

**Dún Laoghaire-Rathdown County Council
Municipal Services
Cleaving & Beaches Section**



**Bathing Water Quality
Sampling, Reporting & Incident Management
April 2022**

1. Introduction

Under the Bathing Water Quality Regulations 2008, Dún Laoghaire-Rathdown County Council has responsibilities in relation to the management of bathing areas in the DLR area. These responsibilities include the identification of bathing areas, the establishment of bathing water profiles for identified bathing areas, the monitoring of bathing water quality at identified bathing areas, and the management of short-term pollution incidents and communication of health risks to bathers. The beaches and bathing areas in Dún Laoghaire-Rathdown are popular swimming locations with hundreds of swimmers visiting Seapoint, Sandycove, the Forty Foot and Hawk's Cliff every day throughout the year.

This document aims to set out the internal protocols for compliance with the bathing water regulations aimed at protecting the health of bathers from the risks associated with pollution events, including roles of staff members to ensure these responsibilities are met in accordance with the relevant aspects of the regulations and EPA guidance notes.

2. Bathing Water Sampling

Sampling and testing of bathing water is carried out at the following locations:

- Blackrock Baths Shore
- **Seapoint Beach**
- Beach Gardens Dún Laoghaire
- **Sandycove Beach**
- **The Forty Foot Bathing Area**
- Colliemore Harbour
- **Killiney Beach**
- **White Rock Beach**
- Corbawn Strand

The locations highlighted in **bold** are Identified Bathing Areas under the regulations. Water quality must be monitored at identified bathing areas. Sampling and testing is carried out twice a month outside the bathing season and once per week during the bathing season. This is more frequent than is required under the regulations, which require only four samples per year.

The location where the sample is taken at each bathing area is in accordance with the regulations - at the location where most bathers are expected. Samples are taken 30cm below the water surface in water that is at least 1 metre deep. A safe system of work is in place for bathing water sampling, and all staff members carrying out bathing water sampling are trained and inducted in this system.

For health and safety reasons, two staff members are required to carry out sampling. The two staff members are usually the shift foreman on duty on the day and one other staff member, either the Cleansing & Beaches Section officer responsible for reporting and managing the results or one other staff member from the shift crew. If the shift foreman is not available, he may delegate the responsibility to the ganger on duty on the day. On occasion, the Engineering Staff may carry out sampling.

Sample bottles of minimum volume 250ml are used. Samples are then delivered to the central lab in Eblana House, Dublin City Council, Dublin 8. Sampling at all locations and delivery of samples to the lab takes 3-5 hours. When preparing the bathing water sampling calendar, effort is made to spread

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out the sampling days. However, due to tides and the requirement to sample during high tide, and factoring in the opening times of the central lab, there are only limited days when sampling can be completed and delivered on time to the lab. Where it is not possible to sample and deliver to the lab on the same day, a fridge is available in Ballyogan Depot to store the samples until they can be delivered to the lab as early as possible on the following day. Samples should be delivered to the lab within 24 hours maximum.

It takes 2-4 days for the results of sampling to be completed and returned by the lab. This is due to the nature of the testing technique which requires the growth of the relevant bacteria. For this reason, it is usually preferable to carry out sampling early in the week, as further delays due to the lab closure over the weekend would mean results may not be returned for up to 4-5 days after the testing has taken place. However, some sampling must take place on Thursdays or Fridays because of the tidal issue noted and so it should be expected that results are not available for 4-5 days after testing in some cases.

If samples cannot be taken for health & safety reasons, sampling staff should email the Executive Engineer and Senior Executive Engineer over the Cleansing & Beaches Section reporting this. This is required to be reported by the Engineering Staff under to the EPA as per the EPA guidance notes.

3. Water Quality Results Reported

During the bathing season only (June 1st to September 15th) when the results from the Central Lab are returned to DLR (to the bathingwater@dlrcoco.ie email address), the following actions are required:

- The Central Lab will have uploaded the results to the EDEN Portal (Environmental Data Exchange Network <https://account.edenireland.ie/>) - MDS Module.
- The Engineering Staff are responsible for logging in and approving the bathing water sampling results on EDEN MDS. This function is sometimes delegated to admin staff in the Cleansing & Beaches Section.
- The above approval allows the results to be displayed on the Beaches.ie website. **This approval should take place within 1 hour of the results being released to DLR.**
- The Engineering Staff are responsible for communicating the results to bathers via graphs and notices posted at each bathing area. The results at each identified bathing area (5 locations) are entered into a DLR database SQL (this is done throughout the year, and not only during the bathing season) and a graph is generated that is posted at each location.

4. Sampling Results Indicating Levels Above HSE Action Levels

It is required under the Bathing Water Regulations to implement certain actions when E-Coli and I.E levels are higher than certain limits in order to inform and manage health risks to bathers. The HSE Actions as set out in the table below when the levels of E. Coli and I.E. in bathing water fall within certain ranges.

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Table 1: Action levels in response to microbiological sample results

<i>Escherichia coli</i>	Intestinal enterococci	Recommended Action *
> 2,000 E.coli	OR > 250 I.E.	Issue of a Bathing Prohibition Notice (Appendix 8) See note 1
≥1,000 - ≤2000 E.coli	AND ≥ 200 I.E.	Issue of a Bathing Prohibition Notice (Appendix 8) See note 1
≥1,000 - ≤2000 E.coli	BUT < 200 I.E.	Issue of a Bathing Advisory Notice (Appendix 7) and re-sample immediately See note 1 If re-sample is still ≥ 1000 E.coli - Issue of a Bathing Prohibition Notice (Appendix 8)
≥500 - <1,000 E.coli	OR ≥100 - ≤250 I.E.	Re-sample and monitor situation. Decision based on evidence available/details of pollution event. If re-sample is ≥ 1000 E.coli - Issue of a Bathing Prohibition Notice (Appendix 8)
Any gross malfunction or leakage of the sewerage system or visual reports of sewage		Issue of a Bathing Prohibition Notice (until the status of the bathing water quality can be verified).
<p>Note 1: There are two circumstances where the Local Authority may consider taking a precautionary approach even when the action levels have not been breached.</p> <p>(i) Where the microbiological result is greater than 90% of the action level, a risk assessment should be carried out which may in some circumstances suggest taking a precautionary approach with the issue of the appropriate bathing water notice.</p> <p>(ii) Where the microbiological result is greatly in excess of the normal background levels (see Appendix 13) for that bathing area, this circumstance may point to a pollution event in the vicinity. A risk assessment should be carried out which may suggest taking a precautionary approach with the issue of the appropriate bathing water notice.</p>		

* Based on risk assessment, taking into account the beach profile, previous sampling history, probable source of contamination, evidence of human illness etc.

Note that it is not possible to establish daily or real-time information on levels of E.Coli and I.E. for bathers. It takes 3 or more days to obtain results and until improved technology is developed, there is no alternative currently available on the market to provide faster results or accurate real-time information on E-Coli or I.E. levels in bathing water.

Data analysis indicates that when there are detected elevated levels of E.Coli. and I.E. in DLR Bathing Areas, they usually return to acceptable within 24-48 hours. It is therefore not valid to assume that water quality levels on a particular day are similar to levels from three days prior. The exception to this would be if a known on-going cause of pollution has been identified, such as heavy rains contributing to Combined Sewer Overflow (CSO) spills on the wastewater network or a known malfunction of a pumping station or treatment plant. Therefore, it is not appropriate to assume that there are current risks to bathers based on test results received from the lab from sampling three days prior. Frequent bathers are aware of this and have come to ignore warnings and prohibitions.

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Identifying risks to bathers is best achieved by identifying and monitoring the possible pollution sources that contribute to increased E.Coli and I.E. levels in bathing water. DLR will implement the actions advised by the HSE when sampling results from 3-4 days prior indicate elevated levels. The following procedures should be followed in response to testing results falling within the action levels as set out in the HSE table above:

Following the receipt of water quality results which fall within the levels set out in table, whether the results are predicted or final, the actions to be taken should comply with the advice of the HSE. These are as follows:

- Contact the DLR Drainage Department, DCC Pollution Control Department, Wicklow County Council and Irish Water to inquire in relation to whether there was a recently detected overflow from the wastewater network. Also, check rainfall levels over the previous days and predictions for the coming days.
- Check the results (indicative or final) against the HSE recommended actions (see table above). Where the results indicate a bathing water prohibition or advisory notice may be advised, contact the HSE and notify them of the result, the days that the sample was taken, and all relevant information in relation to risk. Request advice from the HSE in relation to the action to be taken.
- Arrange for resampling as soon as possible.
- If advised by the HSE, prepare a Warning Sign or Prohibition Sign as appropriate with full details of when the sample was taken and information on the possible reason for the poor water quality. Arrange for the sign to be posted on the notice board of the relevant bathing area by the shift foreman.
- Report to the EPA on the EDEN website that results were received indicating breaches in water quality on the sampling date.
- Prepare a notice to be communicated on the DLR website.
- If there is a proposed warning notice to be posted, or a bathing water prohibition to be put in place, email all Elected Members of DLR to inform them of the bathing water advisory/prohibition.
- Once results return indicating levels have returned to below the HSE action levels, contact the HSE Principal Environmental Health Officer and request confirmation that the warning or prohibition signs may be removed. **Warning signs or prohibition notices should not be removed unless confirmation from the HSE has issued.**
- Issue an update on the DLR website and post updated notices at bathing areas, confirming that the incident has passed and that the most recent results have returned to safe levels.
- Edit the report to the EPA on the EDEN website with follow-up sampling results and close off the incident.

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5. Algae or Algal Bloom in Bathing Water

The Marine Institute monitors algal bloom in bathing waters around Ireland. In general, blooms occurring in the sea in Ireland are not harmful for bathers. There are some species associated with fresh water that may be harmful but these generally are only detected in marine areas following exceptional freshwater runoff. To date there have been no experience of such a harmful algal bloom (HAB) in coastal bathing areas.

6. Additional Information & References

- 1) Bathing Water Quality Regulations 2008,
<http://www.irishstatutebook.ie/eli/2008/si/79/made/en/print>
- 2) Information on Marine Algal Bloom, Marine Institute, <https://www.marine.ie/Home/site-area/areas-activity/marine-environment/phytoplankton-monitoring>
- 3) Image on Front Cover: Seapoint Beach, 2018.
- 4) HSE Action Levels:
<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/env/b-w-health.pdf>
- 5) EPA Guidance Note for Local Authority Management and Reporting of Bathing Water Incidents Under the 2008 Bathing Water Quality Regulations (updated May 2018)
- 6) DLR Bathing Water Quality: <https://www.dlrcoco.ie/en/parks-outdoors/beaches/bathing-water-quality>
- 7) EPA Beaches.ie Website: <https://www.beaches.ie/find-a-beach/#/>

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