Summary of the Lower Lugg Archaeology and Aggregates Resource Assessment

1. Introduction

1.1 *About the Lower Lugg Archaeology and Aggregates Resource Assessment*

The Lower Lugg Archaeology and Aggregates Resource Assessment sets out an archaeological resource assessment for the Lower Lugg Valley, Herefordshire. The assessment includes specific consideration of the process of past and present sand and gravel quarrying in the Lower Lugg Valley, and the future threat this poses to the archaeology of the area. The assessment concludes by defining a research framework for future archaeological investigation in the Lower Lugg area.

In addition to the preparation of the assessment itself, the project also involved the collation and preparation of a GIS database combining archaeological, geological, geomorphological and palaeoenvironmental information relating to the Lower Lugg Valley. The GIS database was used to facilitate the assessment, and to create a practical tool to assist future archaeological management and research activity in the Lower Lugg locality.

1.2 *Project organisation*

The assessment has been managed and executed for English Heritage by Herefordshire Archaeology (the archaeology service of Herefordshire Council) with funding from the Aggregates Levy Sustainability Fund as administered by English Heritage for the historic environment (in accordance with English Heritage ALSF Project Design PN 3336).

The work was undertaken between April 2006 and February 2007 by a project team including Herefordshire Archaeology (Dr Keith Ray MBE, FSA, MIFA and Ian Bapty), Worcestershire County Council Historic Environment and Archaeology Service (Robin Jackson MIFA), The Institute of Geography and Earth Sciences, University of Wales, Aberystwyth (Dr Eric Johnstone and Dr Paul Brewer) and Air Photo Services (Chris Cox). Each of these organisations was responsible for particular components of the collation, analysis and report preparation work. The process of integrating those different elements within the final assessment was achieved by a series of project team meetings at key stages of the project.

Progress of the assessment was monitored for English Heritage by Helen Keeley (English Heritage Project Officer). Lisa Moffett (English Heritage Regional Archaeology Science Adviser) also provided specialist advice and input during the course of the project.

1.3 *Background and rationale*

The 14 km long Lower Lugg river valley is located in central Herefordshire, and extends to the north and east of Hereford city. The valley, with its broad river flood plain, gently undulating surrounding landscape, and good agricultural land, has long been a focus of human settlement. In addition, the Lower Lugg corridor has an established strategic importance as part of the main north/south transport corridor through the Marches geographical zone. The area is also underlain by extensive reserves of sand and gravel which are of local and regional economic significance.

This archaeological resource assessment stems from the late 20th century development of large scale sand and gravel extraction in the Lower Lugg valley. Since 1986, the progressive

expansion of the quarry at Wellington has been associated with the discovery of highly important and exceptionally well preserved multi-period archaeological deposits buried within the flood plain alluvium (which overlays the valley bottom sand and gravel beds). These finds have emphasised the currently poor archaeological understanding of the Lower Lugg beyond Wellington Quarry, and the very limited context which exists to establish the local significance and meaning of the Wellington archaeological material. The Wellington discoveries have also fundamentally illuminated the problem of managing an undefined yet high potential archaeological resource in a zone of apparently increasing quarrying activity.

The work at Wellington (which has been principally carried out by Worcestershire Historic Environment Archaeology Service/WHEAS) and the nearby quarry at Lugg Bridge has also focussed attention on the particular technical and interpretative challenges of undertaking effective archaeological fieldwork in deeply buried alluvial contexts. In this sense, the development of the archaeological process at Wellington has sat alongside evolving programmes of archaeological engagement with river valleys across Britain in the last 20 years. An important practical aspect of the Wellington work has been the problem of coping with the complex geomorphological and site formation processes of the alluvial zone. This is fundamental both to realising proper contextual analysis of archaeological sequences and to understanding the differential impact of site formation processes on the character of the archaeological resource.

The major strategic archaeological resource management issue in the Lower Lugg Valley is the problem of facilitating in situ preservation of poorly defined archaeological remains in proposed quarry areas. At the point where a nationally important but unexpected archaeological find is made during permitted aggregate extraction – and the possibility of such a find is clearly demonstrated by previous discoveries in the waterlogged alluvium at Wellington – then there would currently be no archaeological mitigation option available other than preservation by record. There is an urgent to need to overcome this fundamental archaeological management weakness, and to create better conditions for pro-active archaeological engagement with the process of quarrying in the Lower Lugg Valley. The core aim of this resource assessment is to begin the process of addressing this situation.

1.4 *Key objectives and outputs*

The Lower Lugg Archaeology and Aggregates Resource Assessment aims to provide:

- An overall assessment of the known archaeological resource of the Lower Lugg (including archaeological excavation evidence, the wider record of archaeological sites and finds, and the air photo record of archaeological features). This assessment component is a key starting point for setting the discoveries from Wellington in a wider local context, and specifying the archaeological significance and potential of the Lower Lugg as a whole.
- A careful assessment of the known geological, geomorphological and palaeoenvironmental resource of the Lower Lugg. This assessment component is a fundamental part of evaluating and understanding local archaeological site formation processes, and defining the context for the development of human settlement in the area.
- A considered assessment of the effectiveness of archaeological management and fieldwork strategies in the Lower Lugg. This assessment component is a key starting point for gauging the success of current fieldwork and development mitigation approaches, and evaluating the potential to improve future strategic and practical engagement with the Lower Lugg archaeological resource.

- A full assessment of patterns of past, current and probable future quarrying in the Lower Lugg. This assessment component is crucial to understanding and strategically managing the principal threat to the archaeological deposits of the area, and to defining the value of past quarrying as an integral part of the archaeological resource of the area. In addition it will contribute to the conservation planning agenda with respect to future aggregate extraction in the Lower Lugg Valley.
- A research framework defining an integrated approach to future archaeological and 'geoarchaeological' investigation in the Lower Lugg Valley. This assessment component is fundamental to facilitating better future understanding of the Lower Lugg Valley archaeological resource, and to contributing in the short to medium term to wider conservation and mitigation agendas.
- A Lower Lugg Valley Resource Assessment document and a GIS database which will be used to make information about the archaeological resource of the Lower Lugg Valley more widely available, and will accordingly contribute to local awareness of the importance and fragility of that resource.

2. Conclusions

2.1 *Archaeological and historic environmental resource general conclusions*

Landscape and general settlement context. The Lower Lugg is likely to have been a preferred and significant area of human settlement from the earliest times, and complex multi-period archaeological sequences associated with those patterns should be expected in the area.

Character of the known archaeological resource. Knowledge of the Lower Lugg archaeological resource is extremely limited and currently offers only restricted geographical and period coverage. This is especially for all periods before the Medieval. Nevertheless, current understanding is sufficient to emphasise the important archaeological potential of the area. The work at Wellington has unequivocally shown the high archaeological value of the flood plain zone, and the air photo evidence (and to a lesser extent distributions of other archaeological finds/sites) reveals longstanding concentrations of settlement on the river terraces adjoining the flood plain.

2.2 *Archaeological period conclusions*

Palaeolithic. In principle, there is significant Palaeolithic archaeological potential in the Lower Lugg. However, this potential is not currently defined, and analysis is hampered by lack of detailed understanding of the sub surface character, chronology, and detailed formation processes of the old drift and river terrace sand and gravels. Opportunities for future Palaeolithic discovery are also likely to be limited by the modern/future focus on quarrying of the geologically young sand and gravels of the valley bottom area, although Upper Palaeolithic evidence may survive in this context.

Mesolithic. Notwithstanding the paucity of current evidence, the Lower Lugg valley is likely to have been a significant focus of Mesolithic activity. There is good potential for further recovery of Mesolithic material. On the basis of regional comparisons, areas of particular interest may include the higher terrace/hill top zones, and preferred niches in the valley bottom/river margins. Later agricultural activity on the terraces may have significantly disrupted relatively ephemeral in-situ deposits of this period (though flint scatters would still

be expected), but good preservation in the alluvium is a strong possibility and of potential regional importance.

Neolithic/Early Bronze Age. Despite restricted evidence, and the bias to the Wellington Quarry site, it is clear that the Lower Lugg is a regionally important area of Neolithic/Early Bronze Age settlement. The valley preserves distinctive evidence of Neolithic/Early Bronze Age cultural activity and development with important relevance to regional and national debates about the period. There is strong potential for continuing discovery of such material, and the ongoing development of more complete recording and interpretation of local Neolithic/Early Bronze Age settlement patterns. The valley bottom alluvium will remain a key research zone, and there is every reason to suppose that further discovery of exceptionally well preserved Neolithic/Early Bronze Age contexts and palaeoenvironmental data will continue there. However, it also important to emphasise the potential in the wider landscape, and to stress the need to integrate this broader focus within a coherent overall Neolithic/Early Bronze Age research strategy in the Lower Lugg.

Later prehistory. The current picture of later prehistoric settlement in the Lower Lugg is heavily biased to the excavation evidence from Wellington and Sutton Walls, and significant gaps in recording include the absence of Later Bronze Age elements. Despite these limitations, and poorly developed chronological and spatial definition of the sequence, the dense and complex nature of the local settlement pattern throughout the period is clear. The emergence of Sutton Walls and its hinterland (including the 'ritual' deposition at Wellington) is a regionally significant example of later prehistoric political centralisation associated with a major hillfort site. There is good potential for significant further discovery, survey and investigation of later prehistoric features in the Lower Lugg, including both the river flood plain zone, and the wider landscape (especially associated with crop mark evidence on the river terraces).

Roman. The Lower Lugg was intensively settled in the Roman period, with a complex of sites and activity across the range of landscape and environmental niches within the valley. The Roman period Lower Lugg area may in part be defined by its context within the hinterland of Kenchester. Known and investigated sites appear to show clear differences in character, apparently revealing distinctive local differentiations in settlement status and function. Although there is little close description of these patterns, the Lower Lugg nevertheless emerges as a significant regional example of Romano-British settlement in a river valley setting. The sequence potentially offers interesting insights into wider research issues such as the process and extent of ‘Romanisation’ in the rural West Midlands, and the degree of Iron Age/Roman continuity (and Roman/Early Medieval continuity) in an area of well established rural settlement.

Early Medieval. The Lower Lugg is a nationally significant area of Early Medieval interest. Although still as yet poorly defined, the likely Saxon palace complex in the Sutton St Michael/Marden area is potentially a highly important example of the practical local operation and expression of Early Medieval kingship and power. More generally, the Lower Lugg offers a coherent area for the exploration of Early Medieval settlement patterns and development (with tracking of settlement sites linked to identified cemeteries one possibility), although the archetypal problems of Early Medieval site identification and recognition are as relevant here as elsewhere.

Medieval. There is a significant and largely unstudied Medieval archaeological resource in the Lower Lugg. Evidence of Medieval settlement is found in all sectors of the landscape (although the riverside terraces are the main focus of agriculture and nucleated settlement).

Provisional assessment of that material reveals the potential to go beyond the generic categorisation of the Lower Lugg as a 'typical' area of rural Medieval river valley settlement, although this will only happen through more detailed investigation and analysis of the resource. Regionally important themes relevant to the Lower Lugg include the establishment, operation and development of ridge and furrow agriculture in the valley, the creation of the water meadow/water management systems in the flood plain, the transformation of the local settled landscape associated with wider changes of the 14th century, and the influence of Hereford on settlement patterns.

Post Medieval and Modern. The Post Medieval/Modern settlement of the Lower Lugg is predictably supported by large amounts of archaeological evidence throughout the landscape, but this material has not generally been subject to close analysis of its meaning and significance. Locally distinctive elements include the Lammas meadow systems (in the flood plain area), evidence of long established sand and gravel quarrying (straddling the older gravel terraces and the valley bottom zone), and elements of the 18th, 19th and 20th century transport systems in the valley bottom corridor (including the improvement and modification of the river itself). Much of the Post Medieval archaeological resource remains an active part of the modern human landscape, and this (as in many other places) puts considerable attritional pressure upon it.

2.3 *Geological, geomorphological and palaeoenvironmental resource*

Geology and geomorphology. Description and mapping of the underlying and superficial geology is established for the Lower Lugg and provides a useful context for the associated interpretation of archaeological sequences (although the dating and detailed sub surface characterisation of the fluvio-glacial drift and river terrace deposits are not closely established). Understanding of the Holocene alluvium is poorly developed, with limited available data. It is unclear if the sequence at Wellington is representative of the Lugg Valley as a whole, and even at Wellington the developmental sequence is not understood in sufficient detail.

Palaeoenvironment. The understanding of the palaeoenvironment of the Lower Lugg is very geographically restricted. The main evidence is derived from Wellington quarry, and although a good sequence is available from this site, its wider relevance remains to be established, and there is a danger that the complexity of the Lower Lugg palaeo-environment as a whole (and indeed, even within the floodplain) is underplayed. This is perhaps emphasised by the limited evidence from Lugg Bridge, which revealed a very different Late Devensian environmental context to that known from Wellington.

2.4 *Resource condition, limitations and threats*

General character and condition of archaeological deposits in the Lower Lugg. The deeply buried flood plain archaeological deposits of the Lower Lugg are a nationally important archaeological resource offering exceptional anaerobic preservation of some archaeological materials and features together with associated palaeoenvironmental sequences. This resource is (excepting the major issue of quarrying) in stable condition. The archaeological resource in the wider landscape has been subject to longstanding processes of surface erosion associated with agriculture and other activities, although significant areas of multi-period cropmarks and Medieval and later earthworks do survive. Excavation has illustrated good survival of archaeological materials in stratified contexts from at least the Neolithic onwards (principally ditches), but has also attested to marked truncation of upper horizons in many areas. This ongoing loss seems to be further illustrated by the localised islands of cropmark features

recorded by the air photo mapping (though further analysis is required to properly assess the significance of this pattern).

Limitations of archaeological field methodologies in the Lower Lugg alluvium. The pragmatic approach to archaeological field work at Wellington has facilitated effective recovery of highly significant archaeological sequences, with the integrated recording of palaeoenvironmental and geomorphological data a key component of that process. However, the precise processes of alluvial preservation/site formation - and their differential impact on the survival of archaeological deposits - are not fully understood. In addition, significant problems of effective archaeological field evaluation remain in the Lower Lugg alluvium (as elsewhere). There is an important need to further develop understanding of site formation process issues, and to continue to develop improved field methodologies.

The aggregate extraction context in the Lower Lugg. There is a clear and present threat to the archaeological resource of the Lower Lugg valley bottom/flood plain areas from ongoing and future sand and gravel extraction in the Lower Lugg. There is a good possibility that extraction will expand well beyond current agreed/landbank areas in the short to medium term. Given very restricted current knowledge of the archaeology of that area, mineral planning criteria are at present unlikely to facilitate in-situ preservation of archaeological features.

2.5 *Managing the Lower Lugg combined historic environmental resource*

GIS database. The GIS database facilitates much improved integrated understanding of the existing archaeological resource of the Lower Lugg. It will be a useful aid for future management and research processes, but at the present time remains fundamentally limited as a predictive tool by the limited spatial coverage and quality of the archaeological and geomorphological data sources on which it is based.

Managing the resource in the wider landscape. The wider landscape of the Lower Lugg preserves an extensive and varied archaeological resource. This is unlikely to be subject to future quarrying pressure, but is vulnerable to agricultural processes and development. The resource is largely undefined in detailed terms, and there are significant opportunities for targeted archaeological survey and investigation.

Managing the resource in the valley bottom. The alluvial zone of the Lower Lugg certainly preserves varied nationally important multi-period archaeological deposits. However, that resource is undefined beyond the excavated area at Wellington (which reveals the pre-Medieval potential), and the more widespread superficial incidence of Medieval and later earthworks (which preserve regionally important areas of ridge and furrow and water management systems). Extensive mineral extraction in this area is ongoing, and will almost certainly expand in the medium term. At the present time, minerals planning systems offer little scope for in-situ preservation of an archaeological resource which cannot be specified in advance of quarrying activity. Identification and investigation of archaeological and geomorphological deposits within the alluvium of the Lower Lugg presents a significant practical and interpretative challenge, not least because understanding of the geomorphological character of the Lower Lugg alluvium is also poorly developed.

2.6 *Key findings of the Lower Lugg Archaeology and Aggregates Resource Assessment*

- The known archaeological resource of the Lower Lugg is heavily focused on a few excavated sites (Wellington/Moreton Quarry in particular). There is very limited data and

poor spatial coverage for all periods before the Medieval. Nevertheless, it is possible provisionally to recognise a locally distinctive archaeological sequence in the Lower Lugg Valley including regionally and nationally significant elements.

- Major quarrying activity will continue (and quite possibly expand) over the next 25 years. This will be focussed in just those areas of the flood plain area where the archaeological deposits are least known, least understood in terms of geomorphological and site formation processes, and yet are also likely to be of high value and to include features of national importance.
- The current minerals planning framework (as defined by national legislation and guidance and the pending Herefordshire Unitary Development Plan) only offers opportunity for rejection of a minerals planning permission to protect archaeological remains where those remains are already properly known and described, and of defined national or regional significance.

3. Priorities for effective future archaeological resource management in the Lower Lugg

3.1 *Archaeology, Geomorphology and Palaeoenvironment*

- For all periods before the Medieval, substantially improve the basic recognition, recording and understanding of the character, spatial extent and chronological development of past settlement in the Lower Lugg.

- For the Medieval and Post Medieval periods, develop detailed recording and interpretation of the known resource to better define its significance, character and local development.

- Develop specific interpretative frameworks in the Lower Lugg archaeological context, and engage in these terms with national and regional research issues and themes.

- Develop spatially extensive understanding of the formation, dynamics and detailed character of the Holocene alluvial deposits and sub-surface landforms of the Lower Lugg.

- Develop spatially extensive understanding of the palaeoenvironmental sequence of the floodplain area and (where evidence is available) the wider landscape.

- Develop better understanding of archaeological site formation processes in the alluvium, and seek to further improve methods of data recovery and analytical engagement with this key zone of nationally important archaeological deposits.

3.2 *Protecting the resource*

- Maintain and develop the GIS database as a key tool to inform management and analysis of the Lower Lugg archaeological resource.

- Continue to develop processes of effective archaeological evaluation in the alluvium, facilitating positive historic environment input to the minerals planning process.

- Engage pro-actively with the likely development of quarrying activity in the Lower Lugg, and seek to facilitate mitigation of that threat in terms of in situ-preservation as well as excavation and recording.

3.3 *Promoting the resource*

- Develop professional recognition of the significance of the archaeology of the Lower Lugg by developing new and distinctive explanatory narratives, and engaging through this process with regional and national debates in archaeology.

- Pro-actively develop the involvement of local people in the future investigation, analysis and protection of the Lower Lugg archaeological and historic environment resource.

- Engage with the major issue of quarry after-use. This includes both the need for quarry after-use solutions to positively reference the pre-quarrying environment, and for the results of archaeological work to be pro-actively made available through the creation of public information resources at former quarry sites.

4. Research Framework

4.1 *Context of the Lower Lugg Archaeological Research Framework*

The immediate end point of the Lower Lugg Resource Assessment is to use the results of the project to establish a future archaeological research agenda in the Lower Lugg valley. This agenda is set out within the Lower Lugg Archaeological Research Framework, which is also designed to dovetail with the West Midlands Regional Archaeological Research Framework (see http://www.arch-ant.bham.ac.uk/research/fieldwork).

The Lower Lugg Archaeological Research Framework is still under development, and has not yet been fully reviewed by the project team and other potential interest groups.

4.2 ***Research Component 1: Managing the archaeological resource of the Lower Lugg Valley***

Key elements:

- Condition and extent of the archaeological resource in the wider landscape.

- Effective archaeological field evaluation in the Lower Lugg flood plain area.

- Archaeological observation and recording methods in the flood plain context.

Potential practical implementation in the valley bottom area:

- Testing and development of new archaeological field evaluation and excavation methodologies.

- Ongoing refinement of archaeological recording and data recovery in the alluvium as part of ongoing PPG16 mitigation work.

Potential practical implementation in the wider landscape:

- Desktop evaluation of rates of loss, erosion and truncation of archaeological features in the Lower Lugg Valley.

- Test investigation of known archaeological/cropmark features in the wider landscape.

4.3 ***Research component 2: Improving 'geoarchaeological' understanding of the Lower Lugg Valley flood plain area***

Key elements:

- Geoarchaeology in the Lower Lugg.

Potential practical implementation in the valley bottom area:

- Undertake specialist geomorphological recording, analysis and modelling of the Holocene alluvial deposits of the Lower Lugg Valley.

4.4 ***Research component 3: Improving the definition and understanding of archaeological sequences in the Lower Lugg Valley***

Key elements:

- Period specific research questions

Potential practical implementation in the valley bottom area:

- Ongoing archaeological recording and analysis (in association with future quarrying activity) of the rich archaeological deposits of the valley bottom/flood plain area.

- Base line recording and (where appropriate) sample evaluation of known Medieval and Post Medieval features within the river valley zone of the Lower Lugg.

- Preliminary survey of the banks of the River Lugg to identify new archaeological deposits in this context.

Potential practical implementation in the wider landscape

- Fieldwalking survey across the Lower Lugg area.

- Evaluation of cropmark complexes, targeting a sample of features with different suspected period associations.

- Base line recording/planning/mapping and (where appropriate) sample evaluation of identified Medieval and Post Medieval site complexes in the wider landscape of the Lower Lugg.

4.5 ***Research component 4: Developing integrated interpretative frameworks for the Lower Lugg archaeological sequence***

Key themes:

- Representation, monumentality and structured deposition in prehistory.

- Understanding interconnected zones of landscape use and settlement development.
- Analysing political centralisation in the Marden/Wellington/Sutton area.
- The Lower Lugg Valley as a hinterland area.
- 'Geoarchaeological' narratives in the flood plain.