

EMEP – 37th intercomparison of analytical methods

Laboratory 3, Czech Hydrometeorological Institute, Praha (Czech Republic)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 18.255 | 19.6 | 19.482 | 1.581 | -0.776 | S |
| J4 | | 19.835 | 21.3 | 20.923 | 1.383 | -0.787 | S |
| J5 | | 22.215 | 23.3 | 22.667 | 1.473 | -0.307 | S |
| J6 | | 18.045 | 18.8 | 18.196 | 1.912 | -0.079 | S |

¥ Reported values are blank corrected. Corrections are done by subtracting the blank value when a value was reported or 1/2MDL when MDL was reported.

* Z score is unitless

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

S – Satisfactory: Your result deviates less than ±20% of the expected value

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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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EMEP – 37th intercomparison of analytical methods

Laboratory 4, Aarhus University, Department of Environmental Science (Denmark)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 18.595 | 19.6 | 19.482 | 1.581 | -0.561 | S |
| J4 | | 20.545 | 21.3 | 20.923 | 1.383 | -0.273 | S |
| J5 | | 22.145 | 23.3 | 22.667 | 1.473 | -0.354 | S |
| J6 | | 13.115 | 18.8 | 18.196 | 1.912 | -2.658 | Q |

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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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EMEP – 37th intercomparison of analytical methods

Laboratory 5, Finnish Meteorological Institute. Air Quality Department (Finland)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 18.33 | 19.6 | 19.482 | 1.581 | -0.729 | S |
| J4 | | 20.495 | 21.3 | 20.923 | 1.383 | -0.31 | S |
| J5 | | 22.765 | 23.3 | 22.667 | 1.473 | 0.067 | S |
| J6 | | 18.195 | 18.8 | 18.196 | 1.912 | -0.001 | S |

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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
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Laboratory 6, SGS Multilab (France)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 18.025 | 19.6 | 19.482 | 1.581 | -0.922 | S |
| J4 | | 19.035 | 21.3 | 20.923 | 1.383 | -1.366 | S |
| J5 | | 21.045 | 23.3 | 22.667 | 1.473 | -1.101 | S |
| J6 | | 16.465 | 18.8 | 18.196 | 1.912 | -0.905 | S |

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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 8, Umweltbundesamt, Langen (Germany)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 19.9 | 19.6 | 19.482 | 1.581 | 0.264 | S |
| J4 | | 21.3 | 21.3 | 20.923 | 1.383 | 0.273 | S |
| J5 | | 22.6 | 23.3 | 22.667 | 1.473 | -0.045 | S |
| J6 | | 19 | 18.8 | 18.196 | 1.912 | 0.42 | S |

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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
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 10, Institute for Atmospheric Physics (Hungary)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 0.484 | 19.6 | 19.482 | 1.581 | -12.017 | U |
| J4 | | 0.538 | 21.3 | 20.923 | 1.383 | -14.744 | U |
| J5 | | 0.597 | 23.3 | 22.667 | 1.473 | -14.988 | U |
| J6 | | 0.459 | 18.8 | 18.196 | 1.912 | -9.277 | U |

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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

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Laboratory 15, Norwegian Institute for Air Research NILU (Norway)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 22.56 | 19.6 | 19.482 | 1.581 | 1.947 | S |
| J4 | | 22.64 | 21.3 | 20.923 | 1.383 | 1.242 | S |
| J5 | | 23.66 | 23.3 | 22.667 | 1.473 | 0.675 | S |
| J6 | | 18.65 | 18.8 | 18.196 | 1.912 | 0.237 | S |

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Framsenteret / The Fram Centre
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Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

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

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 19.8 | 19.6 | 19.482 | 1.581 | 0.201 | S |
| J4 | | 20.85 | 21.3 | 20.923 | 1.383 | -0.053 | S |
| J5 | | 23.06 | 23.3 | 22.667 | 1.473 | 0.267 | S |
| J6 | | 19.74 | 18.8 | 18.196 | 1.912 | 0.807 | S |

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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 19, Centro Nacional de Sanidad Ambiental (Spain)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 20.464 | 19.6 | 19.482 | 1.581 | 0.621 | S |
| J4 | | 21.967 | 21.3 | 20.923 | 1.383 | 0.755 | S |
| J5 | | 23.88 | 23.3 | 22.667 | 1.473 | 0.824 | S |
| J6 | | 19.668 | 18.8 | 18.196 | 1.912 | 0.77 | S |

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

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 19.719 | 19.6 | 19.482 | 1.581 | 0.15 | S |
| J4 | | 20.919 | 21.3 | 20.923 | 1.383 | -0.003 | S |
| J5 | | 22.519 | 23.3 | 22.667 | 1.473 | -0.1 | S |
| J6 | | 18.619 | 18.8 | 18.196 | 1.912 | 0.221 | S |

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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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Internet: www.nilu.no
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Laboratory 31, Slovak Hydrometeorological Institute (Slovakia)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 17.575 | 19.6 | 19.482 | 1.581 | -1.206 | S |
| J4 | | 20.665 | 21.3 | 20.923 | 1.383 | -0.187 | S |
| J5 | | 21.155 | 23.3 | 22.667 | 1.473 | -1.027 | S |
| J6 | | 17.295 | 18.8 | 18.196 | 1.912 | -0.471 | S |

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NO-9296 TROMSØ, Norway
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Laboratory 32, Atmospheric Pollution Research Laboratory, Institute of Physics, Vilnius (Lithuania)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 19.55 | 19.6 | 19.482 | 1.581 | 0.043 | S |
| J4 | | 21.57 | 21.3 | 20.923 | 1.383 | 0.468 | S |
| J5 | | 22.76 | 23.3 | 22.667 | 1.473 | 0.063 | S |
| J6 | | 17.99 | 18.8 | 18.196 | 1.912 | -0.108 | S |

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* 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
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

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EMEP – 37th intercomparison of analytical methods

Laboratory 33, Environmental Pollution Observ. Centre (Latvia)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 19.611 | 19.6 | 19.482 | 1.581 | 0.081 | S |
| J4 | | 20.016 | 21.3 | 20.923 | 1.383 | -0.656 | S |
| J5 | | 22.941 | 23.3 | 22.667 | 1.473 | 0.186 | S |
| J6 | | 18.456 | 18.8 | 18.196 | 1.912 | 0.136 | S |

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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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EMEP – 37th intercomparison of analytical methods

Laboratory 38, Estonian Environmental Research Centre, Tallinn (Estonia)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 23.287 | 19.6 | 19.482 | 1.581 | 2.407 | S |
| J4 | | 24.727 | 21.3 | 20.923 | 1.383 | 2.751 | S |
| J5 | | 27.107 | 23.3 | 22.667 | 1.473 | 3.015 | S |
| J6 | | 22.477 | 18.8 | 18.196 | 1.912 | 2.239 | S |

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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
Bank: 5102.05.19030
Foretaksnr./Enterprise no. 941705561

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EMEP – 37th intercomparison of analytical methods

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

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 19.45 | 19.6 | 19.482 | 1.581 | -0.02 | S |
| J4 | | 21.01 | 21.3 | 20.923 | 1.383 | 0.063 | S |
| J5 | | 22.51 | 23.3 | 22.667 | 1.473 | -0.106 | S |
| J6 | | 18.49 | 18.8 | 18.196 | 1.912 | 0.154 | S |

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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
Bank: 5102.05.19030
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EMEP – 37th intercomparison of analytical methods

Laboratory 158, Asia Center for Air Pollution Research (ACAP) (Japan)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 18.16 | 19.6 | 19.482 | 1.581 | -0.836 | S |
| J4 | | 19.36 | 21.3 | 20.923 | 1.383 | -1.131 | S |
| J5 | | 20.96 | 23.3 | 22.667 | 1.473 | -1.159 | S |
| J6 | | 17.36 | 18.8 | 18.196 | 1.912 | -0.437 | S |

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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
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EMEP – 37th intercomparison of analytical methods

Laboratory 200, FUB AG (Switzerland)

Ammonia on impregnated filters (J-samples)

| Sample name | Determinand | Reported value [¥] | Expected value | Mean value | Standard deviation | Z score [*] | EMEP quality norm [¤] |
|-------------|---------------------------------------|-----------------------------|----------------|------------|--------------------|----------------------|--------------------------------|
| J2 | NH ₃ <i>µg N/filter</i> | 18.435 | 19.6 | 19.482 | 1.581 | -0.662 | S |
| J4 | | 19.835 | 21.3 | 20.923 | 1.383 | -0.787 | S |
| J5 | | 21.345 | 23.3 | 22.667 | 1.473 | -0.898 | S |
| J6 | | 17.575 | 18.8 | 18.196 | 1.912 | -0.325 | S |

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NILU – Norsk institutt for luftforskning
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Besøk/visit: Hjalmar Johansens gt. 14, 9007 Tromsø

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