



**Assessment of Member States' reporting  
of New Substances under the 2013 EQS Directive  
during the second planning cycle of the  
Water Framework Directive**



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### **Abbreviations and acronyms**

EQS	Environmental Quality Standard
KTM	Key Types of Measures
MS	EU Member State
POM	Programmes of Measures
RBD	River Basin District
RBMP	River Basin Management Plan
WFD	Water Framework Directive
WISE	Water Information System for Europe

# 1. INTRODUCTION

Ramboll Management Consulting and our partners Deltares, International Office of Water (IOW) and Oréade-Brèche have worked together on the contract for the service request on "ASSESSMENT OF THE MEMBER STATES REPORTS ON THE IMPLEMENTATION OF THE POM AND OF THE RBMP FOR COUNTRIES WITH LATE ADOPTION AND/OR LATE REPORTING, AND EQS REPORTING" under the framework contract ENV.C1/2016/FRA/0014- Contract reference: SI2.821126.

The present report presents an inventory of the current status in the Member States regarding monitoring and measures with respect to the new substances of the Environmental Quality Standard (EQS) Directive<sup>1</sup>.

Task 3 consists of two elements: (1) Monitoring of the new priority substances and (2) addressing additional measures defined.

Regarding monitoring of priority substances, the questions are:

- Are Member States already monitoring the substances that were added to part A of Annex I of the EQS Directive in 2013?
- What type(s) of monitoring is foreseen, with which frequency, in which matrix/matrices?
- If not, what steps have Member States taken to start monitoring those substances, or have they provided an explanation for not doing it?

Regarding additional measures, the questions are:

- Which Key Types of Measures (KTM), using the typology defined in the WFD Reporting Guidance of 2016, have been identified by Member States as being necessary to address the impacts of the new substances, and which costs are associated with these KTM?
- Are these KTM consistent with the objective of reaching the WFD objectives for what concerns the new substances?

In the next chapter the methodology followed to answer these questions is described, and chapter 3 addresses the results per Member State.

<sup>1</sup> DIRECTIVE 2013/39/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy

## 2. METHODOLOGY

Given the deadline of end of 2018, the Member States ought to have submitted information about supplementary monitoring programmes as well as preliminary Programmes of Measures (PoM) to the EC, making this information in principle available in the WISE database at the EEA. However, from the first analysis performed in March 2020 on the extracts received from the WISE database it became clear that not all Member States had submitted the relevant information, and that some submitted information was missing, incomplete or unclear. Furthermore, the reporting date of both the monitoring plans and measures formulated (end of 2018) may have caused problems in timely reporting for some Member States. Therefore, the EC addressed those Member States which did not provide the information asked for, to do so as soon as possible. The deadline for additional reporting was extended until August 1, 2020. The analyses reported in this report is based on an extract of the database received on August 12, 2020.

Based on this information prepared an overview of the number of records per country. The information per Member State is compiled in separate sheets. Within each separate sheet the information is presented per River Basin District (RBD). This is done as the information available (e.g. substances measured, matrix, substances exceeding EQS, identified pressure and defined KTM) may differ per RBD.

The information originates from two main sources:

- Most information is extracted from the WISE database from the European Environment Agency (EEA), received on August 12, 2020.

The information was received in two extracts. One extract contained information about the substances monitored per (sub)RBD and the matrix in which they were monitored. The second extract contained information regarding whether the substance did or did not exceed the EQS, which pressure was identified as causing the exceedance of the EQS, and the associated KTM to reduce the pressure.

- Several background documents were also delivered. These background documents were especially useful for answering questions regarding two aspects, namely:
  - a) Information concerning whether the monitoring programme was in accordance with "Commission Directive 2009/90/EC of July 31, 2009 laying down, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, technical specifications for chemical analysis and monitoring of water status", in short "The Quality Assurance and Quality Control or QA/QC Directive". Most relevant criterion to achieve is the measurement uncertainty of 50 % or less, assessed at the level of the relevant environmental quality standards and Limit of Quantification (LOQ) equal to or less than 30 % of the value of the relevant environmental quality standards.
  - b) Costs associated with the additional PoM planned to reduce the pressures associated with the EQS exceedances.

The provision of background documents fell into four categories:

- I. Some Member States did not deliver any background documents.
- II. Some Member States delivered only general information (i.e. complete River Basin Management Plans), not containing specific information regarding the monitoring or measures with respect to the new priority substances.
- III. Some Member States delivered specific information regarding the monitoring or measures with respect to the new priority substances, but in their native

language. The translation machines from the European Commission were used to translate these documents.

- IV. Some Member States delivered specific information regarding the monitoring or measures with respect to the new priority substances in English, German or Dutch. No translation was needed.

Only the last two categories were useful for answering the two questions posed.

DISCLAIMER: It must be noted that the information retrieved from the translated documents should be viewed with caution, as the translation machines may translate the documents inaccurately, and erroneous conclusions may be drawn.

According to the Request for Proposal, it was not anticipated to scrutinise all the documents provided by the Member States. Therefore, a preliminary analysis was done to determine if a document was relevant for further analysis.

If the documents were written in English, German or Dutch, this preliminary analysis was based on the content of the documents.

For the other documents, written in native languages, the preliminary analysis was based on the structure and the size of the documents. Based on these parameters several documents, deemed relevant, were handed over to the European Commission for translation.

From the documents analysed it became clear that for some of the questions raised in the Request for Proposal no in-depth analysis could be performed, as the reported information was only limited available. This holds for the aspects:

- Type and frequency of monitoring;
- what steps have Member States taken to start monitoring those substances, or have they provided an explanation for not doing so;
- costs associated with KTMs;
- are the KTMs consistent with the objective of reaching the WFD objectives for what concerns the new substances?

These questions can only be answered if this information is available in the background documents.

The analysis of the background documents leads to the following conclusions:

- Relevant Information was available for  
BE, CY, FI, SE, ES, LV, HR, SK, LU, MT, RO, UK, and IE;
- No relevant information was available for  
IT, PT (both only specific regions), AT, CZ, DK, EE, EL, FR, BG, NL, LT, PL, SL, DE, SI and HU.

Substances that were reported as having been monitored between 2006 and 2020 are labelled as 'measured', whilst substances that will be measured in the future are labelled as 'not measured'.

Several records are labelled as "not measured" for other reasons:

- Slovakia reported a future monitoring programme. The substances included in this monitoring programme were listed as 'last monitored' in 2021-2024 and are here labelled as 'not measured'.

- The Netherlands included records with a 'last monitored' value of 0. These records are also labelled as 'not measured'. Request for further information at the national reporting authority did not yield any additional information.
- Belgium added one record with a 'last monitored' value of 1017, most probably this was a mistake and the value should have been 2017.
- Estonia added one record with a 'last monitored' value of 2917, which probably should have been 2017.

No results were reported in the extracts from the WISE database for the Member States Sweden and Slovenia. However, both countries did deliver background documents.

According to the EQS Directive as amended in 2013, for some substances the preferred matrix is biota and for others water. Unless otherwise indicated, the biota EQS relate to fish. The Directive allows Member States to set and apply EQS for alternative biota taxa or another matrix (i.e. sediment), if the EQS applied provides an equivalent level of protection. If a substance is not measured in the intended matrix it has been given the label 'no match', as the preferred matrix and the measured matrix do not match, and no information is provided regarding the level of protection reached by using this alternative matrix. If a substance is measured in the preferred matrix it has been given the label 'match', as the preferred matrix and measured matrix match. In the next chapter the factsheets per Member State are given. The chapter starts with an overview of the metadata per Member State, compiled from the extracts from the WISE database and the background documents. The factsheets provide additional information regarding the background documents and the "no match" records.

### 3. RESULTS

In the following table an overview is displayed from the metadata per Member State, compiled from the extracts from the WISE database and the background documents.

Member state	monitoring	background documents*	QA/QC analysis	information EQS exceedance	pressures	KTM	costs
Austria	X	II	X	X	X	X	-
Belgium	X	IV	X	X	X	X	X
Bulgaria	-	II	-	-	-	-	-
Croatia	X	III	X	X	X	X	-
Cyprus	X	IV	X	-	-	-	-
Czech Republic	X	II	-	X	X	X	-
Denmark	X	II	-	X	X	X	-
Estonia	X	II	-	X	X	X	-
Finland	X	IV	X	X	X	X	-
France	X	I	-	-	-	-	-
Germany	X	I	-	X	X	X	-
Greece	-	III	-	-	-	-	-
Hungary	X	I	-	-	-	-	-
Ireland	X	IV	X	X	-	X	-
Italy	X	II	-	X	-	-	-
Latvia	X	II	X	X	X	X	-
Lithuania	X	II	-	-	X	X	-
Luxembourg	X	IV	X	X	X	X	-
Malta	X	IV	X	X	-	-	-
Netherlands	X	II	-	X	X	X	-
Poland	X	II	X	X	X	X	-
Portugal	X	II	-	X	X	X	-
Romania	X	II	-	X	X	X	-
Slovakia	X	III	X	X	X	X	-
Slovenia	X	III	X	X	X	X	-
Spain	X	IV	-	X	-	-	-
Sweden**	X	III	X	X	X	X	-

\* the number refers to the type of background documents, as described in Chapter 2.

\*\* Sweden has provided information regarding QA/QC of the analyses; however, no monitoring data were present in the extract of the WISE database, but information was available in the background document.

Most Member States are already monitoring the substances that were added to part A of Annex I of the 2013 EQS Directive. All Member States, except from BG, EL, and SI, provided monitoring data on most substances and in most RBDs in WISE. SE provided no monitoring data in the extract of the WISE database, but data were provided in background information. More details are provided in the following.

For AT, a total of 512 monitoring records were reported. Monitoring data in the Elbe RBD was limited, with only information on dicofol, dioxins and dioxin-like compounds,

hexabromocyclododecane and PFOS and its derivatives. Data from all other RBDs on all substances was available.

From BG only monitoring data of terbutryn in the RBD of the Black Sea was available. For BG, the limit of quantification in the water and biota matrix for all new substances it can be concluded the LOQ fulfils the requirements of the Commission Directive 2009/90/EC (limit of quantification equal or below a value of 30 % of the relevant environmental quality standards). No information regarding the uncertainty of the methods of analysis is given.

From DK monitoring data was not available from the RBDs of Bornholm and International Waterdistrict. Additionally, no information was available on the substances aclonifen, bifenoxyfen, dichlorvos, dicofol and quinoxyfen in the Danish RBDs of Jutland and Funen and Seeland.

From FI monitoring data from the RBDs of Teno, Näättäjäjoki and Paatsjoki and Vuoksi was missing. From the RBD of Teno, Näättäjäjoki and Paatsjoki only monitoring data of dicofol, dioxins and dioxin-like substances, HBCDD and PFOS was available. From the RBD of Vuoksi only monitoring data of HBCDD and PFOS was available. Data from all other RBDs on all substances was available. For FI the supplementary monitoring programme for each of the RBDs document all analyses meet the QA/QC requirements, according to Estonia there was however a mistake in the background documents as cypermethrin, dichlorvos and heptachlor/heptachlor epoxide do not meet the QA/QC requirements. As no quantification limits or uncertainties were provided for any of the substance analyses these statements could not be checked.

From FR only information on the RBDs of Rhône et Cours d'eau Côtiers Méditerranéens, Fleuves et Cours d'eau de la Guyane, Cours d'eau de la Martinique, Cours d'eau de la Guadeloupe and Cours d'eau de la Cors was available. Not all 12 substances were monitored in these RBDs. Data from all other RBDs on all substances was available.

From DE the RBD of the Ems monitoring data from dichlorvos and dicofol was missing. From the German RBD of the Maas monitoring data on aclonifen and bifenoxyfen was missing. Data from all other RBDs on all substances was available.

From EL only monitoring data on heptachlor and heptachlor epoxide in water was available.

From IE no information with regards to heptachlor and heptachlor epoxide was available. In the RBD of Neagh Bann also information on the monitoring of aclonifen, bifenoxyfen, dichlorvos, quinoxyfen en terbutryn was missing. Data from all other RBDs on all substances was available.

From IT no information was available on the RBDs of Sardinia and Sicily.

From the LT no information is available for the Dauguva RBD.

From the NL various measurements were included with a 'last monitored' value of 0. These measurements have been listed as 'not measured', since no information is available regarding the date of these measurements. Because of this dioxins and dioxin-like compounds were listed as not measured in all RBDs.

From PL the following substance were not measured; quinoxyfen, cybutryne, bifenoxyfen, cypermethrin, dichlorvos, aclonifen, and terbutryn. No information was available from the Polish RBD of Swieza.

From PT no monitoring data was available from the RBD of Azores at all. Also, not all substances were measured in all RBDs.

From RO all monitoring data from dioxins and dioxin-like compounds and PFOS was missing.

From ES only limited information was available for the RBDs of El Hierro, Fuerteventura, Gran Canaria, International basins of Catalonia, La Gomera, La Palma, Lanzarote, Tenerife and Western Cantabrian. From the other RBDs no information was available at all.

Sometimes substances were monitored in a different matrix than the matrix described in the EQS Directive. Often no information regarding the derivation for these substances in this matrix was provided. For example, dioxins and dioxin-like compounds should be measured in biota, but several Member States also measured these substances in water. Several Member States included sediment monitoring for both Status and Trend analysis. Often Member States did not provide additional information on the sediment analyses and EQS derivation for sediment.

HR, EE, SK and SE (although no monitoring data from Sweden was available in WISE) provided information on the chemical status of all substances monitored and defined Key Type Measure (KTMs) for all substances failing.

Member States BE, CZ, DK, FI, IT, LV, LT, LU, NL, NO, PL, and RO provided information on the status of most substances monitored and defined KTMs for all substances failing. In MT information on the status of all substances was provided, but no substances failed and as such no KTMs were defined.

EL only provided information on the status of heptachlor and heptachlor epoxide, no KTM was provided as no substance failure was identified. IE, PT and ES provided information on the chemical status of some substances, but no substances failed and as such no KTMs were defined. IE, however, provided information on KTMs in the background information. SI provided no information in WISE, but provided detailed information in the background documents.

Member States AT, BG, CY, FR, SI, and HU provided no information on the status of the substances monitored, therefore also no KTMs were determined. AT provided this information in background documents.

12 different KTMs were defined, including KTM99 – Other key type measure reported under PoM, which can refer to various measures.

### 3.1. Austria

Austria provided three background documents in native language:

- *Fisch\_Untersuchungsprogramm\_2013.pdf*: Monitoring programme from 2013 in biota
- *GZUEV\_BGBI\_II\_479\_2006.pdf*: National legal implementation of WFD
- *NGP\_2015-Textdokument.pdf*: National RBMP plan

These documents did not contain any specific information regarding monitoring or measures for the new priority substances. Additional information in the monitoring of priority substances, including the new priority substances as of 2013, is available online in the document *Wassergüte in Österreich* (native language). As the document was not available via EIONET, it was not consulted for this project.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding costs associated with the PoM is provided.

In total 512 monitoring records were reported by Austria. Table 1 displays the 6 no match values (1%), as derived from the extracts from the monitoring program. Below, the 'no match' values are explained.

- Austria has measured terbutryn in biota several times, while according to the EQS Directive this substance should be measured in water. In the Rhine RBD terbutryn was also measured in water, however no information is provided if the locations of the measurements in water and biota match each other. In the Elbe RBD terbutryn was only measured in biota. Only measurements of terbutryn in water are according to the EQS Directive.

No analysis in sediment were provided.

*Table 1: No match values for Austria*

Riverbasin	ELBE	RHINE
Substances	Biota	Biota
Terbutryn	1	5

## 3.2. Belgium

Belgium provided eight documents with additional information in Dutch or French:

- *Bioaccumulatie\_monitoring.pdf*, in Dutch: Detailed information about biota, sediment and passive sampling monitoring, substances, locations, and frequency
- *Geactualiseerde\_monitoringprogramma.pdf*, in Dutch: National implementation of WFD
- *Mesures\_Coûts.docx*, in French: Information concerning KTM's and associated costs not much detail
- *Mesures\_RAfArence.docx*, in French: Information concerning KTM's
- *Monitoring\_programme\_EQS\_2018.pdf*, in French: Information about five monitoring locations
- *Monitoring\_RAfArence.docx*, in French: General information about monitoring
- *PGE\_2016-2021-BXL Capitale.pdf*, in French: Water management plan for Brussels
- *WaterUitvProg2017\_Hfdst2-5.pdf*, in Dutch: Information about substances and sources

From the last document, information regarding QA/QC of the analysis could be distilled.

No information is available for the RBD North Sea.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

Information regarding costs associated with the PoM is provided in the document *Mesures\_coûts.docx*. In this document the costs of four different measures are explained.

From 2016 to 2018 a surveillance monitoring was executed in a 3-year cycle, in which every location in the 57 water bodies is monitored once. The results serve as input for the operational programme, to be drafted.

Belgium has reported 2602 monitoring records in total. Table 2-4 displays the no match records (398 = 16%), as derived from the extracts from the monitoring program. Below, the 'no match' values are explained.

- Both PFOS and heptachlor and heptachlor epoxide were measured in both water and biota. Belgium delivered background information on chemical analysis and EQS comparison. The analyses for heptachlor and heptachlor epoxide in water do not meet the requirements of the QA/QC Directive, however this data was used for trend analysis. The chemical state of water bodies was established with available heptachlor and heptachlor epoxide data collected in biota matrix. The rest of the substances meet the requirements.
- Additionally, dioxins and dioxin-like compounds were measured several times in the water phase, while according to the EQS Directive these substances should be measured in biota. Belgium has not provided any information regarding the EQS derivation for this group of substances in water. Dioxins were also measured in biota and these measurements are according to the EQS Directive. The chemical state of water bodies was established with available dioxin and dioxin-like compound data collected in biota matrix.

Several substances were measured in sediment, for both Status and Trend analysis. Belgium has not provided any additional information on the sediment analyses and EQS derivation for sediment for these substances. Settled sediment measurements were only done for Trend analysis. No information is provided how this information is further processed for Trend Analysis. All substances with measurements in sediment also have measurements in water and/or biota.

Table 2-4: No match values for Belgium

Substances	Riverbasin		SCHELDT_RW		SCHELDT_BR
	Sediment	Water	Sediment	Water	Sediment - settled sediment
Dicofol	4				4
Heptachlor and heptachlor epoxide	4				5
Dioxins and dioxin-like compounds	4	54			5
Hexabromocyclododecane (HBCDD)	4				5
Quinoxifen	4				5
Perfluorooctane sulfonic acid and its derivatives	1				5

Substances	Riverbasin		MEUSE_RW		RHIN_RW	
	Sediment	Water	Sediment	Water	Sediment	Water
Dicofol	23				2	
Heptachlor and heptachlor epoxide	25				2	
Dioxins and dioxin-like compounds	21	135			1	3
Hexabromocyclododecane (HBCDD)	25				2	
Quinoxifen	25				2	
Perfluorooctane sulfonic acid and its derivatives	10				2	

Substances	Riverbasin		SEINE_RW	
	Sediment	Water	Sediment	Water
Dicofol	1			
Heptachlor and heptachlor epoxide	1			
Dioxins and dioxin-like compounds		1		
Hexabromocyclododecane (HBCDD)	1			
Quinoxifen	1			
Perfluorooctane sulfonic acid and its derivatives	1			

### 3.3. Bulgaria

Bulgaria delivered three background documents in native language:

- *BG Kriterii\_za\_izbor\_na\_punktove*
- *BG Obiasnitelna\_zapiska\_izbor\_Predvaritelni\_merki*
- *BG SW\_supplementary\_monitoring\_programe*
- *LOQ\_RLs\_EEA: document containing information on the limit of quantification of the new priority substances*

The four documents were translated and appeared to contain general information. For the moment Bulgaria has measured only terbutryn (at several locations, but only in the Black Sea RBD).

According to the information Bulgaria has provided on the limit of quantification in the water and biota matrix for all new substances it can be concluded the the LOQ fulfils the requirements of the Commission Directive 2009/90/EC (limit of quantification equal or below a value of 30 % of the relevant environmental quality standards). No information regarding the uncertainty of the methods of analysis is given.

Bulgaria has not delivered any valuable background information regarding KTM, PoM or costs involved.

No analysis in sediment were provided.

All measurements reported were in compliance with the EQS Directive.

### 3.4. Croatia

Croatia delivered one background document in native language:

- *HR-Nove tvari*

The document was translated and supplied information regarding QA/QC of the analysis. From this document the following was concluded:

- For PFOS and its derivatives, cypermethrin, dichlorvos (water), heptachlor and heptachlor epoxide (both water and biota), the analysis did not fulfil the QA/QC requirements.
- The preliminary programme of measures is given only for new priority substances identified as exceeding defined water quality standards for water or biota. Over time, as more data are collected on these new priority substances and their sources (including relevant pressures), on which the current knowledge is not sufficient for satisfactory assessment of the level of risk, the KTMs will be updated. No indication of the costs is given now.
- Detailed information about frequencies and locations is provided in the background document.

Croatia reported in total 2441 monitoring records. Table 5 shows the no match values from the monitoring program (522 =21%). Below the 'no match' values are explained.

- Dioxins and dioxin-like compounds were measured several times in water, while the preferred matrix is biota. Croatia has delivered no background information regarding the chemical analyses or EQS derivation for water for these substances. Dioxins were also measured in biota and these measurements are according to the EQS Directive. In the Danube RBD 101 measurements of dioxins were done in water, while only 12 measurements of dioxins were done in biota.

Croatia did several measurements in sediment, see table 5 below. Most sediment measurements were done for Trend analysis, some measurements were done for Status and Trend analysis and a few sediment measurements were done for Status analysis only. Croatia has not provided any additional information on the sediment analyses or EQS derivation for sediment for these substances. No information is provided how this information is further processed for Trend Analysis. All substances with measurements in sediment also have measurements in water and/or biota.

Table 5: no match values for Croatia

Substances	Riverbasin	ADRIATIC		DANUBE	
		Sediment	Water	Sediment	Water
Dicofol		25		9	
Heptachlor and heptachlor epoxide		62		5	
Dioxins and dioxin-like compounds		62	4	5	101
Hexabromocyclododecane (HBCDD)		62			
Quinoxifen		62		6	
Perfluorooctane sulfonic acid and its derivatives		62		6	
Cypermethrin		25			
Dichlorvos		25			

### 3.5. Cyprus

Cyprus has delivered one background document in English:

- *Reporting\_of\_supplementary\_monitoring\_programme*

The document contains additional information regarding the LOQ and LOD of the analyses. The most important information was:

- Cyprus has delivered information on the LOQ and LOD values for the new priority substances. The LOQ levels provided do not meet the minimum performance criteria for the methods of analysis according to the QA/QC Directive, i.e. an LOQ value equal or below a value of 30 % of the relevant environmental quality standards.
- All monitoring sites for the new priority substances are for the moment under surveillance monitoring. Since Cyprus has not identified the pressures as significant, no KTM's or PoM's are provided. Consequently, no information regarding costs associated with the PoM is provided.

Cyprus reported in total 477 monitoring records. In Table 6 the no match values (34= 7%) according to the monitoring programme are shown. Below the 'no match' values are explained.

- Cyprus did several measurements in sediment for the substances heptachlor and heptachloroxide, and dioxin and dioxinlike compounds, see table 6, but Cyprus has not provided any additional information on the sediment analyses or EQS derivation for sediment for these substances. Although only a biota EQS is given for dioxins and dioxin-like compounds in the EQS Directive, these are monitored in sediment in Cyprus since there aren't any suitable biota for monitoring. Sediment measurements were done for Trend analysis only. No information is provided how this information is further processed for Trend Analysis.
- Heptachlor is also measured in water, which is according the EQS Directive.

Table 6: no match values for Cyprus

Riverbasin	CYPRUS
<b>Substances</b>	<b>Sediment</b>
Heptachlor and heptachlor epoxide	25
Dioxins and dioxin-like compounds	9

### 3.6. Czech Republic

Czech Republic provided four documents:

- Two documents concerning annexes and maps of Danube RBMP, named *drbmp-update2015-maps.pdf* and *drbmp-update2015-annexes.pdf*
- Two ZIP files with information in native language, named *envvuq1ua.zip* and *envvuq2\_w.zip*

No additional information was provided in these documents regarding QA/QC of the analyses

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding costs associated with the PoM is provided.

The Czech Republic has reported 2482 monitoring records. Table 7-8 displays the no match values (290 = 12%), as derived from the extracts from the monitoring program. Below the 'no match' values are explained.

- Czech Republic reported several measurements in sediment, see table 7-8. Sediment measurements were done for Trend analysis only. No information is provided how this information is further processed for Trend Analysis. All substances with measurements in sediment also have measurements in water and/or biota.
- Quinoxifen was measured several times in biota and sediment, while the EQS Directive sets EQS in water. However, the measurements of quinoxifen in biota and sediment were for trend analysis only. No additional information on the analyses or EQS derivation for biota for this substance is provided. Quinoxifen is also measured in water and these measurements are in accordance with the EQS Directive.

Table 7-8: no-match values for Czech Republic

Riverbasin	DANUBE		ELBE	
Substances	Biota	Sediment	Biota	Sediment
Dicofol		14		22
Heptachlor and heptachlor epoxide		14		22
Dioxins and dioxin-like compounds		14		22
Hexabromocyclododecane (HBCDD)		14		22
Quinoxifen	9	14	23	22
Perfluorooctane sulfonic acid and its derivatives		14		22
Riverbasin	ODER			
Substances	Biota	Sediment		
Dicofol		6		
Heptachlor and heptachlor epoxide		6		
Dioxins and dioxin-like compounds		6		
Hexabromocyclododecane (HBCDD)		6		
Quinoxifen	6	6		
Perfluorooctane sulfonic acid and its derivatives		6		

### 3.7. Denmark

Denmark has delivered three background documents in native language:

- *Bek\_om\_indsatsprogram\_i\_vandomrader.pdf*: in the annex of the regulation the locations with measurements to achieve the environmental objectives set out in Article 4 of the EU WFD are mentioned
- *novana-2017-21-programbeskrivelse.pdf*: Information about the monitoring programme.
- *Supplerende\_overnavningsprogram\_for\_nye\_EU.pdf*: One page concerning (biota) monitoring.

The second document was translated.

No additional information was provided in this document regarding QA/QC of the analyses

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM's were formulated.

No information regarding costs associated with the PoM is provided.

The following substances were not measured:

- Dicofol
- Quinoxifen
- Bifenox
- Dichlorvos
- Aclonifen

No measurements were provided for the International Water and Bornholm district.

No analysis in sediment were provided.

The analyses which were reported, were in compliance with the EQS Directive.

### 3.8. Estonia

Estonia has provided four background documents:

- *EE\_Program\_of\_Measures\_2015-2021.pdf*.
- Three Excel files: Resembles information included in the WISE database

The first document was translated.

No additional information was provided in this document regarding QA/QC of the analyses.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM's were formulated.

No information regarding costs associated with the PoM is provided.

Estonia has reported 313 monitoring records in total. Table 9-10 displays the no match values (139 = 44%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Estonia performed measurements for several compounds in sediment, see table 9-10. Most sediment measurements were done for Trend analysis only, a few measurements were done for Status analysis only. Estonia has not provided any additional information on the sediment analyses. EQS derivation for sediment has not been applied in Estonia yet, however measurements in sediment are done for future assessments for these substances. No information is provided how this information is further processed for Trend Analysis. All substances with measurements in sediment also have measurements in water and/or biota.
- According to the data registered in the WISE database dioxins and dioxin-like compounds were measured several times in water for status assessment, though according to the EQS Directive biota is the preferred matrix. Estonia has not provided any additional information on the water analyses or EQS derivation for water for these substances. In the East Estonian RBD dioxins were also measured in biota. In the West Estonian RBD dioxins were only measured in biota once, while measurements in water were done 12 times. In the Koiva RBD dioxins were not measured at all. According to additional information provided by Estonia dioxins were measured in the West Estonian RBD and East Estonian RBD in all three matrixes: water, sediment and biota, however, for some reason this information was not registered in the WISE database at the time the database was consulted for this project. No additional information with regards to dioxin measurements in the Koiva RBD were found.
- According to the data registered in the WISE database quinoxifen was measured a number of times in biota, and sediment, though according to the EQS Directive water is the preferred matrix. Estonia has not provided any additional information on the biota or sediment analyses or EQS derivation for biota or sediment for this substance. Quinoxifen is also measured in water and these measurements are in accordance with the EQS Directive.

*Table 9-10: no match values for Estonia*

Riverbasin	EAST-ESTONIAN			KOIVA
Substances	Biota	Sediment	Water	Sediment
Dicofol		13		1
Heptachlor and heptachlor epoxide		13		
Dioxins and dioxin-like compounds		2	2	
Hexabromocyclododecane (HBCDD)		2		
Quinoxyfen	6	13		1
Perfluorooctane sulfonic acid and its derivatives		10		

  

Riverbasin	WEST-ESTONIAN	
Substances	Biota	Sediment
Dicofol		15
Heptachlor and heptachlor epoxide		14
Dioxins and dioxin-like compounds		12
Hexabromocyclododecane (HBCDD)		1
Quinoxyfen	7	14
Perfluorooctane sulfonic acid and its derivatives		12

### **3.9. Finland**

Finland has provided two background documents in English per RBD, regarding the QA/QC of the analyses: one on the preliminary programme of measures and one with the supplementary monitoring programme.

According to the supplementary monitoring programme for each of the RBDs document all analyses meet the QA/QC requirements, according to Estonia there was however a mistake in the background documents as cypermethrin, dichlorvos and heptachlor/heptachlor epoxide do not meet the QA/QC requirements. As no quantification limits or uncertainties were provided for any of the substance analyses these statements could not be checked.

The first document provided background information and reasoning on the PoM provided in the WISE database. No information regarding costs was provided.

The type of monitoring foreseen in all RBD's except FIDWA is surveillance. The type of monitoring in FIWDA is controlling.

No analysis in sediment were provided.

The matrix of all measurements reported was in compliance with the EQS Directive.

### 3.10. France

France did not provide any background information.

No measurements were provided for the following RBD's:

- Cours d'eau de Mayotte
- Escaut, la Somme et les cours d'eau côtiers de la Manche et de la mer du Nord
- Adour, la Garonne, la Dordogne, la Charente et les cours d'eau côtiers charentais et aquitains
- Loire, les cours d'eau côtiers vendéens et Bretons
- Meuse
- Rhin
- Sambre
- Seine et les cours d'eau côtiers normands
- Cours d'eau de la Réunion.

France did not provide background information on the QA/QC of the analyses performed.

France did not provide any information on the type of biota monitored.

No information regarding pressures identified because of EQS exceedances was provided.

No information regarding KTM's was provided.

France did not provide any information on the costs associated with the PoM's.

France did not provide any information on the frequency, locations or type of monitoring foreseen.

France has reported 8424 monitoring records in total. Table 11-12 displays the no match values (in total 2691 = 32%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- France did several measurements in sediment for several substances, see table 11-12. Sediment measurements were done for Trend analysis only. No information is provided how this information is further processed for Trend Analysis. All substances with measurements in sediment also have measurements in water and/or biota.
- Dioxins and dioxin-like compounds were measured in water several times in the FLEUVES ET COURS D'EAU DE LA GUYANE RBD, though the preferred matrix according to the EQS Directive is biota. France has not provided any additional information on the water analyses or EQS derivation for water for these substances. Dioxins were not measured in biota in this RBD.
- France reported biota-other for several measurements. No additional information is provided about this specific matrix.

Table 11-12: no match values for France

Riverbasin	COURS D'EAU DE LA CORS		D'EAU DE LA GUADELOUP E
	Biota - other	Sediment	Biota - other
<b>Substances</b>			
Dicofol	10	26	20
Heptachlor and heptachlor epoxide	10	26	20
Hexabromocyclododecane (HBCDD)	10	26	
Quinoxifen		26	
Perfluorooctane sulfonic acid and its derivatives	10	26	
Riverbasin	FLEUVES ET COURS D'EAU DE LA GUYANE	RHÔNE ET COURS D'EAU CÔTIERS MÉDITERANÉENS	
	Water	Biota - other	Sediment
<b>Substances</b>			
Dicofol		52	434
Heptachlor and heptachlor epoxide		52	434
Dioxins and dioxin-like compounds	41		
Hexabromocyclododecane (HBCDD)		52	434
Quinoxifen			434
Perfluorooctane sulfonic acid and its derivatives		52	434

### **3.11. Germany**

Germany has not provided any background information

No information regarding QA/QC of the analyses was provided.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding the costs involved with the PoM's was provided.

No analysis in sediment were provided. Germany has communicated that analysis in sediment and suspended matter for those substances that accumulate in sediment will be provided in the reporting on the River Basins Management Plan 2021.

All measurements reported were in compliance with the EQS Directive.

### **3.12. Greece**

Greece has provided one Excel sheet, named *Chemical\_monitoring\_programme\_2014-2020.XLSX*, about their monitoring programme (2014-2020) with information regarding locations, substances monitored, and frequencies.

Greece has not provided any background information on the QA/QC of the analyses

No information regarding pressures identified because of EQS exceedances was provided.

No information regarding KTM's or costs associated with the PoM's was provided.

No analysis in sediment were provided.

Greece only measured heptachlor and heptachlor epoxide in water, which is in accordance with the EQS Directive.

### **3.13. Hungary**

Hungary has not provided any background information on the monitoring programme, the pressures or the KTM's identified. No conclusion can be drawn about the QA/QC compliance.

No information regarding the costs involved with the PoM's was provided.

No analysis in sediment were provided.

All measurements reported were in compliance with the EQS Directive.

### 3.14. Ireland

Ireland has provided one background document on a preliminary monitoring programme:

- *Selection\_of\_Substances\_and\_Matrices\_Inland.pdf*
- 2020-3-13\_Monitoring\_for\_chemical\_subs\_TraC.pdf (TraC programme)
- WFD\_Water\_Sediment\_Biota\_prog\_2016to2021\_TraC.pdf (Transitional and coastal monitoring)
- Biota\_Monitoring\_Site\_Scheduling\_Rationale.pdf (Biota in inland waters)
- EPA\_Fish\_Monitoring\_Programme\_2019\_to\_2024.pdf (Inland biota monitoring)
- Biota\_Chemical\_Monitoring\_Programme\_Inland.pdf (Inland biota monitoring)
- River\_and\_Lake\_Sampling\_Points.pdf (Inland biota monitoring)
- Priority\_Substances\_Scoping\_Study\_report.pdf (Scoping study)
- Note\_on\_Key\_Types\_of\_Measures\_PPOM\_Reporting.pdf (PPOMs)

For bifenox, cybutryne, cypermethrin, dichlorvos, dicofol, perfluorooctane sulfonic acid and its derivatives (PFOS), HBCDD and heptachlor and heptachlor epoxide the conclusion was that the LOQ for these compounds did not fulfil the quality criteria for analysis for water.

Ireland has provided additional information on the frequencies, locations, type of monitoring.

No information regarding pressures identified because of EQS exceedances was provided. Likely pressures for emissions of the new substances in the EQS Directive 2013 are provided.

Information regarding KTM's was provided.

Ireland has not provided information on the costs associated with the PoM.

Ireland has reported 704 monitoring records in total. Table 13 displays the no match values (26 = 4%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Some measurements in sediment were performed for perfluorooctane sulfonic acid and its derivatives. Sediment measurements were done for Status analysis only. Ireland has not provided any additional information on the sediment analyses or EQS derivation for sediment for this substance as measurements only done for trend analysis. All substances with measurements in sediment also have measurements in water and/or biota.

Table 13: no match values for Ireland

Riverbasin	IRELAND	NEAGH BANN	NORTH WESTERN
Substances	Sediment	Sediment	Sediment
Perfluorooctane sulfonic acid and its derivatives	23	1	2

### 3.15. Italy

Italy has provided five background documents in native language:

- *ITB-adbpo-20181116-155148708\_AbDPo\_BackDoc\_RepWiseEQSD2018\_16nov2018.pdf*: information concerning KTM's
- *ITB-adbpo-20190208-160524752\_AbDPo\_ErrataCorrige\_BackDoc\_8feb2019.pdf*: Errata from former document
- *ITC-EQSD\_Background\_Document\_ITC122018.pdf*: Information from specific region.
- *ITE-adbtevere-20190128-130255490\_RELAZIONE\_FINALE\_EQSD\_gennaio2019.pdf*: Information from specific region
- *ITG\_-\_Reference\_EQSD\_Reporting\_\_6\_12.pdf*: Information concerning substances, locations, matrices, and frequency - also for specific region

These background documents did not contain specific information on the monitoring programme.

No additional information was provided in these documents regarding QA/QC of the analyses

No information regarding pressures identified because of EQS exceedances was provided.

No information regarding KTM's was provided.

No information regarding costs associated with the PoM is provided.

No measurements were done in the RBD of Sardinia.

No information is available for the RBD of Sicily or the pilot river basin district of Serchio.

Italy has reported 6409 monitoring records in total. Table 14 displays the no match values (55 = 0,86 %), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Some measurements in sediment were performed for heptachlor and heptachlor epoxide and dioxins and dioxin-like compounds. Sediment measurements were done for Trend analysis only. No information is provided how this information is further processed for Trend Analysis. All substances with measurements in sediment also have measurements in water and/or biota.
- Dioxins and dioxin-like compounds were measured in water several times, though the preferred matrix according to the EQS Directive is biota. Italy has not provided any additional information on the water analyses or EQS derivation for water for these substances. Dioxins are also measured in water and these measurements are in accordance with the EQS Directive. However, in the Padan District RBD only one measurement was done in biota, three were done in water and 23 were done in sediment. Only the biota measurements of dioxins are in accordance with the EQS Directive.

Table 14: no match values for Italy

Riverbasin	EASTERN ALPS	PADAN DISTRICT	
	Water	Sediment	Water
Heptachlor and heptachlor epoxide		23	
Dioxins and dioxin-like compounds	6	23	3

### 3.16. Latvia

Latvia has provided one background document in native language:

*Summary of additional monitoring programme and provisional measure programme: environmental quality standards for the implementation of the requirements of directives 2013/39/EU:* Information on the QA/QC on the chemical analyses  
Based on the background information, the following conclusions are drawn:

- All substances meet the QA/QC requirements according to the EQS Directive.
- In monitoring stations where both the water and biota matrix are analysed, the evaluation of the results has highlighted the problem that EQS in biota and water do not lead to the same assessment of water chemical status.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM's were formulated.

Given the uncertainty of the measures, costs have not been estimated for this PoM drafted. The amount of the costs will consist of the payment of hours by the experts involved and, at a later stage, the costs of carrying out additional monitoring and/or applying technical solutions.

Information on frequencies, monitoring locations and type of monitoring was provided per RBD.

No analysis in sediment were provided, as long-term trend analysis was assessed in biota, not sediment.

All measurements reported were in compliance with the EQS Directive.

### 3.17. Lithuania

Lithuania has provided two background documents containing legal approval of the monitoring programme (in English and Lithuanian), named *Legal-Act-Nutarimas\_EN.docx* and *Legal-Act-Nutarimas.docx*.

No additional information was provided in these documents regarding QA/QC of the analyses

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding costs associated with the PoM is provided..

No information is available for the Dauguva RBD.

Lithuania has reported 383 monitoring records in total. Table 15 displays the no match values (987 = 23%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Some measurements in sediment were performed, see table below. Most sediment measurements were done for Trend analysis only, a few measurements were done for Status measurements only. Lithuania has not provided any additional information on the sediment analyses or EQS derivation for sediment for these substances, or how the results are further processed for Trend analysis. All substances with measurements in sediment also have measurements in water and/or biota.
- Dioxins and dioxin-like compounds were measured in water several times, though the preferred matrix according to the EQS Directive is biota. Lithuania has not provided any additional information on the water analyses or EQS derivation for water for these substances. Dioxins were also measured in biota and these measurements are in accordance with the EQS directive.

Table 15: no match values for Lithuania

Riverbasin	LIELUPE	NEMUNAS		VENTA
Substances	Sediment	Sediment	Water	Sediment
Dicofol	1	12		2
Heptachlor and heptachlor epoxide	1	23		2
Terbutryn		1		
Dioxins and dioxin-like compounds		1	4	
Hexabromocyclododecane (HBCDD)		9		1
Quinoxifen	1	12		2
Perfluorooctane sulfonic acid and its derivatives		9		1
Cypermethrin		1		
Dichlorvos		1		
Bifenox		1		
Aclonifen		1		
Cybutryne		1		

### 3.18. Luxembourg

Luxembourg has provided one background document in German:

- *Zusätzliches Überwachungsprogramm und vorläufiges Maßnahmenprogramm für die neuen prioritären Stoffe der Richtlinie 2013/39/EU*: Information on the additional monitoring programme as well as on planned preliminary measures

Additionally Luxembourg referred to the online available document: *ENTWURF DES DRITTEN BEWIRTSCHAFTUNGSPANS FÜR DIE LUXEMBURGISCHE ANTEILE AN DEN INTERNATIONALEN FLUSSGEBIETSEINHEITEN RHEIN UND MAAS (2021-2027)* which is the Draft of the 3rd River Basin Management Plan of Luxembourg, including information on the monitoring program. As this document was not available on EIONET the assessment of this document was outside the scope of this project.

From this information it appeared that dicofol, PFOS, bifenox, cybutryne, cypermethrin, dichlorvos, HBCDD, and heptachlor and heptachlor epoxide (all water phase), as well as heptachlor and heptachlor epoxide (biota) did not reach the requirements of the QA/QC Directive. However, since the reporting in 2018, further efforts have been made in the area of analytics, so the requirements of the QA/QC directive are now met for almost all priority substances.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding costs associated with the PoM's is provided.

Detailed information regarding the type of monitoring, frequencies associated with this monitoring and locations were provided.

Luxembourg has reported 245 monitoring records in total. Table 16 displays the no match values (39 = 16%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Some measurements in sediment were performed, see Table 16. Sediment measurements were done for Trend analysis. Luxembourg has provided additional information on how the sediment analyses for these substances are further processed for Trend analysis in the draft of the 3<sup>rd</sup> River Basin Management Plan. Heptachlor and HBCDD are also measured in water and/or biota. In the Meuse RBD dioxins are only measured in settled sediment, in the Rhine RBD dioxins were also measured in biota several times.

Table 16: no match values for Luxembourg

Riverbasin	MEUSE	RHINE
Substances	Sediment - settled sediment	Sediment - settled sediment
Heptachlor and heptachlor epoxide	1	6
Dioxins and dioxin-like compounds	1	15
Hexabromocyclododecane (HBCDD)	1	15

### 3.19. Malta

Malta has provided one background document in English:

- *Environmental quality standards directive, preliminary programme of measures and supplementary monitoring*: Information regarding the supplementary monitoring programme

From this information it can be derived that in the upcoming monitoring programme, the monitoring frequency for water sampling and analysis will be once-a-month every year in line with WFD Annex V 1.3.4. Noting that a pilot study resulted in unquantifiable concentrations for all supplementary contaminants in all stations, indicates that the water bodies are not at risk of failing chemical status due to these contaminants, and that this frequency may be reduced following the first monitoring year, with monitoring continued in the longer term as part of the surveillance monitoring network as per Section 1.3.1 of Annex V of the WFD.

Next to the monitoring programme in the water phase, monitoring in sediment will be carried out for the supplementary contaminants that tend to accumulate in sediment in line with Article 3 (6) of Directive 2013/39/EC. Such monitoring data will not be used for assessment of status but for the purpose of long-term trend analysis. While these contaminants will only be monitored in sediment/biota, their concentrations in water will be calculated on the basis of equilibrium partitioning methods for the purpose of assessment of status. Malta has not provided any additional information regarding this equilibrium partitioning method.

Furthermore, Malta does not have its own laboratories to carry out this analysis in line with the QA/QC Directive and relies on other European laboratories that are commissioned to carry out this task. During the selection of the appropriate laboratory for analysis of supplementary contaminants, Malta states that it will be ensured that the necessary methodologies and quality control is adopted to achieve reliable results.

No information regarding pressures identified because of EQS exceedances was provided.

No information regarding KTM's was provided.

No information regarding costs associated with the PoM's is provided.

Malta has reported 43 monitoring records in total. Table 17 displays the no match values (24 = 58%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Substances measured in sediments only for trend analysis.

Table 17: no match values for Malta

Riverbasin	MALTA
<b>Substances</b>	<b>Sediment</b>
Dicofol	4
Heptachlor and heptachlor epoxide	3
Dioxins and dioxin-like compounds	3
Hexabromocyclododecane (HBCDD)	3
Quinoxifen	4
Perfluorooctane sulfonic acid and its derivatives	4
Cypermethrin	3

### 3.20. Netherlands

The Netherlands have provided one document containing general background information about the four RBMPs of relevance in the Netherlands, named

- *werkprogramma\_krw\_voor\_sgbp\_2022-2027\_okt\_2018.pdf*

Additionally information was provided for each RBD, including monitoring data, monitoring sites and the program of measures.

Besides, three documents were provided regarding the water governance structure in the Netherlands, named

- *Ecorys-Bekostiging\_waterbeheer-Wie\_betaalt\_KRW.pdf*,
- *OECD-Study\_on\_water\_governance\_in\_the\_Netherlands.pdf*.
- *Toekomstbestendige\_duurzame\_financiering\_van\_het\_Nederlandse\_waterbeheer.pdf*

*Documents from the Netherlands included information on monitoring locations, the measuring program and measures in accordance with the EU format.*

No information regarding QA/QC of the analysis is available in these report.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding costs associated with the PoM's is available in these reports.

In the Netherlands various measurements were included with a 'last monitored' value of 0. These measurements have been listed as 'not measured', since no information is available regarding the date of these measurements and therefore the data could not be checked, this however does not actually mean there is no data. The Netherlands have reported 1258 monitoring records in total. Table 18 displays the no match values (116 records = 9%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

Dioxins and dioxin-like compounds were measured in water several times, though the preferred matrix according to the EQS Directive is biota. The Netherlands have not provided any additional information on the water analyses or EQS derivation for water for these substances. Data on dioxin measurements in biota were currently not available, but will updated in the monitoring programme to be reported in 2022. No analysis in sediment were provided.

*Table 18: no match values for the Netherlands*

	Riverbasin	EMS	MEUSE	RHINE	SCHELDT
Substances		Water	Water	Water	Water
Dioxins and dioxin-like compounds		4	14	32	9

### 3.21. Poland

Poland provided two PDF documents:

*EQS2018\_PLSM.pdf*, in native language. This document was translated by the translation software of the European Commission. The document provides information about the locations of monitoring sites per RBD regarding measurements of the new Priority Substances. Additionally also the document

*BackgroundDocument\_PL.pdf*, in English. This document includes information regarding KTM and PoM approach.

According to the document analysis of all substances meet the requirements of the Quality Assurance and Quality Control or QA/QC Directive. However, no further information is provided.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding the costs associated with the PoM's is available.

According to the document, several "test" substances will be tested as part of diagnostic monitoring, with testing at each point covering all the new Priority Substances. However, from the document it becomes not clear how this is performed.

According to the extracts of the WISE database, the following substances were not measured:

- Quinoxyfen
- Cybutryne
- Bifenox
- Cypermethrin
- Dichlorvos
- Aclonifen
- Terbutryn

No measurements were provided for the Swieza RBD from the WISE database.

No analysis in sediment were provided.

The analyses which were done, were in compliance with the EQS Directive.

### 3.22. Portugal

Portugal has provided 10 different background documents, with detailed information for 10 different regions, in native language, called *PTRH(1-10\_\_SP\_NormasQualidadeAmbiental.pdf*. However, no nationwide information was provided regarding the supplementary monitoring programme.

No measurements were provided for the Azores RBD. Also, not all substances were measured in all RBDs.

No information regarding QA/QC of the analysis is available.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding the costs associated with the PoM's is available.

Portugal has reported 198 monitoring records in total Table 21 displays the no match values (8= 4%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Dioxins and dioxin-like compounds were measured in water several times in the Madeira RBD, though the preferred matrix according to the EQS Directive is biota. Portugal has not provided any additional information on the water analyses or EQS derivation for water for these substances. In the Madeira RBD dioxins were not measured in biota.

No analysis in sediment were provided.

*Table 21: no match values for Portugal*

<b>Riverbasin</b>	<b>MADEIRA</b>
<b>Substances</b>	<b>Water</b>
Dioxins and dioxin-like compounds	8

### 3.23. Romania

Romania has provided one background document in native language:

- *Report on the establishment of the supplementary monitoring programme and the preliminary programme of measures:* Information regarding the supplementary monitoring programme

According to this document monitoring of heptachlor and heptachlor epoxide (biota), aclonifen, cybutryne, dichlorvos, and terbutryn (water) lead to failure to achieve good chemical status.

No information regarding QA/QC of the analysis is available.

Relevant pressures, associated with the observed EQS exceedances were identified. Based on that information, KTM were formulated.

No information regarding the costs associated with the PoM's is available.

The following substances were not measured:

- Perfluorooctane sulfonic acid and its derivatives
- Dioxins and dioxin-like compounds

No analysis in sediment were provided.

All measurements reported were in compliance with the EQS Directive.

### 3.24. Slovakia

Slovakia provided four background documents in native language.

- *PRILOHA\_\_2\_METODY.pdf*: Information concerning analytical methods
- *SK\_DOPLNKOVY\_PROGRAM\_MONITOROVANIA\_OPATRENIA\_NOVE\_PL\_18\_12\_2018.pdf*: Information on the monitoring programme
- Two files containing monitoring locations

The second document was translated. From this document it appeared that at the end of 2018, analytical methods for aclonifen, bifenox, dicofol, quinoxyfen, cybutryne and terbutryn were fully implemented in the water matrix in Slovakia. The methods for cypermethrin, heptachlor and heptachlor epoxide and dichlorvos do not meet the requirement for the water matrix method. The method for dicofol in biota fulfilled the method requirement. The methods for heptachlor and heptachlor (biota), PFOS, HBCDD and dioxins (both in water and biota) are still under development.

The cost estimates for the PoM for newly identified priority substances under the EQS Directive has not yet been estimated. According to the analysis performed in the document, it is first necessary to remove or reduce uncertainties by means of research and improvement in the level of knowledge on the occurrence and sources of pollutants.

The additional monitoring programme for newly identified priority substances is ready for the period 2019-2024. The proposal includes bodies of surface water with different years (2019-2024) which have foreseen monitoring for the purpose of assessing chemical status under the Slovak Water Monitoring Programme for 2016-2021. Overall, 340 water bodies of surface water in the water matrix and 421 bodies of surface water in the matrix of biota are monitored. For the water matrix, all priority substances will be monitored at a monthly frequency for a specified year during that cycle.

Slovakia has reported 6080 monitoring records in total. Table 22 displays the no match values (332 records = 5,5%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Dioxins and dioxin-like compounds were measured in water several times, though the preferred matrix according to the EQS Directive is biota. <sup>2</sup>Slovakia has not provided any additional information on the water analyses or EQS derivation for water for these substances. Dioxins were also measured in biota and these measurements are in accordance with the EQS standard.

No analysis in sediment were provided.

Table 22: no match values for Slovakia

Substances	Riverbasin	DANUBE	VISTULA
		Water	Water
Dioxins and dioxin-like compounds		128	5

<sup>2</sup> Slovakia states that they did not measure dioxins in water, however, as dioxin measurements in water are available for Slovakia this statement is not adjusted.

### 3.25. Slovenia

For Slovenia no information was available in the extracts of the WISE database. However, Slovenia provided two background document in native language:

- *Dopolnilni program monitoringa za nove prednostne snovi iz Direktive 2008/105/EU*: this document contains information on the complementary monitoring program for new priority substances from Directive 2008/105 / EU
- *Predhodni program ukrepov za 12 posameznih snovi, ki so s predpisom, ki ureja stanje površinskih voda, uvrščene na seznam kemijskih parametrov*: this document contains the preliminary program of measures for 12 individual substances that are included in the list of chemical parameters by the regulation governing the status of surface waters

Additionally four Excel tables were shared with information on the monitoring programme (such as measurement frequency, measurement purpose and last measured dates) and on KTM's.

The documents were translated, and contained detailed information regarding the monitoring programme.

The priority substances included in the operational monitoring networks of the Danube and the Adriatic Sea are dicofol, cypermethrin, heptachlor and heptachlor epoxide, terbutryn, dichlorvos, bifenoxy, cybutryne, quinoxifen, acclonifen, dioxins and dioxin-like compounds, PFOS and HBCDD. Dicofol, dioxins and dioxin-like compounds, heptachlor and heptachlor epoxide, PFOS and HBCDD are monitored in biota. Measurements in surface water are to be carried out with a frequency of 12 times a year, at least once every six years; biota monitoring is to be carried out once every six years; sediment monitoring is to be carried out once every three years. For each substance the possible sources of pollution are indicated, including a review of the measures implemented under current legislation and a demonstration of the effects of human activity on water status. 38 of the 121 water bodies in the Danube RBD are included in the monitoring of the priority substances 34-45 (31% coverage of all water bodies) and 18 of 34 water bodies in the Adriatic Sea RBD are included in the monitoring of the priority substances 34-45 (53% coverage).

Information on the QA/QC was provided for all substances monitored in surface water, biota and sediment, including analytical methods, measurement principles, limit of detection, limit of quantification and measurement uncertainty. QA/QC requirements are not met for all substances.

Significant pressures are listed per RBD per substances. Limited information regarding KTM's was provided. According to the received Excel files only dioxins fail due to antropogenic pressure and the KTM appointed is KTM4 - Remediation of contaminated sites.

No information on the costs associated with the PoM's is provided.

### 3.26. Spain

Spain has delivered one background document in English:

- *Supplementary MONITORING PROGRAMME, (Article 3 (1a (ii)) of Directive 2008/105/EC):* Information regarding the supplementary programme

In the background document some reasoning is provided for why some substances have not been measured at certain locations. No measurements were provided for the following RBDs:

- Andalusian Mediterranean basins
- Balearic Islands
- Douro
- Eastern Cantabrian
- Ebro
- Galician Coast
- Guadalete-Barbate
- Guadalquivir
- Guadiana
- Jucar
- Minho-Sil
- Segura
- Tagus
- Tinto-Odiel-Piedras
- Ceuta
- Melilla

No additional QA/QC information is provided.

No pressures for the substance have been identified, so no preliminary KTM's and associated costs are identified.

Spain has reported 713 monitoring records in total. Table 23 displays the no match values (7 records = 1%), as derived from the extracts from the monitoring programme. Below the 'no match' values are explained.

- Spain reported biota-other for several measurements in the Western Cantabrian RBD. No additional information is provided about this specific matrix.

Quinoxifen measurements in sediment were performed in the Western Cantabrian RBD, though according to the EQS Directive water is the preferred matrix. Sediment measurements were done for Trend analysis only. Spain has not provided any additional information on how these analysis are further processed for Trend analysis.

Table 23: no match values for Spain

Riverbasin	WESTERN CANTABRIAN	
	Biota - other	Sediment - settled sediment
<b>Substances</b>		
Dicofol	1	
Heptachlor and heptachlor epoxide	1	
Dioxins and dioxin-like compounds	1	
Hexabromocyclododecane (HBCDD)	1	
Quinoxifen		2
Perfluorooctane sulfonic acid and its derivatives	1	

### 3.27. Sweden

For Sweden no information was available in the extracts of the WISE database. However, Sweden provided one background document in native language:

- *OP\_12\_prioamnen.pdf*: Information on the supplementary monitoring programme

The document was translated, and it contained detailed information regarding the monitoring programme.

The priority substances included in the operational monitoring network are PFOS, dioxins and dioxin-like compounds, aconifen, bifenoxy, cybutryne, cypermethrin and terbutryn. There are relevant local emission sources as well as long range diffuse sources. Substances that are lower priority for operational monitoring due to uncertainties in identifying where the substance is emitted through point or other diffuse sources are quinoxifen and dichlorvos.

The priority substances for surveillance monitoring are PFOS, dioxins and dioxin-like compounds and HBCDD. Those which are lower priority for surveillance monitoring, but where there are requirements for trend monitoring, are dicofol and heptachlor/heptachlor epoxide.

The substances designated in the Directive for trend monitoring are dicofol, PFOS, quinoxifen, dioxins and dioxin-like compounds, HBCDD and heptachlor/heptachlor epoxide. Of these, the following may be monitored less intensively: PFOS, dioxins and dioxin-like compounds, HBCDD and heptachlor/heptachlor epoxide.

For several substances, analytical packages with reporting limits below 30 % of the quality requirement are currently missing. Those substances are cypermethrin, dichlorvos, dicofol, heptachlor/heptachlor epoxide and bifenoxy.

No information regarding pressures identified because of EQS exceedances was provided.

No information regarding KTM's was provided.

No additional information regarding the costs associated with the PoM's is provided.

Detailed information regarding the number and locations of monitoring sites is provided. Both operational and surveillance monitoring is carried out, starting from 2018, every six years at a minimum frequency of 12 times/year in water, and 1 time per year in biota and sediment.

## 4. APPENDICES

### 1.1 Appendix 1 overview of pressures

<b>Overview Significant Pressures</b>
<b>1.1 - Point - Urban waste water</b>
<b>1.2 - Point - Storm overflows</b>
<b>1.3 - Point - IED plants</b>
<b>1.4 - Point - Non IED plants</b>
<b>1.5 - Point - Contaminated sites or abandoned industrial sites</b>
<b>1.6 - Point - Waste disposal sites</b>
<b>1.7 - Point - Mine waters</b>
<b>1.8 - Point - Aquaculture</b>
<b>1.9 - Point - Other</b>
<b>2.1 - Diffuse - Urban run-off</b>
<b>2.2 - Diffuse - Agricultural</b>
<b>2.3 - Diffuse - Forestry</b>
<b>2.4 - Diffuse - Transport</b>
<b>2.5 - Diffuse - Contaminated sites or abandoned industrial sites</b>
<b>2.6 - Diffuse - Discharges not connected to sewerage network</b>
<b>2.7 - Diffuse - Atmospheric deposition</b>
<b>2.8 - Diffuse - Mining</b>
<b>2.9 - Diffuse - Aquaculture</b>
<b>2.10 - Diffuse - Other</b>
<b>3.1 - Abstraction or flow diversion - Agriculture</b>
<b>3.2 - Abstraction or flow diversion - Public water supply</b>
<b>3.3 - Abstraction or flow diversion - Industry</b>
<b>3.7 - Abstraction or flow diversion - Other</b>
<b>4.3.6 - Hydrological alteration - Other</b>
<b>7 - Anthropogenic pressure - Other</b>
<b>8 - Anthropogenic pressure - Unknown</b>
<b>9 - Anthropogenic pressure - Historical pollution</b>
<b>No significant pressure</b>

## 1.2 Appendix 2 overview of key type measures

<b>KTM1 - Construction or upgrades of wastewater treatment plants</b>
<b>KTM3 - Reduce pesticides pollution from agriculture.</b>
<b>KTM4 - Remediation of contaminated sites (historical pollution including sediments, groundwater, soil)</b>
<b>KTM10 - Water pricing policy measures for the implementation of the recovery of cost of water services from industry</b>
<b>KTM12 - Advisory services for agriculture</b>
<b>KTM13 - Drinking water protection measures (e.g. establishment of safeguard zones, buffer zones etc)</b>
<b>KTM14 - Research, improvement of knowledge base reducing uncertainty</b>
<b>KTM15 - Measures for the phasing-out of emissions, discharges and losses of Priority Hazardous Substances or for the reduction of emissions, discharges and losses of Priority Substances</b>
<b>KTM16 - Upgrades or improvements of industrial wastewater treatment plants (including farms).</b>
<b>KTM17 - Measures to reduce sediment from soil erosion and surface run-off</b>
<b>KTM21 - Measures to prevent or control the input of pollution from urban areas, transport and built infrastructure</b>
<b>KTM22 - Measures to prevent or control the input of pollution from forestry</b>
<b>KTM99 - Other key type measure reported under PoM</b>