

TECHNICAL NOTE

JBA Project Code
Contract
Client
Day, Date and Time
Author
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Subject

2024s0703
Dobfield Road - HRA Addendum
Euan Kellie Property Solutions
15 May 2024
Shantelle Friesen
Jane Crossley and Laura Thomas
Habitats Regulations Preliminary
Screening Assessment Addendum to
Provide Supporting Information

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1 Introduction

1.1 Background

Planning permission has been obtained for the erection of 8 dwellings with associated hard and soft landscaping and car parking, following the demolition of existing stables. A Habitats Regulations Preliminary Screening Assessment (HRA) was produced by Collington Winter Environmental (Report Reference - CW20-1585 Report 001) to assess potential impacts relating to the detailed drainage strategy.

The purpose of this HRA addendum technical note is to provide supporting information to address Natural England's request for further information, specifically as the request relates to Section 5.2.6 of the HRA Screening Assessment.

Natural England stated the following:

Section 5.2.6 of the assessment outlines the foul sewage treatment for the two plots with 50m of Rochdale canal. This includes individual sewage treatment plants as well as reedbeds as further tertiary treatment before being discharged to a soakaway. Natural England advises that the introduction of reedbeds will help in principle given the size of the discharges however, it should be noted that future maintenance and management of these rest with the individual householders/permit holder.

Further information is required to demonstrate that the drainage measures put in place will meet the surface water and groundwater environmental standards set out by the Water Framework Directive (WFD 2000/60/EC). The HRA should clearly demonstrate how the drainage methods put in place meet WFD 2000/60/EC and as such will not significantly impact the conservation objectives of Rochdale Canal SAC.

1.2 Proposed foul drainage strategy

As outlined in the HRA Screening Assessment, the proposed foul drainage strategy comprises the use of individual sewage treatment plants located in the rear gardens of each plot, with discharges to soakaways (drainage fields).

Plots 1-6 are located furthest from the Rochdale Canal Special Area of Conservation (SAC) (and also the Site of Special Scientific Interest (SSSI)) will be fitted with soakaways for the sewage treatment plants (STP's). Plots 7 & 8 are 46 metres and 32 metres respectively from the canal and as such they will be provided with soakaways for the STP's along with further tertiary treatment, provided in the form of reedbeds.

The proposed development supports 48 residents.

2 ROCHDALE CANAL SAC AND SSSI

2.1 Qualifying features

Rochdale Canal SAC "contains important habitats for submerged aquatic plants and emergent vegetation, including extensive colonies of the nationally scarce Floating Water-plantain *Luronium natans*. The site also supports a diverse assemblage of aquatic flora, in particular nine species of pondweed *Potamogeton* spp. The plant communities

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found in the Rochdale Canal are characteristic of mesotrophic water bodies, i.e. those which are moderately nutrient rich"¹.

The SAC is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Floating water-plantain *Luronium natans*.

2.2 Conservation objectives of Rochdale Canal SAC:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of the habitats of qualifying species
- The structure and function of the habitats of qualifying species
- The supporting processes on which the habitats of qualifying species rely
- The populations of the qualifying species, and,
- The distribution of the qualifying species within the site.

3 Direct Impacts on Rochdale Canal SAC and SSSI

The sizing of the proposed soakaways and reedbeds (Biodisc BA treatment plant) is sized for a population equivalent of 6 and a max daily flow of 1.2m³. This design is appropriate as the houses are designed for an occupancy of 5 to 6 people in each house and was determined following the British Water Code of Practice for Flows and Loads - 4: Sizing Criteria, Treatment Capacity for Sewage Treatment Systems², which is supported by the Environment Agency.

3.1 Water Quality

Directive 2000/60/EC (the Water Framework Directive) states that "Member States shall ensure that all discharges ... into surface waters are controlled according to the combined approach set out in ... Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment". While the proposed STPs will not discharge directly into a surface water body, assessment of the STPs against the parameters outlined in Council Directive 91/271/EEC can provide an understanding of potential impacts.

Table 3-1 provides the treatment concentration requirements for set parameters outlined in Council Directive 91/271/EEC of 21 May 1991, for the treatment of urban wastewater being discharged into receiving waters.

1 Rochdale Canal SAC Citation PDF.

<https://publications.naturalengland.org.uk/publication/6015060228964352>

2 https://www.theseptictankstore.co.uk/wp-content/uploads/British_Water_flows_and_loads.pdf

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Table 3-1. Council Directive of 21 May 1991 concerning urban wastewater treatment (91/271/EEC)- Annex I³

Parameters (Surface Water)	Concentration (mg/l)	Minimum percentage of reduction
Biochemical oxygen demand (BOD ₅)	25	70-90
Chemical oxygen demand (COD)	125	75
Suspended Solids (SS)	35	90
Total Nitrogen (N)	15 mg/l N (10,000–100,000 p.e.*) 10 mg/l N (more than 100,000 p.e.)	70-80
Total Phosphorus (P)	2 mg/l P (10,000–100,000 p.e.) 1 mg/l P (more than 100,000 p.e.)	80

*p.e. = population equivalent

It is worth noting that the values in Council Directive 91/271/EEC are predominantly for urban wastewater treatment plants discharging directly into receiving water and focus on treatment plants with population levels ranging from 2000 p.e. to greater than 100,000 p.e. Additionally, the Council Directive 91/271/EEC does not provide specific concentration limits for smaller p.e. sizes. More specifically, the concentration limits for N and P are for p.e. of 10,000 or more and the concentration constraints increase as population equivalent increases.

Table 3-2 outlines effluent output and efficiency of the proposed small wastewater treatment systems, BioDisc with and without reedbeds.

Table 3-2. Effluent output and efficiency of small wastewater treatment systems BioDisc with and without reedbeds.

Parameters	Efficiency no reedbed (%)	Effluent no reedbed (mg/l)	Efficiency with reedbed (%)	Effluent with reedbed (mg/l)
COD	89.4	59	93.0	39
BOD ₅	95.7	10	98.0	4
SS	94.8	15	98.2	6
NH ₄ -N	88.6	3.8	88.4	3.8

3 <https://www.legislation.gov.uk/eudr/1991/271/annex/I>

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Parameters	Efficiency no reedbed (%)	Effluent no reedbed (mg/l)	Efficiency with reedbed (%)	Effluent with reedbed (mg/l)
Total Nitrogen	N/A	N/A	61.2	18
Total Phosphorous	N/A	N/A	51.7	3.8

The proposed STP's will reduce the BOD₅, COD and SS in the systems to below levels required by Council Directive 91/271/EEC, and as such would be compliant with the WFD. While total Nitrogen and total Phosphorous would exceed the concentration limits for a p.e. of 10,000 - 100,000; the exceedances would be by only 3mg/l and 1.8mg/l respectively.

Additionally, the proposed STP's will not be discharging directly into a receiving waterbody, and more specifically the Rochdale Canal, but into the ground; therefore, it is probable that the concentrations of Nitrogen, Phosphorous and other parameters in the effluent will not likely significantly effect the water quality and/or allow more competitive flora species to thrive and outcompete the qualifying species in the Rochdale Canal SAC. Additionally, natural biogeochemical processes in the soil will treat the effluent, further reducing any negative impacts to the water quality and flora species.

3.2 Canal design

Canals in the UK, by design, are lined during construction to inhibit the loss of groundwater through permeable soils, making them 'waterproof'⁴ so that water levels in the canals can be maintained year-round (Figure 3-1⁵). This 'waterproof' design is also preserved during any restoration works⁵ on canals. As such, the design of canals means that not only can water not discharge from the canal into the surrounding ground; groundwater adjacent to a canal cannot enter into the canal water body.

This means that effluent from the proposed STP's cannot enter the Rochdale Canal; therefore, the effluent from the soakaways will have **no likely significant effect** on water quality and/or allow more competitive flora species to thrive and outcompete the qualifying species in the Rochdale Canal SAC.

4 <https://canalrivertrust.org.uk/media/original/31136-building-and-carrying-topic-pack.pdf>

5 <https://canalrivertrust.org.uk/media/library/9897-different-ways-of-lining-canals-les-clark.pdf>

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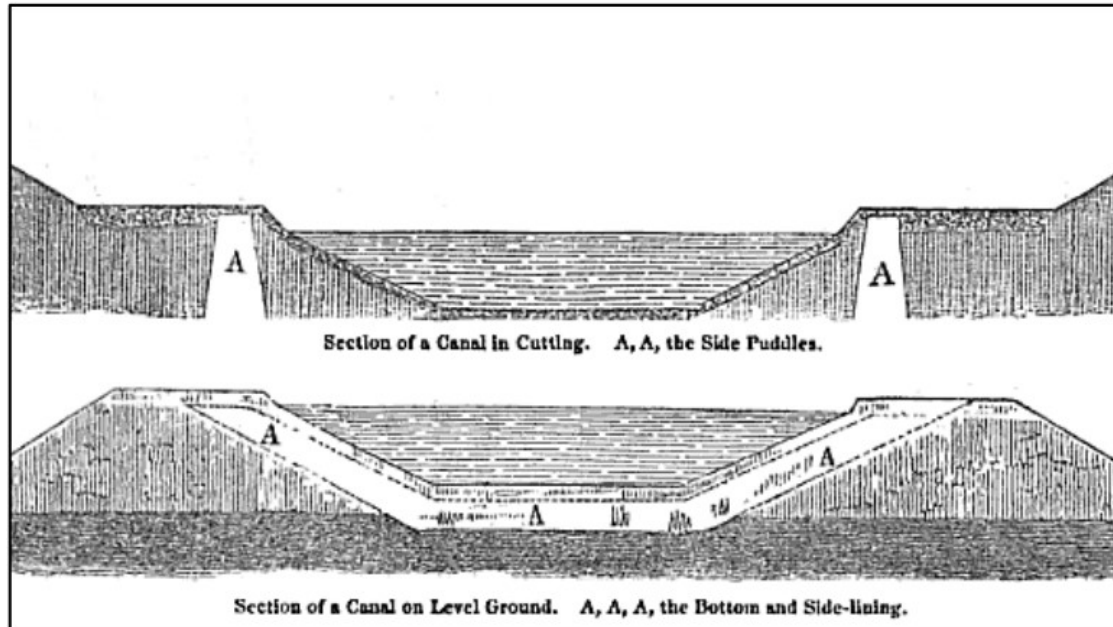


Figure 3-1. A drawing by S C Bees from 1852 showing puddle clay linings.

3.3 Conclusions

It is considered that the proposed development will have **no likely significant effect** on the qualifying features of Rochdale Canal SAC. Therefore, it is not considered necessary to progress to Stage 2 of the HRA assessment (Appropriate Assessment) and that this screening assessment addendum is sufficient to rule out impacts of the proposed development on the European sites at this stage.