

Environment Agency permitting decisions

Bespoke permit

We have decided to grant the permit for Land to the South of Ashford Hill Road operated by the Persimmon Homes Limited.

The Permit number is EPR/EB3396EC

This permits the discharge of 24.3m³ per day of domestic sewage effluent from a new residential development consisting of 35 houses in Ashford Hill. The discharge will be made from a British Standard sewage treatment facility and will discharge to the Baughurst Brook. There is no public foul sewer to reasonably connect to.

Due to local interest in the site the Application has been designated a Site of High Public Interest. We consider in reaching this decision we have taken into account all relevant considerations and legal requirements and that the Permit will ensure that the appropriate level of environmental protection is provided.

Preliminary information and use of terms

We gave the application the reference number EPR/EB3396EC/V001. We refer to the application as “the **Application**” in this document in order to be consistent.

The number we propose to give the permit is EPR/EB3396EC. We refer to the proposed permit as “the **Permit**” in this document.

The Application was duly made on 26/05/2016.

The Applicant is Persimmons Homes Limited. We refer to Persimmons Homes Ltd as “the **Applicant**” in this document. Where we are talking about what would happen after the Permit is granted, we call Persimmons Homes Ltd “the **Operator**”.

The Applicant’s proposed **discharge** is located at National Grid Reference SU 55720 62287. We refer to this as “the **water discharge activity**” in this document.

Purpose of this document

This decision document:

- explains how the Application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the Permit other than those in our generic permit template.

Structure of this document

This document is structured into the following main headings:

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation, web publicising and newspaper advertising responses
- Annex 3 the draft permit web publicising responses
- Annex 4 legal duties

Key issues

Persimmons Homes Limited (the Applicant) made an application for a water discharge activity with a maximum daily volume of 24.3m³ per day of secondary treated domestic sewage effluent from a proposed new development named Land to the South of Ashford Hill Road, located in Ashford Hill, Berkshire. This water discharge activity will be derived from thirty-five residential properties.

The Application consisted of two discharge options, the first of which being to a tributary of the Baughurst Brook and the second to the Baughurst Brook itself. The Environment Agency's initial flow estimates indicated that the tributary of the Baughurst Brook exhibited extremely low flows at Q₉₅.¹ This location also meant the discharge would enter the Ashford Hill Woods and Meadows Site of Special Scientific Interest (SSSI) much further upstream, extending the time the discharge would spend in the SSSI. Natural England have indicated that a water discharge activity to the tributary of the Baughurst Brook would be unsound due to low flows and that the direct effect of the discharge in the SSSI will be minimised by discharging into the larger Baughurst Brook instead. We therefore advised the Applicant that a discharge to the Baughurst Brook rather than the tributary would be the better environmental option to pursue.

We informed the Applicant that only one discharge route would be determined and they agreed that they wished us to determine the second discharge option, direct to the Baughurst Brook.

Receipt of Application

The Application was duly made on 26th May 2016. This means we considered it was in the correct form and contained sufficient information for us to begin our determination but not that it necessarily contained all the technical information we would need to complete that determination.

The Applicant made no claim for commercial confidentiality.

Requests for Further Information

Although we were able to consider the Application duly made, we did in fact need more information in order to determine it, and made several requests for further information and clarification.

Consultation Process

As part of our consultation process the Application was advertised on our consultation page on the GOV.UK website. This advertisement was open for 4 weeks, between 27th May 2016 and 27th June 2016. It generated 18 public representations. As a result of this relatively high level of public interest, we

¹ The Q₉₅ is a statistic derived from a flow duration curve and represents the flow in the watercourse which is exceeded for 95% of the time which is equivalent to less than 18 days a year of low flow conditions.

designated the Application as being of high public interest. As such, we have followed our guidance outlined in Regulatory Guidance Series No RGN 6 – Determination involving sites of high public interest. As part of wider government reforms to guidance, RGN6 was withdrawn on the 1st February 2016 and not replaced. However, we consider it still indicates good practice with respect to sites of high public interest.

Following the designation as high public interest, we further advertised the Application in two local newspapers (Newbury Weekly News and Basingstoke Gazette). The newspaper advertisement was initially placed on the 25th August 2016. Due to an error in the advert this advertising was re-run 2 weeks after the initial advert on the 8th September 2016 with a new 4 week consultation period. A further 23 public representations were received as a result of this further consultation period, meaning a total of 41 public representations were received.

Once we had made our decision to issue the Permit we publicised that decision on GOV.UK on Thursday 3rd November 2016 running until Thursday 1st December inclusive. We received an additional 35 public representations during this time, meaning a total of 81 public representations. We received 5 public representations outside of the consultation periods. These have not been referenced in either Annex 2 or 3 of this document, however they were registered and given their own specific numbers. These representations did not raise any additional issues that had not already been considered.

Consultations were sent to;

- Natural England
- Basingstoke and Deane Borough Council

Both Natural England and Basingstoke and Deane Borough Council responded to consultation requests. These responses can be viewed in Annex 2.

Key issues of the decision making process

A water discharge activity, in general terms, is defined in Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2010 (the “EPR”) as meaning the discharge or entry to inland freshwaters, coastal waters or relevant territorial waters of any poisonous, noxious or polluting matter, waste matter or trade effluent or sewage effluent.

The Application is to discharge domestic sewage effluent to the Baughurst Brook (falling with ‘inland freshwaters’). This flows through the Ashford Hill Woods and Meadows SSSI and National Nature Reserve (NNR).

We discuss below how we assessed the impact of this water discharge activity on the Ashford Hill Woods and Meadows SSSI and on the water quality in the Baughurst Brook. We also address a number of other issues which were raised most frequently via public representations.

Water Framework Directive 2000/60/EC (WFD)

The WFD requires (amongst other things) that member states:

- “implement the necessary measures to prevent deterioration of the status of all bodies of surface water...” (Article 4.1(a)(i)); and
- “protect, enhance and restore all bodies of surface water... with the aim of achieving good surface water status...” (Article 4.1(a)(ii)).

Baughurst Brook (water body ID GB106039017200) is a body of surface water for the purposes of the WFD. Its status is assessed by reference to a number of parameters, which are given a categorisation (Bad, Poor, Moderate, Good or High). Baughurst Brook’s overall status is assigned based on the worst performing parameter.

In the last available classification year (2016) Baughurst Brook was categorised overall as “Moderate” due to low flows not supporting “Good” status and physico-chemical quality elements (specifically dissolved oxygen) being at “Moderate” status. In all other respects the measured parameters were at “Good” or “High” status. The objective is that Baughurst Brook achieves “Good” status overall by 2027.

Concerns over the impact on the water quality in the Baughurst Brook were raised by members of the public in relation to this Application. As part of the process of assessing the impact of this discharge on the Baughurst Brook, water quality modelling was carried out in line with our guidance document Operation Instruction OI 50_12 “Water Quality Planning: no deterioration and the Water Framework Directive”.

To carry out the water quality assessment a number of data streams are required, namely;

- Upstream river flow data (Q₉₅ and mean)
- Upstream river quality data

- Effluent flow volume
- Effluent quality
- River target quality

Upstream river flow data (Q₉₅ and mean)

Upstream river flow data was generated using the Low Flows Enterprise modelling package and supported by additional information including our own data and a report provided by the Applicant, which provided a suitable Q₉₅ and mean flows for a discharge of this volume. A number of consultation responses raised concerns over low flows in the Baughurst Brook. This resulted in us gathering further evidence (as indicated below) to support a scientifically robust and evidence based Q₉₅ we could have confidence in using in our water quality modelling. The Q₉₅ is the recognised low river flow statistic used in water quality modelling because it reflects the flow we would expect when the river is supported by groundwater base flow only. This ensures that when we model the impact of a discharge on the receiving watercourse this is based on the most severe potential impact.

We received from the Applicant a low flow estimation report produced by Wallingford Hydrology Solutions (WHS) which showed similar results to that shown in our own modelling. We also carried out spot flow gauging on the Baughurst Brook and requested a low flows assessment from the Applicant. The Applicant instructed Water Resources Associates (WRA) to carry this out, which they did and which the Applicant submitted to us. During the consultation phase for the draft decision a number of public representations raised concerns over the validity of using flow data provided by the Operator. The Q₉₅ and mean flow used in our water quality modelling assessment was taken from a number of sources, including our own data as detailed above. The Q₉₅ and mean flow values used were significantly below those which were provided in the Operator's report. River flow statistics take into account the variability within a watercourse. The long-term flow statistics and modelling takes into account periods of low flow. We must base our modelling on long-term periods and use the baseline flow whilst making adjustments for any relevant 'man made' influences which impact on the natural flow in the watercourse.

Based on all this evidence we consider that we have been able to produce a scientifically robust Q₉₅ for the Baughurst Brook at the discharge location and upon which we can reasonably base our decision making for this Application.

Upstream river quality data

An upstream river quality monitoring point was not available to provide data for considering this Application. Therefore the modelling used quality data from the nearest suitable alternative, which is the point where data is gathered to classify the Baughurst Brook for WFD purposes (a point on the Baughurst Brook below Ashford Hill Tip, PKER0005). This classification point is located approximately 850m downstream of the discharge location. It provides a suitable reference point as the sample data from here will take into account the current upstream permitted discharges, and there are no known additional permitted inputs or abstractions between the discharge location and the classification point. Further, We therefore consider this to be a representative

measure of the existing water quality in the watercourse at the point of discharge and will afford a further degree of protection to our 'no deterioration' approach.

The water quality measured at the WFD monitoring point downstream approximately 850 metres downstream of the proposed discharge location receives no further man-made inputs or abstractions in that reach. This means that the watercourse will be continuing to provide 'self-purification' along the way and improve its quality. As the water modelling carried out has used the statistics from the WFD monitoring point as the 'upstream water quality baseline', we are basing our calculations from a 'cleaner' starting point. Consequently, our 'no deterioration' targets that need to be achieved immediately downstream of the mixing point of the proposed discharge location will be stricter and therefore require the effluent to achieve a more demanding quality standard.

Effluent flow volume and quality

Effluent flow volume and effluent quality were provided by the Applicant. The target quality was derived following the procedures laid out in our guidance OI 50_12 (Water Quality Planning: no deterioration and the Water Framework Directive).

River target quality

As indicated above, the Baughurst Brook exhibits an overall classification of "Moderate". However, its chemical classification is "Good" with ammonia being classified as "Good" status in 2015. Biochemical oxygen demand (BOD) was classified as "High" status in 2009, the last available classification year for BOD. BOD is not part of our formal classification process, but we still use it for regulation, including setting permit limits. Modelling was carried out to assess the impact of the discharge on BOD and ammoniacal nitrogen as is standard for a sewage effluent discharges of this volume and nature.

Water quality assessment

Water quality modelling was carried out using the Mass Balance Calculation v2.5, Monte Carlo Simulation with BOD and ammonia being assessed. Following OI 50_12, modelling was carried out with a target quality showing a 10% deterioration in current quality, 0% deterioration in current water quality and to achieve the WFD class targets.

For ammonia, this resulted in a discharge quality of:

- 14.17mg/l for the discharge to cause no more than a 10% deterioration;
- 3.74mg/l for 0% deterioration; and
- 14.17mg/l to meet the class target, which is in line with the legal duty under WFD set out above to prevent deterioration in waterbody status.

For BOD, this resulted in a discharge quality of:

- 108mg/l for the discharge to cause no more than a 10% deterioration;
- 9.25mg/l for 0% deterioration; and

- 423.31mg/l to meet the class target (in line with the WFD legal duty of preventing deterioration).

These results show that, in terms of ammonia, the discharge could be permitted with limits up to 14.17mg/l before it would cause a failure of the “Good” WFD target. For BOD, which is not used in the WFD classification process but is still used for regulation purposes, it could be permitted at 423.31mg/l before it would cause a failure of the “Good” WFD target. These values are significantly higher than those set in the Permit.

We have included emissions limits in Schedule 3 of the Permit of 5mg/l for ammonia, 15mg/l for BOD and 30mg/l for suspended solids. The proposed treatment facility will provide a design standard of 1mg/l ammonia, 10mg/l BOD and 15mg/l suspended solids. This, and the emissions limits, means that we are satisfied that the Permit will protect the current water quality in the Baughurst Brook and will ensure that the relevant WFD objectives of overall “Good” status by 2027 are not compromised.

During the consultation for the draft decision a number of public representations questioned the ability of the Baughurst Brook to reach “Good” status by 2027 as required under WFD as a result of this discharge. WFD classifications currently show “Good” is not being achieved as a result of dissolved oxygen with the reasoning being given as low flows. The Permit limits ensure that this discharge is treated to a high quality and that discharge will contribute to the base flow in the Baughurst Brook.

Water quality modelling showed that this discharge will not cause a failure of this target as the modelling takes into account the target levels for “Good” classification which, as shown above, would allow this Permit to discharge at a higher level than permitted and still meet this target.

The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000)

The Baughurst Brook sits within the Ashford Hill Woods and Meadow SSSI. SSSIs are protected under the Wildlife and Countryside Act 1981. Section 28G of that Act requires that we take reasonable steps, consistent with the proper exercise of our functions to further the conservation and enhancement of the special features of SSSIs. Section 28I further requires that we consult with Natural England and take their advice into account before permitting operations likely to damage any of the special features of a SSSI. Early discussions with Natural England resulted in us asking the Operator to progress with their second discharge option to minimise the impacts on the SSSI.

The Ashford Hill Woods and Meadows SSSI comprises an extensive and varied complex of woodlands and agriculturally unimproved meadows lying in a broad shallow valley. Concerns were raised by members of the public at the consultation phase over the impact on the proposed water discharge activity on the SSSI.

We have carefully reviewed the features of the SSSI and the Application and have concluded that the proposed water discharge activity is not likely to

damage any of the special features of the SSSI. We reached this conclusion as there is little hydrological connectivity between the Baughurst Brook and the SSSI (it is very incised and the wet features of the SSSI downstream of the discharge point are not adjacent to the brook) and therefore very little risk to the SSSI. Connectivity would only occur during a flood event where the dilution would be so great as to render any impact insignificant. The Baughurst Brook appears to be more of a hydrological sink for the meadows rather than a supply source.

As a consequence of our conclusion, we are not obliged by section 28I of the Act to consult with Natural England prior to permitting. However, we have consulted with them in any event. This was via our standard process of sending them an 'Appendix 4' document. Natural England has confirmed that they agree with our determination that there is no likelihood of damage to the special features of the Ashford Hill Woods and Meadows SSSI as a result of this discharge.

As a consequence of this, and the controls on emissions (in particular of ammonia, BOD and suspended solids) in the Permit, we also consider that we have complied with our duty under section 28G of the Act in respect of this Application.

Viable Alternatives

A number of the public representations received referred to a viable alternative, namely connection to the foul sewer located at Brimpton Common. Public representations also commented that Thames Water had previously refused the development permission to connect to their surface water sewer as a means of sewage disposal.

Connection to public foul sewer was considered as part of the Application determination process. The Environment Agency Operational Instruction on non-proliferation (OI 538_06) sets out the relevant criteria for considering sewer connection. This Operational Instruction provides guidance on reasonable distances and costs for connection to public foul sewers. In this instance, and in accordance with our guidance, our assessment is that it is unreasonable for this development to be required to connect to the foul sewer at Brimpton Common. This is on both distance and cost grounds.

Connection to the nearest public foul sewer (Ashford Hill STW) would mean the discharge would enter the Ashford Hill Woods and Meadows SSSI much further upstream, extending the time the discharge would spend in the SSSI. Natural England stated that an additional discharge at this location would be unsound. The Ashford Hill treatment works operated by Thames Water was designed specifically for the housing estate it serves. There is no available capacity to accept this additional discharge. This would discharge to the tributary of the Baughurst Brook which would be unsound as previously stated in respect to the location of the SSSI.

The Operator originally intended to use the existing Thames Water surface water sewer as a means to convey the treated sewage effluent to the Baughurst Brook but permission was not provided from the water company. This has no bearing on the determination of this Application. Thames Water has no responsibilities in permitting discharges of this nature.

Odour

A number of public representations have expressed concerns about a potential odour impact from the discharge. Some of these concerns are based on reported odour issues arising from nearby permitted discharges. In this instance the Permit requires the Operator to actively manage the discharge and the Environment Agency is confident that full compliance with the Permit will ensure that there is a negligible odour impact and the future risk of nuisance is minimal. Odour issues may arise from stagnation of any surface water, whether treated sewage effluent is present or not.

Management and Future Accountability

The issues of management of the treatment facility and any future accountability for this was an issue raised by a large number of public representations.

Regarding future management of the facility, the Operator must have an environmental management system in place. The benefit of management systems is that they actively require the Operator to identify and minimise the risks of pollution arising from their activities. This includes consideration of maintenance, accidents, incidents, non-conformances and items brought to the attention of the Operator because of complaints. If a problem does arise, such as a failure of the treatment facility, the Operator is required to notify the Environment Agency within 24 hours. Any issues arising from the failure of the treatment facility will be the responsibility of the Operator.

The discharge will be sampled on a frequency of once a month for the first 12 months of operation. This will then be reviewed based on the performance in terms of Permit compliance.

The operation, maintenance and management of the treatment facility is the responsibility of the Operator.

It will be the responsibility of the Operator to meet any financial penalties and/or rectify any problems with their treatment facility. This is in line with the "Polluter Pays" principle.

A number of public representations raised the possibility of the Permit being transferred in the future to a residents' management company. This is outside the remit of this determination. The Permit may not be transferred otherwise than in accordance with EPR and any future transferee of the Permit will still have to have an environment management system and adhere to the permitted limits.

Annex 1: decision checklist

Aspect	Justification / Detail	Criteria met
		Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with our guidance on High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation, web publicising and newspaper advertising	The web publicising, consultation and newspaper advertising responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the Applicant (now the Operator) is the person who will have control over the operation of the facility after the grant of the Permit. The decision was taken in accordance with our guidance on the meaning of operator.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the Application.	✓
The site		
Extent of the site of the facility	The Operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including the discharge point. A plan is included in the Permit and the Operator is required to carry out the permitted activities and apply the operating techniques described at the locations shown.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The Application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat (i.e. the Ashford Hill Woods and Meadows SSSI and NNR). A full assessment of the Application and its potential to affect the SSSI has been carried out as part of the permitting process. We consider that the proposed discharge is not likely to damage the special features of the Ashford Hill Woods and Meadows SSSI and NNR.	✓

Aspect	Justification / Detail	Criteria met
		Yes
	Formal consultation has been carried out with Natural England. The consultation responses (Annex 2) were taken into account in the permitting decision.	
Environmental Risk Assessment and operating techniques		
Environmental risk	<p>We have carried out a risk assessment on behalf of the Operator.</p> <p>The Operator considers this risk assessment is satisfactory.</p> <p>The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant with the exception of ammoniacal nitrogen, BOD and suspended solids, which required limits to be placed on the Permit. The Permit will contain limits on these emissions as indicated in the body of this decision document.</p>	✓
Operating techniques	<p>We have reviewed the techniques proposed to be used by the Operator and compared these with the relevant guidance notes.</p> <p>The proposed techniques / emission levels for priorities for control are in line with the benchmark levels contained in relevant technical guidance notes and we consider them to represent appropriate techniques for the facility.</p>	✓
The permit conditions		
Emission limits	<p>We have decided that emission limits should be set for the parameters listed in the Permit.</p> <p>It is considered that the numeric limits described below will prevent significant deterioration (including deterioration in status) of receiving waters and ensure that the attainment of the objectives for those waters are not jeopardised by the proposed discharge. This is in line with OI 50_12, "Water Quality Planning: no deterioration and the Water Framework Directive". We have imposed numeric limits because either a relevant environmental quality or operational standard requires this. The emission limits are:</p>	✓

Aspect	Justification / Detail	Criteria met
		Yes
	<ul style="list-style-type: none"> • Ammoniacal nitrogen (expressed as N) – 5mg/l • BOD – 15mg/l • Suspended Solids – 30mg/l 	
Considerations of foul sewer	We agree with the Operator's justification for not connecting to foul sewer.	✓
Operator Competence		
Environment Management System	There is no known reason to consider that the Operator will not have the management systems to enable it to comply with the Permit conditions. The decision was taken in accordance with our guidance on operator competence.	✓

Annex 2: Consultation, web publicising and newspaper advertising responses

We set out below a summary of responses to consultation, web publication and newspaper advertising and the way in which we have taken these into account in the determination process.

Consultee Responses

Response received from
Natural England
Brief summary of issues raised
Natural England are in agreement with our conclusion that the discharge was not likely to damage the special features of the Ashford Hill Woods and Meadows SSSI.
Summary of actions taken or show how this has been covered
An Appendix 4 document was sent to Natural England outlining our view that the discharge was not likely to damage the special features of the SSSI. Natural England returned the Appendix 4 document on 03/10/2016 confirming their agreement with our conclusions.

Response received from
Basingstoke and Deane Borough Council
Brief summary of issues raised
Environmental Health at Basingstoke and Deane Borough Council are not aware of any current issues with any private drainage systems or discharges in the Ashford Hill area. As long as the proposed sewage treatment system is fit for purpose and the effluent is contained within a pipe until the point of discharge they don't have any concerns with the proposals.
Summary of actions taken or show how this has been covered
The discharge will be made via a pipe which will ensure the effluent is fully enclosed until the point of discharge. The treatment system provided is of a high standard and suitable for this type of development.

Public Representations

Topic 1: Impact on a designated site and local wildlife

A number of respondents raised the issue of the discharge being made to the Ashford Hill Woods and Meadows SSSI and that this discharge would have a detrimental effect on the SSSI and its features.

Respondents included; PR1, PR5, PR6, PR7, PR8, PR9, PR10, PR11, PR12, PR13, PR14, PR15, PR16, PR18, PR21, PR22, PR23, PR25, PR27, PR30, PR31, PR34, PR35, PR36, PR37, PR39, PR41

Summary of actions taken or show how this has been covered

We have discussed this issue in the Key Issues section of this document where we explain our conclusion that the discharge is not likely to damage the special features of the SSSI. We have consulted with Natural England and they have confirmed they agree with our conclusion.

Topic 2: Low flows in the Baughurst Brook and the impact on water quality as a result of the discharge

A number of respondents raised the issue of the Baughurst Brook exhibiting low flows, especially during the summer months and they believe the flow to be generated mainly from domestic sewage effluent discharges.

Respondents also raised concerns over how the Applicant's proposed discharge would affect the quality of water in the Baughurst Brook when combined with the other discharges already being made that either discharge directly into the Baughurst Brook or join the Baughurst Brook after discharging into the nearby tributary of the Baughurst Brook.

A number of respondents highlighted the presence of dead fish in the Baughurst Brook.

Respondents also raised the issue of low dissolved oxygen levels in the Baughurst Brook.

A number of respondents highlighted a study by the University of Reading that described the River Enborne (approximately 1km downstream from the discharge location) as not being in an ecologically resilient state.

Respondents included; PR1, PR2, PR5, PR6, PR7, PR8, PR9, PR10, PR11, PR12, PR13, PR14, PR16, PR18, PR19, PR21, PR23, PR24, PR25, PR26, PR27, PR28, PR29, PR30, PR31, PR32, PR33, PR34, PR35, PR36, PR37, PR38, PR39, PR40, PR41

Summary of actions taken or show how this has been covered

We have discussed the issue of water quality in the Key Issues section of this document where we explain the modelling undertaken, the measures taken to ensure that modelling is scientifically robust and the emission limits placed

on the Permit as a result. We consider that those emission limits will protect water quality in the Baughurst Brook.

We have no evidence to directly link the presence of dead fish and low dissolved oxygen levels with local domestic sewage discharges. There are several reasons that could contribute to these issues, such as the naturally occurring low flow characteristics of the Baughurst Brook. Our determination shows that this discharge will not materially affect the overall background water quality in the Baughurst Brook. The additional flow from this discharge may help to support the base flows in the watercourse during times of low flow.

In regard to the River Enborne, the overall influence of this discharge will be insignificant when compared to the existing factors already contributing at the point where the Baughurst Brook joins the River Enborne.

Topic 3: Type of permit applied for

A number of respondents raised concerns that the Applicant had applied to discharge at 50% higher than a Standard Rules permit would allow.

Respondents included; PR1, PR12, PR15

Summary of actions taken or show how this has been covered

We have a number of Standard Rule sets for a water discharge activity. These are graded on the potential risk to the environment. The Applicant has applied for a bespoke permit using application form B6 which is the correct application for a discharge of this volume. An appropriate determination has been carried out as a result. A bespoke permit determination allows us to include conditions that are specifically tailored to the needs of the specific watercourse.

Topic 4: Management of the Sewage Treatment Plant system

A number of respondents raised concerns over how a thirty-five house development would be able to ensure that the quality of effluent discharging from the sewage treatment plant could be controlled.

Respondents also raised concerns over how the products that enter the treatment system would be controlled.

Respondents also raised the issue that the area is recognised for having hard water and a nearby development has a ban on the use of water softeners.

Further concerns raised by the respondents included that the system will require the householders to be trained and external controls put in place. A respondent also raised a point that it was unacceptable for householders to face prosecution over a failure of the system.

Respondents included; PR1, PR6, PR9, PR10, PR16, PR18, PR25, PR26, PR27, PR32

Summary of actions taken or show how this has been covered

The Operator will be responsible for the water discharge activity and for ensuring that the discharge meets its Permit obligations. The Operator will be held responsible for any failure to comply with these obligations.

The Operator's sewage treatment facility is designed to be robust and deal with products that could adversely effect a standard treatment plant. It will be the responsibility of the Operator to ensure the treatment plant is working effectively at all times.

The Operator must have a management system in place to ensure the system is properly maintained. The Environment Agency is satisfied with the management system proposed.

Topic 5: Objections at the planning stage

A number of respondents commented that there had been 78 objections at the planning stage and that the local MP had raised the issue in the House of Commons.

Respondents also commented on an application to alter the planning permission.

Respondents included; PR1, PR17

Summary of actions taken or show how this has been covered

We must determine the Application on the basis of our own duties, only taking into account factors that are relevant to that process. Hence, the determination process for a water discharge activity permit does not take into account objections to planning applications, which are an issue for the local authority. The granting of a water discharge activity permit does obviate the need for the Applicant to obtain any other permits or permissions associated with this activity.

Topic 6: Error in the newspaper consultation

A respondent commented that the newspaper advert placed in the Newbury Weekly News (this was also the advert placed in the Basingstoke Gazette) was incorrect as it stated 24.3cm³ a day.

Respondents included; PR20

Summary of actions taken or show how this has been covered

A new public notice was placed in both the Newbury Weekly News and Basingstoke Gazette correcting this error. The public notice acknowledged the error and the correct volume of 24.3 cubic metres a day was included.

Topic 7: Odours arising from the discharge

A number of respondents raised concerns over foul odours occurring from the discharge.

Respondents included; PR1, PR2, PR6, PR8, PR10, PR20, PR25, PR29, PR30, PR31, PR33, PR34, PR35, PR36, PR39, PR41

Summary of actions taken or show how this has been covered

We are satisfied that the Operator has in place a suitable management plan for the sewage treatment facility. Adhering to this management plan should ensure odours associated with sewage are contained within the treatment facility. A good quality discharge from a properly functioning treatment facility should not produce adverse odours.

It will be the responsibility of the Operator to ensure that the Permit conditions are adhered to.

Topic 8: Non-compliance of nearby permitted sites

A number of respondents raised the issue of other domestic sewage discharges being problematic and causing pollution of the Baughurst Brook along with odour issues.

Respondents included; PR1, PR7, PR31, PR37, PR39

Summary of actions taken or show how this has been covered

We determine each permit application on its own merits, assessing its potential impact on the local environment.

Our determination takes into account the contribution of the discharge applied for, including in-combination effects with existing discharges, when assessing the impact on water quality. This has been discussed in the Key Issues section of this document. However, the performance of other permitted discharges falling below expectations can be addressed through enforcement action and does not influence the determination of this particular application.

It will be the responsibility of the Operator to ensure that the Permit conditions are adhered to.

Topic 9: Threat to human and animal health

Some respondents expressed concern over the health of animals, specifically dogs, drinking from the Baughurst Brook.

A respondent also asked the Environment Agency to guarantee the health of individuals entering the Baughurst Brook.

Respondents included; PR1, PR7, PR29, PR35, PR36, PR39, PR41

Summary of actions taken or show how this has been covered

We have discussed the issues of water quality in the Baughurst Brook in the Key Issues section of this document. As set out in that section, we have concluded that this discharge will not have an adverse effect on the current water quality of the Baughurst Brook so will not adversely affect users of that watercourse.

Topic 10: Environmental Management System and Risk Assessment

A respondent commented that the Environmental Management System and Risk Assessment were generic and did not consider the local environmental factors.

Respondents included; PR1

Summary of actions taken or show how this has been covered

We are satisfied that the Environmental Management System is adequate for this type of activity.

As part of the determination we carried out a risk assessment on behalf of the Applicant which dealt with the relevant site-specific issues.

Topic 11: Increase in traffic

A respondent raised concerns over the increase in traffic as a result of the development and an associated risk of air and noise pollution.

Respondents included; PR38

Summary of actions taken or show how this has been covered

Offsite environmental implications of the Application, such as increases of traffic (and any associated noise and air pollution) are beyond the remit of this permit determination and cannot be taken into account. These matters may be relevant to other determinations concerning the proposed development and should be taken up with the appropriate bodies.

Topic 12: Environment Agency Additional Binding Rules

A number of respondents referenced the Environment Agency's Additional Binding Rules which states "new discharges are not allowed to a ditch or a surface water that does not contain flowing water throughout the year, that is unless there is a drought or an unusually long period of dry weather".

Respondents included; PR1, PR5, PR9

Summary of actions taken or show how this has been covered

This is correct and refers to the issuing of a permit under General Binding Rules. The Operator applied for a Bespoke permit, which was the correct process for this Application.

Topic 13: P Factor Approach

A respondent stated that thirty-five houses could constitute a higher flow than is considered under the P factor approach of 0.8.

Respondents included; PR1

Summary of actions taken or show how this has been covered

The P factor is derived from Flows and Loads 4. Applying the 0.8 reduction factor for a population equivalent of greater than >50 where volume has been calculated using Flows and Loads 4 is therefore reasonable and sensible when sizing the relevant plant and permitting the discharge.

Topic 14: Threat of flooding

Respondents raised concern that if localised flooding continues to occur or potentially increases then the flooding could cause raw sewage discharges.

Respondents raised concerns that the Baughurst Brook at Old Lane floods regularly and that any further water would be too much for the system to take.

Respondents raised concerns over flooding due to increased volume and potential pollution and contamination from the effluent discharge at times of flooding.

Respondents included; PR1, PR3, PR4, PR5, PR6, PR10, PR11, PR12, PR23, PR25, PR27, PR28, PR32, PR35

Summary of actions taken or show how this has been covered

The siting and operation of the sewage treatment facility is the responsibility of the Operator and they should ensure that the quality of the effluent meets the Permit conditions.

In the event of a flood the discharge should already meet its permitted requirements. The nature of a flood event would allow further dilution of the effluent and the volume discharged will be insignificant during times of high flows on the receiving watercourse.

The maximum volume of effluent being discharged is 24.3m³ per day which compares to a Q₉₅ low flow of 898.6m³ per day. The "Q₉₅" statistic relates to the percentage of time a particular flow will be exceeded, i.e. the flow of 898.6m³ per day is on average only below that flow 5% of the time - 18 days of the year. This shows that in the worst case scenario the ratio between effluent (24.3m³ per day) and river flow (898.6m³ per day) is 1 to 37. If we compare the maximum volume of effluent against the estimated mean flow in the Brook (15603.8m³ per day) the subsequent ratio between effluent and river flow is 1 to 640. This demonstrates that this additional discharge volume is insignificant in terms of overall flow in the Brook. During flood conditions the river flow to effluent ratio will be even higher.

Annex 3: Draft permit web publicising responses

Summary of responses to the draft permit web publication and the way in which we have taken these into account in the determination process.

Topic 15: Non-proliferation issues and associated sewer connections

Respondents raised the issue of Thames Water refusing the Operator permission to connect to the existing surface water sewer.

Respondents raised the issue of there being a viable alternative sewer connection at Brimpton Common.

Respondents included; PR46, PR48, PR50, PR51, PR52, PR53, PR59, PR60, PR62, PR64, PR67, PR69, PR70, PR71, PR74, PR77

Summary of actions taken or show how this has been covered

This topic has been addressed in the Key Issues section of this document under the heading 'Viable Alternatives'.

Topic 16: Existing problems at nearby permitted sites

Respondents raised issues with the lack of accountability and problems at nearby permitted sites, including Hollycroft and Holt Cottages which have been specifically raised.

Respondents noted that this should act as a precautionary precedent.

Respondents commented that the issues facing nearby permitted sites should be taken into account and lead to this Application being refused.

Respondents included; PR48, PR58, PR68

Summary of actions taken or show how this has been covered

This topic has been addressed in Topic 8 of this document.

Topic 17: Setting a precedent

A respondent raised concerns that the granting of this Permit would create a precedent for future developments to discharge to the same location using the same infrastructure.

Respondents included; PR48

Summary of actions taken or show how this has been covered

We have to determine each case on its own merits. The issuing of this Permit does not set a precedent for the issuing of any other permits of this nature. Any in-combination effects from existing discharges would be considered if any future application were to be received. Any new developments intending to utilise their own private sewage treatment plants would be subject to our

non-proliferation guidance (OI 538_06) as outlined in the Key Issues section of this document.

Topic 18: Low flows and water quality within Baughurst Brook

A number of respondents raised concerns about current pollution levels within the Baughurst Brook.

Respondents also raised concerns that adding additional pollutants to the Baughurst Brook will increase pollution issues in part due to the watercourse exhibiting low flows and at times running dry.

Respondents also highlighted the presence of dead fish within the Baughurst Brook.

Respondents questioned how this discharge will not have effects on the WFD target of “Good” by 2027.

A respondent questioned why only oxygen levels, ammonia and suspended solids were considered in the determination and not other chemicals which can have a negative impact on fish and fauna.

A respondent also raised concerns over the suggestion that flooding will dissipate pollution.

A respondent stated that no account was taken of a nearby permitted site currently being offline, which will at some point be reinstated.

Respondent stated that the report provided by the Operator does not specify when field analysis was carried out. A respondent also states that Spring and Summer rainfall was higher than usual which would have made the permit limit calculations incorrect.

Respondents questioned the use of the low flow data provided by the Operator.

A respondent commented on private water sampling they had carried out within the Baughurst Brook.

A respondent commented on the suitability of the modelling software used in the assessment.

A respondent stated that the sample results used in the water quality modelling were irrelevant and a snapshot of current quality.

A respondent stated that there was no effluent volume and quality supporting figures available.

A respondent stated that the latest WFD classification year was not provided.

Respondents included; PR45, PR46, PR47, PR48, PR49, PR50, PR51, PR52, PR53, PR54, PR55, PR56, PR57, PR58, PR59, PR60, PR61, PR62, PR63, PR64, PR65, PR66, PR67, PR68, PR69, PR70, PR71, PR72, PR73, PR74, PR75, PR76, PR77, PR78, PR79

Summary of actions taken or show how this has been covered

The topic of water quality and the impact of the discharge has been addressed in the Key Issues section and Topic 2 of this document.

The Permit limits have been calculated using Q₉₅ low flow and mean flow statistics. References to flooding in the decision document were related to the impact on the SSSI where the pollutant concentrations from this discharge will be further diluted to such an extent as to render them insignificant.

The flow report provided by the Operator clearly states the dates when the field analysis was carried out. Rainfall statistics available to the Environment Agency show July to September 2016 was the 14th driest since records began in 1910.

The Environment Agency has Operational Instructions available which prescribe the requirements regarding sampling procedures which we must adhere to. Third party sample results that are not verified by an accredited laboratory cannot be used as part of a permit determination.

The modelling software is used nationally by the Environment Agency in order to provide a consistent methodology to our water quality modelling approach.

Effluent volume and quality statistics were provided with the Application and are available to view on the public register.

Please see Topic 25 in regards to discharges to water course which exhibit low flow characteristics.

Topic 19: Impact on a designated site and local wildlife

A number of respondents raised concerns that the discharge will be made to a SSSI and will have a detrimental effect on it and its features. Respondents also raised concerns over the impact on local wildlife.

Respondents included; PR46, PR47, PR48, PR49, PR51, PR52, PR53, PR54, PR55, PR57, PR58, PR59, PR60, PR62, PR63, PR64, PR65, PR66, PR67, PR71, PR72, PR73, PR74, PR77, PR79, PR81

Summary of actions taken or show how this has been covered

This topic has been addressed within the Key Issues section and Topic 1 of this document.

Topic 20: Surface water run-off and associated flooding

Respondents raised issues with additional surface water run-off and associated flooding as a result of the new development, including contamination from run-off.

A respondents raised the issues of flooding causing the pipeline to back up with effluent being held beneath the road.

Respondents raised concerns over surface water flooding due to the construction of new pipework and asked where this surface water run-off will go.

A respondent stated that surface water run-off and contamination from the new development should have been taken into account within the determination process.

A respondent raised concerns over floodwater containing e-coli, typhoid and other water borne diseases.

Respondents included; PR48, PR63, PR66, PR81

Summary of actions taken or show how this has been covered

Any associated surface water flooding, surface water runoff and contamination issues are outside the remit of this determination and should be taken up with the appropriate statutory bodies.

Any issues in relation to the construction, design and layout of pipework in relation to this Application is outside the remit of this determination and should be taken up with the appropriate statutory bodies.

An environmental permit for a water discharge activity under EPR is aimed at controlling the polluting elements of discharges. The EPR, which apply Part III of the Water Resources Act 1991, do not give us the power to control the volume of discharges in relation to their potential to cause flooding, and do not allow us to refuse consents on these grounds. It is, in any case, the Environment Agency's considered view that this discharge will not exacerbate any flooding problems because the contribution it can make during any flooding event in comparison to surface water runoff from the contributing catchment will be negligible.

There is a potential that pollutants arising from the effluent are present in floodwater. The pollution contribution from this discharge is likely to be insignificant as it will only form a negligible contribution to any floodwaters and therefore be substantially diluted. As a matter of routine, safety precautions should be taken when going near floodwaters, including wearing appropriate protective clothing. This is necessary as there are existing background risks of exposure to any water, in any watercourse, due to the potential for runoff to pick up contaminates.

Issues with flooding have been addressed within in Topic 14 of this document.

Topic 21: Subsoil drainage

A respondent raised the issue of subsoil drainage problems and the presence of a permanent spring within the proposed development site.

A respondent raised concerns that the developer would not remain in place to rectify any associated problems.

Respondents included; PR48

Summary of actions taken or show how this has been covered

This topic is outside the remit of this determination.

Topic 22: Future accountability

Respondents raised the issues of future accountability and responsibility for the running and maintenance of the treatment facility and state that the current Operator will place future responsibility with the residents under a management company.

Respondents have raised issues over financial liability for any problems arising as a result of the discharge and failures of the treatment facility along with responsibility for future replacement and repairs.

Respondents raised issues over how the residents will be educated about the use of the treatment facility and what safeguards are in place for any failures of the system.

Respondents have raised issues with how the conditions within the Permit will be enforced.

A respondent raised concerns over who would rectify any damage caused to their property by the failure of the proposed treatment facility.

A respondent asked if it was correct for the operator to have control over the treatment facility.

Respondents included; PR48, PR50, PR52, PR53, PR59, PR62, PR63, PR67, PR69, PR70, PR72, PR73, PR74, PR76, PR77, PR78

Summary of actions taken or show how this has been covered

This topic has been addressed within the Key Issues section and Topic 4 of this document.

Topic 23: Management of the treatment facility

Respondents raised issues with the management of the treatment facility and how certain products would be restricted from entering the treatment facility.

Respondents commented that as the input cannot be controlled then the Permit cannot ensure protection is maintained.

Respondents included; PR48, PR50, PR51, PR52, PR53, PR54, PR57, PR59, PR60, PR61, PR63, PR67, PR69, PR71, PR72, PR73, PR76, PR77

Summary of actions taken or show how this has been covered

This topic has been addressed in the Key Issues section and Topic 4 of this document.

Topic 24: Disruption to local traffic

Respondents raised issues with the disruption to local traffic as a result of laying a new pipeline from the development to the discharge point.

Respondents included; PR52, PR53, PR64, PR67, PR73, PR74

Summary of actions taken or show how this has been covered

This topic has been addressed in Topic 11 of this document. This issue should be taken up with the appropriate statutory body.

Topic 25: Criteria Used and Permit type

Respondents stated that discharges to water courses with low flow are not normally allowed and questioned why different criteria has been used in this determination.

A respondent also questioned why a bespoke Permit has been issued in this case.

A respondent asked who checks and decides on permit obligations.

Respondents included: PR52, PR53, PR58, PR62, PR67, PR69, PR70, PR75, PR78

Summary of actions taken or show how this has been covered

The Environment Agency has a number of standard permits for a water discharge activity. The use of a bespoke permit in this instance is standard procedure. It is referred to as a bespoke permit as it allows us to add specific water quality conditions to the permit which otherwise wouldn't be possible under General Binding Rules or a Standard Rules permit.

It is incorrect to state that a discharge of domestic sewage effluent cannot be made to a watercourse which exhibits low flow characteristics or else runs dry. A discharge cannot be operated under General Binding Rules or a Standard Rules permit if the watercourse does not normally contain flow throughout the year. However, for a bespoke permit this can take place

subject to appropriate conditions being placed on the permit in order to achieve the water quality principles and targets. These have been outlined in the Key Issues section of this document.

This determination followed the standard criteria used for any other application of this type. The criteria to assess this Application included connection to foul sewer, impacts on local designated sites and impacts on the receiving water course.

Permit obligations are in line with our standard conditions for Bespoke permits. The emissions limits in the Permit have been set in line with our assessment.

Topic 26: Odours arising from the discharge

A number of respondents raised concerns over foul odours as a result of the discharge and currently from the Baughurst Brook.

Respondents included; PR45, PR51, PR53, PR56, PR61, PR67, PR69, PR74, PR76, PR77

Summary of actions taken or show how this has been covered

This topic has been addressed in the Key Issues section and Topic 7 of this document.

Topic 27: Monitoring of discharge volume

Respondents raised issues with the proposed volume of the discharge and questioned if it would be metered.

A respondent asked what provisions would be in place to stop the volume being more.

Respondents included; PR67, PR74

Summary of actions taken or show how this has been covered

The maximum daily flow has been calculated using 'Flows and Loads 4' published on the British Water website which is our standard approach for these types of discharges.

The estimated volume does not meet with our generally accepted 'default threshold' of 50m³/d for flow metering and our water quality modelling. Together with the design standard of the proposed sewage treatment facility, the fact that the discharge volume is so low means that we do not consider it justifiable to require flow metering be installed.

Any plans to increase the existing daily volume would be subject to our standard application determination procedures.

Topic 28: The development
A respondent raised concerns over the disposal of water, sewage and waste during the construction of the development. Respondents included; PR72
Summary of actions taken or show how this has been covered
This topic is outside the remit of this determination.

Annex 4: Legal Duties

In this section we explain how we have addressed relevant legal requirements, to the extent that we have not addressed them elsewhere in this document.

The EPR and related Directives

Regulation 59 of the EPR

Regulation 59 of the EPR requires that the Environment Agency prepares and publishes a statement of its policies for complying with its public participation duties. We have published our public participation statement.

This Application is being consulted upon in line with this statement and satisfies the requirements of the Public Participation Directive (2003/35/EC).

Our decision in this case has been reached following a programme of public consultation. Summaries of the responses received to our consultations and our consideration of them is set out in Annexes 2 and 3.

National primary legislation

Environment Act 1995

(i) Section 4 (Pursuit of Sustainable Development)

We are required to contribute towards achieving sustainable development, as considered appropriate by Ministers and set out in guidance issued to us. The Secretary of State for Environment, Food and Rural Affairs has issued *The Environment Agency's Objectives and Contribution to Sustainable Development: Statutory Guidance (December 2002)*. This document:

“provides guidance to the Agency on such matters as the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and the allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency”.

It requires the Environment Agency:

“To protect, enhance and restore the environmental quality of inland and coastal surface water and groundwater, and in particular:

- to address both point source and diffuse pollution;*
- to implement the EC Water Framework Directive; and*
- to ensure that all relevant quality standards are met.”*

The Environment Agency considers that it has pursued the objectives set out in the Government's guidance, where relevant, and that there are no additional conditions that should be included in this Permit to take account of the Section 4 duty.

(ii) Section 5 (Pollution of the Environment)

The Environment Agency has exercised its powers, when determining this Application, for the purpose of preventing or minimising, remedying or mitigation the effects of pollution of the environment.

As explained in the Key Issues section, in assessing the Application and setting permit limits and conditions we have ensured that the proposed discharge should not cause a deterioration in status of the receiving waterbody or jeopardise it achieving its objective of Good status by 2027. The Permit therefore fulfils our duty of minimising and mitigating the potentially polluting effects the discharge could have on the receiving environment.

(iii) Section 6(1) (Conservation Duties)

We have considered the Environment Agency's duty to promote the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and the land associated with such waters, and the conservation of flora and fauna which are dependent on an aquatic environment. The conditions of the Permit as a whole will ensure that the proposed discharge does not adversely impact these factors and no other appropriate requirements have been identified.

(iv) Section 7 (Pursuit of Conservation Objectives)

We have considered whether we should impose any additional or different requirements to meet our duty to have regard to the various conservation objectives set out in section 7 of the Environment Act 1995 (namely to have regard to any effect which the proposals would have on sites of archaeological, architectural, or historic interest; the economic and social well-being of local communities in rural areas; and to take into account any effect which the proposals would have on the beauty or amenity of any rural area), but concluded that the existing measures contained in the Permit are sufficient.

(v) Section 39 (Costs and Benefits)

The Environment Agency has a duty under section 39 of the Environment Act 1995 to take into account the likely costs and benefits of granting the Application ('costs' being defined as including costs to the environment as well as any person). We have taken this into consideration during the determination of the Application and consider that an appropriate balance is struck between the benefits that granting the Permit will bring and associated costs (including to the Operator and the environment).

Human Rights Act 1998

We have considered potential interference with rights addressed by the European Convention on Human Rights in reaching our decision and consider that our decision is compatible with our duties under the Human Rights Act

1998. In particular, we have considered the right to life (Article 2), the right to a fair trial (Article 6), the right to respect for private and family life (Article 8) and the right to protection of property (Article 1, First Protocol). We do not believe that Convention rights are engaged in relation to this determination.

Countryside and Rights of Way Act 2000

Section 85 of this Act imposes a duty on the Environment Agency to have regard to the purpose of conserving and enhancing the natural beauty of areas of outstanding natural beauty (AONB). There is no AONB which could be affected by the discharges of treated domestic sewage effluent from the Ashford Hill site.

Natural Environment and Rural Communities Act 2006

Section 40 of this Act requires us to have regard, so far as is consistent with the proper exercise of our functions, to the purpose of conserving biodiversity. We have done so and, in particular given the matters addressed in the main body of this document concerning water quality and SSSIs, consider that no different or additional conditions in the Permit are required.

National secondary legislation

The Water Environment (Water Framework Directive) Regulations 2003

Regulations 3 and 17 of these Regulations require that the Environment Agency exercises its water discharge permitting functions so as to secure compliance with the WFD and the EQS Directive (2008/105/EC) and has regard to the approved River Basin Management Plan for this river basin district.

For the reasons given in the Key Issues section of this document, we consider that the conditions and limits imposed in the Permit will ensure that the requirements of the WFD and EQS Directive are met. In doing so we have also had regard to the South East River Basin District RBMP (which covers the Baughurst Brook).