



**Guidance on the Screening for Priority Substances for Waste
Water Discharge Licences**

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1. INTRODUCTION

In wastewater discharge licences, the following typical condition applies in relation to screening for the presence of organic compounds and metals (priority substances) in the primary discharge:

‘A representative sample of effluent from the primary discharge point shall be screened for the presence of organic compounds and metals within twelve months of the date of grant of this licence. The list of parameters for analysis shall include, as a minimum, those organic compounds and metals identified as relevant having regard to the Water Policy Regulations 2003 and amendments (S.I. No. 722 of 2003 and amendments) and any other relevant legislation. Such screening shall be repeated at intervals as requested by the Agency thereafter’.

A risk based approach should be undertaken by licensee (Water Services Authorities) to address this screening requirement at the primary discharge of licensed agglomerations. A desk top study should be undertaken in the first instance to determine the necessity if any for analysis of the discharge to comply with the above typical condition in the relevant wastewater discharge licence. This desk top study should assess all relevant inputs to the waste water works (if feasible), any relevant measurements/calculations/estimates of emissions from the discharge point and any relevant measurements undertaken at representative downstream monitoring locations.

The licensee can make a decision to bypass this desk top study based on the size of the agglomeration (>50,000 p.e.), its location (e.g. city) and hence work involved. Instead the licensee can undertake direct analysis of a representative 24hr composite sample of the primary discharge for the parameters listed in appendix 1.

2. DESKTOP STUDY

For this desk top study the licensee shall undertake the following:

A. Review of all industrial inputs into WWTP

If deemed feasible by the licensee, review all authorised industrial discharge licences to the waste water works and any leachate or septic tank/ package waste water treatment plant contents from industrial activities, authorised for disposal at the WWTP. **Compile a list of all relevant organic compounds and metals (priority substances) from this review**, having regard to the parameters listed in appendix 1.

B. Discharge(s) monitoring

Ascertain whether the discharge(s) have been monitored for organic compounds and metals (priority substances) as part of the wastewater discharge licence application, recent monitoring programmes for e.g. (Dangerous Substances Screening Programme http://www.wfdireland.ie/docs/19_DangerousSubstances/Dangerous_Substances_Summary_Screening_Programme_Final.pdf) and Water Framework Monitoring Programme [Monitoring Programme - Environmental Protection Agency, Ireland](#)) or under binding legislation for e.g. (Pollutant Release Transfer Regulations <http://www.epa.ie/downloads/advice/licensee/prtr/PRTR%20Regs%202007.pdf> or Dangerous Substances Regulations [S.I. No. 12/2001 — Water Quality \(Dangerous Substances\) Regulations, 2001](#)). If so, **note the organic compounds or metals (priority substances) that have and have not been monitored** having regard to the parameters listed in appendix 1.

C. Downstream monitoring location's participation in relevant monitoring programme

Ascertain whether a representative downstream monitoring location from the discharge point has been/is included in a relevant monitoring programme e.g. Dangerous Substances Screening Programme or Water Framework Monitoring Programme. **Note which organic compounds and metals (priority substances) have and have not been monitored** having regard to the parameters listed in appendix 1.

D. Participation in PRTR reporting

Ascertain if emissions of specific organic compounds and metals (priority substances) have been calculated and/or estimated for the discharge (e.g. PRTR reporting utilising the EPA's urban WWTP calculation tool). Assess the result and the basis for the calculation or estimation of the organic compound or metal (priority substances) with regard to the value of the reported data. Having regard to the parameters listed in appendix 1, **note which specific organic compounds and metals (priority substances) have and have not emissions data available** for the discharge.

2.1. Review outcome of Desktop study

1. Full characterisation
If on completion of the desk top study, the licensee can demonstrate to the satisfaction of the Agency that appropriate screening of organic compounds and metals (priority substances) from the primary discharge has been undertaken or is not required.
2. Partial characterisation
If on completion of the desk top study, one or more of the relevant organic compounds and metals (priority substances) have not previously been

identified and screened for in relation to the primary discharge, the licensee shall undertake monitoring for these parameters.

3. Little or no characterisation

If on completion of the desk top study, screening for relevant organic compounds and metals (priority substances) from the primary discharge have not been undertaken the licensee shall either:

- I. Undertake monitoring of relevant identified parameters from part A of the desktop study (if completed) or
- II. Undertake analysis of the primary discharge as outlined below.

The desk top study shall be repeated every 5 years unless otherwise agreed by the Agency. The results of the study shall be reported to the Agency in the next Annual Environmental Report (AER).

III.

2.2. Analysis of the Discharge for the Parameters listed in Appendix 1

The licensee can decide based on the size of the agglomeration, its location and corresponding work involved in completing the desk top to instead undertake analysis of a representative 24hr composite sample of the primary discharge for the pollutants listed in appendix 1. A report on this monitoring event shall be submitted to the Agency as part of the relevant AER.

APPENDIX 1

Parameters to be Screened for in Waste Water Discharges

No.	Compound	Group of compounds
1	Benzene	VOCs
2	Carbon tetrachloride	VOCs
3	1,2-Dichloroethane	VOCs
4	Dichloromethane	VOCs
5	Tetrachloroethylene	VOCs
6	Trichloroethylene	VOCs
7	Trichlorobenzenes	VOCs
8	Trichloromethane	VOCs
9	Xylenes (all isomers):	VOCs
10	Ethyl Benzene	VOCs
11	Toluene	VOCs
12	Naphthlene	PAHs
13	Fluoranthene	PAHs
14	Benzo[k]fluoranthene	PAHs
15	Benzo[ghi]perylene	PAHs
16	Indeno[1,2,3-c,d]pyrene	PAHs
17	Benzo[b]fluoranthene	PAHs
18	Benzo[a]pyrene	PAHs
19	Di(2-ethylhexyl)phthalate (DEHP)	Plasticiser
20	Isodrin	Pesticides
21	Dieldrin	Pesticides
22	Diuron	Pesticides
23	Isoproturon	Pesticides
24	Atrazine	Pesticides
25	Simazine	Pesticides
26	Glyphosate	Pesticides
27	Mecoprop	Pesticides
28	2,4-D	Pesticides
29	MCPA	Pesticides
30	Linuron	Pesticides
31	Dichlobenil	Pesticides
32	2,6-Dichlorobenzamide	Pesticides

No.	Compound	Group of compounds
33	PCBs	PCBs
34	Phenols (as Total C)	Phenols
35	Lead	Metals
36	Arsenic	Metals
37	Copper	Metals
38	Zinc	Metals
39	Cadmium	Metals
40	Mercury	Metals
41	Chromium	Metals
42	Selenium	Metals
43	Antimony	Metals
44	Molybdenum	Metals
45	Tin	Metals
46	Barium	Metals
47	Boron	Metals
48	Cobalt	Metals
49	Vanadium	Metals
50	Nickel	Metals
51	Fluoride	General
52	Chloride	General
53	TOC	General
54	Cyanide	General

In addition the following parameters should be analysed

Conductivity

Hardness (mg/l CaCo₃)

pH

APPENDIX 2

Potential Sources of Priority Substances

Volatile Organic Compounds (VOCs)

Petroleum products, dry cleaning solvents, degreasing agents, paint removers, cleaning fluid, adhesives, refrigerants, oil spills and industrial solvents (eg printing & rubber manufacture)

Polyaromatic Hydrocarbons (PAHs)

Bitumen and other road building materials, petroleum products, oil spills, wood preservative, firewater runoff.

Di(2-ethylhexyl)phthalate (DEHP)

Plasticiser, manufacture of PVC products

Pesticides

Pesticides, herbicides, fungicides, insecticides

Poly Chlorinated Biphenyls (PCBs)

Collant liquids, insulating fluids, plasticisers, pesticides, lubricating oils and hydraulic fluids

Phenols

Raw material and an additive for industrial purposes in laboratory processes, chemical industry, chemical engineering processes, wood processing and plastics processing

Metals

Various sources including landfill leachate, electroplating, textile, paint and plastic manufacture. Some metals can be naturally occurring in groundwater and surface waters.

APPENDIX 3

Flow chart for the screening of the presence of organic compounds and metals (Priority Substances) from WWTP.

