Archaeological Evaluation at Howick Quarry, Northumberland



Restored Little Mill area at Howick Quarry

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Compiled By:

Claire Carey and Daniel Amat Archaeological Research Services Ltd Baltic Business Centre Saltmeadows Road Gateshead Tyne and Wear NE8 3DA

Tel: 0191 447 5111 Fax: 0191 447 7687 admin@archaeologicalresearchservices.com www.archaeologicalresearchservices.com

> Checked By: Dr. Clive Waddington

An Archaeological Investigation at Howick Quarry, Northumberland

ARS Ltd Report 2007/57

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Archaeological Research Services Ltd

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EXECUTIVE SUMMARY

In June 2007 Archaeological Research Services Ltd were commissioned by Tarmac Northern Ltd to undertake an archaeological investigation at Howick Quarry, Northumberland. The work was carried out prior to the western extension of Howick Quarry. The site included areas of pasture, arable and woodland which required different methods of mitigation. The area to the south-west of the study area comprised pasture fields and the area to the north comprised arable crop. The areas to the east comprised woodland.

A walkover survey was undertaken across the areas of woodland in order to identify features of archaeological interest which would assist in deciding where to locate targeted test pits. No features were identified and twenty targeted test pits were placed in areas that may have been attractive for past use on the basis of it being level ground for example. These included natural clearings, where bedrock close to the surface prevented tree growth, near to water sources and areas of flat ground. No archaeology was recovered from the test pits and it is likely that forestation of the areas and the resulting tree roots may have destroyed any surviving remains.

Thirteen evaluation trenches measuring $30m \times 2m$ were located in the pasture and arable areas of the site. Three trenches were located in the Northwestern Plantation Extension and the remaining ten were located in the Western Extension (Little Mill Link). A small oval feature was recorded in Trench Eight but was dated as modern due to a small amount of modern brick found within the fill. There were no other archaeological features identified in the remaining trenches.

1. INTRODUCTION

1.1. Location and scope of work

1.1.1. In June 2007 Archaeological Research Services Ltd were commissioned by Tarmac Northern Ltd to undertake an archaeological investigation on land at Howick Quarry, Northumberland (Fig. 1). The work was carried out prior to an extension of the Quarry on land to the west. There are two areas within the proposed extension, the North-western Plantation Extension and the Western Extension (Little Mill Link) (Fig. 2).



Fig. 1 Site location. Ordnance Survey data copyright OS, reproduced by permission, Licence no. 100045420.

1.1.2. The site is centred at NU 2353917375 approximately 1.5 miles in land from the east coast on land around the 70m contour. The land slopes down gently to the coast.

A watching brief was undertaken in the north area of the proposed extension by Archaeological Research Services Ltd in 2006 but no archaeological remains were encountered. The area covered during the watching brief is illustrated in Figure 2.



1.2. Geology and soils

1.2.1. The site is located on a ridge of Whinsill (dolerite) overlain by thinly bedded Carboniferous Limestone, which outcrops at the surface. The limestone was the focus for Post-Medieval quarrying at this location and may have provided either limited, poor-quality building stone, or lime for mortar. The drift geology of the area consists of glacial till (British Geological Survey 2007).

2. METHODOLOGY

2.1. Walkover survey

- 2.1.1. A walkover survey was undertaken in the wooded areas of the proposed extension in order to identify, locate and record any archaeological features. The survey covered The Northwestern Plantation Extension and the Western Extension, as shown in Figure 2.
- 2.1.2. The area covers approximately nine hectares and comprises plantations of coniferous and deciduous trees, with some areas being more open and some densely covered. The forest edges provided dense cover but areas where outcropping bedrock occurred were less dense and open in places.
- 2.1.3. Transects were walked at intervals of 10m wherever the terrain allowed. Areas of interest were recorded with a 12 figure grid reference, supplied by a hand-held GPS, as well as being photographed and a brief summary of the nature and importance of the feature completed.

2.2. Testpitting

- 2.2.1. Test pits were located in the woodland area of the site as trenching was not possible due to dense tree cover (Fig. 3). The aim of the test pits was to establish the presence or absence of archaeological remains, their type, depth and condition of preservation.
- 2.2.2. Twenty test pits, each measuring 1m by 1m, were targeted over areas of interest which had been identified during the walkover survey. There were no archaeological features detected during the walkover survey, therefore the test pits were located in areas that may have attracted past human activity, for example natural clearings where bedrock close to the surface prevented tree growth, flat areas of land and close to water sources.
- 2.2.3. The test pits were excavated by hand and all contents were sieved through a 10mm mesh to maximise finds recovery.

2.3. Evaluation trenches

2.3.1. Thirteen trenches, each measuring 30m long by 2m wide, were placed within the study area in order to establish the presence or absence of archaeological remains, their type, depth and condition of preservation. Three trenches (Eleven, Twelve and Thirteen) were located in the Northwestern Plantation Extension

and the remaining ten were located in the Western Extension (Little Mill Link) (Fig. 4).

- 2.4.2. The trenches were excavated by machine using a wide, toothless ditching bucket, under continuous archaeological supervision. The topsoil and unstratified modern material was removed in level spits down to the first significant archaeological horizon. The trenches were then cleaned using appropriate hand tools in order to expose surviving archaeological features and deposits.
- 2.4.3. Any archaeological features and deposits were given a unique context number (a Harris Matrix can be found in Appendix I) and recorded using pro-forma record sheets and archaeological features were half sectioned and drawn at a scale of 1:10 and 1:20. All contexts were photographed in colour transparency and black and white print and included a clearly visible, graduated metric scale. A photographic register can be found in Appendix II.





3. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

3.1. A full desk-based assessment including an historic map regression was undertaken prior to the evaluation trenching and test pitting to inform on their locations. A full historical background can be found in Appendix I.

4. WALKOVER SURVEY RESULTS

4.1. A walkover survey was undertaken in order to locate and record any visible archaeology within the woodland areas of the proposed development. This was carried out in order to determine the areas of maximum potential for archaeological remains which would assist in deciding the location of test pits. Two areas were investigated during the walkover survey, the Western Extension (Little Mill Link) and the Northwestern Plantation Extension, but no archaeological remains were encountered in the proposed extension.

4.2. Western Extension (Little Mill Link)

- 4.2.1. The Western Extension (Little Mill Link) was densely covered with woodland and vegetation and no archaeological features were encountered during the walkover survey.
- 4.2.2. Although no remains were encountered, there were three areas which may have attracted human activity due to the nature of the locations. Two areas of bedrock (Figures 5, 6 and 7) which, appeared as outcrops, created natural clearings in the woodland and these areas would have provided an attractive location for past human activity in a densely wooded landscape, giving potential for archaeology to occur in these areas including potential for prehistoric rock art.

4.3. Northwestern Plantation Extension

4.3.1. The Northwestern Plantation Extension area comprised dense woodland with a thick covering of vegetation on the ground. No archaeological features were encountered but the flat nature of the topography may have attracted human activity in the past.



Fig. 5 Whinstone outcrop in north-east area of the Western Extension (Little Mill Link).



Fig. 6 Whinstone outcrop in the south-east area of the Western Extension (Little Mill Link).



Fig. 7 Plateau area of the south-east Whinstone outcrop.

4.4. Discussion

4.5.1. There were no archaeological features encountered during the walkover survey but a number of areas were identified as potentially attractive for past human activity. They were the natural clearings created by natural Whinstone outcrops as well as a water source and flat areas within the site. These areas are where the test pits were placed which are discussed below in section 5.

5. TESTPITTING RESULTS

5.1. Twenty test pits were placed across the woodland areas of the site but no archaeology or artefacts were recovered. Test pits 5 to 10 were located on the summits of whinstone outcrops, Test Pits 1, 4 and 11 to 20 were located in densely wooded areas, Test Pit 2 was located on the edge of a wetland area/watercourse and Test Pit 3 was located to the south-west of this on a flat area of land (Fig. 3).

5.2. Western Extension (Little Mill Link)

5.2.1. Test Pits 1 (Fig. 8) and 4 were located in the Western Extension (Little Mill Link) area where Pasture House Wood is located. The area was densely covered with trees. Both test pits were of similar nature and were made up from two stratigraphic layers:

Topsoil

The topsoil (001 and 007) in this area consisted of very fine, brown silty earth with no inclusions. It measured 0.27m deep across the area.

Natural sand

The natural sand (002 and 008) in this area consisted of very fine, brown siltysand with no inclusions. It continued beyond the depth of excavation but was exposed to a maximum depth of 0.04m.

5.2.2. Test Pits 6 and 7 (Fig. 9) were located on the north-east Whinstone outcrop in the Western Extension (Little Mill Link). Test Pit 6 was excavated down to a layer of natural sand (012) and was made up from two stratigraphic layers. Test Pit 7 was excavated down to natural Whinstone bedrock (014) and was made up from two stratigraphic layers:

Topsoil

The topsoil (011 and 013) was present in Test Pits 6 and 7 and consisted of fine, dark-brown silty-sand with no inclusions. It measured 0.42m deep in Test Pit 6 and 0.22m deep in Test Pit 7.

Natural sand

The natural sand (012) was present in Test Pit 6 directly below the topsoil (011) and consisted of very fine, brown silty-sand with no inclusions. It continued beyond the depth of excavation but was exposed to a depth of 0.02m.

Natural Whinstone

The natural Whinstone (014) lay directly beneath the topsoil (013) in Test Pit 7.

5.2.3. Test Pits 5, 8, 9 (Figures 10 and 11) and 10 were located on the south-eastern Whinstone outcrop in the Western Extension (Little Mill Link). They were all made up from two stratigraphic layers:

Topsoil

The topsoil (009, 015, 017 and 019) consisted of medium, dark-brown organic material with heavy root penetration but no inclusions. It measured between 0.28 and 0.35m deep across the area.

Natural Whinstone

The natural Whinstone (010, 016, 018 and 020) lay directly beneath the topsoil (009, 015, 017 and 019) and continued beyond the depth of excavation.

5.2.4. Test Pit 2 (Figures 12 and 13) was located in an area close to a previous water course to the east of the Western Extension (Little Mill Link). It was made up from two stratigraphic layers:

Topsoil

The topsoil (003) consisted of very fine, brown silty-sand with no inclusions and measured 0.26m deep.

Natural sand

The natural sand (004) consisted of very fine, orange/brown silty-sand with no inclusions. It continued beyond the depth of excavation but was exposed to a depth of 0.04m.

5.2.5. Test Pit 3 (Figures 14 and 15) was located a on flat area to the south of the wetland area /stream course in the Western Extension (Little Mill Link). It was made up from two stratigraphic layers:

Topsoil

The topsoil (005) consisted of very fine, brown, silty earth with no inclusions. It measured 0.24m deep.

Natural silty-clay

The natural (006) consisted of fine silty-clay of mottled grey-orange appearance with no inclusions. It continued beyond the depth of excavation but was exposed to a depth of 0.03m.

5.3. North-western Plantation Extension

5.3.1. Test Pits 11 to 20 were located in the area of the North-western Plantation Extension which is densely covered with trees (Figures 16 and 17). All of the test pits in this area were made up of three stratigraphic layers:

Topsoil

The topsoil (021, 024, 027, 030, 033, 036, 039 and 042) in this area consisted of very fine, brown silty earth with no inclusions. It measured between 0.05 and 0.12m deep across the area.

Subsoil

The subsoil (022, 025, 028, 031, 034, 037, 040 and 042) in this area consisted of very fine, brown silty earth with no inclusions. It measured between 0.14 and 0.22m deep across the area.

Natural sand

The natural (023, 026, 029, 032, 035, 038, 041 and 043) in this area consisted of very fine, silty-sand with no inclusions. It continued beyond the depth of excavation and was exposed to a maximum depth of 0.03m.



Fig. 8 Test Pit 1 in dense wooded area, scale 1m.



Fig. 9 Test Pit 7 on Whinsill outcrop, scale 1m.



Fig. 10 Test Pit 9, scale 1m.



Fig. 11 Test Pit 9 showing the landscape setting of the Whinsill outcrop, scale 1m.



Fig. 12 Test Pit 2, scale 1 The stream course is situated to the south of the test pit running east-west.

Fig. 13 Test Pit 2 showing the landscape setting, scale 1m.



Fig. 14 Test Pit 3, scale 2m



Fig. 15 Test Pit 3 showing flat landscape setting



Fig. 16 Test Pit 19, scale 1m.



Fig. 17 Test Pit 19 showing dense wood setting, scale 1m.

5.3. Discussion

5.3.5. No archaeological remains or artefacts were recovered from the test pits. Due to the amount of woodland in the area it is likely that forestation and the resulting tree roots may have disturbed any surviving archaeological remains.

6. EVALUATION TRENCHE RESULTS

6.1. Trench One

6.1.1 Trench One (Fig. 18) was situated in the north-west area of the study area and was oriented northeast-southwest. No archaeological features were present in the trench. The stratigraphy comprised a layer of fine, brown (7.5 YR 4/3) silty topsoil (021) which measured between 0.43m and 0.37m in depth across the trench. Directly below the topsoil (021) was a deposit of natural, brown (7.5 YR 4/4) silty-clay (026) which continued beyond the depth of excavation.

6.2. Trench Two

6.2.1 Trench Two (Fig. 19) was situated in the north-west area of the study area and was oriented northeast-southwest. No archaeological features were present in the trench. The stratigraphy comprised a layer of fine, brown (7.5 YR 4/3), silty topsoil (021) which measured between 0.42m and 0.35m deep across the trench. Directly below the topsoil (021) was a deposit of natural, brown (7.5 YR 4/4) silty-clay (025) which continued beyond the depth of excavation.

6.3. Trench Three

6.3.1 Trench Three (Fig. 20) was situated in the north-west area of the study area and was oriented northwest-southeast. No archaeological features were present in the trench. The stratigraphy comprised a layer of fine, brown (7.5 YR 4/3), silty topsoil (021) which measured between 0.42m and 0.27m deep across the trench. Directly below the topsoil (021) was a deposit of natural, brown (7.5 YR 4/4) silty-clay (024) which continued beyond the depth of excavation.

6.4. Trench Four

6.4.1 Trench Four (Fig. 21) was situated in the north-west area of the study area and was oriented northeast-southwest. No archaeological features were present in the trench. The stratigraphy (Fig. 22) comprised a layer of fine, brown (7.5 YR 4/3), silty topsoil (021) which measured between 0.47m and 0.34m deep across the trench. Directly below the topsoil (021) was a deposit of natural, brown (7.5 YR 4/6) silty-clay (023) which continued beyond the depth of excavation.

6.5. Trench Five

6.5.1 Trench Five (Fig. 23) was situated in the north-west area of the study area and was oriented northwest-southeast. No archaeological features were present in the trench. The stratigraphy comprised a layer of fine, brown (7.5 YR 4/3), silty topsoil (021) which measured between 0.50m and 0.60m deep across the trench.



Directly below the topsoil was a deposit of natural, brown (7.5 YR 4/4) silty-clay (022) which continued beyond the depth of excavation

Fig. 18 Trench One, scale 2 x 2m.



Fig. 19 Trench Two, scale 2 x 2m.



Fig. 20 Trench Three, scale 2 x 2m.



Fig. 21 Trench Four, scale 2 x 2m.



Fig. 22 North-east facing section, Trench Four, scale 2 x 2m.



Fig. 23 Trench Five, scale 2 x 2m.

6.6. Trench Six

6.6.1. Trench Six (Fig. 24) was situated in the south-west area of the study area and was orientated northwest-southeast. No archaeological features were present in the trench. The stratigraphy comprised a layer of stony, brown (7.5 YR 4/3) topsoil (001) which measured between 0.31m and 0.34m deep across the trench. Directly below the topsoil (001) in the north-west end of the trench was a layer of brown (7.5 YR 4/4), natural silty-sand (008) which measured 13.80m wide in the north end but continued beyond the trench edges and beyond the depth of excavation. In the centre of the trench lay a deposit of natural, brown (7.5 YR 4/5) silty clay (009). It measured 11.20m wide in the trench but continued beyond the trench lay a deposit of the trench lay a deposit of the trench lay a deposit of the trench set end of the trench lay a deposit of dark brown, natural silty-clay (010) which contained medium stone inclusions. It measured 5m wide but continued beyond the trench edges and beyond the depth of excavation.

6.7. Trench Seven

6.7.1. Trench Seven (Fig. 25) was situated in the south-west area of the study area and was orientated northwest-southeast. No archaeological features were present in the trench. The stratigraphy comprised a layer of stony brown (7.5 YR 4/3) topsoil (001) which measured between 0.36m to 0.46m deep across the trench. Directly below lay brown (7.5 YR 4/4) natural sand (002) which continued beyond the depth of excavation.

6.8. Trench Eight

6.8.1. Trench Eight (Figures 26 and 27) was situated in the south-west of the study area and was orientated southwest-northeast. The stratigraphy comprised a layer of stony brown (7.5 YR 4/3) topsoil (001) which measured between 0.55m and 0.70m deep across the trench. Directly below the topsoil (001) at the north-east end of the trench lay a brown (7.5 YR 4/4) silty deposit (005) which measured 3m wide but continued beyond the trench edges and beyond the depth of excavation. A deposit of brown (7.5 YR 4/4), natural silty-clay (004) with rounded stone and boulder inclusions lay directly blow the topsoil (001) in the south-west end of the trench. It existed for 5.90m into the trench but continued beyond the trench edges and beyond the depth of exaction. The same silty-clay material (004) also existed for 14m in the north-east end of the trench but also continued beyond the trench edges and beyond the depth of excavation. The silty-clay (004) lay over a patch of brown (7.5 YR 4/5), natural sand (003) which occurred near the south-west end of the trench for 7.10m but continued beyond the edges of the trench and beyond the depth of excavation. Cut into the siltyclay (004) was a small oval pit (006) 2.80m in from the north-east end of the trench (Fig. 28 and 29). The pit (006) measured 0.47m by 0.20m by 0.16m deep. The fill of the pit (006) consisted of a homogenous, brown (7.5 YR 4/4) siltysand with no inclusions. A modern piece of tile came from within the fill providing a *terminus post-quem* indicating that the feature is modern.

6.9. Trench Nine

6.9.1. Trench Nine (Fig, 30) was situated in the south-west of the study area and was orientated northeast-southwest. No archaeological features were found in the trench. The stratigraphy (Fig. 31) comprised a layer of stony brown (7.5 YR 4/3) topsoil (001) which measured between 0.48m and 0.23m deep across the trench. Directly below the topsoil (001) was a layer of heavily compacted, brown (7.5 YR 4/4), redeposited, natural clay (011) measuring between 0.25m and 0.11m deep. The deposit contained fragments of modern brick and tile. Directly below the redeposited, natural clay (011) was a dark-brown (7.5 YR 4/6) buried soil horizon (012). The deposit comprised a very fine silty-clay with organic inclusions and measured 0.12m to 0.11m deep. Directly underlying the buried soil horizon (012) was a layer of mid-brown (7.5 YR 4/4) natural clay (013) which continued beyond the depth of excavation. It is likely that the natural ground surface was covered during quarrying on land to the north-west.

6.10. Trench Ten

6.10.1. Trench Ten (Fig. 32) was situated in the south-west area of the study area and was orientated southwest-northeast. No archaeological features were found in the trench. The stratigraphy comprised a layer of stony brown (7.5 YR 4/3) topsoil (001) which measured between 0.45m and 0.47m deep across the trench. Directly below the topsoil (001) lay brown (7.5 YR 4/4), natural silty-sand (014) which continued beyond the depth of excavation.

6.11. Trench Eleven

6.11.1. Trench Eleven (Fig. 33) was situated in the north-east area of the study area and was orientated northeast-southwest. No archaeological features were found in the trench. The stratigraphy comprised a layer of brown (7.5 YR 4/3), silty topsoil (015) which measured between 0.26m and 0.40m deep across the trench. Directly below the topsoil (015) lay brown (7.5 YR 4/4), natural sandy-clay (020) which continued beyond the depth of excavation.

6.12. Trench Twelve

6.12.1. Trench Twelve (Fig. 34) was situated in the north-east area of the study area and was orientated northeast-southwest. No archaeological features were found in the trench. The stratigraphy (Fig. 35) comprised a layer of brown (7.5 YR 4/3), silty topsoil (015) which measured between 0.16m and 0.62m deep across the trench. Directly underlying the topsoil (015) at the south-west end of the trench was a layer of surviving mid-brown (7.5 YR 4/4), silty-clay subsoil (019) which existed for 8.60m but continued beyond the trench edges and beyond the depth of excavation. The same deposit of silty-clay (019) existed for 10.40m at the north-east end of the trench and also continued beyond the trench edges and beyond the depth of etherth of excavation. An outcrop of bedrock (016) existed 8.6m in from the south-west edge of the trench and measured 11m in length. This lay below the topsoil (015) and silty-clay (019).

6.13. Trench Thirteen

6.13.1. Trench Thirteen (Fig. 36) was situated in the north-east area of the study area and was orientated northwest-southeast. No archaeological features were found in the trench. The stratigraphy comprised a layer of brown (7.5 YR 4/3), silty topsoil (015) which measured between 0.25m and 0.50m deep across the trench. At the far south-east end of the trench, directly below the topsoil (015) lay a deposit of brown, silty-sand which existed for 5.60m and continued beyond the depth of excavation. Two outcrops of bedrock (016) existed in the trench, one at the far north-west end, which existed for 6.20m, and one 13m in from the south-east end of the trench which existed for 5.40m. Directly below the topsoil (015) and overlying the natural bedrock (016) was a deposit of surviving mid-brown (7.5 YR 4/4), sandy-clay subsoil (017). It was noted 5.60m in from the south-east end of the trench and measured 7.60m but continued beyond the trench edges and beyond the depth of excavation. It was also present 6.20m in from the north-west end of the trench and existed for 5m but continued beyond the trench edges and beyond the depth of excavation.



Fig. 24 Trench Six, scale 2 x 2m.



Fig. 25 Trench Seven, scale 2 x 2m.



Fig. 26 Trench Eight, scale 2 x 2m.





Fig. 28 Pit 006 in trench Eight, scale 0.25m



Fig. 29 Half section of Pit 006 in Trench Eight, scale 0.25m



Fig. 30 Trench Nine, scale 2m.



Fig. 31 North-east facing section, Trench Nine, scale in 0.50m graduations.



Fig. 32 Trench Ten, scale 2 x 2m.



Fig. 33 Trench Eleven, scale 2 x 2m.



Fig. 34 Trench Twelve, scale 2 x 2m.



Fig. 35 South-west facing section, Trench Twelve, scale in 0.50m graduations.



Fig. 36 Trench Thirteen, scale 2 x 2m.

7. CONCLUSION

- 7.1. The desk-based assessment, map regression and walkover survey revealed no evidence for archaeological features within the proposed quarry expansion area. Test pits were therefore located in areas that may have been attractive to past human activity including natural clearings and areas close to water. No archaeology was recovered from any of the twenty test pits or the thirteen evaluation trenches. It is likely that previous afforestation and the resulting tree roots have destroyed any surviving remains.
- 7.2. A small oval feature (006) was located in Trench Eight but was dated as modern due to small modern brick fragments found within the fill. There were no other features found within the trenches.

8. PUBLICITY, CONFIDENTIALITY AND COPYRIGHT

- 8.1. Any publicity will be handled by the client.
- 8.2. Archaeological Research Services Ltd will retain the copyright of all documentary and photographic material under the Copyright, Designs and Patent Act (1988).

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9.1 All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

10. ACKNOWLEDGEMENTS

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APPENDIX I: HARRIS MATRICES











Trench Ten

Trench Eleven









Trench Thirteen



Context no.	Trench	Finds	Description
001	6, 7, 8, 9 and 10	-	Topsoil
002	7	-	Natural Sand
003	8	-	Natural Sand
004	8	-	Silty Clay
005	8	-	Silty Dark Deposit
006	8	-	Oval Feature
007	8	-	Cut of Oval Feature 006
008	6	-	Natural Clay
009	6	-	Natural Clay
010	6	-	Natural Silty Deposit
011	9	-	Re-deposited Natural Clay
012	9	-	Buried Soil Horizon
013	9	-	Natural Clay
014	10	-	Natural Silty Sandy Till
015	11, 12 and 13	-	Topsoil
016	12	-	Bedrock
017	13	-	Natural Clay
018	13	-	Silty Sandy Till
019	12	-	Natural Sandy Clay
020	11	-	Natural Sandy Clay
021	1,2,3,4 and 5	-	Topsoil
022	5	-	Natural silty clay
023	4	-	Natural silty clay
024	3	-	Natural silty clay
025	2	-	Silty Till
026	1	-	Natural silty clay

APPENDIX II: CONTEXT REGISTER

APPENDIX III: PHOTOGRAPHIC REGISTER

Shot Number	Photograph Content
1	General view of trench seven, looking southeast, scale = 2m
2	General view of trench eight, looking southwest, scale = 2m
3	Oval pit feature (006) in trench eight, scale = .25m
4	East facing section of oval pit feature (006) in trench eight, scale = .25m
5	General view of trench six, looking southeast, scale = $2m$
6	General view of trench nine, looking northwest, scale = 2m
7	Northeast facing section of trench nine, scale $= 2m$
8	Northeast facing section of trench six, scale = 2m
9	Northeast facing section of trench seven, scale = $2m$
10	Southeast facing section of trench eight, scale $= 2m$
11	General view of trench ten, looking southwest, scale = 2m
12	Southeast facing section of trench ten, scale = $2m$
13	General view of trench thirteen, looking northwest, scale = 2m
14	Southwest facing section of trench thirteen, scale = $2m$
15	General view of trench twelve, looking northwest, scale $= 2m$
16	Southwest facing section of trench twelve, scale = $2m$
17	General view of trench eleven, looking northwest, scale = 2m

Film One: Black and White

Film Two: Colour Transparency

Shot Number	Photograph Content
1	General view of trench seven, looking southeast, scale = $2m$
2	General view of trench eight, looking southwest, scale = $2m$
3	Oval pit feature (006) in trench eight, scale = $.25m$
4	East facing section of oval pit feature (006) in trench eight, scale = $.25m$
5	General view of trench six, looking southeast, scale $= 2m$
6	General view of trench nine, looking northwest, scale $= 2m$
7	Northeast facing section of trench nine, scale $= 2m$
8	Northeast facing section of trench six, scale = $2m$
9	Northeast facing section of trench seven, scale = $2m$
10	Southeast facing section of trench eight, scale $= 2m$
11	General view of trench ten, looking southwest, scale $= 2m$
12	Southeast facing section of trench ten, scale = $2m$
13	General view of trench thirteen, looking northwest, scale = 2m
14	General view of trench thirteen, looking northwest, scale = 2m
15	Southwest facing section of trench thirteen, scale = $2m$
16	General view of trench twelve, looking northwest, scale $= 2m$
17	General view of trench twelve, looking northwest, scale $= 2m$
18	Southwest facing section of trench twelve, scale = $2m$
19	General view of trench eleven, looking northwest, scale = $2m$

Shot Number	Photograph Content
1	General view of trench 5, looking northwest, scale = $2m$
2	General view of trench 5, looking northwest, scale $= 2m$
3	Southwest facing section of trench 5, scale = $2m$
4	General view of trench 4, looking northeast, scale $= 2m$
5	Northeast facing section of trench 4, scale = $2m$
6	General view of trench 3, looking northwest, scale $= 2m$
7	Southwest facing section of trench 3, scale = $2m$
8	General view of trench 2, looking northeast, scale = $2m$
9	Southwest facing section of trench 2, scale = $2m$
10	General view of trench 1, looking southwest, scale = $2m$
11	Southeast facing section of trench 1, scale = $2m$

Film Three: Black and White

Film Four: Colour Transparency

Shot Number	Photograph Content
1	General view of trench 5, looking northwest, scale $= 2m$
2	General view of trench 5, looking northwest, scale $= 2m$
3	Southwest facing section of trench 5, scale = $2m$
4	General view of trench 4, looking northeast, scale = $2m$
5	Northeast facing section of trench 4, scale = $2m$
6	General view of trench 3, looking northwest, scale $= 2m$
7	Southwest facing section of trench 3, scale = $2m$
8	General view of trench 2, looking northeast, scale = $2m$
9	Southwest facing section of trench 2, scale = $2m$
10	General view of trench 1, looking southwest, scale = $2m$
11	Southeast facing section of trench 1, scale = $2m$

APPENDIX V: SPECIFICATION

1. INTRODUCTION

- 1.1. The study area is centred at Ordnance Survey National Grid reference NU 23671720, and lies within an area that has produced a range of archaeological remains in the past. A watching brief was carried out to the north-east of the study area in 2006 as part of an existing quarry permission by Archaeological Research Services Ltd but no archaeological remains were encountered. Further archaeological evaluation work undertaken in relation to the Western Extension (Little Mill Link) at the site is discussed below.
- 1.2. The client for this work is Tarmac Northern Limited who are producing an EIA to quarry the Western Extension (Little Mill Link) at the Howick Whinstone Quarry.

1.3. Archaeological and historical background

- 1.3.1. The earliest remains found associated with Howick Quarry were a number of 'heaps' of shell midden and a nearby assemblage of faunal remains that included 5 red deer, 1 auroch, 3 horses, 17 oxen, 6 sheep, 5 pigs and two birds (Jobey and Newman 1975). Although this material was undated and dates to a range of periods it is likely that the shell middens belong to the Mesolithic period which is strongly represented in the area (see other sites below).
- 1.3.2. The next period for which archaeological remains have been found is the Early Bronze Age. During an earlier phase of quarry expansion a number of Early Bronze Age burial mounds were recorded on the crest of the Whinstone ridge before these remains were destroyed (Jobey and Newman 1975). This included work on several cairns and an enclosing bank. Cremations were recovered, including one inside a cinerary urn that was dated to c. 1700 cal BC. Other Bronze Age cemeteries are known nearby at Longhoughton, Lowstead Farm and above the Howick Burn.
- 1.3.3. Later prehistoric remains dating to the Iron Age and Romano-British period have also been discovered in previously quarried areas (Jobey and Newman 1975). Bosanquet, an earlier President of the Society of Antiquaries of Newcastle, recorded archaeological remains at the quarry during the late 1920's. He found part of a Roman fibula (a trumpet brooch) of 2nd century AD date and a large base sherd of native hand-made pottery of a type previously referred to as 'Votadinian Ware' (Richmond 1942). The existence of a possible late prehistoric palisaded site at the north-west edge of the quarry would provide a context for this material (Aerial photograph 25-11-2005).
- 1.3.4. Subsequent to the early 1st millennium AD activity evidenced on the Whinstone ridge was the discovery by Bosanquet, and subsequent publication by Keeney (1939), of a substantial pagan Anglo-Saxon cemetery that contained at least 15 inhumations and 1 cremation, many of which were accompanied by grave goods (Keeney 1939). This is the largest Anglian burial ground so far recorded in Bernicia, with only the graves from the Bole Hole at Bamburgh forming a

comparable sized assemblage. These remains were removed by quarrying during the late 1920's and early 1930's.

1.4. Other features within 2km of the Quarry

- 1.4.1. There is one Scheduled Monument within 1 km of the site. It is the Iron Age Howick Burn Hillfort that sits above a bend in the Howick Burn, 0.8km to the south east of Howick Quarry. This hillfort was surveyed in 2002 (Johnson and Waddington 2002). Neither the site, nor its setting, will be affected by the proposed quarry extension.
- 1.4.2. The nearest Listed Building is Howick Hall 0.75km to the east north east of the quarry. The grounds of Howick Hall and gardens are also a Registered Park and Garden. These abut the road on the east side of Howick Quarry, but are not included within the development area. An existing plantation is located along the course of the road screening off the current quarry. As the proposed quarry extension does not impact on ground to the east of the present quarry no impact on the Park and Gardens will result.
- 1.4.3. An internationally important Mesolithic settlement at NU 2585 1657 was excavated at Howick during 2000 and 2002 (Waddington *et al.* 2003), and has been reconstructed as part of a small heritage trail from Craster.
- 1.4.4. Flint scatters of predominantly Mesolithic flints were recovered from seven fields that were fieldwalked on Seahouses Farm, to the east of Howick Hall (Waddington in press). This included 244 pieces suggesting extensive Mesolithic occupation across the area. Neither the area, nor its setting will be affected by the proposed quarry extension which lies for the most part at least 2km distant.
- 1.4.5. A Neolithic stone axe head was found at the farm at Boulmer (Bateson 1895, 334) and another near Longhoughton (Bosanquet 1934).
- 1.4.6. An Early Bronze Age cist cemetery with 5 cists was discovered and completely excavated at the same location as the Mesolithic hut (Waddington *et al.* in press). These remains were fully excavated, although other cists could survive in this area of the field. Neither the site, nor its setting, will be affected by the proposed quarry extension which lies over 2km distant.
- 1.4.7. An Early Bronze Age cist burial at Longhoughton, and a fragmentary Food Vessel were found below a decorated cap stone to the south of the Howick Burn estuary on Lowstead Farm (MacLaughlan 1867; Bateson 1895, 333-34). These remains were fully excavated and subsequent ploughing has removed any surviving upstanding archaeology. Neither the sites, nor their setting, will be affected by the proposed quarry extension.
- 1.4.8. Crop marks of a rectilinear triple-ditched enclosure ('Cushatt Wood Enclosure') belong to the Late Iron Age-Roman period and had an evaluation trench excavated over it in 2000 (Young 2000) on Seahouses Farm east of Howick Hall. Neither the site, nor its setting, will be affected by the proposed quarry extension which lies 2km distant and separated by a deeply-incised burn and Howick Hall and its gardens.

2. METHODOLOGY

2.1. The evaluation rationale will combine a number of techniques in order to evaluate the proposed Western Extension area of Howick Quarry. The study area comprises a mixture of vegetation cover including plantation woodland, pasture and a cultivated area and therefore a selection of evaluation techniques will be employed.

2.3. Desk-based assessment

- 2.3.1. The desk-based assessment will involve the consultation of archive sources in order to study documentary, pictoral and cartographic evidence relating to the study area. The archives to be consulted will include:
 - Berwick-upon-Tweed Records Office, Wallace Green, Berwick-upon-Tweed
 - Sites and Monuments Record (SMR), County Hall, Morpeth, Northumberland
 - Publications held in the Cowan Library, University of Newcastle
 - Publications held in the Robinson Library, University of Newcastle
 - Northumberland Collections Service, Woodhorn, Queen Elizabeth II Country Park, Ashington, Northumberland
 - National Monuments Record, Swindon
 - Aerial photographic archive of the Museum of Antiquities, Newcastle
- 2.3.2. The evidence will provide information about the history of land-use and indicate how the site has changed over time.
- 2.3.3. The results will be used to inform the locations of evaluation trenches and test pits.

2.4. Aerial photography

- 2.4.1. The study of aerial photographs will provide information about potential archaeological features within the study area. The information gained will assist in deciding the final locations of targeted evaluation trenches.
- 2.4.2. Aerial photographs will be consulted at the following archives:
 - Museum of Antiquities, University of Newcastle
 - National Monuments Record, Swindon
 - Northumberland County Council
- 2.4.3. An aerial photograph provided by Northumberland County Council (25-11-2005) revealed a faint circular cropmark in a cultivated field to the north-west of the study area. It is not certain whether the feature is archaeological but the southern side of the feature encroaches into the proposed quarry extension.

2.5. Walkover survey

2.5.1. A walkover survey will be undertaken across the woodland area within the site in order to identify, locate and record any archaeological features.

- 2.5.2. The area covers approximately nine hectares and comprises plantations of coniferous and deciduous trees, with some areas being more open and some densely covered.
- 2.5.3. Transects will be walked at intervals of 10m wherever the terrain allows. Each feature will be assigned a unique context number and recorded with a 12 figure grid reference, supplied by a hand-held GPS, as well as being photographed and a brief summary of the nature and importance of the feature completed.

2.6. Fieldwalking

- 2.6.1. Field walking will be carried out across the cultivated areas of the site. The aim of the fieldwalking is to identify artefact scatters which may indicate archaeological activity below the surface.
- 2.6.2. The fieldwalking will be undertaken at 2m interval spacings. The 2m interval is considered to produce a 100% visual inspection of the field surface with each walker observing 1m either side of their line (Tolan-Smith 1997). All finds will be individually located using a Total Station and individually bagged and labelled. All artefacts recovered will be looked at by appropriate specialists, and provisionally dated. The results will be taken into consideration when deciding upon trench locations.
- 2.6.3. Any artefact clusters that exist within the ploughsoil can be identified using this sampling interval. By employing close-spaced fieldwalking as an evaluation technique, areas of potentially disturbed archaeological features will be identified as well as the ploughsoil, which is a potential archaeological resource in itself, being accurately sampled.

2.7. Test pits and evaluation trenches

- 2.7.1. Test pits will be located in the woodland area of the site where trenching is not possible due to dense tree cover. The aim of the test pits is to establish the presence or absence of archaeological remains, their type, depth and condition of preservation.
- 2.7.2. Twenty test pits, each measuring 1m by 1m, will be targeted over areas of archaeological interest, identified during the walkover survey. In the event that no archaeological features are identified the test pits will be located in areas which are likely to have attracted human activity, e.g. flat areas, or areas close to water sources, as well as any other areas of interest identified by the desk-based assessment.
- 2.7.3. The test pits will be excavated by hand and all contents will be sieved to maximise finds recovery.
- 2.7.4. The final location of the test pits will be subject to discussions with Northumberland County Council, the results of the walkover survey and access, as areas may be restricted due to tree cover, roots and so forth.

- 2.7.5. Thirteen trenches, each measuring 30m long by 2m wide, will be placed within the study area in order to establish the presence or absence of archaeological remains, their type, depth and condition of preservation. The final locations, provisionally agreed with Chris Burgess of NCCCT, will be subject to information gathered by the desk-based assessment and aerial photograph transcription and discussions with Karen Derham, Assistant County Archaeologist at Northumberland County Council.
- 2.7.6. The overall aim of the trial trenching will be to establish the presence/absence, nature, depth and character of any possible archaeological features and to make suggestions, where possible, about further mitigation which may be necessary including the preservation *in-situ* of archaeological features.
- 2.8.3. The trenches will be excavated by machine using a wide, toothless ditching bucket, under continuous archaeological supervision. Topsoil and unstratified modern material will be removed in level spits down to the first significant archaeological horizon. No machinery will track over areas that have been stripped.
- 2.8.4. The trenches will be cleaned using appropriate hand tools in order to expose surviving archaeological features and deposits.
- 2.8.5. All archaeological features and deposits will be recorded on a pre-excavation plan before excavation, sampling and recording.
- 2.8.6. All features exposed will be excavated by hand. Sampling will typically comprise 50% of every discrete feature; 25% of linear/curvilinear features with non-uniform fill and 10% of linear features with a uniform fill.
- 2.8.7. In the event of human burials being discovered, they will be left *in-situ*, covered and protected and the coroners' office informed. If removal is essential, work will comply with relevant Home Office regulations.
- 2.8.8. Appropriate procedures under the relevant legislation will be followed in the event of the discovery of artefacts covered by the provisions of the Treasures Act 1996.
- 2.8.9. Deposits that have the potential for providing environmental or dating evidence will be assessed while the work is in progress. An environmental sampling strategy has been agreed with the English Heritage Scientific advisor for North-East England, Jacqui Huntley. The sampling strategy comprises the following:
 - All intact archaeological contexts will be sampled. Small pit features will be 100% sampled while bulk samples of 40 litres will be taken from larger feature contexts, such as linear ditch fills.
 - Any samples recovered will be floated on site in graduated sieves with the smallest being 500µm and the flots and residues collected. Samples will be analysed by B Johnson of Archaeological Research Services Ltd and an assessment report prepared in accordance with Management of Archaeological Projects 2 (HBMC 1991).

- 2.8.10. During and after the excavation, all recovered artefacts and environmental samples will be stored in appropriate materials and storage conditions to ensure minimal deterioration and loss of information (this will include controlled storage, correct packaging, regular monitoring of conditions and immediate selection for conservation of valuable material).
- 2.8.11. Should any changes in the trench dimensions or location become necessary, they will be discussed with the County Archaeologist and approved prior to work commencing on the site.

3. **PROJECT MANAGEMENT STANDARDS**

- 3.1. The project will be carried out in compliance with the codes of the Institute of Field Archaeologists (IFA) (2000) and will follow the IFA Standard and Guidance for Excavations (1995).
- 3.2. All staff employed on the project will be suitably qualified and experienced for their respective project roles and have practical experience of archaeological excavation and recording. All staff will be made aware of the archaeological importance of the area surrounding the site and will be fully briefed on the work required by this specification. Each member of staff will be fully conversant with the aims and methodologies and will be given a copy of this written scheme of investigation to read. All members of staff employed by Archaeological Research Services Ltd are fully qualified and experienced archaeologists, this will ensure that appropriate decisions regarding environmental and dating sampling will be made in the field.

5. CONTINGENCY

5.1. If the evaluation raises questions of an unexpected nature, attempts will be made to deal with the problem by agreed modification of this specification while the fieldwork is in progress. The client has been made aware that additional work may be required to properly characterise any features only partially exposed by the evaluation process.

6. **RECORDING**

- 6.1. The site will be accurately tied into the National Grid and located on a 1:2500 or 1:1250 map of the area.
- 6.2. A full and proper record (written, graphic and photographic as appropriate) will be made for all work, using pro-forma record sheets and text descriptions appropriate to the work. Accurate scale plans and section drawings will be drawn at 1:50, 1:20 and 1:10 scales as appropriate.
- 6.3. The stratigraphy of the trench and test pits will be recorded even where no archaeological deposits have been identified.
- 6.4. All archaeological deposits and features will be recorded with above ordnance datum (AOD) levels.

- 6.5. A photographic record of all contexts will be taken in colour transparency and black and white print and will include a clearly visible, graduated metric scale. A register of all photographs will be kept.
- 6.6. Where stratified deposits are encountered, a 'Harris' matrix will be compiled.
- 6.7. All features encountered during the walkover survey will be tied into the National Grid and located on a 1:2500 or 1:1250 map of the area.

7. ACCESS

- 7.1. Archaeological Research Services Ltd will give the County Archaeologist for Northumberland County Council 10 working days (or less if so agreed) notice of the commencement of fieldwork.
- 7.2. Archaeological Research Services Ltd will afford access to the County Archaeologist for Northumberland County Council or their representative at all times, for the purposes of monitoring the archaeological evaluation.
- 7.3. Archaeological Research Services Ltd will maintain regular communication with the County Archaeologist for Northumberland County Council to ensure that the project aims and objectives are met.

8. FINDS PROCESSING AND STORAGE

- 8.1. All finds processing, conservation work and storage of finds will be carried out in compliance with the IFA guidelines for Finds Work (2001) and those set out by UKIC (1990).
- 8.2 Artefact collection and discard policies will be appropriate for the defined purpose.
- 8.3 Bulk finds which are not discarded will be washed and, with the exception of animal bone, marked. Marking and labelling will be indelible and irremovable by abrasion. Bulk finds will be appropriately bagged, boxed and recorded. This process will be carried out no later than two months after the end of the excavation.
- 8.4 All small finds will be recorded as individual items and appropriately packaged (e.g. lithics in self-sealing plastic bags and ceramic in acid-free tissue paper). Vulnerable objects will be specially packaged and textile, painted glass and coins stored in appropriate specialist systems. This process will be carried out within two days of the small find being excavated. Prehistoric pottery will not be cleaned or be subject to any abrasion or loss of adhering residues.
- 8.5 During and after the excavation all objects will be stored in appropriate materials and storage conditions to ensure minimal deterioration and loss of information (including controlled storage, correct packaging, and regular monitoring, immediate selection for conservation of vulnerable material). All storage will have appropriate security provision.

- 8.6 The deposition and disposal of artefacts will be agreed with the legal owner and the Museum of Antiquities prior to the work taking place. All finds except treasure trove are the property of the landowner.
- 8.7 All retained artefacts and ecofacts will be cleaned and packaged in accordance with the requirements of the recipient museum.

9. SITE ARCHIVE

9.1 The archive will be compiled in an orderly fashion to the standards and format set out in Management of Archaeological Projects 2 (HBMC 1991) and in accordance with the Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC 1990). The archive will be deposited with the Museum of Antiquities within 6 months of the fieldwork once all post-excavation work is completed and the final report produced.

10. **REPORT**

- 10.1 One copy of the report will be submitted to the client, and two hard copies (one bound and one unbound) and one digital copy will be submitted to the Northumberland SMR within fourteen working days of the completion of the fieldwork. A standalone desk-based assessment will be produced in addition to a further report that will include an integrated account of the various evaluation works to be undertaken. Each report will be bound with each page and paragraph numbered and will comply with NCCCT standard requirements. These will include:
 - executive summary
 - Planning Application Number, NCCCT reference number and OASIS reference number
 - a site location plan to at least 1:10,000 scale with 10 figure central grid reference
 - contractor's details including date work carried out
 - nature and extent of the proposed development, including developer/client details
 - description of the site location and geology
 - trench plans as appropriate, to a suitable scale and tied into the national grid so that features can be correctly orientated
 - discussion of the results of field work
 - context & feature descriptions as appropriate
 - features, number and class of artefacts, spot dating & scientific dating of significant finds presented in tabular format
 - plans and section drawings of the features drawn at a suitable scale, as appropriate
 - additional plans/map extracts to display noted and recorded archaeological features as appropriate
 - list of archive sources consulted for DBA
 - map regression for DBA
 - site photographs

- recommendations regarding the need for, and scope of, any further archaeological work, including publication
- bibliography

11. OASIS

11.1 ARS Ltd will complete an on-line OASIS form for this evaluation. ARS Ltd is a registered contractor on the OASIS system and has uploaded archaeological reports before.

12. DISSEMINATION/PUBLICATION

- 12.1 A summary will be prepared for 'Archaeology in Northumberland' and submitted to Sarah MacLean by the beginning of December of the year in which the work is completed.
- 12.2 A short article will be prepared for a local journal if appropriate.

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