

GUARD ARCHAEOLOGY



Broken Cross North Extension, Phase 4 Data Structure Report Project 3474

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Broken Cross North Extension, Phase 4

Data Structure Report

On behalf of: Scottish Coal

NGR: NS 840 386

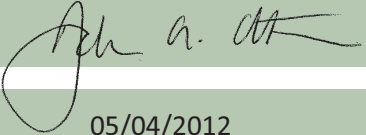
Project Number: 3474

Project Manager: John Atkinson

Report by: Christine Rennie

Illustrations: Fiona Jackson

Approved by:


05/04/2012

Date:

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

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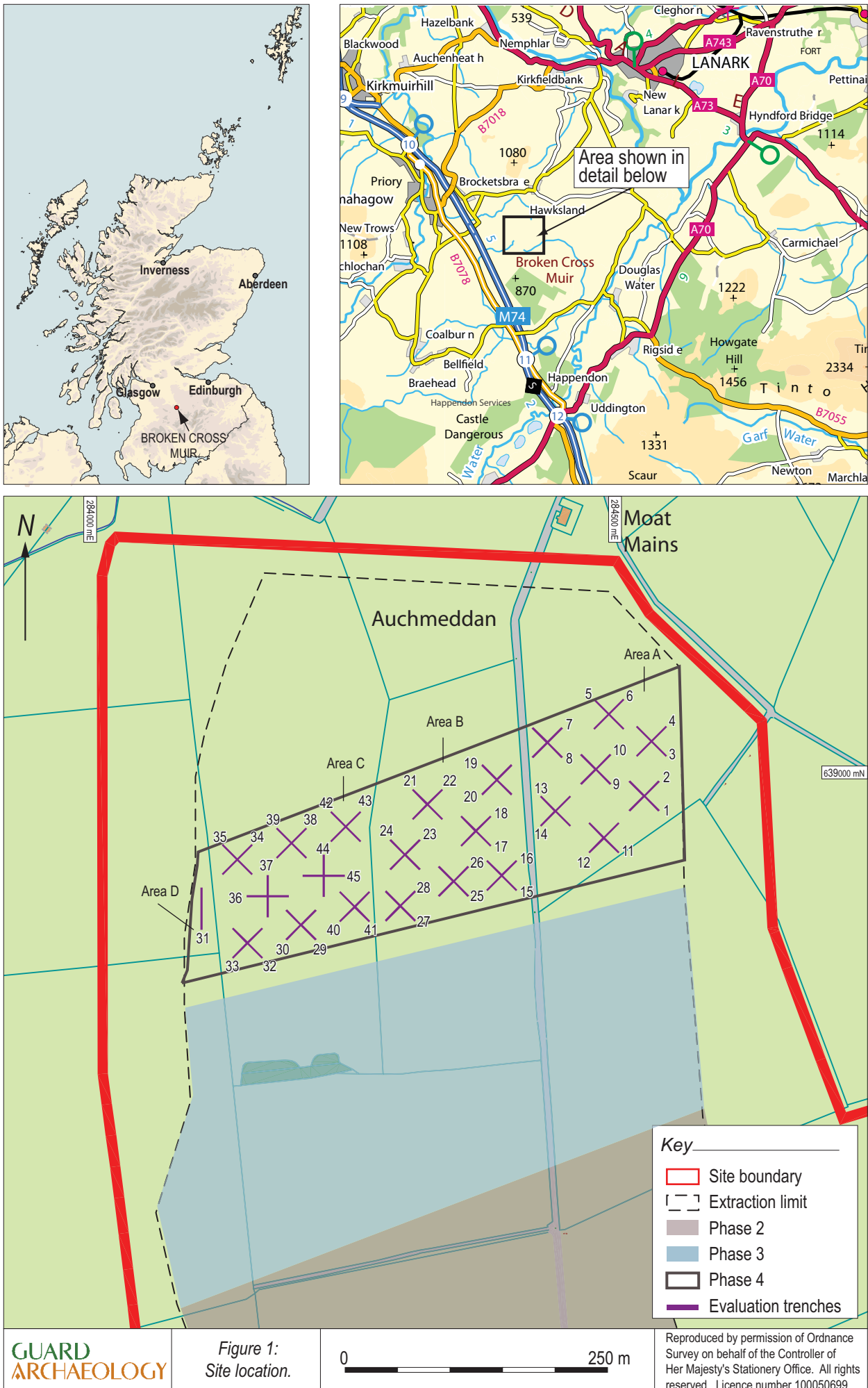
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Executive Summary

- 1.1 As part of the ongoing requirement to satisfy Condition 18 of the consent issued for Broken Cross North (BXN) Surface Mine (CL/04/0670), an archaeological evaluation was carried out by GUARD Archaeology Limited, on behalf of Scottish Coal, on an area proposed for the continued working of mining operations to the south of Mains Farm and Moat Farm to the east of Devonburn, South Lanarkshire. The trial trench evaluation comprised 5% of the total extraction area proposed for development. Two possible archaeological features were encountered during the evaluation. The work was carried out between 27th February and 2nd March 2012.

Introduction

- 2.1 This is the fourth archaeological report for BXN and sets out the results of an archaeological evaluation undertaken in February and March 2012 by GUARD Archaeology Limited, on behalf of Scottish Coal, on the next area for coal excavation at Broken Cross North (Figure 1). During the course of the evaluation a total of 4,500 m² of trenching was undertaken, spread over 45 individual trenches arranged in an offset cross pattern across the site.

Site Location, Topography and Geology

- 3.1 The application area is immediately to the north of the third area of surface mining at BXN and forms part of the lands of Auchmeddan and Moat Mains Farms. The landscape is gently rolling agricultural land currently used as pasture. The site is bounded to the south by the existing surface mine and by farmland to the west, north and east.
- 3.2 The underlying bedrock consists of Limestone Coal Formation of Clackmannan Group Type, while the superficial geology consists of Devensian Till (British Geological Survey website).

Archaeological Background

- 4.1 The Environmental Statement submitted with the planning application, alongside the work undertaken for the earlier Archaeological Evaluations Report (Becket 2009, Will 2010 and Kilpatrick 2011), has provided a background to this piece of work. A site specific review of desk-based sources undertaken in advance of the trenching revealed that there are no known archaeological sites within the development area. Although Moat, to the east of the development area, is the location of a possible tower house (NMRS NS83NW 20) and limeworkings (SMR 22908), while a hammer-stone (NMRS NS83NW 21) was found to the immediate north of Area D. A single C-listed farmstead is located at West Hawksland (NMRS site NS83NW29) outside the application area and two mid-eighteenth century farmsteads are noted by Roy beyond the application area at Auchmeddan (NS 844 393) and Brae (NS 850 388). No scheduled ancient monuments are present within the development area.

Aims and Objectives

- 5.1 The aims and objectives of the archaeological work were to:
- establish the presence or absence of archaeological resources within the area of development under targeted archaeological evaluation conditions;
 - determine the character, extent and significance of any archaeological deposits encountered;
 - excavate and record any significant archaeological remains should they be encountered;
 - undertake funded post-excavation analysis and publication of the results on the archaeological works should they be warranted.

Methodology

- 6.1 Topsoil was stripped using a mechanical excavator, fitted with a flat-bladed ditching bucket, under close archaeological supervision. The topsoil was removed in linear trenches to the surface of the subsoil or the first significant archaeological horizon. The trenches were in general approximately 50 metres long by two metres wide. Trenches were located to provide a 5% sample of the development area and were arranged in an offset cross pattern.
- 6.2 All on-site recording, written, drawn and photographic, was to the standards normally pertaining in archaeological fieldwork. Trenches were surveyed and located within the National Grid using a Leica Smart Rover sub-centimetre DGPS. Weather conditions for the evaluation were damp and windy.

Results

- 7.1 Forty-five trenches were excavated, totalling 4,500 square metres, the results of which are set out in Appendix B. For the majority of the area trenches revealed a silt topsoil (0.21 m to 0.43 m thick), which lay over natural subsoil. A pocket of peat was found at the south of Area A. During the course of the evaluation two possible features of archaeological significance was encountered: a possible posthole in trench 40 and a furrow in trench 10.
- 7.2 Unusually, no artefacts were noted in topsoil deposits across the site. The fields are ploughed every seven years (from discussion with the farmer), but no reason for the aceramic nature of the topsoil could be established.

Discussion

- 8.1 The evaluation trenching found a single posthole of unknown date at the south of Area C and the base of a cultivation furrow in Area A. No datable artefacts were found in association with either of these features.
- 8.2 The furrow in Trench 10 is the remains of the medieval and post-medieval cultivation method known as rig and furrow whereby soil removed from a drainage channel (the furrow) is used to create a raised cultivation platform (the rig). Roy's map of the mid-eighteenth century shows that the land around Auchmeddan and Moat Mains Farms is arable farmland, with rig and furrow depicting the areas of cultivation.
- 8.3 The posthole uncovered in Trench 40 was oval shaped, measuring 0.36 m by 0.31 m and was 0.16 m deep. The fill of dark brown silt was very similar to the topsoil, and may be an indication that this feature is relatively modern. A sample of the fill was removed for possible post-excavation analysis.
- 8.4 These two features are too disparate to allow any meaningful discussion of earlier phases of use of the site. Cartographic evidence indicates that the site has been agricultural land since at least the mid-eighteenth century.

Recommendations

- 9.1 The evaluation work has indicated that potential archaeological deposits or features may exist within the development area. In consequence, it is recommended that a walk-over survey be carried out following the removal of topsoil within the phase 4 area in line with the written scheme of investigation for the site. Any further archaeological features identified during that work will be described in a revision to this report, together with a suitable mitigation strategy, to be submitted to West of Scotland Archaeology Services (WoSAS) and Scottish Coal for further consideration.
- 9.2 GUARD would stress that these recommendations are intended for guidance only. While the recommended mitigation strategy was developed following consultation with Paul Robins of

WoSAS, final decisions on the nature and extent of any future archaeological work rest with the planning authority.

Acknowledgements

- 10.1 GUARD would like to thank Scottish Coal, and Murray Thomson in particular, for their assistance. Plant and drivers were supplied by Brown Plant Hire. Technical support was from Aileen Maule and John Kiely. A survey of trench locations was conducted by Fiona Jackson, who also produced the illustrations. The report was desk top published by Gillian McSwan. The project was managed for GUARD by John Atkinson.

**Broken Cross North Extension,
Phase 4**

Data Structure Report

Section 2: Appendices



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Appendices

Appendix A: Bibliography

Cartographic sources

Roy, W. 1747-55. Military Survey of Scotland

On-line sources

Geological information www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

National Monuments Record for Scotland <http://jura.rcahms.gov.uk/PASTMAP/start.jsph>

Sites and Monuments Record <http://jura.rcahms.gov.uk/PASTMAP/start.jsp>

Appendix B: Trench descriptions

Tr No	Length (m)	Width (m)	Depth (m)	Topsoil/Overburden	Subsoil	Details
1	-	-	0.38	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown sand	1 field drain
2	-	-	0.51	Loose black silt to 0.24m. Onto loose, wet peat	Loose, wet mottled yellow, grey & brown sand	No archaeological remains
3	-	-	0.38	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty clay with cobbles	1 field drain
4	-	-	0.39	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty clay with cobbles	No archaeological remains
5	-	-	0.47	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown sand	1 field drain
6	-	-	0.43	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silt	No archaeological remains
7	-	-	0.40	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
8	-	-	0.41	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
9	-	-	0.43	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
10	-	-	0.35	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown sand with cobbles	Cultivation furrow
11	-	-	0.81	Loose black organic silt to 0.38m. Onto peat	Loose, wet mottled yellow, grey & brown sand with cobbles	1 field drain
12	-	-	1.01	Loose black organic silt to 0.29m. Onto peat	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
13	-	-	0.35	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
14	-	-	0.37	Loose dark brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
15	-	-	0.40	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
16	-	-	0.38	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains

Tr No	Length (m)	Width (m)	Depth (m)	Topsoil/Overburden	Subsoil	Details
17	-	-	0.38	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
18	-	-	0.46	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
19	-	-	0.34	Loose red/brown silty clay with pebbles	Loose orange/brown sand	No archaeological remains
20	-	-	0.36	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
21	-	-	0.40	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
22	-	-	0.39	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
23	-	-	0.51	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
24	-	-	0.35	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown sand with cobbles	No archaeological remains
25	-	-	0.39	Loose red/brown silty clay with pebbles	Medium compaction orange silty sand	No archaeological remains
26	-	-	0.42	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
27	-	-	0.37	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	Stone field drain
28	-	-	0.36	Loose red/brown silty clay with pebbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	4 field drains
29	-	-	0.35	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	7 field drains
30	-	-	0.37	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	8 field drains
31	-	-	0.31	Loose red/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
32	-	-	0.36	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	3 field drains
33	-	-	0.42	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	2 field drains
34	-	-	0.29	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
35	-	-	0.35	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
36	-	-	0.35	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
37	-	-	0.36	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
38	-	-	0.45	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	3 field drains

Tr No	Length (m)	Width (m)	Depth (m)	Topsoil/Overburden	Subsoil	Details
39	-	-	0.42	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
40	-	-	0.35	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
41	-	-	0.37	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	1 field drain
42	-	-	0.34	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	4 field drains
43	-	-	0.43	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	No archaeological remains
44	-	-	0.32	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	1 field drain
45	-	-	0.36	Loose grey/brown silt with pebbles and cobbles	Loose, wet mottled yellow, grey & brown silty sand with cobbles	5 field drains

Appendix C: List of contexts

Context	Area	Description	Interpretation
10003	A	Linear cut	Cut of cultivation furrow
10004	A	Grey/brown silt	Fill of cultivation furrow
27003	B	Stone drain	Stone drain
40003	C	Oval shaped cut	Cut of posthole
40003	C	Dark brown cilt	Fill of posthole 40003

Appendix D: List of samples

Sample No.	Area	Context No.	Size	Reason for Sampling				Application/Comments
				Pot	Bone	Lithics	Botanics	
1	C	40004	1xL	x	x	x	x	Flotation

Appendix E: List of digital photographs

Frame	Area	Context No.	Subject	Taken From
1	-	-	ID shot	-
2	A	14002	Post-excavation view of Trench 14	SW
3	-	14001-2	North-west facing section of Trench 14	N
4	-	13002	Post-excavation view of Trench 13	NW
5	-	13001-2	South-west facing section of Trench 13	W
6	-	12001-3	South-east facing section of Trench 12	SE
7	-	12002&4	Post-excavation view of Trench 12	SW
8	-	11001-3	North-east facing section of Trench 11	NE
9	-	11003	Post-excavation view of Trench 11	SE
10	-	01001	North-west facing section of Trench 1	NW
11	-	01002	Post-excavation view of Trench 1	SE
12	-	02001-2	South-east facing section of Trench 2	SE
13	-	02002	Post-excavation view of Trench 2	NE
14	-	08001-2	South-west facing section of Trench 8	S
15	-	08002	Post-excavation view of Trench 8	SE
16	-	07001-2	North-west facing section of Trench 7	N
17	-	07002	Post-excavation view of Trench 7	NE
18	-	06001-2	North-west facing section of Trench 6	N

Frame	Area	Context No.	Subject	Taken From
19	-	06002	Post-excavation view of Trench 6	NE
20	-	05001-2	North-east facing section of Trench 5	E
21	-	05002	Post-excavation view of Trench 5	SE
22	-	03001-2	North-east facing section of Trench 3	E
23	-	03002	Post-excavation view of Trench 3	NW
24	-	04001-2	North-west facing section of Trench 4	N
25	-	04002	Post-excavation view of Trench 4	SW
26	-	10001-2	North-west facing section of Trench 10	N
27	-	10002	Post-excavation view of Trench 10	SW
28	-	10003-4	Pre-excavation view of cultivation furrow	NE
29	-	10003-4	Slot through cultivation furrow	NE
30	-	10003-4	North-west facing section of cultivation furrow	NW
31	-	09001-2	South-west facing section of Trench 9	S
32	-	09002	Post-excavation view of Trench 9	SE
33	B	15001-2	North-east facing section of Trench 15	NE
34	-	15002	Post-excavation view of Trench 15	SE
35	-	16001-2	South-east facing section of Trench 16	S
36	-	16002	Post-excavation view of Trench 16	NE
37	-	26001-2	South-east facing section of Trench 26	S
38	-	26002	Post-excavation view of Trench 26	NE
39	-	25001-2	North-east facing section of Trench 25	NE
40	-	25002	Post-excavation view of Trench 25	NW
41	-	28001-2	South-east facing section of Trench 28	S
42	-	28002	Post-excavation view of Trench 28	NE
43	-	27001-2	North-west facing section of Trench 27	N
44	-	27002	Post-excavation view of Trench 27	NW
45	-	27003	Pre-excavation view of stone drain	SW
46	-	27003	Slot through stone drain	NW
47	-	27003	East facing section of stone drain	E
48	-	19001-2	South-east facing section of Trench 19	S
49	-	19002	Post-excavation view of Trench 19	NW
50	-	20001-2	North-west facing section of Trench 20	N
51	-	2002	Post-excavation view of Trench 20	SW
52	-	18001-2	South-east facing section of Trench 18	SE
53	-	18002	Post-excavation view of Trench 18	SW
54	-	17001-2	South-west facing section of Trench 17	SW
55	-	17002	Post-excavation view of Trench 17	NW
56	-	21001-2	North-east facing section of Trench 21	NE
57	-	21002	Post-excavation view of Trench 21	SE
58	-	22001-2	South-east facing section of Trench 22	SE
59	-	22002	Post-excavation view of Trench 22	NE
60	-	24002	Post-excavation view of Trench 24	NW
61	-	24001-2	North-east facing section of Trench 24	NE
62	-	23001-2	South-east facing section of Trench 23	E
63	-	23002	Post-excavation view of Trench 23	SW
64	C	41001-2	South-west facing section of Trench 41	S
65	-	-	Post-excavation view of Trench 41	SE
66	-	40001-2	South-east facing section of Trench 40	SE
67	-	40003-4	Pre-excavation view of posthole	NE
68	-	40003-4	North facing section of posthole	N
69	-	40003	Post-excavation view of posthole	N
70	D	31001-2	West facing section of Trench 31	W
71	-	31002	Post-excavation view of Trench 31	S
72	C	33001-2	South-east facing section of Trench 33	SE
73	-	33002	Post-excavation view of Trench 33	NE

Frame	Area	Context No.	Subject	Taken From
74	-	32001-2	South-west facing section of Trench 32	SW
75	-	32002	Post-excavation view of Trench 32	SE
76	-	37001-2	West facing section of Trench 37	W
77	-	37002	Post-excavation view of Trench 37	S
78	-	36001-2	South facing section of Trench 36	SW
79	-	36002	Post-excavation view of Trench 36	E
80	-	35001-2	South-west facing section of Trench 35	SW
81	-	35002	Post-excavation view of Trench 35	SE
82	-	34001-2	South-east facing section of Trench 34	SE
83	-	34002	Post-excavation view of Trench 34	NE
84	-	39001-2	South-west facing section of Trench 39	SW
85	-	39002	Post-excavation view of Trench 39	NW
86	-	38001-2	North-west facing section of Trench 38	NW
87	-	38002	Post-excavation view of Trench 38	SW
88	-	42001-2	South-west facing section of Trench 42	W
89	-	42002	Post-excavation view of Trench 42	SE
90	-	44001-2	East facing section of Trench 44	SE
91	-	44002	Post-excavation view of Trench 44	S
92	-	45001-2	North facing section of Trench 45	N
93	-	45002	Post-excavation view of Trench 45	W
94	-	30001-2	North-west facing section of Trench 30	NW
95	-	30002	Post-excavation view of Trench 30	SW
96	-	29001-2	South-west facing section of Trench 29	SW
97	-	29002	Post-excavation view of Trench 29	NW

Appendix F: Discovery And Excavation Scotland Entry

LOCAL AUTHORITY:	South Lanarkshire
PROJECT TITLE/SITE NAME:	Broken Cross North Extension, Phase 4
PROJECT CODE:	3474
PARISH:	Lesmahagow
NAME OF CONTRIBUTOR(S):	Christine Rennie
NAME OF ORGANISATION:	GUARD Archeology Limited
TYPE(S) OF PROJECT:	Evaluation
NMRS NO(S):	None
SITE/MONUMENT TYPE(S):	None
SIGNIFICANT FINDS:	None
NGR (2 letters, 6 figures)	NS 840 386
START DATE (this season)	27 th February 2012
END DATE (this season)	2 nd March 2012
PREVIOUS WORK (incl. DES ref.)	Three earlier phases of work were carried out by GUARD/GUARD Archaeology Limited.
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	An archaeological evaluation was carried out by GUARD Archaeology Limited, on behalf of Scottish Coal, on an area proposed for the continued working of mining operations to the south of Mains Farm and Moat Farm to the east of Devonburn, South Lanarkshire. The trial trench evaluation comprised 5% of the total extraction area proposed for development. One possible archaeological feature was encountered during the evaluation.
PROPOSED FUTURE WORK:	An inspection of the site will take place following removal of the topsoil.
SPONSOR OR FUNDING BODY:	Scottish Coal
CAPTION(S) FOR ILLUSTRS:	
ADDRESS OF MAIN CONTRIBUTOR:	GUARD Archaeology Limited, 52 Elderpark Workspace, 100 Elderpark Street, Glasgow, G51 3TR
EMAIL ADDRESS:	christine.rennie@guard-archaeology.co.uk
ARCHIVE LOCATION (intended/deposited)	Archive to be deposited with RCAHMS.

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