



LIFE Integrated Projects 2016
Optimising the implementation of the 2nd RBMP in the Malta River Basin District
LIFE 16 IPE MT 0008



Action C.18
Monitoring for emerging pollutants of potential concern

Result 2: Annual Monitoring Report 2023-2024

Table of Contents

CONTENTS OF FIGURES	2
CONTENTS OF TABLES	3
1.0 INTRODUCTION. PURPOSE, OBJECTIVE AND CONTEXT OF THIS DOCUMENT	5
2.0 SAMPLING STRATEGY	7
2.1 Groundwater	10
2.2 Inland surface and transitional waters.....	14
2.3 Stormwater.....	18
2.4 Coastal Waters	20
2.5 New water	22
2.6 Additional Monitoring Stations	23
3.0 Sample Collection and Laboratory Analysis.....	29
4.0 RESULTS.....	30
4.1 Groundwater	30
4.2 Inland surface waters	32
4.3 Stormwater.....	33
4.4 New water	33
4.5 Coastal and transitional water	34
4.6 Additional Testing sites.....	34
5.0 SUMMARY	35
ANNEX.1 TEST PARAMETERS, METHODS, LOD AND LOQ.....	38
ANNEX 2 CHEMICALS TESTED FOR WITHIN ‘TENTATIVELY IDENTIFIED COMPOUNDS’ SCREENING ASSAY	50
ANNEX 3 EXEMPLAR CHAIN OF CUSTODY FORM	68
ANNEX 4 ACCREDITATION CERTIFICATE.....	69
ANNEX 5 RESULTS	70
7.0 REFERENCES	102

Contents of Figures

Figure 1 Location and testing of all sampling points.....	9
Figure 2 Example of a bailer as used to sample boreholes. Water enters via the top (a), is captured by a one-way valve (c) and released by the dislodging of a ball stop (b)	10
Figure 3 Location of Groundwater Sample Stations	11
Figure 4 Sampling at Fiddien	13
Figure 5 Ta Pinu sample point.....	13
Figure 6 Outlet at Ġnien Borehole	13
Figure 7 Bahrija sampling point.....	14
Figure 8 Victoria sampling point	14
Figure 9 Borehole (Pwales) sampling point.....	15
Figure 10 Location of Inland Surface and Transitional Water Sampling Stations.....	15
Figure 11 (a,b) Wied il-Luq	17
Figure 12 Wied Is-Sewda	17
Figure 13 Wied il-Lunzjata	17
Figure 14 Salt pans at Is-Salini.....	18
Figure 15 Location of Stormwater Sampling Station	19

Figure 16 (a,b) Ta' Xbiex Stormwater Outfall.....	20
Figure 17 Location of Coastal Sampling Stations	21
Figure 18 Location of New Water Sampling Station	22
Figure 19 (a,b) Ċumnija Wastewater Treatment Plant	23
Figure 20 Location of Additional surface water sampling stations.....	24
Figure 21 Wied Blandun below (a) and above (b) a retaining dam structure.....	26
Figure 22 Wied Inċita Figure 23 Marsa Storm Water Drain	26
Figure 24 Marsalforn Sampling point Figure 25 Wied il Mielah.....	27
Figure 26 Għasel Catchment, Mosta Figure 27 Il-Magħluq	28
Figure 28 (a,b) Qoton	28
Figure 29 Pollution pathways from sources originating from different uses, through different water bodies.....	32
Figure 30 Comparison of (a) Tributyl phosphate and (b) tri-isobutylphosphate	34

Contents of Tables

Table 1 Details of the monitoring activities per each water category.....	8
Table 2 Groundwater sampling stations	12
Table 3 Inland Surface and Transitional water sampling stations	16
Table 4 Stormwater sampling station	19
Table 5 Coastal water sampling stations.....	21
Table 6 New water sampling stations	23
Table 7 Additional surface water sampling stations	25
Table 8 Container type for different parameters.....	29
Table 9 Test Parameters, methods, LOD and LOQ.....	38
Table 10 Results of groundwaters. All samples were taken in duplicate (a,b). G1 Fiddien Station; G2 San Katald/Ta' Pinu Borehole; G3 Ġnien Borehole; G4 Għattuq/Sellun Boreholes; G5 Bahrija G6 Victoria Station; G7 Pwales Station. Results lower than LOD are indicated with a - . For sample periods after Q1 only results above LOD are given. All values are in µg/L	70
Table 11 Water Screening for Tentatively Identified Compounds* in groundwater (pooled sample)	71
Table 12 Results of Inland surface waters. All samples were taken in duplicate (a,b). I1 Wied il-Luq; I2 Wied il-Lunzjata; I3 Wied is-Sewda. Results lower than LOD are indicated with a - . Values are in µg/L unless otherwise indicated	72
Table 13 Water Screening for Tentatively Identified Compounds* in Inland surface Water (pooled sample).....	81
Table 14 Results of Coastal, Storm, Transitional and New waters. All samples were taken in duplicate. C1 Off Ta' Barkat Sewage treatment plant, C2 Xghajra; Xemxija Bay; C3 Off San Dimitri Point, Gozo; S1a Ta' Xbiex, Msida; T1 Is-Salini, Naxxar; N1 New Water. Results below LOD are indicated with a - . For sample periods after Q1 only results above LOD are given. Values are in µg/L	82
Table 15 Water Screening for Tentatively Identified Compounds* in Coastal Water (pooled sample)	83
Table 16 Water Screening for Tentatively Identified Compounds* in Transitional Water.....	84
Table 17 Water Screening for Tentatively Identified Compounds* in Storm Water	85
Table 18 Water Screening for Tentatively Identified Compounds* in New Water	86
Table 19 Results of Additional Waters. Samples taken in duplicate (a,b). A1 Wied Blandun; A2; A3 Marsa Storm water; A4 Marsalforn Catchment, Gozo; A5 Mielah Catchment, Gozo; A6 Għasel catchment; A7 Il-Magħluq. A8 Qoton*. Results below LOD are indicated with a - . Values are in µg/L unless otherwise indicated	86
Table 20 Water Screening for Tentatively Identified Compounds* in Additional Sites (Pooled Sample).....	99
Table 21 Compounds detected at least once in year 1 of sampling	100

Table 22 Sampling schedule in year 1 and 2 of monitoring 101

1.0 Introduction. Purpose, objective and context of this document

1.1 The Water Framework Directive (WFD) is the primary piece of EU legislation governing water resources (inland, transitional, coastal surface waters and groundwaters). Its mandate is to ensure that water is of adequate quality and quantity to meet the needs of humans and the natural environment. As part of this, it regulates individual pollutants and sets corresponding regulatory standards as well as guiding member countries in their care of water resources – taking the approach of managing river basins to ensure that neighbouring countries cooperate to manage shared water resources. These countries must maintain River Basin Management Plans (RBMPs) to protect and, where necessary, restore water bodies in order to reach ‘good’ status (both chemically and ecologically), and to prevent deterioration. The WFD (specifically, its Annexes) documents monitoring requirements, the criteria for assessing water body status, the contents of the RBMPs, and the list of ‘priority substances’ - contaminants that Member States must monitor. The standards for the latter are set as Environmental Quality Standards (EQS), which must be met to achieve good chemical status in accordance with WFD. Additionally, the WFD also requires Member States to set and meet EQS for substances of national concern, i.e. river basin specific pollutants; the monitoring of which contributes to the assessment of ecological status.

1.2 Under the obligations of the WFD and associated RBMPs, the Environment and Resources Authority (ERA) commissioned AquaBio Tech Ltd. (ABT) to develop and implement a monitoring strategy of Malta’s water resources in terms of contaminants of emerging concern and pollutants attributed to diffuse sources of pollution. The investigation is part of a project funded by the LIFE Programme under the Project Policy Area LIFE Integrated Project Environment (LIFE16/IPE/MT0008, Action C.18).

1.3 The objectives of the project are as follows:

Objective 1: To update the monitoring strategy developed as part of LIFE16/IPE/MT0008 (Action A.6) to address gaps related to the characterisation and quantification of diffuse sources of pollution in Malta.

Objective 2: To implement an initial screening monitoring exercise of the contaminants of emerging concern and diffuse sources of pollution for a period of two years.

Objective 3: To update the monitoring strategy on the basis of the results of the initial screening monitoring exercise to enable focused monitoring of CECs and their sources, and diffuse sources of pollution.

1.4 This document is presented pursuant to Result 2 of Tender SPD8/2021/066; namely to:

- 1.4.1 Describe the screening exercise undertaken during the first year of sampling of all sampling stations, namely: Groundwater, Stormwater, New Water, Surface Water, Seawater, Inland Surface, and Additional Monitoring Stations
- 1.4.2 Compile the results of the analyses and accompanying laboratory certifications.
- 1.4.3 Review the outcomes of year 1 of the screening exercise, ensuring that any revision of the parameters tested during year 2 of the monitoring strategy is fully relevant to Malta whilst demonstrating best practice and scientific scrutiny.

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Date: 09 August 2024

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Date: 09 August 2024

2.0 Sampling Strategy

The sampling strategy was informed by previous investigations and stipulated by Action A.6 (Development of a monitoring strategy for contaminants of emerging concern) - from “Optimising the implementation of the second RBMP in the Malta River Basin District” (LIFE 16 IPE MT 0008) (ERA & SEWCU, 2015). Specifically, the Action sought the characterisation and quantification of selected contaminants from diffuse urban, industrial and agricultural sources of pollution that may pose a risk to Malta’s natural water resources, including coastal, transitional and inland surface waters and groundwater. To achieve this, water samples were taken from 24 sampling stations; 16 of which were established by the results of Action A.6, along with eight additional stations proposed by ERA (Table 1). From each point, water samples were tested for different compounds according to their category (Table 1 and Figure 1):

- All categories were analysed for ‘Contaminants of Emerging Concern’ (CEC) identified in the monitoring strategy proposal developed as part of LIFE16/IPE/MT0008 Action A.6.
- Inland surface waters and the additional monitoring stations were also analysed for evidence of diffuse pollution, evidenced by the presence of ‘Priority and Priority Hazardous Substances’ listed in Directive 2013/39/EC **and** as pollutants in Directive 2006/118/EC. The latter directive stipulates broadly that pesticides should be monitored which ERA then specified in Clarification Note 5 of Tender SPD8/2021/066. In addition, levels of the parameters listed in Annex 2, Table 2 of the Tender were analysed. The combined list of parameters from the Diffuse Pollution and CEC, the testing methods, LOD and LOQ is found in Annex 1.
- Combined samples from each category were screened once for Tentatively Identified Compounds (TIC) – chemicals which are not yet on the aforementioned lists, but whose presence may warrant further monitoring. Annexes VIII and X of the Water Framework Directive 2000/60/EC (establishing a framework for Community action in the field of water policy) and the Commission Implementing Decision (EU) 2022/1307 (establishing a watch list of substances for Union-wide monitoring) were used to compile an assay of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2).

Table 1 Details of the monitoring activities per each water category.

Water category	CEC ¹	Diffuse ²	TIC ³	Monitoring Stations	Replicates	Frequency per year ⁴	Screening duration (years)
Groundwater	✓		✓	7	2	4	2
Inland Surface Waters	✓	✓	✓	3	2	2	2
Transitional	✓		✓	1	2	2	2
Stormwater	✓		✓	1	2	2	2
Coastal	✓		✓	3	2	4	2
New Water	✓		✓	1	2	4	2
Additional Monitoring Stations	✓	✓	✓	8	2	2	2

¹CEC= Compounds of Emerging Concern, ²Diffuse = characterisation of diffuse sources of pollutants,

³TIC= Tentatively Identified Compound ⁴See Table 22 for sampling schedule

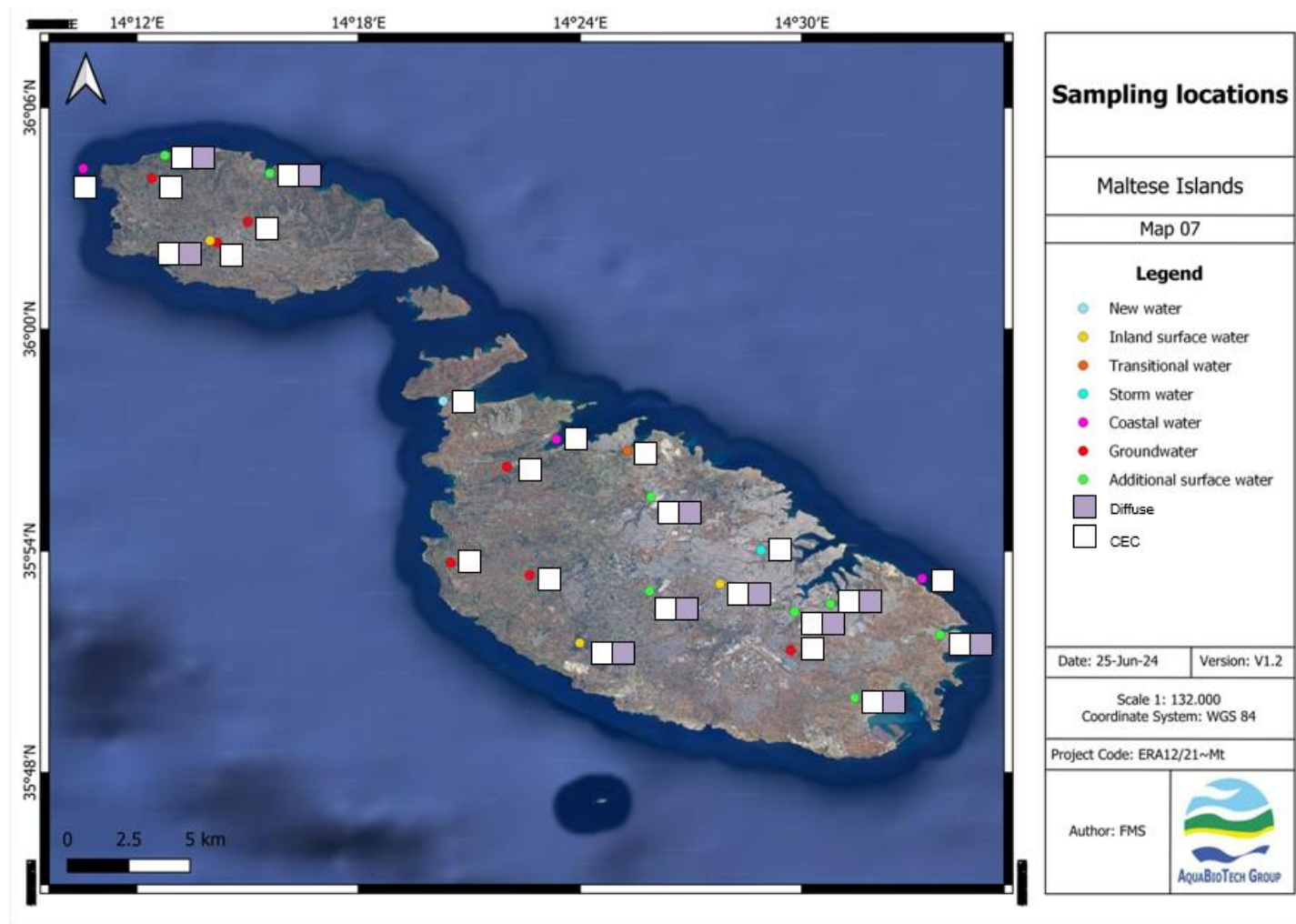


Figure 1 Location and testing of all sampling points

2.1 Groundwater

Groundwater was analysed in detail in the 2nd Water Catchment Management Plan for the Malta Water Catchment District 2015 – 2021, which describes the three main typologies of groundwater bodies found within the Maltese context:

- Sea-level groundwater bodies developed in the Lower Coralline Limestone formation and take the form of freshwater lenses floating over seawater and referred to locally as mean-sea-level aquifers (MSLAs). These occur widely at sea level in Malta, Gozo and Comino.
- Perched (phreatic) groundwater bodies contained within the Upper Coralline Limestone (UCL) formation perched over the Blue Clay formations. The perched aquifers overlie the sea-level aquifers in western Malta and in Gozo but are absent in central and eastern Malta where the UCL and the clay aquitard have been completely eroded.
- Coastal groundwater bodies occurring in valleys within the Upper Coralline Limestone formation where the clay lies below sea level and freshwater is laterally bordered by seawater. These small aquifer systems occur at Pwales, Mellieħa and Marfa.

Seven sites were selected which represented all typologies, 3 in Gozo and 4 in Malta (Figure 3). Sampling was conducted in the presence of representatives from ERA, EWA and, at sites owned by WSC, representatives from WSC. At sample points of Fiddien Station, Ta' Pinu, Ġnien and Sellun, sampling was completed by taking water from a tap. To ensure a representative sample was taken (rather than standing water in the well), the water was purged by running the tap for approximately 5 minutes while measuring both pH and conductivity and only taking samples once these parameters were stable. The springs at Bħrija and Victoria are continually flowing so could be sampled directly. The sample station at Pwales is a hand dug well where a bailer (Figure 2) was used to sample the water.

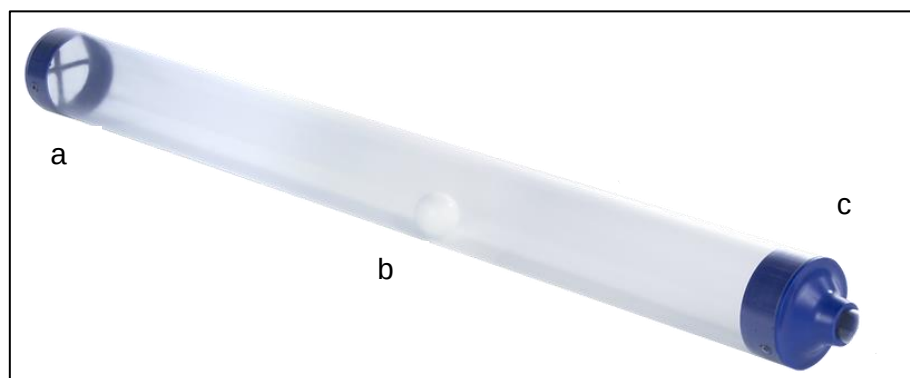


Figure 2 Example of a bailer as used to sample boreholes. Water enters via the top (a), is captured by a one-way valve (c) and released by the dislodging of a ball stop (b)

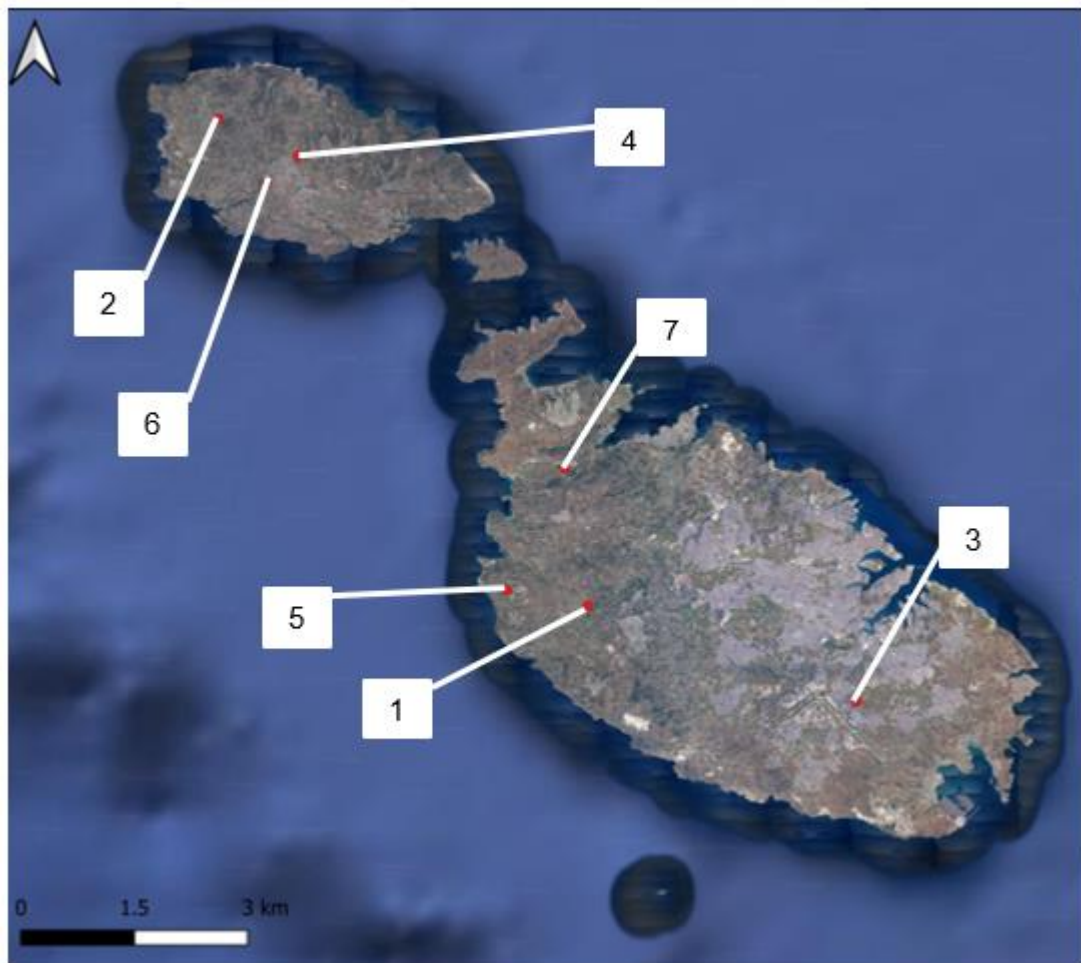


Figure 3 Location of Groundwater Sample Stations

Table 2 Groundwater sampling stations

Map point	Station Name	Groundwater body and context	Owner	Area/Locality	CECs/ CECs & Diffuse Sources	Latitude*	Longitude*
1	Fiddien Station	Sea Level Rural	WSC	Rabat (Malta)	CECs	35.887453	14.376600
2	Ta' Pinu ¹ Borehole	Sea Level Rural	WSC	Sdieri (Gozo)	CECs	36.044489	14.250974
3	Ġnien Borehole	Sea Level Urban	WSC	Hal Luqa (Malta)	CECs	35.853486	14.494444
4	Sellun ² Borehole	Sea Level Urban	WSC	Rabat (Gozo)	CECs	36.044501	14.250980
5	Baħrija	Malta West (Rabat/ Dingli) Perched	EWA	Baħrija (Malta)	CECs	35.894379	14.342157
6	Victoria Station	Gozo Perched	Public Spring	Rabat (Gozo)	CECs	36.040055	14.233248
7	Pwales Station	Pwales Coastal	EWA	Pwales (Malta)	CECs	35.935462	14.361826

¹ Originally at San Katald (36.06652, 14.2062), where the first sample was taken (March, 2023).

However, due to the pump malfunctioning at that site, EWA recommended to test at Ta' Pinu, another borehole used for the municipal water distribution network by WSC, from the June 2023 sampling onwards. Both boreholes extract from the same aquifer. ERA was notified.

² Originally at Ghattuq (36.04691, 14.24957), where the first sample was taken (March, 2023).

However, due to the pump malfunctioning at that site, EWA recommended to test at another WSC borehole closeby; Sellun from the June 2023 sampling onwards. Both boreholes extract from the same aquifer. ERA was notified

* latitude/longitude values in this and all other tables use the WGS 84 datum



Figure 4 Sampling at Fiddien



Figure 5 Ta Pinu sample point



Figure 6 Outlet at Ġnien Borehole



Figure 7 Bahrija sampling point

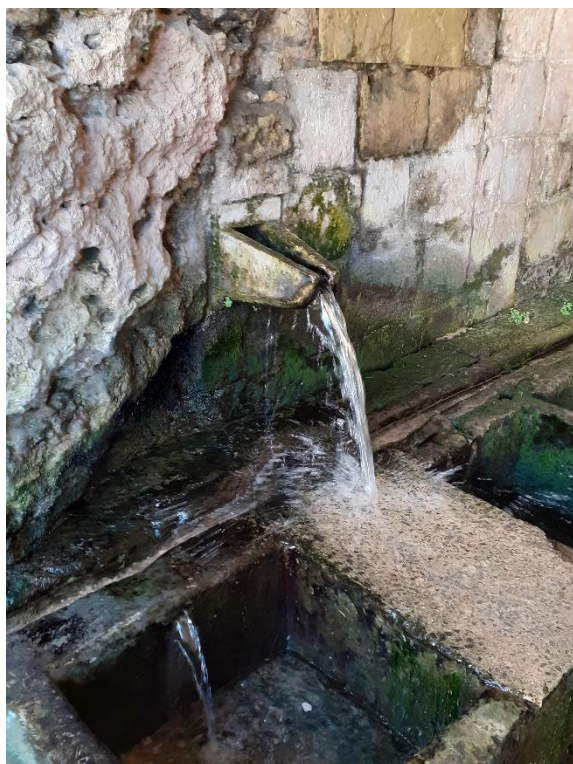


Figure 8 Victoria sampling point



Figure 9 Borehole (Pwales) sampling point



Figure 10 Sellun Sampling point

2.2 Inland surface and transitional waters

The monitoring strategy stipulated samples should be taken from inland (defined by the WFD as *standing or flowing water on the surface of the land*) and transitional surface waters (defined as

bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters, but which are substantially influenced by freshwater flows) for both CECs and diffuse sources of pollution. Action A.6 (LIFE16/IPE/MT0008) identified the characteristics of the sites to include:

- a watercourse in Malta having a rural catchment;
- a watercourse in Malta having an urban catchment;
- a watercourse in Gozo
- a transitional waterbody

Furthermore, Tender SPD8/2021/066 specified that the new sampling strategy should include points found along Wied il-Luq (Malta, rural) and Wied is-Sewda (Malta, urban) (in the Kbir Catchment and Qormi-Marsa Catchment Areas respectively); and Wied il-Lunzjata (Gozo) in Xlendi catchment area. (Figure 10, Table 3).

As a representative of Transitional Waters, Is-Salini was agreed as an important monitoring site. This site is one of the last remaining salt marshes in the Maltese Islands fed by a relatively large catchment area in Malta.



Figure 10 Location of Inland Surface and Transitional Water Sampling Stations

Table 3 Inland Surface and Transitional water sampling stations

Map point	Station Name	Water body and context	Area/Locality	CECs/ CECs & Diffuse Sources	Latitude	Longitude
1	Wied il-Luq	Surface Rural	Is-Sigġiewi (Malta)	CECs & Diffuse Sources	35.858699	14.400677
2	Wied is-Sewda	Surface Urban	Qormi (Malta)	CECs & Diffuse Sources	35.883512	14.462523
3	Wied il-Lunzjata	Surface Rural	Rabat (Gozo)	CECs & Diffuse Sources	36.041124	14.232713
4	Is-Salini	Transitional, Urban	Between Naxxar and St. Paul's Bay (Malta)	CECs	35.944149	14.420586



Figure 11 (a,b) Wied il-Luq



Figure 12 Wied Is-Sewda

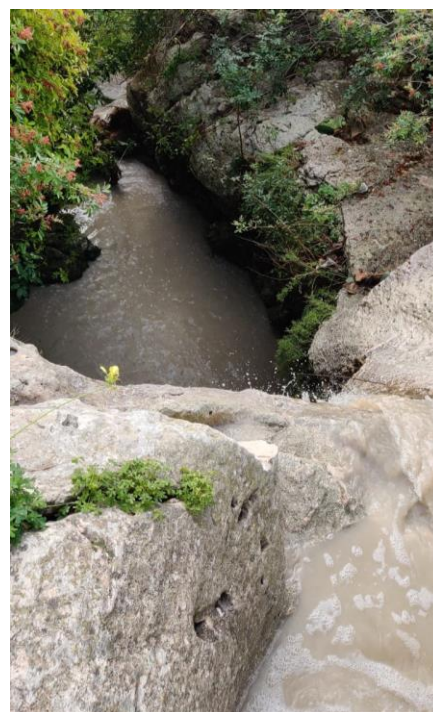


Figure 13 Wied il-Lunzjata



Figure 14 Sampling location at Is-Salini

2.3 Stormwater

The LIFE 16 Action A.6 strategy recommended that monitoring focus upon samples collected from the National Flood Relief Project (NFRP) inlet points (sedimentators) associated with the Birkirkara/Msida/Gzira catchments, which should provide an indication of the CECs transported within stormwater runoff. Subsequent to the publication of the strategy, the NFRP has now been completed with deviation of water to underground tunnels and an outfall at Ta' Xbiex. Only a small volume of water (about 20% of the entire Birkirkara catchment) -i.e. Santa Venera and Msida catchment- is currently discharged at Msida Creek. Therefore, due to the completion of the NFRP and in line with the LIFEIP A.6 strategy, samples were collected from the NFRP outfall at ta' Xbiex and tested for CECs (Figure 15 Table 4).



Figure 15 Location of Stormwater Sampling Station

Table 4 Stormwater sampling station

Map point	Station Name	Water body and context	Area/Locality	CECs/ CECs & Diffuse Sources	Latitude	Longitude
1	Xatt Ta' Xbiex	Outfall NFRP	Msida (Malta)	CECs	35.899487	14.500738



Figure 16 (a,b) Ta' Xbiex Stormwater Outfall

2.4 Coastal Waters

Coastal waters, as defined by the WFD, are *surface waters on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured*. One of the primary sources of CECs into the environment is sewage treatment plant (STP) effluent (Love *et al.*, 2020). Therefore, Action A. 6 recommended a monitoring point in the proximity of a sewage treatment plant discharge/overflow. Additionally, Action A.6 recommended two other points; a control point off the north of Gozo, where the main current direction would be from the north and terrestrial influence would be limited, and finally a point off Xemxija Bay, to capture any sewage overflows, as well as other activities in the area, including aquaculture (Figure 17, Table 5).



Figure 17 Location of Coastal Sampling Stations

Table 5 Coastal water sampling stations

Map point	Station Name	Context	Area/Locality	CECs/ CECs & Diffuse Sources	Latitude	Longitude
1	Off Ta' Barkat STP, Xgħajra	Near STP outlet	Xgħajra (Malta)	CECs	35.88578	14.55368
2	Xemxija Bay	Temporarily closed for bathing in 2017 due to sewage overflow (Agius, 2017)	St Paul's Bay (Malta)	CECs	35.9487	14.38866
3	Off San Dimitri Point	'Control' point	Gozo	CECs	36.07072	14.17515

2.5 New water

New water is a concept of wastewater recycling and was envisioned to contribute up to 11% of the water resources supply base for 2021 (ERA & SEWCU, 2015). In the process, wastewater collected through the urban wastewater sewerage system is treated to secondary treatment standards as required by the Urban Wastewater Treatment Directive, then instead of being discharged to sea, this water is further treated using ultrafiltration, reverse osmosis and advanced oxidation processes to produce a high-quality reclaimed water suitable for agriculture and aquifer recharge.

There are three polishing plants in Malta (two in Malta and one in Gozo); the one at Ċumnija Sewage Treatment Plant, Malta, is most regularly online so was selected for sampling (Figure 18, Table 6)



Figure 18 Location of New Water Sampling Station

Table 6 New water sampling stations

Map point	Station Name	Context	Area/Locality	CECs/ CECs & Diffuse Sources	Latitude	Longitude
1	Ċumnija Sewage Treatment Plant	Most regular supplier of new water	Il-Mellieħa (Malta)	CECs	35.968138	14.338567



Figure 19 (a,b) Ċumnija Wastewater Treatment Plant

2.6 Additional Monitoring Stations

In accordance with the requirements of Tender SPD8/2021/066, eight (8) additional monitoring stations were selected as monitoring sites. The sites have been selected pursuant to Guidance Document No. 28 (Common Implementation Strategy for the Water Framework Directive (2000/60/EC), 2012), the Tender ToRs, and the 2nd Water Catchment Management Plan for the Malta Water Catchment District 2015 – 2021, (Figure 20, Table 7). Activity 1 Identified two sites of significant potential anthropogenic impacts – Wied Blandun and Wied Żnuber. After several site visits, the former location was selected as a sampling point due to the more regular presence of

water and ease of access. Wiedien Qoton and Dalam both have a Master Plan as part of the LIFE 16 IPE MT 0008 Project on the Optimization of the Implementation of the 2nd RBMP. The aims of Master Plans include: providing guidance frameworks for management of resources (e.g., water) that can be replicated for other catchments, and providing a framework for the conservation and enhancement of the ecosystem services provided by water catchments and valleys. As such, both catchments were proposed for monitoring. Unfortunately, they are heavily utilized (hence the need for a Master Plan) and do not contain permanent surface water sources. Instead, Wied Žembaq was proposed, but similarly this only contained ephemeral pools upon the limestone which were not ideal as they were only filled with rainwater, full of microfauna, and located in a reserve for protected species. In the end, a sump from a surface drain was found within Qoton. The results from the analysis indicating whether this was a valid indicator of the Qoton catchment water quality or if it was overwhelmed with pollutants typical of local surface runoff (namely petroleum derivatives).



Figure 20 Location of Additional surface water sampling stations

Table 7 Additional surface water sampling stations

Map point	Station Name	Context	Area/Locality	CECs/ CECs & Diffuse Sources	Latitude	Longitude
1	Wied Blandun	A heavily anthropogenically modified valley	Il-Fgura, Malta	CECs & Diffuse Sources	35.875546	14.513666
2	Wied Incita	Valley receiving inputs from street and agricultural run off	Attard, Malta	CECs & Diffuse Sources	35.881475	14.431811
3	Marsa Storm water catchment	Inputs mainly from surface road run off (coordinated with Ministry for Public Works and Planning)	Marsa, Malta	CECs & Diffuse Sources	35.877210	14.495686
4	Marsalforn	Inputs from runoff, agriculture and urban	Marsalforn Catchment, Gozo	CECs & Diffuse Sources	36.066457	14.260694
5	Wied il Mielah	Inputs from runoff and agriculture	Mielah Catchment, Gozo	CECs & Diffuse Sources	36.070241	14.209933
6	Burmarrad, Mosta	Six valleys draining the northeastern part of the Rabat-Dingli plateau	Ghasel Catchment, Malta	CECs & Diffuse Sources	35.928749	14.429094
7	IL-Magħluq ta' Marsaskala	Heavily modified ponds receiving runoff primarily from urban areas	Sant' Antin Catchment, Malta	CECs & Diffuse Sources	35.861905	14.562427
8	Wied Qoton	Representing catchments that have a Master Plan as part of the LIFE 16 IPE MT 0008 Project on the Optimization of the Implementation of the 2nd RBMP	Qoton/Dalam Catchment, Malta	CECs & Diffuse Sources	35.818836	14.530215



Figure 21 Wied Blandun below (a) and above (b) a retaining dam structure



Figure 22 Wied Incita

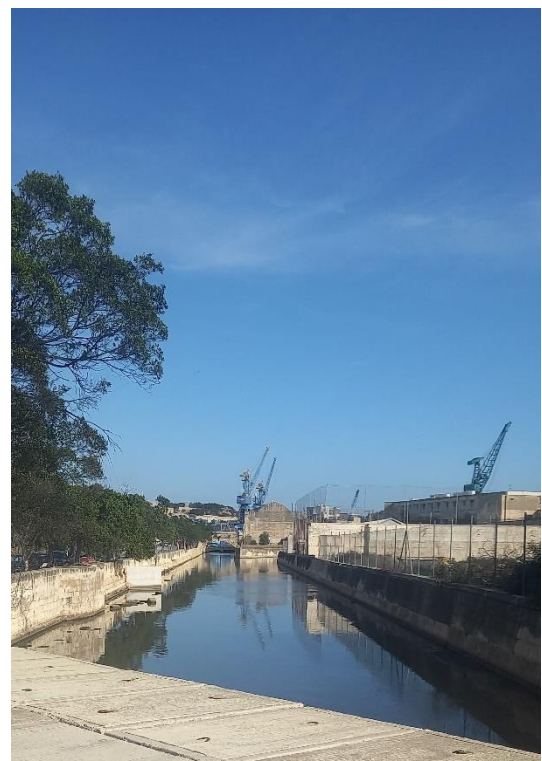


Figure 23 Marsa Storm Water Drain



Figure 24 Marsalforn Sampling point



Figure 25 Wied il Mielah



Figure 26 Ghasel Catchment, Mosta

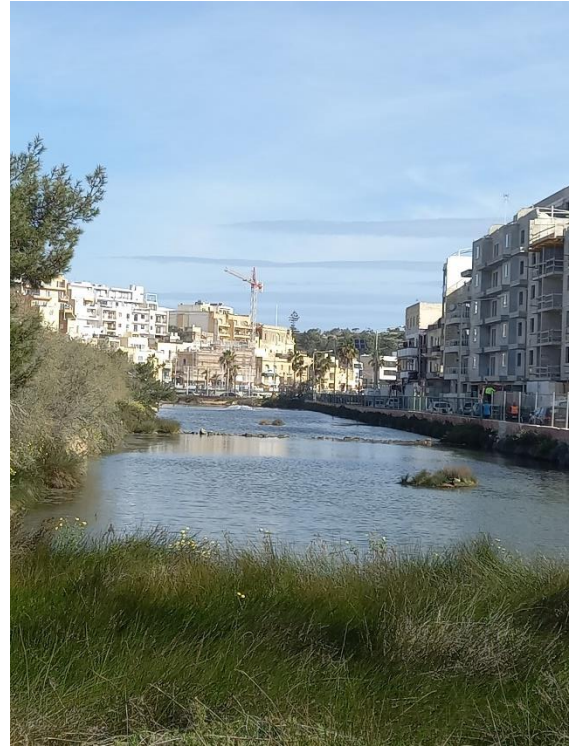


Figure 27 Il-Magħluq



Figure 28 (a,b) Qoton

3.0 Sample Collection and Laboratory Analysis

Before collection of samples, the relevant stakeholders (e.g. EWA, Ministry For Public Works And Planning and WSC) were contacted. Once arranged, ERA was notified of the sampling date/s. Sample sites were grouped geographically to minimize time in transit. Samples were collected following ISO 5667-1:2020 into clean, new vessels depending on the volume required by the type and LOD of analysis (Table 8). Conditions at the time of collection were noted where appropriate (e.g. after heavy rainfall).

Table 8 Container type for different parameters

Compound Class	CEC	Container Type	Acid Volume
Amines	1 L	Dark Glass	1 ml H ₂ SO ₄
PFOA/S + Alkylphenols + Pesticide (LC amenable) + Glyphosate + Un-ionized ammonia (NH ₃) + Anions	500mL	PP PFOA/S free	
POPs + Pesticide (GC amenable)	5x 1 L	Dark Glass	
PAH + SVOC	1 L	Dark Glass	1 ml HCl
VOC	2 x 40 mL	Glass	2 drops HCl
Glycols + EDTA + Un-ionized ammonia (NH ₃) + Anions + Bisphenol A	500 mL	PP or PET	
Metal	50mL	Falcon or PP	2 drops HNO ₃
Dioxins and dioxin-like compounds (HRMS)	2L	Dark Glass	1 ml HCl
Tributyltin compounds	1L	Dark Glass	

Once collected and acid added (required in some analytes for preservation), samples were boxed in specialized secure boxes, and ice blocks added. Samples were couriered out on the day of sampling and were delivered to the analysing laboratory within 24h. Samples were not taken on Fridays due to the delay in shipping over the weekend. Within each box, a Chain of Custody form was completed (Annex 3) which was also emailed to the testing laboratory.

All analyses were carried out by Biochemie Lab SRL (Accredited by Accredia No. 0195, see Annex 4) This laboratory is accredited to UNI CEI EN ISO IEC 17025:2017 to analyze the required parameters in accordance with MSA EN ISO/IEC-17025:2005 or other equivalent standards accepted at international level.

Results were collated and sorted into sample type (coastal, new etc) and sent to stakeholders at ERA and EWA.

4.0 Results

According to the WFD, (Directive 2000/60/EC) the Chemical Status of water bodies is assessed for each priority substance on the basis of its compliance with established standard values (referred to as Environmental Quality Standards (EQS) for surface waters and quality standards or threshold values for groundwaters). Therefore, this report will generally focus on parameters which have exceeded such quality standards or, where not recognized/published, an evaluation of the recorded values based on environmental data.

4.1 Groundwater

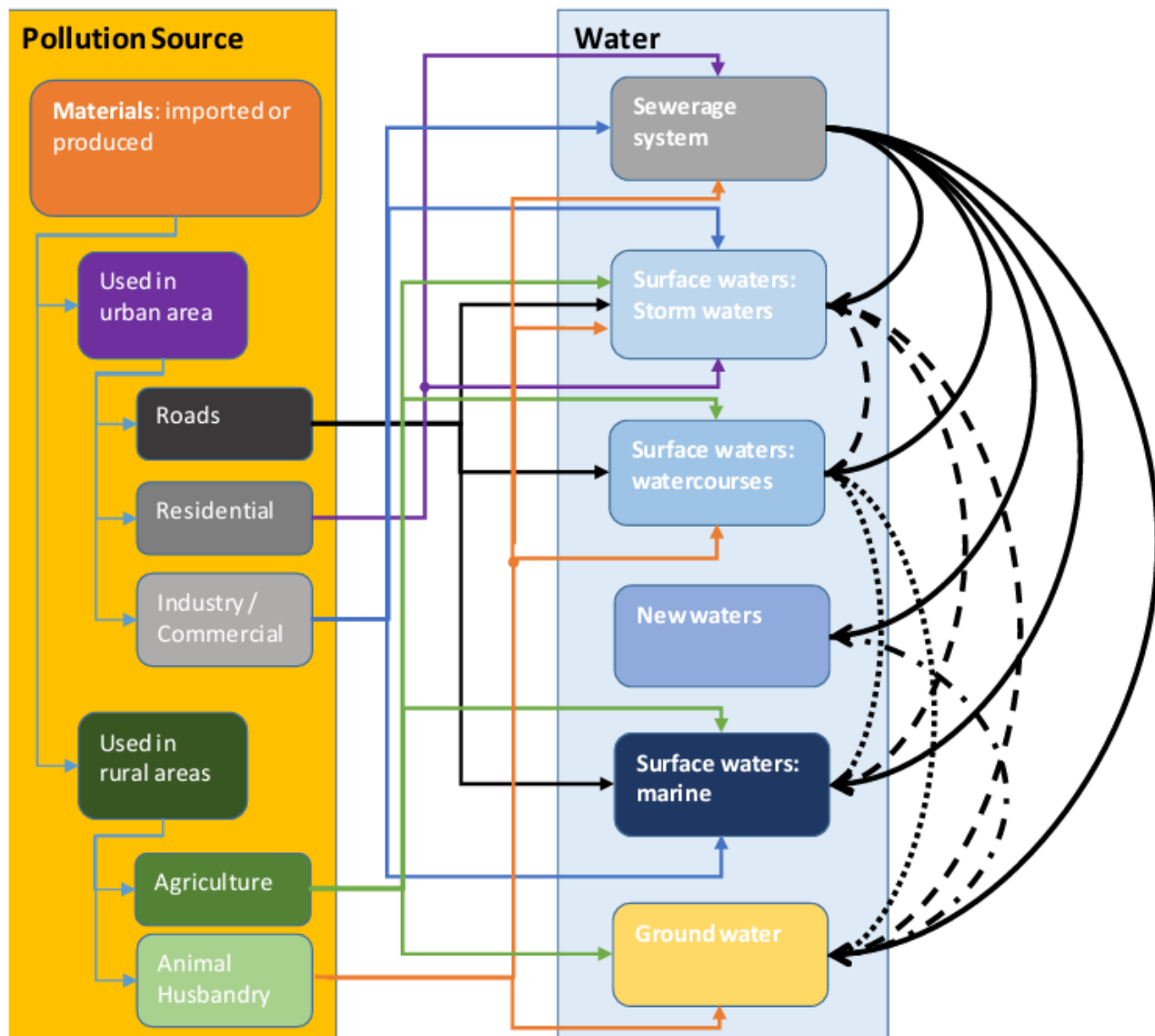
The testing of groundwaters of Malta and Gozo indicates these aquifers remain generally uncontaminated with CECs (Table 10), with the exception of Victoria, Gozo.

Għattuq catchment could only be assessed once (Q1) before the pump failed, but in this single sampling the CEC Benzotriazole (commonly used in anticorrosive agents, bleaching agents, and detergents) was detected, admittedly at levels several orders of magnitude below the proposed EQS of 30µg/l (Kase *et al.*, 2011). Sellun sampling point, less than 300m from Għattuq and within the same catchment area (Xagħra) was sampled for the remainder of the year and did not contain Benzotriazole, or indeed any contaminant, above LOD. However, a methylated form of the compound – methylbenzotriazole, was found in 75% of samples taken at Victoria.

The sampling point of Victoria (Rabat), specifically at the springs of Fontana (Figure 8) is within the Xlendi catchment, which has a Master Plan as part of the LIFE 16 IPE MT 008 Project (Adi Associates, 2021). This catchment comprises an area of approximately 5.76 km² and is mainly rural; approximately 63% of the catchment comprises arable land with the remaining area comprised of residential (29%) and natural (8%) areas. On its northeastern border it is adjacent to the urban area of Victoria. The catchment plan (Adi, 2021) identifies that the area is under pressure from several different sources, some of which could have impacts on water quality (e.g. agriculture, development, traffic, increase in hard surface/runoff, littering). Water samples taken at Victoria contained more contaminants than any other groundwater, namely a persistent presence of carbamazepine (a pharmaceutical drug), acesulpham K (a food sweetener) sulfamethoxazole (an antibiotic) and methylbenzotriazole, though all at values several orders of magnitude lower than the EQS (Belton *et al.*, 2020; Kase *et al.*, 2011, Nendza, 2014, Santariová *et al.*, 2023; SCHEER, 2022b). Therefore, although these concentration levels do not pose a significant problem at the present time; it is recommended to continue monitoring for these compounds at these locations in the long

term. Historically, carbamazepine, and acesulpham K have been the most prevalent contaminants found in Malta's groundwater, detected on ten and six occasions respectively since 2016 at 11 sampling stations (EWA, pers comm.).

The main route of pharmaceuticals and food additives into the environment is discharge from wastewater treatment works via surface water (Love et al., 2020). Evidently, this is not the route for any contaminants found in this site - not only is Gozo's wastewater treatment plant in a different catchment, but the effluent from it is discharged into the sea. Other routes include household waste, surface water infiltration, leakage (from the sewage system), and groundwater recharge. Action A.6 reviewed the modes of contamination in Malta (Figure 29).



Straight arrows indicate pathways from use to water body via direct discharge. Curved arrows (solid) indicate pathways from the sewerage system to the various water bodies due to overflow or leakage; curved arrows (dashes) indicate direct linkages between other water bodies) From Action A.6.

Figure 29 Pollution pathways from sources originating from different uses, through different water bodies.

In terms of CECs, in total, 24 compounds were detected when the pooled sample was screened for TIC (Table 11), some of which were not detected using the analysis methods used for Table 10– such as styrene. In contrast, carbamazepine was not detected in the TIC Screening but it was detected using specific methods (LCMS etc) as reported above. This is due to differences in the methods of analysis, their LOD, and assumption of compound identity (the screening matches the chromatogram profile with a library reference - the Library Match Score (LMS) was considered acceptable when $\geq 40\%$). No TIC were detected above EQS.

4.2 Inland surface waters

Analysis of the inland surface waters of Malta revealed several indicators of diffuse pollution and CECs (Table 12). Ammonium, nitrogen, sulphates, nickel and lead were detected in all samples.

Ammonium is a common pollutant primarily from direct exposure to sewage and farm wastes also in artificial fertilizers. It is highly toxic to aquatic organisms and has an EQS of $15\mu\text{g/L}$ in freshwater (E.A., 2007) which was exceeded, at least once, at all sample stations. However, a characteristic of ammonium pollution is its variability, due to elevated readings immediately after the application of the fertilizer followed by removal due to biodegradation or dilution – a so-called ‘ammonium pulse’ (Tan *et al.*, 2019). This is evident in the results of Inland surface water where, for instance, an average of $2810\mu\text{g/L}$ was found at Wied Is-Sewda in Q1, but it was undetectable at the site on the subsequent sampling (Q4). Such variability makes it difficult to monitor, evaluate or control the general situation.

Sulphates are one of the most common anions found in freshwater. They can be from the leaching of rock - Malta does have sulphate rich geology in the form of selenite (a variety of Gypsum or calcium sulphate), particularly in the northeast of the island – and from sea spray deposition. However, they can also be from anthropogenic sources, such as fertilizer leaching from agricultural soils and industrial emissions. An average concentration of 74.75 mg/L was found across the 6 samples sites in year 1 of sampling. Zak *et al.* (2021) reports values of up to 630mg/L in surface waters in Europe with average concentration of $116\mu\text{g/L}$. To date, an EQS for dissolved sulphates has not been set generally in the EU, though they are included in the list of potential pollutants in the Groundwater Directive (Directive 2006/118/EC).

Lead was found in all inland surface water on at least one sampling date with values ranging from 1.1 to $38.5\mu\text{g/L}$ compared to an AA-EQS of $1.2\mu\text{g/L}$ (Directive 2013/39/EU). According to values supplied by ERA from previous monitoring campaigns (2021-2023) (ERA, Pers comm.), lead has been

found in the many of the sites sampled for the current project (Salini, Wied il-Luq, Maghluq ta' Marsascala and Wied il-Lunzjata) in concentrations from 0.78-14µg/L. In contrast, cadmium (another heavy metal) was found at levels above the EQS (of 0.25µg/L) at Wied Il-Lunzjata in Q4 in the current project, though it was absent in the 2021-2023 ERA sampling campaigns.

Two other parameters were found at levels exceeding the EQS: the herbicide glyphosate, which was detected at Wied il-Lunzjata at an average concentration of 0.562µg/L in Q4, and DEHP, which was detected in Q4 at the same location at an average level of 7.65 µg/L. Glyphosate's EQS for 'surface water not used for producing drinking water' is not yet fixed, but in surface waters currently used for drinking water abstraction an EQS of 0.1 µg/L is recommended (SCHEER, 2022a) (glyphosate was subject to review for possible identification as a priority substance under Directive 2008/105/EC). The EQS of DEHP is 1.3µg/L (Directive 2013/39/EU; EEA ,2005).

Thirty-two compounds were detected in the TIC screening (Table 13); but only 1 at levels greater than their EQS (where an EQS is available): DEHP was detected in the pooled sample at levels of 14.3687µg/L compared to EQS 1.3µg/L. Initially, these levels appear alarming given that they are an order of magnitude greater than the EQS. However, when tested for specifically using GCMS the values are much lower at 0.218µg/L (average) in the same sampling period (from 2 sites). Nevertheless, the same compound was detected at levels exceeding the EQS in Q4 as explained previously. In any case, levels this compound should be specifically reviewed in the second year of sampling.

4.3 Stormwater

Stormwater was one of the most impacted water sources with 8 compounds detected (Table 14). Stormwater is inherently variable and subject to external inputs since it is composed of runoff rinsing accumulated waste from drains and anthropogenic surfaces. Of the 8 compounds detected, 25% were only found in Q1, 37.5% were only found in Q4, with 37.5% found on both sampling dates, emphasising the irregularity of contamination. Of all contaminants detected, one was above its EQS: the herbicide glyphosate, at an average of 0.405µg/L in Q4 (as stated above, the EQS for surface water not used for producing drinking water is not yet fixed, but in surface waters currently used for drinking water abstraction an EQS of 0.1 µg/L is recommended (SCHEER, 2022a).

TIC screening of storm water detected the presence of 30 compounds (Table 17). Carbamazepine was detected at 0.4022µg/L (corresponding to a result of 0.5175µg/L when tested directly), though this is below any EQS.

4.4 New water

New waters are produced by highly processing urban wastewater, therefore, any pollution in these waters is expected to be that originating from sewerage. To mitigate contaminants, following the

secondary treatment standards the waters are further treated using ultrafiltration, reverse osmosis and advanced oxidation processes. The latter treatment is reported to be capable of removing all types of emerging contaminants up to 90%–100% of the time (Singh *et al.*, 2023). Over the year of sampling, four compounds were detected in New Water and none above the EQS (Table 14). In screening for TIC the fewest number of compounds were found (n=15, Table 18) of any water type and none was above EQS (where an EQS is available).

4.5 Coastal and transitional water

No parameters above EQS were detected in coastal waters at any point in the year (Table 14); in fact, no parameters above LOD were detected apart from tri-isobutylphosphate, which was ubiquitous in Q4. Tributyl phosphate was detected in screening of TIC at levels of 0.1815 µg/L (Table 15). Given the similarity of these molecules (Figure 30), there may be interference between the compounds. In any case, the potential sources, natures, and EQS of both compounds are the same, and the EQS were not exceeded.

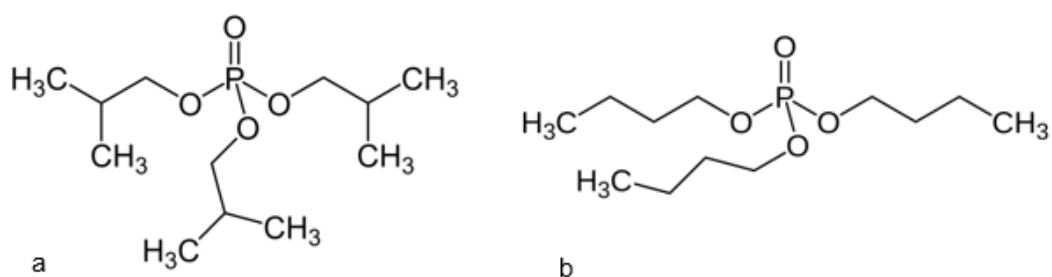


Figure 30 Comparison of (a) Tributyl phosphate and (b) tri-isobutylphosphate

Transitional waters can be heavily influenced by the nature of seawater specifically through dilution and, as in coastal waters, no parameters were detected above EQS in the transitional water sampled (Table 14). Tri-isobutylphosphate was detected at concentrations similar to coastal waters. No TIC were detected above their EQS (where an EQS is available). (Table 16).

4.6 Additional Testing sites

Additional Testing sites (Table 19) showed similar contamination profiles to Inland Water sites, which is not unexpected given they are all surface water sources. Ammonium nitrogen, sulphates,

arsenic, nickel and lead were detected in all sites at least once. Levels were generally at substantially higher levels in Q1 (March) than Q4 (Dec/Jan), possibly due to dilution (rainfall).

Ammonium nitrogen was generally found at levels much higher than its EQS of 15 µg/L at all sample stations at some point though, like at surface water, ammonium pulses were indicated by the variability of the quantities detected. Sulphates were found at elevated levels at Il-Magħluq though this is likely linked to the inclusion of seawater which has naturally high levels of sulphates (up to 2700mg/L, Zak *et al.*, 2020).

Concentrations of lead were higher than the proposed EQS (of 1.2µg/L, Amouroux *et al.*, 2021) in 6 of the 14 sites sampled; at Wied il-Mielah they were substantially higher (mean of 3.4-36.45µg/L). Lead is considered to be persistent in the environment. Though natural weathering processes usually turn lead and its compounds into compounds that are relatively stable and insoluble (e.g. carbonates, sulphates, sulphides and phosphates) there are exceptions (PbNO₃ and PbCl₂ are very soluble), moreover lead compounds are not degraded biotically. Lead was detected at Il-Magħluq in ERA's monitoring campaigns from 2021-2023 (the only site in the current Additional Sampling Site surveyed in that study) (ERA, Pers comm).

Carbamazepine was detected above the EQS at Marsa Storm water drain (average 0.428µg/L in Q1) and detected at Marsalforn (0.136µg/L in Q4) - notable for its presence, but below an EQS of 0.16mg/L (SCHEER, 2022b). Similarly of note is the presence of methylbenzotriazole which was detected at all sample sites except Wied Incita, though always below EQS.

Twenty-two TIC were detected (Table 20), but none above their EQS (where an EQS is available).. Carbamazepine was detected at 0.0488 µg/L in the TIC sample – a pooled collection of 8 sample sites - compared to 0.428 µg/L at Marsa Storm water drain during the same sample period when analysed separately. In contrast, anthracene was not detected in the TIC screening though it was detected in the specific analyses – possibly due to dilution (through the combination of the pooled sample).

The sampling point of Wied Qoton was only discovered in Q4. There was some concern that, being a ditch under a road, it might have major contamination from road runoff as indicated by the presence of benzene, for instance - but this is not supported by the data.

5.0 Summary

The methods and results of the first year of sampling (as described in section 1.3) have been reviewed in this report. In this summary, any overall trends or patterns will be identified.

Four compounds are notable by their prevalence across water types;

- acesulpham K, found in groundwater, inland surface water, storm water, transitional water and additional sampling sites,

- carbamazepine, found in groundwater, storm water and additional surface water sampling sites
- benzotriazole, found in groundwater, inland surface water, storm water, New water and additional sampling sites and
- Methylbenzotriazole, found in groundwater, inland surface water, storm water, New water Transitional water, and additional sampling sites

Acesulpham and carbamazepine were also the most common contaminants of emerging concern found in 11 groundwater sites sampled by EWA since 2016 (EWA, Pers comm.). Both compounds were highlighted in Action A6 (Optimising the implementation of the 2nd RBMP in the Malta River Basin District) (Ecoserv, 2020) which noted that “carbamazepine was the pharmaceutical consumed locally with the highest order of magnitude, detected in circa 25% of boreholes surveyed during surveillance monitoring”. The report stipulated that a monitoring programme on emerging CECs should address:

- i. Whether these substances are detected in other water bodies;
- ii. The extent to which CECs move between water bodies (e.g. from wastewaters to groundwater) as may be implied by different concentration loads; and
- iii. Whether similar CECs (in terms of chemical properties and/or origins) display the same behaviour when discharged at equivalent rates.

Of these, point (i) is achieved by the current review of the first year of monitoring. Point (ii) cannot be readily assessed since wastewaters were not included in the sampling strategy. However, the derivative of wastewater – new water – contained neither acesulpham nor carbamazepine and indeed is one of the least contaminated water sources (though this is arguably due to the rigorous treatment methods outlined before). It does contain some compounds – namely the industrial chemicals methylbenzotriazole and benzotriazole – which are also found in groundwater, for instance, but no conclusions on the movement of chemicals between water sources may be drawn from the data. Similarly, there are no data suggesting similar CECs display the same behaviour when discharged at equivalent rates.

The other consistency across the data is the variability; compounds are erratic in their frequency of detection and concentration. The latter may be due to a combination of acute discharge incidents and rainfall versus evaporation – particularly in isolated pools which were a characteristic of many surface water sample points. Typically, such inconsistency can be ameliorated with the use of passive (automated) sampling, which could only be practical where flow is continuous; limiting the sampling sites to a few locations where this occurs.

Several sampling sites are of questionable value in providing a picture of the quality of Malta’s catchments and water resources. Wied Qoton, Wied Incita, Wied Blandun and Wied is-Sewda are

composed of either surface runoff during a rainfall event, or isolated pools - both of which, through dilution and evaporation respectively, may obscure the true state of contamination. This must be taken into consideration when evaluating the data. Alternatively, sampling permanently flowing springs – such as at Ġhajn tal-Ħasselin and Ġhajn Ballut – may give a more reliable picture.

Detecting a compound in isolation is not useful in evaluating the quality of the water source, nor in developing monitoring or control strategies. Over 81% of compounds tested were never detected in Maltese waters, which suggests a more strategic, bespoke sampling approach is required. Table 21 identifies all compounds that were confirmed at levels above LOD at least once in the first year of sampling (Tentatively Identified Compounds are not included in the list given the aforementioned issues with lack of specificity). This can inform future monitoring strategies with regard to the frequency, and magnitude, of contaminants detected within Maltese waters. Other criteria for consideration are: authorization of the compounds for use within Malta, and presence on Annex I (Priority Substances) of Directive 2013/39/EU, and Annex 1 of Decision (EU) 2022/1307 (Watch list). Furthermore, it may be appropriate that in future sampling strategies, inland, transitional and additional monitoring sites are, where possible, tested more often (than twice per annum) to identify trends versus isolated contamination incidents. Some contaminants – namely DEHP and glyphosate - were detected at levels higher than the EQS in inland surface waters but, with isolated results, it is difficult to verify or assess the significance of this.

Nevertheless, to maintain consistency and gain a full picture, the sampling strategy will not be changed between year 1 and 2. The end of project report will review the proposals made in this report in the light of the data from the second year of sampling, and provide an updated monitoring strategy to enable focused monitoring of CECs and their sources, and diffuse sources of pollution, as per Objective 3 of this project.

Sampling in duplicate should continue in year two at all sites to highlight any irregularities of single results.

Annex.1 Test parameters, methods, LOD and LOQ

Groundwater, Transitional, Stormwater, Coastal, and New Water samples are tested for CEC. Please refer to Table 1

Inland Surface Waters and Additional Monitoring Stations are tested for CEC and Indicators of Diffuse Pollution. Refer to table 1

The testing laboratories QA procedure is UNI CEI EN ISO IEC 17025:2017.

Those parameters which are not in line with the LoDs/LoQs specified in Table 2 of Annex 2 of the Tender are in line with the adequate performance levels as per Schedule XI(B) of S.L. 549.100 (Minimum Performance Criteria for Methods of Analysis). Monitoring is carried out by ensuring to use best available techniques not entailing excessive costs or damage to equipment.

Table 9 Test Parameters, methods, LOD and LOQ

Parameter	Method	CEC or Diffuse	Limit of Detection (µg/L)	Groundwater LOQ (µg/L)	Surface water LOQ (µg/L)	Seawater LOQ (µg/L)
Aniline	EPA 3510C 1996 + EPA 8270E 2018	CEC	10	0.02	0.02	0.02
Fipronil	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.05	0.0025	0.0025	0.0025
Chlorpyrifos-methyl	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.01	0.0025	0.0025	0.0025
Deltamethrin	EPA 3510C 1996 + EPA 8270E 2018	CEC	100	0.0025	0.0025	0.0025
Triisobutyl phosphate	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.01	0.025	0.025	0.025

Triphenyl phosphate	EPA 3510C 1996 + EPA 8270E 2018	CEC	100	0.25	0.25	0.25
Alachlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Atrazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Chlorfenvinphos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.0025	0.0025	0.0025
Chlorpyrifos or Chlorpyrifos-ethyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.0025	0.0025	0.0025
Endrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Isodrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Aldrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Dieldrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p'-DDD	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p'-DDE	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
DDT Total o,p' + p,p'	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p'-DDT	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
o,p'-DDD	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
o,p'-DDE	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

<i>o,p'-DDT</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Chlordane Cis + Trans	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Cis-chlordane	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Trans-chlordane	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Endosulfan I + II	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Alpha-endosulfan (endosulphan I)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Beta-endosulfan (endosulphan II)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Endosulfan sulfate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Hexachlorocyclohexanes alfa-HCH + beta-HCH + delta-HCH + gamma-HCH (Lindane)	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Alpha-hexachlorocyclohexane (alfa-HCH)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Beta-hexachlorocyclohexane(beta-HCH)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Delta hexachlorocyclohexane (delta-HCH)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Gamma-hexachlorocyclohexane (Lindane)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Methoxychlor o,p + p,p	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

o,p-methoxychlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p-methoxychlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Isoproturon	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.1	0.0025	0.0025	0.0025
Simazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.0025	0.0025	0.0025
Trifluralin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Dicofol	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000048	0.0025	0.0025	0.0025
Quinoxifen	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0023	0.0025	0.0025	0.0025
Aclonifen	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0018	0.0025	0.0025	0.0025
Bifenox	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.00018	0.0025	0.0025	0.0025
Cybutryne	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.000375	0.0025	0.0025	0.0025
Cypermethrine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000012	0.0025	0.0025	0.0025
Dichlorvos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.000009	0.0025	0.0025	0.0025
Terbutryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Ametryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Azinphos-ethyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Azinphos-methyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

Chlordecone	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Coumafos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Crotoxyfos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Cyanazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Desmetryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Diazinone	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Dimethoate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Fenitrothion	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Fenthion	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
leptofos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Malathion	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Methidation	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Metolachlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Mevinfos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Mirex	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Molinate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

Parathion-ethyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Parathion-methyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Pendimethalin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Phorate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Prometryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Propazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Terbutylazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Tetrachlorvinphos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Triazophos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Heptachlor*	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000000040	0.0025	0.0025	0.0025
Heptachlor epoxide*	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000000040	0.0025	0.0025	0.0025
Brominated diphenylethers 2,4,4'-tribromodiphenylether + 2,2',4,4'- tetrabromodiphenylether + 2,2',4,4',5-pentabromodiphenylether + 2,2',4,4',6- pentabromodiphenylether + 2,2',4,4',5,5'- hexabromodiphenylether + 2,2',4,4',5,6'-hexabromodiphenylether	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0001	0.5	0.5	0.5
Chloroalkanes, C10-13 Short Chain Chloro Paraffins (SCCP)	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	100	100	100

Hexabromocyclododecane	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.00012	0.5	0.5	0.5
P- Chloro-M-Cresol or 4-Chloro-3-methylphenol (PCMC)	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.5	0.02	0.02	0.02
DEHP or Di(2-ethylhexyl)phthalate or Bis(2-ethylhexyl)phthalate (BEHP)	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.01	0.1	0.1	0.1
Diethyl phthalate (DEP)	EPA 3510C 1996 + EPA 8270E 2018	CEC	5	0.1	0.1	0.1
<i>Polyaromatic hydrocarbons</i> <i>Benzo(b)fluoranthene + Benzo(k)fluoranthene +</i> <i>Benzo(a)pyrene + Benzo(g,h,i)perylene + Indeno(1,2,3-</i> <i>cd)pyrene</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Anthracene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Fluoranthene (PHC)	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Hexachlorobenzene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.001	0.001	0.001
Naphthalene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Pentachlorobenzene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.01	0.01	0.01
Pentachlorophenol	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.02	0.02	0.02
Benzo(a)pyrene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Benzo(b)fluoranthene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Benzo(ghi)perylene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002

Benzo(k)fluoranthene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Indeno(1,2,3-cd)pyrene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Trichlorobenzenes 1,2,4-Trichlorobenzene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.02	0.02	0.02
Di(2-ethylhexyl)phthalate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.1	0.1	0.1
1,2,4-trimethyl benzene	EPA 5030C + EPA 8260D	CEC	3	1	1	5
Cyclohexanone	EPA 5030C + EPA 8260D	CEC	100	25	25	250
Tert-butyl methyl ether; MTBE; 2- methoxy-2- methylpropane	EPA 5030C + EPA 8260D	CEC	0.1-2	1	1	10
Styrene	EPA 5030C + EPA 8260D	CEC	2	1	1	10
Benzene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Carbon tetrachloride	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
1,2- Dichloroethane	EPA 5030C + EPA 8260D	Diffuse	0.001	0.1	0.1	1
Dichloromethane	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Hexachlorobutadiene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.01	0.01	0.1
Tetrachloroethylene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Trichloroethylene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Trichloromethane	EPA 5030C + EPA 8260D	Diffuse	0.01	0.01	0.01	0.1
Azoxystrobin	MP 351	CEC	0.01	0.05	0.05	0.05
Dimethomorph	MP 351	CEC	0.01	0.05	0.05	0.05
Propamocarb	MP 351	CEC	0.03	0.05	0.05	0.09
Imidacloprid	MP 351	CEC	0.01	0.05	0.05	0.5
Diuron	MP 351	Diffuse	0.1	0.05	0.05	0.5
Famphur	MP 351	Diffuse	0.01	0.05	0.05	0.5
Fensulfothion	MP 351	Diffuse	0.01	0.05	0.05	0.5
Acesulpham k	MP 401	CEC	0.025	0.04	0.04	0.1 / 0.4 ¹

Carbamazepine	MP 401	CEC	0.05	0.02	0.02	0.15 / 0.25 ¹
Beta-estradiol (50-28-2)	MP 401	CEC	0.001	0.05	0.05	0.5
Atenolol	MP 401	CEC	0.001	0.04	0.04	0.4
Sulfamethoxazole	MP 401	CEC	0.01	0.02	0.02	0.03 / 0.5 ¹
Amoxicillin	MP 401	CEC	0.3	1	1	1 / 10 ¹
Methylbenzotriazole	MP 401	CEC	0.03	0.05	0.05	0.5
Benzotriazole	MP 401	CEC	0.03	0.05	0.05	0.5
Bisphenol A	MP 402	CEC	100	300	300	300
Nonylphenols Nonylphenol, 4- (branched) (CAS: 84852-15-3)	MP 402	Diffuse	0.01	0.05	0.05	0.5
4-nonylphenol (CAS: 104-40-5)	MP 402	Diffuse	0.01	0.05	0.05	0.5
Octylphenols Octylphenol, 4-tert- (CAS: 140-66-9) or 4-(1,1',3,3'-TetraMethylButhyl)Phenol	MP 402	Diffuse	0.01	0.05	0.05	0.5
N-methyl-2-pyrrolidone	MP 403	CEC	100	10000	10000	10000
Propan-1,2-diol	MP 403	CEC	10	5000	5000	5000
Glyphosate	MP 298	CEC	0.1	0.05	0.05	0.3
EDTA	UNI EN ISO 16588:2006	CEC	500	1500	1500	1500
Cadmium	UNI EN ISO 17294-2:2016	Diffuse	0.01	0.1	0.1	2
Lead	UNI EN ISO 17294-2:2016	Diffuse	0.01	1	1	3
Mercury and its compound as Total Mercury Mercury	UNI EN ISO 17294-2:2016	Diffuse	0.05	0.1	0.1	1
Nickel and its compounds as Total Nickel Nickel	UNI EN ISO 17294-2:2016	Diffuse	0.1	1	1	3
Arsenic	UNI EN ISO 17294-2:2016	Diffuse	0.05	1	1	3

Dioxins and dioxin-like compounds HRMS OctaChloroDibenzoDioxin (OCDD) + OctaChloroDibenzoFuran (OCDF) + 1,2,3,4,6,7,8- HeptaChloroDibenzoFuran (HpCDF) + 1,2,3,4,7,8,9- HeptaChloroDibenzoFuran (HpCDF) + 1,2,3,4,7,8- HexaChloroDibenzoDioxin (HxCDD) + 1,2,3,4,7,8- HexaChloroDibenzoFuran (HxCDF) + 1,2,3,6,7,8- HexaChloroDibenzoDioxin (HxCDD) + 1,2,3,6,7,8- HexaChloroDibenzoFuran (HxCDF) + 1,2,3,7,8,9- HexaChloroDibenzoDioxin (HxCDD) + 1,2,3,7,8,9- HexaChloroDibenzoFuran (HxCDF) + 1,2,3,7,8- PentaChloroDibenzoDioxin (PeCDD) + 1,2,3,7,8- PentaChloroDibenzoFuran (PeCDF) + 2,3,4,6,7,8- HexaChloroDibenzoFuran (HxCDF) + 2,3,4,7,8- PentaChloroDibenzoFuran (PeCDF) + 2,3,7,8- TetraChloroDibenzoDioxin (TCDD) + 2,3,7,8- TetraChloroDibenzoFuran (TCDF) = Sum PCDD, PCDF (Conversion WHO-TEF) + PCB 105 + PCB 114 + PCB 118 + PCB 123 + PCB 126 + PCB 156 + PCB 157 + PCB 167 + PCB 169 + PCB 189 + PCB 77 + PCB 81 = Total PCB (Conversion WHO-TEF)	Dioxins/Furans EPA 1613B 1994 + PCB Dioxin Like EPA 1668C 2010	Diffuse	0.0065 µgTEQ/L	SUM of Dioxins/Furans 0.000000694 µgTEQ/L SUM of PCB Dioxin Like 0.000000028 µgTEQ/L	SUM of Dioxins/Furans 0.000000694 µgTEQ/L SUM of PCB Dioxin Like 0.000000028 µgTEQ/L	SUM of Dioxins/Furans 0.000000694 µgTEQ/L SUM of PCB Dioxin Like 0.000000028 µgTEQ/L
Ammonium (Un-ionized ammonia (NH ₃))	UNI EN ISO 11732:2005	Diffuse	2.0	6.4	6.4	64
Chloride	UNI EN ISO 10304-1:2009	Diffuse	500	2500	2500	25000
Sulphate	UNI EN ISO 10304-1:2009	Diffuse	500	2500	2500	25000
Tributyltin compounds MonoButhilTin (MBT) + DiButhilTin (DBT) + TriButhilTin (TBT) = Sum Organotin Compounds	UNI EN ISO 17353:2006	Diffuse	0.002	0.01	0.01	0.1

PFOA and its compounds include Perfluorooctane sulfonic acid and its derivatives (PFOS) 4:2 Fluorotelomero solfonato (4:2 FTS) + 6:2 Fluorotelomero solfonato (6:2 FTS) + 8:2 Fluorotelomero solfonato (8:2 FTS) + Acido 11-cloroeicosafuoro-3-oxaundecane-1-solfonico (11Cl-PF3OUdS) + Acido 2H-perfluoro-2-decanoico (8:2 FTUA) + Acido 2H-perfluoro-2-ottanoico (6:2 FTUA) + Acido 2-perfluorodecil etanico (FDEA) + Acido 2-perfluoroesil-etanico (FHEA) + Acido 2-perfluoroottilico etanico (FOEA) + Acido 4,8-diossa-3H-perfluorononanoico (DONA) + Acido 9-cloroesadecafluoro-3-ossanone-1-solfonico (9Cl-PF3ONS) + Acido dimero ossido esafluoropropilenico (HFPO-DA) + Acido N ((eptadecafluoroottil) solfonil) -N-metil (Me-NFOSAA) + Acido Perfluorobutanesolfonico (PFBS) + Acido Perfluorobutanoico (PFBA) + Acido perfluorodecanesolfonico (PFDS) + Acido Perfluorodecanoico (PFDA) + Acido perfluorododecanoico (PFDoA) + Acido Perfluoroeptanoico (PFHpA) + Acido perfluoroesanoico (PFHxA) + Acido Perfluorononanoico (PFNA) + Acido Perfluorononansolfonico (PFNS) + Acido Perfluoroottanoico (PFOA) + Acido Perfluoropentanoico (PFPeA) + Acido Perfluoropentansolfonico (PFPeS) + Acido perfluorotetradecanoico (PFTA) + Acido perfluorotridecanoico (PFTTrDA) + Acido Perfluoroundecanoico (PFUnA) + Acido propanoico 3-perfluoroottile (PFHpPA) + N-etil-N - ((eptadecafluoroottil) solfonil) - acido (Et-NFOSAA) + Perfluoroeptanosulfonato (PFHpS) +	ASTM D7979-20	Diffuse	0.0000195	0.002	0.002	0.02
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Perfluoroesansulfonato (PFHxS) + Perfluoroottano sulfonammide (PFOSA) + Perfluoroottansulfonato (PFOS)						
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* In Table 2 of Annex 2 of the Tender document, the LoD given for “Helptachlor & heptachlor epoxide” is 1.5×10^9 . The testing laboratory’s LoD is 4.0×10^9 – provided as separate results

¹ Due to limitations imposed by the analysis method, the LOD for these chemicals in seawater were increased. This was agreed by ERA

Annex 2 Chemicals tested for within 'Tentatively Identified Compounds' Screening Assay

UnTarget Compound List	
Name	CAS#
1(3H)-Isobenzofuranone	87-41-2
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
1,1,2-Trichloroethane	79-00-5
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-diox	35822-46-9
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4
1,2,3-Trichlorobenzene	87-61-6
1,2,3-Trichloropropane	96-18-4
1,2,4,5-Tetrachlorobenzene	95-94-3
1,2,4-Trichlorobenzene	120-82-1
1,2,4-Trimethylbenzene	95-63-6
1,2-Dibromoethane	106-93-4
1,2-Dichlorobenzene	95-50-1
1,2-Dichloropropane	78-87-5
1,3,5-Triallyl-1,3,5-triazine-2,4,6	1025-15-6
1,3,5-Trichlorobenzene	108-70-3
1,3,5-Trimethylbenzene	108-67-8
1,3,5-Trinitrobenzene	99-35-4
1,3-Dichlorobenzene	541-73-1
1,3-Dichloropropane	142-28-9
1,4-Dichlorobenzene	106-46-7
1,4-Dioxane	123-91-1
1,4-Naphthoquinone	130-15-4

Name	CAS#
Epichlorhydrin	106-89-8
EPN	2104-64-5
Epoxiconazole	133855-98-8
Epsilon-HCH	6108-10-7
EPTC	759-94-4
Erbon	136-25-4
Esfenvalerate	66230-04-4
Esprocarb	85785-20-2
Estazolam	29975-16-4
Etaconazole	71245-23-3
Ethalfuralin	55283-68-6
Ethiofencarb	29973-13-5
Ethiolate	2941-55-1
Ethion	563-12-2
Ethofumesate	26225-79-6
Ethoprophos	13194-48-4
Ethoxyquin	91-53-2
Ethyl methanesulfonate	62-50-0
Ethylbenzene	100-41-4
Ethylene thiourea	96-45-7
Ethylparaben	120-47-8
Etioazole	153233-91-1
Etridiazole	2593-15-9
Etrimfos	38260-54-7
Eugenol	97-53-0
Famoxadone	131807-57-3
Famphur	52-85-7
Farnesol	4602-84-0

1,6-Hexanediol diacrylate	13048-33-4
17a-Ethynylestradiol	57-63-6
1-Decanol	112-30-1
1-Ethyl-2-pyrrolidone	2687-91-4
1H-Benzotriazole	95-14-7
1H-Benzotriazole-5-methyl	136-85-6
1-Isocyanato-3-methyl-Benzene	621-29-4
1-Naphthylamine	134-32-7
2-(1-naphthyl)acetamide	86-86-2
2-(2-Butoxyethoxy)ethyl thiocyanate	112-56-1
2(3H)-Benzothiazolone	934-34-9
2-(Octylthio)ethanol	3547-33-9
2,2',3,3',4,4',5,5',6-nonachlorobiphenyl  ⑨	40186-72-9
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3
2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2
2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0
2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6
2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8
2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5
2,2',3,5'-Tetrachlorobiphenyl	41464-39-5
2,2',4,4',5,5'-Hexabromodiphenyl	68631-49-2
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4
2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8

Fenarimol	60168-88-9
Fenazaflor	14255-88-0
Fenazaquin	120928-09-8
Fenbuconazole	11961-10-0
Fenchlorphos	299-84-3
Fenfuram	24691-80-3
Fenhexamide	126833-17-8
Fenitrothion	122-14-5
Fenobucarb	3766-81-2
Fenoprop	93-72-1
Fenoprop methyl ester	4841-20-7
Fenoxaprop-ethyl	82110-72-3
Fenoxycarb	79127-80-3
Fenpiclonil	74738-17-3
Fenpropathrin	64257-84-7
Fenpropidin	67306-00-7
Fenpropimorph	67306-03-0
Fenson	80-38-6
Fensulfothion	115-90-2
Fenthion	55-38-9
Fenthion sulfoxide	000000-00-4
Fenuron	101-42-8
Fenvalerate I	51630-58-1
Fenvalerate II	51630-58-1
Fipronil	120068-37-3
Flamprop-isopropyl	52756-22-6
Flamprop-methyl	52756-25-9

2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3
2,2',5-Trichlorobiphenyl	37680-65-2
2,3,3',4',6-Pentachlorobiphenyl	38380-03-9
2,3',4,4'-Tetrachlorobiphenyl	32598-10-0
2,3,4,5-Tetrachlorophenol	4901-51-3
2,3,4,6-Tetrachlorophenol	58-90-2
2,3,4-Trichloroanisole	54135-80-7
2,3,5,6-Tetrachloroaniline	3481-20-7
2,3,5,6-Tetrachlorophenol	935-95-5
2,3,5,6-Tetrachlorothioanisole	68671-90-9
2,3,5-Trichlorophenol	933-78-8
2,3,5-Trimethacarb	2655-15-4
2,3,5-Trimethylphenyl methyl carbamate	2655-15-4
2,3,6-TBA	50-31-7
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6
2,3-Dichlorobiphenyl	16605-91-7
2,3-Dimethylphenol	526-75-0
2,4,4'-Tribromodiphenyl ether	41318-75-6
2,4,5-T methyl ester	1928-37-6
2,4',5-Trichlorobiphenyl	16606-02-3
2,4,5-Trichlorophenol	95-95-4
2,4,6-Triallyloxyl-1,3,5-triazine	101-37-1
2,4,6-Tribromoanisole	607-99-8
2,4,6-Tribromophenol	118-79-6

Flonicamid	158062-67-0
Florfenicol	73231-34-2
Fluazifop-P-butyl	79241-46-6
Fluazinam	79622-59-6
Flubenzimine	37893-02-0
Fluchloralin	33245-39-5
Flucythrinate I	70124-77-5
Flucythrinate II	70124-77-5
Fludioxonil	131341-86-1
Flufenacet	142459-58-3
Flumetralin	62924-70-3
Flumioxazin	103361-09-7
Fluometuron	2164-17-2
Fluopicolide	239110-15-7
Fluoranthene	206-44-0
Fluorene	86-73-7
Fluorodifen	15457-05-3
Fluotrimazole	31251-03-3
Fluoxastrobin	361377-29-9
Fluoxetine (Prozac)	54910-89-3
Fluquinconazole	136426-54-5
Flurbiprofen	5104-49-4
Flurenol-butyl ester	2314-09-2
Flurenol-methylester	1216-44-0
Fluridone	59756-60-4
Flurochloridone I	61213-25-0

2,4,6-Trichloroanisole	87-40-1
2,4,6-trichlorophenol	88-06-2
2,4,7,9-Tetramethyl-5-decyne-4,7-diol	126-86-3
2,4-D	94-75-7
2,4-D methyl ester	1928-38-7
2,4-D sec-butyl ester	000000-00-3
2,4-DB methyl ester	18625-12-2
2,4-Dichlorobenzamide	2447-79-2
2,4-Dichlorophenol	120-83-2
2,4-Dichlorophenyl benzenesulfonate	97-16-5
2,4-Dimethylaniline	95-68-1
2,4-Dimethylphenol	105-67-9
2,4-Dinitrophenol	51-28-5
2,4-Dinitrotoluene	121-14-2
2,4-Di-tert-butylphenol	96-76-4
2,6-Dichlorobenzamide	2008-58-4
2,6-Dichlorobenzonitrile	1194-65-6
2,6-Dichlorophenol	87-65-0
2,6-Difluorobenzamide	18063-03-1
2,6-Dimethylaniline	87-62-7
2,6-Dimethylphenol	576-26-1
2,6-Dinitrotoluene	606-20-2
2,6-Di-tert-butylphenol	128-39-2
2-[3-Chlorophenoxy]propionamide	5825-87-6
2-Acetylaminofluorene	53-96-3
2-Chloro-4-nitrotoluene	121-86-8
2-Chloro-5-nitrotoluene	13290-74-9
2-Chloro-6-nitrotoluene	83-42-1
2-Chlorobiphenyl	2051-60-7
2-Chloronaphthalene	91-58-7

Flurochloridone II	61213-25-0
Fluroxypyr-1-methylheptyl ester	81406-37-3
Flurtamone	96525-23-4
Flusilazole	85509-19-9
Flutolanil	66332-96-5
Flutriafol	76674-21-0
Fluvalinate-tau-I	10285-10-6
Fluvalinate-tau-II	10285-10-6
Folione	111-12-6
Folpet	133-07-3
Fonofos	944-22-9
Formothion	2540-82-1
Fosthiazate	98886-44-3
Fuberidazole	3878-19-1
Furalaxyl	57646-30-7
Furathiocarb	65907-30-4
Furfural	98-01-1
Furfuryl alcohol	98-00-0
Furmecyclox	60568-05-0
Gabapentin	60142-96-3
gamma-BHC (lindane)	58-89-9
Gemfibrozil	25812-30-0
Geraniol	106-24-1
Glutaraldehyde	111-30-8
Griseofulvin	126-07-8
Heptachlor	76-44-8
Heptachlor epoxide -isomer B	1024-57-3
Heptachlor exo-epoxide isomer B	28044-83-9
Heptenophos	23560-59-0
Heroin Hydrochloride	1502-95-0

2-Chlorophenol	95-57-8
2-Chlorophenyl isocyanate	3320-83-0
2-Chlorotoluene	95-49-8
2-Ethyl-1,3-hexanediol	94-96-2
2-Ethyl-4-methyl-1,3-dioxolane	4359-46-0
2-Ethyl-5,5-dimethyl-1,3-dioxane	768-58-1
2-Ethylhexanoic acid	149-57-5
2-Ethylhexyl diphenyl phosphate	1241-94-7
2-Ethylhexyl salicylate	118-60-5
2H-Indol-2-one, 1,3-dihydro	59-48-3
2-Hydroxyestradiol	362-05-0
2-Methoxynaphthalene	93-04-9
2-Methyl-4,6-dinitrophenol	534-52-1
2-Methylnaphthalene	91-57-6
2-Naphthylamine	91-59-8
2-Nitroaniline	88-74-4
2-Nitrophenol	88-75-5
2-Octyl-4-isothiazolin-3-one	26530-20-1
2-Phenoxypropionic acid	940-31-8
2-Picoline	109-06-8
2-tert-Butylcyclohexanone	1728-46-7
3,3'-Dichlorobenzidine	91-94-1
3,3'-Dimethylbenzidine	119-93-7
3,4,5-Trimethacarb	2686-99-9
3,4-Dichloroaniline	95-76-1
3,5-Dichloroaniline	626-43-7
3,5-Dimethylphenol	108-68-9
3-Chloro-1,2-dibromopropane	96-12-8
3-Chloroaniline	108-42-9
3-Chlorophenol	108-43-0
3-Hydroxycarbofuran	16655-82-6
3-Iodo-2-propynyl butylcarbamate	55406-53-6
3-Methylcholanthrene	56-49-5

Hexabromobenzene	87-82-1
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
Hexachloroethane	67-72-1
Hexachlorophene	70-30-4
Hexachloropropene	1888-71-7
Hexaconazole	79983-71-4
Hexadecane	544-76-3
Hexametapol	680-31-9
Hexazinone	51235-04-2
Hexestrol	84-16-2
Hexyl Cinnamaldehyde	101-86-0
Hexyl salicylate	6259-76-3
Homosalate	118-56-9
Hydroxy Citronellal	107-75-5
Ibuprofen	15687-27-1
Imazalil	35554-44-0
Imazapyr	81334-34-1
Imidacloprid	138261-41-3
Indane	496-11-7
Indene	95-13-6
Indeno[1,2,3-cd]pyrene	193-39-5
Indosulfuron methyl Na (breakdown product)	144550-36-7
Indoxacarb	173584-44-6
Ioxynil	1689-83-4
Ipconazole	125225-28-7
Iprobenfos	26087-47-8
Iprodione	36734-19-7
Irgarol	28159-98-0
Isazophos	42509-80-8
Isobenzan	297-78-9
Isobornyl thiocynoacetate	115-31-1

3-nitroaniline	99-09-2
4,4'-DDD	72-54-8
4,4'-DDE	72-55-9
4,4'-DDT	50-29-3
4,4'-Dichlorobenzophenone	90-98-2
4,4'-Methylenebis (phenyl isocyanate)	101-68-8
4-Aminobiphenyl	92-67-1
4-Bromophenyl phenyl ether	101-55-3
4-Chloro-2-methylphenol	1570-64-5
4-Chloro-2-nitrotoluene	89-59-8
4-Chloro-3-methylphenol	59-50-7
4-Chloro-3-nitrotoluene	89-60-1
4-Chloroaniline	106-47-8
4-Chlorophenol	106-48-9
4-Chlorophenyl phenyl ether	7005-72-3
4-Chlorotoluene	106-43-4
4-Methylanisole	104-93-8
4-Methyl-benzylidene camphor	36861-47-9
4-Nitroaniline	100-01-6
4-Nitrophenol	100-02-7
4-Nitroquinoline-1-oxide	56-57-5
4-Nonylphenol	104-40-5
4-Octyne	1942-45-6
4-tert-Butyltoluene	98-51-1
4-tert-Octylphenol	140-66-9
5,7-Dihydroxy-4'-methoxyisoflavone	491-80-5
5-Nitro-o-toluidine	99-55-8
7,12-Dimethylbenz[a]anthracene	57-97-6
9,10-Anthraquinone	84-65-1
a,a-Dimethylphenethylamine	122-09-8
acenaphthene	83-32-9

Isocarbamide	30979-48-7
Isodecyl diphenyl phosphate	29761-21-5
Isodrin	465-73-6
Isoeugenol	97-54-1
Isofenphos	25311-71-1
Isomethiozin	57052-04-7
Isophorone	78-59-1
Isoprocab	2631-40-5
Isopropalin	33820-53-0
Isopropyl myristate	110-27-0
Isopropyl palmitate	142-91-6
Isopropylbenzene	98-82-8
Isoprothiolane	50512-35-1
Isoproturon	34123-59-6
Isopyrazam	881685-58-1
Isosafrole	120-58-1
Isoxaben	82558-50-7
Isoxaflutole	141112-29-0
Isoxathion	18854-01-8
Jodfenphos	18181-70-9
Kepone	143-50-0
Ketoprofen	22071-15-4
Kinoprene	43588-37-4
Kresoxim-methyl	143390-89-0
Lenacil	2164-08-1
Leptophos	21609-90-5
Leptophos oxon	25006-32-0
Lidocaine	137-58-6
Lilial	80-54-6
Linalool	78-70-6
Linuron	330-55-2

Acenaphthylene	208-96-8
Acephate	30560-19-1
Acetamiprid	160430-64-8
Acetochlor	34256-82-1
Acetophenone	98-86-2
Acifluorfen methyl ester	050594-67-7
Aclonifen	74070-46-5
Alachlor	15972-60-8
Aldrin	309-00-2
Allidochlor	93-71-0
alpha Isomethyl Ionone	127-51-5
alpha-BHC (alpha-HCH)	319-84-6
Alprazolam	28981-97-7
Ambroxol	18683-91-5
Ametryn	834-12-8
Amidithion	919-76-6
Aminocarb	2032-59-9
Aminopyralid	150114-71-9
Amitraz	33089-61-1
Amitrole	61-82-5
Amyl Cinnamal	122-40-7
Amylcinnamyl Alcohol	101-85-9
Ancymidol	12771-68-5
Androstadienedione	897-06-3
Anilazine	101-05-3
Aniline	62-53-3
Anisyl Alcohol	105-13-5
Anthracene	120-12-7
Aramite	140-57-8

Malathion	121-75-5
Malathion-o-analog	1634-78-2
MCPA	94-74-6
MCPA methyl ester	2436-73-9
MCPB	94-81-5
MCPB methyl ester	57153-18-1
m-Cresol (3-methylphenol)	108-39-4
m-Dinitrobenzene	99-65-0
Mecarbam	2595-54-2
Mecoprop	93-65-2
Mecoprop methyl ester	23844-56-6
Mefenacet	73250-68-7
Mefluidide	53780-34-0
Menazon	78-57-9
Mephosfolan	950-10-7
Mepronil	55814-41-0
Mesosulfuron methyl (breakdown product)	208465-21-8
Metalaxyl	57837-19-1
Metaldehyde	108-62-3
Metamitron	41394-05-2
Metasystox thiol	919-86-8
Metazachlor	67129-08-2
Methabenzthiazuron	18691-97-9
Methacrifos	62610-77-9
Methamidophos	10265-92-6
Methapyrilene	91-80-5
Methaqualone	72-44-6
Methfuroxam	2873-17-8
Methidathion	950-37-8

Atraton	1610-17-9
Atrazine	1912-24-9
Atrazine desethyl	6190-65-4
Atrazine desisopropyl	1007-28-9
Azaconazole	60207-31-0
Azamethiphos	35575-96-3
Azinphos-ethyl	2642-71-9
Azinphos-methyl	86-50-0
Aziprotryne	4658-28-0
Azobenzene	103-33-3
Azoxystrobin	131860-33-8
Barban	101-27-9
Benalaxyl	71626-11-4
Benazolin-ethyl	25059-80-7
Bendiocarb	22781-23-2
Benfluralin	1861-40-1
Benfuracarb	82560-54-1
Benfuresate	68505-69-1
Benodanil	15310-01-7
Bentazone	25057-89-0
Bentazone methyl derivative	61592-45-8
Benthiocarb	28249-77-6
Benz[a]anthracene	56-55-3
Benzenepropanoic acid	501-52-0
Benzenesulfonamide	98-10-2
Benzenesulfonamide, 4-methyl-	70-55-3
Benzenesulfonamide, N-butyl	3622-84-2
Benzenesulfonanilide	1678-25-7
Benzo[a]pyrene	50-32-8

Methiocarb	2032-65-7
Methiocarb sulfone	2179-25-1
Methiocarb sulfoxide	2635-10-1
Methomyl	16752-77-5
Methoprene I	40596-69-8
Methoprene II	40596-69-8
Methoprotryne	841-06-5
Methoxychlor	72-43-5
Methyl Methacrylate	80-62-6
Methyl methanesulfonate	66-27-3
Methyl paraoxon	950-35-6
methyl Parathion	298-00-0
Methyl-1-naphthalene acetate	2876-78-0
Methylcyclohexanone	108-87-2
Methyldymron	42609-73-4
Methylparaben	99-76-3
Metobromuron	3060-89-7
Metolachlor	51218-45-2
Metolcarb	1129-41-5
Metribuzin	21087-64-9
Metronidazole	443-48-1
Mevinphos	7786-34-7
Midazolam	59467-70-8
Mirex	2385-85-5
Molinate	2212-67-1
Monalide	7287-36-7
Monocrotophos	6923-22-4
Monolinuron	1746-81-2
Monuron	150-68-5

Benzo[b]fluoranthene	205-99-2	Musk Xylene	81-15-2
Benzo[ghi]perylene	191-24-2	m-Xylene	108-38-3
Benzo[k]fluoranthene	207-08-9	Myclobutanil	88671-89-0
Benzonitrile	100-47-0	N,N,N',N'-Tetraacetylenediamine	10543-57-4
Benzophenone	119-61-9	N,N-Diethyl-m-toluamide	134-62-3
Benzophenone-3	131-57-7	N,N-Dimethylaniline	121-69-7
Benzoylprop ethyl	22212-55-1	N-1-Naphthylacetamide	000575-36-0
Benzyl alcohol	100-51-6	Nalorphine	62-67-9
Benzyl Benzoate	120-51-4	Naphthalene	91-20-3
Benzyl Cinnamate	103-41-3	Naphthalic anhydride	81-84-5
Benzyl laurate	140-25-0	Napropamide	15299-99-7
Benzyl Salicylate	118-58-1	Naproxen	22204-53-1
b-Estradiol	50-28-2	n-Butylbenzene	104-51-8
beta-BHC (beta-HCH)	319-85-7	Neodecanoic acid-ethenyl ester	51000-52-3
Bifenazate	149877-41-8	Nerolidol	7212-44-4
Bifenox	42576-02-3	Nicotine	54-11-5
Bifenthrin	82657-04-3	Nitralin	4726-14-1
Binapacryl	485-31-4	Nitrapyrin	1929-82-4
Bioallethrin	584-79-2	Nitrazepam	146-22-5
Bioallethrin S-cyclopentenyl isomer	28434-00-6	Nitrobenzene	98-95-3
Bioresmethrin	10453-86-8	Nitrofen	1836-75-5
Biphenyl	92-52-4	Nitrothal-isopropyl	10552-74-6
Bis (4-chlorophenyl) sulfone	80-07-9	Nitroxynil	1689-89-0
bis(2-chloroethoxy)methane	111-91-1	N-Methyl-N-1-naphthyl acetamide	000000-00-2
bis(2-chloroethyl) ether	111-44-4	N-nitrosodiethylamine	55-18-5
bis(2-chloroisopropyl) ether	108-60-1	N-nitrosodimethylamine	62-75-9
Bis(2-ethylhexyl) adipate	103-23-1	N-nitrosodi-n-butylamine	924-16-3
bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	N-nitrosodi-n-propylamine	621-64-7
Bisphenol A	80-05-7	N-nitrosodiphenylamine	86-30-6
Bitertanol I	55179-31-2	N-nitrosomethylethylamine	10595-95-6
Bitertanol II	55179-31-2	N-nitrosomorpholine (4-nitrosomorpholin	59-89-2
Bixafen	581809-46-3	N-nitrosopiperidine (1-nitrosopiperidin	100-75-4

Boscalid	188425-85-6
Bromacil	314-40-9
Bromazepam	1812-30-2
Bromobenzene	108-86-1
Bromobutide	74712-19-9
Bromocyclen	1715-40-8
Bromodichloromethane	75-27-4
Bromoform	75-25-2
Bromophos	2104-96-3
Bromophos-ethyl	4824-78-6
Bromopropylate	18181-80-1
Bromoxynil	1689-84-5
Bromoxynil octanoic acid ester	1689-99-2
Bupirimate	41483-43-6
Buprofezin	69327-76-0
Butabarbital	125-40-6
Butachlor	23184-66-9
Butamifos	36335-67-8
Butanedioic acid, dimethyl ester	106-65-0
Butoxycarboxim	34681-23-7
Butralin	33629-47-9
butyl benzyl phthalate	85-68-7
Butylate	2008-41-5
Butylated hydroxyanisole	25013-16-5
Butylated hydroxytoluene	128-37-0
Butylparaben	94-26-8
Caffeine	58-08-2
Caprolactam	105-60-2
Captafol	2425-06-1
Captan	133-06-2

N-nitrosopyrrolidine (1-nitrosopyrrolid	930-55-2
Norflurazon	27314-13-2
N-Phenyl-1-naphthylamine	90-30-2
n-Propylbenzene	103-65-1
Nuarimol	63284-71-9
O,O,O-Triethyl phosphorothioate	126-68-1
o,p'-DDD	53-19-0
o,p'-DDE	3424-82-6
o,p'-DDT	789-02-6
o-Cresol (2-methylphenol)	95-48-7
Octachlorodibenzofuran	39001-02-0
Octachlorodibenzo-p-dioxin	3268-87-9
Octachlorostyrene	29082-74-4
Octocrylene	6197-30-4
Octyl-methoxycinnamate	5466-77-3
Ofurace	58810-48-3
Omethoate	1113-02-6
o-Phenylphenol	90-43-7
Oryzalin	19044-88-3
o-Terphenyl	84-15-1
o-Toluidine	95-53-4
Oxabetrinil	74782-23-3
Oxacyclohexadecan-2-one	106-02-5
Oxadiazon	19666-30-9
Oxadixyl	77732-09-3
Oxamyl	23135-22-0
Oxazepam	604-75-1
Oxycarboxin	5259-88-1
Oxychlordane	27304-13-8
Oxydemeton-methyl	301-12-2

Carbamazepine	298-46-4
Carbaryl	63-25-2
Carbazole	86-74-8
Carbetamide	16118-49-3
Carbofuran	1563-66-2
Carbofuran-3-keto	016709-30-1
Carbophenothion	786-19-6
Carbosulfan	55285-14-8
Carboxin	5234-68-4
Carfentrazone-ethyl	128639-02-1
Caryophyllene	87-44-5
Cedrol	77-53-2
Cedryl acetate	77-54-3
Chinomethionat	2439-01-2
Chloramben methyl ester	7286-84-2
Chloranocryl	2164-09-2
Chlorbenside	103-17-3
Chlorbromuron	13360-45-7
Chlorbufam	1967-16-4
Chlordimeform	6164-98-3
Chlorfenapyr	122453-73-0
Chlorfenethol	80-06-8
Chlorfenprop-methyl	14437-17-3
Chlorfenson	80-33-1
Chlorfenvinphos	470-90-6
Chlorflurecol-methyl ester	2536-31-4
Chlormefos	24934-91-6
Chlornitrofen	1836-77-7
Chlorobenzene	108-90-7
Chlorobenzilate	510-15-6
Chlorodibromomethane	124-48-1

Oxyfluorfen	42874-03-3
o-Xylene	95-47-6
p-(dimethylamino)azobenzene	60-11-7
Paclobutrazol	76738-62-0
Padimate O	21245-02-3
Paraldehyde	123-63-7
Paraoxon	311-45-5
Parathion (ethyl)	56-38-2
p-Benzoquinone	106-51-4
p-Cresol (4-methylphenol)	106-44-5
Pebulate	1114-71-2
Penconazole	66246-88-6
Pencycuron (breakdown product)	66063-05-6
Pendimethalin	40487-42-1
Pentachloroaniline	527-20-8
Pentachloroanisole	1825-21-4
Pentachlorobenzene	608-93-5
Pentachloroethane	76-01-7
Pentachloronitrobenzene	82-68-8
Pentachlorophenol	87-86-5
Pentanochlor	2307-68-8
Pentobarbital	76-74-4
Permethrin I	52645-53-1
Permethrin II	52645-53-1
Perthane	72-56-0
Pethidine	57-42-1
phenacetin	62-44-2
Phenamiphos	22224-92-6
Phenanthrene	85-01-8
Phenkapton	2275-14-1
Phenmedipham	13684-63-4

Chloroneb	2675-77-6
Chlorophacinone	3691-35-8
Chlorophene (2-Benzyl-4-chlorophenol)	120-32-1
Chloropropylate	5836-10-2
Chlorothalonil	1897-45-6
Chlorotoluron	15545-48-9
Chloroxlenol	88-04-0
Chlorpropham	101-21-3
Chlorpyrifos	2921-88-2
Chlorpyrifos Methyl	5598-13-0
Chlorthal-dimethyl	1861-32-1
Chlorthiamid	1918-13-4
Chlorthion	500-28-7
Chlorthiophos	60238-56-4
Chlorthiophos sulfone	025900-20-3
Chlorthiophos sulfoxide	029-21-5
Chlozolate	84332-86-5
Cholesterol	57-88-5
Chrysene	218-01-9
Cinnamal	104-55-2
Cinnamyl Alcohol	104-54-1
cis-1,3-Dichloropropylene	10061-01-5
cis-Chlordane	5103-71-9
Citral	5392-40-5
Citronellol	106-22-9
Clofibrate	637-07-0
Clomazone	81777-89-1
Clomipramine	303-49-1
Clonazepam	1622-61-3
Clopyralid	1702-17-6

Phenol	108-95-2
Phenoxyacetic acid	122-59-8
Phenthoate	2597-03-7
Phenylbutazone	50-33-9
phorate	298-02-2
Phosalone	2310-17-0
Phosfolan	947-02-4
Phosmet	732-11-6
Phosphamidon I	13171-21-6
Phosphamidon II	13171-21-6
Phthalide	27355-22-2
Picloram methyl ester	14143-55-6
Picolinafen	137641-05-5
Pindone	83-26-1
Pinoxaden	243973-20-8
Piperalin	3478-94-2
Piperonyl butoxide	51-03-6
Piperonylbutoxide	51-03-6
Piperophos	24151-93-7
Pirimicarb	23103-98-2
Pirimiphos-ethyl	23505-41-1
Pirimiphos-methyl	29232-93-7
p-Isopropyltoluene	99-87-6
Plifenat	21757-82-4
p-Nitrotoluene	99-99-0
p-Phenylenediamine	106-50-3
Prazepam	2955-38-6
Pretilachlor	51218-49-6
Primidone	125-33-7
Probenazole	27605-76-1

Cloquintocet-mexyl	99607-70-2
Clothianidin	210880-92-5
Cocaine	50-36-2
Codeine	76-57-3
Cotinine	486-56-6
Coumaphos	56-72-4
Coumarin	91-64-5
CPA	122-88-3
Cresyl diphenyl phosphate	26444-49-5
Crimidine	535-89-7
Crotamiton	483-63-6
Crotoxyphos	7700-17-6
Crufomate	299-86-5
Cyanazine	21725-46-2
Cyanofenphos	13067-93-1
Cyanophos	2636-26-2
Cycloate	1134-23-2
Cyclohexanone	108-94-1
Cycluron	2163-69-1
Cyfluthrin I	68359-37-5
Cyfluthrin II	68359-37-5
Cyfluthrin III	68359-37-5
Cyfluthrin IV	68359-37-5
Cyhalothrin I (lambda)	68085-85-8
Cymoxanil	57966-95-7
Cypermethrin I	52315-07-8
Cypermethrin II	52315-07-8

Prochloraz	67747-09-5
Procymidone	32809-16-8
Profenofos	41198-08-7
Profluralin	26399-36-0
Promecarb	2631-37-0
Prometon	1610-18-0
Prometryn	7287-19-6
Propachlor	1918-16-7
Propamocarb	24579-73-5
Propanil	709-98-8
Propargite	2312-35-8
Propazine	139-40-2
Propetamphos	31218-83-4
Propham	122-42-9
Propiconazole-I	60207-90-1
Propiconazole-II	60207-90-1
Propofol	2078-54-8
Propoxur	114-26-1
Propylparaben	94-13-3
Propyzamide	23950-58-5
Prosulfocarb	52888-80-9
Prothioconazole (breakdown product)	178928-70-6
Prothiofos	34643-46-4
Prothoate	2275-18-5
p-Xylene	106-42-3
Pymetrozin	123312-89-0
Pyracarbolid	24691-76-7

Cypermethrin III	52315-07-8
Cypermethrin IV	52315-07-8
Cyprazine	22936-86-3
Cyproconazole	113096-99-4
Cyprodinil	121552-61-2
Cyprofuram	69581-33-5
Cyromazine	66215-27-8
d-(cis-trans)-Phenothrin-I	26002-80-2
d-(cis-trans)-Phenothrin-II	26002-80-2
Dapson	80-08-0
Dazomet	533-74-4
Decachlorobiphenyl	2051-24-3
Decahydronaphthalene (cis)	493-01-6
Decahydronaphthalene (trans)	493-02-7
delta-BHC (delta-HCH)	319-86-8
Deltamethrin	52918-63-5
Demephion	8065-62-1
Demeton-S	126-75-0
Demeton-S-methylsulfon	17040-19-6
Desbromo-bromobutide	000000-00-1
Desimpramine	50-47-5
Desmedipham	13684-56-5
Desmetryn	1014-69-3
Dialifos	10311-84-9
Diallate	2303-16-4
Di-allate II	2303-16-4
Diallyl phthalate	131-17-9

Pyrazine	290-37-9
Pyrazon	1698-60-8
Pyrazophos	13457-18-6
Pyrazoxyfen	71561-11-0
Pyrene	129-00-0
Pyributicarb	88678-67-5
Pyridaben	96489-71-3
Pyridaphenthion	119-12-0
Pyridate	55512-33-9
Pyridine	110-86-1
Pyridinitril	1086-02-8
Pyrifenox I	731-27-1
Pyrifenox II	88283-41-4
Pyrimethanil	53112-28-0
Pyroquilon	57369-32-1
Quinalphos	13593-03-8
Quinmerac (breakdown product)	90717-03-6
Quinoclamine	2797-51-5
Quinoxifen	124495-18-7
Quizalofop-ethyl	76578-14-8
Resmethrin	28434-01-7
Rotenone	83-79-4
S,S,S-Tributylphosphorotrithioate	78-48-8
Safrole	94-59-7
Sebuthylazine	7286-69-3
Secbumeton	26259-45-0
sec-Butylbenzene	135-98-8

Diamyl phthalate	131-18-0
Diazepam	439-14-5
Diazinon	333-41-5
Dibenz[a,h]anthracene	53-70-3
Dibenzofuran	132-64-9
Dibrom (naled)	300-76-5
Dibromomethane	74-95-3
Dibromophenyl ether	5436-43-1
Dicamba	1918-00-9
Dicamba methyl ester	6597-78-0
Dicapthon	2463-84-5
Dichlofenthion	97-17-6
Dichlofluanid	1085-98-9
Dichlone	117-80-6
Dichlormid	37764-25-3
Dichlorophen	97-23-4
Dichlorprop	120-36-5
Dichlorprop methyl ester	57153-17-0
Dichlorvos	62-73-7
Diclobutrazol	75736-33-3
Diclofenac artifact	15362-40-0
Diclofenac-methyl ester	15307-78-5
Diclofop methyl	51338-27-3
Dicloran	99-30-9
Dicofol	115-32-2
Dicrotophos	141-66-2
Dicyclanil	112636-83-6
Dicyclohexyl phthalate	84-61-7
Dicyclopentadiene	77-73-6
Dieldrin	60-57-1
Dienochlor	2227-17-0

Silthiofam	175217-20-6
Simazine	122-34-9
Simetryn	1014-70-6
Spirodiclofen	148477-71-8
Squalane	111-01-3
Styrene	100-42-5
Suflolane	126-33-0
Sulfadiazine	68-35-9
Sulfamethoxazole	723-46-6
Sulfotepp	3689-24-5
Sulfur (S8)	10544-50-0
Sulprofos	35400-43-2
Swep	1918-18-9
Tamoxifen	10540-29-1
TCMTB	21564-17-0
Tebuconazole	107534-96-3
Tebufenpyrad	119168-77-3
Tebutam	35256-85-0
Tecnazene	117-18-0
Tefluthrin	79538-32-2
Temephos	3383-96-8
Tepraloxydim	149979-41-9
Terbacil	5902-51-2
Terbucarb	191-81-1
Terbufos	13071-79-9
Terbumeton	33693-04-8
Terbuthylazine	5915-41-3
Terbutryne	886-50-0
Terpineol	98-55-5
Terpinyl acetate	80-26-2
tert-Butylbenzene	98-06-6

Diethatyl ethyl	38727-55-8
Diethofencarb	87130-20-9
Diethyl dithiobis(thionoformate) (EXD)	502-55-6
Diethyl phthalate	84-66-2
Diethylene glycol	111-46-6
Diethylstilbestrol	56-53-1
Difenoconazol I	119446-68-3
Difenoconazol II	119446-68-3
Diflufenican	83164-33-4
Diisobutyl phthalate	84-69-5
Dimefox	115-26-4
Dimethachlor	50563-36-5
Dimethametryn	22936-75-0
Dimethenamid	87674-68-8
Dimethipin	55290-64-7
Dimethoate	60-51-5
Dimethomorph	110488-70-5
Dimethyl adipate	627-93-0
Dimethyl fumarate	624-49-7
Dimethyl phosphite	868-85-9
Dimethyl phthalate	131-11-3
Dimethylvinphos(z)	2274-67-1
Dimetilan	644-64-4
Dimetridazole	551-92-8
Dimoxystrobin	149961-52-4
di-n-butyl phthalate	84-74-2
Diniconazole	83657-24-3
Dinitramine	29091-05-2
Dinobuton	973-21-7

Tetrachloroethylene	127-18-4
Tetrachlorvinphos	961-11-5
Tetraconazole	112281-77-3
Tetradifon	116-29-0
Tetraethylpyrophosphate (TEPP)	107-49-3
Tetramethrin I	7696-12-0
Tetramethrin II	7696-12-0
Tetrapropyl thiodiphosphate	3244-90-4
Tetrasul	2227-13-6
Thenylchlor	96491-05-3
Thiabendazole	148-79-8
Thiacloprid	111988-49-9
Thiamethoxam	153719-23-4
Thiofanox	39196-18-4
Thiometon	640-15-3
Thionazin	297-97-2
Tiocarbazil I	36756-79-3
Tiocarbazil II	36756-79-3
Tolclofos-methyl	57018-04-9
Toltrazuril	69004-03-1
Toltrazuril Sulfone	69004-04-2
Toluene	108-88-3
Tolylfluanid	88283-41-4
Totarol	511-15-9
Tralkoxydim	87820-88-0
trans-1,3-Dichloropropylene	10061-02-6
trans-Chlordane	5103-74-2
trans-Nonachlor	39765-80-5
Tri-(2-chloroethyl) phosphate	115-96-8

Dinocap I	39300-45-3
Dinocap II	39300-45-3
Dinocap III	39300-45-3
Dinocap IV	39300-45-3
di-n-octyl phthalate	117-84-0
Dinoseb	88-85-7
Dinoseb acetate	2813-95-8
Dinoseb methyl ether	6099-79-2
Dinoterb	1420-07-1
Dinoterb acetate	3204-27-1
Di-n-propyl phthalate	131-16-8
Dioxacarb	6988-21-2
Dioxathion	78-34-2
Dioxydemeton-S-methyl	17040-19-6
Diphacinone	82-66-6
Diphenamid	957-51-7
Diphenyl ether	101-84-8
Diphenyl sulfone	127-63-9
Diphenylamine	122-39-4
Dipropetryn	4147-51-7
Disulfoton	298-04-4
Ditalimfos	5131-24-8
Dithiopyr	97886-45-8
Diuron	330-54-1
d-Limonene	5989-27-5
Dodemorph I	1593-77-7
Dodemorph II	1593-77-7
Doxepin	1668-19-5
Drazoxolon	5707-69-7
Drometrizole	2440-22-4

Triacetin	102-76-1
Triadimefon	43121-43-3
Triadimenol	55219-65-3
Tri-allate	2303-17-5
Triamiphos	1031-47-6
Triazophos	24017-47-8
Triazoxide	72459-58-6
Tribenuron-methyl (breakdown product)	101200-48-0
Tributyl acetylcitrate	77-90-7
Tributyl phosphate	126-73-8
Tributyl phosphorotrithioite	150-50-5
Tributylamine	102-82-9
Trichlopyr	55335-06-3
Trichlorfon	52-68-6
Trichloroethylene	79-01-6
Trichloronate	327-98-0
Triclopyr methyl ester	060825-26-5
Triclosan	3380-34-5
Triclosan-methyl	4640-01-1
Tricresyl phosphate	78-30-8
Tricyclazole	41814-78-2
Tridiphane	58138-08-2
Trietazine	1912-26-1
Trifloxystrobin	141517-21-7
Triflumizole	68694-11-1
Trifluralin	1582-09-8
Trimethoprim	738-70-5
Trinexapac-ethyl	95266-40-3
Triphenyl phosphate	115-86-6
Triphenylphosphine	603-35-0

Edifenphos	17109-49-8
Endosulfan ether	3369-52-6
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan lactone	3868-61-9
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Endrin ketone	53494-70-5

Triphenylphosphine oxide	791-28-6
Tris (2,3-epoxypropyl) isocyanate	2451-62-9
Tris-(1,3-dichloroisopropyl) phosphate	13674-87-8
Trixylenyl phosphate	25155-23-1
Tryclopyrbutoxyethyl	64470-88-8
Tycor (SMY 1500)	64529-56-2
Uniconizole-P	83657-17-4
Vamidothion	2265-23-2
Vanillin	121-33-5
Vernolate	1929-77-7
Vinclozolin	50471-44-8
Zoxamide	156052-68-5

Annex 3 Exemplar Chain of Custody form

Chain of custody form (ENVIRONMENTAL MATRICES)											
Customer: Adrian Love AquaBioTech						Phone: 356 2258 4160			E-mail: acl@aquabt.com		
Job: ERA12			Contract/Offer.: N° 22°-1167 REV 6			Pick-up location: Delivered					
Business name (for invoice): AquaBioTech Group Ltd						How to send the results: email – to acl@aquabt.com , identifying job number					
Report header: ERA12						Sampling report number:					
Delivery date of the results:			Referent:			Priority:		NO		YES	If yes, how many hours:
Sampler: ACL			Signature:			Conflicting samples:		NO		YES	If yes, how many samples:
Sample ID (by Analysis Laboratory)	Sample ID (by the Customer)	Appearance of the sample (visual/olfactory)	Date and time of sampling	Matrix *	Sampling Point	CER code (only wastes)	Producer (only wastes)	Number and type of containers	OFFER N° 22°-1167 R	Required analyzes and related methods	Regulatory limits**
	A5a		10 Jan 2024, 10.30am		il Mielah			1 x 500mL PFOA free	Table 1 and 2	PFOA/S + Alkylphenols and Bisphenol A	
	A5b						1 x 500mL PFOA free			PFOA/S + Alkylphenols and Bisphenol A	
	A5a						1 x 5L PP/PET			Amines, POPs, PAHs, Dioxins, TBT	
	A5b						1 x 5L PP/PET			Amines, POPs, PAHs, Dioxins, TBT	
	A5a						2 x 40mL VOC +HCl			VOC	
	A5b						2 x 40mL VOC +HCl			VOC	
	A5a						1 x 50mL PP + HNO3			Metal	
	A5b						1 x 50mL PP + HNO3			Metal	
Name and Surname Compiler Chain of custody: ADRIAN LOVE								Signature:			



DL0195L/006

CERTIFICATO DI ACCREDITAMENTO Accreditation Certificate

ACCREDITAMENTO N.
ACCREDITATION N. **0195L REV. 06**

EMESSO DA
ISSUED BY **DIPARTIMENTO LABORATORI DI PROVA**

SI DICHIARA CHE
WE DECLARE THAT **BIOCHEMIE LAB S.r.l.**
Sede/Headquarters:
- Via di Limite 27/G - 50013 Campi Bisenzio FI

MD-CA-01 REV. 06

È CONFORME AI REQUISITI
DELLA NORMA **UNI CEI EN ISO/IEC 17025:2018**

MEETS THE REQUIREMENTS
OF THE STANDARD **ISO/IEC 17025:2017**

QUALE **Laboratorio di Prova**
AS **Testing Laboratory**

Data di 1^a emissione
1st issue date
29-10-1998

Data di revisione
Review date
15-11-2022

Data di scadenza
Expiring date
10-12-2026

L'accreditamento attesta la competenza tecnica, l'imparzialità e il costante e coerente funzionamento del Laboratorio relativamente al campo di accreditamento riportato nell'elenco Prove allegato al presente certificato di accreditamento. Il presente certificato non è da ritenersi valido se non accompagnato dagli Elenchi Prove, che possono variare nel tempo e può essere sospeso o revocato o ridotto in qualsiasi momento nel caso di inadempienza accertata da parte di ACCREDIA.

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The accreditation attests competence, impartiality and consistent operation in performing laboratory activities, limited to the scope detailed in the attached Enclosure.

The present certificate is valid only if associated to the annexed Lists and can be suspended, withdrawn or reduced at any time in the event of non fulfillment as ascertained by ACCREDIA.

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The management system requirements in ISO/IEC 17025 are written in language relevant to laboratories operations and generally operate in accordance with the principles of ISO 9001 (refer joint ISO-ILAC-IAF Communiqué dated April 2017).

Il QrCode consente di accedere direttamente al sito www.accredia.it per verificare la validità del certificato di accreditamento rilasciato al CAB.

La data di revisione riportata sul certificato corrisponde alla data di aggiornamento / di delibera del pertinente Comitato Settoriale di Accreditamento. L'atto di delibera, firmato dal Presidente di ACCREDIA, è scaricabile dal sito www.accredia.it, sezione "Documenti".

The QrCode links directly to the website www.accredia.it to check the validity of the accreditation certificate issued to the CAB.

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pag. 1/1

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Annex 5 Results

Table 10 Results of groundwaters. All samples were taken in duplicate (a,b). G1 Fiddien Station; G2 San Katald/Ta' Pinu Borehole; G3 Ġnien Borehole; G4 Ġhattuq/Sellun Boreholes; G5 Bahrija G6 Victoria Station; G7 Pwales Station. Results lower than LOD are indicated with a - . For sample periods after Q1 only results above LOD are given. All values are in µg/L.

Time	Site	LOD	G1a	G1b	G2a	G2b	G3a	G3b	G4a	G4b	G5a	G5b	G6a	G6b	G7a	G7b
Q1	EDTA (EthylenDiamino Tetracetyc Acid)	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Styrene	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,2,4-Trimethylbenzene	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Di-ethylphthalate (DEP)	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Glyphosate	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Aniline	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chlorpyrifos methyl	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Deltamethrin	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Fipronil	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Triphenyl phosphate	0.0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Triisobutylphosphate	0.0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Di (2-ethylhexil) phthalate DEHP) mg/L	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Acesulpham k	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Amoxicillin	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Atenolol	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Azoxystrobin	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Benzotriazole	0.09	-	-	-	-	-	-	0.0949	0.102	-	-	-	-	-	-
	β-Estradiol	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bisphenol A	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.216	0.222	-	-
	Imidacloprid	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Methylbenzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.203	0.211	-	-
	N-methyl-2-pyrrolidone	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Propamocarb	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Propane 1,2-diol	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sulfamethoxazole	0.03	-	-	-	-	-	-	-	-	-	-	0.0613	0.0563	-	-

Q2	Acesulpham k	0.05	-	-	-	-	-	-	-	-	-	-	0.0914	0.0800	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.261	0.270	-	-
Q3									-	-						
	Acesulpham k	0.05	-	-	-	-	-	-	-	-	-	-	0.0537	0.0533	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.295	0.234	-	-
	Methylbenzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.121	0.124	-	-
Q4*									-	-						
	Benzotriazole	0.09	-	-	0.189	0.197	-	-	-	-	-	-	0.198	0.283	-	-
	Methylbenzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.944	1.00	-	-

Q4 – Note: Samples G1, G3, G5 and G7 were taken within 24h of heavy rain,, which typically results in higher concentrations of contamination.

Table 11 Water Screening for Tentatively Identified Compounds* in groundwater (pooled sample)

Cas #	Compound Name	Amount/Conc	LMS	Purity
100-42-5	Styrene	0.2135	95	100
98-82-8	Isopropylbenzene	0.0224	60	100
103-65-1	n-Propylbenzene	0.0366	70	100
108-95-2	Phenol	0.1536	71	100
5989-27-5	d-Limonene	0.2177	86	100
95-48-7	o-Cresol (2-methylphenol)	0.0203	40	100
95-53-4	o-Toluidine	0.161	78	100
106-44-5	p-Cresol (4-methylphenol)	0.2066	43	100
108-39-4	m-Cresol (3-methylphenol)	0.2066	43	100
149-57-5	2-Ethylhexanoic acid	0.1221	45	100
91-20-3	Naphthalene	0.0066	46	100
91-64-5	Coumarin	0.0176	66	100
99-76-3	Methylparaben	0.047	58	86
131-11-3	Dimethyl phthalate	0.3871	96	100
120-47-8	Ethylparaben	0.0507	77	100
134-62-3	N,N-Diethyl-m-toluamide	0.0422	80	100
119-61-9	Benzophenone	0.1272	95	100
126-73-8	Tributyl phosphate	0.1246	76	100
127-63-9	Diphenyl sulfone	0.0093	51	100
1678-25-7	Benzenesulfonamide	0.0262	58	100

101-68-8	4,4'-Methylenebis (phenyl isocyanate)	1.6268	92	100
77-90-7	Tributyl acetyl citrate	0.8717	88	100
103-23-1	Bis(2-ethylhexyl) adipate	0.1489	58	100
6197-30-4	Octocrylene	0.0621	71	100

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 12 Results of Inland surface waters. All samples were taken in duplicate (a,b). I1 Wied il-Luq; I2 Wied il-Lunzjata; I3 Wied is-Sewda. Results lower than LOD are indicated with a - . Values are in µg/L unless otherwise indicated

	<i>Sample ID</i>	<i>LOD</i>	<i>I1a</i>	<i>I1b</i>	<i>I2a</i>	<i>I2b</i>	<i>I3a</i>	<i>I3b</i>
Q1	Ammonium nitrogen	5	10.70	-	93.8	72.5	2718.9	2902.5
	EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	-	-	-	-
	Sulphates (mg/L)	500	160.00	150	120	120	75	75
	Arsenic	1	-	-	1.85	1.82	1.93	1.88
	Cadmium	0.1	-	-	-	-	-	-
	Mercury	0.1	-	-	-	-	-	-
	Nickel	1	-	-	1.43	1.47	4.97	4.98
	Lead	1	-	1.1	-	-	3.45	3.63
	Styrene	6	-	-	-	-	-	-
	Tri-butyltin (TBT)	0.01	-	-	-	-	-	-
	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-
	Benzene	0.1	-	-	-	-	-	-
	1,2,4-Trimethylbenzene	1	-	-	-	-	-	-
	1,2-Dichloroethane	0.1	-	-	-	-	-	-
	Dichloromethane	0.1	-	-	-	-	0.227	0.207
	Hexachlorobutadiene	0.01	-	-	-	-	-	-
	Tetrachloroethylene	0.1	-	-	-	-	-	-
	Trichloromethane (Chloroform)	0.021	0.0207	0.0179	0.0172	0.0174	0.0177	0.0174
	Di-ethylphthalate (DEP)	15	-	-	-	-	-	-
	Glyphosate	0.3	-	-	-	-	-	-
	4-chloro-3-methylphenol (PCMC)	1.5	-	-	-	-	-	-
	Aniline	30	-	-	-	-	-	-
	Anthracene	0.02	-	-	-	-	-	-

Benzo(a)pyrene	0.002	-	-	-	-	-	-
Benzo(b)fluoranthene	0.002	-	-	-	-	-	-
Benzo(ghi)perylene	0.002	-	-	-	-	-	-
Benzo(k)fluoranthene	0.002	-	-	-	-	-	-
Fluoranthene	0.02	-	-	-	-	-	-
Indeno(1,2,3-c,d)pyrene	0.002	-	-	-	-	-	-
Naphtalene	0.02	-	-	-	-	-	-
Total IPA	1	-	-	-	-	-	-
Alpha-Endosulfan	0.01	-	-	-	-	-	-
Aclonifen	0.05	-	-	-	-	-	-
Ametryne	0.01	-	-	-	-	-	-
Azinphos ethyl	0.01	-	-	-	-	-	-
Azinphos Methyl	0.01	-	-	-	-	-	-
Beta-Endosulfan	0.01	-	-	-	-	-	-
Bifenox	0.05	-	-	-	-	-	-
Chlordecone	0.01	-	-	-	-	-	-
Chlorpyrifos methyl	0.03	-	-	-	-	-	-
Cianazina	0.05	-	-	-	-	-	-
Cybutryne	0.003	-	-	-	-	-	-
Cypermethrine	0.003	-	-	-	-	-	-
Coumaphos	0.01	-	-	-	-	-	-
Crotoxyphos	0.01	-	-	-	-	-	-
d-HCH (d-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-
Deltamethrin	300	-	-	-	-	-	-
Desmetryn	0.01	-	-	-	-	-	-
Diazinon	0.01	-	-	-	-	-	-
Dichlorvos	0.01	-	-	-	-	-	-
Dicofol	0.003	-	-	-	-	-	-
Dimethoate	0.01	-	-	-	-	-	-
Endosulfan sulfate	0.01	-	-	-	-	-	-
Heptachlor	0.003	-	-	-	-	-	-
Heptachlor epoxide	0.01	-	-	-	-	-	-
Fenitrothion	0.01	-	-	-	-	-	-
Fenthion	0.01	-	-	-	-	-	-
Fipronil	0.15	-	-	-	-	-	-
Isodrin	0.01	-	-	-	-	-	-
Isoproturon	0.01	-	-	-	-	-	-
Leptophos	0.01	-	-	-	-	-	-
Malathion	0.01	-	-	-	-	-	-

Methidathion	0.01	-	-	-	-	-	-
Methoxychlor	0.01	-	-	-	-	-	-
Metolachlor	0.01	-	-	-	-	-	-
Mevinphos	0.01	-	-	-	-	-	-
Mirex	0.01	-	-	-	-	-	-
Molinate	0.01	-	-	-	-	-	-
o,p-Methoxychlor	10	-	-	-	-	-	-
p,p-Methoxychlor	10	-	-	-	-	-	-
Parathion ethyl	0.01	-	-	-	-	-	-
Parathion methyl	0.01	-	-	-	-	-	-
Pendimethalin	0.01	-	-	-	-	-	-
Pentachlorobenzene	0.01	-	-	-	-	-	-
Phorate	0.01	-	-	-	-	-	-
Prometryn	0.01	-	-	-	-	-	-
Propazine	0.01	-	-	-	-	-	-
Quinoxifen	0.003	-	-	-	-	-	-
Simazine	0.01	-	-	-	-	-	-
Terbutylazine	0.01	-	-	-	-	-	-
Terbutryn	0.01	-	-	-	-	-	-
Tetrachlorvinphos E-isomer	0.01	-	-	-	-	-	-
Triazophos	0.01	-	-	-	-	-	-
Triphenyl phosphate	300	-	-	-	-	-	-
Trifluralin	0.01	-	-	-	-	-	-
Triisobutylphosphate	0.003	-	-	-	-	-	-
Pentachlorophenol	0.02	-	-	-	-	-	-
1,2,3-Trichlorobenzene	0.01	-	-	-	-	-	-
1,2,4-Trichlorobenzene	0.02	-	-	-	-	-	-
1,3,5-Trichlorobenzene	0.02	-	-	-	-	-	-
Di (2-ethylhexil) phthalate DEHP) mg/L	1 ⁻⁰⁴	-	-	-	0.000102	0.000188	0.000363
DDE-2,4	0.01	-	-	-	-	-	-
DDD	0.01	-	-	-	-	-	-
DDT-2,4	0.01	-	-	-	-	-	-
4-n-Nonylphenol	0.05	-	-	-	-	-	-
a-HCH (a-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-
Acesulpham k	0.0675	0.0675	0.0792	-	-	0.493	0.371
Alachlor	0.05	-	-	-	-	-	-
Aldrin	0.01	-	-	-	-	-	-
Amoxicillin	1	-	-	-	-	-	-

Atenolol	0.003	-	-	-	-	-	-
Atrazine	0.01	-	-	-	-	-	-
Azoxystrobin	0.05	-	-	-	-	-	-
b-HCH (b-Hexachlorocyclohexane)	0.05	-	-	-	-	-	-
Benzotriazole	0.01	-	-	-	-	0.102	0.098
β-Estradiol	0.09	-	-	-	-	-	-
Bisphenol A	300	-	-	-	-	-	-
Carbamazepine	0.15	-	-	-	-	-	-
Chlorfenvinphos	0.01	-	-	-	-	-	-
Chlordane-cis	0.01	-	-	-	-	-	-
Chlordane-trans	0.01	-	-	-	-	-	-
Dieldrin	0.003	-	-	-	-	-	-
Endrin	0.01	-	-	-	-	-	-
Famphur	0.05	-	-	-	-	-	-
Fensulfothion	0.05	-	-	-	-	-	-
g-HCH (g-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-
Imidacloprid	0.05	-	-	-	-	-	-
Methylbenzotriazole	0.09	-	-	0.143	0.147	0.148	0.137
N-methyl-2-pyrrolidone	300	-	-	-	-	-	-
Nonylphenol	0.05	-	-	-	-	-	-
Octylphenol, 4-tert	0.05	-	-	-	-	-	-
Propamocarb	0.05	-	-	-	-	-	-
Propane 1,2-diol	30	-	-	-	-	-	-
Sulfamethoxazole	0.03	-	-	0.0302	0.0343	-	-
Perfluorooctanoic acid (PFOA)	0.002	-	-	0.00433	0.105	0.00877	0.00965
Perfluorooctanesulfonic acid (PFOS)	0.002	-	-	0.0104	0.0438	-	0.00508
2,2,4,4-Tetrabromodiphenyl ether	0.5	-	-	-	-	-	-
2,2',4,4',5-Pentabromodiphenyl ether	0.5	-	-	-	-	-	-
2,2',4,4',5,5' - Esabromodiphenyl ether	0.5	-	-	-	-	-	-
2,2',4,4',5,6' - Esabromodiphenylether	0.5	-	-	-	-	-	-
2,2',4,4',6-Pentabromodifhenylether	0.5	-	-	-	-	-	-
2,4,4'-tribromodiphenylether	0.5	-	-	-	-	-	-
Chloroalkanes C10-C13	100	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzodioxin (HpCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzofurano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,4,7,8,9-Heptachlorodibenzofurano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-

Q4*	1,2,3,4,7,8-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,4,7,8-Hexachlorodibenzodioxin (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,6,7,8-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,6,7,8-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,7,8,9-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,7,8,9-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,7,8-Pentachlorodibenzodioxin (PeCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
	1,2,3,7,8-Pentachlorodibenzofurano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
	2,3,4,6,7,8-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
	2,3,4,7,8-Pentachlorodibenzofurano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
	2,3,7,8-Tetrachlorodibenzodioxin (TCDD)	1 ⁻⁰⁷	-	-	-	-	-	-
	Octachlorodibenzodioxin (OCDD)	1 ⁻⁶	-	-	-	-	-	-
	Octachlorodibenzofurano (OCDF)	1 ⁻⁶	-	-	-	-	-	-
	2,3,7,8-Tetrachlorodibenzofurano (TCDF)	1 ⁻⁶	-	-	-	-	-	-
	PCDD, PCDF Summation (I-TEQ)	7 ⁻⁷	-	-	-	-	-	-
	Cyclohexanone	100	-	-	-	-	-	-
	Diuron	0.01						
	Ammonium nitrogen	5	29	29.8	-	11.1	-	-
	EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	-	-	-	-
	Sulphates (mg/L)	500	19	19	47	48	32	32
	Arsenic	1	-	-	2.76	2.76	1.89	1.81
	Cadmium	0.1	0.108	0.109	0.303	0.327	-	-
	Mercury	0.1	-	-	-	-	-	-
	Nickel	1	2.62	2.51	8.01	8.37	2.91	3.07
	Lead	1	2.64	2.52	34.4	38.5	3.41	6.43
	Styrene	6	-	-	-	-	-	-
	Tri-butyltin (TBT)	0.01	-	-	-	-	-	-
	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-
	Benzene	0.1	-	-	-	-	-	-
	1,2,4-Trimethylbenzene	1	-	-	-	-	-	-

1,2-Dichloroethane	0.1	-	-	-	-	-	-
Dichloromethane	0.1	0.897	0.995	1.24	1.18	1.22	1.27
Hexachlorobutadiene	0.01	-	-	-	-	-	-
Tetrachloroethylene	0.1	-	-	-	-	-	-
Trichloromethane (Chloroform)	0.021	0.0470	0.0479	0.0197	0.0160	0.0298	0.0314
Di-ethylphthalate (DEP)	15	-	-	-	-	-	-
Glyphosate	0.3	-	-	0.559	0.564	-	-
4-chloro-3-methylphenol (PCMC)	1.5	-	-	-	-	-	-
Aniline	30	-	-	-	0.227	-	-
Anthracene	0.02	-	-	-	-	-	-
Benzo(a)pyrene	0.002	-	-	0.0205	0.0197	-	-
Benzo(b)fluoranthene	0.002	-	-	0.0179	0.0191	-	-
Benzo(ghi)perylene	0.002	-	-	0.0328	0.0327	-	-
Benzo(k)fluoranthene	0.002	-	-	0.00939	0.00963	-	-
Fluoranthene	0.02	-	-	0.105	0.108	-	-
Indeno(1,2,3-c,d)pyrene	0.002	-	-	0.0173	0.0198	-	-
Naphtalene	0.02	-	-	-	-	-	-
Total IPA	1	-	-	-	-	-	-
Alpha-Endosulfan	0.01	-	-	-	-	-	-
Aclonifen	0.05	-	-	-	-	-	-
Ametryne	0.01	-	-	-	-	-	-
Azinphos ethyl	0.01	-	-	-	-	-	-
Azinphos Methyl	0.01	-	-	-	-	-	-
Beta-Endosulfan	0.01	-	-	-	-	-	-
Bifenox	0.05	-	-	-	-	-	-
Chlordecone	0.01	-	-	-	-	-	-
Chlorpyrifos methyl	0.03	-	-	-	-	-	-
Cianazina	0.05	-	-	-	-	-	-
Cybutryne	0.003	-	-	-	-	-	-
Cypermethrine	0.003	-	-	-	-	-	-
Coumaphos	0.01	-	-	-	-	-	-
Crotoxyphos	0.01	-	-	-	-	-	-
d-HCH (d-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-

Deltamethrin	300	-	-	-	-	-	-
Desmetryn	0.01	-	-	-	-	-	-
Diazinon	0.01	-	-	-	-	-	-
Dichlorvos	0.01	-	-	-	-	-	-
Dicofol	0.003	-	-	-	-	-	-
Dimethoate	0.01	-	-	-	-	-	-
Endosulfan sulfate	0.01	-	-	-	-	-	-
Heptachlor	0.003	-	-	-	-	-	-
Heptachlor epoxide	0.01	-	-	-	-	-	-
Fenitrothion	0.01	-	-	-	-	-	-
Fenthion	0.01	-	-	-	-	-	-
Fipronil	0.15	-	-	-	-	-	-
Isodrin	0.01	-	-	-	-	-	-
Isoproturon	0.01	-	-	-	-	-	-
Leptophos	0.01	-	-	-	-	-	-
Malathion	0.01	-	-	-	-	-	-
Methidathion	0.01	-	-	-	-	-	-
Methoxychlor	0.01	-	-	-	-	-	-
Metolachlor	0.01	-	-	-	-	-	-
Mevinphos	0.01	-	-	-	-	-	-
Mirex	0.01	-	-	-	-	-	-
Molinate	0.01	-	-	-	-	-	-
o,p-Methoxychlor	10	-	-	-	-	-	-
p,p-Methoxychlor	10	-	-	-	-	-	-
Parathion ethyl	0.01	-	-	-	-	-	-
Parathion methyl	0.01	-	-	-	-	-	-
Pendimethalin	0.01	-	-	-	-	-	-
Pentachlorobenzene	0.01	-	-	-	-	-	-
Phorate	0.01	-	-	-	-	-	-
Prometryn	0.01	-	-	-	-	-	-
Propazine	0.01	-	-	-	-	-	-
Quinoxifen	0.003	-	-	-	-	-	-
Simazine	0.01	-	-	-	-	-	-

Terbutylazine	0.01	-	-	-	-	-	-
Terbutryn	0.01	-	-	-	-	-	-
Tetrachlorvinphos E-isomer	0.01	-	-	-	-	-	-
Triazophos	0.01	-	-	-	-	-	-
Triphenyl phosphate	300	-	-	-	-	-	-
Trifluralin	0.01	-	-	-	-	-	-
Triisobutylphosphate	0.003	-	-	-	-	0.00390	0.0887
Pentachlorophenol	0.02	-	-	-	-	-	-
1,2,3-Trichlorobenzene	0.01	-	-	-	-	-	-
1,2,4-Trichlorobenzene	0.02	-	-	-	-	-	-
1,3,5-Trichlorobenzene	0.02	-	-	-	-	-	-
Di (2-ethylhexil) phthalate DEHP) mg/L	1 ⁻⁰⁴	-	-	0.00727	0.00804	-	-
DDE-2,4	0.01	-	-	-	-	-	-
DDD	0.01	-	-	-	-	-	-
DDT-2,4	0.01	-	-	-	-	-	-
4-n-Nonylphenol	0.05	-	-	-	-	-	-
a-HCH (a-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-
Acesulpham k	0.0675	0.576	1.05	0.130	0.128	-	-
Alachlor	0.05	-	-	-	-	-	-
Aldrin	0.01	-	-	-	-	-	-
Amoxicillin	1	-	-	-	-	-	-
Atenolol	0.003	-	-	-	-	0.0216	0.0154
Atrazine	0.01	-	-	-	-	-	-
Azoxystrobin	0.05	-	-	-	-	-	-
b-HCH (b-Hexachlorocyclohexane)	0.05	-	-	-	-	-	-
Benzotriazole	0.01	0.326	0.323	0.606	0.655	7.29	7.01
β-Estradiol	0.09	-	-	-	-	-	-
Bisphenol A	300	-	-	-	-	-	-
Carbamazepine	0.15	-	-	-	-	-	-
Chlorfenvinphos	0.01	-	-	-	-	-	-
Chlordane-cis	0.01	-	-	-	-	-	-
Chlordane-trans	0.01	-	-	-	-	-	-
Dieldrin	0.003	-	-	-	-	-	-

Endrin	0.01	-	-	-	-	-	-
Famphur	0.05	-	-	-	-	-	-
Fensulfothion	0.05	-	-	-	-	-	-
g-HCH (g-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-
Imidacloprid	0.05	-	-	-	-	-	-
Methylbenzotriazole	0.09	0.240	0.235	0.994	1.04	5.93	5.96
N-methyl-2-pyrrolidone	300	-	-	-	-	-	-
Nonylphenol	0.05	-	-	-	-	-	-
Octylphenol, 4-tert	0.05	-	-	-	-	-	-
Propamocarb	0.05	-	-	-	-	-	-
Propane 1,2-diol	30	-	-	-	-	-	-
Sulfamethoxazole	0.03	-	-	-	-	-	-
Perfluorooctanoic acid (PFOA)	0.002	-	-	-	-	0.00397	0.00466
Perfluorooctanesulfonic acid (PFOS)	0.002	-	-	-	-	-	-
2,2,4,4-Tetrabromodiphenyl ether	0.5	-	-	-	-	-	-
2,2',4,4',5-Pentabromodiphenyl ether	0.5	-	-	-	-	-	-
2,2',4,4',5,5' - Esabromodiphenyl ether	0.5	-	-	-	-	-	-
2,2',4,4',5,6' - Esabromodiphenylether	0.5	-	-	-	-	-	-
2,2',4,4',6-Pentabromodifhenylether	0.5	-	-	-	-	-	-
2,4,4'-tribromodiphenylether	0.5	-	-	-	-	-	-
Chloroalkanes C10-C13	100	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzodioxin (HpCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzofurano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,4,7,8,9-Heptachlorodibenzofurano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,4,7,8-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,4,7,8-Hexachlorodibenzodioxin (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,6,7,8-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,6,7,8-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,7,8,9-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,7,8,9-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-

1,2,3,7,8-Pentachlordibenzodioxin (PeCDD)	7 ⁻⁰⁷	-	-	-	-	-	-
1,2,3,7,8-Pentachlordibenzofurano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
2,3,4,6,7,8-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
2,3,4,7,8-Pentachlordibenzofurano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-
2,3,7,8-Tetrachlorodibenzodioxin (TCDD)	1 ⁻⁰⁷	-	-	-	-	-	-
Octachlorodibenzodioxin (OCDD)	1 ⁻⁶	-	-	-	-	-	-
Octachlorodibenzofurano (OCDF)	1 ⁻⁶	-	-	-	-	-	-
2,3,7,8-Tetrachlorodibenzofurano (TCDF)	1 ⁻⁶	-	-	-	-	-	-
PCDD, PCDF Summation (I-TEQ)	7 ⁻⁷	-	-	-	-	-	-
Cyclohexanone	100	-	-	-	-	-	-
Diuron	0.01	-	-	0.0940	0.0910	-	-

* In Q4, Wied il-Lunzjata was sampled after heavy rain.

Table 13 Water Screening for Tentatively Identified Compounds* in Inland surface Water (pooled sample)

Cas #	Compound Name	Amount/Conc	LMS	Purity
108-67-8	1,3,5-Trimethylbenzene	0.4562	45	99.4
108-95-2	Phenol	0.5492	56	98.7
100-51-6	Benzyl alcohol	0.4596	61	99
98-86-2	Acetophenone	2.744	91	100
2687-91-4	1-Ethyl-2-pyrrolidone	1.5577	40	99.7
149-57-5	2-Ethylhexanoic acid	3.4345	57	100
1728-46-7	2-tert-Butylcyclohexanone	0.0261	42	100
98-55-5	Terpineol	2.184	63	100
105-60-2	Caprolactam	10.1807	42	100
126-86-3	2,4,7,9-Tetramethyl-5-decyne-4,7-diol	4.0098	72	100
131-11-3	Dimethyl phthalate	1.4404	78	100
25013-16-5	Butylated hydroxyanisole	1.87	54	100
2675-77-6	Chloroneb	632.8449	48	100
96-76-4	2,4-Di-tert-butylphenol	176.7035	99	100
128-37-0	Butylated hydroxytoluene	5.9712	96	100

16752-77-5	Methomyl	0.4317	40	100
544-76-3	Hexadecane	2.7825	56	97.4
84-66-2	Diethyl phthalate	3.6797	59	100
103-33-3	Azobenzene	0.2664	81	100
119-61-9	Benzophenone	1.5211	89	100
126-73-8	Tributyl phosphate	0.792	57	99.2
58-08-2	Caffeine	0.2641	61	100
84-69-5	Diisobutyl phthalate	2.0792	91	100
58138-08-2	Tridiphan	0.6521	41	100
84-74-2	di-n-butyl phthalate	19.9188	91	99.8
131-57-7	Benzophenone-3	0.6652	51	100
22204-53-1	Naproxen	1.7767	41	100
80-05-7	Bisphenol A	3.6348	76	99.6
77-90-7	Tributyl acetylcitrate	0.9912	41	100
84-61-7	Dicyclohexyl phthalate	10.7858	62	100
117-81-7	bis(2-ethylhexyl)phthalate (DEHP)	14.3687	83	100
117-84-0	di-n-octyl phthalate	1.4099	43	100

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results do not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 14 Results of Coastal, Storm, Transitional and New waters. All samples were taken in duplicate. C1 Off Ta' Barkat Sewage treatment plant, C2 Xghajra; Xemxija Bay; C3 Off San Dimitri Point, Gozo; S1a Ta' Xbiex, Msida; T1 Is-Salini, Naxxar; N1 New Water. Results below LOD are indicated with a - . For sample periods after Q1 only results above LOD are given. Values are in µg/L

	<i>Sample ID</i>	<i>LOD</i>	<i>C1a</i>	<i>C1b</i>	<i>C2a</i>	<i>C2b</i>	<i>C3a</i>	<i>C3b</i>	<i>S1a</i>	<i>S1b</i>	<i>T1a</i>	<i>T1b</i>	<i>N1a</i>	<i>N1b</i>
Q1	EDTA (EthylenDiamino Tetracetyc Acid)	1500	-	-	-	-	-	-	-	-	-	-	-	-
	Styrene	6	-	-	-	-	-	-	-	-	-	-	-	-
	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-	-	-	-	-	-	-
	1,2,4-Trimethylbenzene	1	-	-	-	-	-	-	-	-	-	-	-	-
	Di-ethylphthalate (DEP)	15	-	-	-	-	-	-	-	-	-	-	-	-
	Glyphosate	0.3	-	-	-	-	-	-	-	-	-	-	-	-
	Aniline	30	-	-	-	-	-	-	-	-	-	-	-	-
	Chlorpyrifos methyl	0.03	-	-	-	-	-	-	-	-	-	-	-	-
	Deltamethrin	300	-	-	-	-	-	-	-	-	-	-	-	-

	Fipronil	0.15	-	-	-	-	-	-	-	-	-	-	-	-
	Triphenyl phosphate	300	-	-	-	-	-	-	-	-	-	-	-	-
	Triisobutylphosphate	0.0025	-	-	-	-	-	-	-	-	-	-	-	-
	Di (2-ethylhexil) phthalate DEHP) mg/L	0.0001	-	-	-	-	-	-	-	-	-	-	-	-
	Acesulpham k	0.05	-	-	-	-	-	-	0.125	0.132	0.903	0.837	-	-
	Amoxicillin	1	-	-	-	-	-	-	-	-	-	-	-	-
	Atenolol	0.003	-	-	-	-	-	-	-	-	-	-	-	-
	Azoxystrobin	0.05	-	-	-	-	-	-	-	-	-	-	-	-
	Benzotriazole	0.01	-	-	-	-	-	-	0.348	0.368	-	-	0.323	0.403
	β-Estradiol	0.09	-	-	-	-	-	-	-	-	-	-	-	-
	Bisphenol A	300	-	-	-	-	-	-	-	-	-	-	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	0.492	0.543	-	-	-	-
	Imidacloprid	0.05	-	-	-	-	-	-	-	-	-	-	-	-
	Methylbenzotriazole	0.09	-	-	-	-	-	-	0.515	0.517	-	-	0.100	0.115
	N-methyl-2-pyrrolidone	300	-	-	-	-	-	-	-	-	-	-	-	-
	Propamocarb	0.05	-	-	-	-	-	-	-	-	-	-	-	-
	Propane 1,2-diol	30	-	-	-	-	-	-	-	-	-	-	-	-
	Sulfamethoxazole	0.03	-	-	-	-	-	-	-	0.0302	-	-	-	-
													-	-
Q2	All parameters		-	-	-	-	-	-	n/a	n/a	n/a	n/a	-	-
													-	-
Q3	Triisobutylphosphate	0.0025	-	-	-	-	-	-	n/a	n/a	n/a	n/a	0.381	0.270
Q4	Atenolol	0.003	-	-	-	-	-	-	1.12	1.30	-	-	0.0160	0.0152
	Benzotriazole	0.01	-	-	-	-	-	-	9.18	9.04	-	-	0.263	0.191
	Glyphosate	0.3	-	-	-	-	-	-	0.374	0.436	-	-	-	-
	Methylbenzotriazole	0.09	-	-	-	-	-	-	12.6	14.5	0.291	0.244	0.180	0.131
	Triisobutylphosphate	0.0025	0.0138	0.0110	0.00598	0.00722	0.00470	0.00351	0.0287	0.0265	0.00509	0.0194	-	-
	Sulfamethoxazole	0.03	-	-	-	-	-	-	0.0518	0.0389	-	-	-	-

Table 15 Water Screening for Tentatively Identified Compounds* in Coastal Water (pooled sample)

Cas #	Compound Name	Amount/Conc	LMS	Purity
103-65-1	n-Propylbenzene	0.0078	59	100
95-63-6	1,2,4-Trimethylbenzene	0.0117	59	100

5989-27-5	d-Limonene	0.1414	83	100
2687-91-4	1-Ethyl-2-pyrrolidone	0.2734	49	100
149-57-5	2-Ethylhexanoic acid	0.142	58	100
94-96-2	2-Ethyl-1,3-hexanediol	0.0191	43	99.9
91-57-6	2-Methylnaphthalene	0.0018	46	100
101-84-8	Diphenyl ether	0.0066	49	100
99-76-3	Methylparaben	0.0086	46	100
93-04-9	2-Methoxynaphthalene	0.0027	45	100
134-62-3	N,N-Diethyl-m-toluamide	0.027	70	100
119-61-9	Benzophenone	0.0959	86	100
126-73-8	Tributyl phosphate	0.1815	83	100
934-34-9	2(3H)-Benzothiazolone	3.4498	91	100
118-60-5	2-Ethylhexyl salicylate	0.0886	68	100
5466-77-3	Octyl-methoxycinnamate	0.0276	49	99.8
6197-30-4	Octocrylene	0.1042	78	100

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 16 Water Screening for Tentatively Identified Compounds* in Transitional Water

Cas #	Compound Name	Amount/Conc	LMS	Purity
4359-46-0	2-Ethyl-4-methyl-1,3-dioxolane	0.1141	46	100
98-00-0	Furfuryl alcohol	1.0353	62	100
108-95-2	Phenol	0.1139	60	100
5989-27-5	d-Limonene	0.1782	52	100
98-86-2	Acetophenone	0.082	90	100
2687-91-4	1-Ethyl-2-pyrrolidone	0.3471	46	100
18063-03-1	2,6-Difluorobenzamide	0.5471	40	100
92-52-4	Biphenyl	0.0013	69	100
88-04-0	Chloroxylenol	0.1323	78	99.3
85-01-8	Phenanthrene	0.0037	45	100
120-12-7	Anthracene	0.0045	46	100
106-02-5	Oxacyclohexadecan-2-one	0.2709	60	98.7
115-31-1	Isobornyl thiocynoacetate	0.041	44	100

118-56-9	Homosalate	0.1513	56	100
191-81-1	Terbucarb	0.0298	40	100
10544-50-0	Sulfur (S8)	0.0225	63	100
80-05-7	Bisphenol A	0.0271	45	100

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 17 Water Screening for Tentatively Identified Compounds* in Storm Water

Cas #	Compound Name	Amount/Conc	LMS	Purity
127-18-4	Tetrachloroethylene	0.013	55	100
100-41-4	Ethylbenzene	0.0622	80	100
100-42-5	Styrene	0.0489	77	100
95-47-6	o-Xylene	0.0373	63	100
108-67-8	1,3,5-Trimethylbenzene	0.02	47	98.8
62-53-3	Aniline	0.0141	49	100
95-63-6	1,2,4-Trimethylbenzene	0.0258	54	100
95-53-4	o-Toluidine	0.0513	51	100
2687-91-4	1-Ethyl-2-pyrrolidone	0.831	52	99.7
94-96-2	2-Ethyl-1,3-hexanediol	0.0452	45	100
126-86-3	2,4,7,9-Tetramethyl-5-decyne-4,7-diol	0.0642	47	100
90-43-7	o-Phenylphenol	0.0376	60	100
134-62-3	N,N-Diethyl-m-toluamide	0.1499	72	99.7
103-33-3	Azobenzene	0.0489	81	98.4
119-61-9	Benzophenone	0.3489	98	98.6
2631-37-0	Promecarb	0.0814	48	100
85-01-8	Phenanthrene	0.0055	48	100
120-12-7	Anthracene	0.007	49	100
016709-30-1	Carbofuran-3-keto	0.1257	44	100
58-08-2	Caffeine	0.0456	54	100
120-32-1	Chlorophene (2-Benzyl-4-chlorophenol)	0.0571	52	100
1216-44-0	Flurenol-methylester	0.1793	42	100
127-63-9	Diphenyl sulfone	0.0558	66	100
1678-25-7	Benzenesulfonanilide	0.0719	56	100
131-57-7	Benzophenone-3	0.8051	87	100

206-44-0	Fluoranthene	0.0068	56	100
129-00-0	Pyrene	0.0091	62	100
13674-87-8	Tris-(1,3-dichloroisopropyl) phosphate	0.1156	41	100
298-46-4	Carbamazepine	0.4022	79	100
6197-30-4	Octocrylene	0.5612	88	100

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 18 Water Screening for Tentatively Identified Compounds* in New Water

Cas #	Compound Name	Amount/Conc	LMS	Purity
100-41-4	Ethylbenzene	0.0639	90	100.0
111-30-8	Glutaraldehyde	0.8829	52	99.9
100-42-5	Styrene	0.2530	97	100.0
95-47-6	o-Xylene	0.0324	67	100.0
98-82-8	Isopropylbenzene	0.0087	47	100.0
103-65-1	n-Propylbenzene	0.0278	62	92.4
108-95-2	Phenol	0.0288	45	100.0
5989-27-5	d-Limonene	0.0944	43	100.0
98-86-2	Acetophenone	0.0911	89	100.0
91-57-6	2-Methylnaphthalene	0.0011	52	100.0
126-86-3	2,4,7,9-Tetramethyl-5-decyne-4,7-diol	0.0276	52	100.0
131-11-3	Dimethyl phthalate	0.0278	53	98.2
85-01-8	Phenanthrene	0.0028	59	100.0
1216-44-0	Flurenol-methylester	0.0867	43	100.0
10544-50-0	Sulfur (S8)	0.5426	88	100.0

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 19 Results of Additional Waters. Samples taken in duplicate (a,b). A1 Wied Blandun; A2; A3 Marsa Storm water; A4 Marsalforn Catchment, Gozo; A5 Mielah Catchment, Gozo; A6 Għasel catchment; A7 Il-Magħluq. A8 Qoton*. Results below LOD are indicated with a - . Values are in µg/L unless otherwise indicated

Q1	Sample ID	LOD	A1a	A1b	A2a	A2b	A3a	A3b	A4a	A4b	A5a	A5b	A6a	A6b	A7a	A7b	A8*	A8*
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Ammonium nitrogen	5	144.6	114.1	1403.2	1399.8	586	541	75.2	75.5	526.8	3679	113.1	96.5	8.6	315.5
EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphates (mg/L)	500	14	13	30	30	210	240	140	150	250	940	150	150	4200	4100
Arsenic	1	1.03	1.04	1.18	1.16	1.33	1.53	-	-	4.15	4.62	1.78	1.87	1.83	1.87
Cadmium	0.1	-	-	0.242	0.240	-	-	-	-	-	-	-	-	-	-
Mercury	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	1	2.06	1.94	2.16	2.18	4.09	4.42	2.94	2.94	4.77	5.16	2.14	1.06	3.14	3.27
Lead	1	1.30	1.32	1.16	1.01	-	-	1.20	1.10	3.60	3.20	1.15	1.06	1.5	1.19
Styrene	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tri-butyltin (TBT)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	0.320	-	-	-	-	-	-	-	-	-
Benzene	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	0.1	0.194	0.197	0.179	0.178	0.132	0.141	-	-	-	-	-	-	-	-
Hexachlorobutadiene	0.01	-	-	-	-	0.0125	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloromethane (Chloroform)	0.021	0.0763	0.0753	0.0111	0.0121	0.128	0.110	-	-	-	-	0.0204	0.0190	0.0103	-
Di-ethylphthalate (DEP)	15	-	-	-	-	35	40	-	-	-	-	-	-	-	-
Glyphosate	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-chloro-3-methylphenol (PCMC)	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aniline	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	0.02	-	-	-	-	-	0.0272	-	-	-	-	-	-	-	-
Benzo(a)pyrene	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(ghi)perylene	0.002	-	-	-	-	-	0.0221	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	0.02	-	-	-	-	-	0.0339	-	-	-	-	-	-	-	-
Indeno(1,2,3-c,d)pyrene	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphtalene	0.02	-	-	-	-	0.0428	0.0469	-	-	-	-	-	-	-	-

Total IPA	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alpha-Endosulfan	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aclonifen	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ametryne	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azinphos ethyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azinphos Methyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beta-Endosulfan	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifenox	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordecone	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorpyrifos methyl	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cianazina	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cybutryne	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cypermethrine	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coumaphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crotoxyphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d-HCH (d-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deltamethrin	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Desmetryn	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diazinon	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorvos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicofol	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethoate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan sulfate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenitrothion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fipronil	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isodrin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isoproturon	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptophos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malathion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methidathion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methoxychlor	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metolachlor	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Mevinphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mirex	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molinate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o,p-Methoxychlor	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p,p-Methoxychlor	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parathion ethyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parathion methyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pendimethalin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phorate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prometryn	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quinoxifen	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Simazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terbuthylazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terbutryn	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachlorvinphos E-isomer	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triazophos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triphenyl phosphate	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trifluralin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triisobutylphosphate	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol 1,2,3-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene 1,2,4-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene 1,3,5-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene 1,2,4-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene 1,3,5-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di (2-ethylhexil) phthalate DEHP	1 ⁻⁰⁴	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDE-2,4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDD-2,4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDT-2,4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-n-Nonylphenol	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a-HCH (a-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Acesulpham k	0.06 75	0.98 1	1.00	0.0573	-	0.0998	0.0987	0.160	0.170	1.21	1.24	0.100	0.100	-	-
Alachlor	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aldrin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amoxicillin	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atenolol	0.00 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atrazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azoxystrobin	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b-HCH (b- Hexachlorocyclohex ane)	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzotriazole	0.01	0.21 9	0.223	-	-	0.281	0.265	0.107	0.105	0.323	0.323	0.172	0.178	-	-
β-Estradiol	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bisphenol A	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbamazepine	0.15	-	-	-	-	0.422	0.434	-	-	-	-	-	-	-	-
Chlorfenvinphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane-cis	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane-trans	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.00 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Famphur	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fensulfothion	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g-HCH (g- Hexachlorocyclohex ane)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Imidacloprid	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylbenzotriazol e	0.09	0.17 6	0.184	-	-	0.466	0.449	-	-	-	0.0930	-	-	-	-
N-methyl-2- pyrrolidone	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonylphenol	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Octylphenol, 4-tert	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propamocarb	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propane 1,2-diol	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfamethoxazole	0.03	-	-	-	-	0.0335	0.0366	-	-	-	-	-	-	-	-
Perfluorooctanoic acid (PFOA)	0.00 2	0.00 386	0.0049 5	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulf onic acid (PFOS)	0.00 2	0.00 718	0.0086 4	-	-	-	-	-	-	-	-	-	-	-	-

2,2,4,4-Tetrabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5-Pentabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,5'-Esabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,6'-Esabromodiphenylether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6-Pentabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4'-tribromodiphenylether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroalkanes C10-C13	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzo dioxin (HpCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachlorodibenzo furano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,7,8,9-Heptachlorodibenzo furano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,7,8-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,7,8-Hexachlorodibenzodioxin (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,6,7,8-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,6,7,8-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8,9-Hexachlorodibenzodioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8,9-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8-Pentachlorodibenzodioxin (PeCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Q4	1,2,3,7,8-Pentachlordibenzofurano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2,3,4,6,7,8-Hexachlorodibenzofurano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2,3,4,7,8-Pentachlordibenzofurano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2,3,7,8-Tetrachlorodibenzo dioxin (TCDD)	1 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Octachlorodibenzodioxin (OCDD)	1 ⁻⁶	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00193	
	Octachlorodibenzofurano (OCDF)	1 ⁻⁶	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2,3,7,8-Tetrachlorodibenzofurano (TCDF)	1 ⁻⁶	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	PCDD, PCDF Summation (I-TEQ)	7 ⁻⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.76 ⁻⁰⁶	
	Cyclohexanone	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Diuron	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ammonium nitrogen	5	22.6	10.3	-	-	-	375.8	200.1	166.3	1022.4	2776.2	-	-	74.6	88.7	375.8	14.7
	EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sulphates (mg/L)	500	150	150	24	16	16	15	32	33	36	36	96	96	2200	2200	15	15
	Arsenic	1	-	-	1.22	1.21	1.21	1.03	4.36	4.39	6.44	6.14	-	-	-	-	1.03	1.07
	Cadmium	0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-	-	-	-
	Mercury	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Nickel	1	1.15	1.16	1.47	1.29	1.29	1.16	3.06	3.06	3.77	3.60	1.24	1.22	-	-	1.16	1.09
	Lead	1	1.07	-	1.99	1.40	1.40	1.95	-	-	1.11	1.09	-	-	-	-	1.95	1.79
	Styrene	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Tri-butyltin (TBT)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Benzene	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,2,4-Trimethylbenzene	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1,2-Dichloroethane	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Dichloromethane	0.1	0.727	0.889	0.871	0.960	0.960	0.952	1.21	1.20	1.47	1.29	0.659	0.685	0.673	0.753	0.952	0.889

Hexachlorobutadiene	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloromethane (Chloroform)	0.02	0.01															
Di-ethylphthalate (DEP)	1	71	0.0185	0.0213	0.0196	0.0196	0.0126	0.0499	0.0260	0.0252	0.0210	0.0483	0.0443	0.0302	0.0319	0.0126	< 0.01
Glyphosate	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-chloro-3-methylphenol (PCMC)	0.3	-	-	0.057	0.083	0.083	0.100	0.173	0.153	0.161	0.170	-	-	-	-	0.100	0.107
Aniline	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	0.00	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(ghi)perylene	0.00	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	0.00	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-c,d)pyrene	0.00	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphtalene	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total IPA	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alpha-Endosulfan	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aclonifen	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ametryne	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azinphos ethyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azinphos Methyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beta-Endosulfan	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifenox	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordecone	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorpyrifos methyl	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cianazina	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cybutryne	0.00	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cypermethrine	0.00	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coumaphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Crotoxyphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d-HCH (d-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deltamethrin	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Desmetryn	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diazinon	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorvos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicofol	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethoate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan sulfate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor epoxide	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenitrothion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fipronil	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isodrin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isoproturon	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptophos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malathion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methidathion	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methoxychlor	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metolachlor	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mevinphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mirex	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molinate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o,p-Methoxychlor	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p,p-Methoxychlor	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parathion ethyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parathion methyl	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pendimethalin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phorate	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prometryn	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Propazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quinoxifen	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Simazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terbutylazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terbutryn	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachlorvinphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-isomer	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triazophos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triphenyl phosphate	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trifluralin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triisobutylphosphate	0.003	-	-	-	-	-	-	-	-	-	-	0.0151	0.0172	0.00332	-	-	-	-
Pentachlorophenol	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trichlorobenzene	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di (2-ethylhexil) phthalate (DEHP) mg	1 ⁻⁰⁴	-	-	-	-	-	0.000676	-	-	-	-	-	-	-	-	-	0.000676	0.000873
DDE-2,4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDD-2,4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DDT-2,4	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-n-Nonylphenol	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
a-HCH (a-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acesulpham k	0.0675	-	-	-	-	-	0.220	0.332	0.290	0.284	0.277	-	-	-	-	-	0.220	0.225
Alachlor	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aldrin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amoxicillin	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atenolol	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atrazine	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Azoxystrobin	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

b-HCH (b-Hexachlorocyclohexane)	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzotriazole	0.01	-	-	-	-	-	0.515	0.102	0.133	0.0824	0.0835	3.67	3.58	-	-	0.515	0.451
β-Estradiol	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bisphenol A	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbamazepine	0.15	-	-	-	-	-	-	-	0.136	-	-	-	-	-	-	-	-
Chlorfenvinphos	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane-cis	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane-trans	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Famphur	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fensulfothion	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g-HCH (g-Hexachlorocyclohexane)	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Imidacloprid	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylbenzotriazole	0.09	-	-	-	-	-	0.577	0.140	0.152	-	-	6.12	6.19	1.51	1.61	0.577	0.536
N-methyl-2-pyrrolidone	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonylphenol	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Octylphenol, 4-tert	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propamocarb	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propane 1,2-diol	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfamethoxazole	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoic acid (PFOA)	0.002	-	-	-	-	-	0.00809	0.00662	0.00626	-	-	0.00263	0.00206	-	-	0.00809	0.00871
Perfluorooctanesulfonic acid (PFOS)	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2,4,4-Tetrabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5-Pentabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,5'-Esabromodiphenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

2,2',4,4',5,6' - Esabromodiphenyle ther	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6- Pentabromodifhenyl ether	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4'- tribromodiphenylet her	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroalkanes C10- C13	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,6,7,8- Heptachlorodibenzo dioxin (HpCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,6,7,8- Heptachlorodibenzo furano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,7,8,9- Heptachlorodibenzo furano (HpCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,7,8- Hexachlorodibenzod ioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,4,7,8- Hexachlorodibenzod ioxin (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,6,7,8- Hexachlorodibenzod ioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,6,7,8- Hexachlorodibenzof urano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8,9- Hexachlorodibenzod ioxin (HxCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8,9- Hexachlorodibenzof urano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8- Pentachlordibenzodi oxin (PeCDD)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3,7,8- Pentachlordibenzof urano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6,7,8- Hexachlorodibenzof urano (HxCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,7,8- Pentachlordibenzof urano (PeCDF)	7 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

2,3,7,8-Tetrachlorodibenzo dioxin (TCDD)	1 ⁻⁰⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Octachlorodibenzod ioxin (OCDD)	1 ⁻⁶	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Octachlorodibenzof urano (OCDF)	1 ⁻⁶	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,7,8-Tetrachlorodibenzof urano (TCDF)	1 ⁻⁶	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCDD, PCDF Summation (I-TEQ)	7 ⁻⁷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diuron	0.01	-	-	-	-	-	0.106	-	-	-	-	-	-	-	-	0.106	0.117

*Due to issues in finding a sampling site and lack of rainfall, Qoton was only sampled in Q4

Table 20 Water Screening for Tentatively Identified Compounds* in Additional Sites (Pooled Sample)

Cas #	Compound Name	Amount/Conc	LMS	Purity
88-04-0	Chloroxynol	0.1869	80	100
121-33-5	Vanillin	0.3098	50	100
126-86-3	2,4,7,9-Tetramethyl-5-decyne-4,7-diol	0.3215	75	100
131-11-3	Dimethyl phthalate	0.0527	50	100
134-62-3	N,N-Diethyl-m-toluamide	0.0772	81	100
119-61-9	Benzophenone	0.0438	75	100
126-73-8	Tributyl phosphate	0.2698	80	100
115-96-8	Tri-(2-chloroethyl) phosphate	0.1177	78	100
101-37-1	2,4,6-Triallyloxyl-1,3,5-triazine	0.4036	51	98.7
106-02-5	Oxacyclohexadecan-2-one	0.4296	43	99.5
58-08-2	Caffeine	0.19	88	100
127-63-9	Diphenyl sulfone	0.0273	53	100
1678-25-7	Benzenesulfonanilide	0.1014	74	100
10544-50-0	Sulfur (S8)	10.5593	91	100
80-05-7	Bisphenol A	0.221	78	100
77-90-7	Tributyl acetylcitrate	0.0856	56	100
13674-87-8	Tris-(1,3-dichloroisopropyl) phosphate	0.198	54	100
298-46-4	Carbamazepine	0.0488	49	99.7
84-61-7	Dicyclohexyl phthalate	2.0529	69	100
117-84-0	di-n-octyl phthalate	0.2338	48	100
110488-70-5	Dimethomorph	0.4669	46	97.1
57-88-5	Cholesterol	95.0094	95	100

* SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results do not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound

Table 21 Compounds detected at least once in year 1 of sampling

Compound	Additional sites	Coastal	Ground-water	Inland water	New water	Storm-water	Transitional
Ammonium nitrogen	/			/			
Sulphates	/			/			
Arsenic	/			/			
Cadmium	/			/			
Mercury	/						
Nickel	/			/			
Lead	/			/			
Methyl tert-butyl ether (MTBE)	/						
Dichloromethane	/			/			
Hexachlorobutadiene	/						
Trichloromethane (Chloroform)	/			/			
Di-ethylphthalate (DEP)	/						
Glyphosate	/			/		/	
Anthracene	/						
Benzo(a)pyrene	/			/			
Benzo(b)fluoranthene	/			/			
Benzo(ghi)perylene	/			/			
Benzo(k)fluoranthene	/			/			
Fluoranthene	/						
Indeno(1,2,3-c,d)pyrene	/			/			
Naphtalene	/						
Di (2-ethylhexil) phthalate (DEHP)	/			/			
Acesulpham k	/		/	/		/	/
Benzotriazole	/		/	/	/	/	
Carbamazepine	/		/			/	
Methylbenzotriazole	/		/	/	/	/	/
Sulfamethoxazole	/		/	/		/	
Perfluorooctanesulfonic acid (PFOS)	/			/			
Diuron	/			/			
Perfluorooctanoic acid (PFOA)				/			
Aniline				/			
Triisobutylphosphate		/		/		/	/
Atenolol				/		/	

Table 22 Sampling schedule in year 1 and 2 of monitoring

	Months	M1	M2	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
	Date	Jul	Aug	Jan 23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Activity 2	First year in-situ monitoring*					G,I,T,S ,C,N			G,C,N			G,C,N			G,I,T,S ,C,N
	Annual monitoring report														
	First year shipments ‡														

	Months	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30
	Date	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Activity 2	Second year in-situ monitoring*		G,I,T,S ,C,N				G,C,N			G,C,N			G,I,T,S ,C,N
	Second year shipments ‡												

<i>Legend:</i>
Shipment
Fieldwork

‡ Samples are sent by courier the same day as sampling and are scheduled to arrive within 24h

* G: Groundwater; I: Inland surface water (depending on availability); T: Transitional water;

S: Stormwater; C: Coastal water; N: New water

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