Environmental matrix reference materials

Waters

Code	Product	Unit

Drinking water

ERM-CA011 — Hard drinking water - Metals — 250 mL

Hard drinking water sourced from Teddington, UK, spiked with high purity metals standards to levels close to the EU/UK drinking water regulations (EC directive 98/83/EC).

Certified values

Al	197 µg/L	Cu	1970 µg/L	Na	40 mg/L
As	10.1 µg/L	Cr	48 µg/L	Ni	19.4 µg/L
B	950 µg/L	Fe	207 µg/L	Pb	24.7 µg/L
Ba	120 µg/L	K	7.5 mg/L	Sb	5.2 mg/L
Ca	89 mg/L	Mg	4.9 mg/L	Se	10.7 µg/L
Cd	4.94 µg/L	Mn	47 µg/L	Zn	586 µg/L

ERM-CA15 — Hard drinking water - Anions — 250 mL

Hard drinking water sourced from Teddington, UK, containing anions at concentrations close to the maximum permissible levels specified in EU/UK drinking water regulations (EC directive 98/83/EC).

Certified values

Cl	247 mg/L	Nitrate (as NO_3)	45 mg/L
F	1.3 mg/L	Sulfate (as SO_4^{2})	247 mg/L

ERM-CA016 — Soft drinking water - Anions — 250 mL

Soft drinking water sourced from Plymouth, UK, containing anions at concentrations corresponding to the maximum permissible levels specified in EU/UK drinking water regulations (EC directive 98/83/EC).

Certified values

Cl	250 mg/L	Nitrate (as NO_3)	48 mg/L
F	1.5 mg/L	Sulfate (as SO_4)	254 mg/L

NWBURTAP-90 — Diluted drinking water - Major ions and nutrients — 500 mL

Certified values

Alkalinity, Total (as $CaCO_3$)	46 mg/L	Hardness, Total (as $CaCO_3$)	65 mg/L
Ammonia (as N)	0.045 mg/L	Magnesium	4.1 mg/L
Calcium	18.9 mg/L	Nitrate + Nitrite (as N)	0.16 mg/L
Chloride	11.5 mg/L	pH	7.8
Conductivity (25°C)	164 µS/cm	Potassium	0.75 mg/L
Dissolved Inorganic Carbon (DIC)	10.9 mg/L	Silica (as Si)	0.26 mg/L
Dissolved Organic Carbon (DOC)	0.92 ml/L	Sodium	5.8 mg/L
Fluoride	0.56 mg/L	Sulfate (as SO_4)	13.9 mg/L

Indicative values for , Boron, Colour (Hazen units), Total Kjeldahl Nitrogen (as N)

Rainwater

NWAES-02 — A low pH acid rain sample - Major ions and nutrients — 500 mL

Combination of acid rainwater samples collected by the Atmospheric Environmental Service of Environment Canada. The values given are derived from Performance Evaluation (PE) studies and most of the 65 laboratories which participated are accredited and traceable to NIST.

Certified Values

Alkalinity Gran Tit'n (as $CaCO_3$)	-1.58mg/L	NO_3 (IC as N)	0.235 mg/L
Al	0.013 mg/L	NO_3+ NO_2 (as N)	0.237mg/L
NH_3 (as N)	0.16 mg/L	K	0.030 mg/L
Ca	0.164 mg/L	SiO_4 (as Si)	0.018 mg/L
Cl	0.12 mg/L	SO_4	1.8 mg/L
Mg	0.030 mg/L	Specific Conductance (µS/cm)	16.5
Na	0.067 mg/L	pH	4.53

Indicative values

Colour (Hazen units)	0.8	N (Total Kjeldahl., TKN)	0.18
DOC	0.40		

DOC = Dissolved Organic Carbon

BCR-408 — Simulated rainwater - Low contents — 100 mL

Produced by adding solutions of the required salts to ultra pure water. Sterilised using gamma irradiation

Certified values

Ca	7.68 µmol/kg	Mg	6.14 µmol/kg	SO_4	10.5 µmol/kg
Cl	67.3 µmol/kg	Na	42.0 µmol/kg		
H_3O	16.6 µmol/kg	NO_3	20.1 µmol/kg		

Indicative values for K, NH_4

BCR-409 — Simulated rainwater - High contents — 100 mL

Produced by adding solutions of the required salts to ultra pure water. Sterilised using gamma irradiation

Certified values

Ca	15.5 µmol/kg	K	4.25 µmol/kg	NH_4	106 µmol/kg
Cl	113 µmol/kg	Mg	12.3 µmol/kg	NO_3	78.1 µmol/kg
H_3O	48.0 µmol/kg	Na	82.9 µmol/kg	SO_4	53.2 µmol/kg

NWRAIN-97	**Rain sample - Major ions and nutrients** The sample was collected from a greenhouse roof in Grimsby, Ontario. It was centrifuged and filtered and several years later was modified to represent acid rain by addition of nitric and sulfuric acids. Many of the 52 laboratories which participated in the PE studies are accredited and traceable to NIST and other CRMs. Certified Values Alkalinity, Gran Tit'n (as $CaCO_3$) ..... 1.72 mg/L Al ..... 0.031 mg/L NH_3 (as N) ..... 0.18 mg/L Ca ..... 2.64 mg/L Cl ..... 0.526 mg/L DOC ..... 0.75 Mg ..... 0.934 mg/L NO_3(IC, as N) ..... 2.09 mg/L Total Kjeldahl Nitrogen (TKN) ..... 2.08 mg/L $NO_3 + NO_2$ (as N) ..... 2.08 mg/L K ..... 0.153 mg/L SiO_4 (as Si) ..... 0.111 mg/L Na ..... 0.276 mg/L SO_4 ..... 5.28 mg/L pH ..... 4.50 Specific Conductance ..... 43.8 µS/cm Indicative values for Colour (Hazen units), DIC and	500 mL

Fresh water

LGC6019	**River water - Trace elements** Collected from the River Thames downstream of Henley-on-Thames at Aston, U.K. Filtered at 0.7 µm and then at 0.45 µm. Stabilised at pH 2 by the addition of concentrated HNO_3. Certified values Al ..... 73 µg/L Ca ..... 109 mg/L Cd ..... 0.11 µg/L Cr ..... 0.78 µg/L Cu ..... 15.4 µg/L Fe ..... 287 µg/L K ..... 4.78 mg/L Mg ..... 4.62 mg/L Na ..... 24.7 mg/L Pb ..... 5.2 µg/L Zn ..... 59.7 µg/L	250 mL
BCR-480	**Fresh water - Nitrate, high level** Produced by adding a solution of the required salt to ultra pure water. Final pH was around 6.8 Certified value NO_3 ..... 885 µmol/kg	100 mL
NIST-1643e	**Simulated fresh water - Trace elements** NIST-1643e simulates the elemental composition of fresh water. Nitric acid is present at a concentration of approximately 0.8 mol/L to stabilise the trace elements. Certified values Ag ..... 1.036 µg/kg ..... 1.062 µg/L Al ..... 138.33 µg/kg ..... 141.8 µg/L As ..... 58.98 µg/kg ..... 60.45 µg/L B ..... 154.0 µg/kg ..... 157.9 µg/L Ba ..... 531.0 µg/kg ..... 544.2 µg/L Be ..... 13.64 µg/kg ..... 13.98 µg/L Bi ..... 13.75 µg/kg ..... 14.09 µg/L Ca ..... 31500 µg/kg ..... 32300 µg/L Cd ..... 6.408 µg/kg ..... 6.568 µg/L Cr ..... 19.90 µg/kg ..... 20.40 µg/L Co ..... 26.40 µg/kg ..... 27.06 µg/L Cu ..... 22.20 µg/kg ..... 22.76 µg/L Fe ..... 95.7 µg/kg ..... 98.1 µg/L K ..... 1984 µg/kg ..... 2034 µg/L Li ..... 17.0 µg/kg ..... 17.4 µg/L Mg ..... 7841 µg/kg ..... 8037 µg/L Mn ..... 38.02 µg/kg ..... 38.97 µg/L Mo ..... 118.5 µg/kg ..... 121.4 µg/L Na ..... 20230 µg/kg ..... 20740 µg/L Ni ..... 60.89 µg/kg ..... 62.41 µg/L Pb ..... 19.15 µg/kg ..... 19.63 µg/L Rb ..... 13.80 µg/kg ..... 14.14 µg/L Sb ..... 56.88 µg/kg ..... 58.30 µg/L Se ..... 11.68 µg/kg ..... 11.97 µg/L Sr ..... 315.2 µg/kg ..... 323.1 µg/L Te ..... 1.07 µg/kg ..... 1.09 µg/L Tl ..... 7.263 µg/kg ..... 7.445 µg/L V ..... 36.93 µg/kg ..... 37.86 µg/L Zn ..... 76.5 µg/kg ..... 78.5 µg/L	250 mL
NIST-1641d	**Natural water - Mercury** Mercury in 2% (v/v) HNO_3 initially stabilised with 1 mg/kg gold Certified value: ..... 1.590 mg/kg	10 x 10 mL
BCR-609	**Ground water - Trace elements (low level)** The material has been filtered at 0.45 µm and acidified with HNO_3 to around pH 1.5 Certified values Al ..... 47.7 µg/kg As ..... 1.2 µg/kg Cd ..... 0.164 µg/kg Cu ..... 2.48 µg/kg Pb ..... 1.63 µg/kg	500 mL
BCR-610	**Ground water - Trace elements (high level)** The material has been filtered at 0.45 µm and acidified with HNO_3 to around pH 1.5 Certified values Al ..... 159 µg/kg As ..... 10.8 µg/kg Cd ..... 2.94 µg/kg Cu ..... 45.7 µg/kg Pb ..... 7.78 µg/kg	500 mL
BCR-611	**Ground water - Bromide (low level)** (Based on IC measurements) The material has been filtered at 0.45 µm and sterilised by autoclaving Certified value Br ..... 93 µg/kg	4 x 25 mL

BCR-612 — Ground water - Bromide (high level) — 4 x 25 mL

(Based on IC measurements) The material has been filtered at 0.45 µm and sterilised by autoclaving

Certified value

Br	252 µg/kg

BCR-616 — Artificial ground water - Trace elements, low carbonate content — 75 mL

Produced by adding solutions of the required salts to ultra pure water. Sterilised by autoclaving

Certified values

Ca	38.5 mg/kg	Mn	0.0197 mg/kg	PO_4	3.36 mg/kg
Cl	49.8 mg/kg	Na	61.5 mg/kg	SO_4	57.3 mg/kg
Mg	23.9 mg/kg	NO_3	50.4 mg/kg		

BCR-617 — Artificial ground water - Trace elements, high carbonate content — 75 mL

Produced by adding solutions of the required salts to ultra pure water. Sterilised by autoclaving

Certified values

Ca	14.6 mg/kg	Mg	7.32 mg/kg	NO_3	25.8 mg/kg
Cl	26.4 mg/kg	Mn	0.050 mg/kg	SO_4	26.3 mg/kg
K	9.93 mg/kg	Na	14.6 mg/kg		

NRCSLRS-4 — River water - Trace elements — 500 mL

Collected at a depth of 2-3 metres in the Ottawa River at Chenaux, Ontario, Canada

Certified values

Al	54 µg/L	Cu	1.81 µg/L	Pb	0.086 µg/L
As	0.68 µg/L	Fe	103 µg/L	Sb	0.23 µg/L
Ba	12.2 µg/L	K	0.68 mg/L	Sr	26.3 µg/L
Be	0.007 µg/L	Mg	1.6 mg/L	U	0.050 µg/L
Ca	6.2 mg/L	Mn	3.37 µg/L	V	0.32 µg/L
Cd	0.012 µg/L	Mo	0.21 µg/L	Zn	0.93 µg/L
Co	0.033 µg/L	Na	2.4 mg/L		
Cr	0.33 µg/L	Ni	0.67 µg/L		

NWPERADE-20 — Soft river water - Major ions and nutrients — 500 mL

Certified Values

Alkalinity, Gran Tit'n (as $CaCO_3$)	6.35 mg/L	Nitrate + Nitrite (as N)	0.228 mg/L
Al	0.091 mg/L	K	0.36 mg/L
Ca	3.04 mg/L	Silica (as Si)	2.1 mg/L
Cl	0.96 mg/L	Na	1.5 mg/L
Colour (Hazen units)	24	Sulfate (as SO_4)	3.26 mg/L
Dissolved Organic Carbon (DOC)	4.0 mg/L	pH	6.81
Dissolved Inorganic Carbon (DIC)	1.7 mg/L	Conductivity (25°C)	28.2 µS/cm
Mg	0.44 mg/L		

Indicative values

Ammonia (as N)	0.004 mg/L	Nitrate (IC, as N)	0.228 mg/L
F	0.4 mg/L	Total Kjeldahl Nitrogen	0.15 mg/L
Hardness, total (as $CaCO_3$)	9.3 mg/L	Turbidity (JTU/NTU)	0.18

NWION-96.3 — River water - Major ions and nutrients — 500 mL

Certified values

Alkalinity, Total (as $CaCO_3$)	184 mg/L	Nitrate + Nitrite (as N)	4.3 mg/L
Calcium	90.6 mg/L	pH	8.3
Chloride	93 mg/L	Potassium	4.0 mg/L
Dissolved Inorganic Carbon (DIC)	42.7 mg/L	Silica (as Si)	1.16 mg/L
Dissolved Organic Carbon (DOC)	4.9 ml/L	Sodium	48.6 mg/L
Fluoride	0.16 mg/L	Conductivity (25°C)	860 µS/cm
Hardness, Total (as $CaCO_3$)	336 mg/L	Sulfate (as SO_4)	110 mg/L
Magnesium	25.7 mg/L	Colour (Hazen units)	16

Indicative values for Ammonia (as N), Boron, Total Kjeldahl Nitrogen (as N)

NWONTARIO-99 — Natural lake water - Major ions and nutrients — 500 mL

Certified values

Alkalinity, Total (as $CaCO_3$)	92.7 mg/L	Nitrate + Nitrite (as N)	0.45 mg/L
Calcium	35 mg/L	pH	8.08
Chloride	20.7 mg/L	Potassium	1.5 mg/L
Dissolved Inorganic Carbon (DIC)	22.2 mg/L	Silica (as Si)	0.53 mg/L
Dissolved Organic Carbon (DOC)	1.7 ml/L	Sodium	12.7 mg/L
Fluoride	0.63 mg/L	Conductivity (25°C)	306 µS/cm
Hardness, Total (as $CaCO_3$)	124 mg/L	Sulfate (as SO_4)	26.0 mg/L
Magnesium	8.6 mg/L		

Indicative values for Ammonia (as N), Boron, Color (Hazen Units), Total Kjeldahl Nitrogen (as N)

NWHURON-98 — Lake Huron water - Major ions and nutrients — 500 mL

Certified values

Alkalinity, Total (as $CaCO_3$)	79.5 mg/L	Nitrate + Nitrite (as N)	0.248 mg/L
Calcium	26.1 mg/L	pH	8.06
Chloride	6.18 mg/L	Potassium	0.92 mg/L
Dissolved Inorganic Carbon (DIC)	19.0 mg/L	Silica (as Si)	0.501 mg/L
Dissolved Organic Carbon (DOC)	1.50 ml/L	Sodium	3.73 mg/L
Fluoride	0.085 mg/L	Specific Conductance	206 µS/cm
Hardness, Total (as $CaCO_3$)	96.4 mg/L	Sulfate (as SO_4)	15.4 mg/L
Magnesium	7.36 mg/L		

Indicative values for Ammonia (as N), Boron, Colour (Hazen units), Total Kjeldahl Nitrogen (as N)

NWTROIS-94 — Soft, coloured river water - Major ions and nutrients — 500 mL

Collected from Trois Rivieres.

Certified Values

Alkalinity, Gran Tit'n (as $CaCO_3$)	5.02 mg/L	Nitrate + Nitrite (as N)	0.070 mg/L
Ammonia (as N)	0.030 mg/L	K	0.51 mg/L
Ca	2.52 mg/L	Silica (as Si)	1.98 mg/L
Cl	1.74 mg/L	Na	2.21 mg/L
Colour (Hazen units)	36	Sulfate (as SO_4)	4.76 mg/L
Dissolved Organic Carbon (DOC)	1.2 mg/L	pH	6.8
Dissolved Inorganic Carbon (DIC)	5.3 mg/L	Conductivity (25°C)	31.9 µS/cm
Mg	0.607 mg/L	Total Kjeldal Nitrogen	0.24 mg/L
Nitrate (IC, as N)	0.070 mg/L		

Indicative values

Al	0.067 mg/L	Hardness, total (as $CaCO_3$)	9.3 mg/L
F	0.043 mg/L	Alkalinity, Total (as $CaCO_3$)	6.2

NWHAMILTON-20 — Natural water - Major ions and nutrients — 500 mL

Collected from Hamilton Harbour.

Certified values

Alkalinity, total (as $CaCO_3$)	103 mg/L	Mg	11.8 mg/L
Ca	45.1 mg/L	NO_3 + NO_2 (as N)	2.45 mg/L
Cl	64.6 mg/L	K	4.2 mg/L
Dissolved Inorganic Carbon (DIC)	24.9 mg/L	Silica (as Si)	0.095 mg/L
Dissolved Organic Carbon (DOC)	2.9 mg/L	Na	38 mg/L
Conductivity (25°C)	521 µS/cm	Sulfate (as SO_4)	46 mg/L
F	0.42 mg/L	pH	8.00
Hardness, total (as $CaCO_3$)	163 mg/L		

Indicative values for Ammonia (as N) , B, Colour (units), Total Kjeldahl Nitrogen (as N), Turbidity (JTU/NTU)

NRCORMS-4 — River water - Mercury — 3 x 50 mL

Please ask for details

SPS-SW1 — Surface water - Trace metals — 6 x 50 mL

Certified values

Al	50 ng/mL	Fe	20 ng/mL	Rb	10.0 ng/mL
As	10.0 ng/mL	K	200 ng/mL	S	2000 ng/mL
Ba	50 ng/mL	Mg	400 ng/mL	Se	2.00 ng/mL
Ca	2000 ng/mL	Mn	10.0 ng/mL	Si	1000 ng/mL
Cd	0.50 ng/mL	Mo	10.0 ng/mL	Sr	50.0 ng/mL
Co	2.00 ng/mL	Na	2000 ng/mL	Tl	0.50 ng/mL
Cr	2.00 ng/mL	Ni	10.0 ng/mL	V	10.0 ng/mL
Cs	2.00 ng/mL	P	100 ng/mL	Zn	20 ng/mL
Cu	20 ng/mL	Pb	5.0 ng/mL		

Rare earth metals (Sc, Y, Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Th, Tm, U, Yb) 0.50 ng/mL

SPS-SW2 — Surface water - Trace metals — 6 x 50 mL

Certified values

Al	250 ng/mL	Fe	100 ng/mL	Rb	50.0 ng/mL
As	50.0 ng/mL	K	1000 ng/mL	S	10000 ng/mL
Ba	250 ng/mL	Mg	2000 ng/mL	Se	10.0 ng/mL
Ca	10000 ng/mL	Mn	50.0 ng/mL	Si	5000 ng/mL
Cd	2.50 ng/mL	Mo	50.0 ng/mL	Sr	250 ng/mL
Co	10.0 ng/mL	Na	10000 ng/mL	V	50.0 ng/mL
Cr	10.0 ng/mL	Ni	50.0 ng/mL	Zn	100 ng/mL
Cs	10.0 ng/mL	P	500 ng/mL	Tl	2.50 ng/mL
Cu	100 ng/mL	Pb	25.0 ng/mL		

Rare earth metals (Sc, Y, Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sm, Tb, Th, Tm, U, Yb) 2.50 ng/mL

CBE-WJ-03-1 — Hancza lake water - Cations in natural lake water (preserved with nitric acid)) — 100 mL

Collected from Lake Hancza, Poland. The reference values were obtained in 2002 in the interlaboratory comparison program organised by RefMat Society (Poland) and supported by LGC Promochem.

Reference Values

Ba	0.018 mg/L	K	1.942 mg/L	Na	2.896 mg/L
Ca	37.686 mg/L	Mg	7.542 mg/L	Sr	0.064 mg/L
Fe	0.020 mg/L	Mn	2.909 µg/L	Zn	0.050 mg/L

Indicative value for Al

CBE-WJ-03-3 — Hancza lake water - Cations in natural lake water (preserved with nitric acid)) — 3 x 100 mL

NWION-915 — Natural water - Major ions and nutrients — 500 mL

Collected from Lake Superior

Certified Values

pH	7.72	F	0.048 mg/L
DIC	9.95 mg/L	K	0.49 mg/L
Specific conductance	97 µS/cm	Mg	2.8 mg/L
Total alkalinity (as $CaCO_3$)	42.3 mg/L	NO_3 + NO_2 (as N)	0.343 mg/L
Total hardness (as $CaCO_3$)	45.2 mg/L	Na	1.35 mg/L
Ca	13.4 mg/L	SiO_2 (as Si)	1.16 mg/L
Cl	1.39 mg/L	SO_4	3.4 mg/L

Indicative values for NH_3 (as N), Colour (Hazen units), DOC, Total N (Kjeldahl), Turbidity (NTU/JTU)

Sea water

LGC6016 — Estuarine water - Trace metals — 50 mL

Collected from the Severn Estuary, UK, offshore from a heavily industrialised area near Avonmouth.

Certified Values

Cd ..... 101 µg/kg	Mn ..... 976 µg/kg	Pb ..... 196 µg/kg
Cu ..... 190 µg/kg	Ni ..... 186 µg/kg	

Indicative values for Ca, K, Mg, Na, Zn

BCR-505 — Estuarine water - Trace elements — 1 L

The material has been filtered at 0.45 µm and acidified with HNO_3 to around pH 1.5

Certified values

Cd ..... 0.80 nmol/kg	Ni ..... 24.1 nmol/kg
Cu ..... 29.4 nmol/kg	Zn ..... 172 nmol/kg

BCR-579 — Coastal sea water - Mercury — 1 L

The material has been filtered at 0.45 µm and acidified with HCl to around pH 1.7

Certified value

Hg ..... 1.9 ng/kg

NRCSLEW-3 — Estuarine water - Trace elements — 500 mL

Collected from the San Francisco Bay, California, USA at a depth of 5 metres

Certified values

As ..... 1.36 µg/L	Cu ..... 1.55 µg/L	Pb ..... 0.0090 µg/L
Cd ..... 0.048 µg/L	Fe ..... 0.568 µg/L	V ..... 2.57 µg/L
Co ..... 0.042 µg/L	Mn ..... 1.61 µg/L	Zn ..... 0.201 µg/L
Cr ..... 0.183 µg/L	Ni ..... 1.23 µg/L	

Indicative values for Ag, Mo, U

NRCNASS-5 — Open ocean sea water - Trace metals — 500 mL

Collected in the North Atlantic at a depth of 10 m

Certified Values

As ..... 1.27 µg/L	Cu ..... 0.297 µg/L	Ni ..... 0.253 µg/L
Cd ..... 0.023 µg/L	Fe ..... 0.207 µg/L	Pb ..... 0.008 µg/L
Co ..... 0.011 µg/L	Mn ..... 0.919 µg/L	Zn ..... 0.102 µg/L
Cr ..... 0.110 µg/L	Mo ..... 9.6 µg/L	

Indicative values for Se, U, V

NRCCASS-4 — Nearshore seawater - Trace metals — 500 mL

Collected from Halifax harbour, Canada at a deph of 12 m. It has a salinity of 30.7

Certified Values

As ..... 1.11 µg/L	Cu ..... 0.592 µg/L	Ni ..... 0.314 µg/L
Cd ..... 0.026 µg/L	Fe ..... 0.713 µg/L	Pb ..... 0.0098 µg/L
Co ..... 0.026 µg/L	Mn ..... 2.78 µg/L	V ..... 1.18 µg/L
Cr ..... 0.144 µg/L	Mo ..... 8.78 µg/L	Zn ..... 0.381 µg/L

Indicative value for U

NRCMOOS-1 — Sea water - Nutrients — 2 x 50 mL

Certified values

Orthophosphate ..... 1.56 ± 0.07 µmol/L	Nitrite ..... 3.06 ± 0.15 µmol/L
Silicate ..... 26.0 ± 1.0 µmol/L	Nitrite and Nitrate ..... 23.7 ± 0.9 µmol/L

Spiked/fortified water

NWTM-15 — Fortified water - Trace elements — 500 mL

Ag ..... 12.1 µg/L	Cr ..... 17.2 µg/L	Pb ..... 11.8 µg/L
Al ..... 21.7 µg/L	Cu ..... 18.3 µg/L	Sb ..... 15.6 µg/L
As ..... 14.6 µg/L	Fe ..... 25.0 µg/L	Se ..... 14.5 µg/L
Ba ..... 13.3 µg/L	Li ..... 14.5 µg/L	Sr ..... 70.8 µg/L
Be ..... 15.5 µg/L	Mn ..... 18.4 µg/L	Tl ..... 17.7 µg/L
Cd ..... 13.2 µg/L	Mo ..... 13.7 µg/L	U ..... 14.5 µg/L
Co ..... 15.1 µg/L	Ni, ... 18.1 µg/L	V ..... 12.4 µg/L

Indicative values for Bi, Sn, Zn

NWTM-23.3 — Fortified water - Trace elements — 500 mL

Prepared from Lake Ontario water, filtered, diluted and preserved with 0.2% nitric acid

Certified values

Al ..... 96 µg/L	Fe ..... 15 µg/L	Sn ..... 2.7 µg/L
As ..... 7.6 µg/L	Li ..... 2.5 µg/L	Sr ..... 70.6 µg/L
Ba ..... 14.3 µg/L	Mn ..... 8.7 µg/L	Ti ..... 3.2 µg/L
Be ..... 1.5 µg/L	Mo ..... 4.4 µg/L	Tl ..... 3.8 µg/L
Cd ..... 2.5 µg/L	Ni, ... 5.4 µg/L	U ..... 5.1 µg/L
Co ..... 6.7 µg/L	Pb ..... 3.2 µg/L	V ..... 2.1 µg/L
Cr ..... 6.6 µg/L	Sb ..... 2.5 µg/L	
Cu ..... 9.1 µg/L	Se ..... 4.2 µg/L	

Indicative values for Ag, Bi

NWTM-25.3 — Fortified water - Trace elements — 500 mL

Ag ..... 22.0 µg/L	Cu ..... 27.6 µg/L	Se ..... 27.9 µg/L
Al ..... 24.6 µg/L	Fe ..... 29.5 µg/L	Sn ..... 24.4 µg/L
As ..... 27.16 µg/L	Li ..... 25.6 µg/L	Sr ..... 69.9 µg/L
B ..... 32.4 µg/L	Mn ..... 25.4 µg/L	Tl ..... 29.9 µg/L
Ba ..... 26.8 µg/L	Mo ..... 28.8 µg/L	U ..... 27.4 µg/L
Be ..... 26.0 µg/L	Ni ..... 15.5 µg/L	V ..... 26.3 µg/L
Cd ..... 24.0 µg/L	Pb ..... 23.7 µg/L	Zn ..... 41.9 µg/L
Co ..... 28.0 µg/L	Sb ..... 1.9 µg/L	

Indicative value for Bi

As 7.6 µg/L	Li 2.5 µg/L	Sr 70.6 µg/L	
Ba 14.3 µg/L	Mn 8.7 µg/L	Ti 3.2 µg/L	
Be 1.5 µg/L	Mo 4.4 µg/L	Tl 3.8 µg/L	
Cd 2.5 µg/L	Ni, 5.4 µg/L	U 5.1 µg/L	
Co 6.7 µg/L	Pb 3.2 µg/L	V 2.1 µg/L	
Cr 6.6 µg/L	Sb 2.5 µg/L		
Cu 9.1 µg/L	Se 4.2 µg/L		

Indicative values for Ag, Bi

NWTM-25.3 Fortified water - Trace elements — 500 mL

Ag 22.0 µg/L	Cu 27.6 µg/L	Se 27.9 µg/L
Al 24.6 µg/L	Fe 29.5 µg/L	Sn 24.4 µg/L
As 27.16 µg/L	Li 25.6 µg/L	Sr 69.9 µg/L
B 32.4 µg/L	Mn 25.4 µg/L	Tl 29.9 µg/L
Ba 26.8 µg/L	Mo 28.8 µg/L	U 27.4 µg/L
Be 26.0 µg/L	Ni 15.5 µg/L	V 26.3 µg/L
Cd 24.0 µg/L	Pb 23.7 µg/L	Zn 41.9 µg/L
Co 28.0 µg/L	Sb 1.9 µg/L	

Indicative value for Bi

NWTM-26.3 Fortified water - Trace elements — 500 mL

Al 69 µg/L	Fe 21 µg/L	Sr 96 µg/L
As 7.9 µg/L	Li 6.6 µg/L	Ti 6.0 µg/L
Ba 25 µg/L	Mn 17.0 µg/L	Tl 5.2 µg/L
Be 3.4 µg/L	Mo 7.6 µg/L	U 7.5 µg/L
Cd 7.1 µg/L	Ni 10.2 µg/L	V 12.1 µg/L
Co 8.1 µg/L	Pb 10.5 µg/L	Sn 5.9 µg/L
Cr 12.3 µg/L	Sb 2.7 µg/L	
Cu 13.4 µg/L	Se 5.6 µg/L	

Indicative values for Ag, Bi, Zn

NWTM-28.3 Fortified water - Trace elements — 500 mL

Ag 3.79 µg/L	Cr 4.83 µg/L	Se 4.31 µg/L
Al 51.3 µg/L	Cu 13.4 µg/L	Sr 69.7 µg/L
As 6.22 µg/L	Fe 16.5 µg/L	Ti 8.10 µg/L
B 10.4 µg/L	Li 4.12 µg/L	Tl 3.89 µg/L
Ba 15.5 µg/L	Mn 6.90 µg/L	U 6.0 µg/L
Be 3.34 µg/L	Mo 3.82 µg/L	V 3.07 µg/L
Bi 2.51 µg/L	Ni 9.8 µg/L	Sn 3.83 µg/L
Cd 1.91 µg/L	Pb 3.97 µg/L	Zn 27.5 µg/L
Co 6.15 µg/L	Sb 3.38 µg/L	

Indicative value for Rb

NWTMDA-51.3 Fortified water - Trace elements — 500 mL

Certified values

Ag 13.2 µg/L	Cu 89.2 µg/L	Se 13.2 µg/L
Al 96.8 µg/L	Fe 109 µg/L	Sn 18.4 µg/L
As 15.7 µg/L	Li 17.6 µg/L	Sr 119 µg/L
Ba 75.4 µg/L	Mn 84.9 µg/L	Ti 13.6 µg/L
Be 9.83 µg/L	Mo 58.4 µg/L	Tl 21.1 µg/L
Cd 25.8 µg/L	Ni 68.3 µg/L	U 29.1 µg/L
Co 71.5 µg/L	Pb 73.3 µg/L	V 48.4 µg/L
Cr 67.5 µg/L	Sb 13.8 µg/L	Zn 137 µg/L

Indicative value for Bi

NWTMDA-52.3 Fortified water - Trace elements — 500 mL

Certified values

Ag 20.8 µg/L	Cu 189 µg/L	Sn 19.9 µg/L
Al 310 µg/L	Fe 413 µg/L	Sr 286 µg/L
As 25.3 µg/L	Li 14.9 µg/L	Ti 120 µg/L
Ba 148 µg/L	Mn 198 µg/L	Tl 18.4 µg/L
Be 17.6 µg/L	Mo 208 µg/L	U 22.7 µg/L
Bi 12.5 µg/L	Ni 274 µg/L	V 145 µg/L
Cd 90.9 µg/L	Pb 358 µg/L	Zn 263 µg/L
Co 136 µg/L	Sb 16.5 µg/L	
Cr 165 µg/L	Se 21.8 µg/L	

NWTMDA-54.4	**Fortified water - Trace elements** Prepared from Lake Ontario water, filtered, diluted and preserved with 0.2% nitric acid Certified values Ag 13.6 µg/L, Al 394 µg/L, As 43.6 µg/L, Ba 327 µg/L, Be 17.2 µg/L, Cd 158 µg/L, Co 309 µg/L, Cr 438 µg/L, Cu 443 µg/L, Fe 382 µg/L, Li 25.7 µg/L, Mn 275 µg/L, Mo 295 µg/L, Ni 337 µg/L, Pb 514 µg/L, Sb 25.7 µg/L, Se 33.8 µg/L, Sn 48.2 µg/L, Sr 589 µg/L, Ti 32.5 µg/L, Tl 27.7 µg/L, U 57.3 µg/L, V 340 µg/L, Zn 537 µg/L Indicative value for Bi	500 mL
NWTMDA-61	**Fortified water - Trace elements** Certified values Al 58.4 µg/L, Ba 63.4 µg/L, Be 36.4 µg/L, Cd 59.3 µg/L, Co 62.9 µg/L, Cr 68.6 µg/L, Cu 69.2 µg/L, Fe 81.1 µg/L, Li 34.3 µg/L, Mn 74.8 µg/L, Mo 72.7 µg/L, Ni 58.7 µg/L, Pb 64.4 µg/L, Sb 32.0 µg/L, Se 37.2 µg/L, Sn 59.6 µg/L, Sr 67.7 µg/L, Ti 36.4 µg/L, Tl 36.9 µg/L, U 35.7 µg/L, V 71.0 µg/L Indicative values for Ag, Bi	500 mL
NWTMDA-70	**Fortified water - Trace elements** Certified values Ag 10.9 µg/L, Al 411 µg/L, As 40.9 µg/L, Ba 308 µg/L, Be 15.1 µg/L, Bi 13.4 µg/L, Cd 145 µg/L, Co 285 µg/L, Cr 388 µg/L, Cu 398 µg/L, Fe 367 µg/L, Li 21.8 µg/L, Mn 300 µg/L, Mo 258 µg/L, Ni 328 µg/L, Pb 443 µg/L, Sb 21.6 µg/L, Se 26.0 µg/L, Sn 19.3 µg/L, Sr 441 µg/L, Tl 20.1 µg/L, U 55.8 µg/L, V 312 µg/L, Zn 478 µg/L	500 mL
NWTM-DWS.2	**Fortified water - Trace elements** Certified values Ag 9.91 µg/L, Al 58.3 µg/L, As 4.2 µg/L, Ba 146 µg/L, Be 13.4 µg/L, Cd 4.2 µg/L, Co 64.2 µg/L, Cr 44.4 µg/L, Cu 167 µg/L, Fe 223 µg/L, Li 20.1 µg/L, Mn 47.2 µg/L, Mo 66.7 µg/L, Ni 82.3 µg/L, Pb 7.82 µg/L, Sb 3.2 µg/L, Se 8.69 µg/L, Sn 12.1 µg/L, Sr 243 µg/L, Ti 15.1 µg/L, Tl 8.32 µg/L, U 14.1 µg/L, V 44.3 µg/L, Zn 379 µg/L	500 mL
NWION-92	**Fortified distilled water - Major ions and nutrients** A calibration standard in distilled water Certified Values Alkalinity, Total (as $CaCO_3$) 1.5 mg/L, Ca 42.8 mg/L, Cl 105.5 mg/L, Colour (Hazen units) 1.5, Dissolved Organic Carbon (DOC) <0.5 mg/L, Dissolved Inorganic Carbon (DIC) <0.5 mg/L, Mg 9.59 mg/L, Total hardness (as $CaCO_3$) 147.9 mg/l, K 0.884 mg/L, Silica (as Si) <0.03 mg/L, Na 119.3 mg/L, Sulfate (as SO_4) 37 mg/L, pH 5.53, Conductivity (25°C) 446 µS/cm Indicative values for Ammonia (as N), Fluoride, Nitrate + Nitrite (as N), Total N (Kjeldahl)	500 mL
NCS ZC76304	**Water - Fluoride** Certified value F 1.0 µg/g	100 mL
NCS ZC76305	**Water - Arsenic** Certified value As 0.500 µg/g	100 mL
NCS ZC76307	**Water - Metals** Certified values Cd 0.100 µg/g, Cr 0.500 µg/g, Cu 1.00 µg/g, Ni 0.500 µg/g, Pb 1.00 µg/g, Zn 5.00 µg/g	20 mL
NCS ZC76309	**Water - Silver** Certified value Ag 1000 µg/mL	20 mL
NCS ZC76311	**Water - Cadmium** Certified value Cd 1000 µg/mL	20 mL
NCS ZC76312	**Water - Cobalt** Certified value Co 1000 µg/mL	20 mL

NCS ZC76313	Water - Chromium Certified value Cr ..... 1000 µg/mL	20 mL
NCS ZC76314	Water - Copper Certified value Cu ..... 1000 µg/mL	20 mL
NCS ZC76315	Water - Iron Certified value Fe ..... 1000 µg/mL	20 mL
NCS ZC76316	Water - Mercury Certified value Hg ..... 1000 µg/mL	20 mL
NCS ZC76317	Water - Nickel Certified value Ni ..... 1000 µg/mL	20 mL
NCS ZC76318	Water - Lead Certified value Pb ..... 1000 µg/mL	20 mL
NCS ZC76319	Water - Zinc Certified value Zn ..... 1000 µg/mL	20 mL

Miscellaneous

LGC6175	Landfill leachate - Trace elements Landfill leachate collected and supplied high density polyethylene bottles. Certified values B ..... 8.9 mg/L; K ..... 385 mg/L; Na ..... 860 mg/L Ca ..... 148 mg/L; Mg ..... 221 mg/L; Ni ..... 0.09 mg/L Fe ..... 1.05 mg/L; Mn ..... 0.33 mg/L; Zn ..... 0.28 mg/L	50 mL
LGC6177	Landfill leachate - Trace elements Landfill leachate collected from a landfill site in Loughborough, Leicestershire, UK Assessed values B ..... 9.8 mg/L; K ..... 780 mg/L; Ni ..... 0.21 mg/L Ca ..... 74.8 mg/L; Mg ..... 73.5 mg/L; P ..... 11.5 mg/L Cr ..... 0.18 mg/L; Mn ..... 0.14 mg/L Fe ..... 3.8 mg/L; Na ..... 1750 mg/L	5 x 50 mL
BCR-713	Waste water effluent - Trace elements Certified values As ..... 9.7 µg/L; Fe ..... 0.40 mg/L; Se ..... 5.6 µg/L Cd ..... 5.1 µg/L; Mn ..... 43.4 µg/L; Zn ..... 0.22 mg/L Cr ..... 21.9 µg/L; Ni ..... 30 µg/L Cu ..... 69 µg/L; Pb ..... 47 µg/L	100 mL
BCR-714	Waste water influent - Trace elements Certified values As ..... 18.3 µg/L; Fe ..... 1.03 mg/L; Se ..... 9.8 µg/L Cd ..... 19.9 µg/L; Mn ..... 103 µg/L; Zn ..... 1.00 mg/L Cr ..... 123 µg/L; Ni ..... 108 µg/L Cu ..... 309 µg/L; Pb ..... 145 µg/L	100 mL
BCR-715	Waste water industrial effluent - Trace elements Certified values As ..... 29 4 µg/L; Fe ..... 3.00 mg/L; Se ..... 29 4 µg/L Cd ..... 40 5 µg/L; Mn ..... 248 µg/L; Zn ..... 4.0 mg/L Cr ..... 1.00 mg/L; Ni ..... 1.20 mg/L Cu ..... 0.90 mg/L; Pb ..... 0.49 mg/L	100 mL
SPS-WW1	Waste water - Trace metals Certified values Al ..... 2000 ng/mL; Cu ..... 400 ng/mL; Pb ..... 100.0 ng/mL As ..... 100.0 ng/mL; Fe ..... 1000 ng/mL; V ..... 100.0 ng/mL Cd ..... 20.0 ng/mL; Mn ..... 400 ng/mL; Zn ..... 600 ng/mL Co ..... 60.0 ng/mL; Ni ..... 1000 ng/mL Cr ..... 200 ng/mL; P ..... 1000 ng/mL	6 x 50 mL
SPS-WW2	Waste water - Trace metals Certified values Al ..... 10000 ng/mL; Cu ..... 2000 ng/mL; Pb ..... 500 ng/mL As ..... 500 ng/mL; Fe ..... 5000 ng/mL; V ..... 500 ng/mL Cd ..... 100.0 ng/mL; Mn ..... 2000 ng/mL; Zn ..... 3000 ng/mL Co ..... 300 ng/mL; Ni ..... 5000 ng/mL Cr ..... 1000 ng/mL; P ..... 5000 ng/mL	6 x 50 mL
SPS-NU-WW1	Waste water - Anions Certified values Cl^- ..... 5.00 µg/mL; NO_3 ..... 1.00 µg/mL F^- ..... 1.00 µg/mL; SO_4^{2-} ..... 20.0 µg/mL PO_4^{3-} ..... 1.50 µg/mL	6 x 50 mL

SPS-NU-WW2	Waste water - Anions Certified values Cl^- ..... 50.0 µg/mL NO_3^- ..... 5.00 µg/mL SO_4^{2-} ..... 100 µg/mL F^- ..... 10.0 µg/mL PO_4^{3-} ..... 7.50 µg/mL	6 x 50 mL
IAEA-304	Oxygen-18 labelled water Two Oxygen-18 labelled water samples (A and B) prepared from oxygen-18 enriched water and diluted with distilled water Sample A Assessed value: ..... ^{18}O ..... 251.7δD_{VSMOW}* Sample B Assessed value: ..... ^{18}O ..... 502.5δD_{VSMOW}*	2 x 10 mL
	*The isotopic compositions are given in parts per thousand difference from isotope ratio standard Vienna Standard Mean Ocean Water (VSMOW).	
	The Quality Control Materials RTC-QCI-039 - RTC-QCI-052 for water analysis are formulated at known sample target concentrations for routine use. The samples are packaged in flame sealed ampoules to ensure stability. The materials can be used as the basis for a range of control materials by altering the final volume to which the concentrate is diluted. The analytes and concentrations will vary from lot to lot (except "constant value") but will always be certified within the concentration range shown below.	
RTC-QCI-039	Residues (set of 2 vials) - Constant value A set of 2 ampoules of solids for dilution up to 2 litres of residue-free water. Vial 1: Filterable residue (TDS) ..... 441 mg/L Non-filterable residue (TSS) ..... 57.1 mg/L Residue (Total solids) (TS) ..... 491 mg/L Vial 2: Filterable residue (TDS) ..... 255mg/L Non-filterable residue (TSS) ..... 232 mg/L Total residue (Total solids) (TS) ..... 491 mg/L Total volatile residue ..... 43 mg/L	Set
RTC-QCI-040	Demand - Constant value A single sample to be diluted up to 2 litres of reagent water. Biochemical Oxygen Demand (BOD) ..... 141.58 mg/L Carbonous BOD (CBOD) ..... 121.77 mg/L Chemical Oxygen Demand (COD) ..... 218.41 mg/L Total Organic Carbon (TOC) ..... 90.4 mg/L	Amp.
RTC-QCI-041	pH QC Sample - Constant value A single sample for direct measurement of pH. pH ..... 7.2 units	amp.
RTC-QCI-028	Nutrients Three samples for dilution in 1 litre QCI-028-1 (20 mL concentrate) Ammonia as N ..... 2.99 mg/L Nitrate + Nitrite as N ..... 7.67 mg/L Nitrate as N ..... 7.71 mg/L Orthophosphate as P ..... 4.79 mg/L QCI-028-2 (2 mL concentrate) Kjeldahl nitrogen, total (TKN) ..... 15.62 mg/L Phosphorus, total ..... 2.05 mg/L Nitrogen, total ..... 16.00 mg/L QCI-028-3 (2 mL concentrate) Nitrite as N 2.25 mg/L	Kit
RTC-QCI-028-1	Nutrients Samples for dilution in 1 litre 20 mL concentrate Ammonia as N ..... 2.99 mg/L Nitrate + Nitrite as N ..... 7.67 mg/L Nitrate as N ..... 7.71 mg/L Orthophosphate as P ..... 4.79 mg/L	amp.
RTC-QCI-028-2	Nutrients Sample for dilution in 1 litre 2 mL concentrate Kjeldahl nitrogen, total (TKN) ..... 15.62 mg/L Phosphorus, total ..... 2.05 mg/L Nitrogen, total ..... 16.00 mg/L	amp.
RTC-QCI-028-3	Nutrients Samples for dilution in 1 litre 2 mL concentrate Nitrite as N ..... 2.25 mg/L	amp.

RTC-QCI-042 **Nutrients (set of 2 ampoules) - Constant value** Set

A two-sample set for dilution up to 2 litres of reagent water.

Ampoule 1:

Ammonia-N	2.00 mg/L
Nitrate-N	2.00 mg/L
Nitrite-N	1.50 mg/L
Orthophosphate as P	0.74 mg/L

Ampoule 2:

Nitrogen (total)	7.57 mg/L
Total Kjeldahl-Nitrogen	7.57 mg/L
Total Phosphorus	1.80 mg/L

RTC-QCI-032 **Total phenolics** amp.

A single sample for dilution to 2 litres

	Sample Target Concentration
Total phenolics	0.06 - 5 mg/L

RTC-QCI-043 **Phenolics (set of 2 ampoules) - Constant value** Set

A set of 2 ampoules for dilution up to 2 litres of reagent water.

Ampoule 1:

Phenol	6.60 mg/L

Ampoule 2:

Total recoverable phenolics	5.0 mg/L

RTC-QCI-033 **Total residual chlorine** amp.

A single sample for dilution to 2 litres

	Sample Target Concentration
Total residual chlorine	0.5 - 3 mg/L

RTC-QCI-044 **Residual chlorine - Constant value** amp.

A single sample for dilution up to 2 litres of reagent water.

Total or free residual chlorine	2.60 mg/L

RTC-QCI-046 **Minerals (set of 2 ampoules) - Constant value** Set

A set of 2 ampoules for dilution into 2 litres of reagent water.

Conductivity	460 µhmos/cm^3	K	7.98 mg/L
Corrositivity (Langelier Index)	-1.50	Na	40.2 mg/L
Corrositivity (ph)	6.95	Alkalinity as $CaCO_3$	40.3 mg/L
Total Hardness	102 mg/L	Chloride	84.9 mg/L
Filterable residues (TDS)	262 mg/L	Fluoride	6.0 mg/L
Ca	25.3 mg/L	Sulfate	24.5 mg/L
Mg	10.1 mg/L		

RTC-QCI-031 **Total cyanide** amp.

A single sample for dilution to 2 litres

Total cyanide	0.1 - 1 mg/L

RTC-QCI-047 **Cyanide (set of 2 ampoules) - Constant value** Set

A set of 2 ampoules for dilution into 2 litres of reagent water.

Ampoule 1:

Cyanide (from Potassium Ferricyanide)	0.242 mg/L

Ampoule 2:

Cyanide (from Potassium Cyanide)	0.480 mg/L

RTC-QCI-048 **Turbidity - Constant value** amp.

A single sample for dilution into 2 litres of turbidity-free reagent water.

Turbidity	9.12 NTU

RTC-QCI-034-1 **Trace metals** amp.

A single sample for dilution to 2 litres

	Target conc.		Target conc.		Target conc.
Al	200 - 4000 µg/L	Co	28 - 1000 µg/L	Hg	2 - 30 µg/L
As	70 - 900 µg/L	Cu	18 - 900 µg/L	Ni	80 - 3000 µg/L
Be	8 - 900 µg/L	Fe	30 - 4000 µg/L	Se	90 - 2000 µg/L
Cd	8 - 750 µg/L	Pb	70 - 3000µg/L	V	55 - 10000 µg/L
Cr	17 - 1000 µg/L	Mn	70 - 4000 µg/L	Zn	100 - 2000 µg/L

RTC-QCI-034-3 **Chromium VI** amp.

A single sample for dilution to 2 litres

	Sample Target Concentration
Cr VI	45 - 880 µg/L

RTC-QCI-049 **Trace metal-AA (set of 3 ampoules) - Constant value** Set

A set of 3 ampoules for dilution into 2 litres of reagent water.

Ampoule 1:

Ampoule Concentration		Ampoule Concentration		Ampoule Concentration	
Ag	19.2 µg/L	Cd	41 µg/L	Hg	40.8 µg/L
As	30.2 µg/L	Cr	71.5 µg/L	Pb	51.2 µg/L
Ba	109 µg/L	Cu	61.6 µg/L	Se	28.9 µg/L

Ampoule 2:

Ampoule Concentration		Ampoule Concentration		Ampoule Concentration	
Al	105 µg/L	Mn	29.9 µg/L	Tl	41.2 µg/L
Be	40.2 µg/L	Mo	61.6 µg/L	V	69.9 µg/L
Co	30.3 µg/L	Ni	92 µg/L		
Fe	83.5 µg/L	Sb	115 µg/L		

Ampoule 3 (21 mL):

Ampoule Concentration		Ampoule Concentration		Ampoule Concentration	
Ba	2030 µg/L	K	1030 µg/L	Zn	844 µg/L
Ca	2080 µg/L	Mg	617 µg/L		
Fe	775 µg/L	Na	1010 µg/L		

RTC-QCI-050 **Trace metal-ICP (set of 2 ampoules) - Constant value** Set

A set of 2 ampoules for dilution, the values listed are ampoule concentration.

Ampoule 1:

Ampoule Concentration		Ampoule Concentration		Ampoule Concentration	
As	61.3 µg/L	Fe	30.7 µg/L	Sb	30.7 µg/L
Be	71.6 µg/L	Pb	71.5 µg/L	Se	122 µg/L
Ca	112 µg/L	Li	61.6 µg/L	Sr	143 µg/L
Cd	102 µg/L	Mg	91.9 µg/L	Tl	133 µg/L
Cr	40.9 µg/L	Mn	40.9 µg/L	Ti	72.1 µg/L
Co	61.1 µg/L	Mo	91.9 µg/L	V	91.7 µg/L
Cu	71.2 µg/L	Ni	71.2 µg/L	Zn	30.6 µg/L

Ampoule 2 (21 mL):

Ampoule Concentration		Ampoule Concentration		Ampoule Concentration	
Ag	256 µg/L	B	816 µg/L	Si	3060 µg/L
Al	561 µg/L	K	3780 µg/L		
Ba	664 µg/L	Na	765 µg/L		

RTC-QCI-051 **Anions QC sample** amp.

A single sample for dilution into 2 litres of reagent water.

	Sample Target Concentration		Sample Target Concentration
Bromide	1 – 3 mg/L	Nitrite as Nitrogen	5 – 20 mg/L
Chloride	10 – 50 mg/L	Orthophosphate Phosphorous	1 – 5 mg/L
Fluoride	1 – 5 mg/L	Sulfate	10 – 50 mg/L
Nitrate as Nitrogen	5 – 20 mg/L		

RTC-QCI-052 **Corrosivity/Sodium (set of 2 ampoules) - Constant value** Set

A set of 2 ampoules for dilution into 2 litres of reagent water.

pH	9.12	Alkalinity as $CaCO_3$	63 mg/L
Filterable residues (TDS)	578 mg/L	Na	25 mg/L
Ca	99.9 mg/L		

Sediments

Code	Product	Unit

Freshwater sediments

LGC6187 **River sediment - Extractable metals** 80 g

The extractable/leachable metal content refers to metals soluble in a hot mixture of nitric and hydrochloric acids using methods based on ISO 11466 (1995).

Certified values

As	24.0 mg/kg	Hg	1.4 mg/kg	Sn	6.8 mg/kg
Cd	2.7 mg/kg	Mn	1240 mg/kg	V	38.3 mg/kg
Cr	84.0 mg/kg	Ni	34.7 mg/kg	Zn	439 mg/kg
Cu	83.6 mg/kg	Pb	77.2 mg/kg		
Fe	23600 mg/kg	Se	1.2 mg/kg		

LGC6189 **River sediment - Extractable metals** 30 g

The river sediment was collected from a monitoring station lagoon on the river Elbe close to the Czech-German Border, Czech Republic. Asssed values for extractable metals precisely following the ISO11466 (1995) method. Only those metals that reached a plateau of concentration after two hours reflux were characterised.

Assessed values

As	26 mg/kg	Cu	87 mg/kg	Ni	34 mg/kg
Cd	3.3 mg/kg	Mn	1120 mg/kg	Pb	87 mg/kg
Cr	93 mg/kg	Mo	1.2 mg/kg	Zn	460 mg/kg

Indicative values for Ba, Se and constituents.

LGC6188 — River sediment - PAHs — 30 g

Collected from a monitoring station lagoon on the River Elbe close to Czech-German border.

Assessed values

Acenaphthene	0.07 mg/kg	Dibenzo(*ah*)anthracene	0.13 mg/kg
Anthracene	0.36 mg/kg	Fluoranthene	1.79 mg/kg
Chrysene	0.83 mg/kg	Fluorene	0.12 mg/kg
Benzo(*a*)anthracene	0.83 mg/kg	Indeno(1,2,3-*cd*)pyrene	0.37 mg/kg
Benzo(*b*)fluoranthene	0.82 mg/kg	Naphthalene	0.22 mg/kg
Benzo(*k*)fluoranthene	0.50 mg/kg	Phenanthrene	1.04 mg/kg
Benzo(*a*)pyrene	0.65 mg/kg	Pyrene	1.48 mg/kg
Benzo(*ghi*)perylene	0.36 mg/kg		

Indicative value for Acenaphthylene

BCR-280R — Lake sediment - Trace elements — 30 g

Certified values

As	33.4 mg/kg	Cr	126 mg/kg	Ni	69 mg/kg
Cd	0.85 mg/kg	Cu	53 mg/kg	Zn	224 mg/kg
Co	16.8 mg/kg	Hg	1.46 mg/kg		

BCR-701 — Sediment - Extractable trace elements (3 step extraction) — 20 g

Certified values

Step 1

Cd	7.34 mg/kg	Cu	49.3 mg/kg	Pb	3.18 mg/kg
Cr	2.26 mg/kg	Ni	15.4 mg/kg	Zn	205 mg/kg

Step 2

Cd	3.77 mg/kg	Cu	124 mg/kg	Pb	126 mg/kg
Cr	45.7 mg/kg	Ni	26.6 mg/kg	Zn	114 mg/kg

Step 3

Cd	0.27 mg/kg	Cu	55.2 mg/kg	Pb	9.3 mg/kg
Cr	143 mg/kg	Ni	15.3 mg/kg	Zn	45.7 mg/kg

BCR-684 — River sediment - Phosphorous — 35 g

Extractable phosphorous in sediment following a five-step extraction procedure

NaOH-extractable P	550 mg/kg	Organic P	209 mg/kg
HCl-extractable P	536 mg/kg	Conc.HCl-extract. P	1373 mg/kg
Inorganic P	1113 mg/kg		

BCR-646 — Freshwater sediment - Butyltin and phenyltin — 40 g

Compound	Certified value µg/kg		
TBT	480	TPhT	29
DBT	770	DPhT	36
MBT	610	MPhT	69

NCS DC78301 — River sediment - Metals — 50 g

Certified values

As	56 µg/g	Cr	90 µg/g	Hg	0.22 µg/g
Ba	375 µg/g	Cu	53 µg/g	Pb	79 µg/g
Cd	2.45 µg/g	Fe	3.94 µg/g	Se	0.39 µg/g
Co	16.5 µg/g	Mn	975 µg/g		

NIST-1939a — River sediment - PCBs and chlorinated pesticides — 50 g

All the constituents for which certified and reference values are provided are naturally present in the sediment material.

Certified Concentrations (Mass Fractions) for Selected PCB Congeners

		µg/kg
PCB 44	2,2',3,5'-Tetrachlorobiphenyl	1131 ± 74
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	3740 ± 280
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	4320 ± 130
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	840 ± 130
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	380 ± 96
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	201 ± 28
PCB 110	2,3,3',4',6-Pentachlorobiphenyl	1068 ± 70
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	423 ± 88
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	91.2 ± 8.4
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl +	
163	2,3,3',4',5,6-Hexachlorobiphenyl +	
164	2,3,3',4',5',6-Hexachlorobiphenyl	258.1 ± 6.9
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	427 ± 47
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	192.1 ± 2.6
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	297 ± 19
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	37.0 ± 6.6
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl	107 ± 17
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	140.3 ± 6.1
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	47.3 ± 2.3
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl +	
159	2,3,3',4,5,5'-Hexachlorobiphenyl +	
182	2,2',3',4,4',5,6'-Heptachlorobiphenyl	156.4 ± 2.6
PCB 194	2,2',3,3',4,4',5,5'-Octachorobiphenyl	35.5 ± 4.1
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	29.7 ± 5.6

Certified Concentrations (Mass Fractions) for Selected Chlorinated Pesticides

	µg/kg
cis-Chlordane (alpha-Chlordane)	4.8 ± 1.3
4,4'-DDD	5.50 ± 0.97
4,4'-DDT	2.72 ± 0.42

Indicative values for 4 further PCB congeners.

NIST-1944 — New York/New Jersey waterway sediment - PCBs and PAHs — 50 g

This Standard Reference Material® (SRM®) is a mixture of marine sediment collected near urban areas in New York and New Jersey. Reference values are also provided for selected dibenzodioxin and dibenzofuran congeners, total organic carbon, total extractable material, and particle-size characteristics. All of the constituents for which certified, reference, and information values are provided were naturally present in the sediment material before processing.

Certified Concentrations for Selected PAHs

PAHs	Mass Fractions in mg/kg (dry-mass basis)	PAHs	Mass Fractions in mg/kg (dry-mass basis)
Naphthalene	1.65 ± 0.31	Benzo(a)fluoranthene	0.78 ± 012
Phenanthrene	5.27 ± .0.22	Benzo(e)pyrene	3.28 ± 0.11
Anthracene	1.77 ± 0.33	Benzo(a)pyrene	4.30 ± 0.13
Fluoranthene	8.92 ± 0.32	Perylene	1.17 ± 0.24
Pyrene	9.70 ± 0.42	Benzo(ghi)perylene	2.84 ± 0.10
Benzo(c)phenanthrene	0.76 ± 0.10	Indeno(1,2,3-cd)pyrene	2.78 ± 0.10
Benzo(a)anthracene	4.72 ± .0.11	Dibenzo(a,j)anthracene	0.500 ± 0.044
Chrysene	4.86 ± 0.10	Dibenzo(a,c)anthracene	0.335 ± 0.013
Triphenylene	1.04 ± 0.27	Dibenzo(a,h)anthracene	0.424 ± 0.069
Benzo(b)fluoranthene	3.87 ± 0.42	Pentaphene	0.288 ± 0.026
Benzo(j)fluoranthene	2.09 ± 0.44	Benzo(b)chrysene	0.63 ± 0.10
Benzo(k)fluoranthene	2.30 ± 0.20	Picene	0.518 ± 0.093

Certified Concentrations for Selected PCB Congeners

PCB Congeners		Mass Fraction in µg/kg (dry-mass basis)
PCB 8	2,4'-Dichlorobiphenyl	22.3 ± 2.3
PCB 18	2,2',5-Trichlorobiphenyl	51.0 ± 2.6
PCB 28	2,4,4'-Trichlorobiphenyl	80.8 ± 2.7
PCB 31	2,4',5-Trichlorobiphenyl	78.7 ± 1.6
PCB 44	2,2',3,5'-Tetrachlorobiphenyl	60.2 ± 2.0
PCB 49	2,2',4,5'-Tetrachlorobiphenyl	53.0 ± 1.7
PCB 52	2,2',5,5'-Tetrachlorobiphenyl	79.4 ± 2.0
PCB 66	2,3',4,4'-Tetrachlorobiphenyl	71.9 ± 4.3
PCB 87	2,2',3,4,5'-Pentachlorobiphenyl	29.9 ± 4.3
PCB 95	2,2',3,5',6-Pentachlorobiphenyl	65.0 ± 8.9
PCB 99	2,2',4,4',5-Pentachlorobiphenyl	37.5 ± 2.4
PCB 101	2,2',4,5,5'-Pentachlorobiphenyl +	
90	2,2',3,4',5-Pentachlorobiphenyl	73.4 ± 2.5
PCB 105	2,3,3',4,4'-Pentachlorobiphenyl	24.5 ± 1.1
PCB 110	2,3,3',4',6-Pentachlororbiphenyl	63.5 ± 4.7
PCB 118	2,3',4,4',5-Pentachlorobiphenyl	58 ± 4.3
PCB 128	2,2',3,3',4,4'-Hexachlorobiphenyl	8.47 ± 0.28
PCB 138	2,2',3,4,4',5'-Hexachlorobiphenyl +	
163	2,3,3',4',5,6-Hexachlorobiphenyl +	
164	2,3,3',4',5',6-Hexachlorobiphenyl	62.1 ± 3.0
PCB 149	2,2',3,4',5',6-Hexachlorobiphenyl	49.7 ± 1.2
PCB 151	2,2',3,5,5',6-Hexachlorobiphenyl	16.93 ± 0.36
PCB 153	2,2',4,4',5,5'-Hexachlorobiphenyl	74.0 ± 2.9
PCB 156	2,3,3',4,4',5-Hexachlorobiphenyl	6.52 ± 0.66
PCB 170	2,2',3,3',4,4',5-Heptachlorobiphenyl +	
190	(2,3,3',4,4',5,5'-Heptachlorobiphenyl)	22.6 ± 1.4
PCB 180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	44.3 ± 1.2
PCB 183	2,2',3,4,4',5',6-Heptachlorobiphenyl	12.19 ± 0.57
PCB 187	2,2',3,4',5,5',6-Heptachlorobiphenyl +	
159	2,3,3',4,5,5'-Hexachlorobiphenyl +	
182	2,2',3',4,4',5,6'-Heptachlorobiphenyl	25.1 ± 1.0
PCB 194	2,2',3,3',4,4',5,5'-Octachlorobiphenyl	11.2 ± 1.4
PCB 195	2,2',3,3',4,4',5,6-Octachlorobiphenyl	3.75 ± 0.39
PCB 206	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	9.21 ± 0.51
PCB 209	Decachlorobiphenyl	6.81 ± 0.33

Certified Concentrations for Selected Chlorinated Pesticides

Chlorinated Pesticides	Mass Fractions in µg/kg (dry-mass basis)
Hexachlorobenzene	6.03 ± 0.35
cis-Chlordane (alpha-Chlordane)	16.51 ± 0.83
trans-Nonachlor	8.20 ± 0.51
4,4'-DDT	119 ± 11

Reference Values for PAHs, Chlorinated Pesticides, Dibenz-p-dioxin and Dibenzofuran Congeners, Particle-Size Characteristics, Total Organic Carbon and Percent Extractable Mass.

Certified and reference concentrations for selected inorganic constituents.

RTC-CNS329-050 — Fresh water sediment - PCBs and PBDEs — 50 g

The PDBEs Reference Values were determined by US EPA Method 1614, ISO 22032 and related GC-MS techniques. The PCB Reference Values were determined by Dutch standard methods (NEN 5771, 5718, and 5719) and EPA extraction methods 3540/3541 or 3550A, followed by Method 8270. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Reference values

2,4,4'-Trichlorobiphenyl (PCB 28)	54.1 µg/kg
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	230 µg/kg
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)	390 µg/kg
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	75 µg/kg
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)	226 µg/kg
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)	133 µg/kg
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	104 µg/kg
PCBs, total	**1330 µg/kg**
PBDE 47	149 µg/kg
PBDE 99	192 µg/kg
PBDE 100	108 µg/kg
PBDE 153	160 µg/kg
PBDE 154	108 µg/kg
PBDE 183	52.6 µg/kg
PBDE 209	(81.7) µg/kg

NIST-4350b — River sediment - Radioactivity — 85 g

Certified values

^{241}Am 1.5 x 10^{-4} Bq/g	^{152}Eu 2.90 x 10^{-2} Bq/g	^{238}Pu 1.3 x 10^{-5} Bq/g
^{60}Co 4.64 x 10^{-3} Bq/g	^{154}Eu 3.78 x 10^{-3} Bq/g	^{239}Pu + ^{240}Pu 5.08 x 10^{-4} Bq/g
^{137}Cs 2.90 x 10^{-2} Bq/g	^{226}Ra 3.58 x 10^{-2} Bq/g	

NIST-RM 8704 — Buffalo river sediment - Metals — 50 g

Collected from the Buffalo River in the area of the Ohio Street Bridge, Buffalo, New York. Reference values given for 25 trace elements

NCS ZC76001A — River sediment - Radioactive isotopes — 100 g

Certified values

^{60}Co 0.631 Bq/g	^{239}Pu + ^{240}Pu 0.0199 Bq/g	^{232}Th 0.0599 Bq/g
^{137}Cs 0.131 Bq/g	^{226}Ra 0.120 Bq/g	^{235}U 0.0197 Bq/g
^{40}K 0.415 Bq/g	^{90}Sr 0.197 Bq/g	^{238}U 0.394 Bq/g

NCS DC70311 — Tibet sediment - Constituents — 60 g

Certified values

Ag 6.73±0.62 µg/g	Hg 0.07±0.04 µg/g	Th 8.6±0.6 µg/g
As 512±18 µg/g	Ho 0.86±0.07 µg/g	Ti 0.248±0.006 %
Au 32.6±6.9 µg/g	La 26.6±1.5 µg/g	Tl 2.3±0.8 µg/g
B 43.3±8.6 µg/g	Li 32.7±1.5 µg/g	Tm 0.39±0.04 µg/g
Ba 297±14 µg/g	Lu 0.35±0.02 µg/g	U 6.1±0.4 µg/g
Be 2.32±0.22 µg/g	Mn 0.137±0.007 %	V 80.3±5.9 µg/g
Bi 89.8±4.9 µg/g	Mo 15.5±0.9 µg/g	W 38.7±2.2 µg/g
Br 2.5±1.3 µg/g	Nb 8.6±1.4 µg/g	Y 24.3±1.1 µg/g
Cd 3.76±0.23 µg/g	Nd 23.2±1.6 µg/g	Yb 2.43±0.09 µg/g
Ce 55.6±2.9 µg/g	Ni 46.2±2.4 µg/g	Zn 797±37 µg/g
Cl 87±20 µg/g	P 804±65 µg/g	Zr 132±7 µg/g
Co 45.2±3.1 µg/g	Pb 731±26 µg/g	SiO_2 38.05±0.29 %
Cr 41.3±3.2 µg/g	Pr 6.01±0.37 µg/g	Al_2O_3 9.67±0.19 %
Cs 14.5±0.9 µg/g	Rb 90.0±1.4 µg/g	Fe_2O_3(T) 10.34±0.13 %
Cu 0.50±0.02 %	Sb 13.8±0.8 µg/g	MgO 1.94±0.05 %
Dy 4.40±0.23 µg/g	Sc 8.7±0.3 µg/g	CaO 16.40±0.26 %
Er 2.64±0.15 µg/g	Se 2.8±0.3 µg/g	Na_2O 0.59±0.03 %
Eu 1.17±0.05 µg/g	Sm 4.85±0.24 µg/g	K_2O 1.39±0.03 %
F 632±14 µg/g	Sn 16.6±2.7 µg/g	TiO_2 0.416±0.009 %
Ga 12.4±1.4 µg/g	Sr 324±6 µg/g	MnO 0.174±0.006 %
Gd 4.88±0.23 µg/g	Ta 0.8±0.3 µg/g	P_2O_5 0.182±0.012 %
Ge 1.32±0.30 µg/g	Tb 0.77±0.03 µg/g	
Hf 4.0±0.5 µg/g	Te 0.86±0.32 µg/g	

NCS DC70312 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.05±0.01 µg/g	Ni 35.0±1.1 µg/g	Sm 5.95±0.36 µg/g
As 18.9±0.8 µg/g	P 561±13 µg/g	Eu 1.20±0.04 µg/g
Au 1.2±0.3 µg/g	Pb 30.9±1.4 µg/g	Gd 5.35±0.24 µg/g
B 59.0±6.2 µg/g	Rb 119±2 µg/g	Tb 0.83±0.04 µg/g
Ba 404±11 µg/g	Sc 11.8±0.5 µg/g	Dy 4.71±0.25 µg/g
Be 2.52±0.09 µg/g	Sb 1.44±0.19 µg/g	Ho 0.94±0.08 µg/g
Bi 0.46±0.04 µg/g	Se 0.10±0.02 µg/g	Er 2.79±0.16 µg/g
Br 1.2±0.3 µg/g	Sn 2.8±0.2 µg/g	Tm 0.43±0.03 µg/g
Cd 0.18±0.03 µg/g	Sr 83.8±2.1 µg/g	Yb 2.69±0.08 µg/g
Cl 114±26 µg/g	Ta 1.2±0.2 µg/g	Lu 0.41±0.02 µg/g
Co 16.7±0.7 µg/g	Te 0.045±0.021 µg/g	Y 24.6±0.7 µg/g
Cr 68.2±3.3 µg/g	Th 12.9±0.7 µg/g	SiO_2 63.07±0.43 %
Cs 10.4±1.4 µg/g	Ti 0.375±0.037 %	Al_2O_3 14.18±0.25 %
Cu 27.3±2.1 µg/g	Tl 0.60±0.13 µg/g	Fe_2O_3(T) 5.84±0.07 %
F 659±55 µg/g	U 2.8±0.3 µg/g	MgO 1.55±0.03 %
Ga 19.0±1.3 µg/g	V 102±3 µg/g	CaO 3.69±0.07 %
Ge 1.44±0.14 µg/g	W 1.9±0.2 µg/g	Na_2O 1.11±0.03 %
Hf 6.0±0.3 µg/g	Zn 82.7±3.2 µg/g	K_2O 2.51±0.06 %
Hg 0.022±0.003 µg/g	Zr 210±7 µg/g	TiO_2 0.650±0.016 %
Li 48.5±1.3 µg/g	La 39.0±2.3 µg/g	MnO 0.127±0.003 %
Mn 987±28 µg/g	Ce 76.1±2.3 µg/g	P_2O_5 0.130±0.004 %
Mo 0.75±0.07 µg/g	Pr 8.42±0.42 µg/g	
Nb 14.6±0.6 µg/g	Nd 31.0±1.6 µg/g	

Bi 0.50±0.03 µg/g	Mo 0.60±0.05 µg/g	W 2.6±0.2 µg/g
Br 1.0±0.3 µg/g	Nb 15.9±0.6 µg/g	Y 24.4±0.6 µg/g
Cd 0.54±0.04 µg/g	Nd 31.1±1.8 µg/g	Yb 2.73±0.15 µg/g
Ce 74.0±2.9 µg/g	Ni 51.9±1.9 µg/g	Zn 176±6 µg/g
Cl 63±5 µg/g	P 613±19 µg/g	Zr 222±7 µg/g
Co 17.9±0.8 µg/g	Pb 61.9±4.0 µg/g	SiO_2 69.70±0.20 %
Cr 93.8±4.9 µg/g	Pr 8.33±0.46 µg/g	Al_2O_3 13.19±0.16 %
Cs 11.9±1.1 µg/g	Rb 115±2 µg/g	Fe_2O_3(T) 5.85±0.05 %
Cu 27.1±1.5 µg/g	Sb 1.91±0.22 µg/g	MgO 1.58±0.04 %
Dy 4.73±0.25 µg/g	Sc 12.0±0.4 µg/g	CaO 0.39±0.04 %
Er 2.81±0.15 µg/g	Se 0.16±0.02 µg/g	Na_2O 1.23±0.03 %
Eu 1.21±0.04 µg/g	Sm 5.99±0.39 µg/g	K_2O 2.56±0.08 %
F 622±42 µg/g	Sn 14.9±3.2 µg/g	TiO_2 0.725±0.009 %
Ga 17.8±0.9 µg/g	Sr 59.3±2.1 µg/g	MnO 0.113±0.002 %
Gd 5.40±0.25 µg/g	Ta 1.2±0.1 µg/g	P_2O_5 0.140±0.004 %
Ge 1.34±0.13 µg/g	Tb 0.83±0.04 µg/g	
Hf 6.5±0.4 µg/g	Te 0.05±0.03 µg/g	

NCS DC70314 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.06±0.01 µg/g	Ni 17.2±0.7 µg/g	Sm 5.55±0.33 µg/g
As 19.0±2.5 µg/g	P 441±10 µg/g	Eu 0.96±0.04 µg/g
Au* 0.9±0.2 µg/g	Pb 23.0±1.2 µg/g	Gd 4.88±0.25 µg/g
B 58.9±5.7 µg/g	Rb 104±2 µg/g	Tb 0.75±0.03 µg/g
Ba 341±10 µg/g	Sc 6.96±0.51 µg/g	Dy 4.24±0.20 µg/g
Be 2.13±0.14 µg/g	Sb 1.08±0.27 µg/g	Ho 0.86±0.07 µg/g
Bi 0.34±0.03 µg/g	Se 0.11±0.01 µg/g	Er 2.56±0.11 µg/g
Br 1.4±0.3 µg/g	Sn 3.1±0.4 µg/g	Tm 0.39±0.03 µg/g
Cd 0.15±0.01 µg/g	Sr 117.5±4.4 µg/g	Yb 2.53±0.08 µg/g
Cl 120±29 µg/g	Ta 1.3±0.1 µg/g	Lu 0.38±0.02 µg/g
Co 7.9±0.4 µg/g	Te (0.03) µg/g	Y 23.3±1.1 µg/g
Cr 36.2±1.9 µg/g	Th 12.7±0.6 µg/g	SiO_2 76.43±0.13 %
Cs 8.0±0.7 µg/g	Ti 0.276±0.008 %	Al_2O_3 10.60±0.05 %
Cu 13.3±0.7 µg/g	Tl 0.59±0.17 µg/g	Fe_2O_3(T) 3.29±0.04 %
F 444±12 µg/g	U 2.9±0.3 µg/g	MgO 0.72±0.03 %
Ga 13.6±0.6 µg/g	V 56.1±2.1 µg/g	CaO 1.27±0.03 %
Ge 1.30±0.15 µg/g	W 2.4±0.2 µg/g	Na_2O 1.47±0.04 %
Hf 6.5±0.8 µg/g	Zn 51.8±2.2 µg/g	K_2O 2.30±0.03 %
Hg 0.074±0.004 µg/g	Zr 220±11 µg/g	TiO_2 0.469±0.006 %
Li 40.1±1.0 µg/g	La 37.9±2.0 µg/g	MnO 0.067±0.002 %
Mn 517±16 µg/g	Ce 70.6±2.4 µg/g	P_2O_5 0.101±0.002 %
Mo 0.70±0.03 µg/g	Pr 7.86±0.39 µg/g	
Nb 15.2±0.6 µg/g	Nd 29.0±1.3 µg/g	

NCS DC70315 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.10±0.01 µg/g	Hf 6.0±0.5 µg/g	Tb 0.78±0.04 µg/g
As 22.5±1.1 µg/g	Hg 0.026±0.004 µg/g	Th 12.3±0.6 µg/g
Au 1.6±0.3 µg/g	Ho 0.87±0.07 µg/g	Ti 0.290±0.003 %
B 59.5±4.7 µg/g	La 37.0±2.0 µg/g	Tl 0.62±0.10 µg/g
Ba 384±15 µg/g	Li 27.9±0.9 µg/g	Tm 0.40±0.03 µg/g
Be 2.13±0.11 µg/g	Lu 0.38±0.02 µg/g	U 2.5±0.2 µg/g
Bi 0.46±0.04 µg/g	Mn 567±15 µg/g	V 57.4±2.1 µg/g
Br 1.5±0.3 µg/g	Mo 0.83±0.05 µg/g	W 2.4±0.1 µg/g
Cd 0.33±0.03 µg/g	Nb 15.6±0.4 µg/g	Y 23.7±1.4 µg/g
Ce 71.3±2.0 µg/g	Nd 29.3±1.6 µg/g	Yb 2.55±0.13 µg/g
Cl 96.7±6.4 µg/g	Ni 20.1±0.8 µg/g	Zn 91.1±2.4 µg/g
Co 9.2±0.5 µg/g	P 501±21 µg/g	Zr 206±10 µg/g
Cr 37.5±1.5 µg/g	Pb 31.7±1.6 µg/g	SiO_2 66.50±0.10 %
Cs 7.9±1.2 µg/g	Pr 8.10±0.17 µg/g	Al_2O_3 10.17±0.18 %
Cu 16.6±1.0 µg/g	Rb 104±2 µg/g	Fe_2O_3(T) 3.70±0.04 %
Dy 4.40±0.21 µg/g	Sb 0.82±0.14 µg/g	MgO 1.14±0.04 %
Er 2.60±0.13 µg/g	Sc 7.9±0.5 µg/g	CaO 6.50±0.12 %
Eu 1.04±0.03 µg/g	Se 0.12±0.01 µg/g	Na_2O 1.17±0.03 %
F 539±37 µg/g	Sm 5.61±0.33 µg/g	K_2O 2.26±0.03 %
Ga 14.1±1.0 µg/g	Sn 3.3±0.4 µg/g	TiO_2 0.491±0.010 %
Gd 5.15±0.23 µg/g	Sr 132±3 µg/g	MnO 0.074±0.002 %
Ge 1.09±0.15 µg/g	Ta 1.3±0.2 µg/g	P_2O_5 0.115±0.004 %

NCS DC70316 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.07±0.01 µg/g	Ni 75.3±3.0 µg/g	Sm 8.11±0.54 µg/g
As 13.7±0.7 µg/g	P 571±28 µg/g	Eu 1.58±0.05 µg/g
Au 1.8±0.4 µg/g	Pb 24.0±1.7 µg/g	Gd 7.11±0.29 µg/g
B 56.1±6.4 µg/g	Rb 117±3 µg/g	Tb 1.08±0.05 µg/g
Ba 476±17 µg/g	Sc 11.7±1.0 µg/g	Dy 6.10±0.31 µg/g
Be 2.43±0.07 µg/g	Sb 1.10±0.13 µg/g	Ho 1.20±0.09 µg/g
Bi 0.30±0.02 µg/g	Se 0.16±0.02 µg/g	Er 3.54±0.17 µg/g
Br 1.9±0.4 µg/g	Sn 3.2±0.2 µg/g	Tm 0.54±0.03 µg/g
Cd 0.10±0.02 µg/g	Sr 113±3 µg/g	Yb 3.47±0.12 µg/g
Cl 56.7±7.0 µg/g	Ta 1.3±0.2 µg/g	Lu 0.52±0.03 µg/g
Co 14.7±0.7 µg/g	Te 0.05±0.02 µg/g	Y 32.7±1.9 µg/g
Cr 139±13 µg/g	Th 15.5±0.6 µg/g	SiO_2 68.50±0.13 %
Cs 13.7±0.8 µg/g	Ti 0.451±0.009 %	Al_2O_3 14.42±0.05 %
Cu 23.1±1.0 µg/g	Tl 0.67±0.11 µg/g	Fe_2O_3(T) 4.81±0.06 %
F 440±22 µg/g	U 2.5±0.6 µg/g	MgO 1.74±0.05 %
Ga 18.5±0.8 µg/g	V 87.7±3.6 µg/g	CaO 0.53±0.02 %
Ge 1.22±0.19 µg/g	W 2.3±0.2 µg/g	Na_2O 1.66±0.04 %
Hf 8.8±0.4 µg/g	Zn 80.9±2.9 µg/g	K_2O 2.66±0.06 %
Hg 0.043±0.002 µg/g	Zr 299±6 µg/g	TiO_2 0.753±0.012 %
Li 41.9±1.3 µg/g	La 48.2±3.2 µg/g	MnO 0.087±0.002 %
Mn 668±17 µg/g	Ce 93.4±4.6 µg/g	P_2O_5 0.134±0.003 %
Mo 0.83±0.07 µg/g	Pr 10.9±0.4 µg/g	
Nb 15.3±0.6 µg/g	Nd 41.9±1.9 µg/g	

NCS DC70317 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.32±0.02 µg/g	Hg 0.034±0.004 µg/g	Th 17.5±0.5 µg/g
As 37.3±1.7 µg/g	Ho 0.83±0.06 µg/g	Ti 0.217±0.077 % µg/g
Au* 6.2±1.4 µg/g	La 37.9±1.8 µg/g	Tl 0.96±0.21 µg/g
B 30.0±2.8 µg/g	Li 29.7±0.7 µg/g	Tm 0.38±0.03 µg/g
Ba 369±15 µg/g	Lu 0.36±0.02 µg/g	U 3.4±0.2 µg/g
Be 2.67±0.11 µg/g	Mn 614±21 µg/g	V 45.7±1.9 µg/g
Bi 1.22±0.07 µg/g	Mo 6.6±0.4 µg/g	W 9.2±0.5 µg/g
Br 0.9±0.5 µg/g	Nb 12.0±0.4 µg/g	Y 23.0±1.3 µg/g
Cd 0.57±0.04 µg/g	Nd 29.0±1.5 µg/g	Yb 2.46±0.11 µg/g
Ce 72.0±2.1 µg/g	Ni 20.8±0.7 µg/g	Zn 116±4 µg/g
Cl 69.1±4.6 µg/g	P 389±23 µg/g	Zr 188±12 µg/g
Co 9.8±0.7 µg/g	Pb 127±11 µg/g	SiO_2 64.22±0.22 %
Cr 39.8±3.4 µg/g	Pr 7.89±0.39 µg/g	Al_2O_3 10.84±0.15 %
Cs 17.2±1.0 µg/g	Rb 141±3 µg/g	Fe_2O_3(T) 3.07±0.02 %
Cu 247±6 µg/g	Sb 4.44±0.44 µg/g	MgO 0.87±0.03 %
Dy 4.24±0.25 µg/g	Sc 6.5±0.7 µg/g	CaO 8.19±0.09 %
Er 2.47±0.12 µg/g	Se 0.19±0.02 µg/g	Na_2O 1.74±0.02 %
Eu 0.96±0.04 µg/g	Sm 5.39±0.24 µg/g	K_2O 2.86±0.03 %
F 424±6 µg/g	Sn 3.3±0.4 µg/g	TiO_2 0.366±0.008 %
Ga 14.4±1.3 µg/g	Sr 185±6 µg/g	MnO 0.079±0.003 %
Gd 4.90±0.22 µg/g	Ta 1.1±0.2 µg/g	P_2O_5 0.090±0.005 %
Ge 1.19±0.16 µg/g	Tb 0.76±0.03 µg/g	
Hf 5.7±0.7 µg/g	Te 0.21±0.04 µg/g	

NCS DC70318 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.06±0.01 µg/g	Hf 6.7±0.7 µg/g	Tb 0.91±0.03 µg/g
As 18.0±0.7 µg/g	Hg 0.030±0.005 µg/g	Th 25.1±1.4 µg/g
Au 1.4±0.3 µg/g	Ho 0.97±0.07 µg/g	Ti 0.253±0.008 %
B 30.6±2.6 µg/g	La 47.8±2.8 µg/g	Tl 1.0±0.2 µg/g
Ba 437±12 µg/g	Li 36.6±0.8 µg/g	Tm 0.46±0.03 µg/g
Be 3.32±0.10 µg/g	Lu 0.44±0.02 µg/g	U 4.8±0.3 µg/g
Bi 0.49±0.03 µg/g	Mn 422±16 µg/g	V 52.5±1.6 µg/g
Br 0.9±0.4 µg/g	Mo 0.59±0.03 µg/g	W 4.1±0.3 µg/g
Cd 0.10±0.01 µg/g	Nb 14.7±0.5 µg/g	Y 26.5±0.8 µg/g
Ce 89.6±3.3 µg/g	Nd 35.8±0.9 µg/g	Yb 2.83±0.07 µg/g
Cl 207±7 µg/g	Ni 16.9±0.5 µg/g	Zn 54.1±1.8 µg/g
Co 6.7±0.4 µg/g	P 420±21 µg/g	Zr 225±9 µg/g
Cr 47.6±3.6 µg/g	Pb 35.8±1.3 µg/g	SiO_2 73.37±0.06 %
Cs 20.2±1.2 µg/g	Pr 9.78±0.42 µg/g	Al_2O_3 12.73±0.10 %
Cu 16.2±1.1 µg/g	Rb 180±3 µg/g	Fe_2O_3(T) 3.19±0.05 %
Dy 4.92±0.24 µg/g	Sb 0.84±0.12 µg/g	MgO 1.07±0.04 %
Er 2.90±0.16 µg/g	Sc 7.3±0.5 µg/g	CaO 1.32±0.04 %
Eu 1.07±0.04 µg/g	Se 0.05±0.01 µg/g	Na_2O 2.09±0.05 %
F 456±4 µg/g	Sm 6.62±0.36 µg/g	K_2O 3.56±0.09 %
Ga 16.3±0.8 µg/g	Sn 3.8±0.4 µg/g	TiO_2 0.422±0.012 %
Gd 5.83±0.23 µg/g	Sr 165±6 µg/g	MnO 0.055±0.002 %
Ge 1.33±0.13 µg/g	Ta 1.8±0.2 µg/g	P_2O_5 0.097±0.004 %

NCS DC70319 — Tibet sediment - Constituents — 60 g

Certified values

Ag 0.21±0.02 µg/g	Hg 0.028±0.003 µg/g	Th 25.5±1.2 µg/g
As 19.6±1.0 µg/g	Ho 0.79±0.06 µg/g	Ti 0.344±0.014 %
Au 1.2±0.3 µg/g	La 42.6±2.4 µg/g	Tl 1.1±0.3 µg/g
B 66.2±7.1 µg/g	Li 26.1±0.8 µg/g	Tm 0.38±0.02 µg/g
Ba 470±17 µg/g	Lu 0.39±0.02 µg/g	U 4.8±0.4 µg/g
Be 2.31±0.10 µg/g	Mn 527±17 µg/g	V 74.7±2.7 µg/g
Bi 0.80±0.05 µg/g	Mo 7.0±0.3 µg/g	W 9.3±4.0 µg/g
Br 1.4±0.7 µg/g	Nb 16.1±0.7 µg/g	Y 21.6±1.0 µg/g
Cd 0.19±0.02 µg/g	Nd 30.6±0.8 µg/g	Yb 2.55±0.08 µg/g
Ce 78.1±4.3 µg/g	Ni 9.5±0.8 µg/g	Zn 62.9±2.7 µg/g
Cl 244±38 µg/g	P 484±18 µg/g	Zr 299±24 µg/g
Co 7.6±0.5 µg/g	Pb 46.8±3.5 µg/g	SiO_2 71.23±0.18 %
Cr 22.6±2.0 µg/g	Pr 8.57±0.43 µg/g	Al_2O_3 13.22±0.03 %
Cs 15.0±1.3 µg/g	Rb 154±6 µg/g	Fe_2O_3(T) 4.11±0.14 %
Cu 151±4 µg/g	Sb 2.70±0.53 µg/g	MgO 0.70±0.03 %
Dy 3.91±0.21 µg/g	Sc 6.2±0.3 µg/g	CaO 1.40±0.03 %
Er 2.39±0.12 µg/g	Se 0.18±0.02 µg/g	Na_2O 2.72±0.04 %
Eu 0.97±0.05 µg/g	Sm 5.42±0.30 µg/g	K_2O 3.65±0.05 %
F 459±25 µg/g	Sn 2.7±0.2 µg/g	TiO_2 0.589±0.017 %
Ga 15.8±0.6 µg/g	Sr 256±4 µg/g	MnO 0.069±0.002 %
Gd 4.57±0.23 µg/g	Ta 1.8±0.3 µg/g	P_2O_5 0.111±0.003 %
Ge 1.13±0.14 µg/g	Tb 0.70±0.04 µg/g	
Hf 9.5±1.0 µg/g	Te 0.10±0.02 µg/g	

NCS DC73312 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.066±0.010 µg/g	Hg 0.040±0.008 µg/g	Tb 1.8±0.4 µg/g
As 6.2±0.6 µg/g	Ho 2.6±0.4 µg/g	Th 70±4 µg/g
B 10.8±2.5 µg/g	I 2.9±0.4 µg/g	Ti 1380±80 µg/g
Ba 185±24 µg/g	La 90±7 µg/g	Tl 1.9±0.4 µg/g
Be 17.1±1.1 µg/g	Li 101±4 µg/g	Tm 1.55±0.21 µg/g
Bi 1.64±0.11 µg/g	Mn 240±20 µg/g	U 17±2 µg/g
Br 3.0±0.6 µg/g	Mo 2.0±0.3 µg/g	V 16.5±1.9 µg/g
Cd 0.065±0.011 µg/g	N 363±60 µg/g	W 24±2 µg/g
Ce 192±5 µg/g	Nb 95±6 µg/g	Y 67±9 µg/g
Co 2.6±0.7 µg/g	Nd 62±7 µg/g	Yb 11±1 µg/g
Cr 12±3 µg/g	Ni 5.5±1.4 µg/g	Zn 44±5 µg/g
Cs 16.6±1.7 µg/g	P 200±27 µg/g	Zr 460±27 µg/g
Cu 4.9±0.5 µg/g	Pb 32±5 µg/g	SiO_2 69.91±0.17 %
Dy 11±2 µg/g	Pr 18.6±3.0 µg/g	Al_2O_3 15.72±0.10 %
Er 8.2±0.6 µg/g	Rb 470±23 µg/g	TFe_2O_3 1.90±0.06 %
Eu 0.49±0.09 µg/g	Sb 0.46±0.12 µg/g	FeO 0.56±0.09 %
F 1980±163 µg/g	Sc 4.4±0.7 µg/g	MgO 0.21±0.02 %
Ga 27.4±1.3 µg/g	Se 0.20±0.05 µg/g	CaO 0.25±0.04 %
Gd 9.5±1.3 µg/g	Sm 10.8±0.9 µg/g	Na_2O 3.03±0.09 %
Ge 1.7±0.3 µg/g	Sn 29±3 µg/g	K_2O 5.20±0.09 %
Hf 20±3 µg/g	Ta 15.3±1.3 µg/g	H_2O^+ 2.58±0.28 %

H_2O^+ : Loss of water at 950°C

Indicative values for Cl, In, Lu, S, Sr, Te, CO_2, C org., TC

NCS DC73315 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.36±0.03 µg/g	In 0.13±0.03 µg/g	Te 0.14±0.04 µg/g
As 75±8 µg/g	La 46±5 µg/g	Th 15.2±1.2 µg/g
B 51±6 µg/g	Li 45±2 µg/g	Ti 5370±160 µg/g
Ba 440±30 µg/g	Lu 0.46±0.06 µg/g	Tl 1.16±0.19 µg/g
Be 2.3±0.2 µg/g	Mn 1160±38 µg/g	Tm 0.46±0.07 µg/g
Bi 2.4±0.3 µg/g	Mo 1.2±0.2 µg/g	U 2.6±0.4 µg/g
Cd 0.82±0.05 µg/g	Nb 19±3 µg/g	V 109±6 µg/g
Ce 89±7 µg/g	Nd 35±4 µg/g	W 3.2±0.4 µg/g
Co 18.9±2.1 µg/g	Ni 34±3 µg/g	Y 26±3 µg/g
Cr 70±6 µg/g	P 630±25 µg/g	Yb 2.9±0.3 µg/g
Cs 9.4±0.9 µg/g	Pb 112±9 µg/g	Zn 243±15 µg/g
Cu 137±7 µg/g	Pr 9.9±1.3 µg/g	Zr 220±11 µg/g
Dy 5.0±0.5 µg/g	Rb 118±6 µg/g	SiO_2 56.44±0.24 %
Er 2.8±0.5 µg/g	S 410±65 µg/g	Al_2O_3 15.37±0.14 %
Eu 1.4±0.3 µg/g	Sb 3.9±0.5 µg/g	TFe_2O_3 5.84±0.09 %
F 585±36 µg/g	Sc 14.5±2.0 µg/g	MgO 0.98±0.04 %
Ga 20.3±0.9 µg/g	Se 0.40±0.10 µg/g	CaO 5.34±0.09 %
Gd 6.4±1.1 µg/g	Sm 6.6±0.5 µg/g	Na_2O 0.39±0.03 %
Ge 1.4±0.3 µg/g	Sn 4.6±0.8 µg/g	K_2O 2.11±0.07 %
Hf 6.5±1.9 µg/g	Sr 204±12 µg/g	CO_2 3.56±0.08 %
Hg 0.10±0.02 µg/g	Ta 1.4±0.2 µg/g	
Ho 0.95±0.15 µg/g	Tb 0.89±0.19 µg/g	

Indicative values for FeO, C org., TC

NCS DC73316 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.36±0.03 µg/g	La 39±6 µg/g	Ti 4640±120 µg/g
As 13.6±1.0 µg/g	Li 40±1 µg/g	Tl 1.08±0.15 µg/g
B 50±7 µg/g	Lu 0.34±0.09 µg/g	Tm 0.35±0.06 µg/g
Ba 330±24 µg/g	Mn 970±37 µg/g	U 2.4±0.4 µg/g
Be 1.7±0.3 µg/g	Mo 7.7±0.8 µg/g	V 142±8 µg/g
Bi 5.0±0.4 µg/g	Nb 12±3 µg/g	W 25±2 µg/g
Cd 0.43±0.03 µg/g	Nd 33±6 µg/g	Y 20±2 µg/g
Ce 68±7 µg/g	Ni 78±5 µg/g	Yb 2.1±0.3 µg/g
Co 24.4±1.9 µg/g	P 1020±42 µg/g	Zn 144±7 µg/g
Cr 190±15 µg/g	Pb 27±4 µg/g	Zr 170±8 µg/g
Cs 9.1±1.3 µg/g	Pr 8.4±0.8 µg/g	SiO_2 61.24±0.13 %
Cu 383±12 µg/g	Rb 107±6 µg/g	Al_2O_3 14.16±0.09 %
Dy 3.8±0.9 µg/g	S 784±118 µg/g	TFe_2O_3 5.88±0.07 %
Er 2.2±0.5 µg/g	Sb 1.25±0.22 µg/g	FeO 1.58±0.14 %
Eu 1.50±0.13 µg/g	Sc 17±2 µg/g	MgO 3.00±0.06 %
F 690±35 µg/g	Se 0.30±0.08 µg/g	CaO 3.87±0.07 %
Ga 16.7±0.7 µg/g	Sm 5.6±0.6 µg/g	Na_2O 2.30±0.07 %
Gd 5.5±0.9 µg/g	Sn 2.8±0.7 µg/g	K_2O 2.43±0.05 %
Ge 1.3±0.3 µg/g	Sr 266±18 µg/g	H_2O^+ 3.49±0.27 %
Hf 4.9±1.4 µg/g	Ta 0.75±0.09 µg/g	CO_2 2.03±0.12 %
Hg 0.045±0.008 µg/g	Tb 0.69±0.17 µg/g	TC 0.91±0.15 %
Ho 0.76±0.10 µg/g	Te 0.14±0.04 µg/g	
In 0.14±0.03 µg/g	Th 9.0±1.4 µg/g	

Indicative value for C org.

NCS DC73307 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.089±0.010 µg/g	I 0.63±0.09 µg/g	Th 12.4±0.7 µg/g
As 8.4±0.9 µg/g	In 0.056 ±0.009 µg/g	Ti 5500±160 µg/g
Au (0.0013) µg/g	La 40±3 µg/g	Tl 0.49±0.08 µg/g
B 54±6 µg/g	Li 30±1 µg/g	Tm 0.44±0.07 µg/g
Ba 430±18 µg/g	Lu 0.45±0.03 µg/g	U 2.6±0.4 µg/g
Be 1.8±0.3 µg/g	Mn 620±20 µg/g	V 97±6 µg/g
Bi 0.42±0.04 µg/g	Mo 0.64±0.11 µg/g	W 1.8±0.2 µg/g
Br 1.2±0.3 µg/g	N 440±30 µg/g	Y 27±2 µg/g
Cd 0.26±0.04 µg/g	Nb 18±2 µg/g	Yb 2.8±0.3 µg/g
Ce 78±6 µg/g	Nd 34±2 µg/g	Zn 78±4 µg/g
Cl 52±11 µg/g	Ni 32±2 µg/g	Zr 370±20 µg/g
Co 14.4 ±1.2 µg/g	P 670±23 µg/g	SiO_2 64.89±0.11 %
Cr 85±7 µg/g	Pb 23±3 µg/g	Al_2O_3 10.58±0.10 %
Cs 5.1±0.8 µg/g	Pr 9.2±0.8 µg/g	TFe_2O_3 4.86±0.07 %
Cu 32±2 µg/g	Rb 80±3 µg/g	FeO 1.53±0.05 %
Dy 5.1±0.3 µg/g	S 160±16 µg/g	MgO 2.39±0.06 %
Er 2.8±0.3 µg/g	Sb 0.81±0.15 µg/g	CaO 5.35±0.09 %
Eu 1.33±0.06 µg/g	Sc 11.1±0.6 µg/g	Na_2O 1.44±0.04 %
F 494±25 µg/g	Se 0.16±0.03 µg/g	K_2O 1.99±0.06 %
Ga 14.0±0.6 µg/g	Sm 6.3±0.4 µg/g	H_2O^+ 2.93±0.19 %
Gd 5.5±0.4 µg/g	Sn 2.6±0.4 µg/g	CO_2 4.20±0.08 %
Ge 1.3±0.2 µg/g	Sr 166±9 µg/g	C org. 0.46±0.05 %
Hf 9.7±1.5 µg/g	Ta 1.3±0.2 µg/g	TC 1.61±0.08 %
Hg 0.083±0.009 µg/g	Tb 0.87±0.09 µg/g	L.O.I.* 7.21±0.18 %
Ho 0.96±0.07 µg/g	Te 0.041±0.015 µg/g	

* Loss on Ignition

NCS DC73308 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.27±0.02 µg/g	I 1.6±0.3 µg/g	Th 5.0±0.3 µg/g
As 25±3 µg/g	In 0.067±0.016 µg/g	Ti 1270±70 µg/g
B 26±4 µg/g	La 13.0±0.9 µg/g	Tl 0.21±0.05 µg/g
Ba 42±7 µg/g	Li 13.0±0.5 µg/g	Tm 0.20±0.03 µg/g
Be 0.9±0.2 µg/g	Lu 0.19±0.03 µg/g	U 2.1±0.2 µg/g
Bi 0.38±0.04 µg/g	Mn 1010±29 µg/g	V 107±5 µg/g
Br 2.4±0.5 µg/g	Mo 1.2±0.1 µg/g	W 1.6±0.3 µg/g
Cd 1.12±0.08 µg/g	Nb 6.8±1.3 µg/g	Y 14±2 µg/g
Ce 38±4 µg/g	Nd 11.8±1.1 µg/g	Yb 1.2±0.2 µg/g
Co 15.3±1.1 µg/g	Ni 30±2 µg/g	Zn 46±4 µg/g
Cr 136±10 µg/g	P 271±15 µg/g	Zr 70±6 µg/g
Cs 2.3±0.5 µg/g	Pb 27±2 µg/g	SiO_2 88.89±0.19 %
Cu 22.6±1.3 µg/g	Pr 3.2±0.4 µg/g	Al_2O_3 2.84±0.07 %
Dy 2.2±0.3 µg/g	Rb 9.2±1.5 µg/g	TFe_2O_3 3.86±0.09 %
Er 1.3±0.2 µg/g	Sb 6.3±0.6 µg/g	MgO 0.12±0.04 %
Eu 0.47±0.04 µg/g	Sc 4.1±0.4 µg/g	CaO 0.70±0.03 %
F 149±25 µg/g	Se 0.28±0.05 µg/g	Na_2O 0.039±0.009 %
Ga 6.4±0.7 µg/g	Sm 2.4±0.2 µg/g	K_2O 0.125±0.013 %
Gd 2.2±0.2 µg/g	Sn 1.4±0.3 µg/g	CO_2 0.42±0.06 %
Ge 0.40±0.06 µg/g	Sr 25±3 µg/g	C org. 0.40±0.05 %
Hf 1.8±0.4 µg/g	Ta 0.44±0.12 µg/g	TC 0.51±0.07 %
Hg 0.28±0.03 µg/g	Tb 0.42±0.07 µg/g	L.O.I* 2.88±0.12 %
Ho 0.45±0.07 µg/g	Te 0.08±0.02 µg/g	

Indicative values for Cl, N, S, FeO, H_20^+

* Loss on Ignition

NCS DC73309 — Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 3.2±0.4 µg/g	Ho 1.4±0.2 µg/g	Tb 1.13±0.09 µg/g
As 188±13 µg/g	I 2.0±0.3 µg/g	Te 0.4±0.1 µg/g
B 68±5 µg/g	In 1.9±0.3 µg/g	Th 23.3±1.2 µg/g
Ba 260±17 µg/g	La 30±2 µg/g	Ti 2100±100 µg/g
Be 26±3 µg/g	Li 71±2 µg/g	Tl 2.9±0.4 µg/g
Bi 50±4 µg/g	Lu 0.78±0.06 µg/g	Tm 0.74±0.09 µg/g
Br 2.2±0.5 µg/g	Mn 2490±84 µg/g	U 9.1±0.9 µg/g
Cd 2.3±0.2 µg/g	Mo 5.9±0.6 µg/g	V 47±3 µg/g
Ce 58±4 µg/g	Nb 25±3 µg/g	W 126±9 µg/g
Cl 290±26 µg/g	Nd 27±2 µg/g	Y 43±5 µg/g
Co 8.5±0.8 µg/g	Ni 14.3±1.0 µg/g	Yb 5.1±0.6 µg/g
Cr 40±3 µg/g	P 255±27 µg/g	Zn 373±14 µg/g
Cs 17.4±0.8 µg/g	Pb 636±22 µg/g	Zr 153±13 µg/g
Cu 79±3 µg/g	Pr 7.4±0.5 µg/g	SiO_2 76.25±0.18 %
Dy 7.2±0.6 µg/g	Rb 408±11 µg/g	Al_2O_3 10.37±0.10 %
Er 4.6±0.5 µg/g	S 170±26 µg/g	TFe_2O_3 4.39±0.07 %
Eu 0.60±0.06 µg/g	Sb 14.9±1.2 µg/g	MgO 0.62±0.07 %
F 1650±82 µg/g	Sc 7.4±0.4 µg/g	CaO 0.47±0.03 %
Ga 18.5±0.9 µg/g	Se 0.20±0.05 µg/g	Na_2O 0.46±0.03 %
Gd 5.9±0.4 µg/g	Sm 6.2±0.3 µg/g	K_2O 3.28±0.07 %
Ge 1.81±0.21 µg/g	Sn 370±44 µg/g	H_2O^+ 2.67±0.12 %
Hf 5.4±0.6 µg/g	Sr 29±4 µg/g	
Hg 0.072±0.009 µg/g	Ta 5.7±0.5 µg/g	

Indicative values for Au, FeO, CO_2, C org., TC, Loss on Ignition (L.O.I.)

NCS DC73310 Chinese stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 1.15±0.11 µg/g	Ho 0.94±0.07 µg/g	Tb 0.82±0.06 µg/g
As 115±6 µg/g	I 1.8±0.3 µg/g	Te 0.30±0.07 µg/g
B 24±2 µg/g	In 0.96±0.15 µg/g	Th 21.4±1.1 µg/g
Ba 206±15 µg/g	La 32.7±1.4 µg/g	Ti 1510±50 µg/g
Be 8.2±0.7 µg/g	Li 39.0±1.0 µg/g	Tl 1.76±0.27 µg/g
Bi 10.9±0.9 µg/g	Lu 0.58±0.06 µg/g	Tm 0.53±0.06 µg/g
Br 1.7±0.4 µg/g	Mn 1400±47 µg/g	U 7.8±0.7 µg/g
Cd 4.0±0.3 µg/g	Mo 8.4±0.6 µg/g	V 47±4 µg/g
Ce 61±4 µg/g	Nb 15.4±1.1 µg/g	W 37±2 µg/g
Cl 163±25 µg/g	Nd 26±3 µg/g	Y 29±3 µg/g
Co 8.8±0.7 µg/g	Ni 12.8±1.3 µg/g	Yb 3.7±0.4 µg/g
Cr 35±3 µg/g	P 235±22 µg/g	Zn 498±18 µg/g
Cs 7.9±0.4 µg/g	Pb 285±11 µg/g	Zr 234±16 µg/g
Cu 1230±33 µg/g	Pr 6.9±1.1 µg/g	SiO_2 77.29±0.13 %
Dy 4.8±0.2 µg/g	Rb 270±10 µg/g	Al_2O_3 9.30±0.11 %
Er 3.1±0.3 µg/g	S 940±54 µg/g	TFe_2O_3 4.88±0.09 %
Eu 0.61±0.03 µg/g	Sb 24±3 µg/g	FeO 1.19±0.07 %
F 1250±39 µg/g	Sc 5.1±0.4 µg/g	MgO 0.47±0.08 %
Ga 14.1±0.5 µg/g	Se 0.25±0.03 µg/g	CaO 1.16±0.05 %
Gd 4.4±0.4 µg/g	Sm 5.0±0.4 µg/g	Na_2O 0.44±0.03 %
Ge 1.87±0.13 µg/g	Sn 54±5 µg/g	K_2O 2.91±0.04 %
Hf 8.3±1.0 µg/g	Sr 24±3 µg/g	H_2O^+ 2.15±0.10 %
Hg 0.056±0.006 µg/g	Ta 3.2±0.3 µg/g	L.O.I.* 2.62±0.14 %

Indicative values for Au, CO_2, C org. TC

* Loss on Ignition

NCS DC73371 Stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.036±0.010 µg/g	Ho 0.82±0.11 µg/g	Tb 0.81±0.07 µg/g
As 2.7±0.4 µg/g	I 0.6±0.2 µg/g	Th 27±3 µg/g
B 9.8±1.8 µg/g	La 41±2 µg/g	Ti 5370±210 µg/g
Ba 920±77 µg/g	Li 32±3 µg/g	Tl 0.67±0.14 µg/g
Be 3.1±0.3 µg/g	Lu 0.39±0.04 µg/g	Tm 0.34±0.04 µg/g
Bi 0.49±0.14 µg/g	Mn 910±28 µg/g	U 4.6±0.6 µg/g
Cd 0.11±0.03 µg/g	Mo 1.04±0.13 µg/g	V 115±11 µg/g
Ce 81±7 µg/g	N 741±28 µg/g	W 1.0±0.1 µg/g
Cl 72±7 µg/g	Nb 31.5±1.9 µg/g	Y 22±2 µg/g
Co 20±2 µg/g	Nd 36±3 µg/g	Yb 2.3±0.2 µg/g
Cr 128±6 µg/g	Ni 56±7 µg/g	Zn 90±7 µg/g
Cs 5.5±0.2 µg/g	P 1520±77 µg/g	Zr 316±16 µg/g
Cu 28±2 µg/g	Pb 31±4 µg/g	SiO_2 59.07±0.21 %
Dy 4.3±0.3 µg/g	Pr 9.3±0.9 µg/g	Al_2O_3 15.36±0.06 %
Er 2.3±0.4 µg/g	Rb 126±7 µg/g	TFe_2O_3 6.50±0.15 %
Eu 1.7±0.2 µg/g	Sb 0.30±0.05 µg/g	MgO 3.30±0.17 %
F 872±52 µg/g	Sc 14±2 µg/g	CaO 4.0±0.1 %
Ga 23.6±1.3 µg/g	Se 0.12±0.03 µg/g	Na_2O 3.4±0.1 %
Gd 5.6±0.6 µg/g	Sm 6.7±0.4 µg/g	K_2O 2.8±0.1 %
Ge 1.5±0.2 µg/g	Sn 3.3±0.6 µg/g	L.O.I 3.8±0.3 %
Hf 9.3±0.7 µg/g	Sr 486±32 µg/g	
Hg 0.032±0.003 µg/g	Ta 3.0±0.3 µg/g	

NCS DC73373 Stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.027±0.005 µg/g	Hg 0.011±0.002 µg/g	Ta (0.52) µg/g
As 2.0±0.2 µg/g	Ho 0.33±0.03 µg/g	Tb 0.28±0.06 µg/g
B 5.3±0.7 µg/g	I 0.3±0.1 µg/g	Th 5.4±0.6 µg/g
Ba 690±54 µg/g	La 24±3 µg/g	Ti 1370±120 µg/g
Be 0.96±0.04 µg/g	Li 7.4±0.7 µg/g	Tl 0.30±0.08 µg/g
Bi 0.057±0.010 µg/g	Lu 0.16±0.03 µg/g	Tm 0.13±0.03 µg/g
Cd 0.045±0.015 µg/g	Mn 218±31 µg/g	U 0.75±0.10 µg/g
Ce 42±4 µg/g	Mo 0.44±0.10 µg/g	V 19±3 µg/g
Cl 32±5 µg/g	Nb 9.0±1.1 µg/g	W 0.50±0.06 µg/g
Co 3.5±0.4 µg/g	Nd 14.7±1.6 µg/g	Y 8.9±1.2 µg/g
Cr 10.7±1.7 µg/g	Ni 3.7±1.0 µg/g	Yb 0.99±0.17 µg/g
Cs 1.0±0.1 µg/g	P 166±11 µg/g	Zn 18±2 µg/g
Cu 11±2 µg/g	Pb 13.5±2.3 µg/g	Zr 187±16 µg/g
Dy 1.56±0.19 µg/g	Pr 4.3±0.5 µg/g	SiO_2 80.58±0.17 %
Er 0.98±0.17 µg/g	Rb 70±6 µg/g	Al_2O_3 9.68±0.16 %
Eu 0.38±0.06 µg/g	Sb 0.19±0.05 µg/g	TFe_2O_3 1.46±0.05 %
F 133±19 µg/g	Sc 2.4±0.3 µg/g	MgO 0.24±0.04 %
Ga 11.1±0.9 µg/g	Se 0.040±0.011 µg/g	CaO 0.34±0.03 %
Gd 1.8±0.2 µg/g	Sm 2.3±0.2 µg/g	Na_2O 2.35±0.06 %
Ge 1.16±0.05 µg/g	Sn 0.97±0.33 µg/g	K_2O 3.9±0.2 %
Hf 4.5±0.5 µg/g	Sr 87±4 µg/g	L.O.I 1.07±0.21 %

NCS DC73374 — Stream sediment - Trace elements and oxides — 70 g

Certified values

Ag 0.13±0.02 µg/g	Ho 1.43±0.09 µg/g	Ta 5.0±0.4 µg/g
As 18±2 µg/g	I 1.6±0.3 µg/g	Tb 1.23±0.11 µg/g
B 27±4 µg/g	La 54±3 µg/g	Th 12.4±1.2 µg/g
Ba 760±47 µg/g	Li 24±2 µg/g	Ti 14400±500 µg/g
Be 6.0±0.6 µg/g	Lu 0.58±0.07 µg/g	Tl 0.47±0.19 µg/g
Bi 3.0±0.3 µg/g	Mn 1230±82 µg/g	Tm 0.60±0.05 µg/g
Cd 0.20±0.03 µg/g	Mo 2.7±0.3 µg/g	U 3.0±0.4 µg/g
Ce 109±10 µg/g	N 668±25 µg/g	V 190±25 µg/g
Co 28±2 µg/g	Nb 72±6 µg/g	W 5.6±0.5 µg/g
Cr 243±16 µg/g	Nd 45±5 µg/g	Y 34±5 µg/g
Cs 4.3±0.8 µg/g	Ni 87±9 µg/g	Yb 3.8±0.6 µg/g
Cu 66±6 µg/g	P 1000±30 µg/g	Zn 165±15 µg/g
Dy 7.0±0.6 µg/g	Pb 66±6 µg/g	Zr 524±16 µg/g
Er 4.0±0.5 µg/g	Pr 11.8±0.9 µg/g	SiO_2 57.25±0.31 %
Eu 2.5±0.4 µg/g	Rb 87±7 µg/g	Al_2O_3 13.39±0.16 %
F 593±40 µg/g	Sb 2.7±0.4 µg/g	TFe_2O_3 9.5±0.1 %
Ga 25±3 µg/g	Sc 18±2 µg/g	MgO 3.4±0.1 %
Gd 7.6±1.1 µg/g	Se (0.15) µg/g	CaO 3.5±0.1 %
Ge 1.6±0.3 µg/g	Sm 8.5±0.6 µg/g	Na_2O 2.0±0.1 %
Hf 13.6±0.6 µg/g	Sn 9.5±1.7 µg/g	K_2O 2.3±0.1 %
Hg 0.037±0.004 µg/g	Sr 216±6 µg/g	L.O.I 5.64±0.47 %

RTC-PR96961 — Non-polluted sediment — 100 g

The certified values were determined by Dutch standard methods (NEN 57..; NEN 64.. series).

Certified values

As 8.0 mg/kg	Fe 21 mg/kg	P 0.73 mg/kg
Ca 23934 mg/kg	N 0.73 mg/kg	Zn 79.0 mg/kg
Cu 17.0 mg/kg	Mn 208.1 mg/kg	

Indicative values for Al, Ba, Cd, Cr, Co, Pb, Mg, Hg, Ni, K

RTC-PR96962 — Sediment (cyanide polluted) - Metals — 100 g

This sediment is from a stream located in the Western United States and is not "spiked or fortified" in any manner. The sample was certified by RIZA as determined by Dutch standard methods (NEN 57.., NEN 64 series). The sample is suitable for use in these and other similar methods.

Certified values

Ca 24439 mg/kg	Mn 206.8 mg/kg
Cu 17.0 mg/kg	P 0.73 mg/kg
Fe 20816 mg/kg	Total Cyanide, T-CN 6.74 mg/kg
N 0.75 mg/kg	Zn 78.8 mg/kg
Ni 20.2 mg/kg	

Indicative values for Al, As, Ba, Cd, Cr, Co, Pb, Mg, Hg, K, B-CN

RTC-CRM846 — Sediment - Pesticides — 50 g

The reference values were determined by USEPA SW846 (3rd edition) method 8081A. The sample is suitable for this and other similar methods.

Certified values

Aldrin 248 µg/kg	Endrin aldehyde 40.6 µg/kg
alpha-Chlordane 60.2 µg/kg	Endrin 247 µg/kg
4,4'-DDD 256 µg/kg	delta-HCH 50.2 µg/kg
4,4'-DDE 98 µg/kg	alpha-HCH 387 µg/kg
4,4'-DDT 335 µg/kg	beta-HCH 304 µg/kg
Dieldrin 194 µg/kg	gamma-HCH (Lindane) 125 µg/kg
Endosulfan I 137 µg/kg	Heptachlor 190 µg/kg
Endosulfan II 345 µg/kg	Heptachlor epoxide 75.5 µg/kg
Endosulfan sulfate 311 µg/kg	Methoxychlor 156 µg/kg

IAEA-313 — Stream sediment - Radium-226 — 50 g

Recommended values

^{226}Ra 342 Bq/kg	Th 77.1 mg/kg	U 18.2 mg/kg

IAEA-314 — Stream sediment - Radium-226 — 50 g

Recommended values

^{226}Ra 732 Bq/kg	Th 17.8 mg/kg	U 56.8 mg/kg

IAEA-375 — Soil - Radioactive isotopes — 250 g

Recommende values

^{106}Ru 56 Bq/kg	^{137}Cs 5280 Bq/kg	^{90}Sr 108 Bq/kg
^{125}Sb 77 Bq/kg	^{226}Ra 20 Bq/kg	Th 5.2 mg/kg
^{129}I 0.0017 Bq/kg	^{232}Th 20.5 Bq/kg	U 1.86 mg/kg
^{134}Cs 463 Bq/kg	^{40}K 424 Bq/kg	

IAEA-SL-1 — Lake sediment - Trace elements — 25 g

Collected at the Sardis Reservoir; Panola Country; Mississippi, USA.

Recommended values

As 27.6 mg/kg	Fe 67.4 mg/kg	Ti 5170 mg/kg
Ba 639 mg/kg	La 52.6 mg/kg	V 170 mg/kg
Br 6.82 mg/kg	Mn 3460 mg/kg	Yb 3.42 mg/kg
Cd 0.26 mg/kg	Na 1700 mg/kg	Zn 223 mg/kg
Ce 117 mg/kg	Rb 113 mg/kg	
Co 19.8 mg/kg	Th 14 mg/kg	

Information values for Cd, Cr, Cs, Cu, Dy, Eu, Ga, Hf, Hg, K, Lu, Na, Ni, Pb, Sb, Sc, Se, Sm, Sr, Ta, Tb, U

IAEA-SL-3 — Lake sediment - Trace elements — 25 g

IAEA-SL-3 lake sediment was collected from the Neusiedlersee, located some 80 km south-east of Vienna.

Recommended values

As 3.2 mg/kg	La 22.5 mg/kg	Sr 470 mg/kg
Ce 45.5 mg/kg	Nd 21.5 mg/kg	Th 7.02 mg/kg
Hf 9.1 mg/kg	Rb 38.8 mg/kg	
K 8.74 g/kg	Sm 3.83 mg/kg	

Information values for Al, Br, Ca, Cs, Dy, Lu, Mg, Na, Sb, Sc, Ta, Tb, Ti, U, Yb

IAEA-SL-2 — Lake sediment - Trace elements — 250 g

Recommended values

^{137}Cs 2.4 Bq/kg	^{40}K 240 Bq/kg

NIST-4354 — Freshwater lake sediment - Radioactivity — 25 g

Certified values

^{241}Am 0.0011 Bq/g	^{228}Th 0.0286 Bq/g	^{238}Pu 0.00026 Bq/g
^{60}Co 0.320 Bq/g	^{232}Th 0.0268 Bq/g	^{239}Pu + ^{240}Pu 0.00400 Bq/g
^{137}Cs 0.0592 Bq/g	^{235}U 0.00075 Bq/g	
^{90}Sr 1.09 Bq/g	^{238}U 0.0174 Bq/g	

NWWQB-1 — Lake sediment - Trace elements — 100 g

Certified values

Al 78134 µg/g	Fe 47358 µg/g	Pb 83.7 µg/g
As 23.00 µg/g	Hg 1.09 µg/g	Se 1.02 µg/g
Co 20.1 µg/g	Mn 2237 µg/g	V 129 µg/g
Cu 79.6 µg/g	Ni 61.5 µg/g	Zn 275 µg/g

Indicative values for Ag, Ba, Be, Bi, Ca, Cd, Cr, K, Mg, Mo, Na, P, Sb, Sn, Sr, Tl, recoverable and leachable element concentrations

NWWQB-3 — Lake sediment - Trace elements — 100 g

A blend of sediments collected from the heavy industrial areas of Hamilton Harbour and Lake Ontario, Canada.

Certified values

Al 52700 µg/g	Fe 6.0 %	Pb 240 µg/g
As 18.8 µg/g	Hg 2.75 µg/g	Se 1.15 µg/g
Co 15.3 µg/g	Mn 1264 µg/g	V 90.7 µg/g
Cu 81.6 µg/g	Ni 52.0 µg/g	Zn 1396 µg/g

Indicative values for Ag, Ba, Be, Bi, Cd, Ca, Cr, K, Mg, Mo, Na, P, Pb, Sb, Sn, Sr,Tl, V, recoverable and leachable element concentrations

NWSUD-1 — Lake sediment - Trace metals — 100 g

Collected from Lake Ramsay in Sudbury, Ontario, Canada, a well-known mining area. It has high cobalt, copper and nickel levels but low mercury levels

Al 58049 µg/g	Ga 14.3 µg/g*	Sb 0.727 µg/g*
As 31.1 µg/g*	Hg 0.098 µg/g*	Sc 11.0 µg/g*
B 42.3 µg/g*	K 19718 µg/g*	Se 2.75 µg/g*
Ba 488 µg/g*	La 24.4 µg/g*	Sn 1.63 µg/g*
Be 1.30 µg/g*	Li 19.1 µg/g*	Sr 202 µg/g*
Bi 1.84 µg/g*	Mg 10501 µg/g*	Ti 2203 µg/g*
Ca 11636 µg/g*	Mn 578 µg/g	Tl 0.513 µg/g*
Cd 1.88 µg/g*	Mo 1.92 µg/g*	U 1.72 µg/g*
Ce 51.8 µg/g*	Na 15798 µg/g*	V 67.8 µg/g
Cr 81.2 µg/g*	Nb 6.68 µg/g*	W 0.996 µg/g*
Co 44.2 µg/g	Ni 936 µg/g	Y 12.5 µg/g*
Cs 2.03 µg/g*	P 686 µg/g*	Zn 768 µg/g
Cu 561 µg/g	Pb 56.3 µg/g	

* non-certified values

Information values for recoverable and leachable element concentrations

BCR-535 — Freshwater harbour sediment - PAHs — 40 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Pyrene	2.52	0.18
Benzo(a)anthracene	1.54	0.10
Benzo(a)pyrene	1.16	0.10
Benzo(e)pyrene	1.86	0.13
Benzo(b)fluoranthene	2.29	0.15
Benzo(k)fluoranthene	1.09	0.15
Indeno(1,2,3-cd)pyrene	1.56	0.14

BCR-536 — Freshwater harbour sediment - PCBs — 40 g

Compound (IUPAC Code)	Certified value µg/kg	Uncertainty µg/kg
PCB 28	44	5
PCB 52	38	4
PCB 101	44	4
PCB 105	3.5	0.6
PCB 118	27.5	2.2
PCB 128	5.4	1.2
PCB 138	27	4
PCB 149	49	4
PCB 153	50	4
PCB 156	3.0	0.4
PCB 163	17.2	2.6
PCB 170	13.4	1.4
PCB 180	22.4	2.1

NWHR-1 — Harbour sediment - Trace metals — 100 g

NWHR-1 is a harbour sediment from the mouth of the Humber River near Toronto, Ontario, Canada.

Al	59250 µg/g	Ga	14.9 µg/g*	Sb	1.59 µg/g*
As	6.29 µg/g*	Hg	0.342 µg/g*	Sc	11.4 µg/g*
B	55.7 µg/g*	K	20828 µg/g*	Se	0.713 µg/g*
Ba	532 µg/g*	La	28.4 µg/g*	Sn	9.87 µg/g*
Be	1.65 µg/g*	Li	29.9 µg/g*	Sr	287 µg/g*
Bi	0.453 µg/g*	Mg	14328 µg/g*	Ti	3096 µg/g*
Ca	67660 µg/g*	Mn	549 µg/g	Tl	0.502 µg/g*
Cd	3.88 µg/g*	Mo	1.42 µg/g*	U	1.99 µg/g*
Ce	60.2 µg/g*	Na	12027 µg/g*	V	84.1 µg/g
Cr	126 µg/g	Nb	11.5 µg/g*	W	2.00 µg/g*
Co	14.0 µg/g*	Ni	39.4 µg/g	Y	22.3 µg/g*
Cs	2.92 µg/g*	P	1264 µg/g*	Zn	1105 µg/g
Cu	79.9 µg/g	Pb	139 µg/g		
Fe	30579 µg/g	Rb	80.2 µg/g*		

* not-certified values

Information values for recoverable and leachable element concentrations

RTC-CNS392-050 — Fresh water sediment - Trace elements — 50 g

The reference values were determined by Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly Nitric / Hydrochloric acid mixture (Aqua Regia) in pressurized microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Reference values

Al	(14100) mg/kg	Mn	6604 mg/kg
Sb	12 mg/kg	Mo	14.5 mg/kg
As	6.49 mg/kg	Ni	32.9 mg/kg
Ba	54.8 mg/kg	Se	8.59 mg/kg
Be	14.3 mg/kg	Ag	15.8 mg/kg
Cd	21.5 mg/kg	Ti	(25.9) mg/kg
Co	9.16 mg/kg	V	41.9 mg/kg
Cr	36.6 mg/kg	Zn	81.7 mg/kg
Cu	146 mg/kg	Chemical Oxygen Demand (COD)	0.619 g/kg
Fe	7880 mg/kg	Chloride	0.255 g/kg
Pb	121 mg/kg	Kjeldahl-Nitrogen (KN)	0.185 g/kg
Hg	12.7 mg/kg	Phosphorus. Total (TP)	0.137 g/kg

RTC-CRM141 — Fresh water sediment - PAHs, PCBs and pesticides — 50 g

The Reference Values were determined by Dutch standard methods (NEN 5771, 5718, and 5719) and EPA extraction methods 3540/3541 or 3550A, followed by Method 8270.
The PAH 10 list of poly-aromatic hydrocarbons is defined according to VROM, the Dutch Ministry of Housing and Urban Planning and includes anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene. The PAH 16 list of poly-aromatic hydrocarbons is defined according to the US Environmental Protection Agency, EPA.

Reference values

Acenaphthene	29.9 µg/kg	**Total 16PAH (EPA16)**	**4440 µg/kg**
Acenaphthylene	53.4 µg/kg	2,4'-DDD	15.5 µg/kg
Anthracene	15.0 µg/kg	2,4'-DDE	39.5 µg/kg
Benzo(a)anthracene	338 µg/kg	2,4'-DDT	43.0 µg/kg
Benzo(a)pyrene	65.3 µg/kg	4,4'-DDD	13.9 µg/kg
Benzo(b)fluoranthene	210 µg/kg	4,4'-DDE	18.8 µg/kg
Benzo(g,h,i)perylene	139 µg/kg	4,4'-DDT	10.2 µg/kg
Benzo(k)fluoranthene	300 µg/kg	alpha-Endosulfan	14.2 µg/kg
Chrysene	376 µg/kg	alpha-HCH	37.1 µg/kg
Dibenz(a,h)anthracene	294 µg/kg	Aldrin	16.2 µg/kg
Fluoranthene	557 µg/kg	beta-HCH	21.1 µg/kg
Fluorene	408 µg/kg	gamma-HCH(Lindane)	9.50 µg/kg
Indeno(1,2,3-cd)pyrene	235 µg/kg	Dieldrin	25.7 µg/kg
Naphthalene	464 µg/kg	Endrin	10.4 µg/kg
Phenanthrene	660 µg/kg	Hexachlorobenzene	36.5 µg/kg
Pyrene	331 µg/kg	Heptachlor	6.54 µg/kg
Total 10 PAH (VROM10)	**3190 µg/kg**	Heptachlorepoxide	33.1 µg/kg

PCB 28 (2,4,4'-Trichlorobiphenyl)	44.9 µg/kg
PCB 52 (2,2',5,5'-Tetrachlorobiphenyl)	64.6 µg/kg
PCB 101 (2,2',4,5,5'-Pentachlorobiphenyl)	45.7 µg/kg
PCB 118 (2,3',4,4',5,-Pentachlorobiphenyl)	24.0 µg/kg
PCB 138 (2,2',3,4,4',5'-Hexachlorobiphenyl)	63.0 µg/kg
PCB 153 (2,2',4,4',5,5'-Hexachlorobiphenyl)	41.3 µg/kg
PCB 180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl)	54.7 µg/kg
Total PCB	**334 µg/kg**

RTC-CRM016 — Sediment (Sandy loam) - Metals — 50 g

Sediment from a stream located in the Western United States. The following certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al	8920 mg/kg	Cr	14.5 mg/kg	Na	292 mg/kg
As	7.76 mg/kg	Cu	15.5 mg/kg	Ni	16.7 mg/kg
Ba	79.3 mg/kg	Fe	16831 mg/kg	Pb	14.1 mg/kg
Be	0.49 mg/kg	Hg	0.158 mg/kg	V	22.5 mg/kg
Ca	22646 mg/kg	K	1958 mg/kg	Zn	69.7 mg/kg
Cd	0.47 mg/kg	Mg	13246 mg/kg		
Co	5.96 mg/kg	Mn	180 mg/kg		

Indicative values for Ag, B, Mo, Sb, Se, Si, Sr, Tl

The following certified values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for mercury, and by using Aqua Regia DIN 38414-S7 Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

As	7.76 mg/kg	Cu	17.4 mg/kg	Ni	21.2 mg/kg
Cd	0.613 mg/kg	Pb	18.6 mg/kg	Zn	80.0 mg/kg
Cr	29.2 mg/kg	Hg	0.158 mg/kg		

RTC-CRM015 **Sediment (Sandy loam) - Metals and cyanide** 50 g

Sediment from a stream located in the Western United States. The Certified values were determined by USEPA SW846 (3rd edition) Methods 3050/3051 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), thallium (7841), and cyanide (9010A). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al	9200 mg/kg	Cu	16.1 mg/kg	Na	400 mg/kg
As	6.6 mg/kg	Fe	17070 mg/kg	Ni	17.5 mg/kg
Ba	83.0 mg/kg	Hg	0.10 mg/kg	Pb	15.04 mg/kg
Be	0.47 mg/kg	K	2074 mg/kg	V	22.1 mg/kg
Ca	23463 mg/kg	Mg	13611 mg/kg	Zn	69.9 mg/kg
Cr	14.3 mg/kg	Mn	183.4 mg/kg	Cyanide	6.04 mg/kg
Co	6.04 mg/kg	Mo	1.16 mg		

Indicative values for Ag, B, Cd, Mo, Sb, Se, Si, Tl

CAN-LKSD-1 - CAN-LKSD-1-4

A set of four different samples from CANMET, designed to provide a representative selection of the type of sediments likely to be found within a continental shield region. The samples were taken from the bottom centre of each lake; materials from a number of similar lakes were then blended together to produce the four samples. As well as analytical values for elements from total destruction methods, values are also given for aqua regia and dilute aqua regia extraction methods, and for major and minor elements as oxides.

Provisional values for total elements

	CAN-LKSD 1	CAN-LKSD 2	CAN-LKSD 3	CAN-LKSD 4
Ag	0.6	0.8	2.7	<0.5 mg/kg
As	40	11	27	16 mg/kg
Au	5	3	3	2 ng/g
B	49	65	25	22 mg/kg
Ba	430	780	680	330 mg/kg
Be	1.1	2.5	1.9	1.0 mg/kg
Br	11	18	16	49 mg/kg
C	12.3	4.5	4.5	17.7 wt. %
Ce	27	108	90	48 mg/kg
Co	11	17	30	11 mg/kg
Cr	31	57	87	33 mg/kg
Cs	1.5	3.0	2.3	1.7 mg/kg
Cu	44	37	35	31 mg/kg
Dy	3.4	7.3	4.9	3.7 mg/kg
Eu	0.9	1.9	1.5	1.1 mg/kg
F	300	590	490	260 mg/kg
Fe	2.8	4.3	4.0	2.8 wt. %
Hf	3.6	7.0	4.8	2.8 mg/kg
La	16	68	52	26 mg/kg
Li	7	20	25	12 mg/kg
Lu	0.4	0.6	0.4	0.5 mg/kg
Mn	700	2020	1440	500 mg/kg
Mo	10	<5	<5	<5 mg/kg
Nb	7	8	8	9 mg/kg
Nd	16	58	44	25 mg/kg
Ni	16	26	47	31 mg/kg
Pb	82	44	29	91 mg/kg
Rb	24	85	78	28 mg/kg
S	1.57	0.14	0.14	0.99 wt. %
Sb	1.2	1.1	1.3	1.7 mg/kg
Sc	9	13	13	7 mg/kg
Sm	4	11	8	5 mg/kg
Sn	16	5	3	5 mg/kg
Sr	250	220	240	110 mg/kg
Ta	0.3	0.8	0.7	0.4 mg/kg
Tb	0.6	1.4	1.0	1.2 mg/kg
Th	2.2	13.4	11.4	5.1 mg/kg
Ti	3010	3460	3330	2270 mg/kg
U	9.7	7.6	4.6	31.0 mg/kg
V	50	77	82	49 mg/kg
W	<4	<4	<4	<4 mg/kg
Y	19	44	30	23 mg/kg
Yb	2.0	4.0	2.7	2.0 mg/kg
Zn	331	209	152	194 mg/kg
Zr	134	254	178	105 mg/kg

Provisional values for total analytes

Water	2.92	2.23	2.07	6.55 wt. %

Loss on ignition at

500°C	23.5	12.3	11.8	40.8 wt. %

Provisional values for major and minor elements as oxides

Al_2O_3	7.8	12.3	12.5	5.9 wt. %
CaO	10.8	2.2	2.3	1.8 wt. %
Fe_2O_3	4.1	6.2	5.7	4.1 wt. %
K_2O	1.1	2.6	2.2	0.8 wt. %
MnO	0.1	0.3	0.2	0.1 wt. %
MgO	1.7	1.7	2.0	0.9 wt. %
Na_2O	2.0	1.9	2.3	0.7 wt. %
P_2O_5	0.2	0.3	0.2	0.3 wt. %
SiO_2	40.1	58.9	58.5	41.6 wt. %
TiO_2	0.5	0.6	0.5	0.4 wt. %
SO_4	1.6			wt. %

Loss on Ignition

at 1000°C	29.9	13.6	13.4	43.6 wt. %
Totals	99.9	100.6	99.8	100.2 wt. %

Provisional values for aqua regia extractable elements

Ag	0.6	0.8	2.4	0.2 µg/g
As	30	9	23	12 µg/g
Cd	1.2	0.8	0.6	1.9 µg/g
Co	9	17	30	11 µg/g
Cr	12	29	51	21 µg/g
Cu	44	36	34	30 µg/g
Fe	1.8	3.5	3.5	2.7 wt. %
Hg	110	160	290	190 ng/g
Mn	460	1840	1220	430 µg/g
Mo	12	2	2	2 µg/g
Ni	11	23	44	32 µg/g
Pb	84	40	26	93 µg/g
Sb	1.2	1.2	1.4	1.5 µg/g
V	27	48	55	32µg/g
Zn	337	200	139	189 µg/g

Provisional values for dilute aqua regia extractable elements

Ag	0.6	0.8	2.8	0.2 µg/g
Cd	1.2	0.6	0.4	1.9 µg/g
Co	8	16	30	9 µg/g
Cu	44	36	34	31 µg/g
Fe	1.8	3.7	3.6	2.6 wt. %
Mn	410	1840	1300	420 µg/g
Ni	12	23	46	31 µg/g
Pb	83	34	21	91 µg/g
Zn	335	205	151	195 µg/g

Ag	0.6	0.8	2.8	0.2 µg/g
Cd	1.2	0.6	0.4	1.9 µg/g
Co	8	16	30	9 µg/g
Cu	44	36	34	31 µg/g
Fe	1.8	3.7	3.6	2.6 wt. %
Mn	410	1840	1300	420 µg/g
Ni	12	23	46	31 µg/g
Pb	83	34	21	91 µg/g
Zn	335	205	151	195 µg/g

The materials are mixed from various sediments as follows:

CAN-LKSD-1	Lake sediment Sourced from lake 31F and 31M in Ontario Canada	100 g
CAN-LKSD-2	Lake sediment Sourced from lake 31F in Ontario and lakes 86K and 86L in N.W. Territories	100 g
CAN-LKSD-3	Lake sediment A composite of 9 sediments, 31F, M & N 32 C&D, 41P and 42A all in Ontario plus 64 L&M in Manitoba	100 g
CAN-LKSD-4	Lake sediment Sourced from two lakes, 31C in Ontario and 74H in Saskatchewan	100 g
CAN-LKSD-1-4	Lake sediments Set of CAN-LKSD-1, CAN-LKSD-2, CAN-LKSD-3 and CAN-LKSD-4	4 x 100 g

CAN-STSD-1, CAN-STSD-3, CAN-STSD-4 and CAN-STSD-134

A set of three different samples from CANMET, designed to provide a representative selection of the type of stream sediments likely to be found within a continental shield region. The samples were taken from the bottom of the stream bed; material from a number of similar streams was blended together to produce the four samples. As well as analytical values for elements from total destruction methods, values are also given for aqua regia extraction methods, and the major and minor elements as oxides.

Provisional values for total elements

	CAN-STSD 1	CAN-STSD 3	CAN-STSD 4	
Ag	<0.5	<0.5	<0.5	mg/kg
As	23	28	15	mg/kg
Au	8	7	4	ng/g
B	89	82	46	mg/kg
Ba	630	1490	2000	mg/kg
Be	1.6	2.6	1.7	mg/kg
Br	40	24	13	mg/kg
C	12.3	8.4	4.1	wt. %
Ce	51	63	44	mg/kg
Co	17	16	13	mg/kg
Cr	67	80	93	mg/kg
Cs	1.8	5.2	1.9	mg/kg
Cu	36	39	65	mg/kg
Dy	5.6	5.4	3.8	mg/kg
Eu	1.6	1.3	1.2	mg/kg
F	950	850	380	mg/kg
Fe	4.7	4.4	4.1	wt. %
Hf	6.1	5.1	5.5	mg/kg
La	30	39	24	mg/kg
Li	11	23	14	mg/kg
Lu	0.8	0.8	0.5	mg/kg
Mn	3950	2730	1520	mg/kg
Mo	<5	6	<5	mg/kg
Nb	5	12	9	mg/kg
Nd	28	33	21	mg/kg
Ni	24	30	30	mg/kg
Pb	35	40	16	mg/kg
Rb	30	68	39	mg/kg
S	0.18	0.14	0.09	wt. %
Sb	3.3	4.0	7.3	mg/kg
Sc	14	13	14	mg/kg
Sm	6	7	5	mg/kg
Sn	4	4	2	mg/kg

Sr	170	230	350 mg/kg
Ta	0.4	0.9	0.6 mg/kg
Tb	1.2	1.1	0.8 mg/kg
Th	3.7	8.5	4.3 mg/kg
Ti	4600	4400	4530 mg/kg
U	8.0	10.5	3.0 mg/kg
V	98	134	106 mg/kg
W	<4	<4	<4 mg/kg
Y	42	36	24 mg/kg
Yb	4.0	3.4	2.6 mg/kg
Zn	178	204	107 mg/kg
Zr	218	196	190 mg/kg
Provisional values for total analytes			
Water	4.46	3.47	1.73 wt. %
Loss on ignition at			
500°C	29.7	21.6	10.2 wt. %
Provisional values for major and minor elements as oxides			
Al_2O_3	9.0	0.9	12.1 wt. %
CaO	3.6	3.3	4.0 wt. %
Fe_2O_3	6.5	6.2	5.7 wt. %
K_2O	1.2	1.8	1.6 wt. %
MgO	2.2	2.2	2.1 wt. %
MnO	0.5	0.3	0.2 wt. %
Na_2O	1.8	1.5	2.7 wt. %
P_2O_5	0.4	0.4	0.2 wt. %
SiO_2	42.5	48.6	58.9 wt. %
TiO_2	0.8	0.7	0.8 wt. %
Loss on Ignition			
at 1000°C	31.6	23.6	11.6 wt. %
Totals	100.1	99.5	99.9 wt. %
Provisional values for aqua regia extractable elements			
Ag	0.3	0.4	0.3 mg/kg
As	17	22	11 mg/kg
Cd	0.8	1.0	0.6 mg/kg
Co	14	14	11 mg/kg
Cr	28	34	30 mg/kg
Cu	36	38	66 mg/kg
Fe	3.5	3.4	2.6 wt. %
Hg	110	90	930 µg/kg
Mn	3740	2630	1200 mg/kg
Mo	2	7	2 mg/kg
Ni	18	25	23 mg/kg
Pb	34	39	13 mg/kg
Sb	2.0	2.4	3.6 mg/kg
V	47	61	51 mg/kg
Zn	165	192	82 mg/kg

The materials are mixed from various stream sediments as follows:

CAN-STSD-1	Stream sediments Sourced from the bed of Lavant Creek (31F) in Ontario, Canada	100 g
CAN-STSD-3	Stream sediments A mixture of STSD 1 and 2	100 g
CAN-STSD-4	Stream sediments As STDS 3, but with a greater amount of STSD 1	100 g
CAN-STSD-134	Stream sediments Set of CAN-STSD-1, CAN-STSD-3 and CAN-STSD-4	3 x 100 g

Soils

Code	Product	Unit
BCR-142R	Light sandy soil - Trace elements	40 g

Certified values

Cd 0.34 mg/kg	Hg 0.067 mg/kg	Pb 40.2 mg/kg
Co 12.1 mg/kg	Mn 970 mg/kg	
Cu 69.7 mg/kg	Ni 64.5 mg/kg	

Indicative values for Cr, Zn

Aqua regia soluble content

Certified values

Cd 0.25 mg/kg	Pb 25.7 mg/kg
Ni 61.1 mg/kg	Zn 93.3 mg/kg

Indicative values for Co, Cr, Cu, Mn

CMI7001 — Light sandy soil - Trace elements — 80 g

Total

Certified values

Be 3.32 µg/g	Cu 30.8 µg/g	Pb 43.8 µg/g
Cd 0.32 µg/g	Hg 0.087 µg/g	V 58.7 µg/g
Co 9.66 µg/g	Mn 540 µg/g	Zn 120 µg/g
Cr 89.6 µg/g	Ni 31.9 µg/g	

Indicative values for As, Ba

Aqua regia soluble content

Certified values

As 10.4 µg/g	Co 9.15 µg/g	Ni 31.8 µg/g
Ba 108 µg/g	Cr 71.9 µg/g	Pb 24.1 µg/g
Be 1.02 µg/g	Cu 28.9 µg/g	V 52.0 µg/g
Cd 0.29 µg/g	Mn 479 µg/g	Zn 108 µg/g

Indicative value for Hg

Boiling 2 mol/L nitric acid

Certified values

As 5.92 mg/kg	Cu 24.1 µg/g	V 42.7 µg/g
Be 0.71 µg/g	Mn 438 µg/g	Zn 97.1 µg/g
Co 8.44 µg/g	Ni 18.7 µg/g	
Cr 48.5 µg/g	Pb 23.7 µg/g	

Indicative values for Ba, Cd, Hg

Cold 2 mol/L nitric acid

Certified values

As 2.32 µg/g	Cr 23.6 µg/g	Pb 20.7 µg/g
Be 0.52 µg/g	Cu 18.1 µg/g	V 21.0 µg/g
Cd 0.18 µg/g	Mn 357 µg/g	Zn 58.0 µg/g
Co 5.19 µg/g	Ni 10.0 µg/g	

Indicative values for Ba, Hg

CMI7002 — Light sandy soil - Trace elements — 80 g

Total

Certified values

As 32.4 µg/g	Cr 179 µg/g	Ni 42.0 µg/g
Be 8.77 µg/g	Cu 29.3 µg/g	Pb 58.9 µg/g
Cd 0.31 µg/g	Hg 0.090 µg/g	V 54.9 µg/g
Co 12.6 µg/g	Mn 540 µg/g	Zn 69.0 µg/g

Indicative value for Ba

Aqua regia soluble content

Certified values

As 26.1 µg/g	Cr 147 µg/g	Pb 35.5 µg/g
Be 2.83 µg/g	Cu 27.3 µg/g	V 44.6 µg/g
Cd 0.28 µg/g	Mn 531 µg/g	Zn 64.0 µg/g
Co 11.1 µg/g	Ni 40.1 µg/g	

Indicative values for Ba, Hg

Boiling 2 mol/L nitric acid

Certified values

As 15.1 mg/kg	Cr 121 µg/g	Ni 33.7 µg/g
Be 1.94 µg/g	Cu 23.8 µg/g	Pb 34.1 µg/g
Cd 0.26 µg/g	Hg 0.046 µg/g	V 37.7 µg/g
Co 10.2 µg/g	Mn 481 µg/g	Zn 58.1 µg/g

Cold 2 mol/L nitric acid

Certified values

As 6.12 µg/g	Cr 62.9 µg/g	Pb 30.6 µg/g
Be 1.40 µg/g	Cu 19.8 µg/g	V 21.3 µg/g
Cd 0.21 µg/g	Mn 425 µg/g	Zn 34.2 µg/g
Co 6.64 µg/g	Ni 16.0 µg/g	

Indicative values for Ba, Hg

ERM-CC690 — Calcareous soil — 70 g

Certified values

Ce 49.1 mg/kg	Nd 19.1 mg/kg	Th 7.64 mg/kg
Dy 2.90 mg/kg	Sc 7.81 mg/kg	Tm 0.232 mg/kg
Gd 3.25 mg/kg	Sm 3.50 mg/kg	U 1.90 mg/kg
La 24.4 mg/kg	Tb 0.503 mg/kg	Yb 1.57 mg/kg

Indicative values for: As, Au, Co, Cr, Cs, Cu, Er, Eu, Fe, Hf, Ho, Lu, Ni, Pb, Pr, Sb, Ta, W, Y and Zn

BCR-700 — Organic rich soil - Extractable trace elements — 40 g

Certified values

EDTA

Cd 65.2 mg/kg	Cu 89.4 mg/kg	Pb 103 mg/kg
Cr 10.1 mg/kg	Ni 53.2 mg/kg	Zn 510 mg/kg

Acetic acid

Cd 67.5 mg/kg	Cu 36.3 mg/kg	Pb 4.85 mg/kg
Cr 19 mg/kg	Ni 99 mg/kg	Zn 719 mg/kg

EUROSOILS

The environmental fate of a chemical substance that is deliberately or accidentally distributed in the environment can only be understood if one studies its possible interaction with the various environmental compartments. In this context the processes related to soil are of particular importance and as a consequence producers of chemicals are nowadays obliged to access the interaction of a given chemical product with soils (EU Directive 67/548/EEC and amendments). To achieve a better comparability of data the European Commission's IRMM has released the world's first Certified Reference Materials (IRMM-443) for soil adsorption testing of chemical substances according to the OECD Testguideline 106. Six EU-representative soils have been selected and their adsorption coefficients for three reference substances (Atrazine, 2,4-D and Lindane) have been certified. Furthermore, the soil-pH according to the respective ISO-standards in aqueous solution and in 0.01 M calcium chloride have been certified, too. Additional information on other pedological parameters (CEC, organic carbon content, Total N and C), matrix constituents and background pollution makes IRMM-443 one the best characterised reference soil sets on a global level.

IRMM-443-1 — EUROSOIL 1 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	7.0	1/n of 2,4-D [1]	0.9
1/n of Atrazine [1]	0.91	pH in Water [2]	6.21
K_f of 2,4-D [1]	2.5	pH in 0.01M $CaCl_2$ [2]	5.65

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	68	Organic carbon content	32.7 g/kg
1/n of Lindane [1]	0.9	Total nitrogen content	3.4 g/kg
Total carbon content	33.9 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO Standard 10390

IRMM-443-2 — EUROSOIL 2 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	2.7	K_f of Lindane [1]	48
1/n of Atrazine [1]	0.93	1/n of Lindane [1]	0.98
K_f of 2,4-D [1]	0.99	pH in Water [2]	8.1
1/n of 2,4-D [1]	0.96	pH in 0.01M $CaCl_2$ [2]	7.5

Non-certified indicative values

Parameter	Value	Parameter	Value
Total carbon content	108.1 g/kg	Total nitrogen content	2.5 g/kg
Organic carbon content	37.2 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-3 — EUROSOIL 3 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	2.4	1/n of 2,4-D [1]	0.93
1/n of Atrazine [1]	0.91	pH in Water [2]	6.2
K_f of 2,4-D [1]	1.31	pH in 0.01M $CaCl_2$ [2]	5.5

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	36	Organic carbon content	30.1 g/kg
1/n of Lindane [1]	1.0	Total nitrogen content	3.1 g/kg
Total carbon content	32.5 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-4 — EUROSOIL 4 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	0.7	K_f of Lindane [1]	8.3
1/n of Atrazine [1]	0.87	1/n of Lindane [1]	0.96
K_f of 2,4-D [1]	0.39	pH in Water [2]	7.5
1/n of 2,4-D [1]	0.86	pH in 0.01M $CaCl_2$ [2]	6.8

Non-certified indicative values

Parameter	Value	Parameter	Value
Total carbon content	14.5 g/kg	Total nitrogen content	1.6 g/kg
Organic carbon content	13.1 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-5 — EUROSOIL 5 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	13	1/n of 2,4-D [1]	0.9
1/n of Atrazine [1]	0.9	pH in Water [2]	4.1
K_f of 2,4-D [1]	18	pH in 0.01M $CaCl_2$ [2]	3.1

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	99	Organic carbon content	59.6 g/kg
1/n of Lindane [1]	0.9	Total nitrogen content	2.3 g/kg
Total carbon content	64.3 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

IRMM-443-7 — EUROSOIL 7 — 200 g

Certified values

Parameter	Value	Parameter	Value
K_f of Atrazine [1]	4.8	1/n of 2,4-D[1]	0.88
1/n of Atrazine [1]	0.92	pH in Water[2]	5.1
K_f of 2,4-D[1]	8.2	pH in 0.01M $CaCl_2$ [2]	4.3

Non-certified indicative values

Parameter	Value	Parameter	Value
K_f of Lindane [1]	58	Organic carbon content	56.2 g/kg
1/n of Lindane [1]	0.9	Total nitrogen content	4.8 g/kg
Total carbon content	58.7 g/kg		

[1] Determination according OECD Test guideline 106

[2] Measurement based on ISO 10390

AGH S-1 — Polish soil — 50 g

Collected from an agricultural region 150 km from Krakow, the soil is typical of a well used, but unpolluted, agricultural soil in central Europe.

Certified values

As	3.4 µg/g	Eu	0.6 µg/g	Sb	0.5 µg/g
Ca	2.6 mg/g	Fe	9.88 mg/g	Sc	4 µg/g
Cd	0.3 µg/g	K	12.05 mg/g	Th	7 µg/g
Ce	44µg/g	Mn	266 µg/g	Zn	35 µg/g
Co	3.9µg/g	Na	4.44 mg/g	Zr	620 µg/g
Cr	38 µg/g	Pb	15 µg/g	Rb	52 µg/g

CMI7003 — Silty clay loam - Trace elements — 80 g

Total

Certified values

Be	2.18 µg/g	Cu	29.1 µg/g	Pb	33.5 µg/g
Cd	0.32 µg/g	Hg	0.096 µg/g	V	76.2 µg/g
Co	11.5 µg/g	Mn	600 µg/g	Zn	81.0 µg/g
Cr	79.8 µg/g	Ni	31.3 µg/g		

Indicative values for As, Ba

Aqua regia soluble content

Certified values

As	11.6 µg/g	Cr	42.4 µg/g	Pb	25.2 µg/g
Be	1.29 µg/g	Cu	25.4 µg/g	V	52.9 µg/g
Cd	0.32 µg/g	Mn	529 µg/g	Zn	69.4 µg/g
Co	10.3 µg/g	Ni	28.8 µg/g		

Indicative values for Ba, Hg

Boiling 2 mol/L nitric acid

Certified values

Be	0.95 µg/g	Cu	20.6 µg/g	Pb	22.7 µg/g
Cd	0.27 µg/g	Hg	0.054 µg/g	V	25.3 µg/g
Co	8.31 µg/g	Mn	476 µg/g	Zn	54.2 µg/g
Cr	23.8 µg/g	Ni	22.2 µg/g		

Indicative values for As, Ba

Cold 2 mol/L nitric acid

Certified values

As	1.30 µg/g	Cr	9.06 µg/g	Pb	19.3 µg/g
Be	0.69 µg/g	Cu	15.8 µg/g	V	11.4 µg/g
Cd	0.23 µg/g	Mn	435 µg/g	Zn	24.4 µg/g
Co	5.90 µg/g	Ni	11.9 µg/g		

Indicative values for Ba, Hg

CMI7004 — Loam - Trace elements — 80 g

Total

Certified values

As	49.6 µg/g	Cr	82.2 µg/g	Ni	33.3 µg/g
Be	4.17 µg/g	Cu	183 µg/g	Pb	93.4 µg/g
Cd	1.52 µg/g	Hg	0.223 µg/g	V	126 µg/g
Co	20.0 µg/g	Mn	869 µg/g	Zn	227 µg/g

Indicative value for Ba

Aqua regia soluble content

Certified values

As	42.4 µg/g	Cr	46.3 µg/g	Pb	83.1 µg/g
Be	2.69 µg/g	Cu	167 µg/g	V	95.1 µg/g
Cd	1.44 µg/g	Mn	741 µg/g	Zn	198 µg/g
Co	17.5 µg/g	Ni	30.4 µg/g		

Indicative values for Ba, Hg

Boiling 2 mol/L nitric acid

Certified values

As	27.1 µg/g	Cr	27.3 µg/g	Pb	82.6 µg/g
Be	2.17 µg/g	Cu	159 µg/g	V	48.9 µg/g
Cd	1.44 µg/g	Mn	572 µg/g	Zn	169 µg/g
Co	12.5 µg/g	Ni	21.4 µg/g		

Indicative value for Hg

Cold 2 mol/L nitric acid

Certified values

As 16.4 µg/g	Cr 14.6 µg/g	Ni 11.9 µg/g
Be 1.84 µg/g	Cu 137 µg/g	Pb 71.7 µg/g
Cd 1.36 µg/g	Hg 0.094 µg/g	V 11.4 µg/g
Co 9.42 µg/g	Mn 527 µg/g	Zn 24.4 µg/g

Indicative value for Ba

RTC-CLNSOIL1-5

These five different soil types are not contaminated and contain only what an analyst can expect to find in a "clean soil". They are well characterised for nearly every parameter of interest. These soils are useful as a base material with known characteristics that can be spiked for in-house method development and validation, method comparison or other uses.

RTC-CLN SOIL-1-100	Clean sandy soil Please ask for details	100 g
RTC-CLN SOIL-1-250	Clean sandy soil Please ask for details	250 g
RTC-CLN SOIL-2-100	Clean clay loam Please ask for details	100 g
RTC-CLN SOIL-2-250	Clean clay loam Please ask for details	250 g
RTC-CLN SOIL-3-100	Clean sandy loam Please ask for details	100 g
RTC-CLN SOIL-3-250	Clean sandy loam Please ask for details	250 g
RTC-CLN SOIL-4-100	Clean sand Please ask for details	100 g
RTC-CLN SOIL-4-250	Clean sand Please ask for details	250 g
RTC-CLN SOIL-5-100	Clean clay Please ask for details	100 g
RTC-CLN SOIL-5-250	Clean clay Please ask for details	250 g

NIST-2709 — San Joaquin soil - Trace and constituent elements (baseline) — 50 g

Certified values

Ag 0.41 µg/g	Fe 3.50 %	S 0.089 %
Al 7.50 %	Hg 1.40 µg/g	Sb 7.9 µg/g
As 17.7 µg/g	K 2.03 %	Se 1.57 µg/g
Ba 968 µg/g	Mg 1.51 %	Si 29.66 %
Ca 1.89 %	Mn 538 µg/g	Sr 231 µg/g
Cd 0.38 µg/g	Na 1.16 %	Ti 0.342 %
Co 13.4 µg/g	Ni 88 µg/g	Tl 0.74 µg/g
Cr 130 µg/g	P 0.062 %	V 112 µg/g
Cu 34.6 µg/g	Pb 18.9 µg/g	Zn 106 µg/g

Indicative values for a wide range of elements

NIST-2710 — Montana I soil - Trace and constitutent elements (highly elevated) — 50 g

Certified values

Ag 35.3 µg/g	Hg 32.6 µg/g	S 0.240 %
Al 6.44 %	K 2.11 %	Sb 38.4 µg/g
As 626 µg/g	Mg 0.853 %	Si 28.97 %
Ba 707 µg/g	Mn 1.01 %	Ti 0.283 %
Ca 1.25 %	Na 1.14 %	V 76.6 µg/g
Cd 21.8 µg/g	Ni 14.3 µg/g	Zn 6952 µg/g
Cu 2950 µg/g	P 0.106 %	
Fe 3.38 %	Pb 5532 µg/g	

Indicative values for a wide range of elements

NIST-2711 — Montana II Soil - Trace and constitutent elements (moderately elevated) — 50 g

Certified values

Ag 4.63 µg/g	K 2.45 %	Se 1.52 µg/g
Al 6.53 %	Mg 1.05 %	Si 30.44 %
As 105 µg/g	Mn 638 µg/g	Sr 245.3 µg/g
Ba 726 µg/g	Na 1.14 %	Ti 0.306 %
Ca 2.88 %	Ni 20.6 µg/g	Tl 2.47 µg/g
Cd 41.7 µg/g	P 0.086 %	V 81.6 µg/g
Cu 114 µg/g	Pb 1162 µg/g	Zn 350.4 µg/g
Fe 2.89 %	S 0.042 %	
Hg 6.25 µg/g	Sb 19.4 µg/g	

Indicative values for a wide range of elements

NIST-4355 — Peruvian soil - Radioactivity — 75 g

Certified values

^{241}Am 0.000004 Bq/g	^{238}Pu+^{240}Pu 0.0000076 Bq/g	^{230}Th 0.0397 Bq/g
^{137}Cs 0.00033 Bq/g	^{228}Th 0.0422 Bq/g	^{232}Th 0.0430 Bq/g

IAEA-SOIL-6

Soil - Radioactive isotopes — 250 g

The IAEA-SOIL-6 sample was collected near Ebensee in Upper Austria at an altitude of 1100 m above sea level.

Recommended values

^{137}Cs	53.65 Bq/kg	^{226}Ra	79.92 Bq/kg
$^{239}Pu + {}^{240}Pu$	1.04 Bq/kg	^{90}Sr	30.34 Bq/kg

IAEA-375

Soil - Radioactive isotopes — 250 g

Recommende values

^{106}Ru	56 Bq/kg	^{137}Cs	5280 Bq/kg	^{90}Sr	108 Bq/kg
^{125}Sb	77 Bq/kg	^{226}Ra	20 Bq/kg	Th	5.2 mg/kg
^{129}I	0.0017 Bq/kg	^{232}Th	20.5 Bq/kg	U	1.86 mg/kg
^{134}Cs	463 Bq/kg	^{40}K	424 Bq/kg		

NCS ZC73001

Soil - Composition including trace elements — 70 g

Certified values

Ag	0.083±0.010 µg/g	Ho	0.97±0.04 µg/g	Ta	1.3±0.2 µg/g
As	8.9±0.9 µg/g	I	3.2±0.2 µg/g	Tb	0.84±0.05 µg/g
B	35±3 µg/g	In	0.055±0.015 µg/g	Th	11.3±0.4 µg/g
Ba	613±12 µg/g	La	35.5±1.7 µg/g	Ti	0.427±0.006 %
Be	2.4±0.1 µg/g	Li	30.6±1.5 µg/g	Tl	0.58±0.05 µg/g
Bi	0.27±0.02 µg/g	Lu	0.46±0.03 µg/g	Tm	0.42±0.03 µg/g
Br	5.8±0.4 µg/g	Mn	681±13 µg/g	U	2.25±0.12 µg/g
Cd	0.105±0.013 µg/g	Mo	0.52±0.04 µg/g	V	74±3 µg/g
Ce	70±4 µg/g	N	0.126±0.011 %	W	1.66±0.10 µg/g
Cl	216±14 µg/g	Nb	16.5±0.7 µg/g	Y	26.5±0.9 µg/g
Co	11.7±0.5 µg/g	Nd	32±2 µg/g	Yb	2.81±0.14 µg/g
Cr	58±2 µg/g	Ni	26±1 µg/g	Zn	60±4 µg/g
Cs	6.5±0.4 µg/g	P	500±27 µg/g	Zr	350±12 µg/g
Cu	19±1 µg/g	Pb	22±2 µg/g	SiO_2	65.50±0.12 %
Dy	4.7±0.3 µg/g	Pr	8.5±0.5 µg/g	Al_2O_3	13.80±0.11 %
Er	2.75±0.17 µg/g	Rb	108±3 µg/g	TFe_2O_3	4.17±0.03 %
Eu	1.25±0.04 µg/g	S	270±24 µg/g	MgO	1.30±0.03 %
F	452±16 µg/g	Sb(DA)	0.68±0.09 µg/g	CaO	2.62±0.06 %
Ga	18±1 µg/g	Sc	10.2±0.3 µg/g	Na_2O	2.14±0.06 %
Gd	5.2±0.3 µg/g	Se	0.21±0.02 µg/g	K_2O	2.65±0.05 %
Ge	1.31±0.08 µg/g	Sm	6.0±0.2 µg/g	Corg.	1.35±0.07 %
Hf	9.5±0.7 µg/g	Sn	3.4±0.4 µg/g		
Hg	0.033±0.004 µg/g	Sr	226±5 µg/g		

Indicative values for Re, Sb, FeO, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

NCS ZC73002

Soil - Composition including trace elements — 70 g

Certified values

Ag	0.098±0.007 µg/g	Ho	0.89±0.05 µg/g	Ta	1.05±0.14 µg/g
As	7.4±0.5 µg/g	I	1.6±0.1 µg/g	Tb	0.76±0.05 µg/g
B	36±3 µg/g	In	0.047±0.013 µg/g	Te	µg/g
Ba	634±10 µg/g	La	34±2 µg/g	Th	10.8±0.6 µg/g
Be	2.25±0.08 µg/g	Li	30±2 µg/g	Ti	0.392±0.006 %
Bi	0.28±0.01 µg/g	Lu	0.41±0.02 µg/g	Tl	0.62±0.02 µg/g
Br	2.8±0.2 µg/g	Mn	572±14 µg/g	Tm	0.38±0.03 µg/g
Cd	0.125±0.012 µg/g	Mo	0.60±0.04 µg/g	U	2.2±0.1 µg/g
Ce	65±3 µg/g	N	0.095±0.010 %	V	74±2 µg/g
Cl	98±12 µg/g	Nb	13.8±0.6 µg/g	W	1.65±0.12 µg/g
Co	11.6±0.4 µg/g	Nd	30±2 µg/g	Y	23.6±0.7 µg/g
Cr	59±3 µg/g	Ni	25.4±1.3 µg/g	Yb	2.54±0.13 µg/g
Cs	6.0±0.4 µg/g	P	483±24 µg/g	Zn	65±5 µg/g
Cu	21.4±1.2 µg/g	Pb	24.7±1.4 µg/g	Zr	270±9 µg/g
Dy	4.2±0.4 µg/g	Pr	7.9±0.5 µg/g	SiO_2	69.42±0.28 %
Er	2.46±0.07 µg/g	Rb	110±4 µg/g	Al_2O_3	13.14±0.06 %
Eu	1.18±0.04 µg/g	S	217±23 µg/g	TFe^2O_3	4.21±0.06 %
F	425±17 µg/g	Sb(DA)	0.61±0.06 µg/g	MgO	1.20±0.04 %
Ga	17.2±1.0 µg/g	Sc	10.0±0.3 µg/g	CaO	1.33±0.03 %
Gd	4.7±0.3 µg/g	Se	0.20±0.02 µg/g	Na_2O	1.98±0.07 %
Ge	1.3±0.1 µg/g	Sm	5.5±0.2 µg/g	K_2O	2.70±0.04 %
Hf	7.7±0.5 µg/g	Sn	3.1±0.4 µg/g	Corg.	1.07±0.06 %
Hg	0.060±0.009 µg/g	Sr	182±5 µg/g		

Indicative values for Sb, FeO, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

NCS ZC73003

Soil - Composition including trace elements — 70 g

Certified values

Ag	0.078±0.007 µg/g	I	1.4±0.2 µg/g	Tb	0.84±0.06 µg/g
As	12.2±0.8 µg/g	In	0.058±0.007 µg/g	Th	10±1 µg/g
B	55±5 µg/g	La	29±2 µg/g	Ti	0.392±0.007 %
Ba	492±20 µg/g	Li	36±2 µg/g	Tl	0.51±0.04 µg/g
Be	2.04±0.06 µg/g	Lu	0.46±0.02 µg/g	Tm	0.44±0.05 µg/g
Bi	0.30±0.02 µg/g	Mn	774±19 µg/g	U	2.4±0.2 µg/g
Br	2.1±0.3 µg/g	Mo	0.96±0.06 µg/g	V	86±4 µg/g
Cd	0.15±0.02 µg/g	N	0.055±0.006 %	W	1.64±0.10 µg/g
Ce	57±2 µg/g	Nb	12±1 µg/g	Y	26.4±0.9 µg/g
Co	12.6±0.3 µg/g	Nd	27.9±1.2 µg/g	Yb	2.9±0.2 µg/g
Cr	59±2 µg/g	Ni	32±1 µg/g	Zn	78±5 µg/g
Cs	7.2±0.4 µg/g	P	708±9 µg/g	Zr	195±7 µg/g
Cu	29±1 µg/g	Pb	19±2 µg/g	SiO_2	60.0±0.3 %
Dy	4.9±0.3 µg/g	Pr	7.0±0.4 µg/g	Al_2O_3	13.27±0.11 %
Er	2.9±0.2 µg/g	Rb	94±3 µg/g	TFe_2O_3	4.71±0.04 %
Eu	1.22±0.04 µg/g	S	154±15 µg/g	FeO	1.39±0.07 %
F	592±45 µg/g	Sb(DA)	1.05±0.07 µg/g	MgO	2.43±0.07 %
Ga	16.8±0.5 µg/g	Sc	12.6±0.4 µg/g	CaO	5.83±0.06 %
Gd	5.1±0.3 µg/g	Se	0.16±0.02 µg/g	Na_2O	2.00±0.06 %
Ge	1.3±0.1 µg/g	Sm	5.6±0.4 µg/g	K_2O	2.62±0.05 %
Hf	5.5±0.4 µg/g	Sn	2.8±0.4 µg/g	CO_2	3.9±0.4 %

Hg	0.021±0.005 µg/g	Sr	240±5 µg/g
Ho	1.01±0.04 µg/g	Ta	0.85±0.07 µg/g

Indicative values for Cl, Sb, H_2O^+, Corg.
Sb(DA) is result with aqua regia digestion

NCS ZC73004 — Soil - Composition including trace elements — 70 g

Certified values

Ag	0.067±0.006 µg/g	Ho	0.92±0.03 µg/g	Tb	0.80±0.03 µg/g
As	10.6±0.8 µg/g	I	2.4±0.2 µg/g	Th	11.0±0.5 µg/g
B	54±3 µg/g	In	0.044±0.009 µg/g	Ti	0.382±0.011 %
Ba	500±15 µg/g	La	34±2 µg/g	Tl	0.52±0.05 µg/g
Be	1.90±0.05 µg/g	Li	31.5±1.5 µg/g	Tm	0.40±0.03 µg/g
Bi	0.29±0.02 µg/g	Lu	0.41±0.02 µg/g	U	2.19±0.12 µg/g
Br	4.0±0.4 µg/g	Mn	580±12 µg/g	V	74±2 µg/g
Cd	0.13±0.01 µg/g	Mo	0.48±0.03 µg/g	W	1.6±0.1 µg/g
Ce	66±3 µg/g	N	0.072±0.009 %	Y	24.5±0.7 µg/g
Cl	80±10 µg/g	Nb	14±1 µg/g	Yb	2.6±0.2 µg/g
Co	11.3±0.5 µg/g	Nd	30±2 µg/g	Zn	65±3 µg/g
Cr	65±2 µg/g	Ni	28.5±1.2 µg/g	Zr	257±9 µg/g
Cs	6.0±0.4 µg/g	P	833±35 µg/g	SiO_2	64.9±0.3 %
Cu	21.6±0.8 µg/g	Pb	21.6±1.2 µg/g	Al_2O_3	11.8±0.1 %
Dy	4.5±0.3 µg/g	Pr	7.9±0.5 µg/g	TFe_2O_3	4.11±0.4 %
Er	2.57±0.12 µg/g	Rb	91±3 µg/g	FeO	1.25±0.11 %
Eu	1.18±0.05 µg/g	Sb(DA)	0.86±0.06 µg/g	MgO	2.05±0.04 %
F	545±32 µg/g	Sc	10.5±0.3 µg/g	CaO	5.0±0.1 %
Ga	15.0±0.4 µg/g	Se	0.16±0.02 µg/g	Na_2O	1.86±0.07 %
Gd	4.9±0.3 µg/g	Sm	5.6±0.3 µg/g	K_2O	2.27±0.04 %
Ge	1.27±0.07 µg/g	Sn	3.3±0.4 µg/g	CO_2	3.34±0.14 %
Hf	7.0±0.5 µg/g	Sr	195±4 µg/g	Corg.	0.62±0.08 %
Hg	0.052±0.006 µg/g	Ta	1.02±0.09 µg/g		

Indicative values for S, Re, Sb, H_2O
Sb(DA) is result with aqua regia digestion

NCS ZC73005 — Soil - Composition including trace elements — 70 g

Certified values

Ag	0.084±0.007 µg/g	Ho	0.93±0.04 µg/g	Ta	1.08±0.09 µg/g
As	6.5±1.3 µg/g	I	0.9±0.2 µg/g	Tb	0.87±0.06 µg/g
B	46±3 µg/g	In	0.057±0.006 µg/g	Th	12.7±0.5 µg/g
Ba	608±13 µg/g	La	41±2 µg/g	Ti	0.406±0.013 %
Be	2.44±0.06 µg/g	Li	39±3 µg/g	Tl	0.63±0.03 µg/g
Bi	0.35±0.02 µg/g	Lu	0.42±0.02 µg/g	Tm	0.41±0.03 µg/g
Br	1.7±0.3 µg/g	Mn	688±15 µg/g	U	2.45±0.12 µg/g
Cd	0.20±0.02 µg/g	Mo	0.65±0.06 µg/g	V	86±2 µg/g
Ce	80±2 µg/g	N	0.081±0.012 %	W	1.5±0.1 µg/g
Cl	50±4 µg/g	Nb	14.4±0.6 µg/g	Y	25±1 µg/g
Co	14.6±0.7 µg/g	Nd	36±3 µg/g	Yb	2.54±0.12 µg/g
Cr	70±3 µg/g	Ni	33±2 µg/g	Zn	96±3 µg/g
Cs	7.0±0.3 µg/g	P	730±28 µg/g	Zr	227±8 µg/g
Cu	27.4±1.1 µg/g	Pb	31±1 µg/g	SiO_2	64.5±0.4 %
Dy	4.8±0.3 µg/g	Pr	9.2±0.6 µg/g	Al_2O_3	14.4±0.2 %
Er	2.6±0.3 µg/g	Rb	108±4 µg/g	TFe_2O_3	5.32±0.06 %
Eu	1.36±0.06 µg/g	S	173±21 µg/g	MgO	1.90±0.06 %
F	619±39 µg/g	Sb(DA)	0.73±0.08 µg/g	CaO	2.45±0.05 %
Ga	18.8±0.8 µg/g	Sc	11.7±0.3 µg/g	Na_2O	1.59±0.07 %
Gd	5.5±0.5 µg/g	Se	0.16±0.02 µg/g	K_2O	2.46±0.07 %
Ge	1.42±0.11 µg/g	Sm	6.4±0.3 µg/g	Corg.	0.79±0.07 %
Hf	6.4±0.3 µg/g	Sn	3.1±0.3 µg/g		
Hg	0.089±0.004 µg/g	Sr	152±5 µg/g		

Indicative values for Sb, FeO, H_2O+, CO_2
Sb(DA) is result with aqua regia digestion

NCS ZC73006 — Soil - Composition including trace elements — 70 g

Certified values

Ag	0.15±0.02 µg/g	Ho	1.23±0.07 µg/g	Ta	1.52±0.15 µg/g
As	21.7±1.2 µg/g	I	2.3±0.2 µg/g	Tb	1.08±0.07 µg/g
B	63±2 µg/g	In	0.145±0.021 µg/g	Th	14.5±0.8 µg/g
Ba	716±16 µg/g	La	47±2 µg/g	Ti	0.527±0.020 %
Be	2.7±0.1 µg/g	Li	44±3 µg/g	Tl	0.67±0.04 µg/g
Bi	1.16±0.06 µg/g	Lu	0.54±0.02 µg/g	Tm	0.53±0.04 µg/g
Br	2.7±0.3 µg/g	Mn	963±20 µg/g	U	3.0±0.2 µg/g
Cd	0.21±0.02 µg/g	Mo	0.92±0.07 µg/g	V	119±3 µg/g
Ce	93±4 µg/g	N	0.094±0.010 %	W	2.8±0.2 µg/g
Cl	83±15 µg/g	Nb	18.6±1.3 µg/g	Y	33±2 µg/g
Co	17.6±0.7 µg/g	Nd	41±2 µg/g	Yb	3.5±0.2 µg/g
Cr	87±4 µg/g	Ni	41±1 µg/g	Zn	94±4 µg/g
Cs	8.9±0.4 µg/g	P	560±18 µg/g	Zr	272±8 µg/g
Cu	37±2 µg/g	Pb	38±2 µg/g	SiO_2	63.6±0.2 %
Dy	6.2±0.4 µg/g	Pr	10.3±0.8 µg/g	Al_2O_3	15.3±0.1 %
Er	3.4±0.2 µg/g	Rb	116±3 µg/g	TFe_2O3	6.44±0.07 %
Eu	1.56±0.06 µg/g	S	176±22 µg/g	FeO	1.06±0.15 %
F	652±48 µg/g	Sb(DA)	1.9±0.2 µg/g	MgO	1.80±0.06 %
Ga	20.5±1.0 µg/g	Sc	14.8±0.5 µg/g	CaO	1.53±0.04 %
Gd	6.8±0.5 µg/g	Se	0.31±0.02 µg/g	Na_2O	1.26±0.05 %
Ge	1.63±0.08 µg/g	Sm	7.8±03 µg/g	K_2O	2.36±0.04 %
Hf	7.6±0.4 µg/g	Sn	4.5±0.5 µg/g	Corg.	0.78±0.05 %
Hg	0.094±0.004 µg/g	Sr	115±4 µg/g		

Indicative values for Re, Sb, Te, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

NCS ZC73007 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.14±0.02 µg/g	Ho 1.41±0.08 µg/g	Ta 2.8±0.2 µg/g
As 18±2 µg/g	I 1.3±0.1 µg/g	Tb 1.3±0.1 µg/g
B 63±4 µg/g	In 0.095±0.027 µg/g	Th 28±2 µg/g
Ba 411±18 µg/g	La 67±3 µg/g	Ti 0.578±0.026 %
Be 3.8±0.3 µg/g	Li 51±3 µg/g	Tl 1.12±0.08 µg/g
Bi 1.44±0.11 µg/g	Lu 0.58±0.05 µg/g	Tm 0.57±0.05 µg/g
Br 2.6±0.3 µg/g	Mn 441±20 µg/g	U 5.9±0.3 µg/g
Cd 0.25±0.02 µg/g	Mo 1.15±0.07 µg/g	V 105±4 µg/g
Ce 133±5 µg/g	N 0.102±0.011 %	W 5.8±0.2 µg/g
Cl 78±6 µg/g	Nb 26±1 µg/g	Y 38±3 µg/g
Co 13.6±0.6 µg/g	Nd 57±4 µg/g	Yb 3.8±0.2 µg/g
Cr 67±3 µg/g	Ni 27.4±0.9 µg/g	Zn 100±8 µg/g
Cs 13.9±07 µg/g	P 972±34 µg/g	Zr 275±11 µg/g
Cu 32±2 µg/g	Pb 61±2 µg/g	SiO_2 63.8±0.2 %
Dy 7.4±0.5 µg/g	Pr 14.6±1.1 µg/g	Al_2O_3 17.85±0.12 %
Er 3.8±0.2 µg/g	Rb 173±5 µg/g	TFe_2O_3 5.44±0.05 %
Eu 1.66±0.07 µg/g	S 261±26 µg/g	MgO 0.84±0.05 %
F 790±44 µg/g	Sb(DA) 1.7±0.2 µg/g	CaO 0.40±0.04 %
Ga 25.1±1.2 µg/g	Sc 14.0±0.5 µg/g	Na_2O 0.33±0.02 %
Gd 8.5±0.7 µg/g	Se 0.51±0.05 µg/g	K_2O 2.50±0.04 %
Ge 1.70±0.12 µg/g	Sm 10.4±0.5 µg/g	Corg. 0.97±0.12 %
Hf 8.2±0.4 µg/g	Sn 12.4±0.8 µg/g	
Hg 0.46±0.05 µg/g	Sr 68±4 µg/g	

Indicative values for Re, Sb, FeO, H_2O^+, CO_2
Sb(DA) is result with aqua regia digestion

NCS DC73319 - NCS DC87105

Soils collected from a variety of locations around China. Certified and indicative values are given for a large number of elements and oxides

NCS DC73319 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.35±0.05µg/g	Ho 0.87±0.07µg/g	Tb 0.75±0.06µg/g
As 34±4µg/g	I 1.8±0.3µg/g	Te 0.058±0.020µg/g
B 50±3µg/g	In 0.08±0.02µg/g	Th 11.6±0.7µg/g
Ba 590±32µg/g	La 34±2µg/g	Ti 4830±160µg/g
Be 2.5±0.3µg/g	Li 35±1µg/g	Tl 1.0±0.2µg/g
Bi 1.2±0.1µg/g	Lu 0.41±0.04µg/g	Tm 0.42±0.06µg/g
Br 2.9±0.6µg/g	Mn 1760±63µg/g	U 3.3±0.4µg/g
Cd 4.3±0.4µg/g	Mo 1.4±0.1µg/g	V 86±4µg/g
Ce 70±4µg/g	N 1870±67µg/g	W 3.1±0.3µg/g
Cl 70±9µg/g	Nb 16.6±1.4µg/g	Y 25±3µg/g
Co 14.2±1.0µg/g	Nd 28±2µg/g	Yb 2.7±0.3µg/g
Cr 62±4µg/g	Ni 20.4±1.8µg/g	Zn 680±25µg/g
Cs 9.0±0.7µg/g	P 735±28µg/g	Zr 245±12µg/g
Cu 21±2µg/g	Pb 98±6µg/g	SiO_2 62.60±0.14 %
Dy 4.6±0.3µg/g	Pr 7.5±0.5µg/g	Al_2O_3 14.18±0.14 %
Er 2.6±0.2µg/g	Rb 140±6µg/g	TFe_2O_3 5.19±0.09 %
Eu 1.0±0.1µg/g	Sb 0.87±0.21µg/g	MgO 1.81±0.08 %
F 506±32µg/g	Sc 11.2±0.6µg/g	CaO 1.72±0.06 %
Ga 19.3±1.1µg/g	Se 0.14±0.03µg/g	Na_2O 1.66±0.04 %
Gd 4.6±0.3µg/g	Sm 5.2±0.3µg/g	K_2O 2.59±0.04 %
Ge 1.34±0.20µg/g	Sn 6.1±0.7µg/g	CO_2 1.12±0.09 %
Hf 6.8±0.8µg/g	Sr 155±7µg/g	C org. 1.80±0.16 %
Hg 0.032±0.004µg/g	Ta 1.4±0.2µg/g	TC 2.11±0.19 %

Indicative values for Au, S, FeO, L.O.I

NCS DC73321 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.091±0.007µg/g	I 1.3±0.2µg/g	Te 0.039±0.013µg/g
As 4.4±0.6µg/g	In 0.031±0.010µg/g	Th 6.0±0.5µg/g
B 23±3µg/g	La 21±2µg/g	Ti 2240±80µg/g
Ba 1210±65µg/g	Li 18.4±0.8µg/g	Tl 0.48±0.05µg/g
Be 1.4±0.2µg/g	Lu 0.29±0.02µg/g	Tm 0.28±0.05µg/g
Bi 0.17±0.03µg/g	Mn 304±14µg/g	U 1.3±0.3µg/g
Br 4.3±0.8µg/g	Mo 0.31±0.06µg/g	V 36±3µg/g
Cd 0.060±0.009µg/g	N 640±50µg/g	W 0.96±0.12µg/g
Ce 39±4µg/g	Nb 9.3±1.5µg/g	Y 15±2µg/g
Cl 57±11µg/g	Nd 18.4±1.7µg/g	Yb 1.7±0.2µg/g
Co 5.5±0.7µg/g	Ni 12±2µg/g	Zn 31±3µg/g
Cr 32±4µg/g	P 320±18µg/g	Zr 246±14µg/g
Cs 3.2±0.4µg/g	Pb 26±3µg/g	SiO_2 74.72±0.19 %
Cu 11.4±1.1µg/g	Pr 4.8±0.4µg/g	Al_2O_3 12.24±0.09 %
Dy 2.6±0.2µg/g	Rb 85±4µg/g	TFe_2O_3 2.00±0.05 %
Er 1.5±0.3µg/g	S 123±14µg/g	FeO 0.50±0.06 %
Eu 0.72±0.04µg/g	Sb 0.44±0.08µg/g	MgO 0.58±0.04 %
F 246±26µg/g	Sc 5.0±0.4µg/g	CaO 1.27±0.05 %
Ga 13.7±0.9µg/g	Se 0.09±0.02µg/g	Na_2O 2.71±0.06 %
Gd 2.9±0.4µg/g	Sm 3.3±0.2µg/g	K_2O 3.04±0.05 %
Ge 1.16±0.13µg/g	Sn 2.5±0.3µg/g	C org. 0.51±0.03 %
Hf 6.8±0.8µg/g	Sr 380±16µg/g	TC 0.55±0.05 %
Hg 0.060±0.004µg/g	Ta 0.76±0.15µg/g	L.O.I. 2.67±0.13 %
Ho 0.53±0.06µg/g	Tb 0.49±0.06µg/g	

NCS DC73322 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.070±0.011 µg/g	Ho 1.46±0.12 µg/g	Tb 0.94±0.09 µg/g
As 58±6 µg/g	I 9.4±1.1 µg/g	Te 0.16±0.06 µg/g
Au (0.0055) µg/g	In 0.12±0.03 µg/g	Th 27±2 µg/g
B 97±9 µg/g	La 53±4 µg/g	Ti 10800±310 µg/g
Ba 213±20 µg/g	Li 55±2 µg/g	Tl 0.94±0.25 µg/g
Be 1.85±0.34 µg/g	Lu 0.75±0.06 µg/g	Tm 0.70±0.10 µg/g
Bi 1.04±0.13 µg/g	Mn 1420±75 µg/g	U 6.7±0.8 µg/g
Br 4.0±0.7 µg/g	Mo 2.6±0.3 µg/g	V 247±14 µg/g
Cd 0.35±0.06 µg/g	N 1000±62 µg/g	W 6.2±0.5 µg/g
Ce 136±11 µg/g	Nb 38±3 µg/g	Y 39±6 µg/g
Cl (39) µg/g	Nd 27±2 µg/g	Yb 4.8±0.6 µg/g
Co 22±2 µg/g	Ni 64±5 µg/g	Zn 210±13 µg/g
Cr 370±16 µg/g	P 695±28 µg/g	Zr 500±42 µg/g
Cs 21.4±1.0 µg/g	Pb 58±5 µg/g	SiO_2 50.95±0.14 %
Cu 40±3 µg/g	Pr 8.4±1.7 µg/g	Al_2O_3 23.45±0.19 %
Dy 6.6±0.6 µg/g	Rb 75±4 µg/g	TFe_2O_3 10.30±0.11 %
Er 4.5±0.7 µg/g	S 180±36 µg/g	MgO 0.49±0.05 %
Eu 0.85±0.07 µg/g	Sb 6.3±1.1 µg/g	CaO 0.26±0.04 %
F 540±25 µg/g	Sc 20±2 µg/g	Na_2O 0.11±0.02 %
Ga 31±3 µg/g	Se 0.64±0.14 µg/g	K_2O 1.03±0.06 %
Gd 4.7±0.5 µg/g	Sm 4.4±0.4 µg/g	C org. 0.62±0.08
Ge 1.9±0.3 µg/g	Sn 5.7±0.9 µg/g	TC 0.65±0.10
Hf 14±2 µg/g	Sr 77±6 µg/g	
Hg 0.59±0.05 µg/g	Ta 3.1±0.3 µg/g	

NCS DC73323 — Soil - Composition including trace elements — 70 g

Certified values

Ag 4.4±0.4 µg/g	Ho 0.77±0.08 µg/g	Sr 42±4 µg/g
As 412±16 µg/g	I 3.8±0.5 µg/g	Ta 1.8±0.3 µg/g
Au 0.260±0.007 µg/g	In 4.1±0.6 µg/g	Tb 0.7±0.1 µg/g
B 53±6 µg/g	La 36±4 µg/g	Te (5) µg/g
Ba 296±26 µg/g	Li 56±2 µg/g	Th 23±2 µg/g
Be 2.0±0.4 µg/g	Lu 0.42±0.05 µg/g	Ti 6290±210 µg/g
Bi 41±4 µg/g	Mn 1360±71 µg/g	Tl 1.6±0.3 µg/g
Cd 0.45±0.06 µg/g	Mo 4.6±0.4 µg/g	Tm 0.41±0.04 µg/g
Ce 91±10 µg/g	N 610±31 µg/g	U 6.5±0.7 µg/g
Co 12±2 µg/g	Nb 23±3 µg/g	V 166±9 µg/g
Cr 118±7 µg/g	Nd 24±2 µg/g	W 34±2 µg/g
Cs 15±1 µg/g	Ni 40±4 µg/g	Y 21±3 µg/g
Cu 144±6 µg/g	P 390±34 µg/g	Yb 2.8±0.4 µg/g
Dy 3.7±0.5 µg/g	Pb 552±29 µg/g	Zn 494±25 µg/g
Er 2.4±0.3 µg/g	Pr 7.0±1.2 µg/g	Zr 272±16 µg/g
Eu 0.82±0.04 µg/g	Rb 117±6 µg/g	SiO_2 52.57±0.16 %
F 603±28 µg/g	S 410±54 µg/g	Al_2O_3 21.58±0.15 %
Ga 32±4 µg/g	Sb 35±5 µg/g	TFe_2O_3 12.62±0.18 %
Gd 3.5±0.3 µg/g	Sc 17±1 µg/g	MgO 0.61±0.06 %
Ge 2.6±0.4 µg/g	Se 1.6±0.2 µg/g	Na_2O 0.12±0.02 %
Hf 8.1±1.7 µg/g	Sm 4.0±0.4 µg/g	K_2O 1.50±0.04 %
Hg 0.29±0.03 µg/g	Sn 18±3 µg/g	

NCS DC73324 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.20±0.02 µg/g	Ho 0.69±0.05 µg/g	Ta 5.3±0.6 µg/g
As 220±14 µg/g	I 19.4±0.9 µg/g	Tb 0.61±0.08 µg/g
B 57±5 µg/g	In 0.84±0.18 µg/g	Te 0.4±0.1 µg/g
Ba 118±14 µg/g	La 30±2 µg/g	Th 23±2 µg/g
Be 4.4±0.7 µg/g	Li 36±1 µg/g	Ti 4390±120 µg/g
Bi 49±5 µg/g	Lu 0.42±0.05 µg/g	Tl 2.4±0.5 µg/g
Br 8.0±0.7 µg/g	Mn 1450±82 µg/g	Tm 0.40±0.06 µg/g
Cd 0.13±0.03 µg/g	Mo 18±2 µg/g	U 6.7±0.7 µg/g
Ce 66±6 µg/g	N 740±59 µg/g	V 130±7 µg/g
Cl 95±7 µg/g	Nb 27±2 µg/g	W 90±7 µg/g
Co 7.6±1.1 µg/g	Nd 21±2 µg/g	Y 19±2 µg/g
Cr 75±6 µg/g	Ni 53±4 µg/g	Yb 2.7±0.4 µg/g
Cs 10.8±0.6 µg/g	P 303±30 µg/g	Zn 97±6 µg/g
Cu 390±14 µg/g	Pb 314±13 µg/g	Zr 220±14 µg/g
Dy 3.3±0.3 µg/g	Pr 5.8±0.6 µg/g	SiO_2 56.93±0.18 %
Er 2.2±0.3 µg/g	Rb 237±8 µg/g	Al_2O_3 21.23±0.16 %
Eu 0.66±0.04 µg/g	S 260±43 µg/g	TFe_2O_3 8.09±0.13 %
F 906±45 µg/g	Sb 60±7 µg/g	MgO 0.34±0.05 %
Ga 30±3 µg/g	Sc 15.5±0.9 µg/g	CaO 0.22±0.03 %
Gd 3.4±0.3 µg/g	Se 1.34±0.17 µg/g	Na_2O 0.19±0.02 %
Ge 3.2±0.4 µg/g	Sm 3.8±0.4 µg/g	K_2O 1.70±0.06 %
Hf 7.5±0.8 µg/g	Sn 72±7 µg/g	C org. 0.81±0.09 %
Hg 0.072±0.007 µg/g	Sr 39±4 µg/g	TC 0.83±0.10 %

NCS DC73325 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.057±0.011 µg/g	I 19±2 µg/g	Tb 1.3±0.2 µg/g
As 4.8±1.3 µg/g	In 0.10±0.03 µg/g	Th 9.1±0.7 µg/g
Ba 180±27 µg/g	La 46±5 µg/g	Ti 20200±500 µg/g
Be 2.8±0.6 µg/g	Li 19.5±0.9 µg/g	Tl 0.21±0.06 µg/g
Bi 0.20±0.04 µg/g	Lu 0.35±0.06 µg/g	Tm 0.42±0.05 µg/g
Br 5.1±0.5 µg/g	Mn 1780±113 µg/g	U 2.2±0.4 µg/g
Cd 0.08±0.02 µg/g	Mo 2.9±0.3 µg/g	V 245±21 µg/g
Ce 98±11 µg/g	N 660±62 µg/g	W 1.2±0.2 µg/g
Cl 100±6 µg/g	Nb 64±7 µg/g	Y 27±4 µg/g
Co 97±6 µg/g	Nd 45±2 µg/g	Yb 2.4±0.4 µg/g
Cr 410±23 µg/g	Ni 276±15 µg/g	Zn 142±11 µg/g
Cs 2.7±0.8 µg/g	P 1150±39 µg/g	Zr 318±37 µg/g
Cu 97±6 µg/g	Pb 14±3 µg/g	SiO_2 32.69±0.18 %
Dy 6.6±0.6 µg/g	Pr 11±1 µg/g	Al_2O_3 29.26±0.34 %
Er 2.7±0.5 µg/g	Rb 16±3 µg/g	TFe_2O_3 18.76±0.33 %
Eu 3.4±0.2 µg/g	S 250±36 µg/g	MgO 0.26±0.03 %
F 321±29 µg/g	Sb 0.42±0.09 µg/g	CaO 0.16±0.02 %
Ga 39±5 µg/g	Sc 28±2 µg/g	Na_2O 0.08±0.02 %
Gd 9.6±0.9 µg/g	Se 0.32±0.05 µg/g	K_2O 0.20±0.02 %
Ge 1.6±0.3 µg/g	Sm 10.3±0.4 µg/g	C org. 0.64±0.07 %
Hf 7.7±0.5 µg/g	Sn 3.6±0.7 µg/g	TC 0.67±0.09 %
Hg 0.061±0.006 µg/g	Sr 26±4 µg/g	
Ho 1.1±0.2 µg/g	Ta 3.9±0.6 µg/g	

NCS DC73326 — Soil - Composition including trace elements — 70 g

Certified values

Ag 0.060±0.009 µg/g	I 1.7±0.2 µg/g	Th 11.8±0.7 µg/g
As 12.7±1.1 µg/g	In 0.044±0.013 µg/g	Ti 3800±120 µg/g
B 54±4 µg/g	La 36±3 µg/g	Tl 0.58±0.06 µg/g
Ba 480±23 µg/g	Li 35±2 µg/g	Tm 0.46±0.07 µg/g
Be 1.9±0.2 µg/g	Lu 0.43±0.04 µg/g	U 2.7±0.4 µg/g
Bi 0.30±0.04 µg/g	Mn 650±23 µg/g	V 81±5 µg/g
Br 2.5±0.5 µg/g	Mo 1.16±0.10 µg/g	W 1.7±0.2 µg/g
Cd 0.13±0.02 µg/g	N 370±54 µg/g	Y 26±2 µg/g
Ce 66±7 µg/g	Nb 15±2 µg/g	Yb 2.8±0.2 µg/g
Cl 68±12 µg/g	Nd 32±2 µg/g	Zn 68±4 µg/g
Co 12.7±1.1 µg/g	Ni 31.5±1.8 µg/g	Zr 229±12 µg/g
Cr 68±6 µg/g	P 775±25 µg/g	SiO_2 58.61±0.13 %
Cs 7.5±0.7 µg/g	Pb 21±2 µg/g	Al_2O_3 11.92±0.15 %
Cu 24.3±1.2 µg/g	Pr 8.3±0.8 µg/g	TFe_2O_3 4.48±0.05 %
Dy 4.8±0.4 µg/g	Rb 96±4 µg/g	FeO 1.22±0.05 %
Er 2.8±0.2 µg/g	Sb 1.0±0.2 µg/g	MgO 2.38±0.07 %
Eu 1.2±0.1 µg/g	Sc 11.7±0.7 µg/g	CaO 8.27±0.12 %
F 577±24 µg/g	Se 0.10±0.01 µg/g	Na_2O 1.72±0.04 %
Ga 14.8±1.1 µg/g	Sm 5.9±0.4 µg/g	K_2O 2.42±0.04 %
Gd 5.4±0.5 µg/g	Sn 2.8±0.5 µg/g	CO_2 5.97±0.16 %
Ge 1.27±0.20 µg/g	Sr 236±13 µg/g	TC 1.93±0.13 %
Hf 7.0±0.8 µg/g	Ta 1.05±0.25 µg/g	L.O.I. 9.12±0.17 %
Hg 0.017±0.003 µg/g	Tb 0.89±0.08 µg/g	
Ho 0.97±0.08 µg/g	Te 0.045±0.010 µg/g	

NCS DC73382 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.35±0.07 µg/g	Ho 0.87±0.08 µg/g	Tb 0.75±0.09 µg/g
As 34±5 µg/g	I 1.9±0.4 µg/g	Th 11.6±1.1 µg/g
B 50±4 µg/g	In 0.08±0.02 µg/g	Ti 4830±250 µg/g
Ba 590±50 µg/g	La 34±3 µg/g	Tl 1.0±0.2 µg/g
Be 2.5±0.4 µg/g	Li 35±2 µg/g	Tm 0.42±0.07 µg/g
Bi 1.2±0.2 µg/g	Lu 0.41±0.06 µg/g	U 3.3±0.6 µg/g
Br 2.9±0.5 µg/g	Mn 1760±98 µg/g	V 86±6 µg/g
Cd 4.3±0.6 µg/g	Mo 1.4±0.2 µg/g	W 3.1±0.4 µg/g
Ce 70±5 µg/g	N 1870±54 µg/g	Y 25±4 µg/g
Cl 66±15 µg/g	Nb 16.6±2.2 µg/g	Yb 2.7±0.4 µg/g
Co 14.2±1.5 µg/g	Nd 28±3 µg/g	Zn 680±39 µg/g
Cr 62±6 µg/g	Ni 20.4±2.7 µg/g	Zr 245±18 µg/g
Cs 9.0±0.9 µg/g	P 735±43 µg/g	SiO_2 62.60±0.22 %
Cu 21±2 µg/g	Pb 98±8 µg/g	Al_2O_3 14.18±0.21 %
Dy 4.6±0.3 µg/g	Pr 7.5±0.5 µg/g	TFe_2O_3 5.19±0.13 %
Er 2.6±0.2 µg/g	Rb 140±8 µg/g	MgO 1.18±0.12 %
Eu 1.0±0.1 µg/g	Sb 0.87±0.32 µg/g	CaO 1.72±0.08 %
F 506±49 µg/g	Sc 11.2±0.9 µg/g	Na_2O 1.66±0.05 %
Ga 19.3±1.7 µg/g	Se 0.14±0.04 µg/g	K_2O 2.59±0.06 %
Gd 4.6±0.3 µg/g	Sm 5.2±0.4 µg/g	CO_2 1.12±0.10 %
Ge 1.34±0.21 µg/g	Sn 6.1±1.0 µg/g	Org.C 1.80±0.13 %
Hf 6.8±0.9 µg/g	Sr 155±10 µg/g	
Hg 0.032±0.006 µg/g	Ta 1.4±0.2 µg/g	

Indicative values for Au ,Te ,FeO,H_2O^+, LOI

NCS DC73383 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.054±0.010 µg/g	Ho 0.93±0.15 µg/g	Ta 0.78±0.18 µg/g
As 13.7±1.8 µg/g	I 1.8±0.2 µg/g	Tb 0.97±0.40 µg/g
B 36±4 µg/g	In 0.09±0.03 µg/g	Th 16.6±1.2 µg/g
Ba 930±81 µg/g	La 164±16 µg/g	Ti 2710±120 µg/g
Be 1.8±0.3 µg/g	Li 22±1 µg/g	Tl 0.62±0.28 µg/g
Bi 0.38±0.06 µg/g	Lu 0.32±0.06 µg/g	Tm 0.42±0.13 µg/g
Br 4.5±0.6 µg/g	Mn 510±25 µg/g	U 1.4±0.4 µg/g
Cd 0.071±0.022 µg/g	Mo 0.98±0.17 µg/g	V 62±6 µg/g
Ce 402±25 µg/g	N 630±47 µg/g	W 1.08±0.33 µg/g
Cl -56 µg/g	Nb 27±3 µg/g	Y 22±3 µg/g
Co 8.7±1.4 µg/g	Nd 210±22 µg/g	Yb 2.0±0.3 µg/g
Cr 47±6 µg/g	Ni 19.4±1.9 µg/g	Zn 42±5 µg/g
Cs 4.9±0.6 µg/g	P 446±38 µg/g	Zr 219±23 µg/g
Cu 16.3±1.4 µg/g	Pb 20±4 µg/g	SiO_2 73.35±0.27 %
Dy 4.4±0.3 µg/g	Pr 57±6 µg/g	Al_2O_3 10.31±0.15 %
Er 2.1±0.4 µg/g	Rb 88±5 µg/g	TFe_2O_3 3.52±0.10 %
Eu 3.0±0.3 µg/g	S 210±50 µg/g	FeO 0.57±0.09 %
F 2240±175 µg/g	Sb 1.3±0.3 µg/g	MgO 1.04±0.06 %
Ga 12±1 µg/g	Sc 10.7±0.8 µg/g	CaO 2.36±0.07 %
Gd 7.8±0.6 µg/g	Se 0.16±0.04 µg/g	Na_2O 1.62±0.06 %
Ge 1.2±0.2 µg/g	Sm 18±3 µg/g	K_2O 2.54±0.07 %
Hf 5.8±0.9 µg/g	Sn 3.0±0.4 µg/g	Org.C 0.49±0.05 %
Hg 0.015±0.004 µg/g	Sr 187±14 µg/g	LOI 4.4±0.2 %

Indicative values for Au, Te, H_2O^+, CO_2

NCS DC73384 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.091±0.011 µg/g	I 1.3±0.4 µg/g	Te 0.040±0.015 µg/g
As 4.4±0.9 µg/g	In 0.031±0.009 µg/g	Th 6.0±0.7 µg/g
B 23±4 µg/g	La 21±2 µg/g	Ti 2240±120 µg/g
Ba 1210±101 µg/g	Li 18.4±1.2 µg/g	Tl 0.5±0.2 µg/g
Be 1.4±0.3 µg/g	Lu 0.29±0.03 µg/g	Tm 0.28±0.06 µg/g
Bi 0.17±0.06 µg/g	Mn 304±21 µg/g	U 1.3±0.4 µg/g
Br 4.3±0.7 µg/g	Mo 0.30±0.13 µg/g	V 36±4 µg/g
Cd 0.059±0.022 µg/g	N 640±40 µg/g	W 0.95±0.29 µg/g
Ce 39±6 µg/g	Nb 9.3±2.3 µg/g	Y 15±2 µg/g
Cl -60 µg/g	Nd 18.4±2.4 µg/g	Yb 1.7±0.3 µg/g
Co 5.5±1.0 µg/g	Ni 12±2 µg/g	Zn 31±4 µg/g
Cr 32±6 µg/g	P 320±28 µg/g	Zr 246±21 µg/g
Cs 3.2±0.5 µg/g	Pb 26±4 µg/g	SiO_2 74.72±0.29 %
Cu 11.4±1.6 µg/g	Pr 4.8±0.4 µg/g	Al_2O_3 12.24±0.14 %
Dy 2.6±0.2 µg/g	Rb 85±6 µg/g	TFe_2O_3 2.00±0.07 %
Er 1.5±0.3 µg/g	S 120±20 µg/g	FeO 0.50±0.08 %
Eu 0.72±0.06 µg/g	Sb 0.45±0.15 µg/g	MgO 0.58±0.05 %
F 246±40 µg/g	Sc 5.0±0.6 µg/g	CaO 1.27±0.06 %
Ga 13.7±1.4 µg/g	Se 0.094±0.045 µg/g	Na_2O 2.71±0.08 %
Gd 2.9±0.4 µg/g	Sm 3.3±0.3 µg/g	K_2O 3.04±0.07 %
Ge 1.17±0.22 µg/g	Sn 2.5±0.4 µg/g	Org.C 0.50±0.04 %
Hf 6.8±0.9 µg/g	Sr 380±25 µg/g	LOI 2.67±0.16 %
Hg 0.060±0.006 µg/g	Ta 0.76±0.20 µg/g	
Ho 0.53±0.07 µg/g	Tb 0.49±0.09 µg/g	

Indicative values for H_2O^+, CO_2

NCS DC73385 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.070±0.016 µg/g	Ho 1.46±0.14 µg/g	Sr 77±9 µg/g
As 58±3 µg/g	I 9.4±1.2 µg/g	Ta 3.1±0.3 µg/g
B 97±13 µg/g	In 0.12±0.03 µg/g	Tb 0.94±0.13 µg/g
Ba 213±31 µg/g	La 53±6 µg/g	Th 27±2 µg/g
Be 1.85±0.53 µg/g	Li 55±3 µg/g	Ti 10800±470 µg/g
Bi 1.04±0.20 µg/g	Lu 0.75±0.09 µg/g	Tl 0.94±0.33 µg/g
Br 4.0±1.1 µg/g	Mn 1420±117 µg/g	Tm 0.70±0.12 µg/g
Cd 0.35±0.08 µg/g	Mo 2.6±0.4 µg/g	U 6.7±1.2 µg/g
Ce 136±16 µg/g	N 1000±50 µg/g	V 247±21 µg/g
Co 22±3 µg/g	Nb 38±5 µg/g	W 6.2±0.7 µg/g
Cr 370±24 µg/g	Nd 27±3 µg/g	Y 39±8 µg/g
Cs 21.4±1.3 µg/g	Ni 64±7 µg/g	Yb 4.8±0.8 µg/g
Cu 40±4 µg/g	P 695±43 µg/g	Zn 210±19 µg/g
Dy 6.6±0.7 µg/g	Pb 58±7 µg/g	Zr 500±65 µg/g
Er 4.5±0.8 µg/g	Pr 8.4±1.9 µg/g	SiO_2 50.95±0.21 %
Eu 0.85±0.11 µg/g	Rb 75±6 µg/g	Al_2O_3 23.45±0.29 %
F 540±38 µg/g	S 180±40 µg/g	TFe_2O_3 10.30±0.16 %
Ga 31±5 µg/g	Sb 6.3±1.7 µg/g	MgO 0.49±0.07 %
Gd 4.7±0.6 µg/g	Sc 20±2 µg/g	CaO 0.26±0.05 %
Ge 1.9±0.4 µg/g	Se 0.64±0.18 µg/g	Na_2O 0.11±0.03 %
Hf 14±2 µg/g	Sm 4.4±0.5 µg/g	K_2O 1.03±0.09 %
Hg 0.59±0.08 µg/g	Sn 5.7±1.3 µg/g	Org.C 0.62±0.06 %

Indicative values for Au, Cl, Te, FeO, H_2O^+, CO_2, LOI

NCS DC73386 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 4.4±0.6 µg/g	Hg 0.29±0.04 µg/g	Sn 18±4 µg/g
As 412±24 µg/g	Ho 0.8±0.2 µg/g	Sr 42±6 µg/g
Au 0.260±0.006 µg/g	I 3.8±0.8 µg/g	Ta 1.8±0.3 µg/g
B 53±8 µg/g	In 4.1±0.6 µg/g	Tb 0.7±0.2 µg/g
Ba 296±40 µg/g	La 36±6 µg/g	Th 23±2 µg/g
Be 2.0±0.5 µg/g	Li 56±2 µg/g	Ti 6290±320 µg/g
Bi 41±6 µg/g	Lu 0.42±0.07 µg/g	Tl 1.6±0.4 µg/g
Cd 0.45±0.09 µg/g	Mn 1360±111 µg/g	Tm 0.41±0.05 µg/g
Ce 91±15 µg/g	Mo 4.6±0.5 µg/g	U 6.5±1.1 µg/g
Cl ~70 µg/g	N 610±25 µg/g	V 166±14 µg/g
Co 12±2 µg/g	Nb 23±4 µg/g	W 34±4 µg/g
Cr 118±10 µg/g	Nd 24±2 µg/g	Y 21±4 µg/g
Cs 15±2 µg/g	Ni 40±5 µg/g	Yb 2.8±0.5 µg/g
Cu 144±9 µg/g	P 390±53 µg/g	Zn 494±39 µg/g
Dy 3.7±0.6 µg/g	Pb 552±44 µg/g	Zr 272±25 µg/g
Er 2.4±0.3 µg/g	Pr 7.0±1.3 µg/g	SiO_2 52.57±0.25 %
Eu 0.82±0.06 µg/g	Rb 117±9 µg/g	Al_2O_3 21.58±0.23 %
F 603±43 µg/g	S 410±60 µg/g	TFe_2O_3 12.62±0.27 %
Ga 32±5 µg/g	Sb 35±7 µg/g	MgO 0.61±0.08 %
Gd 3.5±0.3 µg/g	Sc 17±2 µg/g	Na_2O 0.12±0.03 %
Ge 2.6±0.4 µg/g	Se 1.6±0.3 µg/g	K_2O 1.50±0.06 %
Hf 8.1±1.7 µg/g	Sm 4.0±0.6 µg/g	

Indicative values for Br, Te, FeO, CaO, H_2O^+, Org.C, LOI

NCS DC73387 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.20±0.03 µg/g	Ho 0.69±0.06 µg/g	Sr 39±6 µg/g
As 220±21 µg/g	I 19.4±1.0 µg/g	Ta 5.3±0.6 µg/g
B 57±7 µg/g	In 0.84±0.20 µg/g	Tb 0.61±0.12 µg/g
Ba 118±21 µg/g	La 30±3 µg/g	Th 23±2 µg/g
Be 4.4±1.0 µg/g	Li 36±2 µg/g	Ti 4390±180 µg/g
Bi 49±7 µg/g	Lu 0.42±0.06 µg/g	Tl 2.4±0.6 µg/g
Cd 0.13±0.04 µg/g	Mn 1450±127 µg/g	Tm 0.40±0.07 µg/g
Ce 66±8 µg/g	Mo 18±3 µg/g	U 6.7±1.1 µg/g
Cl 98±20 µg/g	N 740±47 µg/g	V 130±11 µg/g
Co 7.6±1.7 µg/g	Nb 27±4 µg/g	W 90±10 µg/g
Cr 75±8 µg/g	Nd 21±3 µg/g	Y 19±3 µg/g
Cs 10.8±0.7 µg/g	Ni 53±5 µg/g	Yb 2.7±0.5 µg/g
Cu 390±22 µg/g	P 303±47 µg/g	Zn 97±9 µg/g
Dy 3.3±0.3 µg/g	Pb 314±20 µg/g	Zr 220±22 µg/g
Er 2.2±0.3 µg/g	Pr 5.8±0.6 µg/g	SiO_2 56.93±0.27 %
Eu 0.66±0.06 µg/g	Rb 237±12 µg/g	Al_2O_3 21.23±0.25 %
F 906±70 µg/g	S 260±50 µg/g	TFe_2O_3 8.09±0.19 %
Ga 30±4 µg/g	Sb 60±10 µg/g	MgO 0.34±0.07 %
Gd 3.4±0.3 µg/g	Sc 15.5±1.4 µg/g	CaO 0.22±0.04 %
Ge 3.2±0.4 µg/g	Se 1.34±0.24 µg/g	Na_2O 0.19±0.02 %
Hf 7.5±0.8 µg/g	Sm 3.8±0.6 µg/g	K_2O 1.70±0.08 %
Hg 0.072±0.011 µg/g	Sn 72±10 µg/g	Org.C 0.81±0.07 %

Indicative values for Au, Br, Te, FeO, H_2O^+, CO_2, LOI

NCS DC73388 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.057±0.016 µg/g	Ho 1.1±0.2 µg/g	Sr 26±6 µg/g
As 4.8±1.9 µg/g	I 19±2 µg/g	Ta 3.9±0.6 µg/g
Ba 180±41 µg/g	In 0.10±0.03 µg/g	Tb 1.3±0.3 µg/g
Be 2.8±0.9 µg/g	La 46±7 µg/g	Th 9.1±1.1 µg/g
Bi 0.20±0.07 µg/g	Li 19.5±1.4 µg/g	Ti 20200±780 µg/g
Br 5.2±1.2 µg/g	Lu 0.35±0.08 µg/g	Tm 0.42±0.06 µg/g
Cd 0.080±0.033 µg/g	Mn 1780±176 µg/g	U 2.2±0.5 µg/g
Ce 98±16 µg/g	Mo 2.9±0.4 µg/g	V 245±32 µg/g
Cl 100±13 µg/g	N 660±50 µg/g	W 1.2±0.4 µg/g
Co 97±9 µg/g	Nb 64±10 µg/g	Y 27±6 µg/g
Cr 410±35 µg/g	Nd 45±3 µg/g	Yb 2.4±0.6 µg/g
Cs 2.7±0.9 µg/g	Ni 276±23 µg/g	Zn 142±17 µg/g
Cu 97±9 µg/g	P 1150±61 µg/g	Zr 318±57 µg/g
Dy 6.6±0.8 µg/g	Pb 14±4 µg/g	SiO_2 32.69±0.27 %
Er 2.7±0.6 µg/g	Pr 11±1 µg/g	Al_2O_3 29.26±0.52 %
Eu 3.4±0.3 µg/g	Rb 16±4 µg/g	TFe_2O_3 18.76±0.51 %
F 321±45 µg/g	S 250±40 µg/g	MgO 0.26±0.06 %
Ga 39±7 µg/g	Sb 0.42±0.13 µg/g	CaO 0.16±0.05 %
Gd 9.6±1.0 µg/g	Sc 28±3 µg/g	Na_2O 0.074±0.028 %
Ge 1.6±0.3 µg/g	Se 0.32±0.09 µg/g	K_2O 0.20±0.03 %
Hf 7.7±0.4 µg/g	Sm 10.3±0.6 µg/g	Org.C 0.64±0.05 %
Hg 0.061±0.008 µg/g	Sn 3.6±1.6 µg/g	

Indicative values for Au, B, Te, Tl, FeO, H_2O^+, CO_2, LOI

NCS DC73389 — Soil - Trace elements and oxides — 70 g

Certified values

Ag 0.060±0.014 µg/g	In (0.044) µg/g	Te 0.046±0.012 µg/g
As 12.7±1.7 µg/g	La 36±4 µg/g	Th 11.8±1.1 µg/g
B 54±5 µg/g	Li 35±2 µg/g	Ti 3800±180 µg/g
Ba 480±36 µg/g	Lu 0.43±0.06 µg/g	Tl 0.59±0.16 µg/g
Be 1.9±0.3 µg/g	Mn 650±35 µg/g	Tm 0.46±0.08 µg/g
Bi 0.30±0.05 µg/g	Mo 1.16±0.15 µg/g	U 2.7±0.5 µg/g
Cd 0.13±0.05 µg/g	N 370±43 µg/g	V 81±7 µg/g
Ce 66±10 µg/g	Nb 15±3 µg/g	W 1.7±0.5 µg/g
Co 12.7±1.7 µg/g	Nd 32±3 µg/g	Y 26±3 µg/g
Cr 68±8 µg/g	Ni 31.5±2.7 µg/g	Yb 2.8±0.3 µg/g
Cs 7.5±0.9 µg/g	P 775±39 µg/g	Zn 68±6 µg/g
Cu 24.3±1.8 µg/g	Pb 21±3 µg/g	Zr 229±18 µg/g
Dy 4.8±0.5 µg/g	Pr 8.3±0.9 µg/g	SiO_2 58.61±0.20 %
Er 2.8±0.2 µg/g	Rb 96±5 µg/g	Al_2O_3 11.92±0.23 %
Eu 1.2±0.1 µg/g	S 120±50 µg/g	TFe_2O_3 4.48±0.07 %
F 577±37 µg/g	Sb 1.0±0.3 µg/g	FeO 1.22±0.07 %
Ga 14.8±1.6 µg/g	Sc 11.7±1.1 µg/g	MgO 2.38±0.10 %
Gd 5.4±0.5 µg/g	Se 0.12±0.04 µg/g	CaO 8.27±0.18 %
Ge 1.27±0.22 µg/g	Sm 5.9±0.6 µg/g	Na_2O 1.72±0.06 %
Hf 7.0±0.8 µg/g	Sn 2.8±0.7 µg/g	K_2O 2.42±0.06 %
Hg 0.017±0.004 µg/g	Sr 236±19 µg/g	CO_2 5.97±0.20 %
Ho 0.97±0.08 µg/g	Ta 1.05±0.26 µg/g	LOI 9.12±0.22 %
I 1.6±0.5 µg/g	Tb 0.89±0.12 µg/g	

Indicative values for Au, Br, Cl, H_2O^+, Org.C

NCS DC77301 — Soil - Composition including trace elements — 50 g

Certified values

Ag 0.067 µg/g	La 31.3 µg/g	Ti 0.25 %
As 2.9 µg/g	Li 14.3 µg/g	Tl 0.58 µg/g
B 13.8 µg/g	Lu 0.27 µg/g	Tm 0.28 µg/g
Ba 693 µg/g	Mn 262 µg/g	U 1.6 µg/g
Be 2.1 µg/g	Mo 0.43 µg/g	V 34.7 µg/g
Bi 0.1 µg/g	Nb 13 µg/g	W 0.98 µg/g
Cd 0.068 µg/g	Nd 26 µg/g	Y 16.9 µg/g
Ce 58.9 µg/g	Ni 9.3 µg/g	Yb 1.8 µg/g
Co 4.9 µg/g	P 318 µg/g	Zn 34.2 µg/g
Cr 26.4 µg/g	Pb 16.3 µg/g	Zr 300 µg/g
Cs 3.3 µg/g	Rb 97.4 µg/g	MgO 0.49 %
Cu 4.9 µg/g	Sb 0.21 µg/g	CaO 1.35 %
Dy 3.2 µg/g	Sc 4.8 µg/g	Na_2O 3.31 %
Eu 0.97 µg/g	Se -0.044 µg/g	K_2O 3.37 %
F 215 µg/g	Sm 4.9 µg/g	Fe_2O_3 2.08 %
Ga 14.6 µg/g	Sn 1.4 µg/g	Al_2O_3 12.91 %
Gd 3.9 µg/g	Sr 270 µg/g	SiO_2 73.28 %
Ge 1.2 µg/g	Tb 0.55 µg/g	
Hg 0.015 µg/g	Th 8.4 µg/g	

NCS DC77302 — Soil - Composition including trace elements — 50 g

Certified values

Ag 0,11 µg/g	Li 33,2 µg/g	Ti* 0,46 %
As 10,5 µg/g	Lu 0,46 µg/g	Tl 0,62 µg/g
B 38,3 µg/g	Mn 706 µg/g	Tm 0,48 µg/g
Ba 623 µg/g	Mo 0,84 µg/g	U 2,4 µg/g
Be 2,6 µg/g	Nb 17,1 µg/g	V 82,7 µg/g
Bi 0,37 µg/g	Nd 34,4 µg/g	W 5 µg/g
Cd 0,09 µg/g	Ni 27,6 µg/g	Y 27,4 µg/g
Ce 76,6 µg/g	P 439 µg/g	Yb 3,1 µg/g
Co 12,8 µg/g	Pb 29,2 µg/g	Zn 72,8 µg/g
Cr 66 µg/g	Rb 109 µg/g	Zr 337 µg/g
Cs 7,9 µg/g	Sb 0,93 µg/g	MgO 1,25 %
Cu 23,2 µg/g	Sc 11,4 µg/g	CaO 1,42 %
Eu 1,2 µg/g	Se 0,28 µg/g	Na_2O 1,9 %
F 438 µg/g	Sm 6,6 µg/g	K_2O 2,59 %
Ga 18,8 µg/g	Sn 4,2 µg/g	Fe_2O_3 4,6 %
Gd 5,6 µg/g	Sr 188 µg/g	Al_2O_3 14,55 %
Hg 0,066 µg/g	Tb 0,85 µg/g	SiO_2 65,64 %
La 37,6 µg/g	Th 12 µg/g	

NCS DC77303 — Soil - Composition including trace elements — 50 g

Certified values

Ag 5,4 µg/g	La 32,8 µg/g	Th 12,6 µg/g
As 205 µg/g	Li 29,4 µg/g	Ti 0,41%
B 63,9 µg/g	Lu 0,36 µg/g	Tm 0,4 µg/g
Ba 550 µg/g	Mn 0,97 %	U 3,3 µg/g
Be 2,3 µg/g	Mo 1,5 µg/g	V 88,5 µg/g
Bi 1,7 µg/g	Nb 15,1 µg/g	W 6,9 µg/g
Cd 28,2 µg/g	Nd 27,4 µg/g	Y 24,2 µg/g
Ce 66,3 µg/g	Ni 24,2 µg/g	Yb 2,5 µg/g
Co 11,6 µg/g	P 0,14 %	Zn 0,38 %
Cr 59,6 µg/g	Pb 0,27 %	Zr 192 µg/g
Cs 9,3 µg/g	Rb 111 µg/g	MgO 3,71 %
Cu 65,4 µg/g	Sb 9,2 µg/g	CaO 4,33 %
Eu 1,1 µg/g	Sc 11 µg/g	Na_2O 1,1 %
F 624 µg/g	Se 0,51 µg/g	K_2O 2,03 %
Ga 17,3 µg/g	Sm 5,4 µg/g	Fe_2O_3 7,97 %
Gd 4,6 µg/g	Sn 64,3 µg/g	Al_2O_3 12,04 %
Ge -1,3 µg/g	Sr 130 µg/g	SiO_2 47,96 %
Hg 0,15 µg/g	Tb 0,7 µg/g	

NCS DC87101 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	67.96 %	B	46 µg/g	Pb	28 µg/g
TiO_2	0.72 %	Ba	677 µg/g	Rb	111 µg/g
Al_2O_3	14.35 %	Be	2.4 µg/g	Sb	0.73 µg/g
Fe_2O_3	4.69 %	Co	15 µg/g	Sr	168 µg/g
MnO	0.093 %	Cr	93 µg/g	Te	0.033 µg/g
MgO	1.62 %	Cu	23 µg/g	Th	12 µg/g
CaO	0.9 %	F	458 µg/g	U	1.9 µg/g
Na_2O	1.78 %	Ga	17 µg/g	V	88 µg/g
K_2O	2.56 %	Hg	0.014 µg/g	W	1.8 µg/g
P_2O_5	0.1 %	La	43 µg/g	Y	24 µg/g
L.O.I	4.64 %	Li	37 µg/g	Zn	68 µg/g
N	0.035 %	Nb	15 µg/g	Zr	274 µg/g
As	10 µg/g	Ni	41 µg/g		

NCS DC87102 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	67.21 %	S	0.034 %	Pb	21 µg/g
TiO_2	0.56 %	As	9.8 µg/g	Rb	86 µg/g
Al_2O_3	10.78 %	Ba	469 µg/g	Sb	0.83 µg/g
Fe_2O_3	2.28 %	Be	2 µg/g	Se	0.14 µg/g
MnO	0.066 %	Cl	600 µg/g	Sn	2.9 µg/g
MgO	1.73 %	Co	9.4 µg/g	Sr	197 µg/g
CaO	5.21 %	Cr	61 µg/g	Th	9.6 µg/g
Na_2O	1.95 %	Cu	12 µg/g	U	1.9 µg/g
K_2O	2.15 %	Ga	17 µg/g	V	63 µg/g
P_2O_5	0.15 %	Hg	0.031 µg/g	W	1.5 µg/g
H_2O^+	2.29 %	La	36 µg/g	Y	21 µg/g
CO_2	3.48 %	Li	27 µg/g	Zn	51 µg/g
L.O.I	6.73 %	Nb	12 µg/g	Zr	291 µg/g
N	0.064 %	Ni	23 µg/g		

NCS DC87103 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	72.92 %	Ba	524 µg/g	Rb	91 µg/g
TiO_2	0.69 %	Be	1.9 µg/g	Sb	0.65 µg/g
Al_2O_3	12.28 %	Co	12 µg/g	Se	0.11 µg/g
Fe_2O_3	3.38 %	Cr	56 µg/g	Sn	3.2 µg/g
MnO	0.072 %	Cu	23 µg/g	Sr	227 µg/g
MgO	1.14 %	F	383 µg/g	Th	10 µg/g
CaO	1.44 %	Ga	15 µg/g	U	1.9 µg/g
Na_2O	2.2 %	Hg	0.017 µg/g	V	74 µg/g
K_2O	2.16 %	La	38 µg/g	W	1.5 µg/g
P_2O_5	0.11 %	Li	28 µg/g	Y	22 µg/g
N	0.029 %	Nb	14 µg/g	Zn	48 µg/g
As	6.3 µg/g	Ni	22 µg/g	Zr	331 µg/g
B	50 µg/g	Pb	19 µg/g		

NCS DC87104 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	60.76 %	B	44 µg/g	Pb	19 µg/g
TiO_2	0.55 %	Ba	448 µg/g	Rb	82 µg/g
Al_2O_3	10.78 %	Be	1.8 µg/g	Sb	0.78 µg/g
Fe_2O_3	2.79 %	Bi	0.24 µg/g	Sn	2.4 µg/g
MnO	0.058 %	Cl	222 µg/g	Sr	296 µg/g
MgO	1.83 %	Co	9.2 µg/g	Th	9.4 µg/g
CaO	9.07 %	Cr	62 µg/g	U	1.8 µg/g
Na_2O	1.74 %	Cu	17 µg/g	V	65 µg/g
K_2O	2.01 %	F	559 µg/g	W	1.4 µg/g
P_2O_5	0.087 %	Ga	13 µg/g	Y	19 µg/g
CO_2	6.44 %	La	34 µg/g	Zn	45 µg/g
L.O.I	9.62 %	Li	38 µg/g	Zr	258 µg/g
N	0.02 %	Nb	11 µg/g		
As	9.4 µg/g	Ni	23 µg/g		

NCS DC87105 — Soil - Composition including trace elements — 100 g

Certified values

SiO_2	67.53 %	S	0.0092 %	Ni	22 µg/g
TiO_2	0.54 %	As	8.2 µg/g	Pb	20 µg/g
Al_2O_3	10.84 %	B	33 µg/g	Rb	83 µg/g
TFe_2O_3	-3.26 %	Ba	555 µg/g	Sb	0.7 µg/g
Fe_2O_3	2.64 %	Be	1.8 µg/g	Sn	2.2 µg/g
MnO	0.062 %	Bi	0.21 µg/g	Sr	231 µg/g
MgO	1.68 %	Co	8.9 µg/g	Th	8.9 µg/g
CaO	5.42 %	Cr	54 µg/g	U	2.4 µg/g
Na_2O	1.87 %	Cu	16 µg/g	V	66 µg/g
K_2O	2.18 %	F	657 µg/g	W	1.3 µg/g
P_2O_5	0.074 %	Ga	13 µg/g	Y	19 µg/g
CO_2	3.59 %	La	32 µg/g	Zr	298 µg/g
L.O.I	6.67 %	Li	25 µg/g		
N	0.021 %	Nb	11 µg/g		

NCS DC78302 **Tibet soil - Trace elements** 15 g

Collected from the mountains of Tibet an area practically unaffected by industrial contamination.

Certified values

Al 7,11±0,12 %	K 2,12±0,18 %	Sc 10,8±1,5 µg/g
As 3,8±0,7 µg/g	La 41,9±4,0 µg/g	Si 30,57±0,11 %
Be 2,96±0,08 µg/g	Mg 1,53±0,04 %	Sm 7,1±0,5 µg/g
Ca 2,59±0,04 %	Mn 677±23 µg/g	Sr 163±29 µg/g
Cd 0,081±0,015 µg/g	Na 1,52±0,11 %	Th 17,6±0,7 µg/g
Co 13,1±1,1 µg/g	N 0,128±0,003 %	Ti 0,40±0,03 %
Ce 83,6±3,3 µg/g	Nd 42,3±4,8 µg/g	U 3,84±0,40 µg/g
Cr 60,8±3,6 µg/g	Ni 31,1±1,6 µg/g	V 77,5±8,0 µg/g
Cu 24,6±2,8 µg/g	P 0,86±0,08 %	Zn 58,0±6,6 µg/g
Eu 1,4±0,3 µg/g	Pb 14,2±2,7 µg/g	Yb 3,1±0,6 µg/g
Fe 3,34±0,11 %	Rb 135±14 µg/g	Se 0,16±0,04 µg/g

NCS DC85101 - NCS DC85106

Soils collected from a variety of locations around China. Certified and indicative values are given for 18 available nutrients. Each type of soil is available in 500 g or 1000 g pack sizes.

Composition	Methods
Total Nitrogen	Kjeldahl method for Nitrogen
Organic Matter	H_2SO_4,$K_2Cr_2O_7$ oxidation volumetric method
Cation Exchange Capacity	CH_3COONH_4 extraction -volumetric method (acid soil) NH_4Cl- CH_3COONH_4 extraction -volumetric method (calcareous soil)
Exchangeable Hydrogen	KCl extraction volumetric method
Exchangeable Aluminium	KCl extraction volumetric method
Exchangeable Magnesium	CH_3COONH_4 extraction volumetric method and AAS
Exchangeable Calcium	CH_3COONH_4 extraction volumetric method and AAS
Exchangeable Sodium	CH_3COONH_4 extraction flame photometric method and AAS
Available Potassium	CH_3COONH_4 extraction flame photometric method and AAS
Hydrolyzable Nitrogen	Alkali Hydrolysis-diffuse method; NH_4F,dilute HCl extraction-Molybdenum-antimony-ascorbic acid photometric method
Available Phosphorus	$NaHCO_3$ extraction -Colorimetry (calcareous soil) NH_4F,dilute HCl extraction - Molybdenum-antimony-ascorbic acid method (acid soil)
photometric	
Available Potassium	CH_3COONH_4 extraction -flame photometric method or AAS
Available Silicon	Citric acid extraction silicon molybdenum blue colorimetric method
Available Iron	DTPA solution* extraction atomic absorption spectrometry
Available Copper	DTPA solution extraction atomic absorption spectrometry(calcareous soil). Dilute HCl extraction, atomic absorption spectrometry (acid soil)
Available Zinc	DTPA solution extraction atomic absorption spectrometry(calcareous soil). Dilute HCl extraction,atomic absorption spectrometry (acid soil)
Available Boron	Boiling water extraction curcumin colorimetric method
Available Molybdenum	Oxalic acid ammonium oxalate(Tamm solution)** extraction polarography
Available Manganese	Hydroquinone extraction, atomic absorption spectrometry
pH	Water extraction, potential method

* DTPA solution 0.005mol/L $C_{14}H_{23}N_3O$10-0.01mol/L $CaCl_2$.0.1mol/L $C_6H_{16}NO_3$ pH 7.3

** Tamm solution 24.9g/L $(NH_4)_2C_2O_4 \cdot H_2O$-12.6g/L $H_2C_2O_4 \cdot 2H_2O$ pH 3.3

NCS DC85101-500 **Soil - Available nutrients** 500 g

Certified values

Total nitrogen	0.109 w(N)/10^{-2}
Organic matter	1.82 w(OM)/10-2
Cation exchange capacity	1.6 cmol(+)/kg
Exchangeable magnesium	3.54 cmo(1/2Mg^{2+})/kg
Exchangeable calcium	14. cmol (1/2Ca^{2+})/kg
Exchangeable sodium	0.20 cmol (Na^+)/kg
Exchangeable potassium	0.45 cmol (K^+)/kg
Hydrolysable nitrogen	151 w(N)/10^{-6}
Available phosphorus	21.2 w(P)/10^{-6}
Available potassium	178 w(K)/10^{-6}
Available silicon	417 w(Si)/10^{-6}
Available iron	91 w(Fe)/10^{-6}
Available boron	0.52 w(B)/10^{-6}

NCS DC85101-1000 **Soil - Available nutrients** 1000 g

NCS DC85102-500 **Soil - Available nutrients** 500 g

Certified values

Total nitrogen	0.86 w(N)/10^{-2}
Organic matter	1.43 w(OM)/10-2
Hydrolysable nitrogen	69 w(N)/10^{-6}
Available phosphorus	18.3 w(P)/10^{-6}
Available potassium	267 w(K)/10^{-6}
Available silicon	310 w(Si)/10^{-6}
Available iron	38 w(Fe)/10^{-6}
Available copper	1.13 w(Cu)/10^{-6}
Available zinc	1.2 w(Zn)/10^{-6}
Available boron	0.60 w(B)/10^{-6}
Available molybdenum	0.10 w(Mo)/10^{-6}

NCS DC85102-1000 **Soil - Available nutrients** 1000 g

NCS DC85103-500	Soil - Available nutrients	500 g

Certified values

Total nitrogen	0.094 w(N)/10^{-2}
Organic matter	1.21 w(OM)/10-2
Hydrolysable nitrogen	66 w(N)/10^{-6}
Available phosphorus	13.8 w(P)/10^{-6}
Available potassium	267 w(K)/10^{-6}
Available silicon	310 w(Si)/10^{-6}
Available iron	26 w(Fe)/10^{-6}
Available copper	0.82 w(Cu)/10^{-6}
Available zinc	0.66 w(Zn)/10^{-6})
Available boron	0.34 w(B)/10^{-6}
Available molybdenum	0.10 w(Mo)/10^{-6}

NCS DC85103-1000	Soil - Available nutrients	1000 g

NCS DC85104-500	Soil - Available nutrients	500 g

Certified values

Total nitrogen	0.222 w(N)/10^{-2}
Organic matter	3.83 w(OM)/10-2
Cation exchange capacity	19.6 cmol(+)/kg
Exchangeable magnesium	2.76 cmo(1/2Mg^{2+})/kg
Exchangeable calcium	13.1 cmol (1/2Ca^{2+})/kg
Exchangeable sodium	0.26 cmol (Na^{+})/kg
Exchangeable potassium	0.44 cmol (K^{+})/kg
Hydrolysable nitrogen	161 w(N)/10^{-6}
Available phosphorus	1.13 w(P)/10^{-6}
Available potassium	171 w(K)/10^{-6}
Available silicon	321 w(Si)/10^{-6}
Available iron	243 w(Fe)/10^{-6}
Available boron	0.27 w(B)/10^{-6}
Available molybdenum	0.13 w(Mo)/10^{-6}

NCS DC85104-1000	Soil - Available nutrients	1000 g

NCS DC85105-500	Soil - Available nutrients	500 g

Certified values

Total nitrogen	0.078 w(N)/10^{-2}
Organic matter	1.63 w(OM)/10-2
Cation exchange capacity	11.2 cmol(+)/kg
Exchangeable magnesium	1.21 cmo(1/2Mg^{2+})/kg
Exchangeable calcium	4.2 cmol (1/2Ca^{2+})/kg
Exchangeable potassium	0.40 cmol (K^{+})/kg
Hydrolysable nitrogen	67 w(N)/10^{-6}
Available phosphorus	14.8.2 w(P)/10^{-6}
Available potassium	156 w(K)/10^{-6}
Available silicon	432 w(Si)/10^{-6}
Available iron	29 w(Fe)/10^{-6}
Available boron	0.34 w(B)/10^{-6}
Available molybdenum	0.20 w(Mo)/10^{-6}
Exchangeable hydrogen	0.22 cmol(H^{+})/kg
Exchangeable aluminium	0.91 cmol(1/3Al^{3+})/kg

NCS DC85105-1000	Soil - Available nutrients	1000 g

NCS DC85106-500	Soil - Available nutrients	500 g

Certified values

Total nitrogen	0.076 w(N)/10^{-2}
Organic matter	1.48 w(OM)/10-2
Cation exchange capacity	6.0 cmol(+)/kg
Exchangeable magnesium	0,27 cmo(1/2Mg^{2+})/kg
Exchangeable calcium	2.6 cmol (1/2Ca^{2+})/kg
Exchangeable potassium	0.50 cmol (K^{+})/kg
Hydrolysable nitrogen	90 w(N)/10^{-6}
Available phosphorus	48 w(P)/10^{-6}
Available potassium	196 w(K)/10^{-6}
Available silicon	392 w(Si)/10^{-6}
Available iron	78 w(Fe)/10^{-6}
Available boron	0.34 w(B)/10^{-6}
Available molybdenum	0.20 w(Mo)/10^{-6}
Exchangeable hydrogen	0.18 cmol(H^{+})/kg
Exchangeable aluminium	0.72 cmol(1/3Al^{3+})/kg

NCS DC85106-1000	Soil - Available nutrients	1000 g

WEPAL soils RTH 912 - RTH 972

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) is situated at the Wageningen Agricultural University (WAU) in Wageningen, the Netherlands. WEPAL runs four international sample exchange programmes for continuous quality control of analytical data as produced by chemical laboratories. There are almost 700 laboratories who take part in one or more of WEPAL's regular ring-tests programmes.
One of these programmes, the Wageningen International Soil-analytical Exchange programme, is designed for the control of inorganic chemical composition (totals and different extraction procedures) and several soil parameters (pH, EC, CEC, clay, etc.) in dried soil samples. Samples are sent out 4 times a year to specialist laboratories all over the world.
Uniquely, for each soil there are values for several sample preparation methods e.g.:
Real totals
- Acid extractable (so-called) totals
- Extraction with boiling 2 M HNO_3
- Extraction with 0.1 M $NaNO_3$
- Extraction with 0.01 M $CaCl_2$
- Extraction with 1 M NH_4NO_3
- Extraction with 1 M NH_4.acetate
- Extraction with $BaCl_2$
- Soil characteristics

RTH 912	Swiss Soil - Metals	100 g
RTH 938	Nicaraguan Soil - Metals	100 g
RTH 946	Salt Marsh Soil - Metals	100 g
RTH 972	Marine Clay Soil - Metals	100 g
CIL-EDF-5183	Soil - Organic contaminants	10 g

Reference values

Polychlorinated dioxins and furans

2,3,78-TCDD	0.11 ± 0.14 ng/kg	1,2,3,7,8-PeCDF	0.23 ± 0.22 ng/kg
Total TCDD	0.32 ± 0.88 ng/kg	2,3,4,7,8-PeCDF	0.34 ± 0.14 ng/kg
1,2,3,7,8-PeCDD	0.39 ± 0.32 ng/kg	Total PeCDF	3.31 ± 5.74 ng/kg
Total PeCDD	2.96 ± 2.40 ng/kg	1,2,3,4,7,8-HxCDF	0.86 ± 0.44 ng/kg
1,2,3,4,7,8-HxCDD	1.12 ± 0.52 ng/kg	1,2,3,6,7,8-HxCDF	0.58 ± 0.26 ng/kg
1,2,3,6,7,8-HxCDD	4.39 ± 0.88 ng/kg	1,2,3,7,8,9-HxCDF	0.12 ± 0.16 ng/kg
1,2,3,7,8,9-HxCDD	2.00 ± 1.20 ng/kg	2,3,4,6,7,8-HxCDF	0.72 ± 0.92 ng/kg
Total HxCDD	50.9 ± 22.8 ng/kg	Total HxCDF	15.6 ± 12.7 ng/kg
1,2,3,4,6,7,8-HpCDD	153 ± 57.2 ng/kg	1,2,3,4,6,7,8-HpCDF	13.9 ± 3.68 ng/kg
Total HpCDD	492 ± 246 ng/kg	1,2,3,4,7,8,9-HpCDF	1.25 ± 0.62 ng/kg
OCDD	7870 ± 1650 ng/kg	Total HpCDF	54.0 ± 16.0 ng/kg
2,3,7,8-TCDF	0.70 ± 0.34 ng/kg	OCDF	58.2 ± 32.4 ng/kg
Total TCDF	3.21 ± 2.12 ng/kg		

Polychlorinated biphenyls

2,2',5-TriCB (#18)3	78.9 ± 30.4 ng/kg
2,4,4'-TriCB (#28)	140 ± 127 ng/kg
3,4,4'-TriCB (#37)	1710 ± 440 ng/kg
2,2',3,5'-TetraCB (#44)	1070 ± 552 ng/kg
2,2',4,5'-TetraCB (#49)	638 ± 350 ng/kg
2,2',5,5'-TetraCB (#52)	2020 ± 744 ng/kg
2,4,4',5-TetraCB (#74)	447000 ± 348000 ng/kg
3,3',4,4'-TetraCB (#77)	2,230 ± 988 ng/kg
3,4,4',5-TetraCB (#81)	5.52 ± 7.42 ng/kg
2,2',3,4,5'-PentaCB (#87)	2370 ± 532 ng/kg
2,2',4,4',5-PentaCB (#99)	1110 ± 444 ng/kg
2,2',4,5,5'-PentaCB (#101)	5370 ± 1564 ng/kg
2,3,3',4,4'-PentaCB (#105)	629 ± 158.4 ng/kg
2,3,3',4',6-PentaCB (#110)	5880 ± 2,110 ng/kg
2,3,4,4',5-PentaCB (#114)	34.6 ± 18.0 ng/kg
2,3',4,4',5-PentaCB (#118)	6520 ± 2,300 ng/kg
2',3,4,4',5-PentaCB (#123)	24.1 ± 23.2 ng/kg
3,3',4,4',5-PentaCB (#126)	33.5 ± 10.3 ng/kg
2,2',3,3',4,4'-HexaCB (#128)	342 ± 135 ng/kg
2,2',3,4,4',5-HexaCB (#137)	87.1 ± 32.8 ng/kg
2,2',3,4,4',5'-HexaCB (#138)	2350 ± 764 ng/kg
2,2',3,4,5,5'- HexaCB (#141)	514 ± 112 ng/kg
2,2',3,4',5',6- HexaCB (#149)	2280 ± 424 ng/kg
2,2',3,5,5',6- HexaCB (#151)	910 ± 752 ng/kg
2,2',4,4',5,5'-HexaCB (#153)	2330 ± 842 ng/kg
2,3,3',4,4',5-HexaCB (#156)	189 ± 25.0 ng/kg
2,3,3',4,4',5'-HexaCB (#157)	31.0 ± 15.1 ng/kg
2,3,3',4,4',6-HexaCB (#158)	224 ± 44.8 ng/kg
2,3',4,4',5,5'-HexaCB (#167)	83.2 ± 12.0 ng/kg
3,3',4,4',5,5'-HexaCB (#169)	0.57 ± 0.68 ng/kg
2,2',3,3',4,4',5-HeptaCB (#170)	436 ± 102 ng/kg
2,2',3,3',4',5,6-HeptaCB (#177)	362 ± 79.0 ng/kg
2,2',3,3',5,5',6-HeptaCB (#178)	135 ± 22.6 ng/kg
2,2',3,4,4',5,5'-HeptaCB (#180)	1116 ± 500 ng/kg
2,2',3,4,4',5',6-HeptaCB (#183)	360 ± 25.2 ng/kg
2,2',3,4',5,5',6-HeptaCB (#187)	679 ± 143 ng/kg
2,3,3',4,4',5,5'-HeptaCB (#189)	14.2 ± 5.32 ng/kg
2,2',3,3',4,4',5,5'-OctaCB (#194)	182 ± 44.6 ng/kg
2,2',3,3',4,4',5,6-OctaCB (#195)	90.6 ± 17.2 ng/kg
2,2',3,3',4,5,6,6'-OctaCB (#199)	229 ± 34.2 ng/kg
2,2',3,3',4,4',5,5',6-NonaCB (#206)	74.8 ± 108 ng/kg
2,2',3,3',4,5,5',6,6'-NonaCB (#208)	39.3 ± 61.4 ng/kg
DecaCB (#209)	12.9 ± 23.0 ng/kg

Brominated diphenyl ethers

2,2',4-TriBDE (#17)	4.80 ± 6.10 ng/kg
2,4,4'-TriBDE (#28)	38.0 ± 79.8 ng/kg
2,2',4,4'-TetraBDE (#47)5	192 ± 246 ng/kg
2,2',4,5'-TetraBDE (#49)	24.4 ± 19.7 ng/kg
2,3',4,4'-TetraBDE (#66)	12.6 ± 10.9 ng/kg
2,2',3,4,4'-PentaBDE (#85)	19.5 ± 17.9 ng/kg
2,2',4,4',5-PentaBDE (#99)	213 ± 186 ng/kg
2,2',4,4',6-PentaBDE (#100)	55.4 ± 31.0 ng/kg
2,2',3,4,4',5'-HexaBDE (#138)	25.8 ± 25.8 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	111 ± 24.0 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	46.0 ± 26.6 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	286 ± 70.8 ng/kg
DecaBDE (#209)	1930 ± 2300 ng/kg

Polyaromatic hydrocarbons

Anthracene	**9650 ± 5980 ng/kg**	**Chrysene**	**16000 ± 7500 ng/kg**
Benz[a]anthracene	**11200 ± 9420 ng/kg**	**Fluoranthene**	**33000 ± 10300 ng/kg**
Benzo[b]fluoranthene	**18100 ± 19200 ng/kg**	**Indeno[1,2,3-cd]pyrene**	**9550 ± 4140 ng/kg**
Benzo[k]fluoranthene	**5870 ± 3320 ng/kg**	**Phenanthrene**	**25900 ± 38200 ng/kg**
Benzo[g,h,i]perylene	**8280 ± 2600 ng/kg**	**Pyrene**	**26300 ± 8680 ng/kg**
Benzo[a]pyrene	**7620 ± 6160 ng/kg**		

Soils

Code	Product	Unit
	LGCQC3004 - 3006 Quality control reference materials from LGC	
LGCQC3004	Clay soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons	2 x 250 g

Textural Classification[1] - Clay

Sand 2.00-0.063mm	31 % w/w	Clay <0.002mm	36% w/w
Silt 0.063-0.002mm	33 % w/w		

Indicative values

Extractable metals

As	83 mg/kg	Cu	300 mg/kg	Pb	50 mg/kg
Ba	380 mg/kg	Fe	40000 mg/kg	Sb	370 mg/kg
Be	<2 mg/kg	Hg	670 mg/kg	Se	<3 mg/kg
Cd	<1 mg/kg	Mn	830 mg/kg	Tl	<1 mg/kg
Co	36 mg/kg	Mo	2 mg/kg	V	47 mg/kg
Cr	37 mg/kg	Ni	61 mg/kg	Zn	82 mg/kg

Naphthalene	<40 µg/kg	Chrysene	<80 µg/kg
Acenaphthylene	<20 µg/kg	Benzo(b)fluoranthene	<70 µg/kg
Acenaphthene	<30 µg/kg	Benzo(k)fluoranthene	<50 µg/kg
Fluorene	<20 µg/kg	Benzo(e)pyrene	<60 µg/kg
Phenanthrene	<90 µg/kg	Benzo(a)pyrene	<60 µg/kg
Anthracene	<40 µg/kg	Dibenzo(ah)anthracene	<50 µg/kg
Fluoranthene	<130 µg/kg	Indeno(1,2,3,cd)pyrene	<80 µg/kg
Pyrene	<110 µg/kg	Benzo(ghi)perylene	<90 µg/kg
Cyclopenta(cd)pyrene	<10 µg/kg	Anthanthrene	<70 µg/kg
Benz(a)anthracene	<50 µg/kg		

Water Soluble Boron	3 mg/kg	Water Soluble Sulfate	<0.02 g/L
Loss on Ignition	10 % w/w	pH	6.7

[1] According to UK Textural Soil Classification

LGCQC3005	Loamy Sand Soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons	2 x 250 g

Textural Classification[1] - Loamy sand

Sand 2.00-0.063mm	81 % w/w	Clay <0.002mm	10% w/w
Silt 0.063-0.002mm	9 % w/w		

Indicative values

Extractable metals

As	<5 mg/kg	Hg	<3 mg/kg	Se	<3 mg/kg
Ba	180 mg/kg	Mn	150 mg/kg	Tl	<1 mg/kg
Be	<2 mg/kg	Mo	7 mg/kg	V	13 mg/kg
Cd	<1 mg/kg	Ni	14 mg/kg	Zn	220 mg/kg
Co	3 mg/kg	Pb	520 mg/kg		
Cr	180 mg/kg	Sb	9 mg/kg		

Naphthalene	<110 µg/kg	Chrysene	<300 µg/kg
Acenaphthylene	<140 µg/kg	Benzo(b)fluoranthene	<390 µg/kg
Acenaphthene	<60 µg/kg	Benzo(k)fluoranthene	<160 µg/kg
Fluorene	<140 µg/kg	Benzo(e)pyrene	<230 µg/kg
Phenanthrene	<500 µg/kg	Benzo(a)pyrene	<220 µg/kg
Anthracene	<210 µg/kg	Dibenzo(ah)anthracene	<80 µg/kg
Fluoranthene	<370 µg/kg	Indeno(1,2,3,cd)pyrene	<210 µg/kg
Pyrene	<340 µg/kg	Benzo(ghi)perylene	<310 µg/kg
Cyclopenta(cd)pyrene	<10 µg/kg	Anthanthrene	<140 µg/kg
Benz(a)anthracene	<180 µg/kg		

Water Soluble Chloride	54 mg/kg	Loss on Ignition	2 % w/w
Water Soluble Boron	<2 mg/kg	Water Soluble Sulfate(4)	0.1 g/L
Total Sulfate	850 mg/kg	pH	8.1
Total Sulfur	0.02 % w/w		

[1] According to UK Textural Soil Classification

LGCQC3006 — Sandy Loam Soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons — 2 x 250 g

Textural Classification[1] - Sandy loam

Sand 2.00-0.063mm	80 % w/w	Clay <0.002mm	11% w/w
Silt 0.063-0.002mm	9 % w/w		

Indicative values

Extractable metals

As	<5 mg/kg	Cu	19 mg/kg	Sb	9 mg/kg
Ba	180 mg/kg	Hg	<1 mg/kg	Se	<3 mg/kg
Be	<2 mg/kg	Mn	170 mg/kg	Tl	<1 mg/kg
Cd	<1 mg/kg	Mo	6 mg/kg	V	13 mg/kg
Co	3 mg/kg	Ni	14 mg/kg	Zn	230 mg/kg
Cr	180 mg/kg	Pb	600 mg/kg		

Naphthalene	<100 µg/kg	Chrysene	<390 µg/kg
Acenaphthylene	<30 µg/kg	Benzo(b)fluoranthene	<340 µg/kg
Acenaphthene	<50 µg/kg	Benzo(k)fluoranthene	<190 µg/kg
Fluorene	<40 µg/kg	Benzo(e)pyrene	<220 µg/kg
Phenanthrene	<330 µg/kg	Benzo(a)pyrene	<230 µg/kg
Anthracene	<180 µg/kg	Dibenzo(ah)anthracene	<70 µg/kg
Fluoranthene	<500 µg/kg	Indeno(1,2,3,cd)pyrene	<150 µg/kg
Pyrene	<400 µg/kg	Benzo(ghi)perylene	<210 µg/kg
Cyclopenta(cd)pyrene	<10 µg/kg	Anthanthrene	<60 µg/kg
Benz(a)anthracene	<280 µg/kg		

Water Soluble Chloride	64 mg/kg	Loss on Ignition	2 % w/w
Water Soluble Boron	<2 mg/kg	Water Soluble Sulfate	0.3 g/L
Total Sulfate	1300 mg/kg	pH	8.2
Total Sulfur	0.03 % w/w		

[1] According to UK Textural Soil Classification

LGC6115 — Soil - PCBs and PAHs — 50 g

LGC6115 is a contaminated sandy loam soil sourced from the Czech Republic. It has been produced to meet the demands of laboratories seeking to validate methods for accreditation to the UK Environment Agency's MCERTS soil testing scheme or similar schemes worldwide.

Certified values

PCB 101	93 µg/kg	Benzo(a)anthracene	36 mg/kg
PCB 118	116 µg/kg	Benzo(a)pyrene	0.13 mg/kg
Phenanthrene	178 mg/kg	Benzo(ghi)perylene	0.33 mg/kg
Fluoranthene	312 mg/kg		

Assesed values

PCB 138	16 µg/kg	PCB 153	19 µg/kg	PCB 180	9.6 µg/kg

ERM-CC135 — Brick works soil - Extractable metals — 50 g

Collected from Hackney Brick Works

The extractable/leachable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995).

Total metals

Certified values

Ba	305 mg/kg	K	16300 mg/kg	Pb	411 mg/kg
Ca	23400 mg/kg	Mg	9400 mg/kg	V	139 mg/kg
Cr	455 mg/kg	Mn	390 mg/kg	Zn	345 mg/kg
Cu	107 mg/kg	Na	1700 mg/kg		
Fe	47500 mg/kg	Ni	291 mg/kg		

Indicative values for Al, Be, Co, Li, Mo, Se, Sn, Ti

Extractable metals

Certified values

Al	22700 mg/kg	Cu	105 mg/kg	Ni	277 mg/kg
As	66 mg/kg	Fe	40900 mg/kg	Pb	391 mg/kg
Ba	134 mg/kg	Hg	3.2 mg/kg	Se	0.9 mg/kg
Be	1.4 mg/kg	K	5100 mg/kg	V	78 mg/kg
Ca	21900 mg/kg	Mg	7000 mg/kg	Zn	316 mg/kg
Co	20 mg/kg	Mn	348 mg/kg		
Cr	336 mg/kg	Na	362 mg/kg		

Indicative values for Li, Mo Sn, Ti

LGC6141 — Soil contaminated with clinker/ash - Extractable metals — 5 x 25 g

The extractable/leachable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995).

Assessed values

As	13.2 mg/kg	Cu	51.1 mg/kg	Pb	75.8 mg/kg
Cr	130 mg/kg	Ni	49 mg/kg	Zn	169 mg/kg

Indicative values for Hg, Se

LGC6145 — Contaminated clay loam soil - Extractable metals, PAHs and inorganics — 50 g

LGC6145 is a contaminated clay – loam soil sourced from the Czech Republic. It has been produced to meet the demands of laboratories seeking to validate methods for accreditation to the UK Environment Agency's MCERTS soil testing scheme or similar schemes worldwide.

Certified values

As	38.7 mg/kg	Pb	45.1 mg/kg
Cd	0.65 mg/kg	Se	1.81 mg/kg
Cr	47.6 mg/kg	V	53.9 mg/kg
Cu	62.2 mg/kg	Zn	137 mg/kg
Ni	39.0 mg/kg		

Assessed values

Naphthalene	9.3 mg/kg	Benzo(*b*)fluoranthene	12 mg/kg
Acenaphthylene	0.79 mg/kg	Indeno(1,2,3-*cd*)pyrene	0.97 mg/kg
Phenanthrene	325 mg/kg	Water soluble chloride	65 mg/kg
Anthracene	8.4 mg/kg	Water soluble sulfate	5.3 g/L
Chrysene	45 mg/kg		

Indicative value for Acenaphthene, Fluorene, Fluoranthene, Pyrene, Benzo(*a*)anthracene, Benzo(*k*)fluoranthene, Benzo(*a*)pyrene, Dibenzo(*a,h*)anthracene, Benzo(*ghi*)perylene, Easily liberated cyanide and Total cyanide, Total sulfur, Al_2O^3, CaO, Fe_2O_3, K_2O, MgO, SO_3, SiO_2, TiO_2, Soil textural class (UK), Loss on drying, pH, Loss on ignition, Quartz SiO_2, Kaoline clay, Muscovite clay

BCR-481 — Industrial soil - PCBs — 25 g

Compound (IUPAC Code)	Certified value mg/kg	Uncertainty mg/kg
PCB 101	37	3
PCB 118	9.4	0.7
PCB 128	9.1	0.8
PCB 149	97	7
PCB 153	137	7
PCB 156	7.0	0.5
PCB 170	52	4
PCB 180	124	6

BCR-524 — Contaminated industrial soil - PAHs — 40 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Pyrene	173	11
Benzo(a)anthracene	22.5	1.8
Benzo(a)pyrene	8.6	0.5
Benzo(e)pyrene	10.6	1.4
Benzo(b)fluoranthene	13.5	1.6
Benzo(k)fluoranthene	6.2	0.7
Benzo(b)naphtho(2,1-d)thiophene	3.8	0.6
Indeno(1,2,3-cd)pyrene	5.1	0.4
Pentachlorophenol	0.034	0.005

BCR-529 — Industrial sandy soil - PCDDs and PCDFs — 50 g

Compound	Certified value mg/kg	Uncertainty mg/kg
1,2,3-Trichlorobenzene	0.63	0.11
3,4-Dichlorophenol	0.23	0.04
2,4,5-Trichlorophenol	1.51	0.10
Pentachlorophenol	0.23	0.04
	µg/kg	µg/kg
2,3,7,8-TCDD	4.5	0.6
1,2,3,7,8-PeCDD	0.44	0.05
1,2,3,4,7,8-HxCDD	1.2	0.3
1,2,3,6,7,8-HxCDD	5.4	0.9
1,2,3,7,8,9-HxCDD	3.0	0.4
2,3,7,8-TCDF	0.078	0.013
1,2,3,7,8-PeCDF	0.14	0.03
2,3,4,7,8-PeCDF	0.36	0.07
1,2,3,4,7,8-HxCDF	3.4	0.5
1,2,3,6,7,8-HxCDF	1.09	0.15
1,2,3,7,8,9-HxCDF	0.022	0.010
2,3,4,6,7,8-HxCDF	0.37	0.04

BCR-530 — Industrial clay soil - Dioxins and furans — 50 g

Compound	Certified value mg/kg	Uncertainty mg/kg
1,2,3-Trichlorobenzene	15	4
3,4-Dichlorophenol	6.0	0.5
2,4,5-Trichlorophenol	40	7
Pentachlorophenol	0.47	0.08
	µg/kg	µg/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.061	0.011
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.022	0.003
1,2,3,7,8-Pentachlorodibenzofuran	0.24	0.04
2,3,4,7,8-Pentachlorodibenzofuran	0.62	0.07
1,2,3,4,7,8-Hexachlorodibenzofuran	0.321	0.015
1,2,3,6,7,8-Hexachlorodibenzofuran	0.19	0.03
2,3,4,6,7,8-Hexachlorodibenzofuran	0.126	0.012

ERM-CC007 — Soil - Pesticides — 41 g

Certified values:

alpha-HCH	32.0 µg/kg	4,4'-DDE	56.3 µg/kg	4,4'-DDT	153.5 µg/kg
beta-HCH	386 µg/kg	2,4'-DDT	35.7 µg/kg		

ERM-CC008 — Soil - Pentachlorophenol — 30 g

Certified value

Pentachlorophenol 2.04 mg/kg

ERM-CC009 — Soil - Pentachlorophenol — 30 g

Certified value

Pentachlorophenol 2.91 mg/kg

ERM-CC010 — Soil - AOX (DIN 38414 Part 18) — 5.7 g

Certified value

AOX 1349.4 mg/kg

AOX - Absorbed Organically Bound Halogens

ERM-CC011	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 80.4 mg/kg AOX - Absorbed Organically Bound Halogens	4.2 g
ERM-CC013A	Soil - PAHs Certified values Napthalene ..... 2.4 mg/kg Fluorene ..... 1.14 mg/kg Phenanthrene ..... 12.0 mg/kg Anthracene ..... 1.14 mg/kg Fluoranthene ..... 12.9 mg/kg Pyrene ..... 9.6 mg/kg Benz(a)anthracene ..... 5.6 mg/kg Chrysene ..... 5.3 mg/kg Benzo(b)fluoranthene ..... 7.1 mg/kg Benzo(k)fluoranthene ..... 3.4 mg/kg Benzo(a)pyrene ..... 4.9 mg/kg Benzo(g,h,i)perylene ..... 4.6 mg/kg Indeno(1,2,3-c,d)pyrene ..... 5.2 mg/kg	81 g
ERM-CC012	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 102.3 mg/kg AOX - Absorbed Organically Bound Halogens	6.5 g
ERM-CC015A	Sediment - Mineral oil hydrocarbons ISO/DIS 16703:2003 (GC/FID) Certified value Mineral oil hydrocarbons ..... 1820 mg/kg	81 g
CIL-EDF-5184	Contaminated sediment - Organic contaminants Reference values Polychlorinated dioxins and furans 2,3,7,8-TCDD ..... 1.96 ± 1.10 ng/kg Total TCDD ..... 25.0 ± 13.6 ng/kg 1,2,3,7,8-PeCDD ..... 5.79 ± 2.12 ng/kg Total PeCDD ..... 45.8 ± 49.2 ng/kg 1,2,3,4,7,8-HxCDD ..... 5.61 ± 2.72 ng/kg 1,2,3,6,7,8-HxCDD ..... 10.9 ± 3.50 ng/kg 1,2,3,7,8,9-HxCDD ..... 6.88 ± 1.94 ng/kg Total HxCDD ..... 193 ± 134 ng/kg 1,2,3,4,6,7,8-HpCDD ..... 231 ± 77.6 ng/kg Total HpCDD ..... 497 ± 304 ng/kg OCDD ..... 2,050 ± 580 ng/kg 2,3,7,8-TCDF ..... 219 ± 47.8 ng/kg Total TCDF ..... 1,680 ± 486 ng/kg 1,2,3,7,8-PeCDF ..... 122 ± 24.0 ng/kg 2,3,4,7,8-PeCDF ..... 164 ± 50.4 ng/kg Total PeCDF ..... 1,490 ± 800 ng/kg 1,2,3,4,7,8-HxCDF ..... 277 ± 42.8 ng/kg 1,2,3,6,7,8-HxCDF ..... 159 ± 23.6 ng/kg 1,2,3,7,8,9-HxCDF ..... 7.44 ± 7.38 ng/kg 2,3,4,6,7,8-HxCDF ..... 48.4 ± 18.7 ng/kg Total HxCDF ..... 1,240 ± 398 ng/kg 1,2,3,4,6,7,8-HpCDF ..... 346 ± 45.6 ng/kg 1,2,3,4,7,8,9-HpCDF ..... 80.2 ± 30.4 ng/kg Total HpCDF ..... 659 ± 462 ng/kg OCDF ..... 301 ± 50.6 ng/kg Polychlorinated biphenyls 2,2',5-TriCB (#18) ..... 27,600 ± 11,200 ng/kg 2,4,4'-TriCB (#28) ..... 54,200 ± 15,500 ng/kg 3,4,4'-TriCB (#37) ..... 16,800 ± 12,700 ng/kg 2,2',3,5'-TetraCB (#44) ..... 657,000 ± 159,000 ng/kg 2,2',4,5'-TetraCB (#49) ..... 476,000 ± 155,000 ng/kg 2,2',5,5'-TetraCB (#52) ..... 1,340,000 ± 260,000 ng/kg 2,3',4,4'-TetraCB (#66) ..... 403,000 ± 40,800 ng/kg 2,4,4',5-TetraCB (#74) ..... 819,000 ± 1,660,000 ng/kg 3,3',4,4'-TetraCB (#77) ..... 11,700 ± 2,600 ng/kg 3,4,4',5-TetraCB (#81) ..... 341 ± 402 ng/kg 2,2',3,4,5'-PentaCB (#87) ..... 1,810,000 ± 1,110,000 ng/kg 2,2',3',4,5-PentaCB (#97) ..... 990,000 ± 1,870,000 ng/kg 2,2',4,4',5-PentaCB (#99) ..... 1,160,000 ± 496,000 ng/kg 2,2',4,5,5'-PentaCB (#101) ..... 3,140,000 ± 552,000 ng/kg 2,3,3',4,4'-PentaCB (#105) ..... 1,050,000 ± 314,000 ng/kg 2,3,3',4',6-PentaCB (#110) ..... 3,340,000 ± 768,000 ng/kg 2,3,4,4',5-PentaCB (#114) ..... 70,000 ± 47,400 ng/kg 2,3',4,4',5-PentaCB (#118) ..... 2,520,000 ± 904,000 ng/kg 2',3,4,4',5-PentaCB (#123) ..... 46,200 ± 29,200 ng/kg 3,3',4,4',5-PentaCB (#126) ..... 2,540 ± 1,080 ng/kg 2,2',3,3',4,4'-HexaCB (#128) ..... 694,000 ± 181,000 ng/kg 2,2',3,4,4',5-HexaCB (#137) ..... 164,000 ± 106,000 ng/kg 2,2',3,4,4',5'-HexaCB (#138) ..... 3,970,000 ± 2,820,000 ng/kg 2,2',3,4,5,5'-HexaCB (#141) ..... 1,010,000 ± 346,000 ng/kg 2,2',3,4',5,5'-HexaCB (#146) ..... 623,000 ± 87,400 ng/kg 2,2',3,4',5',6-HexaCB (#149) ..... 3,380,000 ± 838,000 ng/kg 2,2',3,5,5',6-HexaCB (#151) ..... 1,410,000 ± 788,000 ng/kg 2,2',4,4',5,5'-HexaCB (#153) ..... 3,880,000 ± 902,000 ng/kg 2,3,3',4,4',5-HexaCB (#156) ..... 457,000 ± 189,000 ng/kg 2,3,3',4,4',5'-HexaCB (#157) ..... 88,900 ± 28,000 ng/kg 2,3,3',4,4',6-HexaCB (#158) ..... 512,000 ± 195,000 ng/kg 2,3',4,4',5,5'-HexaCB (#167) ..... 162,000 ± 18,800 ng/kg 3,3',4,4',5,5'-HexaCB (#169) ..... 139 ± 92.4 ng/kg 2,2',3,3',4,4',5-HeptaCB (#170) ..... 1,250,000 ± 334,000 ng/kg 2,2',3,3',4,5,5'-HeptaCB (#172) ..... 207,000 ± 85,600 ng/kg 2,2',3,3',4',5,6-HeptaCB (#177) ..... 743,000 ± 238,000 ng/kg 2,2',3,3',5,5',6-HeptaCB (#178) ..... 290,000 ± 113,000 ng/kg 2,2',3,4,4',5,5'-HeptaCB (#180) ..... 2,940,000 ± 774,000 ng/kg 2,2',3,4,4',5',6-HeptaCB (#183) ..... 810,000 ± 394,000 ng/kg 2,2',3,4',5,5',6-HeptaCB (#187) ..... 1,520,000 ± 232,000 ng/kg 2,3,3',4,4',5,5'-HeptaCB (#189) ..... 50,200 ± 18,200 ng/kg 2,2',3,3',4,4',5,5'-OctaCB (#194) ..... 622,000 ± 146,000 ng/kg 2,2',3,3',4,4',5,6-OctaCB (#195) ..... 268,000 ± 73,800 ng/kg 2,2',3,3',4,5,5',6'-OctaCB (#199) ..... 691,000 ± 226,000 ng/kg 2,2',3,4,4',5,5',6-OctaCB (#203) ..... 442,000 ± 108,000 ng/kg 2,2',3,3',4,4',5,5',6-NonaCB (#206) ..... 152,000 ± 35,400 ng/kg 2,2',3,3',4,5,5',6,6'-NonaCB (#208) ..... 31,800 ± 11,100 ng/kg DecaCB (#209) ..... 6,030 ± 3,100 ng/kg	10 g

Polybrominated diphenyl ethers

2,4,4'-TriBDE (#28) 6	25.8 ± 31.2 ng/kg
2,2',4,4'-TetraBDE (#47)	94.7 ± 218 ng/kg
2,2',4,5'-TetraBDE (#49)	14.5 ± 34.8 ng/kg
2,3',4,4'-TetraBDE (#66)	32.0 ± 112 ng/kg
3,3',4,4'-TetraBDE (#77)	106 ± 66.6 ng/kg
2,2',3,4,4'-PentaBDE (#85)	14.4 ± 45.0 ng/kg
2,2',4,4',5-PentaBDE (#99)	95.1 ± 206 ng/kg
2,2',4,4',6-PentaBDE (#100)	17.6 ± 38.0 ng/kg
2,2',3,4,4',5'-HexaBDE (#138)	12.2 ± 40.6 ng/kg
2,2',4,4',5,5'-HexaBDE (#153)	22.4 ± 59.4 ng/kg
2,2',4,4',5,6'-HexaBDE (#154)	25.3 ± 73.8 ng/kg
2,2',3,4,4',5',6-HeptaBDE (#183)	43.3 ± 82.8 ng/kg
DecaBDE (#209)	9,900 ± 14,300 ng/kg

Polyaromatic hydrocarbons

Acenaphthene	39,300 ± 14,800 ng/kg	Chrysene	2,490,000 ± 442,000 ng/kg
Acenaphthylene	419,000 ± 308,000 ng/kg	Dibenz[a,h]anthracene	243,000 ± 159,000 ng/kg
Anthracene	551,000 ± 258,000 ng/kg	Fluoranthene	3,690,000 ± 636,000 ng/kg
Benz[a]anthracene	2,620,000 ± 1,010,000 ng/kg	Fluorene	69,400 ± 76,800 ng/kg
Benzo[b]fluoranthene	1,550,000 ± 574,000 ng/kg	Indeno[1,2,3-cd]pyrene	1,320,000 ± 780,000 ng/kg
Benzo[k]fluoranthene	856,000 ± 290,000 ng/kg	Naphthalene	82,900 ± 33,800 ng/kg
Benzo[g,h,i]perylene	1,130,000 ± 428,000 ng/kg	Phenanthrene	622,000 ± 424,000 ng/kg
Benzo[a]pyrene	2,390,000 ± 1,010,000 ng/kg	Perylene	428,000 ± 470,000 ng/kg
Benzo[e]pyrene	1,740,000 ± 271,000 ng/kg	Pyrene	5,710,000 ± 445,000 ng/kg

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RTC-CRM401 — Superfund soil (Sludge) - TCLP organics — 225 g

Organic contaminated soil from a superfund site in the Western United States. Certified using methods USEPA, SW846, 3rd edition, Extraction Method 1311 and analytical methods 8031, 8150 and 8270.

Certified values

o-Cresol	888 mg/kg	Pentachlorophenol	117 mg/kg
Total cresol	2660 mg/kg	2,4,6-Trichlorophenol	58.7 mg/kg
Lindane	1.05 mg/kg		

Indicative values for m+p Cresol, 2,4-D

TCLP: Total Characteristic Leaching Procedure.
Superfund: US Government funding for the cleaning up of sites in the United States where dumping of hazardous waste has occurred.

RTC-CRM402 — Superfund soil (Sandy loam) - TCLP organics — 225 g

The reference values were determined by USEPA SW846 (3rd edition) Extraction Method 1311 and Analytical Methods 8081, 8150, and 8270. The sample is suitable for these and other similar methods.

Certified values

Hexachloroethane	2.87 mg/L	gamma-HCH (Lindane.)	1.28 mg/L
Nitrobenzene	12.2 mg/L	2,4-D	67.1 mg/L
2,4-Dinitrotoluene (2,4-DNT)	0.619 mg/L		

RTC-CRM910 — Soil (Loam) - PCBs — 50 g

Real-world waste produced from a contaminated site in the Eastern United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods.

Certified value

Aroclor 1242 ..... 39.4 mg/kg

RTC-CRM911 — Soil (Loam) - PCBs — 50 g

Real-world waste collected from a percolation pond at an electric generating facility in the Southeastern United States. The sample was certified by USEPA SW846 (3rd edition) Methods 3540A/3545/3550 and 8082. The sample is suitable for use by these and other similar methods.

Certified value

Aroclor 1254 ..... 1.28 mg/kg

RTC-CRM913 — Soil (Sandy loam) - PCBs — 50 g

Real-world waste collected from electric utility storage site Western United States..The PCB value was certified using extraction method 3540A and analysis method 8081 (PCBs by GC) and is suitable for use by these and other similar methods.

Certified value

Aroclor 1254 ..... 5.93 mg/kg

RTC-CRM915 — Soil (Sandy loam) - PCBs — 50 g

Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods.

Certified values

Aroclor 1260 ..... 1.44 mg/kg

RTC-CRM916 — Soil (Loamy sand) - PCBs — 50 g

Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods.

Certified value

Aroclor 1248 ..... 10.7 mg/kg

RTC-CRM917 — Soil (Loamy sand) - PCBs — 50 g

Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods.

Certified value

Aroclor 1242 ..... 5.05 mg/kg

RTC-CRM918	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Aroclor 1252 ..... 0.274 mg/kg	50 g
RTC-CRM921	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Aroclor 1242 ..... 29.8 mg/kg	50 g
RTC-CRM922	Soil (Loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Aroclor 1016 ..... 8.30 mg/kg	50 g
RTC-CRM923	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW846, 3rd edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Aroclor 1254..... 5.47 mg/kg	50 g
RTC-CRM924	Soil (Silty loam) - PCBs Certified value Aroclor 1242..... 8.27 mg/kg	50 g
RTC-CRM307	Soil - BETX This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW846, 3rd edition Method 5030A and 8021B or 8260B and is suitable for use by these and other similar methods. Certified values Benzene..... 11.1 mg/kg; Toluene .....34.8 mg/kg; Total Xylene .....39.9 mg/kg Ethylbenzene ..... 7.23 mg/kg; m+p-Xylene .....29.9 mg/kg; GRO..... 422 mg/kg MTBE.....(1.58) mg/kg; o-Xylene.....11.0 mg/kg GRO = Gasoline Range Organics (C5-C10)	30 g
RTC-CRM308	Soil - BETX This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW846, 3rd edition Method 5030A and 8021B or 8260B and is suitable for use by these and other similar methods. Certified values Benzene..... 4.42 mg/kg; m+p-Xylene ..... 7.33 mg/kg Ethylbenzene ..... 8.37 mg/kg; o-Xylene ..... 3.69 mg/kg Methyl tert-butyl ether (MTBE)..... 8.61 mg/kg; Xylene, total..... 11.2 mg/kg Toluene..... 12.3 mg/kg	30 g
RTC-CRM350	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value TPH..... 8296 mg/kg	100 g
RTC-CRM352	Soil (Loamy sand) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value TPH..... 1130 mg/kg	100 g
RTC-CRM353	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value (Lot HC353a) TPH..... 2200 mg/kg	100 g
RTC-CRM355	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value TPH..... 7040 mg/kg	100 g
RTC-CRM356	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1. Certified value TPH..... 3810 mg/kg; Diesel Range Organics (C12-C28) .....611 mg/kg	100 g
RTC-CRM358	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) The value was determined by USEPA Method 8015M, 418.1, Total Recoverable Petroleum Hydrocarbons. Certified value TPH..... 3650 mg/kg	100 g

RTC-CRM359 — Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) (as diesel) — 100 g

The value for TPH was determined by USEPA SW846 (3rd edition) Method 8015B, 8015M, 413.1 and 418.1.

Certified value

Total Petroleum Hydrocarbons (TPH) as Diesel..... 1060 mg/kg

RTC-CRM360 — Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) as (30/40WT motor) oil — 100 g

The reference value for TPH was determined by USEPA SW846 (3rd edition) Method 8015B and 8015M. The Reference Value for TPH was determined by USEPA SW846 (3rd edition) Method 413.1 and 418.1. TPH source is 30/40WT motor oil.

Certified values

Residual Range Organics (RRO) C28-C35..... 705
Total Petroleum Hydrocarbons (TPH)..... 750

RTC-CRM357 — Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) — 100 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA 418.1.

Certified value

TPH..... 3221 mg/kg

RTC-CRM500 — Soil (Sandy loam) - Gasoline — 30 g

Soil from Leaking Underground Storage Tank. Certified for gasoline by USEPA SW 846, 3rd edition, methods SW 846 and 8015M.

Certified value

Benzene..... 5.34 mg/Kg
Ethylbenzene..... 3.82 mg/Kg
Toluene..... 17.8 mg/Kg
m+p-Xylene..... 14.5 mg/Kg
o-Xylene..... 5.5 mg/Kg
Xylene, total..... 20.1 mg/Kg
Gasoline range organics (GRO), C6-C12 247 mg/Kg

RTC-CRM504 — Soil (Sandy loam) - Gasoline — 30 g

The certified values were determined by USEPA SW846 (3rd edition) Method 8015B.

Certified values

GRO..... 185 mg/kg
Benzene..... 3.15 mg/kg
Ethylbenzene..... 3.62 mg/kg
Toluene..... 14.6 mg/kg
m+p-Xylene..... (12.5) mg/kg
o-Xylene..... (4.48) mg/kg
Total Xylene..... 16.6 mg/kg
MTBE..... 2.87 mg/kg
Naphthalene..... (0.740) mg/kg

GRO = Gasoline Range Organics (C6-C12)

RTC-CRM550 — Soil (Sandy loam) - Diesel — 100 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW846 (3rd edition) Method 8015B..

Certified value

Diesel Range Organics (C12-C28)..... 501 mg/kg

RTC-CRM560 — Soil - Diesel — 100 g

This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW846 (3rd edition) Method 8015B.

Certified value

Diesel Range Organics (C12-C28)..... 661 mg/kg

RTC-CRM625 — Soil (Clay loam) - Volatile organic analytes (low level) — 30 g

This soil is a composite sample requiring no spiking or fortification and is intended to be analysed "as is". The sample was certified by USEPA SW846, 3rd edition Method 8260B using the high soil procedure and is suitable for use by similar methods.

Certified values (Lot no: 002519)

Acetone..... 8.580 µg/kg
Benzene..... 82.7 µg/kg
2-Butanone (MEK)..... 231 µg/kg
Carbon disulfide..... 23.4 µg/kg
Carbon tetrachloride..... 75.9 µg/kg
Chlorobenzene..... 111 µg/kg
Chloroform..... 130 µg/kg
1,2-Dibromoethane..... 89.4 µg/kg
1,2-Dichlorobenzene..... 65.9 µg/kg
1,3-Dichlorobenzene..... 32.6 µg/kg
1,4-Dichlorobenzene..... 103 µg/kg
1,2-Dichloroethane..... 29.3 µg/kg
1,1-Dichloroethene..... 14.9 µg/kg
1,2-Dichloropropane..... 69.1 µg/kg
Ethylbenzene..... 184 µg/kg
2-Hexanone..... 54.9 µg/kg
Methylene chloride..... 58.2 µg/kg
4-Methyl-2-pentanone (MIBK)..... 82.8 µg/kg
Methyl-t-butylether (MTBE)..... 39.2 µg/kg
Styrene..... 76.7 µg/kg
1,1,2,2-Tetrachloroethane..... 318 µg/kg
Tetrachloroethylene..... 78.8 µg/kg
Toluene..... 132 µg/kg
1,1,1-Trichloroethane..... 93.7 µg/kg
Trichlorofluoromethane..... 19.0 µg/kg
1,2,3-Trichloropropane..... 144 µg/kg
1,2,4-Trimethylbenzene..... 52.6 µg/kg
1,3,5-Trimethylbenzene..... 22.6 µg/kg
m+p-Xylene..... 57.4 µg/kg
o-Xylene..... 48.6 µg/kg
Xylenes, total..... 111 µg/kg

Indicative value for Vinyl acetate

RTC-CRM626 — Soil (Clay loam) - Volatile organic analytes (high level) — 30 g

The sample was certified using USEPA SW846, 3rd edition, method 8260, and is ideal for methanol extraction.

Certified values

Acetone..... 1.1 mg/Kg
Benzene..... 2.81 mg/Kg
Carbon tetrachloride..... 3.04 mg/Kg
Chlorobenzene..... 2.62 mg/Kg
1,2-Dibromo-3-chloropropane (DBCP)..... 4.86 mg/Kg
1,2-Dibromoethane (EDB)..... 4.51 mg/Kg
1,2-Dichlorobenzene..... 2.09 mg/Kg
1,3-Dichlorobenzene..... 3.67 mg/Kg
1,4-Dichlorobenzene..... 3.92 mg/Kg
1,2-Dichloroethane..... 3.25 mg/Kg
1,1-Dichloroethylene..... 8.03 mg/Kg
Ethylbenzene..... 4.2 mg/Kg
Methyl chloride (Chloromethane)..... 0.984 mg/Kg
4-Methyl-2-pentanone (MIBK)..... 3.4 mg/Kg
Methyl tert-butyl ether (MTBE)..... 5.96 mg/Kg
Naphthalene..... 5.02 mg/Kg
1,1,1,2-Tetrachloroethane..... 6.44 mg/Kg
1,1,2,2-Tetrachloroethane..... 5.07 mg/Kg
1,2,4-Trichlorobenzene..... 2.66 mg/Kg
1,1,2-Trichloroethane..... 3.92 mg/Kg
1,2,3-Trichloropropane..... 2.93 mg/Kg
1,2,4-Trimethylbenzene..... 4.17 mg/Kg
1,3,5-Trimethylbenzene..... 5.74 mg/Kg
m+p-Xylene..... 3.05 mg/Kg
o-Xylene..... 2.43 mg/Kg
Xylene, total..... 5.52 mg/Kg

RTC-CRM627 — Soil (Sandy loam) - Volatile organic analytes (low level) — 30 g

The following sample was certified using USEPA SW846, 3rd edition, method 8260, and is ideal for methanol extraction

Certified values

Benzene	56.5 µg/kg	Styrene	39 µg/kg
Carbon tetrachloride	44.8 µg/kg	1,1,1,2-Tetrachloroethane	99.8 µg/kg
Chlorobenzene	52.6 µg/kg	1,1,2,2-Tetrachloroethane	87.8 µg/kg
1,2-Dichlorobenzene	40.9 µg/kg	Toluene	75.7 µg/kg
1,3-Dichlorobenzene	70.4 µg/kg	1,2,4-Trichlorobenzene	48.9 µg/kg
1,4-Dichlorobenzene	74.9 µg/kg	1,1,2-Trichloroethane	71.3 µg/kg
1,2-Dichloroethane	60.7 µg/kg	1,2,3-Trichloropropane	53 µg/kg
Ethylbenzene	88.4 µg/kg	1,2,4-Trimethylbenzene	90.5 µg/kg
Hexachloroethane	147 µg/kg	m+p-Xylene	67.3 µg/kg
Methyl chloride (Chloromethane)	23.3 µg/kg	o-Xylene	49.9 µg/kg
Methyl tert-butyl ether (MTBE)	121 µg/kg	Xylene, total	117 µg/kg

RTC-CRM630 — Soil (Silty clay) - Volatile organic analytes (high level) — 30 g

This soil was certified using USEPA SW846, 3rd edition, method 8260, and is ideal for methanol extraction. It is a composite soil sample which has been certified for volatile organic compounds (VOC).

Certified values

Acetone	6.16 mg/kg	Ethylbenzene	11.5 mg/kg
Benzene	6.41 mg/kg	Isopropylbenzene	5.68 mg/kg
Bromodichloromethane	9.33 mg/kg	Methyl bromide (Bromomethane)	3.02 mg/kg
Bromoform	10.4 mg/kg	Methylene chloride (Dichloromethane)	12.3 mg/kg
Carbon disulfide	3.92 mg/kg	4-Methyl-2-pentanone (MIBK)	6.69 mg/kg
Chlorobenzene	13.9 mg/kg	Methyl tert-butyl ether (MTBE)	9.55 mg/kg
Chloroethane	4.83 mg/kg	1,1,1,2-Tetrachloroethane	8.83 mg/kg
Chloroform	5.45 mg/kg	1,1,2,2-Tetrachloroethane	2.10 mg/kg
Dibromochloromethane	12.9 mg/kg	Tetrachloroethylene	0.112 mg/kg
Dibromomethane	12.5 mg/kg	Toluene	6.49 mg/kg
1,2-Dichlorobenzene	11.9 mg/kg	1,1,1-Trichloroethane	4.24 mg/kg
1,3-Dichlorobenzene	8.58 mg/kg	Trichloroethene (Trichloroethylene)	3.38 mg/kg
1,4-Dichlorobenzene	8.52 mg/kg	Trichlorofluoromethane	3.07 mg/kg
1,1-Dichloroethane	7.57 mg/kg	1,2,3-Trichloropropane	2.29 mg/kg
1,1-Dichloroethylene	6.76 mg/kg	1,2,4-Trimethylbenzene	11.0 mg/kg
cis-1,2-Dichloroethylene	10.6 mg/kg	1,3,5-Trimethylbenzene	2.12 mg/kg
1,2-Dichloropropane	5.18 mg/kg	m+p-Xylene	8.80 mg/kg
trans-1,3-Dichloropropylene	6.15 mg/kg	o-Xylene	8.24 mg/kg
trans-1,2-Dichloroethylene	0.194 mg/kg	Xylene, total	16.2 mg/kg

RTC-CRM631 — Soil (Silty clay) - Volatile organic analytes (low level) — 30 g

Analytical data for certification was obtained using USEPA SW846, 3rd edition method 8260 (VOCs by GC/MS). The sample is intended for use in analytical systems using this and related methods.

Certified values

Acetone	6760 µg/kg	2-Hexanone	15.4 µg/kg
Benzene	72.0 µg/kg	Isopropylbenzene	58.5 µg/kg
Bromodichloromethane	74.9 µg/kg	Methyl bromide (Bromomethane)	58.3 µg/kg
Bromoform	64.1 µg/kg	Methylene chloride (Dichloromethane)	162 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	113 µg/kg	4-Methyl-2-pentanone (MIBK)	69.5 µg/kg
Carbon disulfide	43.3 µg/kg	Methyl tert-butyl ether (MTBE)	445 µg/kg
Chlorobenzene	145 µg/kg	1,1,1,2-Tetrachloroethane	80.2 µg/kg
Chloroethane	61.9 µg/kg	1,1,2,2-Tetrachloroethane	26.3 µg/kg
Chloroform	60.4 µg/kg	Tetrachloroethylene	18.2 µg/kg
Dibromochloromethane	84.2 µg/kg	Toluene	77.5 µg/kg
Dibromomethane	141 µg/kg	1,1,1-Trichloroethane	44.7 µg/kg
1,2-Dichlorobenzene	114 µg/kg	Trichloroethene (Trichloroethylene)	35.7 µg/kg
1,3-Dichlorobenzene	79.0 µg/kg	Trichlorofluoromethane	42.2 µg/kg
1,4-Dichlorobenzene	80.4 µg/kg	1,2,3-Trichloropropane	24.2 µg/kg
1,1-Dichloroethane	82.5 µg/kg	1,2,4-Trimethylbenzene	109 µg/kg
1,1-Dichloroethylene	87.8 µg/kg	1,3,5-Trimethylbenzene	24.3 µg/kg
cis-1,2-Dichloroethylene	114 µg/kg	m+p-Xylene	94.5 µg/kg
1,2-Dichloropropane	54.7 µg/kg	o-Xylene	79.9 µg/kg
trans-1,3-Dichloropropylene	46.7 µg/kg	Xylene, total	173 µg/kg
Ethylbenzene	124 µg/kg		

RTC-CRM632 — Soil (Loamy sandy) - Volatile organic analytes (high level) — 30 g

Analytical data for certification was obtained using USEPA SW846, 3rd edition method 8260 (VOCs by GC/MS). The sample is intended for use in analytical systems using this and related methods

Certified values

Acetone	1.35 mg/kg	Ethylbenzene	4.05 mg/kg
Benzene	9.92 mg/kg	2Methyl bromide (Bromomethane)	3.35 mg/kg
Bromobenzene	5.66 mg/kg	Methyl chloride (Chloromethane)	5.52 mg/kg
Bromodichloromethane	10.9 mg/kg	Methyl tert-butyl ether (MTBE)	10.2 mg/kg
2-Butanone (Methyl ethyl ketone, MEK)	3.52 mg/kg	Styrene	12.3 mg/kg
Carbon tetrachloride	8.66 mg/kg	1,1,2,2-Tetrachloroethane	10. mg/kg
Chlorobenzene	9.70 mg/kg	Toluene	1.95 mg/kg
Chloroethane	1.19 mg/kg	1,1,1-Trichloroethane	10.3 mg/kg
Chloroform	13.0 mg/kg	1,1,2-Trichloroethane	9.00 mg/kg
1,2-Dibromo-3-chloropropane (DBCP)	3.70 mg/kg	Trichloroethene (Trichloroethylene)	0.307 mg/kg
Dibromochloromethane	10.4 mg/kg	1,2,3-Trichloropropane	3.84 mg/kg
1,2-Dibromoethane (EDB)	7.67 mg/kg	1,2,4-Trimethylbenzene	4.90 mg/kg
Dibromomethane	5.66 mg/kg	1,3,5-Trimethylbenzene	4.43 mg/kg
1,2-Dichlorobenzene	12.0 mg/kg	m+p-Xylene	24.2 mg/kg
1,4-Dichlorobenzene	14.3 mg/kg	o-Xylene	2.47 mg/kg
1,1-Dichloroethane	1.84 mg/kg	Xylene, total	26.7 mg/kg
1,2-Dichloroethane	9.64 mg/kg		

RTC-CRM633 — Soil (Loamy sandy) - Volatile organic analytes (low level) — 30 g

Analytical data for certification was obtained using USEPA SW846, 3rd edition method 8260 (VOCs by GC/MS). The sample is intended for use in analytical systems using this and related methods.

Certified values

Acetone	822 µg/kg	Ethylbenzene	40.6 µg/kg
Benzene	96.4 µg/kg	Methyl bromide (Bromomethane)	27.2 µg/kg
Bromobenzene	56.2 µg/kg	Methyl chloride (Chloromethane)	62.1 µg/kg
Bromodichloromethane	104 µg/kg	Methyl tert-butyl ether (MTBE)	101 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	73.0 µg/kg	Styrene	107 µg/kg
Carbon tetrachloride	75.2 µg/kg	1,1,2,2-Tetrachloroethane	101 µg/kg
Chlorobenzene	95.7 µg/kg	Toluene	24.5 µg/kg
Chloroform	125 µg/kg	1,1,1-Trichloroethane	93.3 µg/kg
1,2-Dibromo-3-chloropropane (DBCP)	33.6 µg/kg	1,1,2-Trichloroethane	88.7 µg/kg
Dibromochloromethane	95.0 µg/kg	Trichloroethene (Trichloroethylene)	5.17 µg/kg
1,2-Dibromoethane (EDB)	72.0 µg/kg	1,2,3-Trichloropropane	41.8 µg/kg
Dibromomethane	56.5 µg/kg	1,2,4-Trimethylbenzene	50.9 µg/kg
1,2-Dichlorobenzene	118 µg/kg	1,3,5-Trimethylbenzene	45.3 µg/kg
1,4-Dichlorobenzene	138 µg/kg	m+p-Xylene	228 µg/kg
1,1-Dichloroethane	18.4 µg/kg	o-Xylene	26.0 µg/kg
1,2-Dichloroethane	94.4 µg/kg	Xylene, total	256 µg/kg

RTC-CRM635 — Soil (Clay) - Volatile organic analytes (low level) — 30 g

Analytical data for certification was obtained using USEPA SW846, 3rd edition method 8260 (VOCs by GC/MS). The sample is intended for use in analytical systems using the and related methods.

Certified values

Acetone	6710 µg/kg	2-Hexanone	50.4 µg/kg
Benzene	42.9 µg/kg	Methylene chloride	55.1 µg/kg
Bromodichloromethane	90.6 µg/kg	4-Methyl-2-pentanone (MIBK)	21.4 µg/kg
Bromoform	74.5 µg/kg	Methyl tert-butyl ether (MTBE)	28.1 µg/kg
2-Butanone (Methyl ethyl ketone, MEK)	118 µg/kg	1,1,1,2-Tetrachloroethane	62.9 µg/kg
Carbon tetrachloride	83.7 µg/kg	1,1,2,2-Tetrachloroethane	37.1 µg/kg
Chlorobenzene	22.3 µg/kg	Tetrachloroethylene	112 µg/kg
Chloroform	98.7 µg/kg	Toluene	129 µg/kg
Dibromochloromethane	131 µg/kg	1,1,1-Trichloroethane	65.1 µg/kg
1,2-Dichlorobenzene	89.9 µg/kg	Trichloroethene	62.0 µg/kg
1,3-Dichlorobenzene	45.6 µg/kg	1,2,4-Trimethylbenzene	144 µg/kg
1,4-Dichlorobenzene	64.3 µg/kg	1,3,5-Trimethylbenzene	85.7 µg/kg
1,1-Dichloroethane	91.4 µg/kg	m+p-Xylene	206 µg/kg
1,2-Dichloroethane	110 µg/kg	o-Xylene	53.0 µg/kg
1,2-Dichloropropane	125 µg/kg	Xylene, total	263 µg/kg
Ethylbenzene	133 µg/kg		

RTC-CRM106 — Soil (Sandy loam) - Semi-volatile organic analytes (Semi-VOAs) — 100 g

Soil contaminated with semi-volatile organic compounds, from the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition extraction methods 3540A (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Phenol	19.54 mg/kg	2,4-Dintrotoluene	29.31 mg/kg
Chlorophenol	17.76 mg/kg	2,6-Dinitrotoluene	16.64 mg/kg
4-Methylphenol	1.71 mg/kg	Pentachlorophenol	29.89 mg/kg
3-Nitroaniline	11.64 mg/kg	Phenanthrene	0.63 mg/kg
2,4-Dinitrophenol	3.90 mg/kg	Bis(2-ethylhexyl)phthalate	24.14 mg/kg
4-Nitrophenol	15.15 mg/kg		

RTC-CRM114 — Soil (Loam) - Semi-volatile organic analytes (Semi-VOAs) — 100 g

Soil contaminated with Semi-Volatile Organic compounds, from a site in the Western region of the United States. The Semi-VOA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540C (Soxhlet extraction), 3550 (Sonication) and analysis method 8270C (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Benzo(a)anthracene	11.5 mg/kg	Hexachlorobenzene	77.1 mg/kg
Benzo(a)pyrene	33.8 mg/kg	Hexachloroethane	11.0 mg/kg
Benzo(ghi)perylene	6.68 mg/kg	1- and 2-Methylnaphthalene	61.3 mg/kg
2-Chlorophenol	30.7 mg/kg	3-Nitroaniline	29.2 mg/kg
2,4-Dichlorophenol	24.6 mg/kg	Nitrobenzene	29.9 mg/kg
2,4-Dinitrotoluene	30.2 mg/kg	4-Nitrophenol	45.4 mg/kg
Fluoranthene	54.4 mg/kg	Pentachlorophenol	30.9 mg/kg
Fluorene	25.4 mg/kg	Pyrene	9.2 mg/kg

RTC-CRM109 — Soil (Sandy loam) - Organic contaminants — 100 g

BNA contaminated soil, from a site in the Western United States and is not "spiked or fortified" in any manner. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Acenaphthene	4.31 mg/kg	Hexachlorobenzene	4.15 mg/kg
Bis(2-ethylhexyl)phthalate	8.99 mg/kg	Naphthalene	1.00 mg/kg
Dibenzofuran	2.27 mg/kg	2-Nitroaniline	6.78 mg/kg
2,4-Dinitrotoluene	5.24 mg/kg	4-Nitrophenol	1.67 mg/kg
Fluorene	3.10 mg/kg	Pentachlorophenol	7.18 mg/kg

Indicative values for Fluoranthene and 3-Nitroaniline

RTC-CRM110 — Soil (Sandy loam) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270B (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Acenaphthene	55.6 mg/kg	Hexachlorobenzene	71.3 mg/kg
Bis(2-ethylhexyl)phthalate	13.1 mg/kg	Hexachloroethane	8.79 mg/kg
2-Chlorophenol	21.4 mg/kg	Naphthalene	30.3 mg/kg
Dibenzofuran	47.8 mg/kg	2-Nitroaniline	46.3 mg/kg
2,4-Dinitrophenol	9.98 mg/kg	4-Nitrophenol	26.2 mg/kg
2,4-Dinitrotoluene	44.6 mg/kg	Nitrobenzene	15.1 mg/kg
2,6-Dinitrotoluene	19.4 mg/kg	Pentachlorophenol	27.1 mg/kg
Fluoranthene	11.8 mg/kg	Phenol	13.9 mg/kg
Fluorene	14.2 mg/kg		

Indicative value for 3-Nitroaniline

RTC-CRM111 — Soil (Loamy sand) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Rocky Mountain region of the United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Acenaphthene	21.3 mg/kg	Hexachloroethane	7.51 mg/kg
Bis(2-ethylhexyl)phthalate	36.0 mg/kg	Naphthalene	10.8 mg/kg
Dibenzofuran	6.91 mg/kg	2-Nitroaniline	30 mg/kg
2,4-Dinitrotoluene	33.7 mg/kg	3-Nitroaniline	5.85 mg/kg
2,6-Dinitrotoluene	15.4 mg/kg	Nitrobenzene	30.7 mg/kg
Fluoranthene	56.1 mg/kg	4-Dinitrophenol	8.70 mg/kg
Fluorene	21.4 mg/kg	Pentachlorophenol	22.0 mg/kg
Hexachlorobenzene	23.1 mg/kg		

RTC-CRM113 — Soil (Loamy sand) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western region of the United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (Sonication), and analysis method 8270C (Semivolatile Organics by GC/MS). The sample is suitable for use by these and other similar methods.

Certified values

Bis(2-ethylhexyl)phthalate	0.97 mg/kg	Hexachlorobenzene	14.3 mg/kg
Benzo(b)fluoranthene	3.53 mg/kg	Hexachloroethane	1.65 mg/kg
Benzo(a)pyrene	3.17 mg/kg	4-Methylphenol	7.55 mg/kg
Chrysene	7.21 mg/kg	2-Nitroaniline	14.5 mg/kg
2,4-Dinitrophenol	1.64 mg/kg	3-Nitroaniline	0.98 mg/kg
2,4-Dinitrotoluene	16.0 mg/kg	Nitrobenzene	5.88 mg/kg
Fluoranthene	6.51 mg/kg	4-Nitrophenol	4.56 mg/kg
Fluorene	8.41 mg/kg	Pyrene	37.0 mg/kg

RTC-CRM115 — Soil (Loamy sand) - Organic contaminants — 100 g

PAH contaminated soil from a site in the Western Region of the United States.

Certified values

Acenaphthene	4,60 mg/kg	Fluoranthene	22,1 mg/kg
Benzo(a)anthracene	12,1 mg/kg	Fluorene	13,0 mg/kg
Benzo(b)Fluoranthene	0,930 mg/kg	Naphthalene	1,34 mg/kg
Chrysene	16,8 mg/kg	Phenanthrene	0,080 mg/kg
Dibenzofuran	10,6 mg/kg	Pyrene	7,66 mg/kg

Indicative values for Anthracene and Bis(2-ethylhexyl)phthalate

RTC-CRM121 — Soil (Loam) - Organic contaminants — 100 g

BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values

Benzo(a)pyrene	5.34 mg/kg	Dimethylphthalate	7.38 mg/kg
Bis(2-ethylhexyl)phthalate	1.49 mg/kg	Di-n-butylphthalate	10.2 mg/kg
4-Bromophenyl phenylether	11.8 mg/kg	2,4-Dinitrotoluene	19.7 mg/kg
Butylbenzylphthalate	5.66 mg/kg	Fluoranthene	5.65 mg/kg
4-Chloro-3-methylphenol	8.80 mg/kg	Fluorene	5.42 mg/kg
2-Chloronaphthalene	8.17 mg/kg	Hexachlorobenzene	6.26 mg/kg
2-Chlorophenol	8.30 mg/kg	Isophorone	9.53 mg/kg
4-Chlorophenyl phenylether	9.37 mg/kg	2-Methyl-4,6-dinitrophenol	11.4 mg/kg
Chrysene	4.94 mg/kg	2-Methylphenol (o-Cresol)	9.65 mg/kg
Dibenzofuran	6.10 mg/kg	Naphthalene	8.63 mg/kg
1,2-Dichlorobenzene	4.19 mg/kg	Nitrobenzene	9.42 mg/kg
1,3-Dichlorobenzene	4.24 mg/kg	Phenanthrene	5.87 mg/kg
1,4-Dichlorobenzene	3.15 mg/kg	Phenol	9.60 mg/kg
2,4-Dichlorophenol	6.66 mg/kg	Pyrene	8.20 mg/kg
2,6-Dichlorophenol	12.9 mg/kg	1,2,4-Trichlorobenzene	6.79 mg/kg
Diethylphthalate	6.74 mg/kg	2,4,5-Trichlorophenol	6.98 mg/kg

Indicative values for Carbazole, 3-Methylphenol (m-Cresol) , 4-Methylphenol (p-Cresol)

RTC-CRM123 Soil (Silty loam) - Organic contaminants 100 g

BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS).The sample is suitable for these and other similar methods.

Certified values

Acenaphthene	7.52 mg/kg	2,4-Dimethylphenol	9.25 mg/kg
Acenaphthylene	7.24 mg/kg	Dimethylphthalate	9.56 mg/kg
Anthracene	6.94 mg/kg	2,4-Dinitrotoluene	17.5 mg/kg
Benzo(a)anthracene	8.38 mg/kg	Di-n-oxtylphthalate	11.4 mg/kg
Benzo(a)pyrene	7.77 mg/kg	Fluoranthene	9.31 mg/kg
Bis(2-ethylhexyl)phthalate	8.90 mg/kg	Fluorene	6.88 mg/kg
4-Bromophenyl-phenylether	13.0 mg/kg	Hexachlorobenzene	6.81 mg/kg
4-Chloro-3-methylphenol	7.60 mg/kg	Hexachlorobutadiene	5.46 mg/kg
2-Chloronaphthalene	7.42 mg/kg	Hexachloroethane	10.6 mg/kg
2-Chlorophenol	8.45 mg/kg	Isophorone	8.07 mg/kg
4-Chlorophenyl-phenylether	9.39 mg/kg	2-Methylphenol	7.70 mg/kg
Chrysene	11.3 mg/kg	Naphthalene	9.73 mg/kg
Dibenzofuran	8.19 mg/kg	Nitrobenzene	10.6 mg/kg
Di-n-butylphthalate	16.8 mg/kg	2-Nitrophenol	6.30 mg/kg
1,2-Dichlorobenzene	5.15 mg/kg	Phenanthrene	7.94 mg/kg
1,3-Dichlorobenzene	4.25 mg/kg	Pyrene	6.75 mg/kg
1,4-Dichlorobenzene	3.98 mg/kg	2,4,5-Trichlorophenol	5.29 mg/kg
2,4-Dichlorophenol	10.6 mg/kg		

RTC-CRM131 Soil (Sandy loam) - Organic contaminants 100 g

The values were determined by USEPA SW846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonicaton), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.

Certified values

1,2-Dichlorobenzene	4371 µg/kg	2,6-Dichlorophenol	3140 µg/kg
1,3-Dichlorobenzene	3545 µg/kg	2,4-Dimethylphenol	2925 µg/kg
1,4-Dichlorobenzene	4654 µg/kg	2,4-Dinitrophenol	1470 µg/kg
Hexachloroethane	4372 µg/kg	2,4-Dinitrotoluene (2,4-DNT)	8532 µg/kg
Naphthalene	3506 µg/kg	bis(2-Ethylhexyl) phthalate (DEHP)	7106 µg/kg
Pyridine	2100 µg/kg	Fluoranthene	2169 µg/kg
1,2,4-Trichlorobenzene	2952 µg/kg	Fluorene	6161 µg/kg
Acenaphthene	2351 µg/kg	Hexachlorocyclopentadiene	3266 µg/kg
Acenaphthylene	3305 µg/kg	Indeno(1,2,3-cd) pyrene	746 µg/kg
Anthracene	4354 µg/kg	Isophorone	4961 µg/kg
Benzo(a)anthracene	6364 µg/kg	2-Methyl-4,6-dinitrophenol	571 µg/kg
Benzo(a)pyrene	5160 µg/kg	2-Methylphenol (o-Cresol)	4596 µg/kg
Benzo(b)fluoranthene	2102 µg/kg	3-Methylphenol (m-Cresol)	4510 µg/kg
Benzo(k)fluoranthene	1391 µg/kg	4-Methylphenol (p-Cresol)	7117 µg/kg
Benzoic acid	429 µg/kg	3+4-Methylphenol (m+p-Cresol)	6554 µg/kg
4-Bromophenyl phenyl ether	8732 µg/kg	2-Nitrophenol	3556 µg/kg
4-Chloro-3-methylphenol	3548 µg/kg	4-Nitrophenol	3526 µg/kg
2-Chlorophenol	3525 µg/kg	Pentachlorophenol	3250 µg/kg
Chrysene	2021 µg/kg	Phenanthrene	2798 µg/kg
Dibenz(a,h) anthracene	3570 µg/kg	Phenol	1912 µg/kg
Dibenzofuran	4529 µg/kg	Pyrene	2296 µg/kg
Di-n-butyl phthalate	7512 µg/kg	2,4,5-Trichlorophenol	2384 µg/kg
2,4-Dichlorophenol	6798 µg/kg		

RTC-CRM135 Soil (Silty clay) - Semi-volatile organic analytes 100 g

Certified values

1,2-Dichlorobenzene	673 µg/kg	2-Chlorophenol	1670 µg/kg
1,3-Dichlorobenzene	329 µg/kg	4-Chlorophenyl phenylether	7620 µg/kg
1,4-Dichlorobenzene	163 µg/kg	Dibenzofuran	5100 µg/kg
Hexachlorobutadiene	155 µg/kg	Di-n-butyl phthalate	4600 µg/kg
Hexachloroethane	156 µg/kg	2,4-Dichlorophenol	1550 µg/kg
Naphthalene	640 µg/kg	2,4-Dimethylphenol	3270 µg/kg
Nitrobenzene	4370 µg/kg	Dimethyl phthalate	3780 µg/kg
1,2,4-Trichlorobenzene	1710 µg/kg	2,4-Dinitrophenol	2220 µg/kg
Acenaphthene	1390 µg/kg	Di-n-octyl phthalate	5140 µg/kg
Acenaphthylene	1210 µg/kg	Fluoranthene	328 µg/kg
Aniline	2310 µg/kg	Fluorene	3410 µg/kg
Anthracene	848 µg/kg	Isophorone	742 µg/kg
Benzo(a)anthracene	3520 µg/kg	2-Methyl-4,6-dinitrophenol	4280 µg/kg
Benzo(a)pyrene	347 µg/kg	2-Methylphenol (o-Cresol)	3500 µg/kg
Benzoic acid	1900 µg/kg	4-Methylpheno (p-Cresol)	5900 µg/kg
Benzyl alcohol	1560 µg/kg	3+4-Methylphenol (m+p-Cresol)	6830 µg/kg
4-Bromophenyl phenyl ether	5260 µg/kg	2-Nitroaniline	5090 µg/kg
Butyl benzyl phthalate	3130 µg/kg	3-Nitroaniline	4930 µg/kg
Carbazole	5400 µg/kg	4-Nitroaniline	1730 µg/kg
4-Chloro-3-methylphenol	602 µg/kg	2-Nitrophenol	3820 µg/kg
4-Chloroaniline	749 µg/kg	4-Nitrophenol	3680 µg/kg
bis(2-Chloroethyl) ether	694 µg/kg	Pentachlorophenol	3420 µg/kg
2-Chloronaphthalene	2030 µg/kg	Phenanthrene	2010 µg/kg

RTC-CRM136 — Soil (Clay) - Organic contaminants — 100 g

Certified values

1,4-Dichlorobenzene	350 µg/kg	Dimethyl phthalate	3130 µg/kg
Hexachlorobutadiene	2010 µg/kg	2,4-Dinitrophenol	1600 µg/kg
Nitrobenzene	4670 µg/kg	2,6-Dinitrotoluene (2,6-DNT)	2510 µg/kg
1,2,4-Trichlorobenzene	698 µg/kg	Di-n-octyl phthalate	5250 µg/kg
Acenaphthene	173 µg/kg	bis(2-Ethylhexyl) phthalate (DEHP)	891 µg/kg
Anthracene	431 µg/kg	Fluoranthene	5350 µg/kg
Benzo(a)anthracene	838 µg/kg	Hexachlorobenzene	551 µg/kg
Benzo(b)fluoranthene	442 µg/kg	Hexachlorocyclopentadiene	3930 µg/kg
Benzo(k)fluoranthene	661 µg/kg	Indeno(1,2,3-cd) pyrene	425 µg/kg
Benzo(b+k)fluoranthene	1100 µg/kg	Isophorone	6070 µg/kg
4-Bromophenyl phenyl ether	6460 µg/kg	2-Methylnaphthalene	6190 µg/kg
Butyl benzyl phthalate	7470 µg/kg	4-Methylphenol (p-Cresol)	2940 µg/kg
Carbazole	1370 µg/kg	3+4-Methylphenol (m+p-Cresol)	3270 µg/kg
bis(2-Chloroethoxy)methane	6970 µg/kg	2-Nitrophenol	668 µg/kg
2-Chloronaphthalene	2640 µg/kg	4-Nitrophenol	2630 µg/kg
2-Chlorophenol	1200 µg/kg	n-Nitrosodi-n-propylamine	2630 µg/kg
Chrysene	927 µg/kg	Pentachlorophenol	2560 µg/kg
Dibenz(a,h) anthracene	458 µg/kg	Phenanthrene	973 µg/kg
Dibenzofuran	5160 µg/kg	Phenol	1200 µg/kg
Di-n-butyl phthalate	720 µg/kg	Pyrene	6620 µg/kg
2,4-Dichlorophenol	605 µg/kg	2,4,6-Trichlorophenol	3480 µg/kg
Diethyl phthalate	1470 µg/kg		

RTC-CRM132 — Sediment - Nitroaromatics — 100 g

The values were certified by USEPA SW846, 3rd edition analysis method 8330 (nitrogen residues by HPLC). The sample is suitable for use by these and other similar methods.

Nitrobenzene	3.61 mg/kg
1,3-Dinitrobenzene (1,3-DNB)	2.83 mg/kg
2,4-Dinitrotoluene (2,4-DNT)	9.42 mg/kg
2,6-Dinitrotoluene (2,6-DNT)	4.86 mg/kg
Nitroglycerin	7.20 mg/kg
2-Amino-4,6-dinitrotoluene	2.96 mg/kg
4-Amino-2,6-dinitrotoluene	1.02 mg/kg
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	2.27 mg/kg
2-Nitrotoluene	5.41 mg/kg
3-Nitrotoluene	8.77 mg/kg
4-Nitrotoluene	3.68 mg/kg
HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	1.58 mg/kg

RTC-CRM137 — Soil (Loamy sand) - Nitroaromatics and nitrosamines — 10 g

Certified using USEPA SW846, 3rd edition, method 8330 or by similar HPLC methods.

Certified values

Nitrobenzene	4.88 mg/kg	RDX	1.16 mg/kg
1,3-Dinitrobenzene (1,3-DNB)	1.72 mg/kg	2-Nitrotoluene	3.65 mg/kg
42,4-Dinitrotoluene (2,4-DNT)	4.62 mg/kg	3-Nitrotoluene	3.13 mg/kg
2,6-Dinitrotoluene (2,6-DNT)	1.57 mg/kg	HMX	1.96 mg/kg
2-Amino-4,6-dinitrotoluene	6.86 mg/kg	Tetryl	1.96 mg/kg
4-Amino-2,6-dinitrotoluene	3.10 mg/kg	2,4,6-Trinitrotoluene(2,4,6-TNT)	5.02 mg/kg

RTC-CRM138 — Soil (Silt loam) - Nitroaromatics and nitrosamines — 100 g

1,2-Dichlorobenzene	2860.00 µg/kg	Chrysene	2370.00 µg/kg
1,3-Dichlorobenzene	2570.00 µg/kg	Dibenzofuran	1910.00 µg/kg
Hexachlorobutadiene	1660.00 µg/kg	Di-n-butylphthalate	2400.00 µg/kg
Hexachloroethane	451.00 µg/kg	2,4-Dichlorophenol	502.00 µg/kg
Naphthalene	606.00 µg/kg	Dimethylphthalate	4080.00 µg/kg
Nitrobenzene	6030.00 µg/kg	2,4-Dinitrotoluene (2,4-DNT)	875.00 µg/kg
1,2,4-Trichlorobenzene	1570.00 µg/kg	Di-n-octylphthalate	1340.00 µg/kg
Acenaphthene	4250.00 µg/kg	bis(2-Ethylhexyl)phthalate	4880.00 µg/kg
Anthracene	282.00 µg/kg	Fluoranthene	124.00 µg/kg
Benzo(a)anthracene	1790.00 µg/kg	Fluorene	1450.00 µg/kg
Benzo(a)pyrene	630.00 µg/kg	Hexachlorobenzene	618.00 µg/kg
Benzo(b)fluoranthene	616.00 µg/kg	Isophorone	6120.00 µg/kg
Benzo(g,h,i)perylene	570.00 µg/kg	2-Methyl-4,6-dinitrophenol	3930.00 µg/kg
Benzo(k)fluoranthene	723.00 µg/kg	2-Methylphenol (o-Cresol)	2570.00 µg/kg
Benzylalcohol	7100.00 µg/kg	4-Methylphenol (p-Cresol)	3110.00 µg/kg
4-Bromophenylphenylether	10600.00 µg/kg	3+4-Methylphenol (m+p-Cresol)	3580.00 µg/kg
4-Chloro-3-methylphenol	653.00 µg/kg	4-Nitrophenol	5830.00 µg/kg
4-Chloroaniline	581.00 µg/kg	Pentachlorophenol	384.00 µg/kg
2-Chloronaphthalene	3890.00 µg/kg	Phenanthrene	30.70 µg/kg
2-Chlorophenol	1990.00 µg/kg	Phenol	738.00 µg/kg
4-Chlorophenylphenyl ether	8330.00 µg/kg	2,4,5-Trichlorophenol	2260.00 µg/kg

RTC-CRM139 — Soil (Clay soil) - Nitroaromatics and nitrosamines — 100 g

The values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540C (Soxhlet), 3550B (Sonication), and analysis method 8270C (Semivolatile organics by GC/MS). The sample is suitable for use by these and other similar methods.

1,2-Dichlorobenzene	1082.52 µg/kg	2,4-Dichlorophenol	4700.09 µg/kg
1,3-Dichlorobenzene	495.07 µg/kg	Diethylphthalate	8064.98 µg/kg
Hexachlorobutadiene	1168.02 µg/kg	2,4-Dinitrophenol	1969.88 µg/kg
Hexachloroethane	201.29 µg/kg	2,4-Dinitrotoluene (2,4-DNT)	7840.28 µg/kg
Nitrobenzene	5588.60 µg/kg	bis(2-Ethylhexyl)phthalate	3096.73 µg/kg
1,2,4-Trichlorobenzene	2380.01 µg/kg	Fluoranthene	5098.72 µg/kg
Acenaphthene	2116.63 µg/kg	Hexachlorocyclopentadiene	429.03 µg/kg
Anthracene	1194.84 µg/kg	Indeno(1,2,3-cd)pyrene	1309.09 µg/kg
Benzo(a)pyrene	1563.19 µg/kg	Isophorone	3311.47 µg/kg
Benzo(b)fluoranthene	3925.10 µg/kg	2-Methyl-4,6-dinitrophenol	5064.86 µg/kg
Benzo(g,h,i)perylene	2831.44 µg/kg	2-Methylphenol (o-Cresol)	1900.24 µg/kg
Benzo(k)fluoranthene	1782.84 µg/kg	3-Methylphenol (m-Cresol)	233.21 µg/kg
Benzylalcohol	3325.86 µg/kg	4-Methylphenol (p-Cresol)	2507.76 µg/kg

4-Bromophenylphenyl ether	8043.07 µg/kg	
Butylbenzylphthalate	7286.12 µg/kg	
4-Chloro-3-methylphenol	3359.15 µg/kg	
bis(2-Chloroethoxy)methane	5348.24 µg/kg	
bis(2-Chloroethyl) ether	966.61 µg/kg	
4-Chlorophenylphenyl ether	6402.37 µg/kg	
Chrysene	1213.74 µg/kg	
Dibenz(a,h)anthracene	1231.21 µg/kg	
Dibenzofuran	1745.31 µg/kg	
Di-n-butylphthalate	7326.39 µg/kg	
3+4-Methylphenol (m+p-Cresol)	2296.70 µg/kg	
4-Nitroaniline	1841.66 µg/kg	
2-Nitrophenol	4882.89 µg/kg	
n-Nitrosodimethylamine	777.05 µg/kg	
n-Nitrosodiphenylamine	348.50 µg/kg	
n-Nitrosodi-n-propylamine	6481.25 µg/kg	
Phenanthrene	57.99 µg/kg	
Phenol	5906 µg/kg	
2,4,5-Trichlorophenol	5305.96 µg/kg	
2,4,6-Trichlorophenol	3165.24 µg/kg	

RTC-CRM140 — Soil (Clay soil) - Nitroaromatics and nitrosamines — 100 g

Please contact your local office for more information.

RTC-CRM133 — Soil (Clay loam) - Nitroaromatics — 10 g

The certified values were determined by USEPA SW846 (3rd edition) Analysis Method 8330 (HPLC method). The sample is suitable for these and other similar methods.

Certified values

Nitrobenzene	7.46 mg/kg	2-Nitrotoluene	19.7 mg/kg
1,3-Dinitrobenzene	12.3 mg/kg	3-Nitrotoluene	6.47 mg/kg
2,4-Dinitrotoluene	16 mg/kg	4-Nitrotoluene	10.7 mg/kg
2,6-Dinitrotoluene	20.2 mg/kg	HMX	2 mg/kg
4-Amino-2,6-dinitrotoluene	1.83 mg/kg	2,4,6-Trinitrotoluene	13.8 mg/kg

RTC-CRM112 — Soil (Sandy loam) - Phenols — 100 g

Soil contaminated with phenols from a wood treatment site in the Rocky Mountain Region of the United States.The phenol values in the sample were certified by USEPA SW846,3rd edition Analysis Method 8041 which describes open-tubular, capillary column gas chromatography procedures for the analysis of phenols, using both single-column and dual column/dual-detector approches. The sample is suitable for these and other similar methods.

Certified values

2-Chlorophenol	2.38 mg/kg	m & p Cresol	4.00 mg/kg
4-Chloro-3-methylphenol	4.94 mg/kg	2-Methyl-4,6-dinitrophenol	4.75 mg/kg
2,4-Dichlorophenol	2.53 mg/kg	Pentachlorophenol	5.05 mg/kg
2-Nitrophenol	4.33 mg/kg	Phenol	2.45 mg/kg
4-Nitrophenol	5.66 mg/kg		

Indicative value for 2,4-Dinitrophenol

RTC-CRM107 — Soil (Sandy loam) - PAH/Pesticides — 100 g

PAH contaminated soil from a superfund site in the Western United States. The BNA values in the sample were certified by USEPA SW846, 3rd edition Extraction Methods 3540A/3541 (Soxhlet), 3550 (sonication), and analysis method 8270A (Semivolatile organics by GC/MS). The Organochlorine Pesticides and PCB values were certified using the same extraction methods and analysis method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Acenaphthene	61.9 mg/kg	2,4-Dinitrotoluene	43.1 mg/kg
Bis(2-ethylhexyl)phthalate	38.5 mg/kg	Fluoranthene	19.2 mg/kg
2-Chlorophenol	37.5 mg/kg	Fluorene	30.8 mg/kg
2,4-D Acid	22.9 mg/kg	Hexachlorobenzene	42.9 mg/kg
4,4-DDD	11.1 mg/kg	Hexachloroethane	2.31 mg/kg
4,4-DDT	38.5 mg/kg	Lindane	34.3 mg/kg
2,4-DP	15.4 mg/kg	Naphthalene	36.8 mg/kg
Dalapon	8.09 mg/kg	2-Nitroaniline	15.1 mg/kg
Dibenzofuran	40.1 mg/kg	3-Nitroaniline	4,27 mg/kg
Dicamba	28.4 mg/kg	Nitrobenzene	35,0 mg/kg
2,4-Dichlorophenol	0.23 mg/kg	4-Nitrophenol	70.8 mg/kg
Dieldrin	10.8 mg/kg	2,4,5-T-Acid	15.0 mg/kg
2,4-Dinitrophenol	9.03 mg/kg	Pentachlorophenol	25.0 mg/kg

Indicative value for Aroclor 1248

RTC-CRM803 — Soil (Sandy loam) - Herbicides — 50 g

Soil contaminated with herbicide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition Methods 8151 (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

2,4-D 44643 µg/kg	2,4,5-T 25746 µg/kg	2,4,5-TP 41334 µg/kg

Indicative values for Acifluorfen, Bentazon, Chloramben, Dapalon, 2,4-DB, Dicamba, 3,5-Dichlorobenzoic acid, Dichloroprop, MCPA, MCPP, Pentachlorophenol, Picloram

RTC-CRM804 — Soil (Sandy loam) - Pesticides — 50 g

Soil contaminated with pesticide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition Methods 3540A/3541 (Soxhlet extraction), 3550 (Sonication), and 8081 (Pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Aldrin 18 µg/kg	4,4'-DDT 1060 µg/kg	EndosulfanII 1128 µg/kg
4,4'-DDD 1531 µg/kg	Dieldrin 1863 µg/kg	Endrin 62.2 µg/kg
4,4'-DDE 1520 µg/kg	Endosulfan I 1464 µg/kg	Lindane 491 µg/kg

RTC-CRM805 — Soil (Sandy loam) - Pesticides — 50 g

Soil contaminated with pesticide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW846, 3rd edition Methods 3540A/3541 (Soxhlet extraction), 3550 (Sonication), and 8081 (Pesticides by GC). The sample is suitable for use by these and other similar methods.

Certified values

DDD 19451 µg/kg	Endosulfan I 6903 µg/kg	Endrine aldehyde 95.5 µg/kg
DDE 18613 µg/kg	Endosulfan II 5938 µg/kg	Lindane 10618 µg/kg
DDT 786 µg/kg	Endrin 12967 µg/kg	Methoxychlor 15785 µg/kg

RTC-CRM808 — Soil (Loam) - Herbicides — 50 g

Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8151 (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

2,4-D ..... 314 µg/kg	Dicamba ..... 307 µg/kg	2,4,5-TP ..... 302 µg/kg
2,4-DB ..... 252 µg/kg	2,4,5-T acid ..... 222 µg/kg	

Indicative value for Pentachlorophenol

RTC-CRM810 — Soil (Loamy sand) - Herbicides — 50 g

Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8151A (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

2,4,5-T ..... 171 µg/kg	2,4-D ..... 311 µg/kg	Dicamba ..... 369 µg/kg
2,4,5-TP (Silvex) ..... 249 µg/kg	Dalapon ..... 156 µg/kg	

RTC-CRM817 — Soil (Loam) - Herbicides — 50 g

Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8151A (herbicides by GC). The sample is suitable for these and other similar methods.

Certified values

Dalapon ..... 112 µg/kg	Dicamba ..... 247 µg/kg	2,4,5-T acid ..... 84.5 µg/kg
2,4-D acid ..... 250 µg/kg	MCPP ..... 4800 µg/kg	2,4,5-TP ..... 188 µg/kg
2,4-DB ..... 188 µg/kg	Pentachlorophenol ..... 267 µg/kg	

RTC-CRM831 — Soil (Loam) - Herbicides — 50 g

Fortified to meet the requirements of NELAC Fields of Testing, RCRA Solid. The Reference Values were determined by USEPA SW846 (3rd edition) Analysis Method 8151. (herbicides by GC).

Certified values

Pentachlorophenol ..... 161 µg/kg	2,4-DB ..... 361 µg/kg	2,4,5-T ..... 172 µg/kg
2,4-D ..... 415 µg/kg	Dicamba ..... 374 µg/kg	
Dalapon ..... 158 µg/kg	Silvex (2,4,5-TP) ..... 297 µg/kg	

RTC-CRM818 — Soil (Loam) - Pesticides — 50 g

Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8081A (Pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

Aldrin ..... 182 µg/kg	Endosulfan Sulfate ..... 345 µg/kg
4,4'-DDD ..... 553 µg/kg	Endrin ..... 340 µg/kg
4,4'-DDE ..... 417 µg/kg	Heptachlor ..... 194 µg/kg
4,4'-DDT ..... 446 µg/kg	alpha-HCH ..... 394 µg/kg
Dieldrin ..... 344 µg/kg	beta-HCH ..... 333 µg/kg
Endosulfan I ..... 318 µg/kg	gamma-HCH (Lindane) ..... 416 µg/kg
Endosulfan II ..... 357 µg/kg	Methoxychlor ..... 280 µg/kg

RTC-CRM824 — Soil (Sandy loam) - Pesticides — 50 g

Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8081A (Pesticides by GC). The sample is suitable for these and other similar methods.

Certified values

4,4'-DDD ..... 367 µg/kg	Endrin aldehyde ..... 398 µg/kg
4,4'-DDE ..... 396 µg/kg	Heptachlor ..... 338 µg/kg
4,4'-DDT ..... 363 µg/kg	Heptachlor epoxide (beta) ..... 317 µg/kg
Endosulfan I ..... 361 µg/kg	alpha-HCH ..... 361 µg/kg
Endosulfan II ..... 340 µg/kg	beta-HCH ..... 382 µg/kg
Endosulfan sulfate ..... 327 µg/kg	gamma-HCH (Lindane) ..... 371 µg/kg
Endrin ..... 358 µg/kg	Methoxychlor ..... 365 µg/kg

Indicative value for Endrin ketone

RTC-CRM827 — Soil (Sandy loam) - Organophosphorus pesticides — 50 g

Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW846 (3rd edition) method 8141A. The sample is suitable for these and other similar methods.

Certified values

Azinophos methyl (guthion) ..... 1.52 mg/kg	Demeton-O ..... 0.710 mg/kg
Dichlorvos (DDVP) ..... 0.887 mg/kg	Diazinon ..... 3.76 mg/kg
Demeton-S ..... 0.525 mg/kg	Malathion ..... 8.02 mg/kg
Ronnel ..... 0.830 mg/kg	Parathion, ethyl ..... 4.88 mg/kg
Phorate ..... 0.48 mg/kg	Stirophos (tetrachlorovinphos) ..... 4.24 mg/kg

RTC-CRM837 — Soil (Silty loam) - Organophoshorous pesticides — 50 g

The reference values were determined by USEPA SW846 (3rd edition) Analysis Method 8141A.

Certified values

Azinphos-methyl (Guthion) ..... 587 µg/kg	Malathion ..... 2790 µg/kg
Chlorpyrifos ..... 10300 µg/kg	Methyl parathion (Parathion, methyl) ..... 2620 µg/kg
Demeton-S ..... 667 µg/kg	Parathion, ethyl ..... 4400 µg/kg
Demeton-o ..... 266 µg/kg	Disulfoton ..... 5220 µg/kg
Diazinon ..... 14400 µg/kg	

RTC-CRM815 — Soil (Loam) - Chlordane — 50 g

The Certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Chlordane ..... 245 µg/kg

RTC-CRM812 — Soil (Sandy loam) - Chlordane — 50 g

The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Chlordane	205 µg/kg

RTC-CRM825 — Soil (Sandy loam) - Chlordane — 50 g

The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Chlordane	392 µg/kg

RTC-CRM828 — Soil (Silty loam) - Pesticides — 50 g

Fortified to meet the requirements of NELAC Fields of Testing, RCRA Solid. The Reference Values were determined by USEPA SW846 (3rd edition) method 8081A.

Certified values

Aldrin	126 µg/Kg	Endosulfan sulfate	319 µg/Kg
4,4'-DDD	397 µg/Kg	Endrin	336 µg/Kg
4,4'-DDE	293 µg/Kg	alpha-HCH	338 µg/Kg
4,4'-DDT	302 µg/Kg	beta-HCH	272 µg/Kg
Dieldrin	225 µg/Kg	gamma-HCH (Lindane)	384 µg/Kg
Endosulfan I	170 µg/Kg	Heptachlor	136 µg/Kg
Endosulfan II	223 µg/Kg	Methoxychlor	279 µg/Kg

RTC-CRM829 — Soil (Silty loam) - Toxaphenes — 50 g

Certified value

Toxaphene	221 µg/kg

RTC-CRM813 — Soil (Sandy loam) - Toxaphene — 50 g

The certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Toxaphene	254 µg/kg

RTC-CRM816 — Soil (Loam) - Toxaphene — 50 g

The Certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Toxaphene	229 µg/kg

RTC-CRM826 — Soil (Sandy loam) - Toxaphene — 50 g

The Certified value was determined by USEPA SW846 (3rd edition) Extraction Methods 3540B/3541 (soxhlet), 3550A (sonication) and Analysis Method 8081 (pesticides by GC). The sample is suitable for these and other similar methods.

Certified value

Toxaphene	257 µg/kg

RTC-CRM847 — Soil (Clay Loam) - Pesticides — 50 g

The certified values were determined by USEPA SW846 (3rd edition) method 8081A. The sample is suitable for this and other similar methods.

Certified values

4,4'-DDD	228 µg/kg	Endrin aldehyde	49.3 µg/kg
4,4'-DDE	218 µg/kg	alpha-HCH	225 µg/kg
4,4'-DDT	172 µg/kg	beta-HCH	92.4 µg/kg
Aldrin	115 µg/kg	delta-HCH	67.6 µg/kg
Dieldrin	125 µg/kg	gamma-HCH (Lindane)	340 µg/kg
Endosulfan I	160 µg/kg	Heptachlor	109 µg/kg
Endosulfan II	233 µg/kg	Heptachlor epoxide (beta)	98.7 µg/kg
Endosulfan sulfate	270 µg/kg	Methoxychlor	172 µg/kg
Endrin	377 µg/kg		

RTC-CRM020 — Dry soil No. 2 (Sandy loam) - Trace elements — 50 g

Soil is from a USEPA Superfund site located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for mercury (Method 7471) and pH (method 9045). The sample is suitable for other 3000 series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

pH	2.96	Co	4.51 mg/kg	Ni	16.9 mg/kg
Ag	38.5 mg/kg	Cr	13.6 mg/kg	Pb	5111 mg/kg
Al	1755 mg/kg	Cu	729 mg/kg	Sb	8.38 mg/kg
As	400 mg/kg	Fe	191706 mg/kg	Se	6.57 mg/kg
Ba	24.8 mg/kg	Hg	1.12 mg/kg	Tl	5.91 mg/kg
Ca	25584 mg/kg	Mg	2687 mg/kg	V	6.47 mg/kg
Cd	15.4 mg/kg	Mn	945 mg/kg	Zn	3011 mg/kg

Indicative values for K, Na, Sr

RTC-CRM021 — Dry soil No. 3 (Sandy loam) - Trace elements — 100 g

Soil is from a waste site in the Midwestern United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag ..... 6.5 mg/kg	Cr ..... 10.7 mg/kg	Na ..... 380 mg/kg
Al ..... 2725 mg/kg	Cu ..... 4792 mg/kg	Ni ..... 12.6 mg/kg
As ..... 24.8 mg/kg	Fe ..... 6481 mg/kg	Sb ..... 4950 mg/kg
Ba ..... 586 mg/kg	Hg ..... 4.7 mg/kg	Zn ..... 546 mg/kg
Ca ..... 5426 mg/kg	K ..... 1006 mg/kg	
Cd ..... 1.2 mg/kg	Mn ..... 174 mg/kg	

Indicative values for Co, Mg, Pb, Sn, Tl, V

RTC-CRM022-020 — Dry soil No. 5 (Loam) - Trace elements and cyanide — 20 g

This soil is from a waste site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Arsenic (7060A), Mercury (7471A), Selenium (7740), Thallium (7841) and Cyanide (9010A). The sample is suitable for other 3000-series metals digestion procedures and 7000-series 9000-series spectroscopic methods.

Certified values

Al ..... 10060 mg/kg	Co ..... 5.7 mg/kg	Na ..... 268 mg/kg
As ..... 5.4 mg/kg	Cu ..... 12.4 mg/kg	Ni ..... 16 mg/kg
Ba ..... 109 mg/kg	Fe ..... 13555 mg/kg	Pb ..... 415 mg/kg
Be ..... 0.5 mg/kg	Hg ..... 5 mg/kg	V ..... 23 mg/kg
Ca ..... 27242 mg/kg	K ..... 3170 mg/kg	Zn ..... 46 mg/kg
Cd ..... 3.1 mg/kg	Mg ..... 9524 mg/kg	Cyanide ..... 26.6 mg/kg
Cr ..... 18.8 mg/kg	Mn ..... 318 mg/kg	

Indicative values for B, Ag, Hg, Sb, Se, Si, Sn, Sr, Tl

RTC-CRM008 — Sediment 1 - Trace elements — 50 g

Sediment/soil from a river bank and bottom near the Chesapeake Bay. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al ..... 23906 mg/kg	Co ..... 11 mg/kg	Mn ..... 261 mg/kg
As ..... 14 mg/kg	Cu ..... 36 mg/kg	Na ..... 8706 mg/kg
Ba ..... 54 mg/kg	Fe ..... 33042 mg/kg	Ni ..... 26 mg/kg
Be ..... 1 mg/kg	Hg ..... 0.72 mg/kg	Pb ..... 95.9 mg/kg
Ca ..... 2935 mg/kg	K ..... 3948 mg/kg	V ..... 44.4 mg/kg
Cr ..... 48 mg/kg	Mg ..... 6742 mg/kg	Zn ..... 134 mg/kg

Indicative values for Ag, B, Cd, Mo, Sb, Se, Si, Sn, Sr, Tl

RTC-CRM023 — Soil (Sandy loam) - Metals — 50 g

Soil is from a contaminated site located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag ..... 132 mg/kg	Co ..... 8.9 mg/kg	Ni ..... 11.0 mg/kg
Al ..... 8472 mg/kg	Cu ..... 4.7 mg/kg	Pb ..... 213 mg/kg
As ..... 380 mg/kg	Fe ..... 10678 mg/kg	Se ..... 116 mg/kg
Ba ..... 75.5 mg/kg	Hg ..... 77.8 mg/kg	Sr ..... 32,6 mg/kg
Be ..... 0.4 mg/kg	K ..... 2231 mg/kg	Tl ..... 111.51 mg/kg
Ca ..... 5425 mg/kg	Mg ..... 3064 mg/kg	V ..... 21.7 mg/kg
Cd ..... 0.9 mg/kg	Mn ..... 206 mg/kg	Zn ..... 93.8 mg/kg
Cr ..... 31.1 mg/kg	Na ..... 295 mg/kg	

Indicative values for B, Si

RTC-CRM024 — Soil (Sandy loam) - Metals — 50 g

This soil is from a site in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010B, except for mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag ..... 13.3 mg/kg	Cr ..... 25.4 mg/kg	Na ..... 287 mg/kg
Al ..... 8681 mg/kg	Cu ..... 8.70 mg/kg	Ni ..... 15.0 mg/kg
As ..... 3.42 mg/kg	Fe ..... 10196 mg/kg	Pb ..... 15.7 mg/kg
B ..... 7.22 mg/kg	Hg ..... 0.71 mg/kg	Sr ..... 35.4 mg/kg
Ba ..... 79.6 mg/kg	K ..... 2102 mg/kg	V ..... 20.8 mg/kg
Be ..... 0.43 mg/kg	Mg ..... 2945 mg/kg	Zn ..... 37.3 mg/kg
Ca ..... 5534 mg/kg	Mn ..... 199 mg/kg	
Cd ..... 2.15 mg/kg	Mo ..... 0.58 mg/kg	

Indicative values for Sb, Se, Si, Tl

RTC-CRM025 — Soil (Sandy loam) - Metals — 50 g

This soil is from a moderate contaminated site located in the Western United States. The certified values were determined by USEPA SW846 (3rd Edition) Methods 3050 and 6010, except for Arsenic (7060A), Mercury (7471A), Selenium (7740), and Thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series 9000-series spectroscopic methods.

Certified values

Ag ..... 132 mg/kg	Cr ..... 441 mg/kg	Mn ..... 173 mg/kg
Al ..... 7637 mg/kg	Co ..... 4.07 mg/kg	Na ..... 313 mg/kg
As ..... 339 mg/kg	Cu ..... 7.76 mg/kg	Ni ..... 12.2 mg/kg
Ba ..... 1839 mg/kg	Fe ..... 9439 mg/kg	Pb ..... 1447 mg/kg
Be ..... 0.33 mg/kg	Hg ..... 99.8 mg/kg	Se ..... 518 mg/kg
Ca ..... 28320 mg/kg	K ..... 1992 mg/kg	V ..... 19.3 mg/kg
Cd ..... 369 mg/kg	Mg ..... 4376 mg/kg	Zn ..... 51.8 mg/kg

Indicative values for B, Mo, Sb, Si, Sr, Tl

RTC-CRM026 Soil (Sandy loam) - Metals 50 g

This soil is from a slightly contaminated site located in the Rocky Mountain Region of the United States. The following certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al 17730 mg/kg	Co 6.77 mg/kg	Na 119 mg/kg
As 5.41 mg/kg	Cu 18.8 mg/kg	Ni 14.4 mg/kg
Ba 214 mg/kg	Fe 21906 mg/kg	Pb 25.6 mg/kg
Be 18.0 mg/kg	Hg 2.42 mg/kg	Sr 38.4 mg/kg
Ca 6221 mg/kg	K 3600 mg/kg	V 32.0 mg/kg
Cd 11.7 mg/kg	Mg 2837 mg/kg	Zn 140 mg/kg
Cr 27.2 mg/kg	Mn 633 mg/kg	

Indicative values for Ag, B, Mo, Sb, Se, Si, Tl

The following certified values were determined by using USEPA SW846 Method 7060A for Arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia DIN 38414-S7 Method for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

As 5.41 mg/kg	Cu 22.5 mg/kg	Ni 19.3 mg/kg
Cd 12.9 mg/kg	Pb 30.7 mg/kg	Zn 169 mg/kg
Cr 36.9 mg/kg	Hg 2.42 mg/kg	

RTC-CRM027 Soil (Sandy loam) - Metals 50 g

This soil is from a moderately contaminated site located in the Western United States.The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010, except for mercury (Method 7471) and pH (method 9045).The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag 5.98 mg/kg	Co 4.70 mg/kg	Ni 10.5 mg/kg
Al 8537 mg/kg	Cu 9.87 mg/kg	Pb 51.9 mg/kg
As 12.4 mg/kg	Fe 11173 mg/kg	Sb 3.28 mg/kg
Ba 166 mg/kg	Hg 3.80 mg/kg	Se 14.0 mg/kg
Be 2.73 mg/kg	K 2115 mg/kg	Sr 43.0 mg/kg
Ca 5970 mg/kg	Mg 2755 mg/kg	V 21.4 mg/kg
Cd 12.0 mg/kg	Mn 259 mg/kg	Zn 51.3 mg/kg
Cr 26.9 mg/kg	Na 241 mg/kg	

Indicative values for B, Mo, Si ,Tl

RTC-CRM028 Soil (Sandy loam) - Metals 50 g

This soil is from a moderately contaminated site location in the Western United States.The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for mercury (Method 7471) and pH (method 9045). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al 7562 mg/kg	Cr 19.0 mg/kg	Mn 209 mg/kg
As 3.83 mg/kg	Co 4.3 mg/kg	Na 231 mg/kg
Ba 73.2 mg/kg	Cu 8.51 mg/kg	Ni 11.0 mg/kg
Be 0.38 mg/kg	Fe 10000 mg/kg	Pb 10.4 mg/kg
Ca 5883 mg/kg	K 2045 mg/kg	V 19.2 mg/kg
Cd 0.50 mg/kg	Mg 2995 mg/kg	Zn 75.0 mg/kg

Indicative values for B, Si, Sr

RTC-CRM030 Soil (Sandy loam) - Metals 50 g

This soil is from a moderately contaminated site location in the Western United States. The Reference Values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010B, except for mercury, pH, cyanide and fluoride (methods 7471, 9045, 9213, and 9214), respectively. The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Al 4810 mg/kg	Cu 5,68 mg/kg	Ni 6,63 mg/kg
As 13,1 mg/kg	Fe 8320 mg/kg	K 1480 mg/kg
Ba 56,1 mg/kg	Pb 7,13 mg/kg	Se 18,5 mg/kg
Be 5,97 mg/kg	Mg 2470 mg/kg	Na 997 mg/kg
Cd 58,4 mg/kg	Mn 127 mg/kg	V 29,0 mg/kg
Ca 14200 mg/kg	Hg 6,55 mg/kg	Zn 74,8 mg/kg
Cr 43,8 mg/kg	Mo 8,78 mg/kg	

Indicative values for Ag, Cyanide, Fluoride, Si, Sb, Sr, pH

RTC-CRM048 Soil (Sandy loam) - Metals 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series.

Certified values

Ag 100 mg/kg	Cu 144 mg/kg	Sb 58.9 mg/kg
Al 6350 mg/kg	Fe 12240 mg/kg	Se 137 mg/kg
As 150 mg/kg	Hg 13.5 mg/kg	Si 811 mg/kg
B 96.9 mg/kg	K 2828 mg/kg	Sn 117 mg/kg
Ba 149 mg/kg	Mg 2371 mg/kg	Sr 114 mg/kg
Be 64.9 mg/kg	Mn 565 mg/kg	Ti 311 mg/kg
Ca 4403 mg/kg	Mo 76.2 mg/kg	Tl 109 mg/kg
Cd 159 mg/kg	Na 650 mg/kg	V 120 mg/kg
Co 74.1 mg/kg	Ni 166 mg/kg	Zn 332 mg/kg
Cr 113 mg/kg	Pb 100 mg/kg	

RTC-CRM042 — Soil (Loam) - Metals — 50 g

The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B, 6010B and 6020, except for Mercury (Method7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag 133 mg/kg	Cu 128 mg/kg	Sb 68.1 mg/kg
Al 16700 mg/kg	Fe 12900 mg/kg	Se 155 mg/kg
As 265 mg/kg	Hg 46.7 mg/kg	Sn 173 mg/kg
B 146 mg/kg	K 1900 mg/kg	Sr 761 mg/kg
Ba 763 mg/kg	Mg 3830 mg/kg	Ti 435 mg/kg
Be 129 mg/kg	Mn 594 mg/kg	Tl 195 mg/kg
Ca 6140 mg/kg	Mo 104 mg/kg	V 139 mg/kg
Cd 281 mg/kg	Na 1520 mg/kg	Zn 529 mg/kg
Co 168 mg/kg	Ni 130 mg/kg	pH 1,76
Cr 268 mg/kg	Pb 182 mg/kg	

Indicative values for Si

RTC-CRM044 — Soil (Silty loam) - Metals — 50 g

The values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

As 57,4 mg/kg	Cu 63,7 mg/kg	Hg 9,41 mg/kg
Cd 70,1 mg/kg	Ni 87,0 mg/kg	Zn 132 mg/kg
Cr 87,8 mg/kg	Mn 204 mg/kg	
Co 50,6 mg/kg	Pb 75,9 mg/kg	

RTC-CRM045 — Soil (Silty clay) - Metals — 50 g

The values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

As 18.4 mg/kg	Cr 85.3 mg/kg	Pb 42.8 mg/kg
Cd 1.61 mg/kg	Hg 0.795 mg/kg	Zn 330 mg/kg
Co 13.5 mg/kg	Mn 292 mg/kg	
Cu 122 mg/kg	Ni 199 mg/kg	

RTC-CRM046 — Soil (Clay) - Metals — 50 g

The values were determined by using USEPA SW846 Method 7060A for arsenic, by using USEPA SW846 Method 7471B for Mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc.

Certified values

As 7.47 mg/kg	Cu 62.2 mg/kg	Ni 37.5 mg/kg
Cd 7.01 mg/kg	Pb 45.3 mg/kg	Zn 114 mg/kg
Cr 45,7 mg/kg	Mn 118 mg/kg	
Co 8.22 mg/kg	Hg 0.153 mg/kg	

RTC-CRM049 — Soil (Sandy clay) - Metals — 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Ag 125 mg/kg	Cu 88.5 mg/kg	Sb 123 mg/kg
Al 560 mg/kg	Fe 9170 mg/kg	Se 72.1 mg/kg
As 65.3 mg/kg	Hg 13.5 mg/kg	Si 168 mg/kg
B 59 mg/kg	K 3020 mg/kg	Sn 236 mg/kg
Ba 12.7 mg/kg	Mg 899 mg/kg	Sr 8.62 mg/kg
Be 60.5 mg/kg	Mn 636 mg/kg	Ti 47.1 mg/kg
Ca 4790 mg/kg	Mo 98.6 mg/kg	Tl 125 mg/kg
Cd 80 mg/kg	Na 665 mg/kg	V 57.8 mg/kg
Co 84 mg/kg	Ni 344 mg/kg	Zn 542 mg/kg
Cr 355 mg/kg	Pb 111 mg/kg	pH 2,23

RTC-CRM051 — Soil (Clay) - Metals — 50 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods.

Certified values

Al 5530 mg/kg	Cu 58.5 mg/kg	Sb 27.4 mg/kg
Ag 79.5 mg/kg	Fe 4520 mg/kg	Se 165 mg/kg
As 22.7 mg/kg	Hg 29.9 mg/kg	Si 1020 mg/kg
B 11.8 mg/kg	K 1690 mg/kg	Sn 81.9 mg/kg
Ba 145 mg/kg	Mg 925 mg/kg	Sr 93.8 mg/kg
Be 1.09 mg/kg	Mn 757 mg/kg	Ti 15.7 mg/kg
Ca 1220 mg/kg	Mo 61.0 mg/kg	Tl 55.9 mg/kg
Cd 42.2 mg/kg	Na 3630 mg/kg	V 56.7 mg/kg
Co 65.1 mg/kg	Ni 96.8 mg/kg	Zn 44.0 mg/kg
Cr 246 mg/kg	Pb 44.1 mg/kg	

RTC-CRM052 — Soil (Loamy clay) - Metals — 50 g

The values were determined by Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly nitric/hydrochloric acid mixture (Aqua Regia) in pressurised microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Certified values

Ag	2.35 mg/kg	Mo	38.9 mg/kg
Al	10900 mg/kg	Ni	28.6 mg/kg
As	14.6 mg/kg	Pb	82.6 mg/kg
Ba	137 mg/kg	Sb	20.1 mg/kg
Cd	35.6 mg/kg	Se	8.24 mg/kg
Co	26.3 mg/kg	Sn	2.48 mg/kg
Cr	30.7 mg/kg	V	88.4 mg/kg
Cu	44.2 mg/kg	Zn	89.0 mg/kg
Fe	12400 mg/kg	Chemical Oxygen Demand (COD)	10.7 mg/Kg
Hg	0.815 mg/kg	Kjeldahl-Nitrogen (KN)	0.627 g/Kg
Mn	187 mg/kg	Phosphorus, Total (TP)	0.348 g/Kg

RTC-CRM202 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ag	5.01 mg/L	Cd	19.6 mg/L	Pb	48.5 mg/L
As	1.44 mg/L	Cr	11.1 mg/L	Se	1.38 mg/L
Ba	5.85 mg/L	Hg	5.58 mg/L		

RTC-CRM204 — Soil (Sandy loam) - TCLP Metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

As	0.5 mg/L	Cr	3.31 mg/L
Cd	14.8 mg/L	Pb	4.51 mg/L

Indicative values for Ag, Ba, Hg, Se

RTC-CRM206 — Soil (Sandy loam) - TCLP Metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ag	1.04 mg/L	Cd	8.34 mg/L	Pb	2.16 mg/L
As	14.0 mg/L	Cr	0.13 mg/L	Se	20.5 mg/L
Ba	0.38 mg/L	Hg	0.65 mg/L		

RTC-CRM207 — Soil (Loamy sand) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ag	0.99 mg/L	Cd	7.45 mg/L	Pb	2.76 mg/L
As	9.51 mg/L	Cr	1.36 mg/L	Se	20.8 mg/L
Ba	0.40 mg/L	Hg	0.02 mg/L		

RTC-CRM208 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for six Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

As	3.93 mg/L	Cd	46.7 mg/L	Hg	0.62 mg/L
Ba	32.8 mg/L	Cr	0.87 mg/L	Pb	2.14 mg/L

RTC-CRM209 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for six Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

As	4.96 mg/L	Cd	5.65 mg/L	Pb	61.4 mg/L
Ba	0.23 mg/L	Cr	1.06 mg/L		

RTC-CRM210 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ag	0.12 mg/L	Cd	6.50 mg/L	Pb	133 mg/L
As	1.98 mg/L	Cr	0.46 mg/L	Se	1.38 mg/L
Ba	0.50 mg/L	Hg	0.45 mg/L		

RTC-CRM211 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ag	0.013 mg/L	Cd	3.53 mg/L	Pb	1.48 mg/L
As	0.749 mg/L	Cr	1.06 mg/L	Se	1.35 mg/L
Ba	0.352 mg/L	Hg	0.012 mg/L		

RTC-CRM212 — Soil (Loamy sand) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ba	0.67 mg/L	Hg	0.007 mg/L
Cd	0.35 mg/L	Se	0.33 mg/L

Indicative values for Ag, As, Cr, Pb

RTC-CRM213 — Soil (Loamy sand) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

As	4.1 mg/L	Cr	0.55 mg/L	Se	7.15 mg/L
Ba	2.37 mg/L	Pb	4.9 mg/L		
Cd	12 mg/L	Hg	0.44 mg/L		

Indicative value for Ag

RTC-CRM214 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

As	2.92 mg/L	Cr	3.2 mg/L	Se	5.48 mg/L
Ba	7.51 mg/L	Pb	0.32 mg/L	Ag	0.24 mg/L
Cd	0.41 mg/L	Hg	0.06 mg/L		

RTC-CRM215 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

	Extraction fluid 1	Extraction fluid 2
As	3.3 mg/L	5.76 mg/L
Ba	16.5mg/L	17.4 mg/L
Cd	31.4 mg/L	54.1 mg/L
Cr	0.912 mg/L	2.09 mg/L
Pb	0.565 mg/L	1.93 mg/L
Hg	1.48 mg/L	1.78 mg/L
Se	1.31 mg/L	1.87 mg/L
Ag	ND	ND

ND: not detected

RTC-CRM216 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

Ag	0.042 mg/L	Cd	2.39 mg/L	Hg	0.05 mg/L
As	5.46 mg/L	Cr	0.37 mg/L	Se	4.28 mg/L
Ba	0.653 mg/L	Pb	0.624 mg/L		

RTC-CRM217 — Soil (Sandy loam) - TCLP metals — 225 g

Collected from sites located in the Western United States and analysed for eight Toxicity Characteristic Leaching Procedure (TCLP) Metals. The samples were certified using method USEPA SW 846, 3rd edition, 1311, 6011 and 7000 series.

Certified values

As	1.84 mg/L	Cr	0.467 mg/L	Se	8.63 mg/L
Ba	3.43 mg/L	Pb	1.75 mg/L	Ag	0.037 mg/L
Cd	8.85 mg/L	Hg	0.198 mg/L		

RTC-CRM221 — Soil (Clay loam) - TCLP metals — 225 g

The reference values were determined by USEPA SW846 (3rd edition) Methods 1311, digestion methods 3010A/3015 and analytical method 6010B and the appropriate 7000 series method. The sample is suitable for these and other similar methods.

Certified values

Ag	0.0227 mg/L	Cd	5.66 mg/L	Pb	1.55 mg/L
As	6.87 mg/L	Cr	0.465 mg/L	Se	3.85 mg/L
Ba	0.571 mg/L	Hg	0.109 mg/L		

BCR-143R — Sewage sludge amended soil - Major and trace elements — 40 g

Certified values

Cd	71.8 mg/kg	Hg	1.10 mg/kg	Pb	179.7 mg/kg
Co	12.3 mg/kg	Mn	904 mg/kg	Zn	1055 mg/kg
Cu	130.6 mg/kg	Ni	299 mg/kg		

Aqua regia soluble content

Cd	72.0 mg/kg	Mn	858 mg/kg	Pb	174 mg/kg
Cr	426 mg/kg	Ni	296 mg/kg	Zn	1063 mg/kg

BCR-483	Sewage sludge amended soil - Extractable trace elements EDTA Certified values Cd 24.3 mg/kg, Cr 28.6 mg/kg, Cu 215 mg/kg, Ni 28.7 mg/kg, Pb 229 mg/kg, Zn 612 mg/kg Acetic acid Certified values Cd 18.3 mg/kg, Cr 18.7 mg/kg, Cu 33.5 mg/kg, Ni 25.8 mg/kg, Pb 2.10 mg/kg, Zn 620 mg/kg	70 g
BCR-484	Sewage sludge amended (terra rossa) soil - Extractable trace elements EDTA Certified values Cd 0.51 mg/kg, Cu 88 mg/kg, Ni 1.39 mg/kg, Pb 59.7 mg/kg, Zn 383 mg/kg Acetic acid Certified values Cd 0.48 mg/kg, Cu 33.9 mg/kg, Ni 1.69 mg/kg, Pb 1.17 mg/kg, Zn 193 mg/kg	70 g
RTC-CRM005	Sewage sludge amended (terra rossa) soil - Trace elements Soil from a sewage sludge agricultural land farming application located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050A and 6010A, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods. pH 7.59 Certified values Ag 36.3 mg/kg, Al 15300 mg/kg, As 6.91 mg/kg, Ba 853 mg/kg, Be 1 mg/kg, Ca 119000 mg/kg, Cd 13.7 mg/kg, Co 6.18 mg/kg, Cr 41.4 mg/kg, Cu 465 mg/kg, Fe 12700 mg/kg, Hg 3.32 mg/kg, K 6230 mg/kg, Mg 6706 mg/kg, Mn 172 mg/kg, Mo 14 mg/kg, Na 2490 mg/kg, Ni 26 mg/kg, Pb 89.2 mg/kg, Se 19.9 mg/kg, V 109 mg/kg, Zn 625 mg/kg Indicative values for P, Tl	50 g
NCS DC80301	Polluted farmland soil - Trace elements Collected from the Beijing region of China where the land has been intensively farmed and regularly treated with animal waste. Certified for a wide range of trace elements and oxides	40 g

Sewage sludges

Code	Product	Unit
ERM-CC136	Sewage sludge - Extractable metals An aged sewage sludge collected from a disused sewage works site at Heathrow in London, UK. Dried, sterilised and ground to a powder. The extractable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995). Assessed values Al 15100 mg/kg, Ba 633 mg/kg, Co 23.2 mg/kg, Cr 399 mg/kg, Cu 464 mg/kg, Fe 22200 mg/kg, K 2030 mg/kg, Mg 2820 mg/kg, Mn 544 mg/kg, Na 397 mg/kg, Ni 130 mg/kg, Pb 341 mg/kg, Zn 890 mg/kg	5 x 25 g
LGC6181	Sewage sludge - Extractable metals The extractable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995). Certified values Ag 55 mg/kg, As 7.8 mg/kg, Cd 5.8 mg/kg, Cu 354 mg/kg, Cr 78 mg/kg, Fe 40300 mg/kg, Hg 4.9 mg/kg, Mn 454 mg/kg, Ni 45 mg/kg, Pb 105 mg/kg, V 20 mg/kg, Zn 1100 mg/kg	100 g
LGC6182	Sewage sludge - PAHs A digested sewage sludge of mixed origin was taken from a city water treatment plant immediately after discharge from a digestion tank. Assessed Values Acenaphthene 0.10 mg/kg, Anthracene 0.17 mg/kg, Benzo(*a*)anthracene 0.66 mg/kg, Benzo(*b*)fluoranthene 0.95 mg/kg, Benzo(*k*)fluoranthene 0.45 mg/kg, Benzo(*ghi*)perylene 0.62 mg/kg, Benzo(*a*)pyrene 0.59 mg/kg, Chrysene 0.84 mg/kg, Fluoranthene 1.81 mg/kg, Fluorene 0.19 mg/kg, Indeno(1,2,3*cd*)pyrene 0.58 mg/kg, Naphthalene 0.33 mg/kg, Phenanthrene 1.04 mg/kg, Pyrene 1.53 mg/kg Indicative values for Acenaphthylene, Dibenzo(a,h)anthracene	4 x 30 g

LGC6184 — Sewage sludge - PCBs — 30 g

A digested sewage sludge of mixed origin, taken from a city water treatment plant in the Czech Republic, immediately after discharge from a digestion tank.

Certified values

PCB 101 ..... 37 µg/kg	PCB 118 ..... 17 µg/kg	PCB 153 ..... 112 µg/kg

Assessed values

PCB 28 ..... 28 µg/kg	PCB 149 ..... 63 µg/kg	PCB 187 ..... 35 µg/kg
PCB 52 ..... 14 µg/kg	PCB 170 ..... 37 µg/kg	PCB 194 ..... 13 µg/kg
PCB 138 ..... 77 µg/kg	PCB 180 ..... 78 µg/kg	

Indicative values for PCB 31, PCB 77, PCB 110

BCR-144R — Sewage sludge (domestic origin) - Trace elements — 40 g

Certified values

Cd ..... 1.82 mg/kg	Cu ..... 308 mg/kg	Ni ..... 47.7 mg/kg
Co ..... 15.0 mg/kg	Hg ..... 3.14 mg/kg	Pb ..... 106 mg/kg
Cr ..... 104 mg/kg	Mn ..... 208 mg/kg	Zn ..... 932 mg/kg

Aqua Regia soluble content

Certified values

Cd ..... 1.84 mg/kg	Cu ..... 300 mg/kg	Ni ..... 44.9 mg/kg
Co ..... 13.3 mg/kg	Hg ..... 3.11 mg/kg	Pb ..... 96.0 mg/kg
Cr ..... 90 mg/kg	Mn ..... 189 mg/kg	Zn ..... 919 mg/kg

BCR-145R — Sewage sludge (mixed origin) - Trace elements — 40 g

Certified values

Cd ..... 3.50 mg/kg	Hg ..... 2.01 mg/kg	Pb ..... 286 mg/kg
Co ..... 5.61 mg/kg	Mn ..... 156 mg/kg	Zn ..... 2122 mg/kg
Cu ..... 696 mg/kg	Ni ..... 247 mg/kg	

Indicative value for: Cr

Aqua Regia soluble content

Certified values

Cr ..... 307 mg/kg	Ni ..... 251 mg/kg	Zn ..... 2137 mg/kg
Cu ..... 707 mg/kg	Pb ..... 282 mg/kg	

Indicative values for Cd, Co, Hg, Mn

BCR-146R — Sewage sludge (industrial origin) - Trace elements — 40 g

Certified values

Cd ..... 18.8 mg/kg	Cu ..... 838 mg/kg	Ni ..... 69.7 mg/kg
Co ..... 7.39 mg/kg	Hg ..... 8.62 mg/kg	Pb ..... 609 mg/kg
Cr ..... 196 mg/kg	Mn ..... 324 mg/kg	Zn ..... 3061 mg/kg

Aqua regia soluble content

Certified values

Cd ..... 18.5 mg/kg	Cu ..... 831 mg/kg	Ni ..... 65.0 mg/kg
Co ..... 6.5 mg/kg	Hg ..... 8.39 mg/kg	Pb ..... 583 mg/kg
Cr ..... 174 mg/kg	Mn ..... 298 mg/kg	Zn ..... 3043 mg/kg

BCR-597 — Sewage sludge - Chromium — 40 g

Certified value

Cr ..... 203 mg/kg

BCR-088 — Sewage sludge - PAHs — 10 g

Certified values

Pyrene ..... 2.16 mg/kg	Benzo(b)fluoranthene ..... 1.17 mg/kg
Benzo(a)anthracene ..... 0.93 mg/kg	Benzo(k)fluoranthene ..... 0.57 mg/kg
Benzo(a)pyrene ..... 0.91 mg/kg	Benzo(b)naphtho(2,1-d)-thiopene ..... 0.42 mg/kg
Benzo(e)pyrene ..... 1.02 mg/kg	Indeno(1,2,3-cd)pyrene ..... 0.81 mg/kg

BCR-677 — Sewage sludge - PCDD/PCDFs — 40 g

Certified values

2,3,7,8-TCDD ..... 1.51 pg/g	2,3,4,7,8-PeCDF ..... 16.9 pg/g
1,2,3,7,8-PeCDD ..... 4.1 pg/g	1,2,3,4,7,8-HxCDF ..... 14.5 pg/g
1,2,3,6,7,8-HxCDD ..... 235 pg/g	1,2,3,6,7,8-HxCDF ..... 6.1 pg/g
1,2,3,7,8,9-HxCDD ..... 79 pg/g	1,2,3,7,8,9-HCDF ..... 0.84 pg/g
1,2,3,4,6,7,8-HpCDD ..... 3.5 x 10^3 pg/g	2,3,4,6,7,8-HxCDF ..... 5.6 pg/g
OCDD ..... 12.7 x 10^3 pg/g	1,2,3,4,6,7,8-HpCDF ..... 62 pg/g
2,3,7,8-TCDF ..... 45 pg/g	1,2,3,4,7,8,9-HpCDF ..... 6.3 pg/g
1,2,3,7,8-PeCDF ..... 24.8 pg/g	OCDF ..... 177 pg/g

CMI-CRM7006 — Sewage sludge - PCDDs and PCDFs — 60 g

Certified values

2,3,7,8-TeCDD ..... 4,5 ± 0,3 ng/kg	1,2,3,4,7,8,9-HpCDF ..... 110 ± 17 ng/kg
1,2,3,7,8-PeCDD ..... 2,1 ± 0,3 ng/kg	OCDF ..... 1590 ± 290 ng/kg
1,2,3,4,7,8-HxCDD ..... 2,6 ± 0,5 ng/kg	PCB 77 ..... 2380 ± 370 ng/kg
1,2,3,6,7,8-HxCDD ..... 5 ± 0,9 ng/kg	PCB 81 ..... 108 ± 16 ng/kg
1,2,3,7,8,9-HxCDD ..... 3,7 ± 0,6 ng/kg	PCB 126 ..... 169 ± 32 ng/kg
1,2,3,4,6,7,8-HpCDD ..... 65 ± 10 ng/kg	PCB 169 ..... 25 ± 4 ng/kg
OCDD ..... 519 ± 74 ng/kg	PCB 105 ..... 3430 ± 495 ng/kg
2,3,7,8-TeCDF ..... 110 ± 17 ng/kg	PCB 114 ..... 169 ± 36 ng/kg
1,2,3,7,8-PeCDF ..... 157 ± 21 ng/kg	PCB 118 ..... 15800 ± 2300 ng/kg
2,3,4,7,8-PeCDF ..... 87 ± 11 ng/kg	PCB 123 ..... 121 ± 30 ng/kg
1,2,3,4,7,8-HxCDF ..... 376 ± 63 ng/kg	PCB 156 ..... 9140 ± 1300 ng/kg
1,2,3,6,7,8-HxCDF ..... 102 ± 13 ng/kg	PCB 157 ..... 802 ± 130 ng/kg
1,2,3,7,8,9-HxCDF ..... 11 ± 2,2 ng/kg	PCB 167 ..... 4130 ± 670 ng/kg
2,3,4,6,7,8-HxCDF ..... 19,8 ± 2,8 ng/kg	PCB 189 ..... 1860 ± 260 ng/kg
1,2,3,4,6,7,8-HpCDF ..... 256 ± 41 ng/kg	

Indicative values for metals, other PCBs, PAHs, pesticides, brominated flame retardants

RTC-CNS312-04 **Sewage sludge - PAHs, PCBs and pesticides** 50 g

The PAH 10 list of polycyclic aromatic hydrocarbons is defined according to VROM, the Dutch Ministry of Housing and Urban Planning. The reference values were determined by Dutch standard methods (NEN 5771, 5718, and 5719).

Reference values

Acenaphthene	2.99 mg/kg	PCB 118	73.6 µg/kg
Acenaphthylene	2.42 mg/kg	PCB 138	136 µg/kg
Anthracene	1.67 mg/kg	PCB 153	214 µg/kg
Benzo(a)anthracene	1.45 mg/kg	PCB 180	232 µg/kg
Benzo(a)pyrene	0.872 mg/kg	Total PCB	1350 µg/kg
Benzo(b)fluoranthene	0.241 mg/kg	2,4-DDD	625 µg/kg
Benzo(g,h,i)perylene	0.835 mg/kg	2,4-DDE	258 µg/kg
Benzo(k)fluoranthene	0.678 mg/kg	2,4-DDT	223 µg/kg
Chrysene	1.12 mg/kg	4,4-DDD	809 µg/kg
Dibenzo(a,h)anthracene	0.407 mg/kg	4,4-DDE	229 µg/kg
Fluoranthene	4.19 mg/kg	4,4-DDT	23.5 µg/kg
Fluorene	2.01 mg/kg	Aldrin	221 µg/kg
Indeno(1,2,3-cd)pyrene	0.54 mg/kg	alpha-BHC	137 µg/kg
Naphthalene	2.58 mg/kg	beta-BHC	111 µg/kg
Phenanthrene	0.462 mg/kg	gamma-BHC (Lindane)	578 µg/kg
Pyrene	4.17 mg/kg	Dieldrin	569 µg/kg
Total PAH 10 (VROM 10)	13.8 mg/kg	Endosulfan I	296 µg/kg
Total PAH16 (EPA 16)	25.1 mg/kg	Endrin	336 µg/kg
PCB 28	205 µg/kg	Hexachlorobenzene	689 µg/kg
PCB 52	263 µg/kg	Heptachlor	197 µg/kg
PCB 101	257 µg/kg	Heptachlor epoxide (beta)	104 µg/kg

RTC-CNS311-04 **Sewage sludge - Trace elements** 50 g

The Reference Values were determined by Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly nitric/hydrochloric acid mixture (Aqua Regia) in pressurised microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Reference values

Ag	18 mg/kg	Mn	232 mg/kg
Al	13200 mg/kg	Mo	10.4 mg/kg
As	3.3 mg/kg	Ni	19.2 mg/kg
Ba	347 mg/kg	Pb	25.4 mg/kg
Cd	1.74 mg/kg	V	12 mg/kg
Co	2.97 mg/kg	Zn	563 mg/kg
Cr	40.4 mg/kg	Chemical Oxygen Demand (COD)	771 mg/kg
Cu	402 mg/kg	Kjeldahl – Nitrogen (KN)	41.1 g/kg
Fe	22500 mg/kg	Phosphorus, Total (TP)	23.1 g/kg
Hg	1.71 mg/kg		

RTC-CRM018 **Sewage sludge (wet) - Metals** 50 g

Raw sewage sludge from a publicly owned treatment works (POTW), representative of a residential area with industrial influence. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010, except for arsenic (7060A), mercury (7471A), selenium (7740), and thallium (7841). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag	72.1 mg/kg	Cr	40.1 mg/kg	Na	1002 mg/kg
Al	22436 mg/kg	Cu	840 mg/kg	Ni	20.4 mg/kg
As	6.63 mg/kg	Fe	9903 mg/kg	Pb	120 mg/kg
Ba	1103 mg/kg	Hg	4.78 mg/kg	Se	8.38 mg/kg
Be	0.30 mg/kg	K	2657 mg/kg	Sr	420 mg/kg
Ca	49068 mg/kg	Mg	4302 mg/kg	V	39.2 mg/kg
Cd	5.57 mg/kg	Mn	200 mg/kg	Zn	1121 mg/kg
Co	3.22 mg/kg	Mo	10.5 mg/kg		

Indicative values for B, P, Si, Ammonia as N, TOC, Nitrogen (total Kjeldahl), Total solids

RTC-CRM029 **Sewage sludge - Metals** 50 g

Digested sewage sludge from a publicly owned treatment works (POTW), representative of a residential area with light industrial influenence. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050B and 6010B, except for Mercury (Method 7471). The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag	54.0 mg/kg	Cr	325 mg/kg	Na	1110 mg/kg
Al	18200 mg/kg	Cu	665 mg/kg	Ni	150 mg/kg
As	26.5 mg/kg	Fe	8640 mg/kg	Pb	277 mg/kg
Ba	806 mg/kg	Hg	4.17 mg/kg	Se	19.0 mg/kg
Be	4.35 mg/kg	K	2340 mg/kg	V	30.9 mg/kg
Ca	37300 mg/kg	Mg	3900 mg/kg	Zn	847 mg/kg
Cd	537 mg/kg	Mn	165 mg/kg		
Co	3.07 mg/kg	Mo	8.77 mg/kg		

Indicative values for Ammonia as N, B, Carbon (total Organic), Nitrogen (total Kjeldal), P, Sb, Si, Sr, Total solids

RTC-CRM031 **Sewage sludge - Metals** 40 g

The values were determined by USEPA SW846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The pH value was determined by USEPA SW 846 (3rd edition) Methods 9040, and 9045C.The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag	71.81 mg/kg	Na	1717.05 mg/kg
Al	18956.79 mg/kg	Ni	278.65 mg/kg
As	170.57 mg/kg	Pb	283.95 mg/kg
B	91.13 mg/kg	Sb	195.62 mg/kg
Ba	1287.71 mg/kg	Se	307.60 mg/kg
Be	70.20 mg/kg	Sn	217.98 mg/kg
Ca	44758.72 mg/kg	Sr	677.33 mg/kg

Cd	75.60 mg/kg		Tl	111.18 mg/kg	
Co	83.39 mg/kg		V	296.56 mg/kg	
Cr (total)	192.29 mg/kg		Zn	1304.19 mg/kg	
Cu	670.05 mg/kg		Ammonia as N	5532.31 mg/kg	
Fe	23571.68 mg/kg		Kjeldahl nitrogen total (TKN)	2.98 %	
Hg	9.11 mg/kg		pH	6.30	
K	4492.04 mg/kg		Phosphorus total	2.01 %	
Mg	7562.52 mg/kg		Residue total (TS)	92.84 %	
Mn	407.97 mg/kg		Residue-volatile	46.84 %	
Mo	68.75 mg/kg				

RTC-CRM055 — Sludge - Metals — 50 g

The values were determined by USEPA SW846 3050(Nitric Acid/Hot Plate), 3051(Nitric Acid/Microwave), 7000 series(AA), 6010(ICP) and Dutch standard methods (NEN 56..; 57..; 64..; and 66..; series) after total digestion using predominantly nitric/hydrochloric acid mixture (Aqua Regia) in pressurised microwave digester units. The sample is suitable for use by these, or other similar digestion and analytical procedures.

Certified values

Ag	18 mg/kg	Mn	232 mg/kg
Al	13200 mg/kg	Mg	9070 mg/kg
As	3.3 mg/kg	Mo	13.4 mg/kg
Ba	347 mg/kg	Ni	19.2 mg/kg
Ca	48000 mg/kg	Pb	25.4 mg/kg
Cd	1.74 mg/kg	Sb	3.33 mg/kg
Co	2.97 mg/kg	V	12 mg/kg
Cr	40.4 mg/kg	Zn	603 mg/kg
Cu	402 mg/kg	Chemical oxygen demand (COD)	771 mg/kg
Fe	22500 mg/kg	kjeldahl nitrogen (TkN)	41.1 g/kg
Hg	2.71 mg/kg	Phosphorus, total	23.1 g/kg

Indicative values for Ammonia as N, Be, K, Na, Se, total solids

NIST-2781 — Domestic sludge - Metals — 40 g

Certified values

As	7.82 mg/kg	Mo	46.7 mg/kg	Se	16.0 mg/kg
Cd	12.78 mg/kg	N	4.78 %	Zn	1273 mg/kg
Cu	627.4 mg/kg	Ni	80.2 mg/kg		
Hg	3.64 mg/kg	Pb	202.1 mg/kg		

Indicative values for Ag, Al, Ca, Cr, Fe, K, Mg, Na, P, Si, Ti

NIST-2782 — Industrial sludge - Leachable and total metals — 70 g

Obtained from an industrial site in northern New Jersey, USA where pharmaceutical research is carried out.

Certified values

As	166 mg/kg	Hg	1.10 mg/kg	Se	0.44 mg/kg
Cd	4.17 mg/kg	Mo	10.07 mg/kg	Zn	1254 mg/kg
Cr	109 mg/kg	Ni	154.1 mg/kg		
Cu	2594 mg/kg	Pb	574 mg/kg		

Indicative values for a wide range of additional elements

Plants

Code	Product	Unit

Trees and bushes

BCR-062 — Olive leaves (Olea europea) - Trace elements — 25 g

Certified values

Al	460 mg/kg	Hg	0.28 mg/kg	Zn	16.0 mg/kg
Cd	0.10 mg/kg	Mn	57.0 mg/kg		
Cu	46.6 mg/kg	Pb	25.0 mg/kg		

Indicative values for Ag, As, Au, B, Br, CaO, Ce, Cl, Co, Cr, Cs, Eu, F, Fe_xO_3, K_2O, La, MgO, Mo, N, Na_2O, Ni, P_2O_5, Rb, S, Sb, Sc, Se, Sn, Tb, TiO_2, Tl, U

BCR-100 — Beech leaves - Trace elements — 30 g

Certified values

Al	0.435 g/kg	Cr	0.0080 g/kg	N	26.29 g/kg
Ca	5.30 g/kg	K	9.94 g/kg	P	1.55 g/kg
Cl	1.49 g/kg	Mg	0.878 g/kg	S	2.69 g/kg

Indicative values for Cd, Cu, Fe, Mn, Mo, Pb, Zn

NIST-1575a — Pine needles - Trace elements and minor constituents — 50 g

Certified values

P	0.107 %	Ba	6.0 mg/kg	Fe	46 mg/kg
K	0.417 %	Cd	0.233 mg/kg	Hg	0.0399 mg/kg
Ca	0.25 %	Cl	421 mg/kg	Rb	16.5 mg/kg
Al	580 mg/kg	Cu	2 g/kg	Zn	38 mg/kg

NIST-1515 — Apple leaves - Trace elements — 50 g

Dried leaves from Golden Delicious and Rome varieties.

Certified values

Al	286 mg/kg	Fe	83 mg/kg	Ni	0.91 mg/kg
As	0.038 mg/kg	Hg	0.044 mg/kg	P	0.159 %
B	27 mg/kg	K	1.61 %	Pb	0.470 mg/kg
Ba	49 mg/kg	Mg	0.271 %	Rb	10.2 mg/kg

Ca ..... 1.526 %	Mn ..... 54 mg/kg	Se ..... 0.050 mg/kg
Cd ..... 0.013 mg/kg	Mo ..... 0.094 mg/kg	Sr ..... 25 mg/kg
Cl ..... 579 mg/kg	N ..... 2.25 %	V ..... 0.26 mg/kg
Cu ..... 5.64 mg/kg	Na ..... 24.4 mg/kg	Zn ..... 12.5 mg/kg

Indicative values for Au, Br, Ce, Co, Cr, Eu, Gd, I, La, Nd, S, Sb, Sc, Sm, Sn, Tb, Th, U, W, Yb

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NIST-1547 — Peach leaves - Trace elements — 50 g

Dried leaves from the Coronet variety.

Certified values

Al ..... 249 mg/kg	Fe ..... 218 mg/kg	Ni ..... 0.69 mg/kg
As ..... 0.060 mg/kg	Hg ..... 0.031 mg/kg	P ..... 0.137 %
B ..... 29 mg/kg	K ..... 2.43 %	Pb ..... 0.87 mg/kg
Ba ..... 124 mg/kg	Mg ..... 0.432 %	Rb ..... 19.7 mg/kg
Ca ..... 1.56 %	Mn ..... 98 mg/kg	Se ..... 0.120 mg/kg
Cd ..... 0.026 mg/kg	Mo ..... 0.060 mg/kg	Sr ..... 53 mg/kg
Cl ..... 360 mg/kg	N ..... 2.94 %	V ..... 0.37 mg/kg
Cu ..... 3.7 mg/kg	Na ..... 24 mg/kg	Zn ..... 17.9 mg/kg

Indicative values for Br, Ce, Co, Cr, Eu, Gd, I, La, Nd, S, Sb, Sc, Sm, Sn, Tb, Th, U, Yb

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NCS DC73348 — Bush branches and leaves - Trace elements — 35 g

Certified values

Ag ..... 0.027 µg/g	Eu ..... 0.037 µg/g	Rb ..... 4.2 µg/g
Al ..... 0.214 %	F ..... 24 µg/g	S ..... 0.32 %
As ..... 0.95 µg/g	Fe ..... 1020 µg/g	Sb ..... 0.045 µg/g
B ..... 34 µg/g	Hf ..... 0.14 µg/g	Sc ..... 0.31 µg/g
Ba ..... 19 µg/g	K ..... 0.85 %	Se ..... 0.184 µg/g
Be ..... 0.056 µg/g	La ..... 1.23 µg/g	Si ..... 0.58 %
Bi ..... 0.027 µg/g	Li ..... 2.4 µg/g	Sm 0.19µg/g
Br ..... 2.4 µg/g	Mg ..... 0.287 %	Sr ..... 345 µg/g
Ca ..... 2.22 %	Mn ..... 58 µg/g	Th ..... 0.37 µg/g
Cd ..... 0.14 µg/g	Mo ..... 0.26 µg/g	Ti ..... 95 µg/g
Ce ..... 2.4 µg/g	N ..... 1.20 %	V ..... 2.4 µg/g
Co ..... 0.39 µg/g	Na ..... 1.10 %	Yb ..... 0.063 µg/g
Cr ..... 2.3 µg/g	Ni ..... 1.7 µg/g	Zn ..... 20.6 µg/g
Cs ..... 0.27 µg/g	P ..... 830 µg/g	
Cu ..... 5.2 µg/g	Pb ..... 7.1 µg/g	

Indicative values for Cl, Nd, Tb, U, W, Y

NCS DC73349 — Bush branches and leaves - Trace elements — 35 g

Certified values

Ag ..... 0.049 µg/g	F ..... 23 µg/g	Rb ..... 4.5 µg/g
Al ..... 0.20 %	Fe ..... 1070 µg/g	S ..... 0.73 %
As ..... 1.25 µg/g	Hf ..... 0.14 µg/g	Sb ..... 0.095 µg/g
B ..... 38 µg/g	K ..... 0.92 %	Sc ..... 0.32 µg/g
Ba ..... 18 µg/g	La ..... 1.25 µg/g	Se ..... 0.12 µg/g
Be ..... 0.051 µg/g	Li ..... 2.6 µg/g	Si ..... 0.60 %
Bi ..... 0.023 µg/g	Mg ..... 0.48 %	Sm ..... 0.19 µg/g
Br ..... 3.0 µg/g	Mn ..... 61 µg/g	Sr ..... 246 µg/g
Ca ..... 1.68 %	Mo ..... 0.28 µg/g	Tb ..... 0.025 µg/g
Ce ..... 2.2 µg/g	N ..... 1.50 %	Th ..... 0.36 µg/g
Co ..... 0.41 µg/g	Na ..... 1.96 %	Ti ..... 95 µg/g
Cr ..... 2.6 µg/g	Nd ..... 1.0 µg/g	V ..... 2.4 µg/g
Cs ..... 0.27 µg/g	Ni ..... 1.7 µg/g	Y ..... 0.68 µg/g
Cu ..... 6.6 µg/g	P ..... 1000 µg/g	Yb ..... 0.063 µg/g
Eu ..... 0.039 µg/g	Pb ..... 47 µg/g	Zn ..... 56 µg/g

Indicative values for Cd, Cl, Dy, Gd, Hf, Ho, Lu, Pr, Sn, U, W

IC-CTA-OTL1 — Oriental tobacco leaves - Trace elements — 50 g

Produced in Poland from oriental tobacco leaves grown in Bulgaria, and air dried before processing.

Certified values

Al ..... 1740 µg/g	Cu ..... 14.1 µg/g	Rb ..... 9.79 µg/g
As ..... 0.539 µg/g	Eu ..... 0.038 µg/g	S ..... 7.32 mg/g
Ba ..... 84.2 µg/g	La ..... 1.44 µg/g	Se ..... 0.153 µg/g
Br ..... 9.28 µg/g	Li ..... 23 µg/g	Sm ..... 0.229 µg/g
Ca ..... 31.7 mg/g	K ..... 15.6 mg/g	Sr ..... 201 µg/g
Cd ..... 1.12 µg/g	Mg ..... 4470 µg/g	Tb ..... 0.032 µg/g
Ce ..... 2.69 µg/g	Mn ..... 412 µg/g	Th ..... 0.348 µg/g
Co ..... 0.879 µg/g	Ni ..... 6.32 µg/g	V ..... 3.08 µg/g
Cr ..... 2.59 µg/g	P ..... 2892 µg/g	Zn ..... 49.9 µg/g
Cs ..... 0.177 µg/g	Pb ..... 4.91 µg/g	

Uncertified values for trace elements Au, Cl, Fe, Hf, Hg, Mo, Na, Sb, Sc, U and Yb

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IC-CTA-VTL2 — Virginia tobacco leaves - Trace elements — 25 g

Produced in Poland from Virginia Tobacco leaves grown in Bulgaria, and air dried before processing.

Certified values

As ..... 0.969 µg/g	Fe ..... 1083 µg/g	Pb ..... 22.1 µg/g
Ba ..... 42.7 µg/g	Hf ..... 0.118 µg/g	Rb ..... 48.6 µg/g
Br ..... 4.3 µg/g	Hg ..... 0.048 µg/g	Sb ..... 0.312 µg/g
Ca ..... 3.60 wt %	K ..... 1.03 wt. %	Sm ..... 0.157 µg/g
Cd ..... 1.52 µg/g	La ..... 1.01 µg/g	Sr ..... 110 µg/g
Ce ..... 1.91 µg/g	Li ..... 23.0 µg/g	Tb ..... 0.022 µg/g
Cl ..... 0.743 wt %	Mg ..... 0.510 wt. %	Th ..... 0.378 µg/g
Co ..... 0.429 µg/g	Mn ..... 79.7 µg/g	U ..... 0.163 µg/g
Cr ..... 1.87 µg/g	Mo ..... 2.01 µg/g	V ..... 4.00 µg/g
Cs ..... 0.515 µg/g	Ni ..... 1.98 µg/g	W ..... 0.233 µg/g
Cu ..... 18.2 µg/g	P ..... 2204 µg/g	Zn ..... 43.3 µg/g

Informational values for Al, Eu, Na, S, Sc, Se, Si, Ta, Ti and Yb

BCR-683 — Beech wood - PCP and PAHs — 60 g

Compound	Certified value mg/kg	Uncertainty mg/kg
Pentachlorophenol	3.6	0.5
Benzo(a)anthracene	6.5	0.7
Benzo(a)pyrene	3.4	0.4
Benzo(e)pyrene	9.3	1.0
Benzo(b)fluoranthene	5.8	0.6
Benzo(k)fluoranthene	2.58	0.29

Grasses and crops

BCR-129 — Hay powder - Trace elements — 30 g

Certified values

Ca 6.4 g/kg	Mg 1.45 g/kg	S 3.16 g/kg
I 0.167 mg/kg	N 37.2 g/kg	Zn 0.0321 g/kg
K 33.8 g/kg	P 2.36 g/kg	Kjeldahl-N 34.2 g/kg

Indicative values for Cu, Fe, Mo, Se

IAEA-V-10 — Hay - Trace elements — 50 g

Certified values

Ba 6 mg/kg	Cu 9.4 mg/kg	P 2300 mg/kg
Br 8 mg/kg	Fe 185 mg/kg	Pb 1.6 mg/kg
Ca 21600 mg/kg	Hg 0.013 mg/kg	Rb 7.6 mg/kg
Cd 0.03 mg/kg	Mg 1360 mg/kg	Sc 0.014 mg/kg
Co 0.13 mg/kg	Mo 0.9 mg/kg	Sr 40 mg/kg
Cr 6.5 mg/kg	Ni 4 mg/kg	Zn 24 mg/kg

Indicative values for Al, K, Mn, Na

NIST-2695 — Vegetation - Fluoride — 2 x 25 g

Two samples of timothy grass with fluoride concentrations above natural levels.

Low level

Certified value

Fluoride 64.0 µg/g

High level

Certified value

Fluoride 277 µg/g

NIST-RM 8412 — Corn (Zea Mays) stalk - Trace elements — 34 g

Reference concentration values for major, minor and trace elements. Indicative values for additional elements.

NIST-RM 8413 — Corn (Zea Mays) kernel - Trace elements — 47 g

Reference values for Ca, Cu, K, Mg, Mn, Zn

IAEA-V-9 — Cellulose (cotton) - Trace elements — 25 g

Certified values

Ba 9 mg/kg	Hg 0.06 mg/kg	Ni 0.09 mg/kg
Ca 240 mg/kg	Mg 53 mg/kg	Pb 0.25 mg/kg
Cl 600 mg/kg	Mn 0.15 mg/kg	Sr 0.65 mg/kg
Cr 0.11 mg/kg	Mo 0.034 mg/kg	
Cu 0.59 mg/kg	Na 56 mg/kg	

Indicative values for Al, Br, Fe, V

BCR-402 — White clover - Trace elements — 25 g

Collected from an area with soil especially rich in selenium, resulting in a high selenium content

Certified values

As 0.093 mg/kg	Mo 6.93 mg/kg
Co 0.178 mg/kg	Se 6.70 mg/kg

Indicative values for Cr, Fe, Ni, Zn

IAEA-156 — Clover - Radioactive isotopes — 250 g

Recommended values

^{134}Cs 132 Bq/kg	^{40}K 657 Bq/kg
^{137}Cs 264 Bq/kg	^{90}Sr 14.8 Bq/kg

Aquatic plants

BCR-060 — Aquatic plant (Lagarosiphon major) - Trace elements — 25 g

Certified values

Al 4180 mg/kg	Hg 0.34 mg/kg	Zn 313 mg/kg
Cd 2.20 mg/kg	Mn 1759 mg/kg	
Cu 51.2 mg/kg	Pb 63.8 mg/kg	

Indicative values for Ag, As, Au, B, Br, CaO, Ce, Cl, Co, Cr, Cs, Eu, F, Fe_2O_3, K_2O, La, MgO, Mo, N, Na_2O, Ni, P_2O_5, Rb, S, Sb, Sc, Se, SiO_2, Sn, Ta, Tb, TiO_2, Tl, U, V, W

BCR-596 — Aquatic plant (trapa natans) - Chromium — 25 g

Certified value

Cr 36.3 mg/kg

BCR-414 — Plankton - Trace elements — 5 g

Certified values

As 6.82 µg/g	Hg 0.276 µg/g	Se 1.75 µg/g
Cd 0.383 µg/g	Mn 299 µg/g	V 8.10 µg/g
Cr 23.8 µg/g	Ni 18.8 µg/g	Zn 111.6 µg/g
Cu 29.5 µg/g	Pb 3.97 µg/g	

BCR-279 — Sea lettuce (ulva lactuca) - Trace elements — 35 g

Certified values

As 3.09 mg/kg	Cu 13.14 mg/kg	Se 0.593 mg/kg
Cd 0.274 mg/kg	Pb 13.48 mg/kg	Zn 51.3 mg/kg

Indicative values for B, C, Ca, Cl, Cr, Fe, Hg, I, K, Mg, Mn, N, P

BCR-670 — Aquatic plant (Lemna minor) - Trace elements — 10 g

Certified values

Ce 0.99 mg/kg	La 0.487 mg/kg	Tb 14.0 µg/kg
Dy 79 µg/kg	Lu 6.3 µg/kg	Th 0.159 mg/kg
Er 44.0 µg/kg	Nd 0.473 mg/kg	Tm 5.70 µg/kg
Eu 23.2 µg/kg	Pr 0.121 mg/kg	U 82 µg/kg
Gd 98 µg/kg	Sc 0.191 mg/kg	Y 0.46 mg/kg
Ho 15.8 µg/kg	Sm 94 µg/kg	Yb 40 µg/kg

Indicative values for : As, Cd, Cr, Cs, Cu, Fe, Mo, Ni, Pb, Sb, Se and Zn

IAEA-140OC — Fucus (sea plant homogenate) - Organic contaminants — 35 g

Recommended values

beta-HCH	4.6 ng/g	Benzo(a)anthracene	25 ng/g
4,4'-DDE	1.2 ng/g	Benzo(e)pyrene	26 ng/g
4,4'-DDD	0.72 ng/g	Benzo(a)pyrene	20 ng/g
4,4'-DDT	2.2 ng/g	Naphthalene	17 ng/g
Dieldrin	1.7 ng/g	Benzo(ghi)perylene	20 ng/g
Total Aliphatics	27000 ng/g	Indeno(1,2,3-cd)pyrene	33 ng/g
n-C17	890 ng/g	PCB 28	1.7 ng/g
Pristane	50 ng/g	PCB 31	1.8 ng/g
n-C18	99 ng/g	PCB 49	1.6 ng/g
Phytane	56 ng/g	PCB 52	3.8 ng/g
Sum n Alkanes (C14-C34)	11000 ng/g	PCB 101	2.4 ng/g
Phenanthrene	76 ng/g	PCB 105	0.49 ng/g
2-Methylphenanthrene	19 ng/g	PCB 118	1 ng/g
1-Methylphenanthrene	11 ng/g	PCB 138	1.7 ng/g
Anthracene	14 ng/g	PCB 149	1.2 ng/g
Chrysene	40 ng/g	PCB 153	1.7 ng/g
Fluoranthene	88 ng/g	PCB 156	0.17 ng/g
Pyrene	67 ng/g	PCB 180	0.43 ng/g
Benzo(k)fluoranthene	19 ng/g		

Information values for further chlorinated Pesticides, PAHs, PCBs

NIES03 — Chlorella (green algae) - Trace elements — 36 g

The material was prepared from spray-dried chlorella (Chlorella pyrenoidosa) obtained from a commercial source.

Certified values

Ca 0.49 %	Fe 0.185 %	Mn 69 µg/g
Co 0.87 µg/g	K 1.24 %	Sr 40 µg/g
Cu 3.5 µg/g	Mg 0.33 %	Zn 20.5 µg/g

Indicative values for Cd, P, Pb, Sc

NIST-4359 — Seaweed - Radioactivity — 300 g

NIST-4359 contains low levels of anthropogenic and natural radioactivity.

Certified values for ^{40}K, ^{137}Cs , ^{210}Pb , ^{210}Po , ^{228}Ra , ^{232}Th , ^{234}U , ^{235}U , ^{238}U , ^{238}Pu , ^{239}Pu , $^{239,240}Pu$, ^{241}Am

Indicative values for further isotopes

Miscellaneous

LGC7162 — Strawberry leaves - Trace elements — 20 g

The raw material was collected from a private farm in the Czech Republic. The mixture was cut and jet milled to pass a 250 µm nylon sieve. The resulting powder was homogenised, separated in 20 g portions and placed in 60 mL bottles.

Certified Values

Ca 1.53 g/100 g	Ba 107 mg/kg	Mo 0.32 mg/kg
Mg 0.377 g/100 g	Cd 0.17 mg/kg	Hg 0.027 mg/kg
N 2.01 g/100 g	Co 0.47 mg/kg	Ni 2.6 mg/kg
P 0.260 g/100 g	Cr 2.15 mg/kg	Sr 64 mg/kg
K 1.96 g/100 g	Fe 818 mg/kg	Zn 24 mg/kg
S 0.174 g/100 g	Pb 1.8 mg/kg	
As 0.28 mg/kg	Mn 171 mg/kg	

NIST-1573a — Tomato leaves - Trace elements — 50 g

Certified values

Al 598 mg/kg	Cu 4.70 mg/kg	P 0.216 %
As 0.112 mg/kg	Hg 0.034 mg/kg	Rb 14.89 mg/kg
B 33.3 mg/kg	K 2.70 %	Sb 0.063 mg/kg
Cd 1.52 mg/kg	Mn 246 mg/kg	Se 0.054 mg/kg
Ca 5.05 %	N 3.03 %	V 0.57 mg/kg
Co 0.57 mg/kg	Na 136 mg/kg	Zn 82 mg/kg
Cr 1.99 mg/kg	Ni 1.59 mg/kg	

Indicative values for Eu, Gd, Mg, Pb, S, Sc, Sm, Sr, Th, U

NIST-RM 8491	Sugar cane bagasse - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8492	Eastern cottonwood - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8493	Monterey pine - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
NIST-RM 8494	Wheat straw - Whole biomass feedstocks This Reference Material (RM) is intended primarily for use in evaluating analytical methods for the determination of summative composition of lignocellulosic materials. Reference concentration values for the following constituents are given: Ash, 95% Ethanol extractives, Acid soluble lignin, Acid insoluble lignin, Total lignin. Glucoronic acid, Arabinan, Xylan, Mannan, Galactan and Glucan.	50 g
BCR-482	Lichen - Trace elements Certified values Al 1103 mg/kg; As 0.85 mg/kg; Cd 0.56 mg/kg; Cr 4.12 mg/kg; Cu 7.03 mg/kg; Hg 0.48 mg/kg; Ni 2.47 mg/kg; Pb 40.9 mg/kg; Zn 100.6 mg/kg	15 g
IAEA-336	Lichen - Trace elements Recommended values As 0.63 mg/kg; Ba 6.4 mg/kg; Br 12.9 mg/kg; Ce 1.28 mg/kg; Co 0.29 mg/kg; Cs 0.11 mg/kg; Cu 3.6 mg/kg; Fe 430 mg/kg; Hg 0.2 mg/kg; K 1840 mg/kg; La 0.66 mg/kg; Mn 63 mg/kg; Na 320 mg/kg; Sb 0.073 mg/kg; Se 0.22 mg/kg; Sm 0.106 mg/kg; Sr 9.3 mg/kg; Th 0.14 mg/kg; Zn 30.4 mg/kg Information values for Al, Cd, Cl, Cr, Eu, Lu, Nd, P, Pb, Rb, Sc, Tb, V, Yb	20 g
BCR-273	Single cell protein The material consists of about 10 g single cell protein powder in a sealed argon filled ampoule. Certified values Ca 11.97 g/kg; Fe 0.156 mg/kg; K 2.22 g/kg; N 121.6 g/kg; P 26.8 g/kg Indicative values for Mg, N(Kjeldahl), Na, S	10 g
BCR-274	Single cell protein - Trace elements Certified values As 132 µg/kg; Cd 30 µg/kg; Co 39 µg/kg; Cu 13.1 µg/kg; Mn 51.9 mg/kg; Pb 44 µg/kg; Se 1.03 mg/kg; Zn 42.7 µg/g Indicative values for F, I, Ni	10 g

Ash, particulate and dust

Ash and particulate

Code	Product	Unit
LGC6180	Pulverised fuel ash - Extractable and total metals Collected from a disposal site near Camarthan Bay in South Wales, UK. Pulverised fuel ash is a waste product of coal-fired power stations. The extractable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995). Extractable metal content Assessed values Al 25700 mg/kg; As 91.7 mg/kg; Ba 676 mg/kg; Ca 6415 mg/kg; Co 18.5 mg/kg; Cr 43.8 mg/kg; Cu 67.9 mg/kg; K 6170 mg/kg; Mg 3660 mg/kg; Mn 259 mg/kg; Na 1230 mg/kg; Ni 48.4 mg/kg; Pb 48.6 mg/kg; V 105 mg/kg; Zn 115 mg/kg Indicative values for B, Be, Fe, Hg, Li, Sb, Se, Ti Total metal content Indicative values for Al, As, Ba, Be, Ca, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Ti, V, Zn	5 x 50 g
BCR-038	Fly ash from pulverised coal - Trace elements Certified values As 48.0 mg/kg; Cd 4.6 mg/kg; Cl 323 mg/kg; Co 53.8 mg/kg; Cr 192 mg/kg; Cu 176 mg/kg; F 538 mg/kg; Fe 33800 mg/kg; Hg 2.10 mg/kg; Mn 479 mg/kg; Na 3740 mg/kg; Pb 262 mg/kg; Zn 581 mg/kg Indicative values for Ni, Th, V	5 g

BCR-176R — Fly ash - Trace elements — 40 g

The CRM was prepared from a fly ash collected in the electrostatic filters of a city waste incineration plant.

Compound	Certified value (mg/kg)	Uncertainty (mg/kg)
As	54	5
Cd	226	19
Co	26.7	1.6
Cr	810	70
Cu	1050	70
Fe	13100	500
Ni	117	6
Pb	5000	500
Sb	850	50
Se	18.3	1.9
Tl	1.32	0.21
Zn	16800	400

BCR-128 — Fly ash on artificial filters - Trace elements (1 charged filter + 1 blank) — set

Intended for the verification of the calibration in XRF- and PIXE-analysis of (air borne) dust. A filter will normally last for at least ten measurements in a vacuum or twenty-five in air. The filter consists of a methyl cellulose filter mounted on polythene backed paper in a petrislide. Each foil contains a certified amount of BCR-038 (see above)

BCR-490 — Fly ash - Dioxins and furans — 30 g

Compound	Certified value µg/kg	Uncertainty µg/kg
2,3,7,8-TCDD	0.169	0.012
1,2,3,7,8-PeCDD	0.67	0.04
1,2,3,4,7,8-HxCDD	0.95	0.11
1,2,3,6,7,8-HxCDD	4.8	0.4
1,2,3,7,8,9-HxCDD	2.84	0.17
2,3,7,8-TCDF	0.90	0.05
1,2,3,7,8-PeCDF	1.71	0.12
2,3,4,7,8-PeCDF	1.8	0.11
1,2,3,4,7,8-HxCDF	2.37	0.12
1,2,3,6,7,8-HxCDF	2.64	0.14
1,2,3,7,8,9-HxCDF	0.34	0.05
2,3,4,6,7,8-HxCDF	2.47	0.17

BCR-615 — Fly ash - Dioxins and furans — 50 g

Certified values

2,3,7,8-T_4CDD (D48)	27 pg/g	2,3,4,7,8-P_5CDF (F114)	125 pg/g
1,2,3,7,8-P_5CDD (D54)	92 pg/g	1,2,3,4,7,8-H_6CDF (F118)	203 pg/g
1,2,3,4,7,8-H_6CDD (D66)	74 pg/g	1,2,3,6,7,8-H_6CDF (F121)	204 pg/g
1,2,3,6,7,8-H_6CDD (D67)	103 pg/g	1,2,3,7,8,9-H_6CDF (F124)	13.3 pg/g
1,2,3,7,8,9-H_6CDD (D70)	108 pg/g	2,3,4,6,7,8-H_6CDF (F130)	130 pg/g
1,2,3,4,6,7,8-H_7CDD (D73)	0.87×10^3 pg/g	1,2,3,4,6,7,8-H_7CDF (F131)	0.75×10^3 pg/g
O_8CDD (D75)	1.75×10^3 pg/g	1,2,3,4,7,8,9-H_7CDF (F134)	61 pg/g
2,3,7,8-T_4CDF (F83)	86 pg/g	O_8CDF (F135)	0.29×10^3 pg/g
1,2,3,7,8-P_5CDF (F94)	176 pg/g		

NIST-1633b — Coal fly ash - Trace and constituent elements — 75 g

Certified values

Al	15.5 %	Hg	0.141 mg/kg	S	0.2075 %
As	136.2 mg/kg	K	1.95 %	Se	10.26 mg/kg
Ba	709 mg/kg	Mg	0.482 %	Si	23.02 %
Ca	1.51 %	Mn	131.8 mg/kg	Sr	1041 mg/kg
Cd	0.784 mg/kg	Na	0.201 %	Th	25.7 mg/kg
Cr	198.2 mg/kg	Nd	120.6 mg/kg	Ti	0.75 %
Cu	112.8 mg/kg	Ni	102.6 mg/kg	U	8.79 mg/kg
Fe	7.78 %	Pb	68.2 mg/kg	V	295.7 mg/kg

Indicative values for Br, Ce, Co, Cs, Eu, Gd, Hf, Ho, La, Lu, Mo, P, Rb, Sb, Sc, Sm, Ta, Tb, Tl, Tm, W, Yb, Zn

NIST-2689 — Coal fly ash - Constituent elements — set (3)

Set of 3 x 10 g

Certified values

Al	12.94 %	K	2.20 %	P	0.10 %
Ca	2.18 %	Mg	0.61 %	Si	24.06 %
Fe(total)	9.32 %	Na	0.25 %	Ti	0.75 %

Indicative values for As, Ba, Be, Cd, Co, Cr, Cs, Eu, Hf, Hg, Mn, Ni, Pb, Sb, Sc, Se, Sr, Th, Zn

NIST-2690 — Coal fly ash - Constituent elements — set (3)

Set of 3 x 10 g

Certified values

Al	12.35 %	Mg	1.53 %	Si	25.85 %
Ca	5.71 %	Na	0.24 %	Ti	0.52 %
Fe(total)	3.57 %	P	0.52 %		
K	1.04 %	S	0.15 %		

Indicative values for As, Ba, Be, Cd, Co, Cr, Cs, Eu, Hf, Hg, Mn, Ni, Pb, Sb, Sc, Se, Sr, Th, Zn

NIST-2691 — Coal fly ash - Constituent elements — set (3)

Set of 3 x 10 g

Certified values

Al	9.81 %	Mg	3.12 %	Si	16.83 %
Ca	18.45 %	Na	1.09 %	Ti	0.90 %
Fe(total)	4.42 %	P	0.51 %		
K	0.34 %	S	0.83 %		

Indicative values for As, Ba, Be, Cd, Co, Cr, Cs, Eu, Hf, Hg, Mn, Ni, Pb, Sb, Sc, Se, Sr, Th, Zn

IC-CTA-FFA-1	Fine fly ash - Constituent elements	50 g

Collected from the 3rd zone electrofilters at Kozienice power station in Poland.

Certified values for elements

Al 14.87 wt. %	Hf 6.09 mg/kg	Si 22.48 wt %
As 53.6 mg/kg	La 60.7 mg/kg	Sm 10.9 mg/kg
Ba 835 mg/kg	Li 128 mg/kg	Sc 24.2 mg/kg
Ce 120 mg/kg	Lu 0.658 mg/kg	Sr 250 mg/kg
Cr 156 mg/kg	Mn 1066 mg/kg	Ta 2.11 mg/kg
Cu 158 mg/kg	Na 2.19 mg/kg	Tb 1.38 mg/kg
Dy 9.09 mg/kg	Nd 56.8 mg/kg	Th 29.4 mg/kg
Er 4.52 mg/kg	Ni 99.0 mg/kg	Tm 0.705 mg/kg
Eu 2.39 mg/kg	P 725 mg/kg	W 10.5 mg/kg
F 198 mg/kg	Pb 369 mg/kg	Y 45.0 mg/kg
Fe 4.89 wt. %	Rb 185 mg/kg	Yb 4.24 mg/kg
Gd 10.0 mg/kg	Sb 17.6 mg/kg	Zn 569 mg/kg

Informational values for Be, Ca, Cd, Ga, In, K, Mg, Mo, Se

NCS ZC78006	Coal fly ash - Fluoride	50 g

Certified value

F 114±14 µg/g

NCS ZC78002	Coal fly ash - PAHs	10 g

Certified values

Anthracene 2.0 µg/g	Phenanthrene 7.1 µg/g
Benzo(a)pyrene 1.3 µg/g	Pyrene 7 µg/g
Fluoranthene 7.4 µg/g	

NCS FC82012	Coal ash - Constituents	30 g

Certified values

SiO_2 46.77 %	MgO 1.73 %	Na_2O 1.36 %
Al_2O_3 14.96 %	SO_3 3.94 %	P_2O_5 0.50 %
Fe_2O_3 5.51 %	TiO_2 0.63 %	
CaO 21.37 %	K_2O 1.41 %	

NCS FC82013	Coal ash - Constituents	30 g

Certified values

SiO_2 52.35 %	MgO 1.07 %	Na_2O 0.49 %
Al_2O_3 19.84 %	SO_3 1.83 %	P_2O_5 0.28 %
Fe_2O_3 17.51 %	TiO_2 0.86 %	
CaO 4.05 %	K_2O 0.92 %	

NCS FC82014	Coal ash - Constituents	30 g

Certified values

SiO_2 59.98 %	MgO 1.08 %	Na_2O 0.22 %
Al_2O_3 31.70 %	SO_3 0.28 %	P_2O_5 0.28 %
Fe_2O_3 7.80 %	TiO_2 1.17 %	
CaO 1.44 %	K_2O 1.36 %	

NCS FC82015	Coal ash - Constituents	30 g

Certified values

SiO_2 62.93 %	MgO 0.90 %	Na_2O 1.18 %
Al_2O_3 17.88 %	SO_3 1.20 %	P_2O_5 0.85 %
Fe_2O_3 6.04 %	TiO_2 0.79 %	
CaO 6.11 %	K_2O 0.87 %	

NCS FC82016	Coal ash - Constituents	30 g

Certified values

SiO_2 50.08 %	MgO 0.76 %	Na_2O 0.41 %
Al_2O_3 33.78 %	SO_3 1.25 %	P_2O_5 0.18 %
Fe_2O_3 4.36 %	TiO_2 1.77 %	
CaO 5.50 %	K_2O 0..87 %	

NCS FC82017	Coal ash - Constituents	30 g

Certified values

SiO_2 31.24 %	MgO 1.17 %	Na_2O 0.46 %
Al_2O_3 10.00 %	SO_3 2.76 %	P_2O_5 0.04 %
Fe_2O_3 8.16 %	TiO_2 0.56 %	
CaO 42.40 %	K_2O 1.28 %	

NCS ZC78001	Coal fly ash - Metals	30 g

Certified values

As 11.4 µg/g	Cr 60 µg/g	Pb 33.8 µg/g
Be 10.7 µg/g	Cu 53 µg/g	Se 1.13 µg/g
Cd 0.16 µg/g	Fe 7.65 %	V 95 µg/g
Co 33.2 µg/g	Mn 1178 µg/g	Zn 61 µg/g

Indicative values for Ba, Hg

RTC-CRM001	Fly ash - Trace elements	100 g

Sample from a power plant in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010. This sample is suitable for use by these and other similar methods.

Certified values

Ba 428 mg/kg	Cu 40,7 mg/kg
Cr 29,1 mg/kg	Ni 19,8 mg/kg

RTC-CRM012 — Industrial incineration ash - Metals — 100 g

Ash material from an industrial incineration facility located in the Western United States. The certified values were determined by USEPA SW846 (3rd edition) Methods 3050 and 6010. The sample is suitable for other 3000-series metals digestion procedures and 7000-series spectroscopic methods.

Certified values

Ag 54,8 mg/kg	Cr 162000 mg/kg	Mn 202 mg/kg
Al 2160 mg/kg	Cu 3020 mg/kg	Na 29200 mg/kg
Ba 18,7 mg/kg	Fe 28700 mg/kg	Ni 13300 mg/kg
Cd 362 mg/kg	K 73300 mg/kg	Pb 120 mg/kg
Ca 2110 mg/kg	Mg 1510 mg/kg	Zn 635 mg/kg

Indicative values for Co, V

NIST-1975 — Diesel particulate extract - PAHs — 4 x 1.2 mL

Certified Concentrations for Selected PAHs

	Mass Fraction mg/kg		Mass Fraction mg/kg
Phenanthrene	8.00 ± 0.20	Triphenylene	2.38 ± 0.10
Fluoranthene	13.5 ± 0.6	Benzo(b)fluoranthene	3.20 ± 0.10
Benzo(a)anthracene	0.092 ± 0.015	Benzo(k)fluoranthene	0.174 ± 0.050
Chrysene	1.95 ± 0.07	Benzo(e)pyrene	0.268 ± 0.023

Reference Concentrations for PAHs, Nitro-substituted PAHs, Extract Residue Mass, Mutagenicity (revertants/ µg of organic extract).

NIST-2975 — Diesel particulate matter - PAHs — 1 g

Certified Concentrations for Selected PAHs

	Mass Fraction mg/kg		Mass Fraction mg/kg
Phenanthrene	17.0 ± 2.8	Benzo(j)fluoranthene	0.82 ± 0.11
Fluoranthene	26.6 ± 5.1	Benzo(k)fluoranthene	0.678 ± 0.076
Pyrene	0.90 ± 0.24	Benzo(e)pyrene	1.11 ± 0.10
Benzo(a)anthracene	0.317 ± 0.066	Benzo(a)pyrene	0.0522 ± 0.043
Chrysene	4.56 ± 0.16	Benzo(ghi)perylene	0.498 ± 0.044
Triphenylene	5.22 ± 0.20		

Reference Concentrations for PAHs, Total Extractable Mass and Particle-Size Characteristics.

NIST-1650b — Diesel particulate matter - PAHs and nitro-PAHs — 200 mg

Certified concentrations for selected PAHs in NIST-1650b

Naphthalene	5.07 ± 0.43 mg/kg	Triphenylene	9.17 ± 0.94 mg/kg
1-Methylnaphthalene	1.51 ± 0.12 mg/kg	Benzo(a)fluoranthene	0.370 ± 0.029 mg/kg
2-Methylnaphthalene	3.05 ± 0.56 mg/kg	Benzo(b)fluoranthene	6.77 ± 0.84 mg/kg
Phenanthrene	69.5 ± 1.9 mg/kg	Benzo(j)fluoranthene	3.24 ± 0.42 mg/kg
Anthracene	7.67 ± 0.47 mg/kg	Benzo(k)fluoranthene	2.37 ± 0.21 mg/kg
1-Methylphenanthrene	28.3 ± 1.5 mg/kg	Benzo(a)pyrene	1.17 ± 0.09 mg/kg
2-Methylphenanthrene	70.7 ± 2.7 mg/kg	Benzo(e)pyrene	6.30 ± 0.50 mg/kg
3-Methylphenanthrene	55.1 ± 1.9 mg/kg	Perylene	0.165 ± 0.032 mg/kg
9-Methylphenanthrene	35.1 ± 1.9 mg/kg	Benzo(ghi)perylene	5.91 ± 0.18 mg/kg
Fluoranthene	47.3 ± 0.8 mg/kg	Indeno(1,2,3-cd)pyrene	4.44 ± 0.28 mg/kg
Pyrene	43.4 ± 1.6 mg/kg	Dibenz(a,c)anthracene	0.438 ± 0.043 mg/kg
Benzo(ghi)fluoranthene	10.8 ± 1.0 mg/kg	Dibenz(a,h)anthracene	0.365 ± 0.071 mg/kg
Benzo(c)phenanthrene	2.51 ± 0.29 mg/kg	Dibenz(a,j)anthracene	0.387 ± 0.051 mg/kg
Benz(a)anthracene	6.18 ± 0.30 mg/kg	Benzo(b)chrysene	0.290 ± 0.020 mg/kg
Chrysene	13.3 ± 1.1 mg/kg	Picene	0.499 ± 0.061 mg/kg

Certified concentrations for selected nitro-PAHs in NIST-1650b

9-Nitroanthracene	5890 ± 310 µg/kg	6-Nitrochrysene	45.5 ± 1.9 µg/kg
1-Nitropyrene	18200 ± 200 µg/kg	6-Nitrobenzo(a)pyrene	1390 ± 100 µg/kg
7-Nitrobenz(a)anthracene	967 ± 42 µg/kg	1,6-Dinitropyrene	84.0 ± 3.0 µg/kg

Reference values for selected PAHs, Nitro-PAHs.
Indicative values for for particle-size characteristics and specific surface area

NIES08 — Vehicle exhaust particulates - Major and minor constituents and trace elements — 7 g

The NIES CRM " Vehicle Exhaust Particulates" was prepared from particulate matter collected from electrostatic precipitators in huge ventilators connected to a highway tunnel.

Certified values

Al 0,33±0,02 %	As 2,6±0,2 µg/g	Pb 219±9 µg/g
Ca 0,53±0,02 %	Cd 1,1±0,1 µg/g	Sb 6,0±0,4 µg/g
K 0,115±0,008 %	Co 3,3±0,3 µg/g	Sr 89±3 µg/g
Mg 0,101±0,005 %	Cr 25,5±1,5 µg/g	V 17±2 µg/g
Na 0,192±0,008 %	Cu 67±3 µg/g	
Zn 0,104±0,005 %	Ni 18,5±1,5 µg/g	

Dust and Fumes

BCR-605 — Urban dust - Trimethyllead — 15 g

Certified value

Trimethyllead 7.9 µg/kg

BCR-723 — Road dust - Palladium, platinum and rhodium — 25 g

Certified values

Pd 6.1 µg/kg	Pt 81.3 µg/kg	Rh 12.8 µg/kg

NIST-1648A — Urban particulate matter - Constituent elements — 2 g

Certified values

Al	3.42 %	Cr	402 mg/kg	Pb	0.655 %
As	115 mg/kg	Cu	610 mg/kg	Rb	51.0 mg/kg
Br	502 mg/kg	Fe	3.92 %	S	5.51 %
Ca	5.84 %	K	1.056 %	Sb	45.4 mg/kg
Cd	75 mg/kg	Mg	0.813 %	Sr	215 mg/kg
Ce	54.6 mg/kg	Mn	790 mg/kg	Ti	4021 mg/kg
Cl	4543 mg/kg	Na	4240 mg/kg	V	127 mg/kg
Co	17.93 mg/kg	Ni	81.1 mg/kg	Zn	4800 mg/kg

Indicative values for Ag, B, Cs, La, Se, Si, Sm and W

BCR-553-4 — Formaldehyde-2,4-dinitrophenyl-hydrazone on filter — set

Set of 2 x BCR 553 & 1 x BCR 554 (blank)

BCR-553 (spiked filter)

Certified value (per filter)

Formaldehyde-2,4-dinitrophenylhydrazone ..... 4.96 µg

BCR-554 (blank filter)

Certified value (per filter)

Formaldehyde-2,4-dinitrophenylhydrazone ..... < 0.1µg

BCR-112, BCR-562, BCR-555

Council directive 80/1107/EEC and national legislation prescribes that the exposure of each individual worker to certain potentially harmful vapours has to be monitored periodically. This requires "personal monitoring" where a tube, containing a suitable sorbing agent, is attached to the worker's clothes. After a set sampling period any harmful vapours absorbed onto the material in the tube are desorbed, either by heating or solvent extraction, and determined using gas chromatography.

BCR-112 — Tenax charged tube - Aromatic hydrocarbons — tube

Certified values (per tube)

Benzene	1.053 µg	Toluene	1.125 µg	m-Xylene	1.043 µg

BCR-562 — Charcoal charged tube - Aromatic hydrocarbons — set

Set of 20 tubes (6 charged, 14 blanks)

Certified values (per tube)

Benzene	15.0 µg	m-Xylene	96.4 µg
Toluene	147 µg	o-Xylene	93.0 µg

BCR-555 — Tenax charged tube - Chlorinated hydrocarbons — tube

Stainless steel tube of 9.0 cm length and 0.25 inches outer diameter containing a single section of 250 mg TENAX GR, charged with 4 chlorinated hydrocarbons and toluene at the levels shown above.

Certified values

Dichloromethane	320 ng	Trichloroethylene	390 ng	Toluene	57 ng
1,1,1-Trichloroethane	370 ng	Perchloroethylene	327 ng		

RTC-CRM014 — Baghouse dust - Trace metals — 50 g

Certified values

Cd	510 mg/kg	Cr	2230 mg/kg	Pb	1910 mg/kg

NIST-1878a — Alpha quartz — 5 g

One form of respirable silica

Certified value

Crystalline α–quartz ..... 100.00 %

NIST-1879a — Cristabolite — 5 g

One form of respirable silica

Certified value

Crystalline cristabolite ..... 96.6 %

NIST-2585 — House dust - Organic contaminants — 10 g

This Standard Reference Material® (SRM®) is a house dust intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and polybrominated diphenyl ether (PBDE) congeners in house dust and similar matrices.

Certified Concentrations for Selected PAHs

	Mass Fraction (dry-mass basis)		Mass Fraction (dry-mass basis)
Naphthalene	266 ± 8 µg/kg	Benzo[j]fluoranthene	1320 ± 110 µg/kg
Dibenzothiophene	109 ± 8 µg/kg	Benzo[k]fluoranthene	1330 ± 70 µg/kg
Phenanthrene	1920 ± 20 µg/kg	Benzo[a]fluoranthene	74.5 ± 8.1 µg/kg
Anthracene	96.0 ± 5.2 µg/kg	Benzo[e]pyrene	2160 ± 80 µg/kg
4H-cyclopenta[def]phenanthrene	117 ± 10 µg/kg	Benzo[a]pyrene	1140 ± 10 µg/kg
3-Methylphenanthrene	293 ± 36 µg/kg	Perylene	387 ± 23 µg/kg
2-Methylphenathrene	352 ± 40 µg/kg	Benzo[ghi]perylene	2280 ± 40 µg/kg
9-Methylphenanthrene	205 ± 16 µg/kg	Indeno[1,2,3-cd]pyrene	2080 ± 100 µg/kg
1-Methylphenanthrene	197 ± 29 µg/kg	Dibenz[a,j]anthracene	267 ± 9 µg/kg
Fluoranthene	4380 ± 100 µg/kg	Dibenz[a,c]anthracene	183 ± 25 µg/kg
Pyrene	3290 ± 30 µg/kg	Dibenz[a,h]anthracene	301 ± 50 µg/kg
Benzo[ghi]fluoranthene	317 ± 11 µg/kg	Benzo[b]chrysene	182 ± 6 µg/kg
Benzo[c]phenanthrene	288 ± 10 µg/kg	Picene	413 ± 15 µg/kg
Benz[a]anthracene	1160 ± 54 µg/kg	Coronene	603 ± 38 µg/kg
Chrysene	2260 ± 60 µg/kg	Dibenzo[b,k]fluoranthene	596 ± 22 µg/kg
Triphenylene	589 ± 17 µg/kg	Dibenzo[a,e]pyrene	477 ± 67 µg/kg
Benzo[b]fluoranthene	2700 ± 90 µg/kg		

Certified Concentrations for Selected PCB Congeners

Mass Fraction (dry-mass basis)

PCB	18 (2,2',5-Trichlorobiphenyl)	12.8 ± 1.0 µg/kg
PCB	28 (2,4,4'-Trichlorobiphenyl)	13.4 ± 0.5 µg/kg
PCB	31 (2,4',5-Trichlorobiphenyl)	14.0 ± 0.5 µg/kg
PCB	44 (2,2'3,5'-Tetrachlorobiphenyl)	18.1 ± 1.9 µg/kg
PCB	52 (2,2',5,5'-Tetrachlorobiphenyl	21.8 ± 1.9 µg/kg
PCB	56 (2,3,3',4-Tetrachlorobiphenyl)	4.42 ± 0.28 µg/kg
PCB	70 (2,3',4',5-Tetrachlorobiphenyl)	13.1 ± 1.2 µg/kg
PCB	74 (2,4,4',5-Tetrachlorobiphenyl)	5.22 ± 0.51 µg/kg
PCB	87 (2,2',3,4,5'-Pentachlorobiphenyl)	16.6 ± 0.8 µg/kg
PCB	92 (2,2',3,5,5'-Pentachlorobiphenyl)	5.48 ± 0.72 µg/kg
PCB	95 (2,2',3,5',6-Pentachlorobiphenyl)	22.7 ± 2.6 µg/kg
PCB	99 (2,2',4,4',5-Pentachlorobiphenyl)	11.6 ± 0.4 µg/kg
PCB	101 (2,2',4,5,5'-Pentachlorobiphenyl)	29.8 ± 2.3 µg/kg
PCB	105 (2,3,3',4,4'-Pentachlorobiphenyl	13.2 ± 1.4 µg/kg
PCB	107 (2,3,3',4,5'-Pentachlorobiphenyl)	4.14 ± 0.47 µg/kg
PCB	110 (2,3,3',4',6-Pentachlorobiphenyl	28.1 ± 3.7 µg/kg
PCB	118 (2,3',4,4',5-Pentachlorobiphenyl)	26.3 ± 1.7 µg/kg
PCB	138 (2,2',3,4,4',5'-Hexachlorobiphenyl)	27.6 ± 2.1 µg/kg
PCB	146 (2,2',3,4',5,5'-Hexachlorobiphenyl)	4.89 ± 0.38 µg/kg
PCB	149 (2,2',3,4',5',6-Hexachlorobiphenyl)	24.4 ± 1.9 µg/kg
PCB	151 (2,2',3,5,5',6-Hexachlorobiphenyl)	6.92 ± 0.64 µg/kg
PCB	153 (2,2',4,4',5,5'-Hexachlorobiphenyl)	40.2 ± 1.8 µg/kg
	132 (2,2',3,3, ',4,6'-Hexachlorobiphenyl)	
PCB	158 (2,3,3',4,4',6-Hexachlorobiphenyl)	4.50 ± 0.43 µg/kg
PCB	163 (2,3,3',4',5,6-Hexachlorobiphenyl)	7.2 ± 1.2 µg/kg
PCB	170 (2,2',3,3',4,4',5-Heptachlorobiphenyl)	8.8 ± 1.0 µg/kg
PCB	174 (2,2',3,3',4,5,6'-Heptachlorobiphenyl)	8.83 ± 0.47 µg/kg
PCB	180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl)	18.4 ± 3.2 µg/kg
PCB	183 (2,2',3,4,4',5',6-Heptachlorobiphenyl)	5.27 ± 0.39 µg/kg
PCB	187 (2,2',3,4',5,5',6-Heptachlorobiphenyl)	11.3 ± 1.4 µg/kg
PCB	206 (2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl)	3.81 ± 0.13 µg/kg

Certified Concentrations for Selected Chlorinated Pesticides

Mass Fraction (dry-mass basis)	Mass Fraction (dry-mass basis)	Mass Fraction (dry-mass basis)
4,4'-DDE ..... 261 ± 2 µg/kg	2,4'-DDT ..... 44.5 ± 3.9 µg/kg	
4,4'-DDD ..... 27.3 ± 0.8 µg/kg	4,4'-DDT ..... 111 ± 23 µg/kg	

Certified Concentrations for Selected PBDE Congeners

Mass Fraction (dry-mass basis)

PBDE	17 (2,2',4-Tribromodiphenyl ether)	11.5 ± 1.2 µg/kg
PBDE	28 (2,4,4'-Tribromodiphenyl ether)	46.9 ± 4.4 µg/kg
	33 (2',3,4-Tribromodiphenyl ether)	
PBDE	47 (2,2',4,4'-Tetrabromodiphenyl ether)	497 ± 46 µg/kg
PBDE	49 (2,2',4,5'-Tetrabromodiphenyl ether)	53.5 ± 4.2 µg/kg
PBDE	85 (2,2',3,4,4'-Pentabromodiphenyl ether)	43.8 ± 1.6 µg/kg
PBDE	99 (2,2',4,4',5-Pentabromodiphenyl ether)	892 ± 53 µg/kg
PBDE	100 (2,2',4,4',6-Pentabromodiphenyl ether)	145 ± 11 µg/kg
PBDE	138 (2,2',3,4,4',5'-Hexabromodiphenylether)	15.2 ± 2.0 µg/kg
PBDE	153 (2,2',4,4',5,5'-Hexabromodiphenyl ether)	119 ± 1 µg/kg
PBDE	154 (2,2',4,4',5,6'-Hexabromodiphenyl ether)	83.5 ± 2.0 µg/kg
PBDE	155 (2,2',4,4',6,6'-Hexabromodiphenyl ether)	3.94 ± 0.34 µg/kg
PBDE	183 (2,2',3,4,4',5',6-Heptabromodiphenyl ether)	43.0 ± 3.5 µg/kg
PBDE	203 (2,2',3,4,4',5,6',6-Octabromodiphenyl ether)	36.7 ± 6.4 µg/kg
PBDE	206 (2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether)	271 ± 42 µg/kg
PBDE	209 (Decabromodiphenyl ether)	2510 ± 190 µg/kg

Reference values for PAHs, PCBs, Pesticides, PBDEs

NIST-2583 — Indoor dust - Trace elements — 8 g

Certified values

As ..... 7.0 mg/kg	Cr ..... 80 mg/kg	Pb ..... 85.9 mg/kg
Cd ..... 7.3 mg/kg	Hg ..... 1.56 mg/kg	

NIST-2584 — Indoor dust - Trace elements — 8 g

Collected from vacuum cleaner bags used in the cleaning of interior dwelling places

Certified values

As ..... 17.4 mg/kg	Cr ..... 135.0 mg/kg	Pb ..... 9761 mg/kg
Cd ..... 10.0 mg/kg	Hg ..... 5.20 mg/kg	

Indicative values for a wide range of additional elements