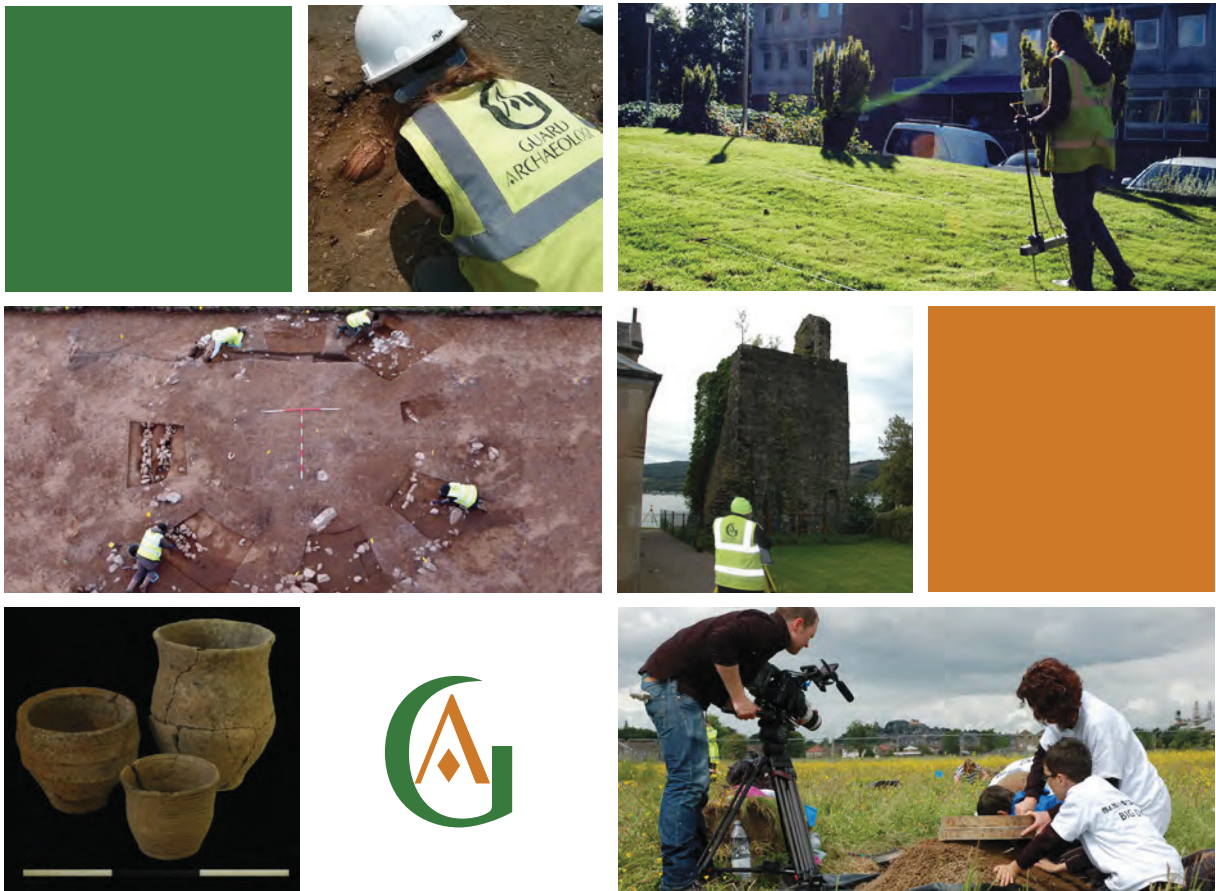


GUARD ARCHAEOLOGY



Catrine Weir, Catrine, East Ayrshire Data Structure Report Project 3811

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Catrine Weir, Catrine, East Ayrshire

Data Structure Report

On behalf of: Covanburn Contracts

NGR: NS 533 260

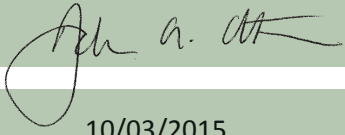
Project Number: 3811

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10/03/2015

Date:

*This document has been prepared in accordance
with GUARD Archaeology Limited standard operating procedures.*

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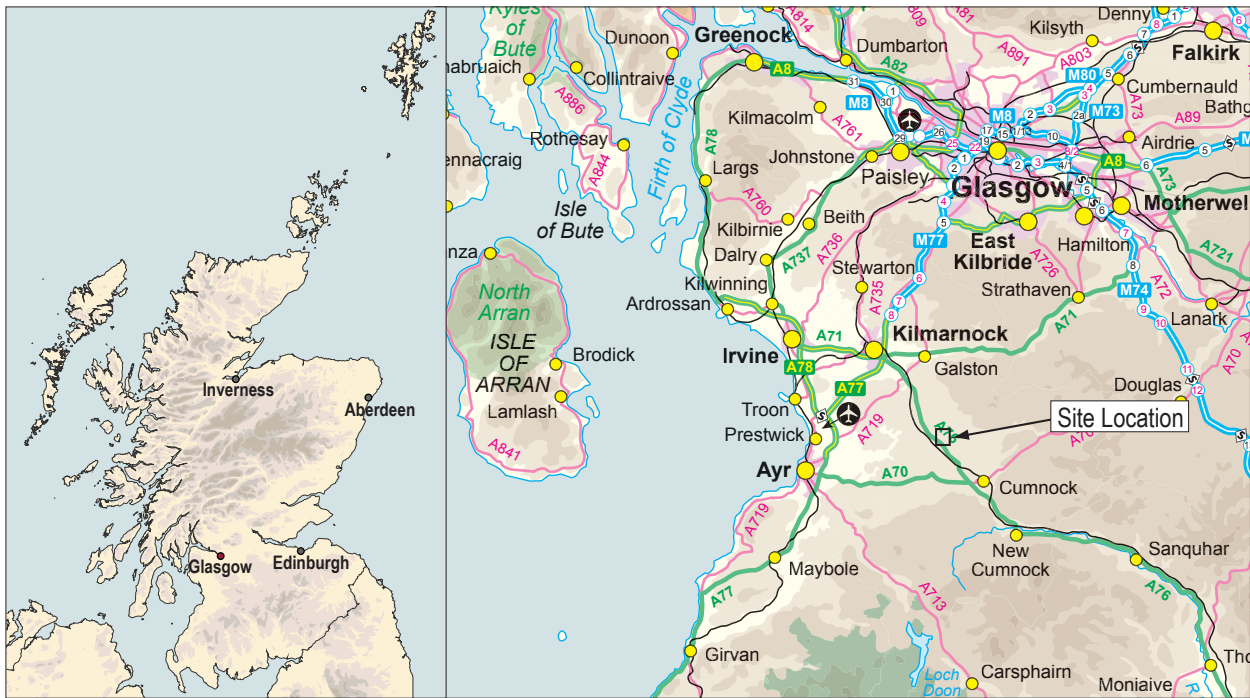
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Executive Summary

- 1.1 GUARD Archaeology Limited were commissioned by Covanburn Contracts on behalf of Catrine Community Trust to undertake an archaeological watching brief during the rehabilitation works associated with repairs to Catrine Weir at Catrine Village, East Ayrshire. This work was in accordance with condition 2 of the scheduled monument consent granted by Historic Scotland on 24th April 2014 (HS case ID: 201307876). The agreed scope of work was for an archaeological watching brief during all groundbreaking works within the scheduled area of the weir. This work was undertaken between 20th May 2014 and the 30th July 2014 and revealed the historic nineteenth century structure of the weir face, its crest and partial exposure of the upper crib and plank components.

Introduction

- 2.1 This report sets out the results of an archaeological watching brief undertaken by GUARD Archaeology on behalf of Covanburn Contracts during the rehabilitation works associated with repairs to the historic scheduled monument of Catrine Weir (HS No. 5670, WoSAS pin 8055) at Catrine on the River Ayr. During the course of the watching brief the historic face and crib and plank construction of the weir was partially uncovered. GUARD Archaeology undertook this programme of work between 20th May 2014 and the 30th July 2014.

Site Location, Topography and Geology

- 3.1 The proposed development location lies to the north-eastern end of the scheduled ancient monument known as Catrine, water works for Catrine Mill 30 m south of 9 St Cuthbert Street on the northern periphery of the village of Catrine, East Ayrshire. The application area is one of gently rolling pasture to the east, woodland to the north and west and the edge of the village to the south. The weir itself is located on the straight section of a bend in the River Ayr located to the north-east of Catrine village.
- 3.2 The underlying drift geology consists of alluvial silt, sand and gravels, while the solid geology consists of Scottish upper coal measures (British Geological Survey viewer, www.bgs.ac.uk/data/mapViewer/home.html).

Historical Background

- 4.1 The weir and lade complex at Catrine is part of an extensive hydraulic water management system which originated in the late eighteenth century to supply power to the cotton mills owned by Claud Alexander of Ballochmyle (Mitchell and Murdoch 2006,9). The water system expanded greatly in 1827 (WoSAS Pin 12437) during renovation work at the mills, and the now extant bleach works, which involved the insertion of new larger waterwheels (Mitchell & Murdoch 2006). Mentioned by John Hume in 1976 in his review of the Industrial Archaeology of the Scottish Lowlands it took until 2006 before a detailed survey of the weir complex was produced that provided a detailed understanding of the complex patchwork of periods of repair and modification (Mitchell & Murdoch). The new weir was modified as early as 1848 and then in response to periods of spating throughout its working life (most notably in 1932 and 1948). This continual phase of damage and repair continues up to this day and in the last five years alone has seen emergency repairs on at least one other occasion in 2012 (Turner 2012) and a watching brief on the area adjacent to the lade in 2009 (Clements) that revealed other elements of the water management system.

Aims and Objectives

- 5.1 The aim of the archaeological work was to:
- Record any disturbance within the scheduled area and ensure preservation by record can be achieved,

5.2 The objectives were therefore to:

- Conduct an archaeological watching brief to record any archaeological remains that were revealed within the development area,
- Submit a report to data structure level for agreement to Historic Scotland, on completion of the investigations;
- Submit, if post-excavation work is required, an accompanying project design and costing alongside the data structure report, which will outline arrangements for further post-excavation and publication works.

Methodology (Figure 1)

- 6.1 The development area was photographed and brief written descriptions were made prior to the commencement of ground-breaking works.
- 6.2 Overburden and any modern infill was removed from the development by machine and by hand and was supervised by an experienced archaeologist. The back-acting excavator was fitted with a flat-bladed (toothless) ditching bucket.
- 6.3 Any archaeological features encountered were cleaned by hand and mapped to determine their character and extent.
- 6.4 All potential archaeological features or concealed elements of earlier weir or lade structures encountered were investigated and recorded.
- 6.5 A full record of all features and structures was made using a single context planning system using pro forma sheets, drawings and photographs. All archaeological features were photographed and recorded at an appropriate scale. Sections were drawn at 1:10 and plans at 1:20. All levels were tied into Ordnance Datum and accurately located with the National Grid.
- 6.6 A representative section was recorded denoting depth of overburden or infill, any stratigraphy present and the nature of the infill matrix. This information was logged in the day book together with a sketch drawn to scale and a photographic record of deposits.
- 6.7 All elements of the fieldwork were undertaken in line with the policies and guidelines of the Institute for Archaeologists (IfA) of which GUARD Archaeology Ltd is a *Registered Organisation*.

Results

- 7.1 Prior to ground breaking works commencing the area impacted by the work programme was recorded via digital photography (plates 1 and 2). This recording programme revealed the present state of the weir and its many repairs which included the application of concrete screed to the weir spillway (001 and 013), stone rubble used to fill in spillway voids (015) and multiple repairs to the weir crest using greenwood and concrete (001 and 005).



Plate 1: General view of weir and fish pass.



Plate 2: Shot of weir crest and cribs.

- 7.2 A track, using geotextile membrane and hardcore stone, was initially constructed across the weir apron close to its crest to enable machine access to the working area (plate 3). Following this a coffer dam was then installed along the length of the weir crest and positioned between 3 m and 5 m from its face (plate 4). The residual water from the now re-directed River Ayr was then pumped out to expose the river gravels (011), which were excavated by both machine and by hand to expose the weir face (003-004, 007 and 010).



Plate 3: Construction access track across weir spillway.



Plate 4: Cofferdam in situ and river bed material pre-excavation.

The Weir Face

- 7.3 The weir face (003 and 004) which stretched from the trash screen to the modern fish pass measured 57 m in length and was constructed using a series of abutting pitch pine wood planks placed vertically. These planks measured between 0.23 m – 0.28 m in width, 0.95 m in length (although not fully exposed) and 70 mm - 100 mm in depth (plate 5). One plank was removed (plate 11) and revealed a total length of 2.5 m with a tapered bottom edge probably used to secure it within the river bed sand and gravels. These planks were secured to the main structure beneath using iron spikes and nails. Several areas of possible 'repair' (007) were positioned intermittently along the length of the face, which gently curved in a north-west/south-east direction with a slight change in direction 45 m from the north-west end as the face approached the lade (figure 2, plates 5 and 6). These 'repair' sections were constructed of shorter planks of wood fixed to the weir face using nails. One section also contained a narrow horizontal strip of wood beneath which the short sections were attached (figure 2, plate 6). These 'repair' sections also contained chamfered (tapered) edges at their top end nearest to the crest and measured between 0.23 m – 0.28 m in width, 0.59 m – 1 m in length and between 20 mm and 60 mm in depth, with the 2 mm end at the top. These additional sections of wood were initially presumed to be repair, however, several sections were missing and on inspection there did not appear to be any damage to the weir face beneath. It was therefore presumed that these additional wood sections were possibly added as a means of adapting or re-directing the flow of water across the face, whether this was to subtly change the direction of flow or decrease turbulence is unknown. The weir face planks to the east of the penstock were in relatively poor state of repair with much erosion and rotting at their top ends located just below the weir crest and gapping in-between the planks and would have resulted in water leakage through the weir structure (plate 11).



Plate 5: Weir face showing its construction and change in slope from north-west to south-east.



Plate 6: Close-up of 'repair' section 007 to weir face.

- 7.4 The weir face (003 - plate 7) to the north-west of the penstock (010 - plate 8) differed slightly in construction to that of the south-east (004) containing a narrow horizontal batten of wood along its mid-length, which was absent from 004. Its planks were also positioned in a more upright vertical position, as opposed to the south-eastern side where they became gradually more angled from north-west to south-east (plate 5). This increase in angulation appears deliberate and was possibly used as a means of controlling the flow of water across the weir face. The wood in this area appeared to be in a better state of repair with no obvious plank erosion. At the rear of section 003 a horizontal batten of wood (016) measuring 4 m in length and 0.1 m in width was located. This was positioned immediately behind the top section of the weir face and only partially observed.



Plate 7: Weir face to west of penstock 003.



Plate 8: Penstock.

- 7.5 At the trash screen end of the weir and abutting both it and the weir face was a raised, horizontal platform of wood (008 - plate 9). It was constructed using a series of planks, which measured 0.23 m – 0.25 m in width and had a narrow strip of wood positioned across its surface. It measured 0.12 m in width, 2.2 m in length (although not fully exposed) and 60 mm in depth. Puddle clay (009) appeared to seal the timber in this area, and probably represents a continuation of the weir face as it meets the lade.
- 7.6 A black, patchy, thin bitumin coating was evident on the weir face in several areas and was probably used as water-proofing agent (plate 10).



Plate 9: Weir face at trash screen with horizontal wood 008.

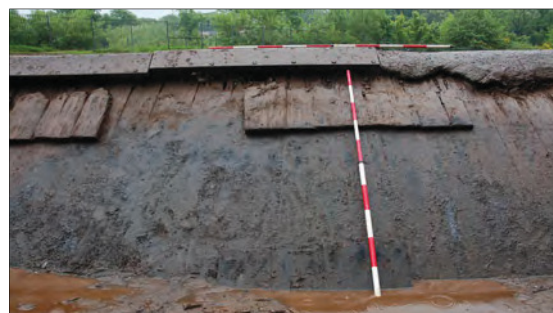


Plate 10: Bitumin coating 009 on weir face and repair section 007.

The Weir Crest

- 7.7 The weir crest appears to have been heavily repaired and modified over the years using a variety of material including concrete (001) and greenheart wood (005). The most recent repairs were in 2002 using greenheart wood, which was bolted into place (plate 12). Only one section of the original weir crest (012) has survived to the present day and remains in situ at the trash screen (plate 13) and comprises a curved cast iron plate.
- 7.8 The concrete and wood repairs were removed by hand from the weir crest and exposed a linear 'intel' beam (006) along most of its length and positioned laterally to the flow of water. It appeared to be a continuous beam with only one break observed towards the trash screen end where the crest turns towards the lade (plates 14 and 15). It appeared to be bolted into position in this area, although other bolts were noted along its length as were numerous nails. The beam

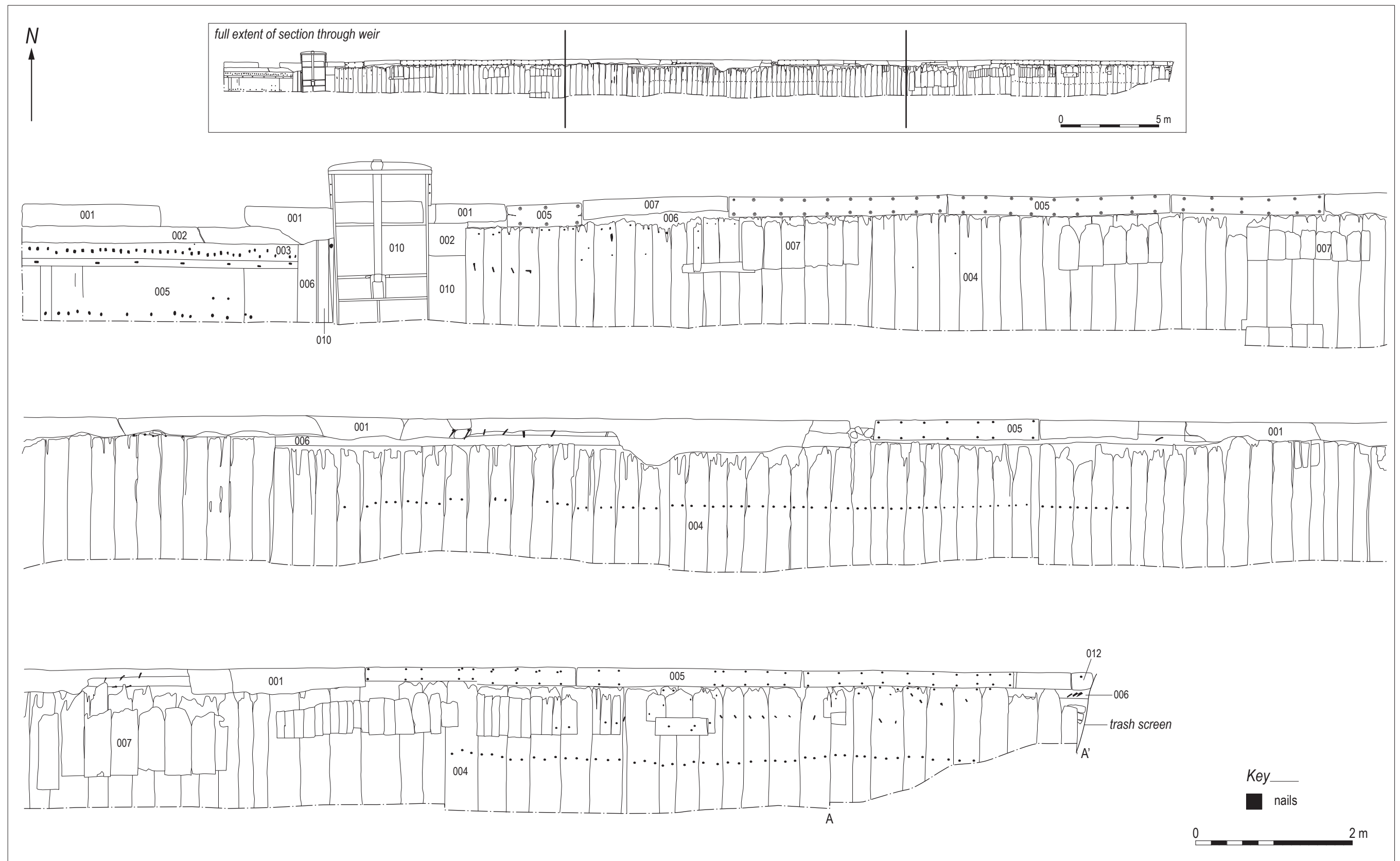


Figure 2: Face of Weir.

measured c. 40 m in length, 0.3 m in width and 0.4 m in height and was roughly rectangular in shape. It was not observed to the rear of weir face (003) although this area was not fully exposed.



Plate 11: Packing material and structure beneath removed weir face plank 004.



Plate 12: Crest repairs.



Plate 13: Original weir crest plate 012.



Plate 14: Partially exposed lintel beam 006/018.



Plate 15: Bolts securing lintel beam at its change in direction near to lade.

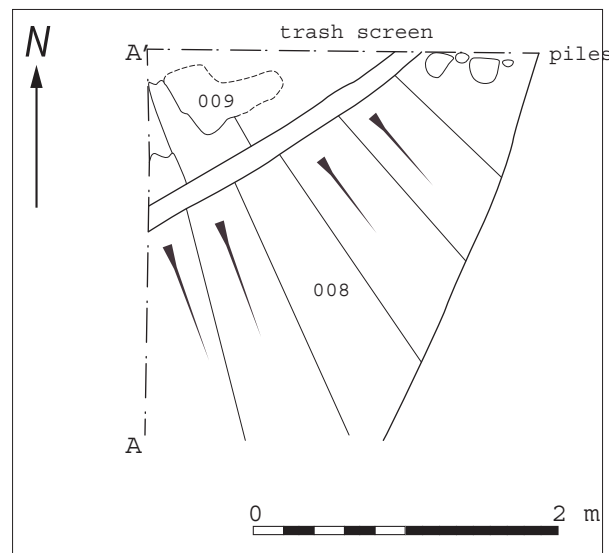


Figure 2: AirWface at trash screen.

The Spillway

- 7.9 Further concrete was also removed from the upper reaches of the weir apron/spillway (close to the weir crest) which revealed more of its crib structure. Ten planks (019) were positioned longitudinally to the water flow (orientated north-east/south-west) and measured 0.25 m in width and 0.1 m in height and were regularly spaced at 2.5 m intervals along the weir crest. They were angled at 45 degrees from lintel beam 006, which they abutted and were fixed to by nails. These planks formed the upper level of the crib sides, which were then filled with rubble (plate 11). Within most of the cribs adjacent to the weir crest were horizontal planks (021) measuring 0.16 m in width and 50 mm in depth (plates 16 and 17). Their length was not observable although was presumed to be 2.5 m as this was the size of the cribs orientation north-west by south-east. Attached onto these were similar beams (020) positioned vertically. These measured 0.25 m in width and 20 mm in depth. These planks were very eroded at the lintel beam end with much gapping in-between. The structure below these planks was not observable although was probably filled with rubble (plate 11).



Plates 16 and 17: Side planks of crib structure 019 and internal upper planks 020 and 021. Metal plates in background 025.

- 7.10 At the north-west end of the crest, to the east of the penstock, rectangular dressed sandstone blocks (023) ranging in size from 0.3 m by 0.25 m and 0.8 m by 0.4 m were located. These were positioned in the upper cribs at this end and contained smooth, uninterrupted surfaces, which would have maintained smooth flow of water across the apron and it is likely that they were constructed this way (plate 18). No horizontal or vertical wood sections (020 - 021) were noted in this area. Set into these sandstone blocks and immediately below the lintel beam were three wooden posts with stone packing around (026–028). They measured 0.25 m by 0.25 m and were square in shape. They are of unknown function (plate 18).
- 7.11 Immediately to the east of the trash screen and on the spillway of the weir close to the crest a linear row of 33 cast iron plates, all abutting each other was uncovered. Their function is

unknown although due to their close proximity to the crest and lade they may have been used to secure or strengthen the structure in this area. Each plate measured 0.5 m by 0.15 m with a depth of 50 mm (plate 19) and appear to be a possible later addition to the weir structure.



Plate 18: Dressed sandstone blocks in crib to immediate east of penstock



Plate 19: Close-up of metal plates 025.

Discussion

- 8.1 During the watching brief at Catrine Weir elements of the historic nineteenth century weir were exposed and recorded. These included elements such as the weir face, its crest and the upper levels of the crib and plank structure close to the weir crest. It has revealed that several of these elements, such as the weir face have survived relatively intact with little damage, while other elements such as the weir crest have been heavily damaged and modified over the intervening years probably due to their exposed nature. It has also revealed the various additions and adaptations to the weir during its working life, such as the 'repair' sections on the weir face and how these adaptations probably subtly changed its flow properties. This work has aided our understanding of this type of gravity weir construction and the materials used in its building and any modifications that may have been carried out during its long use.

Recommendations

- 9.1 The watching brief work has fulfilled the mitigation brief provided by Historic Scotland and therefore it is recommended that no further archaeological work is required at present.
- 9.2 GUARD Archaeology would stress that these recommendations are intended for guidance only. While the recommended mitigation strategy was developed following consultation with Judith Roebuck of Historic Scotland final decisions on the nature and extent of any future archaeological work rest with Historic Scotland.

Acknowledgements

- 10.1 GUARD Archaeology would like to thank Covanburn Contracts and Catrine Community Trust for their assistance and to Bob Will and Dave Swan of GUARD Archaeology who also monitored works on site. Plant and driver were supplied by Tom Grant Plant Hire. Technical support was from Aileen Maule and John Kiely. The illustrations were produced by Gillian McSwan. The report was desk top published by Gillian McSwan. The project was managed for GUARD Archaeology Limited by John Atkinson.

**Catrine Weir, Catrine, East Ayrshire
Data Structure Report**

Section 2: Appendices



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Appendices

Appendix A: Bibliography

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Appendix B: List of Contexts

Context No.	Area	Description	Interpretation
001	-	Hard grey concrete, eroded and cracked in areas measuring 2-3 m in width (where it survives), and 100-400 mm in depth. Curved in shape over weir crest and then runs at 45 degrees angle across the spillway	Weir crest and spillway repair. Very eroded and crack in areas green wood repair 005
002	-	Hard grey concrete measures 3.60 m in length and 200 mm in depth. Surface cracking observable	Concrete found only in western area of weir face below crest 001
003	-	Pitch pine wooden (vertical) upright planks. Measures 0.95 m in height (observable only – max length unknown), 0.23 – 0.28 m in width, depth unknown. Extends along for 3.60 m to west of penstock. Wood grain running vertical with wood knots and lopped branches evident on surface. Wooden rail runs horizontal along the vertical uprights and located 200 mm from top of upright planks. Iron nails evident in several planks and spikes anchoring them in place.	Weir face located to west of penstock.
004	-	Pitch pine wooden (vertical) upright planks. Measures 0.95 m in height (observable only – max length 2.50m), 0.23 m - 0.28m in width, depth xxxxx. Wood grain running vertical with wood knots evident on surface. Iron nails evident in several planks and spikes anchoring them in place. Planks tapered at base. Also repair planks on surface 007. Sits at angle of 30 degrees.	Weir face located to east of penstock
005	-	Wooden repair to weir crest. Grain of wood runs horizontal. Secured to beam below by sunken bolts held on by short rectangular wooden battens. Constructed using 2 planks of wood abutting each and measuring between 700 mm – 100 m in depth and 0.45 m in width.	Modern greenheart wood repair to weir crest. Only observed in sections of the crest.
006	-	Linear wooden beam, rectangular in shape measuring 0.30 m in width, 0.40 m in height and c. 40 m in length. Extends much of the length weir crest except at the western end where its presence was not established. Wrought iron bolts and nails on its surface. Orientated NE/SW	Wooden cross beam used as load bearing, Located in lateral position across the water flow and immediately below the weir crest. Upright planks fixed to it.
007	-	Short plank varying in individual length from 0.19 m – 0.28 m in width and 0.59 m – 1.0 m in height. Depth 20 mm – 60 mm. Wood tapered at top end to aid water flow. Several section of repair fixed onto wooden battens, others directly onto face surface. Length of repairs 2.0 m – 2.60 m and located 0.20 m below the weir crest	Short timbers nailed to face of weir, possibly repair to the weir face but more likely used to change/regulate flow of water across the weir face
008	-	Six planks of wood measuring 0.23 m – 0.25 m in width abutting each other and positioned horizontally. Length and depth unknown. Horizontal batter of wood nailed across all planks	Re-directed timber screen at trash screen

Context No.	Area	Description	Interpretation
009	-	Pink grey stiff clay	Puddle clay located below and between woodwork 008 and also at base of weir face (not observed this phase of work)
010	-	Cast iron constructed penstock	Regulation of water flow across weir
011	-	Alluvial sand and gravel and boulders within loose matrix	River bed material
012	-	Iron plate curved in shape measuring 0.62 m x 0.65 m with a depth of 200 mm	Original cast iron weir crest
013	-	Hard grey concrete measuring 0.15 – 0.20 m in depth	Concrete screed at fish pass (same as 001)
014	-	Large sub-angular boulders within loose matrix	Rock in-fill at eastern end of weir used as in-fill – modern construction
016	-	Linear wooden batten measuring 3-4 m in length and 0.10 m width. Coated with bitumin	Wood batten behind 003
017	-	Same as 001	Modern weir face lining/skin/revetment
018	-	Same as 006	Wooden cross beams used as load bearing
019	-	Wooden struts positioned longitudinally (along the river flow line) and abutting beam 018 at the crest. Flat, rectangular planks only partially exposed length unknown, width 0.25m and height 0.10 m. Series of ten along the apron length (NW/SE). Secured by nails. Part of crib construction	Series of ten crib 'stalls' located along the weir crest.
020	-	Wooden planks measuring 0.25 m in width and 20 mm thick. Length unknown. Positioned at 45 degree angle and orientated longitudinally. Covers upper crib contents. Fixed by nails	Planks located along first row of cribs abutting weir crest inbetween upright planks 019. Very eroded in places
021	-	Horizontal wooden slats orientated lateral to the water flow below 021. Measure 0.16 m wide and 50 mm thick. Possible 2.5 m in length (length of crib) but not fully exposed	Series of planks below 020.
022	-	Dark grey blue clay, very clean in, measures 100 mm in thickness.	Clay located to bond structural elements such as 019-021, 023-025. Also used as a water sealant
023	-	Rectangular sandstone blocks measuring between 0.30 – 0.80 m length, 0.25 – 0.40 m in width, depth unknown.	Shaped sandstone blocks with smooth upper surface. Fill of cribs
025	-	Cast iron plates measuring 0.50 m x 0.15 m x 50 mm. Located in linear alignment on spillway close to trash screen.	Cast iron plates of unknown function but later in date
026	-	Square cut measuring 0.25 m x 0.25 m and packed with stone with a central fragment of wood.	Located adjacent to crest cut into 023. Possible support post during construction
027	-	Square cut measuring 0.25 m x 0.25 m and packed with stone with a central fragment of wood.	Located adjacent to crest cut into 023. Possible support post during construction
028	-	Square cut measuring 0.25 m x 0.25 m and packed with stone with a central fragment of wood.	Located adjacent to crest cut into 023. Possible support post during construction

Appendix C: List of Drawings

Drawing No.	Area	Sheet No.	Feature No.	Details	Scale
1	-	1-11	001-007	Weir facing	1:10
2	-	11	007	Horizontal board at trash screen	1:20
3	-	4-7	many	Plan of exposed spillway	1:20

Appendix D: List of Photographs

File 1

Frame	Area	Context	Subject	Taken from
1	-	-	Lade wall	N
2	-	-	Lade wall	N
3	-	-	Lade wall	NE
4	-	-	Lade wall	N
5	-	-	Fairbairn sluice	NE
6	-	-	Fairbairn sluice	NE
7	-	-	Lade wall	NW
8	-	-	Lade wall	NW
9	-	-	Lade wall	E
10	-	-	Lade wall and stairs	E
11	-	-	Adit	NE
12	-	-	Adit, lade wall and sluice	NE
13	-	-	Adit, lade wall and sluice	NE
14	-	-	Adit, lade wall and sluice	NE
15	-	-	Lade wall	W
16	-	-	Lade wall	W
17	-	-	General shot of weir	E
18	-	-	General shot of weir	E
19	-	-	Lade and sluice gates	W
20	-	-	Lade and sluice gates	W
21	-	-	Lade and sluice gates	W
22	-	-	Lade and sluice gates	W
23	-	-	Lade and sluice gates	W
24	-	-	Lade wall and sluice gates	W
25	-	-	Plastic sheeting below concrete at SE of apron	N
26	-	-	Lade wall and crib stones	W
27	-	-	Exposed cribs at lade and concrete screed	N
28	-	-	Exposed cribs at lade and concrete screed	NE
29	-	-	Concrete at lade	NE
30	-	-	Lade wall and iron plate	N
31	-	-	Lade wall at trash screen	E
32	-	-	Cribs at lade	N
33	-	-	Cribs at lade	N
34	-	-	Cribs at lade	N
35	-	-	Cribs at lade	N
36	-	-	Cribs at lade with timber	E
37	-	-	Cribs at lade with timber	N
38	-	-	Cribs at lade with timber	N
39	-	-	Cribs at lade with timber	N
40	-	-	Cribs at lade and lade wall	N
41	-	-	Cribs at lade and lade wall	N
42	-	-	Cribs at lade and lade wall	N
43	-	-	Cribs at lade and lade wall	N
44	-	-	Cribs at lade and lade wall (close-up)	N
45	-	-	Cribs at trash screen	N
46	-	-	Cribs at trash screen (wood)	N
47	-	-	Cribs at trash screen (wood)	N
48	-	-	Close-up of wood	N
49	-	-	Close-up of wood	N
50	-	-	Weir apron	E
51	-	-	Weir apron	E
52	-	-	Rock in-fill	SW

Frame	Area	Context	Subject	Taken from
53	-	-	Rock in-fill	SW
54	-	-	Rock in-fill and fish pass	S
55	-	-	Rock in-fill and fish pass	S
56	-	-	Cribs at rock in-fill	S
57	-	-	Timber at rock in-fill	S
58	-	-	Re-inforced concrete in-fill	E
59	-	-	Re-inforced concrete in-fill	E
60	-	-	Timber and concrete screed to west of rock in-fill	N
61	-	-	Timber and concrete screed to west of rock in-fill	NW
62	-	-	Close-up of iron bar in apron	N
63	-	-	Timber and concrete screed to west of rock in-fill	N
64	-	-	Apron and fish pass	E
65	-	-	Fish pass	SE
66	-	-	Fish pass	SE
67	-	-	Fish pass	SE
68	-	-	Fish pass	SW
69	-	-	Fish pass	SW
70	-	-	Upper pool	W
71	-	-	Rock in-fill and upper pool	W
72	-	-	Weir crest and lade wall	NW
73	-	-	Weir crest	SE
74	-	-	Weir crest	SE
75	-	-	Crest with metal plate in situ (at trash screen)	W
76	-	-	Trash screen with debris	E
77	-	-	Weir crest	SE
78	-	-	Weir crest	SE
79	-	-	Lade and apron	NW
80	-	-	Lade and apron	NW
81	-	-	Lade and apron at channel	NE
82	-	-	Lade and apron at channel	NE
83	-	-	View from footbridge to east	W
84	-	-	View from footbridge to west	E
85	-	-	View from footbridge to west	E
86	-	-	Weir and Andersons pool	SE
87	-	-	Weir and Andersons pool	SE
88	-	-	Void	-
89	-	-	Damaged cribs and lade	NE
90	-	-	Damaged cribs and lade	NE
91	-	-	Damaged cribs and lade	NE
92	-	-	Damaged cribs and lade	E
93	-	-	Concrete screed on apron NW of weir	E
94	-	-	Re-inforced concrete with weir stone below	N
95	-	-	Depth of concrete screed on apron	N
96	-	-	Depth of concrete screed on apron	S
97	-	-	Depth of concrete screed on apron	S
98	-	-	Timber and uprights NW of apron	SE
99	-	-	Timber and uprights NW of apron	SE
100	-	-	Weir crest	NE
101	-	-	Weir crest	NE
102	-	-	Channel	SE
103	-	-	Channel	SE
104	-	-	Channel	NW
105	-	-	Channel	NW
106	-	-	Fish pass	E
107	-	-	Fish pass	SW

Frame	Area	Context	Subject	Taken from
108	-	-	River Ayr to west of weir	E
109	-	-	Channel and weir	W
110	-	-	Channel and weir	NW
111	-	-	Channel and weir	NW
112	-	-	Channel and weir	NW
113	-	-	Weir and crest	NW
114	-	-	Weir and crest	NW
115	-	-	Wood in situ on crest (close-up)	S
116	-	-	Wood in situ on crest (close-up)	E
117	-	-	Cribs, concrete screed and iron fittings	S
118	-	-	Concrete screed on cribs	E
119	-	-	Concrete screed on cribs	SE
120	-	-	Concrete screed on cribs	SE
121	-	-	Concrete screed on cribs	SW
122	-	-	Concrete screed on cribs	SW
123	-	-	Wood with nail in situ	S
124	-	-	Wood with nail in situ	N
125	-	-	Timber and concrete screed	N
126	-	-	Weir crest	E
127	-	-	Upright wood at weir crest	N
128	-	-	Upright wood at weir crest	N
129	-	-	General shot of weir	W
130	-	-	General shot of weir	W
131	-	-	General shot of weir	W
132	-	-	Weir crest and channel	SE
133	-	-	Weir crest and channel	SE
134	-	-	Weir crest and upright wood at channel	SE
135	-	-	Weir crest and upright wood at channel	NW
136	-	-	Weir crest and upright wood at channel	NW
137	-	-	Weir crest and upright wood at channel	NW
138	-	-	Timber and upright wooden cribs	E
139	-	-	Rock fill and wall	SE
140	-	-	General shot of weir	SE
141	-	-	General shot of weir	E

File 2

Frame	Area	Context	Subject	Taken from
1	-	-	Upper crest with working platform in situ	W
2	-	-	Upper crest with working platform in situ	W
3	-	-	General shot of site	W
4	-	-	Weir crest with working platform in situ	E
5	-	-	Weir crest with working platform in situ	E
6	-	-	Weir crest with working platform in situ	E
7	-	-	Weir crest with working platform in situ	E
8	-	-	Fish pass	S
9	-	-	NE of site	SW
10	-	-	NE of site	SW
11	-	-	Crest at trash screen	NE
12	-	-	Working platform in situ	NE
13	-	-	Working platform in situ	NE
14	-	-	Fish pass	SE
15	-	-	Work to east of SAM (Andersons Pool)	SW
16	-	-	Work to east of SAM (Andersons Pool)	SW
17	-	-	View of site from footbridge	E

Frame	Area	Context	Subject	Taken from
18	-	-	View of Bailey Bridge at weir crest	E
19	-	-	View of Bailey Bridge at weir crest	E
20	-	-	General shot of site	E
21	-	-	Upper pool	S
22	-	-	Upper pool and Andersons Pool	SW
23	-	-	Fish pass	SE
24	-	-	Wooden timber to immediate W of fish pass and rock in-fill	SE
25	-	-	Wooden timber to immediate W of fish pass and rock in-fill	S
26	-	-	Wooden timber to immediate W of fish pass and rock in-fill	S
27	-	-	Wooden timber to immediate W of fish pass and rock in-fill	S
28	-	-	Close-up of wooden uprights at wooden timber	S
29	-	-	Close-up of wooden uprights at wooden timber	E
30	-	-	Close-up of wooden uprights at wooden timber	E
31	-	-	Close-up of wooden uprights at wooden timber	S
32	-	-	Timber to west of wooden timber at rock in-fill	S
33	-	-	Crest and apron at trash screen	NE
34	-	-	Crest and apron at trash screen	NE
35	-	-	Cleared debris from trash screen	NW
36	-	-	Cleared debris from trash screen	NW
37	-	-	Bailey bridge in situ at N of site	E
38	-	-	Bailey bridge in situ at N of site	E
39	-	-	Trash screen	N
40	-	-	Trash screen	E
41	-	-	Shot of site at crest	E
42	-	-	Wooden timber and rock in-fill	N
43	-	-	Wooden timber and uprights	S
44	-	-	Wooden timber and uprights	W
45	-	-	Wooden timber and uprights	N

File 3

Frame	Area	Context	Subject	Taken from
1	-	-	Fish pass end of site	E
2	-	-	View of piles towards gates	W
3	-	-	At sluice gates with wood visible	E
4	-	-	At sluice gates with wood visible	S
5	-	-	At sluice gates with wood visible	SE
6	-	-	At sluice gates with wood visible	SW
7	-	-	At sluice gates with wood visible	SW
8	-	-	At sluice gates with wood visible	SW
9	-	-	Shot of piling towards lade	W
10	-	-	Historic wood at sluice gate	SW
11	-	-	Excavation of slot at pile	E
12	-	-	Excavation of slot at pile	E
13	-	-	Dam in situ towards lade	NW
14	-	-	Dam in situ towards lade	NW
15	-	-	Dam in situ towards lade	NW
16	-	-	General shot of site	NW
17	-	-	General shot of site	NW
18	-	-	General shot of site	NW
19	-	-	Shot of crest	NW
20	-	-	Central area of crest	NW
21	-	-	Weir crest (0-44m)	SW
22	-	-	Weir crest (0-44m)	SW
23	-	-	Weir crest (0-44m)	SW

Frame	Area	Context	Subject	Taken from
24	-	-	Weir crest (0-44m)	SW
25	-	-	Weir crest (0-44m)	SW
26	-	-	Weir crest (0-44m)	SW
27	-	-	Weir crest (0-44m)	SW
28	-	-	Weir crest (0-44m)	SW
29	-	-	Weir crest (oblique)	S
30	-	-	Weir crest (close-up of wood)	SW
31	-	-	Weir crest (close-up of wood)	SW
32	-	-	Weir crest (close-up of wood)	SW
33	-	-	Weir crest (close-up of wood)	SW
34	-	-	Weir crest (close-up of wood)	SW
35	-	-	Weir crest (close-up of wood)	SW
36	-	-	Weir crest (close-up of wood)	SW
37	-	-	Penstock	SW
38	-	-	Penstock	SW
39	-	-	Penstock	SW
40	-	-	To east of penstock	SW
41	-	-	To east of penstock	SW
42	-	-	To east of penstock	SW
43	-	-	To east of penstock (close-up)	SW
44	-	-	To east of penstock (with repairs)	SW
45	-	-	To east of penstock	SW
46	-	-	To east of penstock	SW
47	-	-	To east of penstock	SW
48	-	-	To east of penstock	SW
49	-	-	To east of penstock	SW
50	-	-	To east of penstock (oblique)	SW
51	-	-	Excavated area	SW
52	-	-	Excavated area	SW
53	-	-	Excavated area	SW
54	-	-	Excavated area	SE
55	-	-	Excavated area	SE
56	-	-	Excavated area	SE
57	-	-	Excavated area (section 3 and 4)	S
58	-	-	Excavated area	S
59	-	-	Excavated area (oblique)	SW
60	-	-	Excavated area (section 3)	SW
61	-	-	Excavated area	SW
62	-	-	Concrete and new wood crest repair	S
63	-	-	Concrete and new wood crest repair	S
64	-	-	Concrete and new wood crest repair	S
65	-	-	Bitumin (section 4)	S
66	-	-	Bitumin (section 4)	S
67	-	-	Weir repair	S
68	-	-	Weir repair	S
69	-	-	Weir repair (oblique shot)	SW
70	-	-	Penstock	S
71	-	-	Close-up of nails in wood	SW
72	-	-	Weir (section 5)	S
73	-	-	Weir (section 5)	S
74	-	-	Weir (section 5)	S
75	-	-	Weir (section 5) close-up	S
76	-	-	Bitumin (section 5)	S
77	-	-	Weir (section 5)	S
78	-	-	Oblique shot	SE

Frame	Area	Context	Subject	Taken from
79	-	-	Close-up of bitumin	S
80	-	-	Oblique shot	SW
81	-	-	Oblique shot	SW
82	-	-	Oblique shot	SE
83	-	-	Oblique shot (section 5)	SE
84	-	-	Oblique shot	S
85	-	-	Oblique shot	S
86	-	-	Oblique shot (oblique)	SE
87	-	-	Oblique shot	SE
88	-	-	Weir (section 1)	SW
89	-	-	Weir (section 1)	SW

File 4

Frame	Area	Context	Subject	Taken from
1	-	-	Rebuilding the weir construction track	E
2	-	-	Rebuilding the weir construction track	E
3	-	-	Water inundation into the coffer dam	E
4	-	-	Water inundation into the coffer dam	E
5	-	-	Area still to be excavated in the coffer dam	NW
6	-	-	Water in dammed area	NW
7	-	-	Water in dammed area	SE
8	-	-	Water in dammed area	SE
9	-	-	Water in dammed area	NW
10	-	-	Water in dammed area	NW
11	-	-	Water in dammed area	NW
12	-	-	Removed historic upright plank	-
13	-	-	Removed upright plank section	S
14	-	-	Removed upright plank section (oblique)	SE
15	-	-	Removed upright plank section	S
16	-	-	Removed upright plank section	S
17	-	-	Removed upright plank section	S
18	-	-	Removed upright plank section	S
19	-	-	Removed upright plank section	S
20	-	-	Removed upright plank section	S
21	-	-	Removed upright plank section	S
22	-	-	Removed upright plank section	S
23	-	-	Section at fish pass	SW
24	-	-	Section at penstock	SW
25	-	-	Section at penstock	S
26	-	-	Section at penstock	S
27	-	-	Section at penstock	S
28	-	-	Section at penstock	S
29	-	-	Section at penstock	S
30	-	-	Section at penstock	S
31	-	-	Section at penstock	S
32	-	-	Section at penstock	S
33	-	-	Section at penstock	S
34	-	-	Section at penstock	S
35	-	-	Section at penstock	S
36	-	-	Section at penstock	S
37	-	-	Section at penstock	S
38	-	-	Section at penstock	S
39	-	-	Section at penstock	S
40	-	-	Section at penstock	S

Frame	Area	Context	Subject	Taken from
41	-	-	Section at penstock	S
42	-	-	Shot of weir	SW
43	-	-	Shot of weir	SE
44	-	-	Section shot	S
45	-	-	Section shot	S
46	-	-	Section shot	S
47	-	-	Section shot	S
48	-	-	Section shot	S
49	-	-	Section shot	S
50	-	-	Section shot	S
51	-	-	Section shot	S
52	-	-	Section shot	S
53	-	-	Section shot	S
54	-	-	Section shot	S
55	-	-	Section shot	S
56	-	-	Section shot	S
57	-	-	Section shot	S
58	-	-	Section shot	S
59	-	-	Section shot	S
60	-	-	Section shot	S
61	-	-	Section shot	S
62	-	-	Section shot	S
63	-	-	Section shot	S
64	-	-	Section shot (at trash screen)	S
65	-	001, 006	Horizontal timber below crest	E
66	-	001, 006	Horizontal timber below crest	E
67	-	001-004	General shot of weir	NW
68	-	001-004	General shot of weir	NW
69	-	001, 004, 007	General shot of weir	SE
70	-	001, 004, 007	General shot of weir (central section)	E
71	-	001-004, 006	General shot of weir (central section)	W
72	-	001-004, 006	General shot of weir (central section)	SE
73	-	001-004, 006	General shot of weir (central section)	SE
74	-	001-004, 006	General shot of weir (central section)	SW
75	-	001-004, 006	General shot of weir (central section)	NW
76	-	004, 006-008	Working shot at trash screen	NW
77	-	004, 006-008	Working shot at trash screen	NW
78	-		General shot of weir and coffer dam	SE
79	-	004-005, 008-009	Wood at trash screen	NW
80	-	004-005, 008-009	Wood at trash screen	NW
81	-	004, 008-009	Wood at trash screen	SW
82	-	004, 008-009	Wood at trash screen	SW
83	-	004, 008-009	Wood at trash screen (close-up of puddle clay)	SW
84	-	004, 008-009	Wood at trash screen	NW
85	-	004, 008-009	Wood at trash screen	SE
86	-	004, 008-009	Wood at trash screen	SE
87	-	004, 008-009	Wood at trash screen	SE
88	-	004, 005, 007	Section shot	SE
89	-	004, 005, 007	Section shot	S
90	-	004-005	Section shot (at trash screen)	S
91	-	004-005, 008	Section shot (at trash screen)	S
92	-	004-005, 008	Section shot (at trash screen)	S
93	-	004-005, 008	Section shot (at trash screen)	S
94	-	004-005, 008	Section shot (at trash screen)	S

Frame	Area	Context	Subject	Taken from
95	-	004-005, 008	General shot at trash screen end	SE
96	-	004-005, 008	General shot at trash screen end	SE
97	-	004-005, 008	General shot at trash screen end	SE
98	-	001, 005, 012	Original iron crest at trash screen	SE
99	-	001, 005, 012	Original iron crest at trash screen	W
100	-	013	Concrete at fish pass	SE
101	-	013	Concrete at fish pass	SE
102	-	013	Concrete at fish pass	SW
103	-	013	Concrete at fish pass	SW
104	-	014	Rock in-fill at fish pass	S
105	-	014, 015	Test pit through rock in-fill	W
106	-	014, 015	Test pit through rock in-fill	W
107	-	014, 015	Test pit through rock in-fill	W
108	-	013	Removed concrete at fish pass	SW
109	-	001, 004, 005, 007	General shot of weir crest	NW
110	-	001, 004, 005, 007	General shot of weir crest	NW
111	-	SF13	Pile support from 011	-
112	-	SF13	Pile support from 011	-
113	-	SF13	Pile support from 011	-

File 5

Frame	Area	Context	Subject	Taken from
1	-	-	ID shot	-
2	-	006	Concrete removed to expose timber at SW end of weir	N
3	-	006	SW end of weir (starting point)	N
4	-	006	Section at change of direction	S
5	-	006	Section at change of direction	E
6	-	006	Section at change of direction	N
7	-	006	Three bolts and metal plate	E
8	-	006	Bolts in cleared section	N
9	-	006	Bolts in horizontal wood	N
10	-	006	Bolt and wood in east side	E
11	-	006	North of bolt join at change of direction	S
12	-	006	North of three bolts	S
13	-	006	North to end of concrete and wooden section	S
14	-	006	North to end of concrete and wooden section	N
15	-	006	Nails and bolt	E
16	-	006	Looking to section that has timber battens	S
17	-	006	Detail with section with timber battens	E
18	-	006	Section of timber	N
19	-	001, 006	Section with re-inforced concrete	S
20	-	006	Section beyond concrete	S
21	-	005-006	Section up to the next modern timber cover	S
22	-	006	From timber section working shot	N
23	-	005, 006	Detail section with concrete	N
24	-		General	SW
25	-	006	General from timber section	S
26	-		General from iron sluice north	N
27	-	001, 006	Removal of weir crest	W
28	-	001, 006	Removal of weir crest	W
29	-	006	Close-up of bolts and battens below removed weir crest 001	W
30	-	006	Timber below removed weir crest 001	W
31	-	006	Timber below removed weir crest 001	W

Frame	Area	Context	Subject	Taken from
32	-	006	Timber below removed weir crest 001	W
33	-	006	Timber below removed weir crest 001	W
34	-	006	Timber below removed weir crest 001	W
35	-	006	Timber below removed weir crest 001	W
36	-	006	Timber below removed weir crest 001	W
37	-	006	Timber below removed weir crest 001	W
38	-	006	Timber below removed weir crest 001 (close-up)	W
39	-	006	Timber below removed weir crest 001	W
40	-	006	Timber below removed weir crest 001	W
41	-	006	Concrete repair at weir crest and wood 006 (close-up)	E
42	-	006	Concrete repair at weir crest and wood 006 (close-up)	E
43	-	006	Exposed timber 006 below removed concrete weir crest 001	W
44	-	006	Detail section of 006 with bolts and nails	W
45	-	006	Shot of timber below removed crest concrete 001	W
46	-	006	Shot of timber below removed crest concrete 001	W
47	-	006	Shot of timber below removed crest concrete 001	W
48	-	006	Shot of timber below removed crest concrete (close-up)	W
49	-	006	Close-up of timber 006 and nails with concrete 001	N
50	-	006	Close-up of 006 with bolts and nails in situ	N
51	-	006	Timber 006 near to trash screen	W
52	-	006	Timber 006 near to trash screen with nails in situ	W
53	-	006	Timber 006 near to trash screen with nails in situ	W
54	-	006	Timber 006 near to trash screen with nails in situ (close-up)	N
55	-	006	Timber 006 near to trash screen with nails in situ	W
56	-	006	Timber 006 near to trash screen with nails in situ	W
57	-	006	Timber 006 near to trash screen with nails in situ	W
58	-	006	Timber 006 with bolts in situ at trash screen end	N
59	-	006	Timber 006 trash screen end general shot	W
60	-	006	Timber 006 trash screen end general shot	W
61	-	006	Timber 006 trash screen end general shot	W
62	-	006, 012	Timber 006 and original iron plate crest	W
63	-	006, 012	Timber 006 and original iron plate crest	W
64	-	006, 012	Timber 006 and original iron plate crest	W
65	-	006	General shot of removed weir crest from east end	E
66	-	006	General shot of removed weir crest from east end	E
67	-	006	General shot of removed weir crest from east end	E
68	-	006	General shot of removed weir crest from east end	E
69	-	006	General shot of removed weir crest from east end	E
70	-	006	General shot of removed weir crest from east end	E
71	-	006	General shot of removed weir crest from west end	E
72	-	013	Fish pass	SW
73	-	003	Wood 006 at west end	E
74	-	003	Wood 006 at west end	E
75	-	003	Close-up of wood at west end	E
76	-	003	Close-up of wood at west end	E
77	-	003	Close-up of wood at west end	E
78	-	003	Close-up of wood at west end	E
79	-	003	Exposed wood 003 at west end	SW
80	-	003	Exposed wood 003 at west end	SW
81	-	003	Exposed wood 003 at west end	SW
82	-	003	Exposed wood 003 at west end with sand bags in situ	SW
83	-	004	Removed upright plank of wood from weir	
84	-	004	Removed upright plank of wood from weir	

File 6

Frame	Area	Context	Subject	Taken from
1	-	001	Concrete removal at NE of weir	SW
2	-	001	Concrete removal at NE of weir	NE
3	-	001	Concrete facing pre-removal	NE
4	-		Working shot – removal of concrete facing	NE
5	-		Working shot – stone and wood facing	NE
6	-	002	Wooden cross beam	SW
7	-	002, 004	Working shot – beam and slats	NE
8	-	003, 004	Working shot – horizontal and vertical slats	SW
9	-	002	Working shot – cross beam and modern facing	NE
10	-	002	Working shot – cross beam and modern facing	NE
11	-	007	Stone facing segment	SW
12	-	007	Stone facing segment	SW
13	-	007	Stone facing segment	NE
14	-	002, 004-005	Cross beam, vertical and horizontal slats	SW
15	-	002, 004-005	Cross beam, vertical and horizontal slats	NE
16	-	002, 005	Cross beam, slats and braces	SW
17	-	002, 005	Cross beam, slats and braces	NE
18	-	002-004	Cross beam, slats and braces	SW
19	-	002-004	Cross beam, slats and braces	NE
20	-	002-006	Cross beam, slats, braces and clay	SW
21	-	002-006	Cross beam, slats, braces and clay	NE
22	-	002-006	Cross beam, slats, braces and clay	SW
23	-	002-006	Cross beam, slats, braces and clay	SW
24	-	002-006	Cross beam, slats, braces and clay	NE
25	-	001-003	Concrete, beam and braces	SW
26	-	001-003	Concrete, beam and braces	NE
27	-	002-005	Beam, braces, slats and clay	SW
28	-	002-005	Beam, braces, slats and clay	NE
29	-	002-005	Beam, braces, slats and clay	SW
30	-	002-005	Beam, braces, slats and clay	NE
31	-	002-005	Beam, braces, slats and clay	SW
32	-	002-005	Beam, braces, slats and clay	NE
33	-	002-005	Beam, braces, slats and clay	SW
34	-	002-005	Beam, braces, slats and clay	NE
35	-	002-003, 008	Bea, braces and stone facing	SW
36	-	002-003, 008	Bea, braces and stone facing	NE
37	-	002, 009	Beam and iron facing	SW
38	-	002, 009	Beam and iron facing	NE
39	-	002, 009	Beam and iron facing	NE
40	-	002, 009	Beam and iron facing	SW
41	-	002, 009	Beam and iron facing	NE
42	-	002, 009	Beam and iron facing	SW
43	-	002, 009	Beam and iron facing	NE
44	-	002, 009	Beam and iron facing	SW
45	-	002, 009	Beam and iron facing	NE
47	-	012	Wooden block/post pad segment	SW
48	-	010	Post setting segment	SW
49	-	010	Post setting segment – location shot	NE
50	-	011	Post setting segment	SW
51	-	011	Post setting segment – location shot	NE
52	-	012	Wooden block/post pad location shot	NE
53	-	002	SW facing elevation cross beam	SW
54	-	002	SW facing elevation cross beam	SW
55	-	002	Detail of brace	NE

Frame	Area	Context	Subject	Taken from
56	-	002	Detail of brace	SW
57	-	002-005	Detail of brace, beam and slats	SW
58	-	002-004	Detail of beam and vertical slats	SW
59	-	002-004	Detail of beam and vertical slats	SW
60	-	009	Detail of back of iron facing	SW
61	-	009	Detail of back of iron facing	Oblique

Appendix E: Discovery and Excavation Scotland Report

LOCAL AUTHORITY:	East Ayrshire
PROJECT TITLE/SITE NAME:	Catrine Weir, Catrine, East Ayrshire
PROJECT CODE:	3811
PARISH:	Sorn
NAME OF CONTRIBUTOR(S):	Maureen C. Kilpatrick
NAME OF ORGANISATION:	GUARD Archaeology Limited
TYPE(S) OF PROJECT:	Archaeological Watching Brief
NMRS NO(S):	NS52NW 19.01 SAM No 5670
SITE/MONUMENT TYPE(S):	Scheduled Ancient Monument Historic Weir associated with water works for Catrine Mill
SIGNIFICANT FINDS:	--
NGR (2 letters, 6 figures)	NS 533 260
START DATE (this season)	20 th May 2014
END DATE (this season)	30 th July 2014
PREVIOUS WORK (incl. DES ref.)	--
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	GUARD Archaeology Limited were commissioned to undertake an archaeological watching brief during the rehabilitation works associated with repairs to Catrine Weir at Catrine Village, East Ayrshire. This work was in accordance with condition 2 of the scheduled monument consent granted by Historic Scotland on 24 th April 2014 (HS case ID: 201307876). The agreed scope of work was for an archaeological watching brief during all groundbreaking works within the scheduled area of the weir. This work revealed the historic eighteenth/nineteenth century structure of the weir face, its crest and partial exposure of the upper crib and plank components.
PROPOSED FUTURE WORK:	None
SPONSOR OR FUNDING BODY:	Covanburn Contracts
CAPTION(S) FOR ILLUSTRS:	--
ADDRESS OF MAIN CONTRIBUTOR:	GUARD Archaeology Limited, 52 Elderpark Workspace, 100 Elderpark Street, Glasgow, G51 3TR
EMAIL ADDRESS:	Maureen.kilpatrick@guard-archaeology.co.uk
ARCHIVE LOCATION (intended/deposited)	WoSAS SMR and NMRS

Appendix F: Written Scheme of Investigation

CATRINE WEIR, CATRINE, EAST AYRSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

WRITTEN SCHEME OF INVESTIGATION

PROJECT 3811

Executive Summary

- 1.1 This Written Scheme of Investigation (WSI) forms the archaeological method statement for the proposed rehabilitation works associated with repairs to Catrine Weir, Catrine Village, East Ayrshire, a scheduled monument (HS Index No M5670). This document will require to be approved by Historic Scotland before any work with the scheduled area can commence.

Introduction

- 2.1 This WSI sets out the methodology for the archaeological mitigation works required for the proposed rehabilitation works associated with repairs to Catrine Weir, Catrine Village, East Ayrshire in accordance with condition 2 of the scheduled monument consent granted by Historic Scotland on 18 September 2012. The agreed scope of work is for an archaeological watching brief during all groundbreaking works within the scheduled area of the weir at Catrine Village.
- 2.2 This document outlines the programme of archaeological works that may be needed to mitigate the effects of the proposed development. It details the methodology to be employed in implementing Stage 1 archaeological watching brief. Stage 2 post-excavation analysis and publication, if required, will be specified in an addendum to the WSI. This addendum, if required, will be submitted for the agreement of Historic Scotland, prior to the commencement of any post-excavation work. All phases of work will be funded by the developer, in this case Covanburn Contracts on behalf of Catrine Community Trust.

Site Location

- 3.1 The proposed development area lies at the north-eastern end of the scheduled monument known as Catrine, water works for Catrine Mill 30m south of 9 St Cuthbert's Street on the northern periphery of the village of Catrine, East Ayrshire. The landscape surrounding the application area is one of gently rolling pasture to the east, woodland to the north and west and the edge of the village to the south.

Archaeological Background

- 4.1 The weir and lade complex at Catrine relates to work conducted in 1827 (WoSAS Pin 12437) in association with the renovation of the mills and the insertion of new larger waterwheels (Mitchell & Murdoch 2006). Mentioned by John Hume in 1976 in his review of the Industrial Archaeology of the Scottish Lowlands it took until 2006 before a detailed survey of the weir complex was produced that provided a detailed understanding of the complex patchwork of periods of repair and modification (Mitchell & Murdoch). The new weir was modified as early as 1848 and then in response to periods of spating throughout its working life (most notably in 1932 and 1948). This continual phase of damage and repair continues up to this day and in the last five years alone has seen emergency repairs on at least one other occasion in 2012 (Turner 2013) and a watching brief on the area adjacent to the lade in 2009 (Clements) that revealed other elements of the water management system.

Aims and Objectives

- 5.1 The aim of the archaeological works is to:
 - record any disturbance within the scheduled area and ensure preservation by record can be achieved.
- 5.2 The objectives are therefore to:
 - Conduct an archaeological watching brief to record any archaeological remains that are revealed within the development area;

- Submit a report to data structure level for agreement to Historic Scotland, on completion of the investigations;
- Submit, if post-excavation work is required, an accompanying project design and costing alongside the data structure report, which will outline arrangements for further post-excavation and publication works.

Methodology

- 6.1 The GUARD Archaeologists will photograph the development area and make a brief written description prior to the commencement of ground-breaking works.
- 6.2 Overburden and any modern infill material will be removed from the development area by machine and will be supervised at all times by an experienced GUARD Archaeologist. The back-acting excavator will be fitted with a flat-bladed (toothless) ditching bucket.
- 6.3 Any archaeological features encountered will be cleaned by hand and mapped by the Archaeologist to determine their character and extent.
- 6.4 All potential archaeological features or concealed elements of earlier weir or lade structures encountered will be investigated and recorded by the on-site Archaeologist.
- 6.5 In the event that groups of significant features or complex remains are revealed, further archaeological staff may be deployed in order to assist in the recording of these features.
- 6.6 A full record of all features or structures will be made using a single context planning system using pro forma sheets, drawings and photographs. All archaeological features will be photographed and recorded at an appropriate scale. Sections will be drawn at 1:10, and plans at 1:20. All levels will be tied into Ordnance Datum and accurately located with the National Grid.
- 6.7 All archaeological finds will be dealt with by the on-site Archaeologist. Significant small finds will be three dimensionally located prior to collection. All finds will be processed to MAP2 type standards and subject to specialist assessment. Palaeo-environmental samples will also be taken where appropriate. If necessary, conservation of finds will be appraised to allow for specialist study.
- 6.8 A representative section will be recorded denoting depth of overburden or infill, any stratigraphy present and the nature of the infill matrix. This information will be logged in the day book together with a sketch drawn to scale and a photographic record of deposits.
- 6.9 A record of the full extent in plan of all archaeological deposits as revealed in the investigation will be made, either digitally or by hand, and related to the OS grid. Where digital planning is used, the project archaeologist will ensure that a sufficient number of points are taken on each feature to ensure an accurate representation of the site.
- 6.10 All elements of the fieldwork and any subsequent post-excavation work will be undertaken in line with the policies and guidelines of the Institute for Archaeologists (IfA) of which GUARD Archaeology Ltd is a *Registered Organisation*.

Report Preparation and Contents

- 7.1 A report detailing the results of the archaeological investigations will be submitted to the client and, subject to client approval, then submitted to Historic Scotland. The report will take the form of a Data Structure Report and will contain an analysis of the results of the archaeological investigations. The report will include a full descriptive text that will characterise any archaeological features or structures encountered. It will also include plans and photographs at an appropriate scale showing the archaeological features encountered and archiving lists of all drawings and photographs.
- 7.2 The report will include the following:
 - executive summary
 - a site location plan to at least 1:10,000 scale with at least an 8 figure central grid reference
 - OASIS reference number; unique site code

- Scheduled monument reference number
 - contractor's details including date work carried out
 - nature and extent of the proposed development, including developer/client details
 - description of the site history, location and geology
 - a site plan to a suitable scale and tied into the national grid so that features can be correctly orientated
 - context & feature descriptions
 - 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
 - initial assessment of relevant finds/samples if appropriate
 - discussion of the results of the archaeological investigations
 - recommendations regarding the need for, and scope of, any further archaeological work, such as post-excavation analysis and publication
 - bibliography
- 7.3 The Data Structure Report will be completed within four weeks of the completion of the site investigations.
- 7.4 At least two copies of the report will be prepared for the client and a further one including a digital PDF copy sent to WoSAS.
- 7.5 The report will be presented in an ordered state and contained within a protective cover/sleeve or bound in some fashion. The report will be page numbered and supplemented with section numbering for ease of reference.

Copyright

- 8.1 Unless otherwise agreed copyright for any report resulting from the archaeological work undertaken as part of the project will be deemed the intellectual property of GUARD Archaeology Limited.

Publication

- 9.1 A summary of the project results will be submitted to *Discovery and Excavation in Scotland*. In the event of minor archaeological remains being encountered during the work, it is proposed that a comprehensive report submitted to *Discovery and Excavation in Scotland*, will form the final publication of the site. A copy of this will be included in the Data Structure Report.

Archive

- 10.1 The archive for the project, including a copy of the report, will be submitted to the National Monuments Records for Scotland within three months of completion of all relevant work.
- 10.2 The online OASIS form at <http://ads.ahds.ac.uk/project/oasis/> will be completed within 1 month of completion of the work. Once the Data Structure Report has become a public document by submission to or incorporation into the SMR, WoSAS will validate the OASIS form thus placing the information into the public domain on the OASIS website.
- 10.3 A copy of the archive contents will be included in the Data Structure Report which will be provided to Historic Scotland and WoSAS for inclusion in the HER archive.

Finds Disposal

- 11.1 The arrangement for the final disposal of any finds made in connection with the archaeological work, will be deposited in keeping with Scottish legal requirements as set out in the Treasure Trove Code of Practice published by the Scottish Government in December 2008. The laws relating to Treasure Trove and *Bona Vacantia* in Scotland apply to all finds where the original owner cannot be identified. This includes all material recovered during archaeological fieldwork. Accordingly, all assemblages recovered from archaeological fieldwork are claimed automatically by the Crown and must be reported to the Scottish Archaeological Finds Allocation Panel through its secretariat, the Treasure Trove Unit. In the event of the discovery of small finds, a filled-out copy of the form "Declaration of an Archaeological Assemblage from Fieldwork" and two copies of the pertinent Data Structure Report will be submitted to the Panel at the conclusion of the fieldwork. The Panel will then be responsible for recommending to the Queen's and Lord Treasurer's Remembrancer which museum should be allocated the finds. All artefacts will be temporarily stored by GUARD Archaeology until a decision has been made by the panel.

Personnel and Liaison

- 12.1 The GUARD Archaeology team will comprise the following qualified and experienced GUARD archaeologists:
- Project Director (on-site Lead Archaeologist): Maureen Kilpatrick
 - Additional field staff, if required, will be drawn from our team of experienced field staff
 - Finds and Environmental Support and Conservation: Ms Aileen Maule
 - Illustrator: Ms Fiona Jackson
 - Project Manager: John Atkinson
- 12.2 The GUARD Archaeology Managing Director, John Atkinson, will be the point of contact for the archaeological works. A full CV for individuals concerned can be made available on request.

Monitoring

- 13.1 The proposed start date for the archaeological works has been notified to Historic Scotland so they can monitor the works if required. Historic Scotland will also be informed of the site mobile phone number prior to the start date so that monitoring visits can be arranged. It is envisaged that the archaeological watching brief may take approximately 10 days to complete.

Health & Safety and Insurance

- 14.1 GUARD Archaeology Limited adheres to the guidelines and standards prescribed for archaeological fieldwork set down in the Institute for Archaeologists approved Health and Safety in Field Archaeology document. It is standard GUARD Archaeology policy, prior to any fieldwork project commencing, to conduct a risk assessment and to prepare a project safety plan, the prescriptions of which will be strictly followed for the duration of all archaeological fieldwork. Copies of the resultant project safety plan and of GUARD Archaeology Limited's Fieldwork Safety Policy Statement may be viewed upon request.
- 14.2 GUARD Archaeology Limited also possesses all necessary insurance cover, proofs of which may be supplied upon request.

Bibliography

Clements, V 2009 St Cuthbert's Street, Catrine, East Ayrshire. Unpublished AOC Archaeology Report.
 Hume, JR 1976 The Industrial Archaeology of Scotland, Vol 1: The Lowlands, London.
 Mitchell, JS & Murdoch, R 2006 Catrine Weir Conservation Report, Unpublished Industrial Heritage Consulting Limited Report.
 Turner, L 2013 Catrine Weir, Catrine, East Ayrshire. Unpublished Rathmell Report (OASIS Reference: Rathmell1 - 125130).

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