ORCA
Orkney Research Centre for Archaeology

Twatt Airfield Water Pipeline
Sandwick
Orkney

Archaeological Watching Brief
Data Structure Report

March 2012

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Project No: 334

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Executive Summary

A watching brief was undertaken by Orkney Research Centre for Archaeology (ORCA), on the excavation of two stretches of water pipeline trench near Twatt Airfield, Sandwick, Orkney.

The excavation of a 250m stretch of pipeline, running to the south of the Linklater Road (centred on HY 2659 2165) and a 890m stretch of pipeline, running to the north of the Bryameadow Road (centred on HY 2645 2244) were monitored under constant archaeological supervision.

No significant archaeological finds or features were recorded.

Acknowledgements

The project was funded by Scottish Water. Jim Ballantyne (Ross-shire Engineering) and William Gray and Ben Drever (Gray and Goar Contractors) are thanked for facilitating site access and for their assistance on site. The project was managed for Orkney Research Centre for Archaeology by Ros Aitken and Nick Card.

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1.0 Introduction

During March 2012, two stretches of trenching for water pipeline replacement were excavated under constant archaeological monitoring.

The first stretch ran for c.250m, along the southern side of the Linklater road, from its junction with the A967 in the east (HY 2681 2158) to connect with an existing hydrant between Howanna and Velden (HY 2658 2165).

The second stretch ran for c.890m, along the southern perimeter of Twatt Airfield, to the north side of the Bryameadow road, from its junction with the A967 (HY 2690 2239) in the east, to its connection with existing service runs at Newhall (HY 2610 2259).

The excavation of both stretches was observed by an archaeologist. No significant archaeological features were recorded.

2.0 Site Location, Topography and Geology

The first stretch of pipeline is located to the south of the Linklater Road, starting adjacent to Laurelness (figure 1), crossing a grassed field, before continuing to the north-west, and terminating opposite Velden. The second stretch is located c.780m to the north (figure 1), and runs across the grassland of the former airfield, before running through arable fields to the east and west of the access track to Newhall. It terminates in an arable field to the south of Newhall, where it connects with existing service runs.

Both stretches of pipeline lie within an area underlain by the Upper Stromness Flagstone Formation, formed of laminated, carbonate rich siltstones, shales and thinly bedded sandstones (part of the Caithness flagstone group geological formation).

3.0 Archaeological Background

The area surrounding the Twatt Airfield and Isbister Loch has a number of prehistoric features scattered across the landscape for example the broch site of Knowe of Skogar (SAM No: 1458, NMRS No HY22SE 39 OR No 01730) to the north of the airfield.

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Directly adjacent to the stretch of pipeline adjacent to Howanna lie the remains of a cluster of mounds known as the Knowes of Howana (SAM No 1395, NMRS No HY22SE24, OR No 1227). Originally nine (on the basis of the OS 6" Orkney, 2nd ed. (1903)), only four mounds still survive, and of these only the remains of three can still be seen above ground. The surviving mounds are designated Scheduled Ancient Monuments (SAM No 1395).

The property at Velden, along this length of pipeline, is the former main power generating station for both Skeabrae and Twatt Airfields (NMRS No HY22SE89) that was later converted into a private house. It is of brick and concrete construction with metal framed windows. A small accommodation camp was associated with this power station, with concrete hut bases surviving in the field to the west of Velden.

The Newhall to Millhouse stretch of the pipeline runs along the southern perimeter of Twatt Airfield (NMRS Nos HY22SE58.08, HY22SE58.09, OR No 2921). The extant features of the airfield comprises grass grown runways with perimeter track sub-divided by modern fencing, a control tower in the SW quadrant within the runway perimeter and several hangar bays. The airfield was commissioned 'HMS Tern' on April 1 1941 as a RNAS station. Built and guarded by the Royal Marine engineers, Twatt remained a reserve station until Jannuary 1949 and was retained by the Navy until sold off in 1957 (RCAHMS). The route of the pipeline runs in close proximity to a 'blast wall' earthwork, around hangars to the south of the airfield, and a six-sided brick and concrete pillbox (NMRS No HY22SE58.04).

4.0 Fieldwork Aims and Objectives

As specified in the Written Scheme of Investigation (ORCA, 2012), , the principal objective of the watching brief was to identify and record any features or objects of archaeological importance that could be damaged or destroyed by this development, while minimising any delays or disruption to the development project (Institute for Archaeologists, 2001)

The specific objectives were:

- to ensure that any archaeologically significant remains within the

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project boundary were recognised;

- to preserve by record these remains, as necessary, and
- to ensure that the groundworks did not involve the destruction of any archaeological deposits of national significance.

5.0 Fieldwork Methodology

The work was conducted in accordance with ORCA's standard operating procedures for such work (as specified in the WSI [ORCA, 2012]) and the Code of Conduct, Standards and Guidance of the Institute of Field Archaeologists.

Both stretches of pipeline trench were excavated by a 360º tracked excavator, fitted with a 300mm wide ditching bucket. Topsoil and turf layers were removed separately, before the excavation of reduced levels. Trenches were excavated to a standard depth of 1.00m. The trenches were quickly backfilled after the pipe had been inserted.

All groundbreaking was undertaken under constant archaeological supervision. Any archaeological features encountered were recorded using standard pro-forma sheets, and a running photographic record was maintained.

6.0 Fieldwork Results

6.1 Howanna stretch of pipeline

The pipeline route ran across a grassed field to its eastern extent, before crossing a fenceline and running to the north of Velden. A minor alteration to the proposed route was required to the east of Velden to provide sufficient clearance from an existing cess-pit and connecting services.

A thin topsoil **(100)** was recorded across almost the entire route of the pipeline, c.0.25m in depth. In the grassed field this overlay ploughsoil **(101)**, which was deeper downslope to the east. This directly overlay the natural glacial till **(102)**, with fragments of bedrock visible in a number of places.

To the immediate west of the fenceline, a subsoil **(103)** was recorded, c.0.70m in depth. This directly overlay the natural glacial till and probably

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represents the disturbance of the natural deposits associated with wartime/modern activity in this area. An area of modern hardstand, 3m wide, was observed in the pipeline trench, 7m to the east of Velden. A section of concrete encased sewage pipe was observed 1m to the west of this hardstanding, potentially of WW2 date; this was left in situ. The pipeline trench ran through a concrete slab in front of Velden to the north, c.8m wide. This was observed in section as 0.30m thick, directly overlying the disturbed natural subsoil. To the west of this concrete slab, topsoil was again observed directly overlying the subsoil.

The pipeline excavation extended to an existing hydrant at HY 2658 2165; this lay directly to the North of a concrete slab lying inside the field entrance. This represents one of a number of concrete hut bases in this field, all that survives of the small accommodation camp associated with Velden, the former electricity generating station for both Skeabrae and Twatt (NMRS No HY22SE89).

No features associated with the adjacent mounds representing the Knowes of Howanna (NMRS No HY22SE24) were recorded.

6.2 Newhall stretch of pipeline

Along the second stretch of pipeline, a thin topsoil **(200)**, c. 0.15m in depth, was recorded across the majority of the route. A subsoil **(201)**, average 0.50m deep, was recorded along the entire route, representing the disturbed surface of the natural glacial till **(202)**, which it directly overlay.

A small levelling deposit **(203)**, of sub-angular stone fragments in a very loose clayey silt matrix, was recorded 50m from the east end of the pipeline excavations, 7.55m wide. This deposit coincided with an area of filled-in roadside ditch to the south, and possibly represents an access route into the south of the airfield.

The pipeline route ran adjacent to an extant blast wall earthwork and pillbox, part of Twatt Airfield (NMRS No HY22SE58.04), at HY 2643 2245. To the south of this pillbox, a loosely backilled deposit **(204)** was recorded, extending 14.0m east to west. It contained a mixture of WW2 and more modern material, including much ironwork, modern ceramic and occasional fragment of cow bone. Its extent to the east was difficult to define, but a

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sharper cut was visible to the west, where this deposit overlay a black shingly layer **(205)**, which appeared to represent re-deposited road hardcore material. Overall, this represents an area of infilling to level-up a natural depression in the field, of modern date, but incorporating some re-deposited wartime material.

As the pipeline crossed the arable field to the east of the access track to Newhall, a ploughsoil **(206)**, 0.25m deep, was observed directly overlying the disturbed natural subsoil. No other deposits were recorded across this field.

The pipeline route then crossed over the access track to Newhall, which represents one of the main access routes to the former airfield, leading to the sick bay and the western technical area (Lamb, 2007: 41). Immediately underlying the modern road surface, a thin, patchy hardcore was recorded, up to 0.18m deep, representing this wartime road surface. Set into the west of this surface, a gatepost of WW2 date was recovered, located 1.80m to the North of the existing gatepost. It consisted of a length of iron bar, 0.40m in length, set centrally into a roughly cast concrete block, 0.42 x 0.42 x 0.16m (see plate 1).

Plate 1: WW2 gatepost from (207): ex-situ

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The pipeline trench continued due north, before continuing west to connect with the existing service runs at Newhall. Here, it passed through an arable field to the West of the access track; the ploughsoil, up to 0.40m deep, directly overlay the disturbed natural. The bedrock was encountered at a very shallow depth in this field.

7.0 Discussion

7.1 Summary of the fieldwork results

No significant archaeological finds or features were recorded during the observation of the pipeline excavation.

No deposits related to the burial mounds of Knowes of Howanna were identified in the first stretch of pipeline running across this area. A single stretch of wartime services was located, adjacent to the former powerhouse at Velden.

The watching brief on the Newhall stretch of pipeline recorded no deposits pre-dating the 20th century landscaping of the airfield. The deposits recorded relate to minor episodes of levelling, above subsoil which appears to represent disturbed natural deposits. Surprisingly few metal or other topsoil finds were encountered, suggesting that the southern extent of the airfield has been extensively cleared in the post-war period, or that it lies outwith the focus for WW2 activity to the north and west.

8.0 Conclusions and Recommendations

The archaeological monitoring of the excavation of two stretches of pipeline near Twatt Airfield has recorded no significant archaeological features. All archaeological deposits encountered were associated with the 20th century landscaping of this area.

9.0 References

9.1 Policy and Advisory Documents

Institute for Archaeology (IFA) 1999 *Standard and Guidance for archaeological watching brief* Reading: Institute of Field Archaeologists

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9.2 Bibliographic References

Lamb, G. 2007 *Sky Over Scapa 1939-1945 (2nd edition)* Kirkwall: Bellavue Publications

ORCA 2012 *Written Scheme of Investigation for an Archaeological Watching Brief at Twatt Airfield* Kirkwall: ORCA

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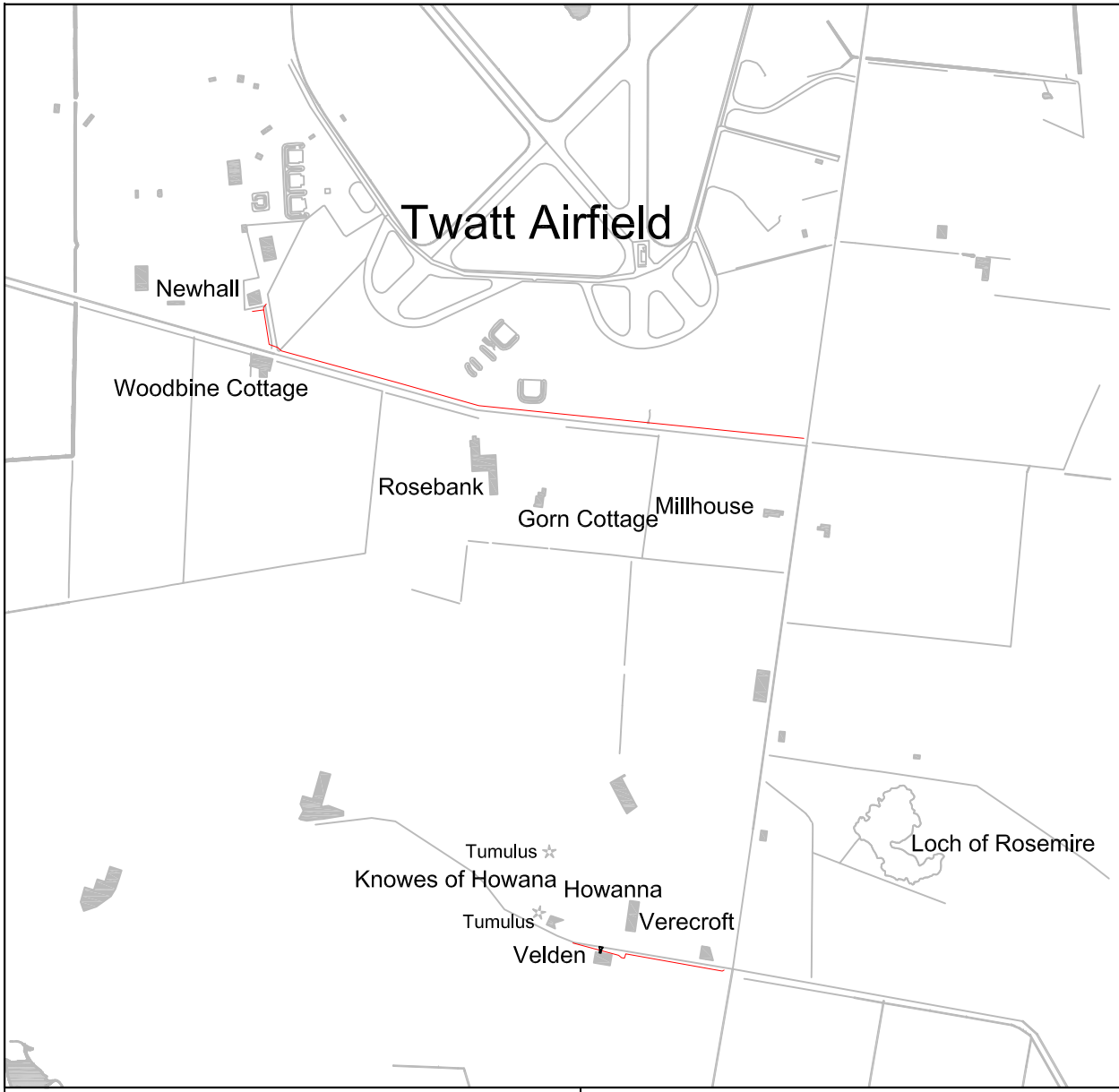

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Pipeline route

Buildings

OS basemap

0 500 m

1:10,000

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Figure.1. Site location

Project Name	Twatt Airfield
Project No.	334

Date	March 2012
Creator	PE/GC
Scale	1:5000 @ A3
Revision No.	

ORCA, Orkney College, East Road, Kirkwall, KW15 1LX

Appendix 1: Contexts Register

Context no.	Site sub-division	Type	Description
100	Howanna	Layer	Topsoil
101	Howanna	Layer	Ploughsoil
102	Howanna	Layer	Natural till
103	Howanna	Layer	Subsoil
200	Newhall	Layer	Topsoil
201	Newhall	Layer	Subsoil
202	Newhall	Layer	Natural till
203	Newhall	Layer	Levelling layer, 50m from E. end of pipeline excavation
204	Newhall	Layer	Dump in natural sump
205	Newhall	Layer	Redeposited ?road material to W end of (204)
206	Newhall	Layer	Ploughsoil in arable fields
207	Newhall	Layer	?WW2 road hardcore

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Appendix 2: Photographic Register

Batch 1

Frame	Site sub-division	Description	Direction of shot
1	Howanna	Pre-commencement photograph	W
2	Howanna	Pre-commencement photograph	W
3	Howanna	Pre-commencement photograph	W
4	Howanna	Pre-commencement photograph	W
5	Howanna	Pre-commencement photograph	W
6	Howanna	Pre-commencement photograph	W
7	Howanna	Pre-commencement photograph	W
8	Howanna	Pre-commencement photograph	W
9	Howanna	S-Facing Trench Section, c.10m from East-End	N
10	Howanna	S-Facing Trench Section, c.10m from East-End	N
11	Howanna	Progress shot	W
12	Howanna	Progress shot	W
13	Howanna	S-Facing Trench Section, c.30m from East-End	N
14	Howanna	Progress shot	W
15	Howanna	Progress shot	W
16	Howanna	S-Facing Trench Section, c.50m from East-End	N
17	Howanna	Progress shot	W
18	Howanna	Progress shot	W
19	Howanna	End of day Progress shot	W
20	Howanna	End of day Progress shot	E
21	Howanna	End of day Progress shot	E
22	Howanna	S-Facing Trench Section, c.100m from East-End	N
23	Howanna	Progress shot	E
24	Howanna	Progress shot	E
25	Howanna	Velden – E elevation	W
26	Howanna	Velden – E elevation	W
27	Howanna	Progress shot – W-ern extent in field	W
28	Howanna	Progress shot	W
29	Howanna	Progress shot – E of Velden	W
30	Howanna	Progress shot – E of Velden	W
31	Howanna	Trench to N of Velden	S
32	Howanna	Concrete encased services to N of Velden	S
33	Howanna	Concrete encased services to N of Velden	NW
34	Howanna	Progress shot – services	NW
35	Howanna	Concrete slab to N of Velden	N
36	Howanna	Concrete slab to N of Velden	N
37	Howanna	End of day Progress shot	E

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38	Howanna	End of day Progress shot	E
39	Howanna	End of day Progress shot	W
40	Howanna	End of day Progress shot	S
41	Howanna	End of day Progress shot	E
42	Howanna	Velden – N elevation	S
43	Howanna	Velden – E elevation	W
44	Howanna	Pre-commencement, W-ern extent of pipeline	W
45	Howanna	Pre-commencement, W-ern extent of pipeline	E
46	Howanna	S-Facing Trench Section, showing concrete slab and (103)	N
47	Howanna	Progress shot	E
48	Howanna	S-Facing Trench Section, to W of concrete slab	N
49	Howanna	Progress shot	W
50	Howanna	Final shot, W-ern extent of trench	E
51	Howanna	N-edge of concrete slab to N of Velden	N
52	Newhall	Pre-commencement photograph	W
53	Newhall	Pre-commencement photograph	W
54	Newhall	Pre-commencement photograph	W
55	Newhall	Pre-commencement photograph	S
56	Newhall	Pre-commencement photograph	E
57	Newhall	Pre-commencement photograph	E
58	Newhall	Pre-commencement photograph	E
59	Newhall	Pre-commencement photograph	E
60	Newhall	Pre-commencement photograph	NE
61	Newhall	Pre-commencement photograph	S
62	Newhall	Pre-commencement photograph	W
63	Newhall	Pre-commencement photograph	W
64	Newhall	Pre-commencement photograph	W
65	Newhall	Pre-commencement photograph	W
66	Newhall	Pre-commencement photograph	W
67	Newhall	Pre-commencement photograph	E
68	Newhall	Pre-commencement photograph	E
69	Newhall	Pre-commencement photograph	E
70	Newhall	Pre-commencement photograph	W

Batch 2

Frame	Site sub-division	Description	Direction of shot
1	Newhall	S-Facing Trench Section, E. end	N
2	Newhall	S-Facing Trench Section, E. end	N
3	Newhall	Progress shot	W
4	Newhall	N-Facing Trench Section, c.20m from East- end	S
5	Newhall	Double service pipes ?WW2	S

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6	Newhall	Double service pipes ?WW2	S
7	Newhall	Double service pipes ?WW2	W
8	Newhall	N-Facing Trench Section, c.40m from East- end	S
9	Newhall	N-Facing Trench Section, c.60m from East- end	S
10	Newhall	Progress shot	W
11	Newhall	N-Facing Trench Section of (203)	S
12	Newhall	N-Facing Trench Section, c.80m from East- end	S
13	Newhall	N-Facing Trench Section, c.100m from East- end	S
14	Newhall	End of day Progress shot	E
15	Newhall	Start of day working shot	W
16	Newhall	N-Facing Trench Section, c.120m from East- end	S
17	Newhall	Progress shot	W
18	Newhall	N-Facing Trench Section, c.150m from East- end	S
19	Newhall	Progress shot	W
20	Newhall	Progress shot	W
21	Newhall	End of day Progress shot	W
22	Newhall	End of day Progress shot	E
23	Newhall	Start of day working shot	W
24	Newhall	N-Facing Trench Section, c.170m from East- end	S
25	Newhall	N-Facing Trench Section, c.200m from East- end	S
26	Newhall	Progress shot – trench crossing burn	E
27	Newhall	Slight amorphous rise to W of burn	W
28	Newhall	N-Facing Trench Section, c.10m W of burn	S
29	Newhall	N-Facing Trench Section, c.40m W of burn	S
30	Newhall	End of day Progress shot	E
31	Newhall	N-Facing Trench Section, c.60m W of burn	S
32	Newhall	N-Facing Trench Section, c.80m W of burn	S
33	Newhall	Progress shot	E
34	Newhall	N-Facing Trench Section, c.100m W of burn	S
35	Newhall	N-Facing Trench Section, along N-S fence	S
36	Newhall	N-Facing Trench Section, c.20m W of fence	S
37	Newhall	N-Facing Trench Section, c.40m W of fence	S
38	Newhall	Progress shot	E
39	Newhall	View from pillbox towards pipe trench	S
40	Newhall	View from pillbox towards pipe trench	SW
41	Newhall	End of day Progress shot	E
42	Newhall	Ex-situ ironwork from (204)	S
43	Newhall	Ex-situ ironwork from (204)	E
44	Newhall	Ex-situ ironwork from (204)	N
45	Newhall	E-end of N-facing section of (204)/(205)	S
46	Newhall	Extent of (204)	E
47	Newhall	Extent of (204)	E
48	Newhall	N-Facing Trench Section, c.30m W of pillbox	S
49	Newhall	Progress shot	E

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50	Newhall	General view across airfield	N
51	Newhall	N-Facing Trench Section, c.50m W of pillbox	S
52	Newhall	N-Facing Trench Section, c.70m W of pillbox	S
53	Newhall	N-Facing Trench Section, c.90m W of pillbox	S
54	Newhall	Progress shot – start of day	E
55	Newhall	N-Facing Trench Section, c.60m E of arable fenceline	S
56	Newhall	N-Facing Trench Section, c.40m E of arable fenceline	S
57	Newhall	N-Facing Trench Section, start of (206)	S
58	Newhall	N-Facing Trench Section, c.30m W of arable fenceline	S
59	Newhall	End of day Progress shot	E
60	Newhall	N-Facing Trench Section, Eastern extent of (207)	S
61	Newhall	N-Facing Trench Section, Eastern extent of (207) – detail	S
62	Newhall	Progress shot	E
63	Newhall	Pre-commencement photograph – stretch towards Newhall	N
64	Newhall	Gatepost of WW2 date ex-situ	-
65	Newhall	Gatepost of WW2 date ex-situ	-
66	Newhall	Gatepost of WW2 date ex-situ	-
67	Newhall	W-Facing Trench Section	E
68	Newhall	Progress shot	N
69	Newhall	General view towards western technical area	NW
70	Newhall	N-facing Trench Section, tie-in to existing services	S
71	Newhall	Progress shot – end of monitoring	E

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