



EMEP – 40th intercomparison of analytical methods - 2022

Laboratory 10, Air Quality Reference Centre (Hungary)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.086	0.074	0.076	0.004	2.235	Q
C2		0.132	0.111	0.113	0.006	3.058	Q
C3	µg N/ml	0.185	0.185	0.187	0.007	-0.238	S
C4		0.273	0.241	0.244	0.009	3.319	Q

* Z score is unitless

† EMEP quality norm; letters indicate:

S – Satisfactory: Your result deviates less than ±10% of the expected value

Q – Questionable: Your result deviates between ±10-20% of the expected value

U – Unsatisfactory: Your result deviates more than ±20% of the expected value

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for more statistics, Youden plots, updated expected values ect: <http://www.nilu.no/projects/ccc/intercomparison.html>

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PO Box 100
NO-2027 KJELLER, Norway
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50
Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

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Laboratory 12, Met Eireann, Dublin (Ireland)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.075	0.074	0.076	0.004	-0.293	S
C2		0.111	0.111	0.113	0.006	-0.343	S
C3	µg N/ml	0.184	0.185	0.187	0.007	-0.39	S
C4		0.24	0.241	0.244	0.009	-0.433	S

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
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Laboratory 15, Norwegian Institute for Air Research NILU (Norway)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.068	0.074	0.076	0.004	-1.901	S
C2		0.101	0.111	0.113	0.006	-1.962	S
C3		0.172	0.185	0.187	0.007	-2.216	S
C4		0.225	0.241	0.244	0.009	-2.138	S

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
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Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
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Laboratory 16, Institute of Meteorology and Water Management, Warsaw (Poland)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.076	0.074	0.076	0.004	-0.063	S
C2		0.113	0.111	0.113	0.006	-0.019	S
C3	µg N/ml	0.183	0.185	0.187	0.007	-0.542	S
C4		0.241	0.241	0.244	0.009	-0.319	S

* Z score is unitless

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Laboratory 20, Swedish Environmental Research Institute IVL, Gothenburg (Sweden)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.075	0.074	0.076	0.004	-0.384	S
C2		0.11	0.111	0.113	0.006	-0.505	S
C3		0.175	0.185	0.187	0.007	-1.76	S
C4		0.237	0.241	0.244	0.009	-0.774	S

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
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Laboratory 23, Ricardo-AEA Limited (United Kingdom)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.073	0.074	0.076	0.004	-0.821	S
C2		0.11	0.111	0.113	0.006	-0.505	S
C3		0.186	0.185	0.187	0.007	-0.055	S
C4		0.244	0.241	0.244	0.009	0.022	S

* Z score is unitless

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PO Box 100
NO-2027 KJELLER, Norway
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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
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Laboratory 31, Slovak Hydrometeorological Institute (Slovakia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.079	0.074	0.076	0.004	0.627	S
C2		0.117	0.111	0.113	0.006	0.629	S
C3		0.196	0.185	0.187	0.007	1.436	S
C4		0.253	0.241	0.244	0.009	1.045	S

* Z score is unitless

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Framsenteret / The Fram Centre
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Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

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Laboratory 32, Center for Physical Sciences and Technology (Lithuania)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.077	0.074	0.076	0.004	0.167	S
C2		0.118	0.111	0.113	0.006	0.79	S
C3		0.193	0.185	0.187	0.007	0.98	S
C4		0.253	0.241	0.244	0.009	1.045	S

* Z score is unitless

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PO Box 100
NO-2027 KJELLER, Norway
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Besøk/visit: Instituttveien 18, 2007 Kjeller

NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Laboratory 33, Latvian Environment, Geology and Meteorology Centre (Latvia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.09	0.074	0.076	0.004	3.109	U
C2		0.12	0.111	0.113	0.006	1.147	S
C3		0.18	0.185	0.187	0.007	-0.999	S
C4		0.241	0.241	0.244	0.009	-0.342	S

* Z score is unitless

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Laboratory 34, Ministry of Environment and Urbanisation (Turkey)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0	0.074	0.076	0.004	-17.529	U
C2		0.097	0.111	0.113	0.006	-2.61	Q
C3		0.183	0.185	0.187	0.007	-0.542	S
C4		0.228	0.241	0.244	0.009	-1.797	S

* Z score is unitless

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Laboratory 110, Thüringer Landesamt für Landwirtschaft und ländlichen Raum (TLLLR) (Germany)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.075	0.074	0.076	0.004	-0.293	S
C2		0.114	0.111	0.113	0.006	0.143	S
C3	µg N/ml	0.19	0.185	0.187	0.007	0.523	S
C4		0.243	0.241	0.244	0.009	-0.092	S

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Laboratory 183, Public health institute Uzice(Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.077	0.074	0.076	0.004	0.167	S
C2		0.116	0.111	0.113	0.006	0.467	S
C3		0.19	0.185	0.187	0.007	0.523	S
C4		0.248	0.241	0.244	0.009	0.477	S

* Z score is unitless

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Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.074	0.074	0.076	0.004	-0.522	S
C2		0.11	0.111	0.113	0.006	-0.505	S
C3		0.185	0.185	0.187	0.007	-0.238	S
C4		0.241	0.241	0.244	0.009	-0.319	S

* Z score is unitless

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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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EMEP – 40th intercomparison of analytical methods - 2022

Laboratory 185, Public Health Centre - Cacak, Department for Sanitary Chemistry and Ecotoxicology
(Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.075	0.074	0.076	0.004	-0.293	S
C2		0.112	0.111	0.113	0.006	-0.181	S
C3	µg N/ml	0.186	0.185	0.187	0.007	-0.086	S
C4		0.243	0.241	0.244	0.009	-0.092	S

* Z score is unitless

[†] EMEP quality norm; letters indicate:

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PO Box 100
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Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
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e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Foretaksnr./Enterprise no. 941705561



EMEP – 40th intercomparison of analytical methods - 2022

Laboratory 187, Public Health Institute - Nis, Department for Sanitary Chemistry (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.07	0.074	0.076	0.004	-1.442	S
C2		0.11	0.111	0.113	0.006	-0.505	S
C3		0.191	0.185	0.187	0.007	0.675	S
C4		0.245	0.241	0.244	0.009	0.136	S

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
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EMEP – 40th intercomparison of analytical methods - 2022

Laboratory 188, Institute of Public Health - Krusevac (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.077	0.074	0.076	0.004	0.167	S
C2		0.113	0.111	0.113	0.006	-0.019	S
C3		0.189	0.185	0.187	0.007	0.371	S
C4		0.247	0.241	0.244	0.009	0.363	S

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Laboratory 189, Institute of Public Health - Kikinda (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.074	0.074	0.076	0.004	-0.522	S
C2		0.113	0.111	0.113	0.006	-0.019	S
C3		0.187	0.185	0.187	0.007	0.067	S
C4		0.245	0.241	0.244	0.009	0.136	S

* Z score is unitless

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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
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Laboratory 193, Institute of Public Health of Vojvodina (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.077	0.074	0.076	0.004	0.167	S
C2		0.112	0.111	0.113	0.006	-0.181	S
C3	µg N/ml	0.18	0.185	0.187	0.007	-0.999	S
C4		0.233	0.241	0.244	0.009	-1.229	S

* Z score is unitless

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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
Bank: 5102.05.19030
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Laboratory 198, Institute for public health - Sremska Mitrovica (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.075	0.074	0.076	0.004	-0.293	S
C2		0.111	0.111	0.113	0.006	-0.343	S
C3		0.18	0.185	0.187	0.007	-0.999	S
C4		0.243	0.241	0.244	0.009	-0.092	S

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Laboratory 200, FUB AG (Switzerland)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.074	0.074	0.076	0.004	-0.522	S
C2		0.111	0.111	0.113	0.006	-0.343	S
C3		0.185	0.185	0.187	0.007	-0.238	S
C4		0.241	0.241	0.244	0.009	-0.319	S

* Z score is unitless

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PO Box 100
NO-2027 KJELLER, Norway
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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Laboratory 201, Public Health Institute "Timok" (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.074	0.074	0.076	0.004	-0.522	S
C2		0.113	0.111	0.113	0.006	-0.019	S
C3	µg N/ml	0.206	0.185	0.187	0.007	2.958	Q
C4		0.239	0.241	0.244	0.009	-0.547	S

* Z score is unitless

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PO Box 100
NO-2027 KJELLER, Norway
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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Laboratory 203, The Public Health Institute Vranje (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂ <i>µg N/ml</i>	0.08	0.074	0.076	0.004	0.857	S
C2		0.118	0.111	0.113	0.006	0.79	S
C3		0.19	0.185	0.187	0.007	0.523	S
C4		0.25	0.241	0.244	0.009	0.704	S

* Z score is unitless

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NILU – Norsk institutt for luftforskning
Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
nilu-tromso@nilu.no
Internet: www.nilu.no
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Laboratory 208, VINCA - Vinca Institute of Nuclear Sciences (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm [†]
C1	NO ₂	0.112	0.074	0.076	0.004	8.257	U
C2		0.165	0.111	0.113	0.006	8.466	U
C3	µg N/ml	0.269	0.185	0.187	0.007	12.607	U
C4		0.361	0.241	0.244	0.009	13.325	U

* Z score is unitless

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Framsenteret / The Fram Centre
NO-9296 TROMSØ, Norway
Phone: +47 77 75 03 75/Fax: +47 77 75 03 76
Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

e-mail: nilu@nilu.no
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Internet: www.nilu.no
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