



Comprehensive Atmospheric Monitoring Programme

Deposition of air pollutants around the North Sea and the North-East Atlantic in 2007



OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.

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Executive summary

This report presents the results of monitoring undertaken by OSPAR Contracting Parties for the Comprehensive Atmospheric Monitoring Programme (CAMP) during 2007. Under the CAMP, OSPAR Contracting Parties are committed to monitoring, on a mandatory basis, the concentrations of a range of heavy metals, organic compounds and nutrients in precipitation and air, and their depositions. The CAMP also encourages OSPAR Contracting Parties to monitor, on a voluntary basis, additional compounds (such as certain persistent organic pollutants). The report gives detailed information on observed atmospheric inputs of selected contaminants to the OSPAR maritime area and its regions during 2007.

Methodological improvements behind the observations delivered by some Contracting Parties have produced significant improvements in their estimates of deposited pollution. Lowering detection limits has delivered confidence in apparent decline in toxic inputs to the North Sea, whilst simultaneously indicating that levels nevertheless remain above environmental background.

There has been a slight decline in the numbers of observations delivered by Contracting Parties. This has resulted solely from improvements introduced by one country which delayed data delivery for 2007 observations. Without this factor, the numbers of observations would have increased. However, no Contracting Party achieved 100% implementation of the monitoring programme for the pollutants in precipitation in 2007, due to data loss for individual samples by all countries. The airborne pollutant programme continued to show greatest divergence in practice between countries. Four achieved 100% implementation of the mandatory monitoring programme, one went so far as to deliver observations for over 70 additional components not listed in the CAMP programme, whilst three chose not to monitor any airborne components whatsoever, regardless of mandatory status.

Improved methodologies benefitted especially observations of lindane which is largely deposited from the atmosphere over the OSPAR region with lower depositions reported for Iceland compared to the North Sea. Depositions appear to be showing a relatively consistent decline across most monitoring stations. That this decline is continuing seven years after most countries phased out lindane in Europe is a demonstration of the benefit in maintaining monitoring programmes beyond timeframes of managerial action. Nevertheless, there is evidence of small depositions arriving from very distant sources.

Translation of nitrogen observations into estimated depositions indicates no observable improvement in deposition levels over recent years. The CAMP programme provides independent verification of model calculations that actual changes in emissions may be more restricted than had been anticipated.

Mercury depositions in precipitation fell dramatically since 1990 but in recent years have shown little change. Observations of mercury concentrations in air around OSPAR coasts also suggest no improvement in the last three or four years.

Récapitulatif

Ce rapport présente les résultats de la surveillance continue mise en œuvre par les parties contractantes à OSPAR dans le cadre du Programme exhaustif de surveillance continue de l'atmosphère (CAMP) en 2007. Aux termes du programme CAMP, les parties contractantes à OSPAR s'engagent à mettre en œuvre une surveillance continue obligatoire des concentrations d'un ensemble de métaux lourds, de composés organiques et de nutriments dans les précipitations et dans l'atmosphère, ainsi que de leurs dépôts. Le programme CAMP encourage aussi les parties

contractantes à OSPAR à pratiquer une surveillance continue, sur la base du volontariat, de composés supplémentaires (tels que certains polluants organiques persistants). Le rapport présente des informations détaillées sur les apports atmosphériques observés de certains contaminants dans la zone maritime OSPAR et dans ses régions en 2007.

Les améliorations méthodologiques apportées aux observations transmises par certaines parties contractantes ont amélioré de façon significative leurs estimations des quantités de polluants déposées. L'abaissement des limites de détection a permis de considérer de manière fiable la diminution vraisemblable des apports toxiques en Mer du Nord tout en indiquant simultanément que les niveaux restent tout de même supérieurs aux teneurs ambiantes présentes dans l'environnement.

Le nombre d'observations transmises par les parties contractantes a légèrement diminué. Cela résulte uniquement de l'introduction par l'un des pays d'améliorations qui a retardé la transmission des données d'observations pour 2007. En l'absence de ce facteur, le nombre d'observations aurait augmenté. Cependant, aucune partie contractante n'est parvenue à mettre en œuvre à 100 % du programme de surveillance continue des polluants dans les précipitations en 2007, car tous les pays ont perdu des données d'échantillons individuels. La mise en œuvre du programme concernant les polluants atmosphériques continue de mettre en avant les différences les plus grandes entre les pratiques des différents pays. Quatre pays ont atteint une mise en œuvre à 100 % du programme de surveillance continue obligatoire, un autre pays a transmis des observations pour plus de 70 polluants supplémentaires ne figurant pas dans le programme CAMP, tandis que trois pays ont choisi de ne pratiquer aucune surveillance continue des polluants atmosphériques, sans tenir compte du caractère obligatoire de cette surveillance.

L'amélioration des méthodologies a été particulièrement bénéfique pour les observations du lindane qui se dépose essentiellement à partir de l'atmosphère dans la région OSPAR, les dépôts observés étant moins élevés pour l'Islande que pour la mer du Nord. Les dépôts semblent diminuer d'une manière relativement uniforme à travers la plupart des stations de surveillance continue. Le fait que cette diminution se poursuive sept ans après que la plupart des pays ont éliminé progressivement le lindane en Europe démontre l'intérêt que représente le maintien des programmes de surveillance continue au-delà des délais prévus pour les mesures de gestion. Il est cependant prouvé que des dépôts peu importants arrivent de sources très éloignées.

Les observations pour l'azote, traduites en termes d'estimations des dépôts, n'indiquent pas d'amélioration observable des niveaux des dépôts au cours de ces dernières années. Le programme CAMP apporte une vérification indépendante des calculs réalisés avec les modèles, indiquant que les changements des émissions sont en réalité peut-être plus limités que prévu.

Les dépôts de mercure dans les précipitations ont diminué de manière spectaculaire depuis 1990, toutefois les changements observés au cours de ces dernières années ont été minimes. Les observations des concentrations atmosphériques de mercure autour des côtes OSPAR suggèrent aussi qu'il n'y a pas eu d'amélioration au cours des trois ou quatre dernières années.

1. Introduction

This report collates and describes the observations from coastal monitoring stations across the OSPAR region (see Figure 1.1) under the Comprehensive Atmospheric Monitoring Programme (CAMP), this forming one element within the wider Joint Assessment and Monitoring Programme of OSPAR. The CAMP aims to assess, as accurately as appropriate, the atmospheric input of the selected contaminants to the maritime area and regions thereof (Figure 1.1) on an annual basis through monitoring the concentrations of selected contaminants in precipitation and air, and determining their deposition. The monitoring regime employed is set out in the CAMP Principles (OSPAR Agreement 2001-7), describing the relevant substances, sampling approach, locations and frequency, and assessment methodologies.



Figure 1.1: OSPAR maritime area and regions: I: Arctic waters, II: Greater North Sea, III: Celtic Seas, IV: Bay of Biscay, V: Wider Atlantic

The components of interest to the CAMP are divided into two groups, for measurement on a mandatory basis and for measurement on a voluntary basis. These are listed in Table 1.1.

Table 1.1: Components to be measured under the CAMP

	Mandatory	Voluntary
Precipitation	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn, γ -HCH, NH_4^+ , NO_3^-	PCB 28,52,101,118,138,153,180 PAHs: Phenanthrene, anthracene, flouranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene
Airborne	NO_2 , HNO_3 , NH_3 , NH_4^{+a} , NO_3^{-a}	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn, γ -HCH, PCB 28,52,101,118,138,153,180, PAHs: Phenanthrene, anthracene, flouranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene, NO

^a) total ammonium ($\text{NH}_3 + \text{NH}_4^+$) and total nitrate ($\text{HNO}_3 + \text{NO}_3^-$) is an alternative

The CAMP Principles call for each Contracting Party bordering the OSPAR maritime area (excluding the EU) to operate at least one monitoring station on the coast and/or offshore as part of the CAMP. Where Parties border more than one region (see Figure 1.1) at least one station should be operating in each. These stations should be so-called background stations, *i.e.* not directly influenced by local emission sources. The stations should be located not more than 10 km from the coastline.

The data assembled by monitoring stations are reported by Contracting Parties to the Norwegian Institute for Air Research (NILU) on a yearly basis, using a reporting format and according to the time schedule set out in the CAMP Principles. Based on the data received, NILU prepares a CAMP data report on an annual basis for OSPAR to examine.

The present CAMP data report "Pollutant depositions and air quality around the North Sea and the North-East Atlantic in 2007" gives in chapter 2 an overview of reported data and the implementation of the CAMP Principles in 2007. The geographical coverage, the contaminants from the mandatory and voluntary lists which have been monitored, and the timeliness of data submission are presented. In chapter 3 an overview is given of the 2007 annual average values of the components subject to mandatory monitoring for the North-East Atlantic. Chapter 4 provides short summaries of observations undertaken of lindane, nitrogen and mercury in recent years, as a contribution to the 2009 assessment of atmospheric inputs of selected substances to the OSPAR area (publication 447/2009). These have been produced to meet the request by OSPAR for short stand-alone text boxes. In this section estimates of depositions calculated using the OSPAR "Method 3a" as laid down in the CAMP Principles are given, providing a point of comparison with purely model-based estimates as provided by the 2009 assessment of atmospheric inputs (publication 447/2009). Chapter 5 summarises the report's observations on the reported CAMP data for 2007. The data submitted by Contracting Parties are appended to this report (Appendix 1).

2. The OSPAR CAMP Monitoring Programme in 2007

2.1 Geographical coverage

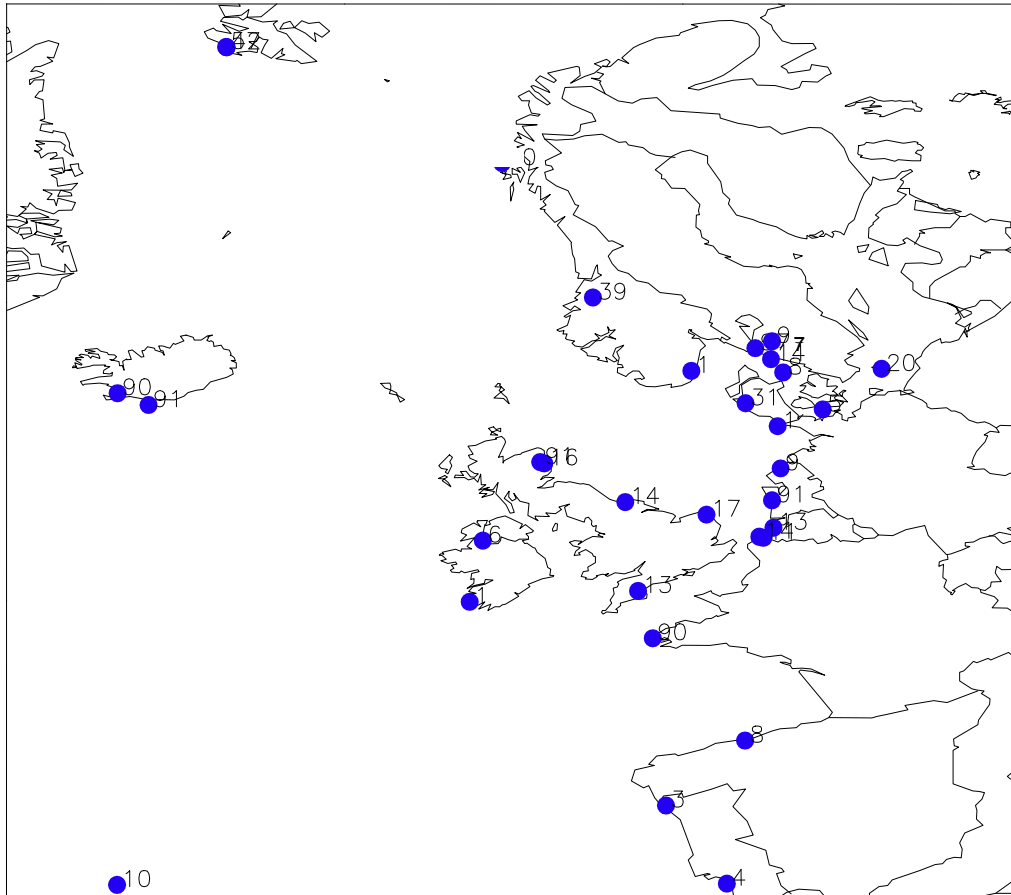


Figure 2.1: Monitoring sites reporting to OSPAR in 2007. Station numbers are the station numbers listed in table 2.1 without the country letters

The reporting network during 2007 did not change, although there were minor changes in which components were observed at each station. Despite the mandatory label applied to the first column of components in table 1.1, not all stations reported data for all components, as commented in section 2.2. Table 2.1 details the locations of monitoring stations, and indicates the broad nature of monitoring undertaken: observation of the deposition of pollutants in precipitation (p), and/or monitoring of ambient air quality (a).

Table 2.1: Stations reporting to OSPAR in 2007

Country	Station number	Station name	OSPAR Region	Lat.	Long.	Elev. (m)	Distance to sea (km)	Precip.(p) airborne(a)
Iceland	IS0090R	Irafoss	I	64°08' N	21°54' W	52	1	p
	IS0091R	Storhofdi	I	63°24' N	20°17' W	118	0.5	pa
Norway	NO0057R	Ny-Ålesund	I	78°55' N	11°55' E	8	0.3	p
	NO0042R	Zepellinfjell	I	78°54' N	11°53' E	474	2	a
	NO0039R	Kårvatn	I	62°47' N	8°53' E	210	70	pa
	NO0001R	Birkenes	II	58°23' N	8°15' E	190	20	pa
Belgium	BE0011R	Moerkerke	II	51°15' N	3°21' E	10	12	a
	BE0013R	Houtem	II	51°01' N	2°35' E	0	9	a
	BE0014R	Koksijde	II	51°7' N	2°30' E	7	1.5	pa
Netherlands	NL0009R	Kollumerwaard	II	53°20' N	6°17' E	1	7.5	pa
	NL0091R	De Zilk	II	52°18' N	4°31' E	4	2.5	pa
Germany	DE0001R	Westerland	II	54°56' N	8°19' E	12	0.09	pa
Denmark	DK0005R	Keldsnor	II	54°44' N	10°44' E	10		p
	DK0008R	Anholt	II	56°43' N	11°31' E	40	~0.5	pa
	DK0020R	Pedersker	II	55°01' N	14°57' E	5		p
	DK0031R	Ulborg	II	56°17' N	8°26' E	40	20	pa
Sweden	SE0014R	Råö	II	57°24' N	11°55' E	10	0.1	pa
	SE0097R	Gårdsjön	II	58°03' N	12°01' E	113	12	p
United Kingdom	GB0013R	Yarner Wood	II	50°36' N	3°43' W	119	16.9	pa
	GB0014R	High Muffles	II	54°20' N	0°48' W	267	20.8	pa
	GB0016R	Glen Saugh	II					pa
	GB0091R	Banchory	II	57°05' N	2°32' W	120	23.6	pa
	GB0017R	Heigham Holmes	II	52°43' N	1°37' E	0	4.4	pa
Ireland	GB0006R	Lough Navar	III	54°26' N	7°54' W	130	18.8	pa
	IE0001R	Valentia Island	III	51°56' N	10°15' W	9	0	p
France	FR0090R	Porspoder	II/IV	48°30' N	4°46' W	30	0.5	p
Spain	ES0008R	Niembro	IV	43°26' N	4°51' W	115	~0.5	pa
Portugal	PT0003R	Viana do Castelo	IV	41°42' N	8°48' W	16	4	p
	PT0004R	Monte Velho	IV	38°05' N	8°48' W	43	1.5	p
	PT0010R	Angra do Heroismo	V	38°40' N	27°13' W	74	1	p

2.2 Completion of the observation programmes

The Comprehensive Atmospheric Monitoring Programme (CAMP) can provide ground truth data on atmospheric pollution of OSPAR waters in a coordinated and geographically appropriate manner. The mandatory programme for observation of pollutants in precipitation was not fully achieved by any Contracting Party in 2007 (five had 100% implementation in 2006). Although Belgium, Germany and Sweden undertook measurements of all components, occasional sample loss in sampling and/or analysis reduced data delivery below 100%. The least reported contaminants in precipitation are mercury (7 reporting countries) and lindane (6 reporting countries). Lindane has mandatory status, but

non-implementation has been a deliberate choice by some countries, this policy decision having been stated and explained to OSPAR in the past.

The mandatory programme for airborne pollutants showed very great divergence in chosen practice between Contracting Parties. Full implementation and data delivery by Germany, Norway, Spain and Sweden, and delivery of data by Norway for over 70 components not selected by CAMP for observation contrasted with no observation data delivered for any airborne components by France, Ireland and Portugal regardless of mandatory or voluntary status. Non-implementation has been a consistent policy for these countries.

From the combined numbers of Contracting Parties and of pollutants, the percentage data delivery for the mandatory contaminant monitoring can be determined, based on the assumption that full completion of the programme would be represented by delivery of 12 monthly averages which pass quality control criteria for each of the listed components. The mandatory programme for components in precipitation, for example, contains 11 substances and that for airborne concentrations contains at least 3 substances, so that 14 x 12 month averages successfully meeting quality control criteria would be needed to achieve 100% delivery.

Table 2.2: Mandatory monitoring of contaminants in precipitation, 2007. Dots indicate observations

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	γ -HCH	NH ₄	NO ₃
Belgium	•	•	•	•	•	•	•	•	•	•	•
Denmark	•	•	•	•	•		•	•		•	•
France	•	•	•	•	•		•	•		•	•
Germany	•	•	•	•	•	•	•	•	•	•	•
Iceland	•	•	•	•	•		•	•	•	•	•
Ireland	•	•	•	•	•	•	•	•		•	•
Netherlands	•	•	•	•	•	•	•	•	•	•	•
Norway	•	•	•	•	•	•	•	•	•	•	•
Portugal		•		•	•		•	•	•	•	•
Spain	•	•	•	•	•		•	•		•	•
Sweden	•	•	•	•	•	•	•	•	•	•	•
United Kingdom	•	•	•	•	•	•	•	•		•	•

Table 2.3: Mandatory monitoring of contaminants in air, 2007. Dots indicate observations

	NO ₂	NO ₃ /HNO ₃	NH _x
Belgium	•		
Denmark	•	•	•
France			
Germany	•	•	•
Iceland		•	
Ireland			
Netherlands	•	•	•
Norway	•	•	•
Portugal			
Spain	•	•	•
Sweden	•	•	•
United Kingdom	•	•	•

Fulfilment of the CAMP programme expressed as a percentage is shown in table 2.4. Fulfilment of the combined precipitation plus airborne mandatory programmes was 75%, down from 76.9% in 2006, and 79.0% in 2005. However, the main cause of the decline was technical: changes to precipitation monitoring by the Netherlands required prolonged quality control such that observations have not yet been released. When available in due course the overall completion rate is anticipated to reach 80%, potentially slightly better than 2006 and close to 2005 levels. Non-observation of mercury and lindane accounts for much of the remaining fulfilment shortfall. Also, some countries choose not to implement any of the mandatory airborne programme. Occasional loss of data accounts for remaining deficits, for example, due to sample contamination or loss. Fulfilment of the voluntary programme improved to 36.4% in 2007, up from 26.5% in 2006 and 27.8% in 2005.

Table 2.4: *Percentage completion of the CAMP programme 2007*

	Precipitation		Airborne	
	Mandatory	Voluntary	Mandatory	Voluntary
Belgium	91.7	0.0	33.3	34.6
Denmark	81.8	0.0	75.0	48.6
France	83.3	0.0	0.0	0.0
Germany	95.1	100.0	100.0	56.7
Iceland	90.9	43.8	25.0	59.3
Ireland	84.8	0.0	0.0	0.0
Netherlands	16.4	0.0	80.0	23.1
Norway	90.9	43.8	100.0	92.3
Portugal	55.3	0.0	0.0	0.0
Spain	81.8	0.0	100.0	62.5
Sweden	94.7	100.0	100.0	68.0
United Kingdom	90.9	0.0	96.7	93.6
<i>mean</i>	79.8	24.0	59.2	44.9

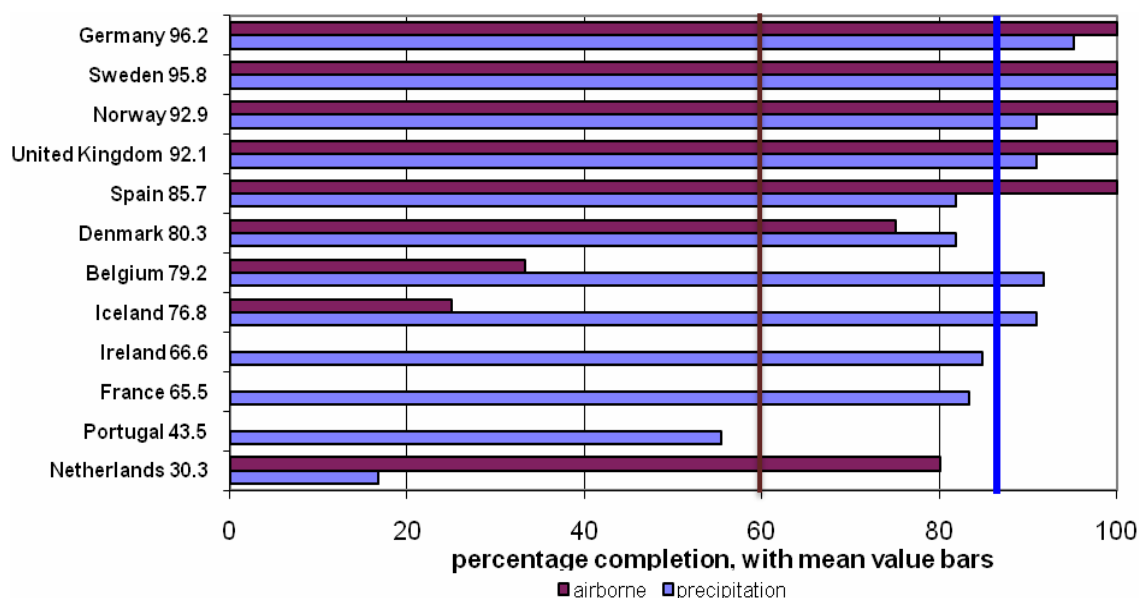


Figure 2.2: *Completion of the mandatory programmes (100%=12 months x 14 values)*

2.3 Timeliness of reporting

Reporting of observation data for 2007 was perhaps the most successful of recent years. All but one country delivered data within the time schedule. Only the UK missed the target date, but even here moved up from 'red' category (no delivery before INPUT/submission of the draft report) to 'pink' category (too late for any data validation, but prior to INPUT). Table 2.6 gives an overview of the actual receipt of national observation reports.

Table 2.5: *Timetable for data reporting according to the CAMP Principles*

30 th June	Call for metadata and data issued from NILU (regarding new data and metadata), with instructions and reference to supporting software (for example where to find tools on the NILU website).
30 th September	Participants submit data and metadata via email or on diskette, in specified formats.
31 st October	NILU returns data and metadata via email or on diskette in the form of a 'validation report' to data originators for verification and signing off by the data originators within two weeks of receipt.

Table 2.6: *Timeline of reporting of 2007 observations*

Contracting Party	Data delivered	
June 30 - Deadline for data request issue by NILU		
Belgium	✓	
Denmark	✓	
France	✓	
Germany	✓	
Iceland	✓	
Ireland	✓	
Netherlands	✓	
Norway	✓	
Portugal	✓	
Spain	✓	
Sweden	✓	
September 30 - Deadline for receipt of data		
October 31 - Deadline for issue of Validation Reports by NILU		
United Kingdom	✓	
January 12, 2008 - Reporting to INPUT by NILU		
February 2008 – INPUT, London		

2.4 Reporting of additional components

Contracting Parties report a wider range of components not covered by CAMP. This data is managed and stored by the Data Manager in the same way as for the regular data. Table 2.7 lists all components reported by Contracting Parties during 2007 (excluding major ions submitted for quality control, and components of no clear relevance to CAMP), this time divided by precipitation and airborne components. These are colour-coded to indicate their status as mandatory components (green), voluntary components (blue) or additional components (red), and are listed with the country code of Contracting Parties concerned.

The main body of this report describes the observations of the mandatory components only. These are both tabulated and shown as maps. In Appendix 1 all observations from each country are listed, covering the mandatory components, the voluntary components, and additional components. Excluded are only the major ions which are reported solely to provide the potential for quality control, and compounds which are part of other international programmes but which may be expected to lie outside the core interest of OSPAR, for example sulphates, ozone, particulate matter measurements.

Table 2.7: All components reported by Contracting Parties in 2007

Precipitation Components

	aldrin	BE, DE		gamma_HCH	BE, DE, IS, NL, NO, SE		PCB_138	DE, IS, NO
	alpha_HCH	BE, DE, IS, NO		HCb	DE, IS, NO		PCB_153	DE, IS, NO
	aluminium	IE, IS		heptachlor	BE, DE		PCB_156	IS
	ammonium	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		inden_123cd_pyrene	DE		PCB_180	DE, IS, NO
	anthracene	DE		iron	DE, IS		phenanthrene	DE
	arsenic	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		lead	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		pp_DDD	BE, DE, IS
	benz_a_anthracene	DE		manganese	DE, IE, IS, SE		pp_DDE	BE, DE, IS
	benzo_a_pyrene	DE		mercury	BE, DE, DK, FR, IE, IS, NL, NO, SE		pp_DDT	BE, DE, IS
	benzo_ghi_perylene	DE		nickel	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		sum_DDT	BE, DE, IS
	beta_HCH	IS		nitrate	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		pyrene	DE
	cadmium	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		op_DDT	DE, IS		trans_CD	IS
	chromium	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		PCB_28	DE, IS, NO		trans_NO	IS
	cis_CD	IS		PCB_31	IS		txph_26	IS
	cobalt	NO		PCB_52	DE, IS, NO		txph_50	IS
	copper	BE, DE, DK, ES, FR, IE, IS, NL, NO, SE		PCB_101	DE, IS, NO		txph_62	IS
	dieldrin	BE, DE, IS		PCB_105	IS		vanadium	IE, NO, SE
	endrin	BE, DE		PCB_118	DE, IS, NO		zinc	BE, DE, ES, FR, IE, IS, NL, NO, SE
	fluoranthene	DE						

 **Mandatory**

 **Voluntary**

 **Additional**

Airborne Components

	acenaphthene	ES, NO		fluorene	ES, NO		PCB_114	NO
	acenaphthylene	ES, NO		gamma_HCH	IS, NO, SE		PCB_118	IS, NO, SE
	alpha_HCH	IS, NO		HCb	IS, NO		PCB_122	NO
	aluminium	DK, IS		inden_123cd_pyrene	ES, NO, SE		PCB_123	NO
	ammonia	DK, ES, NL, NO		iron	DE, DK, IS		PCB_128	NO
	ammonium	NL, NO		lead	BE, DE, DK, ES, IS, NL, NO		PCB_138	IS, NO, SE
	sum ammonia & ammonium	DE, DK, ES, NO, SE		manganese	DE, DK, IS		PCB_141	NO
	anthanthrene	NO		mercury	BE, ES, IS, NO, SE		PCB_149	NO
	anthracene	ES, NO, SE		N1methylphenanthrene	NO		PCB_153	IS, NO, SE
	arsenic	DE, DK, ES, IS, NL, NO		N1methylphenanthrene	NO		PCB_156	IS, NO
	benz_a_anthracene	ES, NO, SE		N2methylanthracene	NO		PCB_157	NO
	benzo_a_fluoranthene	NO		N2methylanthracene	NO		PCB_167	NO
	benzo_a_fluorene	NO		N2methylphenanthrene	NO		PCB_170	NO
	benzo_a_pyrene	ES, NO, SE		N3methylphenanthrene	NO		PCB_180	IS, NO, SE
	benzo_b_fluorene	NO		N9methylphenanthrene	NO		PCB_183	NO
	benzo_bk_fluoranthenes	ES, NO		naphtalene	ES, NO		PCB_187	NO
	benzo_e_pyrene	NO		nickel	BE, DE, DK, ES, IS, NL, NO		PCB_189	NO
	benzo_ghi_fluoranthene	NO		nitrate	ES, IS, NL, NO		PCB_194	NO
	benzo_ghi_perylene	ES, NO, SE		nitric acid	ES, IS, NL, NO		PCB_206	NO
	beta_HCH	IS		sum nitric acid & nitrate	DE, DK, ES, NO, SE		PCB_209	NO
	biphenyl	NO		nitrogen dioxide	BE, DE, DK, ES, NL, NO, SE		sum_PCB	NO
	cadmium	BE, DE, ES, IS, NL, NO		nitrogen monoxide	BE, ES, NL		perylene	NO
	chromium	DK, ES, IS, NO		op_DDD	NO		phenanthrene	ES, NO, SE
	chrysene	ES, UK		op_DDE	NO		pp_DDD	IS, NO
	cis_CD	IS, NO		op_DDT	IS, NO		pp_DDE	IS, NO
	cis_NO	NO		PCB_18	NO		pp_DDT	IS, NO
	copper	BE, DE, DK, ES, IS, NO		PCB_28	IS, NO, SE		sum_DDT	NO
	coronene	NO		PCB_31	IS		pyrene	ES, NO, SE
	cyclopenta_cd_pyrene	NO		PCB_33	NO		retene	NO
	dibenzo_ac_ah_anthracenes	ES, NO		PCB_37	NO		selenium	DK
	dibenzo_ae_pyrene	NO		PCB_47	NO		trans_CD	IS, NO
	dibenzo_ah_pyrene	NO		PCB_52	IS, NO, SE		trans_NO	IS, NO
	dibenzo_ai_pyrene	NO		PCB_66	NO		txph_26	IS
	dibenzofuran	NO		PCB_74	NO		txph_50	IS
	dibenzothiophene	NO		PCB_99	NO		txph_62	IS
	dieldrin	IS		PCB_101	IS, NO, SE		vanadium	DE, IS
	fluoranthene	ES		PCB_105	IS, NO		zinc	BE, DE, DK, ES, IS, NL, NO

3. Observed pollutant depositions at monitoring stations in 2007

This section describes air pollutant status at coastal stations around the North-East Atlantic in 2007. The annual average concentrations of contaminants subject to mandatory monitoring are listed and mapped, and deposition rates tabulated. Heavy metal concentrations and depositions in precipitation are presented in Tables 3.1-3.2, illustrated in Figures 3.1-3.7. Data for mercury is in Table 3.3 and Figure 3.8, and lindane in Table 3.4 and Figure 3.9. Nitrogen concentrations and depositions in precipitation are in Table 3.5, and are mapped in Figures 3.11-3.12. In all figures Portuguese data from the Azores is located below the colour scale. Colour coding in the tabulated results highlights the two highest, and the lowest concentrations/depositions.

3.1 Heavy metals (except mercury)

It is interesting to note that the Atlantic seaboard frequently displays higher concentrations of heavy metals than the North Sea coastline. There may be natural environmental explanations for this, such as resuspension/emission from oceanic waters, and local geothermal activity in the case of Iceland. However, issues with monitoring may also contribute. For example, for all components except arsenic, the highest concentrations are found on the Iberian peninsula, and some of these observations are of such magnitude as to shed some uncertainty. In a similar vein, rather high detection limits characterise observations made in Ireland. The French observations are also above average, and intercomparison between this data supplier and other more regular contributors in Europe would be desirable in establishing the reliability of these observations.

Table 3.1: Reported mean concentrations of heavy metals in precipitation ($\mu\text{g/l}$)

2007		arsenic mg/l	cadmium mg/l	chromium mg/l	copper mg/l	lead mg/l	nickel mg/l	zinc mg/l	precipitation mm
Belgium	BE0014R	0.29	0.05	0.28	3.10	1.42	0.47	11.77	819
Denmark	DK0008R	0.12	0.02	0.13	2.05	0.67	0.25	9.68	639
	DK0020R	0.10	0.05	0.12	1.59	0.99	0.21	4.36	615
	DK0031R	0.07	0.03	0.09	1.09	0.45	0.22	6.91	1007
France	FR0090R	0.10	0.05	0.40	1.08	1.26	1.80	3.35	1225
Germany	DE0001R	0.10	0.02	0.11	0.82	0.60	0.30	7.49	693
Iceland	IS0090R	0.42	0.01	0.47	1.98	0.22	0.67	4.90	1041
	IS0091R	0.05	0.01	0.11	0.54	0.18	0.82	8.48	1883
Ireland	IE0001R	0.50	0.05	0.50	1.72	0.50	0.62	9.60	1347
Netherlands	NL0009R	not delivered							
	NL0091R	not delivered							
Norway	NO0001R	0.10	0.02		0.37	0.67	0.23	2.78	1346
Portugal	PT0003R		0.43		2.60	4.54	0.95	7.77	792
	PT0004R		0.43		0.94	0.74	1.15	8.43	355
	PT0010R		0.43		1.21	0.65	1.24	32.01	977
Spain	ES0008R	0.15	0.08	73.87	14.32	3.43	51.97	80.79	1016
Sweden	SE0097R	0.15	0.03	0.19	1.12	0.59	0.29	5.10	1168
United Kingdom	GB0006R	0.18	0.01	0.08	0.22	0.11	0.20	5.03	1444
	GB0013R	0.06	0.01	0.07	0.20	0.26	0.15	1.18	1403
	GB0017R	0.11	0.02	0.06	0.56	0.57	0.22	7.18	586
	GB0091R	0.08	0.01	0.06	0.21	0.27	0.07	1.45	827

highest concentrations second highest concentrations lowest concentrations

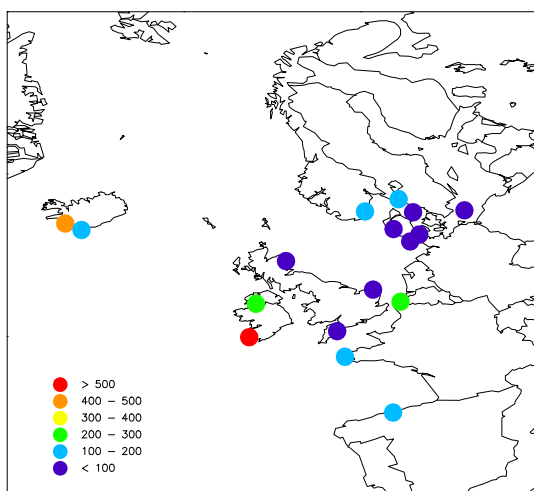


Figure 3.1: As depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

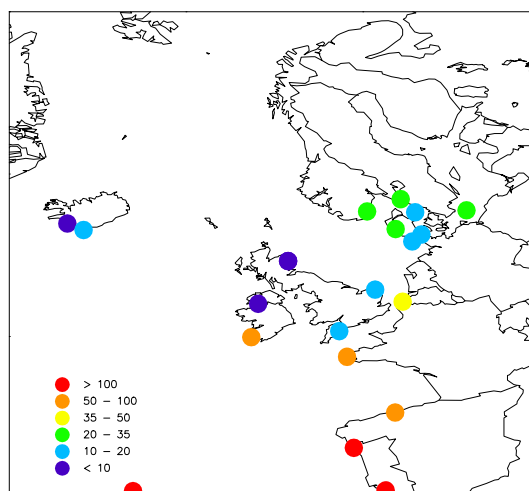


Figure 3.2: Cd depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

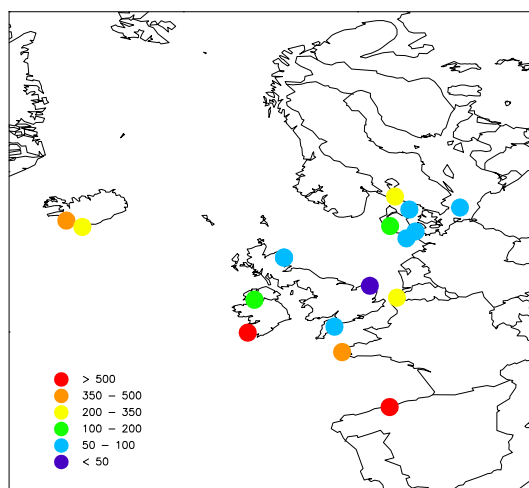


Figure 3.3: Cr depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

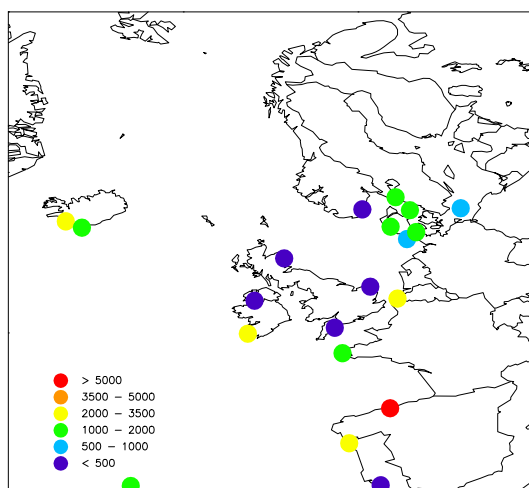


Figure 3.4: Cu depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

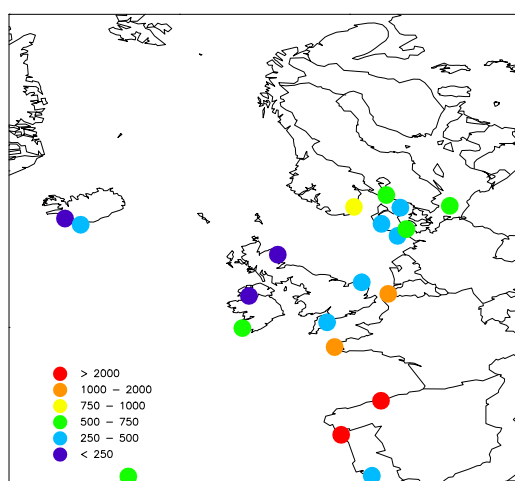


Figure 3.5: Pb depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

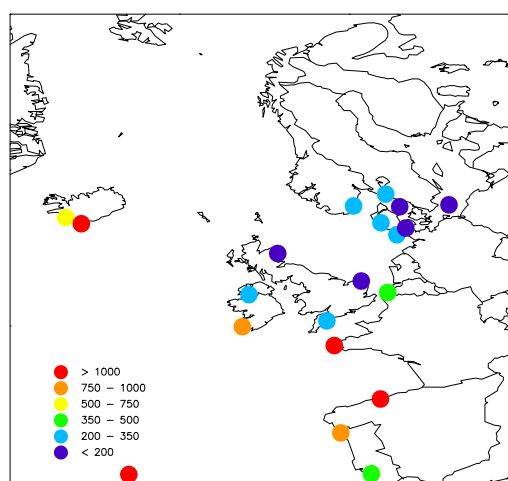


Figure 3.6: Ni depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

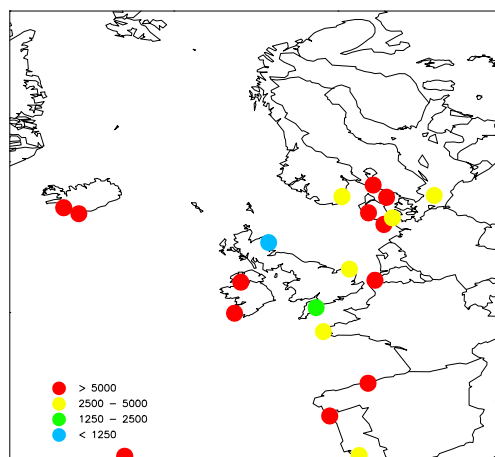


Figure 3.7: Zn depositions 2007, $\mu\text{g}/\text{m}^2$ p.a.

Table 3.2: Reported mean annual depositions of heavy metals in precipitation($\text{mg}/\text{m}^2/\text{a}$). Precipitation amounts are given in mm.

2007		arsenic $\mu\text{g}/\text{m}^2$	cadmium $\mu\text{g}/\text{m}^2$	chromium $\mu\text{g}/\text{m}^2$	copper $\mu\text{g}/\text{m}^2$	lead $\mu\text{g}/\text{m}^2$	nickel $\mu\text{g}/\text{m}^2$	zinc $\mu\text{g}/\text{m}^2$	precipitation mm
Belgium	BE0014R	236	44	229	2541	1160	381	9638	819
Denmark	DK0008R	78	15	85	1308	426	157	6188	639
	DK0020R	60	32	76	976	611	198	2899	615
	DK0031R	67	31	112	1093	453	217	6950	1007
France	FR0090R	122	66	488	1327	1548	2209	4097	1225
Germany	DE0001R	70	16	74	571	418	211	5960	696
Iceland	IS0090R	435	8	487	2066	229	694	5097	1041
	IS0091R	100	18	211	1013	342	1550	15932	1883
Ireland	IE0001R	673	67	674	2321	673	831	12932	1347
Netherlands	NL0009R	not delivered							
	NL0091R	not delivered							
Norway	NO0001R	133	32		499	900	304	3735	1346
Portugal	PT0003R		337		2057	3598	753	6155	792
	PT0004R		151		332	262	407	2988	355

	<i>PT0010R</i>			415		1186	630	1208	31277	977
Spain	<i>ES0008R</i>	157	79	75085	14556	3492	52831	82118		1016
Sweden	<i>SE0097R</i>	171	31	219	1305	682	343	5944		1168
United Kingdom	<i>GB0006R</i>	257	7	112	323	153	293	7269		1444
	<i>GB0013R</i>	90	11	93	287	370	216	1652		1403
	<i>GB0017R</i>	67	12	34	337	332	127	4210		586
	<i>GB0091R</i>	66	6	52	172	226	60	1201		827

highest depositions
 second highest depositions
 lowest depositions

3.2 Mercury

The broad comparison in observed concentrations and depositions around the southern North Sea, from Norway around the coast to the United Kingdom, provides some reassurance as to the quality of these measurements. Concentrations of this order are broadly typical for the whole North Atlantic region. Whilst natural oceanic emissions could influence Atlantic seaboard concentrations, in the case of western Ireland the high values appear to reflect high detection limits. Indeed, the estimated average concentration has been exactly the same for many years at this site, and is five times greater than at any other reporting site. It is also interesting to see the role of precipitation in delivering airborne concentrations to the sea. For the two UK sites, the figures for concentrations in precipitation are very similar. However, there is an eight-fold difference in the figures for total depositions due simply to precipitation quantity. This is an illustration of the value of deposition data over concentrations alone.

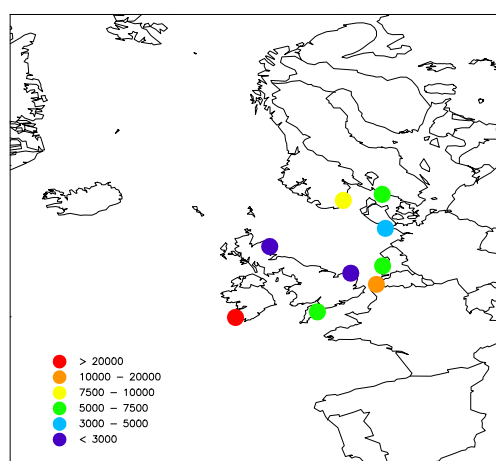


Figure 3.8: Mercury depositions 2007, ng/m² p.a.

Table 3.3: Reported depositions of mercury in precipitation (ng/m²), 2007, together with associated concentrations (ng/l). Ranked by deposition quantity

2007		conc ng/l	prec mm	dep ng/m ²
Ireland	IE0001R	50.00	1347	67350
Belgium	BE0014R	10.64	964	10257
Norway	NO0001R	6.3	1441	9078
Netherlands	NL0091R	9.61	760	7304
Sweden	SE0014R	11	632	6952
Germany	DE0001R	6.29	714	4491
United Kingdom	GB0091R	4.644	1262	5861
	GB0013R	4.021	192	772
Denmark		•		
France		•		
Iceland		•		
Portugal		•		
Spain		•		

• no data reported
 same each year
 difference due only to precipitation amount

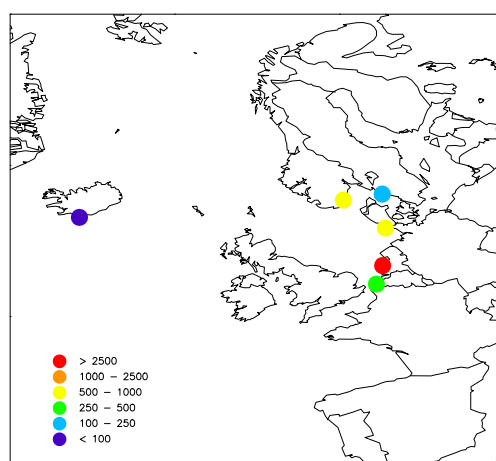
3.3 Lindane

Consistency across results affords confidence in much of the lindane data delivered. Most importantly in 2007, the benefits of methodological improvements undertaken by Belgium are revealed. Estimated deposition for recent years are quoted for comparative purposes, and show an apparent fall of around 80% from 2006 to 2007 in depositions on the Belgian coast. In reality, introduction of a revised analytical technique is now revealing depositions to be of similar magnitude to other parts of the North Sea coastline. Improvements in the Netherlands are also expected to yield such benefits in the coming year.

A difference of around one third and more in depositions between 2004 and 2007 is seen reasonably consistently across the region and hence supports the reality of the decline. In Germany, Belgium, and Sweden declines have been steady, despite three different techniques being used. Only Iceland does not show such decline, although depositions are perhaps 20 times lower already.

Table 3.4: Reported annual concentrations of γ -HCH in precipitation (ng/l) and deposition (ng/m²), plus percentage change 2004-7

		concentration	precipitation	2007 deposition	2006 deposition	2005 deposition	2004 deposition	% change
		ng/l	mm	ng/m ²	ng/m ²	ng/m ²	ng/m ²	2004-7
Netherlands	NL0091R-2006	3.34	83100	2777	3240	5008	4861	-42.9
Germany	DE0001R	0.78	723.00	567	685	798	943	-39.9
Norway	NO0001R	0.40	1423.00	565	850	833	845	-33.1
Belgium	BE0014R	0.39	1223.00	476	2462	4369	3083	-84.6
Sweden	SE0014R wet+dry			103	157	197	299	-65.6
Iceland	IS0091R	0.03	850.00	29	31	29	39	-26.7
Denmark		●						
France		●						
Ireland		●						
Portugal		●						
Spain		●						
United Kingdom		●						
●	no data reported							
●	effect of change in methodology							
●	detection limit likely far greater than environmental concentrations							

**Figure 3.9:** Lindane depositions 2007 ng/m²

3.4 Overview of coastal depositions of toxic substances

Of the mandatory substances, the metals excluding mercury have been reported by all countries. The depositions of these components in precipitation around the coasts of the OSPAR area can be summarised in terms of their highest and lowest values. In figure 3.10 this has been done. The red indicates in which countries the highest depositions have been observed, the yellow indicates the second highest depositions, and the blue indicates the lowest depositions in precipitation. The numbers indicate the number of pollutants for which the category applies; there being seven metal components in the mandatory list, each colour is shown on seven occasions.

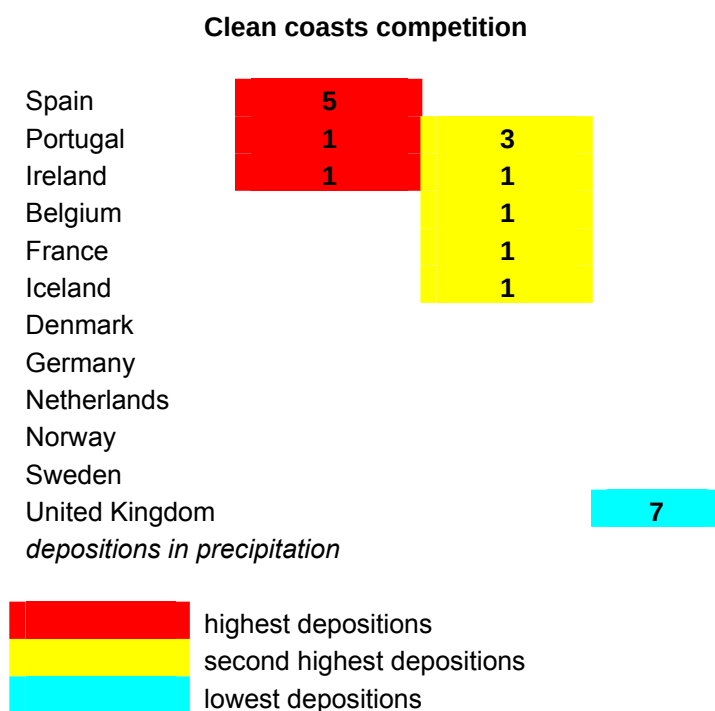


Figure 3.10: Simple ranking between countries of the largest and the smallest quantities of metals reported as deposited in precipitation. Numbers refer to the number of components to which the category applies. Only highest, second highest, and lowest depositions are ranked

The list is not surprising in many ways, considering the basic geography of the OSPAR area. The western extremes receive less metal deposition than the southern North Sea. What is more interesting are the very high values in Spain and Ireland. At least a part of this picture is dictated by data quality, with some very high detection limits, and maybe other sampling and analysis problems. That the UK coasts show lowest levels of pollutant depositions for all metals is also curious. To be certain of such quality a review by the UK might confirm that samples are not unintentionally stripped during analysis. However, for all observations there is insufficient information to be categorical.

3.5 Nitrogen

Table 3.5: Mean annual nitrogen concentrations (mg/l) and depositions (mg/m²) nitrogen, 2007

2007		nitrate ammonium concentrations		precip	nitrate ammonium depositions	
		mg/l	mg/l	mm	mg/m ²	mg/m ²
Belgium	BE0014R	0.36	0.50	819	295	410
Germany	DE0001R	0.49	0.55	719	356	393
Denmark	DK0005R	0.50	0.56	601	301	337
	DK0008R	0.36	0.19	598	215	114
	DK0020R	0.48	0.96	618	297	593
France	FR0090R	0.56	0.16	1225	686	196
Iceland	IS0090R	0.12	0.33	1041	125	344
	IS0091R	0.18	0.69	1883	339	1299
Ireland	IE0001R	0.07	0.14	1347	94	189
Netherlands	NL0009R					
	NL0091R					
Norway	NO0001R	0.33	0.28	1441	476	403
	NO0039R	0.04	0.11	1930	77	212
	NO0057R	0.05	0.12	304	15	36
Portugal	PT0003R	0.08	0.30	792	63	238
	PT0004R	0.26	0.21	355	92	75
	PT0010R	0.04	0.11	977	39	107
Spain	ES0008R	0.53	0.51	575	309	294
Sweden	SE0014R	0.35	0.37	860	301	318
United Kingdom	GB0006R	0.09	0.17	1089	98	185
	GB0013R	0.18	2.48	1201	216	2978
	GB0014R	0.36	0.53	1148	413	608
	GB0016R	0.32	0.50	1198	383	599



highest

second
highest

lowest

The broad picture of higher depositions in the North Sea, and lower depositions in the wider N.E. Atlantic for both oxidised and reduced nitrogen is as expected – due to the enclosed nature of the North Sea, surrounded by significant emissions sources. Given the tendency of the North Sea to nitrogen limitation, this pattern is of interest. There are some uncertain reported depositions – the extremely high depositions of ammonium at GB0013 are out of all proportion to other reports. Nitrate depositions in Brittany, France, are also a little higher than expected.

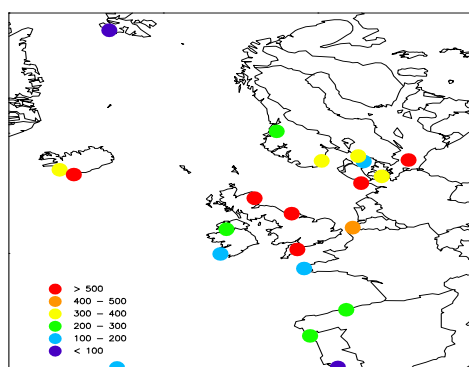


Figure 3.11: NH_4 depositions, mg N /m² p.a

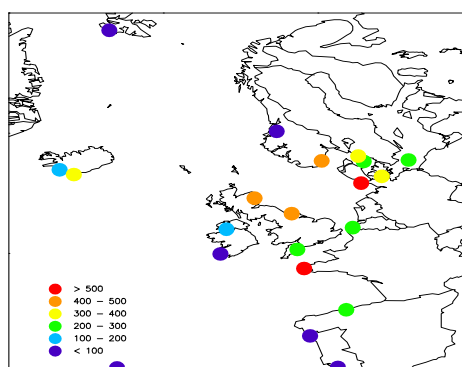


Figure 3.12: NO_3 depositions, mg N /m² p.a

4. Deposition changes in lindane, nitrogen and mercury

The following short overviews are intended as potential text box contributions to the 2009 OSPAR assessment of atmospheric inputs of selected substances (publication 447/2009). They have been constructed as approximately 300 word pieces with illustrations.

4.1 Lindane: going, going,but not quite gone

Lindane is an example of a biocide which has been phased out in Europe, and for which levels now being deposited to the seas have fallen dramatically. The improvement, however, has taken a period of time to be fully evident. OSPAR's Comprehensive Atmospheric Monitoring Programme has been able to track these changes independently of the official expectations.

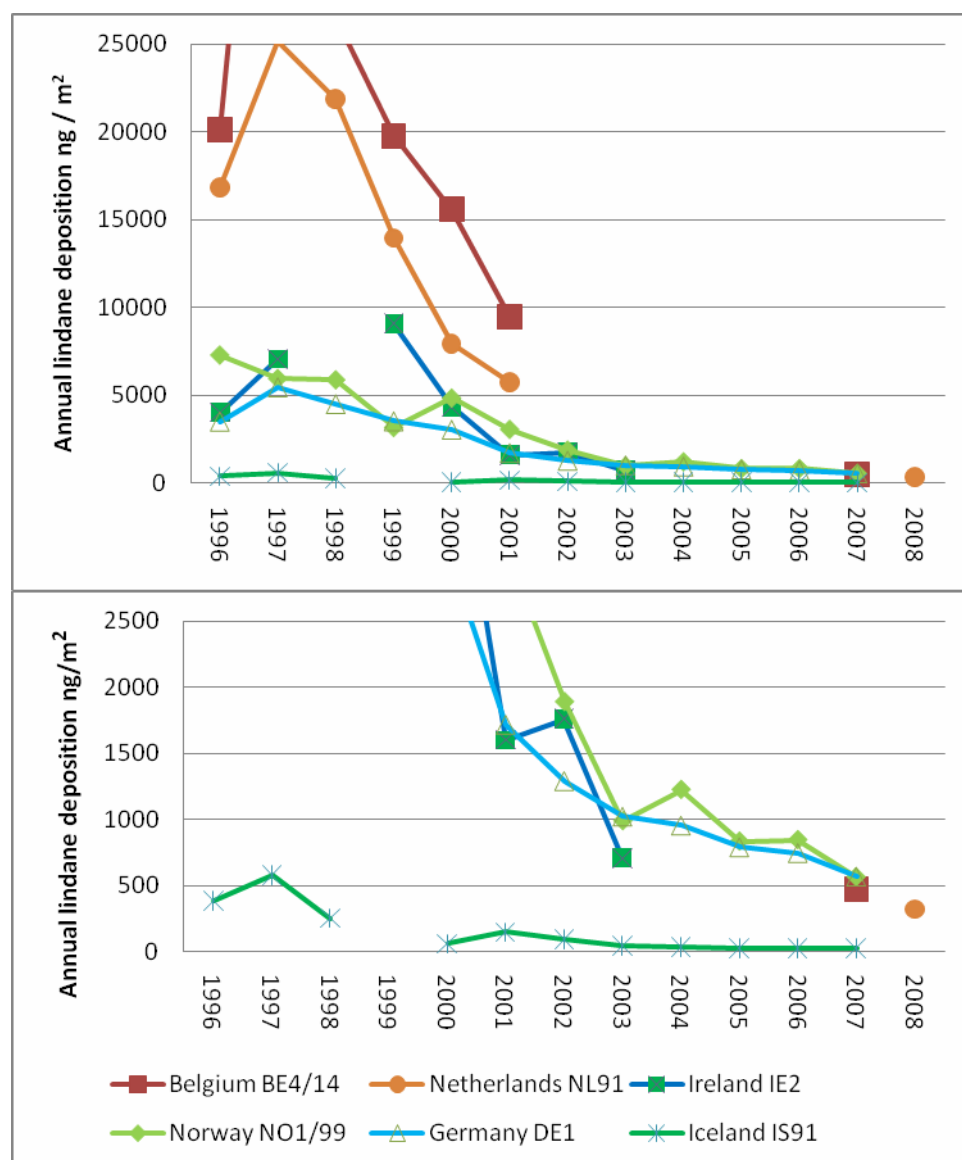


Figure 4.1: The sharp decline in late 1990s continues gently to date. Southern North Sea depositions remain notably above background levels (peaks for BE4/14: 1997=53589; 1998=26560)

During the later 1990s lindane was phased out across Europe, France completing the process in 1999. Observations made by CAMP do show a dramatic decrease in the quantities being deposited to the coasts in precipitation at this time, yet lindane continued to be observed for several years. Moreover, a clear seasonal pattern persisted with a spring peak to depositions each year. This suggests that lindane was still being used after 1999, for example as stockpiles were rundown.

Although a decline has been seen everywhere there is a clear decrease in observed depositions of lindane with distance from mainland Europe. By 2007, approximately a decade after the peak, observed depositions in the southern North Sea had fallen by a factor of up to 50, as they had also done on the coasts of Iceland. However, during this decade the southern North Sea depositions have only just fallen to the levels seen in Iceland at the peak ten years ago.

Lindane is still found in the atmosphere. Some continued European use is one explanation, as is continental-scale transport from as far as Asia where use continues. Re-release from the environment

also occurs, one potential pathway with current topical interest being release as ice melts in the high Arctic.

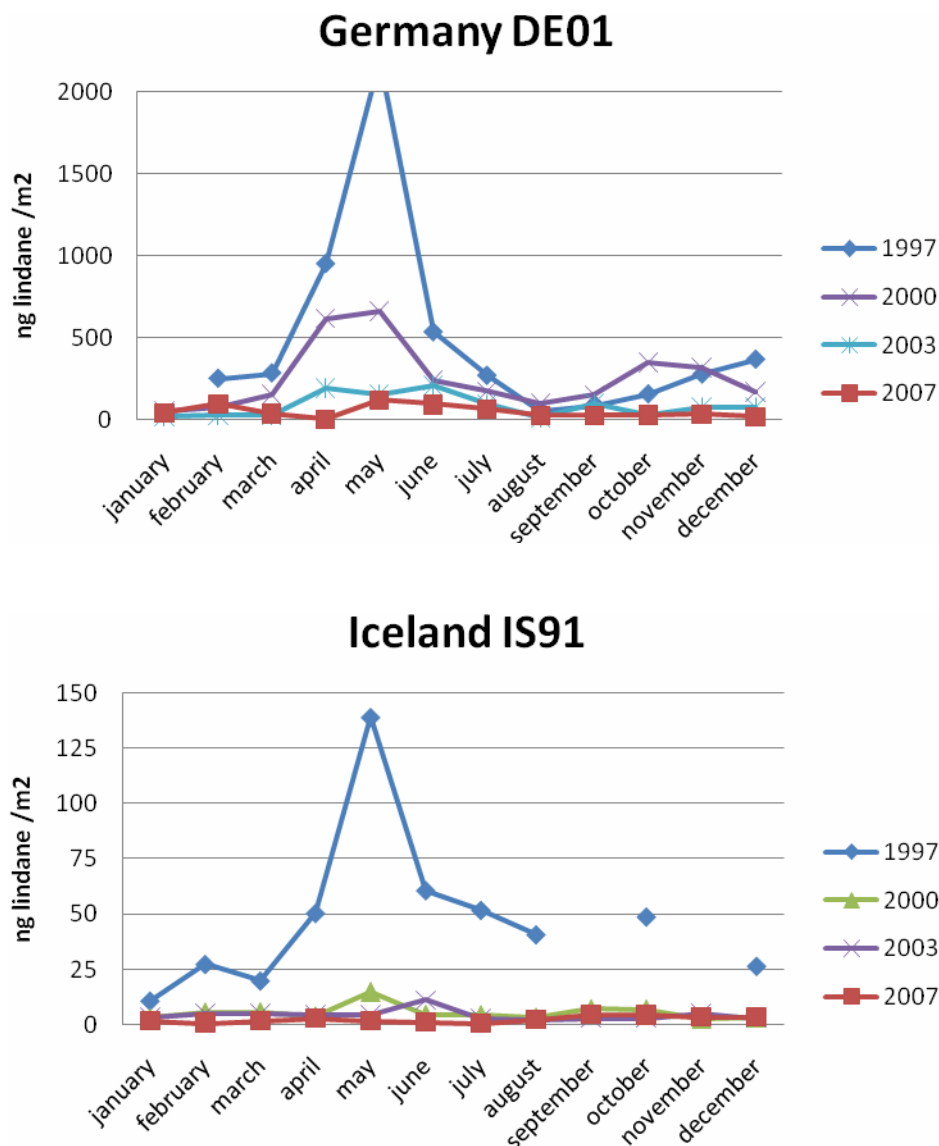


Figure 4.2: The Europe-wide decline in the strength of the spring peak to lindane deposition

4.2 Estimated total depositions of nitrogen to the North Sea in the first years of the 21st century

Whilst negotiated international agreements aim to deliver notable reductions in the emissions of nitrogen to the atmosphere, progress has been slower than originally wished for. Although calculated nitrogen emission estimates provided by European countries do largely point downwards, recent evaluations suggest that many countries may not attain targets.

CAMP data offers the opportunity for an independent assessment of progress in reducing nitrogen emissions, given that reductions in final depositions is the desired outcome of the emission reduction policies. Indeed, the CAMP review of monitoring station data does reveal that only a minority of stations are reporting a significant downward trend in nitrogen depositions, even though model

calculations suggested a significant downward trend in nitrogen for the North Sea, Region II where most stations are located. When the observations are used to derive independent deposition estimates the position becomes more equivocal. The OSPAR Method 3a is essentially an extrapolation technique weighting the multi-station combined series of coastal observations each year according to estimated over-sea deposition patterns. Figure 4.3 suggests that although there may have been a decline since 2000 in total nitrogen depositions to the North Sea, in the past four years depositions have been largely unchanging, with even a hint of an increase.

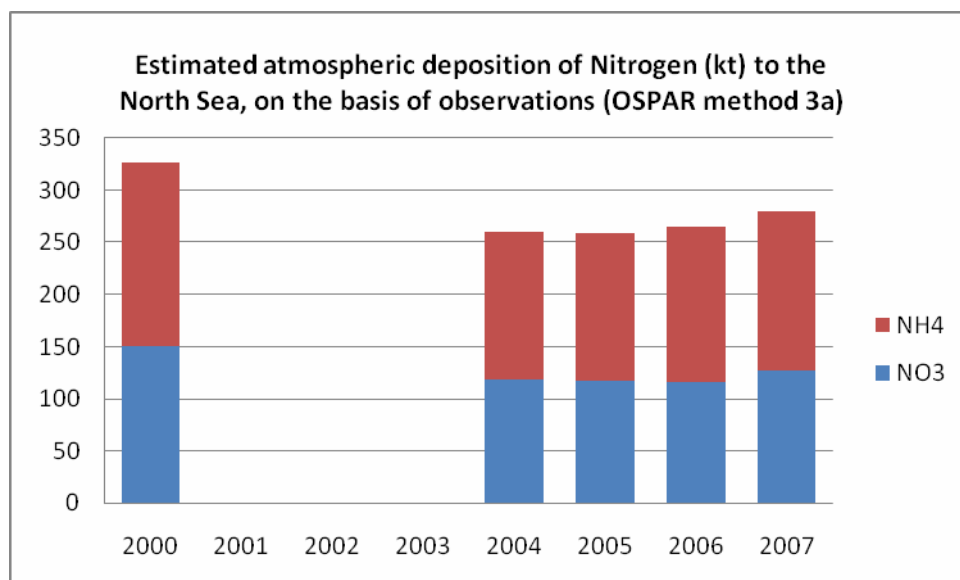


Figure 4.3: Stagnation in the reduction to nitrogen depositions. The OSPAR Method 3a combines and extrapolates multiple site CAMP observations to provide an independent evaluation of predicted deposition changes

Looking at observations from individual monitoring stations provides a variable picture. In figure 4.4 the background nitrate depositions which occur on OSPAR's western coasts is illustrated from Ireland, representing an amalgamation of Europe's influence on the wider Atlantic, with the general hemispheric influence on OSPAR waters. Largely unchanging concentrations on the far coastal margin further suggests that any changes in nitrate deposition that have occurred can be expected to have been quite localised. This fact is illustrated by the Danish record of ammonium deposition on the southern North Sea coast, which shows dramatic inter-annual variations. The higher concentrations result from station proximity to emission sources, and the shorter transport distances of ammonium compared to nitrate. Although meteorological variations will play a significant role here, as far as depositions experienced by the North Sea are concerned once again no marked downward trend is seen.

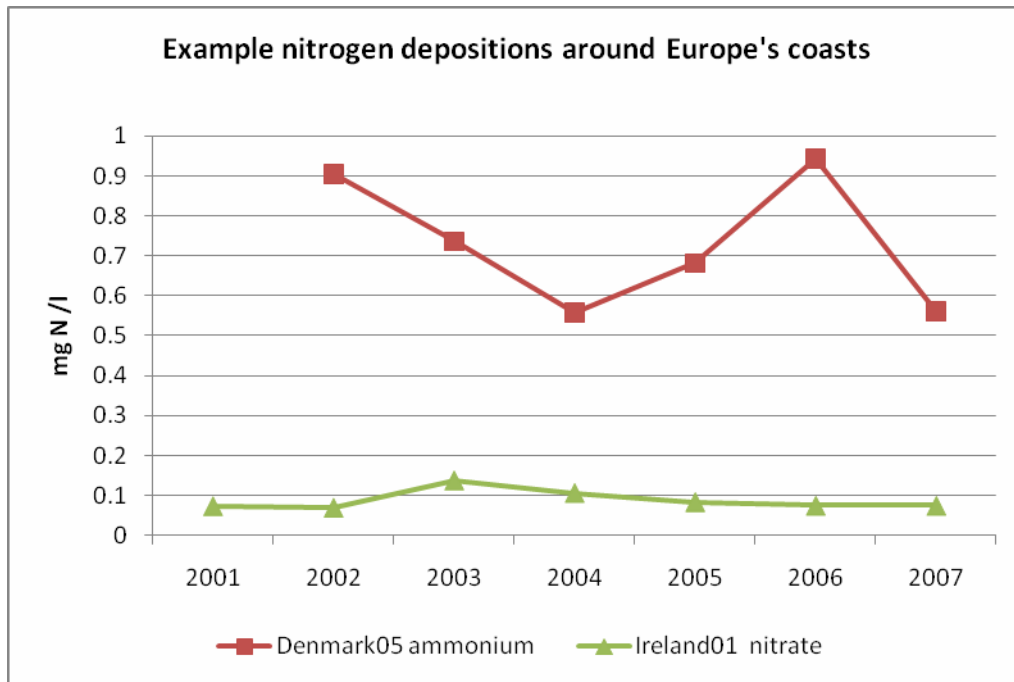


Figure 4.4: Restricted changes to nitrate depositions observed on the Atlantic coastline, whilst sharp inter-annual variations occur to ammonium deposition in the southern North Sea, subject to shorter and variable atmospheric transport

4.3 Mercury in coastal precipitation and in the air

Observation of mercury levels in precipitation and in the air under the CAMP programme around OSPAR's coasts has special relevance now that UNEP has decided to press forward with a global mercury agreement (UNEP Governing Council, February 2009), and that the European Union is moving forward with its own mercury policy. These records provide a view of past changes and current state which can inform these policy initiatives and which can provide a benchmark.

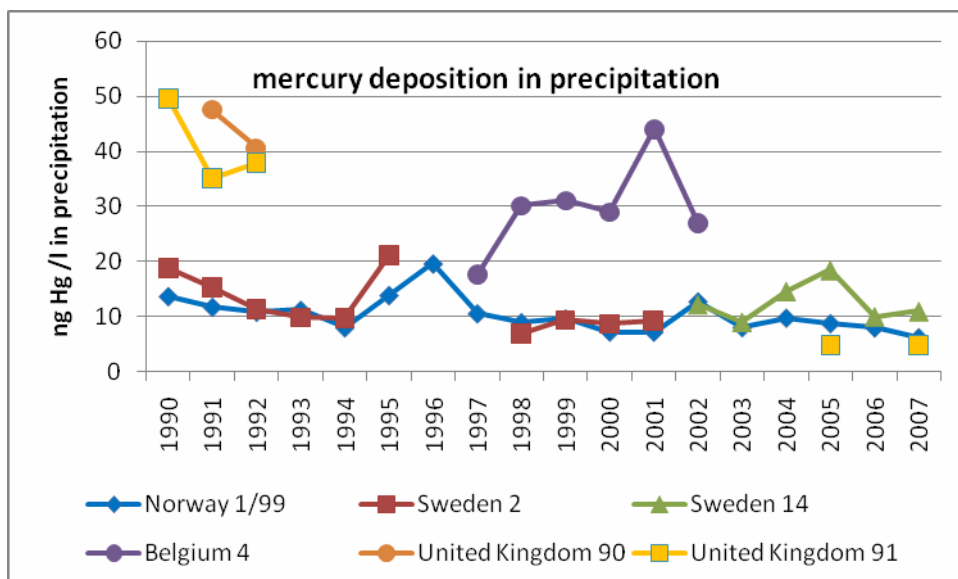


Figure 4.5: All sites have seen a decline in the mercury content in precipitation, changes being greater nearer to Europe's continental heartland. With annual

precipitation up to approximately 1400mm, depositions in precipitation are now currently mostly under 10mg Hg /m²

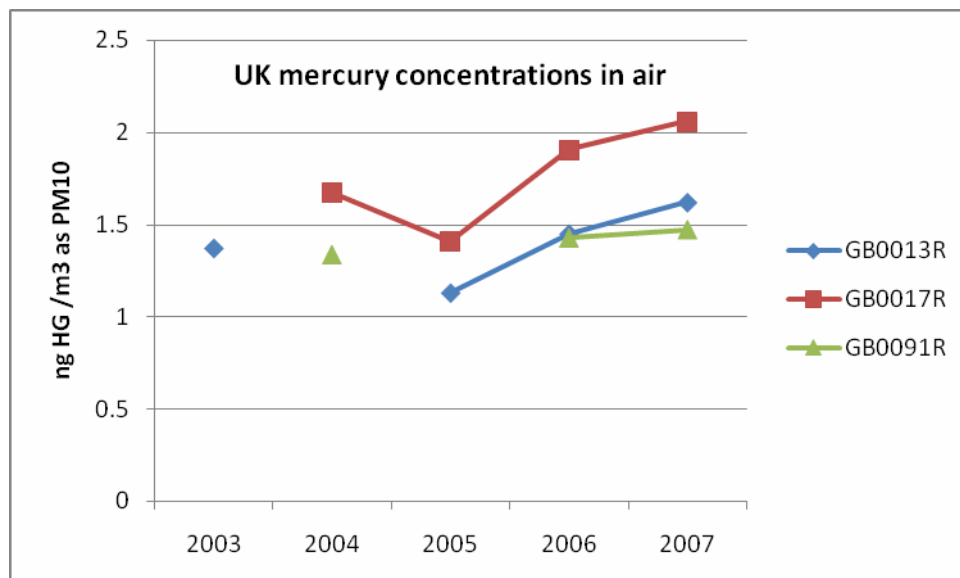


Figure 4.6: Regular reporting of mercury concentrations in air has been relatively recent. Current tendencies do not show a decline, and warrant careful future monitoring

Observations of the concentrations of mercury found in precipitation provide the longest records held by CAMP. Indeed, for Birkenes/Liste on the southern tip of Norway, CAMP holds a continuous record stretching nearly two decades. Records from 1990 are shown in figure 4.5. The reliability of these observations is evidenced by comparable concentrations being observed on the Swedish coast. The CAMP record also indicates the more localised changes which have been seen closer to source regions. Records from Belgium and the United Kingdom reveal much higher concentrations in the beginning and middle of the period, the latter station in 2007 having seen a five-fold fall in precipitation concentrations from its 1990 peak. Scandinavian sites have seen a halving of concentrations, all coastal locations now reporting less than 10 ng/l mercury in precipitation.

Observations of mercury in air have only recently been reported under the CAMP, giving a short record over recent years. Figure 4.6 displays the observations made in the United Kingdom at three monitoring sites. Whilst concentrations are low, they have nevertheless crept upwards by about one third over the past four years. It is not possible to exclude meteorological factors as a reason for this, but observations of rising mercury air concentrations on OSPAR coasts do provide a measure to watch carefully in the future.

5. Final observations

Reporting of CAMP data for 2007 was more rapid and timely than has been achieved before, with all Contracting Parties except one delivering observation data before the deadline. This is a notable improvement on 2006 which was one of the most delayed reporting years.

The rates of data submission for the mandatory programmes have to some extent been artificially distorted by extensive quality control work undertaken by the Netherlands following methodological changes at its stations. This work has merely slowed progress and will not prevent the submission of observation results, but it does mean that at the time of compiling the report, the number of observations reported was lower than normal. Without this delay, rates of submission would have been expected to be high. Nevertheless, several Contracting Parties do not report any data from the mandatory programme for airborne concentrations, or from the voluntary programmes. This picture is relatively unchanging, and would appear to indicate that the airborne concentration programme simply does not command support. In the precipitation programme, mercury and lindane are regularly not fully reported.

Important methodological improvements in analysis gave clearly observable benefits in 2007. Indeed, this improvement adds notable weight to the picture of uniformly low and declining rates of deposition across the North Sea for toxic substances. That lindane is largely being deposited from the atmosphere over OSPAR region distances is suggested by the very much lower depositions reported for Iceland compared to the North Sea. Depositions appear to be showing a relatively consistent decline across most monitoring stations. That this decline is continuing seven years after final phase out of lindane in Europe is a demonstration of the benefit in maintaining monitoring programmes beyond timeframes of managerial action. Nevertheless there is evidence of small depositions arriving from very distant sources.

Translation of nitrogen observations into estimated depositions indicates no observable improvement in the level of depositions during recent years. The CAMP provides independent verification that actual changes in emissions may be more restricted than had been anticipated when agreements were signed.

Mercury depositions in precipitation fell dramatically since 1990, but in recent years have shown little change. Observations of mercury concentrations in air around OSPAR coasts also suggests no improvement in the last 3 or 4 years.

As in previous years, some countries provided extensive reporting of components not required by CAMP (as mandatory or voluntary components). Some countries reported more non-CAMP than CAMP components.

Appendix 1: Reported monthly observations of mandatory, voluntary, and additionally reported components

(Major ions used solely for quality assurance are not listed)

**Belgium
Denmark
France
Germany
Iceland
Ireland
Netherlands
Norway
Portugal
Spain
Sweden
United Kingdom**

BELGIUM

Components in Precipitation														
Mandatory 2007	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
ammonium	BE0014R	mg/l	0.169	0.520	0.293		0.822	0.854	0.376	0.664	0.475	0.266	0.889	0.205
nitrate	BE0014R	mg/l	0.121	0.248	0.298		0.495	0.382	0.280	0.862	0.363	0.270	0.572	0.094
precipitation	nitrogen	BE0014R	mm	66.3	72.2	57.3		49.6	116.8	134.1	94.4	42.5	70.1	36.0
arsenic	BE0014R	µg/l	0.264	0.265	0.265		0.265	0.265	0.265	0.265	0.265	0.265	0.585	0.285
cadmium	BE0014R	µg/l	0.025	0.025	0.039		0.080	0.050	0.044	0.046	0.101	0.025	0.103	0.116
chromium	BE0014R	µg/l	0.264	0.265	0.265		0.265	0.265	0.265	0.265	0.265	0.265	0.465	0.265
copper	BE0014R	µg/l	0.942	0.861	1.316		2.351	5.916	3.143	7.040	2.388	2.319	1.056	1.907
lead	BE0014R	µg/l	0.993	0.642	0.773		1.692	0.849	1.510	1.546	1.382	1.256	4.115	2.100
mercury	BE0014R	ng/l	11.920	7.361	8.260		12.077	13.277	9.820	14.216	14.016	5.540	8.957	5.857
nickel	BE0014R	µg/l	0.470	0.265	0.430		0.373	0.265	0.452	1.573	0.572	0.265	0.265	0.311
zinc	BE0014R	µg/l	15.542	5.262	6.356		18.473	9.729	15.386	16.589	5.269	20.293	5.267	7.100
precipitation	metals ex. Hg	BE0014R	mm	66.5	81.2	52.0		54.5	151.4	111.6	77.4	38.0	73.4	50.9
precipitation	mercury	BE0014R	mm	79.1	88.2	65.4		69.5	175.0	129.8	78.9	101.8	29.6	35.1
g-HCH	BE0014R	ng/l	0.720	0.200	0.200		0.810	0.620	0.490	0.200	0.450	0.200	0.200	0.200
precipitation	g-HCH	BE0014R	mm	55.5	156.0	40.8		88.5	164.1	211.6	134.9	71.8	121.6	148.3
Percentage completion of mandatory programme														91.7 estimate
Voluntary														
2007														
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene+triphenylene			not reported											
flouranthene			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
Percentage completion of voluntary programme														0.0
additional non-CAMP components														
2007														
aldrin	BE0014R	ng/l	0.450	0.450	0.450		0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450
alpha_HCH	BE0014R	ng/l	0.350	0.350	0.350		0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
dieldrin	BE0014R	ng/l	0.200	0.200	0.200		0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
endrin	BE0014R	ng/l	0.550	0.550	0.550		0.550	0.550	0.550	0.550	0.550	0.550	0.550	0.550
heptachlor	BE0014R	ng/l	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
pp_DDD	BE0014R	ng/l	0.500	0.500	0.500		0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
pp_DDE	BE0014R	ng/l	0.700	0.700	0.700		0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700
pp_DDT	BE0014R	ng/l	0.500	0.500	0.500		0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
precipitation	BE0014R	mm	55.5	156.0	40.8		88.5	164.1	211.6	134.9	71.8	121.6	148.3	50.4
number of additional components reported														8

Comprehensive Atmospheric Monitoring Programme in 2007

BELGIUM														
Airborne components														
2007														
Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
NO ₂	BE0011R	µg/m ³	5.48	7	6.09	7.3	3.96	3.96	3.04	3.65	3.96	7.3	7	8.52
	BE0013R	µg/m ³	4.26	6.09	5.78	7.61	3.96	3.65	2.43	3.65	3.65	7	5.78	6.7
HNO ₃			not reported											
NO ₃			not reported											
HNO ₃ +NO ₃			not reported											
NH ₃			not reported											
NH ₄			not reported											
NH ₃ +NH ₄			not reported											
Percentage completion of mandatory programme														33.3
Voluntary														
2007														
NO	BE0011R	µg/m ³	0.93	2.33	1.87	1.4	0.47	0.47	0.47	0.93	0.93	3.27	1.4	8.87
	BE0013R	µg/m ³	0.93	1.4	1.4	2.33	0.47	0.47	0.47	0.93	0.93	2.33	0.93	7.47
arsenic	BE0014R	ng/m ³	0.818	1.351	1.416	1.254	0.628	0.647	1.007	0.606	0.649	1.127	0.924	0.727
cadmium	BE0014R	ng/m ³	0.276	0.389	0.458	0.473	0.202	0.187	0.232	0.173	0.172	0.104	0.13	0.106
chromium	BE0014R	ng/m ³	4.75	4.36	5.544	4.957	5.176	5.538	6.116	5.245	6.123	7.653	6.947	4.193
copper	BE0014R	ng/m ³	8.021	9.547	10.699	10.449	6.583	7.037	7.916	11.402	9.762	11.766	9.731	8.598
lead	BE0014R	ng/m ³	9.15	15.977	14.427	13.129	7.297	6.451	7.083	7.035	7.118	13.691	11.39	10.511
mercury	BE0014R	ng/m ³	2.009	2.124	2.124	1.752	1.663	1.637	1.487	1.497	1.373	1.654	1.283	1.824
	BE0014R	ng/m ³	11.92	7.361	8.26	-9999.99	12.077	13.277	9.82	14.216	14.016	5.54	8.957	5.857
nickel	BE0014R	ng/m ³	4.427	4.824	7.444	12.687	7.385	7.931	5.947	5.786	4.932	8.102	4.633	3.898
zinc	BE0014R	ng/m ³	41.904	51.852	44.216	43.288	30.323	33.302	55.788	38.396	49.063	44.94	35.451	32.245
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene			not reported											
flouranthene			not reported											
g-HCH			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
Percentage completion of voluntary programme														34.6

DENMARK

Components in Precipitation															
2007															
Mandatory		station	units	month											
				january	february	march	april	may	june	july	august	september	october	november	december
ammonium		DK0005R	mg/l	0.408	1.006	1.002	3.163	0.859	0.281	0.379	0.831	0.34		0.506	0.36
		DK0008R		0.14	0.414	0.297	0.533	0.232	0.129	0.099	0.321	0.063	0.274	0.394	0.29
		DK0020R		2.752	0.684	0.94	1.199	1.308	0.306	0.299	0.788	1.301	4.867	0.292	0.197
nitrate		DK0005R	mg/l	0.374	1.112	0.667	3.449	0.804	0.277	0.324	0.491	0.228		0.472	0.495
		DK0008R		0.252	0.679	0.656	0.582	0.528	0.255	0.191	0.387	0.236	0.581	0.749	0.658
		DK0020R		0.401	0.911	0.778	0.812	0.546	0.326	0.256	0.442	0.467	1.252	0.489	0.376
precipitation	nitrogen	DK0005R	mm	85.49	62.036	31.931	0.691	59.173	94.086	125.308	54.529	33.689		15.442	40.081
		DK0008R		61.217	48.318	24.745	9.624	35.264	102.899	147.236	42.254	62.695	17.958	13.736	33.759
		DK0020R		65.213	44.565	35.588	13.796	61.707	73.767	114.195	44.732	48.595	15.169	49.927	49.179
arsenic		DK0008R	µg/l	0.099	0.306	0.182	0.398	0.208	0.129	0.057	0.177	0.089	0.106	0.128	0.075
		DK0020R		0.059	0.209	0.138		0.276	0.111		0.061	0.057	0.059	0.029	0.034
cadmium		DK0008R	µg/l	0.018	0.073	0.024	0.06	0.034	0.018	0.016	0.037	0.014	0.027	0.048	0.011
		DK0020R		0.023	0.062	0.055		0.055	0.036		0.032	0.075	0.314	0.048	0.019
chromium		DK0031R		0.057	0.031	0.04	0.062	0.03	0.034	0.023	0.043	0.01	0.026	0.025	0.019
		DK0008R	µg/l	0.085	0.17	0.177	0.494	0.523	0.109	0.06	0.173	0.093	0.128	0.16	0.071
		DK0020R		0.075	0.209	0.134		0.223	0.146		0.143	0.123	0.148	0.058	0.065
copper		DK0031R		0.034	0.038	0.907	0.606	0.135	0.067	0.051	0.091	0.067	0.088	0.065	0.039
		DK0008R	µg/l	6.688	3.449	2.846	2.25	2.4	1.419	0.775	1.352	0.695	0.965	2.065	0.848
		DK0020R		6.078	0.826	0.798		1.387	0.785		0.635	1.03	2.86	0.55	0.428
lead		DK0031R		0.682	0.887		3.131	3.449	0.526	0.423	0.6	0.552	6.211	0.341	0.219
		DK0008R	µg/l	0.425	1.623	0.927	1.879	1.262	0.599	0.326	1.067	0.472	0.738	1.472	0.537
		DK0020R		0.614	2.089	1.256		2.012	0.923		0.869	0.809	1.371	0.648	0.449
		DK0031R		0.275	0.428	0.735	1.95	0.727	0.304	0.273	0.287	0.228	0.667	0.998	0.542
mercury				not yet received											
nickel		DK0008R	µg/l	0.222	0.391	0.397	0.892	0.399	0.198	0.124	0.267	0.169	0.22	0.416	0.462
		DK0020R		0.257	0.458	0.794		0.349	0.265		0.25	0.392	0.404	0.222	0.132
		DK0031R		0.186	0.168	0.446	1.448	0.267	0.211	0.182	0.209	0.146	0.197	0.144	0.193
zinc		DK0008R	µg/l	6.939	14.127	8.39	25.514	61.022	7.527	3.228	6.896	5.713	7.239	13.284	3.298
		DK0020R		4.626	9.252	11.932		6.657	6.33		4.515	6.782	22.387	6.565	4.524
		DK0031R		7.23	8.929	21.222	20.975	7.954	7.403	4.018	5.087	4.33	5.159	4.004	3.983
precipitation	metals ex. Hg	DK0008R	mm	82.341	28.052	32.438	11.602	35.939	106.354	153.341	45.924	77.172	22.424	9.944	0
		DK0020R		61.922	15.998	40.281	15.234	54.273	57.577	145.804	59.92	38.954	16.138	55.273	51.714
		DK0031R		132.951	86.979	50.696	10.774	83.439	160.162	119.633	36.605	126.082	45.351	56.438	97.492
g-HCH			not yet received												
										Percentage completion of mandatory programme					81.8
Voluntary															
2007															
PCB_28				not reported											
PCB_52				not reported											
PCB_101				not reported											
PCB_118				not reported											
PCB_138				not reported											
PCB_153				not reported											
PCB_180				not reported											
anthracene				not reported											
benzo(a)anthracene				not reported											
benzo(a)pyrene				not reported											
benzo(ghi)perylene				not reported											
chrysene+triphenalene				not reported											
flouranthene				not reported											
indeno(123cd)pyrene				not reported											
phenanthrene				not reported											
pyrene				not reported											
										Percentage completion of voluntary programme					0.0

Comprehensive Atmospheric Monitoring Programme in 2007

Airborne components														
Mandatory 2007	station	units							month					
			january	february	march	april	may	june	july	august	september	october	november	december
NO ₂	DK0008R	µg/m ³												
HNO ₃			not reported											
NO ₃			not reported											
HNO ₃ +NO ₃	DK0005R	µg/m ³	0.505	1.093	1.537	1.618	1.045	0.738	0.664	0.814	0.636	0.977	0.681	0.823
	DK0008R	µg/m ³	0.296	0.546	1	1.066	0.759	0.559	0.419	0.572	0.447	0.683	0.56	0.97
	DK0031R	µg/m ³	0.24	0.862	1.155	1.13	0.888	0.545	0.428	0.562	0.362	0.858	0.545	0.789
NH ₃	DK0005R	µg/m ³	0.231	0.13	0.622	1.296	0.629	0.34	0.338	0.621	0.508	2.557	0.408	0.307
	DK0008R	µg/m ³	0.059	0.02	0.127	0.434	0.229	0.199	0.186	0.277	0.176	0.115	0.062	0.034
	DK0031R	µg/m ³	0.159	0.128	0.968	1.733	0.753	1.193	0.274	0.745	0.419	0.46	0.347	0.201
NH ₄	DK0005R	µg/m ³	0.603	1.615	2.018	2.054	1.284	1.085	0.93	1.218	0.782	1.4	0.967	1.471
	DK0008R	µg/m ³	0.287	0.898	1.314	1.275	0.937	0.64	0.465	0.738	0.471	1.03	0.776	1.194
	DK0031R	µg/m ³	0.22	1.454	1.509	1.442	1.033	0.795	0.586	0.811	0.435	1.215	0.885	1.108
NH ₃ +NH ₄			not reported											
			Percentage completion of mandatory programme											75.0
Voluntary 2007														
NO			not reported											
arsenic	DK0005R	ng/m ³	0.092	0.437	0.3	0.28	0.19	0.12	0.079	0.256	0.214	0.283	0.311	0.131
	DK0008R	ng/m ³	0.101	0.293	0.407	0.299	0.205	0.224	0.169	0.208	0.246	0.286	0.237	0.252
	DK0031R	ng/m ³	0.076	0.317	0.325	0.305	0.16	0.221	0.112	0.212	0.162	0.41	0.404	0.252
cadmium			not reported											
chromium	DK0005R	ng/m ³	0.162	0.286	0.631	0.131	0.304	0.473	0.167	0.564	0.647	0.641	0.428	0.542
	DK0008R	ng/m ³	0.149	0.236	0.507	0.037	0.248	0.524	0.128	0.385	-0.034	0.551	0.192	0.556
	DK0031R	ng/m ³	0.069	0.189	0.495	-0.008	0.189	0.545	0.114	0.265	0.26	0.363	0.031	0.443
copper	DK0005R	ng/m ³	0.398	1.157	1.249	1.118	0.689	0.879	0.738	1.515	1.417	1.708	1.63	1.706
	DK0008R	ng/m ³	0.167	0.641	0.914	0.776	0.58	0.726	0.614	1.124	0.97	1.299	0.94	1.013
	DK0031R	ng/m ³	0.126	0.645	1.021	0.972	0.851	2.806	0.649	1.161	0.578	1.345	0.844	2.432
lead	DK0005R	ng/m ³	1.227	5.41	4.511	2.971	1.445	2.492	1.234	3.27	2.404	4.055	3.984	4.182
	DK0008R	ng/m ³	0.428	3.509	3.604	1.693	1.093	1.644	1.031	2.754	1.474	3.431	2.713	2.66
	DK0031R	ng/m ³	0.483	3.316	3.379	2.161	1.448	1.988	1.269	2.676	1.419	4.247	3.472	3.287
mercury			not reported											
nickel	DK0005R	ng/m ³	0.538	1.417	2.107	2.471	2.35	2.764	0.969	2.874	1.291	1.54	1.072	1.594
	DK0008R	ng/m ³	0.353	0.849	1.611	1.556	1.286	1.592	1.147	1.893	1.018	1.301	1.001	1.65
	DK0031R	ng/m ³	0.179	0.662	1.061	1.024	1.327	1.68	0.926	1.36	0.603	1.01	0.749	1.236
zinc	DK0005R	ng/m ³	3.414	13.323	14.055	9.142	5.116	9.868	4.341	11.172	7.954	12.533	11.72	13.305
	DK0008R	ng/m ³	1.172	9.569	10.593	5.662	3.858	8.102	3.854	8.903	6.034	11.562	7.941	10.631
	DK0031R	ng/m ³	2.281	8.43	9.861	6.877	6.647	22.782	5.706	8.411	6.866	12.742	9.42	10.529
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene			not reported											
flouranthene			not reported											
g-HCH			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
			Percentage completion of voluntary programme											48.6
additional non-CAMP components 2007														
aluminium	DK0005R	ng/m ³	14.361	41.948	108.812	187.462	127.717	140.93	59.98	146.04	159.63	123.976	130.77	116.545
	DK0008R	ng/m ³	19.618	54.533	107.511	123.272	119.245	149.2	82.991	157.019	181.523	173.343	146.939	134.432
	DK0031R	ng/m ³	-62.312	45.103	147.32	199.776	121.559	162.738	83.286	173.165	181.043	113.233	143.789	127.552
iron	DK0005R	ng/m ³	18.925	40.19	91.611	122.18	70.974	76.294	30.364	88.818	62.72	66.689	52.47	47.203
	DK0008R	ng/m ³	7.166	32.259	81.397	67.289	42.759	68.795	27.302	78.832	36.572	52.973	30.508	30.299
	DK0031R	ng/m ³	5.803	20.826	88.926	129.024	41.232	79.855	25.808	80.268	30.958	49.329	28.754	29.158
manganese	DK0005R	ng/m ³	0.564	1.512	2.694	3.741	2.08	2.395	1.203	3.023	2.057	2.298	1.81	1.696
	DK0008R	ng/m ³	0.331	1.511	2.671	2.233	1.553	2.599	1.199	2.632	1.27	2.288	1.292	1.578
	DK0031R	ng/m ³	0.209	1.021	2.915	3.122	1.7	3.246	1.14	2.747	1.209	1.892	1.163	1.674
selenium	DK0005R	ng/m ³	0.209	0.372	0.378	0.332	0.301	0.337	0.309	0.556	0.44	0.471	0.417	0.465
	DK0008R	ng/m ³	0.109	0.21	0.299	0.248	0.26	0.233	0.334	0.403	0.335	0.414	0.297	0.353
	DK0031R	ng/m ³	0.12	0.243	0.35	0.359	0.337	0.304	0.387	0.546	0.337	0.437	0.322	0.365

FRANCE

Components in Precipitation															
2007															
Mandatory	station	units	month												
			january	february	march	april	may	june	july	august	september	october	november	december	
ammonium	FR0090R	mg/l	0.05	0.05	0.4	0.5	0.1	0.15	0.1	0.15	0.15	0.4	0.25	0.05	
nitrate	FR0090R	mg/l	0.23	0.18	1.2	2.7	0.45	0.23	0.38	0.47	0.79	1.58	0.54	0.18	
precipitation	nitrogen	mm	112.5	164.2	102.1	61.5	122.8	149.1	145	91.2	45.1	25.5	105.3	102	
arsenic	FR0090R	µg/l	0.15	0.05	0.11	0.33	0.08	0.03	0.05	0.05	0.08	0.1	0.06	0.27	
cadmium	FR0090R	µg/l	0.02	0.04	0.15	0.2	0.06	0.01	0.02	0.06	0.03	0.06	0.05	0.04	
chromium	FR0090R	µg/l	0.11	0.19	0.39	0.75	0.24	0.47	0.19	0.33	0.29	0.3	1.35	0.38	
copper	FR0090R	µg/l	0.41	0.38	1.96	4.91	1.23	0.41	0.57	1.11	1.15	1.96	0.98	1.15	
lead	FR0090R	µg/l	0.7	0.49	2.55	4.85	1.85	0.21	0.62	0.65	1.07	2.71	1.64	1.32	
mercury			not reported												
nickel	FR0090R	µg/l	1.81	1.21	2.23	4.2	1.25	1.54	1.57	1.94	1.66	2.01	2.48	1.45	
zinc	FR0090R	µg/l	1.18	0.89	4.34	17.14	2.15	1.35	2.85	5.16	4.28	8.03	4.22	1.29	
precipitation	all metals	mm	112.5	164.2	102.1	61.5	122.8	149.1	145	91.2	45.1	25.5	105.3	102	
g-HCH			not reported												
Percentage completion of mandatory programme														83.3	
Voluntary															
2007															
PCB_28			not reported												
PCB_52			not reported												
PCB_101			not reported												
PCB_118			not reported												
PCB_138			not reported												
PCB_153			not reported												
PCB_180			not reported												
anthracene			not reported												
benzo(a)anthracene			not reported												
benzo(a)pyrene			not reported												
benzo(ghi)perylene			not reported												
chrysene+triphenylene			not reported												
fluoranthene			not reported												
indeno(123cd)pyrene			not reported												
phenanthrene			not reported												
pyrene			not reported												
Percentage completion of voluntary programme														0.0	

Comprehensive Atmospheric Monitoring Programme in 2007

Airborne components															
2007															
Mandatory	station	units	month												
			january	february	march	april	may	june	july	august	september	october	november	december	
NO2			not reported												
HNO3			not reported												
NO3			not reported												
HNO3+NO3			not reported												
NH3			not reported												
NH4			not reported												
NH3+NH4			not reported												
Percentage completion of mandatory programme															0.00
2007															
Voluntary															
NO			not reported												
arsenic			not reported												
cadmium			not reported												
chromium			not reported												
copper			not reported												
lead			not reported												
mercury			not reported												
nickel			not reported												
zinc			not reported												
PCB_28			not reported												
PCB_52			not reported												
PCB_101			not reported												
PCB_118			not reported												
PCB_138			not reported												
PCB_153			not reported												
PCB_180			not reported												
anthracene			not reported												
benzo(a)anthracene			not reported												
benzo(a)pyrene			not reported												
benzo(ghi)perylene			not reported												
chrysene			not reported												
flouranthene			not reported												
g-HCH			not reported												
indeno(123cd)pyrene			not reported												
phenanthrene			not reported												
pyrene			not reported												
Percentage completion of voluntary programme															0.00

GERMANY

Components in Precipitation

Mandatory 2007	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
ammonium	DE0001R	mg/l	0.320	0.908	0.302	0.600	0.785	0.535	0.352	0.338	0.240	0.410	1.296	0.366
nitrate	DE0001R	mg/l	0.509	0.719	0.399	0.600	0.511	0.369	0.330	0.267	0.416	0.515	0.779	0.517
precipitation <i>nitrogen</i>	DE0001R	mm	96.9	67.7	45.8	1.7	72.4	83.2	79.3	57.3	54.1	32.2	92.6	36.2
arsenic	DE0001R	µg/l	0.137	0.155	0.091	0.132		0.081	0.057	0.083	0.091	0.080	0.120	0.080
cadmium	DE0001R	µg/l	0.012	0.056	0.023	0.033		0.023	0.019	0.022	0.018	0.028	0.014	0.021
chromium	DE0001R	µg/l	0.212	0.206	0.136	0.270		0.115	0.033	0.037	0.046	0.056	0.077	0.062
copper	DE0001R	µg/l	0.385	1.149	0.527	2.780		1.457	0.607	1.117	1.012	0.853	0.544	0.603
lead	DE0001R	µg/l	0.484	1.706	0.537	0.412		0.564	0.400	0.428	0.486	0.672	0.432	0.503
mercury	DE0001R	ng/l	3.294	10.186	6.413	7.000	8.964	8.730	6.017	6.920	6.205	6.842	3.387	3.935
nickel	DE0001R	µg/l	0.375	0.571	0.327	1.720		0.319	0.234	0.232	0.266	0.247	0.159	0.241
zinc	DE0001R	µg/l	9.356	18.035	26.600	29.600		10.114	3.921	5.313	5.520	7.100	2.437	2.500
precipitation <i>metals ex. Hg</i>	DE0001R	mm	97.7	58.6	40.6	1.5	72.6	82.3	77.0	56.8	53.6	32.3	83.6	36.1
precipitation <i>Hg</i>	DE0001R	mm	101.5	58.7	41.0	1.7	70.2	84.6	83.4	58.5	55.3	31.1	91.6	36.8
g-HCH	DE0001R	ng/l	0.480	1.410	0.780	0.940	1.540	1.040	0.750	0.430	0.460	0.860	0.560	0.200
precipitation <i>g-HCH</i>	DE0001R	mm	84.0	68.0	46.0	2.0	76.0	88.0	82.0	59.0	55.0	32.0	53.0	78.0

Percentage completion of mandatory programme

95.1

Voluntary
2007

PCB_28	DE0001R	ng/l	0.079	0.044	0.067	1.530	0.142	0.038	0.041	0.143	0.088	0.081	0.049	0.065
PCB_52	DE0001R	ng/l	0.012	0.014	0.021	0.476	0.034	0.016	0.017	0.065	0.016	0.044	0.027	0.022
PCB_101	DE0001R	ng/l	0.027	0.033	0.084	1.920	0.086	0.039	0.042	0.172	0.061	0.073	0.093	0.043
PCB_118	DE0001R	ng/l	0.007	0.009	0.024	0.541	0.034	0.013	0.014	0.104	0.008	0.064	0.044	0.020
PCB_138	DE0001R	ng/l	0.030	0.040	0.180	4.010	0.380	0.060	0.060	0.220	0.100	0.140	0.090	0.080
PCB_153	DE0001R	ng/l	0.050	0.030	0.140	3.120	0.310	0.050	0.060	0.250	0.090	0.130	0.080	0.060
PCB_180	DE0001R	ng/l	0.013	0.016	0.039	0.899	0.118	0.014	0.015	0.145	0.030	0.047	0.028	0.024
anthracene	DE0001R	ng/l	0.260	1.080	0.570	6.290	0.290	0.430	0.270	0.450	0.300	0.210	0.130	0.120
benzo(a)anthracene	DE0001R	ng/l	0.760	4.070	0.580	3.010	0.520	0.670	0.620	0.900	1.560	1.190	1.130	0.420
benzo(a)pyrene	DE0001R	ng/l	0.290	3.300	0.590	3.000	0.460	0.890	1.050	0.740	1.590	0.870	0.480	0.420
benzo(ghi)perylene	DE0001R	ng/l	0.550	6.100	0.440	4.400	0.640	0.560	0.570	0.760	1.390	1.180	0.550	0.600
chrysene+triphenylene	DE0001R	ng/l	1.600	15.900	1.200	2.800	2.100	2.000	2.000	2.900	3.900	2.600	3.700	1.300
flouranthene	DE0001R	ng/l	4.400	51.000	4.700	8.300	5.600	4.600	4.600	6.200	8.000	6.900	9.500	2.900
indeno(123cd)pyrene	DE0001R	ng/l	0.600	7.250	0.570	2.400	0.440	0.380	0.410	0.770	1.450	1.560	0.710	0.650
phenanthrene	DE0001R	ng/l	8.900	47.100	6.400	25.200	6.000	5.100	5.900	7.700	9.900	6.200	13.300	4.100
pyrene	DE0001R	ng/l	2.800	27.800	2.800	12.800	3.200	2.900	2.700	4.800	5.300	5.000	6.300	1.400

Percentage completion of voluntary programme

100.0

additional non-CAMP components
2007

antimony	DE0001R	µg/l	0.046	0.172	0.065	0.040		0.129	0.053	0.043	0.066	0.066	0.055	0.067
cobalt	DE0001R	µg/l	0.014	0.022	0.015	0.049		0.017	0.016	0.014	0.024	0.016	0.013	0.013
iron	DE0001R	µg/l	10.478	17.804	29.070	46.400		10.257	9.988	10.996	12.779	18.959	3.391	16.240
manganese	DE0001R	µg/l	0.924	1.171	0.920	3.600		1.701	1.412	1.468	1.963	0.669	0.709	0.563
vanadium	DE0001R	µg/l	0.878	0.592	0.493	0.770		0.506	0.373	0.270	0.473	0.412	0.455	0.560
precipitation <i>metals</i>	DE0001R	mm	97.7	58.6	40.6	1.5	72.6	82.3	77.0	56.8	53.6	32.3	83.6	36.1
aldrin	DE0001R	ng/l	0.002	0.003	0.003	0.069	0.002	0.002	0.003	0.009	0.002	0.017	0.011	0.005
alpha_HCH	DE0001R	ng/l	0.150	0.220	0.150	1.570	0.200	0.180	0.150	0.100	0.190	0.230	0.290	0.050
benzo(b,j,k)flouranthene	DE0001R	ng/l	1.700	19.400	1.200	6.300	2.300	2.700	2.400	2.800	5.200	4.400	2.700	1.900
dibenzo_ah_anthracene	DE0001R	ng/l	0.160	1.180	0.100	2.700	0.190	0.160	0.140	0.160	0.310	0.290	0.130	0.100
dieldrin	DE0001R	ng/l	0.104	0.079	0.076	0.523	0.064	0.051	0.032	0.064	0.054	0.099	0.060	0.030
endrin	DE0001R	ng/l	0.006	0.006	0.008	0.205	0.005	0.005	0.006	0.014	0.004	0.068	0.041	0.012
HCB	DE0001R	ng/l	0.013	0.036	0.017	0.384	0.045	0.027	0.036	0.047	0.021	0.030	0.088	0.010
heptachlor	DE0001R	ng/l	0.004	0.004	0.005	0.122	0.003	0.003	0.004	0.009	0.003	0.020	0.012	0.005
op_DDD	DE0001R	ng/l	0.002	0.008	0.016	0.358	0.005	0.008	0.010	0.016	0.004	0.011	0.016	0.004
pp_DDD	DE0001R	ng/l	0.007	0.013	0.022	0.512	0.010	0.004	0.004	0.013	0.008	0.016	0.010	0.006
op_DDE	DE0001R	ng/l	0.003	0.002	0.006	0.141	0.001	0.002	0.006	0.013	0.004	0.013	0.008	0.004
pp_DDE	DE0001R	ng/l	0.009	0.014	0.020	0.459	0.010	0.006	0.013	0.042	0.022	0.019	0.012	0.009
op_DDT	DE0001R	ng/l	0.005	0.011	0.022	0.298	0.006	0.007	0.007	0.027	0.004	0.018	0.011	0.008
pp_DDT	DE0001R	ng/l	0.002	0.047	0.011	0.249	0.023	0.004	0.024	0.014	0.015	0.009	0.026	0.004
precipitation <i>organics</i>	DE0001R	mm	84.0	68.0	46.0	2.0	76.0	88.0	82.0	59.0	55.0	32.0	53.0	78.0

Comprehensive Atmospheric Monitoring Programme in 2007

Airborne components

2007														
Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
NO2	DE0001R	µg/m ³	3.14	6.458	6.637	1.312	1.068	1.216	0.887	1.06	0.969	1.876	2.709	4.742
HNO3	DE0001R	µg/m ³	0.102	0.111	0.145	0.223	0.292	0.304	0.157	0.211	0.086	0.164	0.079	0.101
NO3	DE0001R	µg/m ³	0.216	1.117	1.255	1.157	0.81	0.435	0.587	0.581	0.52	0.788	0.693	1.035
HNO3+NO3	DE0001R	µg/m ³	0.319	1.222	1.399	1.378	1.102	0.737	0.746	0.79	0.591	0.955	0.766	1.135
NH3	DE0001R	µg/m ³	0.478	0.455	1.267	2.091	1.19	2.022	1.608	1.833	1.045	1.289	0.806	0.748
NH4	DE0001R	µg/m ³	0.164	1.457	1.349	1.084	0.492	0.399	0.422	0.612	0.368	0.933	0.745	1.227
NH3+NH4	DE0001R	µg/m ³	0.621	1.893	2.608	3.175	1.679	2.425	2.023	2.471	1.404	2.221	1.536	1.975

Percentage completion of mandatory programme 100.0

Voluntary

Voluntary 2007														
NO			not reported											
arsenic	DE0001R	ng/m ³	0.290	0.844	0.622	0.478	0.285	0.262	0.151	0.275	0.223	0.399	0.449	0.435
cadmium	DE0001R	ng/m ³	0.036	0.240	0.294	0.106	0.049	0.078	0.031	0.054	0.048	0.127	0.106	0.122
chromium			not reported											
copper	DE0001R	ng/m ³	1.225	3.600	2.258	2.563	1.332	1.766	0.770	1.562	1.490	2.997	2.672	3.333
lead	DE0001R	ng/m ³	2.413	8.082	7.228	4.888	2.093	2.506	1.580	2.148	1.483	3.820	3.850	4.535
mercury			not reported											
nickel	DE0001R	ng/m ³	1.850	1.943	2.868	2.538	1.955	1.730	1.297	1.144	0.912	2.130	0.930	1.628
zinc	DE0001R		not reported											
PCB_28	DE0001R	pg/m ³	not reported											
PCB_52	DE0001R	pg/m ³	not reported											
PCB_101	DE0001R	pg/m ³	not reported											
PCB_118	DE0001R	pg/m ³	not reported											
PCB_138	DE0001R	pg/m ³	not reported											
PCB_153	DE0001R	pg/m ³	not reported											
PCB_180	DE0001R	pg/m ³	not reported											
anthracene	DE0001R	pg/m ³	0.080	0.160	1.190	0.090	0.080	0.080	0.040	0.040	0.030	0.090	0.180	0.210
benzo(a)anthracene	DE0001R	pg/m ³	0.030	0.110	0.510	0.040	0.020	0.010	0.010	0.010	0.010	0.070	0.060	0.250
benzo(a)pyrene	DE0001R	pg/m ³	0.030	0.170	0.430	0.050	0.010	0.020	0.010	0.020	0.010	0.080	0.020	0.270
benzo(ghi)perylene	DE0001R	pg/m ³	0.050	0.290	0.430	0.090	0.040	0.030	0.030	0.030	0.020	0.150	0.100	0.570
chrysene+triphenylene	DE0001R	pg/m ³	0.110	0.380	1.020	0.140	0.060	0.050	0.040	0.060	0.030	0.170	0.170	0.690
flouranthene	DE0001R	pg/m ³	0.360	1.530	2.890	1.080	0.670	0.990	0.470	0.370	0.270	0.750	0.500	1.400
g-HCH	DE0001R	pg/m ³	not reported											
indeno(123cd)pyrene	DE0001R	pg/m ³	0.050	0.310	0.620	0.110	0.050	0.030	0.030	0.040	0.020	0.140	0.090	0.530
phenanthrene	DE0001R	pg/m ³	1.310	3.710	5.290	3.780	2.820	2.590	1.320	1.440	0.970	2.340	2.180	3.980
pyrene	DE0001R	pg/m ³	0.250	0.960	2.130	0.430	0.260	0.410	0.130	0.190	0.120	0.450	0.340	1.040

Percentage completion of voluntary programme 53.8

additional non-CAMP components

antimony	DE0001R	ng/m ³	0.283	0.950	0.682	0.508	0.713	0.336	0.237	0.292	0.250	0.530	0.484	0.545	
cobalt	DE0001R	ng/m ³	0.021	0.044	0.104	0.080	0.046	0.086	0.039	0.049	0.028	0.069	0.052	0.066	
iron	DE0001R	ng/m ³	17.625	37.900	96.800	103.625	50.075	57.440	24.200	52.120	31.000	70.425	46.520	62.850	
manganese	DE0001R	ng/m ³	1.238	2.103	4.802	4.290	2.118	2.694	1.433	2.246	1.112	3.042	1.792	2.298	
vanadium	DE0001R	ng/m ³	3.590	2.822	4.190	4.743	3.110	3.056	2.403	1.996	1.330	1.655	1.172	2.158	
benzo_bjk_fluoranthene	DE0001R	pg/m ³	0.130	0.730	1.770	0.220	0.080	0.060	0.060	0.080	0.030	0.310	0.240	1.340	
dibenzo_ah_anthracene	DE0001R	pg/m ³	0.010	0.050	0.130	0.020	0.010	0.000	0.000	0.000	0.000	0.020	0.010	0.070	

ICELAND

Components in Precipitation														
2007														
Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
ammonium	IS0090R	mg/l	0.268	0.36	0.321	2.099	0.259	0.215	0.225	0.111	0.11	0.069	0.178	0.157
	IS0091R	mg/l	0.005	4.991	0.1	2.95	5.072	0.24	0.234	0.308	0.015	0.024	0.005	0.043
nitrate	IS0090R	mg/l	0.053	0.085	0.064	0.558	0.147	0.144	0.135	0.054	0.142	0.035	0.069	0.059
	IS0091R	mg/l	0.831	0.757	0.039	0.148	1.818	0.309	0.166	0.063	0.042	0.037	0.035	0.077
precipitation	nitrogen	IS0090R	mm	49.01	39.78	136.76	82.55	26.81	25.9	22.8	84.9	144.9	156.3	118.3
		IS0091R	mm	98.21	63.13	198.68	215.63	51.02	41.6	23.7	103.1	328.3	288.8	200.5
arsenic	IS0090R	µg/l	0.382	0.379	0.564	0.283	0.242	0.146	0.034	0.025	0.078	0.197	1.138	0.721
	IS0091R	µg/l	0.05	0.093	0.073	0.102	0.115	0.087	0.087	0.045	0.012	0.028	0.044	0.06
cadmium	IS0090R	µg/l	0.007	0.005	0.011	0.016	0.033	0.01	0.006	0.007	0.007	0.005	0.005	0.005
	IS0091R	µg/l	0.008	0.008	0.008	0.013	0.017	0.02	0.023	0.008	0.006	0.008	0.009	0.013
chromium	IS0090R	µg/l	0.05	0.129	0.332	0.352	0.441	0.733	0.581	0.222	0.224	0.447	0.877	0.891
	IS0091R	µg/l	0.071	0.184	0.126	0.076	0.226	0.168	0.503	0.161	0.079	0.052	0.147	0.127
copper	IS0090R	µg/l	2.503	2.874	3.139	2.452	4.947	5.093	3.873	1.332	0.958	0.975	1.963	1.356
	IS0091R	µg/l	0.585	0.739	0.493	0.482	0.656	1.109	1.85	0.486	0.304	0.381	0.643	0.723
lead	IS0090R	µg/l	0.405	0.303	0.241	0.578	0.551	0.554	0.459	0.145	0.09	0.081	0.176	0.119
	IS0091R	µg/l	0.148	0.165	0.161	0.377	0.436	0.276	0.591	0.127	0.069	0.142	0.175	0.167
mercury			not reported											
nickel	IS0090R	µg/l	0.276	0.606	1.408	1.164	0.99	1.566	2.062	0.357	0.333	0.397	0.363	0.455
	IS0091R	µg/l	0.278	1.525	0.189	0.13	0.287	1.257	1.727	0.643	0.283	1.347	1.489	1.51
zinc	IS0090R	µg/l	16.8	7.312	5.99	7.851	16.856	12.685	8.804	2.329	1.466	2.459	3.758	1.925
	IS0091R	µg/l	5.226	4.956	9.512	8.057	5.85	15.589	15.275	2.767	7.182	8.387	12.308	9.823
precipitation	metals	IS0090R	mm	49.01	39.78	136.76	82.55	26.81	25.9	22.8	84.9	144.9	156.3	118.3
precipitation	metals	IS0091R	mm	98.21	63.13	198.68	215.63	51.02	41.6	23.7	103.1	328.3	288.8	200.5
g-HCH														
	precipitation	IS0091R	mm	65	22	100	55	25	17	15	61	160	121	90
Percentage completion of mandatory programme														90.9
Voluntary														
2007														
PCB_28	IS0091R	ng/l	0.01	0.018	0.004	0.007	0.016	0.024	0.193	0.048	0.018	0.024	0.055	0.023
PCB_52	IS0091R	ng/l	0.005	0.009	0.002	0.004	0.008	0.012	0.06	0.015	0.006	0.007	0.01	0.007
PCB_101	IS0091R	ng/l	0.005	0.009	0.012	0.004	0.008	0.025	0.027	0.007	0.002	0.003	0.004	0.014
PCB_118	IS0091R	ng/l	0.018	0.015	0.02	0.006	0.008	0.012	0.013	0.003	0.001	0.006	0.005	0.011
PCB_138	IS0091R	ng/l	0.034	0.06	0.034	0.004	0.031	0.05	0.034	0.003	0.002	0.005	0.009	0.016
PCB_153	IS0091R	ng/l	0.023	0.03	0.02	0.006	0.008	0.026	0.041	0.003	0.002	0.004	0.006	0.015
PCB_180	IS0091R	ng/l	0.008	0.014	0.013	0.004	0.008	0.012	0.033	0.003	0.001	0.009	0.002	0.007
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene+triphenalyne			not reported											
flouranthene			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
precipitation	voluntary organics	IS0091R	mm											
Percentage completion of voluntary programme														43.8
additional non-CAMP components														
2007														
aluminium	IS0090R	µg/l	188.788	366.215	298.928	228.408	523.743	618.36	410.695	86.579	45.259	52.338	219.382	101.363
iron	IS0090R	µg/l	133.089	261.473	245.33	202.874	555.668	561.624	273.421	74.68	46.991	17.934	61.331	10.842
	IS0091R	µg/l	34.445	211.415	242.369	48.582	145.679	206.237	309.964	129.119	68.053	75.625	153.884	166.84
manganese	IS0090R	µg/l	2.236	4.324	4.226	3.897	10.857	11.378	5.168	1.512	0.833	0.849	2.833	1.506
	IS0091R	µg/l	0.64	3.427	4.32	1.071	3.012	3.321	6.846	3.057	1.15	1.352	2.494	2.642
vanadium	IS0090R	µg/l	2.324	2.686	3.694	2.017	2.38	1.964	0.885	0.298	0.592	0.764	4.676	3.053
	IS0091R	µg/l	0.144	0.865	0.909	0.266	0.73	1.048	1.317	0.547	0.302	0.358	0.285	0.517
precipitation	IS0090R	mm	49.01	39.78	136.76	82.55	26.81	25.9	22.8	84.9	144.9	156.3	118.3	153
precipitation	metals	IS0091R	mm	98.21	63.13	198.68	215.63	51.02	41.6	23.7	103.1	328.3	288.8	200.5
PCB_31	IS0091R	ng/l	0.007	0.014	0.003	0.005	0.012	0.018	0.16	0.039	0.015	0.02	0.04	0.019
PCB_105	IS0091R	ng/l	0.009	0.015	0.011	0.004	0.008	0.012	0.013	0.003	0.001	0.003	0.002	0.006
PCB_156	IS0091R	ng/l	0.005	0.009	0.006	0.004	0.008	0.012	0.013	0.003	0.001	0.002	0.002	0.004
HCB	IS0091R	ng/l	0.017	0.017	0.007	0.007	0.018	0.016	0.007	0.006	0.009	0.005	0.006	0.007
alpha_HCH	IS0091R	ng/l	0.12	0.133	0.066	0.089	0.2	0.15	0.147	0.116	0.076	0.13	0.108	0.089
beta_HCH	IS0091R	ng/l	0.009	0.009	0.006	0.009	0.008	0.012	0.013	0.006	0.004	0.005	0.005	0.006
cis_CD	IS0091R	ng/l	0.004	0.005	0.004	0.004	0.004	0.006	0.013	0.003	0.001	0.003	0.002	0.002
dieldrin	IS0091R	ng/l	0.045	0.056	0.047	0.035	0.052	0.044	0.037	0.023	0.02	0.038	0.033	0.031
op_DDT	IS0091R	ng/l	0.005	0.009	0.002	0.004	0.008	0.012	0.013	0.003	0.001	0.002	0.002	0.002
pp_DDD	IS0091R	ng/l	0.005	0.009	0.004	0.007	0.008	0.012	0.013	0.003	0.001	0.002	0.002	0.002
pp_DDE	IS0091R	ng/l	0.005	0.009	0.004	0.004	0.008	0.012	0.013	0.003	0.001	0.002	0.002	0.002
pp_DDT	IS0091R	ng/l	0.005	0.009	0.008	0.008	0.008	0.012	0.02	0.005	0.002	0.002	0.003	0.002
trans_CD	IS0091R	ng/l	0.004	0.005	0.003	0.003	0.004	0.006	0.013	0.003	0.001	0.002	0.002	0.002
trans_NO	IS0091R	ng/l	0.006	0.005	0.004	0.004	0.007	0.015	0.013	0.003	0.001	0.002	0.002	0.002
txph-26	IS0091R	ng/l	0.002	0.005	0.004	0.004	0.007	0.006	0.007	0.002	0.001	0.002	0.002	0.003
txph-50	IS0091R	ng/l	0.005	0.009	0.004	0.004	0.008	0.012	0.013	0.003	0.001	0.002	0.002	0.002
txph-62	IS0091R	ng/l	0.01	0.018	0.004	0.007	0.016	0.024	0.013	0.003	0.001	0.002	0.002	0.002
precipitation	voluntary organics	IS0091R	mm	65	22	100	55	25	17	15	61	160	121	90
precipitation_amount_off	IS0090R	mm	63.6	36.6	131.5	62.6	28.1	28.2	29.5	106.9	156.1	171.5	113.1	196.5
precipitation_amount_off	IS0091R	mm	114.5	72.6	225.6	152.7	56.1	51.9	24.8	105.9	371.1	281	230.6	312.5
precipitation_amount_off	IS0091R	mm	117	70	226	165	57	41	25	106	372	281	231	313

Comprehensive Atmospheric Monitoring Programme in 2007

Airborne components															
Mandatory 2007	station	units	january	february	march	april	may	june	july	august	september	october	november	december	
NO2			not reported												
HNO3			not reported												
NO3	IS0091R	µg/m³	0.02	0.035	0.02	0.08	0.05	0.075	0.059	0.045	0.02	0.015	0.02	0.048	
HNO3+NO3			not reported												
NH3			not reported												
NH4			not reported												
NH3+NH4			not reported												

IRELAND

Components in Precipitation														
2007														
Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
ammonium	IE0001R	mg/l	0.09	0.05	0.13	0.12	0.63	0.09	0.39	0.06	0.1	0.1	0.08	0.1
nitrate	IE0001R	mg/l	0.05	0.04	0.04	0.1	0.06	0.08	0.14	0.05	0.05	0.15	0.11	0.07
precipitation	nitrogen	mm	105.4	201.4	111	50.9	77	153.3	76.3	106	74.4	105.7	98.2	189.4
arsenic	IE0001R	µg/l		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
cadmium	IE0001R	µg/l		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
chromium	IE0001R	µg/l		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
copper	IE0001R	µg/l		0.5	2.1	0.5	0.5	4.6	4.5	2.8	2.7	0.5	0.5	0.5
lead	IE0001R	µg/l		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
mercury	IE0001R	ng/l		50	50	50	50	50	50	50	50	50	50	50
nickel	IE0001R	µg/l		0.5	0.5	0.5	0.5	0.5	2.4	0.5	0.5	0.5	0.5	0.5
zinc	IE0001R	µg/l		1.7	0.5	7.4	19.7	38.5	22.1	9.8	3.7	0.5	5.9	0.5
precipitation	all metals	mm	105.4	201.4	111	50.9	77	153.3	76.3	106	74.4	105.7	98.2	189.4
g-HCH			not reported											
Percentage completion of mandatory programme														84.8
Voluntary														
2007														
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene+triphenylene			not reported											
flouranthene			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
Percentage completion of voluntary programme														0.0
additional non-CAMP components														
2006														
aluminium	IE0001R	µg/l	25.00	19.10	17.40	38.70	25.00	72.90	25.00	23.60	21.50	16.90	22.90	15.90
manganese	IE0001R	µg/l	4.20	9.40	4.10	6.90	3.50	13.60	3.40	7.30	2.50	3.20	4.20	2.30
vanadium	IE0001R	µg/l	0.50	0.50	0.50	0.50	0.50	2.20	0.50	0.50	0.50	0.50	0.50	0.50

Comprehensive Atmospheric Monitoring Programme in 2007

IRELAND

Airborne components

Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
NO2			not reported											
HNO3			not reported											
NO3			not reported											
HNO3+NO3			not reported											
NH3			not reported											
NH4			not reported											
NH3+NH4			not reported											
Percentage completion of mandatory programme													0,00	

Voluntary

NO			not reported											
arsenic			not reported											
cadmium			not reported											
chromium			not reported											
copper			not reported											
lead			not reported											
mercury			not reported											
nickel			not reported											
zinc			not reported											
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene			not reported											
flouranthene			not reported											
g-HCH			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
Percentage completion of voluntary programme													0,00	

NETHERLANDS

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Comprehensive Atmospheric Monitoring Programme in 2007

Airborne components															
2007															
Mandatory	station	units	month												
			january	february	march	april	may	june	july	august	september	october	november	december	
NO2		NL0009R	µg/m ³	2.605	4.223	3.404	3.218	2.322	2.009	1.668	2.068	1.596	3.325	4.468	5.164
		NL0091R	µg/m ³	4.113	7.514	6.053	6.504	3.276	3.915	3.174	3.242	2.797	7.062	5.703	7.834
HNO3				not reported											
NO3		NL0009R	µg/m ³	0.244	0.616	0.661	1.278	0.766	0.812	0.392	0.606	0.394	1.070	0.575	0.849
		NL0091R	µg/m ³	0.251	0.700	1.036	1.324	0.646	0.730	0.390	0.499	0.424	1.026	0.538	0.822
HNO3+NO3				not reported											
NH3		NL0091R	µg/m ³	0.217	1.641	1.302	2.720	1.158	0.757	0.717	1.392	0.454	1.496	0.544	0.679
NH4		NL0009R	µg/m ³	0.464	0.872	0.829	1.788	1.018	1.481	0.850	0.991	0.640	1.545	0.873	1.420
		NL0091R	µg/m ³	0.505	0.942	1.475	1.835	0.952	1.509	0.700	0.805	0.653	1.407	0.809	1.411
NH3+NH4				not reported											
Percentage completion of mandatory programme													80.0		
Voluntary															
2007															
NO		NL0009R	µg/m ³	0.039	0.544	0.099	0.276	0.124	0.113	0.067	0.029	0.129	0.673	0.801	1.891
		NL0091R	µg/m ³	0.573	2.621	1.437	0.922	0.239	0.343	0.420	0.564	0.607	2.465	1.789	6.923
arsenic		NL0009R	ng/m ³	0.169	0.339	0.561	0.602	0.290	0.374	0.285	0.398	0.186	0.453	0.381	0.381
cadmium		NL0009R	ng/m ³	0.065	0.132	0.194	0.170	0.073	0.132	0.063	0.052	0.086	0.112	0.119	0.165
chromium				not reported											
copper				not reported											
lead		NL0009R	ng/m ³	2.888	6.911	7.050	5.764	2.915	4.370	3.168	3.443	3.462	5.057	4.833	8.632
mercury				not reported											
nickel		NL0009R	ng/m ³	1.078	1.354	1.832	2.341	1.711	1.718	1.210	1.413	1.463	1.216	1.244	1.604
zinc		NL0009R	ng/m ³	19.335	28.492	29.014	29.258	11.644	17.683	13.554	12.172	14.513	16.959	18.311	24.022
PCB_28				not reported											
PCB_52				not reported											
PCB_101				not reported											
PCB_118				not reported											
PCB_138				not reported											
PCB_153				not reported											
PCB_180				not reported											
anthracene				not reported											
benzo(a)anthracene				not reported											
benzo(a)pyrene				not reported											
benzo(ghi)perylene				not reported											
chrysene				not reported											
flouranthene				not reported											
g-HCH				not reported											
indeno(123cd)pyrene				not reported											
phenanthrene				not reported											
pyrene				not reported											
Percentage completion of voluntary programme													23.1		

NORWAY

Components in Precipitation															
2007															
Mandatory		station	units	month											
				january	february	march	april	may	june	july	august	september	october	november	december
ammonium		NO0001R	mg/l	0.12	0.166	0.37	0.533	0.245	0.073	0.191	0.566	0.146	0.944	0.356	0.165
		NO0039R		0.062	0.19	0.164	0.188	0.178	0.141	0.052	0.055	0.058	0.075	0.221	0.068
		NO0057R		0.005	0.18	0.025	0.325	0.112	0.08	0.09	0.08	0.408	0.017	0.089	0.362
nitrate		NO0001R	mg/l	0.172	0.301	0.501	0.624	0.318	0.18	0.207	0.404	0.221	0.841	0.432	0.291
		NO0039R		0.033	0.046	0.068	0.07	0.11	0.099	0.027	0.035	0.006	0.013	0.039	0.05
		NO0057R		0.04	0.047	0.043	0.054	0.109	0.04	0.03	0.052	0.097	0.03	0.052	0.041
precipitation	nitrogen	NO0001R	mm	156.9	152.5	86.7	33.4	140.6	118.9	191	152.4	77.3	69.6	100.9	160.8
		NO0039R		279.6	121.1	94.6	135.8	66.9	52.2	172.9	206.4	257.6	170.4	300.3	72.5
		NO0057R		16.8	10.5	55.5	16	15	20.1	13	21.5	18.3	62.4	14.9	32.2
arsenic		NO0001R	µg/l	0.155	0.12	0.169	0.13	0.065	0.051	0.05	0.072	0.057	0.216	0.111	0.075
cadmium		NO0001R	µg/l	0.005	0.023	0.036	0.024	0.02	0.008	0.025	0.032	0.015	0.087	0.029	0.011
chromium		NO0001R	µg/l	not reported											
copper		NO0001R	µg/l	0.073	0.314	0.333	0.881	0.372	0.29	0.296	0.394	0.343	0.782	0.729	0.321
lead		NO0001R	µg/l	0.345	0.738	0.752	0.878	0.636	0.271	0.472	0.751	0.445	2.315	0.888	0.465
mercury		NO0001R	ng/l	3.984	3.59	5.69	8.44	13.721	13.7	6.082	7.538	2.68	4.32	3.2	2.994
nickel		NO0001R	µg/l	0.141	0.211	0.456	0.454	0.223	0.131	0.154	0.128	0.2	0.706	0.217	0.182
zinc		NO0001R	µg/l	1.114	4.131	3.628	4.11	1.991	2.137	2.494	2.703	3.337	6.087	3.905	1.461
precipitation	metals ex. Hg	NO0001R	mm	160.99	113.14	88.57	26.37	110.19	101.83	178.37	145.64	76.52	73.63	116.36	154.33
precipitation	mercury	NO0001R	mm	156.9	152.5	86.7	43.8	130.2	118.9	191	152.4	77.3	69.6	100.9	160.8
g-HCH		NO0001R	ng/l	0.2	0.16	0.316	0.597	0.61	0.42	0.437	0.522	0.454	0.535	0.402	0.343
precipitation	organics	NO0001R	mm	156.3	134.6	103.2	32.4	142.8	128.1	179.3	152.6	77.2	29.6	125.7	160.8
Percentage completion of mandatory programme															90.9
Voluntary															
2007															
PCB_28		NO0001R	ng/l	0.008	0.017	0.007	0.052	0.023	0.121	0.025	0.016	0.013	0.011	0.015	0.022
PCB_52		NO0001R	ng/l	0.008	0.016	0.006	0.036	0.021	0.075	0.032	0.018	0.02	0.013	0.021	0.033
PCB_101		NO0001R	ng/l	0.007	0.024	0.014	0.046	0.031	0.041	0.033	0.022	0.029	0.026	0.031	0.063
PCB_118		NO0001R	ng/l	0.003	0.011	0.009	0.035	0.019	0.304	0.059	0.027	0.026	0.026	0.021	0.025
PCB_138		NO0001R	ng/l	0.007	0.027	0.018	0.044	0.019	0.682	0.067	0.025	0.035	0.023	0.02	0.035
PCB_153		NO0001R	ng/l	0.011	0.039	0.026	0.057	0.032	1.413	0.127	0.044	0.062	0.035	0.032	0.066
PCB_180		NO0001R	ng/l	0.005	0.011	0.014	0.019	0.01	0.348	0.029	0.008	0.021	0.011	0.012	0.022
anthracene				not reported											
benzo(a)anthracene				not reported											
benzo(a)pyrene				not reported											
benzo(ghi)perylene				not reported											
chrysene+triphenylene				not reported											
flouranthene				not reported											
indeno(123cd)pyrene				not reported											
phenanthrene				not reported											
pyrene				not reported											
precipitation	organics	NO0001R	mm	156.3	134.6	103.2	32.4	142.8	128.1	179.3	152.6	77.2	29.6	125.7	160.8
Percentage completion of voluntary programme															43.8
additional non-CAMP components															
2007															
cobalt		NO0001R	µg/l	0.01	0.009	0.015	0.042	0.019	0.014	0.011	0.013	0.031	0.036	0.021	0.01
vanadium		NO0001R	µg/l	0.831	0.47	1.173	1.102	0.771	0.321	0.38	0.458	0.312	1.225	0.624	0.625
precipitation	metals	NO0001R	mm	160.99	113.14	88.57	26.37	110.19	101.83	178.37	145.64	76.52	73.63	116.36	154.33
HCB		NO0001R	ng/l	0.112	0.27	0.088	1.702	0.295	4.647	0.195	0.083	0.119	0.058	0.043	0.081
a-HCH		NO0001R	ng/l	0.161	0.095	0.167	0.351	0.224	0.984	0.194	0.218	0.287	0.194	0.193	0.157
precipitation	organics	NO0001R	mm	156.3	134.6	103.2	32.4	142.8	128.1	179.3	152.6	77.2	29.6	125.7	160.8

Comprehensive Atmospheric Monitoring Programme in 2007

Airborne components													
2007													
Mandatory	station	units	month										
			january	february	march	april	may	june	july	august	september	october	november december
NO ₂	NO0001R	µg/m ³	0.21	0.494	0.462	0.37	0.327	0.312	0.2	0.293	0.144	0.242	0.396 0.406
	NO0039R	µg/m ³	0.173	0.262	0.244	0.248	0.187	0.194	0.15	0.12	0.057	0.151	0.109
HNO ₃	NO0001R	µg/m ³	0.02	0.084	0.087	0.072	0.029	0.051	0.053	0.018	0.024	0.019	0.03 0.029
	NO0042R	µg/m ³	0.015	0.012	0.048	0.049	0.012	0.018	0.019	0.017	0.014	0.013	0.016 0.016
NO ₃	NO0001R	µg/m ³	0.07	0.153	0.245	0.302	0.083	0.054	0.085	0.116	0.116	0.121	0.145 0.072
	NO0039R	µg/m ³	0.029	0.128	0.051	0.118	0.028	0.034	0.015	0.024	0.017	0.017	0.037 0.052
HNO ₃ +NO ₃	NO0042R	µg/m ³	0.036	0.029	0.084	0.095	0.011	0.025	0.015	0.011	0.009	0.012	0.03 0.018
	NO0001R	µg/m ³	0.09	0.235	0.333	0.375	0.113	0.107	0.138	0.135	0.142	0.143	0.178 0.103
NH ₃	NO0039R	µg/m ³	0.044	0.124	0.075	0.17	0.05	0.057	0.038	0.05	0.035	0.032	0.053 0.065
	NO0042R	µg/m ³	0.052	0.042	0.131	0.147	0.025	0.044	0.035	0.028	0.024	0.026	0.047 0.037
NH ₄	NO0001R	µg/m ³	0.279	0.252	0.364	0.356	0.226	0.444	0.272	0.308	0.214	0.241	0.232 0.066
	NO0039R	µg/m ³	0.467	0.854	0.987	0.895	0.702	1.18	0.775	0.897	0.249	0.724	0.525 0.29
NH ₄	NO0042R	µg/m ³	0.456	0.198	0.296	0.269	0.244	0.352	0.245	0.185	0.186	0.143	0.057 0.07
	NO0039R	µg/m ³	0.023	0.097	0.061	0.111	0.067	0.113	0.059	0.06	0.025	0.025	0.021 0.036
NH ₃ +NH ₄	NO0042R	µg/m ³	0.062	0.037	0.079	0.114	0.018	0.02	0.014	0.018	0.006	0.005	0.023 0.035
	NO0001R	µg/m ³	0.304	0.542	0.699	0.634	0.322	0.628	0.312	0.611	0.304	0.468	0.288 0.145
	NO0039R	µg/m ³	0.491	0.927	1.048	1.006	0.77	1.292	0.835	0.958	0.274	0.749	0.546 0.326
	NO0042R	µg/m ³	0.518	0.236	0.376	0.385	0.263	0.374	0.259	0.203	0.193	0.148	0.08 0.105
Percentage completion of mandatory programme													100.0
Voluntary													
2007													
NO													
not reported													
arsenic	NO0001R	ng/m ³	0.095	0.272	0.343	0.307	0.202	0.233	0.122	0.185	0.113	0.372	0.124 0.132
	NO0042R	ng/m ³	0.123	0.044	0.067	0.072	0.017	0.011	0.014	0.023	0.01	0.009	0.051 0.169
cadmium	NO0001R	ng/m ³	0.036	0.072	0.122	0.061	0.027	0.047	0.02	0.039	0.023	0.066	0.026 0.026
	NO0042R	ng/m ³	0.018	0.008	0.014	0.023	0.004	0.023	0.002	0.009	0.002	0.003	0.01 0.037
chromium	NO0001R	ng/m ³	0.892	1.012	0.771	0.848	0.409	0.289	0.178	0.406	0.233	0.397	0.188 0.604
	NO0042R	ng/m ³	0.103	0.044	0.067	0.064	0.034	0.106	0.041	0.121	0.063	0.078	0.066 0.097
copper	NO0001R	ng/m ³	1.044	0.552	0.67	0.658	0.562	0.682	0.757	1.049	0.582	1.864	0.273 1.068
	NO0042R	ng/m ³	0.209	0.2	0.224	0.778	0.137	0.705	0.096	0.589	0.117	0.18	0.172 0.275
lead	NO0001R	ng/m ³	0.9	2.362	2.557	1.528	0.778	1.371	0.481	1.634	0.61	1.616	0.68 1.004
	NO0042R	ng/m ³	0.664	0.27	0.401	0.65	0.106	0.69	0.032	0.198	0.05	0.06	0.328 1.5
mercury	NO0042R	ng/m ³	1.611	1.699	1.821	1.416	1.705	1.832	1.636	1.596	1.754	1.77	1.719 1.599
	NO0001R	ng/m ³	0.312	0.908	0.702	0.913	0.527	0.495	0.347	0.73	0.25	0.502	0.204 1.411
nickel	NO0042R	ng/m ³	0.053	0.044	0.066	0.148	0.036	0.122	0.027	0.272	0.01	0.031	0.04 0.09
	NO0001R	ng/m ³	1.892	8.527	7.639	4.759	2.615	5.042	1.774	3.937	2.345	7.113	2.206 3.429
zinc	NO0042R	ng/m ³	1.093	0.92	1.737	2.985	0.379	0.874	0.204	1.696	0.352	0.372	0.796 2.53
PCB_28	NO0001R	pg/m ³	0.952		1.555	1.129	1.127	1.924	1.638	1.748	0.938	1.215	1.346 1.128
	NO0042R	pg/m ³	3.113	2.699	2.855	1.651	1.693	5.207	4.762	3.779	1.77	2.093	2.552 1.628
PCB_52	NO0001R	pg/m ³	0.843		1.334	1.078	1.184	1.782	1.528	1.556	0.826	1.371	1.372 1.12
	NO0042R	pg/m ³	1.54	1.216	1.426	1.066	0.812	1.627	1.444	1.135	0.786	0.895	1.035 1.01
PCB_101	NO0001R	pg/m ³	0.456		0.725	0.654	0.77	1.114	0.989	1.039	0.514	0.846	0.68 0.406
	NO0042R	pg/m ³	0.896	0.468	0.587	0.491	0.323	0.569	0.541	0.324	0.345	0.398	0.406 0.399
PCB_118	NO0001R	pg/m ³	0.193		0.261	0.216	0.335	0.627	0.518	0.349	0.18	0.297	0.347 0.116
	NO0042R	pg/m ³	0.717	0.155	0.207	0.707	0.245	0.186	0.229	0.089	0.122	0.233	0.138 2.589
PCB_138	NO0001R	pg/m ³	0.26		0.307	0.447	0.442	0.953	0.71	0.482	0.334	0.328	0.302 0.156
	NO0042R	pg/m ³	0.835	0.136	0.213	1.239	0.326	0.208	0.255	0.086	0.106	0.288	0.128 0.489
PCB_153	NO0001R	pg/m ³	0.419		0.506	0.818	0.76	1.255	1.349	0.756	0.616	0.505	0.521 0.256
	NO0042R	pg/m ³	1.301	0.23	0.353	2.614	0.761	0.367	0.448	0.139	0.183	0.499	0.21 1.014
PCB_180	NO0001R	pg/m ³	0.104		0.12	0.199	0.21	0.303	0.226	0.183	0.18	0.192	0.102 0.063
	NO0042R	pg/m ³	0.319	0.04	0.076	0.623	0.202	0.128	0.074	0.028	0.041	0.138	0.039 0.14
anthracene	NO0042R	pg/m ³	0.005	0.002	0.002	0.001	0.001	0.001	0.001	0.002	0.001	0.013	0.006 0.003
	benzo(a)anthracene	pg/m ³	0.02	0.002	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.002 0.011
benzo(a)pyrene	NO0042R	pg/m ³	0.015	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003 0.012
	benzo(ghi)perylene	pg/m ³	0.028	0.004	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004 0.018
not reported													
chrysene	NO0042R	pg/m ³	0.065	0.009	0.007	0.001	0.002	0.002	0.001	0.002	0.001	0.001	0.01 0.037
	flouranthene	pg/m ³	0.169	0.026	0.038	0.007	0.011	0.011	0.008	0.011	0.01	0.008	0.027 0.106
g-HCH	NO0001R	pg/m ³	1.918		3.613	4.698	5.186	5.339	6.827	7.453	3.57	4.062	3.281 2.588
	NO0042R	pg/m ³	1.718	1.488	2.076	2.14	1.58	1.264	1.375	1.43	1.563	1.208	1.541 1.482
indeno(123cd)pyrene	NO0042R	pg/m ³	0.023	0.003	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004 0.019
	phenanthrene	pg/m ³	0.267	0.051	0.132	0.024	0.031	0.05	0.043	0.043	0.039	0.045	0.07 0.146
pyrene	NO0042R	pg/m ³	0.094	0.016	0.014	0.006	0.01	0.01	0.007	0.01	0.01	0.007	0.019 0.066
Percentage completion of voluntary programme													92.3

additional non-CAMP components														
2007														
PCB_18	NO0042G	pg/m ³	5.864	4.286	4.88	2.742	2.441	7.278	7.701	6.136	2.447	1.917	2.463	16.339
PCB_31	NO0042G	pg/m ³	2.977	2.584	2.713	1.54	1.584	4.949	4.585	3.627	1.624	1.849	2.275	1.537
PCB_33	NO0042G	pg/m ³	2.056	1.911	1.905	1.126	1.164	3.771	3.6	2.774	1.254	1.532	1.804	7.414
PCB_37	NO0042G	pg/m ³	0.254	0.279	0.252	0.151	0.161	0.502	0.388	0.298	0.208	0.311	0.351	1.106
PCB_47	NO0042G	pg/m ³	0.641	0.51	0.598	0.465	0.307	0.78	0.702	0.567	0.381	0.552	0.595	0.441
PCB_66	NO0042G	pg/m ³	0.561	0.325	0.348	0.334	0.204	0.529	0.319	0.231	0.218	0.343	0.34	2.516
PCB_74	NO0042G	pg/m ³	0.311	0.233	0.236	0.222	0.133	0.306	0.215	0.158	0.145	0.215	0.22	0.227
PCB_99	NO0042G	pg/m ³	0.595	0.213	0.263	0.407	0.192	0.185	0.202	0.12	0.152	0.215	0.171	0.327
PCB_105	NO0042G	pg/m ³	0.253	0.046	0.066	0.193	0.059	0.058	0.066	0.028	0.039	0.074	0.045	0.726
PCB_114	NO0042G	pg/m ³	0.039	0.01	0.012	0.023	0.013	0.01	0.011	0.013	0.017	0.011	0.289	0.097
PCB_122	NO0042G	pg/m ³	0.017	0.01	0.013	0.01	0.019	0.01	0.01	0.012	0.015	0.01	0.01	0.144
PCB_123	NO0042G	pg/m ³	0.021	0.01	0.013	0.011	0.01	0.01	0.01	0.012	0.017	0.01	0.01	0.07
PCB_128	NO0042G	pg/m ³	0.135	0.019	0.032	0.151	0.041	0.032	0.036	0.018	0.028	0.047	0.024	0.458
PCB_141	NO0042G	pg/m ³	0.127	0.031	0.034	0.035	0.021	0.051	0.049	0.024	0.031	0.027	0.028	0.221
PCB_149	NO0042G	pg/m ³	0.522	0.261	0.277	0.262	0.16	0.385	0.28	0.156	0.162	0.191	0.178	1.404
PCB_156	NO0042G	pg/m ³	0.046	0.01	0.016	0.086	0.026	0.016	0.015	0.012	0.014	0.023	0.013	0.208
PCB_157	NO0042G	pg/m ³	0.013	0.01	0.01	0.021	0.011	0.01	0.01	0.012	0.014	0.01	0.01	0.103
PCB_167	NO0042G	pg/m ³	0.028	0.01	0.011	0.053	0.019	0.01	0.013	0.012	0.015	0.014	0.01	0.113
PCB_170	NO0042G	pg/m ³	0.073	0.012	0.021	0.136	0.049	0.043	0.024	0.014	0.02	0.043	0.017	0.232
PCB_183	NO0042G	pg/m ³	0.105	0.014	0.026	0.156	0.042	0.039	0.024	0.014	0.019	0.031	0.015	0.365
PCB_187	NO0042G	pg/m ³	0.28	0.038	0.067	0.418	0.067	0.093	0.065	0.029	0.034	0.067	0.035	0.835
PCB_189	NO0042G	pg/m ³	0.01	0.01	0.013	0.01	0.01	0.01	0.01	0.011	0.015	0.01	0.01	0.01
PCB_194	NO0042G	pg/m ³	0.019	0.01	0.014	0.04	0.023	0.02	0.011	0.012	0.017	0.019	0.01	0.01
PCB_206	NO0042G	pg/m ³	0.013	0.01	0.016	0.01	0.01	0.012	0.01	0.014	0.016	0.012	0.01	0.028
PCB_209	NO0042G	pg/m ³	0.014	0.01	0.01	0.01	0.01	0.01	0.01	0.012	0.018	0.01	0.01	0.017
sum_PCB	NO0042G	pg/m ³	22.08	22.04	22.48	33.07	61.50	27.71	31.68	21.88	27.19	21.48	26.07	34.47
acenaphthene	NO0042G	pg/m ³	0.035	0.005	0.008	0.003	0.003	0.003	0.002	0.001	0.002	0.004	0.005	0.01
acenaphthylene	NO0042G	pg/m ³	0.006	0.001	0.001	0.002	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.003
alpha_HCH	NO0042G	pg/m ³	5.007	9999.99	6.765	6.734	7.9	12.856	10.933	12.645	11.234	9.63	6.5	4.696
anthanthrene	NO0042G	pg/m ³	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002
benzo_a_fluoranthene	NO0042G	pg/m ³	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004
benzo_a_fluorene	NO0042G	pg/m ³	0.009	0.002	0.001	0.008	0.001	0.002	0.001	0.002	0.001	0.001	0.002	0.008
benzo_b_fluorene	NO0042G	pg/m ³	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.004	0.004
benzo_bjk_fluoranthenes	NO0042G	pg/m ³	0.078	0.01	0.008	0.001	0.002	0.001	0.002	0.002	0.002	0.002	0.015	0.068
benzo_e_pyrene	NO0042G	pg/m ³	0.032	0.004	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.007	0.024
benzo_ghi_fluoranthene	NO0042G	pg/m ³	0.02	0.005	0.002	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.002	0.011
biphenyl	NO0042G	pg/m ³	2.006	0.855	0.843	0.188	0.078	0.055	0.024	0.022	0.093	1.042	0.85	1.253
cis_CD	NO0042G	pg/m ³	0.825	0.574	0.575	0.457	0.551	0.448	0.657	0.434	0.49	0.527	0.844	0.51
trans_CD	NO0042G	pg/m ³	0.443	0.319	0.312	0.215	0.124	0.077	0.132	0.093	0.087	0.249	0.318	0.235
coronene	NO0042G	pg/m ³	0.011	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.006
cyclopenta_cd_pyrene	NO0042G	pg/m ³	0.006	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.004
dibenzo_ac_ah_anthracenes	NO0042G	pg/m ³	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002
dibenzo_ae_pyrene	NO0042G	pg/m ³	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001
dibenzo_ah_pyrene	NO0042G	pg/m ³	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.148	0.001
dibenzo_ai_pyrene	NO0042G	pg/m ³	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
dibenzofuran	NO0042G	pg/m ³	2.191	1.069	1.705	0.263	0.067	0.056	0.035	0.043	0.153	0.308	0.724	1.396
dibenzothiophene	NO0042G	pg/m ³	0.035	0.015	0.019	0.003	0.002	0.005	0.004	0.003	0.002	0.003	0.01	0.018
op_DDD	NO0042G	pg/m ³	0.705	0.039	0.075	0.017	0.016	0.085	0.022	0.013	0.015	0.018	0.106	0.057
pp_DDD	NO0042G	pg/m ³	1.337	0.053	0.082	0.023	0.025	0.278	0.061	0.022	0.022	0.028	0.083	0.087
op_DDE	NO0042G	pg/m ³	0.2	0.167	0.126	0.068	0.027	0.025	0.022	0.019	0.021	0.038	0.06	0.126
pp_DDE	NO0042G	pg/m ³	3.967	1.036	1.034	3.367	1.295	0.323	1.52	0.137	0.217	0.971	0.428	1.759
op_DDT	NO0042G	pg/m ³	0.526	0.362	0.254	0.214	0.086	0.075	0.122	0.077	0.104	0.124	0.234	0.315
pp_DDT	NO0042G	pg/m ³	0.492	0.127	0.156	0.1	0.047	0.072	0.212	0.037	0.042	0.049	0.073	0.141
sum_DDT	NO0042G	pg/m ³	7.228	1.784	1.726	8.26	1.497	0.857	1.928	0.305	0.42	1.229	9.266	2.486
fluorene	NO0042R	pg/m ³	1	0.314	0.49	0.023	0.026	0.037	0.022	0.02	0.044	0.082	0.224	0.613
HCB	NO0042G	pg/m ³	54.947		63.881	65.946	69.194	60.194	61.506	65.892	62.741	70.037	72.561	55.625
HCB	NO0001R	pg/m ³	66.688	51.146	62.738	68.518	69.415	67.893	72.577	73.646	73.317	69.721	64.646	
alpha_HCH	NO0042G	pg/m ³	8.296	7.41	7.637	11.553	9.135	8.621	10.223	11.165	12.019	8.898	10.133	9.592
N1methylnaphtalene	NO0042G	pg/m ³	0.698	0.138	0.11	0.155	0.188	0.038	0.021	0.017	0.019	0.301	0.13	0.243
N1methylphenanthrene	NO0042G	pg/m ³	0.012	0.005	0.005	0.004	0.003	0.006	0.006	0.006	0.005	0.007	0.007	0.008
N2methylanthracene	NO0042G	pg/m ³	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.001	0.001
N2methylnaphtalene	NO0042G	pg/m ³	0.932	0.184	0.164	0.298	0.379	0.079	0.041	0.032	0.035	0.51	0.195	0.285
N2methylphenanthrene	NO0042G	pg/m ³	0.018	0.007	0.01	0.006	0.006	0.012	0.011	0.009	0.007	0.011	0.012	0.013
N3methylphenanthrene	NO0042G	pg/m ³	0.013	0.005	0.007	0.005	0.005	0.009	0.009	0.007	0.006	0.009	0.01	0.009
N9methylphenanthrene	NO0042G	pg/m ³	0.01	0.004	0.005	0.005	0.005	0.009	0.008	0.007	0.005	0.009	0.009	0.006
naphtalene	NO0042G	pg/m ³	3.126	0.734	0.536	0.328	0.519	0.154	0.087	0.087	0.115	1.161	0.536	0.963
cis_NO	NO0042G	pg/m ³	0.351	0.027	0.03	0.081	0.088	0.067	0.081	0.077	0.079	0.074	0.188	0.042
trans_NO	NO0042G	pg/m ³	0.942	0.47	0.511	0.523	0.558	0.336	0.377	0.314	0.347	0.453	0.638	0.521
perylene	NO0042G	pg/m ³	0.003	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003
retene	NO0042G	pg/m ³	0.02	0.005	0.005	0.002	0.003	0.005	0.005	0.009	0.006	0.004	0.004	0.01

PORTUGAL

Components in Precipitation														
Mandatory 2007	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
ammonium	PT0003R	mg/l	0.12	0.391	0.16	0.253	0.015							
	PT0004R		0.015	0.018	0.74	0.618	0.342	0.155			0.35	0.13	0.31	0.13
	PT0010R		0.064	0.056	0.087	0.094	0.09	0.272	0.088		0.19	0.044	0.11	0.081
nitrate	PT0003R	mg/l	0.222	0.035	0.03	0.458	0.01							
	PT0004R		0.17	0.035	0.38	0.849	0.35	0.189			1.96	0.26	0.274	0.13
	PT0010R		0.036	0.01	0.077	0.012	0.01	0.073	0.01		0.187	0.02	0.039	0.025
precipitation	nitrogen	mm	49.9	205.3	28	33.3	93	132.5	48.4	25.5	47.3	23.4	43.2	62.6
	PT0004R		19.9	73.5	11.5	22.6	44.8	46.4	0	0	8.9	19.3	57.8	50
	PT0010R		120.6	120.1	50.8	149.1	7.5	115.8	24.6	3.9	46.5	60.6	151.9	117.5
arsenic			not reported											
cadmium	PT0003R	µg/l	0.425	0.425	0.425	0.425	0.425							
	PT0004R		0.425	0.425	0.425	0.425	0.425	0.425			0.425	0.425	0.425	0.425
	PT0010R		0.425	0.425	0.425	0.425	0.425	0.425	0.425		0.425	0.425	0.425	0.425
chromium			not reported											
copper	PT0003R	µg/l	1.17	3.363	1.07	2.193	0.509							
	PT0004R		1.53	1.202	3.2	2.262	1.904	0.325			1.63	0.325	0.325	0.325
	PT0010R		0.476	2.654	1.576	3.181	1.12	0.449	2.246		0.325	0.325	0.368	0.325
lead	PT0003R	µg/l	4.629	4.766	0.645	11.378	0.645							
	PT0004R		0.645	0.645	0.645	0.645	1.411	0.645			0.645	0.645	0.645	0.645
	PT0010R		0.645	0.645	0.645	0.645	0.645	0.645	0.645		0.645	0.645	0.645	0.645
mercury			not reported											
nickel	PT0003R	µg/l	2.18	0.775	0.775	0.775	0.775							
	PT0004R		0.775	2.074	0.775	0.775	1.536	0.775			0.775	0.775	0.775	0.775
	PT0010R		3.701	1.195	1.12	0.775	0.775	0.775	0.775		0.775	0.775	0.835	0.775
zinc	PT0003R	µg/l	0.725	9.341	1	21.606	1							
	PT0004R		100	1	20	4.492	4.251	3.301						
	PT0010R		120.83	8.812	2.371	8.976	10	3.343	1					
precipitation	all metals	mm	49.9	205.3	28	33.3	93	132.5	48.4	25.5	47.3	23.4	43.2	62.6
	PT0004R		19.9	73.5	11.5	22.6	44.8	46.4	0	0	8.9	19.3	57.8	50
	PT0010R		120.6	120.1	50.8	149.1	7.5	115.8	24.6	3.9	46.5	60.6	151.9	117.5
g-HCH			not reported											
Percentage completion of mandatory programme														55.3
Voluntary														
2007														
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene			not reported											
benzo(a)anthracene			not reported											
benzo(a)pyrene			not reported											
benzo(ghi)perylene			not reported											
chrysene+triphenylene			not reported											
flouranthene			not reported											
indeno(123cd)pyrene			not reported											
phenanthrene			not reported											
pyrene			not reported											
Percentage completion of voluntary programme														0.0

[illegible]

Comprehensive Atmospheric Monitoring Programme in 2007

SPAIN

Components in Precipitation

2007

Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
ammonium	ES0008R	mg/l	0.216	0.430	0.358	0.426	0.559	0.729	0.937	0.781	0.699	0.516	0.264	0.334
nitrate	ES0008R	mg/l	0.320	0.545	0.329	0.484	0.588	0.756	1.076	0.726	0.813	0.471	0.400	0.301
precipitation <i>nitrogen</i>	ES0008R	mm	41.0	25.0	67.0	90.2	53.8	34.2	17.6	89.4	27.4	62.4	43.0	23.8
arsenic	ES0008R	µg/l	0.25	0.09	0.14	0.1	0.15	0.2	0.12	0.13	0.15	0.21	0.05	0.46
cadmium	ES0008R	µg/l	0.1	0.03	0.02	0.04	0.14	0.19	0.16	0.02	0.06	0.2	0.04	0.12
chromium	ES0008R	µg/l	56.21	114.22	111.92	152.43	59.78	126.04	82.6	10.69	45.99	10.39	7.28	8.17
copper	ES0008R	µg/l	31.19	5.44	4.18	8.92	20.49	27.79	21.24	6.86	15.82	24.36	5.69	17.13
lead	ES0008R	µg/l	3.02	1.46	0.64	9.02	2.63	14.47	5.34	0.53	1.74	1.85	1.05	2.99
mercury	ES0008R	ng/l	not reported											
nickel	ES0008R	µg/l	51.5	131.54	144.33	23.8	24.78	41.49	30.33	7.56	10.83	7.15	6.57	26.18
zinc	ES0008R	µg/l	90.87	25.01	29.32	31.27	332.83	91.22	87.34	18.88	64.68	89.83	58.99	62.85
precipitation <i>metals</i>	ES0008R	mm	124.2	91.7	154.2	129.3	103.8	58.4	31.5	102.0	40.6	64.7	82.2	33.9
g-HCH			not reported											
Percentage completion of mandatory programme														81.8

Voluntary

PCB_28	not reported
PCB_52	not reported
PCB_101	not reported
PCB_118	not reported
PCB_138	not reported
PCB_153	not reported
PCB_180	not reported
anthracene	not reported
benzo(a)anthracene	not reported
benzo(a)pyrene	not reported
benzo(ghi)perylene	not reported
chrysene+triphenylene	not reported
flouranthene	not reported
indeno(123cd)pyrene	not reported
phenanthrene	not reported
pyrene	not reported

Percentage completion of voluntary programme 0.0

Airborne components

2007

Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
NO ₂	ES0008R	µg/m ³	2.837	2.242	1.888	2.174	1.265	1.096	1.101	1.362	1.516	2.538	2.010	2.560
HNO ₃	ES0008R	µg/m ³	not reported											
NO ₃	ES0008R	µg/m ³	0.500	0.444	0.733	0.896	0.393	0.251	0.168	0.345	0.452	0.405	0.418	0.370
HNO ₃ +NO ₃	ES0008R	µg/m ³	0.769	0.608	0.949	1.707	0.709	0.502	0.425	0.474	0.730	0.700	0.486	0.436
NH ₃	ES0008R	µg/m ³	0.760	0.955	0.748	1.675	0.894	0.925	1.017	1.344	1.082	0.843	0.680	1.275
NH ₄	ES0008R	µg/m ³	not reported											
NH ₃ +NH ₄	ES0008R	µg/m ³	1.778	1.500	1.884	3.910	2.299	1.797	1.583	2.100	2.012	2.161	1.120	1.236
Percentage completion of mandatory programme														100.0

Voluntary

2007

NO	ES0008R	µg/m ³	0.364	0.263	0.200	0.212	0.239	0.251	0.289	0.275	0.254	0.320	0.183	0.278
arsenic	ES0008R	ng/m ³			0.16	0.38	0.13	0.12	0.07	0.18	0.23	0.35	0.19	0.21
cadmium	ES0008R	ng/m ³	0.09	0.1	0.08	0.23	0.07	0.11	0.02	0.06	0.1	0.12	0.06	0.09
chromium	ES0008R	ng/m ³			0.78	0.78	1.64	0.78	0.78	0.78	0.99	2.01	0.78	0.78
copper	ES0008R	ng/m ³	17.75	27.37	28.38	48.13	80.39	87.78	34.42	52.31	57.99	73.74	29.34	61.9
lead	ES0008R	ng/m ³	3	3.67	9.29	14.68	3.29	5.05	2.23	5.16	12.99	9.87	5.5	5.16
mercury	ES0008R	ng/m ³												
nickel	ES0008R	ng/m ³			1.01	5.32	9.2	1.48	0.52	1.92	1.95	2.04	0.97	1.13
zinc	ES0008R	ng/m ³			43.39	44.25	18.25	21.38	6.82	8.65	24.02	20.68	14.27	12.92
PCB_28			not reported											
PCB_52			not reported											
PCB_101			not reported											
PCB_118			not reported											
PCB_138			not reported											
PCB_153			not reported											
PCB_180			not reported											
anthracene	ES0008R	ng/m ³	0.001		0.003	0.002	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001
benzo(a)anthracene	ES0008R	ng/m ³	0.015	0.015	0.019	0.015	0.017	0.015	0.015	0.016	0.015	0.018	0.015	0.016
benzo(a)pyrene	ES0008R	ng/m ³	0.021	0.02	0.028	0.019	0.025	0.019	0.018	0.021	0.018	0.027	0.018	0.019
benzo(ghi)perylene	ES0008R	ng/m ³	0.025	0.024	0.031	0.024	0.029	0.083	0.024	0.025	0.023	0.03	0.024	0.026
chrysene	ES0008R	ng/m ³	0.016	0.016	0.022	0.015	0.018	0.016	0.015	0.015	0.014	0.017	0.014	0.015
flouranthene	ES0008R	ng/m ³	0.019	0.02	0.026	0.018	0.023	0.018	0.018	0.019	0.017	0.022	0.017	0.018
g-HCH			not reported											
indeno(123cd)pyrene	ES0008R	ng/m ³	0.029	0.029	0.03	0.028	0.029	0.028	0.028	0.029	0.028	0.033	0.028	0.029
phenanthrene	ES0008R	ng/m ³	0.007	0.007	0.01	0.01	0.009	0.007	0.007	0.006	0.006	0.007	0.006	0.006
pyrene	ES0008R	ng/m ³	0.008	0.008	0.014	0.007	0.01	0.006	0.006	0.007	0.007	0.01	0.006	0.007
Percentage completion of voluntary programme														62.5

* insufficient for calculation of monthly average

additional non-CAMP components

2007

acenaphthene	ES0008R	ng/m ³	0.057	0.041	0.06	0.058	0.059	0.058	0.058	0.056	0.057	0.057	0.057	0.057
acenaphthylene	ES0008R	ng/m ³	0.024	0.025	0.028	0.026	0.027	0.025	0.025	0.024	0.024	0.024	0.024	0.024
benzo(b)fluoranthene	ES0008R	ng/m ³	0.024	0.024	0.031	0.024	0.028	0.02	0.023	0.024	0.023	0.029	0.023	0.024
benzo(j)fluoranthene	ES0008R	ng/m ³	0.018	0.018	0.02	0.019	0.019	0.019	0.018	0.018	0.018	0.018	0.017	0.018
benzo(k)fluoranthene	ES0008R	ng/m ³	0.011	0.011	0.018	0.009	0.015	0.012	0.01	0.01	0.01	0.017	0.009	0.011
dibenzo(ah)anthracene	ES0008R	ng/m ³	0.03	0.03	0.032	0.03	0.031	0.03	0.03	0.03	0.03	0.031	0.03	0.03
fluorene	ES0008R	ng/m ³	0.015		0.009	0.006	0.009	0.009	0.008	0.015	0.015	0.015	0.015	0.015
naphthalene	ES0008R	ng/m ³	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006	0.006

Comprehensive Atmospheric Monitoring Programme in 2007

SWEDEN

Components in Precipitation																
2007																
Mandatory	station	units	month													
			january	february	march	april	may	june	july	august	september	october	november	december		
ammonium	SE0014R	mg/l	0.187	0.661	0.334	0.404	0.596	0.393	0.216	0.534	0.180	0.992	0.444	0.476		
nitrate	SE0014R	mg/l	0.288	0.824	0.547	0.241	0.430	0.204	0.191	0.327	0.210	0.926	0.730	0.723		
precipitation	nitrogen	SE0014R	mm	74.0	12.5	42.9	33.7	73.8	126.3	169.6	83.0	119.3	24.2	36.2	64.8	
arsenic	SE0097R	µg/l		0.270	0.280	0.180	0.150	0.050	0.050	0.180	0.120	0.150	0.250	0.140		
cadmium	SE0097R	µg/l		0.090	0.040	0.020	0.030	0.030	0.010	0.020	0.020	0.040	0.040	0.020		
chromium	SE0097R	µg/l		0.320	0.280	0.340	0.180	0.050	0.130	0.140	0.150	0.170	0.300	0.220		
copper	SE0097R	µg/l		0.670	1.300	0.570	0.540	3.700	0.270	0.500	0.260	0.500	3.300	0.720		
lead	SE0097R	µg/l		1.300	0.860	0.180	0.790	0.310	0.330	0.450	0.350	0.710	1.100	0.690		
mercury	SE0014R	ng/l	8.200	15.300	10.000	9.600	11.100	5.900	21.100	10.500	8.800	13.900	6.900	12.600		
nickel	SE0097R	µg/l		0.420	0.730	0.310	0.250	0.200	0.130	0.170	0.140	0.230	0.370	0.390		
zinc	SE0097R	µg/l		9.500	8.200	3.500	4.400	5.200	1.900	5.900	4.200	5.600	10.000	3.900		
precipitation	all metals	SE0097R	mm		41.0	104.0	46.0	67.0	131.0	148.0	106.0	160.0	45.0	81.0	239.0	
precipitation	Hg	SE0014R	mm	46.0	15.0	21.0	23.0	79.0	97.0	98.0	63.0	108.0	16.0	47.0	19.0	
g-HCH [†]	SE0014R	ng/m ² /day	0.690	0.130	0.420	0.160	0.180	0.010	0.710	0.510	0.160	0.260	0.300	0.020		
* measurement is of combined wet plus dry deposition										Percentage completion of mandatory programme					94.7	
Voluntary																
2007																
PCB_28	SE0014R	ng/m ² /day	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
PCB_52	SE0014R	ng/m ² /day	0.050	0.005	0.005	0.020	0.040	0.020	0.040	0.040	0.050	0.040	0.040	0.040	0.020	
PCB_101	SE0014R	ng/m ² /day	0.150	0.080	0.090	0.070	0.080	0.090	0.100	0.090	0.090	0.090	0.120	0.040		
PCB_118	SE0014R	ng/m ² /day	0.150	0.080	0.080	0.050	0.070	0.090	0.130	0.100	0.090	0.070	0.090	0.040		
PCB_138	SE0014R	ng/m ² /day	0.500	0.250	0.240	0.240	0.210	0.460	0.380	0.370	0.290	0.230	0.310	0.100		
PCB_153	SE0014R	ng/m ² /day	0.450	0.200	0.200	0.230	0.190	0.530	0.410	0.400	0.300	0.200	0.280	0.090		
PCB_180	SE0014R	ng/m ² /day	0.310	0.160	0.180	0.150	0.120	0.250	0.250	0.320	0.150	0.150	0.200	0.070		
anthracene	SE0014R	ng/m ² /day	1.000	2.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000		
benzo(a)anthracene	SE0014R	ng/m ² /day	4.000	13.000	4.000	2.000	3.000	1.000	1.000	2.000	2.000	1.000	4.000	4.000		
benzo(a)pyrene	SE0014R	ng/m ² /day	5.000	16.000	5.000	3.000	4.000	1.000	2.000	3.000	3.000	1.000	6.000	4.000		
benzo(ghi)perylene	SE0014R	ng/m ² /day	1.000	4.000	1.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000		
chrysene+triphenalene	SE0014R	ng/m ² /day	15.000	18.000	11.000	10.000	8.000	2.000	4.000	4.000	4.000	2.000	16.000	16.000		
flouranthene	SE0014R	ng/m ² /day	28.000	61.000	26.000	10.000	11.000	4.000	9.000	8.000	8.000	6.000	30.000	26.000		
indeno(123cd)pyrene	SE0014R	ng/m ² /day	5.000	15.000	6.000	3.000	4.000	1.000	2.000	2.000	2.000	1.000	6.000	4.000		
phenanthrene	SE0014R	ng/m ² /day	26.000	44.000	21.000	9.000	9.000	4.000	10.000	6.000	7.000	6.000	21.000	19.000		
pyrene	SE0014R	ng/m ² /day	18.000	37.000	15.000	7.000	8.000	3.000	7.000	6.000	6.000	4.000	19.000	15.000		
										Percentage completion of voluntary programme					100.0	
additional non-CAMP components																
2007																
cobalt	SE0097R	µg/l		0.040	0.040	0.020	0.020	0.020	0.010	0.030	0.020	0.030	0.040	0.030		
manganese	SE0097R	µg/l		2.600	1.000	1.400	1.700	2.800	0.900	2.100	0.900	1.500	1.200	0.600		
vanadium	SE0097R	µg/l		0.700	1.500	0.800	0.700	0.400	0.500	1.100	0.700	0.800	1.400	1.000		
precipitation	metals	SE0097R	mm		41	104	46	67	131	148	106	160	45	81	239	
benzo_b_fluoranthene	SE0014R	ng/m ² /day	9	29	8	4	5	1	4	4	3	2	12	12		
benzo_k_fluoranthene	SE0014R	ng/m ² /day	4	10	3	2	2	1	1	2	1	1	5	4		
										number of additional components reported						
															4	

Airborne components														
2007														
Mandatory	station	units	month											
			january	february	march	april	may	june	july	august	september	october	november	december
NO ₂	SE0014R	µg/m ³	1.132	1.164	1.769	1.672	1.211	1.193	0.866	0.985	1.025	1.703	1.827	2.088
HNO ₃			not reported											
NO ₃			not reported											
HNO ₃ +NO ₃	SE0014R	µg/m ³	0.285	0.312	0.615	0.785	0.66	0.395	0.321	0.395	0.431	0.582	0.436	0.757
NH ₃			not reported											
NH ₄			not reported											
NH ₃ +NH ₄	SE0014R	µg/m ³	0.197	0.705	0.959	1.173	0.87	0.732	0.462	0.785	0.458	0.81	0.543	0.73
Percentage completion of mandatory programme														100.0
Voluntary														
2007														
NO			not reported											
arsenic			not reported											
cadmium			not reported											
chromium			not reported											
copper			not reported											
lead			not reported											
mercury	aerosol	SE0014R	ng/m ³	3.275	9.888	10.656	4.814	6.078	5.844	5.825	5.712	4.156	8.088	5.433
	air+aerosol	SE0014R	ng/m ³	1.444	1.725	1.589	1.562	1.522	1.489	1.625	1.533	1.589	1.544	1.422
nickel			not reported											
zinc			not reported											
PCB_28	SE0014R	pg/m ³	0.859	1.045	1.444	1.554	1.419	1.762	1.244	1.879	0.887	1.215	1.13	1.208
PCB_52	SE0014R	pg/m ³	0.993	0.945	1.343	1.661	1.956	2.925	1.692	2.388	1.536	1.411	0.993	1.261
PCB_101	SE0014R	pg/m ³	0.843	0.764	1.129	1.555	2.068	3.41	2.285	3.655	1.454	1.475	0.962	1.131
PCB_118	SE0014R	pg/m ³	0.305	0.273	0.391	0.605	0.764	1.242	0.849	1.369	0.559	0.503	0.353	0.373
PCB_138	SE0014R	pg/m ³	0.495	0.502	0.759	1.118	1.752	2.516	1.46	2.872	0.975	1.162	0.627	0.713
PCB_153	SE0014R	pg/m ³	0.663	0.605	0.927	1.321	2.035	3.077	1.911	3.587	1.178	1.342	0.743	0.881
PCB_180	SE0014R	pg/m ³	0.158	0.202	0.304	0.487	0.868	1.023	0.564	1.275	0.317	0.477	0.24	0.272
anthracene	SE0014R	pg/m ³	0.007	0.065	0.016	0.008	0.005	0.004	0.004	0.003	0.003	0.017	0.018	0.018
benzo(a)anthracene	SE0014R	pg/m ³	0.017	0.179	0.052	0.03	0.007	0.008	0.004	0.005	0.007	0.04	0.076	0.055
benzo(a)pyrene	SE0014R	pg/m ³	0.02	0.183	0.055	0.041	0.007	0.013	0.003	0.005	0.005	0.059	0.088	0.063
benzo(ghi)perylene	SE0014R	pg/m ³	0.023	0.183	0.069	0.052	0.007	0.009	0.004	0.006	0.005	0.066	0.11	0.095
chrysene+triphenylene	SE0014R	pg/m ³	0.055	0.349	0.125	0.098	0.029	0.032	0.012	0.017	0.018	0.071	0.166	0.155
flouranthene	SE0014R	pg/m ³	0.286	1.305	0.49	0.352	0.14	0.125	0.07	0.09	0.08	0.317	0.535	0.579
g-HCH	SE0014R	pg/m ³	2.567	3	2.742	4.7	6.968	6.2	7.613	3.774	3.6	2.548	2.6	0.129
indeno(123cd)pyrene	SE0014R	pg/m ³	0.837	2.865	1.455	0.922	0.405	0.45	0.32	0.355	0.315	0.907	1.345	1.625
phenanthrene	SE0014R	pg/m ³	0.837	2.865	1.455	0.922	0.405	0.45	0.32	0.355	0.315	0.907	1.345	1.625
pyrene	SE0014R	pg/m ³	0.186	0.82	0.325	0.221	0.085	0.07	0.045	0.055	0.05	0.227	0.36	0.351
Percentage completion of voluntary programme														68.0
additional non-CAMP components														
benzo_b fluoranthene	SE0014R	pg/m ³	0.036	0.32	0.11	0.087	0.019	0.016	0.008	0.013	0.013	0.098	0.158	0.139
benzo_k fluoranthene	SE0014R	pg/m ³	0.015	0.143	0.045	0.035	0.006	0.005	0.003	0.005	0.005	0.04	0.067	0.056
pp_DDD	SE0014R	pg/m ³	0.413	0.02	0.025	0.037	0.065	0.065	0.08	0.045	0.065	0.047	0.05	
pp_DDE	SE0014R	pg/m ³	1.404	1.955	2.36	1.594	1.275	1.115	1.105	2.045	1.105	2.923	1.92	2.078
pp_DDT	SE0014R	pg/m ³	0.277	0.61	0.75	0.872	0.68	0.825	0.725	1.325	0.44	0.78	0.425	0.452

UNITED KINGDOM

United Kingdom															
Components in Precipitation															
Mandatory 2007	station	units	month												
			january	february	march	april	may	june	july	august	september	october	november	december	
ammonium	GB0006R	mg/l	0.061	0.306	0.058	0.296	0.503	0.245	0.014	0.072	0.129	0.230	0.252	0.257	
	GB0013R	mg/l	0.088	0.198	0.073	26.200	0.589	12.628	5.575	0.070	1.660	0.657	0.078	0.071	
	GB0014R	mg/l	0.431	0.640	0.354	2.486	1.224	0.374	0.218	0.524	0.264	0.931	0.506	0.453	
	GB0016R	mg/l	0.232	0.377	0.101	0.101	0.105	0.772	0.158	2.497	1.580	1.670	0.398	0.240	
	GB0006R	mg/l	0.030	0.138	0.058	0.134	0.051	0.203	0.053	0.050	0.079	0.123	0.128	0.090	
nitrate	GB0013R	mg/l	0.096	0.161	0.080	1.560	0.218	0.157	0.141	0.082	0.687	0.565	0.170	0.093	
	GB0014R	mg/l	0.329	0.602	0.272	0.950	0.220	0.308	0.236	0.283	0.124	0.802	0.483	0.335	
	GB0016R	mg/l	0.159	0.485	0.436	0.155	0.140	0.630	0.130	0.187	0.145	0.126	0.444	0.321	
	precipitation	nitrogen	GB0006R	mm	189.8	79.4	98.6	29.1	89.7	107.7	123.3	86.8	105.6	78.0	57.0
	GB0013R	mm	137.9	269.9	80.1	3.4	116.4	180.5	63.9	62.0	43.3	38.9	78.2	126.1	
	GB0014R	mm	86.0	147.4	53.1	11.3	105.2	52.0	186.2	93.2	97.2	39.4	155.2	122.4	
	GB0016R	mm	60.7	245.7	89.7	28.3	32.5	26.8	197.7	105.2	19.3	4.1	166.3	222.0	
	arsenic	GB0006R	µg/l	0.186	0.233	0.209	0.186	0.136	0.207	0.148	0.141	0.259	0.211	0.132	0.143
GB0013R		µg/l	0.060	0.057	0.063	0.265	0.071	0.050	0.046	0.037	0.226	0.140	0.055	0.074	
GB0017R		µg/l	0.071	0.112	0.143	0.126	0.115	0.113	0.087	0.130	0.216	0.216			
GB00091R		µg/l	0.097	0.096	0.136	0.100	0.096	0.065	0.062	0.049	0.082	0.078	0.055	0.123	
cadmium	GB0006R	µg/l	0.009	0.007	0.005	0.007	0.004	0.006	0.003	0.002	0.001	0.006	0.004	0.003	
	GB0013R	µg/l	0.011	0.006	0.003	0.130	0.015	0.002	0.004	0.001	0.047	0.020	0.004	0.011	
	GB0017R	µg/l	0.009	0.026	0.033	0.025	0.022	0.021	0.013	0.017	0.015	0.015			
	GB00091R	µg/l	0.006	0.015	0.005	0.008	0.008	0.002	0.004	0.004	0.005	0.005	0.005	0.021	
chromium	GB0006R	µg/l	0.088	0.346	0.135	0.074	0.041	0.022	0.020	0.138	0.046	0.020	0.075	0.043	
	GB0013R	µg/l	0.116	0.087	0.044	0.258	0.084	0.037	0.020	0.041	0.156	0.108	0.045	0.022	
	GB0017R	µg/l	0.085	0.048	0.080	0.053	0.040	0.041	0.053	0.077	0.139	0.139			
	GB00091R	µg/l	0.187	0.096	0.126	0.156	0.094	0.024	0.027	0.086	0.064	0.029	0.021	0.076	
copper	GB0006R	µg/l	0.266	0.192	0.424	0.267	0.151	0.191	0.153	0.135	0.411	0.339	0.135	0.114	
	GB0013R	µg/l	0.183	0.162	0.150	2.250	0.243	0.188	0.188	0.102	1.090	0.633	0.091	0.152	
	GB0017R	µg/l	0.380	0.612	0.699	0.552	0.515	0.530	0.694	0.633	0.879	0.879			
	GB00091R	µg/l	0.321	0.257	0.289	0.390	0.188	0.130	0.200	0.112	0.162	0.199	0.144	0.478	
lead	GB0006R	µg/l	0.123	0.118	0.030	0.211	0.080	0.144	0.082	0.030	0.232	0.212	0.093	0.055	
	GB0013R	µg/l	0.166	0.244	0.095	3.227	0.349	0.118	0.118	0.047	1.850	0.857	0.169	0.483	
	GB0017R	µg/l	0.399	0.866	0.927	0.504	0.452	0.453	0.487	0.711	0.992	0.992			
	GB00091R	µg/l	0.102	0.509	0.087	0.467	0.265	0.143	0.178	0.113	0.113	0.110	0.162	1.070	
mercury	GB0013R	µg/l	5.871	2.800											
	GB0017R	µg/l	6.088	5.180	2.000			15.000				3.700	3.700		
	GB00091R	µg/l	4.815	4.200	5.440	4.734	4.497	4.286	4.831	5.191	11.790	4.970	3.328	3.209	
	GB0006R	µg/l	0.894	0.098	0.187	0.076	0.005	0.084	0.111	0.198	0.005	0.005	0.053	0.073	
nickel	GB0013R	µg/l	0.170	0.158	0.123	0.433	0.183	0.185	0.179	0.116	0.411	0.281	0.059	0.131	
	GB0017R	µg/l	0.189	0.284	0.340	0.248	0.224	0.218	0.141	0.151	0.190	0.190			
	GB00091R	µg/l	0.120	0.126	0.077	0.095	0.059	0.063	0.091	0.029	0.032	0.017	0.033	0.108	
	GB0006R	µg/l	28.842	1.174	0.500	0.940	0.500	0.500	0.500	0.500	0.500	0.500	0.500	3.195	
zinc	GB0013R	µg/l	1.172	0.855	0.844	15.500	1.995	0.626	0.659	0.660	5.500	3.109	0.711	1.408	
	GB0017R	µg/l	1.906	3.932	5.120	11.275	11.500	10.822	2.687	3.554	4.450	4.450			
	GB00091R	µg/l	1.184	2.006	1.812	8.200	1.864	0.533	1.046	1.211	0.973	1.692	1.071	3.190	
	precipitation	metals ex. Hg	GB0006R	mm	211.7	70.0	109.9	40.3	121.3	128.1	151.6	117.1	121.7	82.3	133.2
		GB0013R	mm	156.6	254.6	108.7	11.0	136.1	202.2	103.6	88.0	43.4	41.8	169.0	84.3
		GB0017R	mm	64.6	59.3	30.2	61.7	116.7	110.1	77.8	36.3	23.2	6.2	0.0	0.0
		GB00091R	mm	49.0	103.5	22.3	11.4	80.8	165.0	89.4	38.5	50.6	38.1	124.1	54.1
precipitation	metals Hg	GB0013R	mm	196.1	162.3	154.8	24.5	77.7	160.7	116.5	84.9	28.5	61.1	70.7	122.4
		GB0017R	mm	55.6	23.3	37.5	68.8	71.1	60.1	31.8	31.8	9.2	0.0	0.0	0.0
		GB00091R	mm	40.7	36.1	39.9	60.1	98.7	63.0	42.1	31.7	21.6	29.9	30.6	79.6
g-HCH			not reported												
Percentage completion of mandatory programme															90.9
Voluntary															
PCB_28 PCB_52 PCB_101 PCB_118 PCB_138 PCB_153 PCB_180 anthracene benzo(a)anthracene benzo(a)pyrene benzo(ghi)perylene chrysene+triphenalene flouranthene indeno(123cd)pyrene phenanthrene pyrene			not reported												
			not reported												
			not reported												
			not reported												
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			not reported												
			not reported												
			not reported												
			not reported												
			not reported												
			not reported												
			not reported												
Percentage completion of voluntary programme															0.0

UNITED KINGDOM															
Airborne components															
2007															
Mandatory	station	units	month												
			january	february	march	april	may	june	july	august	september	october	november	december	
NO2		GB0013R		1.144	2.787	1.412	1.902	1.34	1.448	1.017	1.028	1.491	1.883	1.611	3.863
HNO3		GB0014R		1.584	3.092	2.173	1.741	1.194	0.799	1.141	1.236	1.038	3.509	3.178	3.731
		GB0006R		0.020		0.040	0.100	0.050	0.100	0.020	0.010	0.010	0.080	0.040	0.110
		GB0013R		0.060	0.160	0.100	0.320	0.150	0.200	0.060	0.120	0.130	0.260	0.100	0.200
		GB0014R		0.080	0.230	0.180	0.160	0.110	0.170	0.110	0.080	0.080	0.230	0.150	0.240
NO3		GB0016R		0.030	0.140	0.080	0.150	0.110	0.170	0.060	0.040	0.030	0.160	0.040	0.160
		GB0006R		0.050		0.300	0.510	0.100	0.220	0.060	0.060	0.090	0.420	0.120	0.350
		GB0013R		0.140	0.360	0.490	1.580	0.490	0.320	0.120	0.300	0.330	0.600	0.240	0.470
		GB0014R		0.130	0.240	0.690	0.700	0.320	0.230	0.180	0.210	0.250	0.760	0.330	0.510
		GB0016R		0.040	0.060	0.300	0.470	0.150	0.290	0.090	0.110	0.070	0.430	0.070	0.210
HNO3+NO3			not reported												
NH3		GB0006R		0.160	1.700	0.350	0.860	0.440	1.100	0.200	0.240	0.400	0.560	0.260	0.680
		GB0013R		0.160	0.290	0.410	1.600	0.760	0.330	0.200	0.460	0.580	0.300	0.270	0.160
		GB0014R		0.370	0.390	0.570	1.400	0.520	0.300	0.450	0.630	0.560	0.430	0.440	0.220
		GB0016R		0.120	0.200	0.250	0.550	0.280	0.270	0.160	0.300	0.300	0.330	0.160	0.160
NH4		GB0006R		0.220	0.520	0.820	2.800	0.690	0.710	0.190	0.260	0.400	0.990	0.340	0.740
		GB0013R		0.220	0.520	0.820	2.800	0.690	0.710	0.190	0.260	0.400	0.990	0.340	0.740
		GB0014R		0.260	0.680	1.100	1.200	0.540	0.610	0.340	0.230	0.360	1.100	0.540	0.830
		GB0016R		0.062	0.190	0.530	0.740	0.290	0.500	0.140	0.120	0.093	0.620	0.170	0.330
NH3+NH4			not reported												
			Percentage completion of mandatory programme												
			96.7												
Voluntary															
2007															
NO		GB0013R		0.379	0.455	0.284	0.418	0.494	0.339	0.239	0.269	0.300	0.269	0.394	0.645
		GB0014R		0.010	0.015	0.019	0.020	0.011	0.008	0.003	0.003	0.005	0.010	0.040	0.109
arsenic		GB0013R		0.100	0.500	0.633	0.906	0.391	0.341	0.124	0.355	0.347	0.620	1.074	0.979
		GB0017R		0.578	0.723	0.447	0.338	0.354	0.413	0.451	0.474				
		GB0091R		0.103	0.542	0.523	0.311	0.285	0.240	0.201	0.162	0.108	0.375	0.454	0.434
cadmium		GB0013R		0.026	0.063	0.116	0.243	0.054	0.038	0.025	0.044	0.047	0.112	0.106	0.228
		GB0017R		0.122	0.134	0.164	0.062	0.095	0.056	0.067	0.088				
		GB0091R		0.023	0.066	0.101	0.085	0.029	0.039	0.012	0.015	0.008	0.052	0.050	0.044
chromium		GB0013R		0.648	0.658	0.846	1.444	0.779	0.854	0.584	0.537	0.422	0.852	0.733	1.166
		GB0017R		1.155	1.167	0.643	0.830	0.541	0.973	0.463	1.563				
		GB0091R		0.668	1.024	0.332	0.884	0.870	1.091	0.416	0.435	0.345	0.455	0.209	0.495
copper		GB0013R		0.257	1.342	1.145	3.414	0.891	0.842	0.358	25.101	0.937	2.426	1.493	3.223
		GB0017R		1.567	2.510	1.640	1.559	1.409	2.063	1.193	2.062				
		GB0091R		0.364	0.477	0.658	1.009	0.430	0.522	0.404	0.423	0.322	1.214	0.394	0.720
lead		GB0013R		0.756	3.781	3.810	9.242	2.219	2.341	0.681	2.238	2.570	5.438	6.437	10.080
		GB0017R		6.910	6.713	4.146	2.985	4.049	3.304	3.296	3.906				
		GB0091R		3.174	2.504	2.365	2.854	0.884	1.375	0.785	0.530	0.360	3.129	2.813	2.969
mercury		GB0013R		1.618	1.230	1.995	1.770	1.934	1.640	0.950					
		GB0017R					1.972	3.934							
		GB0091R		1.561	1.721	1.592	1.600	1.518	1.458	1.556	1.288		1.221	1.642	
nickel		GB0013R		0.361	0.489	0.770	2.662	0.306	1.252	0.213	0.633	0.310	2.083	0.433	2.905
		GB0017R		0.724	0.782	3.907	1.150	0.406	1.584	0.916	1.962				
		GB0091R		0.606	0.149	0.079	0.420	0.081	0.477	0.080	0.201	0.105	0.660	0.086	0.610
zinc		GB0013R		3.111	5.483	9.533	18.500	6.459	14.500	11.778	6.850	3.075	11.150	5.172	44.250
		GB0017R		9.323	10.859	8.978	16.542	4.539	5.946	2.973	6.009				
		GB0091R		50.291	4.748	6.715	5.958	2.962	2.769	1.950	2.957	2.232	7.113	6.652	13.906
PCB_28		GB0014R		3.490	3.490	3.490	7.310	7.310	7.310	0.010	0.010	0.010	7.170	7.170	7.170
PCB_52		GB0014R		1.080	1.080	1.080	0.010	0.010	0.010	1.800	1.800	1.800	0.760	0.760	0.760
PCB_101		GB0014R		0.540	0.540	0.540	0.120	0.120	0.120				1.570	1.570	1.570
PCB_118		GB0014R		0.130	0.130	0.130	0.440	0.440	0.440	0.010	0.010	0.010	0.650	0.650	0.650
PCB_138		GB0014R		0.200	0.200	0.200	0.550	0.550	0.550	0.100	0.100	0.100	0.850	0.850	0.850
PCB_153		GB0014R		0.310	0.310	0.310	1.460	1.460	1.460	0.840	0.840	0.840	2.190	2.190	2.190
PCB_180		GB0014R		0.060	0.060	0.060	0.190	0.190	0.190	0.060	0.060	0.060	0.220	0.220	0.220
anthracene		GB0014R		0.047	0.047	0.047	0.420	0.420	0.420	0.260	0.260	0.260	0.190	0.190	0.190
benzo(a)anthracene		GB0014R		0.042	0.042	0.042	0.010	0.010	0.010	0.028	0.028	0.028	0.130	0.130	0.130
benzo(a)pyrene		GB0014R		0.047	0.047	0.047	0.014	0.014	0.014	0.018	0.018	0.018	0.110	0.110	0.110
benzo(ghi)perylene		GB0014R		0.037	0.037	0.037	0.028	0.028	0.028	0.026	0.026	0.026	0.150	0.150	0.150
chrysene		GB0014R		0.140	0.140	0.140	0.056	0.056	0.056	0.058	0.058	0.058	0.250	0.250	0.250
flouranthene		GB0014R		0.780	0.780	0.780	0.620	0.620	0.620	0.670	0.670	0.670	1.300	1.300	1.300
g-HCH			not reported												
indeno(123cd)pyrene	GB0014R		0.057	0.057	0.057	0.014	0.014	0.014	0.014	0.028	0.028	0.028	0.190	0.190	0.190
phenanthrene	GB0014R		2.700	2.700	2.700	9.500	9.500	9.500	9.500	3.900	3.900	3.900	4.800	4.800	4.800
pyrene	GB0014R		0.440	0.440	0.440	1.200	1.200	1.200	1.200	0.520	0.520	0.520	1.200	1.200	1.200
			Percentage completion of voluntary programme												
			93.6												



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