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**Upper Falloch Hydro Scheme,
Crianlarich, Stirling**

Archaeological Mitigation Works

Report No. 3334

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1. INTRODUCTION

1.1 General

This report presents the results of a programme of archaeological mitigation works carried out by CFA Archaeology Ltd (CFA) at the Upper Falloch Hydro Scheme, south of Crianlarich, Stirlingshire (Fig. 1). The work was carried out between October 2014 and September 2015 and was commissioned by Natural Power Consultants Ltd.

1.2 Background

Consent has been granted for the construction of the Upper Falloch Hydro Scheme, in Upper Glen Falloch to the south of Crianlarich, Stirlingshire (between approx. NN 3697 2396 and NN 3840 2179). The scheme includes a single intake, c.2km of pipeline, a powerhouse, and associated access tracks and borrow pits.

A Written Scheme of Investigation (WSI), dated 23 September 2014, was agreed in advance of works starting with the West of Scotland Archaeology Service (WoSAS), archaeological advisors to Loch Lomond and the Trossachs National Park Authority. This WSI superseded the previously agreed WSI (dated 23 June 2010) prepared by Firat Archaeological Services for Hydroplan UK.

As part of the environmental impact assessment for the scheme, a programme of archaeological desk based study and walkover survey was undertaken by SUAT Ltd in February 2009 (Perry & Barton 2009). Some minor variations to the scheme resulted in an additional archaeological survey being undertaken by Firat Archaeological Services in October 2009 (Baker 2009). Site numbers from these reports are reproduced on Fig. 1 and in the gazetteer, and CFA site numbering continued sequentially.

1.3 Objectives

The objectives of the mitigation works were:

- To conduct a pre-construction survey covering Construction Areas (CA) 1-3 and Borrow Pit (BP) 1, along with the location of Site 16. The survey aimed to identify any additional cultural heritage sites within these locations and propose mitigation measures if needed.
- To erect a buffer zone around the recorded extents of sites in close proximity to construction activities, and demarcate them with high visibility fencing. This was to include Sites 3, 5, 11, 12 and 13, as well as any newly discovered sites.
- To undertake a watching brief during topsoil stripping works in areas of archaeological sensitivity ie, where construction work took place in proximity to the above sites.
- To report on the results.

2. WORKING METHODS

CFA Archaeology Ltd follows the Chartered Institute for Archaeologists' Code of Conduct, Standards and Guidance. Recording of all elements followed established methods.

2.1 Pre-Construction Survey

A pre-construction survey was undertaken in October 2014 when vegetation cover had died back. This survey covered areas which had not previously been walked, including CA1, CA2, CA3, BP1 and the location of Site 16. The survey was designed to identify any additional cultural heritage sites within these locations and propose mitigation measures.

Archaeological sites were located by GPS and a photographic record was made of the surviving remains.

2.2 Site demarcation

Sites 3, 5, 13 and 17 (Fig. 1) were demarcated prior to any construction activities in their vicinity. Site 11 could not be found but it appears to be the same as Site 17. Site 12 has been recently buried under material excavated from the Pulpit Rock road improvement scheme on the A82 to the south.

The width of the buffer zone around each site was constrained in some cases but a buffer of at least 10m was used where possible.

2.3 Watching Brief

A watching brief was then carried out during groundbreaking work within agreed areas of the development, which comprised works in the vicinity of Sites 14 and 16.

The watching brief was not required during upgrading of existing tracks, and where access tracks were built as floating roads.

All mechanical excavations were carried out under constant archaeological supervision, and machines were fitted with a smooth bladed ditching bucket. Any further excavations undertaken to assess potential archaeological remains were carried out by hand.

3. ARCHAEOLOGICAL RESULTS

3.1 General

The development site (Fig. 1) covers in the main unimproved hill slopes and the sides of the Upper Falloch Valley. To the south-east, the hills rise to well over 900m AOD. The development is bisected by the West Highland Railway from Glasgow to Oban and Fort William.

The area is predominantly north west facing and varies between 300m AOD in the south-east and 170m AOD in the north-west. Thin peaty soils were dominant except for localised areas of improved land on either side of the West Highland Railway.

3.2 Pre-construction Survey

All of the sites are listed in Appendix 2. Sites 1-16 were recorded during the previous surveys (Perry & Barton 2009; Baker 2009). These sites were not revisited unless works were taking place in their vicinity. One new site was recorded, Site 17.

BPI

Borrow Pit 1 lies upstream along the River Falloch, to the south-east of the development area, in proximity to Site 7. The setting is uneven ground on steep hillside, covered with grass and frequent boulders. No new archaeological sites were recorded.

CA1

Construction Area 1 lies on the inside bend of the south bank of the River Falloch on fairly level and even ground, at the north-west end of the development area on the south side of the railway line. The surface was grass and sedge and it was poorly drained. No archaeological remains were visible and the waterlogged nature of the location indicates a very low probability of buried remains.

The area of site 16 contained no remains which correspond to those described in the gazetteer.

Adjacent to the public road, a substantial area has been covered by spoil and boulders.

Site 12 was recorded during this survey as being buried beneath this modern spoil and rubble, which may relate to road works that took place in 2010 and which were not associated with the hydro scheme.

Site 13 was recorded during this survey as being a corn-drying kiln.

CA2

Construction Area 2 was in the approximate centre of the development area. The setting was uneven ground on moderately steep hillside, covered with grass and frequent boulders. No new archaeological sites were recorded.

Site 17 was a two-celled sheepfold recorded close to CA2, on a NE-facing slope on the SW side of the River Falloch (Fig. 2). It measured c.9m by 4m with 1.2m high dry-stone walls and comprised two cells built against large angular erratic. It is situated immediately above the current track up the glen. This site is likely to correspond to Site 11, which could not be located at its recorded grid reference; it is to be assumed that the grid reference for Site 11 supplied in previous gazetteers is wrong.

CA3

Construction Area 3 was located adjacent to Intake 1 at the south-eastern end of the development. The setting was uneven ground on steep hillside, covered with grass and rushes with frequent boulders. No new archaeological sites were recorded.

3.3 Site Demarcation

Sites 3, 5, 13 and 17 were demarcated. Site 12 was buried and so was not visible (Fig. 3) but its recorded location was marked on the ground, while the grid reference for Site 11 is likely to be incorrect and instead this site corresponds to Site 17, as Site 11 could not be found. A buffer was erected around these sites.

3.4 Watching Brief

A watching brief was undertaken during ground breaking works at the north-western end of the development, in the vicinity of sites 12, 13 and 16. The works here entailed the construction of a compound, a laydown area and provision of access into the site, which included the replacement of a bridge.

A dump of modern artefacts within the peat, including glass bottles, china plates and shoes, was recorded c. 30m to the west of the railway line along the edge of the new access road.

No features or deposits of archaeological significance were recorded.

At the location where Site 14 was crossed by the pipeline trench, there were no visible upstanding remains. A watching brief was undertaken and no archaeological remains were recorded.

Peat/topsoil depth in the watching brief areas varied from 0.2m to 2m deep.

4. CONCLUSIONS

A programme of archaeological works was carried out prior to and during construction of the Upper Falloch Hydro Scheme. This included walkover survey, site demarcation and a watching brief in two archaeologically sensitive areas. The walkover survey recorded one new site, a sheepfold, while no features or deposits of archaeological significance were recorded during the watching brief.

A summary statement covering the results of this project will be submitted for publication in *Discovery and Excavation in Scotland* (Appendix 3). It will also be reported through the OASIS protocol.

The project archive, comprising all CFA record sheets, maps and reports, will be deposited with the Royal Commission on the Ancient and Historic Monuments of Scotland (RCAHMS) and copies of reports will be lodged with the National Park Authority Sites and Monuments Record (SMR).

5. REFERENCES

Baker, F 2009 *Glen Falloch Hydro Schemes. Clarification of Archaeological Survey Results. Additional Archaeological Survey Report and Recommendations*. Firat Archaeological Services.

Baker, F 2010 *Written Scheme of Investigation for Archaeological Work during the Glen Falloch Hydro Schemes*. Prepared for Hydroplan UK by Firat Archaeological Services.

Perry, D and Barton T 2009 *Archaeological Desk-Based Assessment and Walkover Survey. Upper Falloch, Glen Falloch*. SUAT Ltd.

APPENDIX 1: Digital Photograph Register

Photo No.	Description	Taken from
1-3	Area of Sites 12, 13 & 16 showing spoil and boulders, walkover	Various
4	CA2 walkover	SE
5	CA2 walkover	NW
6	CA2 walkover	W
7	BP1 walkover	W
8	BP1 walkover	N
9	BP1 walkover	E
10	BP1 walkover	S
11	CA3 walkover	SE
12	CA3 walkover	NW
13	CA3 walkover	W
14	CA3 walkover	SW
15	CA3 walkover	S
16	Two-celled sheepfold (Site 17)	S
17	Two-celled sheepfold (Site 17)	SE
18	Two-celled sheepfold (Site 17)	E
19	CA1 walkover	N
20	CA1 walkover	NE
21	CA1 walkover	NW
22	CA1 walkover	SW
23	CA1 walkover	SE
24	Sites 13 (marked out) and 12 (buried under rubble)	SW
25	Sites 13 (marked out) and 12 (buried under rubble)	N
26	Possible site at 237481 723209 next to Site 17	SW
27	Possible site at 237481 723209 next to Site 17	NE
28	Site 5 fenced	S
29	General view of Sites 2 and 3	NNW
30	Existing bridge to be replaced near Site 16	NE
31-32	Site 16 panorama of the area	NW and W
33	Site 13 from Site 12	NE
34-36	Site 13, general views	Various
37	Existing bridge to be replaced near Site 16 and derelict machine	S
38-39	Site 16 panorama of the area	SW
40-41	Site compound area	NE
42-43	Site compound area	NW
44-46	Site compound area	SW
48-49	General views of the location of the assemblage of ceramic, glass and shoes with the railway line in the distance	NNE
50	General view of the temporary road from the railway crossing to the existing bridge	SW
51	General view of the temporary road from the railway crossing to the existing bridge	NE
52	Soil profile on the temporary road	SE
54-55	Views of the abutments of the existing bridge	SE and W
56	General view of the access road from the compound to the railway crossing	NNW
57-63	General views of the existing bridge	Various
66-67	Powerhouse building area	SW and NNE
68	General view of the location of the new bridge and test-pits	NNW
69-74	General views of the location of the assemblage of ceramic, glass and shoes with the railway line in the distance	W
75-82	General views of test-pits on location of new bridge abutment	Various
84	Bottles found during excavation within topsoil	-
85-91	General shots of site stripped to natural	Various
92-94	General shots of area surrounding works	Various

APPENDIX 2: Gazetteer of Sites

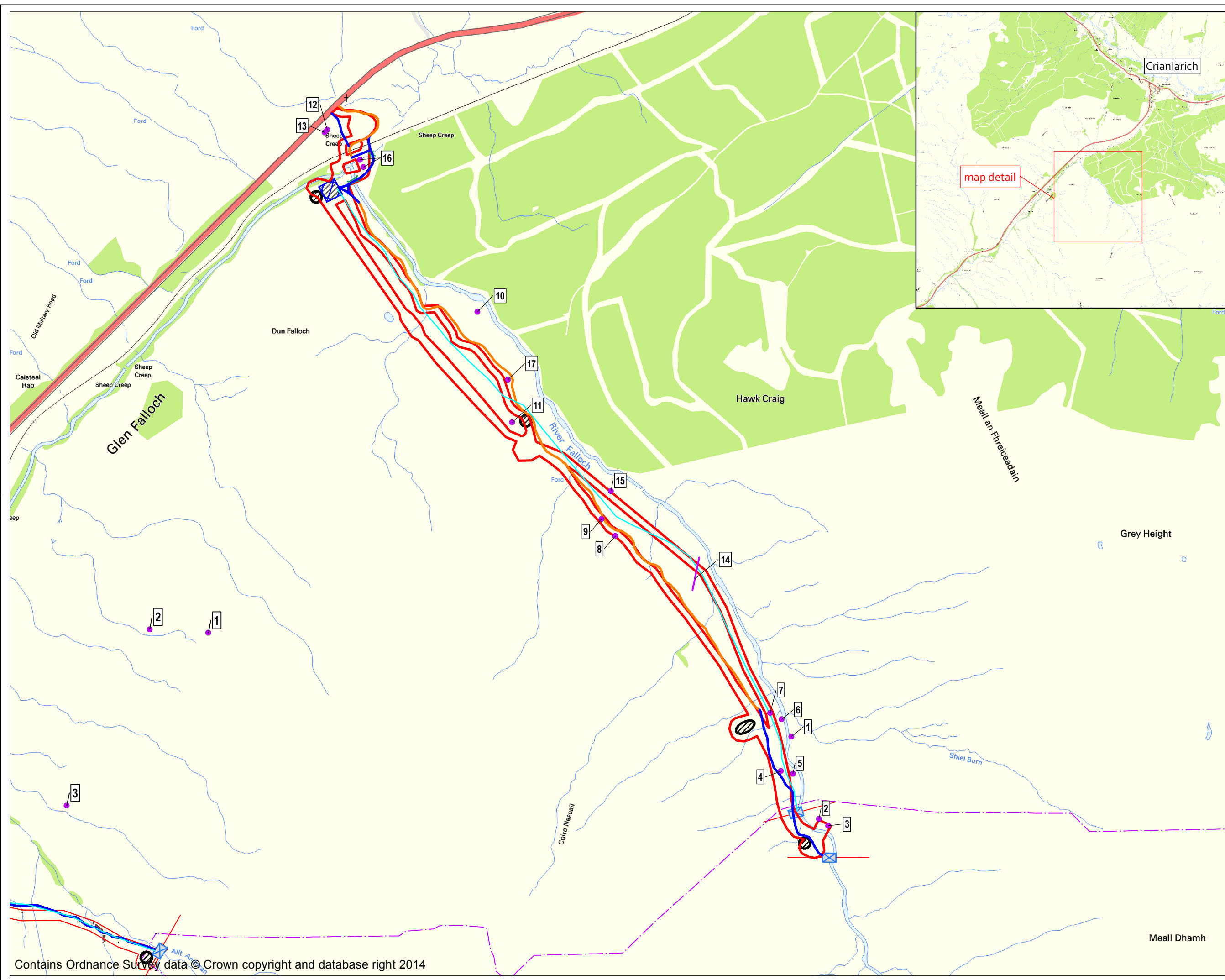
(Descriptions for Sites 1-11 taken from Perry & Barton 2009, descriptions for Sites 12-16 taken from Baker 2009)

Site No.	Grid reference	Type of site	Description
1	NN 3829 2215	Sheepfold	Modern sheepfold still in use
2	NN 38370 21912	Ditch	Linear trench (27m long) on approx N-S alignment with upcast on west side. Waterlogged at north end, dry at south. Bank 0.5m wide, 0.3m high. Ditch 0.4m wide, 0.35m deep.
3	NN 38397 21891	Shieling	Grass-covered stone enclosure with reeds covering interior. Walls possibly 0.75m wide. Structure 4.75m by 5m.
4	NN 3826 2205	Boundary	Not seen during survey, though a number of isolated fence posts were noted.
5	NN 38294 22042	Shieling	Horseshoe-shaped stone wall (drystone) on a possible natural platform by the River Falloch. Grass bank (with stones protruding) between wall and river. Main structure size: 3m by 3m externally. Platform: 7m by 6m. Walls 0.8m wide and 0.55m high. There may be other hidden archaeological remains in the nearby area.
6	NN 38261 22200	Enclosure	Terrace on edge of River Falloch enclosed by turf banks to the west and south. Enclosure 12m wide and 18.5m long. Walls 1.5m at base and 0.5m high. There may have once been a wall along the riverside which has been eroded by the river.
7	NN 38228 22218	Track	Grass track with occasional stones, 2m wide. Leads off main track (Site 15) and down to the River Falloch. There was probably a ford at the river leading to sheepfold (Site 12).
8	NN 3778 2273	Track	Modern track
9	NN 3774 2278	Fence	Modern fence
10	NN 3738 2338	Sheepfold	Original sheepfold appears to have been demolished though no rubble was found. Current sheepfold built of wood and fencing.
11	NN 37481 23060	Structure	An L-shaped drystone structure around a large rock outcrop near a modernised track. Two rectangular compartments visible, one to the SE side of the rock outcrop; one to the NE. The NE compartment was lower than the one to the SW. Both compartments utilise the rock outcrop for one of the walls. NE compartment 7m by 3.7m internally, walls up to 90cm-1m thick and 1-1.3m high. Most of the walls are in poor condition and roughly constructed but at the SE end, the wall was built curved and consisted of coursed rubble. On the SW wall a gap which would have led into the second compartment or served as an entrance had been blocked with a rough rubble wall. The south wall of the second compartment abutted the first and the blocking noted above effectively separated this compartment from the first. This structure measured 6.7-3.1m internally, walls up to 75cm thick, 70cm high. The SW wall curved but only survived to 1 course. Rubble was also noted on the top of the rock outcrop very close to the SW wall of the second compartment.
12	NN 36945 23907	Structure	A sub-oval turf and stone structure measuring 6.20m E-W x 4.80m over 1.20m thick denuded wall foundations, which stand 0.20m high. The interior

Site No.	Grid reference	Type of site	Description
			space measures 3.3m x 1.8m. There is 0.80m wide gap at the E end of the low stony bank that defines the building, which suggests an entrance. The structure is overgrown with grass and is located at the edge of the area of dumping. This site maybe be associated with Site 13 and may represent settlement remains. Although no other archaeological sites were located in this area they may have already been destroyed or obscured by the dumping over the general area. This site might be part of Coire Earbh steading.
13	NN 36937 23900	Possible structure	A 2m high and 5m diameter glacial drumlin located c.8m to the south of Site 12 has a slight depression on the top of the mound that may be artificial. The depression might be the result of sheep scrape although it is now grass covered. Excavation would be required to confirm whether this is an archaeological feature but it is notable that none of the other drumlins in this area exhibit similar features. Coire Earbh steading is believed to have stood near here in the 16th – 17th century and this possible site may be associated.
14	NN 38003 22574 - NN 38023 22669	Track and natural terrace	A grassy track 2.30m wide slightly terraced into the hillside. Most obvious at NN 38007 22608. The track is overgrown with grass and quite boggy. The two grid points given represent either end of the track as far as it could be traced. At the W end the track peters out but it is possible stretches of it might be present further west. At the east end it again peters out at an area of rocky outcrops, drier ground and shorter more fertile grass on a natural terrace. A burn running through this area has a slight bank along one side suggesting it has been cleared of debris in the past. Although no structural remains were observed on this small terrace at NN 37996 22686, which is right on the line of the pipe route, the change in vegetation and track way leading to it suggests it may have been used as a stock corral area in the past.
15	NN 37767 22861	Track	Shown on the modern OS map this is a 3.30m wide forestry track. It has been cut by machine and a 3.00m wide and 0.60m high bank is present along its N side. The track is very rocky and eroded and is only suitable for heavy tracked vehicles. It leads to a bridge and a track continues on the NE bank of the river up to the forestry plantation.
16	NN 37050 23800 NN 3704 2382	Coire Earbh farmstead	A possible medieval / post medieval farmstead is recorded at this location in the Stirling SMR (SMR No. 45). The farmstead is believed to be under or in the vicinity of the modern sheepfold but has not been located by any of the field surveys. The farmstead s believed to date to the 16th / 17 centuries and it is of note that nothing is shown at this location on Stobie's map of 1783.
17	NN 37469 23185	Sheepfold	A two-celled sheepfold built against two large angular erratics. On a NE-facing slope immediately above the current track. Measures 9m by 4m overall, with walls standing to 1.2m high.

APPENDIX 3: Discovery and Excavation in Scotland Entry

LOCAL AUTHORITY:	Stirling
PROJECT TITLE/SITE NAME:	Upper Falloch Hydro Scheme, Crianlarich
PROJECT CODE:	UPPE
PARISH:	Killin
NAME OF CONTRIBUTOR:	Ian Suddaby
NAME OF ORGANISATION:	CFA Archaeology Ltd
TYPE(S) OF PROJECT:	General Mitigation Works: Watching Brief and Walkover survey
NMRS NO(S):	None
SITE/MONUMENT TYPE(S):	
SIGNIFICANT FINDS:	None
NGR (2 letters, 6 figures)	
START DATE (this season)	October 2014
END DATE (this season)	September 2015
PREVIOUS WORK (incl. DES ref.)	None
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	A programme of archaeological works was carried out prior to and during construction of the Upper Falloch Hydro Scheme. This included walkover survey, site demarcation and a watching brief in two archaeologically sensitive areas. The walkover survey recorded one new site, a sheepfold, while no features or deposits of archaeological significance were recorded during the watching brief.
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	None
SPONSOR OR FUNDING BODY:	Natural Power Consultants Ltd
ADDRESS OF MAIN CONTRIBUTOR:	CFA Archaeology Ltd, Old Engine House, Eskmills Park, Musselburgh, EH21 7PQ.
EMAIL ADDRESS:	cfa@cfa-archaeology.co.uk
ARCHIVE LOCATION (intended/deposited)	Archive to be deposited in NMRS, Reports lodged with SMR and NMRS.



Key:

- Site Boundary
- Proposed New Track
- Upgrade Existing Track
- Temporary Construction Track
- Proposed Pipe Route
- Powerhouse Locations
- Intake Location
- Proposed Bridge
- Construction Area
- Cultural Heritage Site (point)
- Cultural Heritage Site (linear)



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Fig. No:	1	Report No:	3334
Title: Location map and plan of the scheme			
Project: Upper Falloch Hydro Scheme			
Client: Natural Power			
Scale at A3: 1:10,000			
Drawn by: GC		Checked: SW	Date: 16/09/2015
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Fig. 2 Site 17, a drystone enclosure built against a rock outcrop



Fig. 3 Site 13, a probable kiln. Site 12 to the left has been recently buried



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Title:	Fig. 2 - 3	Report: 3334	Drawn: GC	CKD: SW	Date: 22/12/15
Project: Upper Falloch Hydro_Scheme	Client: Natural Power Consultants Ltd				



Fig. 4 Topsoil stripping for the access road



Fig. 5 Topsoil stripping for the storage area



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Title:	Fig. 4 - 5	Report: 3334	Drawn: GC	CKD: SW	Date: 22/12/15
Project: Upper Falloch Hydro_Scheme	Client: Natural Power Consultants Ltd				