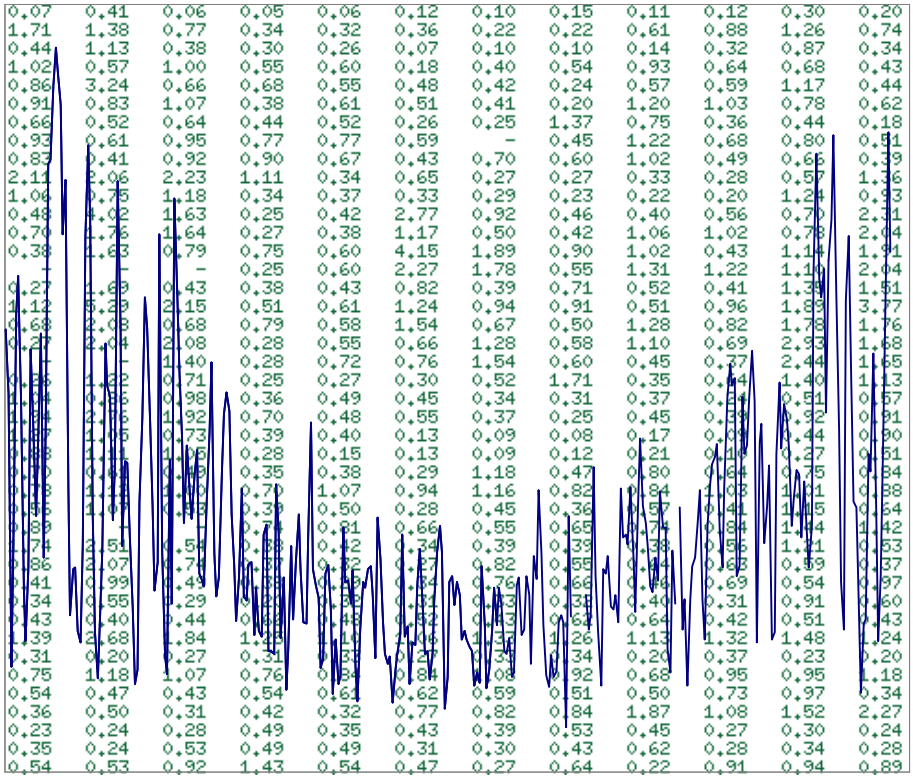
EMEP/CCC-Report 2/2001

EMEP Co-operative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe

Data Report 1999

Acidifying and eutrophying compounds
Part 1: Annual summaries

Anne-Gunn Hjellbrekke



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1. Introduction

Measurements of air quality in Europe have been carried out under the "Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe" (EMEP) since 1 October 1977. From the start, priority was given to sulphur dioxide and sulphate in air, and pH and sulphate in precipitation, gradually increasing to all main components in precipitation and ozone and nitrogen compounds in air. A few sites also measure VOC. EMEP does not yet have its own monitoring network for POPs and heavy metals, but existing data are collected and reported yearly.

The EMEP data from 1999 for acidifying and eutrophying components in air and precipitation have been presented in two reports. Part 1, contained in this volume, gives the annual summaries. Part 2, contained in EMEP/CCC-Report 3/2001, gives the seasonal and monthly summaries of the data from 1999.

In total, precipitation data from 86 stations and air data from 100 stations are presented in this report. The total number of measurement sites in this report is 105.

The air and precipitation samples were analysed at the laboratories in the participating countries and the results have been forwarded to the Chemical Co-ordinating Centre (CCC) at the Norwegian Institute for Air Research (NILU).

2. The measurement network

The locations of the measurement sites, which have delivered data during 1999, are given in Table 1 and Figure 1. In addition to the network presented here, there are additionally sites with other types of measurements.

In some parts of Europe, the site density is low and highly unsatisfactory. There is a need for more sites especially in the Mediterranean region and in the eastern parts of Europe.

There are no data from Valentia Observatory this year due to technical problems at the laboratory, nor have we received any data from the Irish site Ridge of Capard. There are five new sites in Spain (Niembro, Campisabalos, Cabo de Creus, Barcarrola and Zarra) and one in Russia (Danki). NO_2 data from three Belgium sites have also been included in this report, as well as data on base cations from seven Norwegian sites.

Table 1: List of EMEP monitoring stations in operation in 1999.

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
Austria	AT0002R	AT2,A2	Illmitz	47°46'E	16°46'E	117
	AT0004R	AT4,A4	St. Koloman	47°39'N	13°12'E	851
	AT0005R	AT5	Vorhegg	46°40'N	12°58'E	1020
Belgium	BE0001R	B1	Offagne	49°52'N	5°12'E	430
	BE0032R	B32	Eupen	50°37'N	6°00'E	295
	BE0035R	-	Vezin	50°30'N	4°59'E	160
Czech Rep.	CZ0001R	CS1	Svratouch	49°44'N	16°02'E	737
	CZ0003R	CS3	Kosetice	49°35'N	15°05'E	534
Denmark	DK0003R	DK3	Tange	56°21'N	9°36'E	13
	DK0005R	DK5	Keldsnor	54°44'N	10°44'E	9
	DK0008R	DK8	Anholt	56°43'N	11°31'E	40
Estonia	EE0009R	EE9,SU9	Lahemaa	59°30'N	25°54'E	32
	EE0011R	EE11,SU11	Vilsandi	58°23'N	21°49'E	6
Finland	FI0004R	FI4,SF4	Ähtari	62°33'N	24°13'E	162
	FI0009R	FI9,SF9	Utö	59°47'N	21°23'E	7
	FI0017R	FI17,SF17	Virolahti II	60°31'N	27°41'E	4
	FI0022R	FI22,SF22	Oulanka	66°19'N	29°24'E	310
	FI0037R	-	Ähtari II	62°35'N	24°11'E	180
France	FR0003R	FR3,F3	La Crouzille	45°50'N	1°16'E	497
	FR0005R	FR5,F5	La Hague	49°37'N	1°50'W	133
	FR0008R	FR8,F8	Donon	48°30'N	7°08'E	775
	FR0009R	FR9,F9	Revin	49°54'N	4°38'E	390
	FR0010R	FR10,F10	Morvan	47°16'N	4°05'E	620
	FR0011R	FR11,F11	Bonnevaux	46°49'N	6°11'E	836
	FR0012R	FR12,F12	Iraty	43°02'N	1°05'W	1300
	FR0013R	-	Peyrusse Vielle	47°22'N	0°06'E	236
	FR0014R	-	Montandon	47°11'N	6°30'E	746
Germany	DE0001R	DE1,D1	Westerland	54°55'N	8°18'E	12
	DE0002R	DE2,D2	Langenbrügge	52°48'N	10°45'E	74
	DE0003R	DE3,D3	Schauinsland	47°55'N	7°54'E	1205
	DE0004R	DE4,D4	Deuselbach	49°46'N	7°03'E	480
	DE0005R	DE5,D5	Brotjacklriegel	48°49'N	13°13'E	1016
	DE0007R	DE7,D2	Neuglobsow	53°09'N	13°02'E	62
	DE0008R	DE8,D8	Schmücke	50°39'N	10°46'E	937
	DE0009R	DE9	Zingst	54°26'N	12°44'E	1
Hungary	HU0002R	HU2,H1	K-puszta	46°58'N	19°35'E	125
Iceland	IS0002R	IS2	Irafoss	64°05N	21°01'W	61
Ireland	IE0002R	IE2,IR2	Turlough Hill	53°02N	6°24'W	420
	IE0003R	IE3	The Burren	53°00'N	7°27'W	90
Italy	IT0001R	IT1,I1	Montelibretti	42°06'N	12°38'E	48
	IT0004R	IT4,I4	Ispra	45°48'N	8°38'E	209
Latvia	LV0010R	LV10,SU10	Rucava	56°13'N	21°13'E	18
	LV0016R	LV16	Zoseni	57°08'N	25°55'E	183
Lithuania	LT0015R	LT15,SU15	Preila	55°21'N	21°04'E	5
Netherlands	NL0009R	NL9	Kollumerwaard	53°20'N	6°17'E	0
	NL0010R	NL10	Vreedepeel	51°32'N	5°51'E	28

Table 1 cont.:

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
Norway	NO0001R	NO1,N1	Birkenes	58°23'N	8°15'E	190
	NO0008R	NO8,N8	Skreådalen	58°49'N	6°43'E	475
	NO0015R	NO15,N15	Tustervatn	65°50'N	13°55'E	439
	NO0039R	NO39,N39	Kårvatn	62°47'N	8°53'E	210
	NO0041R	NO41,N41	Osen	61°15'N	11°47'E	440
	NO0042G	NO42,N42	Spitsbergen, Zeppelinfjell	78°54'N	11°53'E	474
	NO0055R	NO55	Karasjok	69°28'N	25°13'E	333
Poland	PL0002R	PL2	Jarczew	51°49'N	21°59'E	180
	PL0003R	PL3	Sniezka	50°44'N	15°44'E	1604
	PL0004R	PL4	Leba	54°45'N	17°32'E	2
	PL0005R	PL5	Diabla Gora	54°09'N	22°04'E	157
Portugal	PT0001R	PT1,P1	Braganca	41°49'N	6°46'W	691
	PT0003R	PT3,P3	V. d. Castelo	41°42'N	8°48'W	16
	PT0004R	PT4,P4	Monte Velho	38°05'N	8°48'W	43
Russian Federation	RU0001R	RU1,SU1	Janiskoski	68°56'N	28°51'E	118
	RU0013R	RU13,SU13	Pinega	64°42'N	43°24'E	28
	RU0016R	RU16	Shepeljovo	59°58'N	29°07'E	4
	RU0017R	-	Danki	54°54'N	37°48'E	150
Slovenia	SI0008R	SI8	Iskrba	45°34'N	14°52'E	520
Slovakia	SK0002R	SK2,CS2	Chopok	48°56'N	19°35'E	2008
	SK0004R	SK4	Stará Lesná	49°09'N	20°17'E	808
	SK0005R	SK5	Liesek	49°22'N	19°41'E	892
	SK0006R	SK6	Starina	49°03'N	22°16'E	345
Spain	ES0001R	ES1,E1	San Pablo	39°33'N	4°21'W	917
	ES0003R	ES3,E3	Roquetas	40°49'N	0°30'W	50
	ES0004R	ES4,E4	Logrono	42°27'N	2°30'W	445
	ES0005R	ES5	Noya	42°44'N	8°55'W	685
	ES0006R	ES6	Mahon	39°52'N	4°19'E	78
	ES0007R	ES7	Viznar	37°14'N	3°32'W	1265
	ES0008R	-	Niembro	43°27'N	4°51'W	134
	ES0009R	-	Campisabolos	41°17'N	3°9'W	1360
	ES0010R	-	Cabo de Creus	42°19'N	3°19'E	23
	ES0011R	-	Barcarrola	38°29'N	6°55'W	393
	ES0012R	-	Zarra	39°5'N	1°6'W	885
Sweden	SE0002R	SE2,S2	Rörvik	57°25'N	11°56'E	10
	SE0005R	SE5,S5	Bredkälen	63°51'N	15°20'E	404
	SE0008R	SE8,S8	Hoburg	56°55'N	18°09'E	58
	SE0011R	SE11,S11	Vavihill	56°01'N	13°09'E	172
	SE0012R	SE12,S12	Aspvreten	58°48'N	17°23'E	20
Switzerland	CH0001G	CH1	Jungfraujoch	46°33'N	7°59'E	3573
	CH0002R	CH2	Payerne	46°48'N	6°57'E	510
	CH0003R	CH3,CH32	Tänikon	47°29'N	8°54'E	540
	CH0004R	CH4	Chaumont	47°03'N	6°59'E	1130
	CH0005R	CH5	Rigi	47°04'N	8°28'E	1030
Turkey	TR0001R	TR1	Cubuk II	40°30'N	33°00'E	1169
United Kingdom	GB0002R	GB2,UK2	Eskdalemuir	55°19'N	3°12'W	243
	GB0004R	GB4UK4	Stoke Ferry	52°34'N	0°30'E	15
	GB0006R	GB6,UK6	Lough Navar	54°26'N	7°54'W	126
	GB0007R	GB7,UK7	Barcombe Mills	50°52'N	0°02'W	8
	GB0013R	GB13,UK13	Yarner Wood	50°36'N	3°43'W	119
	GB0014R	GB14,UK14	High Muffles	54°20'N	0°48'W	267
	GB0015R	GB15,UK15	Strath Vaich Dam	57°44'N	4°46'W	270
	GB0016R	GB16,UK16	Glen Dye	56°58'N	2°25'W	85

Table 1 cont.:

Country	Station codes		Station name	Location		Height above sea
	New	Old		Lat.	Long.	(m)
United Kingdom cont.	GB0036R	GB36	Harwell	51°34'N	1°18'W	137
	GB0037R	GB37	Ladybower	53°23'N	1°45'W	420
	GB0038R	GB38	Lullington Heath	50°47'N	0°10'W	120
	GB0043R	GB43	Narberth	51°14'N	4°42'W	160
	GB0045R	GB45	Wicken Fen	52°18'N	0°18'W	5
Yugoslavia	YU0005R	YU5	Kamenicki vis	43°24'N	21°57'E	813
	YU0008R	YU8	Zabljak	43°09'N	19°08'E	1450

3. Site codes

The site codes used in this report are the codes used for data submission and storage in the EMEP database. The codes consist of the two-letter ISO code for the countries, a four-digit number and a letter indicating the type of station, regional (R) or global (G). The station numbers have been retained from previous codes used.

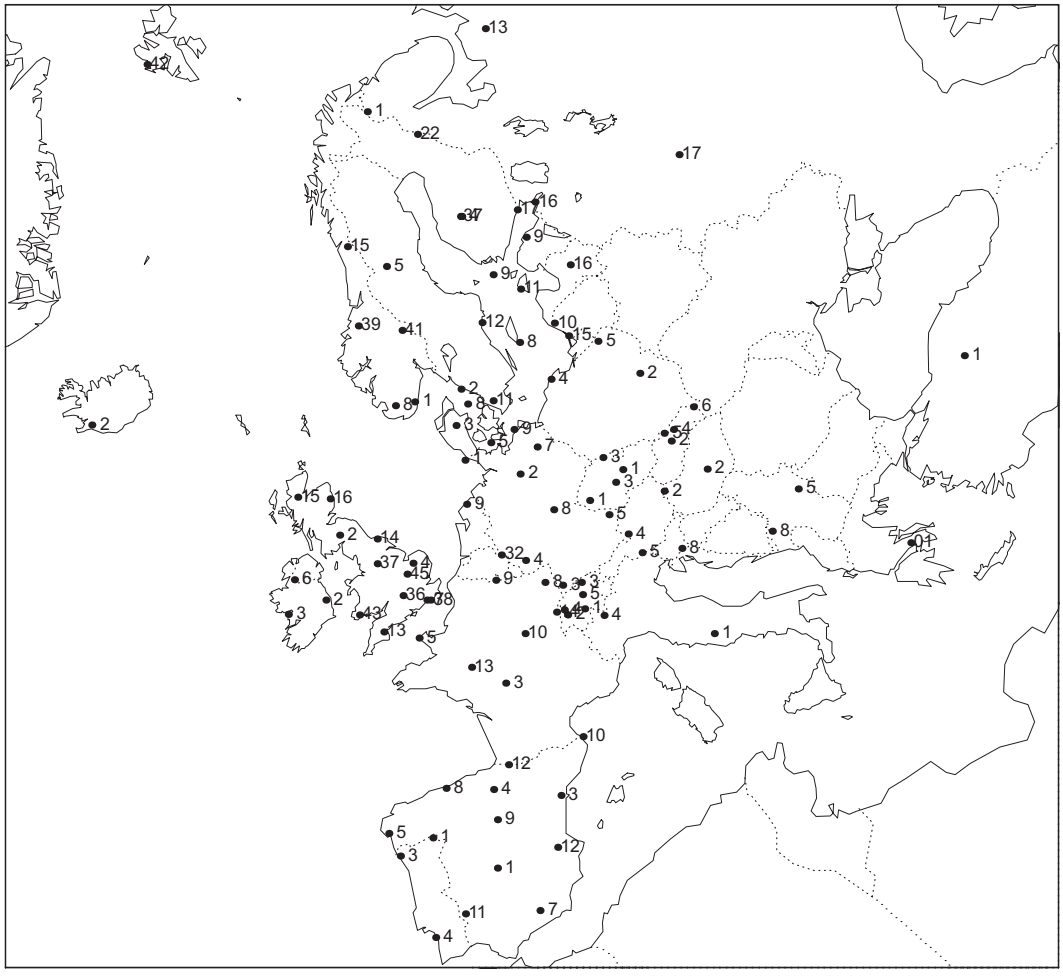

Figure 1: Location of the EMEP monitoring stations in operation in 1999. Sites with ozone/VOC measurements only are not included.

4. The measurement programme during 1999

EMEP's measurement programme during 1999 is presented in Table 2. Many sites had however, even during 1999, a less extensive measurement programme, as can be seen from the data tables in this report. Most sites measure air as well as precipitation components. However, some sites perform either the one or the other type of measurements.

Table 2: EMEP's measurement programme 1999.

	Components	Measurement period	Measurement frequency
Gas	SO_2, NO_2	24 hours	daily
	O_3	hourly means stored	continuously
	Light hydrocarbons C_2-C_7	10-15 mins	twice weekly
	Ketones and aldehydes (VOC)	8 hours	twice weekly
	Hg	24 hours	weekly
Particles	SO_4^{2-}	24 hours	daily
	Cd, Pb (first priority), Cu, Zn, As, Cr, Ni (second priority)	weekly	weekly
Gas + particles	$HNO_3(g)+NO_3^-(p)$, $NH_3(g)+NH_4^-(p)$	24 hours	daily
	POPs (PAH, PCB, HCB, chlordane, lindane, α-HCH, DDT/DDE)	to be decided	to be decided
Precipitation	Amount, SO_4^{2-}, NO_3^-, Cl^-, pH, NH_4^+, Na^+, Mg^{2+}, Ca^{2+}, K^+, conductivity	24 hours/weekly	daily/weekly
	Hg, Cd, Pb (first priority), Cu, Zn, As, Cr, Ni (second priority)	weekly	weekly
	POPs (PAH, PCB, HCB, chlordane, lindane, α-HCH, DDT/DDE)	to be decided	to be decided

Measurements of VOC, heavy metals and POPs are made at a small number of sites only.

An evaluation of the VOC measurement programme within EMEP has been published earlier (Solberg et al., 1995). The VOC data from 1999 was reported separately by Solberg et al. (2001), while ozone data from 1999 was reported by Hjellbrekke (2001). Heavy metals and POPs were reported by Berg and Hjellbrekke (2001).

A list of data reports from EMEP/CCC can be found in Annex 5.

5. Sampling and analytical methods

The recommended procedures for sampling and analysis of precipitation and air are described in the EMEP Manual for sampling and chemical analysis. The manual has been updated and sent out in 1996 (Hanssen et al., 1995). A version is also available on the WWW at http://www.nilu.no/projects/ccc/manual/. The methods used by the participating countries are given in Annex 1.

Generally, concentrations of gaseous nitric acid and ammonia, and of nitrate and ammonium in aerosol particles are determined by filter pack sampling. However, sampling artefacts due to the volatile nature of ammonium nitrate, and the possible interaction with strong acids, e.g. sulphuric acid, make separation of gases and particles by simple aerosol filters unreliable. Therefore only the sums of nitric acid and nitrate, and of ammonium and ammonia are unbiased.

6. Laboratory intercomparison

During 1999 the 17th laboratory intercomparison of analytical methods was carried out. As usual most of the laboratories report acceptable data, but there are still some outliers. The intercomparison results are presented in Hanssen (2001).

7. Calculation of excess sulphate in precipitation

The sulphate in precipitation is stored in the database as reported, i.e. total sulphate, and as corrected, non-marine sulphate, i.e. total sulphate minus sulphate originating from sea-salt particles.

When the sulphate concentrations originating from sea-salt are larger than the total sulphate, and the corrected sulphate concentrations consequently become less than zero, negative concentrations have been stored in the data base and have been used to calculate averages in the report in order to avoid bias in the aggregates. Negative concentrations are mainly caused by random errors in the data and occur when non sea-salt sulphate concentrations are low compared to total sulphate.

CCC has since 1994 used a routine worked out by the Canadian Air and Precipitation Monitoring Network (CAPMoN) for calculation of the marine contribution to sulphate in precipitation. The routine has been adopted by the WMO GAW. A series of EMEP's sites will also report data to WMO, and common routines will necessarily fill the data bases with identical data. This is consequently a step in a harmonisation process between EMEP and WMO GAW.

Excess sulphate data as calculated with the old routine are available from the CCC as a continuation of the data series upon request.

8. Data flagged in this report

EMEP's data quality objectives (DQO, Annex 6) were set to provide sufficiently accurate data for EMEP's needs. They have been discussed and accepted at the Steering Body in 1996, and the participating laboratories have consequently to provide data meeting the DQO in order to have them accepted by EMEP.

The Parties to the Convention are obliged to make this goal attainable to their own EMEP laboratories. The laboratories must therefore be sufficiently funded to do their measurements in accordance with recommended methods and instrumentation in field and in laboratory. Although a harmonisation and standardisation of methods is strongly needed, methods equivalent to the recommended ones may be acceptable if the participant has demonstrated that the data meet the DQO. Secondly, and of greatest importance is to have sufficient funding to be able to implement quality assurance procedures good enough to provide data meeting the DQO.

The CCC has in collaboration with MSC-W performed an evaluation of the methods and data quality of precipitation and air measurements (Aas et al., 2001). The intention with this evaluation is to give an estimate of the expected errors in the annual arithmetic averages from 1999.

The averages have been classified in four quality groups:

A: expected error 10% or better
B: expected error 25% or better
C: expected error 30% or better
D: expected error worse than 30%
U: unknown/not documented

The sources used in the evaluation are:

- Results from the intercomparions 17 and 18 from 1999 and 2000 (Hanssen, 2001; Uggerud, 2001).
- Results from field comparisons (Schaug et al., 1998; Aas et al., 1999, 2000, 2001).
- Calculations on ion balances.

The results from this evaluation have been used to flag most of the data presented in this report.

9. Annual summaries of the data

9.1 Maps over Europe

Geographical distributions based on annual means of SO_2, NO_2 and SO_4^{--} in air and pH, NH_4^+, NO_3^- and excess SO_4^{--} in precipitation of are shown in Annex 4.

9.2 Annual summaries in tables

Annual summaries of the precipitation data are given in Annex 2 and of the air data in Annex 3. The precipitation component summaries contain:

- the precipitation weighted arithmetic mean value,
- the minimum and maximum daily concentrations,
- the wet deposition,
- percent of total precipitation amount analysed for a specific component (completeness for precipitation data),
- the number of data below the detection limit,
- a sampling flag which gives information about deviations from the EMEP sampling procedures.

The wet depositions have been obtained by multiplying the weighted mean concentration by the total amount of precipitation in the period. The concentrations for days with missing precipitation data have consequently been assumed to be equal to the weighted average of the period.

Concentrations less than zero may exist in the database for sulphate in precipitation corrected for sea-salt. This occurs whenever the sea-salt contribution is larger than the total sulphate concentration, and it is caused by random errors in the results. The negative values have been included in the estimation of the weighted arithmetic mean values.

For air components the arithmetic mean and the geometric mean have been computed together with their standard deviations. The definitions are given on the next three pages. The geometric standard deviation is a dimensionless factor. If the data come from a random sample of independent data in a normal distribution, about 95% of the data will lie between

$$\overline{c_a} - 2sd_a \; and \; \overline{c_a} + 2sd_a$$

and between

$$\frac{\overline{c_g}}{sd_g^2} \; and \; \overline{c_g} \cdot sd_g^2$$

if the data come from a lognormal distribution. The minimum, maximum, 5 and 95 percentiles are also presented in Annex 3. As a measure of the completeness of the dataset, the percentage of samples analysed in the period has been printed.

In the computations of mean values and other statistics, the concentrations below the detection limit have been set equal to one half of the actual limit. An overview of the statistics and definitions is given below.

W.mean — $\hat{c}$ is the precipitation weighted arithmetic mean concentration used for precipitation components:

$$\hat{c} = \frac{1}{\sum_i p_i} \cdot \sum_i c_i \cdot p_i$$

where p_i is precipitation amount day i with the measured concentration c_i of a specific component.

Arit mean — $\overline{c_a}$ is the arithmetic mean value used for air components only, and N is number of days with data:

$$\overline{c_a} = \frac{1}{N} \sum_i c_i$$

Arit sd — sd_a is the arithmetic standard deviation from the arithmetic mean value. It is computed for air components only:

$$sd_a = \left(\frac{\sum_i \left(c_i - \overline{c_a} \right)^2}{N - 1} \right)^{\frac{1}{2}}$$

Geom mean — $\overline{c_g}$ is the geometric mean value used for air components only, and it is computed from the arithmetic mean of ln c:

$$\overline{lnc} = \frac{1}{N} \cdot \sum_i lnc_i$$

$$\overline{c_g} = exp\left(\overline{lnc}\right)$$

Geom sd — sd_g is the geometric standard deviation from the geometric mean value. It is computed for air components only, and it is based on the standard deviation of ln c:

$$sdlnc = \left(\frac{\sum_i \left(lnc_i - \overline{lnc} \right)^2}{N - 1} \right)^{\frac{1}{2}}$$

$$sd_g = exp\left(sdlnc\right)$$

Min — is the minimum value reported for a specific component, and it is printed both for precipitation and air components.

5% is the 5 percentile computed from the histogram of the daily results. The data have been divided into 30 classes of equal size with the addition of two extreme classes. The 5 percentile has been computed by linear interpolation of the two closest class marks. The percentile has been computed for air components only.

50% is the 50 percentile, defined as above and computed for air data only.

95% is the 95 percentile, defined as above and computed for air data only.

Max is the maximum value reported for a specific component, and it is given for precipitation and air components.

Dep is the wet deposition of a specific precipitation component. The deposition is the product of the total precipitation amount measured and the weighted arithmetic mean of a component measured at a site.

% anal for precipitation components this is the percent of the total precipitation reported analysed for a specific component, and for air components based on the number of days with data.

Num bel is the number of data below the detection limit (not used for precipitation amount).

Num day is the number of days with measurements for a specific component.

QA flag is the quality flag described in section 8.

Samp flag is a one character code which gives information about routine-wise deviation from the EMEP sampling length and frequency. The code used in this report is:

W: weekly sampling

The units used for the results in this report are given in Table 3 and Table 4.

The start hours for the sample collections for the period covered by this report are given in Table 5.

Table 3: Units used for precipitation components.

Precipitation components	Units for W. mean, Min., Max.	Units for depositions
Amount	mm	mm
SO_4^{--}	mg S/l	mg S/m^2
NO_3^-	mg N/l	mg N/m^2
Cl^-	mg Cl/l	mg Cl/m^2
NH_4^+	mg N/l	mg N/m^2
H^+	µe H^+/l	µe H^+/m^2
pH	pH-units	µe H^+/m^2
Na^+	mg Na/l	mg Na/m^2
Mg^{2+}	mg Mg/l	mg Mg/m^2
K^+	mg K/l	mg K/m^2
Ca^{2+}	mg Ca/l	mg Ca/m^2

Table 4: Units used for air components.

Air components	Units for arithmetic and geometric mean values, arithmetic standard deviations, Min., Max, percentiles.
SO_2	µg S/m^3
NO_2	µg N/m^3
HNO_3	µg N/m^3
NH_3	µg N/m^3
SO_4^{2-}	µg S/m^3
NO_3^-	µg N/m^3
NH_4^+	µg N/m^3
H^+	Ne H^+/m^3
SPM	µg/m^3
$HNO_3 + NO_3^-$	µg N/m^3
$NH_3 + NH_4^+$	µg N/m^3
Ca^{++}	µg/m^3
Cl^-	µg/m^3
Mg^{++}	µg/m^3
K^+	µg/m^3
Na^+	µg/m^3

Table 5: Start hours for sampling (GMT) in 1999.

Site	Prec.	Air	Site	Prec.	Air
AT 2	08	00	HR 2	06	06
AT 3	08	00	HR 4	06	06
AT 4	08	00			
			HU 2	09	09
CH 1	-	08			
CH 2	08	08	IE 1	10	10
CH 3	-	08	IE 2	00	00
CH 4	-	08			
CH 5	-	08	IS 2	09	09
CZ 1	06	06	IT 1	09	00
CZ 3	06	06	IT 4	10	10
DE 1	07	00	LT15	09	09
DE 2	07	00			
DE 3	07	00	LV10	09	09
DE 4	07	00	LV16	09	09
DE 5	07	00			
DE 7	07	00	NL 9	09	09
DE 8	07	00	NL10	09	09
DE 9	07	00	NL11	10	10
DE12	-	00			
DE14	-	00	NO 1	07	07
DE17	-	00	NO 8	07	07
DE18	-	00	NO15	07	07
DE19	-	00	NO30	07	07
			NO39	07	07
DK 3	07	07	NO41	07	07
DK 5	07	07	NO42	-	07
DK 8	07	07			
			PL 2	06	06
ES 1	07	07	PL 3	06	06
ES 2	07	07	PL 4	06	06
ES 3	07	07	PL 5	06	06
ES 4	07	07			
ES 5	07	07	PT 1	09	-
ES 6	07	07	PT 3	09	-
			PT 4	09	09
FI 4	06	06			
FI 9	06	06	RU 1	(1)	(1)
FI17	06	06	RU13	(1)	(1)
FI22	06	06	RU14	(1)	(1)
			RU16	(1)	(1)
FR 3	09	09			
FR 5	09	09	SE 2	06	06
FR 8	09	09	SE 5	06	06
FR 9	09	09	SE 8	-	06
FR10	09	09	SE11	06	06
FR11	09	09	SE12	06	06
			SE13	-	06
FR12	09	09	SI8	08:30	08:30
GB 2	07	07	SK 2	07	07
GB 4	-	07	SK 4	07	07
GB 6	07	07	SK 5	07	07
GB 7	-	07	SK 6	07	07
GB13	07	07			
GB14	07	07	TR 1	00	00
GB15	07	70			
GB16	-	07	YU 5	06	06
			YU 8	06	06
GR1	-	00			

(1) : Not reported

10. Update

The data compiled in this report represent the best data available at present. If any further errors are detected, the data will be corrected in the database. It is important that users make certain that they have access to the most recent version of the database. For the data presented here the latest alteration was 17 July, 2001.

Scientific use of the EMEP data should be based on fresh copies of the data. Copies can be requested from the CCC (e-mail: anne-gunn.hjellbrekke@nilu.no). Information about the EMEP network and measurement data can also be found at http://www.emep.int and http://www.nilu.no/projects/ccc/index.html

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13. List of participating institutions

Austria	Umweltbundesamt
Belgium	CELINE - IRCEL
Commission of the European Communities	Joint Research Center. Ispra Establishment
Croatia	Meteorological and Hydrological Service of Croatia
Czech Republic	Czech Hydrometeorological Institute
Denmark	National Environmental Research Institute
Finland	Finnish Meteorological Institute
France	I' Ecole des Mines de Douai Laboratories Wolff
Germany	Umweltbundesamt
Greece	Ministry of Environmental Physical Planning and Public Works
Hungary	Institute for Atmospheric Physics, Dep. for Air Chemistry
Iceland	The Icelandic Meteorological Office
Ireland	Meteorological Service H.Q. Electricity Supply Board (ESB)
Italy	C.N.R. Istituto Inquinamento Atmosferico
Latvia	Latvian Hydrometeorological Agency
Lithuania	Institute of Physics
Netherlands	National Institute for Public Health and Environmental Protection (RIVM)
Norway	Norwegian Institute for Air Research (NILU)
Poland	Institute of Meteorology and Water Management Institute of Environmental Protection
Portugal	Ministério do ambiente e recursos naturais
Russian Federation	Institute of Global Climate and Ecology
Slovakia	Slovak Hydrometeorological Institute
Slovenia	Hydrometeorological Institute of Slovenia
Spain	Dirección General de Calidad y Evaluacíon Ambiental
Sweden	Swedish Environmental Research Institute (IVL)
Switzerland	Swiss Federal Laboratory of Testing Materials and Research (EMPA)
Turkey	Refik Saydam Centre of Hygiene
United Kingdom	AEA Technology
Yugoslavia	Federal Hydrometeorological Institute

Annex 1

Overview of sampling and analytical methods 1999

This Annex gives an overview of the sampling and analytical methods in use in the participating countries during 1999. The information given is mostly based on answered questionnaires issued by the CCC.

Table 1.1 shows the sampling techniques used for precipitation and aerosol components in the different countries. Table 1.2 shows the corresponding information for gases and Table 1.3 information on sampling for the sum of aerosols and gases.

Table 1.4 shows the analytical methods used for components in aerosols, for gases and for the sum of aerosols and gases. Several combinations of reagents can be used in the Griess method for measurements of nitrogen dioxide and in the data reports different combinations have been given different names, e.g. NEDA and ANSA in the past. Due to the increasing number of different reagent combinations, no distinction was made in 1999 between the different procedure which have all been referenced to as Griess method in Tables 1.4 and 1.7.

Table 1.5 shows the methods used for components in precipitation.

Tables 1.6 to 1.15 give the code numbers for the methods used in Tables 1.4 and 1.5.

Table 1.1: Techniques for sampling of precipitation and for aerosols in 1999.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Austria	Wet only	Schleicher und Schüll TE 36 Membranfilter 0.45 µm, 47 mm diameter, 2.7 Nm^3/day	-	-
Croatia	Bulk	-	-	-
Czech Republic	Bulk and wet-only	Teflon filter Gelman, pore size 1 µm 40 m^3/day	Schleicher and Schüll TE36 0.45 µm 5 m^3/day	As for ammonium
Denmark	Wet-only	Mixed cellulose ester filter Millipore RAWP 1.2 µm 58 m^3/day	-	-
Estonia	Bulk	Whatman 40 filter 4-5 m3/day at Lahemaa	-	-
Finland	Bulk	Whatman 40 filter 24 m3/day	-	-
France	Wet-only	Whatman 40 filter 2.5 m^3/day	-	-

Table 1.1 cont.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Germany	Bulk	Schleicher & Shüll 589/2L filter 1.0 m3/day	-	-
Greece	Wet only	Whatman 41 filter 1,1 m3/day	-	As for particulate sulphate
Hungary	Wet only	Teflon filter, Schleicher & Schüll, 1 μm, 25 m3/day	As for particulate sulphate	As for particulate sulphate
Iceland	Bulk	Whatman 40 filter 30 m^3/day	-	-
Ireland	Bulk (IE1) Wet only (IE2, IE3, IE4)	Whatman 40 filter 20-25 m^3/day (IE1) Gelman GN-6 Metricel filter 20 m^3/day (IE2, IE3, IE4)	-	-
Italy	Wet only	Teflon filter Gelman Zeflour 1 μ. 17 m^3/day	Teflon filter (as for sulphate) + phosphorous acid impregnated filter	As for sulphate + Nylasorb filter
Latvia	Bulk (LV16) Wet only (LV10 from July 1996)	Whatman 41 filter 14-20 m3/day	Whatman 41 filter 14-20 m3/day	As for particulate sulphate
Lithuania	Wet only	Whatman 40 filter, 24 m^3/day	As for particulate sulphate	As for particulate sulphate
Netherlands	Wet only	Whatman 42 filter 2.5 m^3/day Filter mounted behind denuder	As for particulate sulphate	As for particulate sulphate.
Norway	Bulk NILU-type	Teflon filter, Gelman Zefluor 2 μm 25 m^3/day	-	-
Poland 2,3,4	Bulk	Whatman 40 filter PL2,3,4:3.5-4 m^3/day	As for particulate sulphate	As for particulate sulphate
PL5	Bulk	PL 5: Teflon filter Gelman Zefluor 2 um 16 m3/day		
Portugal	Bulk	Whatman 40 filter , 2.5-4.2 m^3/day	-	-
Russian Fed.	Bulk	Whatman 40 filter 10-15 m^3/day	As for particulate sulphate	As for particulate sulphate
Slovakia	Wet only	Whatman 40 filter 6-8 m^3/day	-	Whatman 40 filter 6-8 m^3/day

Table 1.1 cont.

Country	Precipitation	Particulate sulphate	Particulate ammonium	Particulate nitrate
Slovenia	-	Teflon filter, Gelman Zefluor 2 µm, 18-24 m3/day	-	-
Spain	Wet only	Whatman GF/A filter 770 m^3/day	As for particulate sulphate	-
Sweden	Wet only	Teflon filter Gelman Zefluor 2 µm 20 m^3/day	-	-
Switzerland	Wet only	Schleicher & Schüll filter 589/4, 3.6 m^3/day (CH2,5), 4.1 m^3/day (CH1)	-	-
Turkey	Wet only	Teflon filter, Gelman Zefluor 2 µm 27 m^3/day	See sum of gases and aerosols	See sum of gases and aerosols
United Kingdom	Wet only. collector	Whatman 41 filter 1.1 m^3/day	-	
Yugoslavia	Bulk	-	-	-
CEC (IT 4)	Wet only	Cellulose acetate 0.8 µm filter 12 m^3 day	As for particulate sulphate	As for particulate sulphate

Table 1.2: Techniques for sampling of gases in 1999.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Austria	Instrumental: DOAS	DOAS	-	-
Croatia	Absorbing solution TCM, 1.6-2.5 m^3/day	Absorbing solution Trietanolamin 1.6-2.5 m^3/day	-	-
Czech Republic	KOH-impregnated Whatman 41 filter 6-8 m^3/day	Absorbing solution NaOH and guajacol 0.72 m^3/day	Oxalic acid imp. Whatman 41 filter 5 m^3/day	NaCl-impregnated Whatman 41 filter 0.72 m^3/day
Denmark	NaF-impregnated + KOH-impregnated Whatman 41 filters 58 m^3/day	KI-method (glass sinter) 0,7 m^3/day	-	-
Estonia	NaOH-impregnated Whatman 40 filter 4-5 m^3/day at Lahemaa Instrumental UV-fluorescense at Vilsandi	Absorbing tubes KI solution, 0.3 m^3/day at Lahemaa; Instrumental: chemiluminescence at Vilsandi	-	-

Table 1.2 cont.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Finland	NaOH-impregnated Whatman 40 filter 24 m^3/day	Instrumental: chemiluminescence	-	-
France	Absorbing solution H_2O_2, 2.5 m^3/day	-	-	-
Germany	Absorbing solution TCM, 1.0 m^3/day	Absorbing solution Saltzman, 1 m^3/day		
Greece	Absorbing solution H_2O_2, 1.1 m^3/day	Absorbing solution TGS, 1.1 m^3/day	-	-
Hungary	KOH-impregnated Whatman 40 filter, 25 m^3/day	Iodide method (impregnated glass sinter) 0.7 m^3/day	Oxalic acid coated diffusion tube, 4 m^3/day until June 30, 1999. From July 1, 1999 alkaline impregnated Whatman 40 filter, 25 m^3/day	Teflon filter, Schleicher & Schüll, 1 μm, 25 m^3/day
Iceland	KOH-impregnated Whatman 40 filter 30 m^3/day	-	-	-
Ireland	KOH-impregnated Whatman 40 filter 20-25 m^3/day	Absorbing solution TGS 1.5-1.6 m^3/day	-	-
Italy	Diffusion tubes NaCl and Na_2CO_3 + glycerine 17 m^3/day	Instrumental: Chemiluminescence	Diffusion tubes coated with phosphorous acid 17 m^3/day	Diffusion tubes NaCl 17 m^3/day
Latvia	KOH-impregnated Whatman 41 filter 14-20 m^3/day	Absorbing KI solution in absorbing tubes with glass granules, 0.2-0.4 m^3/day	Whatman 41 filter 14-20 m^3/day	As for sulphur dioxide
Lithuania	KOH-impregnated Whatman 40 filter, 24 m^3/day	Absorbing solution KI; 0.72 m^3/day	-	-
Netherlands	Instrumental: UV-fluorescence	Instrumental: Chemiluminescence	Absorption in $NaHSO_4$, membrane separation, conductivity measurement	-
Norway	KOH-impregnated Whatman 40 filter 25 m^3/day	Iodide method (impregnated glass sinter) 0.7 m^3/day	-	-

Table 1.2 cont.

Country	Sulphur dioxide	Nitrogen dioxide	Ammonia	Nitric acid
Poland 2,3,4	KOH-impregnated Whatman 40 filter 3.5-4 m^3/day	Absorbing solution TGS 0.7 m^3/day	-	-
			-	-
Poland 5	KOH-impregnated Whatman 40 filter 16 m3/day	Iodie method (impregnated glass sitner) 0.7 m3/day		
Portugal	Absorbing Solutions H_2O_2 2.5-4.2 m^3/day. Instrumental: UV-fluorescence at P4 only	Instrumental: Chemiluminescence at P4 only		
Russian Federation	NaOH-impregnated Whatman 40 filter 10-15 m^3/day	Absorbing tubes KI 0.3 m^3/day		
Slovakia	KOH-impregnated Whatman 41 filter 6-8 m^3/day	Absorbing solution NaOH and guajacol 0.5 m^3/day	-	KOH-impregnated Whatman 41 filter 6-8 m^3/day
Slovenia	KOH-impregnated Whatman 40 filter, 18-24 m3/day	-	-	-
Spain	Absorbing solution H_2O_2 2 m^3/day	Absorbing solution Trietanolamine 1 m^3/day	-	-
Sweden	KOH-impregnated Whatman 40 filter 20 m^3/day	NaI-impregnated glass sinters ~0.7 m^3/day	-	-
Switzerland	CH1: Absorbing solution H_2O_2 4.1 m^3/day CH2,3,4,5: Instrumental UV-fluorescence	Instrumental: Chemilumin-escence; Cranox at CH1	-	-
Turkey	KOH-impregnated Whatman 40 filter, 27 m^3/day	NaI-impregnated glass sinters, 0.72 m^3/day	See sum of gases and aerosols	See sum of gases and aerosols
United Kingdom	Absorbing solution H_2O_2 1.1m^3/day		-	-
Yugoslavia	Absorbing solution TCM, 1.6-2.5 m^3/day	Absorbing solution TGS, 1.6-2.5 m^3/day	-	-
CEC (I4)	Instrumental UV-fluorescence	Instrumental: Chemiluminescence	-	-

Table 1.3: Techniques for sampling of sums of gases and aerosols in 1999.

	Ammonia and ammonium	Nitric acid and nitrate
Denmark	Aerosolfilter as for sulphate + Oxalic acid impregnated Whatman 41, 58 m^3/day	Aerosolfilter as for sulphate + NaF-impregnated Whatman 41, 58 m^3/day
Finland	Oxalic acid impregnated Whatman 40 filter, 24 m^3/day	Whatman 40 + NaOH impregnated Whatman 40 filter, 24 m^3/day
Hungary	Teflon filter as for sulphate + alkaline impregnated Whatman 40 filter, 25 m^3/day	Teflon filter as for sulphate + KOH-impregnated Whatman 40 filter, 25 m^3/day
Latvia	Oxalic acid impregnated Whatman 41 filter, 14-20 m^3/day	KOH impregnated Whatman 41 filter, 14-20 m^3/day
Lithuania	Oxalic acid impregnated Whatman 40 filter, 16-17 m^3/day	KOH impregnated Whatman 40 filter, 16-17 m^3/day
Norway	Aerosolfilter as for sulphate + Oxalic acid imp. filter, 25 m^3/day	Aerosolfilter as for sulphate + KOH-imp.filter as for sulphur dioxide, 25 m^3/day
Poland 2,3,4	Oxalic acid impregnated Whatman 40 filter, 4 m^3/day	PL2,3,4: NaF impregnated Whatman 40 filter, 4 m^3/day
Poland 5	Aerosol Teflon filter (as for sulphate) + Oxalic acid impregnated Whatman 40 filter, 16 m3/day	Aerosol Teflon filter (as for sulphate) +NaOH impregnated Whatman 40 filter, 16 m3/day
Russian Federation	Oxalic acid impregnated Whatman 40 filter 10-15 m^3/day	-
Slovenia	Aerosol filter as for sulphate + oxalic acid impregnated Whatman 40 filter, 18-24 m^3/day	Aerosol filter as for sulphate + oxalic acid impregnated Whatman 40 filter, 18-24 m^3/day
Spain	Oxalic acid impregnated Whatman 40 filter, 35 m^3/day	NaOH impregnated Whatman 40 filter, 35 m^3/day
Sweden	Aerosolfilter as for sulphate + Oxalic acid impregnated Whatman 40 filter, 20 m^3/day	Aerosolfilter as for sulphate + KOH impregnated Whatman 40 filter, 20 m^3/day
Switzerland	Citric acid impregnated Schleicher & Schüll 589/4 filter, 18 m^3/day	NaOH impregnated Schleicher & Schüll 589/4 filter, 18 m^3/day
Turkey	Citric acid impregnated Whatman 40 filter Teflon filter, Gelman Zeflour 2 μm, 27 m^3/day	KOH impregnated Whatman 40 filter Teflon filter, Gelman Zeflour 2 μm, 27 m^3/day
United Kingdom	Citric acid impregnated Whatman 40 filter, 25 m^3/day GB2 and GB14	NaOH impregnated Whatman 40 filter, 25 m^3/day GB2 and GB14

Table 1.4: Analytical methods used by the participants for components in aerosols, for gases, and for the sum of aerosol components and gases in 1999. Method numbers are given in Tables 1.6–1.9.

	SO_4	NH_3/NH_4	HNO_3/NO_3	SO_2	NO_2
Austria	1	-	-	12	5
Belgium	2	-	-	7	4
Croatia	-	-	-	6	3
Czech Republic	2	3	4	3	3
Denmark	10	3	4	1	3
Estonia	1	-	-	1 & 9	3 & 4
Finland	1	1	1	1	4
France	1	-	-	1	-
Germany	2	4	1	6	2
Greece	1	-	-	1	3
Hungary	1	3	1	1	3
Iceland	13	-	-	1	-
Ireland	1	-	-	1	3
Italy	1	1	1	1	4
Latvia	3	3	2	3	3
Lithuania	1	3	1	1	3
Netherlands	1	3	1	9	4
Norway	1	3/1	1	1	3
Poland 2,3,4	3	2	4	3	3
Poland 5	14	3	14	14	3
Portugal	-	-	-	-	-
Russian Fed.	1	1	1	1/9*	3
Slovakia	1	-	1	1	3
Slovenia	1	1	1	1	
Spain	1	3	1	3	3
Sweden	1	4	1	1	3
Switzerland	2	1	1	1/9**	4
Turkey	1	3	1	1	3
United Kingdom	1	1	1	1	1
Yugoslavia	-	-	-	6	3
CEC (I4)	1	1	1	9	4

* 9 at RU1

** 1 at CH1
9 at CH2, CH3, CH4, CH5

Table 1.5: Analytical methods used by the participants for components in precipitation in 1999. Methods numbers are given in Tables 1.10–1.15.

	SO_4	NO_3	NH_4	H^+	Mg	Na	Cl	Ca	K
Austria	1	1	1	-	1	1	1	1	1
Belgium	1	1	1	-	3	1	1	3	1
Croatia	4	4	7	6	2	5	2	2	5
Czech Republic	1	1	4/6	6	6	4	1	6	4
Denmark	1	1	5	6	2	2	1	2	2
Estonia	1	1	5	-	2	3	1	3	3
Finland	1	1	1	6	1	1	1	1	1
France	1	1	4	6	1	1	1	1	1
Germany	1	1	4	-	3	6	1	3	6
Greece	1	1	1	6	1	1	1	1	1
Hungary	1	1	5	3	2	5	1	2	5
Iceland	1	-	-	-	-	5/7##	-	-	-
Ireland	1	1	1	-	1	1	1	1	1
Italy	1	1	1	-	1	1	1	1	1
Latvia	1	1	5	-	2	2	2	7	2
Lithuania	1	1	5	6	2	2	1	2	2
Netherlands	1	1	6	5	8	7	1	8	7
Norway	1	1	1	-	1	1	1	1	1
Poland 2,3,4	1	1	3	-	2	5	1	2	5
Poland 5	6	8	5	-	8	7	5	8	2
Portugal	1	1	5	-	1	1	1	1	1
Russian Federation	1	1	1	-	2	1	1	3	1
Slovak Republic	1	1	1	-	1	1	1	1	1
Spain	1	1	5	6	3	3	1	3	6
Sweden	1	1	4	6	1	1	1	1	1
Switzerland	1	1	1	-	1	1	1	1	1
Turkey	1	1	5	6	2	5	1	2	5
United Kingdom	1	1	1	6	1	1	1	1	1
Yugoslavia	2	2	5	-	2	5	2	2	5
CEC (I4)	1	1	1/5	6	1/2	1/2	1	1/2	1/2

from 1 Oct. 1998 new method

Table 1.6: Methods used for analysing sulphur dioxide and sulphate in particles.

Ion chromatography	SO_2	SO_4	1
X-ray fluorescence (XRF)		SO_4	2
Thorin	SO_2	SO_4	3
Ring-oven technique		SO_4	4
Isotopic dilution method	SO_2	SO_4	5
Pararosanilin method	SO_2		6
Flame photometry	SO_2		7
Sulfonazo III, automatic,	SO_2	SO_4	8
UV-fluorescence	SO_2		9
Proton Induced X-ray Emission (PIXE)		SO_4	10
Nephelometry (barium sulphate)	SO_2	SO_4	11
DOAS	SO_2		12
Plasma emission spectrometry		SO_4	13
Capillary Electrophoresis	SO_2	SO_4	14

Table 1.7: Methods used for analysing nitrogen dioxide.

Ion chromatography	1
Saltzman	2
Spectrophotometric, Griess method	3
Chemiluminescence	4
DOAS	5

Table 1.8: Methods used for determination of ammonium in aerosols, ammonia, and the sum of ammonium and ammonia.

Ion chromatography	1
Spectrophotometric, Chloramin T	2
Spectrophotometric, Indophenol method	3
Flow Injection Analysis	4

Table 1.9: Methods used for determination of nitrate in aerosols, nitric acid, and the sum of nitrate and nitric acid.

Ion chromatography	1
Spectrophotometric, Griess after Cd reduction	2
Spectrophotometric, Nitration of sodium salicylate	3
Spectrophotometric, Griess after hydrazine reduction	4

Table 1.10: Methods used for determination of sulphate in precipitation.

Ion chromatography	1
Thorin	2
Isotope dilution	3
Turbidity/Nephelometry (barium sulphate)	4
Sulfonazo III	5
Capillary Electrophoresis	6

Table 1.11: Methods used for determination of nitrate in precipitation.

Ion chromatography	1
Spectrophotometric Griess method, Cd reduction	2
Spectrophotometric, Flow injection analysis	3
UV-spectrophotometric	4
Other spectrophotometric	5
Griess method, Hydrazine reduction	6
Nesslers method after reduction	7
Capillary Electrophoresis	8

Table 1.12: Methods used for determination of ammonium in precipitation.

Ion chromatography	1
Spectrophotometric, Nesslers method	2
Spectrophotometric, Chloramin T	3
Spectrophotometric, Flow injection analysis	4
Spectrophotometric, Indophenol method	5
As method 5, using sodium salicylate instead of phenol	6
Gas sensitive electrode	7

Table 1.13: Methods used for determination of strong acid in precipitation.

Coulometric titration method	1
As above, but automatic plotting of Gran's function	2
Alkali titration	3
Gran's plot titration	4
Acid and alkali titration	5
Calculated from pH	6

Table 1.14: Methods used for determination of magnesium and calcium in precipitation.

Ion chromatography	1
Atomic absorption method	2
As method 2 + addition of lanthanium	3
As method 2 + addition of cesium	4
As method 2 + addition of potassium	5
As method 2 + addition of lanthanium, cesium and 8-Chynolynol	6
Atomic emission method	7
Plasma emission spectrometry	8

Table 1.15: Methods used for determination of sodium and potassium in precipitation.

Ion chromatography	1
Atomic emission method	2
As method 2 + addition of cesium	3
As method 2 + addition of lanthanium, cesium and 8-Chynolynol	4
Atomic absorption method	5
As method 5 + addition of cesium	6
Plasma emission spectrometry	7

Table 1.16: Methods used for determination of chloride in precipitation.

Ion chromatography	1
Spectrophotometric, mercury thiocyanate/iron method	2
Ion selective electrode	3
Setpoint titration	4
Capillary Electrophoresis	5

Annex 2

Annual statistics on precipitation data

AT0002R Illmitz Austria

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.66	0.08	6.02	298.5	98.7	0	66	A	
Ca++	0.33	0.00	2.40	147.8	98.7	3	66	A	
Cl-	0.21	0.00	3.90	96.9	99.1	3	70	A	
Mg++	0.063	0.014	0.458	28.7	98.7	0	66	A	
NO3-	0.50	0.15	4.41	228.1	99.1	0	70	A	
pH	4.85	3.91	7.35	6446.7	99.9	0	79	B	
K+	0.09	0.01	1.35	40.6	98.7	0	66	B	
Precip	-	0.0	32.8	453.4	100.0	283	365		
Na+	0.12	0.00	2.30	55.2	98.7	1	66	A	
SO4-- corr	0.79	0.20	4.26	355.7	99.1	0	70	A	
SO4--	0.80	0.21	4.27	361.2	99.1	0	70	A	

AT0004R St. Koloman Austria

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.49	0.01	5.21	578.6	99.4	1	175	A	
Ca++	0.27	0.00	4.90	320.1	99.4	26	175	A	
Cl-	0.13	0.00	1.40	156.7	99.5	23	176	A	
Mg++	0.073	0.014	0.860	85.8	99.4	0	175	A	
NO3-	0.43	0.08	3.38	509.3	99.5	0	176	A	
pH	5.14	3.98	7.76	8427.5	100.0	0	195	B	
K+	0.06	0.00	0.92	67.0	99.4	11	175	B	
Precip	-	0.0	33.0	1176.4	100.0	168	365		
Na+	0.13	0.00	0.86	148.2	99.4	1	175	A	
SO4-- corr	0.33	-0.03	2.01	392.9	99.5	1	176	A	
SO4--	0.35	0.05	2.02	413.9	99.5	0	176	A	

AT0005R Vorhegg Austria

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.27	0.01	3.88	286.4	98.4	4	124	A	
Ca++	0.22	0.00	2.20	228.6	98.4	33	124	A	
Cl-	0.12	0.00	5.50	121.5	98.3	38	122	A	
Mg++	0.039	0.005	0.580	41.0	98.4	5	124	A	
NO3-	0.24	0.03	2.25	252.1	98.3	0	122	A	
pH	5.08	4.05	6.94	8832.1	99.4	0	144	B	
K+	0.03	0.00	0.74	29.2	98.4	23	124	B	
Precip	-	0.0	33.8	1047.0	99.5	218	363		
Na+	0.13	0.00	4.87	136.4	98.4	6	124	A	
SO4-- corr	0.34	0.00	2.79	356.3	98.3	1	122	A	
SO4--	0.35	0.01	2.88	370.2	98.3	0	122	A	

CH0002R Payerne Switzerland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.45	0.09	2.99	484.2	98.6	0	125	A	
Ca++	0.38	0.03	3.63	411.1	98.4	10	123	A	
Cl-	0.21	0.03	3.84	222.1	98.6	8	125	A	
Mg++	0.037	0.005	0.436	40.2	98.6	13	125	B	
NO3-	0.28	0.05	2.18	297.2	98.6	0	125	A	
pH	5.16	3.90	7.33	7493.5	99.5	0	141	A	
K+	0.03	0.00	0.38	31.6	98.6	14	125	B	
Precip	-	0.0	61.6	1079.2	99.7	199	364		
Na+	0.13	0.01	2.15	137.1	98.6	8	125	A	
SO4-- corr	0.32	0.01	3.13	340.6	98.6	1	125	A	
SO4--	0.33	0.01	3.19	354.5	98.6	1	125	A	

CH0004R Chaumont Switzerland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.24	0.01	2.18	293.8	99.4	1	104	A	
Ca++	0.22	0.03	2.58	266.5	98.4	16	103	A	
Cl-	0.20	0.03	2.66	244.4	99.4	1	104	A	
Mg++	0.027	0.005	0.254	32.5	99.4	28	104	B	
NO3-	0.23	0.04	2.08	278.8	99.4	0	104	A	
pH	4.95	3.85	7.00	13880.5	99.8	0	113	A	
K+	0.03	0.00	0.50	31.8	99.4	16	104	B	
Precip	-	0.0	76.9	1221.6	99.7	241	364		
Na+	0.12	0.01	1.50	141.9	99.4	7	104	A	
SO4-- corr	0.26	0.01	1.79	316.9	99.4	1	104	A	
SO4--	0.27	0.01	1.80	330.2	99.4	1	104	A	

CH0005R Rigi Switzerland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.45	0.01	4.26	609.7	99.1	2	141	A	
Ca++	0.24	0.03	1.98	329.2	98.5	17	140	A	
Cl-	0.12	0.03	2.49	165.6	99.1	17	141	A	
Mg++	0.022	0.005	0.304	29.2	99.1	39	141	B	
NO3-	0.34	0.03	2.62	457.8	99.1	0	141	A	
pH	4.90	3.87	7.24	16945.4	99.8	0	157	A	
K+	0.03	0.00	0.39	40.1	99.1	14	141	B	
Precip	-	0.0	45.1	1351.3	95.6	181	349		
Na+	0.08	0.01	1.58	112.3	99.1	12	141	A	
SO4-- corr	0.31	0.01	2.29	424.3	99.1	0	141	A	
SO4--	0.32	0.01	2.35	434.4	99.1	0	141	A	

CZ0001R Svratouch Czech Republic

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.22	0.02	1.41	170.4	94.0	0	40	B	W
Cl-	0.37	0.08	2.97	290.0	94.6	0	40	A	W
K+	0.10	0.01	1.46	77.5	94.0	0	40	A	W
Mg++	0.044	0.010	0.310	34.3	94.0	0	40	A	W
NH4+	0.73	0.17	4.43	569.6	94.6	0	40	B	W
NO3-	0.46	0.03	1.87	358.6	96.0	0	41	A	W
Na+	0.10	0.02	0.49	80.4	92.6	0	39	A	W
Precip	-	0.0	71.3	776.4	98.1	4	52		W
SO4--	0.58	0.08	2.93	453.5	96.0	0	41	A	W
SO4-- corr	0.56	-0.14	2.92	438.1	96.0	0	41	A	W
pH	4.74	4.12	7.09	14208.6	100.0	0	46	A	W

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.26	0.05	1.98	147.1	93.0	0	43	B	W
Cl-	0.25	0.08	1.12	141.6	93.0	0	43	A	W
K+	0.07	0.03	0.31	41.2	93.0	0	43	A	W
Mg++	0.036	0.010	0.220	20.2	93.0	0	43	A	W
NH4+	0.57	0.12	2.24	322.6	93.0	0	43	B	W
NO3-	0.49	0.01	1.93	276.0	93.0	1	43	A	W
Na+	0.10	0.02	0.66	57.0	93.0	0	43	A	W
Precip	-	0.2	67.8	562.3	92.3	3	49		W
SO4--	0.60	0.01	2.72	338.5	93.0	0	43	A	W
SO4-- corr	0.58	0.00	2.71	332.9	93.1	1	43	A	W
pH	4.68	4.16	6.42	11839.3	94.9	0	45	A	W

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.53	0.04	2.95	299.3	93.7	0	125	B	
Ca++	0.21	0.00	1.61	118.5	93.8	8	125	B	
Cl-	0.31	0.04	82.72	178.1	92.8	0	124	A	
Mg++	0.039	0.000	0.920	22.1	93.8	3	125	A	
NO3-	0.48	0.14	2.95	273.4	93.8	0	125	A	
pH	4.65	3.90	6.94	12799.5	94.3	0	136	A	
K+	0.14	0.00	61.80	80.2	93.7	1	123	A	
Precip	-	0.0	28.0	566.0	100.0	200	365		
Na+	0.14	0.00	5.39	81.5	93.8	1	126	A	
SO4-- corr	0.59	0.10	4.39	335.3	93.8	0	125	A	
SO4--	0.61	0.11	4.56	342.8	93.8	0	125	A	

DE0001R Westerland Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.42	0.00	5.21	340.4	98.4	7	169	A	
Ca++	0.75	0.00	16.90	605.5	98.7	1	173	A	
Cl-	11.93	0.40	152.70	9682.6	98.4	0	169	A	
Mg++	0.735	0.050	19.690	596.3	98.7	0	173	A	
NO3-	0.55	0.07	4.01	447.8	98.5	0	171	A	
pH	4.89	3.48	7.26	10542.7	99.2	0	187	A	
K+	0.21	0.00	7.26	171.5	98.7	8	173	B	
Precip	-	0.0	33.1	811.0	98.4	153	359		
Na+	6.58	0.18	81.69	5342.5	98.5	0	170	A	
SO4-- corr	0.54	-0.29	23.76	440.3	98.5	3	171	A	
SO4--	1.07	0.19	25.71	871.2	98.5	0	171	A	

DE0002R Langenbrugge Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.70	0.00	11.36	355.2	89.8	2	138	A	
Ca++	0.62	0.20	6.00	312.5	89.7	0	133	A	
Cl-	1.10	0.10	37.40	556.0	90.0	0	140	A	
Mg++	0.175	0.040	2.510	88.7	89.7	0	133	A	
NO3-	0.69	0.06	4.89	347.0	90.0	0	140	A	
pH	5.27	4.14	6.82	2692.5	90.0	0	130	A	
K+	0.09	0.00	2.29	47.8	92.7	15	135	B	
Precip	-	0.0	16.5	465.8	97.3	165	355		
Na+	0.53	0.00	5.91	269.2	89.7	3	133	A	
SO4-- corr	0.61	-0.04	12.86	309.6	90.0	1	140	A	
SO4--	0.67	0.21	14.60	339.4	90.0	0	140	A	

DE0003R Schauinsland Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.36	0.00	3.22	793.1	87.3	4	156	A	
Ca++	0.30	0.00	9.80	671.1	87.4	4	157	A	
Cl-	0.33	0.10	35.00	742.7	86.7	0	155	A	
Mg++	0.046	0.005	0.630	102.7	92.3	12	158	A	
NO3-	0.33	0.06	3.63	728.9	86.7	0	155	A	
pH	4.95	4.13	7.38	24977.9	86.8	0	161	A	
K+	0.06	0.00	2.31	143.0	87.1	19	156	B	
Precip	-	0.0	64.3	1959.5	94.8	149	346		
Na+	0.17	0.00	6.90	371.9	90.9	9	157	A	
SO4-- corr	0.38	0.11	2.84	846.4	86.7	0	155	A	
SO4--	0.40	0.13	2.97	887.8	86.7	0	155	A	

DE0004R Deuselbach Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.38	0.00	5.53	281.8	97.1	3	173	A	
Ca++	0.34	0.00	4.50	251.9	97.2	2	175	A	
Cl-	0.52	0.00	7.00	385.4	97.1	2	175	A	
Mg++	0.081	0.005	1.230	59.6	97.2	1	175	A	
NO3-	0.43	0.06	4.29	318.5	97.1	0	175	A	
pH	4.84	3.62	7.45	10531.1	96.5	0	156	A	
K+	0.05	0.00	0.79	38.8	97.2	22	175	B	
Precip	-	0.0	25.9	716.5	98.6	151	360		
Na+	0.26	0.00	3.36	194.3	97.2	5	176	A	
SO4-- corr	0.47	0.00	4.21	344.2	97.1	1	175	A	
SO4--	0.50	0.15	4.48	366.5	97.1	0	175	A	

DE0005R Brotjacklriegel Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.65	0.02	4.31	619.2	97.1	0	160	A	
Ca++	0.26	0.00	4.80	251.7	96.9	10	157	A	
Cl-	0.26	0.10	2.70	249.1	97.1	0	160	A	
Mg++	0.036	0.005	0.360	34.8	96.9	29	157	A	
NO3-	0.58	0.05	4.04	553.3	97.1	0	160	A	
pH	4.76	3.74	6.80	16641.3	97.2	0	164	A	
K+	0.14	0.00	2.52	133.1	96.9	19	157	B	
Precip	-	0.0	30.2	954.0	100.0	180	365		
Na+	0.14	0.00	2.58	130.3	96.9	16	157	A	
SO4-- corr	0.53	0.02	3.78	504.5	97.1	0	160	A	
SO4--	0.54	0.13	3.85	517.5	97.1	0	160	A	

DE0007R Neuglobsow Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.79	0.07	4.43	387.8	97.3	0	118	A	
Ca++	0.38	0.00	2.00	187.8	97.4	1	119	A	
Cl-	0.91	0.10	29.40	445.1	97.3	0	118	A	
Mg++	0.081	0.005	1.690	39.9	97.4	6	119	A	
NO3-	0.67	0.15	2.73	328.8	97.3	0	118	A	
pH	4.84	3.86	7.03	7147.1	99.3	0	139	A	
K+	0.08	0.00	2.10	39.7	97.4	36	119	B	
Precip	-	0.0	17.3	490.7	99.7	199	364		
Na+	0.48	0.02	17.94	235.3	97.4	0	119	A	
SO4-- corr	0.62	0.00	3.25	303.2	97.3	1	118	A	
SO4--	0.66	0.15	3.29	325.4	97.3	0	118	A	

DE0008R Schmucke Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.52	0.00	5.70	714.6	84.0	1	162	A	
Ca++	0.13	0.00	3.70	173.8	85.0	38	161	A	
Cl-	0.44	0.00	6.20	607.9	84.0	2	163	A	
Mg++	0.032	0.005	0.420	44.1	89.4	37	163	A	
NO3-	0.54	0.08	4.97	735.1	84.0	0	163	A	
pH	4.61	3.68	6.62	33461.4	84.1	0	167	A	
K+	0.05	0.00	1.33	63.7	85.7	43	163	B	
Precip	-	0.0	44.0	1156.0	91.2	100	333		
Na+	0.28	0.02	3.53	381.2	83.9	0	160	A	
SO4-- corr	0.51	0.11	3.14	697.6	84.0	0	163	A	
SO4--	0.53	0.11	3.17	726.6	84.0	0	163	A	

DE0009R Zingst Germany

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.47	0.00	3.38	274.9	69.5	7	86	A	
Ca++	0.65	0.10	3.20	375.5	63.5	0	77	A	
Cl-	1.42	0.10	25.10	825.9	63.9	0	85	A	
Mg++	0.194	0.030	2.310	112.4	63.5	0	77	A	
NO3-	0.61	0.12	2.33	352.9	63.9	0	85	A	
pH	4.89	4.10	6.99	7483.7	64.0	0	87	A	
K+	0.08	0.00	0.91	44.0	71.2	27	85	B	
Precip	-	0.0	19.7	374.1	82.7	193	302		
Na+	0.77	0.04	14.58	449.0	63.5	0	77	A	
SO4-- corr	0.61	0.18	4.26	356.1	63.9	0	85	A	
SO4--	0.69	0.23	4.39	398.4	63.9	0	85	A	

DK0003R Tange Denmark

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.46	0.00	3.12	160.4	98.6	0	84	A	
Ca++	0.12	0.01	1.38	42.6	97.3	0	80	A	
Cl-	3.05	0.03	68.80	1067.1	99.1	0	95	A	
Mg++	0.234	0.010	4.340	81.9	87.5	0	76	A	
NO3-	0.46	0.03	2.40	161.1	99.0	0	94	A	
pH	4.75	3.00	6.43	6255.7	96.9	0	259	A	
K+	0.08	0.00	1.38	28.1	84.0	2	78	B	
Precip	-	0.0	21.5	350.2	49.0	37	179		
Na+	0.83	0.03	5.11	292.0	97.3	0	78	A	
SO4-- corr	0.40	0.01	2.69	140.8	98.1	0	94	A	
SO4--	0.54	0.07	3.27	189.7	98.1	0	94	A	

DK0005R Keldsnor Denmark

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.63	0.08	4.20	356.0	95.2	0	75	A	
Ca++	0.33	0.03	1.84	184.0	97.3	0	75	A	
Cl-	4.27	0.23	41.40	2409.8	99.6	0	88	A	
Mg++	0.277	0.020	2.530	156.1	97.6	0	69	A	
NO3-	0.58	0.07	4.88	326.7	99.6	0	88	A	
pH	4.89	3.00	6.98	7274.8	98.0	0	87	A	
K+	0.36	0.02	1.82	201.6	98.8	0	75	B	
Precip	-	0.0	100.9	564.3	83.8	65	179		
Na+	2.41	0.00	23.21	1357.7	97.9	1	71	A	
SO4-- corr	0.46	0.06	5.90	258.5	99.6	0	88	A	
SO4--	0.66	0.13	6.27	371.1	99.6	0	88	A	

DK0008R Anholt Denmark

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.42	0.18	1.63	333.9	100.0	0	32	A	W
Ca++	0.35	0.09	2.12	276.1	100.0	0	32	A	W
Cl-	7.80	0.99	58.20	6224.5	99.8	0	31	A	W
Mg++	0.526	0.090	3.930	419.6	100.0	0	32	A	W
NO3-	0.53	0.18	2.84	424.0	100.0	0	32	A	W
pH	4.77	3.00	6.49	13648.7	100.0	0	48	A	W
K+	0.20	0.04	1.50	162.5	100.0	0	32	B	W
Precip	-	0.0	99.7	797.8	99.7	1	33		W
Na+	4.28	0.69	32.01	3415.3	99.8	0	31	A	W
SO4-- corr	0.41	0.21	1.42	329.6	100.0	0	32	A	W
SO4--	0.76	0.29	3.42	608.6	100.0	0	32	A	W

EE0009R Lahemaa Estonia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.16	0.00	1.83	104.7	98.0	7	127	A	
Ca++	0.34	0.00	6.00	231.2	96.2	1	118	B	
Cl-	0.47	0.05	3.40	314.9	98.8	3	136	B	
Mg++	0.058	0.005	0.380	39.0	96.2	4	118	B	
NO3-	0.28	0.01	2.13	190.5	98.8	4	136	A	
pH	4.76	3.95	7.02	11710.7	100.0	0	143	B	
K+	0.09	0.05	1.16	62.8	96.3	75	119	B	
Precip	-	0.0	42.4	669.4	100.0	222	365		
Na+	0.22	0.05	1.74	145.7	96.3	35	119	A	
SO4-- corr	0.46	0.09	3.45	309.8	98.8	0	136	A	
SO4--	0.49	0.11	3.51	325.3	98.8	0	136	A	

EE0011R Vilsandi Estonia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.30	0.00	3.25	153.2	98.9	5	59	A	
Ca++	0.49	0.10	3.90	251.1	99.0	0	59	B	
Cl-	1.55	0.10	9.70	804.7	99.5	0	61	B	
Mg++	0.137	0.005	0.760	71.0	99.0	1	59	B	
NO3-	0.38	0.03	1.73	195.3	99.5	0	61	A	
pH	4.78	4.13	7.43	8583.2	99.8	0	63	B	
K+	0.25	0.05	5.10	127.2	99.0	25	59	B	
Precip	-	0.0	34.2	517.7	100.0	301	365		
Na+	0.78	0.05	5.30	405.5	99.0	2	59	A	
SO4-- corr	0.53	0.15	3.45	273.4	99.5	0	61	A	
SO4--	0.60	0.18	3.52	311.2	99.5	0	61	A	

ES0001R Toledo Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.18	0.04	1.61	61.6	98.9	15	68	A	
Ca++	0.46	0.07	2.78	158.5	97.2	0	61	A	
Cl-	0.89	0.25	3.60	310.8	99.4	0	70	D	
Mg++	0.064	0.010	0.240	22.4	97.2	1	61	A	
NO3-	0.24	0.04	2.16	84.6	99.4	1	70	A	
pH	5.91	5.33	7.64	432.1	99.9	0	78	B	
K+	0.09	0.03	0.94	31.6	97.2	10	61	A	
Precip	-	0.0	26.8	348.6	98.6	292	360		
Na+	0.40	0.05	9.60	138.5	97.2	1	61	A	
SO4-- corr	0.48	0.22	2.40	165.9	99.4	0	70	A	
SO4--	0.52	0.25	2.51	179.8	99.4	0	70	A	

ES0003R Roquetas Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	-	0.04	3.06	-	0.0	1	53	A	
Ca++	-	0.67	17.00	-	0.0	0	47	A	
Cl-	-	0.54	23.75	-	0.0	0	61	D	
Mg++	-	0.120	1.900	-	0.0	0	47	A	
NO3-	-	0.10	6.80	-	0.0	0	60	A	
pH	-	6.28	7.86	-	0.0	0	67	B	
K+	-	0.03	0.90	-	0.0	1	47	A	
Na+	-	0.08	13.30	-	0.0	0	47	A	
SO4-- corr	-	0.16	9.28	-	0.0	0	60	A	
SO4--	-	0.20	9.43	-	0.0	0	60	A	

ES0004R Logrono Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.88	0.10	3.65	263.5	97.3	0	69	A	
Ca++	1.54	0.16	7.00	463.5	96.5	0	64	A	
Cl-	1.17	0.26	6.13	352.9	98.9	0	75	D	
Mg++	0.133	0.010	0.390	39.9	96.5	0	64	A	
NO3-	0.64	0.09	2.86	193.6	98.1	0	73	A	
pH	6.03	5.07	7.49	280.6	100.0	0	84	B	
K+	0.17	0.03	1.70	50.9	96.5	10	64	A	
Precip	-	0.0	21.0	300.6	97.5	282	356		
Na+	0.52	0.05	8.70	157.2	96.5	0	64	A	
SO4-- corr	0.96	0.17	4.93	289.7	98.6	0	74	A	
SO4--	1.02	0.20	5.17	308.2	98.6	0	74	A	

ES0005R Noia Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	-	0.04	1.47	-	0.0	39	76	A	
Ca++	-	0.08	1.19	-	0.0	0	74	A	
Cl-	-	0.66	15.48	-	0.0	0	76	D	
Mg++	-	0.030	1.100	-	0.0	0	74	A	
NO3-	-	0.04	1.63	-	0.0	1	76	A	
pH	-	4.36	7.58	-	0.0	0	76	B	
K+	-	0.03	0.33	-	0.0	4	74	A	
Na+	-	0.23	8.80	-	0.0	0	74	A	
SO4-- corr	-	0.09	1.86	-	0.0	0	76	A	
SO4--	-	0.31	2.33	-	0.0	0	76	A	

ES0007R Viznar Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.18	0.04	1.39	80.1	99.3	17	50	A	
Ca++	1.56	0.36	9.90	699.3	98.4	0	46	A	
Cl-	0.89	0.29	6.48	398.2	99.9	0	57	D	
Mg++	0.243	0.060	1.500	108.8	98.4	0	46	A	
NO3-	0.35	0.12	5.31	157.5	99.9	0	57	A	
pH	6.39	6.15	7.43	183.5	100.0	0	58	B	
K+	0.13	0.03	0.89	59.7	98.4	1	46	A	
Precip	-	0.0	72.6	447.4	98.4	308	359		
Na+	0.41	0.05	2.90	183.2	98.4	3	46	A	
SO4-- corr	0.62	0.23	6.18	277.0	99.9	0	57	A	
SO4--	0.67	0.25	6.39	299.2	99.9	0	57	A	

ES0008R Niembro Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.44	0.03	7.19	286.3	98.0	17	131	A	
Ca++	0.94	0.13	5.73	615.3	91.7	0	122	A	
Cl-	9.73	0.72	214.50	6386.7	100.0	0	136	D	
Mg++	0.702	0.060	13.500	460.8	91.7	0	122	A	
NO3-	0.63	0.05	7.25	416.6	100.0	0	136	A	
pH	4.92	4.01	7.12	7926.1	100.0	0	138	B	
K+	0.29	0.03	4.30	187.6	91.7	1	122	A	
Precip	-	0.0	36.8	656.6	97.0	262	354		
Na+	6.59	0.26	112.00	4326.1	91.7	0	122	A	
SO4-- corr	1.00	0.18	6.46	656.2	100.0	0	136	A	
SO4--	1.49	0.33	10.60	980.7	100.0	0	136	A	

ES0009R Campisabalos Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.27	0.02	2.63	121.3	98.5	17	99	A	
Ca++	0.77	0.09	7.70	345.5	97.9	0	92	A	
Cl-	0.79	0.32	4.62	354.6	99.5	0	110	D	
Mg++	0.073	0.020	0.800	32.9	97.9	0	92	A	
NO3-	0.33	0.04	3.44	148.1	99.4	1	109	A	
pH	5.78	4.90	7.42	737.4	99.9	0	119	B	
K+	0.07	0.03	0.63	32.5	97.5	24	91	A	
Precip	-	0.0	31.0	448.8	98.4	262	359		
Na+	0.25	0.05	2.15	112.2	97.9	4	92	A	
SO4-- corr	0.46	0.18	4.78	205.5	99.5	0	110	A	
SO4--	0.50	0.19	4.99	222.0	99.5	0	110	A	

ES0010R Cabo de Creus Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.30	0.04	2.21	52.4	100.0	5	42	A	
Ca++	4.45	0.78	81.00	775.7	100.0	0	42	A	
Cl-	61.41	3.06	6634.00	10710.4	100.0	0	45	D	
Mg++	2.461	0.300	280.000	429.2	98.3	0	41	A	
NO3-	0.64	0.20	17.61	111.4	100.0	0	45	A	
pH	6.49	5.96	8.12	55.8	100.0	0	45	B	
K+	1.40	0.20	73.00	243.9	100.0	0	42	A	
Precip	-	0.0	25.8	174.4	98.9	329	361		
Na+	18.22	0.50	2720.00	3177.7	98.3	0	41	A	
SO4-- corr	1.55	-0.47	403.40	270.7	100.0	1	45	A	
SO4--	3.92	0.54	598.00	684.0	100.0	0	45	A	

ES0011R Barcarrola Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.19	0.04	1.77	58.5	99.8	14	47	A	
Ca++	0.71	0.16	3.75	220.7	99.6	0	46	A	
Cl-	1.85	0.60	13.94	574.0	99.9	0	51	D	
Mg++	0.169	0.020	0.800	52.4	99.6	0	46	A	
NO3-	0.27	0.10	2.40	82.9	99.9	0	51	A	
pH	5.85	5.24	7.45	441.1	100.0	0	52	B	
K+	0.19	0.03	1.30	59.2	99.6	2	46	A	
Precip	-	0.0	50.6	309.6	100.0	318	365		
Na+	0.96	0.05	6.10	297.2	99.6	1	46	A	
SO4-- corr	0.51	0.22	4.22	157.0	99.9	0	51	A	
SO4--	0.60	0.25	4.61	186.0	99.9	0	51	A	

ES0012R Zarra Spain

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.25	0.04	2.14	68.9	99.8	17	57	A	
Ca++	4.68	0.56	50.80	1284.3	99.2	0	52	A	
Cl-	1.29	0.54	9.28	353.6	99.9	0	58	D	
Mg++	0.315	0.080	2.000	86.4	99.2	0	52	A	
NO3-	0.58	0.04	7.46	159.6	99.9	1	58	A	
pH	6.74	6.05	7.85	50.2	100.0	0	59	B	
K+	0.12	0.03	1.22	32.1	99.2	8	52	A	
Precip	-	0.0	45.6	274.2	99.5	313	363		
Na+	0.67	0.05	5.60	183.3	99.2	1	52	A	
SO4-- corr	0.83	0.21	8.64	227.8	99.9	0	58	A	
SO4--	0.90	0.25	9.07	247.9	99.9	0	58	A	

FI0004R Ahtari Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.18	0.00	2.04	104.9	99.5	1	164	A	
Ca++	0.08	0.00	3.18	44.9	99.5	1	164	A	
Cl-	0.15	0.02	1.76	91.1	99.5	0	164	A	
Mg++	0.017	0.002	0.330	9.7	99.5	9	164	A	
NO3-	0.26	0.02	2.31	154.4	99.5	0	164	A	
pH	4.68	3.90	5.72	12211.2	99.7	0	171	A	
K+	0.04	0.00	1.09	24.0	99.5	2	164	A	
Precip	-	0.0	32.6	589.8	100.0	179	365		
Precip off	-	0.0	28.3	657.7	100.0	153	365		
Na+	0.08	0.00	1.39	48.9	99.5	0	164	A	
SO4-- corr	0.29	0.00	2.71	168.4	99.5	1	164	A	
SO4--	0.29	0.01	2.80	173.7	99.5	1	164	A	

FI0009R Uto Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.30	0.00	1.97	85.3	97.0	3	91	A	
Ca++	0.22	0.03	6.92	63.1	97.0	0	91	A	
Cl-	1.60	0.08	19.07	457.0	97.0	0	91	A	
Mg++	0.116	0.007	1.383	33.2	97.0	0	91	A	
NO3-	0.41	0.06	14.70	116.8	97.0	0	91	A	
pH	4.60	3.74	6.03	7177.3	97.6	0	100	A	
K+	0.14	0.03	2.74	39.1	97.0	0	91	A	
Precip	-	0.0	22.6	285.8	100.0	239	365		
Precip off	-	0.0	25.6	554.7	100.0	185	365		
Na+	0.94	0.04	10.42	268.1	97.0	0	91	A	
SO4-- corr	0.45	0.06	7.13	128.8	97.0	0	91	A	
SO4--	0.53	0.09	7.24	150.7	97.0	0	91	A	

FI0017R Virolahti II Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.41	0.03	3.49	159.7	98.3	0	130	A	
Ca++	0.28	0.03	7.00	111.9	98.3	0	130	A	
Cl-	0.53	0.03	23.85	210.4	98.3	0	130	A	
Mg++	0.060	0.004	1.541	23.5	98.3	0	130	A	
NO3-	0.41	0.10	4.92	162.6	98.3	0	130	A	
pH	4.65	3.82	5.98	8836.2	98.6	0	136	A	
K+	0.12	0.02	2.44	46.4	98.3	0	130	A	
Precip	-	0.0	16.8	394.7	100.0	210	365		
Precip off	-	0.0	22.2	508.7	100.0	192	365		
Na+	0.28	0.01	10.27	108.6	98.3	0	130	A	
SO4-- corr	0.59	0.07	7.11	231.3	98.3	0	130	A	
SO4--	0.61	0.09	7.55	241.8	98.3	0	130	A	

FI0022R Oulanka Finland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.10	0.00	1.13	47.9	99.4	9	181	A	
Ca++	0.04	0.00	2.17	20.5	99.4	5	181	A	
Cl-	0.10	0.00	2.32	49.5	99.4	5	181	A	
Mg++	0.010	0.002	0.316	5.2	99.4	33	181	A	
NO3-	0.16	0.00	1.02	79.2	99.4	1	181	A	
pH	4.73	3.91	6.16	9107.3	99.8	0	191	A	
K+	0.03	0.00	1.35	14.3	99.4	15	181	A	
Precip	-	0.0	20.8	493.4	100.0	163	365		
Precip off	-	0.0	22.2	595.9	100.0	129	365		
Na+	0.05	0.00	1.59	27.0	99.4	3	181	A	
SO4-- corr	0.21	0.00	2.90	103.3	99.4	1	181	A	
SO4--	0.21	0.01	2.92	105.8	99.4	1	181	A	

FR0003R La Crouzille France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.53	0.03	18.62	514.2	95.4	0	138	A	
Ca++	0.28	0.02	3.33	271.3	95.4	0	137	A	
Cl-	1.43	0.05	9.46	1399.0	95.4	0	137	A	
Mg++	0.182	0.020	1.380	177.8	95.4	0	137	A	
NO3-	0.23	0.02	1.22	221.6	95.4	0	137	A	
pH	5.21	4.20	7.77	5999.5	96.2	0	144	A	
K+	0.13	0.02	3.96	126.7	95.4	0	137	A	
Precip	-	0.1	31.0	976.4	100.0	193	365		
Na+	0.85	0.02	5.44	830.0	95.4	0	137	A	
SO4-- corr	0.32	0.02	1.81	311.4	95.4	0	137	A	
SO4--	0.39	0.04	1.94	382.9	95.4	0	137	A	

FR0005R La Hague France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.30	0.03	3.37	289.1	88.1	0	123	A	
Ca++	0.34	0.03	2.41	323.4	88.0	0	122	A	
Cl-	8.46	0.19	51.00	8179.2	88.0	0	122	A	
Mg++	0.661	0.020	4.340	638.7	88.0	0	122	A	
NO3-	0.27	0.03	2.58	259.1	88.0	0	122	A	
pH	5.01	3.94	6.45	9351.5	88.8	0	129	A	
K+	0.24	0.02	1.70	233.5	88.0	0	122	A	
Precip	-	0.1	49.5	966.9	100.0	183	365		
Na+	5.02	0.04	31.10	4856.2	88.0	0	122	A	
SO4-- corr	0.28	0.04	1.87	270.4	88.0	0	122	A	
SO4--	0.70	0.13	4.42	675.2	88.0	0	122	A	

FR0008R Donon France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.31	0.00	2.08	645.1	96.5	2	157	A	
Ca++	0.14	0.00	2.79	278.3	96.4	2	155	A	
Cl-	0.41	0.00	4.96	854.2	96.4	2	155	A	
Mg++	0.046	0.000	0.370	95.8	96.4	2	155	A	
NO3-	0.28	0.00	2.01	586.1	96.4	2	155	A	
pH	4.83	3.80	6.77	30415.5	95.0	0	163	A	
K+	0.04	0.00	1.11	91.1	96.4	2	155	A	
Precip	-	0.2	62.0	2063.8	100.0	175	365		
Na+	0.25	0.00	2.92	514.7	96.4	2	155	A	
SO4-- corr	0.31	0.00	1.94	641.2	96.4	2	155	A	
SO4--	0.33	0.00	1.98	685.3	96.4	2	155	A	

FR0009R Revin France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.38	0.03	4.29	429.3	93.3	0	109	A	
Ca++	0.22	0.02	3.53	246.4	93.5	0	110	A	
Cl-	0.59	0.05	5.12	674.6	93.5	0	110	A	
Mg++	0.058	0.020	0.550	65.9	93.5	0	110	A	
NO3-	0.29	0.06	2.92	337.3	93.5	0	110	A	
pH	4.94	3.80	6.84	13052.0	93.9	0	116	A	
K+	0.04	0.02	0.48	42.5	93.5	0	110	A	
Precip	-	0.2	72.0	1142.3	100.0	219	365		
Na+	0.34	0.02	3.93	391.7	93.5	0	110	A	
SO4-- corr	0.34	0.05	3.56	389.4	93.5	0	110	A	
SO4--	0.37	0.05	3.89	424.5	93.5	0	110	A	

FR0010R Morvan France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.34	0.03	3.67	456.8	92.9	0	149	A	
Ca++	0.25	0.02	4.66	339.3	92.9	0	150	A	
Cl-	0.64	0.05	5.58	855.0	92.9	0	150	A	
Mg++	0.075	0.020	0.420	100.8	92.9	0	150	A	
NO3-	0.26	0.02	2.37	346.8	92.9	0	150	A	
pH	5.05	4.00	7.14	11973.9	94.1	0	163	A	
K+	0.16	0.02	3.82	220.4	92.9	0	150	A	
Precip	-	0.2	55.6	1342.4	100.0	164	365		
Na+	0.37	0.02	3.42	497.3	92.9	0	150	A	
SO4-- corr	0.30	0.02	1.71	401.6	92.9	0	150	A	
SO4--	0.33	0.02	1.74	446.3	92.9	0	150	A	

FR0012R Iraty France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.37	0.03	25.66	647.8	90.3	0	158	A	
Ca++	0.45	0.02	11.11	799.5	89.7	0	157	A	
Cl-	0.60	0.05	10.41	1058.2	89.7	0	157	A	
Mg++	0.088	0.020	1.370	156.5	89.7	0	157	A	
NO3-	0.22	0.02	2.85	390.0	89.7	0	157	A	
pH	5.22	3.86	7.84	10561.0	90.6	0	164	A	
K+	0.05	0.02	2.29	95.8	89.7	0	157	A	
Precip	-	0.1	55.2	1774.5	100.0	154	365		
Na+	0.37	0.02	5.94	663.3	89.7	0	157	A	
SO4-- corr	0.36	0.03	4.66	632.5	89.7	0	157	A	
SO4--	0.39	0.04	4.84	688.7	89.7	0	157	A	

FR0013R Peyrusse Vieille France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.38	0.03	8.04	308.4	93.4	0	130	A	
Ca++	0.39	0.02	9.10	312.1	92.9	0	125	A	
Cl-	2.02	0.05	53.45	1627.5	92.9	0	125	A	
Mg++	0.176	0.020	4.130	142.0	92.9	0	125	A	
NO3-	0.29	0.04	6.22	230.8	92.9	0	125	A	
pH	4.98	4.29	7.32	8434.5	94.5	0	141	A	
K+	0.14	0.02	1.66	116.1	92.9	0	125	A	
Precip	-	0.1	36.0	805.1	100.0	183	365		
Na+	1.21	0.02	32.80	973.6	92.9	0	125	A	
SO4-- corr	0.44	0.06	3.22	355.6	92.9	0	125	A	
SO4--	0.54	0.08	3.30	437.6	92.9	0	125	A	

FR0014R Montandon France

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.29	0.03	5.93	436.5	93.0	0	144	A	
Ca++	0.24	0.02	5.61	363.2	92.2	0	142	A	
Cl-	0.24	0.05	3.79	357.3	92.2	0	142	A	
Mg++	0.039	0.020	0.320	58.5	92.2	0	142	A	
NO3-	0.26	0.03	4.49	387.1	92.2	0	142	A	
pH	4.97	4.18	7.02	16156.0	93.4	0	151	A	
K+	0.04	0.02	0.82	63.7	92.2	0	142	A	
Precip	-	0.2	73.6	1473.5	99.7	177	364		
Na+	0.14	0.02	2.42	217.9	92.2	0	142	A	
SO4-- corr	0.28	0.03	3.91	431.0	92.2	0	142	A	
SO4--	0.30	0.03	3.94	451.8	92.2	0	142	A	

GB0002R Eskdalemuir United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.23	0.01	5.29	282.7	99.7	6	207	A	
Ca++	0.25	0.03	1.82	308.5	99.7	6	207	B	
Cl-	3.39	0.25	37.43	4182.9	97.6	0	203	C	
Mg++	0.412	0.025	4.393	508.9	99.7	14	207	B	
NO3-	0.20	0.01	6.05	251.4	99.7	5	207	A	
pH	4.86	3.98	6.45	17147.2	99.7	0	207	A	
K+	0.08	0.01	1.02	99.4	99.7	86	207	A	
Precip	-	0.0	31.1	1234.7	100.0	126	365		
Na+	1.93	0.05	21.25	2387.6	97.6	0	203	A	
SO4-- corr	0.28	-0.70	4.14	344.3	99.7	9	207	A	
SO4--	0.44	0.01	4.42	546.3	99.7	4	207	A	

GB0006R Lough Navar United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.10	0.01	1.05	37.8	91.2	9	63	A	
Ca++	0.70	0.20	2.64	273.6	91.2	0	63	B	
Cl-	10.25	0.37	84.02	3997.0	91.2	0	63	C	
Mg++	1.262	0.209	9.357	492.2	91.2	0	63	B	
NO3-	0.05	0.01	0.80	21.0	91.2	15	63	A	
pH	5.49	4.88	6.46	1276.6	91.2	0	63	A	
K+	0.25	0.03	2.78	98.4	91.2	4	63	A	
Precip	-	0.0	30.6	390.0	25.8	20	94		
Na+	5.93	0.14	52.22	2311.2	91.2	0	63	A	
SO4-- corr	0.10	-1.28	1.01	38.1	91.2	7	63	A	
SO4--	0.60	0.02	3.99	234.2	91.2	4	63	A	

GB0013R Yarner Wood United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.19	0.04	5.35	56.1	99.8	0	51	A	
Ca++	0.41	0.20	3.90	119.9	99.8	0	51	B	
Cl-	4.57	0.40	24.60	1333.3	99.8	0	51	C	
Mg++	0.604	0.079	2.280	176.5	99.8	0	51	B	
NO3-	0.12	0.01	3.47	34.3	99.8	5	51	A	
pH	5.30	4.49	7.11	1459.2	99.8	0	51	A	
K+	0.09	0.03	0.48	27.1	99.8	16	51	A	
Precip	-	0.0	31.2	292.1	26.3	40	96		
Na+	2.64	0.12	13.94	771.8	99.8	0	51	A	
SO4-- corr	0.19	-0.01	3.82	55.2	99.8	1	51	A	
SO4--	0.41	0.14	4.21	120.9	99.8	0	51	A	

GB0014R High Muffles United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.47	0.01	5.14	404.8	98.4	2	168	A	
Ca++	0.33	0.03	3.16	288.2	98.4	1	168	B	
Cl-	2.59	0.25	36.43	2231.6	97.5	0	165	C	
Mg++	0.301	0.025	4.599	259.7	98.4	12	168	B	
NO3-	0.40	0.05	4.33	346.4	98.4	0	168	A	
pH	4.63	3.75	6.54	20220.0	98.4	0	168	A	
K+	0.09	0.03	1.23	75.0	98.4	40	168	A	
Precip	-	0.0	31.0	862.2	100.0	167	365		
Na+	1.62	0.08	20.98	1399.8	97.5	0	165	A	
SO4-- corr	0.54	-0.15	7.06	461.9	98.4	1	168	A	
SO4--	0.68	0.07	7.67	581.7	98.4	0	168	A	

GB0015R Strathvaich Dam United Kingdom

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.06	0.01	1.42	66.7	99.8	78	199	A	
Ca++	0.34	0.00	8.70	350.5	99.8	7	199	B	
Cl-	6.32	0.05	295.00	6490.9	96.0	2	195	C	
Mg++	0.831	0.016	51.978	854.6	99.8	12	199	B	
NO3-	0.12	0.01	4.32	124.8	99.8	44	199	A	
pH	5.05	4.04	6.58	9078.0	99.8	0	199	A	
K+	0.14	0.00	10.19	141.5	99.8	74	199	A	
Precip	-	0.0	32.0	1027.9	100.0	148	365		
Na+	3.62	0.01	169.91	3725.9	96.0	1	195	A	
SO4-- corr	0.09	-0.41	4.23	90.7	99.8	28	199	A	
SO4--	0.37	0.01	13.97	375.2	99.8	19	199	A	

HU0002R K-Puszta Hungary

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	-	-218.	17.	-	-	1	3		
NH4+	0.67	0.01	6.73	425.7	95.9	1	80	B	
Ca++	0.81	0.14	4.40	514.1	88.6	0	76	B	
Cl-	1.39	0.14	10.90	879.8	96.7	0	79	B	
Mg++	0.271	0.025	2.180	171.4	87.2	1	74	A	
NO3-	0.37	0.11	2.19	233.2	98.5	0	82	A	
pH	5.73	4.62	7.69	1171.0	98.4	0	80	A	
K+	0.15	0.03	2.87	94.1	89.0	4	77	D	
Precip	-	0.0	35.1	622.9	98.6	278	360		
Precip off	-	0.0	40.9	852.8	100.0	278	365		
Na+	0.47	0.22	6.94	297.6	89.0	0	77	B	
SO4-- corr	0.89	0.27	5.31	562.2	98.5	0	82	A	
SO4--	0.97	0.30	5.54	616.1	98.5	0	82	A	

IE0002R Turlough Hill Ireland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.27	-0.01	8.57	400.1	99.8	9	214	B	
Ca++	0.16	0.00	4.30	242.1	99.8	12	214	B	
Cl-	3.00	0.00	63.60	4510.9	99.8	1	214	B	
Mg++	0.218	0.000	4.640	327.7	99.8	2	214	B	
NO3-	0.16	0.00	10.94	232.6	99.8	10	214	A	
pH	5.25	3.70	6.50	8403.5	99.6	0	203	A	
K+	0.12	0.00	4.47	186.5	99.8	17	214	B	
Precip	-	0.1	49.7	1504.1	100.0	150	365		
Na+	1.79	0.02	58.54	2693.0	99.8	0	214	B	
SO4-- corr	0.24	-2.15	3.93	357.7	99.8	10	214	A	
SO4--	0.38	0.00	7.16	575.9	99.8	6	214	A	

IE0003R The Burren Ireland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.17	0.00	2.28	192.1	100.0	32	189	B	
Ca++	0.33	0.00	10.75	365.2	100.0	5	189	B	
Cl-	9.23	0.20	218.10	10247.8	100.0	0	189	B	
Mg++	0.660	0.000	8.364	732.1	100.0	1	189	B	
NO3-	0.10	0.00	1.50	107.3	100.0	11	189	A	
pH	5.28	4.10	6.70	5814.4	99.8	0	181	A	
K+	0.24	0.00	5.91	265.2	100.0	3	189	B	
Precip	-	0.2	33.8	1109.9	100.0	176	365		
Na+	5.65	0.02	137.98	6266.3	100.0	0	189	B	
SO4-- corr	0.19	-1.49	6.27	216.2	100.0	14	189	A	
SO4--	0.64	0.00	7.59	714.2	100.0	1	189	A	

IS0002R Irafoss Iceland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
pH	5.73	4.60	8.00	3352.2	100.0	0	171	A	
Precip	-	0.0	94.6	1811.1	100.0	194	365		
Na+	3.12	0.10	49.50	5649.3	100.0	0	171	A	
SO4-- corr	5.67	1.66	7.18	10263.5	100.0	0	171	A	
SO4--	5.93	4.60	8.00	10736.4	100.0	0	171	A	

IT0001R Montelibretti Italy

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.47	0.08	2.62	581.0	100.0	0	29	A	
Ca++	1.81	0.28	5.17	2216.5	100.0	0	29	A	
Cl-	3.57	0.25	29.91	4370.8	100.0	0	29	A	
Mg++	0.336	0.050	1.820	410.9	100.0	0	29	A	
NO3-	0.48	0.04	1.11	583.5	100.0	0	29	A	
pH	5.49	4.90	6.92	3917.2	48.0	0	20	B	
K+	0.35	0.04	2.97	434.3	100.0	0	29	A	
Precip	-	0.0	219.0	1223.6	100.0	336	365		
Na+	2.06	0.18	15.03	2520.2	100.0	0	29	A	
SO4-- corr	0.06	-0.77	0.39	76.1	100.0	6	29	A	
SO4--	0.25	0.05	0.65	306.8	100.0	0	29	A	

IT0004R Ispra Italy

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	1.74	0.00	10.47	2437.3	100.0	2	95	A	
Ca++	0.69	0.00	31.04	970.4	100.0	4	95	B	
Cl-	0.57	0.00	13.35	794.9	100.0	1	95	B	
Mg++	0.095	0.000	1.572	132.8	100.0	13	95	A	
NO3-	1.16	0.09	8.72	1627.9	100.0	0	95	A	
pH	4.57	2.92	7.29	37447.6	100.0	0	95	A	
K+	0.09	0.00	1.74	122.2	100.0	3	95	A	
Precip	-	0.0	83.1	1401.6	100.0	270	365		
Na+	0.34	0.00	10.82	480.5	100.0	9	95	A	
SO4-- corr	1.29	0.13	8.81	1815.4	100.0	0	95	A	
SO4--	1.33	0.14	8.96	1860.6	100.0	0	95	A	

LT0015R Preila Lithuania

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.52	0.10	7.00	315.6	99.7	0	44	B	W
Cl-	2.70	0.22	20.80	1647.3	99.7	0	44	A	W
K+	0.13	0.05	1.10	81.9	99.7	0	44	A	W
NH4+	0.47	0.05	2.55	285.7	99.7	0	44	A	W
NO3-	0.46	0.13	2.33	280.6	99.7	0	44	A	W
Na+	1.70	0.10	13.60	1036.4	99.7	0	44	A	W
Precip	-	0.0	86.2	698.3	99.2	7	52		W
SO4--	0.68	0.28	3.64	412.0	99.7	0	44	A	W
SO4-- corr	0.53	0.12	2.64	325.3	99.7	0	44	A	W
pH	4.92	3.84	7.03	7321.7	99.7	0	44	A	W

LV0010R Rucava Latvia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.35	0.01	3.35	295.7	99.3	4	132	A	
Ca++	0.20	0.00	1.14	175.3	98.9	2	129	B	
Cl-	1.02	0.10	9.90	868.9	98.5	10	125	B	
Mg++	0.095	0.001	0.884	81.3	98.7	6	128	D	
NO3-	0.46	0.08	2.00	390.9	98.9	0	130	A	
pH	4.59	3.72	6.60	22120.7	99.8	0	133	A	
K+	0.07	0.00	2.20	58.6	97.9	14	128	A	
Precip	-	0.0	36.3	855.4	100.0	230	365		
Na+	0.59	0.02	7.10	507.8	98.9	0	130	A	
SO4-- corr	0.41	-0.09	3.13	346.1	98.8	1	129	A	
SO4--	0.45	0.03	3.20	388.7	98.9	0	130	A	

LV0016R Zoseni Latvia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.44	0.01	2.52	316.7	99.2	1	157	A	
Ca++	0.62	0.01	6.40	446.4	96.4	1	140	B	
Cl-	0.52	0.10	3.90	370.5	95.0	15	119	B	
Mg++	0.211	0.001	2.020	151.5	96.1	2	138	D	
NO3-	0.64	0.10	3.00	461.7	98.3	0	143	A	
pH	5.21	4.10	6.84	4465.6	99.6	0	164	A	
K+	0.14	0.00	2.28	97.6	96.4	11	141	A	
Precip	-	0.0	29.7	717.8	100.0	189	365		
Na+	0.26	0.01	2.70	190.0	94.0	1	139	A	
SO4-- corr	0.43	-0.02	2.12	306.9	98.0	1	141	A	
SO4--	0.46	0.07	2.33	329.4	98.2	0	143	A	

NL0009R Kollumerwaard Netherlands

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	-10.	-662.	52.	-7320.	96.2	117	153		
NH4+	0.71	0.11	5.09	530.7	94.4	0	128	A	
Ca++	0.34	0.00	2.20	249.8	92.4	1	113	A	
Cl-	4.47	0.00	71.30	3332.3	95.7	1	144	A	
Mg++	0.306	0.000	2.035	228.1	92.2	7	112	A	
NO3-	0.42	0.08	3.23	313.0	95.7	0	144	A	
pH	5.42	4.35	8.11	2848.4	96.2	0	153	A	
K+	0.20	0.00	1.43	147.2	92.4	9	113	A	
Precip	-	0.0	22.2	746.1	100.0	174	365		
Na+	2.52	0.04	25.83	1880.4	92.4	0	113	A	
SO4-- corr	0.46	0.12	3.57	339.6	95.7	0	144	A	
SO4--	0.67	0.25	3.99	502.9	95.7	0	144	A	

NO0001R Birkenes Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.36	0.00	2.71	657.9	98.6	18	167	A	
Ca++	0.10	0.00	1.41	193.7	96.6	11	164	A	
Cl-	2.37	0.00	22.49	4366.4	98.6	1	167	A	
Mg++	0.149	0.005	1.255	275.1	98.5	14	166	A	
NO3-	0.43	0.00	4.01	792.2	98.6	5	167	A	
pH	4.59	3.79	6.14	47660.6	97.5	0	186	A	
K+	0.08	0.00	0.54	150.0	98.6	12	167	B	
Precip	-	0.0	63.4	1841.2	99.7	130	364		
Na+	1.30	0.00	12.53	2400.8	98.6	1	167	A	
SO4-- corr	0.47	0.00	2.67	866.3	98.6	1	167	A	
SO4--	0.57	0.00	2.75	1059.1	98.6	1	167	A	

NO0008R Skreaadalen Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.24	0.00	2.21	604.4	99.1	1	186	A	
Ca++	0.14	0.00	0.81	350.2	98.8	2	186	A	
Cl-	3.90	0.12	34.67	9845.5	99.3	0	189	A	
Mg++	0.230	0.005	2.346	580.4	99.3	9	189	A	
NO3-	0.23	0.00	3.95	584.1	99.3	1	189	A	
pH	4.93	3.59	6.75	29776.7	99.0	0	203	A	
K+	0.19	0.03	0.87	465.5	99.1	0	187	B	
Precip	-	0.0	83.0	2521.7	100.0	138	365		
Na+	2.12	0.08	20.05	5355.0	99.3	0	189	A	
SO4-- corr	0.25	-0.07	2.98	638.4	99.3	3	189	A	
SO4--	0.42	0.03	3.37	1065.6	99.3	0	189	A	

NO0015R Tustervatn Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.17	0.00	1.18	192.6	89.3	1	146	A	
Ca++	0.07	0.00	0.56	83.7	89.6	3	152	A	
Cl-	1.32	0.05	14.71	1490.8	90.4	0	154	A	
Mg++	0.081	0.005	0.848	92.1	90.4	21	154	A	
NO3-	0.08	0.00	0.97	89.2	90.2	4	153	A	
pH	5.38	4.22	6.81	4773.0	90.7	0	178	A	
K+	0.08	0.00	0.59	95.5	89.7	1	149	B	
Precip	-	0.0	40.5	1058.3	98.1	124	358		
Na+	0.69	0.02	8.25	786.5	90.4	0	154	A	
SO4-- corr	0.09	-0.05	1.07	105.8	90.4	2	154	A	
SO4--	0.15	0.00	1.07	169.2	90.4	1	154	A	

NO0039R Kaarvatn Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.08	0.00	2.02	101.6	99.3	10	143	A	
Ca++	0.07	0.00	0.95	89.6	99.3	16	143	A	
Cl-	2.03	0.00	40.35	2653.9	99.3	3	143	A	
Mg++	0.133	0.005	2.837	173.9	99.3	23	143	A	
NO3-	0.07	0.00	1.29	91.4	99.3	9	143	A	
pH	5.22	4.38	6.54	7888.1	99.9	0	158	A	
K+	0.06	0.00	0.89	75.6	99.3	13	143	B	
Precip	-	0.0	55.6	1305.3	100.0	203	365		
Na+	1.13	0.02	23.99	1476.7	99.3	0	143	A	
SO4-- corr	0.09	0.01	1.50	115.8	99.3	0	143	A	
SO4--	0.18	0.01	2.15	236.3	99.3	0	143	A	

NO0041R Osen Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.20	0.01	1.03	149.7	93.4	0	100	A	
Ca++	0.08	0.00	0.48	59.2	97.3	6	104	A	
Cl-	0.32	0.00	2.19	241.5	97.6	2	106	A	
Mg++	0.023	0.005	0.138	16.9	97.6	41	106	A	
NO3-	0.24	0.03	1.37	181.1	97.3	0	104	A	
pH	4.83	4.21	6.49	11084.2	95.1	0	111	A	
K+	0.09	0.00	0.78	68.5	92.9	2	100	B	
Precip	-	0.0	28.8	747.7	99.7	245	364		
Na+	0.17	0.02	1.21	131.4	97.6	0	106	A	
SO4-- corr	0.26	0.01	1.04	192.0	97.6	0	106	A	
SO4--	0.27	0.01	1.08	202.4	97.6	0	106	A	

NO0055R Karasjok Norway

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.14	0.00	0.73	55.2	88.1	1	81	A	
Ca++	0.07	0.00	0.56	27.3	91.0	2	85	A	
Cl-	0.35	0.00	3.51	142.8	90.5	1	82	A	
Mg++	0.025	0.005	0.253	10.1	93.5	13	88	A	
NO3-	0.12	0.00	0.47	48.6	93.3	1	87	A	
pH	5.04	4.31	6.97	3709.3	90.0	0	108	A	
K+	0.13	0.02	0.61	52.2	90.3	0	81	B	
Precip	-	0.0	29.3	409.8	100.0	211	365		
Na+	0.22	0.02	2.43	90.7	90.5	0	82	A	
SO4-- corr	0.20	0.00	1.12	84.0	93.5	1	88	A	
SO4--	0.22	0.00	1.25	91.4	93.5	1	88	A	

PL0002R Jarczew Poland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.70	0.07	11.12	470.3	98.6	0	145	A	
Ca++	0.26	0.04	5.69	172.8	98.3	0	141	B	
Cl-	0.39	0.08	10.18	258.1	98.6	0	145	A	
Mg++	0.035	0.010	0.450	23.6	98.3	0	141	A	
NO3-	0.44	0.08	7.36	296.3	98.7	0	147	A	
pH	4.67	3.31	7.60	14284.8	98.7	0	147	A	
K+	0.09	0.01	3.16	59.9	98.2	0	139	A	
Precip	-	0.0	41.4	667.3	100.0	186	365		
Na+	0.13	0.02	5.10	83.9	98.3	0	141	A	
SO4-- corr	0.75	0.09	9.80	499.3	98.7	0	147	A	
SO4--	0.77	0.10	10.07	511.7	98.7	0	147	A	

PL0003R Sniezka Poland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.73	0.04	5.99	779.6	99.0	0	235	A	
Ca++	0.60	0.04	5.98	642.4	96.1	0	223	B	
Cl-	1.55	0.14	8.32	1654.9	99.0	0	235	A	
Mg++	0.148	0.030	0.770	157.9	96.1	0	223	A	
NO3-	0.95	0.07	6.86	1018.4	99.0	0	235	A	
pH	4.37	3.47	6.67	45196.5	99.0	0	235	A	
K+	0.20	0.07	2.18	216.2	96.1	0	223	A	
Precip	-	0.0	47.8	1068.7	100.0	109	365		
Na+	0.47	0.07	6.32	496.5	96.1	0	223	A	
SO4-- corr	0.73	0.06	8.06	779.2	99.0	0	235	A	
SO4--	0.81	0.12	8.45	867.4	99.0	0	235	A	

PL0004R Leba Poland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.52	0.01	11.31	416.3	97.6	0	154	A	
Ca++	0.23	0.04	3.53	189.1	97.6	0	154	B	
Cl-	1.69	0.08	28.63	1357.3	97.6	0	154	A	
Mg++	0.125	0.010	1.550	100.7	97.6	0	154	A	
NO3-	0.42	0.01	8.50	338.8	97.6	0	154	A	
pH	4.71	3.36	6.61	15637.4	97.6	0	154	A	
K+	0.12	0.02	2.91	94.2	97.6	0	154	A	
Precip	-	0.0	55.0	803.6	100.0	174	365		
Na+	0.91	0.02	16.56	729.2	97.6	0	154	A	
SO4-- corr	0.55	0.05	7.01	438.5	97.6	0	154	A	
SO4--	0.62	0.05	7.40	498.6	97.6	0	154	A	

PL0005R Diabla Gora Poland

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.46	0.01	5.32	301.1	99.9	1	175	A	
Ca++	0.28	0.00	3.00	185.9	98.2	10	150	A	
Cl-	0.47	0.05	7.40	308.1	98.8	19	174	B	
Mg++	0.065	0.005	0.346	42.2	94.5	0	147	A	
NO3-	0.47	0.09	6.78	309.9	98.8	0	175	A	
pH	4.66	3.63	6.74	14506.1	99.3	0	168	B	
K+	0.17	0.02	1.86	111.0	99.0	0	150	A	
Precip	-	0.0	35.2	654.8	100.0	189	365		
Precip off	-	0.0	35.6	651.5	100.0	187	365		
Na+	0.23	0.01	2.69	152.2	94.7	0	147	A	
SO4-- corr	0.58	0.10	6.48	378.6	98.8	0	174	B	
SO4--	0.61	0.11	6.60	397.4	98.8	0	175	B	

PT0001R Braganca Portugal

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.31	0.01	4.49	162.9	100.0	10	36	A	
Ca++	1.88	0.05	20.50	993.6	100.0	2	36	A	
Cl-	0.68	0.00	5.30	359.2	100.0	4	36	A	
Mg++	0.084	0.015	0.640	44.5	100.0	9	36	A	
NO3-	0.12	0.01	1.01	65.2	100.0	9	36	A	
pH	5.14	4.03	7.47	3859.8	100.0	0	36	A	
K+	0.09	0.04	1.57	48.3	100.0	28	36	A	
Precip off	-	0.0	55.8	529.0	100.0	329	365		
Na+	0.26	0.01	2.26	135.6	100.0	12	36	B	
SO4-- corr	0.44	0.07	2.38	233.1	100.0	0	36	A	
SO4--	0.48	0.09	2.53	251.5	100.0	0	36	A	

PT0003R V. Do Castelo Portugal

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.14	0.01	3.28	208.1	98.0	18	85	A	
Ca++	0.31	0.05	9.50	460.1	98.0	11	85	A	
Cl-	4.51	0.20	22.80	6746.6	98.0	0	85	A	
Mg++	0.293	0.015	1.880	438.9	98.0	3	85	A	
NO3-	0.12	0.01	1.00	185.1	98.0	14	85	A	
pH	4.86	3.45	6.74	20574.4	98.0	0	85	A	
K+	0.10	0.04	3.49	151.8	98.0	49	85	A	
Precip off	-	0.0	176.7	1495.8	100.0	279	365		
Na+	2.34	0.13	13.15	3503.4	98.0	0	85	B	
SO4-- corr	0.35	-0.07	3.28	528.5	96.5	1	84	A	
SO4--	0.54	0.03	3.53	813.0	96.5	1	84	A	

PT0004R Monte Velho Portugal

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.24	0.01	5.12	135.2	99.2	12	51	A	
Ca++	0.54	0.05	6.30	300.1	99.2	2	51	A	
Cl-	6.82	0.40	30.80	3820.7	99.2	0	51	A	
Mg++	0.468	0.015	2.190	261.9	99.0	1	50	A	
NO3-	0.16	0.01	1.23	89.3	99.2	5	51	A	
pH	5.17	4.05	8.85	3759.6	100.0	0	54	A	
K+	0.17	0.04	4.00	92.9	99.2	17	51	A	
Precip off	-	0.0	63.5	560.0	100.0	311	365		
Na+	3.84	0.24	19.57	2150.2	99.2	0	51	B	
SO4-- corr	0.47	-0.12	4.12	265.8	99.2	1	51	A	
SO4--	0.78	0.20	4.96	437.4	99.2	0	51	A	

RU0001R Janiskoski Russian Federation

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.17	0.00	5.90	91.0	100.0	35	90	A	
Ca++	0.12	0.00	1.82	66.3	100.0	19	90	B	
Cl-	1.16	0.13	23.10	622.4	100.0	0	90	B	
Mg++	0.021	0.001	1.568	11.4	100.0	33	90	A	
NO3-	0.10	0.00	2.52	53.7	100.0	33	90	A	
pH	4.82	4.15	7.72	8199.7	99.6	0	89	A	
K+	0.38	0.02	5.28	206.0	100.0	2	90	B	
Precip	-	0.0	66.1	536.1	100.0	275	365		
Na+	0.68	0.10	11.44	366.3	100.0	0	90	B	
SO4-- corr	0.33	-0.22	3.05	177.4	100.0	3	90	A	
SO4--	0.37	0.02	3.20	198.6	100.0	1	90	A	

RU0013R Pinega Russian Federation

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.21	0.00	2.79	96.6	100.0	32	143	A	
Ca++	0.22	0.01	2.02	101.2	99.9	11	142	B	
Cl-	0.55	0.07	3.63	254.7	98.1	0	142	B	
Mg++	0.045	0.001	0.749	20.8	99.9	15	142	A	
NO3-	0.15	0.00	1.78	69.1	100.0	23	143	A	
pH	5.05	4.24	7.23	4146.5	99.6	0	140	A	
K+	0.29	0.02	4.10	133.6	98.1	1	142	B	
Precip	-	0.0	39.6	463.7	100.0	222	365		
Na+	0.26	0.08	2.15	120.7	100.0	0	143	B	
SO4-- corr	0.41	0.03	3.70	191.4	100.0	0	143	A	
SO4--	0.43	0.05	3.78	201.0	100.0	0	143	A	

RU0016R Shepeljovo Russian Federation

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.31	0.00	5.75	201.1	100.0	20	112	A	
Ca++	0.85	0.02	14.10	553.9	100.0	0	112	B	
Cl-	4.75	0.28	110.60	3089.5	100.0	0	112	B	
Mg++	0.278	0.002	3.798	180.9	100.0	0	112	A	
NO3-	0.39	0.00	4.08	255.0	100.0	5	112	A	
pH	4.98	4.28	7.47	6773.3	100.0	0	112	A	
K+	0.52	0.07	3.42	335.6	100.0	0	112	B	
Precip	-	0.0	103.0	650.6	100.0	253	365		
Na+	2.88	0.16	57.54	1874.4	100.0	0	112	B	
SO4-- corr	0.88	-0.72	21.59	574.7	100.0	4	112	A	
SO4--	1.11	0.23	21.93	723.6	100.0	0	112	A	

RU0018R Danki Russian Federation

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.50	0.00	3.60	246.9	99.3	11	79	A	
Ca++	0.34	0.02	2.26	167.7	100.0	0	80	B	
Cl-	0.38	0.08	7.92	188.7	100.0	0	80	B	
Mg++	0.036	0.001	0.467	18.0	100.0	7	80	A	
NO3-	0.25	0.00	2.64	125.1	100.0	5	80	A	
pH	5.00	4.26	6.78	4946.2	99.7	0	78	A	
K+	0.26	0.05	3.36	132.0	100.0	0	80	B	
Precip	-	0.0	44.7	499.2	47.4	123	203		
Na+	0.20	0.03	4.83	98.2	100.0	0	80	B	
SO4-- corr	0.49	0.03	6.00	245.3	100.0	0	80	A	
SO4--	0.51	0.07	6.19	254.3	100.0	0	80	A	

SE0002R Rorvik Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.48	0.01	4.38	416.0	96.7	1	140	A	
Ca++	0.21	0.03	1.71	183.8	97.0	3	149	B	
Cl-	3.82	0.03	67.85	3313.6	97.0	2	148	A	
Mg++	0.279	0.010	4.950	242.0	97.0	5	149	A	
NO3-	0.50	0.06	3.22	435.9	97.0	0	149	A	
pH	4.55	3.71	6.02	24309.9	97.8	0	154	A	
K+	0.17	0.03	2.56	143.4	97.0	11	149	B	
Precip	-	0.0	27.3	848.9	95.9	193	350		
Na+	2.26	0.06	43.01	1958.0	97.0	7	148	A	
SO4-- corr	0.47	0.02	4.70	407.0	97.0	0	149	A	
SO4--	0.65	0.06	4.85	565.5	97.0	0	149	A	

SE0005R Bredkalen Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.12	0.01	0.77	68.5	99.9	4	49	A	W
Ca++	0.08	0.01	0.24	44.8	100.0	15	52	B	W
Cl-	0.21	0.00	3.71	120.8	100.0	13	52	A	W
Mg++	0.027	0.010	0.170	15.1	100.0	25	52	A	W
NO3-	0.13	0.00	0.65	75.3	100.0	1	52	A	W
pH	4.88	4.00	5.54	7461.1	100.0	0	56	A	W
K+	0.09	0.01	0.38	49.8	100.0	20	52	B	W
Precip	-	0.0	39.3	565.7	100.0	8	61		W
Na+	0.14	0.01	2.14	77.6	100.0	25	52	A	W
SO4-- corr	0.16	0.00	0.96	92.9	100.0	2	52	A	W
SO4--	0.18	0.00	0.98	100.8	100.0	2	52	A	W

SE0011R Vavihill Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.55	-	3.64	437.3	99.3	0	32	A	W
Ca++	0.16	0.03	1.90	130.7	100.0	1	53	B	W
Cl-	1.96	0.00	18.66	1572.5	100.0	2	53	A	W
Mg++	0.151	0.030	1.300	121.3	100.0	0	53	A	W
NO3-	0.50	0.20	2.33	403.6	99.3	0	52	A	W
pH	4.62	3.98	5.46	19108.1	100.0	0	57	A	W
K+	0.12	0.04	0.51	96.0	100.0	8	53	B	W
Precip	-	0.0	62.4	802.4	100.0	9	61		W
Na+	1.18	0.06	11.31	950.9	100.0	1	53	A	W
SO4-- corr	0.46	0.21	3.09	365.6	100.0	0	53	A	W
SO4--	0.55	0.22	3.21	443.6	100.0	0	53	A	W

SE0012R Aspvreten Sweden

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.38	0.06	1.56	130.1	99.6	0	48	A	W
Ca++	0.26	0.06	2.27	89.0	99.7	0	50	B	W
Cl-	0.83	0.00	6.11	282.0	99.7	2	50	A	W
Mg++	0.077	0.010	0.370	26.0	99.7	1	50	A	W
NO3-	0.40	0.10	1.53	136.0	99.7	0	50	A	W
pH	4.59	3.84	5.75	8775.1	100.0	0	58	A	W
K+	0.10	0.04	0.49	32.5	99.7	9	50	B	W
Precip	-	0.0	30.8	339.5	100.0	6	61		W
Na+	0.43	0.06	3.12	144.2	99.7	2	50	A	W
SO4-- corr	0.47	0.09	2.75	160.7	99.7	0	50	A	W
SO4--	0.52	0.13	2.85	176.0	99.7	0	50	A	W

SK0002R Chopok Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.56	0.01	2.47	666.9	95.5	0	169	A	
Ca++	0.37	0.05	2.91	440.1	95.5	0	169	A	
Cl-	0.36	0.04	2.66	429.2	95.5	0	169	A	
Mg++	0.092	0.007	0.820	108.7	95.5	0	169	A	
NO3-	0.43	0.06	2.98	504.8	95.5	0	169	A	
pH	4.42	3.79	6.83	45289.8	95.0	0	168	A	
K+	0.23	0.05	1.74	272.4	95.5	0	169	B	
Precip	-	0.1	42.4	1185.3	99.7	151	364		
Na+	0.25	0.02	1.71	302.6	95.5	0	169	A	
SO4-- corr	1.05	0.19	5.58	1247.9	95.5	0	168	A	
SO4--	1.08	0.20	5.62	1275.5	95.5	0	168	A	

SK0004R Stara Lesna Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.47	0.01	3.52	329.4	95.7	0	108	A	
Ca++	0.38	0.07	1.68	270.0	95.7	0	108	A	
Cl-	0.27	0.02	1.90	187.4	95.6	0	107	A	
Mg++	0.069	0.011	0.335	48.8	95.7	0	108	A	
NO3-	0.36	0.04	2.86	251.9	95.7	0	108	A	
pH	4.50	3.67	6.39	22148.4	95.7	0	108	A	
K+	0.19	0.03	1.48	131.3	95.6	0	107	B	
Precip	-	0.1	59.6	702.5	100.0	193	365		
Na+	0.17	0.03	1.56	117.9	95.6	0	107	A	
SO4-- corr	0.88	0.05	5.68	614.4	95.7	0	108	A	
SO4--	0.89	0.06	5.75	627.3	95.7	0	108	A	

SK0005R Liesek Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.50	0.02	2.72	425.1	94.3	0	110	A	
Ca++	0.41	0.02	2.79	345.5	94.3	0	110	A	
Cl-	0.35	0.05	2.78	296.0	94.3	0	110	A	
Mg++	0.070	0.011	0.341	59.5	94.3	0	110	A	
NO3-	0.39	0.08	3.24	334.2	94.3	0	110	A	
pH	4.45	3.79	6.13	30525.7	94.4	0	111	A	
K+	0.22	0.03	1.93	187.3	94.3	0	110	B	
Precip	-	0.1	38.7	853.4	100.0	178	365		
Na+	0.22	0.01	2.25	185.9	94.3	0	110	A	
SO4-- corr	0.84	0.09	4.70	716.6	94.3	0	110	A	
SO4--	0.86	0.13	4.92	735.0	94.3	0	110	A	

SK0006R Starina Slovakia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.38	0.01	1.75	291.5	94.5	0	119	A	
Ca++	0.34	0.05	1.71	259.2	94.5	0	119	A	
Cl-	0.29	0.04	2.40	221.1	94.5	0	119	A	
Mg++	0.068	0.008	0.361	51.7	94.5	0	119	A	
NO3-	0.41	0.06	2.00	313.6	94.5	0	119	A	
pH	4.42	3.71	6.43	29148.6	94.5	0	119	A	
K+	0.19	0.03	0.98	146.7	94.5	0	119	B	
Precip	-	0.1	42.5	761.5	100.0	203	365		
Na+	0.20	0.02	2.52	149.3	94.5	0	119	A	
SO4-- corr	0.77	0.19	3.97	587.0	94.5	0	119	A	
SO4--	0.79	0.21	4.08	600.2	94.5	0	119	A	

TR0001R Cubuk II Turkey

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.61	0.13	1.25	157.0	98.2	0	54	A	
Ca++	1.85	0.52	43.79	478.6	97.5	0	52	B	
Cl-	1.25	0.24	5.47	321.9	98.6	0	53	A	
Mg++	0.226	0.070	0.990	58.3	98.6	0	53	A	
NO3-	0.48	0.10	5.17	124.4	98.6	0	53	A	
pH	5.52	4.17	7.08	783.4	100.0	0	63	A	
K+	0.55	0.10	2.21	140.8	97.7	0	50	D	
Precip	-	0.0	21.8	258.1	100.0	302	365		
Na+	0.70	0.03	7.75	181.4	98.7	0	54	A	
SO4-- corr	1.02	0.13	4.54	262.8	98.6	0	53	A	
SO4--	1.11	0.28	4.94	286.8	98.6	0	53	A	

YU0005R Kamenicki Vis Yugoslavia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.61	0.06	1.64	228.1	100.0	0	71	A	
Ca++	1.26	0.16	9.61	475.0	91.9	0	53	B	
Cl-	0.80	0.08	4.52	299.3	88.3	0	48	C	
Mg++	0.225	0.050	1.190	84.7	91.9	0	53	B	
NO3-	0.69	0.23	1.11	258.9	99.7	0	70	B	
pH	5.18	3.86	7.27	2514.0	100.0	0	71	A	
K+	0.32	0.02	1.68	122.0	91.9	0	53	A	
Precip	-	0.0	24.4	376.1	96.7	282	353		
Na+	0.72	0.11	3.87	270.7	91.9	0	53	A	
SO4-- corr	1.46	-0.02	5.66	548.7	94.2	1	57	A	
SO4--	1.56	0.16	6.57	585.9	100.0	0	71	A	

YU0008R Zabljak Yugoslavia

January 1999 - December 1999

Component	W. mean	Min	Max	Dep	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.42	0.06	1.79	642.2	99.9	0	123	A	
Ca++	0.72	0.01	29.36	1090.6	99.3	0	118	B	
Cl-	1.02	0.05	5.21	1544.5	98.7	0	113	C	
Mg++	0.125	0.010	1.210	189.3	99.3	0	118	B	
NO3-	0.58	0.13	1.12	876.5	99.9	0	123	B	
pH	5.65	4.66	8.09	3420.8	100.0	0	124	A	
K+	0.24	0.01	4.45	361.4	98.3	0	117	A	
Precip	-	0.0	104.8	1514.7	96.4	228	352		
Na+	0.85	0.01	6.48	1285.0	99.3	0	118	A	
SO4-- corr	0.84	0.03	5.91	1274.3	99.5	0	120	A	
SO4--	0.89	0.05	6.07	1349.6	100.0	0	124	A	

Annex 3

Annual statistics on gases and aerosol data

AT0002R Illmitz Austria

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.35	1.55	1.93	1.89	0.20	0.69	1.94	5.16	9.88	82.2	0	300	U	
SO4--	0.93	0.79	0.68	2.26	0.07	0.18	0.70	2.58	4.87	95.6	0	349	A	
SO2	1.95	1.78	1.22	3.09	0.01	0.13	1.59	5.25	9.62	82.2	0	300	U	

AT0004R St. Koloman Austria

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.55	1.28	1.11	2.35	0.12	0.21	1.10	4.18	6.50	62.5	0	228	U	
SO2	0.46	0.42	0.31	2.52	0.02	0.05	0.33	1.30	2.52	58.9	0	215	U	

AT0005R Vorhegg Austria

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.90	0.59	0.77	1.71	0.19	0.34	0.70	2.22	3.91	80.5	0	294	U	
SO2	0.69	0.73	0.49	2.26	0.04	0.13	0.47	2.24	4.40	76.2	0	278	U	

BE0001R Offagne Belgium

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	4.48	2.83	3.87	1.69	1.12	1.61	3.81	9.24	24.95	98.4	0	359	U	

BE0032R Eupen Belgium

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	4.61	3.23	3.78	1.84	1.83	1.85	3.45	11.35	18.02	97.8	0	357	U	

BE0035R Vezin Belgium

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	6.55	3.11	5.91	1.57	1.47	2.80	5.94	12.83	18.62	96.4	0	352	U	

CH0001G Jungfraujoch Switzerland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.10	0.14	0.06	2.43	0.01	0.02	0.06	0.34	1.32	81.6	0	298	A	
SO4--	0.13	0.14	0.08	2.88	0.02	0.02	0.07	0.41	0.90	97.0	95	354	A	
SO2	0.09	0.16	0.04	2.84	0.01	0.01	0.04	0.37	1.54	98.6	0	360	B	
SPM	3.8	5.7	2.2	2.7	0.5	0.5	1.9	13.6	48.6	94.0	52	343		

CH0002R Payerne Switzerland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	5.10	2.77	4.46	1.67	0.93	1.93	4.30	11.15	15.11	96.7	0	353	C	
SO4--	0.72	0.44	0.59	1.96	0.07	0.18	0.66	1.53	2.44	98.9	0	361	A	
SO2	0.68	0.62	0.53	1.99	0.09	0.18	0.51	1.66	5.32	97.3	0	355	U	
NH3+NH4+	3.95	2.55	3.36	1.78	0.42	1.32	3.56	7.50	25.55	87.9	0	321	A	
HNO3+NO3	1.01	0.81	0.75	2.17	0.09	0.22	0.74	2.58	4.74	87.7	0	320	A	
SPM	20.6	12.1	17.5	1.8	3.6	6.8	17.1	45.4	65.1	93.7	0	342		

CH0003R Tanikon Switzerland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	4.93	2.98	4.30	1.65	1.45	2.08	4.07	11.77	22.79	99.2	0	362	C	
SO2	0.79	0.61	0.65	1.81	0.17	0.28	0.60	1.81	5.30	100.0	0	365	U	
SPM	18.8	12.1	15.4	1.9	2.9	5.1	15.0	45.2	67.2	97.5	0	356		

CH0004R Chaumont Switzerland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.44	1.18	2.20	1.58	0.50	0.99	2.23	4.96	7.75	95.3	0	348	C	
SO2	0.59	0.65	0.35	3.11	0.01	0.04	0.43	1.52	5.69	96.7	0	353	U	
SPM	12.1	8.5	9.4	2.1	0.5	3.1	9.9	27.9	51.9	86.6	0	316		

CH0005R Rigi Switzerland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.41	1.28	2.12	1.65	0.43	0.91	2.14	5.21	8.09	97.5	0	356	C	
SO4--	0.49	0.38	0.36	2.32	0.02	0.07	0.39	1.26	2.02	95.1	3	347	A	
SO2	0.40	0.47	0.29	2.11	0.03	0.09	0.28	1.03	3.94	98.1	0	358	U	
SPM	11.8	9.1	8.9	2.2	0.5	2.6	9.3	26.4	66.4	98.9	0	361		

CZ0001R Svratouch Czech Republic

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH3	1.32	0.77	1.10	1.87	0.08	0.33	1.23	2.63	5.59	95.6	0	349	U	
NH4+	0.81	0.81	0.53	2.66	0.08	0.08	0.58	2.39	6.06	100.0	0	365	U	
NO3-	0.47	0.47	0.25	3.61	0.02	0.02	0.34	1.30	3.55	100.0	0	365	U	
HNO3	0.77	0.65	0.49	2.95	0.02	0.07	0.58	2.09	3.40	100.0	0	365	U	
NO2	1.60	1.09	1.22	2.27	0.10	0.20	1.40	3.80	6.50	87.1	0	318	B	
SO4--	1.03	0.61	0.87	1.87	0.20	0.24	0.98	2.02	3.56	14.5	0	53		
SO2	2.31	2.06	1.58	2.65	0.10	0.20	1.70	6.60	12.70	99.2	0	362	A	
NH3+NH4+	2.15	1.37	1.77	1.92	0.24	0.57	1.87	4.65	9.89	95.6	0	349	B	
HNO3+NO3	1.24	0.80	0.99	2.13	0.06	0.18	1.07	2.92	4.71	100.0	0	365	B	

CZ0003R Kosetice Czech Republic

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH3	1.64	1.00	1.40	1.79	0.25	0.49	1.48	4.10	6.17	99.3	0	363	U	
NH4+	0.95	0.83	0.67	2.41	0.08	0.16	0.70	2.78	4.58	100.0	0	365	U	
NO3-	0.53	0.40	0.39	2.43	0.02	0.07	0.45	1.44	2.24	100.0	0	365	U	
HNO3	0.56	0.63	0.32	3.15	0.02	0.04	0.38	1.82	4.47	99.5	0	363	U	
NO2	2.00	1.13	1.69	1.82	0.30	0.60	1.80	4.10	6.50	97.5	0	356	B	
SO4--	1.13	0.76	0.91	1.96	0.26	0.34	0.89	2.91	3.21	15.6	0	57		
SO2	1.84	1.58	1.38	2.15	0.10	0.40	1.30	5.20	11.00	99.7	0	364	A	
NH3+NH4+	2.60	1.51	2.27	1.68	0.48	0.89	2.26	5.75	9.93	99.2	0	362	B	
HNO3+NO3	1.10	0.76	0.86	2.09	0.09	0.24	0.92	2.42	5.55	99.5	0	363	B	

DE0001R Westerland Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.14	1.59	1.73	1.89	0.27	0.69	1.71	5.10	10.26	95.9	0	350	D	
SO4--	0.86	0.44	0.76	1.67	0.10	0.30	0.80	1.53	3.50	63.8	0	233	A	
SO2	0.33	0.40	0.18	2.98	0.05	0.05	0.15	1.21	2.55	59.5	0	217	D	
SPM	23.6	16.8	19.3	1.8	3.0	8.0	18.0	66.0	88.0	98.1	0	358		

DE0002R Langenbrugge Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.51	1.62	2.14	1.72	0.42	1.02	1.93	5.67	10.62	99.5	0	363	D	
SO4--	0.81	0.53	0.69	1.78	0.10	0.30	0.70	1.80	2.90	66.3	0	242	A	
SO2	0.60	0.71	0.36	2.76	0.05	0.08	0.35	1.87	6.45	96.4	0	352	D	
SPM	19.1	12.8	15.8	1.8	4.0	6.1	15.0	45.0	89.0	98.9	0	361		

DE0003R Schauinsland Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.24	0.50	1.17	1.42	0.18	0.75	1.14	2.16	4.17	98.6	0	360	D	
SO4--	0.53	0.30	0.45	1.77	0.10	0.20	0.50	1.10	1.70	66.6	0	243	A	
SO2	0.14	0.28	0.08	2.33	0.05	0.05	0.05	0.58	2.95	95.6	0	349	D	
SPM	8.1	6.0	5.8	2.5	0.5	0.5	6.0	19.0	35.0	95.9	20	350		

DE0004R Deuselbach Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.24	1.11	2.03	1.52	0.90	1.12	1.89	4.59	7.92	100.0	0	365	D	
SO4--	0.67	0.31	0.61	1.56	0.20	0.30	0.60	1.20	2.10	66.6	0	243	A	
SO2	0.73	1.03	0.34	3.62	0.05	0.05	0.40	2.34	9.45	100.0	0	365	D	
SPM	14.4	7.7	12.5	1.7	2.0	5.0	13.0	29.0	48.0	97.8	0	357		

DE0005R Brotjacklriegel Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.86	1.08	1.67	1.52	0.75	0.99	1.53	3.38	10.80	100.0	0	365	D	
SO4--	0.77	0.47	0.64	1.87	0.10	0.20	0.70	1.60	2.80	66.6	0	243	A	
SO2	0.37	0.64	0.14	3.59	0.05	0.05	0.05	1.73	4.45	100.0	0	365	D	
SPM	10.5	6.8	8.5	2.0	0.5	2.0	9.0	23.0	47.0	100.0	4	365		

DE0007R Neuglobsow Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.96	1.25	1.71	1.64	0.75	0.90	1.53	4.58	8.43	99.2	0	362	D	
SO4--	0.68	0.49	0.55	1.88	0.10	0.20	0.55	1.40	3.70	66.6	0	243	A	
SO2	0.63	0.97	0.26	3.83	0.05	0.05	0.20	2.43	8.40	99.7	0	364	D	
SPM	14.6	9.5	12.1	1.8	3.0	5.0	11.0	34.8	57.0	100.0	0	365		

DE0008R Schmucke Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.80	1.17	1.57	1.61	0.45	0.84	1.41	3.94	8.37	100.0	0	365	D	
SO4--	0.58	0.33	0.50	1.72	0.20	0.20	0.50	1.20	2.20	66.6	0	243	A	
SO2	0.81	2.22	0.35	3.53	0.00	0.05	0.35	2.39	36.35	100.0	6	365	D	
SPM	12.5	8.3	9.6	2.2	0.5	3.0	10.0	27.0	58.0	100.0	7	365		

DE0009R Zingst Germany

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.97	1.12	1.74	1.64	0.42	0.73	1.65	4.18	9.39	100.0	0	365	D	
SO4--	0.63	0.47	0.52	1.86	0.10	0.20	0.50	1.38	3.30	66.6	0	243	A	
SO2	0.71	0.84	0.48	2.43	0.05	0.10	0.50	2.00	6.65	100.0	0	365	D	
SPM	17.0	11.2	14.3	1.8	3.0	6.0	13.0	39.8	76.0	99.7	0	364		

DK0003R Tange Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	1.12	4.70	0.70	2.06	0.03	0.26	0.64	2.16	88.42	97.0	2	354	A	
SO2	0.53	1.78	0.28	2.66	0.02	0.07	0.26	1.49	32.33	95.9	0	350	A	
NH3+NH4+	3.67	17.95	2.27	1.97	0.46	0.80	2.12	6.20	337.71	96.4	0	352	A	
HNO3+NO3	1.09	3.84	0.62	2.55	0.03	0.16	0.63	2.56	71.50	97.0	0	354	A	

DK0005R Keldsnor Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	1.10	0.73	0.90	1.90	0.09	0.31	0.90	2.37	4.80	81.9	1	299	A	
SO2	0.77	0.65	0.55	2.40	0.04	0.11	0.56	2.08	4.58	81.9	0	299	A	
NH3+NH4+	3.04	1.93	2.48	1.97	0.27	0.68	2.68	6.25	11.31	81.9	0	299	A	
HNO3+NO3	1.35	1.18	0.98	2.31	0.05	0.23	1.00	3.89	8.34	81.9	0	299	A	

DK0008R Anholt Denmark

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH3	0.13	0.15	0.07	3.76	0.00	0.01	0.07	0.42	0.97	97.3	137	355	U	
NO2	2.12	1.72	1.64	2.02	0.24	0.57	1.55	5.90	11.96	100.0	0	365	A	
SO4--	0.84	0.61	0.67	2.12	0.01	0.25	0.66	2.00	4.30	97.5	5	356	A	
SO2	0.67	0.73	0.44	2.55	0.00	0.10	0.41	2.16	6.81	97.8	2	357	A	
NH3+NH4+	1.36	1.37	0.92	2.45	0.09	0.20	0.92	3.72	11.98	97.3	0	355	A	
HNO3+NO3	0.86	0.84	0.57	2.57	0.01	0.13	0.61	2.70	4.85	97.3	1	355	A	

EE0009R Lahemaa Estonia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.51	0.24	0.45	1.64	0.10	0.19	0.44	0.88	1.43	17.8	0	65	C	
NO2	0.56	0.25	0.51	1.51	0.12	0.28	0.51	1.07	1.76	86.0	0	314	C	
SO4--	0.38	0.36	0.33	1.63	0.10	0.17	0.32	0.73	5.50	97.8	0	357	B	
SO2	0.95	1.52	0.41	3.96	0.04	0.04	0.45	3.61	14.67	97.3	51	355	B	

EE0011R Vilsandi Estonia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.92	0.62	0.77	1.81	0.10	0.32	0.77	2.04	5.16	85.2	0	311	U	
SO2	0.59	0.91	0.32	2.92	0.03	0.05	0.30	2.27	9.70	92.9	4	339	U	

ES0001R Toledo Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.5	1.6	-	-	0.0	0.0	0.0	2.0	15.0	94.8	282	346		
NH4+	0.43	0.53	0.20	4.33	0.00	0.00	0.25	1.59	3.32	97.3	26	355	U	
NO2	2.70	2.79	1.08	5.01	0.15	0.15	2.35	8.11	13.00	97.8	135	357	D	
SO4--	0.71	0.54	0.57	1.89	0.11	0.22	0.55	1.77	4.57	97.3	0	355	A	
SO2	1.16	2.63	0.47	2.98	0.25	0.25	0.25	4.43	25.10	97.0	249	354	D	
NH3+NH4+	0.12	0.21	0.06	2.91	0.01	0.01	0.06	0.38	2.45	95.9	42	350	A	
HNO3+NO3	0.26	0.25	0.13	4.09	0.01	0.01	0.20	0.76	1.41	99.5	38	363	A	
SPM	20.5	15.2	15.8	2.1	1.0	5.0	16.0	47.7	91.0	95.1	0	347		

ES0003R Roquetas Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.3	1.3	-	-	0.0	0.0	0.0	1.0	14.0	81.6	263	298		
NH4+	0.52	0.63	0.29	3.22	0.00	0.05	0.27	1.79	4.15	92.1	5	336	U	
NO2	3.07	2.69	1.53	4.37	0.15	0.15	2.70	8.46	13.60	95.3	92	348	D	
SO4--	1.32	0.73	1.13	1.79	0.24	0.39	1.24	2.64	5.99	92.1	0	336	A	
SO2	0.97	1.80	0.45	2.81	0.25	0.25	0.25	4.30	14.10	98.4	260	359	D	
NH3+NH4+	1.16	0.76	0.94	2.04	0.04	0.22	1.05	2.31	7.17	98.1	0	358	A	
HNO3+NO3	0.80	0.65	0.48	3.61	0.01	0.03	0.66	2.06	3.10	97.5	12	356	A	
SPM	35.5	15.2	32.2	1.6	8.0	12.0	34.0	61.0	108.0	91.8	0	335		

ES0004R Logrono Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.7	1.6	-	-	0.0	0.0	0.0	3.0	12.0	85.8	229	313		
NH4+	0.62	0.78	0.33	3.47	0.00	0.04	0.32	2.41	5.20	89.9	6	328	U	
NO2	2.69	2.79	1.21	4.50	0.15	0.15	1.90	7.18	14.70	91.0	103	332	D	
SO4--	1.19	0.78	0.97	1.91	0.18	0.33	0.92	2.85	4.03	89.9	0	328	A	
SO2	1.33	2.62	0.55	3.17	0.25	0.25	0.25	6.00	21.20	90.4	211	330	D	
NH3+NH4+	0.64	0.67	0.37	3.20	0.01	0.04	0.45	1.78	5.53	95.1	3	347	A	
HNO3+NO3	0.40	0.44	0.27	2.52	0.01	0.09	0.25	1.31	3.39	98.1	6	358	A	
SPM	27.7	18.1	23.1	1.8	4.0	8.1	23.0	56.8	133.0	88.5	0	323		

ES0005R Noia Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.0	0.3	-	-	0.0	0.0	0.0	0.0	2.0	57.0	200	208		
NH4+	0.59	1.17	0.16	5.76	0.00	0.00	0.16	2.86	6.92	57.0	18	208	U	
NO2	1.94	2.12	0.80	4.52	0.15	0.15	1.30	6.42	10.20	64.1	99	234	D	
SO4--	1.16	1.21	0.76	2.45	0.11	0.20	0.66	3.80	7.45	57.0	0	208	A	
SO2	1.33	2.44	0.56	3.20	0.25	0.25	0.25	5.50	19.30	62.5	142	228	D	
NH3+NH4+	0.61	0.90	0.24	4.13	0.01	0.02	0.19	2.77	5.80	61.1	10	223	A	
HNO3+NO3	0.29	0.27	0.16	3.92	0.01	0.01	0.22	0.83	1.53	53.2	30	194	A	
SPM	16.6	11.3	13.5	1.9	2.0	5.0	13.0	39.8	65.0	55.6	0	203		

ES0007R Viznar Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.2	1.2	-	-	0.0	0.0	0.0	1.0	14.0	67.7	221	247		
NH4+	0.45	0.46	0.23	4.33	0.00	0.00	0.30	1.44	2.70	91.5	24	334	U	
NO2	3.33	2.85	1.72	4.22	0.15	0.15	2.90	8.45	14.50	94.0	79	343	D	
SO4--	1.07	0.68	0.89	1.82	0.15	0.34	0.90	2.43	4.49	91.8	0	335	A	
SO2	0.71	1.25	0.39	2.42	0.25	0.25	0.25	3.00	11.20	92.3	257	337	D	
NH3+NH4+	1.71	1.27	1.25	2.63	0.02	0.34	1.44	3.95	9.10	95.1	8	347	A	
HNO3+NO3	0.46	0.29	0.37	2.16	0.01	0.09	0.42	0.94	1.96	92.3	0	337	A	
SPM	41.8	29.4	32.9	2.1	3.0	8.0	37.0	94.4	220.0	91.2	0	333		

ES0008R Niembro Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.3	0.6	-	-	0.0	0.0	0.0	1.4	4.0	85.5	252	312		
NH4+	0.66	1.15	0.22	5.19	0.00	0.00	0.23	2.65	7.72	85.8	17	313	U	
NO2	2.87	2.93	1.22	4.84	0.15	0.15	2.20	8.33	15.60	91.5	112	334	D	
SO4--	1.53	1.31	1.15	2.10	0.17	0.37	1.10	4.32	7.94	85.8	0	313	A	
SO2	1.64	2.89	0.64	3.53	0.25	0.25	0.25	7.08	20.90	92.1	199	336	D	
NH3+NH4+	1.76	1.77	1.03	3.40	0.01	0.14	1.30	5.08	14.54	91.5	8	334	A	
HNO3+NO3	0.49	0.51	0.34	2.64	0.01	0.06	0.35	1.16	4.96	95.1	7	347	A	
SPM	28.6	16.0	24.5	1.8	3.0	9.0	25.0	54.7	104.0	67.4	0	246		

ES0009R Campisabalos Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.5	1.5	-	-	0.0	0.0	0.0	3.0	15.0	90.4	271	330		
NH4+	0.29	0.38	0.14	3.88	0.00	0.00	0.16	1.03	2.92	93.2	17	340	U	
NO2	3.22	2.84	1.60	4.39	0.15	0.15	2.80	8.70	13.90	95.9	89	350	D	
SO4--	0.69	0.51	0.54	2.04	0.08	0.15	0.52	1.74	2.72	93.4	0	341	A	
SO2	1.10	2.12	0.48	2.95	0.25	0.25	0.25	4.40	16.50	97.3	246	355	D	
NH3+NH4+	0.97	1.00	0.54	3.57	0.01	0.03	0.61	3.01	6.58	96.4	12	352	A	
HNO3+NO3	0.19	0.15	0.13	3.08	0.01	0.01	0.17	0.40	1.25	97.8	33	357	A	
SPM	15.2	14.1	11.0	2.2	2.0	3.0	10.0	39.0	116.0	89.3	0	326		

ES0010R Cabo de Creus Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.3	1.0	-	-	0.0	0.0	0.0	2.0	7.0	89.6	275	327		
NH4+	0.38	0.50	0.17	4.67	0.00	0.00	0.22	1.25	3.66	94.0	27	343	U	
NO2	3.01	3.41	1.16	5.18	0.15	0.15	2.40	9.10	24.20	82.2	111	300	D	
SO4--	1.50	0.83	1.29	1.76	0.12	0.47	1.24	3.21	4.54	94.0	0	343	A	
SO2	1.22	2.02	0.54	3.14	0.25	0.25	0.25	5.10	14.50	89.0	211	325	D	
NH3+NH4+	0.98	1.09	0.55	3.44	0.02	0.03	0.71	2.64	8.94	92.6	11	338	A	
HNO3+NO3	0.26	0.20	0.19	2.51	0.01	0.03	0.18	0.66	1.27	96.2	12	351	A	
SPM	41.2	20.1	37.1	1.6	1.0	19.0	37.0	82.0	144.0	81.1	0	296		

ES0011R Barcarrola Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.2	0.9	-	-	0.0	0.0	0.0	1.0	9.0	67.9	233	248		
NH4+	0.42	0.73	0.15	5.09	0.00	0.00	0.16	1.64	6.48	71.2	23	260	U	
NO2	2.50	2.63	1.08	4.61	0.15	0.15	1.95	7.43	13.80	67.7	86	247	D	
SO4--	1.08	1.01	0.81	2.07	0.18	0.31	0.71	3.30	6.36	71.2	0	260	A	
SO2	0.98	1.30	0.51	2.85	0.25	0.25	0.25	3.85	7.60	72.6	173	265	D	
NH3+NH4+	1.37	1.38	0.83	3.11	0.02	0.08	0.90	4.34	8.78	72.3	2	264	A	
HNO3+NO3	0.25	0.16	0.19	2.51	0.01	0.01	0.23	0.56	0.97	73.2	15	267	A	
SPM	29.8	18.4	24.8	1.9	7.0	9.0	26.0	61.5	112.0	68.8	0	251		

ES0012R Zarra Spain

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	0.4	1.2	-	-	0.0	0.0	0.0	2.0	8.0	82.5	259	301		
NH4+	0.32	0.37	0.19	3.19	0.00	0.02	0.22	0.93	3.28	92.9	9	339	U	
NO2	2.86	2.81	1.29	4.64	0.15	0.15	2.40	8.08	18.70	88.2	100	322	D	
SO4--	0.97	0.62	0.80	1.89	0.18	0.26	0.79	2.24	3.12	92.9	0	339	A	
SO2	0.73	1.37	0.39	2.45	0.25	0.25	0.25	3.40	11.30	93.4	266	341	D	
NH3+NH4+	1.91	1.45	1.38	2.68	0.01	0.35	1.60	5.00	8.59	93.4	2	341	A	
HNO3+NO3	0.40	0.22	0.33	2.00	0.01	0.09	0.37	0.74	1.53	93.7	1	342	A	
SPM	24.3	15.2	19.9	1.9	4.0	6.0	22.0	51.3	82.0	91.5	0	334		

FI0009R Uto Finland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.63	1.08	1.29	2.13	0.00	0.35	1.38	3.73	6.85	97.5	1	356	C	
SO4--	0.75	0.61	0.56	2.28	0.07	0.12	0.61	1.90	4.45	98.1	0	358	A	
SO2	0.54	0.62	0.37	2.29	0.01	0.13	0.33	1.86	4.46	98.4	0	359	A	
NH3+NH4+	0.58	0.52	0.39	2.70	0.00	0.07	0.43	1.58	3.04	95.6	0	349	A	
HNO3+NO3	0.42	0.30	0.32	2.20	0.03	0.07	0.36	0.95	2.15	98.1	0	358	A	

FI0017R Virolahti II Finland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.77	1.62	1.38	1.95	0.10	0.52	1.30	4.28	14.57	100.0	0	365	C	
SO4--	0.86	0.70	0.63	2.27	0.07	0.14	0.68	2.09	6.42	100.0	0	365	A	
SO2	0.96	1.17	0.52	3.18	0.02	0.08	0.50	3.13	7.73	100.0	0	365	A	
NH3+NH4+	1.16	0.79	0.90	2.16	0.08	0.20	1.00	2.78	4.11	100.0	0	365	A	
HNO3+NO3	0.32	0.24	0.25	2.13	0.03	0.06	0.27	0.75	1.43	100.0	0	365	A	

FI0022R Oulanka Finland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.55	0.44	0.46	2.16	-0.27	0.06	0.42	1.43	2.19	98.9	14	361	C	
SO4--	0.49	0.41	0.32	2.82	0.00	0.05	0.37	1.41	1.78	99.7	0	364	A	
SO2	0.47	0.71	0.17	4.65	0.01	0.02	0.16	1.76	6.36	99.7	0	364	A	
NH3+NH4+	0.20	0.20	0.13	2.64	0.00	0.03	0.14	0.60	1.42	98.9	0	361	A	
HNO3+NO3	0.07	0.07	0.05	2.56	0.00	0.01	0.05	0.17	0.80	99.7	0	364	A	

FI0037R Ahtari II Finland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.95	0.67	0.77	1.95	0.11	0.23	0.79	2.32	4.33	95.1	0	347	C	
SO4--	0.56	0.47	0.39	2.47	0.02	0.07	0.43	1.54	2.62	98.4	0	359	A	
SO2	0.41	0.59	0.18	3.57	0.01	0.03	0.15	1.97	2.81	98.9	0	361	A	
NH3+NH4+	0.42	0.33	0.32	2.05	0.05	0.11	0.31	1.08	2.26	99.7	0	364	A	
HNO3+NO3	0.17	0.15	0.13	2.15	0.01	0.04	0.14	0.41	1.46	98.4	0	359	A	

FR0003R La Crouzille France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.62	0.46	0.53	1.92	0.00	0.12	0.50	1.41	3.81	95.9	12	350	A	
SO2	0.62	0.75	0.50	1.89	0.00	0.22	0.37	1.86	9.69	95.9	13	350	B	

FR0005R La Hague France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.76	0.60	0.60	1.98	0.04	0.22	0.56	2.01	3.89	95.9	1	350	A	
SO2	0.95	0.86	0.69	2.13	0.16	0.30	0.62	2.62	5.69	96.2	1	351	B	

FR0008R Donon France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.40	0.31	0.36	1.96	0.00	0.00	0.32	1.04	2.01	98.6	25	360	A	
SO2	0.57	0.49	0.53	1.78	0.00	0.00	0.38	1.45	4.23	98.9	26	361	B	

FR0009R Revin France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.84	0.70	0.74	1.97	0.00	0.00	0.68	2.12	4.04	78.4	23	286	A	
SO2	0.87	0.85	0.73	1.99	0.00	0.00	0.57	2.79	4.86	78.4	23	286	B	

FR0010R Morvan France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.57	0.45	0.45	2.11	0.00	0.09	0.43	1.45	2.56	95.9	7	350	A	
SO2	0.78	2.38	0.52	1.94	0.00	0.29	0.37	1.85	42.26	96.4	10	352	B	

FR0012R Iraty France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.55	0.51	0.40	2.41	0.00	0.08	0.36	1.58	2.97	95.9	10	350	A	
SO2	0.68	1.22	0.51	1.94	0.00	0.27	0.35	1.93	18.97	96.7	12	353	B	

FR0013R Peyrusse Vieille France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.64	0.65	0.49	2.16	0.00	0.11	0.49	1.62	8.76	96.4	5	352	A	
SO2	0.58	0.60	0.47	1.79	0.00	0.22	0.38	1.70	4.74	96.4	5	352	B	

FR0014R Montandon France

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.44	0.34	0.36	2.12	0.00	0.07	0.34	1.22	1.66	97.0	11	354	A	
SO2	0.41	0.59	0.34	1.66	0.00	0.20	0.29	0.92	8.33	97.3	9	355	B	

GB0002R Eskdalemuir United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.54	0.48	0.41	2.08	0.08	0.13	0.38	1.59	3.01	92.9	0	339	A	
SO2	0.50	0.51	0.37	2.09	0.05	0.14	0.31	1.55	3.32	93.2	3	340	B	
NH3+NH4+	0.72	0.80	0.46	2.66	0.02	0.09	0.46	2.20	7.19	99.2	0	362	A	
HNO3+NO3	0.31	0.44	0.17	2.87	0.00	0.04	0.17	0.98	4.99	95.9	4	350	A	

GB0004R Stoke Ferry United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.82	0.53	0.68	1.89	0.08	0.24	0.68	1.84	3.22	92.6	0	338	A	
SO2	1.42	1.04	1.14	1.97	0.13	0.39	1.11	3.51	7.19	92.9	3	339	B	

GB0006R Lough Navar United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.41	0.41	0.29	2.23	0.01	0.11	0.25	1.30	2.43	98.1	1	358	A	
SO2	0.28	0.21	0.23	1.79	0.06	0.08	0.23	0.67	1.60	99.2	32	362	B	

GB0007R Barcomb Mills United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.87	0.53	0.73	1.84	0.07	0.28	0.75	1.88	3.12	96.7	0	353	A	
SO2	0.93	0.72	0.74	1.94	0.09	0.29	0.74	2.19	5.02	100.0	2	365	B	

GB0013R Yarner Wood United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.56	0.50	0.39	2.38	0.04	0.09	0.38	1.63	2.71	88.5	0	323	A	
SO2	0.57	0.66	0.38	2.33	0.05	0.12	0.33	1.77	4.02	88.8	9	324	B	

GB0014R High Muffles United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.62	0.47	0.50	1.86	0.10	0.21	0.47	1.50	3.24	99.2	0	362	A	
SO2	0.93	1.25	0.54	2.65	0.05	0.15	0.46	3.06	11.35	98.4	1	359	B	
NH3+NH4+	1.67	1.85	1.15	2.37	0.08	0.32	1.12	4.55	12.21	26.0	0	95		
HNO3+NO3	0.82	1.22	0.47	2.96	0.00	0.08	0.44	2.72	8.08	23.8	1	87		

GB0015R Strathvaich Dam United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.36	0.38	0.26	2.15	0.02	0.09	0.26	1.11	2.77	98.9	1	361	A	
SO2	0.35	0.25	0.29	1.84	0.03	0.14	0.31	0.75	1.92	100.0	152	365	B	

GB0016R Glen Dye United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.45	0.49	0.30	2.37	0.05	0.08	0.28	1.38	3.51	97.5	0	356	A	
SO2	0.39	0.40	0.29	2.13	0.07	0.09	0.27	1.08	4.27	99.5	63	363	B	

GB0036R Harwell United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	4.13	3.40	3.09	2.14	0.40	1.00	2.90	11.00	16.60	52.1	0	190	C	

GB0037R Ladybower United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	3.41	2.01	2.91	1.78	0.60	1.00	3.10	6.80	15.00	87.1	0	318	C	

GB0038R Lullington Heath United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	4.39	2.96	3.54	1.97	0.50	1.20	3.50	10.40	16.10	63.8	0	233	C	

GB0043R Narberth United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.54	1.02	1.27	1.92	0.00	0.40	1.30	3.64	6.40	63.6	1	232	C	

GB0045R Wicken Fen United Kingdom

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	4.24	2.48	3.54	1.89	0.20	1.20	3.70	9.62	12.50	86.3	0	315	C	

GR0001R Aliartos Greece

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO3-	0.28	0.17	0.24	2.14	0.00	0.07	0.25	0.61	1.01	74.8	3	273	U	
NO2	2.83	1.38	2.46	1.81	0.00	0.67	2.70	5.30	6.60	82.2	4	300	B	
SO4--	1.23	0.61	1.02	2.15	0.03	0.26	1.20	2.42	3.34	74.5	0	272	A	
SO2	0.74	0.63	0.54	2.40	0.00	0.10	0.60	1.70	4.91	72.6	3	265	C	

HU0002R K-Puszta Hungary

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH3	1.18	1.06	0.67	3.80	0.01	0.02	0.98	2.62	7.64	95.6	20	349	U	
NH3	1.18	1.06	0.67	3.80	0.01	0.02	0.98	2.62	7.64	95.6	20	349	U	
NH4+	1.72	1.11	1.28	2.64	0.00	0.26	1.51	3.72	5.78	95.9	3	350	U	
NO3-	0.63	0.57	0.39	3.05	0.00	0.07	0.41	1.83	3.10	95.6	6	349	U	
HNO3	0.27	0.25	0.20	2.41	0.00	0.05	0.21	0.63	2.50	95.6	7	349	U	
NO2	1.73	1.12	1.41	2.14	0.01	0.57	1.43	3.94	11.16	95.6	4	349	A	
SO4--	1.79	1.13	1.47	1.98	0.06	0.50	1.53	3.81	9.58	95.9	0	350	A	
SO2	3.37	3.34	2.15	2.88	0.00	0.34	2.35	10.17	21.45	95.6	1	349	A	
NH3+NH4+	2.90	1.36	2.55	1.76	0.11	0.81	2.71	5.42	9.64	93.2	3	340	B	
HNO3+NO3	0.89	0.63	0.69	2.17	0.02	0.19	0.69	2.23	3.29	95.3	6	348	A	

IE0002R Turlough Hill Ireland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.35	0.32	0.25	2.23	0.00	0.06	0.25	1.00	2.72	95.6	1	349	A	
SO2	0.10	0.15	0.06	2.86	0.00	0.01	0.05	0.35	1.58	91.8	10	335	A	

IE0003R The Burren Ireland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.34	0.41	0.21	2.83	0.00	0.03	0.19	1.24	2.78	95.9	5	350		

IS0002R Irafoss Iceland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.13	0.13	0.08	2.78	0.00	0.01	0.10	0.37	1.04	97.8	1	357	A	

IT0001R Montelibretti Italy

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH3	1.49	0.87	1.18	2.19	0.00	0.27	1.38	2.97	4.21	91.2	0	333	A	
NH4+	1.36	0.70	1.17	1.82	0.08	0.42	1.32	2.55	3.58	91.2	0	333	A	
NO3-	0.75	0.49	0.61	1.93	0.05	0.20	0.61	1.61	2.53	91.2	0	333	A	
HNO3	0.15	0.14	0.09	2.99	0.00	0.01	0.10	0.43	0.62	91.2	0	333	A	
NO2	4.30	1.50	4.03	1.45	0.87	2.17	4.16	7.19	9.25	97.3	0	355	C	
SO4--	1.04	0.64	0.86	1.88	0.17	0.29	0.87	2.35	3.31	91.2	0	333	A	
SO2	0.35	0.24	0.27	2.10	0.01	0.08	0.29	0.76	1.40	91.2	0	333	A	
NH3+NH4+	2.85	1.25	2.54	1.68	0.40	0.96	2.79	5.01	5.98	91.2	0	333		
HNO3+NO3	0.90	0.50	0.77	1.79	0.11	0.26	0.79	1.79	2.68	91.2	0	333		

IT0004R Ispra Italy

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
H+	6.0	4.4	-	-	0.0	0.9	4.9	14.9	21.6	99.5	10	363		
NH4+	2.38	3.66	1.34	2.95	0.06	0.18	1.44	6.91	38.93	99.5	0	363	U	
NO3-	1.81	1.83	1.21	2.55	0.03	0.23	1.24	5.28	11.33	99.5	0	363	U	
NO2	6.74	3.73	5.86	1.70	1.16	2.61	5.43	14.49	19.31	98.9	0	361	C	
SO4--	1.46	1.17	1.05	2.39	0.06	0.22	1.13	4.01	6.22	99.5	0	363	B	
SO2	1.54	0.80	1.36	1.65	0.27	0.53	1.33	3.19	5.59	99.7	0	364	U	
SPM	57.3	30.4	49.1	1.8	3.7	16.4	52.5	115.9	180.0	99.5	0	363		

LT0015R Preila Lithuania

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.18	0.65	1.03	1.73	0.10	0.41	1.09	2.34	6.17	97.5	0	356	A	
SO4--	0.89	0.58	0.71	2.07	0.06	0.19	0.76	1.99	3.85	98.4	0	359	A	
SO2	1.08	1.47	0.63	2.69	0.09	0.13	0.53	3.44	13.88	98.6	0	360	A	
NH3+NH4+	1.54	1.02	1.22	2.05	0.12	0.32	1.35	3.52	7.35	98.6	0	360	A	
HNO3+NO3	0.64	0.53	0.48	2.14	0.06	0.15	0.46	1.66	4.16	98.9	0	361	A	

LV0010R Rucava Latvia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	1.04	0.54	0.89	1.84	0.06	0.29	0.94	2.09	2.92	89.3	10	326	U	
NO3-	0.16	0.16	0.10	3.17	0.00	0.01	0.11	0.49	0.85	89.9	9	328	U	
NO2	0.61	0.39	0.50	1.91	0.10	0.20	0.50	1.50	2.10	90.4	3	330	A	
SO4--	0.30	0.37	0.17	3.03	0.00	0.03	0.17	1.00	2.15	89.9	108	328	B	
SO2	0.41	0.58	0.35	2.45	0.00	0.00	0.20	1.77	3.70	89.3	147	326	B	
NH3+NH4+	2.03	1.30	1.59	2.37	0.01	0.52	1.63	4.56	8.69	82.5	0	301	A	
HNO3+NO3	0.19	0.17	0.12	3.14	0.00	0.01	0.14	0.55	0.89	89.9	7	328	A	

LV0016R Zoseni Latvia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.67	0.51	0.50	2.33	0.01	0.12	0.52	1.60	4.37	96.2	64	351	U	
NO3-	0.32	0.32	0.22	2.38	0.00	0.05	0.21	0.89	2.28	93.7	1	342	U	
NO2	0.59	0.31	0.52	1.70	0.00	0.20	0.50	1.10	2.30	98.9	3	361	A	
SO4--	0.61	0.61	0.38	2.94	0.01	0.06	0.40	1.94	3.94	93.7	45	342	B	
SO2	0.62	0.73	0.41	2.59	0.00	0.10	0.30	1.89	4.70	93.7	54	342	B	
NH3+NH4+	1.04	0.64	0.87	1.85	0.15	0.30	0.89	2.30	4.73	96.2	0	351	A	
HNO3+NO3	0.35	0.34	0.25	2.25	0.00	0.07	0.25	0.97	2.39	94.0	1	343	A	

NL0009R Kollumerwaard Netherlands

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	1.25	1.16	0.85	2.50	0.06	0.19	0.89	3.70	6.59	98.9	0	361	A	
NO3-	0.82	0.77	0.62	2.33	0.00	0.00	0.61	2.52	4.15	98.9	18	361	A	
NO2	3.72	2.64	2.90	2.12	0.00	0.61	3.35	8.85	15.86	97.8	2	357	C	
SO4--	0.76	0.66	0.59	2.16	0.00	0.13	0.53	2.05	4.37	98.9	10	361	A	
SO2	0.70	0.62	0.82	1.57	-0.50	0.00	0.50	1.88	3.51	100.0	70	365	U	

NL0010R Vreedepeel Netherlands

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	1.62	1.29	1.21	2.33	-0.10	0.20	1.40	4.00	11.00	99.7	4	364	A	
NO3-	1.00	0.79	0.81	2.09	0.00	0.12	0.80	2.50	5.80	99.7	14	364	A	
NO2	7.48	3.33	6.75	1.59	1.50	3.00	6.70	13.70	20.10	85.5	0	312	C	
SO4--	0.93	0.74	0.73	2.21	0.00	0.10	0.80	2.30	6.80	99.7	10	364	A	
SO2	1.49	1.24	1.24	1.93	-0.50	0.00	1.00	4.00	9.00	99.2	22	362	U	

NO0001R Birkenes Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.04	0.05	0.02	3.23	0.00	0.00	0.02	0.13	0.41	100.0	123	365		
Cl-	0.45	0.82	0.09	6.95	0.01	0.01	0.09	2.43	5.26	100.0	117	365		
Mg++	0.05	0.06	0.02	3.43	0.00	0.00	0.02	0.19	0.38	100.0	101	365		
NO2	0.52	0.43	0.41	2.02	0.07	0.13	0.39	1.49	2.78	100.0	0	365	A	
K+	0.04	0.05	0.03	3.00	0.00	0.00	0.03	0.13	0.37	100.0	79	365		
Na+	0.40	0.54	0.17	4.23	0.00	0.01	0.18	1.67	3.28	100.0	15	365		
SO4--	0.49	0.48	0.30	2.83	0.02	0.05	0.31	1.60	2.38	100.0	0	365	A	
SO2	0.14	0.16	0.07	3.33	0.01	0.01	0.07	0.50	0.96	99.7	55	364	A	
NH3+NH4+	0.51	0.60	0.28	3.17	0.03	0.03	0.28	1.79	3.62	100.0	0	365	A	
HNO3+NO3	0.20	0.28	0.11	2.81	0.01	0.02	0.11	0.73	2.70	99.7	0	364	A	

NO0008R Skreaadalen Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.04	0.05	0.02	3.21	0.00	0.00	0.02	0.14	0.25	93.7	108	342		
Cl-	0.53	0.92	0.11	6.87	0.01	0.01	0.10	2.60	4.63	76.7	63	280		
Mg++	0.04	0.06	0.02	3.55	0.00	0.00	0.02	0.18	0.34	93.7	141	342		
NO2	0.40	0.26	0.35	1.65	0.05	0.16	0.34	0.77	3.08	97.3	0	355	A	
K+	0.03	0.03	0.02	2.67	0.00	0.00	0.02	0.08	0.17	93.7	100	342		
Na+	0.34	0.53	0.10	6.23	0.00	0.00	0.12	1.57	3.22	93.7	59	342		
SO4--	0.37	0.39	0.23	2.78	0.00	0.03	0.22	1.15	3.17	76.7	2	280	A	
SO2	0.09	0.15	0.04	3.22	0.01	0.01	0.04	0.44	0.99	76.4	74	279	A	
NH3+NH4+	1.17	1.00	0.88	2.19	0.07	0.24	0.91	2.73	9.55	76.2	0	278	A	
HNO3+NO3	0.15	0.23	0.09	2.57	0.01	0.02	0.09	0.41	2.82	76.2	0	278	A	

NO0015R Tustervatn Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.02	0.03	0.01	2.61	0.00	0.00	0.01	0.08	0.26	100.0	180	365		
Cl-	0.31	0.57	0.07	6.15	0.01	0.01	0.07	1.38	4.33	100.0	130	365		
Mg++	0.02	0.04	0.01	2.87	0.00	0.00	0.01	0.09	0.29	100.0	171	365		
NO2	0.14	0.09	0.12	1.77	0.01	0.05	0.12	0.34	0.60	97.8	4	357	A	
K+	0.02	0.02	0.01	2.34	0.00	0.00	0.01	0.06	0.13	100.0	157	365		
Na+	0.21	0.32	0.09	4.24	0.00	0.00	0.09	0.75	2.58	100.0	32	365		
SO4--	0.23	0.27	0.14	2.90	0.00	0.03	0.14	0.81	2.29	100.0	7	365	A	
SO2	0.08	0.19	0.03	3.45	0.01	0.01	0.03	0.38	1.38	99.7	165	364	A	
NH3+NH4+	0.99	1.20	0.58	2.92	0.03	0.09	0.61	2.78	12.76	100.0	0	365	A	
HNO3+NO3	0.05	0.05	0.04	1.83	0.01	0.02	0.04	0.12	0.47	99.7	0	364	A	

NO0039R Kaarvatn Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.02	0.04	0.01	2.61	0.00	0.00	0.00	0.07	0.49	96.7	191	353		
Cl-	0.14	0.29	0.04	4.60	0.00	0.01	0.03	0.56	3.10	96.7	156	353		
Mg++	0.01	0.02	0.01	2.36	0.00	0.00	0.00	0.05	0.22	96.7	207	353		
NO2	0.23	0.20	0.19	1.77	0.04	0.08	0.18	0.54	2.51	100.0	0	365	A	
K+	0.02	0.02	0.01	2.38	0.00	0.00	0.01	0.05	0.17	96.7	159	353		
Na+	0.12	0.18	0.06	3.72	0.00	0.00	0.06	0.38	1.92	96.7	32	353		
SO4--	0.20	0.26	0.11	3.02	0.00	0.02	0.12	0.70	1.97	96.7	6	353	A	
SO2	0.03	0.05	0.02	2.39	0.00	0.01	0.01	0.11	0.47	95.9	209	350	A	
NH3+NH4+	0.45	0.58	0.27	2.77	0.03	0.04	0.24	1.48	5.35	96.4	0	352	A	
HNO3+NO3	0.05	0.04	0.04	1.86	0.01	0.02	0.03	0.14	0.29	95.6	0	349	A	

NO0041R Osen Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.02	0.04	0.01	2.69	0.00	0.00	0.00	0.06	0.48	99.2	182	362		
Cl-	0.07	0.17	0.02	3.51	0.01	0.01	0.01	0.38	1.53	99.2	223	362		
Mg++	0.01	0.02	0.01	2.16	0.00	0.00	0.00	0.04	0.13	99.2	248	362		
NO2	0.38	0.34	0.28	2.42	0.00	0.07	0.28	1.01	2.49	95.3	7	348	A	
K+	0.03	0.04	0.02	2.66	0.00	0.00	0.02	0.07	0.27	99.2	104	362		
Na+	0.10	0.15	0.05	3.56	0.00	0.00	0.05	0.38	1.15	99.2	41	362		
SO4--	0.30	0.35	0.17	3.24	0.00	0.03	0.17	1.11	2.04	99.2	2	362	A	
SO2	0.06	0.11	0.03	2.85	0.01	0.01	0.03	0.25	1.20	99.2	129	362	A	
NH3+NH4+	0.31	0.33	0.21	2.42	0.03	0.04	0.20	0.90	3.19	99.2	0	362	A	
HNO3+NO3	0.08	0.09	0.06	2.26	0.01	0.02	0.05	0.27	0.87	99.2	0	362	A	

NO0042R Zeppelin, Spitsbergen Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.03	0.05	0.02	2.90	0.00	0.00	0.02	0.12	0.42	95.3	98	348		
Cl-	0.46	0.76	0.20	4.23	0.01	0.01	0.25	1.45	7.05	82.5	24	301		
Mg++	0.05	0.05	0.03	3.11	0.00	0.00	0.03	0.14	0.45	95.3	79	348		
K+	0.01	0.02	0.01	2.22	0.00	0.00	0.01	0.04	0.14	95.3	152	348		
Na+	0.32	0.42	0.17	3.30	0.00	0.02	0.19	0.90	3.89	95.3	8	348		
SO4--	0.19	0.15	0.12	2.97	0.00	0.02	0.15	0.46	0.90	99.2	14	362	A	
SO2	0.13	0.24	0.05	3.92	0.01	0.01	0.04	0.58	2.06	99.2	113	362	A	
NH3+NH4+	0.19	0.17	0.14	2.30	0.02	0.03	0.14	0.54	1.01	93.4	0	341	A	
HNO3+NO3	0.03	0.03	0.03	1.74	0.01	0.01	0.03	0.07	0.29	99.2	0	362	A	

NO0055R Karasjok Norway

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
Ca++	0.02	0.03	0.01	2.34	0.00	0.00	0.00	0.05	0.34	99.5	187	363		
Cl-	0.18	0.32	0.05	5.25	0.01	0.01	0.03	0.86	1.98	99.5	168	363		
Mg++	0.02	0.02	0.01	2.59	0.00	0.00	0.00	0.07	0.15	99.5	189	363		
NO2	0.25	0.40	0.16	2.62	0.01	0.01	0.18	0.59	4.94	99.5	22	363	A	
K+	0.02	0.02	0.01	2.31	0.00	0.00	0.01	0.04	0.30	99.5	170	363		
Na+	0.16	0.20	0.08	3.66	0.00	0.00	0.09	0.58	1.19	99.5	27	363		
SO4--	0.36	0.37	0.19	3.55	0.00	0.02	0.22	1.23	1.68	99.5	9	363	A	
SO2	0.51	1.27	0.08	6.67	0.01	0.01	0.06	2.60	10.47	99.5	107	363	A	
NH3+NH4+	0.53	0.55	0.39	2.18	0.03	0.11	0.39	1.48	5.06	99.2	0	362	A	
HNO3+NO3	0.05	0.03	0.04	1.73	0.01	0.02	0.04	0.10	0.19	99.5	0	363	A	

PL0002R Jarczew Poland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	1.64	0.92	1.39	1.84	0.03	0.50	1.44	3.22	5.45	95.9	0	350	U	
NO3-	0.68	0.46	0.55	1.94	0.04	0.18	0.53	1.55	2.54	97.0	0	354	U	
NO2	2.68	1.33	2.41	1.60	0.60	1.11	2.40	5.09	10.70	93.7	0	342	B	
SO4--	1.60	0.80	1.40	1.78	0.05	0.57	1.46	2.99	6.10	96.7	0	353	A	
SO2	2.84	2.35	2.01	2.42	0.10	0.50	2.10	7.68	14.00	97.3	0	355	A	
NH3+NH4+	2.85	1.68	2.46	1.73	0.52	0.96	2.48	5.99	13.05	95.9	0	350	A	
HNO3+NO3	0.83	0.50	0.69	1.83	0.16	0.24	0.69	1.85	2.74	97.3	0	355	A	

PL0003R Sniezka Poland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.63	0.37	0.52	1.92	0.08	0.15	0.58	1.24	2.20	99.7	0	364	U	
NO3-	0.21	0.11	0.18	1.75	0.04	0.06	0.19	0.39	0.70	99.7	0	364	U	
NO2	1.25	0.48	1.15	1.50	0.30	0.60	1.20	2.10	3.00	99.7	0	364	B	
SO4--	0.73	0.41	0.62	1.86	0.10	0.23	0.67	1.48	2.16	99.7	0	364	A	
SO2	1.28	0.57	1.16	1.60	0.30	0.50	1.20	2.40	3.30	99.7	0	364	A	
NH3+NH4+	0.98	0.55	0.82	1.90	0.13	0.24	0.91	1.99	3.38	99.7	0	364	A	
HNO3+NO3	0.25	0.12	0.22	1.65	0.05	0.09	0.23	0.45	0.75	99.7	0	364	A	

PL0004R Leba Poland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	1.02	0.78	0.71	2.77	0.03	0.08	0.80	2.43	4.51	98.6	0	360	U	
NO3-	0.47	0.39	0.34	2.39	0.01	0.07	0.37	1.27	3.09	98.6	0	360	U	
NO2	1.42	0.98	1.17	1.87	0.20	0.40	1.10	3.21	7.00	98.4	0	359	B	
SO4--	1.25	0.78	1.00	2.11	0.10	0.24	1.16	2.70	5.50	98.6	0	360	A	
SO2	1.47	1.22	1.09	2.25	0.10	0.30	1.10	3.40	9.40	98.6	0	360	A	
NH3+NH4+	1.57	1.05	1.20	2.31	0.03	0.24	1.32	3.60	5.70	98.6	0	360	A	
HNO3+NO3	0.54	0.41	0.43	2.03	0.04	0.12	0.44	1.35	3.13	97.8	0	357	A	

PL0005R Diabla Gora Poland

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.08	0.98	0.81	2.07	0.09	0.30	0.74	3.21	5.84	73.4	0	268	A	
SO4--	0.71	0.64	0.44	3.09	0.01	0.06	0.51	2.14	3.22	73.2	8	267	A	
SO2	0.74	1.28	0.30	3.96	0.01	0.01	0.30	3.38	11.63	74.2	15	271	A	
NH3+NH4+	1.13	0.74	0.86	2.38	0.03	0.14	0.95	2.49	3.54	74.8	0	273	A	
HNO3+NO3	0.39	0.32	0.29	2.14	0.06	0.09	0.28	1.06	1.76	72.6	0	265	A	

RU0001R Janiskoski Russian Federation

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.23	0.19	0.17	2.59	0.00	0.02	0.18	0.62	1.04	77.0	87	281		
NO3-	0.06	0.05	0.06	2.32	0.00	0.00	0.05	0.16	0.34	77.0	109	281		
SO4--	0.52	0.61	0.28	3.40	0.00	0.02	0.29	2.01	4.24	77.0	26	281	A	
SO2	0.94	2.25	0.23	6.12	0.00	0.00	0.10	5.34	20.10	77.0	117	281	B	
NH3+NH4+	0.23	0.14	0.20	1.80	0.03	0.07	0.21	0.49	0.85	76.7	15	280	A	

RU0016R Shepeljovo Russian Federation

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.56	0.40	0.44	2.25	0.00	0.07	0.48	1.26	2.47	83.8	112	306		
NO3-	0.21	0.16	0.16	2.15	0.00	0.04	0.16	0.50	1.07	83.8	16	306		
SO4--	0.63	0.50	0.48	2.29	0.00	0.09	0.48	1.63	3.34	83.8	18	306	A	
SO2	1.09	1.26	0.60	3.29	0.00	0.07	0.58	3.83	7.12	83.6	34	305	B	

RU0018R Danki Russian Federation

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH4+	0.47	0.35	0.37	2.07	0.05	0.11	0.37	1.26	1.88	47.9	15	175		
NO3-	0.10	0.10	0.06	2.45	0.01	0.01	0.06	0.29	0.66	47.9	41	175		
SO4--	0.44	0.35	0.33	2.26	0.00	0.08	0.35	1.22	2.15	47.9	6	175	A	
SO2	0.19	0.23	0.13	2.99	0.00	0.00	0.12	0.62	1.43	47.9	68	175	B	

SE0002R Rorvik Sweden

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.58	1.15	1.28	1.88	0.24	0.47	1.24	3.75	8.89	96.4	0	352	A	
SO4--	0.69	0.59	0.49	2.56	0.00	0.05	0.53	1.87	3.70	94.0	7	343	A	
SO2	0.53	0.39	0.40	2.30	0.01	0.10	0.44	1.22	2.91	93.7	0	342	B	
NH3+NH4+	1.02	1.16	0.62	2.86	0.02	0.11	0.61	2.97	8.40	93.4	21	341	A	
HNO3+NO3	0.73	0.96	0.43	2.79	0.00	0.08	0.41	2.56	7.39	93.7	12	342	A	
SPM	1.4	1.7	1.0	2.0	0.7	0.7	0.7	4.3	18.6	91.8	254	335		

SE0005R Bredkalen Sweden

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.19	0.18	0.14	2.27	0.03	0.03	0.14	0.49	1.27	98.9	46	361	A	
SO4--	0.20	0.26	0.11	3.36	0.00	0.01	0.10	0.71	1.37	100.0	9	365	A	
SO2	0.10	0.19	0.06	3.06	0.00	0.00	0.03	0.47	1.28	99.5	28	363	B	
NH3+NH4+	0.17	0.20	0.10	3.01	0.01	0.02	0.09	0.57	1.62	100.0	100	365	A	
HNO3+NO3	0.05	0.07	0.04	2.17	0.00	0.01	0.03	0.12	1.20	99.5	38	363	A	
SPM	0.8	0.3	0.8	1.3	0.7	0.7	0.7	1.9	2.5	99.7	337	364		

SE0008R Hoburg Sweden

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.06	0.81	0.84	1.97	0.13	0.31	0.85	2.42	5.96	98.4	0	359	A	
SO4--	0.71	0.71	0.43	3.10	0.00	0.05	0.51	1.98	4.89	97.8	2	357	A	
SO2	0.61	0.54	0.42	2.57	0.02	0.08	0.48	1.66	3.30	97.3	0	355	B	
SPM	2.1	3.2	1.2	2.4	0.7	0.7	0.7	8.2	25.5	99.2	249	362		

SE0011R Vavihill Sweden

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	1.66	1.25	1.31	1.98	0.32	0.45	1.27	4.32	7.31	96.4	0	352	A	
SO4--	0.75	0.63	0.54	2.43	0.01	0.10	0.54	2.01	3.61	96.4	0	352	A	
SO2	0.55	0.62	0.34	2.87	0.00	0.05	0.40	1.82	6.58	96.2	1	351	B	
NH3+NH4+	1.33	1.07	0.99	2.21	0.14	0.25	1.05	3.37	7.07	95.9	10	350	A	
HNO3+NO3	0.67	0.68	0.46	2.39	0.03	0.11	0.44	1.80	7.14	96.2	5	351	A	
SPM	1.6	2.3	1.1	2.1	0.7	0.7	0.7	4.7	22.6	95.6	251	349		

SE0012R Aspvreten Sweden

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	0.81	0.61	0.67	1.79	0.22	0.29	0.61	1.84	5.46	90.7	0	331	A	
SO4--	0.56	0.65	0.31	3.41	0.00	0.02	0.35	1.89	3.81	97.8	3	357	A	
SO2	0.37	0.40	0.24	2.68	0.00	0.04	0.23	1.06	3.28	97.8	2	357	B	
NH3+NH4+	0.60	0.82	0.34	2.92	0.01	0.06	0.34	2.00	7.27	97.8	36	357	A	
HNO3+NO3	0.34	0.62	0.22	2.30	0.02	0.06	0.21	0.84	6.86	96.4	13	352	A	

SI0008R Iskrba Slovenia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
SO4--	0.92	0.74	0.65	2.47	0.02	0.11	0.72	2.35	4.48	99.5	0	363	A	
SO2	0.95	1.39	0.43	3.85	0.00	0.03	0.41	3.70	11.22	99.5	6	363	A	
NH3+NH4+	0.91	0.72	0.68	2.22	0.08	0.16	0.77	2.19	5.06	99.5	0	363	A	
HNO3+NO3	0.24	0.24	0.17	2.40	0.01	0.04	0.17	0.66	2.21	99.5	0	363	A	

SK0002R Chopok Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO3-	0.19	0.16	0.12	2.65	0.01	0.02	0.13	0.54	0.91	99.5	12	363	U	
HNO3	0.08	0.04	0.07	1.65	0.02	0.03	0.07	0.16	0.37	99.2	0	362	U	
NO2	0.90	0.28	0.86	1.39	0.20	0.50	0.90	1.40	2.10	99.2	0	362	B	
SO4--	0.47	0.37	0.36	2.11	0.04	0.12	0.33	1.16	2.23	99.5	4	363	A	
SO2	1.12	1.01	0.85	2.06	0.10	0.30	0.90	3.00	7.80	99.2	0	362	A	
HNO3+NO3	0.26	0.19	0.20	2.10	0.02	0.06	0.20	0.65	1.02	99.2	12	362	A	

SK0004R Stara Lesna Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO3-	0.30	0.18	0.25	1.82	0.02	0.09	0.25	0.62	1.19	100.0	0	365	U	
HNO3	0.07	0.06	0.06	1.80	0.02	0.03	0.06	0.17	0.54	99.5	0	363	U	
NO2	1.57	0.73	1.45	1.47	0.70	0.90	1.30	3.08	5.60	99.7	0	364	B	
SO4--	1.06	0.58	0.91	1.76	0.19	0.34	0.90	2.18	3.06	100.0	0	365	A	
SO2	1.72	1.60	1.27	2.14	0.10	0.40	1.20	4.50	14.10	99.5	0	363	A	
HNO3+NO3	0.37	0.21	0.32	1.69	0.05	0.14	0.32	0.73	1.27	99.5	0	363	A	

SK0005R Liesek Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO3-	0.53	0.33	0.44	1.88	0.02	0.14	0.46	1.19	2.15	100.0	0	365	U	
HNO3	0.06	0.05	0.05	1.82	0.01	0.02	0.05	0.13	0.64	100.0	0	365	U	
NO2	1.99	1.03	1.81	1.51	0.70	1.02	1.70	4.00	8.40	100.0	0	365	B	
SO4--	1.26	0.66	1.10	1.68	0.31	0.44	1.11	2.46	4.61	100.0	0	365	A	
SO2	4.10	5.81	2.14	2.99	0.20	0.50	1.70	15.43	41.20	100.0	0	365	A	
HNO3+NO3	0.60	0.34	0.51	1.75	0.12	0.20	0.52	1.25	2.31	100.0	0	365	A	

SK0006R Starina Slovakia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO3-	0.21	0.14	0.17	2.26	0.01	0.03	0.19	0.48	0.88	99.7	7	364	U	
HNO3	0.32	0.35	0.21	2.49	0.02	0.05	0.18	1.10	2.62	100.0	0	365	U	
NO2	1.46	0.57	1.37	1.43	0.40	0.80	1.40	2.47	4.20	100.0	0	365	B	
SO4--	1.14	0.79	0.91	2.07	0.04	0.23	1.00	2.65	5.22	99.7	1	364	A	
SO2	3.04	3.38	1.90	2.58	0.30	0.50	1.60	11.18	20.70	100.0	0	365	A	
HNO3+NO3	0.53	0.41	0.41	2.09	0.02	0.12	0.43	1.38	3.05	99.7	7	364	A	

TR0001R Cubuk II Turkey

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NH3	0.44	0.28	0.37	2.16	-0.08	0.03	0.41	0.93	1.59	61.6	6	225	U	
NH4+	0.37	0.33	0.26	2.81	-0.05	0.02	0.28	1.03	1.46	61.9	6	226	U	
NO3-	0.13	0.19	0.08	3.25	-0.01	0.00	0.06	0.53	1.13	63.3	17	231	U	
HNO3	0.08	0.06	0.07	2.20	-0.03	0.01	0.06	0.20	0.37	63.0	9	230	U	
NO2	0.74	0.74	0.52	2.33	0.02	0.15	0.50	2.09	5.81	61.1	0	223	D	
SO4--	0.41	0.38	0.25	3.31	0.00	0.02	0.30	1.13	1.92	63.3	2	231	A	
SO2	1.01	1.24	0.50	3.72	0.00	0.03	0.55	3.24	9.02	62.7	1	229	U	
NH3+NH4+	0.79	0.42	0.66	2.07	-0.08	0.13	0.74	1.57	1.94	63.3	1	231	A	
HNO3+NO3	0.21	0.19	0.15	2.36	-0.04	0.03	0.15	0.61	1.18	63.3	2	231	A	

YU0005R Kamenicki Vis Yugoslavia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	2.98	1.43	2.69	1.57	1.10	1.30	2.65	6.03	7.60	47.4	0	173	B	
SO2	3.78	2.31	3.33	1.59	2.50	2.50	2.50	8.81	12.00	51.8	0	189	D	

YU0008R Zabljak Yugoslavia

January 1999 - December 1999

Component	Arit mean	Arit sd	Geom mean	Geom sd	Min	5%	50%	95%	Max	% anal	Num bel	Num sampl	QA flag	Samp flag
NO2	3.76	1.35	3.51	1.46	1.00	1.80	3.60	6.35	8.40	90.4	0	330	B	
SO2	3.02	1.35	2.86	1.33	2.50	2.50	2.50	5.40	12.90	95.9	0	350	D	

Annex 4

Maps over Europe

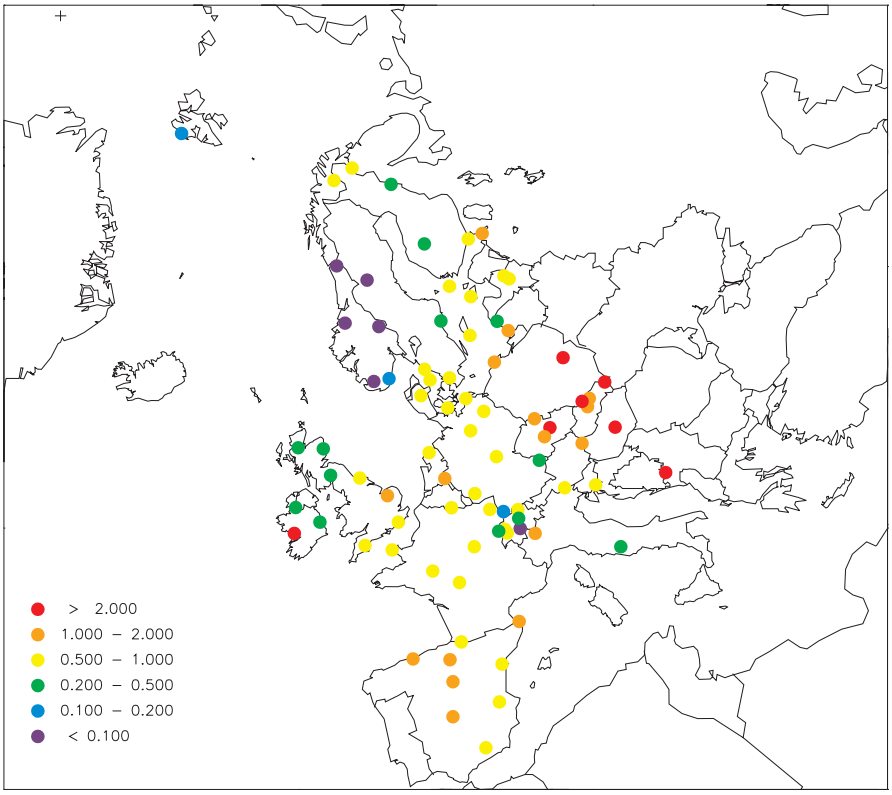

Figure 4.1: Geographical distribution of sulphur dioxide 1999. Unit: µg S/m^3.

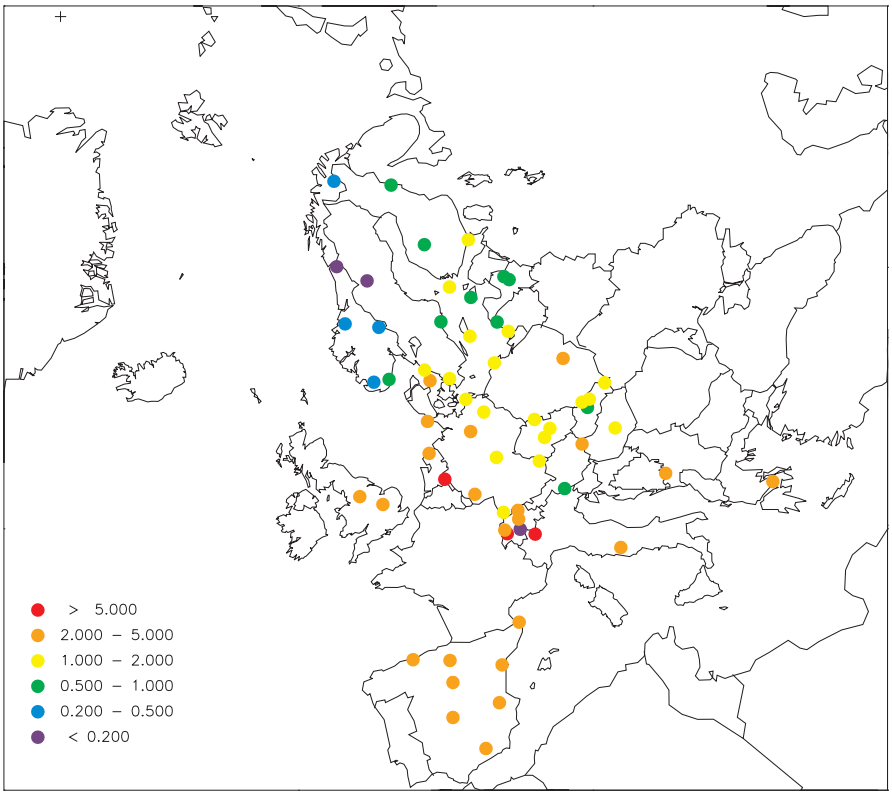

Figure 4.2: Geographical distribution of nitrogen dioxide 1999. Unit: µg N/m^3.

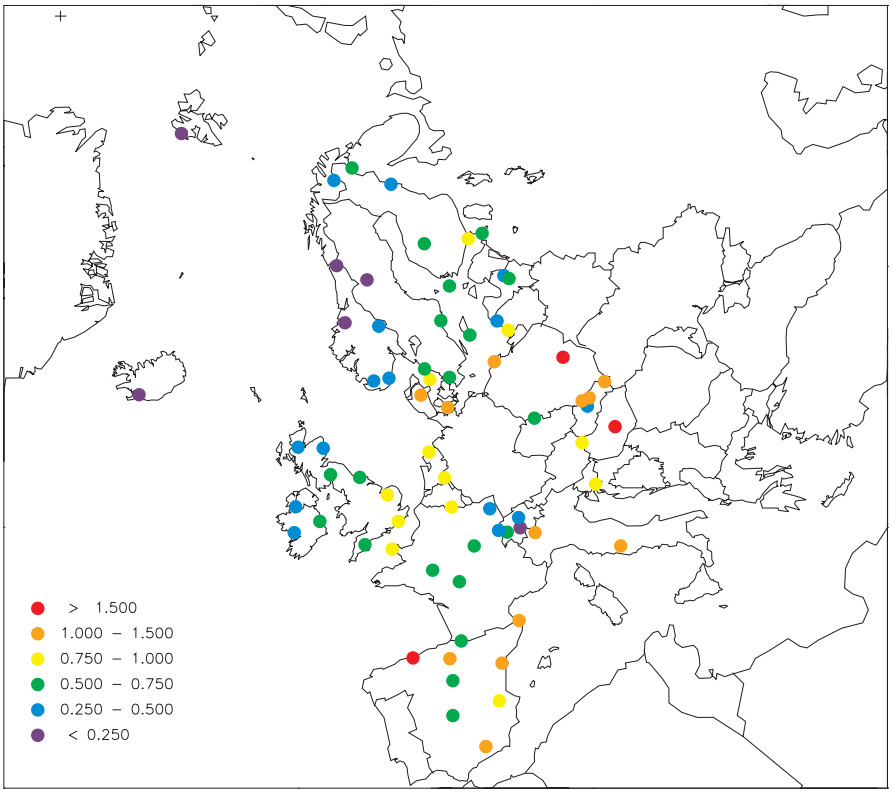

Figure 4.3: Geographical distribution of sulphate in aerosols 1999. Unit: µg S/m^3.

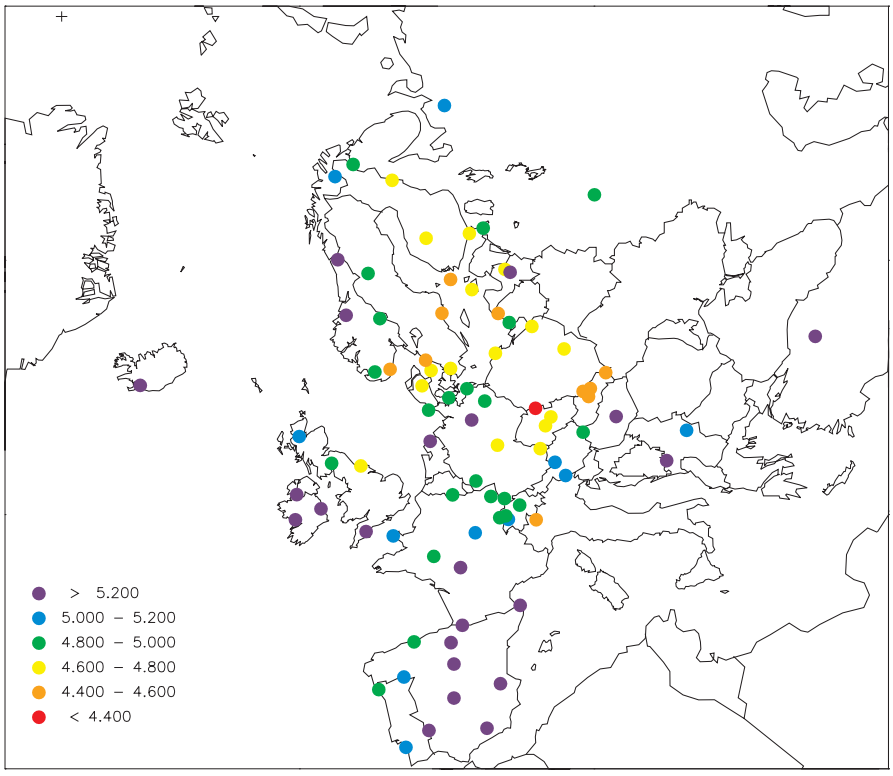

Figure 4.4: Geographical distribution of pH in precipitation 1999. Unit: pH units.

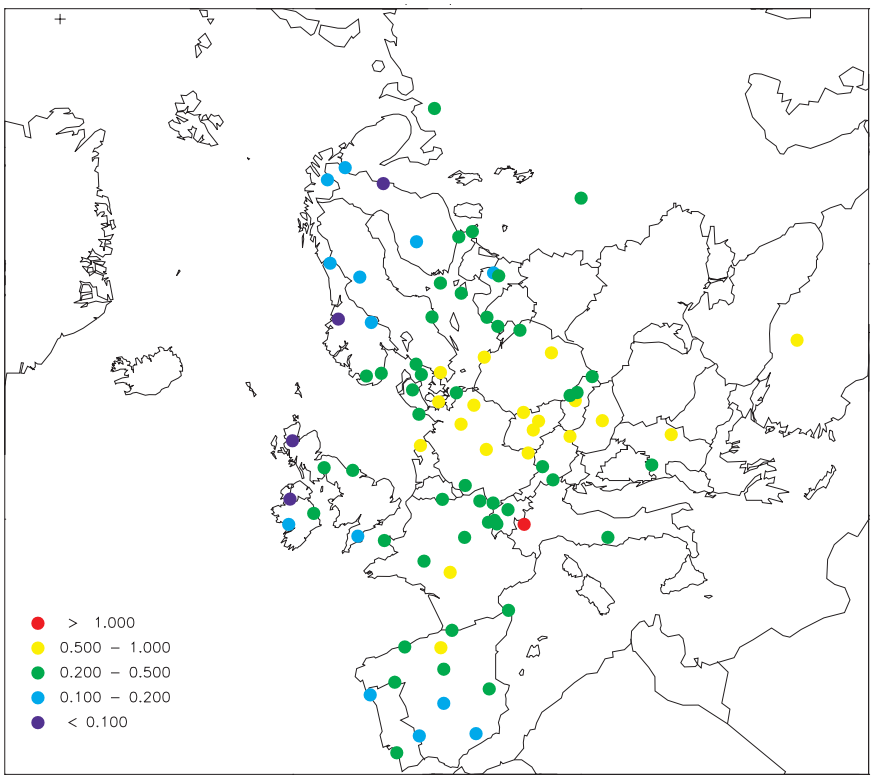

Figure 4.5: Geographical distribution of ammonium in precipitation 1999. Unit: mg N/l.

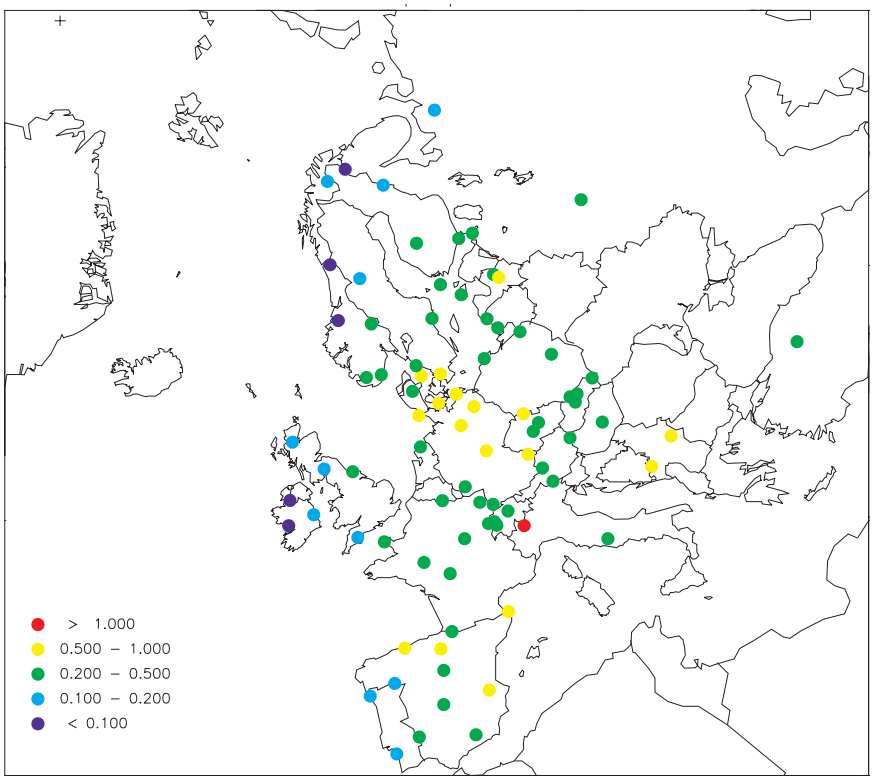

Figure 4.6: Geographical distribution of nitrate in precipitation 1999. Unit: mg N/l.

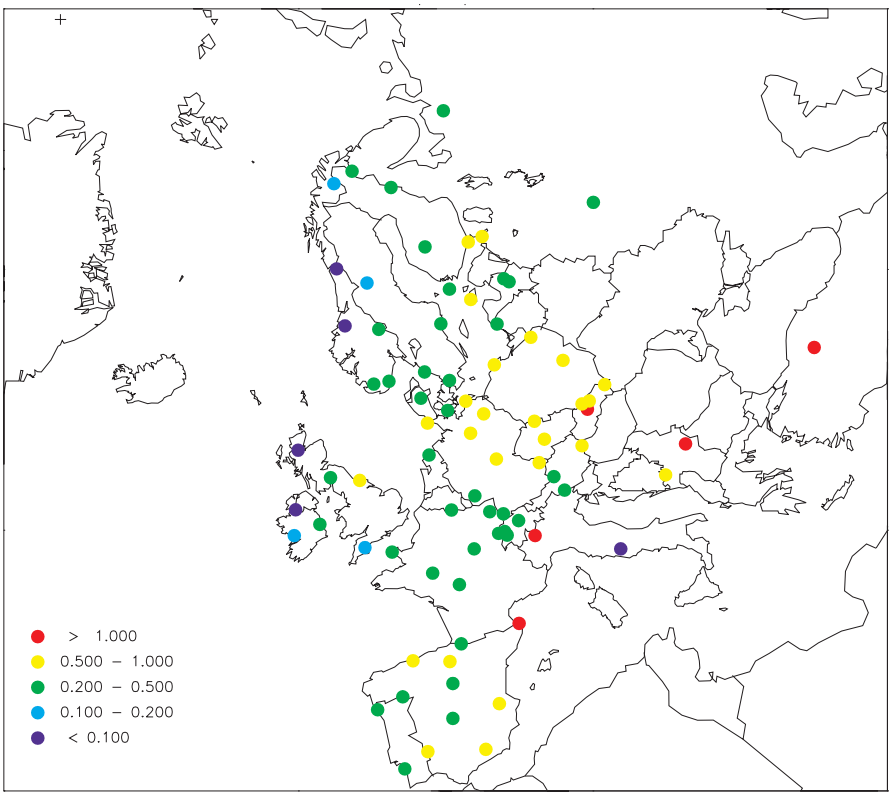

Figure 4.7: Geographical distribution of sulphate in precipitation 1999 (corrected for sea spray). Unit: µg S/m^3.

Annex 5

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Kjeller, Norwegian Institute for Air Research, 2000.

Annex 6

EMEP Data Quality Objectives (DQO)

10 % accuracy or better for oxidized sulphur and oxidized nitrogen in single analysis in the laboratory,

15 % accuracy or better for other components in the laboratory,

0.05 units for pH,

15–25 % uncertainty for the combined sampling and chemical analysis (components to be specified later),

90 % data completeness of the daily values.

The targets, with respect to accuracy in the laboratory, for the very lowest concentrations of the main components in precipitation follow the WMO GAW (1992) recommendations for regional stations:

	Accuracy	
SO_4^{2-}	0.032 mg S/l	(1 µmol/l)
NO_3^-	0.014 mg N/l	(1 µmol/l)
NH_4^+	0.028 mg N/l	(2 µmol/l)
Cl^-	0.107 mg Cl/l	(3 µmol/l)
Ca^{2+}	0.012 mg Ca/l	(0.3 µmol/l)
K^+	0.012 mg K/l	(0.3 µmol/l)
Mg^{2+}	0.007 mg Mg/l	(0.3 µmol/l)
Na^+	0.007 mg Na/l	(0.3 µmol/l)

The targets for the wet analysis of components extracted from air filters are the same as for precipitation. For SO_2 the limit above for sulphate is valid for the medium volume method with impregnated filter. For NO_2 determined as NO_2^- in solution the accuracy for the lowest concentrations is 0.01 mg N/l.

The aim for data completeness is valid for the current definition used by the CCC. This definition will, however, be harmonised with the WMO GAW definition and modified.

It is understood that there is a need to investigate additional uncertainty caused by local influence on the measurements at the sites (not representative siting).

It may be necessary to reconsider the DQO for volatile organic components (VOC), persistent organic pollutants (POP), and trace metals (HM).