

ELLISCALES (LAND AT), ASKHAM ROAD, DALTON-IN-FURNESS, CUMBRIA

Archaeological Watching Brief



Client:
ME and CA Duerden
(Holdings)

NGR: 322715 475066

Planning ref. B13/2013/0354

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Non-Technical Summary

Following the submission of a planning application for the erection of a new dwelling on land at Elliscales, Askham Road, Dalton-in-Furness, Cumbria an archaeological watching brief was undertaken on 11th and 12th August 2014 during groundwork. The area is known to have been the site of Pit No 6 of the Elliscales Iron Mine, which was established in the mid-19th century and worked until it was abandoned in 1907; there is documentary evidence for earlier mining in the area but it is not known exactly where this was. Across most of the site little of archaeological interest was encountered, despite the presence of a boiler shown on an undated plan within the footprint of the new building. However, an extensive deposit of tipped dark, reddish-brown clay, containing a significant quantity of haematite, was revealed at the south-west end of the area, presumably following the slope of the underlying hillside. This was probably dumped waste material from the Elliscales Iron Mine. The lack of structural evidence for the boiler house is perhaps because it was removed at an early date or never even built in the first place, the plan perhaps only showing proposed new additions. The only finds, found in the layer of dumped mining waste, were a few fragments of colourless glass, probably dating to the late 19th to 20th century, and a plausibly 18th century clay tobacco pipe stem fragment, which might indicate that the earlier mining was carried out in the same general area.

Acknowledgements

Greenlane Archaeology would like to thank MA and CE Duerden (Holdings) for commissioning the project, in particular Carolyn and Mark Duerden, and also the staff of Marsh Plant Hire for their assistance on site. Further thanks are due to the staff of the Cumbria Archive Centre in Barrow for their help in accessing the archives.

The watching brief was carried out by Dan Elsworth, who also compiled this report along with Tom Mace, who also produced the illustrations. The finds were examined by Tom Mace, Jo Dawson edited the report, and the project was managed by Dan Elsworth.

1. Introduction

1.1 Circumstances of the Project

1.1.1 Following the submission of a planning application (Ref. B13/2013/0354) for the erection of a new dwelling on land at Elliscales, Askham Road, Dalton-in-Furness, Cumbria (NGR 322715 475066), planning permission was granted by Barrow Borough Council, with a condition (No. 9) placed requiring an archaeological watching brief to be undertaken during any groundwork. Greenlane Archaeology produced a project design for this work (*Appendix 1*) and the watching brief was carried out on 11th and 12th August 2014.

1.1.2 The site is situated approximately 370m north-east of the existing Elliscales Farm, which has been converted into new dwellings. Elliscales is recorded from at least the early 13th century, although the place-name derives includes the Norse 'scale', referring to a temporary settlement used during transhumance farming (Greenlane Archaeology 2007a, 6) and what is clearly a reference to the nearby chapel dedicated to St Helen as the earliest versions of it are 'Alynescal' and 'Alinscales' (Ekwall 1922, 206, although Ekwall suggests that the first part derives from the French name 'Alein'). The right to iron ore deposits at Elliscales was granted to Furness Abbey by Hugh de Morisby in c1271, although this was carried out at an earlier date too (*ibid*). The site was later occupied by 'Pit No. 6' of the Elliscales Iron Mines in the late 19th century (Kelly 1998, 58 and 177).

1.2 Location, Geology, and Topography

1.2.1 The site is approximately 600m north of the village of Dalton-in-Furness at approximately 70m above sea level in an area of open fields approximately 300m north-east of the junction of the A595 and the A590 (Ordnance Survey 2011; see Figure 1).

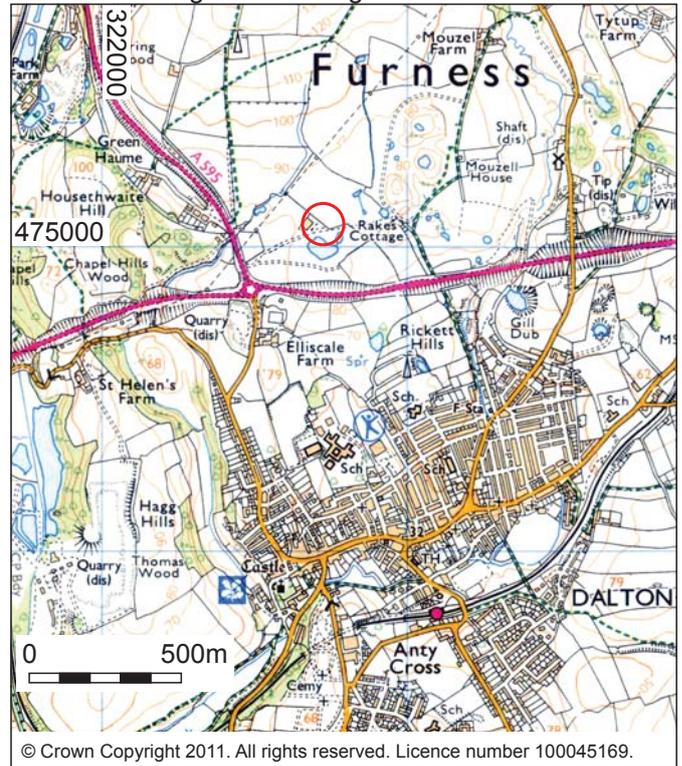
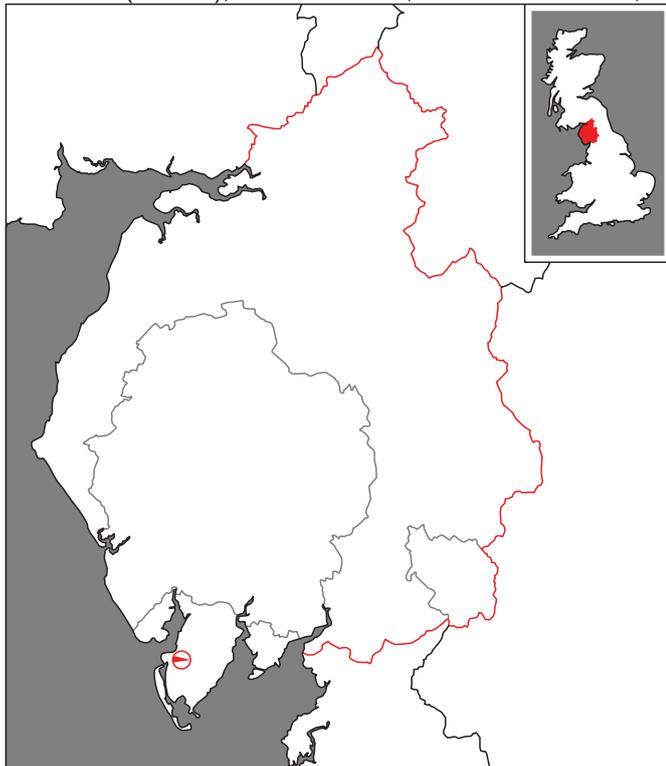
1.2.2 Dalton-in-Furness is situated within a large area of Carboniferous limestone, which dominates much of the local solid geology (Moseley 1978, plate 1). The overlying drift deposits comprise glacial material such as boulder clay, which forms undulating low fells and ridges (Countryside Commission 1998, 64-66).

1.2.3 The site is situated on the edge of an open field. There are large, modern, concrete and corrugated sheet metal farm buildings to the west of the area of the new dwelling, the proposed site of which had been cleared of topsoil and overlying deposits and covered with a layer of hardcore some time prior to the watching brief taking place (Plate 1 and Plate 2).



Plate 1 (left): Pre-excitation view of the site from the south-west

Plate 2 (right): Pre-excitation view of the site from the south-east



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Figure 1: Site location

2. Methodology

2.1 Desk-Based Assessment

2.1.1 The desk-based assessment was carried out in accordance with the guidelines of the Institute for Archaeologists (IfA 2008a). The intention of this element of the project was to provide background information to put the results of the watching brief into context. This principally comprised an examination of early maps of the site and published secondary sources. Information was gathered from the following locations:

- **Cumbria Archive Centre, Barrow-in-Furness (CAC(B))**: this was visited primarily to examine early maps of the site;
- **Greenlane Archaeology library**: additional secondary sources were used to provide information for the site background.

2.2 Watching Brief

2.2.1 The ground works involved scraping off the uppermost deposits to clear the area and drain standing water from the site and the excavation of complex footings for the new dwelling (Figure 2). The trenched area was excavated using a mid-size tracked mechanical excavator with a toothless bucket and totalled approximately 110m². All aspects of the archaeological recording were carried out according to the standards and guidance of the Institute for Archaeologists (IfA 2008b) and Greenlane Archaeology's own excavation manual (2007b). The underlying deposits and features were recorded in the following manner:

- **Written record**: descriptive records were made using Greenlane Archaeology *pro forma* record sheets;
- **Photographs**: photographs in both colour print and colour digital format were taken of all archaeological features uncovered during the groundworks, as well as general views of the site and working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology *pro forma* record sheets;
- **Drawings**: a plan of the watching brief area was produced at a scale of 1:200.

2.3 Environmental Samples

2.3.1 No environmental samples were taken as no appropriate deposits were encountered.

2.4 Finds

2.4.1 **Processing**: all of the artefacts recovered during the watching brief were washed then naturally air-dried and packaged appropriately in self-seal bags with white write-on panels.

2.4.2 **Assessment and recording**: the finds were identified and catalogued (*Appendix 3*).

2.5 Archive

2.5.1 A comprehensive archive of the project has been produced in accordance with the project design (*Appendix 1*) and current IfA and English Heritage guidelines (English Heritage 1991; Brown 2007). The archive, which comprises the drawn, written, and photographic record, will be deposited with the Cumbria Archive Centre in Barrow-in-Furness (CAC (B)). A copy of the report will be provided to the client, Greenlane Archaeology will retain a copy, a copy will also be provided for the Cumbria Historic Environment Record (HER), and a digital copy will form part of the OASIS scheme.

2.5.2 The client will ultimately be encouraged to transfer ownership of the finds to a suitable museum, which in this case is the Dock Museum in Barrow-in-Furness; however, it is unlikely that it would be willing to take anything unless it is of exceptional importance. If no suitable repository can be found the

finds may have to be discarded, and in this case as full a record as possible would be made of them beforehand.

3. Historical and Archaeological Background

3.1 Map Regression

3.1.1 **Introduction:** the earliest maps of the area are typically lacking in detail and so only maps that provide more detail about the development of the site are included. In each case the footprint of the new building is marked in red.

3.1.2 **Tithe Map, 1842:** field boundaries shown on the tithe map (CAC(B) BPR/1/I3/2 1842) match well with the earliest Ordnance Survey mapping (the numbers from the tithe apportionment have been overlaid on the Ordnance Survey mapping of 1850, Plate 3). The existing barn straddles Plots C281 and C287, both of which were owned by George Banks Ashburner (who also owned a number of neighbouring fields) and they are both described as 'arable' (CAC(B) BPR/1/I3/1/1 1842). The new building falls entirely within Plot C287. The apportionment entries for these are recorded in Table 2.

Owner and occupier	Pt No.	Field name	Description
Geo Banks Ashburner	C281	Great Colton Close	'arable'
	C287	New Colton Close	'arable'

Table 1: Extract from the Dalton-in-Furness tithe apportionment (CAC(B) BPR/1/I3/1/1 1842)

3.1.3 **Ordnance Survey, 1850:** there are two versions of the 1850 Ordnance Survey map, one apparently showing later additions (Plate 3 and Plate 4). The two versions are identical apart from the fact that one version only shows the fields (corresponding to C281 and C287 on the tithe map, see Section 3.1.2) to the west of a strip of land called 'Dalton Rakes' and the beck, which flows between, whereas the other version shows the tramway from the north-east, looping round to the north and east of the site, leading to a shaft in the field to the north.

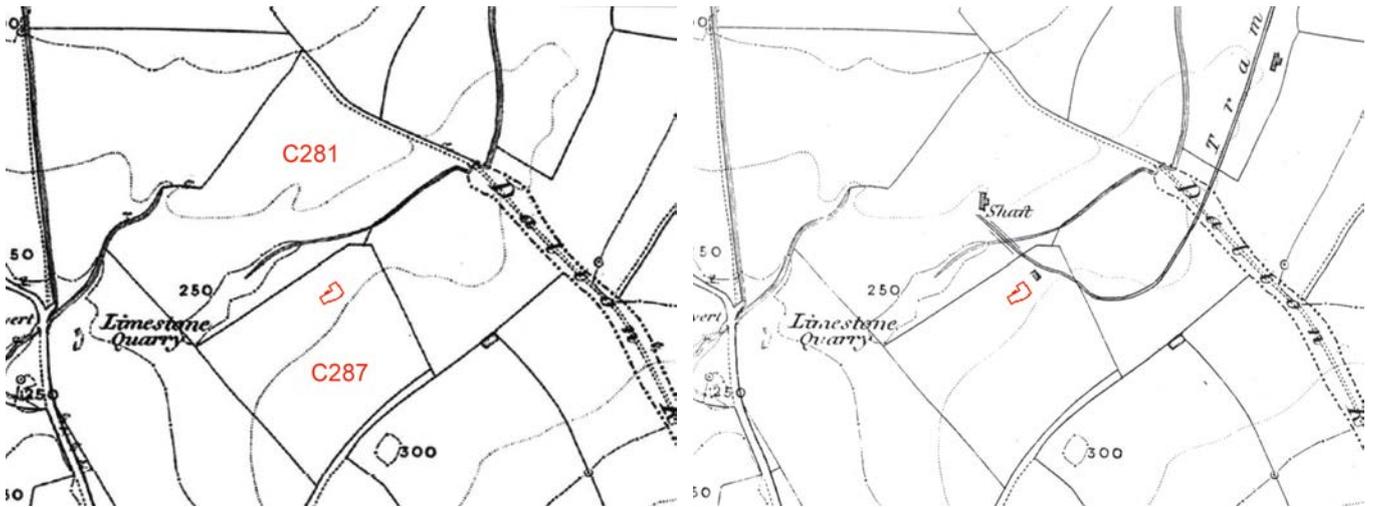


Plate 3 (left): Extract from the Ordnance Survey map of 1850, showing the numbers used on the earlier Tithe Map

Plate 4 (right): Extract from an alternative edition of the Ordnance Survey map of 1850

3.1.4 **Plan of boreholes and ore deposits, Dalton and Lindal** (CAC(B) BD/BUC/66/23 1903): this map shows the location of ore deposits and boreholes marked on a version of what is evidently the 1891 edition of the Ordnance Survey mapping (Plate 5). The map shows how the Elliscales Iron Mines had developed since the previous map. The tramway has been rerouted and passes by the south side of the site, various old shafts are marked, and the engine house and smithy are nearby. The site is located very near to Pit No. 6 and associated buildings.

3.1.5 **Ordnance Survey, 1891:** this shows essentially the same information as the previous source (Plate 6; cf. Plate 5).

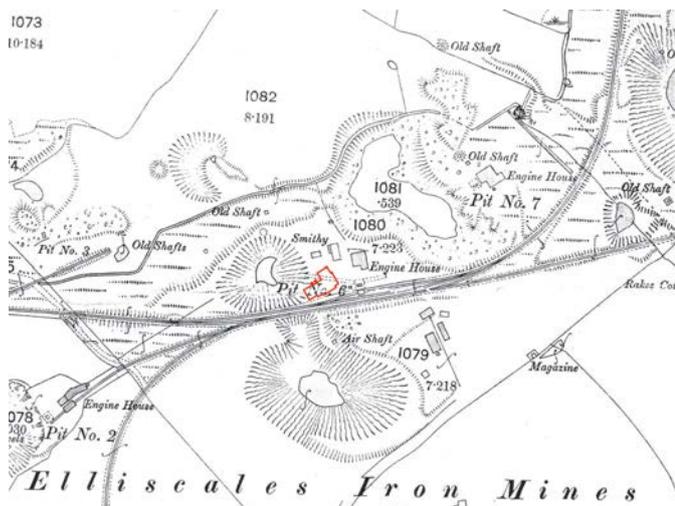


Plate 5 (left): Extract from the Ordnance Survey map (CAC(B) BD/BUC/66/23 1903)

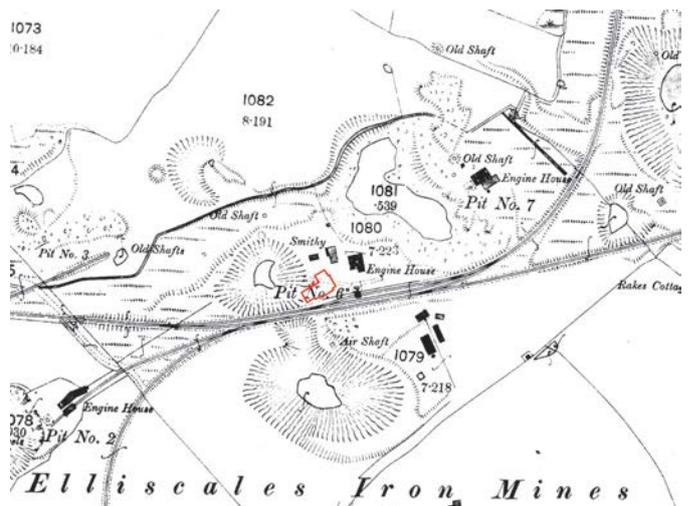


Plate 6 (right): Extract from the Ordnance Survey map of 1891

3.1.6 **Late 19th century plans of Elliscales Mines** (CAC(B) BDY/100 nd): locating the new building exactly is slightly complicated; overlaying modern maps on late 19th century maps of Elliscales Mines shows the site is near buildings associated with Pit No. 6 (Plate 7 and Plate 8), with the new building overlying the footprint of a building labelled 'boiler'. The tramway passes to the south and to the north-east is the engine house or engine house and joiners shop. Nearby buildings to the north include the changing house, smithy, office, and stores. However, it is worth noting that a number of the buildings shown on this plan are not shown on any others, so it is possible that they were demolished or simply never built and that this is a plan of proposed new additions.



Plate 7 (left): Late 19th century plan of Elliscales Mines (CAC(B) BDY/100 nd)

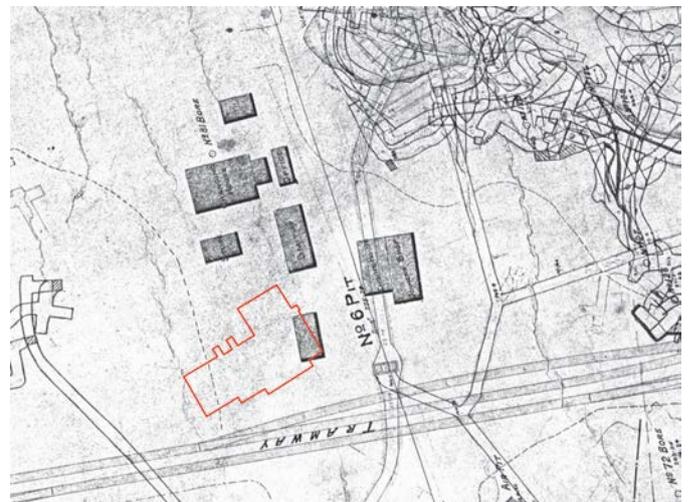


Plate 8 (right): Late 19th century plan of Elliscales Mines (CAC(B) BDY/100 nd)

3.1.7 **Ordnance Survey, 1913**: the boiler house is no longer shown on the 1913 edition of the Ordnance Survey mapping and the arrangement of nearby buildings has changed, none of which are labelled (Plate 10). A mound (by convention shown as formed entirely of stone) is shown immediately to the east of the site. The c1910 land valuation made by the commissioners of the Inland Revenue utilises the 1913 edition of the Ordnance Survey mapping for a base and shows the boundaries and assessment numbers that were allocated (Plate 9). Unfortunately, it is unclear which number, if any, corresponds to the area occupied by the site. It probably counted as part of 'Pt 2827', which is marked to the south and owned by the Manchester and Liverpool District Banking Co (CAC(B) BT/IR/1/18 1910), but some of the information is carried over from 'Pt 2826' (which is listed above the entry for 2827 in the valuations

this period. Similar sites are also recorded in the local area, including an enclosure on Hoad hill near Ulverston (Elsworth 2005), and another at Skelmore Heads near Urswick (Powell 1963), and there are a number of other examples in the Morecambe Bay area (Elsworth forthcoming).

3.2.3 Sites that can be specifically dated to the Iron Age (c600 BC – 1st century AD) are very rare; the enclosures at Ulverston and Urswick may represent hillforts, a typical site of this period, but they have not been dated. Burials belong to the Iron Age are extremely rare, a radiocarbon dated example at Levens being perhaps the only certain example (OA North 2004). There is, in general, likely to have been a considerable overlap between the end of the Iron Age and the beginning of the Romano-British period; it is evident that in this part of the country, initially at least, the Roman invasion had a minimal impact on the native population in rural areas (Philpott 2006, 73-74).

3.2.4 **Romano-British to Early Medieval Period: (1st century AD – 11th century AD):** late 18th and 19th century antiquarians considered a Roman military presence in the Furness area beyond question, but by the 20th century there was a complete reversal of opinion (summarised in Elsworth 2007, 31-37). Re-examination of the evidence however suggests a strong Roman influence or “background” presence in the peninsula during the Roman period, which doubtless would have been attractive for its rich iron reserves (Shotter 1995, 74; Elsworth 2007, 37, 41-43). There is little record of the area in the early medieval period, although the place-name Elliscales probably has early medieval origins; Elliscales combines the name ‘Alina’ (an early version of Helen) and ‘scale’, a Norse word for a temporary settlement (Fell 1908, 16n). ‘Helen’ undoubtedly comes from St Helens chapel and well (*ibid*), which are a short distance to the west of Elliscales, and appears to suggest that it existed before the Vikings arrived in the area. St Helen was an important early saint; she was the mother of the Emperor Constantine (Post 1989, 39), and a patroness of roads and wells (Fell 1908, 16n).

3.2.5 **Medieval Period (11th century AD – 16th century AD):** Elliscales is an extremely ancient site, and documentary records show that activity was taking place from at least the 13th century, specifically the mining of iron ore. A reference from 1211-1222 describes mines worked by Furness Abbey at Elliscales (NA DL 25/394 1211-1222), which were evidently granted by Thomas le Fleming and others (Fell 1908, 15-16): these are some of the earliest references to mining in the Furness Peninsula. In c1271 Hugh de Morisby confirmed the grant of access to the iron ore on his land at Alinscales to Furness Abbey (*op cit*, 16). This grant also refers to the existence of ‘*farm dwellings and edifices*’ at Elliscales belonging to Hugh de Morisby, within the grounds of which the monks were allowed to search for ore and construct buildings to house both the miners and their animals (*op cit*, 17). De Morisby’s buildings were protected by a subsequent grant of 3rd April 1271 with the proviso that should they be damaged by the miners ‘*the said edifices shall be repaired according to their former state at the cost of the said Abbot and Convent*’, but at the same time the miners could take down these buildings to look for ore at their own cost (*op cit*, 18).

3.2.6 In 1273 de Morisby granted the rights to iron ore for one hearth, apparently one he had previously used, to Robert de Layburne (*op cit*, 19; Wiper 1889, 140). In 1282 the mines at Elliscales were granted to Furness Abbey once again (Beck 1844, 226), while in 1340 the manor of Elliscales was transferred to Robert de Thweng, parson of Warton Church, Adam de Bardsea, vicar of Millom, and John English (Wiper 1889, 141). In 1342, however, a messuage and six acres of land at Elliscales were granted by Robert de Layburne to John de Moriceby (*ibid*), in 1344 goods at Elliscales were granted to Robert, son of Robert de Laiburne, and in 1358 Robert de Layburne sold the manor of Elliscales to William Sharp (*op cit*, 141-142), so the de Layburnes evidently continued to hold the manor until this point. William Sharp eventually conveyed the manor to Furness Abbey in 1384 (Farrer and Brownbill 1914, 308n), and it is ultimately named in a list of rents paid to the Abbey in 1525 (*op cit*, 299n) and after the Dissolution (Beck 1844, 328).

3.2.7 The work of early local historians has somewhat confused the understanding of the recorded medieval history of Elliscales, by combining it with a settlement called Killerwick. Killerwick is probably the same as Chiluestrewic, which is recorded in the Domesday Book (Farrer and Brownbill 1914, 307). Killerwick is subsequently listed as a grange belonging to Furness Abbey in 1190 (*op cit*, 307n), and again in 1292 (Beck 1844, 231). In 1336 the abbey was granted the right of free warren (hunting) in several places, amongst which was Killerwick (Farrer and Brownbill 1914, 287) but it does not appear to

be mentioned again until 1509, when it is listed (and apparently described as attached to Mousell) among tenants of the abbey required to provide a horse and man to protect its lands against attacks from Scotland (Beck 1844, 305), and this was repeated in an agreement of perhaps 1520 (Farrer and Brownbill 1914, 299). This is apparently the last reference to Killerwick, and the assumption has been that it was merged with or was the same place as Elliscales as this replaced it in the rental list of 1525 (*op cit*, 299n). However, it is apparent that the two settlements existed separately at the same time but have been joined together due to a misinterpretation of a single document – in this case the tenants list of 1525. The connection with Mousell might suggest that Killerwick was close to the present Mouzell Farm, which is less than 1km to the north-east of Elliscales, adjacent to Tytup Hall, and could explain how earlier antiquarians interpreted the two settlements as being merged by the 16th century.

3.2.8 Post-medieval Period (16th century AD – present): Elliscales' importance in the post-medieval period stemmed from its mineral reserves. William Rawlinson and Co of Backbarrow operated a mine at 'Ennescales' [sic] between 1721 and 1728 and John Beamon, of Dalton, resumed mining operations at Elliscales from 1757 (Kelly 1998, 58). George Banks Ashburner began operations there, perhaps around the mid-19th century (at which time he was the owner of the estate), and executors of his continued mining at Elliscales following his death in 1880 until the Elliscales Mine was abandoned in 1907 (*ibid*). Limestone quarrying too became a major element of the landscape by the 19th century, as shown by the early maps (see above).

3.3 Conclusion

3.3.1 Iron ore was already being exploited at Elliscales by at least the 13th century but the area around the site was not significantly developed until the mid-to-late 19th century, when the site formed part of what became Elliscales Iron Mine. The date when the Elliscales Mine was opened is not known, perhaps around the mid-19th century when the estate was owned by George Banks Ashburner. The mine was abandoned in 1907 and the new building overlies the site of the former boiler associated with Pit No. 6.

4. Results

4.1 Watching Brief

4.1.1 The uppermost 0.1m of the area was a soft and wet, mixed, dark reddish-brown, sandy-clay layer (**100**) with occasional brick fragments and haematite and 10% rounded gravel inclusions (Plate 11 and Plate 12). This was cleared from across the site to remove surface water before excavation, and below it was a firm, mottled clay (**103**), varying from yellowish on the south side to more brown on the north, with 10% rounded gravel and 10% rounded cobble-sized volcanics. There was a roughly 1m square patch of compacted clinker or similar on the east side (**101**) (see Figure 2; Plate 13).



Plate 11 (left): Surface of the site cleared, viewed from the north-west

Plate 12 (right): Surface of the site cleared, viewed from the south



Plate 13: Patch of clinker (**101**)

4.1.2 Excavation of the footings revealed a tipped deposit of dark, reddish-brown clay (**102**) at the south-west end, with large angular cobbles and haematite tipping down to the south-west (Plate 14 to Plate 25). It was up to 1m thick and stonier at the west end. It contained at least one brick fragment (which was not retained), but limited other pipe dating evidence apart from a few fragments of colourless glass and a single piece of clay tobacco pipe (see *Appendix 3*). The underlying deposit (**103**) became more bluish-grey and much harder to the north-east (Plate 18).



Plate 14 (left): Deposits at south-west end (102)

Plate 15 (right): Tip line in trench edge, viewed from the south-east



Plate 16 (left): Tip line in trench edge, viewed from the north-west

Plate 17 (right): South-west end of the area viewed from the north-east



Plate 18 (left): Bluish-grey variation in the underlying deposit (103)



Plate 19 (right): North-west end section, viewed from the south-east



Plate 20 (left): Working shot, north-east end, viewed from the north-east



Plate 21 (right): Working shot, north-east end, viewed from the north



Plate 22 (left): Deposit 102 in section



Plate 23 (right): East side of site



Plate 24: General view of the site from the north-east



Plate 25: Panoramic view of the site from the north

4.2 Finds

4.2.1 **Introduction:** nine artefacts were recovered during the watching brief, comprising clay tobacco pipe stem and glass fragments. A complete catalogue of the finds is presented in *Appendix 3*.

4.2.2 **Glass:** all eight of the colourless glass fragments were recovered from context **102**, including probable window pane glass and bottle fragments, which are thought likely to date from the late 19th to 20th century.

4.2.3 **Clay tobacco pipe:** a small, plain, clay tobacco pipe stem fragment was recovered from context **102**. There are too few fragments to reliably make use of stem-bore data for dating the context from which this piece derived (Davey 1975); however, consideration of the borehole diameter suggests an 18th century date for the pipe (after Davey 2013).

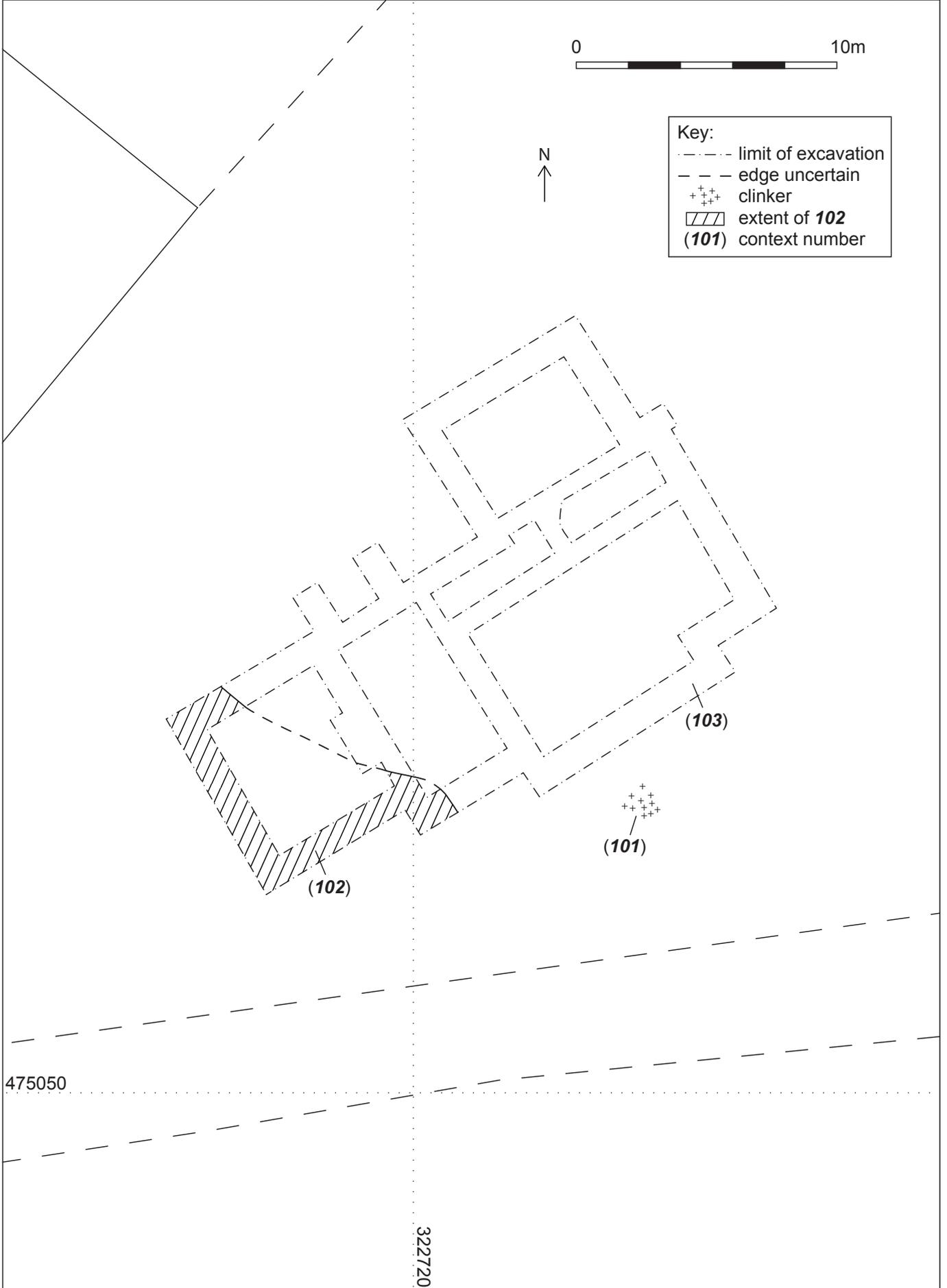


Figure 2: Trench plan

5. Discussion and Conclusion

5.1 Discussion

5.1.1 The early maps suggest that the small patch of clinker (**101**) exposed to the east of the new dwelling perhaps relates to material put down for a tramway serving the mines, which were evidently constructed in the late 19th century. Similarly the large dumped deposit of material on the south-west side (**102**) is presumably mining waste, and corresponds with the outer edge of a large hollow feature shown on the late 19th century mapping (Plates 5-6 and 9-10) and would explain the evident sloping ground seen in section (Plates 15-16 and 19). The limited dating evidence from this deposit certainly fits with the known period of activity of the mines, although the 18th century date of the clay pipe perhaps suggests that this is residual or indicates that the 18th century mining was indeed carried out in this area, although it is difficult to draw any real conclusions from a single find. The lack of evidence for the boiler, which is clearly marked on the undated plans (Plates 7-8) and should have been present on the north-east side of the site, is remarkable. However, this building and a number of others shown on the same plans were either never built or very quickly removed as they are not shown on any of the other maps. It would seem inconceivable that they were built after the plan of 1913 was drawn up as the mine was abandoned in 1907.

5.2 Conclusion

5.2.1 The watching brief has provided evidence of the extensive tipping of haematite-rich material on the site, clearly relating to when it formed part of Elliscales Iron Mine. No structural evidence remained of the former boiler, which was supposedly positioned approximately where the new dwelling is to be built, but this was presumably either removed at an early date or never built.

6. Bibliography

6.1 Primary and Cartographic Sources

* Original not examined

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CAC(B) BDY/100, nd *Elliscales Mines; Dalton, plans of mines, late 19th century*

CAC(B) BPR/1/I3/1/1, 1842a *Apportionment of the Rent-charges in lieu of tithes in the Parish of Dalton-in-Furness*

CAC(B) BPR/1/I3/2, 1842b *Plan of Ireleth in the division of above town and parish of Dalton, by John Robinson, surveyor*

CAC(B) BT/IR1/18, 1910 *The Commissioners of Inland Revenue Duties on Land Values, Record of Valuations Made by the Commissioners of Inland Revenue, in Accordance with Part 1 of the Finance (1909/1910) Act, 1910. County of Lancaster, Division of Lonsdale North, A Valuation Book for the Parish or Place of Dalton*

*NA/DL/25/394, 1211-1222 *R(ober) t, Abbot of Furness to Thomas le Fleming: Grant that no mines of iron shall be Opened in his Courtyard, nor Between his House and the House of William de Boyvill, and That he will Pay a Reasonable Price for any Mining in his Land of Elliscales (Aylinescal)*

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Ordnance Survey, 1891 *Lancashire Sheet 16.9*, 1:2,500, surveyed in 1889

Ordnance Survey, 1913 *Lancashire Sheet 16.9*, 1:2,500, re-surveyed in 1889, revised in 1910, relevelled in 1909

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Appendix 1: Project Design

ELLISCALES (LAND AT), ASKHAM ROAD, DALTON-IN-FURNESS, CUMBRIA

Archaeological Watching Brief Project Design



Client: ME and CA Duerden (Holdings)

Planning ref. B13/2013/0354

April 2014

1. Introduction

1.1 Project Background

1.1.1 Following the submission of a of planning application (Ref. B13/2013/0354) for the erection of a new dwelling on land at Elliscales, Askham Road, Dalton-in-Furness, Cumbria, (NGR 322715 475066) planning permission was granted by Barrow Borough Council, with a condition (No. 9) placed requiring an archaeological watching brief to be undertaken during any groundwork. This project design has been produced in response to that condition in order to outline the methodology that would be used to carry out the archaeological work.

1.1.2 The site is situated approximately 370m north–east of the existing Elliscales Farm, which is now converted into new dwellings. Elliscales is recorded from at least the early 13th century, although the place-name derives from a Norse word for a temporary settlement used during transhumance farming (Greenlane Archaeology 2007a, 6) and the nearby St Helens chapel; the earliest version is ‘Alinscales’. The right to iron ore deposits at Elliscales was granted to Furness Abbey by Hugh de Morisby in c1271, although this was carried out at an earlier date too (*ibid*). The site was later occupied by ‘Pit No. 6’ in the late 19th century (Carolyn Duerden pers comm.).

1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have a combined total of over 18 years continuous professional experience working in commercial archaeology, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Institute for Archaeologists’ (IfA) Code of Conduct. The watching brief will be carried out according to the Standards and Guidance of the Institute for Archaeologists (IfA 2008).

1.3 Project Staffing

1.3.1 The project will be managed by **Dan Elsworth (MA (Hons), AIfA)**. Daniel graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has recently managed a wide variety of projects including building recordings of various sizes, watching briefs, and excavations in the region, including an excavation and evaluation in the centre of medieval Kendal (Greenlane Archaeology 2009a; 2010a), evaluation in the Roman *vicus* at Stanwix (Greenlane Archaeology 2010b), evaluation of a Scheduled post-medieval gunpowder works (Greenlane Archaeology 2010c), and watching briefs in Preston (Greenlane Archaeology 2009b; 2010d).

1.3.2 The watching brief will be carried out by **Tom Mace (BA (Hons), MA, MIfA)** or another suitably qualified member of staff, depending on scheduling constraints. Tom has extensive experience of working on a variety of archaeological projects, especially watching briefs, but also excavations, evaluations, and building recordings, as well as report writing and illustration production. He joined Greenlane Archaeology in 2008 having worked for several previous companies including Archaeological Solutions and Oxford Archaeology North.

1.3.3 All artefacts will be processed by Greenlane Archaeology, and it is envisaged that they will initially be assessed by Jo Dawson, who will fully assess any of post-medieval date. Medieval pottery will be assessed by Tom Mace, and other finds will be assessed by specialist sub-contractors as appropriate. Barrow Borough Council will be notified of any other specialists, other than those named, whom Greenlane Archaeology wishes to engage.

1.3.4 Environmental samples and faunal remains, should significant deposits of these be recovered, will be processed by Greenlane Archaeology. It is envisaged that charred plant remains will be assessed by staff at Headland Archaeology Ltd, and faunal remains by Jane Richardson at ASWYAS. Should any human remains be recovered for assessment it is envisaged that these will be examined by Malin Horst at York Osteoarchaeology, following appropriate advice on initial processing.

2. Objectives

2.1 Rapid Desk-Based Assessment

2.1.1 A rapid desk-based assessment of the site will be carried out as part of the project. This is intended to place the results of the watching brief in their historical and archaeological context.

2.2 Watching Brief

2.2.1 To identify any surviving archaeological remains and to investigate and record any revealed archaeological remains or deposits.

2.3 Report

2.3.1 To produce a report detailing the results of the watching brief, which will outline the nature, form, extent, and date of any archaeological remains discovered.

2.4 Archive

2.4.1 Produce a full archive of the results of the watching brief.

3. Methodology

3.1 Rapid Desk-Based Assessment

3.1.1 Information about the site, intended to place the results of the watching brief in context, will be collected primarily from secondary sources such as published histories of the area, articles, and other previous pieces of archaeological work. In addition, primary sources such as early maps of the site will also be consulted; these are likely to be held at the Cumbria Archive Centre in Barrow-in-Furness (CAC(B)). Both primary and secondary sources held by Greenlane Archaeology will also be consulted.

3.2 Watching Brief

3.2.1 The groundworks are to be monitored, with one archaeologist on site. If there are multiple machines operating on site it may be considered necessary to have more than one archaeologist on site.

3.2.2 The watching brief methodology will be based on Greenlane Archaeology's own excavation manual (Greenlane Archaeology 2007b), and can be summarised as follows:

- Foundation trenches and/or trenches for services and any areas of ground reduction will be excavated under supervision by staff from Greenlane Archaeology;
- All deposits of archaeological significance will be examined by hand if possible in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. If possible, negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include detailed plans and sections at a scale of 1:20 or 1:10 where practicable or sketches where it is not, and photographs in both colour print and colour digital format;
- All deposits, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;
- All finds will be recovered during the watching brief for further assessment as far as is practically and safely possible. Should significant amounts of finds be encountered an appropriate sampling strategy will be devised;
- All faunal remains will also be recovered by hand during the watching brief as far as is practically and safely possible, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have, for example, preserved environmental remains, industrial residues, and/or material suitable for scientific dating will be sampled. Bulk samples of between 20 and 60 litres in volume (or 100% of smaller features) where possible, depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (e.g. gullies, pits and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist sub-contractors (see *Section 1.3.4* above), who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;

- Any articulated human remains discovered during the watching brief will be left *in situ*, and, if possible, covered. The client will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will require a Home Office licence, under Section 25 of the Burial Act of 1857, which will be applied for should the need arise;
- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and securely stored off-site, or covered and protected on site if immediate removal is not possible;
- Should any significant archaeological deposits be encountered during the watching brief these will immediately be brought to the attention of Barrow Borough Council and ground works in that area halted so that the need for further work can be determined. Any additional work will be agreed with Barrow Borough Council, and subject to a variation to this project design.

3.3 Report

3.3.1 The results of the watching brief will be compiled into a report, which will contain the following sections as necessary:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom, and the results of the rapid desk-based assessment;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the watching brief including descriptions of any deposits identified, their extent, form and potential date, and an assessment of any finds or environmental remains recovered during the watching brief;
- Discussion of the results;
- Illustrations at appropriate scales including:
 - a plan showing the location of the ground works;
 - plans and sections of the watching brief ground works, as appropriate, showing any features of archaeological interest;
 - photographs of the watching brief, including both detailed and general shots of features of archaeological interest and the trenches;
 - photographs of individual artefacts as appropriate.

3.4 Archive

3.4.1 The archive, comprising the drawn, written, and photographic record of the watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the Cumbria Record Office in Barrow-in-Furness. The archive will be compiled according to the standards and guidelines of the IFA (Brown 2007), and in accordance with English Heritage guidelines (English Heritage 1991). In addition details of the project will be submitted to the Online Access to the Index of archaeological investigations (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.4.2 A copy of the report will be supplied to the client, a digital copy will be supplied to the client's agent, and within six months of the completion of fieldwork a digital copy will be provided for the Cumbria Historic Environment Record (HER). In addition, Greenlane Archaeology Ltd will retain one copy, and a digital copy will be deposited with the OASIS scheme as required.

3.4.3 The client will be encouraged to transfer ownership of the finds to a suitable museum, most likely the Dock Museum in Barrow-in-Furness. If no suitable repository can be found the finds may have to be discarded, and in this case as full a record as possible and necessary would be made of them beforehand.

4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project from **14th April 2014**, or at another date convenient to the client. It is envisaged that the project will involve tasks in the following order:

- **Task 1:** rapid desk-based assessment;
- **Task 2:** watching brief;
- **Task 2:** post-excavation work on archaeological watching brief, including processing of finds and production of draft report and illustrations;
- **Task 3:** feedback, editing and production of final report, completion of archive.

5. Other matters

5.1 Access

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s).

5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£1,000,000**. Details of this can be supplied if requested.

5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally- and ethically-sound working practices. Its office is supplied with 100% renewable energy by Good Energy, uses ethical telephone and internet services supplied by the Phone Co-op, is even decorated with organic paint, and has floors finished with recycled vinyl tiles. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

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Appendix 2: Summary Context List

Context	Type	Description	Interpretation
100	Deposit	Soft/wet, mixed, dark reddish-brown, sandy-clay layer, 0.1m thick, with occasional brick fragments and haematite and 10% rounded gravel inclusions	Disturbed surface layer mixed with dumped hardcore used to make yard
101	Deposit	Roughly 1m square patch of compacted clinker or similar on the east side	Bedding for railway?
102	Deposit	Dark, reddish-brown clay, with large angular cobbles and haematite tipping down to the south-west; up to 1m thick and stonier at the west end	Tipped mining waste
103	Deposit	Firm, mottled clay, varying from yellowish on the south side to more brown on the north, with 10% rounded gravel and 10% rounded cobble-sized volcanics; it became more bluish-grey and much harder to the north-east	Natural geology

Appendix 3: Summary Finds List

Context	Type	Qty	Description	Date range
102	Glass	8	Colourless glass fragments, including probable window pane and glass bottle(?) fragments	Late 19 th – 20 th century?
102	Clay tobacco pipe	1	Small, plain, stem fragment; 17mm long, maximum diameter 6mm; 6/64" borehole diameter	18 th century