



SECTION A: NON-TECHNICAL SUMMARY



**ATTACHMENT A.1.1:
NON-TECHNICAL SUMMARY**

ATTACHMENT A.1.1 NON-TECHNICAL SUMMARY

1. Introduction

The Grenagh agglomeration consists largely of a village with a substantial residential element. The agglomeration is located approximately 16 km north of Cork City and west of the N20 Cork-Mallow road and railway line.

The effluent from the agglomeration arises mainly from domestic sources. There are no IPC or waste licensed activities in the vicinity with significant discharges to the agglomeration.

The WwTP is located at NGR 158817E, 084754N and is currently operated by EPS Ltd. for Irish Water.

The agglomeration is served by a combined gravity sewer. The plant provides secondary treatment to reduce the biological load to the standards required by the Urban Wastewater Treatment (UWWT) Regulation (S.I. No. 254 of 2001).

Discharges from the Grenagh agglomeration are currently authorised under Certificate of Authorisation (CoA) A0524-01. The WwTP is currently collecting loads in excess of 500 p.e. (ca. 561 p.e., 2021 peak week loading). As there is an increase in the p.e. to which a CoA relates, an application for a waste water discharge licence is now required.

Refer to **Attachment A.1.2** for the area of interest and **Attachment B.2.1** for a map of the Grenagh agglomeration.

2. Description of the waste water discharges from the waste water works serving the agglomeration

Primary Discharge (SW001):

The primary discharge (SW001), which operates 24hrs a day and 365 days a year, discharges to the Martin River (Martin_010) primary discharge outfall pipe at NGR 158833E, 084980N. There is no composite sampling or continuous flow monitoring in place at present on the discharge point.

Secondary Discharges:

There are no secondary discharge points associated with the current waste water works.

Dual Function Overflow (SW002):

There is one Dual Function Overflow (SW002) at the WwTP *i.e.*, overflow which can act as a Storm Water Overflow or as an Emergency Overflow depending on the event.

The Storm Water Overflow at the WwTP is located after the grit trap and before the inlet screen. Stormwater passes through a mesh screen with an approximate spacing of 20-25mm. Wastewater overflows *via* a 300mm weir channel at a depth of 150mm and is diverted to a Storm Water Overflow tank (ca. 115.1m³). There are two pumps within the storage tank which return stormwater to the inlet chamber. Return pumped flows are operated by a level sensor. Should the capacity of the storage tank be exceeded a high-level Storm Water Overflow from the storm tank discharges to the primary outfall and combines with the treated effluent before being discharged to the Martin River.

This SWO operates in compliance with the definition of 'Storm Water Overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995.

In the event of an emergency (*i.e.*, power failure), wastewater will discharge to the Martin River *via* the primary discharge outfall pipe.

Refer to **Attachment B.2.2: Map 4** and **Map 5** for the location of the operational discharges.

3. Description of the wastewater works and associated waste water treatment plant

The Grenagh agglomeration consists largely of a village with a substantial residential element. The agglomeration is located approximately 16 km north of Cork City and west of the N20 Cork-Mallow road and railway line.

The design capacity of the WwTP is 1,200 p.e. The current p.e. based on 2021 collected loads is 561 p.e. Based on the existing collected loads (2021), the projected 10-year load is 750 p.e.

The agglomeration is served by a combined gravity sewer. The plant provides secondary treatment to reduce the biological load to the standards required by the Urban Wastewater Treatment (UWWT) Regulation (S.I. No. 254 of 2001).

The treatment plant consists of the following:

- Mechanical Inlet Screening.
- Gravity overflow to underground storm water storage with pumped return.
- A secondary treatment process based on dual stream activated sludge.
- Fine bubbled diffused aeration system.
- Dual secondary clarifiers complete with rotating half bridge scrapers systems.
- Single sludge storage tank.
- Block built control building.

The performance standards for final effluent have been set to ensure compliance with the Urban Waste Water Treatment Directive and associated Treatment Standards and to ensure there is no significant adverse effect on the receiving aquatic environment, the Martin River (Martin_010). Refer to **Table A.1.1** below:

Table A.1.1 Proposed Operational Standards/ELVs

Parameter	Unit	Proposed Standards/ELVs
Biological Oxygen Demand (BOD)	mg/l	25
Chemical Oxygen Demand (COD)	mg/l	125
Suspended Solids (SS)	mg/l	35
Ammonia (as N)	mg/l	3
Ortho-phosphate (as P)	mg/l	1.65
pH	pH unit	6-9

Sludge is stored in a sludge holding tank and is removed once a month to various WWTPs and composting farms.

There are no pumping stations within the agglomeration.

Refer **Section 2** above for details on existing discharges from the WwTP.

4. Description of the features and measures, if any, envisaged to avoid, prevent, or reduce and, if possible, offset the significant adverse effects on the environment

Irish Water are committed to ensuring that water services infrastructure operates in a manner that supports the achievement of the water body objectives under the Water Framework Directive, and their obligations under the Birds and Habitats Directives.

The proposed standards/ELVs as listed above give effect to the principle of the Combined Approach as defined in Waste Water Discharge (Authorisation) Regulations, 2007 to 2020 in that they accommodate the Urban Waste Water Regulations and the relevant status of the receiving waterbody, the Martin River (Martin_010) (see **Attachment D.2.1**: Impact Assessment Report and **Attachment D.2.3**: Waste Assimilative Capacity (WAC)).

The SWO operates in compliance with the definition of '*Storm Water Overflow*' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995.

Refer also to **Section C.2** for further details of the proposed robust measures to prevent any unintended discharges to the Martin River.

5. The proposed technology and other techniques for preventing or, where this is not possible, reducing discharges from the wastewater works

As noted above, the WwTP has been designed, and will be operated, to ensure the primary discharge of treated effluent (SW001) does not cause a significant adverse effect on the receiving environment *i.e.*, Martin_010.

Refer to **Section C.2** for details of the proposed measures to prevent any unintended discharges to the Martin River.

6. Description of the receiving waterbody

Grenagh WwTP discharges to the Martin River (Martin_010). Martin_010 is within the Lee, Cork Harbour and Youghal Bay Catchment (Hydrometric Area 19). This catchment includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork, draining a total area of 2,153km².

The draft 3rd Cycle Catchment Report (2021) for this Hydrometric Area (HA), determined that for river waterbodies excess nutrients remain the most prevalent issue, along with morphology, organic pollution, and hydrology. Pressures identified affecting the greatest number of waterbodies within HA 19 include hydromorphology, followed by agriculture, urban run-off, urban wastewater, domestic waste water, forestry, mines and quarries and industry. Grenagh WwTP is not listed as a significant pressure in At Risk waterbodies in the draft 3rd cycle catchment assessment. The Martin_010 is listed as an area for action under the 3rd cycle (and the 2nd cycle).

The significant pressures for the Martin_010 have been cited within the draft 3rd cycle Catchment Report as Hydromorphology (embankments) and Other (illegal dumping), both of which are outside of the control of IW. Grenagh WwTP is not listed as a significant pressure on this At Risk Martin_010 waterbody.

The WFD status of the Martin_010 is Poor and At Risk of not achieving Good water quality status during 2022-2027. Further downstream the Martin_010 flows to the Martin_020 (Good Status) and then to the Martin_030 (Good Status) and the Martin_040 (Moderate Status). Approximately 13 km downstream, the Martin River flows into the Shournagh_030 (Moderate Status). The Shournagh River flows into the River Lee just north of Carrigrohane.

The EPA undertake biological monitoring of the Martin River at various locations. Upstream of the WwTP at RS19M010100 (ca. 1.6 km upstream), the 2020 monitoring reported a Q value of 3-4 (Moderate). Downstream of the WwTP at RS19M010200 and RS19M010300 (ca. 1.3 km and 4.3 km downstream, respectively) the 2020 monitoring reported a Q value of 4 (Good). Further downstream at RS19M010400 (ca. 7.1 km downstream of the WwTP), the 2020 monitoring reported a Q value of 4-5 (High).

Irish Water have conducted ambient monitoring sampling in 2022 ca. 1.6km d/s of RS19M010100 and directly u/s of the WwTP discharges and ca. 4km u/s of RS19M010300 and ca. 260m d/s of WwTP discharges. Based on grab sampling results obtained in 2022, the concentration for Ammonia and Ortho-P are within the required EQSs for Good status (mean and 95%ile). In relation to BOD, the mean upstream concentration was 1.9m/l, indicating that the mean EQS for Good status is not met upstream of the WwTP. However, the 95%ile Good status EQS is met. The downstream mean BOD, Ortho-P and Ammonia concentrations are below the EQS for Good status (both mean and 95%ile).

There are no nutrient sensitive waters, designated shellfish area, drinking water abstraction points or freshwater pearl mussel designated habitats in proximity to the Grenagh agglomeration and its operational discharges.

The Lee [Cork] Salmonid River is located ca. 19km downstream of the primary discharge.

The Lee Estuary / Lough Mahon Nutrient Sensitive Area is located ca. 23.5 km downstream of the primary discharge.

The nearest drinking water abstraction point is located at the Lee Road Waterworks in Cork City, ca. 22 km downstream.

The Cork Great Island North Channel Shellfish Area is located ca. 40 km downstream of the primary discharge.

The nearest European site to the agglomeration is the Blackwater River (Cork/Waterford) SAC, located ca. 5 km north of the agglomeration. However, there is no hydrological connectivity between the Blackwater River SAC and the Grenagh agglomeration.

Cork Harbour SPA and Great Channel Island SAC are distantly hydrologically connected to the Martin River and are over 30km downstream of the Grenagh WWTP operational discharges.

There are 8 pNHAs and 1 NHA within 15 km of the WwTP, the closest of which is Ardamadane Wood pNHA. Ardamadane Wood pNHA is located ca. 8 km downstream of the discharge point along the banks of Martin River and comprises of mainly dry deciduous woodland of Sessile Oak and Downey Birch with some scrub woodland and improved

agricultural grassland. The Blarney Castle Woods pNHA is located *ca.* 11 km downstream of the discharge point and comprises Sessile Oak, Ash, Sycamore and Beech. None of the habitats that each of the sites are designated for are highly sensitive to changes in water quality.

7. Description of the likely significant effects of the discharges on the environment

A Small Stream Risk Score (SSRS) was completed in 2018. The report concluded that there was no apparent impact to the macroinvertebrate community of the Martin River downstream of the WwTP due to the WwTP discharges.

Based on the EPA’s biological monitoring of the Martin River upstream of the WwTP at RS19M010100 (*ca.* 1.6 km upstream), the 2020 monitoring reported a Q value of 3-4 (Moderate). Downstream of the WwTP at RS19M010200 and RS19M010300 (*ca.* 1.3 km and 4.3 km downstream, respectively) the 2020 monitoring reported a Q value of 4 (Good). Further downstream at RS19M010400 (*ca.* 7.1 km downstream of the WwTP), the 2020 monitoring reported a Q value of 4-5 (High). The 2022 ambient monitoring results available (see **Tables 35 and 37 of Application Form**) shows that the downstream BOD, Ammonia and Ortho-P concentrations are below the EQS for Good status (both mean and 95%ile) in accordance with the European Union Environmental Objectives (Surface Waters) (Amendment). Regulations 2019 (S.I. No. 77 of 2019).

The above would indicate that the operational discharges from the Grenagh WwTP are not having an observable significant adverse effect on the receiving waterbody.

8. Measures planned to monitor discharges into the environment

Effluent Monitoring:

The proposed effluent monitoring regime is tabled below.

Table A.1.4 – Proposed Effluent Monitoring Regime

Parameter	Units	Monitoring Frequency	Analysis method/Technique
pH	pH Units	Bi-Monthly	pH Meter and recorder
cBOD	mg/l	Bi-monthly	Standard Method
COD	mg/l	Bi-monthly	Standard Method
Suspended Solids	mg/l	Bi-monthly	Standard Method
Ammonia (as N)	mg/l	Bi-monthly	Standard Method
Ortho-Phosphate (as P)	mg/l	Bi-monthly	Standard Method
Visual Inspection	Descriptive	Weekly	Sample and examine for colour and odour

Ambient Monitoring:

The proposed monitoring locations and parameters to be monitored are tabled below.

Table A.1.5 – Proposed Ambient Monitoring Locations and Parameters

Monitoring Location					Name of Receiving Water
158824	E	084996	N	Upstream aSW001u	MARTIN_010
158952	E	084741	N	Downstream aSW001d	MARTIN_010

Table A.1.6 – Proposed Ambient Monitoring Regime

Parameter	Units	Monitoring Frequency	Analysis method/Technique
pH	pH Unit	Quarterly	pH meter and recorder
BOD	mg/l	Quarterly	Standard Method
Suspended Solids	mg/l	Quarterly	Standard Method
Ortho-phosphate (as P)	mg/l	Quarterly	Standard Method
Ammonia (as N)	mg/l	Quarterly	Standard Method
DO	% O ₂	Quarterly	Standard Method
DO	mg/l	Quarterly	Standard Method
Visual Inspection	Descriptive	Quarterly	Standard Method

9. Hours during which the wastewater works is supervised or manned and days per week of this supervision

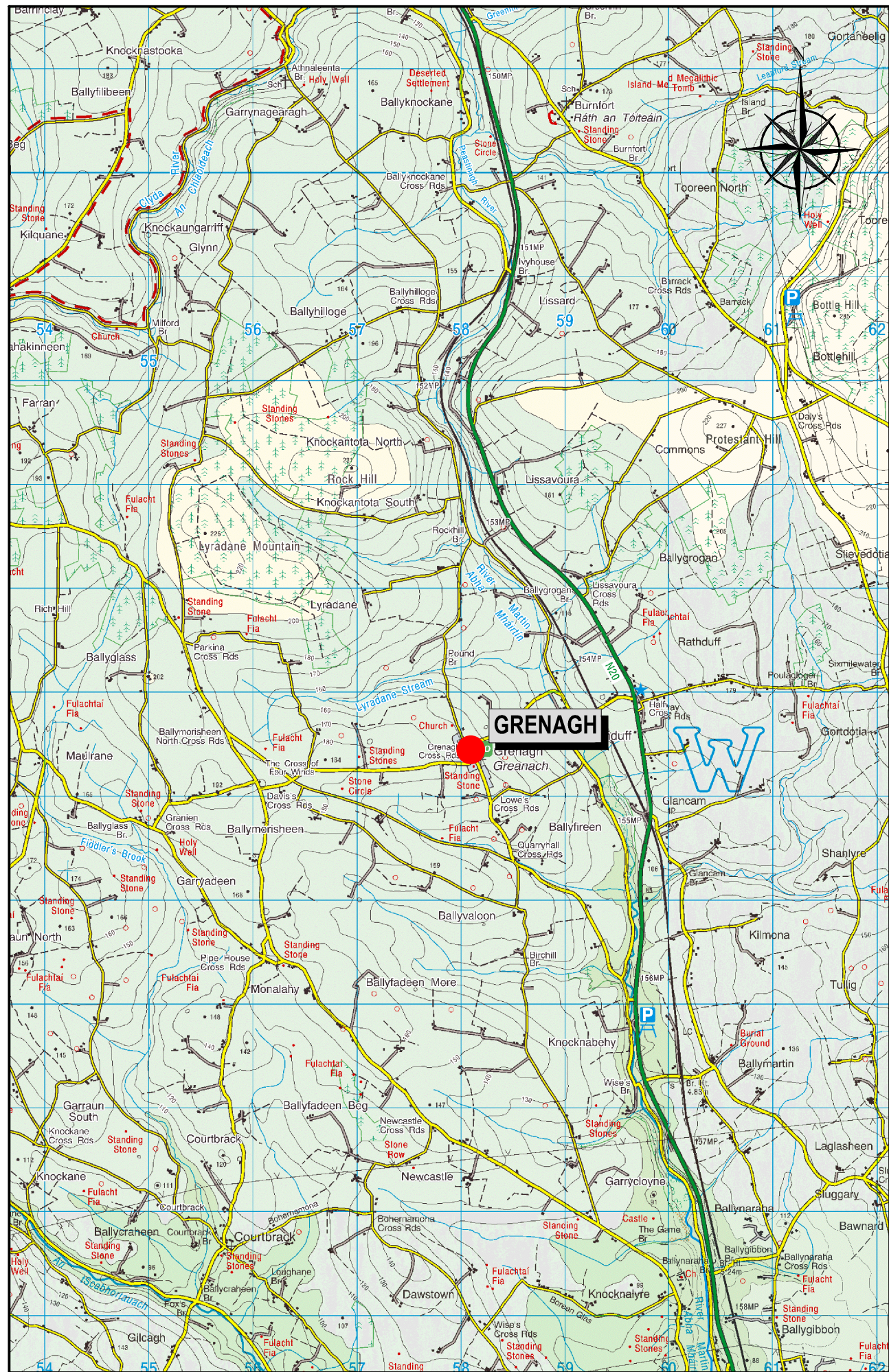
The WwTP operator EPS attends the plant a minimum of once a week and the hours spent at the plant varies depending on various factors *e.g.*, weather or breakdowns in plant or maintenance works required such as cleaning of the intake screens *etc.*

10. In the event of a review application, state the grounds for which this review application is being made

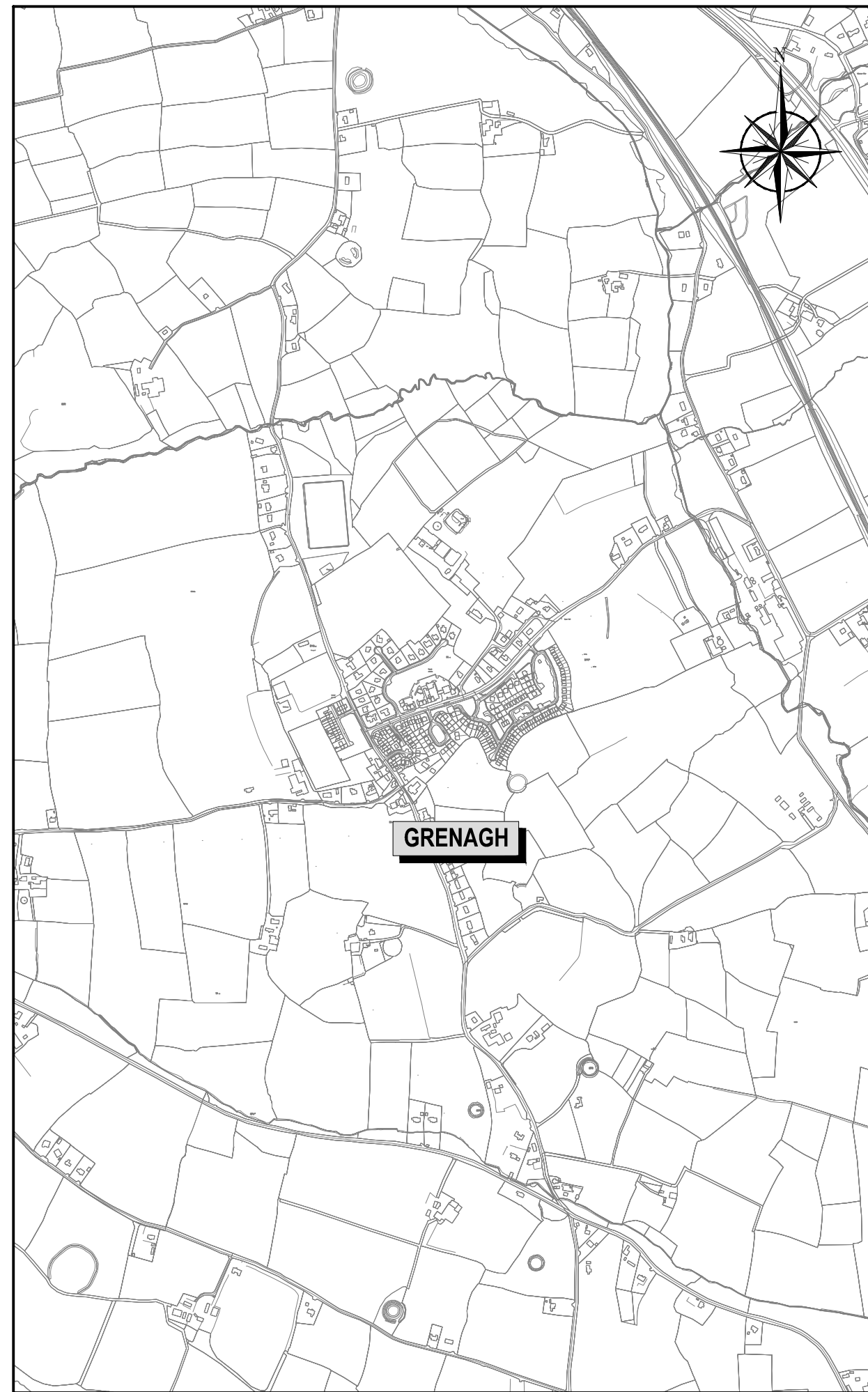
Not applicable. Not a review application.



ATTACHMENT A.1.2:
MAP 1 – AREA OF INTEREST



GRENAGH LOCATION MAP
SCALE 1:50,000



GRENAGH LOCATION PLAN
SCALE 1:12,500

SIGNED: _____

PRINT NAME: _____

POSITION: _____

DATE: _____

FOR IRISH WATER

REV	DATE	DESCRIPTION	D	C	A

DISCHARGE LICENCE

CLIENT
 **IRISH WATER**
 Cahill House,
 24-26 Talbot Street,
 Dublin 1.
 Tel. 1890 278 278 Web. www.water.ie

PROJECT
**GRENAGH
 WASTE WATER DISCHARGE
 LICENCE APPLICATION**

TITLE
**MAP 1
 AREA OF INTEREST**

SCALES	DRAWN	REV
AS SHOWN	A. McIntyre	-
CAD REFERENCE	DATE	
20893-NOD-WWDL-09	19.08.2022	
	ATTACHMENT	
	A.1.2	