Herefordshire Council

V2 17.03.2023

Package Treatment Plants and Small Scale Impacts in the Lugg Catchment

Herefordshire Council - Interim Guidelines

Version control

Version	Date	Officer	Notes
V1 DRAFT	January 2023	Fran Lancaster Principal Natural Environment Officer	DRAFT released to website
V2	March 2023	Fran Lancaster Principal Natural Environment Officer	Amendments to the 'Local Clarification of the Criteria' section only

Purpose

This guidance note is intended to support applicants and developers seeking to use Package Treatment Plants (PTP) as a means of foul drainage for new developments in the catchment of the River Lugg which is hydrologically linked to the River Wye Special Area of Conservation (SAC) and also in the small area of the River Clun SAC catchment in the county.

It should be noted that mains sewerage connection is the preferred method of foul drainage in Herefordshire where connectivity is available or possible. This approach is in line with Herefordshire Council Core Strategy Policy SD4.

This note is intended to provide applicants and developers with information relating to the Nutrient Neutrality approach which applies in the River Lugg and River Clun catchments.

Further information on the principals of Nutrient Neutrality can be found on the Council's website at Nutrient management – Herefordshire Council and that webpage contains links to the documents published by Natural England relating to the approach.

Background

Nutrient Neutrality is the name given nationally to the approach which aims to ensure that development does not result in additional nutrient loads within the catchment of internationally designated sites including Special Areas of Conservation (SAC), Special Protection Areas (SPAs) and Ramsar Sites.

The approach forms part of the Council's work as a Competent Authority under the Conservation of Species & Habitats Regulations 2017 (as amended) which requires the Council to ensure that the planning decisions it makes do not result in an adverse effect on the integrity of an SAC, SPA or Ramsar Site (known collectively as 'Habitats Sites').

The River Lugg, which is a hydrological part of the River Wye SAC catchment, and the River Clun SAC catchment are particularly sensitive to phosphate (P) and the Nutrient Neutrality approach has been established in order to avoid new sources of P within the catchments as a result of planning decisions made by the Council.

Development where Mains Sewerage Connection is Achievable

This note does not apply to development where a mains sewerage connection is either available or reasonably possible. Those developments are expected to make use of the mains connection option, to calculate a nutrient budget and offset or mitigate that budget following the guidance on the Council's website.

Development which relies on a Package Treatment Plant

Development relying on a PTP falls into five categories:

- Development utilising a private small scale PTP to serve a small number of proposed dwellings with a direct outfall to a watercourse; or
- Development utilising a private small scale PTP to serve a small number of proposed dwellings with an associated drainage field or drainage mound; or
- Development proposing to replace an existing old PTP or Septic Tank with a new small scale PTP either with or without a drainage field or mound without an increase in dwelling number;
- Development proposing to replace an existing old PTP or Septic Tank with a new small scale PTP either with or without a drainage field or mound while increasing the number of dwellings on the site; or
- Developments of a larger size which propose a PTP in shared ownership or in the ownership or control of a management company.

It should be noted that drainage mounds over soils which cannot achieve infiltration are generally not supported by Environment Agency and the Council's specialist drainage consultant.

Circumstances in which PTPs demonstrate Nutrient Neutrality

The use of a PTP to serve a development will not necessarily achieve Nutrient Neutrality unless:

- A new PTP is replacing an old PTP or Septic Tank with no increase in dwelling numbers;
- The new PTP is below 2m^3/day and meets the 7 criteria for small scale flows set out in the Natural England guidance on Nutrient Neutrality to Local Authorities[1].

It may be possible to develop a suite of mitigation measures bespoke to a development which sit alongside the proposal for a new PTP in order to achieve Nutrient Neutrality.

Criteria for Small Scale Impacts within Nutrient Neutral Catchments

Discharges from PTPs to ground in catchments where Nutrient Neutrality applies may be considered not significant, and therefore screened out of the Habitats Regulations Assessment process, where certain criteria (set by Natural England[2]) are met.

Small discharges to ground i.e. less than 2m^3/day that are within the surface or groundwater catchment of a designated site will present a low risk that the phosphorus will have a significant effect on the designated site where certain conditions are met:

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[1] Natural England Water Quality and Nutrient Neutrality Advice (16 March 2022) - NE785

[2] Annex F of the Natural England Advice - NE785 Edition 1 Natural England Water Quality and Nutrient Neutrality Advice (16 March 2022).pdf

a) The drainage field is more than 50m from the designated site boundary (or sensitive interest feature) and;
b) The drainage field is more than 40m from any surface water feature e.g. ditch, drain, watercourse, and;
c) The drainage field in an area with a slope no greater than 15%, and;
d) The drainage field is in an area where the high water table groundwater depth is at least 2m below the surface at all times, and;
e) The drainage field will not be subject to significant flooding, e.g. it is not in flood zone 2 or 3, and;
f) There are no other known factors which would expedite the transport of phosphorus for example fissured geology, insufficient soil below the drainage pipes, known sewer flooding, soil/geology type and its ability for P sorption/mineralisation or presence of conditions would cause remobilisation phosphorus, presence of mineshafts, etc. and;
g) To ensure that there is no significant in combination effect, the discharge to ground should be at least 200m from any other discharge to ground.

Local Clarification of the Criteria

The council had proposed to offer some local clarification of the criteria for small scale discharges and did so in a draft of this guidance in January 2023. In this instance the council set out to control some additional elements of impact specific to the high soil phosphate legacy which occurs in Herefordshire. The Council continues to work with Natural England on developing its guidance and approach. Natural England have since shared further evidence associated with the small scale impact criteria and have assured the Council that the criteria are already sufficiently precautionary for interactions between phosphates from drainage features and phosphates in the agricultural fields in which those features might be located to have been taken into account. As a result the local clarification element has been removed from this guidance.

Chemical Dosing

Natural England have advised Herefordshire Council that PTPs requiring chemical dosing should only be used where it can be robustly justified and that where dosing is proposed it should only be carried out by appropriately a British Water Accredited Service Technician, or other suitably qualified professional working for an established, experienced management company.

Where chemical dosing is proposed developers will need to provide a robust, evidenced justification for why chemical dosing is necessary, that dosing can be managed appropriately and why a non-chemical (biological) PTP cannot be used.

Where it is agreed that chemical dosing is appropriate, developers will need to demonstrate that a management plan for dosing and other maintenance is in place and that dosing will only be carried out by experienced, accredited professionals through a service agreement. This will be secured by a planning condition or legal agreement for the lifetime of the development.

Herefordshire Council considers that the costs of adequately securing elements of management and maintenance of systems requiring dosing may be prohibitively expensive for smaller developments and will discuss these requirements with developers prior to proceeding.

Developers will need to provide the make, model and capacity of the proposed PTP along with information on required dosing, management and maintenance in order to allow the Council to carry out an Appropriate Assessment.

Use of chemicals in dosing

Where it is agreed that chemical dosing is appropriate, and has been secured in the long term, Natural England have advised that PTPs which use ferric rather than aluminium salts must be used.

Aluminium is known to be highly toxic in freshwater environments including impacting negatively on species but its impacts are not well understood meaning that gathering sufficient scientific evidence for a favourable Appropriate Assessment is not likely to be possible where aluminium salt use is proposed.

Consideration of dosing in the Council's phosphate budget calculator

Where chemical dosing can be robustly justified, professionally managed and legally controlled it may be used in Phosphate budget calculations. This decision will usually be reached through detailed discussions between the applicant and Herefordshire Council and the appropriate Phosphate co-efficient for use in the budget calculator will be agreed as part of those discussions.

It should be noted that Herefordshire Council will formally consult Natural England as part of the Habitats Regulations Assessment process and will have regard to the views of Natural England in making a planning decision.

Lifetime of PTPs and Drainage Mounds/Fields vs Lifetime of Development

The operational lifetime of most PTPs and any associated drainage fields will almost certainly be shorter than the lifetime of the development.

Planning permissions will need to ensure that maintenance and eventual replacement is secure.

Replacement PTPs should provide betterments where possible but should be like for like as a minimum.

EA Permits

New and replacement wastewater systems must abide by EA permitting requirements Discharges to surface water and groundwater: environmental permits - GOV.UK (www.gov.uk)

Replacing Septic Tanks and inefficient PTPs with new PTPs

Upgrades with no increase in dwellings

Upgrades to septic tanks and older PTPs without an increase in dwelling numbers are likely to provide a betterment which has the potential to be used as 'nutrient credits' provided that the new PTP can be appropriately sited.

Upgrades to failing systems cannot be considered to generate credits and the baseline will be assumed to be the system performing adequately and meeting regulatory requirements. Failing and non-legal systems will not be rewarded.

Upgrades to systems which are considered 'small scale impacts' under the 7 conditions (a – g) above cannot be considered to generate credits.

Upgrades with an increase in dwellings

In some cases new development, i.e. an increase in dwelling numbers on a site, may be supported by an upgrade of an existing septic tank or old PTP to a new PTP. An assessment of the baseline would be required including details of the existing system and the number of dwellings it serves along with their occupancy rate. An assessment of the proposed situation would also be required setting out the total (including existing) dwellings and proposed occupancy rates, the details of the new PTP including the P coefficient of the outflow.

Proposals will be considered to be Nutrient Neutral (or to provide a betterment) only where evidence is provided to support that conclusion and only where details of the proposed drainage system (including dosing if proposed) are appropriate and are legally secured.

Upgrades to units which currently discharge to ground

Where proposals include updates to systems which currently discharge to ground only new systems which also discharge to ground will be acceptable. Proposals will need to be supported by evidence that ground conditions are suitable.

Upgrades to units which currently discharge to water course

Where proposals include updates to systems which currently discharge to water courses replacements which discharge to either ground (where conditions are appropriate) or to water course will be acceptable.

Upgrades of existing private drainage systems to mains connection

Dwellings with existing septic tanks or PTPs being upgraded to discharge to a mains connection have the potential to provide betterment depending on the specification of the current system and also depending on which Waste Water Treatment Works (WWTW) the development would connect to.

An assessment of the proposed change should be made using the Natural England Nutrient Budget Calculator to allow the Council to consider the implications of the proposal.

Evidencing Nutrient Outputs from PTPs

Septic tanks and PTPs which meet British Standards (BS EN 2566) have been independently tested and have a certificate which includes the mean concentration of the effluence. Where the certificate can be provided this is sufficient evidence of the concentrations that the unit will achieve. Not all systems will have been tested for Total Phosphorus (TP) though in some cases test results from British Water or independent third party tests may be available.

Where there is no Total Phosphorus effluent concentration either on a valid test certificate or test results from a third-party test facility to British Standards, or where the type of system is not known then the load of the system should be calculated using the default mean concentration values set out in the Natural England Nutrient Budget Calculator.

For Phosphorus these are:

Septic tank = 11.6 mg/l (O'Keeffe et al 2015)
PTP = 9.7 mg/l (May and Woods 2016)

Monitoring of the outputs from an existing system might be an alternative but monitoring would need to cover a period of at least 8 months of normal operation.

Proposals to Connect Outflows from PTP to a Mains Sewer

Natural England have advised that proposals to connect outflows from a PTP to a mains sewer for treatment at a WWTW are not generally acceptable. It is not possible to achieve certainty around any potential benefits of this approach since they would vary based on a range of factors and potentially across time. It is therefore not possible to conclude with any certainty whether the development would achieve Nutrient Neutrality in perpetuity.

Further Sources of Information

The Council maintains a webpage of *Frequently Asked Questions* around Nutrient Neutrality and the Phosphate Credit System which can be found at Nutrient management – Herefordshire Council.

All documents relating to Nutrient Neutrality and the River Lugg and River Clun catchments can be found at Nutrient management – Herefordshire Council.