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**LONGWORTH CLOUGH NATURE
RESERVE
LANCASHIRE**

Assessment Report

Commissioned by:

Lancashire Wildlife Trust

Longworth Clough
Lancashire

Archaeological Assessment Report

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SUMMARY

An archaeological assessment was undertaken in July 1999 of the Longworth Clough Nature Reserve, near Bolton, Lancashire (centred at NGR SD 699150) by Lancaster University Archaeological Unit (LUAU), on behalf of Lancashire Wildlife Trust. The assessment comprised a desk-based study and identification survey intended to inform the management of the reserve.

The desk-based study involved a search of records held by the Lancashire Sites and Monuments Record, the Lancashire County Record Office in Preston, the Bolton Archives in Bolton Library, and the Turton Local History Society, and examined both published and unpublished records. The identification survey involved the systematic fieldwalking of the study area (0.5sqkm), the identified sites being located using Global Positioning System (GPS) equipment.

The desk-based study and identification survey recorded 68 monuments either within or immediately around the study area. The programme established that there were two principal landscapes: an agricultural one centred on the former Longworth Hall at the northern end of the study area, and also an industrial landscape centred on the former Longworth Mill in the bottom of the valley, to the south of the study area.

The site of Longworth Hall is just outside the study area and was demolished at some time after 1908. There are, however, residual elements of an early field-system relating to the site.

Longworth Mill has been rebuilt on a number of occasions, the earliest possibly dating to 1608. The mill was powered by a water-driven wheel, which was fed by a leat and weir from the adjacent Eagley Brook. The latest mill was demolished in 1907 and although there are still extant peripheral features relating to the mill, such as leats, bridges and ancillary structures, there is little surviving of the mill itself.

The industrial and agricultural landscapes identified by the assessment are the relict survivals of the developing land-use during the medieval and post-medieval periods, and it is recommended that the management plan for the reserve incorporate the preservation of these landscapes centred on the former mill and the hall.

ACKNOWLEDGEMENTS

Lancaster University Archaeological Unit (LUAU) would like to thank Turton Local History Society, particularly Mrs Helen Heyes, for supplying information on Longworth Mill and Longworth Hall, the staff of the Lancashire Record Office in Preston and Bolton Library Archives Department, and Peter Iles of Lancashire County Council Archaeology Service for SMR information.

LUAU is particularly grateful to Graham Standring of Lancashire Wildlife Trust for help in setting up the project and arranging access.

The documentary research was undertaken by Caron Newman of the Egerton Lea Consultancy. The field survey was undertaken by Chris Scurfield and Daniel Ellsworth, with draughting by Chris Scurfield. The report was written by Caron Newman and Chris Scurfield, and was edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 An archaeological assessment has been undertaken of the Longworth Clough Nature Reserve, near Bolton (centred at NGR SD 699150) (Fig 1) by Lancaster University Archaeological Unit (LUAU), on behalf of Lancashire Wildlife Trust. The assessment was undertaken between May and July 1999, and examined 0.5sqkm of former pasture land.
- 1.1.2 The work was intended to appraise rapidly the likely archaeological value of a given area, and to locate and record potentially interesting or important features in the landscape, whether or not they were visible as surface remains. The intention was that the results would inform the management of the reserve. To this end, available documentary and map sources were scanned, and a rapid site inspection (LUAU Level 1 survey) of the site was undertaken. All work was carried out in accordance with a project design (*Appendix 1*) prepared by LUAU.
- 1.1.3 The desk-based study consisted of a search of both published and unpublished records held by the Lancashire Sites and Monuments Record (SMR), the Lancashire County Record Offices in Preston (PRO), and the Bolton Archives in Bolton Library (BRO) were examined as well as available secondary sources held in Lancaster University Library and Lancaster City Library. Turton Local History Society was consulted for other possible sources. The identification survey involved a systematic examination of the ground surface of the study area by field walking.
- 1.1.4 This report sets out the results of the work in the form of a short document which outlines the findings, followed by a statement of the archaeological potential of the area, and an evaluation of the impact of the proposed development. This is complemented by a gazetteer of sites (*Appendix 2*), both new to the record and formerly known, and a bibliography.

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 A project design (*Appendix 1*) was submitted in January 1999 by LUAU in response to a request from Lancashire Wildlife Trust, for an archaeological assessment in order to inform the management of Longworth Clough Nature Reserve, Lancashire.
- 2.1.2 The project design provided for an archaeological assessment involving a desk-based study, a rapid identification survey, and written reports, which would interpret the data discovered during the project and present management recommendations for the reserve. The assessment has been carried out in accordance with the project design.

2.2 DESK-BASED STUDY

- 2.2.1 Existing archaeological information was obtained from the Sites and Monuments Record (SMR) (Lancashire County Archaeological Service). Manuscript maps and selected other documents were studied in the Lancashire County Record office (LRO) (Preston) and the Bolton Archives, from the Bolton Library (BRO), along with published antiquarian sources. The quantity of manuscript maps in the LRO and BRO was very small, as there were no tithe or enclosure maps for the area. Available maps and plans were restricted to the Ordnance Survey 6 inches to one mile, first edition maps of 1848 (Sheets 78 and 87), 1849 (Sheet 86), and 1850 (Sheet 79), two 1829 plans of lands in Longworth (LRO DX 1492 and DX 1493), and a plan accompanying a lease agreement of 1839 (BRO ABCS/3/12/1). There were very few relevant documents in either the LRO or the BRO, although, a list of the documents which were consulted is given in the bibliography.
- 2.2.2 *Aerial photographic study:* 1948 RAF vertical photographs were located and studied in the LRO. Further vertical sorties for the study area, held by Lancashire County Council (LCC) Planning Department, were studied, using a stereoscope.
- 2.2.3 A cover search from the National Monuments Record (NMR) in Swindon was also requested, but did not reveal significant new detail. Laser prints were not requested, since the coverage already seen indicated the limited potential of the aerial photographic coverage for this particular site.

2.3 IDENTIFICATION SURVEY

- 2.3.1 A systematic surface inspection of the Longworth Clough Nature Reserve was undertaken to ensure complete coverage of the ground. The majority of the study area was open pasture; the ground was therefore walked on 30m transects to identify earthworks and extant surface features. The archaeological detail, as well as significant topographic detail, was mapped to an accuracy of +/- 0.5m, using differential Global Positioning System (GPS) techniques, which use electronic distance measurements along radio frequencies to satellites to enable a fix in Latitude and Longitude, which were subsequently converted mathematically to Ordnance Survey National Grid.

2.4 GAZETTEER OF SITES

- 2.4.1 All of the information concerning archaeological sites in the affected area has been collated into a gazetteer (*Appendix 2*), which provides details of their location, origin, and character. Locations are given as eight-figure National Grid References where possible. A summary description of each site is provided in conjunction with a reference to the source of the information (SMR, cartographic, documentary, field inspection) with references as appropriate and an assessment has been given of the interpretation and archaeological potential of the site. The sites have been marked onto a digital map showing their position (Fig 2). Other sites beyond the extent of the study area, which were considered to be of background relevance, are mentioned in the text with appropriate SMR references.

2.5 ARCHIVE

- 2.5.1 A full archive of the desk-based study and the field inspection has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 1991). The archive will be deposited in the Lancashire Record Office with a copy to the Lancashire Sites and Monuments Record and a copy will be available for deposition to the National Monuments Record.

3. TOPOGRAPHY AND GEOLOGY

3.1 LOCATION

3.1.1 The study area is centred on Longworth Clough, a steeply-sided valley formed by the Belmont or Eagley Brook. Most of the study area lies at the southern end of the historic township of Longworth, but to the south it includes part of the historic township of Sharples and a detached part of the township of Little Bolton. The highest part of the assessment area is at the northern end, at around 240m AOD, compared with around 170m AOD at the bottom of Longworth Clough. Topographically the study area could be divided into three:

- i) undulating upland pastures
- ii) the steeply-sided valley, which was largely unimproved
- iii) the valley bottom.

3.2 GEOLOGY

3.2.1 The area has a complex geological background, and it is crossed by a number of faults. The solid geology comprises rocks of the Upper Carboniferous Series, mainly Lower Coal Measures, but with a small area of Millstone Grit at the far northern end (Ordnance Survey 1958, 1" to 1 mile). The overlying drift geology is made up of thick deposits of boulder clay on either side of Longworth Clough which has some alluvial deposits, and extends on to the moors to the south-west. To the immediate north-east of the assessment area are deposits of sand and gravel (Ordnance Survey 1948, 1" to 1 mile).

4. DESK-BASED STUDY

4.1 SITES AND MONUMENTS RECORD

- 4.1.1 There were 41 known archaeological sites recorded on the Lancashire SMR in the vicinity of the assessment area, of which a few actually lie within the area itself. These are listed in detail in the gazetteer (*Appendix 2*). One site, an enclosure noted on aerial photographs, was undatable (Site 1). There were five prehistoric sites, four of which were findspots, comprising a Neolithic stone axe (Site 2) and three Bronze Age finds (Sites 3, 4 and 5). The fifth site is Three Lowes tumuli (Site 6), which are situated to the north-east of the assessment area.
- 4.1.2 Most of the SMR sites related to features noted on the Ordnance Survey first edition maps. This includes a number of wells (Sites 19, 21, 22, 23, 25, 32, 35, 36, 39 and 42), one coal mine (Site 37), six quarries or sandpits (Sites 14, 16, 17, 20, 31, and 38), and eight buildings, including schools, and chapels with cemeteries (Site 24, 25, 26, 27, 28, 29, 43, 44, 45, 46, and 47).
- 4.1.3 Industrial features included the Belmont printworks and reservoir (Site 13), the Belmont paper mill (Site 15), and the Bolton waterworks reservoir and paper mill cottages (Site 18). There were also four sites associated with industrial activity, two aqueducts and two weirs (Sites 33, 34, 40 and 41).

4.2 DOCUMENTARY AND CARTOGRAPHIC SOURCES

- 4.2.1 The assessment area lies in the modern civil parish of North Turton, but was situated within the historical townships of Longworth, Sharples and a detached portion of Little Bolton, in the historic parish of Bolton, with the major part of the area lying within Longworth (Farrer and Brownbill 1911, 235-6). The name Longworth is first recorded in thirteenth-century documents, where it is spelled variously as Langworthe or Lungewerthe (Ekwall 1922, 47). The name is derived from the Old English *lang+worth*, meaning a long enclosure or enclosed settlement (Mills 1991, 215). The name evidently arises from the shape of the township, which is a long and narrow tongue of land lying between the Delph and Eagley Brooks. The township ceased to be independent in 1898, when it was joined with Turton in the Bolton and Turton Extension Act (Farrer and Brownbill 1911, 285).
- 4.2.2 The medieval manor of Longworth was assessed as two oxgangs, and was held by a family named Longworth from the lords of Manchester (Farrer and Brownbill 1911, 285). Little is known of the Longworth family, although they are recorded as granting land to Cockersands Abbey in the thirteenth century (Farrer 1900, 704-7), and they are mentioned briefly in various documents of the sixteenth and seventeenth centuries (Farrer and Brownbill 1911, 286). The manor appears to have been sold soon after 1632, and in 1738 it was named in a settlement of the estates of William Hulton, in whose family it remained until 1907 when it was purchased by the Bolton Corporation (Farrer and Brownbill 1911, 286).
- 4.2.3 The Medieval manor of Sharples was also part of the estates of the lords of Manchester, and was assessed as four oxgangs of land, part of which was known as the Folds (Farrer and Brownbill 1911, 260). The Folds appears to have covered around 4000 acres and to have been situated in the southern part of the manor, and

thus would have included part of the assessment area, south of the Eagley Brook. The local families adopted the surname of Sharples, and are recorded from the thirteenth century down to the seventeenth century, although there appear to be few documents relating to them (Farrer and Brownbill 1911, 260-1).

4.2.4 The land covered by the study area comprises mainly land that was enclosed prior to the enclosure acts of the late eighteenth and early nineteenth centuries. There is also woodland, particularly concentrated around the valley of the Eagley Brook, which was extant in 1839 when it was depicted on a map of lands at the southern end of Longworth township (BRO ABCS/3/12/1). This map details some of the field names within the assessment area and their names are also given in a deed of 1630 (DDHu 25/4), confirming that the fields were indeed ancient enclosures. They include, for example, elements such as hey, croft and fold, all of which mean enclosure (Field 1972, 269-70). The names are also descriptive either of their function, such as Calf Hey, their size, such as Little and Great Meadows, or of topographical features such as Oak Field, Rushy Field and Cross Hill Meadow. Some of the land was evidently wet, for as well as Rushy Field, part of the woodland was known as Carr Wood. In 1630, Carr Wood was recorded as Rames Carr Wood, and this first element of the name is probably a distortion of the Old Norse word *reinn*, meaning land on a boundary (Field 1972, 273); this would probably refer to the adjacent Eagley Brook which formed the boundary between the townships of Longworth and Sharples. Apart from Mill Field, none of the field names indicate any activity other than agriculture. The name Mill Field probably only indicates that the field belonged to Longworth Mill, rather than being the site of the mill, as it lies well above the Eagley Brook. On the modern map, the field pattern has changed to some degree, and Oak Field has been enlarged to include Cross Hill and Cross Hill Meadow.

4.2.5 **Longworth Hall:** Longworth Hall (Site 7) is also marked on the map of 1839, situated just north of the assessment area (BRO ABCS/3/12/1). Although it is not known when the hall was built, it was certainly in existence in 1630, and was regarded as the ancient seat of the Longworth Family (Heyes 1997, 26). It was a substantial building, and a deed of this date provides a detailed description:

- the Hall of Longworth .. viz. the west end of the Hall of Longworth from the door, ie the kitchen, larder, pantry, dairyhouse, milkhouse, great chamber, maids chamber, 3 chambers at the stairhead, chamber over the porch, and outchamber where the servants lodge. .. The east end of the Hall of Longworth, ie the hall, parlour, buttry, chamber over the parlour, the chamber at the stairhead, the inner room, 2 bedchambers, long chamber with the chimney in the outkitchen.

The deed also describes the ancillary buildings to the Hall:

- also the lower barn in the Rayle, the thatched barn in the Yearde next the garden, and the great stable in the great barne, .. brewhouse, and room in the turfhouse (DDHu 25/4).

The map of 1839 (ABCS/3/12/1) shows a number of buildings around the Hall, as well as a small close to the south, in an area that now forms part of the assessment area. This small enclosure may have been a feature related to the Hall, such as a walled garden.

- 4.2.6 The manor was sold to the Hulton family in the seventeenth or early eighteenth centuries and the Hall became an ordinary farmhouse (Heyes 1997, 26). By the end of the nineteenth century, the Hall was occupied by a tenant, Nancy Howarth, for whom there is an agreement to lease the Hall and farm for £180 *per annum* (ABSC/24/43). Mrs Howarth retained possession of the Hall and farm until 1908 (ABCF/24/43), when Bolton Corporation bought the land. It would appear that the hall was demolished some time after this date, during the construction of Delph reservoir (Heyes 1997, 24).
- 4.2.7 **Longworth Mill (Site 08):** the site of Longworth Mill is situated at the extreme south-eastern end of the study area. The origins of the mill are not known, but there has been more than one such structure on this site, and documents dating back to the early post-medieval period refer to a mill at Longworth. The earliest known reference dates to 1608, when Christopher Longworth died holding various messuages and lands in Longworth, including a water-mill (Baines 1863, 221; Farrer and Brownbill 1911, 286). The mill is next mentioned in a rental of 1741-7, when John Dewhurst of Longworth, miller, held a messuage called the Milnhouse (PRO DDHu 42/3/46), and a marriage settlement of 1785 included '*and all that water corn mill or tenement called Longworth Mill*' (BRO ZZ/543/1). Some time after 1785, the mill appears either to have been converted to, or rebuilt as, a carding and spinning factory by a local farmer, Robert Greenhalgh (Heyes 1997, 18). Robert Greenhalgh was from a local family, many of whom were recorded in the census of 1801 for Brightmet township, and who were employed in both manufacture and agriculture (Barton 1882, 120). Greenhalgh's mill was water-powered, and on 4th May 1804, it was completely destroyed by a flash flood, leaving only the foundations and a small part of the outer walls (*Bolton Chronicle* 19th July 1907). This flood was the result of an extraordinary storm, which is referred to in a number of local texts (Clegg 1888, 69). Robert, who died in 1807, must have rebuilt the mill as he was recorded as a cotton carder and spinner in his will, and he left all his stock in trade to his wife and sons for them to continue '*my present business as a cotton carder and spinner*' (Heyes 1997, 19). It is not known how long this mill continued in business, but it is marked on two maps of 1829 (PRO DX 1492; DX 1493), and on a map of 1839 (BRO ABCS/3/12/1), although by 1844 it was marked as a ruin (Ordnance Survey 1850, sheet 79). This replacement mill also appears to have been water-powered, rather than steam-driven, as one of the 1829 maps (PRO DX 1492) clearly shows a water wheel. The 1839 map depicts the mill leat (Site 09), running to the north of the Eagley Brook. This mill leat probably pre-dates the early nineteenth century rebuilding of the mill, and it probably originated with the earlier post-medieval mills mentioned in the documents. Also on the map of 1839, and described in the accompanying lease (ABCS/3/12/1), is a boundary marker (Site 11) next to Longworth Mill. This marker is described as '*the rock adjoining the said brook .. marked with the letters H and N and being the North-Western boundary of the waterfall leased by the said William Hulton to Messieurs Ashworth*'. The initial H would have stood for William Hulton, the owner of the estate on the north-east side of the brook. The Ashworths owned the Egerton and Eagley mills further downstream (Heyes 1997, 27 and 35).
- 4.2.8 A new mill was constructed at Longworth in 1860. The older mill had evidently been demolished some time previously, as its remains were discovered while the foundations for the new one were being built (Heyes 1997, 18). The new mill was

powered partly by steam and partly by water, the latter obtained by a turbine water wheel of 30 horse power. The building itself was three storeys high, measuring about 150 feet by 100 feet, plus a warehouse, mixing and scutching rooms, plus *all the usual requisite appurtenances* (*Bolton Chronicle* 21st April 1860). The mill is shown on an Ordnance Survey map of 1893 (25 inches to one mile), and in addition to several mill buildings there is also a gasometer. As well as the mill buildings, two dwelling houses were built for the unnamed proprietors, and a number of cottages for the workers; Longworth Cottages (Site 10) lie on the southern boundary of the assessment area. The mill carried on working until 1903, when it probably closed because of its remote location (Heyes 1997, 19-20), and it was finally demolished in 1907 by the Bolton Corporation in connection with the proposed Delph Reservoir (Farrer and Brownbill 1911, 285).

4.2.9 **Delph Reservoir:** a major impact on the area was the nineteenth century plan to construct a number of new reservoirs, to supply both the many mills being built in the Bolton area, and later to supply the rapidly expanding town of Bolton with drinking water. These plans were first set out in 1829, when William Hulton leased the land around the Delph Brook and land around the Eagley Brook south-east of Longworth Mill, for a term of 999 years, to Henry and Edmund Ashworth, cotton spinners of Turton, and William Fairbairn and James Lillie, millwrights of Manchester (PRO DX 1492; DX 1493). The plans specifically set out an area to be flooded, which is marked Delph Reservoir. This plan evidently came to nothing because a decade later, in 1839, William Hulton leased all of the southern end of Longworth township to Lawrence Wright of Cheshire, for the purpose of improving the land by their construction of manufactories and reservoirs (ABCS/3/12/1). The lease details the types of manufactories and works which could be erected, and gives detailed instructions as to what could be done with the watercourses, as well as giving permission to quarry stone for construction work. The accompanying plan details the area involved, and marks the site of a reservoir next to Delph Brook. It was also intended to build a new road along the north side of the Eagley Brook, running from Critchley Fold to a tributary of the brook called Three Nooked Brook Shea, through the middle of the assessment area. However, these plans were never developed, and neither the reservoir nor the new road were built, nor any of the manufactories or works mentioned in the lease. It is possible that the rebuilt Longworth Mill of 1860 was as a result of Lawrence Wright's lease, but there is no direct evidence for this. Delph Reservoir (Site 12) was finally built by Bolton Corporation, which purchased the estate in 1907 (Farrer and Brownbill 1911, 286), and built the reservoir between 1908 and 1921 (Heyes 1997, 24).

5. IDENTIFICATION SURVEY

5.1 INTRODUCTION

- 5.1.1 The study area was walked on 15 July 1999. Twenty sites were noted (Sites 48-68) of which the mill leat (Site 09), Longworth mill (Site 08) and the cottages (Site 10) were mentioned in the documentary study.
- 5.1.3 Topographically the study area could be divided into three: the undulating upland pastures, the steeply-sided valley and the valley bottom. The vegetation encountered was high both on the pasture fields and along the valley bottom on either side of Belmont or Eagley Brook. The upland pastures contained additional field boundaries and evidence of arable cultivation, notably across Oak Field, and included ridge and furrow (Site 56) and boundary banks (Site 52). The valley sides incorporated examples of localised quarrying and the valley bottom contained evidence of the industrial remains pertaining to the mill.

5.2 SURVEY DETAIL

- 5.2.1 **Agricultural Field Systems:** although the higher ground above the valley slope is now essentially rough pasture there were indications that the land was more intensively farmed in the past. Relict field boundaries and ridge and furrow were all testament to this intensive land use and were probably farmed from the now demolished Longworth Hall (Site 07), which was just to the north of the study area. Although boundaries 48 and 51 are marked on the current 1:10,000 Ordnance Survey map, the triangular plot that they enclose is no longer in use and the boundaries survived as earthworks rather than as standing boundaries. Along the south-west side of the enclosure most of the bank and ditch has eroded down the wooded slopes of Hall Wood, but there is a remaining section to the south where the bank changes direction up the slope to a south-west to north-east orientation.
- 5.2.2 Boundaries 52 and 55 were not noted on any Ordnance Survey edition maps, but were set parallel to each other on a north-east to south-west alignment, extending across the line of slope. They were probably components of an early field system. An area of ridge and furrow (Site 56) was found to the north of boundary 52, aligned parallel to the boundaries. Although ill-defined, the cultivation ridges appear to be defined by the boundary, suggesting a relationship between them. Unlike Sites 52 and 55, Boundary 53 is shown on the Ordnance Survey first edition map defining a subdivision of Oak field and is now characterised by an earthbank which follows the east/west orientation of the contours.
- 5.2.3 Standing in the Oak Field was an elaborate trapezoidal-shaped water trough (Site 58) which was noted on the first edition Ordnance Survey map. The trough was 1.75m wide and was fed by a cast iron water pipe from a spring; it was apparently associated with the site of Longworth Hall, 120m to the north.
- 5.2.4 **Communications:** Site 49 is a large inclined causeway between Witton Farm and Longworth Road. The causeway is not marked on the first edition Ordnance Survey map, nor the 3rd edition Ordnance Survey map (1927), but is on the current 1:10,000 Ordnance Survey map, although it is now no longer in use. The construction of this roadway provided a more even gradient up the slope onto the

current Longworth Road. Site 57 was a narrow grass-covered track which led up to the present Longworth Road. It is not marked as such on the first edition Ordnance Survey map and would appear to be consistent with the pre-1848 field system, as it corresponds to the line of a field boundary shown on the 1839 lease plan (BRO/ABCS/3/12/1). It probably served as a trackway to fields further down the valley side.

- 5.2.5 **Quarrying:** the quarries within the study area were typically along the valley sides, although, one of the larger and also later quarries (Site 54) was deliberately positioned adjacent to the Longworth Road. Site 50 is located on the valley side at the northern edge of Hall Wood and was marked on the first edition Ordnance Survey map of 1848 as a “sandstone quarry”; it is still evident in the field as a series of depressions and large sandstone blocks. Quarry 66 is a two-bayed quarry set into the north-facing hillside above Eagley Brook; the two quarry depressions are c1m deep x 10m long.
- 5.2.6 **Longworth Mill Landscape:** little survives of either the mill or the adjacent cottages (Fig 3 and Plate 1), but there were associated residual features surviving in the landscape; this includes the stone weir (Site 60) and its associated millrace (Site 09) which provided the water for the mill. The extant features would suggest a nineteenth century date and probably related to the earlier mill (constructed after the 1804 flood) as the latest mill (c1860) largely used an alternative power supply. However, there may have been a weir here relating to an original mill of unknown date.
- 5.2.7 Sites 59 and 67 comprise a very well-constructed bridge with associated revetment wall which served Longworth Mill and dates from the rebuilding of the mill (c1860). Site 68 was a later revetment wall, which was sited on the north bank of the brook surrounding the site of Longworth Mill. Sites 62, 63 and 64 also date from the c1860 rebuild when the power source changed from a waterwheel to a water turbine. Site 64 the later weir, necessitated the creation of an extension of the brook leading into the millrace; this dredging must have produced the large mounds of alluvial deposits found at Site 63. The millrace provided sufficient water pressure to supply the pump house (Site 62) which provided a pressurised supply for the turbine which was probably located close to the mill.

6. DISCUSSION

6.1 IDENTIFIED RESOURCE

- 6.1.1 Despite the relative paucity of archaeology within the study area there is documentary evidence for significant archaeological sites outside; there have been several prehistoric finds in the immediate vicinity (Sites 2, 3, 4, 5 and 6), and are a typical feature of upland landscapes in the region (Howard-Davies 1996), reflecting early agricultural exploitation of the landscape during a warm climatic period. There are also a number of industrial sites existing around Longworth Clough, in addition to Longworth Mill, including Belmont printworks and reservoir (Site 13), Belmont paper mill (Site 15) and Delph Reservoir (Site 12).
- 6.1.2 **Longworth Mill:** the principal archaeology identified by the assessment within the study area is the industrial landscape pertaining to Longworth Mill (Site 8), which includes the associated mill leat (Site 9), cottages (Site 10), the later weir (Site 64), engine house (Site 62), the bridge (Site 59) and a well (Site 68). This landscape holds the greatest archaeological potential, as there may be mill remains within the area which date back to at least the early seventeenth century. As well as the later mill structures, there is also the possibility that the mill leat may be of some antiquity.
- 6.1.3 **Longworth Hall:** the other significant landscape is that associated with Longworth Hall, which was demolished at sometime after 1908), the site of the hall being just outside the study area. Despite this, the agricultural landscape belonging to the hall was clearly evident within the upper pasture land of the nature reserve. This included field boundaries (Sites 48, 51, 52, 53 and 55), an area of ridge and furrow (Site 56), and trackways (Sites 49 and 57). A study of the field names reinforces the physical evidence indicating that the area was predominantly used for agriculture throughout the medieval and post-medieval periods.

7. RECOMMENDATIONS

7.1 MANAGEMENT

- 7.1.1 The survey has highlighted two significant, localised archaeological landscapes: that centred on the former Longworth Hall, immediately to the north of the study area, and the Longworth Mill complex in the valley bottom, which has the potential to incorporate elements of an earlier seventeenth century mill.
- 7.1.2 The remains of the ancillary structures associated with Longworth Hall will have been in part lost as a result of the widening of the former track to the present Longworth Road, but there is the potential for sub-surface remains in the immediate environs of the former hall. Associated with the hall is a field system which is of at least eighteenth century date and is a representative example of such systems found throughout Southern Lancashire. The proposed management plan for the nature reserve should anticipate the conservation of this overall landscape in particular.
- 7.1.3 The Longworth Mill complex has been subject to considerable destruction, demolition and rebuilding at various stages in its chequered life; however, there is the potential that sub-surface elements of the original mill survive, in addition to the extant surface remains of the later mills. This represents a locally important industrial landscape that has developed over an extended period and as such there is a need that the proposed management plan allow for the preservation of the landscape, which should include the water catchment features (weir and leat) that may incorporate early fabric.

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APPENDIX 1
PROJECT DESIGN

JANUARY 1999

Lancaster
University
Archaeological
Unit

LONGWORTH CLOUGH NATURE RESERVE
nr BOLTON

LANCASHIRE

ARCHAEOLOGICAL ASSESSMENT

Proposals

The following project design is offered in response to a request from Lancashire Wildlife Trust, for an archaeological assessment of Longworth Clough Nature Reserve, near Bolton to inform management proposals.

1. INTRODUCTION

1.1 Lancaster University Archaeological Unit (LUAU) have been requested by Lancashire Wildlife Trust to submit a project proposal for an archaeological assessment of Longworth Clough Nature Reserve to inform management proposals. The requirement is for a basic level of survey to identify the extant and documented archaeological resource.

1.2 The resource identified to date comprises areas of ridge and furrow on the valley slides, and the remains of a mill on the valley floor with an associated leat and sluice. The extent of the industrial remains are not known and at present it is not known if there are other sites within the extent of the study area. This apparent dearth of archaeological remains may reflect the lack of archaeological investigation that has been undertaken into the area and there is a need to undertake the proposed archaeological programme to provide a reliable indication of the extant resource.

1.3 **Lancaster University Archaeological Unit (LUAU):** LUAU has considerable experience of the assessment of sites of all periods, having undertaken a great number of small and large scale projects during the past 18 years. Assessments and evaluations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. LUAU has considerable experience of the general locality, having undertaken extensive surveys of the adjacent Smithills and Rivington moors. LUAU has the professional expertise and resource to undertake the project detailed below to a high level of quality and efficiency. LUAU and all its members of staff operate subject to the Institute of Field Archaeologists (IFA) Code of Conduct.

2. OBJECTIVES

2.1 The following programme has been designed in accordance with a request from Lancashire Wildlife Trust to provide an accurate archaeological assessment of the designated area. The principal purpose of the assessment is to collate existing information about the archaeology of the site, to determine the significance of the identified archaeological resource, and to provide recommendations for any further archaeological investigation. The required stages to achieve these ends are as follows:

2.2 **Desk Top Survey:** to accrue an organised body of data to inform the identification survey.

2.3 **Identification Survey:** to record the character of the extant earthworks within the study area and provide an assessment of the archaeological significance of any earthwork remains.

2.4 **Assessment Report:** a written assessment report will be generated for the site, which will assess the significance of the data generated by this programme within a local and regional context. This will advise on the requirements for further recording measures as necessary.

3. METHODS STATEMENT

3.1 The following work programme is submitted in line with the stages and objectives of the archaeological work summarised above.

3.2 DESK TOP SURVEY

3.2.1 The following will be undertaken as appropriate, depending on the availability of source material. The level of such work will be dictated by the time scale of the project.

3.2.2 **Documentary and cartographic material:** this work will rapidly address the full range of potential sources of information. It will include an appraisal of the Lancashire Sites and Monuments Records, as well as appropriate sections of County histories, early maps, and such primary documentation (tithes and estate plans etc.) as may be reasonably available. Particular attention will be paid to field and place names recorded on early cartographic sources as these often provide important evidence of archaeological activity. Any photographic material lodged in either the County Sites and Monuments Records or the County Record Offices will also be studied. Published documentary sources will also be examined and assessed. This work will involve visits to the County Record Offices in Preston, Bolton Library and Museum.

3.2.3 **Aerial photography:** a survey of the extant air photographic cover will be undertaken. This may indicate the range and survival of archaeological and structural features in the designated area, and if appropriate coverage is available, allow an assessment of the rate and progress of erosion of

archaeological features. It will also facilitate the rapid recognition and plotting of archaeological features including those no longer visible at ground level. Identified features will be plotted at 1:10,000. Aerial photographic work may entail liaison with the Royal Commission on the Historical Monuments (England), although, within the time scale available, it is unlikely that prints will be forthcoming from this body for inclusion in this report.

- 3.2.4 **Physical environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken. This will not only set the archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field inspection.

3.3 IDENTIFICATION SURVEY

- 3.3.1 **Access:** liaison for basic site access will be undertaken through Lancashire Wildlife Trust.

3.3.2 It is proposed to undertake an LUAU 'level 1' survey (*Appendix 1*) of the study area, which covers an extent of c0.62sqkm. This is a rapid survey undertaken alongside a desk top study as part of a site assessment. It is an initial site inspection intended to identify the extant archaeological resource. It represents the minimum standard of record and is appropriate to exploratory survey aimed at the discovery of previously unrecorded sites. Its aim is to record the existence, location and extent of any such site. The emphasis for the recording is on the written description which will record type and period and would not normally exceed c50 words. The extent of a site is defined for sites or features greater than 50m in size and smaller sites are shown with a cross.

3.3.3 The reconnaissance will be undertaken in a systematic fashion, walking on approximately 30m wide transects, within the extent of the defined study area. It is proposed to use Global Positioning System (GPS) techniques to locate and record the features. GPS instrumentation uses electronic distance measurement along radio frequencies to satellites to enable a positional fix in latitude and longitude which can be converted mathematically to Ordnance Survey National Grid. The use of GPS techniques has proved to be an essential and extremely cost effective means of locating monuments, and can achieve accuracies of better than +/- 1m.

3.3.4 A photographic record will be undertaken simultaneously. An early surface inspection such as this is highly recommended, as such work can frequently double the amount of archaeological information for an area. This fieldwork will result in the production of plans at a scale of 1: 2500 or any other appropriate scale required, recording the location of each of the sites listed in the gazetteer. All archaeological information collected in the course of field inspection will be recorded in standardised form, and will include accurate national grid references. This will form the basis of a gazetteer, to be submitted as part of the report.

3.3.5 LUAU provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997) and risk assessments are now being implemented for all projects.

3.4 ASSESSMENT REPORT

3.4.1 **Archive:** the results of Stages 3.2-3.3 will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*The Management of Archaeological Projects, 2nd edition, 1991*). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. It will include summary processing and analysis of any features and finds recovered during fieldwork. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct.

3.4.2 This archive can be provided in the English Heritage Central Archaeology Service format, both as a printed document and on computer disks as ASCII files (as appropriate), and a synthesis (in the form of the index to the archive and the report) will be deposited with the Lancashire Sites and Monuments Record, as appropriate. A copy of the archive will also be available for deposition in the National Archaeological Record in London. LUAU practice is to deposit the original record archive of projects (paper, magnetic, and plastic media) with the appropriate County Record Office, and a full copy of the record archive, should any material be recovered, with the material archive (artefacts, ecofacts, and samples, at this stage from surface collections) with an appropriate museum.

3.4.3 **Collation of data:** the data generated by 3.2 and 3.3 (above) will be collated and analysed in order to provide an assessment of the nature and significance of the known surface and subsurface remains within the designated area. It will also serve as a guide to the archaeological potential of

the area to be investigated, and the basis for the formulation of any detailed field programme and associated sampling strategy, should these be required in the future.

- 3.4.4 **Assessment Report:** one bound and one unbound copy of the report will be submitted to the Client, and a further copy submitted to the Lancashire Sites and Monuments Record Office. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, together with appropriate illustrations, including maps and gazetteers of known or suspected sites identified within or immediately adjacent to the study area. It will also include a complete bibliography of sources from which the data has been derived, and a list of further sources identified during the programme of work, but not examined in detail. The report will also include a complete bibliography of sources from which data has been derived, and a list of further sources identified during the programme of work, but not examined in detail.
- 3.4.5 The report will identify areas of defined archaeology, an assessment and statement of the actual and potential archaeological significance of any features within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, which can be tailored to the specific requests of the client (eg particular scales etc.), subject to discussion. The report will be in the same basic format as this project design; a copy of the report can be provided on 3.5" disk (IBM compatible format).
- 3.4.6 **Confidentiality:** the assessment report is designed as a document for the specific use of the client, for the particular purpose as defined in the project brief and this project design, and should be treated as such; they are not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

4. WORK TIMETABLE

The phases of work will comprise:

- 4.1 **Desk Top Study**
A three day period is required to collate all the available data.
- 4.2 **Identification Survey**
A one day period is required for the identification survey.
- 4.3 **Prepare Assessment Report**
A three day period would be required to complete this element.
- 4.4 LUAU can execute projects at very short notice once an agreement has been signed with the client.

5. OUTLINE RESOURCES

The following resource base will be necessary to achieve the proposals detailed above.

- 5.1 **Desk Top Study**
3 man-days external consultant
- 5.2 **Identification Survey**
1 man-day Project Supervisor
1 man-day Project Assistant
- 5.3 **Assessment Report**
1.5 man-days Project Supervisor
1 man day Illustrator
- 5.4 The project will be under the management of **Jamie Quartermaine, BA, Surv Dip, MIFA** (Unit Project Manager) to whom all correspondence should be addressed. All Unit staff are experienced, qualified archaeologists, each with several years professional expertise.

APPENDIX 2 GAZETTEER OF SITES

Site number **01**
Site name Folds Pasture
NGR SD 6811 1497
Site type Enclosure, sub-circular
Period Unknown
Source SMR 3374

A possible enclosure is shown on aerial photographs.

Assessment

The site lies to the west of the assessment area.

Site number **02**
Site name Longworth Hall Farm, Delph
NGR SD 70 15
Site type Stone axes
Period Neolithic
Source SMR 1859

Two Neolithic "Cumbria" axes, one broad butted, the other point butted, were found together at Longworth Hall Farm during the construction of Delph Reservoir.

Assessment

The site lies to the immediate north of the assessment area.

Site number **03**
Site name Charter's Moss, Turton
NGR SD 69 16
Site type Stone hammer, perforated
Period Bronze Age
Source SMR 131

A perforated stone hammer from Charter's Moss, Turton, is very imprecisely located.

Assessment

The site lies to the north of the assessment area.

Site number **04**
Site name Charter's Moss
NGR SD 69 16
Site type Bronze palstave
Period Bronze Age
Source SMR 133

A bronze 'celt' was found c1810 by a man digging for turf. The find is very imprecisely located.

Assessment

The site lies to the north of the assessment area.

Site number **05**
Site name Egg Hillock
NGR SD 68450 14210
Site type Barbed and tanged stone arrowhead
Period Bronze Age
Source SMR 138

A barbed and tanged arrowhead was found on Egg Hillock.

Assessment

The site lies to the south-west of the assessment area.

Site number 06
Site name Three Lowes tumuli, Turton
NGR SD 710 160
Site type Three barrows
Period Bronze Age
Source SMR 1865
 The Three Lowes tumuli, thought to be Bronze Age barrows.
Assessment
 The site lies to the north-east of the assessment area.

Site number 07
Site name Longworth Hall
NGR SD 69250 15680
Site type Hall
Period Pre-1630
Source DDHu 25/4 1630; BRO ABCS/3/12/1; Farrer and Brownbill 1911, 285; Heyes 1997
 Longworth Hall, the seat of the Longworth family, is named in a deed of 1630. It later became a farmhouse, and was demolished during the construction of Delph Reservoir between 1908 and 1921.
Assessment
 The site lies to the immediate north of the assessment area.

Site number 08
Site name Longworth Mill
NGR SD 70162 14724
Site type Cotton factory mill
Period Seventeenth - nineteenth centuries
Source Farrer and Brownbill 1911, 286; Heyes 1997; Identification Survey 1999
 Site of Longworth mill. It was built in 1860 as a three storey building, with ancillary structures and was powered by steam and a water wheel within Eagley Brook. It was closed in 1903 and demolished in 1907. The remains of an older mill were discovered while the foundations of the new mill were being constructed. This original mill was built for carding and spinning, and was destroyed by a flash flood in 1804, leaving only foundations.
Assessment
 The site lies at the south-east end of the assessment area.

Site number 09
Site name Longworth Mill leat
NGR SD 69450 15150 to SD 70190 14760
Site type Mill leat
Period Seventeenth to nineteenth centuries
Source BRO ABCS/3/12/1; Identification Survey 1999
 A mill leat (c 800m long) serving Longworth Mill (Site 08), is first shown on a map of 1839, but was probably built to serve the earlier mill mentioned in documents from 1608 onwards. This linear feature extends from the weir (Site 60) to the north of Site 08; at this point there is a steep incline, probably on the course of a directed water flow, a wooden duct or robbed-out pipework, which would have powered the mill. The channel forms a linear depression marked by standing water and reeds 5m wide with an associated embankment to the south-west (3m wide and up to 2m high). The construction of the millrace appears to be contemporary with Site 60 as evidenced by the stonework lining the channel and the weir.
Assessment
 The site lies within the assessment area.

Site number 10

Site name Longworth Cottages
NGR SD 70250 14640
Site type Houses
Period 1860
Source Heyes 1997; Identification Survey 1999
 A terrace of workers cottages for employees of Longworth Mill, which were occupied until the mid-twentieth century and were then demolished. There are no extant structural remains on site.
Assessment
 The houses lie on the southern boundary of the assessment area, at its south-eastern end.

Site number 11
Site name Longworth Mill
NGR SD 70250 14750
Site type Boundary stone
Period 1839
Source BRO ABCS/3/12/1
 A boundary stone, marked H (for Hulton) and N marked on a map of 1839. It was not recorded by the identification survey.
Assessment
 The site lies on the border of the assessment area.

Site number 12
Site name Delph Reservoir
NGR centred on SD 700 155
Site type Reservoir
Period 1908-21
Source Farrer and Brownbill 1911, 285; Heyes 1997
 Delph Reservoir, built by Bolton Corporation to supply water to Bolton. The construction of the reservoir was initiated in 1908, but was not ready for use until 1921.
Assessment
 The site lies to the north-east of the assessment area.

Site number 13
Site name Belmont printworks and reservoir, Turton
NGR SD 67780 15750; SD 68000 15720
Site type Reservoir, printing works
Period Post-medieval
Source SMR 7749; Ordnance Survey first edition map (1848)
 Belmont printworks and adjacent reservoir. The printworks was occupied by John Parker and Co in 1823, but by 1840 it was occupied by Will Spencer. After 1869 it was taken over by Edward Deakins. Part of the works is still in use today.
Assessment
 The site lies to the west of the assessment area.

Site number 14
Site name Quarry
NGR SD 68170 16080
Site type Sandstone quarry
Period Post-medieval
Source SMR 7788; Ordnance Survey first edition map (1848) sheet 78.
 A quarry is shown on the Ordnance Survey first edition map (1848).
Assessment
 The site lies to the north-west of the assessment area.

Site number 15
Site name Belmont paper mill, Turton
NGR SD 6932 1513
Site type Paper mill
Period Post-medieval
Source SMR 7789; Ordnance Survey first edition map (1848) sheet 78
 Belmont (Springside) paper mill, on Eagley Brook. It is shown on the Ordnance Survey first edition map (1848). It was founded in 1834 and is still in use today.
Assessment
 The site lies to the immediate west of the assessment area.

Site number 16
Site name Greenhill Farm, Turton
NGR SD 68380 15340
Site type Sandpit
Period Post-medieval
Source SMR 7790; Ordnance Survey first edition map (1848) sheet 78
 A sandpit is shown on the Ordnance Survey first edition map (1848).
Assessment
 The site lies to the west of the assessment area.

Site number 17
Site name Near Longworth Hall, Turton
NGR SD 69410 15800
Site type Sandstone quarry and sandpit
Period Post-medieval
Source SMR 7791; Ordnance Survey first edition map (1848) sheet 78
 A sandstone quarry and sandpit is shown on the Ordnance Survey first edition map (1848). The site is now within Longworth Hall Plantation.
Assessment
 The site lies to the immediate north of the assessment area.

Site number 18
Site name Bolton waterworks reservoir and paper mill cottages
NGR SD 69000 14750; SD 69180 14860
Site type Reservoir and domestic houses
Period Post-medieval
Source SMR 7792; Ordnance Survey first edition map (1849) sheet 86
 A reservoir and cottages are shown on the Ordnance Survey first edition map (1849).
Assessment
 The site lies to the south of the assessment area.

Site number 19
Site name Well
NGR SD 68680 14660
Site type Well
Period Post-medieval
Source SMR 7793; Ordnance Survey first edition map (1848) sheet 86
 A well shown on the Ordnance Survey first edition map (1849).
Assessment
 The site lies to the south of the assessment area.

Site number 20
Site name Three Nooked Shawbrook

NGR SD 68550 14710
Site type Sandstone quarry and sandpit
Period Post-medieval
Source SMR 7794; Ordnance Survey first edition map (1849), sheet 86
 A sandstone quarry and sandpit shown on the Ordnance Survey first edition map (1849).
Assessment
 The site lies to the south of the assessment area

Site number 21
Site name Top o' th' Meadows
NGR SD 70440 16660
Site type Well
Period Post-medieval
Source SMR 8259; Ordnance Survey first edition map (1844); sheet 79
Description
 A well is shown on the Ordnance Survey first edition map (1844).
Assessment
 The site lies to the north-east of the assessment area.

Site number 22
Site name Near Dimple
NGR SD 70680 16270
Site type Well
Period Post-medieval
Source SMR 8260; Ordnance Survey first edition map (1844) sheet 79
 A well is shown on the Ordnance Survey first edition map (1844).
Assessment
 The site lies to the north-east of the assessment area.

Site number 23
Site name Dimple
NGR SD 70460 15710
Site type Well
Period Post-medieval
Source SMR 8261; Ordnance Survey first edition map (1844) sheet 79
 A well shown on the Ordnance Survey first edition map (1844).
Assessment
 The site lies to the north-east of the assessment area.

Site number 24
Site name Dimple
NGR SD 70420 15540
Site type Chapel, well, and cemetery
Period Post-medieval
Source SMR 8262; Ordnance Survey first edition map (1844) sheet 79
 A chapel, well and cemetery are shown on the Ordnance Survey first edition map (1844).
Assessment
 The site lies to the north-east of the assessment area.

Site number 25
Site name Dimple
NGR SD 70710 15610
Site type School and well
Period Post-medieval

Source SMR 8263; Ordnance Survey first edition map (1844) sheet 79
A school and well are shown on the Ordnance Survey first edition map (1844).

Assessment

The site lies to the north-east of the assessment area.

Site number 26
Site name Near Dimple
NGR SD 70870 15430
Site type Graveyard and site of Walmesley chapel
Period Post-medieval
Source SMR 8264; Ordnance Survey first edition map (1844) sheet 79
A graveyard and the site of Walmesley chapel are shown on the Ordnance Survey first edition map (1844).
Assessment
The site lies to the north-east of the assessment area.

Site number 27
Site name Near Dimple
NGR SD 70740 15560
Site type Cross Guns Inn
Period Post-medieval
Source SMR 8265; Ordnance Survey first edition map (1844) sheet 79
Cross Guns Inn is shown on the Ordnance Survey first edition map (1844).
Assessment
The site lies to the north-east of the assessment area.

Site number 28
Site name Near Egerton
NGR SD 70840 15120
Site type British School
Period Post-medieval
Source SMR 8266; Ordnance Survey first edition map (1844) sheet 79
Description
A building named as 'British School' is shown on the Ordnance Survey first edition map (1844).
Assessment
The site lies to the east of the assessment area.

Site number 29
Site name Near Egerton
NGR SD 70850 15130
Site type Independent Chapel
Period Post-medieval
Source SMR 8267; Ordnance Survey first edition map (1844) sheet 79
A building named as 'Independent Chapel' is shown on the Ordnance Survey first edition map (1844).
Assessment
The site lies to the east of the assessment area.

Site number 30
Site name Near Egerton
NGR SD 70880 15020
Site type Smithy
Period Post-medieval
Source SMR 8268; Ordnance Survey first edition map (1844) sheet 79
A smithy is shown on the Ordnance Survey first edition map (1844).

Assessment

The site lies outside the assessment area, to the south.

Site number 31
Site name Hampsons Pasture, Martha Tree Delf
NGR SD 68260 14430
Site type Quarry
Period Post-medieval
Source SMR 9639; Ordnance Survey first edition map (1845) sheet 86
 Martha Tree Delf quarry is shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 32
Site name Hampsons Pasture
NGR SD 68410 14490
Site type Wells
Period Post-medieval
Source SMR 9640; Ordnance Survey first edition map, 1845, sheet 86
 Two wells are shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 33
Site name Hampsons Pasture
NGR SD 68270 14420
Site type Weir and sluice
Period Post-medieval
Source SMR 9641; Ordnance Survey first edition map (1845)
 A weir and sluice are shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 34
Site name Hampsons Pasture
NGR SD 68260 14370
Site type Aqueduct
Period Post-medieval
Source SMR 9642; Ordnance Survey first edition map (1845) sheet 86
 An aqueduct is shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 35
Site name Hampsons Pasture
NGR SD 68220 14310
Site type Wells
Period Post-medieval
Source SMR 9643; Ordnance Survey first edition map (1845) sheet 86
 Two wells are shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 36
Site name Hampsons Pasture
NGR SD 68310 14140
Site type Wells
Period Post-medieval
Source SMR 9644; Ordnance Survey first edition map (1845) sheet 86
Description
 Two wells are shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 37
Site name Hampsons Pasture
NGR SD 68310 14090
Site type Coal mine
Period Post-medieval
Source SMR 9645; Ordnance Survey first edition map (1845) sheet 86
 A coal mine is shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south-west of the assessment area.

Site number 38
Site name Hampsons Pasture, Spakes Delf
NGR SD 69060 14230
Site type Quarry
Period Post-medieval
Source SMR 9646; Ordnance Survey first edition map (1845) sheet 86
 Spakes Delf quarry is shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south of the assessment area.

Site number 39
Site name Shooterslee Wood
NGR SD 69420 14350
Site type Well
Period Post-medieval
Source SMR 9647; Ordnance Survey first edition map (1845) sheet 86
 A well is shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south of the assessment area.

Site number 40
Site name Shooterslee Wood
NGR SD 69250 14430
Site type Waste weir
Period Post-medieval
Source SMR 9648; Ordnance Survey first edition map (1845) sheet 86
 A weir, described as a 'waste weir', is on the Ordnance Survey first edition map (1845). It is at the eastern edge of the former Bolton Water Works reservoir (now Springs reservoir).
Assessment
 The site lies to the south of the assessment area.

Site number 41

Site name North Dingle
NGR SD 69580 14120
Site type Aqueduct
Period Post-medieval
Source SMR 9649; Ordnance Survey first edition map (1845) sheet 86
 An aqueduct is shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south of the assessment area.

Site number 42
Site name North Dingle
NGR SD 69560 14140
Site type Wells
Period Post-medieval
Source SMR 9650; Ordnance Survey first edition map (1845) sheet 86
 Two wells are shown on the Ordnance Survey first edition map (1845).
Assessment
 The site lies to the south of the assessment area.

Site number 43
Site name Dingle House, formerly Hampsons Farmhouse
NGR SD 69700 14720
Site type Farmhouse, listed grade II
Period Sixteenth century
Source SMR 10739; Ordnance Survey first edition map (1845) sheet 86
 A farmhouse building is shown on the Ordnance Survey first edition map (1845). It is Listed Grade II.
Assessment
 The site lies to the immediate south of the assessment area

Site number 44
Site name The Farmhouse, Lower Folds
NGR SD 68990 15370
Site type Farmhouse, listed grade II
Period 1704
Source SMR 10740; Ordnance Survey first edition map (1845) sheet 86
 A farmhouse building is shown on the Ordnance Survey first edition map (1845) where it is called Folds. It is Listed Grade II.
Assessment
 The site lies to the immediate south-west of the assessment area

Site number 45
Site name Waterworks Cottage, Belmont
NGR SD 69150 14440
Site type House with plaque, listed grade II
Period 1824
Source SMR 10751; Ordnance Survey first edition map (1845) sheet 86
 A building has a plaque dating to 1824. It is adjacent to the Bolton Water Works Reservoir and is called the Bolton Water Works cottage on the Ordnance Survey first edition map (1845). It is Listed Grade II.
Assessment
 The site lies to the south of the assessment area.

Site number 46
Site name Higher Whittaker Farmhouse
NGR SD 68060 16260

Site type Farmhouse, listed grade II
Period Seventeenth / eighteenth century
Source SMR 10777

Farmhouse, Listed Grade II.

Assessment

The site lies to the north-west of the assessment area.

Site number 47
Site name Stones Bank Road
NGR SD 69960 16590
Site type Guidepost, listed grade II
Period Early nineteenth century
Source SMR 10784

A guidepost at the north-west corner of Stones Bank road junction, is Listed Grade II.

Assessment

The site lies to the north of the assessment area.

Site number 48
Site name Longworth Clough
NGR SD 69171 15680
Site type Bank and Ditch
Period Post-medieval
Source Identification Survey 1999; Modern Ordnance Survey map 1:10,000

This is the north-eastern boundary of a 'triangular'-shaped field to the north-west of 'Oak Field' and was also noted at Site 51. The boundary has been formed by a bank being cut into the south-west facing slope above Hall Wood. The bank stands 1.5m high x 2m wide, creating an adjacent ditch marked by reeds. Access into the field was gained from the western corner where a series of trackways (one goes into Oak Field) led down from the modern road junction. It is close to the site of Longworth Hall (Site 07).

Assessment

The site is within the study area.

Site number 49
Site name Longworth Clough
NGR SD 68770 15982
Site type Trackway
Period Nineteenth century
Source Identification Survey 1999, Modern Ordnance Survey map 1:10000

The trackway forms a broad, 7m wide, incline from 'Wittons Farm' up onto the Longworth Road. At the top of the trackway is an additional embanked circular area which may have acted as a turning circle and was adjacent to a gateway; this is currently marked by a series of sandstone and concrete blocks.

Assessment

The site is within the study area.

Site number 50
Site name Longworth Clough
NGR SD 68904 15848
Site type Quarry
Period Pre 1845
Source Identification Survey 1999; Ordnance Survey first edition map, 1845

A quarry located on the edge of a break of slope above 'Hall Shore'. The site is represented by a number of regular spoil heaps, depressions and large sandstone blocks. The spoil heaps stand to 1.5m and none extend above the surrounding topography. The quarry covers approximately 15sqm and was located close to Longworth Road.

Assessment

The site is within the study area.

Site number 51
Site name Longworth Clough
NGR SD 69052 15725
Site type Bank and Ditch
Period Post-medieval
Source Identification Survey 1999

A boundary bank and ditch formed the northern edge of a field associated with Longworth Hall. The bank is orientated south-west to north-east and is 19m long. There is a distinct corner to the north-east where it joins Site 48. The bank is the upcast from an internal ditch, which would indicate that it was intended to keep stock inside.

Assessment

The site is within the study area.

Site number 52
Site name Longworth Clough
NGR SD 69691 15344 - 69510 15230
Site type Oak Field, Bank and Ditch
Period Post-medieval
Source Identification Survey 1999

A bank and ditch formed a field boundary, which is mainly orientated south-west to north-east and at its south-western end it forms a 90° bend to the north-west. The bank is 2.5m wide with a possible associated ditch to the south-east. The bank runs across the contours of the hill and extends towards the Longworth Road where it becomes less well defined. The boundary does not correspond to any shown on the Ordnance Survey first edition map (1845).

Assessment

The site is within the study area.

Site number 53
Site name Oak Field, Longworth Clough
NGR SD 69647 15223 to 69820 15228
Site type Bank and Ditch
Period Post-medieval (Pre-1845)
Source Identification Survey 1999, Ordnance Survey first edition map (1845)

This bank forms the southern edge of Oak Field which is marked on the Ordnance Survey first edition map (1845). The bank is just over 1m wide with a possible ditch, 0.5m wide, to the north-east. The bank closely follows the line of the top break of slope and so delineates the upper, flatter terrain from the south-facing slopes.

Assessment

The site is within the study area.

Site number 54
Site name Oak Field Longworth Clough
NGR SD 69984 15180
Site type Quarry
Period Post-medieval
Source Identification Survey 1999; Modern Ordnance Survey map 1:10,000

A quarry is located at the north-east corner of Oak Field and was twin bayed, each bay being 25m long x 10m wide. All the quarry surfaces were graded and grassed over.

Assessment

The site is within the study area.

Site number 55
Site name Oak Field, Longworth Clough
NGR SD 69720 15338

Site type Bank
Period Post-medieval
Source Identification Survey 1999

Orientated south-west to north-east, this bank is 1m wide and extends 60m from the Longworth Road. It appears to be parallel to Site 52 and may be associated. Neither Site 52 or 55 appear on the first edition Ordnance Survey map and as such may predate later enclosures.

Assessment

The site is within the study area.

Site number 56
Site name Longworth Clough
NGR SD 69644 15372
Site type Ridge and Furrow
Period Post-medieval
Source Identification Survey 1999

An area of ridge and furrow is sited on gently sloping north-west-facing ground. The ridges were 3m apart and were aligned south-west to north-east, which appeared to parallel field boundaries sites 52 and 55, and they would appear to be related.

Assessment

The site is within the study area.

Site number 57
Site name Longworth Clough
NGR SD 69443 15511
Site type Trackway
Period Post-medieval/Pre-1845
Source Identification Survey 1999

An 'S' shaped trackway would have provided access to the lower ground to the south-west of Oak Field. It was probably associated with the pre-1845 and pre-enclosure field system represented by Sites 52 and 55.

Assessment

The site is within the study area.

Site number 58
Site name Longworth Clough
NGR SD 69355,15603
Site type Trough
Period Post-medieval/Pre 1845
Source Identification Survey 1999

A trapezoidal-shaped trough is set into the south-west-facing slope of Oak Field. It is 1.75m wide across its longest side. It was fed by a cast iron water pipe from a spring, c15m to the north, and a 'U' shaped outlet has been cut into the centre of the south-west-facing side.

Assessment

The site is within the study area.

Site number 59
Site name Longworth Clough
NGR SD 70204,14727
Site type Bridge
Period Nineteenth century
Source Identification Survey 1999, Heyes 1997; Ordnance Survey first edition map (1845)

The bridge provided vehicular access along a 5m wide road to Longworth Mill (Site 08) to the north-west of Longworth Lane. It is very well built of rusticated sandstone blocks with capped parapet walls.

Assessment

The site is within the study area.

Site number 60
Site name Longworth Clough
NGR SD 69463 15147
Site type Weir
Period Post-medieval
Source Identification Survey 1999; Modern Ordnance Survey map 1:10,000
This comprises a series of *in situ* and dislocated 1 x 1.5m x 1.5m deep ashlar blocks which contributed to a monumental weir structure. The *in situ* blocks were consistent with diverting the watercourse into the millstream (Site 09).
Assessment
The site is within the study area.

Site number 61
Site name Longworth Clough
NGR SD 70037 14847
Site type Building
Period Twentieth century
Source Identification Survey 1999
A large rectangular concrete bunker is 15m x 20m x 5m high. There were no windows but incorporates two doorways with "Danger Voltage" signs. There was no visible power supply, and its purpose is unknown.
Assessment
The site is within the study area.

Site number 62
Site name Longworth Clough
NGR SD 70086 14791
Site type Building/pump house
Period Nineteenth-twentieth centuries
Source Identification Survey 1999
A small rectangular brick built hut, with a pitched slate roof, has a window through the north-east-facing wall, a doorway in the south-east-facing wall and internally there were twin holes set in concrete for a pump and a cast iron bollard which was probably a valve housing.
Assessment
The site is within the study area.

Site number 63
Site name Longworth Clough
NGR SD 70070 14799
Site type Spoil Heaps
Period Seventeenth - nineteenth centuries
Source Identification Survey 1999
Twin spoil heaps, each with a diameter of 10m x 3m high, are rounded and consist of silts and stone which were probably dredged from the Belmont / Eagley Brook during the construction of Site 09. They are orientated south-east to north-west and parallel the brook 10m to the south-east.
Assessment
The site is within the study area.

Site number 64
Site name Longworth Clough
NGR SD 70073 14770
Site type Weir
Period Nineteenth - twentieth centuries
Source Identification Survey 1999

This weir is built at right angles to the direction of flow of the Belmont or Eagley Brook and consists of a concrete base, 2m high, and an cement cap with a cast iron 'skirt' on the top the length of the dam. There is a sump in the north bank which probably fed the pump house (Site 62). The sites would appear not only to provide water for the pump house and mill but also to control the water flow down the valley (possibly a flood prevention scheme).

Assessment

The site is within the study area.

Site number 66
Site name Longworth Clough
NGR SD 70468 14637
Site type Quarry
Period Seventeenth - nineteenth centuries
Source Identification Survey 1999

A two-bayed quarry is cut into the north-facing hillside above Belmont or Eagley Brook. The quarry forms two depressions c1m deep x 10m long just to the south of a current right of way.

Assessment

The site is within the study area.

Site number 67
Site name Longworth Clough
NGR SD 70228 14722
Site type Bank and Ditch
Period Nineteenth century
Source Identification Survey 1999

A revetment wall was built to prevent flooding and erosion by the River Belmont or Eagley Brook and was of cement bonded sandstone blocks (0.1m x 0.2m). The wall was contemporary with the bridge (Site 59) and was particularly evident to the north of this, whereas to the south the wall soon stops and has been superseded by site 68.

Assessment

The site is within the study area.

Site number 68
Site name Longworth Clough
NGR SD 70173 14707
Site type Wall
Period Nineteenth to twentieth centuries
Source Identification Survey 1999

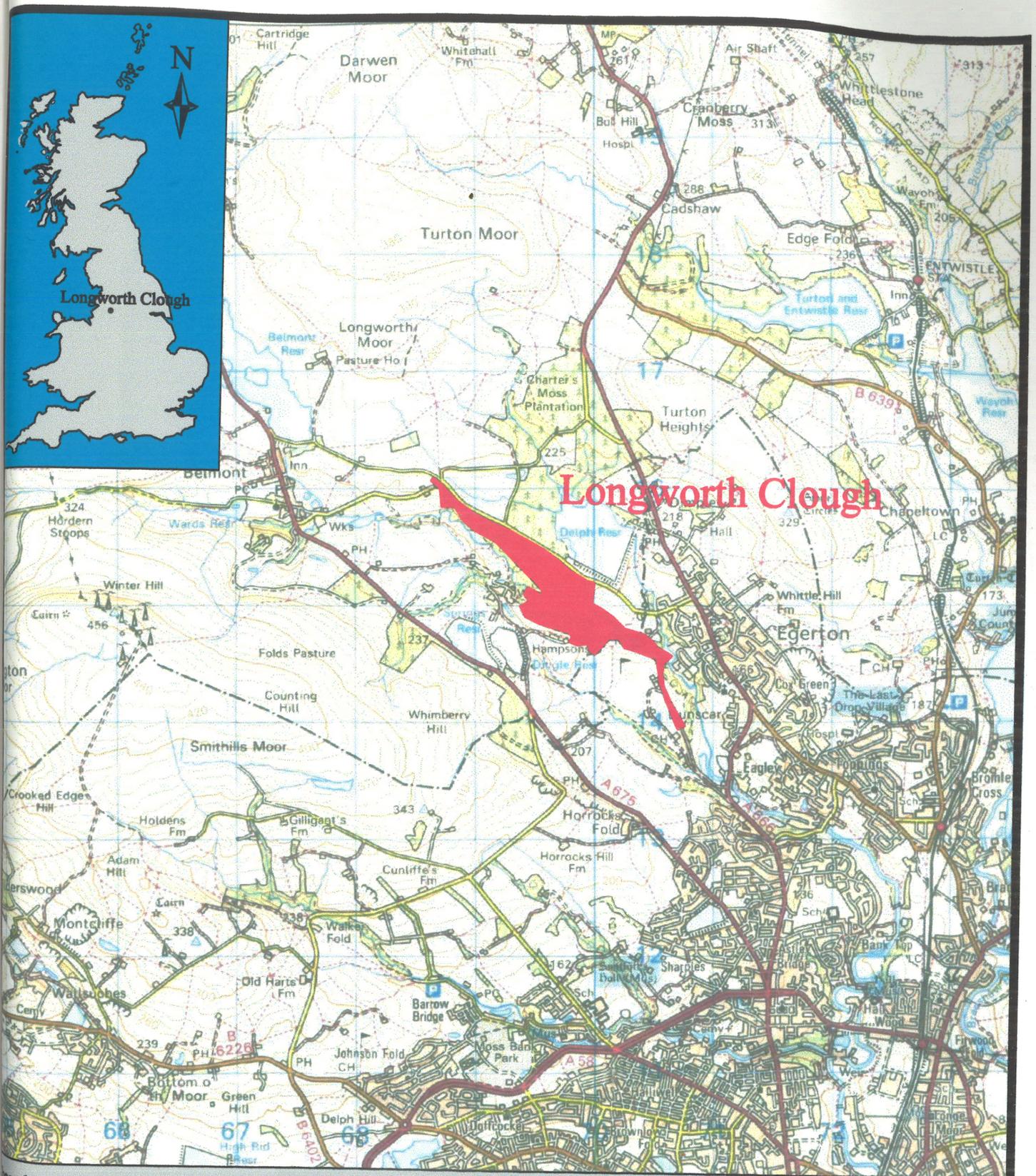
A well-built cement-bonded sandstone wall with a top course of double pitched capping stones, forms a continuation of Site 67 to the south and to the east of Longworth Mill (Site 09).

Assessment

The site is within the study area.

ILLUSTRATIONS

- Fig 1 Longworth Clough Location Plan
- Fig 2 Lease plan of several plots of land in Longworth (1839 (BRO/ABCS/3/12/1, 1839))
- Fig 3 Longworth Mill (1893) Extract from Ordnance Survey 25": 1 mile map, first edition
- Fig 4 Longworth Clough General Site plan



Based upon the Ordnance Survey 1:50,000
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Fig 1: Longworth Clough Location Plan

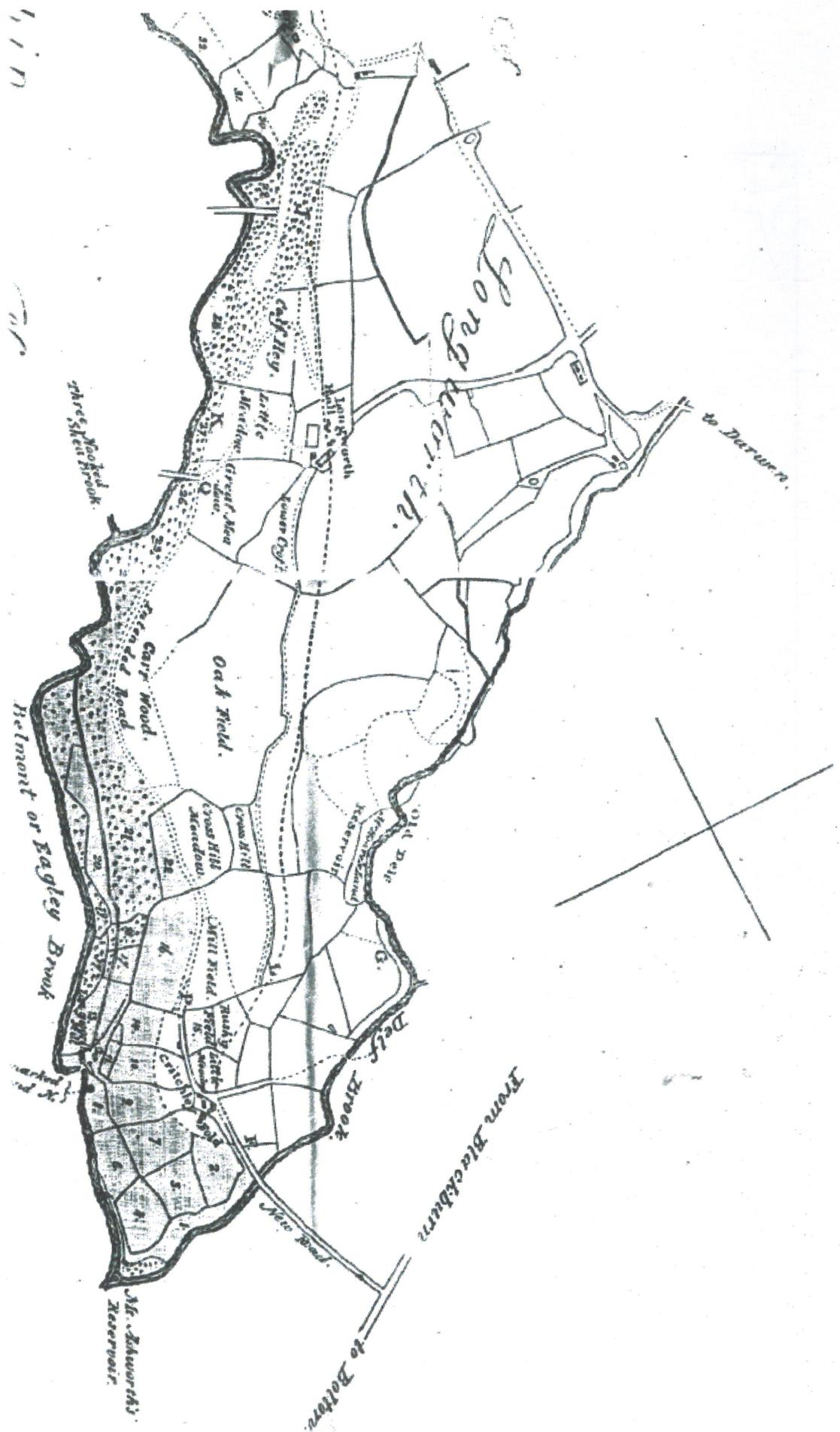


Fig 2 Lease plan of several plots of land in Longworth (1839 (BRO/ABCS/3/12/1, 1839)

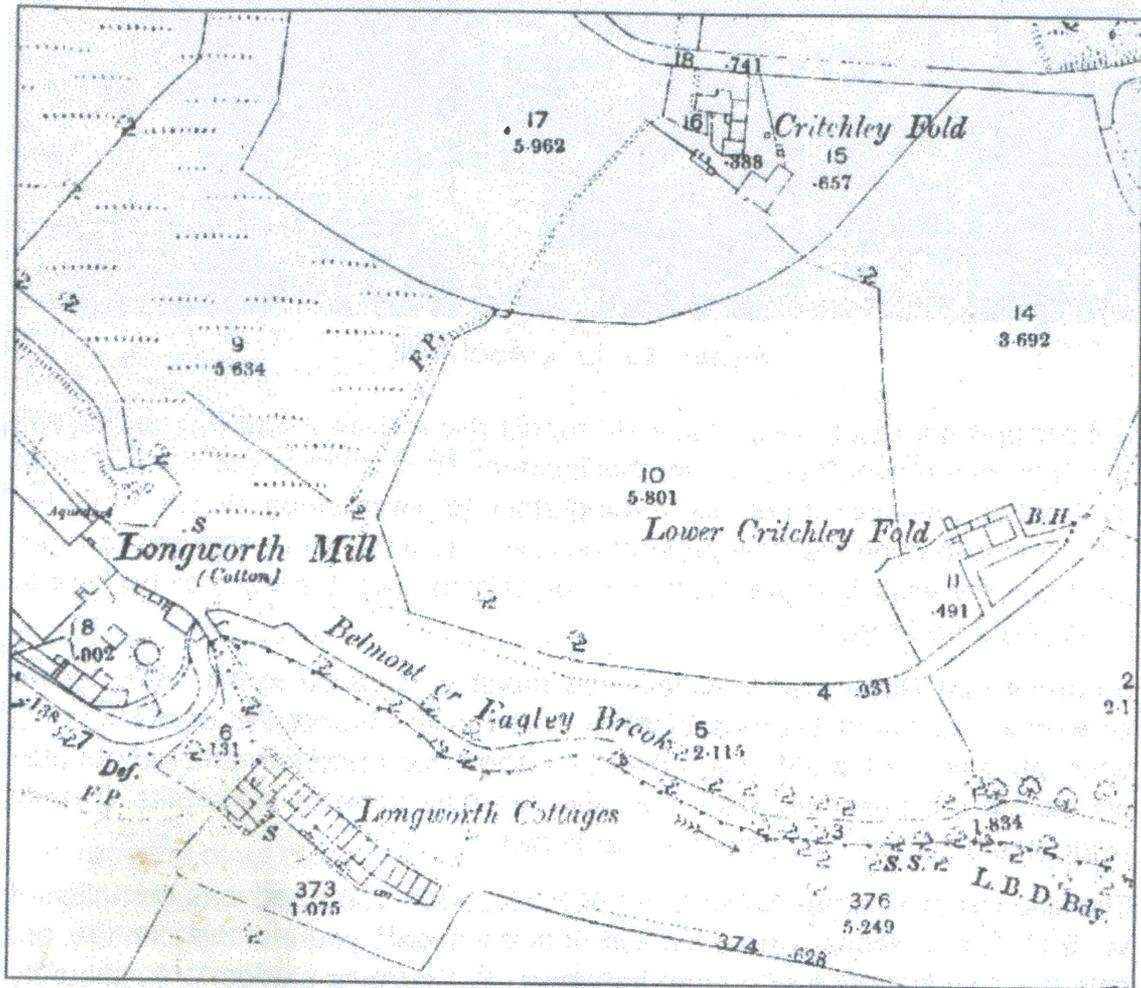


Fig 3 Longworth Mill (1893) Extract from OS 25": 1 mile map, 1st edition

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PROJECT:

Longworth Clough

DRAWING No:



DRAWN BY: CS and JQ

DATE: August 1999

LOCATION:



KEY

Sites
66

Study Area Boundary

TITLE:

General Site Plan

COMMISSIONED BY:

Lancashire Wildlife Trust

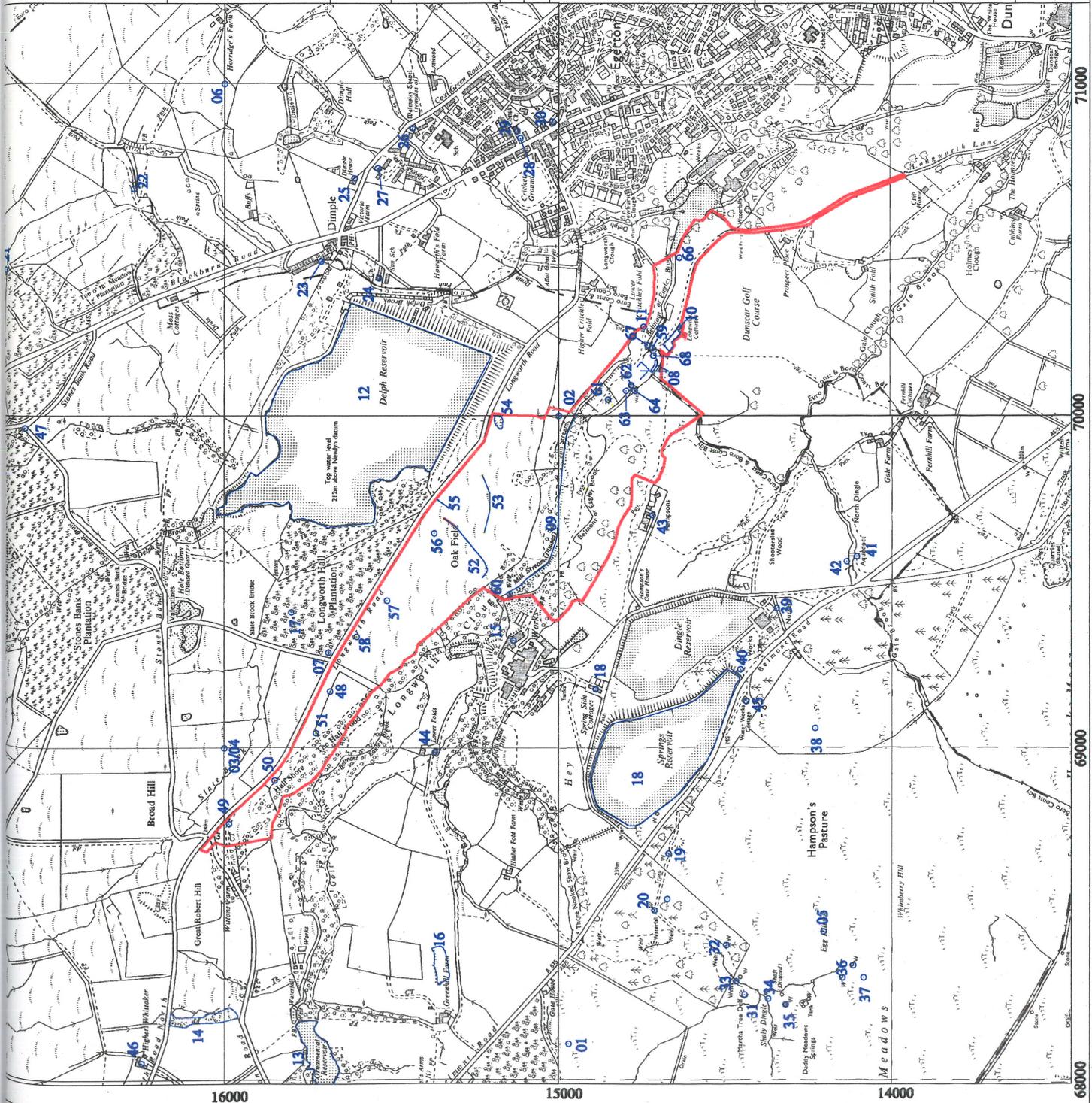


Fig 4 Longworth Clough General Site Plan

PLATES

- Plate 1 Longworth Mill viewed from the east (date 1880-1900)
(After Heyes 1997, 19)
- Plate 2 Quarry 50 viewed from the east
- Plate 3 Boundary 53 which marks the east edge of the former Oak Field
- Plate 4 Bridge 59 which served Longworth Mill

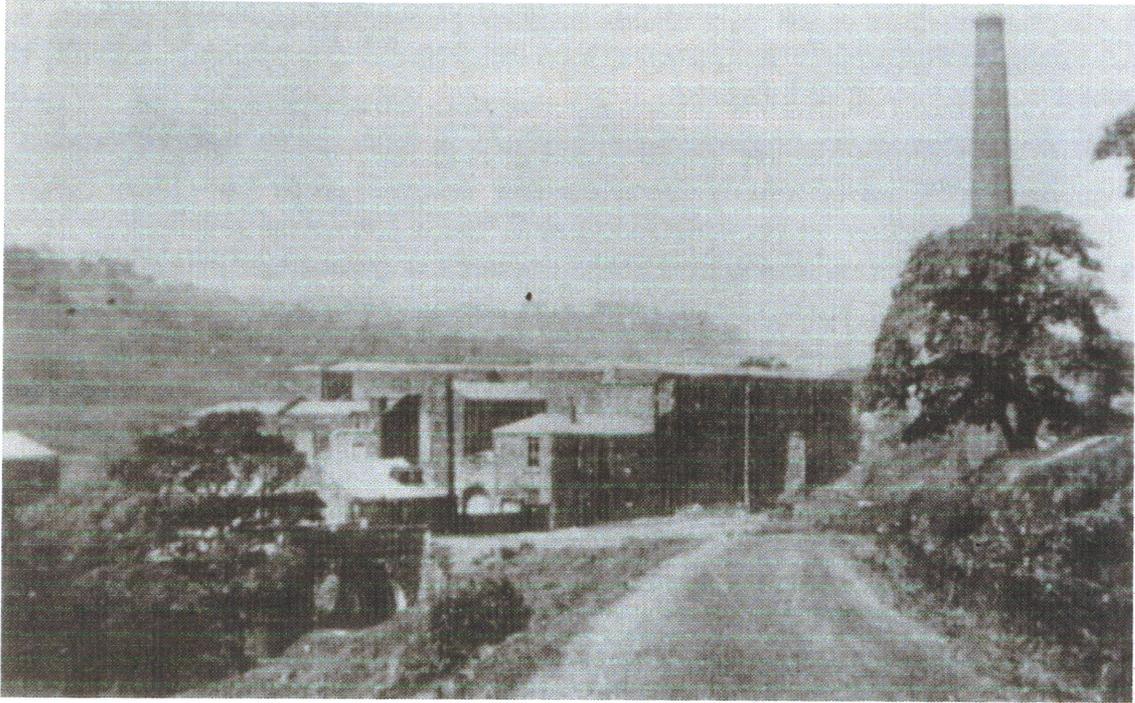


Plate 1 Longworth Mill viewed from the east (date 1880-1900) (After Heyes 1997, 19)



Plate 2 Quarry 50 viewed from the east



Plate 3 Boundary 53 which marks the east edge of the former Oak Field



Plate 4 Bridge 59 which served Longworth Mill