan deposits (32) with a maximum thickness of 0.05 m.. This deposit may have been the remains of the filtration tank box, described above in Section 3.2. The turf block layer (within the filtration tank) comprised blue-washed red and grey-brown clay (12) within a light brown silt clay (13).

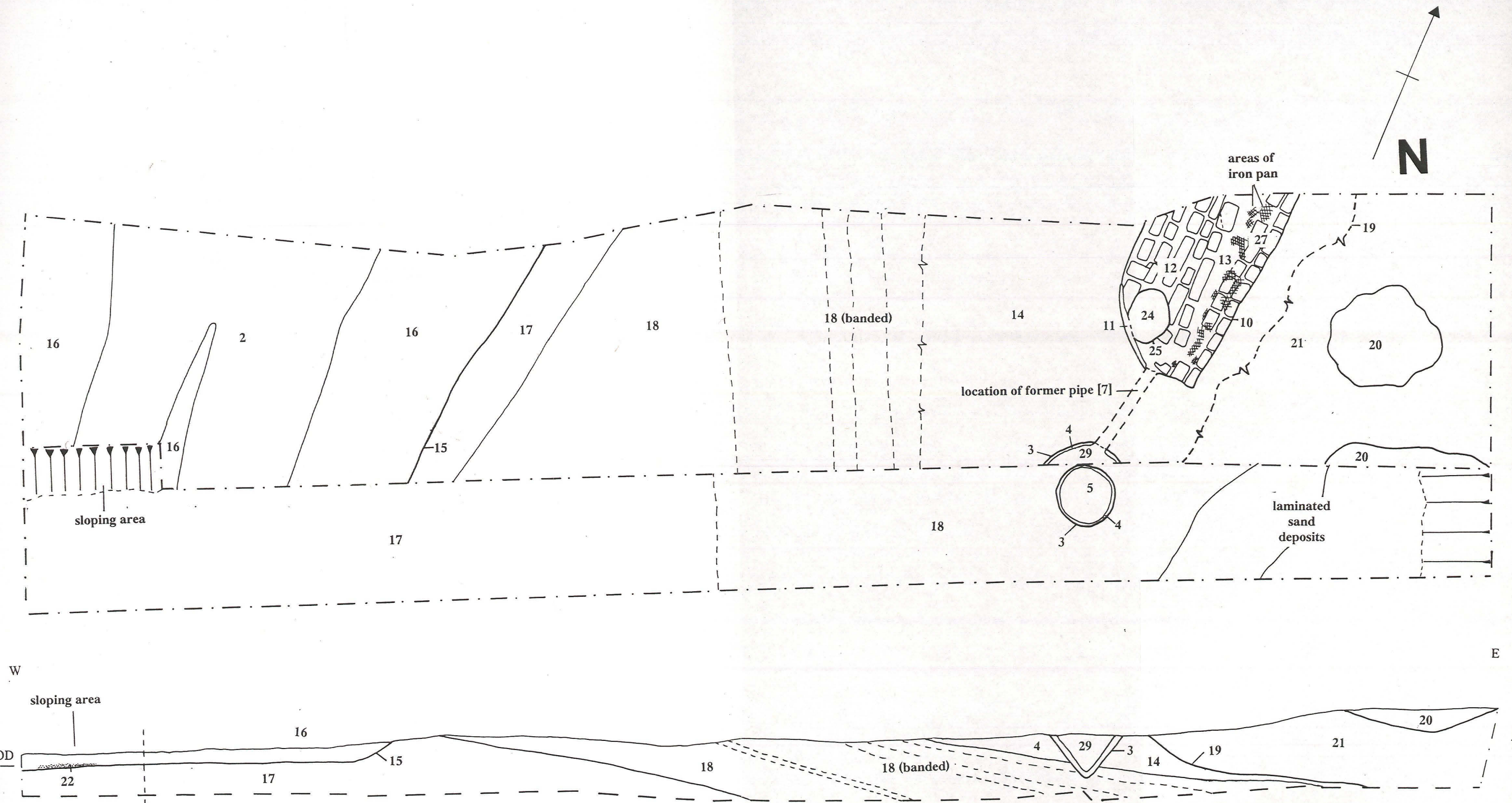


Fig. 3: Plan and south facing section of the evaluation trench. Scale 1.50.

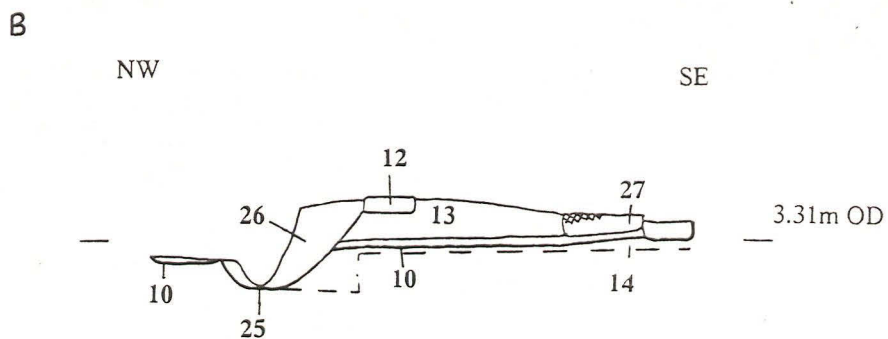
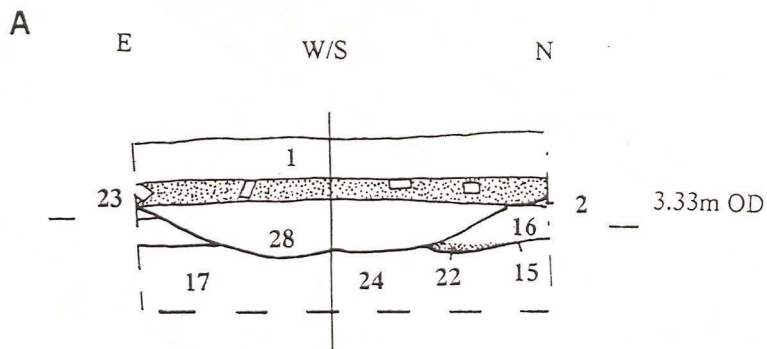


Fig. 4: A/ Section of pit 24. Scale 1.50.

B/ Section of filtration tank 10. Scale 1.20.

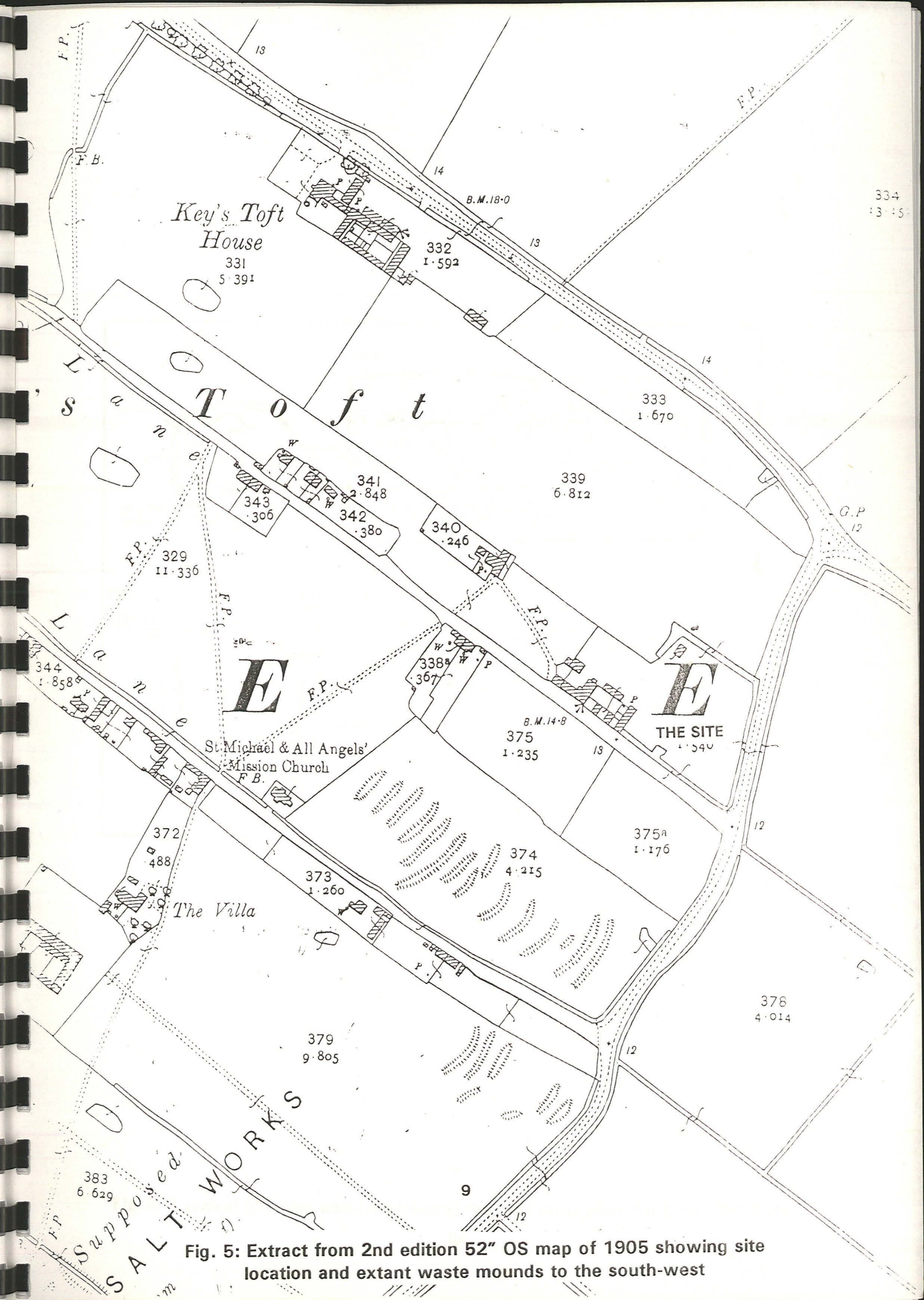


Fig. 5: Extract from 2nd edition 52" OS map of 1905 showing site location and extant waste mounds to the south-west

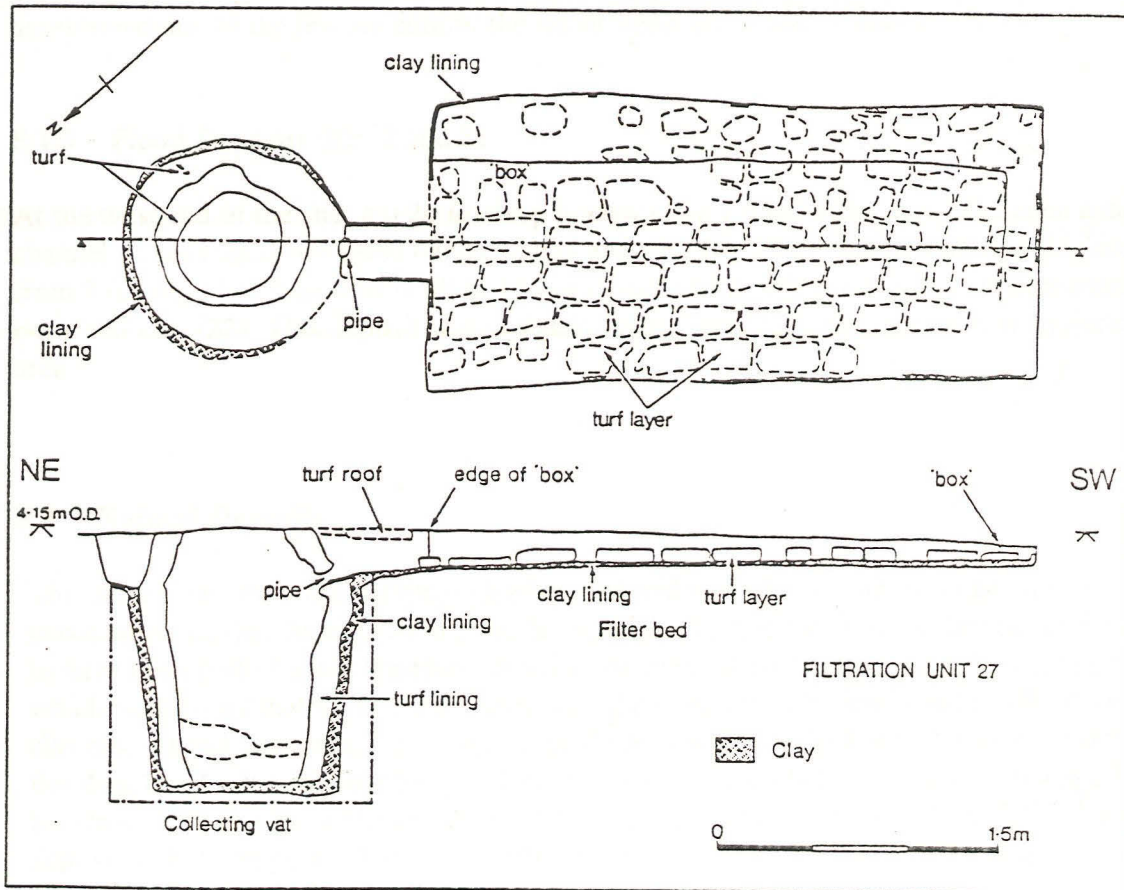


Fig. 6: A typical filtration unit found during the 1984 excavation (McAvoy 1994, 140).

Unfortunately, the filtration unit pipe (7) was removed by machine before being properly recorded. It was filled with mid-brown silty clay (8) over a blue-grey clay lining (9) and was estimated to be 1.10 m. long and 0.17 m. wide.

Much of the collecting vat (3) (Pl.7), which was within the deeper machine-cut slot, was also removed by machine. It clearly conformed to previously excavated examples - a blue-grey clay lining (4), average thickness 0.02 m., was sealed by a brown-grey silt sand (29), probably representing the turf lining of the vat. A red-brown silt clay (5) was noted in plan (in the 1.50m slot) sealing 4. This material filled the vat pipe. The depth of the vat could not be ascertained due to the feature cutting the water table, but it was in excess of 1 m..

5.1.3 Flood Deposits (Pls. 2 and 8)

At the west end of the site, a 0.20 m. deep hollow (15), c.7 m. wide, may have been a natural channel. It contained laminated bands of clay and silt (16). These bands varied in thickness from 0.02 – 0.05 m. The lowest fill of 15 comprised burnt red-brown silty clay containing burnt red clay (22). This deposit was probably hearth material washed in from an adjacent area.

5.4 Natural Deposits

The saltern remains were cut through a layer of mid to dark grey silt-clay (14) (Pl.9), maximum recorded depth 0.50 m., which sloped to the east (ie towards the sea) and is likely to have been part of a salt marsh of an old shore line. Likewise the layer below (18) (Pl.9), which was a combination of brown-grey silty clays separated by laminated bands of sand and clay also dipped seawards, suggesting a build-up of marshland subjected to intermittent flooding but progressing out to sea. Beneath 18 and cut by hollow /channel 15 was a light brown-grey sand-silt-clay layer (17) (Pl.8) whose highest point was 3.55 m. O.D.. This deposit sealed compact yellow sand (30), another shoreline, which when exposed in the sondage was seen to be above a grey-blue marine clay (31).

6.0 Discussion and conclusions

The evaluation established the presence of archaeological remains associated with salt processing; probably in the medieval or early post-medieval period.

The brick fragments and charcoal flecks noted in layer 23 are probably part of a demolition horizon deriving from a building located to the west of the site (Mr R. Young, *pers comm*).

Sealed by the demolition material was a pit (24) of unknown function and date. It may have been associated with the demolished building.

One filtration unit (6) was identified during the evaluation. The alignment and location of this feature corresponds with the position of the salterns recorded in 1984 and 1998. Unfortunately

no artefacts were retrieved from the saltern, but finds from the sealing layer (subsoil) suggest use in the 16th century.

No positive evidence of a waste mound (which was expected to be close to or cut by the saltern) was identified, although it must be emphasised that the identification of such features is made easier with increased site area - it remains a possibility that deposits cut by the filtration unit were in fact redeposited.

The way in which the industry physically advanced has been interpreted during previous excavations to the south-west (it has been suggested that the initial waste from one row of filtration units was cast seawards to form a platform: the next row of filtration units were then cut into this platform, with the initial waste being cast forward to form the next platform. Further waste from the second row of filtration units was then cast back to form the mound, burying the previous row of units). This phenomenon was not noted on the current site. The apparent absence of redeposited material could mean that the saltern was either isolated (the last of many), or that it did not conform to previous interpretations.

The dating of the salt-making activity on the site is one of the most important questions that remains outstanding. Artefacts retrieved from the subsoil, sealing the saltern, suggest industrial cessation around the 16th century - the final phase of this industry in Lincolnshire?

7.0 Acknowledgements

Pre-Construct Archaeology (Lincoln) express sincere thanks to Mr T. Young for this commission, Mr R. Young and Leon Young for their help. Thanks are expressed also to James Albone and to Jane Young. Rob Armour-Chelu prepared the illustrations for this report.

8.1 Context Register

Context	Type	Description	Relationship
1	Layer	Topsoil	Above 21,23,26
2	Layer	Subsoil	Above 16,12,13,9,5, 29
3	Cut	Collection vat	Above 14
4	Fill	Clay lining of 3	Above 3
5	Fill	Upper fill of 3	Above 4
6	Structure	Filtration unit	Above 14
7	Cut	Filtration pipe	Above 14
8	Fill	Clay lining of 7	Above 7
9	Fill	Upper fill of 7	Above 8
10	Cut	Filtration tank	Above 14
11	Fill	Fill of 10	Above 10
12	Fill	Fill of 10	Above 27
13	Fill	Fill of 10	Above 27
14	Layer	Marsh deposit	Above 18
15	Cut	Hollow / channel	Above 17
16	Fill	Laminated deposits	Above 22
17	Layer	Marsh deposit	Above 30
18	Layer	Marsh deposit	Above 17
19	Cut	Treebole	Above 2
20	Fill	Fill of 19	Above 19
21	Fill	Fill of 19	Above 20
22	Fill	Fill of 15	Above 15
23	Layer	Demolition	Above 28
24	Cut	Pit	Above 2
25	Cut	Posthole	Above 2
26	Fill	Fill of 25	Above 25
27	Fill	Clay brick of 10	Above 11
28	Fill	Fill of 24	Above 24
29	Fill	Fill of 3	Above 4
30	Layer	Yellow sand	Above 31
31	Layer	Grey blue clay	Limit of excavation
32	Fill	Filtration tank box	Above 27

8.2 GLM 99 Finds (archive by J Young)

Pottery

Context	Type	Sherds	Date	Comments
1	TB	1	Late medieval-Early post-medieval	Jug base, well worn
1	GRE	1	16TH	Hollow base
2	TB	1	Late medieval-Early post-medieval	Same vessel as context 1

Tile

Context	Type	Pieces	Date	Comments
Fieldwalking	PANT	2	18/19TH	
	DRAIN	1	18/19TH	

Brick

Context	Type	Pieces	Date	Comments
Fieldwalking	BRICK	6	17-18TH	Small fragments

Fired clay

Context	Type	Pieces	Date	Comments
2	4	?	Well worn	

8.3 Site Archive

Primary records are currently with PCA (Lincoln). An ordered archive of both paper and object elements is in preparation and will be deposited at the City and County Museum, Lincoln, within six months.

8.4 References

English Heritage. 1996 *England's Coastal Heritage: A Statement on the Management of Coastal Heritage*.

Hallam, H E. 1960 Salt-making in the Lincolnshire fenland during the middle ages. *LAASRP* Vol 8. p85-112.

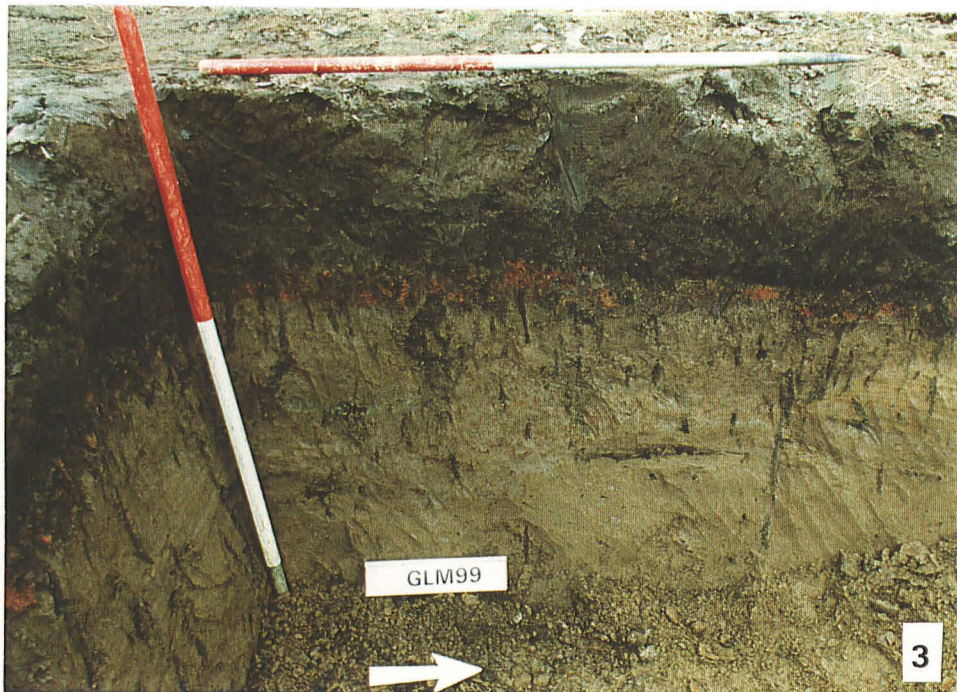
Palmer-Brown, C. 1993 Bronze Age salt production at Tetney. *Current Archaeology* 136.p1145.

R. McAvoy, F. 1994 Marine salt extraction: The excavation of salterns at Wainfleet St Mary, Lincolnshire *Medieval Archaeology* 38. p134-163.

Pevsner, N. Harris, J. & Antrarn, N. 1995 *The Buildings of England: Lincolnshire*.

Sturman, C.J. 1984 Salt-making in the Lindsey marshland in the sixteenth and early seventeenth centuries in, N. Field and A. White (eds), *A Prospect of Lincolnshire*. p 50-56.

Albone, J. 1998 *Archaeological field evaluation, land north of St. Michael's Lane, Wainfleet St. Mary's, Lincolnshire*; Pre-Construction Archaeology (Lincoln), unpublished developer report



Appendix 8.5 Colour Plates

