Inspector's Report ABP-305756.

Development	Upgrade Kilfenora wastewater treatment plant and construction of percolation area.
Location	Kilcarragh and Ballybreen, Kilfenora, Co. Clare.
Planning Authority	Clare County Council.
Planning Authority Reg. Ref.	P19/31.
Applicant	Irish Water.
Type of Application	Permission.
Planning Authority Decision	Grant permission.
Type of Appeal	Third Party
Appellant	Michael Duffy.
Observer	None.
Date of Site Inspection	31st December 2019.
Inspector	Mairead Kenny.

1.0 Introduction

The development involves a new wastewater treatment plant and a percolation area.

The existing wastewater treatment system at Kilfenora consists of:

- A system of foul and combined sewers, discharging to a secondary treatment plant at Kilcarragh.
- Site infrastructure at Kilcarragh includes a storm water tank.
- At the WwTP site northern boundary there is a stormwater overflow discharge to ground via swallow hole A.
- Treated effluent discharges directly to swallow hole B at Ballybreen.
- The plant is capable of serving a population equivalent (PE) of 300-330.

The proposed development is below the PE threshold of 500PE for wastewater discharge licences. There is a requirement to secure a Certificate of Authorisation (CoA) from the EPA. The Agency in deciding that case shall attach such conditions it considers necessary to give effect to the requirements of environmental legislation in the field of water policy.

Under the existing EPA Certificate of Authorisation A0079-01 no effluent discharge standard limits are set but there was a requirement that the direct discharge to ground cease by 31st of December 2016. That discharge is contrary to Regulation 8 and 14 of the Groundwater Regulations (S.I. no. 9 of 2010). There is an application before the EPA for a review of the CoA under A0079-02.

2.0 Site Location and Description

The site is in Kilfenora in the southern side of the Burren national park. This is a remote location with some small villages and a rural hinterland with particular agricultural and residential patterns shaped by the karst environment. Kilfenora in common with much of the area is in part a tourist village. Its attractions include its location in the Burren and the Kilfenora cathedral and high crosses.

Two plots of land make up the site of the proposed development. Both of these are close to swallow holes. The plots, which are separated by 600m are:

- Kilcarragh (site 1) is the location of the WwTP and swallow hole A.
- Ballybreen (site 2) site for the percolation area and location of swallow hole B.

The Kilcarragh lands are located within the environs of the built up village of Kilfenora. The site is served by way of a lane off a local road. The primary school is 100m to the south and there are one-off houses 100m to the east.

The existing wastewater treatment plant comprises low lying structures and is not visible from the surrounding area. Swallow hole A, which serves as an emergency overflow to the existing wastewater treatment plant is located to the north of the site.

The Ballybreen site adjoins the R481 to Ennistymon, which is 8km to the southwest. This plot is outside of the built up area of the village. There is a dwellinghouse 100m to the east of the site. The site slopes away from the public road. The stream which enters swallow hole B at this location comes from the south.

The main plots are connected by way of a rising main and gravity main.

Photographs of the site and surrounding area, which were taken by me at the time of my inspection are attached.

3.0 Proposed Development

The development relates to the Kilfenora wastewater treatment plant upgrade. The subject scheme proposes to address the identified deficiencies in the existing facility and the discharge arrangements through provision of a new wastewater treatment plant at the site of the existing facility and a percolation area at Ballybreen.

The development may be described as follows:

Kilcarragh site:

- New **330 PE WwTP** and demolition of existing treatment works.
- To consist of inlet works, stormwater storage tank, treatment works including **tertiary filtration and UV disinfection**, sludge treatment, a control kiosk.
- To include flood protection bund, site lighting, 2.4m high security fence and signage and all associated site works including site excavation.

- To achieve a treated effluent standard of not in excess of 10mg/l biological oxygen demand (BOD), 40 mg/l chemical oxygen demand (COD) and 35mg/l total suspended solids (TSS).

Ballybreen site:

- Construction of a **percolation area (sand filter)** including treated effluent pumping station, control kiosk, internal roads.
- To include site lighting, 1.2m high fence and signage and associated works.

The application was accompanied by a **Natura Impact Statement**.

In terms of the detail of the application the following is stated:

- Proposal achieves a higher level of treatment including provision for **nutrient removal and disinfection** and the requirement of the CoA to **remove direct primary discharge** to groundwater.
- A **new storm storage tank of 350m^3 capacity** is proposed at site 1. Together with the **retention of the existing 200 m^3 storm tank** this will significantly reduce stormwater overflow frequency and volume. **Discharges of stormwater to swallow hole A** will occur under extreme weather events.

Elements of the **proposed development include**:

- Administration building and stormwater tank will be retained.
- The rising main and gravity main pipeline which currently discharges treated effluent to swallow hole B will be retained up to a point and a new 200 mm diameter gravity main pipeline 75 m in length constructed to the proposed percolation area. The redundant section of pipeline will be decommissioned.
- Treated effluent will discharge directly to the proposed percolation area.

Development of the design solution involved consideration of **alternative options**:

- Alternatives were assessed under processes recommended by the EPA.
- Alternatives considered included discharge of treated effluent from WWTP to surface water bodies and to existing sewerage schemes.
- Assessment was made of alternative sites for the proposed percolation area.

- The proposal was the most technically feasible and financially viable solution.

4.0 Planning Authority Decision

4.1. Decision

The planning authority **decided to grant permission** subject to conditions including:

- To be in accordance with drawings and particulars and the NIS received by the planning authority on 22nd of January 2019 as amended by further information received by the planning authority on 30th of July 2019.
- Finalised CEMP, waste management plan and traffic management plan to be agreed and to provide for specified information.
- Detailed site drainage design with detailed calculations for the storm network within the site to be agreed as specified.
- Agreement on construction and demolition waste management plan. Traffic management plan for demolition and construction stage.
- Archaeological monitoring and related issues.
- Revised roadside fencing to include a timber post and tension mesh fence.
- All mitigation measures shall be adhered to in full and complied with by the applicant/developer including those outlined in the NIS and other reports.
- Financial contribution in the amount of €3,223.40.

A copy of the **determination under section 177V** which is dated 27th of September 2019 is attached. It was determined that the proposed development (either individually or in combination with other plans and projects) would not adversely affect the integrity of any European sites. The determination is made in light of adherence to all mitigation measures in particular those relating to the operational phase and the completion of the final CEMP in line with the grant of permission.

4.2. Further information request.

In relation to the **NIS**:

- The applicant was requested to clarify which habitats and species are at risk and in what way, to present further information to assess the likely significant effects of the project on European sites including in relation to improvements which were required to be analysed with respect to progress towards the achievement of the conservation objectives of the European site. Revisions to the NIS to address the above were requested.

In relation to **detail of the development including flood risk**:

- Availability of land to accommodate disposal or recovery of spoil, rock and other materials from excavation and demolition.
- Whether works will be required at the discharge point and swallow hole to connect with pipework to percolation area.
- Details of the proposed height of berm to be constructed bordering lands that flood within the Kilcarragh site.

In the relation to the **entrance detail at the Ballybreen** site:

- Requirements to provide visibility lines of 160m.

In relation to **potential archaeological impact**:

- Submission of an archaeological impact assessment including visual impact assessment.
- A programme of test excavation to be carried out.
- Written report stating recommendations.

In relation to **entrance signage** revised details requested.

Further information was received on the 30th July 2019. Revised public notices were received by the planning authority on the 6th of August 2019.

4.3. Planning Authority Reports

4.3.1. Planning Reports

The **final planner's report** dated 26th of September 2019 recommends permission.

- The proposed improvement cannot have a significant adverse effect on any European site. The responses to the further information requested clearly

define the relevant European sites and their associated qualifying interest features and special conservation interests, which are water dependent and therefore have a potential for significant effects.

- Sufficient lands are available for disposal or recovery of materials.
- No works will be undertaken at the discharge point and swallow hole.
- The 55mOD high berm within the WwTP site is satisfactory.
- Sight distance of 160 m is available which is considered acceptable.
- The archaeological impact assessment failed to identify any features of archaeological potential.
- Signage will not unduly impact on the amenities of the area.

The **original planner's report** dated 14th of March 2019 included the following:

- The project will lead to positive impacts in terms of water quality and environmental objectives.
- Comments of DoCHG and the EIA Screening report are noted. The proposal constitutes sub-threshold development. The requirements of A103 (1)(a) and (b) of PDR as amended are noted.
- The need for environmental impact assessment can be excluded at preliminary examination.
- Principle of development is acceptable including under the 'Utilities' zoning.
- Legal interest is established through letters of consent.
- No noise or odours were evident during site inspection. A monitoring condition in relation to noise may be appropriate. Construction phase noise needs to be addressed by condition.
- Having regard to the preliminary FRA provided and the fact that the site is not in an identified risk area under Vol 2 and 10 of the development plan as varied and to the mitigation measures provided and that the development as proposed seeks to replace and upgrade the existing WwTP infrastructure, the development can proceed. Further information needed regarding berm height.
- There are no built heritage impacts.

- The development is acceptable in principle.

A separate Screening for Appropriate Assessment and Determination is provided.

4.3.2. Other Technical Reports

Environmental Assessment Officer (final report) notes the lack of negative effect

Road Design Planning report (final report) notes the drawings submitted show compliance with sightline requirements and are reflective of actual conditions. The proposed fence should be a timber post and retention mesh fence as per TII CC–SCD–00320. There should be no interference with roadside drainage.

Environment Section / Executive Scientist report dated 4th March 2019 notes the nature of the proposed design of the WwTP and the indirect discharge. The system will significantly improve the quality of effluent discharged and provide a higher level of treatment. The existing plant frequently overflows to the swallow hole adjacent the WwTP site. These will be significantly reduced in terms of frequency and volume.

4.4. **Prescribed Bodies**

Development of Culture, Heritage and the Gaeltacht (final report).

Nature Conservation

The development will result in an improvement in treatment and removes the direct discharge to groundwater. There is **an absence of an existing adverse operational effect.** It can therefore be concluded that the proposed development cannot have a significant adverse effect on any European site. Section 1.3 of the RFI defines the European sites and the associated qualifying interest features and special conservation interests which are water dependent and therefore the potential for significant effects. Any permission should be subject to a condition relating to **adherence to all mitigation measures** as outlined in section 6.4 in the NIS particularly those relating to the operational phase and completion of the CEMP.

Archaeology

Following review of the further information, concurs with the findings that archaeological monitoring should be undertaken and a condition is recommended.

Development of Culture, Heritage and Gaeltacht (25th February 2019).

Nature Conservation

Characteristics of the site include the flood risk at Kilcarragh site which forms part of Ballybreen Turlough. Turloughs are Annex I priority habitats. Groundwater pathways to three European sites have been identified (East Burren Complex SAC site code 001926, Corofin Wetlands SPA site code 004220 and Inagh River Estuary SAC site code 000036). Queries the sufficiency of lands to accommodate the disposal or recovery of materials arising from excavations and works at Ballybreen swallow hole. The height of the proposed berm bordering lands that flood is queried.

The NIS establishes that there is **significant conduit flow** in the area and the presence of **groundwater pathways** between the Ballybreen swallow hole and 3 no. European sites. It is unclear which species and habitats are at risk and in what way. The NIS fails to assess the likely significant effects including from the improvement in water quality, which could be positive effects. Case law includes C-259/11 and the need for there to be no lacunae is noted. Where an existing unfavourable scenario is in existence and will be improved, this improvement must be analysed with respect to progress towards the achievement of the conservation objectives of the site.

Archaeology

The Department concurs with the archaeological assessment. Further information is required including further archaeological assessment of the site in relation to the three recorded monuments, a visual impact assessment of the proposed development and a programme of test excavation and a written report.

Irish Water indicates no objection to the proposed development.

The appeal was notified by the Board to the Heritage Council, An Chomhairle Ealaion, An Taisce and Failte Ireland. No responses were received.

4.5. **Third Party Observations**

Michael Duffy's letter of objection to the planning authority included:

- Legal and procedural comments including in relation to European Directives.
- The percolation area site was selected to allow ponded material to discharge directly to ground by way of the swallow hole.

- The FRA is flawed and does not address issues, which will result in pollution.
- Alternatives were inadequately considered in terms of flood risk and secondly, the location of the percolation area.
- Groundwater risk assessment did not properly consider the issues.

5.0 Planning History

Reg. 18/1073 - incomplete application for an upgrade to the WwTP and other works.

There have been no recent (post-2010) applications for significant development.

The appellant refers to a permitted hotel. Any permission would have lapsed.

6.0 Other consents

6.1. Reg. ref. A0079-02 is an application before the EPA for a review of the existing Certificate of Authorisation (A0079-01).

7.0 Legal and Policy Context

7.1. Selected Legal Provisions

Urban Wastewater Treatment Directive 91/271/EEC amended by Directive 98/15/EC (UWWTD)

The Directive identifies the general need for secondary treatment.

European Union (Drinking Water)(Amendment) Regulations (S.I. 464/2017).

This sets down measures relating to monitoring of drinking water and sets down (under Part B) amendments to the chemical and indicator parameters.

European Union (Drinking Water) Regulations (S.I. 122/2014)

These address a wide range of measures relating to drinking water. The regulations set down microbiological, chemical and indicator parametric values including:

- Escherichia coli and Enterococci are set at 0 per 100ml.
- Nitrate – 50 mg/l

- Ammonium - parametric value of 0.3mg/l.

European Union Environmental Objectives (Groundwater)(Amendment) Regulations 2016 ((SI 366 of 2016)

The table below sets down maximum permissible thresholds which are relevant to the assessment of impacts of chemical inputs from groundwater on associated surface waters and to the assessment of adverse impacts on drinking water. I have extracted some relevant parameters below from Schedule 5.

Table 1 Maximum Permissible Threshold in the Groundwater Regulations (SI 366 of 2016):

Parameter	Assessment of adverse impacts of chemical inputs from groundwater on associated surface water	Assessment of adverse impacts on Drinking water
MRP	0.035 mg/l	-
Ammonium	0.065 mg/l	-
Nitrate	-	37.5 mg/l

Groundwater Regulations S.I. 9 of 2010

Schedule 5 – Groundwater Threshold Values were amended by Schedule 5 above.

European Communities Environmental Objectives (Surface Water) Regulations 2009 (SI 272/2009) as amended by The European Communities Environmental Objectives (Surface Water) (Amendment) Regulations 2015 (S.I. 386/2015)

These give effect to the measures needed to achieve the environmental objectives established for surface waterbodies by the WFD.

Waste Water Discharge (Authorisation) Regulations 2007 (S.I. 684/2007)

This concerns the authorisation process relevant to requirements for EPA licence / CoA. For a PE of less than 500 the requirement is to apply for a CoA. A43 (1) addresses planning conditions.

River Basin Management Plan for Ireland, 2018-2021

The priority objective for this cycle is to secure compliance with the Urban Waste Water Treatment Directive and contribute to the improvement and protection of waters. Achieving this entails addressing waste-water discharges and overflows.

7.2. Selected Policy Context

National Development Plan

Under national strategic objective 9 investment in waste management infrastructure is critical to our environment and economic well-being for a growing population and to the achievement of economic and climate objectives.

Water Services Policy Statement 2018-2025

This was published by the Minister in May 2018 following the NPF and NDP. Priority objectives include bringing / maintaining wastewater services to acceptable international benchmarks and ensuring full compliance with the UWWTD and licensing requirements.

Clare County Development Plan 2017-2023

The Kilcarragh plot (site 1) is zoned ‘Utilities’ under a variation to the development plan. In relation to lands that are zoned ‘utilities’ and ‘infrastructure safeguard’ these lands will be reserved for existing and future provision of key infrastructural services and upgrading of existing services and infrastructure.

Kilfenora is identified as a Large Village and the core strategy notes a projected population for 2023 of 363.

The development plan includes a range of policies and objectives relating to the development of water services infrastructure and measures to ensure protection of the environment and compliance with the Water Framework Directive including those summarised below.

7.3. Natural Heritage Designations

The nearby connected European sites are East Burren Complex SAC (Site Code 001926), Corofin Wetlands SPA (Site Code 004220) and Inagh River Estuary SAC (Site Code 000036).

8.0 **The Appeal**

8.1. **Grounds of Appeal**

The appellant Michael Duffy is a chartered civil engineer and resident.

In relation to the selected agglomeration it is considered that:

- Minimal evidence is presented to support the extent of the agglomeration and the PE is underestimated and does not allow for growth or seasonal variations.

In relation to the design:

- The plant is under-designed with regard to the verified measured flow of 911m^3 in 2008.
- Stormwater overflow design is a significant problem and not discussed.

In relation to the polishing filter design:

- Inadequate details provided relating to T values.
- The polishing filter will be inundated and there are no design details and the basis of assessment is not clear or is incorrect.
- The high hydraulic loading of 240 l/m^2/day on the sand filter could function subject to no clogging of the pores in the sand, but would not pass through the 300mm of aerated soil. The loading is 24 times higher than the norm.

In relation to the detail of the design:

- The level of detail which is required for proper EIA and appropriate assessment is not presented.
- The possible need to import soil and stone is not explained.

In relation to the red line boundary and the site zoning:

- The application is invalid as not all of the development is included.
- Part of the site outlined is zoned low density residential and the polishing filter site is zoned agricultural. These are material contraventions of the development plan.

In relation to the EIA and AA:

- EIA was screened out without proper consideration of the pipe from the WwTP to the discharge point.
- There is considered to be subterranean connectivity between the limestone area in the village and Lickeen Lake which is a significant potable water source for north Clare. While this has not been professionally researched the conduit from the swallow travels in a south easterly direction and could have an offset to the lake.
- There was no appropriate assessment by the planning authority. The AA requires mitigation but there was not proper consideration of alternatives. The AA does not address the issue of Lickeen Lake.

In relation to the payment of planning contributions:

- The guidelines are draft. The applicant should not be treated differently.

In conclusion:

- The design is very flawed and will fail.
- There is no clarity in relation to whether the land is actually available for the proposed uses notwithstanding the letters of consent to the applicant.

Attached is a copy of a non-technical summary of the application by Clare County Council in accordance with Article 5 of the Wastewater Discharge (Authorisation) Regulations 2007.

8.2. Applicant Response

The applicant's response, formulated with input from Prof Laurence Gill was received by the Board on the 26th of November 2019. The main points are:

In response to appeal comments relating to the extent of the agglomeration and the suitability of the proposed PE of 330:

- The estimated PE is based on the figures for Kilfenora village only (CSO settlement data) with allowance for growth. The plant can be expanded if necessary in the long-term.

Regarding design of percolation area and stormwater overflow:

- The design is in accordance with 2009 Code of Practice and the 2012 clarification and is sufficiently detailed. An alternative approach is also allowed for and is described. The purpose of the percolation area is to disperse the hydraulic load of tertiary treated and disinfected effluent.
- The current problem of regular overflowing will be resolved.

Regarding the location of the polishing filter and subsoil characteristics:

- Site A was selected as the subsoil was deepest with limestone bedrock at 3.0m bgl and groundwater at 3.6m and suitable soil profile.
- The percolation design has been demonstrated above to be compliant with the CoP and based on verified flow data and site investigations. The basis for design is provided. The design is robust. There will be no ponding or overflow.

Regarding the 'red line boundary' and the zoning:

- The entirety of the development is within the red line.
- The rising main and gravity main pipeline discharging the treated effluent to the swallow hole will be retained up to 'existing manhole CL:57.704'.
- The 200mm diameter underground gravity pipeline will be constructed from the existing manhole to the proposed percolation area. Part of the gravity main pipeline to the swallow hole will be decommissioned and sealed and a 200mm diameter underground gravity pipeline constructed from CL57.504 to the percolation area as exempted development.
- A revised Appropriate Assessment Screening report has been presented and the information in this supersedes section 5 of the AA Screening of the NIS.
- Notwithstanding the above we provide an alternative for the Board to consider as shown on Drg. 20624-PP-KA-07_Rev B in Appendix C.

In response to appeal comments relating to EIA screening being ruled out without consideration of the pipeline, lack of consideration of Lickeen Lake, a drinking water source:

- There is no likelihood of significant effects on the environment. EIA can be excluded at preliminary examination. A screening determination is not required.
- Lickeen lake is not connected. It is not a European site.
- The NIS contains complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the European sites concerned.

8.3. **Planning Authority Response**

The planning authority response to the appeal is as follows:

- The development will result in a high level of treatment along with removal of the direct discharge to groundwater, is stated to be capable of meeting EPA requirements and includes backup measures. A full and complete assessment was made by the planning authority on the basis of the appropriate drawings.
- Proper consideration of the pipe from the WWTP to the discharge point is in the NIS which accompanied the application and was assessed. The NIS contains a WAC calculation which addresses the loads.
- Should there be a conduit which could affect Lickeen Lake (which is disputed) the improved water quality discharge will potentially improve the lake.
- The section 177V determination constitutes an appropriate assessment.
- Alternatives are not considered to be an issue under the AA process, except in the exceptional case relating to article 6(4).
- The basis for the development contribution of €3,223.40 is presented.

8.4. **Further Responses**

The planning authority concurs with the applicant's response to the appeal.

The appellant makes the following points in response to the applicant's submission:

- It is reiterated that the PE is incorrect based on previous measured discharges and information under the EPA Discharge Certificate.

- The CoP is for single houses and is not statutory or a standard.
- Is it proposed that the soil with a T value of 41 can be loaded top 240l/m^2/day which if accepted by the EPA would cause chaos.
- A T-value below 3 is considered a failure for a single house. Repeat tests should have been carried out given the widely varying test results.
- Given the verified flow measured in 2008 of 911m^3/d the stormwater capacity of 550m^3/d for a plant designed to treat 238m^3/d is clearly deficient.
- The proposal to replace some of the pipe outside the red line boundary makes the application invalid. The applicant has failed to produce evidence of the integrity of the pipe and connections to it.
- Lickeen Lake 2km away has never been investigated. Wider connectivity to European sites cannot be ruled out.

9.0 **Assessment**

This assessment has three sections:

- Wastewater, incorporating the substantive matters raised in the appeal.
- Planning Assessment.
- Appropriate Assessment.

9.1. **Wastewater**

In relation to the suitability of the proposal in terms of effects on surface water and groundwater and the environment and drinking water sources and having regard to the substantive of the grounds of the appeal, I consider that the matters relevant for assessment by the Board may be considered under the following headings:

- Overview.
- Adequacy of the selected agglomeration and population equivalent.
- Design and location of the percolation area.
- Pathways and risks to receptors

- Other matters raised in the appeal
- Conclusions.

9.1.1. **Overview**

The characteristics and issues associated with the existing treatment system as outlined in the application submissions and based on information from my site inspection and the information in the public realm under the live application to the EPA for review of the Certificate of Authorisation A0079-02 are:

- Constructed in 1974 the existing Kilfenora wastewater treatment plant is approaching its design life.
- The WwTP consists of screening, secondary treatment (aeration basin followed by clarification) and a stormwater tank (approximately 200m^3).
- The plant design provides for carbonaceous organic matter removal only, not achieving the removal of nutrients or disinfection of final effluent prior to discharge to groundwater.
- The Gill report *Groundwater Risk Assessment* report provides some monitoring data from the WwTP and states that the existing plant is operating well as a fairly conventional small-scale secondary treatment plant almost completely nitrifying the effluent and reducing the indicator organism (E. coli) to a level which is typical for a secondary treatment plant.
- High levels of manual intervention are required to regulate flows.
- Treated effluent from the plant discharges to a pumping station on site and is pumped forward and discharged directly to swallow hole B (Ballybreen).
- The majority of the village is on a separate network system but some properties still contribute to the combined network. The storm water tank is of insufficient capacity and there are overflows to swallow hole A (Kilcarragh).
- Kilfenora is listed as a point pressure under the West Coast Clare Water Management Unit Action Plan.

The main objective of the scheme is to provide long-term improvement and expansion of the treatment and disposal of wastewater generated by the village. It

aims to provide adequate wastewater infrastructure to account for the existing needs and future development of Kilfenora.

The main elements of the proposed development are:

- A new 300 PE WwTP with higher level of treatment including provision for nutrient removal and disinfection. Tertiary treatment in two forms is proposed, one addressing further removal of phosphorous, suspended solids, BOD and COD and the other to remove potential pathogens.
- Provision of a sand filter (percolation area) at Ballybreen to address the requirement of the Certificate of Authorisation to remove direct primary discharge to groundwater.
- A new storm storage tank of 350m^3 capacity at the WwTP site.

The table below sets out the proposed effluent quality to be achieved at the WwTP.

Parameter	**Unit**	**Final effluent standard at WwTP**
BOD	mg/l	10
COD	mg/l	40
Ammonia	mg/l	1.0
Nitrates	mg/l	50
Ortho-Phosphate	mg/l	0.5
Suspended solids	mg/l	10
Pathogenic reduction	-	Log 3 reduction

It is evident that treatment at the proposed WwTP is to a very high standard. The addition of the percolation area is a further beneficial feature. I consider that it may be concluded beyond any doubt that the proposal constitutes a positive development in terms of the protection of the environment including groundwater resources and compliance with European and national legislation.

9.1.2. **Selected agglomeration and population equivalent**

In relation to the selected agglomeration and selected PE for the new WwTP the appellant has queried the adequacy of the assessment and the results, noting the seasonal patterns of occupation in this village, the need to cater for any future significant development and the scale of a previous proposed upgrade.

The applicant's submissions on the selected agglomeration / PE rely on information relating to the resident population and surveys of the physical infrastructure.

Regarding the demographic data the applicant has confirmed that the estimated PE is based on the figures for Kilfenora village only (CSO settlement data) and takes account of likely population rises and provision for expansion within the village. The area which is presently connected will continue to be served by the upgraded WwTP. I consider that the applicant's approach is reasonable.

The appellant has referred to information which was previously presented to the EPA under applications for CoA. The document attached to the appeal is from the original CoA application A0079-01 and is based on data compiled in 2009, which is available on the EPA website. The current application is based on recent verified monitored flows and the plant is sized to take account of the anticipated load. I consider that the use of the recent flow data is demonstrated and is appropriate.

In further support of the selected agglomeration the applicant refers to design stage survey work undertaken (CCTV surveys and an Impermeable Area Survey). The extent of these investigations appears to be appropriate for the purpose of identifying properties connected to the sewerage network system and stormwater flows. In my opinion it is unnecessary that full detail of the surveys be made available.

Regarding the fact that much higher capacity was envisaged under previous proposed upgrades, the matter for the Board is to assess is the current project and the context in which it is proposed. It would not be appropriate or feasible that unknown future scenarios for major new development be provided for when calculating the PE. To ensure long-term sustainability increased capacity, if required, can be achieved through adding on further modules to the WwTP.

Regarding any fluctuations in load, which would be associated with seasonal peaks in population in the town I accept the applicant's statements that the robust and flexible design can deal with such fluctuations without compromising the treatment.

The hydraulic loading will vary significantly under different weather conditions. The upgraded WwTP has been sized to cater for 4 x Dry Weather flow (DWF).

Regarding extreme weather events the prediction is that as a result of the stormwater management there will be greatly reduce overflows to swallow hole A. There is a general prohibition under the Groundwater Regulations on direct discharges. Regarding the continued use of swallow hole A for overflows I note the likelihood that this may be deemed to be exempted under category 14(b) and should be considered to be part of the future operation of the plant when considering the environmental impacts. The legislative provision allows for exemptions on the general prohibitions where the inputs of pollutants will not result in deterioration of groundwater quality and / or are of a magnitude and persistence that would not result in a sustained increase in groundwater concentrations. Having regard to the infrequent nature of these events and the levels of dilution which would arise in those circumstances the overflow might be deemed to be exempted under the regulations. That matter will be part of the further review by the EPA under application A0079-02.

I conclude that the applicant has demonstrated that the agglomeration to be served and the 330 PE are appropriate and that they were selected following suitable assessment of the existing flows and loads. The new WwTP plant, in addition, can provide for expansion and emergency overflows will be greatly reduced in frequency.

9.1.3. **Design and location of the percolation area**

I refer at this point to the purpose of the percolation area which will cater for effluent treated to a very high level in a modern plant fitted with built-in safeguards. Although the percolation area would result in some additional quality improvements its purpose is to disperse the hydraulic loading of the highly treated and disinfected effluent into the underlying subsoil. Assessment of the suitability of the approach requires consideration of the percolation area design and the subsoil characteristics.

In relation to design details the appellant has raised a number of matters primarily in relation to the proposed sand filter and storm water management. It is the appellant's case that the sand filter design is not suitable and that its location beside the swallow hole is to allow for overflow to that feature.

I have referred above to the enhancements to the storm water management which are proposed. I now consider the hydraulic load on the percolation area and the design details. It is relevant to note the average flow of 238m^3/d, which is the basis for the design. I consider that the appellant is being selective in referring to a verified measured design flow of 911m^3/d or 920 l/m^2/day load on the percolation area and fails to acknowledge the relevant data. The applicant refers to a 2016 flow survey and rainfall survey which were used for the percolation area design. In relation to the percolation area design, emergency overflows will not be diverted to the percolation area but to the emergency overflow discharge point. I conclude that there is no basis for the appellant's statements that there would be excessive loading of the sand filters and I reject the appellant's claim that the basis for the design is inappropriate.

In support of the above conclusion it is necessary to consider the ground conditions and the percolation area design further. The appellant states that the polishing filter will be inundated even based on the selected design of average flow of 238m^3. The selected site at Ballybreen was deemed to be suitable on the basis of the subsoil characteristics, the subsoil depth and the groundwater level. The soil profile comprises low permeability clay under which there is more suitable gravelly clay at a depth of 0.6m to 3.0m below which lies the limestone bedrock. The groundwater level is at a further depth of 3.6m. The subsoil characteristics based on the T-values of 1.8 and 41.3 which were recorded for the site were deemed to be suitable. The underlying subsoil fits broadly within the values which are deemed to be acceptable under the CoP. The recorded T value of 1.8 is low but it would be accepted that it is possible to engineer solutions to address high permeability situations. In this regard I refer to the importation of material for the construction of the sand filter. Also of critical importance is the purpose of the percolation area, which is related to dispersal and not to treatment. I am satisfied that the subsoil characteristics together with the other site characteristics support the selection of this site for a percolation area.

The appellant has referred to the difference in results for the site stating that the P and T values should be similar. I consider that the difference can be explained in this case by the fact that the upper level, where the P test would be taken is a low permeability clay. The removal of this upper layer of low permeability material is likely to be required at the construction stage.

The appellant objects to the applicant's reference to the EPA Code of Practice for Single Houses (2009) and the subsequent clarification document relating to tertiary systems published in 2012. The appellant has not identified what alternative design approach should be undertaken. I note that the CoP is specifically mentioned in Appendix E of the EPA *Guidance on the Authorisation of Discharges to Groundwater* (2011) which sets out the relevant calculations to check on site suitability for percolation. Nothing in that guidance restricts the application of the CoP to assessments involving single houses. In addition I refer to section 3.11 of the EPA Wastewater Treatment Manual *Treatment Systems for Small Communities, Business, Leisure Centres and Hotels (PE 10-500)* which states that where it is proposed to discharge the treated wastewater to ground a site characterisation based on the CoP for Single Houses manual and adherence to the guidance in that manual should be undertaken. Therefore, I accept the applicant's use of the CoP, which has relevance in terms of the principles of the design of the percolation area, which is the purpose to which it has been put by the applicant.

In addition regarding the suitability of the applicant's approach I note that the assessment of hydraulic loading calculations follow the procedures which are set out in Appendix E in relation to the infiltration capacity of the system. The requirement under the 2011 EPA Guidance in relation to developments of the scale proposed is that assessments require hydraulic loading calculations that make use of the site specific subsoil permeability values.

The required percolation area (A) follows the simple formulae A=Q/Inf presented in Appendix E, where Q is the plant design hydraulic loading ($237m^3$ /d). The applicant has provided a detailed explanation of the relatively technical matter of the calculation for 'Inf', the infiltration capacity, which is a measure of the volume of load spread over a given area per day. In brief this involves converting the selected design value for T (of 5) to the equivalent saturated hydraulic conductivity value (K_{fs}) resulting in a value of 0.84 m/d. I consider that the selected T value of 5 for the purposes of this assessment is appropriate and that it is a conservative approach as stated.

Next, in line with the CoP 2011, which relates to tertiary treated discharges there is a factor of safety of 3.5 applied and the result is a sand filter design loading rate of 0.24 m/d or 240 l/m^2.d. On that basis the required area of the percolation area is

990m^2. Some further design details of the proposed percolation area are presented with the application including section drawings.

Regarding the separation distance between the karst features (swallow hole B) and the percolation area the proposed distance is about 15m, which would be in keeping with the recommendation in Table B.3 of the 2009 CoP, which sets out minimum separation distances between a receptor and a percolation area or polishing filter. This matter has been identified in the Gill report who states that the proposed distance is only 10m; that appears to be the case based on the original application drawings but not the further information response. I consider that the requirement under Table B.3 of 15m can easily be met. If necessary a minor adjustment of the design could be undertaken and this would not raise any significant environmental issues. I recommend that the Board address the matter by condition referring to Table B.3 of the 2009 CoP.

I consider that the applicant's explanation of the design calculations and overall approach is robust and convincing. I conclude that there can be no reasonable doubt over the suitability of the characteristics of the selected site and that it compares favourably with the other three sites assessed. I conclude that the percolation area will be adequate and that the subsoil is suitable. Therefore, the Board can be satisfied that the hydraulic load will be properly dispersed and that there is no reasonable likelihood of ponding or lateral migration to swallow hole B.

9.1.4. Pathways and risks to receptors

Pathways and receptors

There is significant conduit flow in the area and extensive testing involving tracer studies has been undertaken to gain an understanding of the karst environment including the location of the outlets from the Ballybreen swallow hole and how this interacts with the local hydrology and hydrogeology of the area.

The main pathways from Ballybreen are:

- The main connectivity is to the spring system 6.5 km down gradient and to the south east – this system provides the headwaters of the River Fergus.

- In periods of high groundwater flow there is also a connection with Cloongarve Stream 0.7km to the west, which flows into the Smithstown River , a tributary of the Dealagh and ultimately to the Inagh River.

Regarding receptors and baseline conditions the following is stated:

- Private wells connected to the swallow hole are listed in section 4.3 of the Gill report. Lemaneh well was the source for a now decommissioned group water scheme. The remaining relevant private wells have all been offered connection to the public supply comprise a small number of houses over 2km from swallow hole B.

In the absence of groundwater quality data being available from the EPA monitoring programme the applicant has relied on surface water quality data from Poplar Bridge in the River Fergus, where surface water quality under the Water Framework Directive was ‘good’ for the period 2009-2013. Information presented with the Waste Assimilative Capacity calculation shows more up to date information.

On the basis of the available information it can be determined that the existing discharges to the Ballybreen swallow hole are not materially impacting the surface water quality at the River Fergus.

Groundwater monitoring undertaken in May 2012 by the local authority identified faecal contamination of some private wells including a group water scheme which was decommissioned.

I consider that the type of information presented is adequate and that the applicant has demonstrated a high level of understanding of the connections between the swallow hole and the ground and surface waters in the area.

The appeal raises issues in relation to Lickeen Lake to the south, which is a drinking water source and which local information indicates is connected to the swallow hole. The applicant in the response to the appeal addresses this matter in detail noting that the lake sits on Namurian shales bedrock, is a permanent lake and has therefore no direct connection with the karst limestone and furthermore that all scientific evidence shows no evidence of any flow paths to the south.

I conclude that there is no pathway to Lickeen Lake. Together with the River Fergus and the Cloongarve Stream, private wells and groundwater remain the significant receptors for the purposes of this appeal.

Risks

In relation to the risks to the environment and to drinking water sources I refer in particular to the Gill report, which is described as a Risk Assessment in accordance with *Guidance on Authorisation of Discharges to Groundwater* (2011 and 2014) and which includes a conceptual model. Of significance also are the waste assimilative capacity calculation figures which are presented as appendix A of the NIS and the discussion in section 3.4 of the NIS on water chemistry and the evaluation of effluent quality.

As noted above the drinking water supplies in this area have been adversely affected by faecal contamination. As swallow hole B is connected to these wells it is possible that the source of the contamination was the existing WwTP. In terms of the proposed development, I consider that the risk to drinking water supplies is very low for the following reasons:

- The main parameter of relevance in relation to drinking water supplies is pathogens. The introduction of tertiary treatment in the form of disinfection to secure a Log 3 reduction in indicator organisms will eliminate any significant public health concerns.
- The Gill report notes that the sand filter would further remove microorganisms, in the event of a short term systems failure. Such events are highly unlikely in the context of back-up measures included in the design.
- Of secondary concern in relation to drinking water are Ammonium and Nitrates. The WwTP design provides for complete nitrification of wastewater and effluent limit values for Ammonium of 1.0 mg/l will be consistently achieved. I consider that it is reasonable to assume that the downstream concentrations at the receptors (which are over 2km away) will be less than the limit of 0.3mg/l set in the Drinking Water Regulations.

- Further, as a result of denitrification step to be incorporated in the plant design, the effluent concentration of nitrate is anticipated to be much lower than the level of 50mg/I set under the Drinking Water Regulations.

Regarding the risks to the environment the primary relevant water quality parameters are nutrients (nitrogen and phosphorous) in relation to which the following refers:

- The Gill report in Appendix B provides summary data from measurements of the existing plant undertaken in 2018 the relevant forms of nitrogen and phosphorous.
- The 'Good' chemical status of the groundwater body based on local authority monitoring data suggests that the existing WwTP is not having a substantial impact on the overall chemical quality of the groundwater body.
- The evidence from WFD monitoring is that the existing plant is not adversely impacting surface water quality. The applicant's submissions in relation to the information for Poplar Bridge (River Fergus) refers. That situation can be expected to continue with improved levels of treatment and greater consistency.
- The development will achieve much lower levels of nutrients compared with those being discharged from the WwTP currently. This is particularly relevant to phosphorous levels given the proposed ELV of 0.5 mg-P/l but is also relevant to the nitrogen compounds.
- The applicant has undertaken and presented for consideration relevant Waste Assimilative Capacity calculations based on the use of the data from the Fergus as a surrogate for the assimilative capacity calculations. I accept the conclusions therein which show that the resultant concentration for key parameters in the operational phase of the WwTP will be acceptable and that the present 'good' chemical status of the groundwater will be retained.
- Therefore, as is also shown the proposed development will also comply with the Surface Water Regulations and will assist in the achievement of the goals of the Water Framework Directive.

9.1.5. **Other matters raised in the appeal**

In relation to the consideration of alternatives, I note that these are stated to have included not only consideration of the 4 no. alternative percolation area sites but also the consideration of different means of discharging treated effluent including to surface water bodies or to existing sewerage schemes for further treatment.

The appellant has raised concerns about the information presented regarding the integrity of the existing rising main and gravity main pipeline between the two sites and which are largely to be retained in situ. I accept the statements made that the integrity of the pipe has been suitably tested including by air testing and inspection by CCTV and that it has been deemed to be fit for purpose and does not require works. The decommissioning of the final section which presently discharges into the swallow hole would be appropriate and proposals are made in this regard. An alternative is also described, which involves use of the existing gravity effluent pipework and consists of a new manhole and new 75m long section of pipeline to connect with the proposed pumping station (Drg. 20624-PP-KA-07_Rev B in Appendix C of the appeal response). Having regard to the two options which are presented by the applicant, both of which appear to me to be viable and reasonable, I do not consider that there are any outstanding issues in relation to the rising main and gravity main pipeline.

9.1.6. **Conclusions**

Based on the above I am satisfied that the proposed development will comply with the relevant legislative requirements relating to surface water, groundwater and drinking water and would be in accordance with the goals of the Water Framework Directive.

9.2. **Planning Assessment**

I consider that the relevant matters relate to:

- Policy provisions.
- Flood risk.
- Air and Noise.

- Archaeology.
- Landscape and Visual Impacts.
- Ecology and Invasive Species.
- Road and Traffic.
- Legislative and procedural matters.
- Contributions.
- EIA.

9.2.1. **Policy provisions.**

The development is supported at a high level by national policy provisions and European Directives as transposed into legislation. The development plan provides policy support for developments in Settled Landscapes, where development that sustain and enhance quality of life and residential amenity and promote economic activity will be facilitated. Other broad objectives in the development plan refer to the protection of groundwater and implementation of the WFD.

In relation to the appellant's statement that the development constitutes a material contravention of the development plan I refer to policy CDP 8.24, which is to facilitate timely delivery of water services to realise the development objectives of the plan. I agree with the general thrust of the applicant's Planning Report, that the provision of proper wastewater services is a requirement for the purposes of implementing the development plan. It is in this context difficult to concur with the appellant's overarching position that the proposed development materially contravenes the plan.

Regarding the agglomeration to be served policy CDP 8.27 is to advocate the provision of adequate waste water services to accommodate the target population and employment potential of the county in accordance with the statutory obligations. The target population for Kilfenora in 2023 is 363, which includes lands which are within the boundary but not serviced. The applicant has confirmed that the selected PE allows for growth and the design allows for expansion. I have discussed the issue of the selected agglomeration and concluded that the proposal is acceptable.

The site zoning objectives are central to the appellant's argument that the proposed development materially contravenes the development plan. I note that the proposed

development is partly on lands zoned UT1 (Utilities) and the remainder in an agricultural area. The WwTP is not only sited on lands which are suitably zoned – the wastewater treatment is not materially different to the existing WwTP in terms of its use and environmental impacts. I consider that the proposed percolation area reasonably accords with the agricultural classifications on site and in the vicinity. An element of temporary works will be on lands which are zoned for residential development and which would be available for such development on completion of the project works.

I conclude that the development is supported by national policy and is in accordance with the development plan.

9.2.2. **Flood risk.**

In relation to the flood risk the FRA assessed the risk of flooding of the locations where works are proposed and this is stated to have informed the design of the works. There is a risk of localised flooding at the two sites which in both cases is connected with the large turlough to the west. This risk is identified in the Outline Construction and Environmental Management Plan.

The **Preliminary Flood Risk Assessment Report** is presented in section 13 of the application documentation. The significant conclusions in relation to Flood Risk Identification (Stage 1) may be summarised as described below.

For the WwTP site the PFRA indicates no risk of fluvial or groundwater flooding at or near the sites – an area 60m to the north of the site boundary is at risk of pluvial flooding during a 1% AEP.

The PRFA map also indicates that a section of the proposed percolation area site is at risk of pluvial flooding during a 1% AEP. A topographical survey indicates a lower central point and refers to possible localised waterlogging.

The OPW data does not show any recurring flood points at or near the development sites. The development plan Strategic Flood Risk Assessment classifies the settlement as having a low risk of flooding but notes a pluvial flood risk to some parts of the north and northwest of the settlement.

At the WwTP site there is a low-lying area of 52.0m OD at the north-west corner of the WwTP site which is an extension of the small turlough west of the site. Periodic

flooding of this low-lying area was confirmed by the caretaker who also noted that the water level never rises to the top of the embankment of 53.5mOD. The ground level of the remaining WwTP site is between 54.0mOD and 55.0mOD.

An intrusive ground investigation comprising a borehole at circa 50m from the WwTP site turlough identified groundwater at 3.65m below ground level.

Based on the above I consider that it may be concluded that there is a potential flood risk at the both the site of the WwTP (groundwater flood risk) and the percolation area (pluvial flood risk).

Regarding Stage 2 flood risk identification the report indicates as follows:

- The sources of information presented in Stage 1 are reliable and consistent.
- The Stage 2 conclusions are that the sources of flooding and the risk to infrastructure are the proposed above ground infrastructure at the percolation area site is potentially at risk of pluvial flooding during a 1% AEP flood event and the proposed above ground infrastructure at the WwTP site is potentially at risk of groundwater flooding due to the proximity to an adjacent turlough.

The applicant concludes that information which has been reviewed in the Stage 1 and Stage 2 assessments is sufficient for a quantitative appraisal of potential flood risk at the proposed development sites and a Stage 3 assessment is not necessary. I accept this conclusion having regard to the site history in particular. The proposed detailed site drainage design to be completed will include detailed hydraulic calculations for the storm network within the sites and examination of this for a variety of storm return events and durations. Site drainage will ensure that no flooding of the sites shall occur during the above events. Furthermore, although the information indicates that water level in the area to the north-west of the WwTP has never reached the embankment level of 53.5mOD all critical infrastructure will be above this level. In addition an embankment will be built up to a level of 55.5mOD around the turlough edge to provide protection against potential groundwater flooding. No upgrade works will be constructed at the location of the turlough, which is appropriate given its status as a priority habitat.

I am satisfied that it is demonstrated by information gleaned from a number of sources that the site infrastructure will be positioned above the flood level. The

proposed embankment height of 55.5mOD will provide further protection against the groundwater flood events associated with the turlough which is centred on an area to the west of the site and from which waters would infrequently reach the relevant area adjacent the WwTP site.

Having regard to the FRA, the history of the sites and area and the mitigation measures and the extant use of the site for the purposes of WwTP infrastructure, I consider that it can be concluded that the development is acceptable in terms of flood risk.

9.2.3. **Air and Noise.**

In terms of **air emissions** I consider that there are no likely significant effects. In the construction phase dust emissions would be managed under a CEMP, which is to be finalised. I agree with the assessment by the planning authority that the main odour source will be associated with sludge management facilitates, which will be at the same location as the existing. There are houses within 100m of the site of the WwTP. There is no evidence of any history of complaints or issues with the existing facility. The new WwTP will contain the odour source as it will be an enclosed structure and air will be extracted to dedicated odour control units.

I consider that the proposed development is satisfactory in relation to air emissions and I recommend a condition relating to odour levels.

Regarding construction noise I consider that the condition of the planning authority relating to hours of construction will suffice to address any residential amenity issues. I recommend that it be addressed as part of the CEMP.

The applicant indicates that in the operation phase there will be no major sources of noise on site and no aeration blowers are provided.

I consider that the development will not adversely impact on the amenities of the area or give rise to significant environmental effects related to air or noise subject to the recommended conditions.

9.2.4. **Archaeology and Protected Structures**

The development is within the zone of archaeological potential established around 3 no. recorded monuments subject to statutory protection in the RMP and the extent and location of the proposed development could impact on subsurface archaeological remains. These recorded monuments are the remains of a Tower House, Bawn, and Lime-kiln. None of them has a significant above ground component and they do not appear to have importance as visitor attractions.

As noted earlier Kilfenora has a wealth of archaeological monuments notably the high crosses, one of which is close to the Ballybreen site and the others are within the village core close to the old cathedral and some distance from the proposed WwTP. I am satisfied that there would be no long-term significant impacts on the setting of those structures.

The retention of the existing pipeline between the two sites and the re-use of the WwTP site are positive in terms of reducing potential archaeological impacts. The test excavation report failed to identify further features of archaeological potential. The setting of known monuments was deemed not to be subject to adverse visual impacts.

The Development of Culture, Heritage and the Gaeltacht concurs with the findings of the application submissions including that archaeological monitoring should be undertaken and a condition is recommended. I consider that the development is acceptable in terms of its archaeological impact.

Kilfenora cathedral is on the NIAH and as noted above will not be adversely affected. There are no protected structures in the immediate vicinity of the development. I therefore consider that the development will not have a significant effect on built heritage.

9.2.5. **Ecology and Invasive Species**

This section of this report primarily concerns the ecological impacts relevant to the area in the immediate vicinity of the site. I refer also to the matter of invasive species. The application submission includes an Ecological Impact Assessment report. I consider that the significant aspects of the ecological baseline are:

- The low lying area in the northwest of the WwTP site is an extension of a small turlough lying in linear basin to the west. It contains a limited flora.
- The percolation area flora is dominated by common flora.
- Swallow hole B is within a fenced off area of grassland with briars and there is the black moss Cinclidotus on exposed rock. A small stream which rises to the south feeds in to the swallow hole.
- There is a badger track through the percolation area site but no other evidence of relevance to mammals.
- The open grasslands and stone wall habitats may support breeding birds and there would be used of the Ballybreen turlough 450m from the percolation area by Whooper swan.

Mitigation is proposed by the applicant as follows:

- At Kilcarragh the area subject to seasonal flooding should be fenced off and to ensure protection of the turlough and measures adopted to control silt and prevent pollution in the construction phase.
- A treeline to the eastern boundary should be retained including for screening.
- The percolation area will be maintained as a badger route during construction and operation through use of suitable fences.
- Standard measures relating to breeding birds protection.
- Protection of European sites in accordance with the NIS.

Based on the above I consider that it may reasonably be concluded that subject to mitigation as described the ecological impacts associated with the proposed development are acceptable.

On the matter of **invasive species** and the Invasive Species Survey reports the results of a targeted survey and sets out recommendations. I consider that the significant matters relevant to invasive species are:

- There is a 200m^2 stand of Japanese Knotweed 2m from the access track to the WwTP site, which is on third party lands and will require mitigation as outlined. The 20m^2 stand of Japanese Knotweed 110m to the east of the

proposed percolation area within a residential site is not considered to pose a risk.

- No other high impact invasive species were recorded. A pre-investigation survey is to be undertaken by a suitably qualified and experienced ecologist. General recommendations are also presented.

Having regard to the above measure I agree with the applicant's submission that there is no potential for the spread and introduction of high impact invasive species as a result of this scheme subject to mitigation measures being implemented.

9.2.6. **Landscape and Visual Impacts.**

There are limited above ground components envisaged as part of the WwTP design and the development can reasonably be described as being of low profile and small scale. As part of the further information request the planning authority secured modifications to reduce the site signage and conditions require agreement on finishes.

In general the site of the WwTP is not in a sensitive location. I consider that the WwTP in the long-term would be most visible from the nearby local road. Nothing suggests that this road is of significance for tourists and it would not be heavily trafficked. In view of the limited number of dwellinghouses in the immediate vicinity there would be no significant impact on the outlook from those properties.

At the Ballybreen site the short-term construction phase impacts would constitute the most significant period in terms of the issue of landscape and visual impacts. On completion the proposed percolation area will be seeded and will largely blend into the rural landscape. The Ballybreen site is not within the view which is protected in the development plan.

I conclude that the development would not give rise to significant landscape and visual effects and that there would be no adverse impact on amenities.

9.2.7. **Road and Traffic.**

The likely roads and traffic impacts on the area will be limited to the short term construction phase and are suitable for management under a traffic management plan, which could be part of the CEMP as recommended below.

Regarding the access to the Ballybreen site at the regional road this matter was subject of the further information following which it has been confirmed that suitable sightlines of 160m are available.

The planning authority has made a recommendation relating to the roadside fence, which should be a timber post and retention mesh fence as per TII standards. The existing roadside boundary is of the type which is considered to be appropriate for use in the Clear Zone adjacent a national road. It would appear therefore that the planning authority had concerns relating to the possibility of errant vehicles. Having regard to the nature of the development I consider that there is no significantly likelihood of public safety being endangered in the event that a car veered off the road into the percolation area site below. Equally I am unconvinced that the road conditions warrant this approach in the interest of protecting motorists. I therefore recommend that the boundary be reinstated to match the existing.

9.2.8. **Legislative and procedural matters.**

The appellant's statements that the detail of the design is insufficient have been considered earlier. I consider that this cannot be substantiated. I refer to the entirety of the plans and particulars which includes drawings of the percolation area and details with respect to site investigation and design. There is no basis to the description of the proposal as an outline application. I consider that the development complies with the relevant regulations and note that the application was validated by the planning authority.

Regarding contractor flexibility and the caption 'indicative proposals' I accept the applicant's position on this matter and note that the future development would be bound by all planning requirements and environmental outcomes.

In relation to other procedural matters the planning authority refers to information about land ownership and the letters of consent received with the application. I am satisfied that there are no issues in relation to the applicant's control over lands.

The appeal raises a further procedural issue which relates to part of the development which it is stated is not located within the site boundary defined for the application. This part of the development comprises a section of pipe from an existing manhole which will be put in place as an exempted development. It is a new 200mm diameter

underground gravity pipeline section which will be constructed from CL5 7.504 to the percolation area. I accept the applicant's statement that this would constitute exempted development. I also note that an alternative option has been presented which would ensure that all work proposed is within the defined site boundary for the purposes of the application. As such, I consider that the Board has sufficient information on this matter and that the applicant can undertake the development.

9.2.9. **Contributions.**

I refer to condition 9 attached by the planning authority in relation to the payment in the amount of €3,223.4 in a financial contribution under the DCS. The applicant's objection to this payment refers *inter alia* to the ability of Irish Water to undertake its statutory obligations and to the fact that it is effectively one arm of the state seeking payment from another.

The applicant has not appealed the condition. Notwithstanding that point, the Board has on other occasions required payment in relation to small-scale facilities such as canteens or offices which might be associated with the development of a wastewater treatment plant and established the principle of seeking such payment in similar developments. This would in my opinion be in line with the Draft W*ater Services Guidelines for Planning Authorities* which state that in the making of Schemes, planning authorities should consider including a special provision in respect of water sector developments to limit the extent of the contribution and to require payments based on the area of administrative buildings.

In this case the only building of significance is the administrative building which is to be retained on site. In the absence of any significant new administrative buildings I recommend that the condition be omitted.

9.2.10. **EIA.**

The applicant submission included an the EIA screening report, which concluded that the construction and operation of the proposed works are unlikely to have significant effects on the environment either by itself or in combination with other plans or projects and that an EIA is not required.

The planning authority determined that having regard to the nature and scale of the development as a whole that there is no real likelihood of significant effects on the environment arising from the proposed development and that the need for environmental impact assessment can be excluded preliminary examination and that the screening determination is not required.

In view of the small scale of the development including the construction works, the size of the resulting project and the nature and scale of the operational phase impacts, the development can only be considered to be likely to give rise to neutral or positive impacts, which would not be deemed to be significant in the context of the environment in which it would be located.

For these reasons I consider that the need for environmental impact assessment can, therefore, be excluded preliminary examination and a screening determination is not required.

9.3. Appropriate Assessment

9.3.1. Introduction

Article 6(3) of the Habitats Directive requires that any plan or project not directly connected with or necessary to the management of a European site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the sites in view of the sites conservation objectives.

The Board as the competent authority must be satisfied that the proposed development would not adversely affect the integrity of the European sites having regard to their conservation objectives.

This section of this report assesses whether in view of best scientific knowledge the project, individually or in combination with other plans or projects, is likely to have a significant effect on any European site, in view of the sites' conservation objectives.

The subject application relates to a project that is not directly connected with or necessary to the management of a European site. The applicant submitted a Natura Impact Statement (NIS) incorporating an Appropriate Assessment (AA) Screening Report. The response of the applicant to the appeal includes an updated

Appropriate Assessment Screening Report, which is stated to supersede the original document. This will provide for the alternative final section of pipeline from CL5 7.502 should that be required. I consider that this report does not constitute significant information for the purposes of the participation of the public and does not raise requirements in relation to the need for revised public notices. In this regard it is relevant that the outcome of the Stage I Screening is not altered.

In considering this section of this report I have had regard to the totality of information presented by the applicant including the NIS and the revised Stage 1 Screening report, the submissions of third parties and prescribed bodies and the considerations of the planning authority.

The scientific information which forms the basis for the NIS includes:

- Tracer studies of Ballybreen swallow hole (2001 and 2012) by Dr David Drew.
- The Hydrogeology Assessment (2014) by Geosyntec.
- The Geology, Hydrology and Hydrogeology report (2006) by NUIG.
- The EcIA report (2018) by EirEco Environmental Consultants.
- Invasive Species report (2018) by Nicholas O'Dwyer.
- NPWS and Online EPA GIS data.
- Field walkover studies in 2014 and 2018.
- Waste Assimilative Capacity calculations, presented in Appendix of the NIS.

The proposed development is as described in the application documentation and comprises the following elements:

- Inlet works which provide for screenings and grit removal.
- Anoxic tank for denitrification and for reduction in the concentration of nitrates.
- The primary settlement tanks.
- Secondary treatment process.
- Secondly settlement tanks.
- Sludge pumping stations.
- Chemical dosing for phosphorous removal.

- Tertiary filtration system which will be installed upstream of the UV disinfection system to provide for effluent polishing.
- Disinfection by UV for pathogens removal.
- Sludge thickening and storage tank.
- New 350m^3 storm water storage tank and retention of the existing 200 m^3 tank, to reduce stormwater overflows frequency and volume.
- New final effluent treatment pumping station.
- Percolation area for indirect discharge to groundwater including ancillary infrastructure of lift pumping station and control kiosk.

The design review report which was undertaken and its conclusions examined options for the discharge of the treated effluent in accordance with the process recommended in Section 4.1 of the document of the EPA Guidance on the Authorisation of Direct Discharges to Groundwater (2014).

9.3.2. **Stage 1 Screening –**

The potential impact sources which are relevant are:

- Indirect impacts in the construction stage related to water quality due to accidental release of silt laden waters or hydrocarbons. There is potential for direct and indirect impacts to qualifying interests and special conservation interest of European sites (*ex situ*).
- Potential indirect impacts on qualifying interests and special conservation interests from the introduction, disturbance or spread of invasive species.
- Upgrade to the level of treatment and cessation of the direct discharge to groundwater will significantly reduce stormwater overflow frequency and volume.

The potential impact pathways relevant are:

- The interconnectedness of the surface water and the groundwater provides a vector for potential water quality impact sources to be transferred downstream or downgradient from the development during both the construction and operation phases.

- Localised noise and visual disturbance effects in the construction phase.

Figure 3 of the NIS identifies the European sites which are within a buffer of 10km and 15 km from the proposed development. The table below presents the conservation objectives and the location and potential pathways for these sites.

9.3.3. **Conservation Objectives - Table.**

Site Name and Site Code	**Conservation Objectives and Qualifying Interests (Habitats and Species)**	**Location / distance, presence of water dependent and nutrient sensitive features, potential pathways and screening conclusion**
Ballyteige (Clare) SAC (000994)	**Conservation Objectives** *21/02/2018* To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Qualifying interests** *Molinia* meadows on calcareous, peaty or clayey-silt-laded soils (Molinion caeruleae)	4.7km to NW Water dependent and nutrient sensitive species present. No hydrological or other pathways – separated by distance. *Screened out.*
Inagh River Estuary SAC (000036)	**Conservation Objectives** *Version 1.0, 27 January 2017* To restore the favourable conservation condition of the habitats which are listed as qualifying interests, which is defined by a list of attributes and targets. **Qualifying interests** 1310 *Salicornia* and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-	7.2km to SW. Water dependent and nutrient sensitive species present. Hydrological connectivity by way of surface water

	Puccinellietalia maritimae) 1410 Mediterranean salt meadows (Juncetalia maritimi) 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	pathways. *Further assessment required with respect to potential of significant adverse effects.*
Black Head-Poulsallagh Complex SAC (000020)	**Conservation Objectives** *Version 1.0, 21 May 2014* To maintain the favourable conservation condition of Annex I habitat(s) and/or the Annex II species for which the SAC has been selected, which is defined by a list of attributes and targets. **Qualifying interests** 1170 Reefs 1220 Perennial vegetation of stony banks 1395 Petalwort *Petalophyllum ralfsii* 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation 4060 Alpine and Boreal heaths 5130 *Juniperus communis* formations on heaths or calcareous grasslands 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia)(*important orchid sites) 6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) 7220 Petrifying springs with tufa formation (Cratoneurion) 8240 Limestone pavements* 8330 Submerged or partially submerged sea caves	8.8 km to N Water dependent and nutrient sensitive species present. No hydrological or other pathways – separated by distance. *Screened out.*
Ballycullinan Lake SAC (000016)	**Conservation Objectives** *Version 1.0, 12 January 2018* To maintain the favourable conservation condition of Calcareous fens with Cladium	12km to SE Water dependent and nutrient sensitive

	mariscus and species of the Caricion davallianae* in Ballycullinan Lake SAC, which is defined by a list of attributes and targets. **Qualifying interests** Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae**	species present. No hydrological or other pathways – separated by distance. *Screened out.*
Corofin Wetlands SPA (004220)	**Conservation Objectives** *21 February 2018* To maintain or restore the favourable conservation condition of the bird species listed as special conservation interests for this SPA. To maintain or restore the favourable conservation condition of the wetland habitat at Corofin Wetlands SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. **Qualifying interests** A004 Little Grebe *Tachybaptus ruficollis* A038 Whooper Swan *Cygnus cygnus* A050 Wigeon *Anas penelope* A052 Teal *Anas crecca* A156 Black-tailed Godwit *Limosa limosa*	8.6km to SE Water dependent and nutrient sensitive species present. Hydrological connectivity by way of ground / surface water pathways. *Further assessment required with respect to potential of significant adverse effects.*
Cliffs of Moher SPA (004005)	**Conservation Objectives** *21 February 2018* To maintain or restore the favourable conservation condition of the bird species listed as special conservation interests for this SPA. **Qualifying interests** A009 Fulmar *Fulmarus glacialis* A188 Kittiwake *Rissa tridactyla* A199 Guillemot *Uria aalge* A200 Razorbill *Alca torda* A204 Puffin *Fratercula arctica*	12km W Water dependent and nutrient sensitive species present. No hydrological or other pathways – separated by distance. *Screened out.*

	A346 Chough *Pyrrhocorax pyrrhocorax*	
East Burren Complex SAC(001926)	**Conservation Objectives** *21 February 2018* To maintain or restore the favourable conservation condition of the Annex I habitats(s) and / or the Annex II species for which the SAC has been selected. **Qualifying interests** 3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. 3180 Turloughs* 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation 4060 Alpine and Boreal heaths 5130 *Juniperus communis* formations on heaths or calcareous grasslands 6130 Calaminarian grasslands of the Violetalia calaminariae 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae* Petrifying springs with tufa formation (Cratoneurion)* 7230 Alkaline fens 8240 Limestone pavements* 8310 Caves not open to the public 91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)*	5.7km to E, 9.2km to SE. Water dependent and nutrient sensitive species present. Hydrological connectivity by way of groundwater pathways. *Further assessment required with respect to potential of significant adverse effects.*
Moneen Mountain SAC	**Conservation Objectives** *21 February 2018* To maintain or restore the favourable conservation condition of the Annex I	2.7kmE Water dependent and nutrient sensitive

(000054)	habitats(s) and / or the Annex II species for which the SAC has been selected. **Qualifying interests** 3180 Turloughs* 4060 Alpine and Boreal heaths 5130 Juniperus communis formations on heaths or calcareous grasslands 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) 7220 Petrifying springs with tufa formation (Cratoneurion)* 8240 Limestone pavements* 1065 Marsh Fritillary *Euphydryas aurinia* 1303 Lesser Horseshoe Bat *Rhinolophus hipposideros*	species present. No hydrological or other pathways – separated by distance. *Screened out.*

The NIS refers to the surface water quality monitoring results from Poplar Bridge on the Fergus from 2009-2013 and the updated chemical water quality data for 2013-2015 , which shows strong compliance with 'High' status and generally with 'Good' status limits for the Fergus at Riverstown and Poplar Bridge sampling locations. Poplar Bridge is downstream of the main springs which form the River Fergus and upstream of the East Burren Complex and Corofin Wetlands SPA by 0.11km and 0.95km respectively. On the basis of this information it may be concluded that the existing discharges from the final effluent are not having a significant impact on the downstream water quality which is a supporting feature of the East Burren Complex SAC and Corofin Wetlands SPA.

With respect to the Cloongarve Stream to the northwest and which periodically may receive water from the Ballybreen swallow hole in high flow conditions the NIS notes that there is no monitoring of water quality undertaken of this watercourse. As such the localised impact of the existing wastewater treatment facility cannot be evaluated. I consider that for the purposes of AA there is no requirement for detailed knowledge about the baseline conditions in this small watercourse as the relevant consideration concerns the downstream effects in the Inagh River Estuary SAC, which is 7.2km downstream. Taking into account the available monitoring

information from the River Dealagh Bridge downstream and upstream of the confluence with the Cloongarve Stream (which is 'Good') and the status of the Inagh River Estuary (Intermediate) the NIS indicates that it may be extrapolated that the discharges from the existing wastewater treatment system is not having an adverse effect on the Inagh River Estuary SAC. This conclusion is reasonable and is supported by adequate scientific information in my opinion.

It can therefore be concluded that there is no significant impact from the existing discharge on the WFD water quality status of the East Burren Complex SAC and Corofin Wetlands SPA and Inagh River Estuary SAC. As a result of the development proposed there will be a reduction in the pollutant loading from the WwTP due to the tertiary treatment, UV disinfection and percolation area and there will be a reduction in stormwater overflow frequency and volume to swallow hole A. On that basis it is also reasonable to conclude that the proposed development will have positive effects due to the proposed improved operational discharges.

Notwithstanding this conclusion it is necessary to assess the potential or significant adverse effects on the qualifying interests and the conservation objectives of the East Burren Complex SAC and Corofin Wetlands SPA and Inagh River Estuary SAC. These European sites are connected to the proposed development by a hydrological and hydrogeological pathway.

Based on the conclusions in the Stage 1 Screening, which I consider are adequate and which are supported by best available scientific evidence, the impact source-pathway-receptor chains which are relevant are:

- Potential accidental release of silt-laden waters or hydrocarbon by way of karst features including Ballybreen swallow hole to East Burren Complex SAC and Corofin Wetlands SPA and Inagh River Estuary SAC.
- Operational stage percolation potential due to character of subsoil and extreme aquifer vulnerability for the Miltown Malbay_2 GWB.
- Potential in the construction stage for indirect disturbance impacts on qualifying interests and special conservation interests where they are present within the wider zone of influence of the proposed works by land and air pathways.

- Potential for introduction, spread or disturbance of invasive species.
- Potential for cumulative or in-combination impacts including agriculture, Ennistymon WwTP and others with regard to baseline or diffuse water quality impacts affecting East Burren Complex SAC and Corofin Wetlands SPA and Inagh River Estuary SAC.
- Discharge by way of percolation in the operation phase has potential impacts in terms of nutrient-sensitive water dependant qualifying interests of European sites.

In conclusion the East Burren Complex SAC and Corofin Wetlands SPA and Inagh River Estuary SAC are brought forward for Stage 2 appropriate assessment.

9.3.4. Stage 2 Appropriate Assessment

As concluded above groundwater and surface water dependent qualifying interests and special conservation interests of East Burren Complex SAC and Corofin Wetlands SPA and Inagh River Estuary SAC are directly dependent on water quality and have the potential to be adversely impacted by water quality changes. The investigation of hydrology and hydrogeology has shown groundwater pathways with connectivity to surface water between the WwTP and the qualifying interest of these European sites.

In the construction phase the impacts which may arise in the absence of mitigation relate to accidental release of silt-laden water and hydrocarbons during site works and the potential to encounter groundwater when excavating for the percolation area, which could also require management of suspended solids encountered during dewatering.

The impacts from silt laden waters during construction is short-term and reversible. The risks of impacts related to hydrocarbon spillages is considered low but the consequences could potentially be significant involving potential impact on respiration of aquatic organisms and deterioration in aquatic habitats. Impacts on riverine and lacustrine plant communities could result.

Impacts on the **Corofin Wetland SPA** related to release of suspended solids or hydrocarbons could give rise to changes in riverine and lacustrine plant and

invertebrate communities which would impact on the foraging of birds. The direct impacts on birds as a result of spillages of hydrocarbons is considered low.

In the operation phase there is potential for impacts relating to nitrates inputs cumulatively or in combination with other inputs and pressures including from agriculture and forestry practices, artificial drainage and on-site wastewater treatment system and the licenced point pressures as well as peat siltation.

With respect to the Ennis GWB which is hydrologically and hydro geologically connected to the WwTP there are agricultural and anthropogenic pressures which affect that GWB. The Fergus is downstream of the plant and is upstream of and connected to the East Burren Complex SAC and the Corofin Wetlands SPA and is of 'good' ecological status in 2016 and with nutrient parameters of generally 'good' to 'high'.

The main threat to the **East Burren Complex SAC** is from agricultural improvement including fertilisation, from heavy grazing pressures in some areas and in the case of some wetlands from agricultural run-off. Based on the NPWS and EPA data the main known threats to the other Europeans sites / water bodies are listed in the NIS as:

- Corofin Wetland SPA – no known threats.
- Inagh River Estuary SAC – no identified impacts by way of surface or groundwater pathways.
- Inagh River Estuary SAC – water body listed 'at risk' in 2010 from land based point sources pressures namely WwTPs.
- Kilfenora WwTP not listed specifically as a pressure within the surface water or groundwater catchments.
- The River Dealagh between Smithstown Bridge and Aughvackeen Bridge are at 'good' status.
- There is limited connectivity to the Inagh River SAC except in peak flow and potential for consequential effect is discounted due to the distance of separation and the high dilution during a peak flow event and due to the fact that the current discharge is not compromising water quality, alone or in combination taking into account the improved discharge values proposed from the upgraded WwTP.

Regarding the impacts on Annex I habitats, Annex II species and Annex I Birds / SCI species the key parameters of concern include alkalinity, Orthophosphate and Total Phosphorous, Ammonia, Potassium and Suspended Solids.

In terms of the groundwater and surface water dependent habitats of East Burren Complex SAC and Corofin Wetlands SPA turloughs, hard water lakes and alkaline fens are sensitive receptors with regard to potential releases of nutrient loading and operational suspended solids release which may affect plant life, photosynthesis and alteration to species composition. A review of water quality has shown that the current discharge is not affecting the conservation status of the Annex I habitats of the East Burren SAC and the wetland habitat of the SPA with 'good' water quality being identified downstream of the existing discharge and it is evaluated that the proposed improvement to the discharge effluent quality will result in a significant improvement in effluent quality thus reducing the potential for cumulative and in combination pressures on these European sites with regard to water quality in the wider catchment.

The coastal and transitional habitats listed as qualifying interests for the **Inagh River Estuary SAC** are 7.2km downstream of any hydrological connection with the proposed development and although these are nutrient sensitive and water dependent the saltmarsh and sand/mud flat habitats are tolerant of elevated suspended solids. The dune habitats are not directly connected to potential pathways and will not be indirectly affected due to distance.

With regard to **potential cumulative and in-combination** effects none of the permitted developments are considered relevant. There are works ongoing with respect to the sewers in Kilfenora which aim to reduce infiltration to the network and are subject to their own assessment and to the exempted development provisions of the PDR 2018. It is considered that due to the nature and scale of these works and the geographic and temporal separation there are no likely significant effects on the environment when considered in combination with the construction effect of the proposed development. There are no third party projects which could operate cumulatively to exacerbate the significance of any individual impacts associated with the construction and operation of the proposed development.

The potential impacts associated with the construction and operation of the proposed development as described with regard to the qualifying interests / special conservation interests of the respective European sites are presented in table 7 in the NIS. I have considered this information and assess the potential construction and operational pause impacts on the 3 no. relevant European sites below.

East Burren Complex SAC

This European site is located about 9.6km from the site of the proposed development, contains water dependent habitats and species and is connected to the proposed development by surface water and groundwater pathways.

There is potential indirect impacts on the following qualifying interests in the construction and operation phases

- Hard water lakes
- Turloughs*
- Floating river vegetation
- Cladium fens*
- Petrifying springs with tufa formation*
- Alkaline fens

The potential indirect impacts may be summarised as:

- Potential construction phase pollution due to suspended solids release or hydrocarbon spillages which could affect the conservation status of the habitats. Mitigation is required.
- Potential water quality effects on the groundwater body which is hydrologically connect to the SAC. Due to the project design and setting of discharge standards which were established to avoid impacts on the conservation status of these habitats, the proposed development is considered not to require further mitigation other than the design mitigation measures. This conclusion may be drawn in the context of the existing baseline conditions, the imperceptible effect of the existing discharge on the SAC and the improved water quality measures which are proposed.

- In relation to the appeal comments relating to the potential for ponding at the percolation area its location and design have been deemed adequate in an earlier section of this report.

There is potential indirect impacts on otter in the construction and operation phases from:

- Potential construction phase pollution due to suspended solids release or hydrocarbon spillages which could affect the River Fergus resulting in reduced foraging area and fish stocks, which could affect the conservation status. Mitigation is required.
- Potential water quality effects on the groundwater body which is hydrologically connect to the SAC, which might have long-term effects on water quality and indirect impacts on the species, in the event of fish being impacted. Due to the project design and setting of discharge standards which were established to avoid impacts on the conservation status of the European site, the proposed development is considered not to require further mitigation other than the design mitigation measures. This conclusion may be drawn in the context of the existing baseline conditions, the imperceptible effect of the existing discharge on the SAC and the improved water quality measures which are proposed.

Inagh River SAC

This European site is located about 7.2km from the site of the proposed development, contains water dependent habitats and is connected to the proposed development by surface water and groundwater pathways.

There is potential indirect impacts on the following habitats which are qualifying interests of the European site in the construction and operation phases:

- Salicornia and other annuals colonising mud and sand
- Atlantic salt meadows
- Mediterranean salt meadows.

There is potential construction phase pollution due to suspended solids release or hydrocarbon spillages which could affect the conservation status of the habitats by

connectivity by way of the River Dealagh. However this pathway is temporary and the habitats are a significant distance downstream and not subject to significant nutrient pressures. It can therefore be concluded that significant adverse effects either indirect or cumulative are unlikely. Mitigation is prescribed to avoid any such construction phase impacts.

There is potential for operational phase impacts from the proposed development on the water quality of the River Dealagh and this in turn could affect the SAC. Due to the project design and setting of discharge standards which were established to avoid impacts on the conservation status of these habitats, the proposed development is considered not to require further mitigation other than the design mitigation measures. This conclusion may be drawn in the context of the existing baseline conditions, the imperceptible effect of the existing discharge on the SAC and the improved water quality measures which are proposed.

Corofin Wetlands SPA

This European site is located about 8.6km from the site of the proposed development, contains wetland habitats and bird species which are qualifying interests and is connected to the proposed development by groundwater pathways.

There is potential indirect impacts on the following in the construction and operation phases:

- Wetland habitat
- Little grebe
- Whooper swan
- Wigeon
- Teal
- Black-tailed godwit.

There is potential construction phase pollution due to accidental suspended solids release or hydrocarbon spillages which could affect the conservation status of the wetland habitat. The potential for impacts on plants and invertebrates as a result of water quality impacts would result in a reduced foraging area for birds, which could

result in indirect effects on bird species and affect the conservation status of the birds which are special conservation interests of the European site.

Due to the project design and setting of discharge standards which were established to avoid impacts on the conservation status of water dependent habitats, the proposed development is considered not to require further mitigation other than the design mitigation measures. This conclusion may be drawn in the context of the existing baseline conditions, the imperceptible effect of the existing discharge on the SAC and the improved water quality measures which are proposed.

Mitigation

The construction phase mitigation measures outlined in section 6.4 of the NIS include relatively standard best practice measures to ensure avoidance of spillages, measures to protect groundwater and measures relating to the discharge of groundwater if encountered during construction. All of the above would be governed by the overarching measure of the CEMP and the adherence to accepted standards. The measures are approved by DCHG which recommends a planning condition be attached in this respect.

9.3.5. **Conclusion**

On the basis of the information provided with the application including the Natura Impact Statement, which I consider is acceptable in order to carry out a Stage 2 Appropriate Assessment, I am satisfied that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of the following European sites:

- East Burren Complex SAC
- Corofin Wetlands SPA
- Inagh River Estuary SAC

or any other European site, in view of the sites' conservation objectives and no reasonable scientific doubt remains as to the absence of such effects.

10.0 Conclusions and Recommendation

Arising from my assessment above I recommend that the decision of the Planning Authority be upheld and that planning permission be granted for the proposed development based on the reasons and considerations set out below.

In general regarding the conditions which the Board may wish to attach I have referred earlier to the CoA and the types of conditions which the EPA shall attach. The onus is on the Board to regulate noise and odours. Regarding emissions from the WwTP the practice has emerged also that the Board attaches conditions relating to the standard of treatment and those conditions would be superseded by any conditions attached under the CoA.

Reasons and Considerations

Proper Planning and Sustainable Development

It is considered that the proposed Kilfenora wastewater treatment plant including the provision of tertiary treatment and a percolation area would, subject to conditions set out below constitute a significant improvement in the standard of treated effluent discharged, would provide a suitable means of dispersing the treated effluent, would eliminate the direct discharge to ground, would be acceptable in terms of flood risk, public health and traffic safety, would not seriously impact on the residential amenities of the area or property in the vicinity and would provide for growth in the village. The proposed development would therefore be in accordance with the proper planning and sustainable development of the area.

Appropriate Assessment

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on European sites, having regard to the sites' conservation objectives. The Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' conservation objectives.

Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by further plans and particulars submitted on the 30th day of July 2019 as revised by the details submitted to An Bord Pleanála on the 26th day of November 2019, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to the commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

   Reason: In the interest of clarity.

2. The developer shall comply with all mitigation and environmental commitments in the application documentation including those identified in the Ecological Impact Assessment Report, the Natura Impact Statement and the finalised Construction and Environmental Management Plan.

   Reason : In the interest of development control and clarity.

3. The demolition and construction shall be managed in accordance with a Construction and Environmental Management Plan which shall be submitted to and agreed in writing with the planning authority prior to the commencement of development. This plan shall provide details of the proposed construction practice for the development including traffic management, noise management measures, hours of construction and off-site disposal of construction/demolition waste.

   Reason: In the interest of public safety and residential amenity and to ensure proper disposal of waste.

4. The percolation area shall comply with the requirements of Table B.3 of the Code of Practice for Single Houses published by the EPA in 2009.

   Reason: To ensure suitable separation between the percolation area and

karst features.

5. The effluent quality standards to be achieved at the WwTP shall be as follows:

Parameter	Unit	Final effluent standard at WwTP
BOD	mg/l	10
COD	mg/l	40
Ammonia	mg/l	1.0
Nitrates	mg/l	50
Ortho-Phosphate	mg/l	0.5
Suspended solids	mg/l	10
Pathogenic reduction	-	Log 3 reduction

Reason : In the interest of clarity.

6. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall –

(a) Notify the Department of Culture, Heritage and the Gaeltacht in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.

(b) Employ a suitably qualified archaeologist who shall monitor all topsoil stripping, site investigations and other excavation works.

(c) Once each RMP or area of archaeological potential has been archaeologically excavated, a detailed technical report setting out the findings of excavations together with the studies already carried out in relation to the EIAR shall be submitted to the planning authority.

(d) Provide arrangements for the recording and for the removal of any archaeological material which the Department of Culture,

Heritage and the Gaeltacht considers appropriate to remove.

(e) Following consultation with the National Monuments Service and the National Museum, the developer shall agree with the planning authority the arrangements for post excavation analysis and archiving.

(f) A final report on the completed archaeological works shall be submitted to the National Monuments Service, the National Museum and the Planning Authority within one year, unless otherwise agreed.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

7. The development shall comply with the requirements of the planning authorities with respect to surface water management.

   Reason: In order to protect water quality and to avoid the creation of flood risk.

8. Details of the materials, colours and textures of all the external finishes to the proposed buildings and structures shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. The new roadside boundary at the Ballybreen site shall be finished with either a low stone wall or a grass covered berm.

   Reason: In the interest of the visual amenities of the area.

Mairead Kenny,
Senior Planning Inspector.
17th February, 2020.