Grand Union Canal Transfer

Appendix 22-PD-2: Preliminary Water Framework Directive Assessment

Table of Contents

Appendix 22-PD-2: Water Framework Directive Assessment 1
1. Introduction 1
2. WFD Assessment Methodology 4
3. Summary of WFD Assessments at RAPID Gates 11
4. WFD Screening 14
5. WFD Scoping 73
6. Baseline 174
7. Mitigation 176
8. WFD Impact Assessment 181
9. Conclusion 256
Annex 22-1: WFD status of screened-in WFD surface water bodies 259
Annex 22-2: WFD status of screened-in WFD groundwater water bodies 296
Annex 22-3: Mitigation Measures Assessment 300
Annex 22-4: River Tame Bed Shear Stress Modelling Results 312
Annex 22-5: Hydromorphology Walkover Survey 316

Tables

Table 1: Summary of WFD assessments throughout the gated process 11
Table 2: Screening of the Proposed Development's activities against WFD quality elements 15
Table 3: Screening of WFD water bodies potentially impacted by the Proposed Development 42
Table 4: Screening of sensitive sites 63
Table 5: Scoping of the Proposed Development's activities against WFD quality elements 74
Table 6: Impact Assessment on the WFD quality elements of the surface water bodies screened-in for this assessment 183
Table 7: Impact Assessment on the WFD quality elements of the groundwater bodies screened in for this assessment 241
Table 8: Compliance assessment of the Proposed Development 253
Table 9: Entrainment threshold by particle class 313
Table 10: Bed shear stress at baseline and Scenario A (Q_{95}) 314
Table 11: Bed shear stress at baseline and Scenario A (ELF) 314

Appendix 22-PD-2: Water Framework Directive Assessment

1. Introduction

1.1 Context

1.1.1 Water Framework Directive (WFD) assessment has been undertaken for the operation of the Grand Union Canal Transfer Strategic Resource Option (SRO) scheme ('the Proposed Development') iteratively as part of design development. This was to support the gated process set out by the Regulators' Alliance for Progressing Infrastructure Development (Ref. 1) (RAPID) for SRO schemes.

1.1.2 The All Company Working Group (ACWG) (Ref. 2) developed a consistent framework for undertaking WFD assessments for SROs to demonstrate that options would not cause deterioration in status of any WFD water body. At Gates 2 and 3 of the RAPID process, separate WFD assessments were produced using the ACWG method for different elements of the Proposed Development: one for the GUC (Grand Union Canal) component (Parts 2 – 4), and one for the Minworth component (Part 1), reflecting that these schemes originated as individual SROs. These assessments were then combined, alongside additional scoping level assessment of construction aspects of the Proposed Development, to form a single scoping level assessment for the Proposed Development. As such, this WFD assessment, which has been produced as an appendix of the Grand Union Canal Transfer Preliminary Environmental Impact Report (PEI Report), is a continuation of the EIA scoping level assessment. It has been produced in accordance with the Planning Inspectorate's (PINS) guidance for WFD assessment, released in September 2024 (Ref. 3).

1.2 Summary of the Proposed Development

1.2.1 The Proposed Development will transfer water from Severn Trent's supply area via up to approximately 120 kilometres (km) of canal to areas of forecast deficit in Affinity Water's (AfW) supply area.

1.2.2 A proportion of the highly treated, recycled water from the existing Minworth Wastewater Recycling Centre (WwRC), which would usually be discharged into the adjacent River Tame will be diverted to a new Advanced Water Treatment Plant (AWTP) within the Minworth site. The Proposed AWTP uses the required standards of technology to treat water to an even higher standard to protect the quality of the water in the canal.

1.2.3 Once the recycled water is further treated in the new 'Minworth AWTP', a buried pipeline will transfer the treated water from the AWTP to a new outfall

in the Coventry Canal near Atherstone. The Coventry, Oxford and Grand Union Canals will then convey water to a location south of Bletchley, Milton Keynes, where it will be abstracted, stored and further treated at a new drinking water treatment plant (named the 'Galley Water Treatment Works' [WTW]). It will then be transferred via a new buried pipeline to an underground reservoir (an existing AfW asset) near Luton and then distributed to AfW customers.

1.2.4 To manage flow velocities and water level changes within the canal network resulting from the water transfer, a range of new infrastructure developments, along with modifications to existing infrastructure, will be required. The new infrastructure will include new pumping stations at locks (uphill), weir bypasses around locks (downhill) and some sections of bank raising. Three new locks, referred to as 'transfer locks', are also proposed to reduce some of the lengths of bank raising that would otherwise be required.

1.2.5 The existing Daventry and Drayton Reservoirs will be utilised to provide storage to ensure water supply is maintained during periods when there may be less water in the canal network. This is in addition to their current purpose of supplying water to the canal for navigation. This will require some additional infrastructure and improvements to existing infrastructure at the reservoirs.

1.2.6 The Proposed Development is split into the following main elements, described north to south, as shown on **Figure 1-PD-1** in **Volume 3** of the PEI Report:

a. Part 1: Minworth to Atherstone:
   i. Part 1a: Minworth AWTP; and
   ii. Part 1b: Minworth to Atherstone pipeline.
b. Part 2: Outfall and other works to the Coventry, Oxford and Grand Union canals;
c. Part 3: Works to Daventry and Drayton Reservoirs;
d. Part 4: Abstraction, storage and treatment and pipeline to an underground storage reservoir near Luton:
   i. Part 4a: Abstraction, storage and treatment; and
   ii. Part 4b: Pipeline to an underground reservoir near Luton.

Preliminary Order Limits

1.2.7 A red line boundary, referred to as the 'Preliminary Order Limits', has been adopted for the purposes of the PEI Report to define the potential maximum extent of land within which it is currently envisaged all works (both temporary and permanent) and associated activities for the Proposed Development will take place. The Preliminary Order Limits shown in the PEI Report are

therefore draft and may be subject to change due to ongoing design development, surveys, stakeholder engagement and feedback from the Phase 2 Public Consultation. Updated and final Order Limits will be published as part of the Development Consent Order (DCO) application and assessed in the Environmental Statement (ES).

1.2.8 Where the area within the Preliminary Order Limits contains existing buildings or other known environmental constraints, ongoing design development will look to avoid any works occurring to these features, where practicable (although some monitoring or protective works may be required). Development offsets from these features will be defined as appropriate as part of ongoing design activities.

1.2.9 For Parts 2 and 3 of the Proposed Development, the Preliminary Order Limits has been divided into an Indicative Work Area and an Indicative Non-Work Area:

a. **Indicative Work Area**: includes areas anticipated for temporary and/or permanent works associated with the Proposed Development; and

b. **Indicative Non-Work Area**: includes areas where no temporary or permanent works are proposed, however, these are required to operate the Proposed Development (i.e. the transfer of water from outfall to abstraction point).

1.2.10 The Preliminary Order Limits for each Part of the Proposed Development are shown on the following figures in **Volume 3** of the PEI Report:

a. Part 1 (a and b): **Figure 3-P1A-1** and **Figure 3-P1B-1**;

b. Parts 2 and 3: **Figure 3-P2&3-1**; and

c. Part 4 (a and b): **Figure 3-P4A-1** and **Figure 3-P4B-1**.

1.2.11 The Preliminary Order Limits have been drawn to provide flexibility, where the Proposed Development's design details are not yet confirmed or where flexibility is to be retained in the DCO. As such, the Preliminary Order Limits are subject to change as the Proposed Development design progresses, taking into account the findings of the ongoing environmental and technical assessments and ongoing engagement and consultation. It is however considered to provide a robust basis for the purpose of identifying likely significant environmental effects. The final Order Limits will be refined as design of the Proposed Development continues up to submission of the DCO application.

2. WFD Assessment Methodology

2.1 Background

2.1.1 The WFD seeks to establish an integrated approach to the protection and sustainable use of the water environment. This requires a holistic approach to managing waters, looking at the wider ecosystem and considering the movement of water through the hydrological cycle.

2.2 Legislation

2.2.1 The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (referred to as WFD Regulations) transpose, for England and Wales, the WFD as well as aspects of the Groundwater Directive and Environmental Quality Standards Directive.

2.2.2 The WFD Regulations provide a framework for managing the water environment in England.

2.2.3 The European Union Withdrawal Act 2018 carries over the requirements of the WFD into domestic law as retained EU law.

2.2.4 The WFD Regulations require the preparation and publication of river basin management plans (RBMP), the setting of environmental objectives for groundwater and surface waters (including estuaries and coastal waters), and the devising and implementing of programmes of measures to meet those objectives.

2.2.5 The aims of the WFD Regulations are to:

a. Prevent further deterioration and protect and enhance the status of aquatic ecosystems and associated wetlands;
b. Promote the sustainable consumption of water;
c. Reduce pollution of waters from priority substances and phasing out of priority hazardous substances;
d. Prevent the deterioration of the status and to progressively reduce pollution of groundwater; and
e. Contribute to mitigating the effects of floods and droughts.

2.2.6 The WFD Regulations environmental objectives, as set out in Regulation 13, are:

a. Prevention of deterioration of the status of surface waters and groundwater;
b. Achievement of objectives and standards for protected areas;
c. Protect, enhance and restore each body of surface water with the aim of achieving good status for all water bodies by 2021. Where this is not possible and subject to the criteria set out in the WFD Regulations,

aim to achieve good status by 2027 or set an objective less stringent than good status;

d. Protect and enhance each artificial or heavily modified water body with the aim of achieving good ecological potential and good surface water chemical status for heavily modified water bodies and artificial water bodies. Where this is not possible and subject to the criteria set out in the WFD Regulations, aim to achieve good status or potential by 2027 or set an objective less stringent than good status or potential;

e. Reversal of any significant and sustained upward trends in pollutant concentrations in groundwater;

f. Aim progressively to reduce pollution from priority substances and aim to cease or phase out discharges of priority hazardous substances into surface waters; and

g. Progressively reduce the pollution of groundwater, prevent the input of hazardous substances, and limit the entry of non-hazardous pollutants to groundwater.

2.2.7 Under the WFD Regulations, a RBMP must be developed for each river basin district and reviewed and updated every six years. These plans were first published in December 2009. They were updated in February 2016 and December 2022.

2.2.8 The WFD aims to protect and enhance the water environment. The WFD takes a holistic approach to sustainable management of the water environment by considering interactions between surface water, groundwater, and water-dependent ecosystems. Ecosystem conditions are evaluated according to interactions between classes of biological, chemical, physico-chemical and hydromorphological elements known as 'Quality Elements'.

2.2.9 Within the WFD, ‘water bodies’ are the basic management units. These are defined as all or part of a river system or aquifer. Water bodies form part of a larger ‘river basin district’ (RBD) which are then used to summarise baseline conditions and set broad improvement objectives. RBMPs are produced every six years, in accordance with the river basin management planning cycle. The current RBMPs at the date of this assessment are the Cycle 3 plans. The most recent RBMP data available on the online Catchment Data Explorer is from 2022 (in some instances the latest data available for a water body is from 2019). With regards to river water bodies, this assessment considers the water body catchment as mapped on the Catchment Data Explorer. All watercourses and tributaries within these water body catchments are considered to be a part of the water body. Any reference to water bodies within this assessment will refer to the catchment rather than individual watercourses.

2.2.10 The Environment Agency is the government regulator for implementing the WFD in England, although many objectives are delivered in partnership with

other relevant government (i.e., public) bodies as well as local planning authorities, water companies, rivers trusts, landowners, and developers.

2.2.11 The WFD requires water bodies to be classified according to their current condition, known as the 'Status' if not designated as an artificial or heavily modified water body (A/HMWB), or 'Potential' if they are a A/HMWB. The WFD also requires water bodies to have a series of objectives for maintaining or improving conditions so that water bodies maintain or reach good status or potential.

2.3 The RAPID Gated Process

2.3.1 Through the PR19 (Price Review 2019) Final Determination, Ofwat set up RAPID in 2019. RAPID consists of representatives from Ofwat, the Environment Agency and Drinking Water Inspectorate, and it oversees the gated process. The National Infrastructure Commission estimated that new water supplies equivalent to the water consumed by over nine million people would be needed by the mid-2030s. Responding to the scale of that challenge, RAPID was formed to help facilitate the development and funding of new, large-scale SRO schemes (such as Grand Union Canal Transfer) by the water companies. RAPID is working alongside the five regional water resources planning groups to ensure the timely delivery of new infrastructure.

2.3.2 The gated process relates to the funding of investigations and development of water resources solutions. There are four Gates during this period. At each Gate, Water Companies submit information about their work on a solution, which is assessed to ensure companies are making progress on the investigation and development of solutions. Ofwat also decides whether companies should continue to be allowed funding to further investigate and develop a solution to the next Gate.

2.3.3 The purpose of the gated process is to ensure at each Gate that:

a. Companies are progressing strategic water resource solutions that have been allocated funding at PR19;
b. Costs incurred in doing so are efficient; and
c. Solutions merit continued investigation and development during the period 2020 to 2025.

2.3.4 Extensive consultation has been carried out throughout the gated process, principally with the Environment Agency and Natural England and specifically for the DCO stage WFD assessment. For a summary of this see **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**.

2.4 DCO WFD Assessment guidance

2.4.1 There are no unified methods for WFD assessment. The nature of the water environment and the breadth of the legislation mean that assessments are tailored to proposals on a case-by-case basis.

2.4.2 The following general guidance is available which has been applied for this assessment:

a. Environment Agency (2016a). Water Framework Directive risk assessment. How to assess the risk of your activity. (Ref. 5);

b. Environment Agency (2016b). Protecting and improving the water environment. Water Framework Directive compliance of physical works in river. (Ref. 6);

c. Environment Agency (2016c). Water Framework Directive assessment: estuarine and coastal waters. Clearing the Waters for All. (Ref. 14);

d. Regulation 5(2) (l) (iii) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations (2009). (Ref. 15); and

e. The Planning Inspectorate (2024), Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive. (Ref. 3).

2.4.3 A stepwise approach consisting of screening, scoping and impact assessment phases is generally followed in order to: (a) rationalise the levels of WFD assessment and impact mitigation that are required; and (b) verify that proposals meet the requirements of the WFD. The general approach is described by the Planning Inspectorate (2024): Advice on the Water Framework Directive and briefly summarised below.

Stage 1: Screening

2.4.4 Screening identifies the extent to which a proposed development is likely to affect water bodies. Where impacts are ‘screened out’ from further assessment, this is clearly justified.

2.4.5 The screening stage:

a. Shows all relevant WFD water bodies on a map or plan;

b. Identifies the zone or zones of influence based on specific activities and/or characteristics of a proposed development that could affect the identified water bodies; and

c. Identifies any specific activities and/or characteristics of the proposed development that have been screened out and why.

2.4.6 Screening may find that no further consideration of WFD matters is needed. For example, where water bodies are not located within the development’s zone of influence or where no impact pathways exist.

Stage 2: Scoping

2.4.7 After screening, the scope of further assessment is determined if required.

2.4.8 The scoping stage involves:

a. An initial assessment to identify the risks from a proposed development to receptors within the zone of influence, based on the relevant water bodies and their water quality elements; and

b. Identification of those water bodies where a more detailed impact assessment is needed.

Stage 3: Impact Assessment

2.4.9 The impact assessment is a detailed assessment of the water bodies and activities carried forward from the WFD screening. It is set within the context of the appropriate RBMPs and includes:

a. Identification of water bodies that are potentially affected, directly or indirectly, or at risk from a proposed development;

b. The baseline characteristics of the water bodies affected;

c. A description of the proposed development and the aspects of the development considered within the scope of the WFD assessment;

d. The methods used to determine and quantify the scale of WFD impacts;

e. An assessment of the risk of deterioration, where WFD regulation 19 (commonly referred to as article 4.7 of the original EU directive) may apply if the proposed development may risk deterioration in status or prevent achievement of good status;

f. An explanation of any mitigation required and how it is secured;

g. An explanation of any enhancements and/or positive contributions to the rbmp objectives proposed and how they would be secured;

h. Where a derogation is required, information to justify the case for derogation; and

i. Identification of any areas of non-compliance.

WFD Assessment Timescale

2.4.10 This report includes all three stages of the assessment methodology listed above.

2.5 Limitations and Assumptions

2.5.1 There are some aspects of the Proposed Development that are still to be determined and/or being updated for Gate 4, and as such these will be assessed for the ES, including:

a. Additional Simulation of Catchments (SIMCAT) modelling is being undertaken at Gate 4 to further assess water quality impacts to the Rivers Tame and Trent, accounting for updated discharge parameters. It will include for climate change and Asset Management Plan (AMP) 8/9 Wastewater Treatment Works improvements in the Tame catchment;

b. Further water quality monitoring in the Rivers Tame and Trent, the GUC and Daventry and Drayton Reservoirs is being undertaken for Gate 4 to provide a longer-term baseline dataset, and the water quality baselines will be updated for the ES to reflect this;

c. Updated hydrological modelling of the River Tame and River Trent (including climate change with a higher emission scenario, Representative Concentration Pathway (RCP8.5) will be completed and used to update the assessment of impacts related to changing water levels in the River Tame and the resultant connectivity to potentially affected receptors;

d. River Tame hydraulic flood modelling is underway and will model a range of scenarios including the Credible Maximum Scenario. The assessment of flood risk across Parts 1a and 1b at Gate 4 will be updated at ES stage to reflect this;

e. Assessment of canal contamination mobilisation is ongoing and will be presented at the ES stage;

f. Change in Daventry and Drayton reservoir water quality from transfer of flow into them from the canal for Hands off Flood (HOF)/outage storage will be assessed at the ES stage when further water quality H1 risk assessment work has been completed; and

g. Assessment of impacts of an altered regime of waste weir spills, in terms of the volumes of water spilling and impacts on downstream receptors and connectivity to water dependent receptors will be updated in the ES.

2.5.2 Although some hydromorphology surveys have been conducted, there remain some watercourses within the Preliminary Order Limits that have not yet been surveyed yet due to land access restrictions, and so their condition has not been confirmed. Further surveys will be conducted prior to the ES stage.

2.5.3 There are ongoing intrusive ground investigations (GI) being undertaken and will continue to be undertaken during the ES Stage. Assessment is carried out based on the data available to date, and this will be reviewed as the GI and the Assessment progresses. For any areas where GI information on groundwater levels is not available, as a worst- case assumption groundwater is assumed to be shallow.

2.5.4 This WFD assessment has been undertaken based on the design information of the Proposed Development that is described in **Chapter 3: The Proposed Development** in PEI Report **Volume 2**. Where there is uncertainty in the design, reasonable assumptions have been made, and

these are described at relevant points within the assessment, specifically section 4.1 Screening of Activities. Further updates and assessment will therefore be made at the ES stage when there is less design uncertainty and when results from refined hydraulic and water quality modelling are made available.

3. Summary of WFD Assessments at RAPID Gates

3.1.1 **Table 1** provides an overview of the WFD assessments completed for the RAPID Gate stages and the outcomes of those assessments.

Table 1: Summary of WFD assessments throughout the gated process

Assessment	What was assessed?	How was it assessed?	Assessment outcome
Gate 1			
GUC SRO	Three potential routes for taking water from the Minworth AWTP to the middle section of the canal (sub-routes 1, 3, and 6) and three abstraction and treatment points in the southern section (Tring, Hemel Hempstead, and The Grove) were shortlisted, giving a total of nine possible combinations for assessment.	Existing hydrological and hydraulic models to test where increased flow would put pressure on the current system, and to outline engineering solutions, were utilised.	The findings of the assessment indicated that there were potential WFD compliance risks associated with the operation of the transfer for all options and that potential water quality effects could conflict with achieving WFD status objectives.
Minworth SRO	One scenario was assessed: - Minworth transfer of up to 100 Ml/d of recycled water to the GUC.	A high-level review of predicted flow impacts was carried out, based on existing flow models of the Tame and Trent.	Assessment was unable to rule out potential risks and recommended that further WFD assessments would be required at Gate 2.
Gate 2			
GUC SRO	One preferred route and abstraction location was assessed, with a Minworth to Atherstone pipeline and an abstraction and treatment site at Leighton Buzzard.	Further hydraulic modelling was in progress at the time of the Gate 2 WFD assessment but was not yet available to inform the outcomes. Water quality modelling data were	The findings indicate that there are potential WFD compliance risks associated with the operation of the scheme, specifically to water quality.

		available and was used to inform the assessment.	
Minworth SRO	Two scenarios were assessed: Minworth transfer of up to 57 Ml/d of recycled water to the GUC; and Minworth transfer of up to 115 Ml/d of recycled water to the GUC.	Assessment was supported by hydrological and hydraulic modelling that considered each scenario in isolation and in combination. This model was a collation of existing 1D models that were updated and adapted to create a model capable of a more detailed assessment of the SROs than was possible at Gate 1.	Assessment suggested that three of the four flow reduction scenarios may have the potential to cause non-compliance with WFD objectives due to status deterioration or an introduction of impediments to reaching target status. The assessment recommended continued modelling and design development to improve the accuracy of the assessment.
Gate 3			
GUC SRO	One preferred route and abstraction location was assessed, with a Minworth to Atherstone pipeline and an abstraction and treatment site at the southern end of the transfer route.	Hydraulic modelling conducted for Gate 2 was available to inform the conclusions of the Gate 3 assessment.	The assessment judged that there was the potential for deterioration in water quality at the point of discharge and downstream of the point of discharge, which is not permissible under the WFD, as implemented in UK law. Further water quality modelling to confirm the level of treatment required at the AWTP to avoid deterioration in water quality will be conducted at Gate 4.
Minworth SRO	One scenario was assessed which was the provision of 115 Ml/d to the GUC.	Gate 3 hydraulic modelling was produced that was used to support fish passage assessment and water quality assessment.	Impacts to hydromorphology and sediment transport processes are likely to be minimal, however there may be some impacts to fish passage and water quality, which will require further assessment at Gate 4, supported by updated hydraulic and hydrological modelling.

Grand Union Canal Transfer WFD Scoping	The GUC SRO and Minworth SRO were combined to form a single scoping level assessment for the Proposed Development.	Hydraulic modelling and fish passage assessments were used to support the assessment.	Impacts to hydromorphology and sediment transport processes are likely to be minimal, however there may be some impacts to fish passage and water quality, which will require further assessment at Gate 4, supported by updated hydraulic and hydrological modelling. The assessment judged that there was the potential for deterioration in water quality at the point of discharge and downstream of the point of discharge, which is not permissible under the WFD, as implemented in UK law. Further water quality modelling to confirm the level of treatment required at the AWTP to avoid deterioration in water quality will be conducted at Gate 4.

4. WFD Screening

4.1.1 In line with the PINS WFD assessment guidance, the purpose of the WFD screening stage is to identify a zone of influence of the Proposed Development and to determine whether that influence has the potential to adversely impact upon WFD water body receptors. The screening stage also identifies specific components of the Proposed Development that could affect receptor water bodies' WFD status and carries them forward to subsequent stages of the assessment process. Water body receptors or activities that are screened out are not carried forward, and justification is provided.

4.1.2 This WFD assessment first screens the activities associated with the Proposed Development, which is provided in **Table 2**. This identifies which activities may result in an impact to WFD receptors and/or require further mitigation to ensure they are compliant. Activities screened in will therefore be passed on for further assessment.

4.1.3 WFD water bodies are then screened to determine which water bodies may be impacted by the Proposed Development (**Table 3**). A Zone of Influence of 1 km from the Preliminary Order Limits is followed, with all water bodies within this area screened. Additional downstream water bodies have been included in the Zone of Influence based on professional judgement of how far downstream impacts would propagate. Activities screened in in **Table 2** relevant to each water body are also given. Water bodies screened in will therefore be passed on for further assessment.

4.1 Screening of Activities

4.1.1 The Proposed Development comprises several activities, some of which present a potential risk to the WFD status of water bodies. These components and activities are listed in **Table 2** together with a screening assessment. For a full breakdown of activities refer to **Chapter 3: Proposed Development** in PEI Report **Volume 2.**

Table 2: Screening of the Proposed Development's activities against WFD quality elements

Activity	Description	Screening Outcome	Justification
Part 1a: Minworth AWTP			
Operational Regime of the AWTP	The Minworth AWTP will receive up to 115 Ml/d of recycled water from the Minworth WwRC that would have otherwise been discharged to the River Tame and will further treat it. The AWTP will be designed to treat bulk organics, nutrients, and priority contaminants. A pumping station located within the Filter building area would pump highly treated recycled water into the proposed Minworth to Atherstone Pipeline. This will be designed so that the pumping of water can be stopped at any point if there are any issues detected, or if the quality of treated water drops below the required standards. In this scenario, the water will be returned to the treatment plant and retreated. For further information regarding the treatment process see **Chapter 3: The Proposed Development** in PEI Report **Volume 2**.	In	This activity has the potential to impact WFD receptors due to the resultant decrease in discharge to the River Tame. Water quality modelling at Gate 3 (Ref. 13) assessed changes in water quality resulting from reduced dilution of contaminants in the River Tame and found there to be only a minor impact on downstream water quality, with no increases in any pollutant concentrations by a significant percentage of the EQS. However, pollutants that currently exceed EQS values will continue to breach limits. Further modelling is being undertaken at Gate 4 and will be included in the assessment at the ES stage. (NB: potential impacts related to reduced water quality within receiving water bodies are assessed under Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals).
Minworth AWTP Infrastructure	Permanent Works (operation) Part 1a is anticipated to include buildings and infrastructure as seen on **Figure 3-P1A-1** in **Volume 3** of the PEI Report which provides an	In	The permanent works associated with the Minworth AWTP will have no impact to WFD receptors so are screened out of further assessment.

Activity	Description	Screening Outcome	Justification
	indicative layout plan for Minworth AWTP and illustrates the Preliminary Order Limits. Temporary Works (installation) **Figure 3-P1A-1** in **Volume 3** of the in PEI Report shows the area of land that could be used as a working area. Vegetation clearance teams will clear the site of vegetation using hand tools (for example, strimmer and chainsaw). Temporary access points and access roads would be constructed to provide access from the public highways to haul routes, working areas and site compounds. This will involve utilising and upgrading existing access points and creating new accesses. Internal temporary haul roads and site offices would be created with suitable drainage to be installed to manage surface water in the compound.		The temporary works associated with the Minworth AWTP have the potential to impact to Groundwater WFD receptors so are screened in of further assessment. Any potential surface water impacts related to the construction works will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts arising during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment, see section 22.6 Project-Wide Environmental Design, Standards and Management of **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**.
Part 1b: the Minworth to Atherstone Pipeline			
Pipeline (operation)	Part 1b of the Proposed Development comprises the transfer of highly treated recycled water through a new 15 km long buried pipeline from the Minworth AWTP to the Atherstone outfall to Coventry Canal. The pipeline will have the capacity to transfer the maximum of 115 Ml/d of	Out	Once operational, the Minworth to Atherstone pipeline will have no impact to WFD receptors so is screened out of further assessment. (NB: Any potential impacts related to the construction of these works is addressed in Pipeline (installation), below.)

Activity	Description	Screening Outcome	Justification
	water from the Minworth AWTP. Highly treated recycled water will be pumped through the pipeline to a high point approximately 12 km from the Minworth AWTP at a site south-east of Baxterley, where water flow will transition from pumped to gravity fed. This transition will be managed by the Break Pressure Tank (BPT). Beyond the BPT, water in the pipeline will flow by gravity to the Atherstone outfall to the Coventry Canal. The maximum and minimum depths for the pipeline are expected to be as follows: Indicative minimum pipe depth of 1.2 m to the top of the pipe, in open cut scenarios; and Indicative pipe depth of approximately 10.5 m to the top of the pipe at the major trenchless crossings, subject to refinement following further design development.		
Pipeline (installation)	The majority of the pipeline will be installed using open cut methods. The following works will occur simultaneously in a staggered sequence, so only a short length of excavation will be open at any one time. Trench Excavation: Excavators will be used to dig out the trench to a suitable depth and width. The depth of excavation required below ground level will vary according to ground conditions.	In	This activity has the potential to impact WFD receptors through the crossing of various watercourses along the pipeline route so has been screened in for further assessment. It is assumed that the majority of crossings will be constructed using open trench techniques.

Activity	Description	Screening Outcome	Justification
	Pipeline Installation: Using an excavator or small crane, lengths of pipe will be lifted into position at the bottom of the trench. Trench Backfill and Reinstatement: Once the pipe is installed and tested, excavators will be used to place suitable bedding material around it. A working area is required to support construction and would include temporary construction compounds, with associated temporary access roads, launch and reception sites for trenchless crossings, and a working width in which to construct the pipeline. The working width would include areas required to install the pipeline, including digging trenches, storing the pipe and other equipment alongside the trench before installation, and storing excavated soil during installation. The working width would also include temporary construction traffic haul routes. Temporary working areas, such as compounds and access routes, are shown on **Figure 3-P1B-1** in **Volume 3** of the PEI Report. Trenchless crossings Where existing features such as A-roads, main rivers, and railways prevent the use of open cut methods, the design proposes to utilise trenchless techniques to install the new pipeline, which would be combined with micro-tunnelling and thrust and reception pits. The pipeline will include several key trenchless crossings as indicated on		

Activity	Description	Screening Outcome	Justification
	Figure 3-P1B-1 in **Volume 3** of the PEI Report. Where the pipeline intersects with B-roads and ordinary watercourses, the likely method of construction is expected to be open cut, but this may change as the design and impact assessment progresses. Smaller roads may be temporarily closed while open cut works are progressed.		
Break Pressure Tank (BPT)	The BPT is required to manage the water pressures that will be generated in the pumped rising main and the transition from a pumped flow to a gravity flow within the pipeline. The BPT is also used to ensure that a surge from the starting and stopping of the pumps at the AWTP does not affect the pipeline. Whilst the BPT would have the capacity to store water, the purpose of the BPT is not for water storage. Highly treated recycled water would flow under gravity from the BPT to the Atherstone outfall to the Coventry Canal. The BPT would also include retention ponds to allow additional water storage in the unlikely event that water cannot be discharged into the Coventry Canal. The retention ponds will be connected to a nearby watercourse if water needs to be discharged.	Out	Any potential impacts related to the construction of these works will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts arising during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment, see section 22.6 Project-Wide Environmental Design, Standards and Management of **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**. The discharge from the retention ponds into a nearby watercourse (AST-17) would have the potential to impact WFD receptors. However, it is understood that this is only an emergency facility, and is required to only provide storage for 30 minutes to give time to stop the transfer at Minworth AWTP. It is assumed that the BPT would contain the majority of the additional

Activity	Description	Screening Outcome	Justification
			water, which would be transferred first to the retention ponds, and finally discharged to the watercourse and that this would be done once the flow from the AWTP had been cut off, allowing it to be discharged at a greenfield runoff rate via a soft outfall. On this assumption, this activity has been screened out. Should this not be the case, then this will be re-assessed at the ES stage.
Construction of access road	An access road is required to facilitate the construction of Part 1b, which requires a watercourse crossing (T-BA10). It is assumed that the access road is temporary.	In	Due to lack of specific design information, it is assumed for the purposes of this assessment that this will be a temporary watercourse crossing and that it will be via a piped culvert designed to convey flows up to a 1 in 20-year flood. This is assumed as a 'worst-case scenario'. As such this activity is screened in for further assessment.
Part 2: Works (and discharge) to the Coventry, Oxford and Grand Union Canals			
Atherstone outfall structure	The location of the outfall is shown on **Figure 3-P2&3-1** PEI Report **Volume 3**. The outfall structure will provide a controlled discharge of water into the canal at a maximum volumetric flow of 1.35 m^3/s (cubic metres per second) and will not adversely impact navigation or disturb the canal bank or bed. It will be designed to provide oxygenation of the discharge water to meet a standard of 7 mg/l (micrograms per litre) dissolved oxygen. The outfall will be designed such that fish	In	This activity has the potential to impact WFD receptors due to the increased discharge to, and potential change in water quality of, the Grand Union Canal and so has been screened in for further assessment. Construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction.

Activity	Description	Screening Outcome	Justification
	cannot enter. The outfall structure will be designed to provide micro hydro power recovery, which will be used to power site operations and potentially nearby canal moorings, subject to feasibility. The turbine has the dual purpose of reducing the velocity of the discharge and converting this dynamic energy into electricity.		For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management of **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**.
Pumped bypasses	Pumping stations and associated bypass works are required to bypass existing lock structures along the canal to allow the water to flow around the locks, where it is going 'uphill' along the canal. These have been collectively referred to as 'pumped bypasses'. Pumped bypasses will be required at the following locations, as shown on **Figure 3-P2&3-1** in PEI Report **Volume 3**: Hawkesbury; Hillmorton; Braunston; and Fenny Stratford. Permanent Works - General Each pumped bypass must have the capacity to transfer a maximum flow of 115 Ml/d during peak periods, but also must be able to facilitate transfers as low as 15 Ml/d. Flow velocities at the weirs are expected to be low enough for juvenile fish to be able to escape, and	Out	Once operational, pumped bypasses will have no impact to WFD receptors so are screened out of further assessment. Each pumped bypass requires the installation of underground pipeline, but these pipelines do not necessitate watercourse crossings. As such, construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management of **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**.

Activity	Description	Screening Outcome	Justification
	as such, no screening for fish is proposed. This is with the exception of the Braunston Pumped Bypass, where screening is proposed. Temporary Works – General The construction of the pumped bypasses will comprise: Construction of the pipelines – works will be similar to those described for Parts 1b and 4b of the Proposed Development within **Chapter 3: The Proposed Development** in the **Volume 2** of the PEI Report. The majority of pipelines will be constructed in open cut trenches, whilst in some areas, as described in the site-specific sections below, trenchless crossing techniques are proposed. Construction of the inlet and outlet weirs. It is not expected that canal closures will be required for these works, however, restrictions on canal use may be imposed to allow single boat passage. Where access from land is restricted, floating platforms may be used for plant and material deployment. Construction of the pumping station wet well Construction of the pumping station control building. Estimated duration for construction is between 7-9 months per site (with the exception of Braunston Pumped Bypass, where the overall duration of		

Activity	Description	Screening Outcome	Justification
	works is likely to be 12 months). Indicative construction compound locations have been identified for each site, as shown on **Figure 3-P2&3-1** in **Volume 3** of the PEI Report.		
Gravity bypasses	Gravity bypasses will be required to allow the water to flow downhill past individual locks or lock flights (groups of locks close together). Gravity bypasses are likely to be required at the following locks or lock flights, as shown on **Figure 3-P2&3-1** in **Volume 3** of the PEI Report: Long Buckby – Lock 7; Long Buckby – Lock 8; Long Buckby – Lock 9; Whilton Locks (Locks 10 to 13); Stoke Bruerne Locks (Locks 14 to 20); and Cosgrove Lock (Lock 21). Permanent Works - General The process for operating the gravity bypasses includes the following: Water flows down the canal until it reaches a location, where it needs to flow downhill past a lock or flight of locks; Water will enter the bypass via a weir structure built into the canal bank, flow through a pipe (typically 700 mm in diameter) and bypass the lock, or flight of locks; and	In	Once operational, gravity bypasses will have no impact to WFD receptors. However, each gravity bypasses requires the installation of an underground pipeline. In most cases this pipeline, which it is assumed will be built using open-cut methods, will not cross watercourses and so will have no impact to WFD receptors. However, for the Stoke Bruerne Locks (Locks 14 to 20) the gravity bypass will cross an unnamed watercourse (T-GN21) in two locations, and so this activity has been screened in for further assessment. Other construction works related to this activity will be otherwise be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management of **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**.

Activity	Description	Screening Outcome	Justification
	Water re-enters the canal further down, via a similar weir structure to the entry pofint. Gravity bypasses do not require a pumping station or power provision. No above ground structures are proposed, with the exception of a small control kiosk at Stoke Bruerne. Temporary Works – General The construction of the gravity bypasses will comprise the construction of pipelines and weirs, as discussed for pumped bypasses. Indicative construction compound locations have been identified for each site, as shown on **Figure 3-P2&3-1** in **Volume 3** of the PEI Report.		
Canal bank raising	Permanent Works Along sections of the canals, impermeable lining of the canal banks may need to be raised by 100 mm to 250 mm to accommodate the increase in water level within the canals. Sections of the canal that may require bank raising have been identified through hydraulic modelling. **Figure 3-P2&3-1** in **Volume 3** of the PEI Report shows the maximum extent of the canal banks which may be subject to bank raising. Works may also be required in adjacent marinas, as indicated on **Figure 3-P2&3-1** in **Volume 3** of the PEI Report, to accommodate the increase in water levels. Whilst marinas which may be subject to works have been identified, the nature of the	Out	Once operational, canal bank raising will have no impact to WFD receptors so are screened out of further assessment. Construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management of the **Chapter 22: Water Environment and Floor Risk** in the **Volume 2** of the PEI Report.

Activity	Description	Screening Outcome	Justification
	works requires further engagement with the marina operators. Where the towpath is impacted by canal bank raising it will be designed to be appropriate to the location and re-establishment and/or mitigation of any impacts will be informed by the Trust's Towpaths for Everyone Policy (Ref. 7). Bank raising would be undertaken on a like-for-like basis with the existing canal bank (i.e. the raised impermeable lining within the canal bank would be of same construction as the existing feature), and in consultation with the Trust and/or any other relevant landowners. There are also some sections of canal bank that may require repair works rather than raising to accommodate the water level increases. Temporary Works Where possible, compounds and access routes used for other works described in section 3.8 of this chapter will address bank raising. **Figure 3-P2&3-1** in **Volume 3** of the PEI Report indicates where additional access and compound locations may be required specifically for bank raising works, if the works are to be carried out from landside. No canal closures are anticipated to be required to complete the bank raising works. However, where dry working conditions are required, cofferdams may be installed, requiring restrictions		

Activity	Description	Screening Outcome	Justification
	to be placed on canal traffic to allow for single boat passage.		
Transfer locks	Permanent Works In order to minimise the extent of bank raising required in the longer pounds resulting from the water transfer, there are four new transfer locks proposed at the following locations, as shown on **Figure 3-P2&3-1** in **Volume 3** of the PEI Report: Springwood Transfer Lock; Grimes Bridge Transfer Lock; Dodford Road Transfer Lock; and Transfer Lock south of Cosgrove (as an alternative to bank raising works at the Iron Trunk Aqueduct Scheduled Monument). Transfer locks provide a small change in water levels from the upstream to the downstream side and significantly reduce bank raising requirements in the upstream end of the pound. Each transfer lock will comprise: A lock structure similar to existing locks found elsewhere on the canal; Two automated lock gates; and A pumped bypass arrangement, similar to the pumped bypasses. The transfer locks will normally remain open, for all flows up to 80 Ml/d. When higher transfer flows are required (i.e. 80-115 Ml/d, which will only be	Out	Once operational, transfer locks will have no impact to WFD receptors so are screened out of further assessment. Each pumped bypass requires the installation of underground pipeline, but these pipelines do not necessitate watercourse crossings. Construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management of **Chapter 22: Water Environment and Flood Risk** in PEI Report **Volume 2**.

Activity	Description	Screening Outcome	Justification
	used in severe drought or exceptional operational conditions, estimated once every 10-20 years), then the lock gates will shut and bypass pumping will start. This will act to lower the water level on the upstream side down to the lower end of normal operating levels in the canal and increase the upstream side towards the upper end of normal operating levels. Typically, this difference will be in the order to 150-200 mm and levels will remain within normal operating levels on both sides of the lock. When closed, the lock will act as existing locks on the canals, allowing passage of a single boat at a time. It is proposed that the lock gates will be automated (although operated by users) to reduce impacts on canal users. The downstream gate is expected to be of a guillotine, sector or tilting weir type. The parameters for the pumping station, inlet and outlet weirs and bypass pipelines are the same as described for the pumped bypasses. Temporary Works Construction of transfer locks will require canal closure and therefore, works are anticipated to be undertaken during the off-season periods (generally November-March, subject to timing of Easter) across two years with the canal re-opening during the boating season. The canal closures will be carried out within the standard Trust closure notification system, and no works		

Activity	Description	Screening Outcome	Justification
	will take place over the Christmas period in accordance with their service commitments. Closures for all transfer locks may take place in the same off season or could be staggered. Construction activities across the two years including the though routes protocol, designed to ensure that there is always one route open. For more information see **Chapter 3: The Proposed Development** in **Volume 2** of the PEI Report.		
Bridge 88, Peartree Bridge Modifications	Hydraulic modelling currently shows that only one bridge (Bridge 88, Peartree Bridge) along the canal network may require modification to accommodate the increase in water level. Bridge 88 is shown on **Figure 3-P2-1** in PEI Report **Volume 3**. Further modelling, assessment and design development is required to determine the extent of any works that might be required to the bridge. A potential solution is to raise the bridge height, which would require the reconstruction of the bridge. The solution required is a matter that will be explored further as part of the ongoing design development. However, raising of the bridge height through the reconstruction of the bridge has been assessed in the PEI Report as it is the solution being considered at this time.	Out	Once operational, bridge 88 modifications will have no impact to WFD receptors so are screened out of further assessment. It is anticipated that construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management in the **Volume 2** of the PEI Report.

Activity	Description	Screening Outcome	Justification
Modification of control and waste weirs	Permanent Works There are currently existing waste weirs, inlet weirs and bypass weirs on the canal network which control the amount of water in the canals. When the Proposed Development is in operation, the canal water levels will rise and adjustments may be needed for existing weirs to avoid the additional water from being wasted or otherwise mismanaged. It is expected that for the majority of the affected weirs, a new fixed weir plate could be fitted to allow flow control when the canal water level is raised, comprising minor works. However, there are a number of weirs that will require >100 mm increase in weir level and therefore, require more substantial works. The locations of these weirs are shown on **Figure 3-P2&3-1** in PEI Report **Volume 3**. A number of these weirs will need to be amended, so that they can be level controlled. This will mean that the existing fixed weir will need to be replaced with a tilting weir or weir with a variable penstock. Temporary Works Where minor works to weirs are required for fitting a new fixed weir plate, these works have been assumed to be completed within a week and require a single vehicle to access the Site. For the weirs requiring more substantive works, an approximate construction period of 7 weeks per weir has been assumed.	Out	Once operational, modification of control and waste weirs will have no impact to WFD receptors so are screened out of further assessment. Construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management in the **Volume 2** of the PEI Report.

Activity	Description	Screening Outcome	Justification
Construction compounds and temporary works	Activities associated with Part 2 require compounds to facilitate the construction of the permanent works. These will be temporary in their nature but may still pose a risk to WFD receptors. The construction compounds cover numerous ordinary watercourses and so there is the potential for multiple watercourse crossings to be required, for example to facilitate access routes within the compound areas.	In	Due to a lack of specific design information, it is assumed for the purposes of this assessment that all watercourse crossings required for temporary construction purposes will be via a piped culvert designed to convey flows up to a 1 in 20-year flood. As such this activity is screened in for further assessment. Any watercourse crossings within construction compounds that will remain post-works are assumed to be in the form of an open-span bridge.
Part 3: Works to Daventry and Drayton Reservoirs			
Daventry and Drayton Reservoir Works	Permanent Works The existing Daventry and Drayton Reservoirs are currently used for water storage and to supply water to the canal for navigation. Initial water resource modelling for the Proposed Development has confirmed that there are risks associated with continuous supply from Minworth WwRC when it is needed during extended droughts. This includes risk of unplanned asset outage, periods of higher demand and the requirement to support river flows in the River Trent. There is a “hands off flow” requirement in the River Trent to which the Minworth WwRC recycled water is a significant contribution via the River Tame. In order to ensure operation of the Proposed Development does not change the	In	Permanent works have the potential to impact WFD receptors through the crossing of watercourses required to facilitate the new pipeline between the Grand Union Canal and the head of each reservoir. The temporary works associated with the Daventry and Drayton Reservoirs will have no impact to WFD receptors so are screened out of further assessment. Any potential impacts related to the construction of these works will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts arising during construction. For an overview of embedded environmental design, standards and/or management

Activity	Description	Screening Outcome	Justification
	frequency of the hands off flow being triggered, the transfer of recycled water out of the River Tame catchment may be reduced or stopped for periods of up to 10 days. Both Daventry and Drayton Reservoirs are therefore proposed to provide the water storage required to support the Proposed Development, whereby water in the reservoirs can be drawn down to augment the transfer in the Grand Union Canal during periods when outage, higher demand or the requirement to manage the River Trent hands off flow are triggered. The reservoirs will also still operate as existing to ensure a supply of water for navigation to the canal. At the proposed Braunston Pumping Station, the pumped transfer main is split into two pipes: one pipe (approximately 450 mm diameter) will feed the reservoirs, and the other pipe (approximately 700 mm diameter) will be used to bypass the Braunston Tunnel. The proposed works at Daventry Reservoir will comprise: Replacement of the existing inlet structure with a new structure and connecting it to an existing large culvert using pre-cast culvert sections. Construction of an additional outlet structure. Bank raising along the existing channel leading from the reservoir to the Grand Union Canal. Replacement of the existing culvert discharging to the Grand Union Canal with a larger structure.		measures in relation to the water environment, see section 22.6 Project-Wide Environmental Design, Standards and Management in the **Volume 2** of the PEI Report.

Activity	Description	Screening Outcome	Justification
	The proposed works at Drayton Reservoir will comprise: Provision of a discharge structure to the existing inlet to the southwest of the reservoir; and Works to the existing overflow structure to the north of the reservoir through the provision of an additional siphon and siphon discharge chamber. There will be flow monitoring and level controls at the intake to the pumping station and monitoring for the delivery into the new pipeline and for delivery from the pipeline into each reservoir at the new discharge structures. There will also be flow monitoring and level sensors at the discharge structures back into the canal. Given the diversion of the canal water into the reservoirs and back out to the canal, and the inevitable mixing of waters in the reservoirs, there will be a need for monitoring water quality and Invasive and Non-Native Species (INNS) at the inlet weir to the pumping station and near the outlet from the reservoirs. An indicative layout plan for Part 3 of the Proposed Development is provided within **Figure 3-P2&3-1** in **Volume 3** of the PEI Report. Temporary Construction Works Construction compound and temporary access locations have been shown on the indicative		

Activity	Description	Screening Outcome	Justification
	layout plan in **Figure 3-P2&3-1** in **Volume 3** of the PEI Report.		
Part 4a: Abstraction, Storage and Treatment			
Abstraction point south of Bletchley	A new weir will be constructed to abstract water out of the Grand Union Canal, located south of Bletchley, Milton Keynes, to transfer canal water to the proposed Galley WTW site via a new water main pipeline. The structure would consist of an intake at the canal side to abstract water from the canal in a controlled way and at a low speed. It is currently proposed for screens to the inlet structure to be set back from the canal to allow the towpath to be maintained and prevent fish and eels becoming stranded next to the inlet screens. The indicative dimension of the screens would likely be similar to the proposed gravity and pumped bypasses in Part 2 (i.e. typically 700 mm in diameter). Fish and eel returns will be back to Grand Union Canal via a pond or direct channel. The transfer from the canal to the screen chamber will likely be via a short open channel, if required. The status of the fishery, particularly in relation to eels is not currently known within the Grand Union Canal, but it is intended that the final design will be in compliance with an appropriately designed Fish Recovery and Return (FRR) system (e.g. 'hydrolox' or similar compliant system to The Eels (England and Wales) Regulations 2009 (Ref. 8).	Out	Once operational, the abstraction point south of Bletchley will have no impact to WFD receptors so is screened out of further assessment, providing the Fish Recovery and Return system is designed to be compliant, as is intended. The set back nature of the inlet screens poses a potential risk to fish and eel stranding. However, it is intended that there will be an appropriately designed Fish Recovery and Return (FRR) system such as a pond or direct channel, which will ensure there is no risk of stranding. The design of this is ongoing and will be reviewed at the ES stage. Construction impacts will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment see section 22.6 Project Wide Environmental Design, Standards and Management in the **Volume 2** of the PEI Report.

Activity	Description	Screening Outcome	Justification
Abstraction point to Galley Water Treatment Works pipeline (Raw)	A new underground water main pipeline is proposed to transfer the raw canal water from the abstraction point to the proposed Galley WTW site via the raw water storage. Following the same approach as the Part 1b pipeline, the internal Part 4a pipeline is expected to have an internal diameter of approximately 1 m and at this stage. The pipeline will be installed primarily through open cut (to an indicative depth of 2.5 m below ground level – dependent upon further topographic and ground investigations). However, there is a point where the pipeline crosses the River Ouzel, where trenchless techniques will be used. The raw water from the intake will be pumped within the screening compound via the underground pipeline to the top of the raw water storage site along its northern side. There will be an offtake near the treatment works to allow direct supply if the storage facility is not operational. The indicative length of raw water pipeline from abstraction to the storage facility is approximately 800 m, although this is dependent upon further topographic and ground investigations which will be confirmed through further design development.	In	This activity has the potential to impact WFD receptors through the crossing of the River Ouzel by the pipeline route.
Galley Water Treatment Works	Raw water storage At the new water storage, the abstracted raw water would be stored before it is treated at the new WTW. Storage will be provided for five days' worth of water for peak flow (575 Ml/d) to allow	In	This activity has the potential to impact WFD receptors through the diversion of a drainage stream so has been screened in for further assessment. At present this watercourse is culverted in this section, so its diversion

Activity	Description	Screening Outcome	Justification
	the transfer to be more resilient and allow an additional buffer between water in the canal and the water reaching the new WTW. This equates to an estimated 575,000 cubic metres (m^3) capacity for the water storage. The water storage site will be located in the south-eastern portion of Part 4a where the topography is highest, with a likely surface area ranging from 7-11 ha. Due to the sloping topography, the water storage will require an earth embankment (up to 8 m) to the lowest existing ground level to the west to contain the water storage. Furthermore, the earth embankment will be constructed all around the water storage to a height of around 1-2 m above the highest water storage level. However, the actual footprint will depend on further topography and ground investigation works, and through further design development. Water Treatment Works A new WTW will be located in the central-western portion of Part 4a and will take water from the storage site (gravity-fed) and treat it to drinking water standards. The treated water will be stored in an underground clean water storage tank, from which a pumping station will deliver the water into the new potable water pipeline to an existing underground reservoir near Luton (Part 4b of the Proposed Development). Further design development will be undertaken to confirm the		represents an opportunity for WFD enhancement. There remains design uncertainty regarding a drawdown facility – this will be assessed at the ES stage when there is more information.

Activity	Description	Screening Outcome	Justification
	proposed layout of the Galley WTW site; however, at this stage, it is expected that the entire footprint of the WTW will be approximately 200 m by 110 m (indicative maximum footprint of 22,000 m^2). This area will include site buildings, storage tanks, process units, pipelines and storage equipment. For further details see **Chapter 3: The Proposed Development** in the **Volume 2** of the PEI Report. Diversion of drainage stream There is a straightened and modified watercourse that forms the southern boundary of the field required for the proposed water storage facility of the WTW. It is believed there is also a culverted stream that bisects this field. During surveys (see Annex 22-5), the straight ditch was dry and thought to be ephemeral with an absence of aquatic vegetation. A review of LiDAR data indicates that the culverted stream and the straightened watercourse are hydrologically connected. The water storage facility will likely to be built above the culverted stream. It is therefore assumed that flow from the culvert will be permanently diverted into the straightened watercourse. The straightened watercourse may also need to be diverted to accommodate the facility. This represents an opportunity for WFD enhancement, although at present the diversion route is yet to be confirmed.		

Activity	Description	Screening Outcome	Justification
Part 4b: Pipeline to Underground Reservoir near Luton			
Pipeline (permanent works)	Drinking water will be pumped from the new WTW (Part 4a) to an existing covered underground reservoir near Luton via a new underground pipeline (approximately 28 km in length). The Part 4b Preliminary Order Limits for the pipeline corridor are shown in **Figure 3-P4B-2** in PEI Report **Volume 3**. It provides the widest possible area within which the pipeline could be routed. Further consideration will be given to the pipeline corridor in these areas as the design and the impact assessment progresses. The maximum and minimum depths for the pipeline are expected to be as follows: Indicative minimum pipe depth of 1.2 m to the top of the pipe, in open cut scenarios; and Indicative pipe depth of approximately 10.5 m to the top of the pipe at the major trenchless crossings, subject to refinement following further design development. The pipeline is expected to have an internal diameter of approximately 1,000 millimetres (mm). Following further hydraulic testing and analysis of the proposed pipeline as part of the ongoing design development, the pipe could comprise either a single or smaller twin/dual pipe for the water transfer.	Out	Once operational, the Minworth to Atherstone pipeline will have no impact to WFD receptors so is screened out of further assessment.

Activity	Description	Screening Outcome	Justification
Pipeline (installation)	The majority of the pipeline will be installed using open cut methods, following the establishment of a working area (for example, site clearance and topsoil stripping). The following works will occur simultaneously in a staggered sequence, so only a short length of excavation will be open at any one time. Trench Excavation: Excavators will be used to dig out the trench to a suitable depth and width. The depth of excavation required below ground level will vary according to ground conditions. Pipeline Installation: Using an excavator or small crane, lengths of pipe will be lifted into position at the bottom of the trench. Trench Backfill and Reinstatement: Once the pipe is installed and tested, excavators will be used to place suitable bedding material around it. Pipeline installation will necessitate watercourse crossings.	In	This activity has the potential to impact WFD receptors through the crossing of various watercourses along the pipeline route so has been screened in for further assessment.
Other construction activities	Construction within Dunstable Downs There will be no permanent above ground structures left within Dunstable Downs (which is part of the Chilterns National Landscape and National Trust land), as the air valve can be located in the landing/launching pit area within the field to the east of Isle of Wight Lane. Access to the pit within the Downs area will be via temporary	Out	Any potential impacts related to construction activities will be adequately mitigated by measures detailed within the Outline CEMP, which will set out best practice measures to address potential impacts arising during construction. For an overview of embedded environmental design, standards and/or management measures in relation to the water environment,

Activity	Description	Screening Outcome	Justification
	track, either from the existing car park or the visitors centre. Underground reservoir near Luton Connection A dedicated connection into each of the reservoir cells is the best option for managing abstraction reductions in the rest of the system and Affinity Water's business needs. It is worth noting that to achieve this the cells will have to be taken out one at a time and re-filled, chlorinated and sampled, with a set of valves to balance the flows into the reservoir and manage and operational cleaning or reactive outages. Construction compounds and working areas The current proposal is to have the main offices and deliveries located at either end of the route, i.e. Galley WTW site and the site of the underground reservoir near Luton, with mobile welfare travelling up the working width along with localised plant and materials. Construction plant and equipment Plant for open cut will consist of two excavators, plus a dumper truck, as shown in the illustrative design link provided above. Each site will only require 1 gang (c. 5 workers) with mobile welfare facilities within the laydown compounds. It should be noted that multiple gangs may work concurrently on separate pipe sections, but these		see section 22.6 Project-Wide Environmental Design, Standards and Management in the **Volume 2** of the PEI Report.

Activity	Description	Screening Outcome	Justification
	will not be close enough together to affect traffic impact assessments. Construction staff and vehicle movements For the purposes of the PEI Report, it can be assumed that this will be no more than 1 HGV delivery per day. Each site will only require 1 'gang' (c. 5 workers) with mobile welfare facilities within the laydown compounds. It should be noted that multiple gangs may work concurrently on separate pipe sections, but these will not be close enough together to affect traffic impact assessments.		

4.2 Screening of WFD Water Bodies

4.2.1 The Proposed Development interacts with a number of WFD surface water and groundwater bodies. WFD Screening of these water bodies is provided in **Table 3**. Water bodies are shown on **Figure 22-P1-2**, **Figure 22-P23-2**, **Figure 22-P4-2**, and **Figure 22-TT-1** of **Volume 3** of the PEI Report. Smaller tributaries within each of the WFD water body catchments that may be impacted by the Proposed Development are considered in this assessment. A Zone of Influence of 1 km from the Preliminary Order Limits is considered, with all water bodies within this area screened. Additional water bodies downstream of the Zone of Influence have been included based on professional judgement. Any other remaining downstream waterbodies not mentioned below are considered sufficiently far downstream to avoid impacts of the Proposed Development or would not interact with the Proposed Development and are therefore screened out of further assessment.

Table 3: Screening of WFD water bodies potentially impacted by the Proposed Development

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
WFD Surface Water Bodies			
Part 1a: Minworth AWTP			
GB104028046841	'Tame – R Rea to R Blythe Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to reduction in discharge (i.e. sedimentation).
GB104028046440	'Tame from R Blythe to River Anker Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to reduction in discharge (i.e. sedimentation).
GB104028047050	'Tame from River Anker to River Trent Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to reduction in discharge (i.e. sedimentation).
GB104028047180	'Trent – R Tame to R Dove Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			reduction in discharge (i.e. sedimentation).
GB104028047420	'Trent from Dove to Derwent Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to reduction in discharge (i.e. sedimentation).
GB104028053120	'Trent from Derwent to Soar Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to reduction in discharge (i.e. sedimentation).
GB104028053110	'Trent from Soar to The Beck Water Body'	Part 1a: Minworth AWTP (operational regime)	**In –** Potential reduction in fish passage due to reduction in discharge within the River Tame, and potential hydromorphological impacts due to reduction in discharge (i.e. sedimentation).
GB104028058480	'Trent from Carlton-on-Trent to Laughton Drain Water Body'	Part 1a: Minworth AWTP (operational regime)	**Out –** There will be minimal reductions in flow in this water body as it is a long way downstream of Minworth AWTP, and the number of tributaries and inflows upstream of this water body mean that any decrease in flow from the Proposed Development will be of a negligible

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			magnitude. Therefore, there is no impact on fish passage or water quality. As such this water body is scoped out of further assessment.
GB530402609203	'HUMBER UPPER Water Body'	Part 1a: Minworth AWTP (operational regime)	**Out –** There will be minimal reductions in flow in this water body as it is a long way downstream of Minworth AWTP, and the number of tributaries and inflows upstream of this water body mean that any decrease in flow from the Proposed Development will be of a negligible magnitude. Therefore, there is no impact on fish passage or water quality. As such this water body is scoped out of further assessment.
Part 1b: the Minworth to Atherstone Pipeline			
GB104028046460	'Anker from River Sence to River Tame Water Body'	Part 1b: the Minworth to Atherstone Pipeline (installation)	**In –** The Minworth to Atherstone pipeline crosses an unnamed watercourse within this water body and so there is a potential impact to WFD quality elements arising from the installation of the pipeline.
GB104028042630	'Dog Lane Brook from Source to R Tame Water Body'	Part 1b: the Minworth to Atherstone Pipeline (installation)	**In –** the Minworth to Atherstone pipeline crosses Dog Lane Brook within this water body and so there is a potential impact to WFD quality elements arising from the installation of the pipeline.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB104028046430	'Anker from Wem Brook to River Sence Water Body'	Part 1b: Minworth to Atherstone pipeline (installation)	**Out –** the Minworth to Atherstone pipeline enters this water body but does not interact with any water sensitive receptors.
GB104028046901	'Langley Bk – source to conf R Tame Water Body'	Part 1b: the Minworth to Atherstone Pipeline (installation)	**Out –** the Minworth to Atherstone pipeline does not cross into this water body catchment but does not cross any watercourses and so is scoped out of further assessment.
GB104028046841	'Tame – R Rea to R Blythe Water Body'	Part 1b: the Minworth to Atherstone Pipeline (installation)	**Out –** the Minworth to Atherstone pipeline is present within this water body but does not cross any watercourses and so is scoped out of further assessment.
GB104028042481	'Bourne – source to R Tame Water Body'	Part 1b: the Minworth to Atherstone Pipeline (installation)	**Out –** the Minworth to Atherstone pipeline is present within this water body but does not cross any watercourses and so is scoped out of further assessment.
GB104028046440	'Tame from R Blythe to River Anker Water Body'	Part 1b: the Minworth to Atherstone Pipeline (installation)	**In –** the Minworth to Atherstone pipeline crosses the River Tame and several unnamed watercourses within this water body and so there is a potential impact to various WFD quality elements.
		Part 1b: construction of access road	**In –** the access road may require a culverted crossing of T-BA10 and so is screened in for further assessment

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
Part 2: Works (and discharge) to the Coventry, Oxford and Grand Union Canals			
GB104028046430	'Anker from Wem Brook to River Sence Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.
GB104028042440	'Anker – source to Wem Bk Water Body'	Part 2: Atherstone outfall structure	**Out –** water body is more than 0.8 km from the canal and so there is no potential for overspills into this water body.
GB109054043920	'Avon – ClaycotonYelvertoft Bk to conf R Sowe Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB109054043940	'Swift source to conf Avon Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB109054044150	'Rains Bk – source to conf R Leam Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB109054044630	'Smite Bk – source to conf R Sowe Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB109054044660	'Sowe – conf Breach Bk to conf Withy Bk Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB109054044700	'Sowe – source to conf Breach Bk Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB70410212	'Coventry and Ashby Canals Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal.
GB104028042430	'Wem Brook from Source to River Anker Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
GB70510193	'Grand Union Canal, Braunston summit Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal.
GB70510251	'Grand Union Canal, Milton Keynes to Braunston summit Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal.
GB70510192	'Grand Union Canal, Milton Keynes trough pound Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal.
GB70510191	'Grand Union Canal, Tring summit to Milton Keynes Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal.
GB105033030520	'Ouzel (US Clipstone Brook) Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			water quality of this water body due to overspills.
GB105033037971	'Ouzel US Caldecote Mill Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills from the canal.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.
GB105033037840	'Newton Longville Brook Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills from the canal.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.
GB105032045360	'Welton Village Trib, Whilton branch of R. Nene Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB105033037900	'Loughton Brook Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
GB105033038000	'Ouse (Wolverton to Newport Pagnell) Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
GB105033037972	'Ouzel DS Caldecote Mill Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
GB105033038180	'Tove (DS Greens Norton) Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
		Part 2: gravity bypass	**In –** Gravity bypass pipeline required for the River Tove Locks will cross an unnamed watercourse two times within this water body and so there is a potential impact to various WFD quality elements.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB70910513	'North Oxford Canal Water Body'	Part 2: Atherstone outfall structure	**In –**Potential reduction in water quality in the canal.
GB109054043900	'Clifton Bk – source to conf R Avon Water Body'	Part 2: Atherstone outfall structure	**In –**Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.
GB109054044120	'Leam – source to conf Rains Bk Water Body'	Part 2: Atherstone outfall structure	**In –**Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.
GB109054044640	'Withy Bk – source to conf R Sowe Water Body'	Part 2: Atherstone outfall structure	**In –** Potential reduction in water quality in the canal may result in a deterioration in water quality of this water body due to overspills.
		Part 2: Construction compounds and temporary works	**In –** Potential for a temporary culverted crossing due to construction compound may result in a deterioration in water quality of this water body.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB105032045280	'Bugbrooke Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105032045310	'Nene – headwaters to conf Whilton Branch Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105032045320	'Nene – conf Whilton Branch to conf Brampton Branch Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105032045340	'Whilton Branch – Lower Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105032045550	'Wootton Brook Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105032045560	'Kislingbury Arm of Wootton Brook Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105033037920	'Ouse (Buckingham to Cosgrove) Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105033037990	'Potterspury Brook Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
GB105033038270	'Shutlanger Brook Water Body'	Part 2: Atherstone outfall structure	**Out –** there is no mechanism for overspills to impact this water body.
Part 3: Works to Daventry and Drayton Reservoirs			

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB105032045360	'Welton Village Trib, Whilton branch of R. Nene Water Body'	Part 3: Works to Daventry and Drayton Reservoirs (permanent works)	**In –** Pipeline between Grand Union Canal and reservoir heads crosses multiple watercourses within this water body and so there is a potential impact to various WFD quality elements.
GB109054044120	'Leam – source to conf Rains Bk Water Body'	Part 3: Works to Daventry and Drayton Reservoirs (permanent works)	**In –** Pipeline between Grand Union Canal and reservoir heads crosses multiple watercourses within this water body and so there is a potential impact to various WFD quality elements.
Part 4a: Abstraction, Storage and Treatment			
GB105033037971	'Ouzel US Caldecote Mill Water Body'	Part 4a: abstraction point to Galley Water Treatment Works pipeline	**In –** pipeline crosses several watercourses within this water body and so there is a potential impact to various WFD quality elements.
		Part 4a: Galley Water Treatment Works	**In –** diversion of a drainage stream within this water body has the potential to impact various WFD quality elements.
Part 4b: Pipeline to an Existing Underground Reservoir near Luton			
GB105033037971	'Ouzel US Caldecote Mill Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In –** Part 4b (pipeline to underground reservoir near Luton) corridor crosses an unnamed watercourse within this water body and so there is a potential impact to various WFD quality elements.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB105033030530	'Ouzel Brook Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In –** Part 4b (pipeline to underground reservoir near Luton) corridor crosses Ouzel Brook within this water body and so there is a potential impact to various WFD quality elements.
GB105033030500	'Eaton Bray Brook Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In –** Part 4b (pipeline to underground reservoir near Luton) corridor crosses an unnamed watercourse within this water body so there is a potential impact to various WFD quality elements.
GB105033037830	'Clipstone Brook Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In –** Part 4b (pipeline to underground reservoir near Luton) corridor crosses Clipstone Brook within this water body so there is a potential impact to various WFD quality elements.
GB105033037930	'Broughton Brook Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**Out –** Part 4b (pipeline to underground reservoir near Luton) crosses into this water body but does not cross any watercourses and so is scoped out of further assessment.
GB105033037630	'Clipstone Brook Tributary Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In –** Part 4b (pipeline to underground reservoir near Luton) corridor crosses Clipstone Brook Tributary so there is a potential impact to various WFD quality element.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB106039029920	'Ver Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**Out –** Pipeline to underground reservoir near Luton crosses into this water body catchment but does not cross any watercourses and so is scoped out of further assessment.
GB106039029820	'Upper Colne and Ellen Brook Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**Out –** Pipeline to underground reservoir near Luton crosses into this water body catchment but does not cross any watercourses and so is scoped out of further assessment.
GB106038033391	'Lee (from Luton to Luton Hoo Lakes) Water Body'	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**Out –** Pipeline to underground reservoir near Luton crosses into this water body catchment but does not cross any watercourses and so is scoped out of further assessment.
WFD Groundwater Bodies:			
Part 1a: Minworth AWTP			
GB40402G990800	Tame Anker Mease - Secondary Combined	Part 1a: Minworth AWTP (operational regime) Part 1a: Minworth AWTP (Installation) Part 1b: the Minworth to Atherstone Pipeline (installation)	**In –** Part 1a: Significant below-ground construction and potential dewatering may be required within this groundwater body. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavation could cause mobilisation of contaminants. Changes to flow and groundwater levels may occur

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			during construction and operation. The depth and construction methods are unknown; therefore, these cannot be scoped out at this stage.
GB40402G990300	Lower Trent Erewash - Secondary Combined	Part 1a: Minworth AWTP (operational regime)	**Out** – Effects of Minworth diverted flows reducing River Tame (and d/s Trent) water level and lowering connected groundwater. These changes in surface water and groundwater levels are negligible. Whilst there is potential for impact on GWDTEs along the Rivers Tame and Trent where surface water and groundwater are in continuity, the scale of water level change means any impact would be negligible. No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.
GB40401G302800	Soar - PT Sandstone	Part 1a: Minworth AWTP (operational regime)	**Out** – Justification same as for Lower Trent Erewash.
GB40402G990600	Soar - Secondary Combined	Part 1a: Minworth AWTP (operational regime)	**Out** – Justification same as for Lower Trent Erewash.
GB40401G301200	Tame Anker Mease - PT Sandstone Burton	Part 1a: Minworth AWTP (operational regime)	**Out** – Justification same as for Lower Trent Erewash.

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
GB40401G301000	Tame Anker Mease - PT Sandstone Birmingham Lichfield	Part 1a: Minworth AWTP (operational regime)	**Out** – Justification same as for Lower Trent Erewash.
Part 1b: Minworth to ATHERSTONE Pipeline			
GB40402G990800	Tame Anker Mease - Secondary Combined	Part 1b: the Minworth to Atherstone Pipeline (installation)	**In –** Part 1b: Significant below-ground construction and potential dewatering may be required within this groundwater body. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavation could cause mobilisation of contaminants. Changes to flow and groundwater levels may occur during construction and operation. The depth and construction methods are unknown; therefore, these cannot be scoped out at this stage.
Part 2: Works to the Coventry, Oxford and Grand Union Canals			
GB40401G302700	Tame Anker and Mease - Permo-Triassic Sandstone Nuneaton and Meriden	Part 2: All aspects	**Out** – Minor below ground works are required for Part 2, whilst there is a theoretical potential for temporary localised quality/quantitative impacts to the groundwater body, measures within the CoCP or Outline CEMP would manage these impact pathways, so no potential

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			risks to WFD objectives have been identified. The waterbody is therefore scoped out of further assessment.
GB40901G300700	Warwickshire Avon - PT Sandstone Warwick/Avon Confined	Part 2: All aspects	**Out** – Minor below ground works are required for Part 2, whilst there is a theoretical potential for temporary localised quality/quantitative impacts to the groundwater body, measures within the CoCP or Outline CEMP would manage these impact pathways, so no potential risks to WFD objectives identified and the waterbody is scoped out of further assessment.
GB40902G990900	Warwickshire Avon - Secondary Mudrocks	Part 2: All aspects	**Out** – Minor below ground works are required for Part 2, whilst there is a theoretical potential for temporary localised quality/ quantitative impacts to the groundwater body, CoCP or Outline CEMP measures would manage these impact pathways, so no risks to WFD objectives have been identified and the waterbody is scoped out of further assessment.
GB40502G402400	Nene Mid Lower Jurassic Unit	Part 2: All aspects	**Out** – Minor below ground works are required for Part 2, whilst there is a theoretical potential for temporary localised quality/quantitative impacts to the groundwater body, CoCP or Outline

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			CEMP measures would manage these impact pathways, so no risks to WFD objectives have been identified and the waterbody is scoped out of further assessment.
GB40501G402300	Upper Bedford Ouse Oolite Principal 1	Part 2: All aspects Part 4a; all aspects	**Out** – No construction within groundwater body for Part 2 therefore no impact anticipated so no risks to WFD objectives identified, and the waterbody is scoped out of further assessment.
GB40501G445500	Northampton Sands	Part 2: All aspects	**Out** – No construction within groundwater body for Part 2 therefore no impact anticipated so no risks to WFD objectives identified, and the waterbody is scoped out of further assessment.
GB40501G445600	Upper Bedford Ouse Principal Oolite 2	Part 2: All aspects	**Out** – No construction within groundwater body for Part 2 therefore no impact anticipated so no risks to WFD objectives identified, and the waterbody is scoped out of further assessment.
GB40502G401300	Upper Bedford Ouse Oolite Secondary	Part 2: All aspects	**Out** – Minor below ground works are required for Part 2, whilst there is a theoretical potential for temporary localised quality/quantitative impacts to the groundwater body, CoCP or Outline CEMP measures would manage these impact pathways, so no risks to WFD

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			objectives have been identified and the waterbody is scoped out of further assessment.
Part 3: Works to Daventry and Drayton Reservoirs;			
GB40901G300700	Warwickshire Avon - PT Sandstone Warwick/Avon Confined	Part 3: Works to Daventry and Drayton Reservoirs (permanent works)	**Out** – Minor below ground works are required for Parts 2 and 3, whilst there is a theoretical potential for temporary localised quality/quantitative impacts to the groundwater body, measures within the CoCP or Outline CEMP would manage these impact pathways, so no potential risks to WFD objectives identified and the waterbody is scoped out of further assessment.
Part 4a: Abstraction, Storage and Treatment			
GB40501G402300	Upper Bedford Ouse Woburn Sands	Part 4a; all aspects	**Out** – No construction within groundwater body for Part 4a therefore no impact anticipated so no risks to WFD objectives identified, and the waterbody is scoped out of further assessment.
Part 4b: Pipeline to an Existing Underground Reservoir near Luton			
GB40501G402200	Upper Bedford Ouse Woburn Sands	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In – Part 4b** Significant below ground construction and potential dewatering may be required within this groundwater

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			body. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavation could cause mobilisation of contaminants. Changes to flow and groundwater levels may occur during construction and operation.
GB40601G603000	Upper Bedford Ouse Chalk	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In Part 4b** – Significant below ground construction and potential dewatering may be required within this groundwater body. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavation could cause mobilisation of contaminants. Changes to flow and groundwater levels may occur during construction and operation.
GB40601G601200	Mid-Chilterns Chalk	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In Part 4b** – Significant below ground construction and potential dewatering may be required within this groundwater body. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to

Water Body ID	Water Body	Screened-In Activities Relevant to Water Body	Screening Outcome
			enter the aquifer, and dewatering or excavation could cause mobilisation of contaminants. Changes to flow and groundwater levels may occur during construction and operation.
GB40601G602900	Upper Lee Chalk	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**In Part 4b** – Significant below ground construction and potential dewatering may be required within this groundwater body. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavation could cause mobilisation of contaminants. Changes to flow and groundwater levels may occur during construction and operation.

4.3 Screening of Sensitive Sites

4.3.1 A review of sensitive habitats and sites indicates that there are eight Local Nature Reserves (LNR), 18 Sites of Special Scientific Interest (SSSI), one National Nature Reserve, one Special Area of Conservation (SAC), and no Ramsar sites within 1 km of the Preliminary Order Limits, which is judged to be the Zone of Influence. **Table 4** details the sensitive habitats and sites and screens them based on their connection to the water environment.

Table 4: Screening of sensitive sites

Site Name	Description of Site	Screening Outcome	Justification
Ensor's Pool LNR and SAC	Ensor's Pool is a small but ecologically significant site. It is home to a population of rare, white-clawed crayfish and so the site's designation is in place to protect this species. The site is found to the southwest of Nuneaton and is approximately 1 km from the Coventry Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Wyken Slough LNR	Wyken Slough LNR is made up of a mix of marshes, flood lands, and reedbeds that are increasingly rare in the UK due to land drainage yet are crucial for supporting a wide range of bird species such as reed buntings, meadow pipits, jack snipes, and mute swans. Found to the northeast of Coventry, 0.4 km from the Oxford Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Newbold Quarry Park LNR	Newbold Quarry Park LNR is a former limestone quarry located in Newbold-on-Avon, near Rugby, Warwickshire. The flooded quarry and surrounding woodlands provide a rich habitat for wildlife, supporting populations of white-clawed crayfish, great crested grebes, swans, moorhens, ducks, smooth newts, pike, perch, and various invertebrates. The woodland includes ash, sycamore, and hawthorn. Site borders the Oxford Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Ashlawn Cutting LNR	Ashlawn Cutting LNR is designated due to its ecological richness, historical significance, and community value. The site is a disused railway	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.

Site Name	Description of Site	Screening Outcome	Justification
	cutting through lias clay soils, which has developed into a diverse habitat of species-rich grassland, scrub, and small pools, with the grassland present one of Warwickshire's rarest habitat types. The site crosses the order limits and is 20 m from the Oxford Canal at its closest point.		
Swift Valley LNR	Swift Valley LNR includes a range of grasslands, wetlands, hedgerows, and a disused canal arm (the Brownsover Arm of the Oxford Canal). It supports a wide range of wildlife including dragonflies and damselflies, nationally scarce beetles such as soldier and longhorn species, butterflies, moths, and birds of prey such as kestrels, hobbies, and sparrowhaks, as well as wetland birds such as swans, ducks, snipe, and gulls. The site is 0.3 km from the Oxford Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Linnel Road LNR	Linnel Road LNR supports a variety of grassland, scrub, and woodland habitats and is particularly important for pollinators and small mammals. It is found in Daventry, Northamptonshire on the banks of Clifton Brook and is 0.1 km from Oxford Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Daventry County Park LNR	Daventry County Park LNR centres around Daventry Reservoir and includes meadows, crack willow woodland, and wetland habitats that support a variety of wildlife such as yellowhammers, lesser whitethroats, dunnocks, and song thrushes.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.

Site Name	Description of Site	Screening Outcome	Justification
Blue Lagoon LNR	Blue Lagoon LNR is an area of grassland, scrubland, and woodland supporting a wide range of flora and fauna, with a main lake up to 18 m deep that contains pike, perch, roach, crayfish, tench, and carp. It is located 1 km from the order limits.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
King's Wood and Rushmere NNR	The site is a large and ecologically rich protected area and part of the largest area of ancient woodland in Bedfordshire, dating back to the 15th century. It supports a diverse mix of habitats including ancient deciduous woodland, heathland, acid and neutral grassland, wet woodland and marshy grassland. It hosts rare and locally significant species such as small-leaved lime, lily-of-the-valley, woodland butterflies, bat species, and reptiles such as adder, slow-worm, and common lizard. It is located 0.1 km from the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Whitacre Heath SSSI	Whitcare Heath is a vital habitat for breeding water birds and supports a diverse range of wildlife, including amphibians, fungi, and a variety of plant and insect species. The site is located along the east bank of the River Tame to the west of the village of Whitacre Heath and borders the Minworth to Atherstone pipeline order limits.	Out	Any potential impact would relate to reduced discharge in the River Tame downstream of the Minworth AWTP, as the SSSI is likely in balance with the present hydrological regime of the River Tame. However, the Proposed Development will not impact the magnitude of annual flood events due to the relatively small volume of abstracted water relative to these events, which are the only events likely to interact with the SSSI. As such the Proposed Development will have no impact to this SSSI.

Site Name	Description of Site	Screening Outcome	Justification
Bentley Park Wood SSSI	Bentley Park Wood is designated for its ancient mixed woodland that has developed on light, strongly acidic soils resulting in a composition rarely seen within the United Kingdom. The site is located within the Merevale Estate, which is found between Atherstone and Baxterley, and borders the order limits of the Minworth to Atherstone pipeline.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Illing's Trenches SSSI	Illing's Trenches is designated for nationally significant geological features. The site contains a layer of interglacial deposit formed during a warm period between Ice Ages, that is uniquely preserved beneath more common glacial sediments.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Woodlands Quarry SSSI	Woodland's Quarry SSSI is designated as it is a unique example of the Home Farm Member of the Hartshill Sandstone Formation, which is a regionally significant division for correlation of the Cambrian. The site is located to the north of Nuneaton, approximately 0.5 km south of the Coventry Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Boon's Quarry SSSI	Boon's Quarry SSSI is designated because it provides a rare and clear geological record of the transition between the Precambrian and Cambrian periods. The site is located to the north of Nuneaton, approximately 0.3 km west of the Coventry Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Griff Hill Quarry SSSI	Griff Hill Quarry is designated for its geological features, which reveal a significant part of the region's ancient history. It provides insight into the	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.

Site Name	Description of Site	Screening Outcome	Justification
	Nuneaton Inlier, a rare exposure of ancient basement rock in Central England. The site is located south of Nuneaton approximately 0.1 km west of the Coventry Canal.		
Bugbrooke Meadows SSSI	Bugbrooke Meadows is designated because it is a rare and exceptionally diverse example of a traditionally managed floodplain meadow. It is particularly rich in wildflowers and insects, with its biological richness stemming from a unique mix of spring-fed areas and winter-flooded sections near the River Nene. It is found on the banks of the River Nene, approximately 0.9 km north of the Grand Union Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Blisworth Rectory Farm Quarry SSSI	Blisworth Rectory Farm Quarry is important because it provides a significant and clearly exposed geological record of the Middle Jurassic period in Northamptonshire. The quarry is west of Blisworth, 0.75 km west of the Gran Union Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Mill Crook SSSI	Mill Crook SSSI is a nationally rare and floristically diverse floodplain hay meadow. It is considered the best remaining species-rich hay meadow in the River Tove Valley. It is found 0.8 km east of the Grand Union Canal.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Kings and Bakers Woods	Kings and Bakers Woods and Heaths SSSI is important because it represents one of the largest remaining areas of woodland and heathland in	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.

Site Name	Description of Site	Screening Outcome	Justification
and Heaths SSSI	Bedfordshire, with a high level of biodiversity. The site's significance stems from the range of habitats it contains, which support a variety of flora and fauna, including some rare species. It is located north of Leighton Buzzard, 0.1 km from the southern pipeline route.		
Double Arches Pit SSSI	Double Arches Pit SSSI, located in Bedfordshire, is important for its geological features, specifically for its valuable exposure of Cretaceous rocks. The former sand quarry provides a unique window into the area's geological history, as well as its archaeological past. It is located northeast of Leighton Buzzard and is 0.6 km southwest of the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Totternhoe Chalk Quarry SSSI	Totternhoe Chalk Quarry SSSI is important for both its outstanding biodiversity and its historical significance related to quarrying. The site, located in the Chilterns Area of Outstanding Natural Beauty in Bedfordshire, is managed as a nature reserve by the Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire. It is located west of Luton and is 0.5 km east of the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Totternhoe Knolls SSSI	Totternhoe Knolls SSSI is important because it combines outstanding biodiversity with significant historical and archaeological features. This combination of a species-rich chalk grassland and a Scheduled Ancient Monument makes it a nationally and regionally important site. It is located west of	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.

Site Name	Description of Site	Screening Outcome	Justification
	Luton and is 0.2 km east of the southern pipeline route.		
Totternhoe Stone Pit SSSI	Totternhoe Stone Pit SSSI is important because it is a geological site with exceptional paleontological value, primarily for its rich collection of Upper Cretaceous shark remains. The site's significance is based on the geological features within its former quarry faces, which are protected as a Geological Conservation Review site. It is located west of Luton and is 0.7 km east of the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Dunstable and Whipsnade Downs SSSI	Dunstable and Whipsnade Downs SSSI is important because it is a prime example of high-quality chalk grassland, a nationally rare and declining habitat, and is also home to significant archaeological features. The SSSI, located within the Chilterns Area of Outstanding Natural Beauty, contains both biological and historical interest. It is crossed by the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Kensworth Chalk Pit SSSI	Kensworth Chalk Pit SSSI is of international importance because it provides a uniquely clear and extensive reference section for Late Cretaceous geology and stratigraphy. The quarry offers geologists an unparalleled opportunity to study the boundary between the Middle and Upper Chalk and is also a significant fossil site. It is found adjacent to the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.

Site Name	Description of Site	Screening Outcome	Justification
Blow's Down SSSI	Blow's Down SSSI is important because it is a rare and highly biodiverse site featuring unimproved chalk grassland, significant medieval archaeological earthworks, and a haven for rare flora and migratory birds. It is found 1 km north of the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Dallow Deans and Winsdon Hill SSSI	Dallow Deans and Winsdon Hill SSSI, located on the outskirts of Luton, is important because it represents one of the few remaining examples of species-rich chalk grassland, a nationally rare habitat. The site's significance is based on its rich biodiversity and the role it plays as a wildlife refuge near an urban area. It is found 0.2 km east of the southern pipeline route.	Out	The site is not hydrologically connected to the Proposed Development so there are no impact pathways.
Ashby Canal SSSI	The Ashby Canal supports communities of aquatic and emergent plants that are representative of eutrophic standing water bodies in the English lowlands. The diversity of aquatic plants and invertebrates makes this one of the most important water bodies of its type in the East Midlands.	Out	The site is over 20 km along the canal network from the Grand Union Canal so any impacts to water quality within the Grand Union Canal are unlikely to impact the Ashby Canal as they will be dispersed and diluted over a great distance.

4.4 Summary of Screening Assessment

4.4.1 The Proposed Development screening assessment presented in **Table 2** screened the activities of the Proposed Development on their potential to impact water bodies. The following activities were screened in:

a. Part 1a: Minworth AWTP Infrastructure (operational regime);
b. Part 1a: Minworth AWTP (installation);
c. Part 1b: the Minworth to Atherstone Pipeline (installation);
d. Part 1b: Construction of access road;
e. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (Atherstone outfall structure);
f. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (gravity bypass pipeline);
g. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (Construction compounds and temporary works);
h. Part 3: Works to Daventry and Drayton Reservoirs (permanent works);
i. Part 4a: Abstraction, Storage and Treatment (abstraction point to Galley Water Treatment Works pipeline);
j. Part 4a: Abstraction, Storage and Treatment (Galley Water Treatment Works); and
k. Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation).

4.4.2 The WFD water body screening assessment presented in **Table 2** screened WFD water bodies based on their potential to be impacted by the Proposed Development. A total of 32 surface water bodies and 5 groundwater bodies were screened in. The following water bodies were screened in:

a. Anker from River Sence to River Tame (GB104028046460);
b. Anker from Wem Brook to River Sence (GB104028046430);
c. Coventry and Ashby Canals (GB70410212);
d. Dog Lane Brook from Source to R Tame (GB104028042630);
e. Wem Brook from Source to River Anker (GB104028042430);
f. Tame – R Rea to R Blythe (GB104028046841);
g. Tame from R Blythe to River Anker (GB104028046440);
h. Tame from River Anker to River Trent (GB104028047050);
i. Trent – R Tame to R Dove (GB104028047180);
j. Trent from Dove to Derwent (GB104028047420);
k. Trent from Derwent to Soar (GB104028053120);
l. Trent from Soar to The Beck (GB104028053110);

m. Grand Union Canal, Braunston summit (GB70510193);
n. Grand Union Canal, Milton Keynes to Braunston summit (GB70510251);
o. Grand Union Canal, Milton Keynes trough pound (GB70510192);
p. Grand Union Canal, Tring summit to Milton Keynes (GB70510191);
q. Ouzel (US Clipstone Brook) (GB105033030520);
r. Ouzel US Caldecote Mill (GB105033037971);
s. Newton Longville Brook (GB105033037840);
t. Welton Village Trib, Whilton branch of R. Nene (GB105032045360);
u. Ouzel Brook (GB105033030530);
v. Loughton Brook (GB105033037900);
w. Ouse (Wolverton to Newport Pagnell) (GB105033038000);
x. Ouzel DS Caldecote Mill (GB105033037972);
y. Tove (DS Greens Norton) (GB105033038180);
z. Eaton Bray Brook (GB105033030500);
aa. Clipstone Brook (GB105033037830);
bb. Clipstone Brook Tributary (GB105033037630);
cc. North Oxford Canal (GB70910513);
dd. Clifton Bk - source to conf R Avon (GB109054043900);
ee. Leam - source to conf Rains Bk (GB109054044120);
ff. Withy Bk - source to conf R Sowe (GB109054044640);
gg. Tame Anker Mease – Secondary Combined (GB40402G990800);
hh. Upper Bedford Ouse Woburn Sands – (GB40501G402200);
ii. Upper Bedford Ouse Chalk – (GB40601G603000);
jj. Mid-Chilterns Chalk – (GB40601G601200); and
kk. Upper Lee Chalk – (GB40601G602900).

4.4.3 The sensitive sites screening assessment presented in **Table 4** screened sensitive sites based on their potential to be impacted by the Proposed Development. No sensitive sites were screened in as there was no hydrological connectivity between them and the Proposed Development, and no obvious receptor pathways.

5. WFD Scoping

5.1.1 The WFD Scoping stage defines the level of detail required for further WFD assessment. This includes identifying risks to the WFD receptors from the Proposed Development's activities that were screened in, in **Table 2**. The scoping stage assessment is presented in **Table 7**.

Table 5: Scoping of the Proposed Development's activities against WFD quality elements

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
Biological Quality Elements			
Fish	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame has the potential to impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to cause water quality issues which would impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works)	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings have the potential to impact this element.	
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
Invertebrates	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		The discharge of additional water to the canal network has the potential to cause water quality issues which would impact this element.	
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
Macrophytes and Phytobenthos	Yes	**Part 1a: Minworth AWTP (operational regime)**	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Reduced discharge in the River Tame will not impact this element.	
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to cause water quality issues which would impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings have the potential to impact this element.	
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
Physico-chemical Quality Elements			
Acid Neutralising Capacity	No	There is no potential for Acid Neutralising Capacity to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
Ammonia (Phys-Chem)	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element.	Out
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Biochemical Oxygen Demand (BOD)	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element.	Out
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Culverts will not impact this element.	
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Dissolved Inorganic Nitrogen	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element.	Out
		Part 1a: Minworth AWTP (installation)	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Installation of the Minworth AWTP will not impact this element.	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
Dissolved Oxygen	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element. Dissolved oxygen modelling in the River Tame shows only minor reductions in dissolved oxygen which would not be sufficient to impact WFD status (see **Appendix 22-PD-5** of **Volume 3** of the **PEI Report**).	Out
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream may impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
pH	No	There is no potential for pH to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
Phosphate	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element.	Out
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts have the potential to impact this element.	
		Part 2: Atherstone outfall structure	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		The discharge of additional water to the canal network has the potential to cause water quality issues in receiving water bodies, including an increase in phosphate concentrations.	
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Salinity	No	There is no potential for salinity to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
Temperature	Yes	**Part 1a: Minworth AWTP (operational regime)**	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Reduced discharge in the River Tame will not impact this element.	
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Total Phosphorus	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame will not impact this element.	Out
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 4a: Galley Water Treatment Works Watercourse crossings will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Hydromorphological Quality Elements			
Quality and Dynamics of Water Flow	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame may impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure Reduced discharge in the River Tame will not impact this element.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
Connection to Groundwater Bodies	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame may impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure Reduced discharge in the River Tame will not impact this element.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
River Continuity	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame may impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure Reduced discharge in the River Tame will not impact this element.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings have the potential to impact this element.	
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
River Depth and Width Variation	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame may impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure Reduced discharge in the River Tame will not impact this element.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In
Structure and Substrate of the Riverbed	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduced discharge in the River Tame may impact this element.	In
		Part 1a: Minworth AWTP (installation) Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts have the potential to impact this element.	In
		Part 2: Atherstone outfall structure Reduced discharge in the River Tame will not impact this element.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings have the potential to impact this element.	In
		Part 2: Construction compounds and temporary works Culverts have the potential to impact this element.	In
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings have the potential to impact this element.	In
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings have the potential to impact this element.	In
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream has the potential to impact this element.	In
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings have the potential to impact this element.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
Specific Pollutants			
2, 4-Dichlorophenol	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for 2, 4-Dichlorophenol to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
2, 4-Dichlorophenoxyacetic acid	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for 2, 4-Dichlorophenoxyacetic acid to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Culverts will not impact this element.	
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Arsenic	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for arsenic to be	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		impacted by the Proposed Development, and so this element has been scoped out of further assessment.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Chlorothalonil	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for chlorothalonil to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Copper	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
Diazinon	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for diazinon to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Dimethoate	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for dimethoate to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Iron	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for iron to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Linuron	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for linuron to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Manganese	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for manganese to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
Mecoprop	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for mecoprop to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		The diversion of a drainage stream will not impact this element.	
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Pendimethalin	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for pendimethalin to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works)	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Permethrin	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for permethrin to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Phenol	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for phenol to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Toluene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation)	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for toluene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Triclosan	No	**Part 1a: Minworth AWTP (installation)**	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Installation of the Minworth AWTP will not impact this element.	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for triclosan to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		The diversion of a drainage stream will not impact this element.	
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Zinc	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Chemical Quality Elements			
Aldrin, Dieldrin, Endrin, and Isodrin	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for aldrin, dieldrin, endrin, and isodrin to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Carbon Tetrachloride	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for carbon tetrachloride to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
DDT Total	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for DDT total to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Para-para DDT	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for para-para DDT to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Tetrachloroethylene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for tetrachloroethylene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Trichloroethylene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for trichloroethylene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
1,2-dichloroethane	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for 1,2-dichloroethane to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
Atrazine	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for atrazine to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Benzene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for benzene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Chlorfenvinphos	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for chlorfenvinphos to be impacted by the Proposed	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Development, and so this element has been scoped out of further assessment.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Chlorpyrifos	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for chlorpyrifos to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Dichloromethane	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for dichloromethane to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Dichlorvos	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for dichlorvos to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Diuron	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for diuron to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Fluoranthene	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		The discharge of additional water to the canal network has the potential to impact this element.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Hexabromocyclododecane (HBCDD)	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Isoproturon	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation)	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for isoproturon to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
Lead and Its Compounds	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for lead to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Naphthalene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for naphthalene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Nickel and Its Compounds	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Pentachlorophenol	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for pentachlorophenol to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Simazine	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for simazine to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
Trichlorobenzenes	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for trichlorobenzenes to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Trichloromethane	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for trichloromethane to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Anthracene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for anthracene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Benzo(b) and (k) fluoranthene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for benzo(b) and (k) fluoranthene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Benzo(ghi)perelyene and indeno	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation)	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Watercourse crossings will not impact this element.	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for benzo(ghi)perelyene and indeno to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Benzo(a)pyrene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for benzo(a)pyrene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Cadmium and Its Compounds	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Di(2-ethylhexyl) phthalate	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for di(2-ethylhexyl) phthalate to be impacted by the Proposed	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Development, and so this element has been scoped out of further assessment.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Endosulfan	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for endosulfan to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Hexachlorobenzene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for hexachlorobenzene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Hexachlorobutadiene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for hexachlorobutadiene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Hexachlorocyclohexane	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for hexachlorocyclohexane to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Mercury and Its Compounds	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		The discharge of additional water to the canal network has the potential to impact this element.	
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Nonylphenol	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for nonylphenol to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Pentachlorobenzene	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for pentachlorobenzene to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Perfluorooctane sulphonate (PFOS)	Yes	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure The discharge of additional water to the canal network has the potential to impact this element.	In
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Tributyltin Compounds	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for tributyltin to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Trufuralin	No	**Part 1a: Minworth AWTP (installation)** Installation of the Minworth AWTP will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) Watercourse crossings will not impact this element.	Out
		Part 1b: Construction of access road Culverts will not impact this element.	Out
		Part 2: Atherstone outfall structure Water quality modelling (GUC SRO Gate 3 Annex 4.4: Water Quality Modelling Report) shows no potential for trufuralin to be impacted by the Proposed Development, and so this element has been scoped out of further assessment.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 2: Gravity bypass pipelines Watercourse crossings will not impact this element.	Out
		Part 2: Construction compounds and temporary works Culverts will not impact this element.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Watercourse crossings will not impact this element.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Watercourse crossings will not impact this element.	Out
		Part 4a: Galley Water Treatment Works The diversion of a drainage stream will not impact this element.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Watercourse crossings will not impact this element.	Out
Groundwater Quality Elements			
Qualitative Elements			
Quantitative Status element	Yes	**Part 1a: Minworth AWTP (operational regime)** No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	In
		Part 1a: Minworth AWTP (installation) Below ground construction could pose a potential pathway for contaminants to enter the aquifer.	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 1b: the Minworth to Atherstone Pipeline (installation) Below ground construction could pose a potential pathway for contaminants to enter the aquifer.	in
		Part 1b: Construction of access road No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	Out
		Part 2: Atherstone outfall structure No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	Out
		Part 2: Gravity bypass pipelines No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	Out
		Part 2: Construction compounds and temporary works No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	Out
		Part 4a: Galley Water Treatment Works	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		No changes are anticipated for groundwater quality from this element of the Proposed Development's operation.	
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Below ground construction could pose a potential pathway for contaminants to enter the aquifer.	In
Chemical Dependent Surface Water Body Status	Yes	**Part 1a: Minworth AWTP (operational regime)** Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 1a: Minworth AWTP (installation) Below ground aspects could pose a potential pathway for contaminants to enter the aquifer and lateral migration to Surface Water bodies.	In
		Part 1b: the Minworth to Atherstone Pipeline (installation) Below ground aspects could pose a potential pathway for contaminants to enter the aquifer and lateral migration to Surface Water bodies.	In
		Part 1b: Construction of access road Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 2: Atherstone outfall structure Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 2: Gravity bypass pipelines	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Activities unlikely to have impacts on the water body status of nearby surface water.	
		Part 2: Construction compounds and temporary works Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 4a: Galley Water Treatment Works Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Below ground aspects could pose a potential pathway for contaminants to enter the aquifer and lateral migration to Surface Water bodies.	In
Groundwater Dependent Terrestrial Ecosystems (GWDTE)	No	**Part 1a: Minworth AWTP (operational regime)** Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 1a: Minworth AWTP (installation)	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 1b: Construction of access road Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 2: Atherstone outfall structure Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 2: Gravity bypass pipelines Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 2: Construction compounds and temporary works Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Activities unlikely to have impact on water quality in GWTDE due to lack of connectivity	Out
Drinking Water Protected Area (DWPA)	Yes	**Part 1a: Minworth AWTP (operational regime)** No significant groundwater quality impacts expected	Out
		Part 1a: Minworth AWTP (installation) Below ground construction can cause increased potential of contamination pathways into DWPAs. Concern of degradation in water quality.	In
		Part 1b: the Minworth to Atherstone Pipeline (installation) Below ground construction can cause increased potential of contamination pathways into DWPAs. Concern of degradation in water quality.	In
		Part 1b: Construction of access road No significant groundwater quality impacts expected.	Out
		Part 2: Atherstone outfall structure No significant groundwater quality impacts expected	Out
		Part 2: Gravity bypass pipelines No significant groundwater quality impacts expected	Out
		Part 2: Construction compounds and temporary works No significant groundwater quality impacts expected	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) No significant groundwater quality impacts expected	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline No significant groundwater quality impacts expected	Out
		Part 4a: Galley Water Treatment Works No significant groundwater quality impacts expected	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Below ground construction can cause increased potential of contamination pathways into DWPAs. Concern of degradation in water quality	In
Quantitative Elements			
Status element	Yes	**Part 1a: Minworth AWTP (operational regime)** Effects of Minworth diverted flows reducing River Tame (and d/s Trent) water level and lowering connected groundwater.	In
		Part 1a: Minworth AWTP (installation) Dewatering of groundwater could change water flows or changes in groundwater levels.	In
		Part 1b: the Minworth to Atherstone Pipeline (installation) Dewatering of groundwater could change water flows or changes in groundwater levels.	In
		Part 1b: Construction of access road	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		No significant groundwater quantity impacts expected	
		Part 2: Atherstone outfall structure No significant groundwater quantity impacts expected	Out
		Part 2: Gravity bypass pipelines No significant groundwater quantity impacts expected	Out
		Part 2: Construction compounds and temporary works No significant groundwater quantity impacts expected	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) No significant groundwater quantity impacts expected	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline No significant groundwater quantity impacts expected	Out
		Part 4a: Galley Water Treatment Works No significant groundwater quantity impacts expected	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Dewatering of groundwater could change water flows or changes in groundwater levels.	In
Dependent Surface Water Body Status	Yes	**Part 1a: Minworth AWTP (operational regime)** Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 1a: Minworth AWTP (installation)	In

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Dewatering of groundwater could change water flows into connected surface water bodies.	
		Part 1b: the Minworth to Atherstone Pipeline (installation) Dewatering of groundwater could change water flows into connected surface water bodies.	In
		Part 1b: Construction of access road Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 2: Atherstone outfall structure Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 2: Gravity bypass pipelines Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 2: Construction compounds and temporary works Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline Activities unlikely to have impacts on the water body status of nearby surface water.	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Galley Water Treatment Works Activities unlikely to have impacts on the water body status of nearby surface water.	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Dewatering of groundwater could change water flows into connected surface water bodies.	In
GWDTE	Yes	**Part 1a: Minworth AWTP (operational regime)** No connectivity to GWDTE.	Out
		Part 1a: Minworth AWTP (installation) No connectivity to GWDTE	Out
		Part 1b: the Minworth to Atherstone Pipeline (installation) No connectivity to GWDTE	Out
		Part 1b: Construction of access road No significant groundwater quantity impacts expected	Out
		Part 2: Atherstone outfall structure No significant groundwater quantity impacts expected	Out
		Part 2: Gravity bypass pipelines No significant groundwater quantity impacts expected	Out
		Part 2: Construction compounds and temporary works No significant groundwater quantity impacts expected	Out
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) No significant groundwater quantity impacts expected	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline No significant groundwater quantity impacts expected	Out
		Part 4a: Galley Water Treatment Works No significant groundwater quantity impacts expected	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton No connectivity to GWDTE	Out
Quantitative Water Balance	Yes	**Part 1a: Minworth AWTP (operational regime)** Reduction on groundwater levels or flows impacts due to river levels changes during the operation of the scheme	In
		Part 1a: Minworth AWTP (installation) Dewatering of groundwater could change water flows or changes in groundwater levels.	In
		Part 1b: the Minworth to Atherstone Pipeline (installation) Dewatering of groundwater could change water flows or changes in groundwater levels.	In
		Part 1b: Construction of access road No significant groundwater quantity impacts expected	Out
		Part 2: Atherstone outfall structure No significant groundwater quantity impacts expected	Out
		Part 2: Gravity bypass pipelines No significant groundwater quantity impacts expected	Out
		Part 2: Construction compounds and temporary works	Out

WFD Quality Element	Potential Risk to Receptor (Yes/No)	Screened-in Activity	Scoping Outcome (In/Out)
		No significant groundwater quantity impacts expected	
		Part 3: Works to Daventry and Drayton Reservoirs (permanent works) No significant groundwater quantity impacts expected	Out
		Part 4a: Abstraction point to Galley Water Treatment Works pipeline No significant groundwater quantity impacts expected	Out
		Part 4a: Galley Water Treatment Works No significant groundwater quantity impacts expected	Out
		Part 4b: Pipeline to an Existing Underground Reservoir near Luton Dewatering of groundwater could change water flows or changes in groundwater levels.	In

6. Baseline

6.1 Surface Water

6.1.1 For the WFD status of screened-in groundwater bodies, see Annex 22-1**:** WFD status of screened-in WFD surface water bodies.

6.1.2 For hydromorphological survey results of watercourses that the Proposed Development interacts with, see Annex 22-5: Hydromorphology Walkover Survey. Not all watercourses have been surveyed prior to the preparation of this report. Hydromorphological surveys will continue to be undertaken, with full survey results being produced at the ES stage.

6.1.3 For further baseline information refer to **Chapter 22: Water Environment and Flood Risk** in **Volume 2** of the PEI Report.

6.2 Groundwater

Hydrogeology

6.2.1 For the WFD status of screened-in groundwater bodies, see Annex 22-2: WFD status of screened-in WFD groundwater water bodies.

6.2.2 The baseline conceptual model of the areas for the WFD groundwater body's which are scoped in for assessment are included below.

6.2.3 For further baseline information refer to **Chapter 22: Water Environment and Flood Risk** in **Volume 2** of the PEI Report.

6.2.4 The Tame Anker Mease- Secondary Combined water body (GB40402G990800) underlies the Part 1a preliminary order limits. This water body has Groundwater area of 114057.047 ha and a surface area of 1140.57 km^2. It has been classified as having a Good Quantitative and Chemical Status. It has also been noted is a combination moderately - low productivity aquifers and classified as a secondary aquifer by the EA. Some secondary aquifers (Secondary A) are capable of supporting local water supplies they may also support rivers, lakes and wetlands.

6.2.5 The Upper Bedford Ouse Woburn Sands water body (GB40501G402200) underlies the Part 2, 4a and 4b preliminary order limits. This water body has Groundwater area of 22094.557 ha and a surface area of 220.946 km^2. Th Woodburn sands formation is a Fine to medium grained sandstone aquifer, part of the Lower greensand group, the majority of the aquifer is confined below the gaunt formation. It has been classified as having a poor over quantitative depended surface water body status. It has also been noted is a highly productive aquifer and classified as a Principal aquifer by the EA. Principal aquifer provide significant quantities of drinking water and water for

business needs, they may also support rivers, lakes and wetlands. The challenge to WFD status come from key pressures of groundwater abstractions and diffuse pollution from agricultural sources.

6.2.6 The Upper Bedford Ouse Chalk water body (GB40601G603000) underlies the Part 4b preliminary order limits. This water body has Groundwater area of 35288.588 ha and a surface area of 352.886 km^2. It has been classified as having a poor over quantitative depended surface water body status, Chemical drinking water protected area, and general chemical test. It has also been noted is a highly productive aquifer and classified as a Principal aquifer by the EA. Principal aquifer provide significant quantities of drinking water and water for business needs, they may also support rivers, lakes and wetlands. The challenge to WFD status come from key pressures of groundwater abstractions and diffuse pollution from agricultural and industrial sources.

6.2.7 The Mid-Chilterns Chalk water body (GB40601G601200) underlies the Part 4b preliminary order limits. This water body has Groundwater area of 72974.352 ha and a surface area of 729.744 km^2. It has been classified as having a poor over quantitative depended surface water body status, quantitative water balance, Chemical drinking water protected area, and general chemical test. It has also been noted is a highly productive aquifer and classified as a Principal aquifer by the EA. Principal aquifer provide significant quantities of drinking water and water for business needs, they may also support rivers, lakes and wetlands. The challenge to WFD status come from key pressures of groundwater abstractions and diffuse pollution from agricultural urban and industrial sources and point source pollution from private sewage treatment industrial incidents and urban incidents.

6.2.8 The Upper Lee Chalk water body (GB40601G602900) underlies the Part 4b preliminary order limits. This water body has Groundwater area of 62914.266 ha and a surface area of 629.143 km^2. It has been classified as poor for the following elements; quantitative depended surface water body status, quantitative water balance, Chemical drinking water protected area, and general chemical test. It has also been noted is a highly productive aquifer and classified as a Principal aquifer by the EA. Principal aquifer provide significant quantities of drinking water and water for business needs, they may also support rivers, lakes and wetlands. The challenge to WFD status come from key pressures of groundwater abstractions and diffuse pollution from agricultural urban and industrial sources and point source pollution from private sewage treatment industrial incidents and urban incidents.

6.2.9 The lower chalk aquifer making the three later waterbodies is unconfined and therefore vulnerable to contamination, due to the lack of protection from low productivity deposits.

7. Mitigation

7.1 Reduced discharge to the River Tame

7.1.1 Reduced discharge to the River Tame may result in reduced fish passage in some locations (see the Gate 3 Fish Passage Assessment). Further fish passage assessment will be conducted at ES stage. It is expected that this will inform detailed mitigation requirements with an aim to either maintaining or improving passage for all fish species. Such requirements may include remediation works to weirs, the installation of appropriately designed fish passes, or the partial or complete removal of weirs. This will be further discussed with the Environment Agency.

7.2 Trenchless watercourse crossings

7.2.1 The Outline Construction Environmental Management Plan (CEMP), which will be secured as a requirement of the DCO, is likely to include details measures to be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse. Topsoil will be moved to the edge of the working area and stored such that the spoil heap does not encroach outside the fenced area. Topsoil storage will be managed to maintain the nature of the soils and measures taken to prevent compaction, soil loss due to erosion, excessive weed growth, etc. The WMP (which will be produced post consent) should describe all other pollution prevention measures and proposed water quality monitoring.

7.2.2 The Outline CEMP is also likely to include measures to reduce the risk of spillages. An Emergency Response Plan or similar titled plan is likely to be prepared and included within the detailed CEMP, to be produced post consent.

7.2.3 It is also recommended that a Water Management Plan (WMP) be prepared as an appendix to the detailed CEMP. This would describe measures for implementation in the event of a ’break-out’ under a watercourse to minimise the risk of pollution.

7.2.4 The detailed CEMP should state that launch and receive pits be located at least 10 m from the edge of water/channel for normal flows to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. The pipe is likely to be installed at least 3 m below the river bed. The detailed CEMP should also state that where works are required within the floodplain, they are to be carried out during dry periods to reduce the risk of flooding interacting with the works. All works should be suitably contained so that in the event of flooding there is no interaction with floodwaters.

7.3 Trenched open-cut watercourse crossings

7.3.1 The Outline CEMP should describe measures which may be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse. It is recommended that Topsoil may be moved to the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. It is recommended that Topsoil storage will be managed to maintain the nature of the soils and measures taken to prevent compaction, soil loss due to erosion, excessive weed growth, etc. The WMP (which will be produced post consent) should describe all other pollution prevention measures and proposed water quality monitoring.

7.3.2 It is recommended that the detailed CEMP states that trenched crossings will be carried out in dry weather at low-flow conditions. If flow is present, it is recommended that this will be flumed or culverted through the works to maintain flow downstream and maintain a dry working area.

7.3.3 It is recommended that a pre-works and post-works condition survey will be carried out to inform and monitor reinstatement of the channel, which should be included in the detailed CEMP. Reinstatement would return in-stream vegetation and the banks of the watercourse replanted and reseeded in accordance with the reinstatement measures contained within the Outline Landscape and Ecological Management Plan (LEMP) submitted with the DCO Application. Reinstatement would aim to provide an improved channel form with enhancement works to be carried out between 5 and 10 m upstream and downstream of the trenched open-cut crossing to ensure the reinstated improved channel form merges into the existing channel form. The area of bank reinstatement is recommended to be covered with hessian to encourage plant establishment and reduce the risk of soil erosion. The hessian will naturally degrade in-situ as the vegetation grows back.

7.4 Temporary culverted watercourse crossings

7.4.1 If culverting is required for construction crossings, the expectation is the adoption of the least impacting design that is reasonably practicable. The detailed CEMP should outline measures that will be implemented for culverts (in the event they cannot be avoided). It is recommended:

a. Culverts should maintain connectivity along watercourses for aquatic species and riparian mammals, where present. Mammal ledges with sufficient room will be utilised;

b. Perched inverts that create a drop from the structure to the downstream bed level should be avoided;

c. Culverts should ensure capacity for the peak flow rate of the watercourse, preventing any impact on flow;

d. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained;

e. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width;

f. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows; and

g. A pre-works and post-works condition survey should be carried out to inform and monitor post-construction reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. Reinstatement measures should be in accordance with the Framework LEMP.

7.4.2 Failure to adhere to these measures could result in the activity being non-compliant with the WFD. It is assumed that any permanent watercourse crossings within construction areas that will remain post-works (i.e. for access etc.) will be in the form of open-span footbridges.

7.5 Discharge from Minworth AWTP to the canal network

7.5.1 The discharge from the Minworth AWTP to the Coventry Canal has the potential to impact numerous physico-chemical quality elements, both in the canal and surrounding surface water bodies due to the risk of overspills. Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling, with a standard of treatment proposed that will result in no deterioration in water quality within the canal.

7.6 Diversion of drainage stream

7.6.1 There is a straightened and modified watercourse that forms the southern boundary of the field required for the proposed water storage facility of the WTW (see **Figure 22-P4-2** in **Volume 3** of the PEI Report). It is believed there is also a culverted stream that bisects this field. During surveys (Annex 22-5: Hydromorphology Walkover Survey), the straight ditch was dry and thought to be ephemeral with an absence of aquatic vegetation. A review of LiDAR data indicates that the culverted stream and the straightened watercourse are hydrologically connected.

7.6.2 The water storage facility will likely to be built above the culverted stream. It is therefore assumed that flow from the culvert will be permanently diverted into the straightened watercourse. The straightened watercourse may also need to be diverted to accommodate the facility. This represents an opportunity for WFD enhancement, although at present the diversion route is yet to be confirmed.

7.6.3 Diversion and potential enhancement should aim to improve channel form and should be determined in consultation with a contractor with prior experience in river restoration. A pre-works and post-works condition survey should be carried out to inform the alignment of the diversion, which should be stated in the detailed CEMP. A Geomorphological Clerk of Works should attend site through the construction phase to ensure that designs are followed, and detail which is difficult to outline in design but are important for environmental functioning such as bank shape, or cross-sectional variation are appropriately created.

7.6.4 It should also be recommended in the detailed CEMP to carry out the diversion works in relatively dry weather. Any flow that is present within the watercourse should be over-pumped which will reduce impact to flow dynamics. Fish surveys and rescues, if required at the time of construction, should be carried out prior to works; this should be included in the detailed CEMP.

7.6.5 The Outline CEMP should be followed for the diversion of the drainage stream. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. The Outline CEMP outlines measures to reduce the risk of spillages.

7.7 Management of Groundwater activities

7.7.1 To manage the impact of any groundwater control activities on water receptors, the need for a Construction Dewatering Strategy should be secured in the Preliminary Outline CEMP which will accompany the DCO application. The Strategy itself will be produced post consent by the Contractor based on further determination of site specific ground conditions. Good practice mitigations measures should be followed to avoid and or minimise impact on groundwater and dependent receptors and should be included in the Preliminary Outline CEMP.

7.7.2 The mitigations options deployed by the contractor will be informed by the findings of the intrusive ground investigation works at detailed design stage which will provide information of site-specific conditions, including the groundwater level, quality and quantity.

7.7.3 As a Minimum the Principal Contactor should adhere to the following mitigation measures required to ensure WFD compliance which are secured within Outline CEMP:

a. Groundwater control should be implemented to ensure water level in adjacent water features are maintained and any discharge is of suitable quality;

b. A programme of water monitoring of the dewatering discharges should be implemented;

c. If discharging into a nearby watercourse, the rate of discharge will need to be agreed with the relevant authority to ensure that this will not result in unacceptable increase in flood risk or risk of scour. Any discharge will need to be undertaken with the agreement of the statutory regulator and will need to comply with the pollution prevention requirements set out in the future CEMP and appropriate consents or approvals;

d. Managing the risk from groundwater flooding through appropriate working practices (during excavations) and with adequate plans and equipment in place for de-watering to ensure safe dry working environments;

e. An approved abstraction licence will be required from the Environment Agency if the volume abstracted will be greater than 20 m^3 a day;

f. As stated, a programme of water monitoring may be required. This would be implemented to ensure water levels in adjacent waterbodies are maintained and any discharge is of a suitable quantity and quality;

g. Extra care must be taken in areas of evacuations to avoid accidental contamination from site activities or movement of contaminants from the excavated materials;

h. The extent of exposed ground should be minimised at all times during construction and any stockpiles outside areas specifically designed for the purpose should be covered to prevent the creation of any contaminated run-off;

i. Areas where stockpiles are located should be positively drained through a grit trap where silt will be collected before water is discharged. Wheel-wash down areas should also be drained through a grit trap;

j. The locations of refuelling, storage of oil/fuel, concrete mixing and washing areas should be established where practicable to be situated off site at a designated location coordinated with the Applicant. If these are to be provided within the proposed Preliminary Order Limits, then a buffer zone of at least 50 m between this and any excavations should be provided; and

k. Any groundwater dewatering required in excess of the exemption thresholds should be undertaken in line with the requirements of the Environment Agency (under the Water Resources Act 1991 as amended) (Ref. 6) and the Environmental Permitting Regulations (2019) (Ref. 12).

8. WFD Impact Assessment

8.1 Site Specific Assessments of the Proposed Development Against WFD Quality Elements

8.1.1 To summarise, multiple activities relating to the Proposed Development have been screen in for assessment. These are:

a. Part 1a: Minworth AWTP (operational regime);
b. Part 1a: Minworth AWTP (Installation);
c. Part 1b: the Minworth to Atherstone Pipeline (installation);
d. Part 1b: Construction of access road;
e. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (Atherstone outfall structure);
f. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (gravity bypass pipeline);
g. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (Construction compounds and temporary works);
h. Part 3: Works to Daventry and Drayton Reservoirs (permanent works);
i. Part 4a: Abstraction, Storage and Treatment (abstraction point to Galley Water Treatment Works pipeline);
j. Part 4a: Abstraction, Storage and Treatment (Galley Water Treatment Works); and
k. Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation).

8.1.2 These activities can be summarised into seven potential impacts:

a. Reduced discharge in the River Tame;
b. Trenchless watercourse crossings;
c. Trenched open-cut watercourse crossings;
d. Temporary culverted watercourse crossings;
e. Discharge from Minworth AWTP to the canal network ;
f. Diversion of a drainage stream; and
g. Management of groundwater activities.

8.1.3 Site-specific impacts of the Proposed Development on the biological, physico-chemical and hydromorphological quality elements of the screened-in water bodies are provided in **Table 6**. The impact assessment on the groundwater bodies is provided in **Table 7**. The mitigation referred to in these tables forms the basis of this assessment, and the outcomes of the

assessment are subject to the appropriate implementation of the mitigation measures provided.

Table 6: Impact Assessment on the WFD quality elements of the surface water bodies screened-in for this assessment

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
Biological Quality Elements		
Fish	Reduced discharge to the River Tame (Part 1a) Potential reduction in fish passage at some weirs (see the Gate 3 Fish Passage Assessment). Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Further work and mitigation: Further fish passage assessment is ongoing with findings to be assessed at ES stage. It is expected that this will inform detailed mitigation requirements with an aim to either maintaining or improving passage for all fish species. Such requirements may include remediation works to weirs, the installation of appropriately designed fish passes, or the partial or complete removal of weirs. This will be further discussed with the Environment Agency and included within the detailed CEMP. **Assessment:** Hydraulic modelling results for the River Tame suggest that there will be only minor reductions in bed shear stress. As such there will be a negligible impact on fish with regards to a change in hydromorphology and hydrology within the Tame (see Annex 22-4: River Tame Bed Shear Stress Modelling Results). Assuming appropriate mitigation is implemented that will either maintain or improve fish passage, it is not expected that there will be a deterioration of this WFD quality element. This will be determined based on further assessments which will be reported at ES stage.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) Potential for loss of biological continuity resulting in interference with fish population movements and blocking the exchange of individuals among populations, reducing gene flow, and disrupting the ability of 'source' populations to support declining populations nearby, resulting from short-term blockages in longitudinal connectivity from open-cut crossings. Possible harm to fish from spillages or pollution from fine sediment, drilling fluids (water based) and chemicals used during construction and decommissioning (e.g. fuel and hydraulic oil), and through disturbance when trenched techniques are used. Affected Water Bodies: 'Anker from River Sence to River Tame Water Body' 'Dog Lane Brook from Source to R Tame Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tove (DS Greens Norton) Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Leam - source to conf Rains Bk Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which may be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry, and it is unlikely fish will be present. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Fish surveys and rescues, if required at the time of construction, will be carried out prior to works. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to should flow velocities are not impacted, and the flume will be appropriately sized. All of these should mean that fish access is not impeded. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to fish are not considered significant due to the recommended mitigation that would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Temporary culverted watercourse crossings (Part 2) Potential for loss of biological continuity resulting in interference with fish population movements and blocking the exchange of individuals among populations, reducing gene flow, and disrupting the ability of ‘source’	Mitigation measures within the Outline CEMP: The Outline CEMP will be followed which describes measures which may be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	populations to support declining populations nearby, resulting from short-term blockages in longitudinal connectivity from open-cut crossings. Possible harm to fish from spillages or pollution from fine sediment, drilling fluids (water based) and chemicals used during construction and decommissioning (e.g. fuel and hydraulic oil), and through disturbance when trenched techniques are used. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Tove (DS Greens Norton) Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body' 'Withy Bk - source to conf R Sowe Water Body'	Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		Assessment: Impacts to fish are not considered significant due to the recommended mitigation that would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.

	Discharge from Minworth AWTP to the canal network (Part 1a) Potential reduction in water quality within the Coventry, Oxford, and Grand Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. **Assessment:** Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

	‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	

	Diversion of drainage stream (Part 4a) Potential for loss of biological continuity resulting in interference with fish population movements and blocking the exchange of individuals among populations, reducing gene flow, and disrupting the ability of 'source' populations to support declining populations nearby, resulting from short-term blockages in longitudinal connectivity from open-cut crossings. Possible harm to fish from spillages or pollution from fine sediment, drilling fluids (water based) and chemicals used during construction and decommissioning (e.g. fuel and hydraulic oil), and through disturbance when trenched techniques are used. Affected Water Bodies: 'Ouzel US Caldecote Mill Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the diversion of the drainage stream. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. The Outline CEMP should outline measures to reduce the risk of spillages. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to the mitigation described in the Outline CEMP, it is recommended that: The diversion works are carried out in relatively dry weather. Any flow that is present within the watercourse should be over-pumped which will reduce impact to flow dynamics. Fish surveys and rescues, if required at the time of construction, should be carried out prior to works. Diversion and potential enhancement should aim to improve channel form and should be determined in consultation with a contractor with prior experience in river restoration. A Geomorphological Clerk of Works should attend site through the construction phase to ensure that designs are followed, and detail which is difficult to outline in design but are important for

		environmental functioning such as bank shape, or cross-sectional variation are appropriately created. These recommended measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to biological continuity are not considered to be significant given the localised, small scale, and short-term nature of the works, and the small nature of most of the watercourse. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
Invertebrates	Reduced discharge to the River Tame (Part 1a) Changes in hydrological regime in the River Tame may impact invertebrates through changes in aquatic habitat conditions. Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Further work and mitigation: Hydraulic modelling results for the River Tame suggest that there will be only minor changes in flow conditions, and so minimal impact to invertebrate habitats. However, hydraulic and hydrological modelling is ongoing, as are aquatic ecology surveys, so this will be assessed further at the ES stage. **Assessment:** It is not expected that there will be a deterioration of this WFD quality element. This will be determined based on further assessment and modelling which will be reported at ES stage, which adequate mitigation proposed if deemed necessary.
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) Harm or direct mortality to invertebrates through excavation of the channel bed and bank. Possible harm to invertebrates from spillages or pollution of fine sediment, drilling fluids (water based) and chemicals used during construction (e.g. fuel and hydraulic oil), and through disturbance when trenched techniques are used. Affected Water Bodies: 'Anker from River Sence to River Tame Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to the mitigation described in the Outline CEMP, it is recommended that:

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Dog Lane Brook from Source to R Tame Water Body’ ‘Tame from R Blythe to River Anker Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	The works for trenched crossings are carried out in in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to invertebrates are not considered significant due to the recommended mitigation that would result in

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		impacts being localised, small-scale, and short-term in nature. With the proposed mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Temporary culverted watercourse crossings (Part 2) Harm or direct mortality to invertebrates through excavation of the channel bed and bank. Possible harm to invertebrates from spillages or pollution of fine sediment, drilling fluids (water based) and chemicals used during construction (e.g. fuel and hydraulic oil), and through disturbance when trenched techniques are used. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Mitigation measures within the Outline CEMP: The Outline CEMP should be followed which describes measures which should be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to invertebrates are not considered to be significant due to the recommended mitigation that would result in impacts being localised, small-scale, and short-term in nature. With the proposed mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. **Assessment:**

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Coventry and Ashby Canals Water Body’ ‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes trough pound Water Body’ ‘Ouzel (US Clipstone Brook) Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration in quality of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	Diversion of drainage stream (Part 4a) Harm or direct mortality to invertebrates through excavation of the channel bed and bank. Possible harm to invertebrates from spillages or pollution of fine sediment, drilling fluids (water based) and chemicals used during construction (e.g. fuel and hydraulic oil), and through disturbance when trenched techniques are used. Affected Water Bodies 'Ouzel US Caldecote Mill Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the diversion of the drainage stream. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. The Outline CEMP should outline measures to reduce the risk of spillages. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to the mitigation described in the Outline CEMP, it is recommended that: The diversion works are carried out in relatively dry weather. Any flow that is present within the watercourse should be over-pumped which will reduce impact to flow dynamics. Diversion and potential enhancement should aim to improve channel form and should be determined in consultation with a contractor with prior experience in river restoration. A Geomorphological Clerk of Works should attend site through the construction phase to ensure that designs are followed, and detail which is difficult to outline in design but are important for

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		environmental functioning such as bank shape, or cross-sectional variation are appropriately created. These recommended measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to invertebrates are not considered to be significant given the localised, small scale, and short-term nature of the works, and the small nature of most of the watercourse. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
Macrophytes and Phytobenthos	Watercourse crossings for pipeline (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) Potential smothering of macrophytes and phytobenthos from excessive fine sediment from construction runoff or drilling fluids, or toxic effects from chemical pollutants that may be spilt and through disturbance when trenched techniques are used. Possible removal of macrophytes and phytobenthos from excavation of the channel bed and bank. Affected Water Bodies: 'Anker from River Sence to River Tame Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to the mitigation described in the Outline CEMP, it is recommended that:

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Dog Lane Brook from Source to R Tame Water Body’ ‘Tame from R Blythe to River Anker Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry, and it is unlikely macrophytes should be present. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:**

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		Impacts to macrophytes are not considered significant due to the recommended mitigation that would result in impacts being localised, small-scale, and short-term in nature. With the proposed mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Temporary culverted watercourse crossings (Part 2) Potential smothering of macrophytes and phytobenthos from excessive fine sediment from construction runoff or drilling fluids, or toxic effects from chemical pollutants that may be spilt and through disturbance when trenched techniques are used. Possible removal of macrophytes and phytobenthos from excavation of the channel bed and bank. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Tove (DS Greens Norton) Water Body' 'Clifton Bk - source to conf R Avon Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP should be followed which describes measures which should be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. Assessment: Impacts to macrophytes are not considered to be significant due to the recommended mitigation that would result in impacts being localised, small-scale, and short-term in nature. With the proposed mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Grand Union Canals, and neighbouring surface water bodies due to the	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body'	accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration in quality of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Withy Bk - source to conf R Sowe Water Body'	
	Diversion of drainage stream (Part 4a) Potential smothering of macrophytes and phytobenthos from excessive fine sediment from construction runoff or drilling fluids, or toxic effects from chemical pollutants that may be spilt and through disturbance when trenched techniques are used. Possible removal of macrophytes and phytobenthos from excavation of the channel bed and bank. Affected Water Bodies 'Ouzel US Caldecote Mill Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the diversion of the drainage stream. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. The Outline CEMP will outline measures to reduce the risk of spillages. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to the mitigation described in the Outline CEMP, it is recommended that: The diversion works are carried out in relatively dry weather Any flow that is present within the watercourse should be over-pumped which will reduce impact to flow dynamics. Diversion and potential enhancement should aim to improve channel form and should be determined in consultation with a contractor with prior experience in river restoration. A Geomorphological Clerk of Works

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		should attend site through the construction phase to ensure that designs are followed, and detail which is difficult to outline in design but are important for environmental functioning such as bank shape, or cross-sectional variation are appropriately created. These recommended measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to macrophytes are not considered to be significant given the localised, small scale, and short-term nature of the works, and the small nature of most of the watercourse. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
Physico-chemical Quality Elements		
Ammonia (Phys-Chem)	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body' 'Withy Bk - source to conf R Sowe Water Body'	
Biochemical Oxygen Demand (BOD)	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body'	accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Withy Bk - source to conf R Sowe Water Body'	
Dissolved Inorganic Nitrogen	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall.	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.
Dissolved oxygen	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) Possible reduction in dissolved oxygen levels from excavation activities for launch and receive pits, and trenched crossing excavation activities which may create a source and pathway for the delivery of fine sediments and organic material to the water body. Affected Water Bodies: 'Anker from River Sence to River Tame Water Body' 'Dog Lane Brook from Source to R Tame Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tove (DS Greens Norton) Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized. These additional measures should be included in the detailed CEMP, to be produced post-consent. Assessment: Impacts to dissolved oxygen are not considered significant due to the recommended mitigation that would result in impacts being localised, small scale, and short-term in nature.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Temporary culverted watercourse crossings (Part 2) Possible reduction in dissolved oxygen levels from culvert installation which may create a source and pathway for the delivery of fine sediments and organic material to the water body. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Tove (DS Greens Norton) Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body' 'Withy Bk - source to conf R Sowe Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP will be followed which describes measures which will be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to dissolved oxygen are not considered significant due to the recommended mitigation that would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
	Discharge from Minworth AWTP (Part 2) Potential reduction in dissolved oxygen within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes trough pound Water Body’ ‘Ouzel (US Clipstone Brook) Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	
	Diversion of drainage stream Possible reduction in dissolved oxygen levels from construction activities require for watercourse diversion which may create a source and pathway for the delivery of fine	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the diversion of the drainage stream. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to,

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	sediments and organic material to the water body. Affected Water Bodies 'Ouzel US Caldecote Mill Water Body'	and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. The Outline CEMP should outline measures to reduce the risk of spillages. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to the mitigation described in the Outline CEMP, it is recommended that: The diversion works are carried out in relatively dry weather. Any flow that is present within the watercourse should be over-pumped which will reduce impact to flow dynamics. Diversion and potential enhancement should aim to improve channel form and should be determined in consultation with a contractor with prior experience in river restoration. A Geomorphological Clerk of Works should attend site through the construction phase to ensure that designs are followed, and detail which is difficult to outline in design but are important for environmental functioning such as bank shape, or cross-sectional variation are appropriately created. These recommended measures should be included in the detailed CEMP, to be produced post-consent.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		Assessment: Impacts to dissolved oxygen are not considered to be significant given the localised, small scale, and short-term nature of the works, and the small nature of most of the watercourse. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
Phosphate	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	
Temperature	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall.	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.
Total Phosphorus	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body'	accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Withy Bk - source to conf R Sowe Water Body'	
Hydromorphological Quality Elements		
Quality and Dynamics of Water Flow	Reduced discharge in the River Tame (Part 1a) Lower flows in the River Tame due to transfer of water within the Grand Union Canal Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Assessment: Hydraulic modelling results for the River Tame suggest that there will be only minor reductions in flow within the River Tame. Furthermore, at present baseflows within the River Tame are thought to be artificially elevated and so the Proposed Development would work towards a return in natural flow conditions. It is not expected that there will be a deterioration of this WFD quality element. This will be confirmed following further modelling which will be reported at ES stage.
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) There will be some unavoidable short-term disruption to flow dynamics during the construction phase of open-cut pipeline crossings through temporary flow diversions and creation of dry working areas. Affected Water Bodies: 'Anker from River Sence to River Tame Water Body' 'Dog Lane Brook from Source to R Tame Water Body'	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area. Recommended mitigation measures to be included in the detailed CEMP to ensure compliance:

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Tame from R Blythe to River Anker Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized. Perched inverts that create a drop from the structure to the downstream bed level should be avoided.
	Temporary culverted watercourse crossings (Part 2) There will be some unavoidable short-term disruption to flow dynamics during the construction phase of temporary culverts through temporary flow diversions and creation of dry working areas. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to hydromorphology are not considered significant due to the recommended mitigation that would result in impacts being localised, small scale, and short-term in nature.
	Diversion of drainage stream (Part 4a) There will be some unavoidable short-term disruption to flow dynamics during the diversion of the drainage stream through temporary flow diversions and creation of dry working areas. There may also be permanent impacts on the flow regime. Affected Water Bodies ‘Ouzel US Caldecote Mill Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
Connection to Groundwater Bodies	Reduced discharge in the River Tame (Part 1a) Lower flows within the River Tame due to transfer of water within the Grand Union Canal Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Assessment: Hydraulic modelling results for the River Tame suggest that there will be only minor reductions in flow within the River Tame. Furthermore, at present baseflows within the River Tame are thought to be artificially elevated and so the Proposed Development would work towards a return in natural flow conditions. It is not expected that there will be a deterioration of this WFD quality element. This will be confirmed following further modelling which will be reported at ES stage.
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) There will be some unavoidable short-term disruption to groundwater connection during the construction phase of open-cut pipeline crossings through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies:	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Anker from River Sence to River Tame Water Body’ ‘Dog Lane Brook from Source to R Tame Water Body’ ‘Tame from R Blythe to River Anker Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized.
	Temporary culverted watercourse crossings (Part 2) There will be some unavoidable short-term disruption to groundwater connection during the construction of temporary culverts through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Ouzel US Caldecote Mill Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to hydromorphology are not considered significant due to the recommended mitigation that
	Diversion of drainage stream Diversion of drainage stream (Part 4a) There will be some unavoidable short-term disruption to groundwater connection during the diversion of the drainage stream through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies ‘Ouzel US Caldecote Mill Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
River Continuity	Reduced discharge in the River Tame (Part 1a) Lower flows within the River Tame due to transfer of water within the Grand Union Canal Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Assessment: Hydraulic modelling results for the River Tame suggest that there will be only minor reductions in flow within the River Tame. Furthermore, at present baseflows within the River Tame are thought to be artificially elevated and so the Proposed Development would work towards a return in natural flow conditions. It is not expected that there will be a deterioration of this WFD quality element. This will be confirmed following further modelling which will be reported at ES stage.
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) There will be some unavoidable short-term disruption to river continuity during the construction phase of open-cut pipeline crossings through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment.	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	Affected Water Bodies: 'Anker from River Sence to River Tame Water Body' 'Dog Lane Brook from Source to R Tame Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tove (DS Greens Norton) Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Leam - source to conf Rains Bk Water Body' 'Ouzel US Caldecote Mill Water Body' 'Ouzel US Caldecote Mill Water Body' 'Ouzel Brook Water Body' 'Eaton Bray Brook Water Body' 'Clipstone Brook Water Body' 'Clipstone Brook Tributary Water Body'	Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized.
	Temporary culverted watercourse crossings (Part 2) There will be some unavoidable short-term disruption to river continuity during the construction of temporary culverts through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body'	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to hydromorphology are not considered significant due to the recommended mitigation that
	Diversion of drainage stream (Part 4a) There will be some unavoidable short-term disruption to river continuity during the diversion of the drainage stream through temporary flow diversions and creation of dry working areas. Additionally, the diversion may have a permanent impact on the longitudinal sediment transport. Affected Water Bodies ‘Ouzel US Caldecote Mill Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
River Depth and Width Variation	Reduced discharge in the River Tame (Part 1a) Lower flows within the River Tame due to transfer of water within the Grand Union Canal Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Assessment: Hydraulic modelling results for the River Tame suggest that there will be only minor reductions in flow within the River Tame. Furthermore, at present baseflows within the River Tame are thought to be artificially elevated and so the Proposed Development would work towards a return in natural flow conditions. It is not expected that there will be a deterioration of this WFD quality element. This will be confirmed following further modelling which will be reported at ES stage.
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) There will be some unavoidable short-term disruption to river width and depth variation during the construction phase of open-cut pipeline crossings through direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies:	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Anker from River Sence to River Tame Water Body’ ‘Dog Lane Brook from Source to R Tame Water Body’ ‘Tame from R Blythe to River Anker Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Ouzel Brook Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Clipstone Brook Tributary Water Body’	Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized.
	Temporary culverted watercourse crossings (Part 2) There will be some unavoidable short-term disruption to river width and depth variation during the construction of temporary culverts through direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to hydromorphology are not considered significant due to the recommended mitigation that
	Diversion of drainage stream (Part 4a) There will be some unavoidable short-term disruption to river width and depth variation during the diversion of the drainage stream through direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies ‘Ouzel US Caldecote Mill Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
Structure and Substrate of the Riverbed	Reduced discharge in the River Tame (Part 1a) Lower flows within the River Tame due to transfer of water within the Grand Union Canal Affected Water Bodies: 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body'	Assessment: Hydraulic modelling results for the River Tame suggest that there will be only minor reductions in flow within the River Tame. Furthermore, at present baseflows within the River Tame are thought to be artificially elevated and so the Proposed Development would work towards a return in natural flow conditions. It is not expected that there will be a deterioration of this WFD quality element. This will be confirmed following further modelling which will be reported at ES stage.
	Watercourse crossings for pipelines (trenchless and open-cut) (Part 1b, Part 2, Part 3, Part 4a, Part 4b) There will be some unavoidable short-term disruption to the structure and substrate of the riverbed during the construction phase of open-cut pipeline crossings through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment.	Mitigation measures within the Outline CEMP: The Outline CEMP submitted with the DCO Application should be followed for the installation of watercourse crossings required for pipelines. It outlines measures which should be taken to prevent the ingress of fine sediment or other material to, and the pollution by sediment of, any existing watercourse. This includes storage of excavated material at the edge of the working area and heaped such that the spoil heap does not encroach outside the fenced area.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	Affected Water Bodies: 'Anker from River Sence to River Tame Water Body' 'Dog Lane Brook from Source to R Tame Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tove (DS Greens Norton) Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Leam - source to conf Rains Bk Water Body' 'Ouzel US Caldecote Mill Water Body' 'Ouzel US Caldecote Mill Water Body' 'Ouzel Brook Water Body' 'Eaton Bray Brook Water Body' 'Clipstone Brook Water Body' 'Clipstone Brook Tributary Water Body'	Recommended mitigation measures to be included in the detailed CEMP to ensure compliance: Further to mitigation described in the Outline CEMP, it is recommended that: The works for trenched crossings are carried out in relatively dry weather, wherein it is expected that the smaller watercourses proposed to be crossed by trenched methods may be expected to be dry. If flow is present within the watercourse, this should be over-pumped which will reduce impact to flow dynamics. Launch and receive pits for trenchless crossings should also be located at least 10 m away from the watercourse (edge of normal flow) to reduce the risk of pathways being created for runoff or pollutants to enter water bodies. For sensitive water crossings, the Working Width should be reduced to 10 m. The flume bed level should be set below the existing bed level to allow for the natural excavated bed to be placed over the flume base. The channel gradient should not be disrupted; there should be a smooth transition through the channel bed to the flume bed. Flume capacity should be designed to ensure flow velocities are not impacted, and the flume should be appropriately sized.
	Temporary culverted watercourse crossings (Part 2) There will be some unavoidable short-term disruption to the structure and substrate of the riverbed during the construction of temporary culverts through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies:	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Anker from Wem Brook to River Sence Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	Perched inverts that create a drop from the structure to the downstream bed level should be avoided. Culverts should ensure capacity for a 1 in 20-year flood event, preventing any impact on flow. The base of a culvert should be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert should be maintained. The culvert should cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert should be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works condition survey should be carried out to inform post-works reinstatement of the channel. Reinstatement should bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. These additional measures should be included in the detailed CEMP, to be produced post-consent. **Assessment:** Impacts to hydromorphology are not considered significant due to the recommended mitigation that
	Diversion of drainage stream There will be some unavoidable short-term disruption to the structure and substrate of the riverbed during the diversion of the drainage stream through temporary flow diversions, creation of dry working areas, direct excavation of the bed and banks, and mobilisation of fine sediment. Affected Water Bodies ‘Ouzel US Caldecote Mill Water Body’	

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
		would result in impacts being localised, small scale, and short-term in nature. With the recommended mitigation in place, it is not expected that there will be a deterioration of this WFD quality element.
Specific Pollutants		
Copper	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Coventry and Ashby Canals Water Body’ ‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes trough pound Water Body’ ‘Ouzel (US Clipstone Brook) Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	
Zinc	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Coventry and Ashby Canals Water Body’ ‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Grand Union Canal, Milton Keynes trough pound Water Body’ ‘Ouzel (US Clipstone Brook) Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	
Chemical Quality Elements		
Fluoranthene	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Coventry and Ashby Canals Water Body’	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body' 'Withy Bk - source to conf R Sowe Water Body'	
Hexabromocyclododecane (HBCDD)	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body'	accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Withy Bk - source to conf R Sowe Water Body'	
Nickel and Its Compounds	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Wem Brook from Source to River Anker Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	
Cadmium and Its Compounds	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Coventry and Ashby Canals Water Body’ ‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes trough pound Water Body’ ‘Ouzel (US Clipstone Brook) Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	
Mercury and Its Compounds	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: ‘Anker from Wem Brook to River Sence Water Body’ ‘Coventry and Ashby Canals Water Body’ ‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	'Grand Union Canal, Milton Keynes trough pound Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Loughton Brook Water Body' 'Ouse (Wolverton to Newport Pagnell) Water Body' 'Ouzel DS Caldecote Mill Water Body' 'Tove (DS Greens Norton) Water Body' 'North Oxford Canal Water Body' 'Clifton Bk - source to conf R Avon Water Body' 'Leam - source to conf Rains Bk Water Body' 'Withy Bk - source to conf R Sowe Water Body'	
Perfluorooctane sulphonate (PFOS)	Discharge from Minworth AWTP (Part 2) Potential reduction in water quality within the Coventry, Oxford, and Gran Union Canals, and neighbouring surface water bodies due to the risk of overspills, due to the discharge of water from the AWTP via the Atherstone outfall. Affected Water Bodies: 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body'	Further work and mitigation: Further assessment of water quality within receiving water bodies will be available at the ES stage following refined water quality modelling. This will allow a more accurate view of the AWTP performance and output quality required to achieve no deterioration. Assessment: Assuming an adequate level of treatment is implemented, it is not expected that there will be a deterioration of this WFD quality element.

WFD Quality Element	Potential Impacts	Mitigation Measures and Assessment of Residual Impact
	‘Wem Brook from Source to River Anker Water Body’ ‘Grand Union Canal, Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes to Braunston summit Water Body’ ‘Grand Union Canal, Milton Keynes trough pound Water Body’ ‘Ouzel (US Clipstone Brook) Water Body’ ‘Ouzel US Caldecote Mill Water Body’ ‘Newton Longville Brook Water Body’ ‘Welton Village Trib, Whilton branch of R. Nene Water Body’ ‘Loughton Brook Water Body’ ‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’	

Table 7: Impact Assessment on the WFD quality elements of the groundwater bodies screened in for this assessment

Scheme Component	Potential impacts	Mitigation measures
Qualitative Status		
Chemical - Status element	Part 1a: Minworth AWTP (Installation) Potential reduction in water quality within the groundwater. Below ground construction within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavations could cause mobilisation of contaminants.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk and protection of groundwater. **With the proposed mitigation in place, the quantities of contaminants would be very minor, and it is not expected that there will be a deterioration of this WFD quality element.**
	Part 1b: the Minworth to Atherstone Pipeline (installation) Potential reduction in water quality within the groundwater. Trenches dug for pipeline laying and trenchless HDD drilling within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavations could cause mobilisation of contaminants.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid management. **With the proposed mitigation in place, the quantities of contaminants would be very minor, and it is not expected that there will be a deterioration of this WFD quality element.**
	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid

	Potential reduction in water quality within the groundwater. Trenches dug for pipeline laying and trenchless HDD drilling within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavations could cause mobilisation of contaminants.	management. Additional monitoring within this is proposed for this part of the scheme to add assurance that no abstraction will be impacted during the construction. **With the proposed mitigation in place, the quantities of contaminants would be very minor, and it is not expected that there will be a deterioration of this WFD quality element.**
Chemical Dependent Surface Water Body Status	Part 1a: Minworth AWTP (Installation) Potential reduction in water quality within the groundwater from construction surface contamination has the potential to migrate into connected groundwater bodies	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk and protection of groundwater. **With the proposed mitigation in place, the quantities of contaminants would be very minor, and it is not expected that there will be a deterioration in quality the groundwater body and thus surface water body status.**
	Part 1b: the Minworth to Atherstone Pipeline (installation) Potential reduction in water quality within the groundwater. Trenches dug for pipeline laying and trenchless HDD drilling within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavations could cause mobilisation of contaminants.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid management. **With the proposed mitigation in place, the quantities of contaminants would be very minor, and it is not expected that there will be a deterioration in quality the groundwater body and thus surface water body status.**

	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation) Potential reduction in water quality within the groundwater. Trenches dug for pipeline laying and trenchless HDD drilling within the groundwater body could pose a potential pathway for surface contaminants to enter the aquifer, and dewatering or excavations could cause mobilisation of contaminants.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid management. Additional monitoring within this is proposed for this part of the scheme to add assurance that no abstraction will be impacted during the construction. **With the proposed mitigation in place, the quantities of contaminants would be very minor, and it is not expected that there will be a deterioration in quality the groundwater body and thus surface water body status.**
Drinking Water Protected Area (DWPA)	Part 1a: Minworth AWTP (Installation) Potential reduction in groundwater quality during construction have the potential to impact the DWPA.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid management. **With the proposed mitigation in place, the quantities of contaminants would be very minor and localised, and it is not expected that there will be a deterioration of this WFD quality element.**
	Part 1b: the Minworth to Atherstone Pipeline (installation) Potential reduction in groundwater quality during construction have the potential to impact the DWPA.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid management.

		With the proposed mitigation in place, the quantities of contaminants would be very minor and localised, and it is not expected that there will be a deterioration of this WFD quality element.
	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation) Potential reduction in groundwater quality during construction have the potential to impact the DWPA.	The Outline CEMP will be submitted with the DCO Application, this should contain measures around construction best practice, site water management measure, and spillage risk, protection of groundwater and drilling fluid management. Additional monitoring within this is proposed for this part of the scheme to add assurance that no abstraction will be impacted during the construction. **With the proposed mitigation in place, the quantities of contaminants would be very minor and localised, and it is not expected that there will be a deterioration of this WFD quality element.**
Quantitative Status		
Quantitative Status element	Part 1a: Minworth AWTP (Installation) Potential for dewatering of excavations to change groundwater flows or changes in groundwater levels.	The Outline CEMP will be submitted with the DCO Application this should contain measures construction best practice and surface water management. A Construction Groundwater Control Strategy will need to be prepared by the contractor at the detailed design stage. It is anticipated that any intrusive ground investigation (GI) additional to design-related GI, to address any residual data gaps and better delineate the depth to groundwater and dewatering requirements, will be undertaken post-DCO consent.

		With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration of this WFD quality element.
	Part 1a: Minworth AWTP (operational regime) Reduced discharge to the tame has the potential to reduce the groundwater levels in the surrounding superficial deposits aquifer.	Modelling undertaken to assess the changes in river levels, this concluded that change in to be very small (Minworth SRO Gate 3 Annex B1.6 Tame and Trent Hydrological and Hydraulic Modelling Report) even at Extreme Low Flows, although only steady state conditions were considered any impact to groundwater body would be negligible. Gate 4 hydrological and hydraulic modelling is ongoing and includes high emissions scenario (RCP8.5 CC) modelling, therefore impacts related to water level change will be reviewed at ES stage. I**t is not expected that there will be a deterioration of this WFD quality element.**
	Part 1b: the Minworth to Atherstone Pipeline (installation) Potential for dewatering for pipeline trench to change groundwater flows or changes in groundwater levels.	The Outline CEMP will be submitted with the DCO Application this should contain measures construction best practice and surface water management. A Construction Groundwater Control Strategy will need to be prepared by the contractor at the detailed design stage. It is anticipated that any intrusive ground investigation (GI) additional to design-related GI, to address any residual data gaps and better delineate the

		depth to groundwater and dewatering requirements, will be undertaken post-DCO consent. **With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration of this WFD quality element.**
	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation) Potential for dewatering of excavations for pipeline trench to change groundwater flows or changes in groundwater levels.	The Outline CEMP will be submitted with the DCO Application this should contain measures construction best practice and surface water management. A Construction Groundwater Control Strategy will need to be prepared by the contractor at the detailed design stage. It is anticipated that any intrusive ground investigation (GI) additional to design-related GI, to address any residual data gaps and better delineate the depth to groundwater and dewatering requirements, will be undertaken post-DCO consent. **With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration of this WFD quality element.**
Dependent Surface Water Body Status	Part 1a: Minworth AWTP (Installation) Potential for dewatering of excavations to change groundwater flows or changes in	**With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and**

	groundwater levels which could impact connected surface waterbodies.	**it is not expected that there will be a deterioration of this WFD quality element.**
	Part 1a: Minworth AWTP (operational regime) Potential for dewatering of excavations to change groundwater flows or changes in groundwater levels which could impact connected surface waterbodies.	Modelling undertaken to assess the changes in river levels, this concluded that change in to be very small (Minworth SRO Gate 3 Annex B1.6 Tame and Trent Hydrological and Hydraulic Modelling Report) even at Extreme Low Flows, although only steady state conditions were considered any impact to groundwater body would be negligible. Gate 4 hydrological and hydraulic modelling is ongoing and includes high emissions scenario (RCP8.5 CC) modelling, therefore impacts related to water level change will be reviewed at ES stage. I**t is not expected that there will be a deterioration in quality of this WFD quality element.**
	Part 1b: the Minworth to Atherstone Pipeline (installation) Potential for dewatering of excavations to change groundwater flows or changes in groundwater levels which could impact connected surface waterbodies.	**With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration in quality of this WFD quality element.**
	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation)	**With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and**

	Potential for dewatering of excavations to change groundwater flows or changes in groundwater levels which could impact connected surface waterbodies.	**it is not expected that there will be a deterioration in quality of this WFD quality element.**
Quantitative Water Balance	Part 1a: Minworth AWTP (Installation) Potential for dewatering of excavations to change groundwater flows or changes in groundwater levels.	The Outline CEMP will be submitted with the DCO Application this should contain measures construction best practice and surface water management. A Construction Groundwater Control Strategy will need to be prepared by the contractor at the detailed design stage. It is anticipated that any intrusive ground investigation (GI) additional to design-related GI, to address any residual data gaps and better delineate the depth to groundwater and dewatering requirements, will be undertaken post-DCO consent. **With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration in quality of this WFD quality element.**
	Part 1a: Minworth AWTP (operational regime) Effects of Minworth diverted flows reducing River Tame (and d/s Trent) water level and lowering connected groundwater.	Modelling undertaken to assess the changes in river levels, this concluded that change in to be very small (Minworth SRO Gate 3 Annex B1.6 Tame and Trent Hydrological and Hydraulic Modelling Report) even at Extreme Low Flows, although only steady state conditions were considered any impact to groundwater body would be negligible. Gate 4 hydrological and hydraulic modelling is ongoing and includes high emissions scenario (RCP8.5 CC) modelling, therefore

		impacts related to water level change will be reviewed at ES stage. I**t is not expected that there will be a deterioration in quality of this WFD quality element.**
	Part 1b: the Minworth to Atherstone Pipeline (installation) Potential for dewatering for pipeline trench to change groundwater flows or changes in groundwater levels.	The Outline CEMP will be submitted with the DCO Application this should contain measures construction best practice and surface water management. A Construction Groundwater Control Strategy will need to be prepared by the contractor at the detailed design stage. It is anticipated that any intrusive ground investigation (GI) additional to design-related GI, to address any residual data gaps and better delineate the depth to groundwater and dewatering requirements, will be undertaken post-DCO consent. **With the proposed mitigation in place, the dewatering will be kept to a minimum and inline with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration of this WFD quality element.**
	Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation) Potential for dewatering of excavations for pipeline trench to change groundwater flows or changes in groundwater levels.	The Outline CEMP will be submitted with the DCO Application this should contain measures construction best practice and surface water management. A Construction Groundwater Control Strategy will need to be prepared by the contractor at the detailed design stage. It is anticipated that any intrusive ground investigation (GI) additional to design-related GI, to

		address any residual data gaps and better delineate the depth to groundwater and dewatering requirements, will be undertaken post-DCO consent. **With the proposed mitigation in place, the dewatering will be kept to a minimum and in line with appropriate permits therefore impacts would be temporary and localised, and it is not expected that there will be a deterioration of this WFD quality element.**

8.1.4 Considering the recommended design mitigation, the assessment concludes that the Proposed Development is likely to be compliant with the objectives of the WFD: it would not cause deterioration in status of the water bodies and would not prevent the water bodies from achieving Good Ecological Status and Good Ecological Potential. This will be reviewed at the ES stage when further assessment has been undertaken

8.2 Assessment of the Proposed Development Against WFD Mitigation Measures

8.2.1 The Environment Agency identifies mitigation measures for water bodies, which are actions that can be implemented to protect and improve the water environment and help achieve the objectives for each RBMP. This section of the assessment considers the nature of the measures identified by the Environment Agency for each water body and assesses whether the Proposed Development may prevent such measures being implemented.

8.2.2 The Environment Agency was consulted on water body objectives and HMWB mitigation measures which are actions that can be implemented by activities to protect and improve the water environment and help achieve the objectives set for each RBMP. However, the data provided by the Environment Agency only covered the following water bodies:

a. ‘Langley Bk - source to conf R Tame Water Body’ (GB104028046901);
b. ‘Coventry and Ashby Canals’ (GB70410212);
c. ‘Tame - R Rea to R Blythe’ (GB104028046841);
d. ‘North Oxford Canal’ (GB70910513);
e. ‘Clifton Bk - source to conf R Avon’ (GB109054043900);
f. ‘Eaton Bray Brook Water Body’ (GB105033030500);
g. ‘Loughton Brook Water Body’ (GB105033037900);
h. ‘Ouzel (US Clipstone Brook) Water Body’ (GB105033030520);
i. ‘Tove (DS Greens Norton) Water Body’ (GB105033038180);
j. ‘Whistle Brook Water Body’ (GB105033030490);
k. ‘Trent from Carlton-on-Trent to Laughton Drain Water Body’ (GB104028058480); and
l. ‘Ouse (Wolverton to Newport Pagnell) Water Body’ (GB105033038000).

8.2.3 Therefore, it is only assessed whether the Proposed Development aligns with the measures outlined for these water bodies. However, due to the outlined activity and construction mitigation measures being undertaken by

the Proposed Development, it is unlikely that the Proposed Development would not align with HMWB mitigation measures.

8.2.4 An appraisal of the Proposed Development against available mitigation measures is presented in Annex 22-3: Mitigation Measures Assessment.

8.2.5 This appraisal concluded that the Proposed Development would have no detrimental impact to the supplied mitigation measures.

8.3 Assessment Against WFD Objectives

8.3.1 The compliance of the Proposed Development with the WFD is determined based upon an assessment against the following objectives relating to WFD quality elements, including biological, physico-chemical and hydromorphological quality elements:

a. Whether the Proposed Development will cause deterioration in the Ecological Potential or Status of a water body;

b. Whether the Proposed Development will compromise the ability of a water body to achieve Good Ecological Status or Potential;

c. Whether the Proposed Development will cause a permanent exclusion or compromise achievement of the WFD objectives (e.g., mitigation measures) in other water bodies within the same RBD; and

d. Whether the Proposed Development will contribute to the delivery of the WFD objectives (e.g., mitigation measures).

The WFD compliance assessment for the Proposed Development is summarised in **Table 8**. The Proposed Development is expected to be compliant with the objectives of the WFD.

Table 8: Compliance assessment of the Proposed Development

Compliance Elements	Surface Water Body Assessment	Groundwater Body Assessment
Water body name	'Anker from River Sence to River Tame Water Body' 'Anker from Wem Brook to River Sence Water Body' 'Coventry and Ashby Canals Water Body' 'Dog Lane Brook from Source to R Tame Water Body' 'Langley Bk - source to conf R Tame Water Body' 'Wem Brook from Source to River Anker Water Body' 'Tame – R Rea to R Blythe Water Body' 'Tame from R Blythe to River Anker Water Body' 'Tame from River Anker to River Trent Water Body' 'Trent – R Tame to R Dove Water Body' 'Trent from Dove to Derwent Water Body' 'Trent from Derwent to Soar Water Body' 'Trent from Soar to The Beck Water Body' 'Trent from Carlton-on-Trent to Laughton Drain Water Body' 'HUMBER UPPER Water Body' 'Grand Union Canal, Braunston summit Water Body' 'Grand Union Canal, Milton Keynes to Braunston summit Water Body' 'Grand Union Canal, Milton Keynes trough pound Water Body' 'Grand Union Canal, Tring summit to Milton Keynes Water Body' 'Ouzel (US Clipstone Brook) Water Body' 'Ouzel US Caldecote Mill Water Body' 'Newton Longville Brook Water Body' 'Welton Village Trib, Whilton branch of R. Nene Water Body' 'Ouzel Brook Water Body' 'Loughton Brook Water Body'	'Tame Anker Mease – Secondary Combined' 'Upper Bedford Ouse Woburn Sands' 'Upper Bedford Ouse Chalk' 'Mid-Chilterns Chalk' 'Upper Lee Chalk'

Compliance Elements	Surface Water Body Assessment	Groundwater Body Assessment
	‘Ouse (Wolverton to Newport Pagnell) Water Body’ ‘Ouzel DS Caldecote Mill Water Body’ ‘Tove (DS Greens Norton) Water Body’ ‘Eaton Bray Brook Water Body’ ‘Clipstone Brook Water Body’ ‘Broughton Brook Water Body’ ‘Clipstone Brook Tributary Water Body’ ‘North Oxford Canal Water Body’ ‘Clifton Bk - source to conf R Avon Water Body’ ‘Leam - source to conf Rains Bk Water Body’ ‘Withy Bk - source to conf R Sowe Water Body’ ‘Ver Water Body’ ‘Upper Colne and Ellen Brook Water Body’	
Deterioration in the status/potential of the water body	The Proposed Development is not anticipated to cause a deterioration in status/potential due to the embedded and additional environmental mitigation.	The Proposed Development is not anticipated to cause a deterioration in status due to the embedded and additional environmental mitigation.
Ability of the water body to achieve Good Ecological Potential/Status	The Proposed Development and associated mitigation would not cause deterioration in status of the water bodies and would not prevent the water bodies achieving Good Ecological Potential due to the embedded and additional environmental mitigation.	The Proposed Development and associated mitigation would not prevent the water body reaching Good Status due to the embedded and additional environmental mitigation.
Impact on the WFD objectives of other water bodies	No downstream or upstream impacts are anticipated associated with the Proposed Development and the mitigation measures proposed due to the embedded and additional environmental mitigation.	No wider impacts are anticipated associated with the Proposed Development and the

Compliance Elements	Surface Water Body Assessment	Groundwater Body Assessment
within the same RBD		mitigation measures proposed due to the embedded and additional environmental mitigation.
Ability to contribute to the delivery of the WFD objectives	The Proposed Development does contribute to the delivery of WFD objectives within the Order limits through enhancements at the re-establishment stage.	The Proposed Development does contribute to the delivery of WFD objectives.

9. Conclusion

9.1.1 This assessment has considered the potential impacts and associated mitigation of the Proposed Development in relation to the WFD quality elements of 32 screened-in surface and five screened-in groundwater bodies.

9.1.2 Multiple activities relating to the Proposed Development were screened in for assessment. These are:

a. Part 1a: Minworth AWTP (operational regime);
b. Part 1a: Minworth AWTP (Installation);
c. Part 1b: the Minworth to Atherstone Pipeline (installation);
d. Part 1b: Construction of access road;
e. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (Atherstone outfall structure);
f. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (gravity bypass pipeline);
g. Part 2: Outfall (and discharge) and other works to the Coventry, Oxford and Grand Union Canals (Construction compounds and temporary works);
h. Part 3: Works to Daventry and Drayton Reservoirs (permanent works);
i. Part 4a: Abstraction, Storage and Treatment (abstraction point to Galley Water Treatment Works pipeline);
j. Part 4a: Abstraction, Storage and Treatment (Galley Water Treatment Works); and
k. Part 4b: Pipeline to an Existing Underground Reservoir near Luton(installation).

9.1.3 These activities can be summarised into seven potential impacts, which were assessed against WFD quality elements to ascertain the potential for any detrimental impact:

a. Reduced discharge in the River Tame;
b. Trenchless watercourse crossings;
c. Trenched open-cut watercourse crossings;
d. Temporary culverted watercourse crossings;
e. Discharge from Minworth AWTP to the canal network ;
f. Diversion of a drainage stream; and
g. Management of groundwater activities.

9.1.4 Considering the recommended design mitigation, the assessment concluded that the Proposed Development is likely to be compliant with the objectives of the WFD: it would not cause deterioration in status of the water bodies and would not prevent the water bodies from achieving Good Ecological Status and Good Ecological Potential.

9.1.5 This WFD assessment will be reviewed at the ES stage when further assessment has been undertaken. This includes further water quality and hydrological modelling of the Rivers Tame and Trent, assessment of canal contamination mobilisation, and results from groundwater monitoring, as well as further refinement of the various elements of the Proposed Development.

9.2 References

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Ref. 2 Mott Macdonald (2020) All Company Working Group (ACWG). Available at: acwg-environmental-assessments-task-3-wfd-no-deterioration.pdf [Accessed: 09/02/2026]

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Ref. 4 Affinity Water (2024) Water Resources Management Plan October 2024.

Ref. 5 Environment Agency (2016a). Water Framework Directive risk assessment: How to assess the risk of your activity. Available at: https://www.gov.uk/government/publications/water-framework-directive-how-to-assess-the-risk-of-your-activity [Accessed: 09/02/2026]

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Ref. 10 National Library of Scotland. 2025. Side by side georeferencing maps viewer. Available at: https://maps.nls.uk/geo/explore/side-by-side/#zoom=5.0&lat=56.00000&lon=-4.00000&layers=1&right=ESRIWorld [Accessed: 09/02/2026]

Ref. 11 Water Resources Act 1991. Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents [Accessed: 09/02/2026]

Ref. 12 The Environmental (England and Wales) Permitting Regulations 2016. Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents/made [Accessed: 09/02/2026].

Ref. 13 Strategic Resource Option Plans Gate 3 Documents. Available at: https://affinitywater.uk.engagementhq.com/strategic-resource-options/widgets/125108/documents [Accessed: 09/02/2026]

Ref. 14 Environment Agency (2016c). Water Framework Directive assessment: estuarine and coastal waters. Clearing the Waters for All. Available at: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters [Accessed: 09/02/2026]

Ref. 15 Regulation 5(2) (l) (iii) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations (2009). Available at: https://www.legislation.gov.uk/uksi/2009/2264/contents/made [Accessed: 09/02/2026]

Annex 22-1: WFD status of screened-in WFD surface water bodies

Classification Item	Anker from River Sence to River Tame (GB104028046460)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Fish	Moderate
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	High
Biochemical Oxygen Demand (BOD)	High
Dissolved oxygen	High
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Specific Pollutants	High
Chromium (VI)	High
Copper	High
Iron	High
Manganese	High
Mecoprop	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)

Classification Item	Anker from River Sence to River Tame (GB104028046460)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Anker from Wem Brook to River Sence (GB104028046430)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Moderate
Biological quality elements	Moderate
Fish	High
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	Good
Dissolved oxygen	Moderate
Phosphate	Poor
Temperature	Good

Classification Item	Anker from Wem Brook to River Sence (GB104028046430)
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Specific Pollutants	Moderate
Arsenic	High
Copper	High
Iron	High
Manganese	Moderate
Triclosan	High
Zinc	Moderate
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Fail (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Fail in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Fail (2019)
Other Pollutants	Does not require assessment

Classification Item	Coventry and Ashby Canals (GB70410212)
Hydromorphological designation	Artificial
Ecological	Good (2019)
Supporting Elements (Surface Water)	Good (2019)
Mitigation Measures Assessment	Good
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Dog Lane Brook from Source to R Tame (GB104028042630)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High

Classification Item	Dog Lane Brook from Source to R Tame (GB104028042630)
Dissolved oxygen	High
Phosphate	Moderate
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	High
Morphology	Not high
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Wem Brook from Source to River Anker (GB104028042430)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Fish	Good
Invertebrates	Moderate

Classification Item	Wem Brook from Source to River Anker (GB104028042430)
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	Moderate
Dissolved oxygen	Good
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Specific Pollutants	High
Copper	High
Iron	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)

Classification Item	Wem Brook from Source to River Anker (GB104028042430)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Fail (2019)
Other Pollutants	Does not require assessment

Classification Item	Tame – R Rea to R Blythe (GB104028046841)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Moderate
Fish	Moderate
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	Moderate
Biochemical Oxygen Demand (BOD)	High
Dissolved oxygen	Good
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Specific Pollutants	Moderate
Copper	High
Iron	High
Manganese	High
Permethrin	High

Classification Item	Tame – R Rea to R Blythe (GB104028046841)
Triclosan	High
Zinc	Moderate
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Tributyltin Compounds	Good (2019)
Priority substances	Does not require assessment (Fail in 2019)
Cypermethrin (Priority)	Fail (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Fail (2019)
Trichloromethane	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Tame from R Blythe to River Anker (GB104028046440)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Fish	Poor

Classification Item	Tame from R Blythe to River Anker (GB104028046440)
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	Good
Dissolved oxygen	Poor
Phosphate	Poor
Temperature	Good
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Morphology	Not high
Specific Pollutants	High
Chromium (VI)	High
Copper	High
Iron	High
Manganese	High
Triclosan	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)

Classification Item	Tame from R Blythe to River Anker (GB104028046440)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Fail (2019)
Other Pollutants	Does not require assessment

Classification Item	Tame from River Anker to River Trent (GB104028047050)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Fish	Good
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	Good
Dissolved oxygen	Good
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Morphology	Not high
Specific Pollutants	Moderate
Arsenic	High
Chlorothalonil	High
Chromium (VI)	High
Copper	High

Classification Item	Tame from River Anker to River Trent (GB104028047050)
Iron	High
Manganese	High
Pendimethalin	High
Triclosan	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Hexachlorocyclohexane	Good (2019)
Mercury and Its Compounds	Fail (2019)
Nonylphenol	Good (2019)
Pentachlorobenzene	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Quinoxyfen	Good (2019)
Tributyltin Compounds	Good (2019)
Priority substances	Does not require assessment (Good in 2019)
1,2-dichloroethane	Good (2019)
Aclonifen	Good (2019)
Alachlor	Good (2019)
Benzene	Good (2019)
Bifenox	Good (2019)
Cybutryne	Good (2019)

Classification Item	Tame from River Anker to River Trent (GB104028047050)
Cypermethrin (Priority)	Good (2019)
Dichloromethane	Good (2019)
Dichlorvos (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Good (2019)
Pentachlorophenol	Good (2019)
Terbutryn	Good (2019)
Trichlorobenzenes	Good (2019)
Trichloromethane	Good (2019)
Other Pollutants	Does not require assessment
Aldrin, Dieldrin, Endrin & Isodrin	Good (2019)
Carbon Tetrachloride	Good (2019)
DDT Total	Good (2019)
Tetrachloroethylene	Good (2019)
Trichloroethylene	Good (2019)
para - para DDT	Good (2019)

Classification Item	Trent – R Tame to R Dove (GB104028047180)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Fish	High
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high

Classification Item	Trent – R Tame to R Dove (GB104028047180)
Hydrological Regime	Supports good
Specific Pollutants	Moderate
Chromium (VI)	High
Copper	High
Iron	High
Manganese	High
Triclosan	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Fail in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Fail (2019)
Other Pollutants	Does not require assessment

Classification Item	Trent from Dove to Derwent (GB104028047420)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Moderate
Biological quality elements	Moderate

Classification Item	Trent from Dove to Derwent (GB104028047420)
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	Good
Biochemical Oxygen Demand (BOD)	High
Dissolved oxygen	Good
Phosphate	Poor
Temperature	Moderate
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Morphology	Not high
Specific Pollutants	High
Copper	High
Iron	High
Manganese	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Cadmium and Its Compounds	Fail (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Nonylphenol	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)

Classification Item	Trent from Dove to Derwent (GB104028047420)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Fail in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Good (2019)
Octylphenol	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Trent from Derwent to Soar (GB104028053120)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Moderate
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	High
Biochemical Oxygen Demand (BOD)	Good
Dissolved oxygen	Good
Phosphate	Poor
Temperature	Good
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Good
Mitigation Measures Assessment	Good
Specific Pollutants	Moderate
Chromium (VI)	High

Classification Item	Trent from Derwent to Soar (GB104028053120)
Copper	High
Iron	High
Manganese	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Fail (2019)
Other Pollutants	Does not require assessment

Classification Item	Trent from Soar to The Beck (GB104028053110)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Moderate
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Moderate

Classification Item	Trent from Soar to The Beck (GB104028053110)
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	High
Biochemical Oxygen Demand (BOD)	Good
Dissolved oxygen	High
Phosphate	Poor
Temperature	Good
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Specific Pollutants	Moderate
Arsenic	High
Chlorothalonil	High
Chromium (VI)	High
Copper	High
Diazinon	High
Dimethoate	High
Iron	High
Manganese	High
Mecoprop	High
Pendimethalin	High
Phenol	High
Toluene	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Anthracene	Good (2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)

Classification Item	Trent from Soar to The Beck (GB104028053110)
Benzo(k)fluoranthene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Di(2-ethylhexyl)phthalate (Priority hazardous)	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Hexachlorocyclohexane	Good (2019)
Mercury and Its Compounds	Fail (2019)
Nonylphenol	Good (2019)
Pentachlorobenzene	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Quinoxyfen	Good (2019)
Tributyltin Compounds	Good (2019)
Priority substances	Does not require assessment (Good in 2019)
1,2-dichloroethane	Good (2019)
Aclonifen	Good (2019)
Alachlor	Good (2019)
Benzene	Good (2019)
Bifenox	Good (2019)
Chlorpyrifos	Good (2019)
Cybutryne	Good (2019)
Cypermethrin (Priority)	Good (2019)
Dichloromethane	Good (2019)
Dichlorvos (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Good (2019)
Octylphenol	Good (2019)

Classification Item	Trent from Soar to The Beck (GB104028053110)
Pentachlorophenol	Good (2019)
Terbutryn	Good (2019)
Trichlorobenzenes	Good (2019)
Trichloromethane	Good (2019)
Other Pollutants	Does not require assessment
Aldrin, Dieldrin, Endrin & Isodrin	Good (2019)
Carbon Tetrachloride	Good (2019)
DDT Total	Good (2019)
Tetrachloroethylene	Good (2019)
Trichloroethylene	Good (2019)
para - para DDT	Good (2019)

Classification Item	Grand Union Canal, Braunston summit (GB70510193)
Hydromorphological designation	Artificial
Ecological	Moderate
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)

Classification Item	Grand Union Canal, Braunston summit (GB70510193)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Grand Union Canal, Milton Keynes to Braunston summit (GB70510251)
Hydromorphological designation	Artificial
Ecological	Moderate
Physico-chemical quality elements	High
pH	High
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Specific Pollutants	High
Chromium (VI)	High
Copper	High
Iron	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Fluoranthene	Good (2019)

Classification Item	Grand Union Canal, Milton Keynes to Braunston summit (GB70510251)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Grand Union Canal, Milton Keynes trough pound (GB70510192)
Hydromorphological designation	Artificial
Ecological	Moderate
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Fail in 2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Grand Union Canal, Tring summit to Milton Keynes (GB70510191)
Hydromorphological designation	Artificial
Ecological	Moderate
Supporting elements (Surface Water)	Moderate

Classification Item	Grand Union Canal, Tring summit to Milton Keynes (GB70510191)
Mitigation Measures Assessment	Moderate or less
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Ouzel (US Clipstone Brook) (GB105033030520)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Good
Fish	Good
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	High
Dissolved oxygen	Good
Phosphate	Poor
Temperature	High

Classification Item	Ouzel (US Clipstone Brook) (GB105033030520)
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Specific Pollutants	High
Iron	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Tributyltin Compounds	Good (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Ouzel US Caldecote Mill (GB105033037971)
Hydromorphological designation	Heavily modified

Classification Item	Ouzel US Caldecote Mill (GB105033037971)
Ecological	Moderate
Biological quality elements	Good
Fish	Good
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Biochemical Oxygen Demand (BOD)	High
Dissolved oxygen	High
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Specific Pollutants	Moderate
Iron	High
Manganese	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)

Classification Item	**Ouzel US Caldecote Mill (GB105033037971)**
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	**Welton Village Trib, Whilton branch of R. Nene (GB105032045360)**
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Invertebrates	Moderate (2019)
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Biochemical Oxygen Demand (BOD)	High
Dissolved oxygen	High
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Does not support good
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)

Classification Item	**Welton Village Trib, Whilton branch of R. Nene (GB105032045360)**
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	**Loughton Brook (GB105033037900)**
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Moderate
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Good
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Good
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Specific Pollutants	High
Triclosan	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Fail (2019)

Classification Item	Loughton Brook (GB105033037900)
Benzo(k)fluoranthene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Nonylphenol	Good (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Ouse (Wolverton to Newport Pagnell) (GB105033038000)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Good
Fish	Good
Invertebrates	High
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Moderate
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high

Classification Item	Ouse (Wolverton to Newport Pagnell) (GB105033038000)
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Ouzel DS Caldecote Mill (GB105033037972)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Moderate
Biological quality elements	Good
Invertebrates	Good
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Moderate
Temperature	High

Classification Item	Ouzel DS Caldecote Mill (GB105033037972)
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Anthracene	Good (2019)
Benzo(a)pyrene	Good (2019)
Benzo(b)fluoranthene	Good (2019)
Benzo(g-h-i)perylene	Good (2019)
Benzo(k)fluoranthene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Tove (DS Greens Norton) (GB105033038180)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Poor
Fish	Poor
Invertebrates	High
Macrophytes and Phytobenthos Combined	Poor

Classification Item	Tove (DS Greens Norton) (GB105033038180)
Physico-chemical quality elements	Moderate
Acid Neutralising Capacity	High
Ammonia (Phys-Chem)	High
Biochemical Oxygen Demand (BOD)	High
Dissolved oxygen	Good
Phosphate	Moderate
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Specific Pollutants	High
Copper	High
Iron	High
Manganese	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)

Classification Item	Tove (DS Greens Norton) (GB105033038180)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Nickel and Its Compounds	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Whistle Brook (GB105033030490)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	Good
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Moderate
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Poor
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)

Classification Item	Whistle Brook (GB105033030490)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Fail in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Eaton Bray Brook (GB105033030500)
Hydromorphological designation	Havily modified
Ecological	Good
Biological quality elements	Good
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	High
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	High
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Moderate
Mitigation Measures Assessment	Moderate or less
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)

Classification Item	Eaton Bray Brook (GB105033030500)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Clipstone Brook (GB105033037830)
Hydromorphological designation	Heavily modified
Ecological	Moderate
Biological quality elements	High
Invertebrates	High
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Moderate
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good
Supporting elements (Surface Water)	Good
Mitigation Measures Assessment	Good
Chemical	Does not require assessment (Fail in 2019)

Classification Item	Clipstone Brook (GB105033037830)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Clipstone Brook Tributary (GB105033037630)
Hydromorphological designation	Heavily modified
Ecological	Good
Biological quality elements	Moderate
Invertebrates	Moderate
Macrophytes and Phytobenthos Combined	Good
Physico-chemical quality elements	High
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	High
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high
Hydrological Regime	Supports good

Classification Item	Clipstone Brook Tributary (GB105033037630)
Supporting elements (Surface Water)	Good
Mitigation Measures Assessment	Good
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Good (2019)
Perfluorooctane sulphonate (PFOS)	Good (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	North Oxford Canal (GB70910513)
Hydromorphological designation	Artificial
Ecological	Good
Physico-chemical quality elements	High
Ammonia (Phys-Chem)	High
Dissolved oxygen	Moderate
Phosphate	High
Temperature	High
pH	High
Supporting elements (Surface Water)	Good

Classification Item	North Oxford Canal (GB70910513)
Mitigation Measures Assessment	Good
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Fluoranthene	Good (2019)
Other Pollutants	Does not require assessment

Classification Item	Withy Bk - source to conf R Sowe (GB109054044640)
Hydromorphological designation	Not designated as artificial or heavily modified
Ecological	Poor
Biological quality elements	Poor
Invertebrates	Good
Macrophytes and Phytobenthos Combined	Poor
Physico-chemical quality elements	Moderate
Ammonia (Phys-Chem)	High
Dissolved oxygen	High
Phosphate	Moderate
Temperature	High
pH	High
Hydromorphological Supporting Elements	Not high

Classification Item	Withy Bk - source to conf R Sowe (GB109054044640)
Hydrological Regime	High
Morphology	Not high
Specific Pollutants	High
Copper	High
Iron	High
Manganese	High
Zinc	High
Chemical	Does not require assessment (Fail in 2019)
Priority hazardous substances	Does not require assessment (Fail in 2019)
Benzo(a)pyrene	Good (2019)
Cadmium and Its Compounds	Good (2019)
Dioxins and dioxin-like compounds	Good (2019)
Heptachlor and cis-Heptachlor epoxide	Good (2019)
Hexabromocyclododecane (HBCDD)	Good (2019)
Hexachlorobenzene	Good (2019)
Hexachlorobutadiene	Good (2019)
Mercury and Its Compounds	Fail (2019)
Perfluorooctane sulphonate (PFOS)	Fail (2019)
Polybrominated diphenyl ethers (PBDE)	Fail (2019)
Priority substances	Does not require assessment (Good in 2019)
Cypermethrin (Priority)	Good (2019)
Fluoranthene	Good (2019)
Lead and Its Compounds	Good (2019)
Nickel and Its Compounds	Good (2019)
Other Pollutants	Does not require assessment

Annex 22-2: WFD status of screened-in WFD groundwater water bodies

Classification Item	Tame Anker Mease - Secondary Combined Water Body (GB40402G990800)
Overall Water Body Class	Good (2019)
Quantitative	Good (2019)
Quantitative Status element	Good (2019)
Quantitative Dependent Surface Water Body Status	Good (2019)
Quantitative GWDTEs test	Good (2019)
Quantitative Saline Intrusion	Good (2019)
Quantitative Water Balance	Good (2019)
Chemical (GW)	Good (2019)
Chemical Status element	Good (2019)
Chemical Dependent Surface Water Body Status	Good (2019)
Chemical Drinking Water Protected Area	Good (2019)
Chemical GWDTEs test	Good (2019)
Chemical Saline Intrusion	Good (2019)
General Chemical Test	Good (2019)
Prevent and Limit Objective	Active
Trend Assessment	No Trend

Classification Item	Upper Bedford Ouse Woburn Sands (GB40501G402200)
Overall Water Body Class	Poor (2019)
Quantitative	Poor (2019)
Quantitative Status element	Poor (2019)
Quantitative Dependent Surface Water Body Status	Poor (2019)
Quantitative GWDTEs test	Good (2019)
Quantitative Saline Intrusion	Good (2019)
Quantitative Water Balance	Good (2019)
Chemical (GW)	Good (2019)
General Chemical Test	Good (2019)
Chemical Dependent Surface Water Body Status	Good (2019)

Classification Item	Upper Bedford Ouse Woburn Sands (GB40501G402200)
Chemical Drinking Water Protected Area	Good (2019)
Chemical GWDTEs test	Good (2019)
Chemical Saline Intrusion	Good (2019)
Chemical Status element	Good (2019)
Prevent and Limit Objective	Active
Trend Assessment	Upward Trend

Classification Item	Upper Bedford Ouse Chalk Water Body (GB40601G603000)
Overall Water Body Class	Poor (2019)
Quantitative	Poor (2019)
Quantitative Status element	Poor (2019)
Quantitative Dependent Surface Water Body Status	Poor (2019)
Quantitative GWDTEs test	Good (2019)
Quantitative Saline Intrusion	Good (2019)
Quantitative Water Balance	Good (2019)
Chemical (GW)	Poor (2019)
Chemical Status element	Poor (2019)
Chemical Dependent Surface Water Body Status	Good (2019)
Chemical Drinking Water Protected Area	Poor (2019)
Chemical GWDTEs test	Good (2019)
Chemical Saline Intrusion	Good (2019)
General Chemical Test	Poor (2019)
Prevent and Limit Objective	Active
Trend Assessment	Upward Trend

Classification Item	Mid-Chilterns Chalk Water Body (GB40601G601200)
Overall Water Body Class	Poor (2019)
Quantitative	Poor (2019)
Quantitative Status element	Poor (2019)
Quantitative Dependent Surface Water Body Status	Poor (2019)
Quantitative GWDTEs test	Good (2019)

Classification Item	Mid-Chilterns Chalk Water Body (GB40601G601200)
Quantitative Saline Intrusion	Good (2019)
Quantitative Water Balance	Poor (2019)
Chemical (GW)	Poor (2019)
Chemical Status element	Poor (2019)
Chemical Dependent Surface Water Body Status	Good (2019)
Chemical Drinking Water Protected Area	Poor (2019)
Chemical GWDTEs test	Good (2019)
Chemical Saline Intrusion	Good (2019)
General Chemical Test	Poor (2019)
Prevent and Limit Objective	Active
Trend Assessment	Upward Trend

Classification Item	Mid-Chilterns Chalk Water Body (GB40601G601200)
Overall Water Body Class	Poor (2019)
Quantitative	Poor (2019)
Quantitative Status element	Poor (2019)
Quantitative Dependent Surface Water Body Status	Poor (2019)
Quantitative GWDTEs test	Good (2019)
Quantitative Saline Intrusion	Good (2019)
Quantitative Water Balance	Poor (2019)
Chemical (GW)	Poor (2019)
Chemical Status element	Poor (2019)
Chemical Dependent Surface Water Body Status	Good (2019)
Chemical Drinking Water Protected Area	Poor (2019)
Chemical GWDTEs test	Good (2019)
Chemical Saline Intrusion	Good (2019)
General Chemical Test	Poor (2019)
Prevent and Limit Objective	Active
Trend Assessment	Upward Trend

Classification Item	Upper Lee Chalk Water Body (GB40601G602900)
Overall Water Body Class	Poor (2019)
Quantitative	Poor (2019)
Quantitative Status element	Poor (2019)
Quantitative Dependent Surface Water Body Status	Poor (2019)
Quantitative GWDTEs test	Good (2019)
Quantitative Saline Intrusion	Good (2019)
Quantitative Water Balance	Poor (2019)
Chemical (GW)	Poor (2019)
Chemical Status element	Poor (2019)
Chemical Dependent Surface Water Body Status	Good (2019)
Chemical Drinking Water Protected Area	Poor (2019)
Chemical GWDTEs test	Good (2019)
Chemical Saline Intrusion	Good (2019)
General Chemical Test	Poor (2019)
Prevent and Limit Objective	Active
Trend Assessment	Upward Trend

Annex 22-3: Mitigation Measures Assessment

Mitigation Measure	Water Bodies	Compliance Assessment
Dredging		
Amending the timing of dredging and disposal operations so that they have a reduced impact on the ecology	'Coventry and Ashby Canals' (GB70410212)	The construction will take place in accordance with the Outline CEMP submitted with the DCO Application. The Outline CEMP details the measures that would be undertaken during construction. The CEMP will be supported by a Water Management Plan (WMP) (which will be produced post consent) that will provide greater detail regarding the mitigation to be implemented to protect the water environment from adverse effects during construction, to prevent the ingress of fine sediment to nearby watercourses. Management and maintenance will be line with the OEMP submitted with the DCO Application and decommissioning impacts will be mitigated through good practice measures set out within the DEMP submitted with the DCO Application. The management of habitats during operation will take place in accordance with a LEMP submitted with the DCO Application The above mitigation means there would be no deterioration impact to the water bodies.
	'North Oxford Canal' (GB70910513)	
Avoid need for dredging activities	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Implement an active and operational dredging disposal strategy	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Reduction of re-suspension of sediments	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	
Sediment management (e.g. trickle recharge, sediment bypass; water column recharge; beneficial placement)	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
	'Coventry and Ashby Canals' (GB70410212)	

Mitigation Measure	Water Bodies	Compliance Assessment
Sediment removal or deposition for flood defence purposes; sediment removal and reinstatement for fisheries interest; aggregate extraction; land drainage and beach replenishment	'North Oxford Canal' (GB70910513)	
	'Grand Union Canal, Milton Keynes trough pound Water Body' (GB70510192)	
Selection of dredge disposal sites to cause minimum ecological impact	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Education		
Raise public awareness of invasive species e.g. leaflets, media campaigns, app development	'Coventry and Ashby Canals' (GB70410212)	The Proposed Development will not impact the implementation of these measures.
	'North Oxford Canal' (GB70910513)	
Raise public awareness of the impacts and responsibilities of landowners	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Raise public awareness of the impacts of boat wash	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	

Mitigation Measure	Water Bodies	Compliance Assessment
and excessive speed on water courses, e.g. improved signage, media campaigns, leaflets	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Habitats		
Activity to create new habitat where it did not exist before	'Langley Bk - source to conf R Tame' (GB104028046901)	The Proposed Development is not predicted to impact these mitigation measures, that relate to the preservation and restoration. Reducing flows in the River Tame to that which is closer to natural base flows should improve morphological conditions within the river by better balancing the processes of erosion and deposition. Further the potential removal of a culverted watercourse would increase aquatic habitat.
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
Preserve and, where possible, restore historic aquatic habitats	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Preserve and/or restore existing in stream and riparian/shoreline habitats	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Rehabilitation of degraded bankside habitats to improve their physical structure and the condition of the riparian zone. Bank rehabilitation includes bank	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	

Mitigation Measure	Water Bodies	Compliance Assessment
reprofiling, the creation of aquatic ledges and removal of hard bank protection etc.		
Restoration of lateral connectivity with the water bodies surrounding floodplain e.g. flood plain spillways	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Restore or increase in-channel morphological diversity e.g. riffle and pool creation and bar creation etc.	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Coventry and Ashby Canals' (GB70410212)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'North Oxford Canal' (GB70910513)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Ouse (Wolverton to Newport Pagnell) Water Body' (GB105033038000)	
	'Ouzel (US Clipstone Brook) Water Body' (GB105033030520)	
	'Whistle Brook Water Body' (GB105033030490)	
Maintenance		
Appropriate channel maintenance strategies and techniques, e.g. remove	'Langley Bk - source to conf R Tame' (GB104028046901)	The Outline CEMP outlines measures to be taken to ensure best practice is followed during the construction
	'Tame - R Rea to R Blythe' (GB104028046841)	

Mitigation Measure	Water Bodies	Compliance Assessment
woody debris only upstream of, or within, areas of urban flood risk	'Clifton Bk - source to conf R Avon' (GB109054043900)	phase to ensure impacts to the environment to ensure compliance with these measures.
	'Loughton Brook Water Body' (GB105033037900)	
Ensure best practice is applied when undertaking maintenance works e.g. coffer dam placement, working during appropriate flow conditions	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Tove (DS Greens Norton) Water Body' (GB105033038180)	
Ensure best practice techniques are applied when undertaking maintenance activities to minimise impacts to the habitat	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Ouse (Wolverton to Newport Pagnell) Water Body' (GB105033038000)	
	'Tove (DS Greens Norton) Water Body' (GB105033038180)	
Management		
Action(s) to reduce the extent and spread of invasive non-native species, including actions on our own assets	'Langley Bk - source to conf R Tame Water Body' (GB104028046901)	The construction will take place in accordance with the Outline CEMP submitted with the DCO Application. The CEMP details the measures that would be undertaken during construction to mitigate the temporary effects on the water environment. The
	'Coventry and Ashby Canals' (GB70410212)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'North Oxford Canal' (GB70910513)	

Mitigation Measure	Water Bodies	Compliance Assessment
	'Clifton Bk - source to conf R Avon' (GB109054043900)	CEMP will be supported by a WMP (which will be produced post consent) that will provide greater detail regarding the mitigation to be implemented to protect the water environment from adverse effects during construction. Management and maintenance will be line with the OEMP submitted with the DCO Application and decommissioning impacts will be mitigated through good practice measures set out within the DEMP submitted with the DCO Application. The management of habitats during operation will take place in accordance with a LEMP submitted with the DCO Application. The above mitigation means there would be no deterioration to the water bodies.
	'Eaton Bray Brook Water Body' (GB105033030500)	
	'Loughton Brook Water Body' (GB105033037900)	
	'Ouzel (US Clipstone Brook) Water Body' (GB105033030520)	
	'Tove (DS Greens Norton) Water Body' (GB105033038180)	
	'Whistle Brook Water Body' (GB105033030490)	
Good practice management of in channel and riparian vegetation works or maintenance practices (e.g. macrophyte cutting), carried out in a manner that considers the impacts of the activity upon ecology and hydromorphology	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Coventry and Ashby Canals' (GB70410212)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'North Oxford Canal' (GB70910513)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Eaton Bray Brook Water Body' (GB105033030500)	
	'Loughton Brook Water Body' (GB105033037900)	
	'Ouzel (US Clipstone Brook) Water Body' (GB105033030520)	
	'Whistle Brook Water Body' (GB105033030490)	
Implement an active sediment management strategy (develop and	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	

Mitigation Measure	Water Bodies	Compliance Assessment
revise) which could include a) substrate reinstatement, b) sediment traps, c) allow natural recovery minimising maintenance, d) riffle construction, e) reduce all bar necessary management in flood risk areas	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Eaton Bray Brook Water Body' (GB105033030500)	
	'Loughton Brook Water Body' (GB105033037900)	
	'Ouse (Wolverton to Newport Pagnell) Water Body' (GB105033038000)	
	'Ouzel (US Clipstone Brook) Water Body' (GB105033030520)	
	'Whistle Brook Water Body' (GB105033030490)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Navigation		
Ensure that boats use the central track of navigation to protect marginal habitat e.g. signage, buoys etc.	'Coventry and Ashby Canals' (GB70410212)	The Proposed Development will not impact the implementation of these measures.
	'North Oxford Canal' (GB70910513)	
Management of number, type and duration of vessels on a navigation	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Modify or use alternative boats to prevent impact of wash, e.g. electric motors or different propeller design	'North Oxford Canal' (GB70910513)	

Mitigation Measure	Water Bodies	Compliance Assessment
Passive Management		
Leaving habitat or parts of natural habitat while undertaking operations or maintenance in a water body	'Langley Bk - source to conf R Tame' (GB104028046901)	The construction will take place in accordance with the Outline CEMP submitted with the DCO Application. The CEMP details the measures that would be undertaken during construction to mitigate the temporary effects on the water environment. The CEMP will be supported by a WMP (which will be produced post consent) that will provide greater detail regarding the mitigation to be implemented to protect the water environment from adverse effects during construction. Management and maintenance will be line with the OEMP submitted with the DCO Application and decommissioning impacts will be mitigated through good practice measures set out within the DEMP submitted with the DCO Application. The management of habitats during operation will take place in accordance with a LEMP submitted with the DCO Application. The above mitigation means there would be no deterioration impact to the water bodies and would ensure that construction activities would be restricted to targeted areas.
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Eaton Bray Brook Water Body' (GB105033030500)	
	'Ouzel (US Clipstone Brook) Water Body' (GB105033030520)	
Structures		
Bed of culvert altered to allow decreased flow conditions and to allow	'Langley Bk - source to conf R Tame' (GB104028046901)	The detailed CEMP should outline the following measures regarding culverts:
	'Tame - R Rea to R Blythe' (GB104028046841)	

Mitigation Measure	Water Bodies	Compliance Assessment
longitudinal connectivity of both biota and sediments	'Clifton Bk - source to conf R Avon' (GB109054043900)	Culverts will maintain connectivity along watercourses for aquatic species and riparian mammals, where present. Mammal ledges with sufficient room will be utilised. Perched inverts that create a drop from the structure to the downstream bed level will be avoided. Culverts will ensure capacity for the peak flow rate of the watercourse, preventing any impact on flow. The base of a culvert will be buried at least 0.3 m below bed level to limit the impact on aquatic species migration and sediment transport. The natural bed within the culvert will be maintained. The culvert will cross the channel perpendicularly and be of an appropriate width to contain the entire channel width. The culvert will be of an appropriate height to allow for environmental mitigation and flood flows. A pre-works and post-works condition survey will be carried out to inform and monitor post-construction reinstatement of the channel. Reinstatement will bring the watercourse as close as possible to its original state once the works are completed. This includes vegetation planting and replacement of bed and bank features. Reinstatement measures will be in accordance with the Framework LEMP.
Installation of structures designed to facilitate and improve the passage of migratory (e.g. salmon and sea trout) and non-migratory fish where structures cannot be removed	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Loughton Brook Water Body' (GB105033037900)	
	'Ouse (Wolverton to Newport Pagnell) Water Body' (GB105033038000)	
	'Tove (DS Greens Norton) Water Body' (GB105033038180)	
	'Whistle Brook Water Body' (GB105033030490)	
Modification of structure to prevent/reduce fish entrainment e.g. screens	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
Removal of hard engineering structures that modify the natural flow and sediment regime, including weirs, locks, floodgates, sluices, and erosion control structures	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Tove (DS Greens Norton) Water Body' (GB105033038180)	
	'Whistle Brook Water Body' (GB105033030490)	

Mitigation Measure	Water Bodies	Compliance Assessment
Removal or re-location of set-back embankments	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
Removal/softening of hard engineering structures that modify natural bank profile	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
Re-opening of covered culverts	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Retro-fitting existing structures to accommodate niche habitats, as opposed to more substantial structural modifications that would be likely to deliver greater hydromorphological change but may not be possible given the use	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Coventry and Ashby Canals' (GB70410212)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'North Oxford Canal' (GB70910513)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	

Mitigation Measure	Water Bodies	Compliance Assessment
Structural changes to locks, sluices, weirs, beach control	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Coventry and Ashby Canals' (GB70410212)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'North Oxford Canal' (GB70910513)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Eaton Bray Brook Water Body' (GB105033030500)	
	'Grand Union Canal, Milton Keynes trough pound Water Body' (GB70510192)	
	'Ouse (Wolverton to Newport Pagnell) Water Body' (GB105033038000)	
	'Whistle Brook Water Body' (GB105033030490)	
	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works	'Trent from Carlton-on-Trent to Laughton Drain Water Body' (GB104028058480)	
Water Resources		
Allowing water levels to drop in a water body in a phased manner to minimise	'Coventry and Ashby Canals' (GB70410212)	The Proposed Development will not impact the implementation of these measures.
	'North Oxford Canal' (GB70910513)	

Mitigation Measure	Water Bodies	Compliance Assessment
disruption to the ecology e.g. retiming to avoid breeding times of fish/birds etc.		
Implement a downstream flow regime that does not impact the ecology (applies to rivers and reservoirs)	'Langley Bk - source to conf R Tame' (GB104028046901)	
	'Tame - R Rea to R Blythe' (GB104028046841)	
	'Clifton Bk - source to conf R Avon' (GB109054043900)	
	'Eaton Bray Brook Water Body' (GB105033030500)	
	'Ouse (Wolverton to Newport Pagnell) Water Body' (GB105033038000)	
	'Ouzel (US Clipstone Brook) Water Body' (GB105033030520)	
	'Tove (DS Greens Norton) Water Body' (GB105033038180)	
Implement an active sediment management regime	'Coventry and Ashby Canals' (GB70410212)	
	'North Oxford Canal' (GB70910513)	

Annex 22-4: River Tame Bed Shear Stress Modelling Results

A TUFLOW FV hydraulic model has been used to assess bed shear stress and sedimentation within the River Tame between the Tame's confluence with the River Bourne (SP 2156 9160) and Lea Marston Lakes (SP 2072 9363), a distance of 3 km. TUFLOW FV is a flexible mesh hydrodynamic model that can be used to solve the 1D, 2D and 3D non-linear shallow water equations on both structured fixed resolution grids and unstructured grids comprised of triangular and/or quadrilateral elements.

A 'future' baseline model was run to represent flow conditions under RCP 8.5 high-emissions scenario. This therefore represents a worst-case baseline scenario to show the potential consequences of unchecked climate change.

The model was run for two flow conditions:

a. Q_{95}: a flow rate that is equalled or exceeded 95% of the time and so represents a low baseflow; and

b. Extreme Low Flow (ELF): Q_{99} flow (a flow rate that is equalled or exceeded 99% of the time) lowered by a further 20% to represent the worst drought year on record for the River Tame (1990).

The model extent and model extraction points are shown in **Figure 1** below.

Figure 1: Model extent and abstraction points

The Proposed Development will result in reduced discharge in the River Tame, which may lead to reduced bed shear stress and consequently increased sedimentation.

Bed shear stress is the force of flowing water exerted on the bed of a river or channel, with a greater shear stress capable of entraining sediments of greater size. As such, an analysis of bed shear stress can be used to assess the size of sediment that would be mobilised, or entrained, under different flow conditions.

The bed shear stress required to entrain particles of specific size classes is given in **Table 9**.

Table 9: Entrainment threshold by particle class

Particle class	Particle size range (mm)	Bed Shear Stress (N/m^2)
Sand	0 – 2	0 – 2
Very fine gravel	2 – 4	2 – 4
Fine gravel	4 – 8	4 – 8
Medium gravel	8 – 16	8 – 16
Coarse gravel	16 – 32	16 – 32
Very coarse gravel	32 – 64	32 – 64
Small cobble	64 – 90	64 – 90
Medium cobble	90 – 128	90 – 128

Particle class	Particle size range (mm)	Bed Shear Stress (N/m^2)
Large cobble	128 – 180	128 – 180
Very large cobble	180 – 256	180 – 256
Small boulder	256 – 512	256 – 512
Medium boulder	512 – 1024	512 – 1024
Large boulder	1024 – 2048	1024 – 2048

Bed shear stress in the baseline model is compared to bed shear stress as a result of the Proposed Development (Scenario A) in **Table 10** for Q95 and **Table 11** for ELF. Where there is a change in entrained particle class, this is shown in red.

Table 10: Bed shear stress at baseline and Scenario A (Q_{95})

Point	Q_{95} baseline bed shear stress	Particle class entrained	Q_{95} Scenario A bed shear stress	Particle class entrained
1	0.2723	Sand	0.1922	Sand
2	2.236	Very fine gravel	1.843	Sand
3	5.033	Fine gravel	5.118	Fine gravel
4	3.737	Very fine gravel	3.136	Very fine gravel
5	0.4369	Sand	0.2968	Sand
6	1.064	Sand	0.7437	Sand
7	2.040	Very fine gravel	1.491	Sand
8	2.787	Very fine gravel	2.209	Very fine gravel
9	2.881	Very fine gravel	2.380	Very fine gravel
10	0.9989	Sand	0.7420	Sand
11	14.43	Medium gravel	14.64	Medium gravel
12	1.719	Sand	1.491	Sand
13	12.66	Medium gravel	10.79	Medium gravel

Table 11: Bed shear stress at baseline and Scenario A (ELF)

Point	ELF baseline bed shear stress	Particle class entrained	ELF Scenario A bed shear stress	Particle class entrained
1	0.1877	Sand	0.1143	Sand
2	1.817	Sand	1.373	Sand
3	5.123	Fine gravel	5.284	Fine gravel
4	3.107	Very fine gravel	3.105	Very fine gravel
5	0.2886	Sand	0.1696	Sand
6	0.7250	Sand	0.4321	Sand
7	1.459	Sand	0.9676	Sand
8	2.169	Very fine gravel	1.463	Sand

9	2.346	Very fine gravel	1.781	Sand
10	0.7261	Sand	0.4714	Sand
11	14.68	Medium gravel	15.30	Medium gravel
12	1.487	Sand	1.274	Sand
13	10.67	Medium gravel	8.590	Medium gravel

Bed shear stress is shown to reduce at every extraction point under the Proposed Development at both Q_{95} and the ELF scenario. However, in most cases the size of particle that is no longer entrained remains the same. As such the risk of sedimentation within the River Tame as a result of the Proposed Development is judged to be negligible.

Annex 22-5: Hydromorphology Walkover Survey

Survey Notes	Photograph
Part 1b	
T-BA13 Quality and Dynamics of Water Flow: This artificial drainage ditch was dry and only likely to be wet after periods of rainfall. River Continuity: There are no barriers to continuity on the artificial drainage ditch. River Depth and Width Variation: The cross section of this artificial drainage ditch was uniform throughout, with a bankfull width of approximately 1 m and bankfull depth of approximately 0.5 m. Structure and Substrate of the Riverbed: The bed was comprised of earth and organic material. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a road on the left bank and agricultural fields on the right bank, with scattered trees along both banks.	

Survey Notes	Photograph
T-BA12 Quality and Dynamics of Water Flow: This very minor artificial drainage ditch was dry and unlikely to hold water. River Continuity: There were no barriers to continuity along this artificial drainage ditch. River Depth and Width Variation: The cross section of this artificial drainage ditch was uniform throughout, with a bankfull width of approximately 0.5 m and bankfull depth of approximately 0.2 m. Structure and Substrate of the Riverbed: The bed was comprised of grassed earth. Riparian Structure and Floodplain Connectivity: The riparian zone comprised an agricultural field. It is unlikely that this artificial ditch floods.	

Survey Notes	Photograph
T-BA11 Quality and Dynamics of Water Flow: This artificial drainage ditch was dry and only likely to be wet after periods of rainfall. River Continuity: There are no barriers to continuity on the artificial drainage ditch. River Depth and Width Variation: The cross section of this artificial drainage ditch was uniform throughout, with a bankfull width of approximately 0.5 m and bankfull depth of approximately 0.3 m. Structure and Substrate of the Riverbed: The bed was comprised of earth and organic material. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a hedge adjacent to agricultural fields.	

Survey Notes	Photograph
River Tame Quality and Dynamics of Water Flow: Flow was gliding and laminar, with no variation throughout. Flow was impounded by weirs downstream. River Continuity: Large weirs are present a short distance downstream of the site boundary which impound flow and likely act as a barrier to sediment transport. Hard bank protection disrupts natural bank continuity in several locations. River Depth and Width Variation: The river had a uniform cross section having been historically modified, with a bankfull width of approximately 20 m, and a bankfull depth of approximately 2 m. Structure and Substrate of the Riverbed: Bed substrate could not be observed due to high turbidity, but is assumed to comprise fine sediment due to the low energy conditions caused by the impounding weirs. Riparian Structure and Floodplain Connectivity: The riparian zone comprised grassland with pockets of woodland and scattered trees, as did the floodplain. The river is likely to be connected to the floodplain, although has been over deepened likely reducing the frequency of floods.	

Survey Notes	Photograph
T-BA22 Quality and Dynamics of Water Flow: There was no perceptible flow along the entirety of survey extent. Several dry areas were noted. The watercourse had deep, ponded flow in a wider section of watercourse. River Continuity: The watercourse is culverted under a road and a railway. River Depth and Width Variation: The watercourse was over deep throughout and over wide in parts. Depth and width variation are restricted at the upstream and downstream extents by road and rail culverts. Bankfull depth was approximately 1 m, and bankfull width varying between approximately 1 m to 3 m. Structure and Substrate of the Riverbed: Bed substrate dominated by fine sediment. Riparian Structure and Floodplain Connectivity: The riparian zone on the right bank comprised grazed pasture, while the left bank comprised a railway embankment. There was no floodplain connectivity due to over deep nature of channel.	

Survey Notes	Photograph
DLB34 Quality and Dynamics of Water Flow: There was no perceptible flow along the entirety of survey extent. River Continuity: The watercourse is culverted in several locations for farm access and road crossings. River Depth and Width Variation: The channel was uniform, over deep and of approximately 2 m bankfull depth and 5 m bankfull width. Structure and Substrate of the Riverbed: The bed comprised silt overlying gravel. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a narrow wooded corridor adjacent to grazed pasture. The watercourse was over deep and disconnected from the floodplain.	

Survey Notes	Photograph
DLB35 Quality and Dynamics of Water Flow: Generally sluggish or no perceptible flow. The channel bed was heavily vegetated with reeds in parts which impeded flow. River Continuity: The watercourse is culverted under a road upstream of the surveyed length. River Depth and Width Variation: The watercourse was over deep and generally uniform, with bankfull depth of approximately 2 m and bankfull width of 5 m. Structure and Substrate of the Riverbed: Bed substrate comprised silt. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a narrow wooded corridor adjacent to grazed pasture. The watercourse was over deep and disconnected from the floodplain.	

Survey Notes	Photograph
DLB2 Quality and Dynamics of Water Flow: Areas of run and gliding flow, with some riffles noted. River Continuity: Culverted under a road downstream of the site boundary, but generally unimpeded continuity. River Depth and Width Variation: Width and depth uniform throughout, with an over deep channel. Bankfull depth of approximately 2.5 m and bankfull width of approximately 7 m. Structure and Substrate of the Riverbed: Bed substrate varied, with silt dominating in areas of smooth, gliding flow, and gravel dominating in areas of turbulent flow. Gravel riffle deposits were noted. Riparian Structure and Floodplain Connectivity: The riparian zone largely comprised grazed pasture, with some scattered trees. The over deep watercourse was disconnected from the floodplain.	

Survey Notes	Photograph
DLB4 Quality and Dynamics of Water Flow: The watercourse was dry through both surveyed locations and likely ephemeral. River Continuity: The watercourse is culverted in several locations under roads and farm access tracks. River Depth and Width Variation: The watercourse was of uniform depth and width with an artificial cross section. The watercourse was deeper through the upstream lengths, with a bankfull depth of approximately 1 m, whereas downstream the bankfull depth was approximately 0.5 m. Bankfull width was approximately 0.75 m throughout. Structure and Substrate of the Riverbed: The bed was silty or comprised earth. Riparian Structure and Floodplain Connectivity: Through the upstream lengths, the riparian zone comprised a road and farm storage areas, with a narrow grassed buffer alongside the watercourse. Further downstream, the riparian zone comprised agricultural fields. The watercourse is ephemeral and unlikely to be connected to the floodplain.	

Survey Notes	Photograph
A-ST4 Quality and Dynamics of Water Flow: The watercourse was dry during survey and likely ephemeral. River Continuity: Numerous culverts were present on the watercourse for field and road crossings. River Depth and Width Variation: The watercourse generally had a uniform cross section throughout the surveyed length, with bankfull width and depth of approximately 0.5 m. Some variation in depth and width due to the presence of trees and other vegetation which likely control erosional and depositional processes. Structure and Substrate of the Riverbed: The bed generally comprised earth and organic matter. Some cobbles were present, although the source of these may be from adjacent land uses. Riparian Structure and Floodplain Connectivity: The riparian zone on the right bank comprised a woodland with mettled track, whilst the left bank comprised agricultural fields. The watercourse is unlikely to be connected to the floodplain.	

Survey Notes	Photograph
A-ST3 Quality and Dynamics of Water Flow: Standing water with no perceptible flow was observed. The water appeared to be heavily polluted with oils. The watercourse appeared to be dry upstream of the road. River Continuity: The watercourse is culverted under roads and trackways in several locations. River Depth and Width Variation: The watercourse had a uniform cross section, with a bankfull width of approximately 0.5 m and a bankfull depth of approximately 0.7 m. Structure and Substrate of the Riverbed: The bed was not visible through wetted parts of the watercourse due to oil pollution, although it is likely that the bed was silty. Through dry parts, the bed comprised earth and organic material. Riparian Structure and Floodplain Connectivity: The riparian zone on the left bank comprised woodland, with a road on the right bank. This watercourse is unlikely to be connected to the floodplain.	

Survey Notes	Photograph
A-ST8 Quality and Dynamics of Water Flow: This was a dry ditch that likely only holds water after heavy rainfall. River Continuity: There was no barrier to continuity of this artificial drainage ditch. River Depth and Width Variation: This artificial drainage ditch had a uniform cross section, with bankfull width of approximately 1 m and bankfull depth of approximately 0.3 m. Structure and Substrate of the Riverbed: The bed comprised earth and organic material. Riparian Structure and Floodplain Connectivity: The riparian zone comprised woodland. It is unlikely that this artificial drainage ditch has any connection to the floodplain.	

Survey Notes	Photograph
A-ST1 Quality and Dynamics of Water Flow: The watercourse exhibited varied flow types throughout, with large wood, vegetation and coarser bed sediments contributing to flow dynamics. River Continuity: The watercourse is culverted under a road, but otherwise river continuity is maintained along its course. River Depth and Width Variation: The watercourse exhibited varied depth and width throughout, with bankfull width ranging from approximately 0.5 m to 1.2 m and bankfull depth ranging from 0.3 m to 0.6 m. Structure and Substrate of the Riverbed: The bed was generally silty, with areas of gravels and organic material noted. Riparian Structure and Floodplain Connectivity: The riparian zone comprised woodland, as did the floodplain. The floodplain floor was wet indicating a high groundwater level. The watercourse is likely to be connected to the floodplain.	

Survey Notes	Photograph
Part 4a	
<u>River Ouzel</u> Quality and Dynamics of Water Flow: Flow was generally gliding and laminar, although some variation due to in channel vegetation was noted. River Continuity: The watercourse is culverted under the A4146 road, but otherwise river continuity is maintained along its course. River Depth and Width Variation: Varying depth and width throughout, with in channel vegetation influencing erosional and depositional processes. Berms were noted in several locations. Bankfull width and depth were approximately 15 m and 4 m respectively. Structure and Substrate of the Riverbed: The bed was generally composed of fine sediment, although areas of gravels were noted. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a narrow corridor of trees adjacent to agricultural fields. The watercourse appeared over deep, limiting floodplain connectivity.	

Survey Notes	Photograph
O-uCM119 Quality and Dynamics of Water Flow: This artificial drainage channel was dry during surveys. It is believed that a culvert passes through land to the north, and the majority of flow which would otherwise pass through this drainage channel passes through the culvert instead. The drainage channel is hydrologically connected to the culvert. River Continuity: There are some farm access culverts located along the course of this drainage channel. River Depth and Width Variation: Width and depth were uniform throughout, with bankfull width and depth being approximately 1 m. Structure and Substrate of the Riverbed: The bed was composed of earth and organic material. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a hedge on both banks adjacent to agricultural fields. It is unlikely that this watercourse has any connectivity with the floodplain.	

Survey Notes	Photograph
Part 4b	
<u>O-uCM110</u> Quality and Dynamics of Water Flow: Flow was generally smooth, with some variation over coarser substrate and as a result of woody material. River Continuity: A pond is present on the watercourse immediately upstream of the site boundary which likely disrupts flow and sediment transport. River Depth and Width Variation: The watercourse had a bankfull width of approximately 1 m and bankfull depth of approximately 0.7 m. Some variation in width and depth was noted, particularly further downstream where sinuosity increased. Structure and Substrate of the Riverbed: The bed was generally silty with some gravels noted. Organic accumulations were also present from the riparian trees. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a narrow corridor of trees adjacent to agricultural fields. The watercourse was over deep and likely to have poor floodplain connectivity.	

Survey Notes	Photograph
<u>Clipstone Brook</u> Quality and Dynamics of Water Flow: Varied flow types, with riffles, pools, bars and woody material contributing to flow diversity. River Continuity: The watercourse was culverted under several farm access crossings. River Depth and Width Variation: The watercourse was incised, with a bankfull depth of approximately 2 m, and bankfull width of approximately 5 m. The low flow channel had varying width and depth however. Structure and Substrate of the Riverbed: The bed primarily comprised gravel, with silt overlying in parts. A well developed series of riffles, pools and bars was noted through the upstream lengths. Riparian Structure and Floodplain Connectivity: The riparian zone comprised a narrow corridor of trees adjacent to agricultural fields. The watercourse was over deep and unlikely to be connected to the floodplain.	

Survey Notes	Photograph
EBB1 Quality and Dynamics of Water Flow: Flow was gliding or not perceptible throughout the surveyed length. River Continuity: The watercourse is crossed by a road within the site boundary. River Depth and Width Variation: The watercourse has been artificially straightened, and was over deep. Bankfull width was approximately 2 m and bankfull depth was approximately 1.2 m. The channel had a uniform cross section throughout. Structure and Substrate of the Riverbed: The bed appeared to be silty throughout, with dense vegetation growth on the bed. Riparian Structure and Floodplain Connectivity: The riparian zone on the left bank comprised a hedge adjacent to agricultural fields, while the right bank comprised agricultural fields. It is unlikely that this over deep watercourse has any connectivity with the floodplain.	

Survey Notes	Photograph
EBB33 Quality and Dynamics of Water Flow: This artificial drainage ditch was mostly dry, with some areas of standing water. River Continuity: There were no barriers to continuity on this artificial drainage ditch. River Depth and Width Variation: The ditch had an uniform cross section throughout, with a bankfull width and depth of approximately 1.2 m. Structure and Substrate of the Riverbed: The bed appeared to be vegetated with terrestrial vegetation, and likely comprised earth. Riparian Structure and Floodplain Connectivity: The riparian zone comprised agricultural fields, with a hedge running along the top of the left bank. It is unlikely that this artificial drainage ditch has any connectivity with the floodplain.	

Survey Notes	Photograph
EBB53 Quality and Dynamics of Water Flow: This artificial ditch was dry and is unlikely to hold water apart from after heady rainfall. River Continuity: There are numerous crossings which separate the ditch into sections, with no connectivity between the sections. The ditch does not appear to be connected to any water features at either end. River Depth and Width Variation: This artificial ditch had a unform cross section of approximately 0.5 m bankfull width and 0.3 m bankfull depth. Structure and Substrate of the Riverbed: The bed of the ditch comprised chalk with grass. Riparian Structure and Floodplain Connectivity: The riparian zone comprised mown grass used for recreation. There is no connectivity between this ditch and the floodplain.	