Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Environmental Statement

Volume 4

Appendix 11.2: Baseline

June 2021

Haweswater Aqueduct Resilience Programme - Proposed Bowland Section

Project No:	B27070CT
Document Title:	Proposed Bowland Section Environmental Statement Volume 4 Appendix 11.2: Baseline
Document Ref.:	LCC_RVBC-BO-TA-011-002
Revision:	0
Date:	June 2021
Client Name:	United Utilities Water Ltd

Jacobs U.K. Limited

5 First Street
Manchester M15 4GU
United Kingdom
T +44 (0)161 235 6000
F +44 (0)161 235 6001
www.jacobs.com

Contents

1. Soils, Geology and Land Quality Baseline

1.1 Introduction

1) This appendix presents the technical baseline information in support of the Soils, Geology and Land Quality chapter of the Environmental Statement for the Proposed Bowland Section. Specifically, the baseline information for the following sub-topics is presented:

- Soil quality
- Mineral Resources
- Geologically Designated Sites.

Appendix 11.2 A: Soil Quality

Soil types and Agricultural Land Classification grades

ID	Section*	Encountered Soil Associations[1]	Provisional ALC Grades[2]
1	Lower Houses Compound with associated construction access	The majority of the Lower Houses Compound is underlain by soil of the Brickfield 3 association. This soil association comprises slowly permeable seasonally waterlogged fine loamy over clayey soils. Cropping and land uses include stock rearing and some dairying on permanent grassland; grassland and winter cereals in drier lowlands. Habitats include seasonally wet pastures and woodlands. A small section in the east of the compound is underlain by soil of the Wilcocks 1 association. This soil association comprises slowly permeable, seasonally waterlogged fine loamy and fine loamy over clayey upland soils with a peaty surface horizon. Cropping and land uses include wet moorland habitats of moderate and poor grazing value, some improved grassland; coniferous woodland and military use. Habitats include grass moor and some heather with flush and bog communities in wetter parts.	This proposed compound is located on grade 4 land.
2	Newton-in-Bowland Compound with associated construction access	The majority of the Newton-in-Bowland construction compound is underlain by soil of the Brickfield 2 association. This soil association comprises slowly permeable seasonally waterlogged fine loamy soils, associated with fine loamy soils with only slight waterlogging and some deep well drained fine loamy soils. Common cropping and land uses include dairying and stock rearing on permanent or short term grassland; some cereals in drier areas. Habitats include seasonally wet pastures and woodlands. The southwest corner of the Newton-in-Bowland Compound and overflow are underlain by soil of the Fladbury 3 association. This soil association comprises seasonally wet stoneless clay, fine silty and fine loamy soils affected by groundwater. Common cropping and land uses include stock rearing on permanent grassland with occasional winter cereals; more cereals in drier areas. Habitats include wet flood meadows with wet carr woodlands in old river meanders.	The main proposed compound is located on grade 4 land with a small tip in the southernmost extent and overflow on grade 3 land.

[1] Cranfield University (2020) *National soil map data.* [Online] Available from: https://cranfield.blueskymapshop.com/ [Accessed: 22-10-2020]

[2] Natural England (2020) *Agricultural Land Classification (ALC) Grades – Post 1988 Survey (polygons).* [Online] Available from: https://data.gov.uk/dataset/c002ceea-d650-4408-b302-939e9b88eb0b/agricultural-land-classification-alc-grades-post-1988-survey-polygons [Accessed: 26-10-2020)

Appendix 11.2 B: Mineral Resources

Mineral Safeguarding Areas

2) Consultation with the minerals planning officer from Lancashire County Council was undertaken. The response received gave direction to Lancashire County Council's online planning portal containing information about the local planning policies for minerals and waste. Lancashire County Council's Maps & Related Information Online (MARIO) was consulted to identify whether any Minerals Safeguarding Areas (MSA's) were present in the study area. The findings are set out below.

Location / Area of Works	MSA	Comments
Newton-in-Bowland Compound area with associated access roads.	Limestone (Chatburn Limestone).	The construction area with associated access roads partially cross the MSA for Chatburn Limestone.
Newton-in-Bowland open cut section	High Purity Limestone (>97 % CaCO3) and limestone (Chatburn Limestone).	The southern open cut section crosses two MSAs – primarily the Chatburn Limestone, but also to a lesser extent the high purity limestone MSA.

Active and historical minerals workings

3) No active mineral workings have been identified within 500 m of the Proposed Bowland Section.

4) Fifteen potential historical mineral workings (quarries, mines and pits) have been identified within 500 m of the Proposed Bowland Section. Workings comprised limestone, slate and coal.

Appendix 11.2 C: Geologically Designated Sites

Local Geodiversity Sites (LGS)

5) There are no LGS present in the study area. The closest LGS is Boarsden Quarry, located approximately 320 m southwest of the proposed Newton-in-Bowland Compound.

Sites of Special Scientific Interest (Geological)

6) No Sites of Special Scientific Interest (Geological) have been identified within the study area.