

Non-Technical Summary

RSPCA Bryn-y-Maen Animal Centre
Bryn-y-Maen
Colwyn Bay
LL28 5EJ

Groundwater activity: discharge into land of sewage effluent from a septic tank (Permit number: CM0195001)

Application to change the description of the discharge and type of treatment.

Background:

On 22 November 1989, the National Rivers Authority issued a Consent to Discharge to RSPCA Bryn Y Maen Animal Shelter, Nant-y-Glyn Road, Bryn-y-Maen, Colwyn Bay (Consent Number: CM0195001). This permit allowed for the discharge of domestic sewage effluent from a sewage treatment plant, serving an Animal Centre and Staff Accommodation. The discharge shall be made via a pipe discharging to a sub-surface soakaway system at OS Grid reference SH 838150 762700.

On 18 May 1992, a review of the consent was made by the National Rivers Authority. Conditions of the Consent changed to: the discharge shall consist only of domestic sewage effluent from the sewage treatment plant which consists of a septic tank. The discharge shall be made via pipe to land at OS Grid Reference: SH 8382.7627. The volume discharged from the septic tank to the outfall pipe shall not exceed 5 cubic metres of effluent per day.

In April 2010, when the Environmental Permitting Regulations 2010 were enacted, this existing discharge consent automatically became an Environmental Permit (Permit Number CM0195001). Conditions of the permit changed to: Groundwater activity: discharge into land of sewage effluent from a septic tank via a soakaway system at NGR SH8382076270.

Some years ago, the septic tank was replaced by a package sewage treatment plant (WCS's (formerly WPL) HiPAF treatment plant). The Environmental Permit (CM0195001) was not varied at this time to reflect the new treatment process.

Scope:

This application to vary the Environmental Permit is limited to:

- To reflect the change in treatment method. Some years ago, the septic tank was replaced by a package sewage treatment plant maintained by Hutchinson Environmental Solutions Ltd.
- To reflect the discharge of trade effluent associated with the activities undertaken on site which include the operation of the animal centre and wastewater generated from the cleaning of the cattery cat pods and dog kennels. This is in addition to domestic wastewater generated on site and staff accommodation.
- There have been no changes to the volume of discharge generated on site, so the discharge volume does not need to be varied.

Current Operations

The current treatment plant is a HiPAF sewage treatment plant (HiPAF HP 210100020 TW 415V), which composes of the following treatment stages:

1. Pre-Treatment - Incoming wastewater gravitates to the primary settlement tank, where organic and inorganic matter settles. Sewage sludge sinks to the bottom of this tank and is held in this section until it requires de-sludging.
2. Secondary Treatment - From the primary settlement tank, the settled wastewater (without solids) enters the 'biozone' for treatment. High-voidage plastic media, contained between two floors within the biozone, encourages the growth of bacteria and other organisms which treat the water.

3. Discharge - The treated effluent (final effluent) enters the final settlement tank. It takes approximately 8 hours for a load to be treated and end up in the final settlement tank. Sludge from the treatment process settles out in this final tank and is returned to the primary settlement tank for co-settlement. The final effluent is discharged to a soakaway.

No regular sampling of final effluent is taken because there are no water quality limits given in the Environmental Permit. Centre staff check the treatment plant weekly including checking the final chamber for the presence of any oil or grease. It should be noted that the cleaning and disinfectants required by the Association of Dogs and Cats Homes (ADCH) are used in the cleaning operations on site.

In 2023, in preparation for the permit variation application, water quality samples were taken. Samples were taken by RSPCA colleagues and analysed by ALS Laboratories (UK) Limited.

Treated Final effluent 04.07.2023

Fats, Oils & Greases 1.33 mg/l
pH 7.7 pH units
Alkalinity as CaCO₃ 84.4 mg/l
Ammoniacal Nitrogen as N 0.95 mg/l
Ammonia as NH₃, Calculated 1.1 mg/l
Nitrite as N <0.08 mg/l
Nitrate as N 26.1 mg/l
Nitrogen, Total as N 25.0 mg/l
Phosphate, Ortho as P 10.5 mg/l
Total Suspended Solids 12.0 mg/l
BOD + ATU (5 day) 2 mg/l
COD (Total) 42.0 mg/l

Pre-Treated Wastewater 05.07.2023

Fats, Oils & Greases 2240 mg/l
pH 7.9 pH units
Alkalinity as CaCO₃ 348 mg/l
Ammoniacal Nitrogen as N 40.7 mg/l
Ammonia as NH₃, Calculated 40.7 mg/l
Nitrite as N <0.08 mg/l
Nitrate as N <0.7 mg/l
Nitrogen, Total as N 42.1 mg/l
Phosphate, Ortho as P 9.0 mg/l
Total Suspended Solids 712 mg/l
BOD + ATU (5 day) 393 mg/l
COD (Total) 989 mg/l

Treated Final Effluent 12.07.2023

Fats, Oils & Greases 15.3 mg/l
pH 7.6 pH units
Alkalinity as CaCO₃ 104 mg/l
Ammoniacal Nitrogen as N 0.81 mg/l

Ammonia as NH₃, Calculated 1.0mg/l
Nitrite as N 0.12 mg/l
Nitrate as N 23.4 mg/l
Nitrogen, Total as N 3.1 mg/l
Phosphate, Ortho as P 10.5 mg/l
Total Suspended Solids 6.00 mg/l
BOD + ATU (5 day) 18 mg/l
COD (Total) 50.0 mg/l

Control Measures

Hutchinson Environmental Solutions Ltd services the plant twice a year. There are no water quality limits set in the Environmental Permit, therefore no regular sampling is conducted. Centre staff check the treatment plant weekly including checking the final chamber for the presence of any oil or grease.

Change to Operations

There have been no changes of operations.