Hornsea Project Four: Environmental Statement (ES)

PINS Document Reference: A6.3.6
APFP Regulation 5(2)(a)

Volume A6, Annex 3.6 – Water Vole Survey Report

Prepared	Royal HaskoningDHV, July 2021
Checked	Ant Sahota, Orsted, July 2021
Accepted	Thomas Watts, Orsted, August 2021
Approved	Julian Carolan, Orsted, September 2021

A6.3.6
Version A

Table of Contents

List of Tables

List of Figures

Glossary

Term	Definition
Commitment	A term used interchangeably with mitigation and enhancement measures. The purpose of Commitments is to reduce and/or eliminate Likely Significant Effects (LSEs), in EIA terms. Primary (Design) or Tertiary (Inherent) are both embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, Preliminary Environmental Information Report (PEIR) or ES). Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment i.e. so that residual effects are acceptable.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Energy balancing infrastructure (EBI)	The onshore substation includes energy balancing Infrastructure. These provide valuable services to the electrical grid, such as storing energy to meet periods of peak demand and improving overall reliability.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
Export cable corridor (ECC)	The specific corridor of seabed (seaward of Mean High Water Springs (MHWS)) and land (landward of MHWS) from the Hornsea Project Four array area to the Creyke Beck National Grid substation, within which the export cables will be located.
Hornsea Project Four Offshore Wind Farm	The term covers all elements of the project (i.e. both the offshore and onshore). Hornsea Four infrastructure will include offshore generating stations (wind turbines), electrical export cables to landfall, and connection to the electricity transmission network. Hereafter referred to as Hornsea Four.
Landfall	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) tide and the Transition Joint Bay (TJB) inclusive of all construction works, including the offshore and onshore ECC, intertidal working area and landfall compound. Where the offshore cables come ashore east of Fraisthorpe.
National Grid Electricity Transmission (NGET) substation	The grid connection location for Hornsea Four at Creyke Beck.
Onshore substation (OnSS)	Comprises a compound containing the electrical components for transforming the power supplied from Hornsea Project Four to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid. If a HVDC system is used the OnSS will also house equipment to convert the power from HVDC to HVAC.
Order Limits	The limits within which Hornsea Project Four (the 'authorised project) may be carried out.
Orsted Hornsea Project Four Ltd.	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).

Term	Definition
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Trenchless Techniques	Also referred to as trenchless crossing techniques or trenchless methods. These techniques include Horizontal Directional Direction (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.

Acronyms

Acronym	Definition
DAFOR	Dominant, abundant, frequent, occasional or rare
DCO	Development Consent Order
CENV	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology and Environmental Management
CIWEM	Chartered Institute of Water and Environmental Management
C. WEM	Chartered Water and Environmental Manager
EBI	Energy Balancing Infrastructure
ECC	Export cable corridor
EECoW	Environmental and Ecological Clerk of Works
EP1HS	Extended Phase 1 Habitat Survey
EPS	European Protected Species
ERYC	East Riding Yorkshire Council
HDD	Horizontal Directional Drilling
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MHWS	Mean High Water Spring
NE	Natural England
NERC	Natural Environment and Rural Communities
NEYEDC	North and East Yorkshire Data Centre
NGET	National Grid Electricity Transmission
OnSS	Onshore substation
OS	Ordnance Survey
SoS	Secretary of State
UK BAP	UK Biodiversity Action Plan
WCA	Wildlife and Countryside Act

Units

Unit	Definition
km	kilometre
kV	kilovolt
m	metre

1 Introduction

1.1 Project background

1.1.1.1 Orsted Hornsea Project Four Limited (the 'Applicant') is proposing to develop Hornsea Project Four Offshore Wind Farm (hereafter 'Hornsea Four'). Hornsea Four will be located approximately 69 km offshore the East Riding of Yorkshire in the Southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall, and on to an onshore substation (OnSS) with energy balancing infrastructure (EBI) and connection to the electricity transmission network.

1.1.1.2 Royal HaskoningDHV was commissioned to undertake a water vole (*Arvicola amphibious*) survey of all suitable watercourses (e.g. ditches, drains and rivers) within and up to 50 m from the onshore Hornsea Four Order Limits (i.e. the landfall, onshore export cable corridor (ECC), the OnSS, and 400 kV National Grid Electricity Transmission (NGET) connection area).

1.1.1.3 This technical annex has been prepared to characterise the baseline environment to inform and support the ecological impact assessment set out in **Volume A3, Chapter 3: Ecology and Nature Conservation** of the Hornsea Four Environmental Statement (ES).

1.2 Aims

1.2.1.1 The aim of the Hornsea Four water vole survey was to determine the presence or likely absence of water vole populations within all watercourses that are within and up to 50 m from the onshore Hornsea Four Order Limits (i.e. the Hornsea Four water vole survey area).

1.2.1.2 The purpose of this report is to present the findings of the Hornsea Four water vole survey and to identify the presence or likely absence of water vole in all watercourses within the Hornsea Four water vole survey area.

1.2.1.3 This report has been prepared following the guidelines as set out in the Chartered Institute of Ecology and Environmental Management's (CIEEM) Guidelines on Ecological Report Writing (CIEEM 2017), as well as the guidelines within the Water Vole Mitigation Handbook (Dean et al 2016).

2 Legislation

2.1.1.1 Table 1 summarises information regarding key legislation and English national policy relevant to water voles. It should be noted that this is for information only and is not intended to be comprehensive or to replace specialist legal advice.

Table 1: Summary of key legislation and policy relevant to water voles.

Legislation	Relevance
Wildlife and Countryside Act 1981 (as amended) (WCA, 1981)	This Act makes it an offence to intentionally kill, injure or take any animal listed in schedule 5 of the Act. Water voles are listed on schedule 5.
Natural Environment and Rural Communities Act 2006 (NERC, 2006)	Section 41 of the Act requires the Secretary of State (SoS) to compile a list of habitats and species of principal importance for the conservation of biodiversity in England. Decision makers of public bodies, in the execution of their duties, must have regard to the conservation of biodiversity in England, and the list is intended to guide them. Natural England has compiled a list of species of Principal Importance. Water voles are on this list.
Conservation of Habitats and Species Regulations, 2017 (as amended) (Conservation of Habitats and Species Regulations, 2017)	Codifies the EU Directive 92/43/EEC (The Habitats Directive) into UK law, and provides legal protection for European Protected Species (EPS) and designated sites. Water voles are EPS.
Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	Makes changes to the Conservation of Habitats and Species Regulations 2017 following the UK's exit from the European Union (EU).
Policy	**Relevance**
UK Post-2010 Biodiversity Framework	Supersedes the UK Biodiversity Action Plan (UK BAP), which fulfilled a legal obligation under the Convention on Biological Diversity to identify and produce action plans for priority habitats and species

3 Methodology

3.1 Survey Area

3.1.1.1 The Hornsea Four water vole survey area consists of all watercourses within the onshore Hornsea Four Order Limits, plus watercourses within an additional 50 m buffer of the Hornsea Four Order Limits. This approach was agreed with relevant stakeholders (i.e. Natural England, Environment Agency (EA), Yorkshire Wildlife Trust (YWT) and ERYC) as part of the Hornsea Four onshore Ecology Evidence Plan Technical Panel meeting held on the 8th April 2019 (ON-ECO-1.8). Subsequent agreement was obtained from Natural England at the

sixth onshore Ecology Evidence Plan Technical Panel meeting held on the 1st April 2020 (ON-ECO-1.11).

3.1.1.2 The Hornsea Four water vole survey area is shown on **Figure 1**.

3.2 Survey Methodology

3.2.1 Desk study

3.2.1.1 Biological data received from the North and East Yorkshire Data Centre (NEYEDC), initially obtained during the scoping stages of the project (NEYEDC 2018) and more recently updated in April 2020, was reviewed for information on the presence of water vole within the Hornsea Four water vole survey area. There is no specific date for determining that desk study records of a certain age are no longer valid, and therefore each record has been considered on its own merits. As the biological records data was updated in April 2020 it is therefore considered to remain valid. .The findings from the desk study is presented within **Section 4.1** of this report.

3.2.1.2 Ordnance Survey (OS) mapping was then used to identify all watercourses within the Hornsea Four water vole survey area.

500000

520000

460000

440000

N

GRID NORTH

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Contains OS data © Crown Copyright and database right 2020.
© Crown copyright and database rights 2021 Ordnance Survey
0100031673. All rights reserved.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0099_WatervoleSurvey_SurveyArea

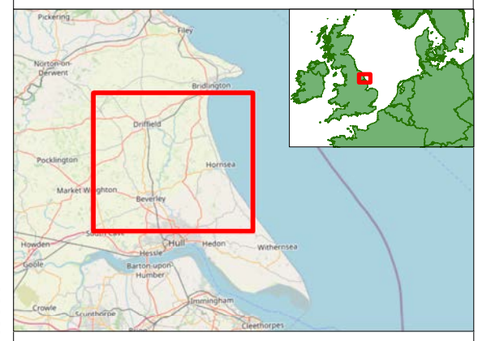
Hornsea Four

Figure 1

Water Vole Survey Area

Order Limits

Water Vole Survey Area



Coordinate system: British National Grid

Scale@A3: 1:1,500,000

0 1.25 2.5 5 Kilometres

0 0.75 1.5 3 Miles

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Survey Area
Document no: HOW04RH0099
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

3.2.2 Field survey

3.2.2.1 Two separate survey visits to each watercourse within the Hornsea Four water vole survey area were undertaken in 2019 to ensure that changes in the local population size over the course of the breeding season were captured (Dean et al 2016). The extent of each watercourse within the survey area was walked and surveyed.

3.2.2.2 The first survey visit to each watercourse was undertaken in May 2019 to include the first half of the breeding season (mid-April to end of June), and the second survey visit in August 2019 to include the second half of the breeding season (July – September inclusive).

3.2.2.3 The Hornsea Four water vole survey was undertaken in accordance with the guidelines in The Water Vole Mitigation Handbook (Dean et al, 2016) and adhered to Natural England's Standing Advice on water vole surveys (Natural England 2015b).

3.2.2.4 The Hornsea Four water vole survey involved searching for water vole field signs primarily within the marginal vegetation along the bank toe of each watercourse and up to 1 m either side of this. Each survey was undertaken along one bank of each watercourse. The following water vole field signs were searched for:

- faeces;
- latrines;
- feeding stations;
- burrows;
- footprints;
- runs or pathways; and
- sightings.

3.2.2.5 The location of all field signs observed was recorded and mapped. The number of latrines recorded during the surveys was then used to calculate a relative water vole population size at each watercourse. In addition, the habitats adjacent to each surveyed watercourse were recorded. Detailed information on bankside species and watercourse characteristics were also recorded for each watercourse and this information is provided in **Appendix A – Full 2019 Hornsea Four Water Vole Survey Results**.

3.2.2.6 Environmental conditions, such as the weather, were also recorded at the start and during each survey visit.

3.2.2.7 This methodology was discussed and agreed with statutory stakeholders including, Natural England, the Yorkshire Wildlife Trust (YWT), the Environment Agency (EA) and East Riding of Yorkshire Council (ERYC) at the Hornsea Four ecology evidence plan technical panel meetings on 8th April 2019 (ON-ECO-1.8). Subsequent agreement was also obtained from Natural England at the sixth onshore Ecology Evidence Plan Technical Panel meeting held on the 1st April 2020 (ON-ECO-1.11).

3.2.3 Surveyors

3.2.3.1 The Hornsea Four water vole survey was led by Charlotte Clements, a Royal HaskoningDHV ecologist with 5 years' experience of undertaking water vole surveys. Charlotte is an associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM). Charlotte was supported by the following ecological surveyors:

- Paul Hiscocks, Member of CIEEM (MCIEEM) and a Member of the Association of Environmental and Ecological Clerk of Works (MEECoW). Paul has 15 years' experience of undertaking ecological surveys; and
- Ella Moseley, a Royal HaskoningDHV ecologist with 5 years' experience of undertaking ecological surveys. Ella is a Member of the Chartered Institute of Water and Environmental Management (MCIWEM), a Chartered Environmentalist (CEnv) and a Chartered Water and Environmental Manager (C.WEM).

3.3 Limitations

3.3.1.1 At the time of the water vole survey (i.e. May and August 2019) a total of 92 watercourses were identified to be present within the Hornsea Four water vole survey area and formed the basis of the 2019 Hornsea Four water vole survey. However, since this time, the Hornsea Four Order Limits have been refined (as detailed within **Volume A1, Chapter 3: Site Selection and Consideration of Alternatives**) and consequently the total number of watercourses has been recalculated to include only those that remain within and up to 50 m of the Hornsea Four Order Limits.

3.3.1.2 The Hornsea Four Order Limits refinement process has resulted in a total of 12 watercourses being excluded as they are no longer present within the Hornsea Four water vole survey area. However, no additional watercourses have been identified within the final Hornsea Four water vole survey area. These 12 watercourses are included in **Table 6** for completeness although they are not considered further within this report. Consequently, a total of 80 watercourses form the basis of this report and are shown on **Figure 2** to **Figure 28**.

3.3.1.3 The survey team has completed surveys of all watercourses to which access was physically possible. One watercourse (Ditch_B05, **Figure 4**) was inaccessible on both survey visits due to the presence of livestock. However, all connecting watercourses within this location were dry. In addition, the landowner informed the field surveying team that the ditch in question was also dry. Consequently, it is concluded that Ditch_B05 (**Figure 4**) was dry and therefore assessed as being sub-optimal habitat for water voles during the 2019 breeding season and consequently no survey has been undertaken on this ditch.

3.3.1.4 A total of 18 watercourses could not be fully accessed due to physical barriers preventing entry such as overgrown vegetation and/or steep banks making access/egress potentially unsafe (please refer to **Table 6** in **Appendix A – Full 2019 Hornsea Four Water Vole Survey Results** for details of these 18 watercourses). For these watercourses, a visual inspection was made from the bankside using binoculars, and despite the access restrictions it was

considered that a sufficient level of survey observations and information were obtained to inform the conclusions drawn in this report and the accompany assessments in **Volume A3, Chapter 3: Ecology and Nature Conservation**.

3.3.1.5 Whilst the survey team made the utmost effort record all water vole field signs, due to human error it is possible that some signs may have been missed or overlooked. However, despite this, the standard survey methods were followed, and the data presented within this report provides an accurate description of the habitats present within the Hornsea Four water vole survey area and in turn provides a robust understanding of the distribution of water vole populations within it.

3.4 Weather Conditions

3.4.1.1 **Table 2** summarises the weather conditions encountered during each of the survey visits which collectively form the 2019 Hornsea Four water vole survey period.

Table 2: Weather conditions.

Survey Visit	Date	Weather Conditions
Visit No.1	20 May 2019	Sunny, light breeze, 18°C
	21 May 2019	Sunny, light breeze, 19°C
	22 May 2019	Sunny, light breeze, 20°C
	23 May 2019	Sunny, light breeze, 21°C
	24 May 2019	Sunny, light breeze, 21°C
	28 May 2019	Sunny, light breeze 14°C
Visit No.2	19 August 2019	Sunny, moderate breeze, 21°C
	20 August 2019	Sunny, moderate breeze, 19°C
	21 August 2019	Sunny, moderate breeze, 22°C
	28 August 2019	Overcast, light showers, 22°C
	29 August 2019	Sunny, strong winds, 21°C
	30 August 2019	Sunny, strong winds, 23°C

4 Results

4.1 Desk Study Results

4.1.1.1 Within the biological records provided by NEYEDC, there are a total of eight watercourses within the Hornsea Four water vole survey area where water vole has been recorded. These watercourses are as follows:

- Ditch_B06 – Gransmoor Drain (**Figure 5**);
- Ditch_B11 – Foston Beck (**Figure 9**);
- Ditch_B15 – Nafferton Drain (**Figure 10**);
- Ditch_B16 – Nafferton Drain (**Figure 11**);
- Ditch_B19 – Driffield Canal (**Figure 10**);
- Ditch_B21 – River Hull / West Beck (**Figure 12**);

- Ditch_B26 – Scurf Dike (Figure 14); and
- Ditch_B40 – Bryan Mills Beck (Figure 18).

4.2 Field Survey Results

4.2.1.1 A total of 80 watercourses formed the scope of the Hornsea Four water vole survey. Of those 80 watercourses, a total of 48 were found to be dry during the Hornsea Four water survey and therefore assessed as sub-optimal for water voles during the 2019 breeding season. One watercourse (Ditch_B05, Figure 4) was situated within a field with livestock present, preventing safe access to undertake the survey.

4.2.1.2 Out of the 80 watercourses, field signs of water voles were recorded within six watercourses. These field signs included one site where a burrow, a latrine, and a pathway were recorded and five other sites where feeding remains were recorded.

4.2.1.3 The six watercourses where field signs were recorded are summarised in Table 3 below. This should be read in conjunction with the figures referenced within the table. Full details of all watercourses can be found within Table 6 in Appendix A – Full 2019 Hornsea Four Water Vole Survey Results.

Table 3: Hornsea Four watercourses with confirmed presence of water vole.

Watercourse	Survey visit	Latrine	Burrow	Run	Feeding remains	Comments
Ditch_B14 (Figure 9)	Visit #1	n/a	n/a	n/a	n/a	No field signs recorded during the first survey visit.
	Visit #2	1	1	1	n/a	A burrow, latrine and run were observed within the bankside vegetation during the second survey visit.
Ditch_B15 (Figure 9)	Visit #1	n/a	n/a	n/a	1	Feeding remains consisting of cut canes (to a 45° angle) observed within bankside vegetation at the bank toe. No additional corroborating evidence to support the presence of water voles was observed.
	Visit #2	n/a	n/a	n/a	n/a	No evidence of water vole presence recorded during the second survey visit.

Watercourse	Survey visit	Latrine	Burrow	Run	Feeding remains	Comments
Ditch_B30 (Figure 15)	Visit #1	n/a	n/a	n/a	1	Feeding remains consisting of cut canes (to a 45° angle) observed within bankside vegetation at the bank toe. No additional corroborating evidence to support the presence of water voles was observed.
	Visit #2	n/a	n/a	n/a	n/a	No evidence of water vole presence recorded during the second survey visit.
Ditch_B31 (Figure 15)	Visit #1	n/a	n/a	n/a	1	Feeding remains consisting of cut canes (to a 45° angle) observed within bankside vegetation at the bank toe. No additional corroborating evidence to support the presence of water voles was observed.
	Visit #2	n/a	n/a	n/a	n/a	No evidence of water vole presence recorded during the second survey visit.
Ditch_B38 (Figure 16)	Visit #1	n/a	n/a	n/a	1	Feeding remains consisting of cut canes (to a 45° angle) observed within bankside vegetation at the bank toe. No additional corroborating evidence to support the presence of water voles was observed.
	Visit #2	n/a	n/a	n/a	n/a	No evidence of water vole presence recorded during the second survey visit.
Ditch_B39 (Figure 16)	Visit #1	n/a	n/a	n/a	1	Feeding remains consisting of cut canes (to a 45° angle) observed within bankside vegetation at the bank toe. No additional corroborating evidence to support the presence of water voles was observed.
	Visit #2	n/a	n/a	n/a	n/a	No evidence of water vole presence recorded during the second survey visit.

4.3 Relative population sizes

4.3.1.1 The numbers of latrines observed during each survey visit can be used to calculate an indicative population size (Dean et al 2016). Table 4 shows the values of latrine density that can be used to give an estimate of population size.

Table 4: Calculation of estimated population size based on latrine numbers (adapted from Dean et al 2016).

Reference number	Approximate number of latrines per 100 m of bankside habitat	
	First half of breeding season April – June)	*Second half of breeding season (July – September)*
High	10 or more	20 or more
Medium	3 – 9	6 – 19
Low	≤ 2 (or none, but with other confirmatory field signs)	≤ 5 (or none, but with other confirmatory field signs)

4.3.1.2 Using the guidelines in **Table 4**, an estimate of population density of each watercourse where water vole field signs were recorded has been undertaken. These results are shown in **Table 5**.

Table 5: Water vole population density.

Watercourse	Maximum No. of latrines	Other field signs	Population density
Ditch_B14	1	Yes	Low
Ditch_B15	0	Yes	Low
Ditch_B30	0	Yes	Low
Ditch_B31	0	Yes	Low
Ditch_B38	0	Yes	Low
Ditch_B39	0	Yes	Low

4.3.1.3 All watercourses in which water vole presence was recorded during the Hornsea Four water vole survey are indicative of a 'low' water vole population as defined by Dean et al 2016.

4.4 Habitats

4.4.1.1 The habitats adjacent to each surveyed watercourse were noted during the Hornsea Four water vole survey, as specified within the approved survey methodology (Dean, et al 2016), and used to inform the survey findings. The adjacent habitats were noted as a mixture of arable fields with areas of poor semi-improved grassland and pastures, in combination with small areas of broadleaved woodland and scattered shrubs, scrub and semi-mature trees. The majority of watercourses subject to the Hornsea Four water vole survey consisted of artificial field drainage ditches, with some larger main drains and rivers. Full details on the habitats within each surveyed watercourse is provided in **Table 6** in **Appendix A – Full 2019 Hornsea Four Water Vole Survey Results.**

4.4.1.2 The locations of each watercourse and the results of the Hornsea Four water vole survey are shown on **Figure 2** to **Figure 28** within this report.

516000 516500 517000 517500

461500 461000 460500

N
GRID NORTH

Ditch_B01
Ditch_B02
Ditch_B03

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 2
Watervole Survey Results
- Sheet 1 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV
Ørsted

515000 515500 516000

461500 461000 460500

N
GRID NORTH

Ditch_B04

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 3
Watervole Survey Results
- Sheet 2 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Hornsea Four

Figure 4

Watervole Survey Results

- Sheet 3 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

513500 514000 514500 515000

459000

458500

458000

N

GRID NORTH

Ditch_B06

Ditch_B79

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 5

Watervole Survey Results - Sheet 4 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

512500 513000 513500

457000

456500

N

GRID NORTH

Ditch_B08 Ditch_B07

Ditch_B85

_B88

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 6
Watervole Survey Results
- Sheet 5 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

511000 511500 512000

457000

456500

456000

N

GRID NORTH

Ditch_B90

Ditch_B91

Ditch_B88

Ditch_B86

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 7

Watervole Survey Results
- Sheet 6 of 27

Order Limits

Water Vole Survey Area

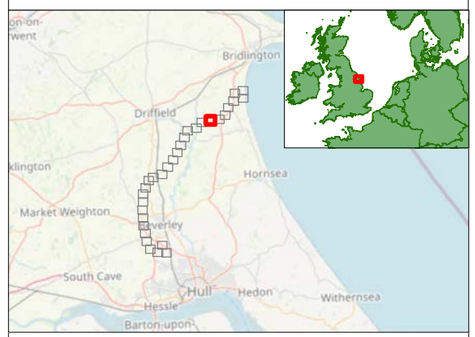
Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey



Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

509500
510000
510500
456500
456000
N
GRID NORTH
Ditch_B86
Ditch_B09
Ditch_B10
Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021
Author: 303273
Name: HOW04RH0100_WatervoleSurveyResults

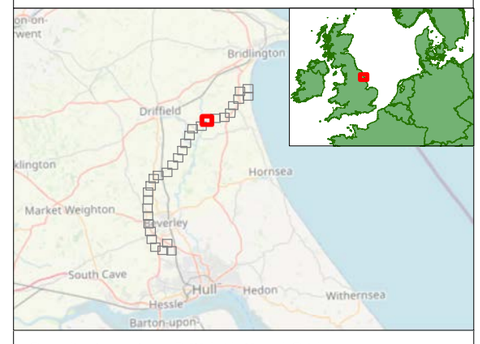
Hornsea Four

Figure 8
Watervole Survey Results
- Sheet 7 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey



Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV
Ørsted

508500 509000 509500

455500 455000

N
GRID NORTH

Ditch_B10
Ditch_B11
Ditch_B12
Ditch_B13
Ditch_B14
Ditch_B80
tch_B15

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 9
Watervole Survey Results
- Sheet 8 of 27

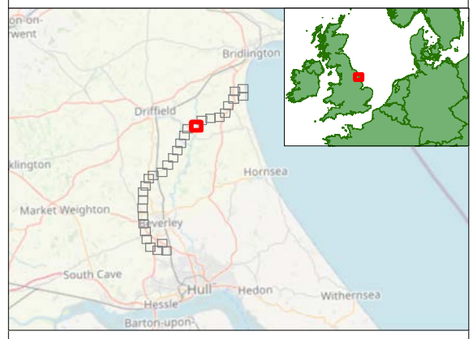
Order Limits
Water Vole Survey Area

Water Vole Field Signs

Burrows
Feeding Stations
Latrine Sites
Runs

Surveyed Ditches

Field signs recorded
No field signs
Dry
No survey



Coordinate system: British National Grid
Scale@A3: 1:5,000
0 50 100 150 200 Metres
0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV
Ørsted

Hornsea Four

Figure 10

Watervole Survey Results

- Sheet 9 of 27

Order Limits

Water Vole Survey Area

Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

506500 507000 507500

454000

453500

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 11

Watervole Survey Results
- Sheet 10 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Hornsea Four

Figure 12

Watervole Survey Results

- Sheet 11 of 27

506000 506500 507000

453000 452500 452000

N

GRID NORTH

Ditch_B20

Ditch_B21

Ditch_B22

Ditch_B23

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

505500
506000
506500
451500
451000

N
GRID NORTH

Ditch_B25
Ditch_B24
Ditch_B26

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 13
Watervole Survey Results
- Sheet 12 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV
Ørsted

Hornsea Four

Figure 14

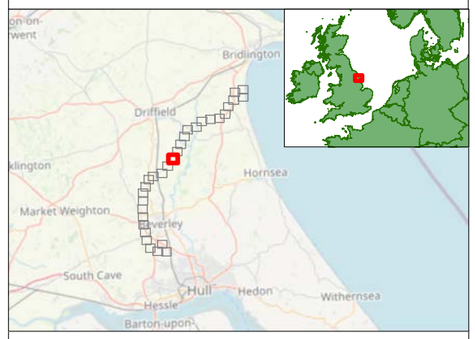
Watervole Survey Results
- Sheet 13 of 27

Order Limits

Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey



Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

504000 504500 505000

449500 449000 448500

N
GRID NORTH

Ditch_B31
Ditch_B30
Ditch_B32
Ditch_B34
Ditch_B33
Ditch_B36
Ditch_B37
Ditch_B35

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 15
Watervole Survey Results
- Sheet 14 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV
Ørsted

503000 503500 504000

448000

447500

N

GRID NORTH

Ditch_B37

Ditch_B35

Ditch_B38

Ditch_B39

Ditch_B92

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 16

Watervole Survey Results
- Sheet 15 of 27

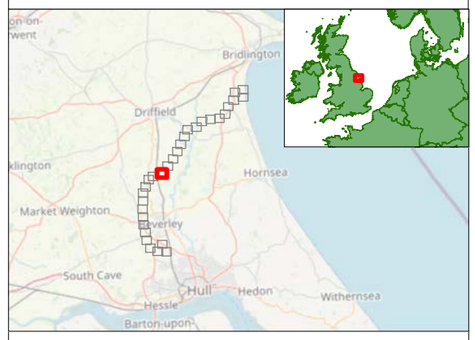
- Order Limits
- Water Vole Survey Area

Water Vole Field Signs

- Burrows
- Feeding Stations

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey



Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

501500 502000 502500

447500 447000

N
GRID NORTH

Ditch_B82
Ditch_B81
Ditch_B87

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 17
Watervole Survey Results
- Sheet 16 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey

Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV
Ørsted

Hornsea Four

Figure 18

Watervole Survey Results

- Sheet 17 of 27

501000 501500 502000

447000

446500

N

GRID NORTH

Ditch_B87

Ditch_B40

Order Limits

Water Vole Survey Area

Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 19

Watervole Survey Results

- Sheet 18 of 27

Order Limits

Water Vole Survey Area

Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Hornsea Four

Figure 20

Watervole Survey Results

- Sheet 19 of 27

Order Limits

Water Vole Survey Area

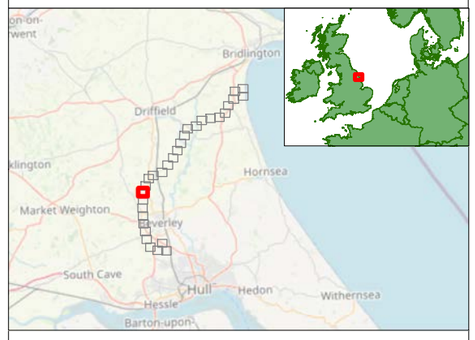
Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey



Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

500000 500500 501000

443500

443000

N

GRID NORTH

Ditch_B84

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

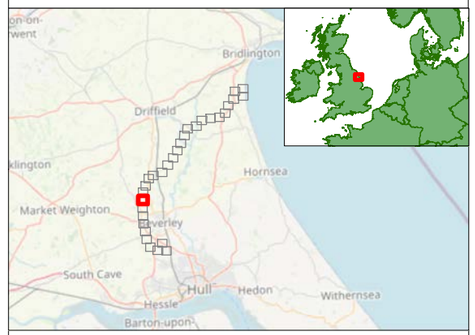
Hornsea Four

Figure 21
Watervole Survey Results
- Sheet 20 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey



Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

500000
500500
501000
442500
442000
441500
N
GRID NORTH
Ditch_B43

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

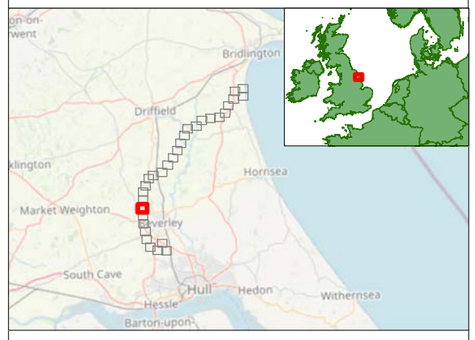
Figure 22

Watervole Survey Results
- Sheet 21 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey



Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

500000 500500 501000 501500

438500

438000

437500

N

GRID NORTH

Ditch_B77

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 23

Watervole Survey Results

- Sheet 22 of 27

Order Limits

Water Vole Survey Area

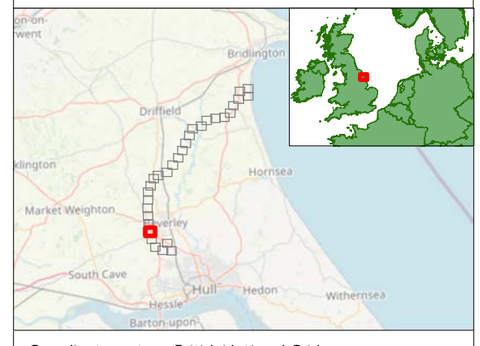
Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey



Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

500500 501000 501500

437000

436500

N

GRID NORTH

Ditch_B44

Hornsea Four

Figure 24

Watervole Survey Results

- Sheet 23 of 27

Order Limits

Water Vole Survey Area

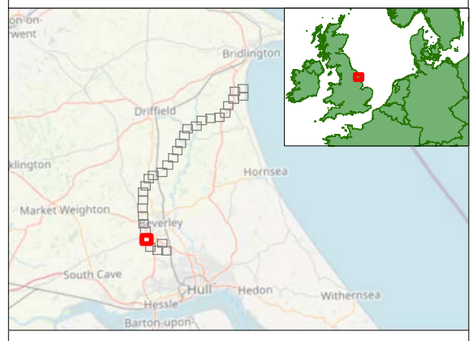
Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey



Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

500500 501000 501500

437000

436500

501000 501500 502000

436000

435500

435000

N

GRID NORTH

Ditch_B45

Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

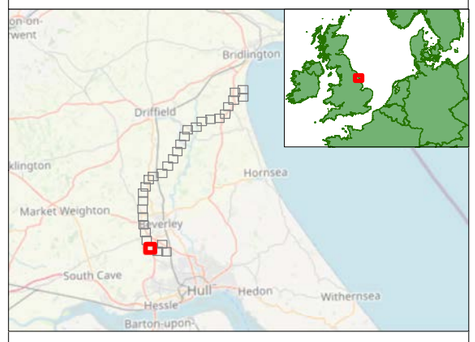
Hornsea Four

Figure 25
Watervole Survey Results
- Sheet 24 of 27

- Order Limits
- Water Vole Survey Area

Surveyed Ditches

- Field signs recorded
- No field signs
- Dry
- No survey



Coordinate system: British National Grid
Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

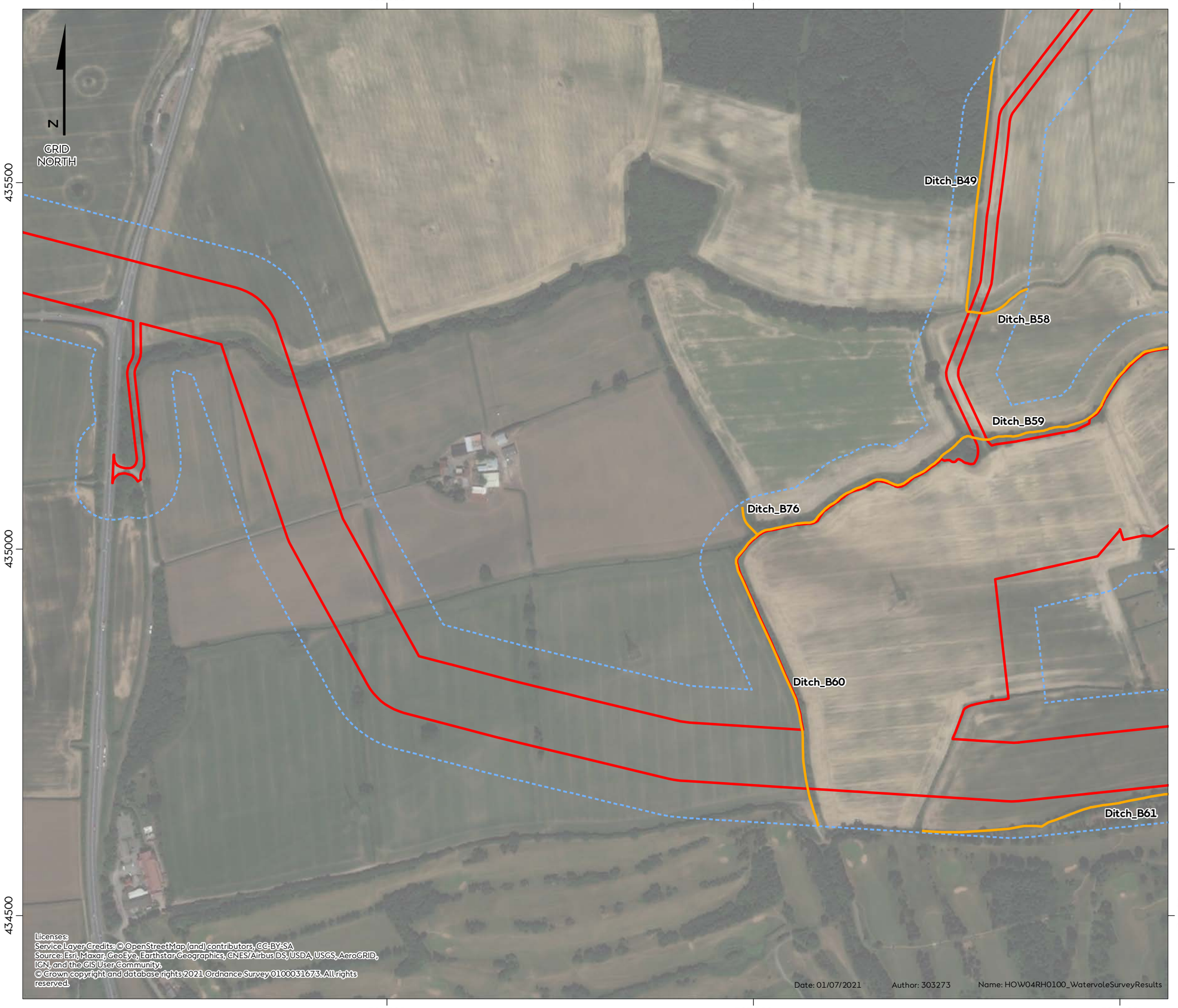
Ørsted

Hornsea Four

Figure 26

Watervole Survey Results

- Sheet 25 of 27



Order Limits

Water Vole Survey Area

Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

503000
503500
504000
436500
436000
N
GRID NORTH
Ditch_B55
Ditch_B48
Licenses:
Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Date: 01/07/2021
Author: 303273
Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 27

Watervole Survey Results

- Sheet 26 of 27

Order Limits

Water Vole Survey Area

Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

503500 504000 504500

435500 435000 434500

N

GRID NORTH

Ditch_B55
Ditch_B56
Ditch_B74
Ditch_B57
Ditch_B58
Ditch_B63
Ditch_B64
Ditch_B71
Ditch_B70
Ditch_B65
Ditch_B69
Ditch_B62
Ditch_B75
Ditch_B61
Ditch_B66
Ditch_B67

Date: 01/07/2021 Author: 303273 Name: HOW04RH0100_WatervoleSurveyResults

Hornsea Four

Figure 28

Watervole Survey Results

- Sheet 27 of 27

Order Limits

Water Vole Survey Area

Surveyed Ditches

Field signs recorded

No field signs

Dry

No survey

Coordinate system: British National Grid

Scale@A3: 1:5,000

0 50 100 150 200 Metres

0 50 100 200 Yards

REV	REMARK	DATE
	First Issue for DCO	01/07/2021

Title: Watervole Survey Results
Document no: HOW04RH0100
Created by: AZ
Checked by: CC
Approved by: CS

Royal HaskoningDHV

Ørsted

5 Conclusion

5.1.1.1 A total of 80 watercourses were identified to be within the Hornsea Four water vole survey area. These watercourses were either recorded and mapped during the updated EP1HS or identified using aerial imagery and OS mapping. Of those 80 watercourses, a total of 48 were dry and therefore assessed as sub-optimal, in line with standard guidance and as agreed with stakeholders (Natural England, YWT, the EA and ERYC) during the third Hornsea Four ecology Evidence Plan Technical Panel meeting on 8th April 2019 (ON-ECO-1.8). One watercourse was unable to be surveyed, due to the presence of livestock preventing access.

5.1.1.2 All 80 watercourses accessible at the time of the survey were subject to two survey visits in 2019, one during the first half of the breeding season in May 2019 and one during the second half of the breeding season in August 2019.

5.1.1.3 Water vole field signs, consisting of a combination of one burrow, one latrine, one pathway and feeding remains, were recorded within six watercourses. A population density assessment was undertaken (Dean et al 2016) and results indicate a low population of water vole within those six watercourses. The six watercourses where water vole field signs were recorded are as follows:

- Ditch_B14;
- Ditch_B15;
- Ditch_B30;
- Ditch_B31;
- Ditch_B38; and
- Ditch_B39.

5.1.1.4 Relative population sizes for the watercourses where water vole activity signs have been recorded was calculated using industry standard guidance (Dean et al, 2016). Each watercourse was determined to have a low population of water vole. Current plans include the use of Horizontal Directional Drilling (HDD), or other trenchless techniques, to cross all but one of the watercourses where water vole presence has been confirmed. Ditch_B39 may be crossed via open cut methods (as the worst case), and therefore mitigation measures for water voles will be required.

5.1.1.5 Mitigation measures relating to water voles that will be adhered to during the construction works associated with the onshore aspects of Hornsea Four, have been agreed with stakeholders (EA, Natural England, ERYC and YWT) through the onshore Evidence Plan Technical Panel meeting process via meetings held on the 13th November 2019 and 1st April 2020 (ON-ECO-3.6 and ON-ECO-3.11 respectively), are presented in full in **Volume F2, Chapter 3: Outline Ecological Management Plan**. Furthermore, a water vole method statement was submitted to Natural England in July 2020 and approved (by Natural England) in August 2020, with a Letter of No Impediment (LONI) issued on the 18th August 2020.

6 References

Chartered Institute of Ecology and Environmental Management (CIEEM) (2017) Guidelines for Ecological Report Writing. Technical Guidance Series.

Dean, M., Strachan, R., Gow, D., and Andrews, R. (2016) The Water Vole Mitigation Handbook. (The Mammal Society Mitigation Guidance Series) Eds Fiona Matthews and Paul Chanin. The Mammal Society, London.

Natural England (2015) Standing advice for local planning authorities who need to assess the impacts of development on water voles. Published 9 October 2014, last updated 28 March 2015.

Natural Environmental and Rural Communities (NERC) Act 2006. Available at https://www.legislation.gov.uk/ukpga/2006/16/contents (accessed: July 2019).

North and East Yorkshire Ecological Data Centre (NEYEDC) (2018 and 2020) Biological Data Records

Orsted (2018) Hornsea Project Four Scoping Report.

Orsted (2019) Hornsea Project Four Updated Extended Phase 1 Habitat Survey Report.

Strachan, R., Moorhouse, T., and Gelling, M (2011) Water Vole Conservation Handbook, 3rd Edition. Wildlife Conservation Unit, University of Oxford.

Wildlife and Countryside Act (WCA) 1981 (as amended). Available at https://www.legislation.gov.uk/ukpga/1981/69 (accessed: July 2019).

7 Appendix A – Full 2019 Hornsea Four Water Vole Survey Results

7.1.1.1 Table 6 below presents the full survey information from both survey visits to each watercourse. Only watercourses where water was present were surveyed for the presence of water voles. As discussed within Section 3.3, due to the refinement of the Hornsea Four Order Limits following the 2019 water vole survey, a total of 12 watercourses are no longer within a 50 m buffer of the final Order Limits. These 12 watercourses are included within the table below for completeness, although are shown as grey as they are not considered within this report and do not inform the assessment provided in Volume A3, Chapter 3: Ecology and Nature Conservation.

Table 6: Full water vole survey results.

SURVEY VISIT ONE: MAY 2019																											SURVEY VISIT TWO: AUGUST 2019										
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_B01	CC, EM	20 May 2019	Sunny, 18 °C	Running water	Earth	Arable	Rare	Occasional	Abundant	Frequent	Occasional	Abundant	Abundant	Steep > 45°	0.5 – 1 m	2 – 5 m	Slow	0	0	0	0	0	0	0	None recorded	**Earl's Dyke** Wide ditch/dyke with steep, overgrown banks. Arable fields on both sides. Vegetation including bramble, nettle, broad leaf dock, common hogweed and perennial rye grass **No access into watercourse – survey undertaken from banks and with binoculars**	CC, PH	20 August 2019	Sunny, 19 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_B02	CC, EM	20 May 2019	Sunny, 18 °C	Ditch	Earth	Arable	Rare	Rare	Occasional	Occasional	Frequent	Frequent	Frequent	Steep > 45°	< 0.5 m	1 -2 m	Static	0	0	0	0	0	0	0	None recorded	Mostly dry ditch with patches of standing water. Common reed, nettle, bramble, common hogweed, reed canary grass	CC, PH	20 August 2019	Sunny, 19 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_B03	CC, EM	20 May 2019	Sunny, 18 °C	**Dry ditch – vegetated – no survey undertaken**																							CC, PH	20 August 2019	Sunny, 19 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_B04	CC, EM	20 May 2019	Sunny, 18 °C	Ditch	Earth	Arable	Rare	Rare	Frequent	Abundant	Abundant	Abundant	Abundant	Steep > 45°	< 0.5 m	1 -2 m	Static	0	0	0	0	0	0	0	None recorded	Narrow ditch with steep, heavily vegetated banks, dry in patches. Willowherb, thistle, nettle, reed canary grass	CC, PH	20 August 2019	Sunny, 19 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_B05	CC, EM	20 May 2019	Sunny, 18 °C	**No access to watercourse due to presence of livestock – landowner suggested that ditch is dry, other ditches within vicinity were also dry.**																							CC, PH	20 August 2019	Sunny, 19 °C	**As per survey visit #1 – no survey undertaken**								

SURVEY VISIT ONE: MAY 2019																										SURVEY VISIT TWO: AUGUST 2019											
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B06	CC, EM	20 May 2019	Sunny, 18 °C	Ditch	Earth	Arable	Occasional	Occasional	Abundant	Dominant	Dominant	Dominant	Abundant	Vertical	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	**Gransmoor Drain** Narrow ditch with steep/vertical vegetated banks. Choked with common reed, occasional hawthorn and small woodland present outside survey area. Reed canary grass, common hogweed, willowherb, thistle and broad leaf dock. Desk study results show water vole presence in the past. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	20 August 2019	Sunny, 19 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B07	CC, EM	20 May 2019	Sunny, 18 °C	Ditch	Earth	Arable	Rare	Rare	Abundant	Occasional	Dominant	Abundant	Frequent	Steep > 45°	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	**Yew Dike** Steep, heavily vegetated banks dominated by common reed. Nettle, bramble, cleavers, thistle and willowherb present. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	21 August 2019	Sunny, 22 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B08	CC, EM	20 May 2019	Sunny, 18 °C	Ditch	Earth	Arable	Rare	Rare	Abundant	Occasional	Dominant	Abundant	Frequent	Steep > 45°	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	**Barmston Main Drain** Habitat as per Ditch_B07 (**Yew Dike**), watercourses connected. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	21 August 2019	Sunny, 22 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B09	CC, PH	21 May 2019	Sunny, 19 °C	**Dry ditch – no survey undertaken**																							CC, PH	29 August 2019	Sunny, 21 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B10	CC, PH	21 May 2019	Sunny, 19 °C	**Dry ditch – no survey undertaken**																							CC, PH	29 August 2019	Sunny, 21 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B11	CC, PH	21 May 2019	Sunny, 19 °C	Ditch	Earth	Arable Grass	Rare	Occasional	Abundant	Rare	Abundant	Frequent	Frequent	Steep > 45°	0.5 – 1 m	5 – 10 m	Slow	0	0	0	0	0	0	0	Large mammal run observed	**Foston Beck** Wide, slow moving ditch with steep banks in sections, heavily vegetated. Glyceria, willowherb, nettle and hawthorn present. Desk study results show water vole presence in the past	CC, PH	21 August 2019	Sunny, 22 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B12	CC, PH	21 May 2019	Sunny, 19 °C	Ditch	Earth	Arable	Rare	Rare	Abundant	Occasional	Frequent	Abundant	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Static	0	0	0	0	0	0	0	None recorded	Narrow, heavily vegetated ditch with approx. 20 cm water. Thistle, willowherb and nettle dominant.	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.

SURVEY VISIT ONE: MAY 2019																											SURVEY VISIT TWO: AUGUST 2019										
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B13	CC, PH	21 May 2019	Sunny, 19 °C	Ditch	Earth	Arable	Rare	Rare	Frequent	Occasional	Frequent	Abundant	Abundant	Steep > 45°	0.5 – 1 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	**Creyke Dike** Narrow ditch with steep banks, good water quality. Glyceria, nettle, thistle and willowherb. High likelihood of water vole presence due to proximity to Ditch_B12 **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B14	CC, PH	21 May 2019	Sunny, 19 °C	Ditch	Earth	Arable	Rare	Frequent	Frequent	Occasional	Dominant	Abundant	Abundant	Steep > 45°	0.5 – 1 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	**White Dike** Wide, deep ditch with heavily vegetated banks. Glyceria, reed canary grass, common hogweed, thistle, nettle and occasional hawthorn. High likelihood of water vole presence due to proximity to Ditch_B12 **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	1	0	1	1	0	None recorded	Run, burrow and feeding remains observed during second survey visit.
Ditch_ B15	CC, PH	21 May 2019	Sunny, 19 °C	Ditch	Earth	Arable	Rare	Occasional	Abundant	Rare	Dominant	Abundant	Abundant	Steep > 45°	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	1	0	None recorded	**Nafferton Drain** Ditch with heavily vegetated banks, common reed dominant, bindweed, nettle and thistle. Cut vegetation recorded at water's edge (to 45° angle), however no other corroborating evidence of water vole presence. Desk study results show water vole presence in the past **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	No field signs recorded during second survey visit.
Ditch_ B16	CC, PH	22 May 2019	Sunny, 20 °C	Running water	Earth	Arable Grass	Rare	Rare	Abundant	Occasional	Abundant	Abundant	Abundant	Steep > 45°	0.5 – 1 m	2 – 5 m	Sluggish	0	0	0	0	0	0	0	None recorded	**Nafferton Drain** Wide drainage ditch, culverted, drains into river Hull. Choked with common reed. Desk study results show water vole presence in the past **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B17	CC, PH	22 May 2019	Sunny, 20 °C	**Dry ditch – no survey undertaken – NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																	
Ditch_ B18	CC, PH	22 May 2019	Sunny, 20 °C	**No ditch present – no survey undertaken, scoped out of further survey effort - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																	

SURVEY VISIT ONE: MAY 2019																											SURVEY VISIT TWO: AUGUST 2019										
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B19	CC, PH	22 May 2019	Sunny, 20 °C	Running water	Earth	Arable Grass	Rare	Abundant	Abundant	Occasional	Frequent	Abundant	Abundant	Shallow < 45°	1 – 2 m	5 – 10 m	Sluggish	0	0	0	0	0	0	0	None recorded	**Driffield Canal** Wide, slow flowing water. Scattered hawthorn, common reed, reed canary grass, nettle, thistle, willowherb present. Desk study results show water vole presence in the past **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B20	CC, PH	22 May 2019	Sunny, 20 °C	Ditch	Earth	Arable Grass	Occasional	Frequent	Abundant	Rare	Rare	Abundant	Abundant	Steep > 45o	0.5 – 1 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	**Nafferton Drain** Wide ditch with silty bed and steep grassy banks. Common reed, nettle, reed canary grass. Recently cleared, no in-channel vegetation present. Landowner stated ditch is managed by the Environment Agency (EA). **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B21	CC, PH	22 May 2019	Sunny, 20 °C	Running water	Earth	Arable Grass	Occasional	Occasional	Abundant	Occasional	Abundant	Abundant	Abundant	Shallow < 45°	0.5 – 1 m	5 – 10 m	Fast	0	0	0	0	0	0	0	None recorded	**River Hull / West Beck** Wide, flowing river with gently sloping banks and deep water. Heaving vegetated banks, common reed, nettle, willowherb, glyceria, thistle and scattered poplar and alder. Desk study results show water vole presence in the past **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B22	CC, PH	22 May 2019	Sunny, 20 °C	**Dry ditch – no survey undertaken**																							CC, PH	29 August 2019	Sunny, 21 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B23	CC, PH	22 May 2019	Sunny, 20 °C	**Dry ditch – no survey undertaken**																							CC, PH	29 August 2019	Sunny, 21 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B24	CC, PH	22 May 2019	Sunny, 20 °C	Ditch	Earth	BL wood Arable	Abundant	Occasional	Frequent	Rare	Rare	Frequent	Frequent	Steep > 45°	< 0.5 m	2 – 5 m	Sluggish	0	0	0	0	0	0	0	None recorded	**Rotsea Drain** Ditch between arable crop and small broadleaf woodland, banks recently mown. No in-channel vegetation, small sections with common reed.	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B25	CC, PH	22 May 2019	Sunny, 20 °C	Ditch	Earth	Arable	Rare	Rare	Abundant	Occasional	Dominant	Abundant	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Static	0	0	0	0	0	0	0	None recorded	Narrow drainage ditch with steep, heavily vegetated banks. Common reed, willowherb, thistle, nettle, bramble. Low levels of water present. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.

SURVEY VISIT ONE: MAY 2019

Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B26	CC, PH	23 May 2019	Sunny, 21 °C	Running water	Earth	Arable Grass	Rare	Rare	Abundant	Occasional	Occasional	Abundant	Abundant	Steep > 45°	0.5 – 1 m	2 – 5 m	Slow	0	0	0	0	0	0	0	None recorded	**Scurf Dike** Wide ditch/dike with slow flowing water, heavily vegetated banks. Glyceria, common reed. Desk study results show water vole presence in the past **No access to watercourse – survey undertaken from banks and with binoculars**
Ditch_ B27	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Rare	Rare	Rare	Rare	Rare	Rare	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Static	0	0	0	0	0	0	0	None recorded	Steep sided drainage ditch bordering arable field and roadside. Recently managed with low levels of water, no bankside or in channel vegetation present. Defunct hawthorn edge at one end outside of survey area. Same ditch as Ditch_B28, culverted under field entrance
Ditch_ B28	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Rare	Rare	Rare	Rare	Rare	Rare	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Static	0	0	0	0	0	0	0	None recorded	Steep sided drainage ditch bordering arable field and roadside. Recently managed with low levels of water, no bankside or in channel vegetation present. Defunct hawthorn edge at one end outside of survey area. Same ditch as Ditch_B27, culverted under field entrance
Ditch_ B29	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Rare	Rare	Rare	Rare	Rare	Occasional	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Static	0	0	0	0	0	0	0	None recorded	**Spring Dike** Small section of ditch within survey area, steep sided, recently managed with no bankside or in-channel vegetation.
Ditch_ B30	CC, PH	23 May 2019	Sunny, 21 °C	Running water	Earth	Arable Grass BL wood	Frequent	Occasional	Abundant	Rare	Occasional	Abundant	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Slow	0	0	0	0	0	Y	0	None recorded	**Kirby Drain** Culverted to Ditch_B31. Heavily vegetated, steep banks with small broadleaved woodland at eastern end. Scattered hawthorn, common hogweed and nettle present. Cut vegetation recorded at water's edge (to 45° angle), however no other corroborating evidence of water vole presence.
Ditch_ B31	CC, PH	23 May 2019	Sunny, 21 °C	Running water	Earth	Arable Grass BL wood	Frequent	Occasional	Abundant	Rare	Occasional	Abundant	Abundant	Steep > 45°	< 0.5 m	1 – 2 m	Slow	0	0	0	0	0	Y	0	None recorded	**Kirby Drain** Culverted to Ditch_B30. Heavily vegetated, steep banks with small broadleaved woodland at eastern end. Scattered hawthorn, common hogweed and nettle present. Cut vegetation recorded at water's edge (to 45° angle), however no other corroborating evidence of water vole presence.
Ditch_ B32	CC, PH	23 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																						

SURVEY VISIT TWO: AUGUST 2019

	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B26	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B27	CC, PH	21 August 2019	Sunny, 22 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B28	CC, PH	21 August 2019	Sunny, 22 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B29	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B30	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	No field signs recorded during second survey visit.
Ditch_ B31	CC, PH	29 August 2019	Sunny, 21 °C	0	0	0	0	0	0	0	None recorded	No field signs recorded during second survey visit.
Ditch_ B32	CC, PH	29 August 2019	Sunny, 21 °C	**As per survey visit #1 – no survey undertaken**								

SURVEY VISIT ONE: MAY 2019																													SURVEY VISIT TWO: AUGUST 2019											
Background Information				Habitat			Vegetation (DAFOR)								Physical Properties				Water vole field signs								Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B33	CC, PH	23 May 2019	Sunny, 21 °C	Running water	Earth	Arable Grass	Rare	Rare	Abundant	Occasional	Abundant	Abundant	Abundant	Steep > 45°	0.5 – 1 m	2 – 5 m	Slow	0	0	0	0	0	0	0	None recorded	**Watton Beck** Steep, vegetated banks, glyceria, nettle and bramble present. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B34	CC, PH	23 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																							CC, PH	30 August 2019	Sunny, 23 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B35	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Occasional	Occasional	Frequent	Rare	Frequent	Abundant	Abundant	Steep > 45°	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	0	0	None recorded	Mostly dry ditch with low levels of standing water in places. Common reed, nettle, willowherb, ash, hawthorn and bramble present	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B36	CC, PH	23 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																							CC, PH	30 August 2019	Sunny, 23 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B37	CC, PH	23 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																							CC, PH	30 August 2019	Sunny, 23 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B38	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Rare	Rare	Abundant	Rare	Dominant	Abundant	Abundant	Steep > 45°	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	Y	0	None recorded	**Beswick New Cut (Drain)** Ditch with steep, heavily vegetated banks; reedmace, common reed, willowherb, bramble and common hogweed present. Cut vegetation recorded at water's edge (to 45° angle), however no other corroborating evidence of water vole presence. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B39	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Rare	Rare	Abundant	Rare	Abundant	Abundant	Abundant	Steep > 45°	< 0.5 m	2 – 5 m	Static	0	0	0	0	0	Y	0	None recorded	Ditch with steep, heavily vegetated banks, choked with vegetation. Reedmace, common reed, willowherb, thistle and nettle present. Cut vegetation recorded at water's edge (to 45° angle), however no other corroborating evidence of water vole presence. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.

SURVEY VISIT ONE: MAY 2019																											SURVEY VISIT TWO: AUGUST 2019													
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B40	CC, PH	23 May 2019	Sunny, 21 °C	Running water	Earth, sand, gravel	Arable	Frequent	Occasional	Abundant	Abundant	Rare	Abundant	Abundant	Vertical	< 0.5 m	2 – 5 m	Fast	0	0	0	0	0	0	0	None recorded	**Bryan Mills Beck** Vertical, sandy banks, fast flowing shallow water. Alder, common hogweed, willowherb, bramble and nettle present. Desk study results show water vole presence in the past **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B41	CC, PH	23 May 2019	Sunny, 21 °C	Running water	Earth	Arable BL wood	Dominant	Abundant	Rare	Rare	Rare	Abundant	Abundant	Steep > 45	< 0.5 m	5 – 10 m	Slow	0	0	0	0	0	0	0	None recorded	**Bealey's Beck** Very shaded beck running through broadleaved woodland with limited food sources immediately adjacent to watercourse. No in-channel vegetation, bare earth banks. Hawthorn, oak, ash and bramble present.	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1.
Ditch_ B42	CC, PH	23 May 2019	Sunny, 21 °C	Ditch	Earth	Arable	Occasional	Dominant	Occasional	Occasional	Occasional	Abundant	Abundant	Vertical	< 0.5 m	1 – 2 m	Static	0	0	0	0	0	0	0	None recorded	Narrow ditch with steep, heavily vegetated banks. Intact hawthorn hedgerow on one bank. Low levels of water. Hawthorn, water mint, nettle and bramble present. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B43	CC, PH	24 May 2019	Sunny, 21 °C	Running water	Earth	Arable	Rare	Rare	Abundant	Occasional	Occasional	Abundant	Abundant	Vertical	< 0.5 m	1 – 2 m	Fast	0	0	0	0	0	0	0	None recorded	Narrow ditch with steep, heavily vegetated banks, low levels of running water. Bramble, nettle, thistle, common hogweed and bindweed present. **No access to watercourse – survey undertaken from banks and with binoculars**	CC, PH	30 August 2019	Sunny, 23 °C	0	0	0	0	0	0	0	None recorded	Watercourse condition the same as Visit #1, no safe access into watercourse, survey undertaken from banks with binoculars.
Ditch_ B44	CC, PH	24 May 2019	Sunny, 21 °C	**Autherd Drain** **Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B45	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B46	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																		
Ditch_ B47	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				

SURVEY VISIT ONE: MAY 2019																													SURVEY VISIT TWO: AUGUST 2019											
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs								Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B48	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B49	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B50	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																		
Ditch_ B51	CC, PH	24 May 2019	Sunny, 21 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				
Ditch_ B52	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				
Ditch_ B53	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				
Ditch_ B54	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				
Ditch_ B55	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								

SURVEY VISIT ONE: MAY 2019																													SURVEY VISIT TWO: AUGUST 2019										
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B56	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B57	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B58	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B59	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B60	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B61	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B62	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B63	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								

SURVEY VISIT ONE: MAY 2019																											SURVEY VISIT TWO: AUGUST 2019											
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B64	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B65	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B66	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B67	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B68	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																	
Ditch_ B69	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B70	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B71	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								

				SURVEY VISIT ONE: MAY 2019																												SURVEY VISIT TWO: AUGUST 2019													
Background Information				Habitat			Vegetation (DAFOR)								Physical Properties				Water vole field signs								Other field signs of rats, mink or other wildlife	Additional comments		Background Information			Water vole field signs								Other field signs of rats, mink or other wildlife	Additional comments	
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B72	CC, PH	28 May 2019	Sunny, 14 °C	**No ditch present – no survey undertaken, scoped out of further survey effort - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				
Ditch_ B73	CC, PH	28 May 2019	Sunny, 14 °C	**No ditch present – no survey undertaken, scoped out of further survey effort - NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**																																				
Ditch_ B74	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																									CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**									
Ditch_ B75	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																									CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**									
Ditch_ B76	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																									CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**									
Ditch_ B77	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																									CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**									
Ditch_ B78	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																									CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**									
Ditch_ B79	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																									CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**									

SURVEY VISIT ONE: MAY 2019																												SURVEY VISIT TWO: AUGUST 2019											
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs								Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B80	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B81	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B82	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B83	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B84	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B85	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B86	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B87	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								

SURVEY VISIT ONE: MAY 2019																											SURVEY VISIT TWO: AUGUST 2019											
Background Information				Habitat			Vegetation (DAFOR)							Physical Properties				Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments	Background Information			Water vole field signs							Other field signs of rats, mink or other wildlife	Additional comments
Watercourse reference	Surveyors	Date	Weather conditions	Waterbody Type	Bank Composition	Land Use	Bankside trees	Bushes	Herbs	Submerged weed	Reeds/sedges	Tall grass	Short grass	Bank profile	Depth	Width	Current	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance			Surveyors	Date	Weather conditions	Sightings	Latrines	Burrows	Footprints	Pathway in vegetation	Feeding remains	Cropped grass around tunnel entrance		
Ditch_ B88	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B89	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B90	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B91	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								
Ditch_ B92	CC, PH	28 May 2019	Sunny, 14 °C	**Dry ditch – no survey undertaken**																							CC, PH	28 August 2019	Cloudy, 22 °C	**As per survey visit #1 – no survey undertaken**								

8 Appendix B – Photographs

8.1.1.1 Table 7 provides a photograph for each watercourse subject to the water vole survey in 2019. This should be read in conjunction with Figure 2 to Figure 26 in this report. All photographs were taken with an iPad 8 megapixel camera (*f*/2.4 aperture).

Table 7: Photographs of watercourses surveyed in 2019.

Watercourse reference	Photograph
Ditch_B01 (see Figure 2)	
Ditch_B02 (see Figure 2)	

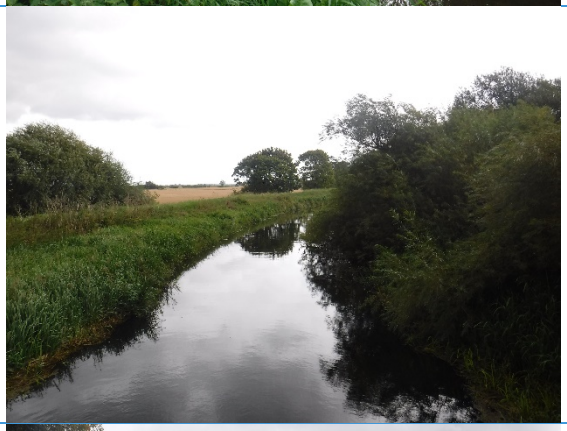
Watercourse reference	Photograph
Ditch_B03 (see Figure 2)	
Ditch_B04 (see Figure 3)	
Ditch_B05 (see Figure 4)	No access due to livestock present within field, therefore no photograph available

Watercourse reference	Photograph
Ditch_B06 (see Figure 5)	
Ditch_B07 (see Figure 6)	
Ditch_B08 (see Figure 6)	

Watercourse reference	Photograph
Ditch_B09 (see Figure 8)	
Ditch_B10 (see Figure 8)	
Ditch_B11 (see Figure 9)	

Watercourse reference	Photograph
Ditch_B12 (see Figure 9)	
Ditch_B13 (see Figure 9)	
Ditch_B14 (see Figure 9)	

Watercourse reference	Photograph
Ditch_B15 (see Figure 9)	
Ditch_B16 (see Figure 11)	
Ditch_B17	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B18	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B19 (see Figure 11)	

Watercourse reference	Photograph
Ditch_B20 (see Figure 12)	
Ditch_B21 (see Figure 12)	
Ditch_B22 (see Figure 12)	

Watercourse reference	Photograph
Ditch_B23 (see Figure 12)	
Ditch_B24 (see Figure 13)	
Ditch_B25 (see Figure 13)	

Watercourse reference	Photograph
Ditch_B26 (see Figure 14)	
Ditch_B27 and Ditch_B28 (see Figure 14)	
Ditch_B29 (see Figure 14)	

Watercourse reference	Photograph
Ditch_B30 and Ditch_B31, (see Figure 14)	
Ditch_B32 (see Figure 15)	
Ditch_B33 (see Figure 15)	

Watercourse reference	Photograph
Ditch_B34 (see Figure 15)	
Ditch_B35 (see Figure 15)	
Ditch_B36 (see Figure 15)	

Watercourse reference	Photograph
Ditch_B37 (see Figure 15)	
Ditch_B38 (see Figure 16)	
Ditch_B39 (see Figure 16)	

Watercourse reference	Photograph
Ditch_B40 (see Figure 18)	
Ditch_B41 (see Figure 19)	
Ditch_B42 (see Figure 19)	

Watercourse reference	Photograph
Ditch_B43 (see Figure 22)	
Ditch_B44 (see Figure 24)	
Ditch_B45 (see Figure 25)	
Ditch_B46	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B47	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA

Watercourse reference	Photograph
Ditch_B48 (see Figure 23)	
Ditch_B49 (see Figure 23)	
Ditch_B50	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B51	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B52	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B53	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B54	NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA
Ditch_B55 (see Figure 27)	

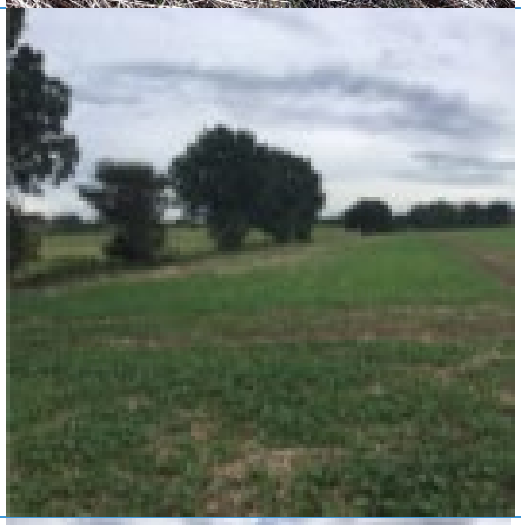
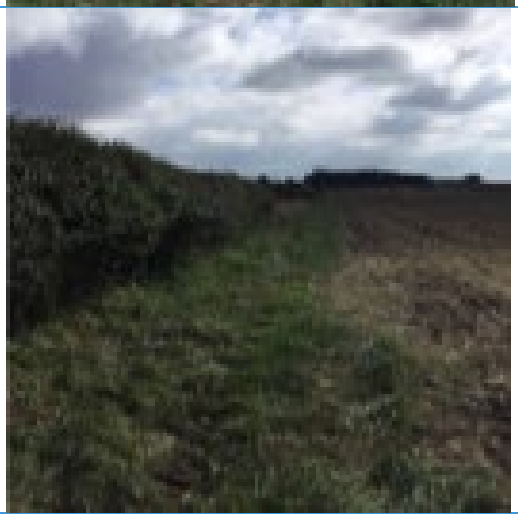
Watercourse reference	Photograph
Ditch_B56 (see Figure 28)	
Ditch_B57 (see Figure 28)	
Ditch_B58 (see Figure 28)	

Watercourse reference	Photograph
Ditch_B59 (see Figure 28)	
Ditch_B60 (see Figure 26)	
Ditch_B61 (see Figure 26)	

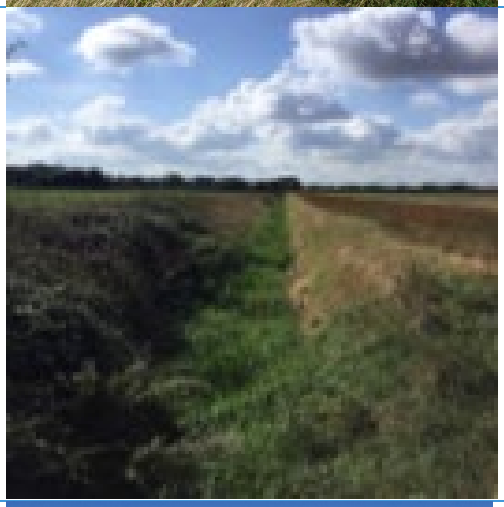
Watercourse reference	Photograph
Ditch_B62 (see Figure 28)	
Ditch_B63 (see Figure 28)	
Ditch_B64 (see Figure 28)	

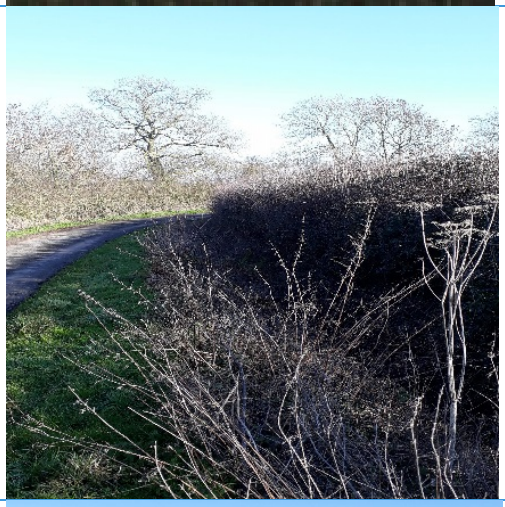
Watercourse reference	Photograph
Ditch_B65 (see Figure 28)	
Ditch_B67, Ditch_B69, Ditch_B70, Ditch_B71 (see Figure 28)	
Ditch_B68	**NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA**
Ditch_B69	Refer to Ditch_B67 photograph
Ditch_B70	Refer to Ditch_B67 photograph
Ditch_B71	Refer to Ditch_B67 photograph
Ditch_B72	**NO LONGER PRESENT WITHIN THE WATER VOLE SURVEY AREA**
Ditch_B73	**NO LONGER PRESENT WITHIN THE HORNSEA FOUR WATER VOLE SURVEY AREA**
Ditch_B74	

Watercourse reference	Photograph
Ditch_B75	
Ditch_B76	
Ditch_B77	

Watercourse reference	Photograph
Ditch_B78	
Ditch_B79	
Ditch_B80	

Watercourse reference	Photograph
Ditch_B81 and Ditch_B82	
Ditch_B83	
Ditch_B84	
Ditch_B85	

Watercourse reference	Photograph
Ditch_B86	
Ditch_B87	
Ditch_B88	

Watercourse reference	Photograph
Ditch_B89	
Ditch_B90	
Ditch_B91	

Watercourse reference	Photograph
Ditch_B92