

## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 10, Institute for Atmospheric Physics (Hungary)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.097	0.092	0.094	0.003	1.054	S
C2		0.105	0.099	0.102	0.004	0.809	S
C3		0.175	0.163	0.167	0.007	1.165	S
C4		0.184	0.17	0.175	0.007	1.258	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

Q – Questionable: Your result deviates between  $\pm 10\text{-}20\%$  of the expected value

U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

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

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Besøk/visit: Instituttveien 18, 2007 Kjeller

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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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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> µg N/ml	0.088	0.092	0.094	0.003	-2.039	S
C2		0.093	0.099	0.102	0.004	-2.47	S
C3		0.143	0.163	0.167	0.007	-3.639	Q
C4		0.148	0.17	0.175	0.007	-3.965	Q

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.094	0.092	0.094	0.003	0.023	S
C2		0.103	0.099	0.102	0.004	0.262	S
C3		0.168	0.163	0.167	0.007	0.114	S
C4		0.173	0.17	0.175	0.007	-0.338	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 19, Centro Nacional de Sanidad Ambiental (Spain)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.096	0.092	0.094	0.003	0.711	S
C2		0.103	0.099	0.102	0.004	0.262	S
C3		0.165	0.163	0.167	0.007	-0.336	S
C4		0.174	0.17	0.175	0.007	-0.193	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.092	0.092	0.094	0.003	-0.664	S
C2		0.1	0.099	0.102	0.004	-0.557	S
C3		0.167	0.163	0.167	0.007	-0.036	S
C4		0.176	0.17	0.175	0.007	0.098	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.089	0.092	0.094	0.003	-1.695	S
C2		0.095	0.099	0.102	0.004	-1.923	S
C3		0.159	0.163	0.167	0.007	-1.237	S
C4		0.168	0.17	0.175	0.007	-1.063	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.097	0.092	0.094	0.003	1.054	S
C2		0.106	0.099	0.102	0.004	1.082	S
C3		0.176	0.163	0.167	0.007	1.315	S
C4		0.182	0.17	0.175	0.007	0.968	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 32, Atmospheric Pollution Research Laboratory, Institute of Physics, Vilnius (Lithuania)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.101	0.092	0.094	0.003	2.429	S
C2		0.11	0.099	0.102	0.004	2.175	Q
C3		0.174	0.163	0.167	0.007	1.015	S
C4		0.181	0.17	0.175	0.007	0.823	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 33, Environmental Pollution Observ. 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 <sup>‡</sup>
C1	NO <sub>2</sub> µg N/ml	0.097	0.092	0.094	0.003	1.054	S
C2		0.104	0.099	0.102	0.004	0.454	S
C3		0.168	0.163	0.167	0.007	0.084	S
C4		0.178	0.17	0.175	0.007	0.344	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.008	0.092	0.094	0.003	-29.534	U
C2		0.018	0.099	0.102	0.004	-22.96	U
C3		0.073	0.163	0.167	0.007	-14.149	U
C4		0.093	0.17	0.175	0.007	-11.946	U

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 39, Environmental Monitoring Laboratory, Institute of Environmental Protection (Poland)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.096	0.092	0.094	0.003	0.711	S
C2		0.098	0.099	0.102	0.004	-1.104	S
C3		0.167	0.163	0.167	0.007	-0.036	S
C4		0.174	0.17	0.175	0.007	-0.193	S

\* Z score is unitless

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 42, State Hydrometeorological Service, Chisnau (Moldova)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score *	EMEP quality norm <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.05	0.092	0.094	0.003	-15.099	U
C2		0.052	0.099	0.102	0.004	-13.671	U
C3		0.073	0.163	0.167	0.007	-14.149	U
C4		0.077	0.17	0.175	0.007	-14.268	U

\* Z score is unitless

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nilu-tromso@nilu.no  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.09	0.092	0.094	0.003	-1.351	S
C2		0.104	0.099	0.102	0.004	0.535	S
C3		0.168	0.163	0.167	0.007	0.114	S
C4		0.176	0.17	0.175	0.007	0.098	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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

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Phone: +47 77 75 03 75/Fax: +47 77 75 03 76  
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nilu-tromso@nilu.no  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 184, Institute for Public Health Pozarevac (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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.094	0.092	0.094	0.003	0.023	S
C2		0.103	0.099	0.102	0.004	0.262	S
C3		0.168	0.163	0.167	0.007	0.114	S
C4		0.176	0.17	0.175	0.007	0.098	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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

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Framsenteret / The Fram Centre  
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Phone: +47 77 75 03 75/Fax: +47 77 75 03 76  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>⌘</sup>
C1	NO <sub>2</sub>  µg N/ml	0.093	0.092	0.094	0.003	-0.32	S
C2		0.1	0.099	0.102	0.004	-0.557	S
C3		0.165	0.163	0.167	0.007	-0.336	S
C4		0.175	0.17	0.175	0.007	-0.048	S

\* Z score is unitless

⌘ EMEP quality norm; the letters in the column indicates:

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Framsenteret / The Fram Centre  
NO-9296 TROMSØ, Norway  
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](http://www.nilu.no)  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.092	0.092	0.094	0.003	-0.664	S
C2		0.103	0.099	0.102	0.004	0.262	S
C3		0.168	0.163	0.167	0.007	0.114	S
C4		0.172	0.17	0.175	0.007	-0.483	S

\* Z score is unitless

‡ EMEP quality norm; the letters in the column indicates:

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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

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Framsenteret / The Fram Centre  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.094	0.092	0.094	0.003	0.023	S
C2		0.1	0.099	0.102	0.004	-0.557	S
C3		0.166	0.163	0.167	0.007	-0.186	S
C4		0.175	0.17	0.175	0.007	-0.048	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> µg N/ml	0.093	0.092	0.094	0.003	-0.32	S
C2		0.101	0.099	0.102	0.004	-0.284	S
C3		0.167	0.163	0.167	0.007	-0.036	S
C4		0.177	0.17	0.175	0.007	0.243	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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

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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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nilu-tromso@nilu.no  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 192, The Public Health Institute Sabac (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 <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.093	0.092	0.094	0.003	-0.32	S
C2		0.1	0.099	0.102	0.004	-0.557	S
C3		0.17	0.163	0.167	0.007	0.414	S
C4		0.177	0.17	0.175	0.007	0.243	S

\* Z score is unitless

‡ EMEP quality norm; the letters in the column indicates:

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

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Framsenteret / The Fram Centre  
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Phone: +47 77 75 03 75/Fax: +47 77 75 03 76  
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nilu-tromso@nilu.no  
**Internet:** [www.nilu.no](http://www.nilu.no)  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.096	0.092	0.094	0.003	0.711	S
C2		0.102	0.099	0.102	0.004	-0.011	S
C3		0.167	0.163	0.167	0.007	-0.036	S
C4		0.178	0.17	0.175	0.007	0.388	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

Q – Questionable: Your result deviates between  $\pm 10\text{-}20\%$  of the expected value

U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

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

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nilu-tromso@nilu.no  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 194, Institute of Public Health - Zrenjanin (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 <sup>†</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.096	0.092	0.094	0.003	0.814	S
C2		0.108	0.099	0.102	0.004	1.71	S
C3		0.178	0.163	0.167	0.007	1.646	S
C4		0.185	0.17	0.175	0.007	1.476	S

\* Z score is unitless

<sup>†</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

Q – Questionable: Your result deviates between  $\pm 10\text{-}20\%$  of the expected value

U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

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

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 196, Institute of Public Health Leskovac (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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.092	0.092	0.094	0.003	-0.664	S
C2		0.101	0.099	0.102	0.004	-0.284	S
C3		0.163	0.163	0.167	0.007	-0.637	S
C4		0.171	0.17	0.175	0.007	-0.628	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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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

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NO-2027 KJELLER, Norway  
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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

**e-mail:** nilu@nilu.no  
nilu-tromso@nilu.no  
**Internet:** [www.nilu.no](http://www.nilu.no)  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 197, Institute of Occupational Health - Novi Sad (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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.092	0.092	0.094	0.003	-0.664	S
C2		0.104	0.099	0.102	0.004	0.535	S
C3		0.163	0.163	0.167	0.007	-0.637	S
C4		0.175	0.17	0.175	0.007	-0.048	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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

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PO Box 100  
NO-2027 KJELLER, Norway  
Phone: +47 63 89 80 00/Fax: +47 63 89 80 50  
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NILU – Norsk institutt for luftforskning  
Framsenteret / The Fram Centre  
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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  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.093	0.092	0.094	0.003	-0.32	S
C2		0.101	0.099	0.102	0.004	-0.284	S
C3		0.17	0.163	0.167	0.007	0.414	S
C4		0.177	0.17	0.175	0.007	0.243	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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NILU – Norsk institutt for luftforskning  
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](http://www.nilu.no)  
**Bank:** 5102.05.19030  
**Foretaksnr./Enterprise no.** 941705561

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

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 <sup>‡</sup>
C1	NO <sub>2</sub> <i>µg N/ml</i>	0.097	0.092	0.094	0.003	1.054	S
C2		0.105	0.099	0.102	0.004	0.809	S
C3		0.172	0.163	0.167	0.007	0.715	S
C4		0.179	0.17	0.175	0.007	0.533	S

\* Z score is unitless

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NILU – Norsk institutt for luftforskning  
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](http://www.nilu.no)  
**Bank:** 5102.05.19030  
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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 204, Institute for Public Health "Pomoravlje" Cuprija (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 <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.092	0.092	0.094	0.003	-0.664	S
C2		0.1	0.099	0.102	0.004	-0.557	S
C3		0.164	0.163	0.167	0.007	-0.486	S
C4		0.174	0.17	0.175	0.007	-0.193	S

\* Z score is unitless

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NILU – Norsk institutt for luftforskning  
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](http://www.nilu.no)  
**Bank:** 5102.05.19030  
**Foretaksnr./Enterprise no.** 941705561

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## EMEP – 35<sup>th</sup> intercomparison of analytical methods

Laboratory 206, Public Health Institute Valjevo (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 <sup>‡</sup>
C1	NO <sub>2</sub>  µg N/ml	0.094	0.092	0.094	0.003	0.023	S
C2		0.102	0.099	0.102	0.004	-0.011	S
C3		0.17	0.163	0.167	0.007	0.414	S
C4		0.178	0.17	0.175	0.007	0.388	S

\* Z score is unitless

<sup>‡</sup> EMEP quality norm; the letters in the column indicates:

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NILU – Norsk institutt for luftforskning  
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

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