

## 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
	Co ..... 12.1 mg/kg	Mn ..... 970 mg/kg
	Cu ..... 69.7 mg/kg	Ni ..... 64.5 mg/kg
	Pb ..... 40.2 mg/kg	
	Indicative values for Cr, Zn	
	<u>Aqua regia soluble content</u>	
	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	
ERM-CC690	Calcareous soil - Trace elements	70 g
	Certified values	
	Ce ..... 49.1 mg/kg	Nd ..... 19.1 mg/kg
	Dy ..... 2.90 mg/kg	Sc ..... 7.81 mg/kg
	Gd ..... 3.25 mg/kg	Sm ..... 3.50 mg/kg
	La ..... 24.4 mg/kg	Tb ..... 0.503 mg/kg
	Th ..... 7.64 mg/kg	Tm ..... 0.232 mg/kg
	U ..... 1.90 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	
<b>New</b> ERM-CC141	Loam soil - Trace elements	24 g
	Certified values	
	Total content	
	As ..... 9.9 ± 1.5 mg/kg	Cr ..... 86 ± 8 mg/kg
	Cd ..... 0.35 ± 0.05 mg/kg	Cu ..... 14.4 ± 1.4 mg/kg
	Co ..... 8.5 ± 0.5 mg/kg	Mn ..... 464 ± 18 mg/kg
	Ni ..... 26.4 ± 2.4 mg/kg	Pb ..... 41 ± 4 mg/kg
	Zn ..... 57 ± 4 mg/kg	
	<u>Aqua regia extractable content according to ISO 11466</u>	
	As ..... 7.5 ± 1.4 mg/kg	Cr ..... 31 ± 4 mg/kg
	Cd ..... 0.25 ± 0.04 mg/kg	Cu ..... 12.4 ± 0.9 mg/kg
	Co ..... 7.9 ± 0.9 mg/kg	Mn ..... 387 ± 17 mg/kg
	Ni ..... 21.9 ± 1.6 mg/kg	Pb ..... 32.2 ± 1.4 mg/kg
	Zn ..... 50 ± 4 mg/kg	
BCR-700	Organic rich soil - Extractable trace elements	40 g
	Certified values	
	<u>EDTA</u>	
	Cd ..... 65.2 mg/kg	Cu ..... 89.4 mg/kg
	Cr ..... 10.1 mg/kg	Ni ..... 53.2 mg/kg
	Pb ..... 103 mg/kg	Zn ..... 510 mg/kg
	<u>Acetic acid</u>	
	Cd ..... 67.5 mg/kg	Cu ..... 36.3 mg/kg
	Cr ..... 19 mg/kg	Ni ..... 99 mg/kg
	Pb ..... 4.85 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.

## Soils

Code	Product	Unit		
IRMM-443-1	<b>EUROSOIL 1</b>	200 g		
	Parameter	Value	Parameter	Value
	$K_f$ of Atrazine <sup>(1)</sup> .....	7.0	1/n of 2,4-D <sup>(1)</sup> .....	0.9
	1/n of Atrazine <sup>(1)</sup> .....	0.91	pH in Water <sup>(2)</sup> .....	6.21
	$K_f$ of 2,4-D <sup>(1)</sup> .....	2.5	pH in 0.01M CaCl <sub>2</sub> <sup>(2)</sup> .....	5.65
	Non-certified indicative values			
	Parameter	Value	Parameter	Value
	$K_f$ of Lindane <sup>(1)</sup> .....	68	Organic carbon content.....	32.7 g/kg
	1/n of Lindane <sup>(1)</sup> .....	0.9	Total nitrogen content.....	3.4 g/kg
	Total carbon content.....	33.9 g/kg		
<sup>(1)</sup> Determination according OECD Test guideline 106				
<sup>(2)</sup> Measurement based on ISO Standard 10390				
IRMM-443-2	<b>EUROSOIL 2</b>	200 g		
	Certified values			
	Parameter	Value	Parameter	Value
	$K_f$ of Atrazine <sup>(1)</sup> .....	2.7	$K_f$ of Lindane <sup>(1)</sup> .....	48
	1/n of Atrazine <sup>(1)</sup> .....	0.93	1/n of Lindane <sup>(1)</sup> .....	0.98
	$K_f$ of 2,4-D <sup>(1)</sup> .....	0.99	pH in Water <sup>(2)</sup> .....	8.1
	1/n of 2,4-D <sup>(1)</sup> .....	0.96	pH in 0.01M CaCl <sub>2</sub> <sup>(2)</sup> .....	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			
<sup>(1)</sup> Determination according OECD Test guideline 106				
<sup>(2)</sup> Measurement based on ISO 10390				
IRMM-443-3	<b>EUROSOIL 3</b>	200 g		
	Certified values			
	Parameter	Value	Parameter	Value
	$K_f$ of Atrazine <sup>(1)</sup> .....	2.4	1/n of 2,4-D <sup>(1)</sup> .....	0.93
	1/n of Atrazine <sup>(1)</sup> .....	0.91	pH in Water <sup>(2)</sup> .....	6.2
	$K_f$ of 2,4-D <sup>(1)</sup> .....	1.31	pH in 0.01M CaCl <sub>2</sub> <sup>(2)</sup> .....	5.5
	Non-certified indicative values			
	Parameter	Value	Parameter	Value
	$K_f$ of Lindane <sup>(1)</sup> .....	36	Organic carbon content.....	30.1 g/kg
	1/n of Lindane <sup>(1)</sup> .....	1.0	Total nitrogen content.....	3.1 g/kg
Total carbon content.....	32.5 g/kg			
<sup>(1)</sup> Determination according OECD Test guideline 106				
<sup>(2)</sup> Measurement based on ISO 10390				
IRMM-443-4	<b>EUROSOIL 4</b>	200 g		
	Certified values			
	Parameter	Value	Parameter	Value
	$K_f$ of Atrazine <sup>(1)</sup> .....	0.7	$K_f$ of Lindane <sup>(1)</sup> .....	8.3
	1/n of Atrazine <sup>(1)</sup> .....	0.87	1/n of Lindane <sup>(1)</sup> .....	0.96
	$K_f$ of 2,4-D <sup>(1)</sup> .....	0.39	pH in Water <sup>(2)</sup> .....	7.5
	1/n of 2,4-D <sup>(1)</sup> .....	0.86	pH in 0.01M CaCl <sub>2</sub> <sup>(2)</sup> .....	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			
<sup>(1)</sup> Determination according OECD Test guideline 106				
<sup>(2)</sup> Measurement based on ISO 10390				
IRMM-443-5	<b>EUROSOIL 5</b>	200 g		
	Certified values			
	Parameter	Value	Parameter	Value
	$K_f$ of Atrazine <sup>(1)</sup> .....	13	1/n of 2,4-D <sup>(1)</sup> .....	0.9
	1/n of Atrazine <sup>(1)</sup> .....	0.9	pH in Water <sup>(2)</sup> .....	4.1
	$K_f$ of 2,4-D <sup>(1)</sup> .....	18	pH in 0.01M CaCl <sub>2</sub> <sup>(2)</sup> .....	3.1
	Non-certified indicative values			
	Parameter	Value	Parameter	Value
	$K_f$ of Lindane <sup>(1)</sup> .....	99	Organic carbon content.....	59.6 g/kg
	1/n of Lindane <sup>(1)</sup> .....	0.9	Total nitrogen content.....	2.3 g/kg
Total carbon content.....	64.3 g/kg			
<sup>(1)</sup> Determination according OECD Test guideline 106				
<sup>(2)</sup> Measurement based on ISO 10390				

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Code	Product	Unit
IRMM-443-7	EUROSOIL 7 Certified values Parameter Value Parameter Value K <sub>f</sub> of Atrazine <sup>(1)</sup> .....4.8 1/n of 2,4-D <sup>(1)</sup> ..... 0.88 1/n of Atrazine <sup>(1)</sup> .....0.92 pH in Water <sup>(2)</sup> ..... 5.1 K <sub>f</sub> of 2,4-D <sup>(1)</sup> .....8.2 pH in 0.01M CaCl <sub>2</sub> <sup>(2)</sup> ..... 4.3 Non-certified indicative values Parameter Value Parameter Value K <sub>f</sub> of Lindane <sup>(1)</sup> .....58 Organic carbon content..... 56.2 g/kg 1/n of Lindane <sup>(1)</sup> .....0.9 Total nitrogen content ..... 4.8 g/kg <sup>(1)</sup> Determination according OECD Test guideline 106 <sup>(2)</sup> Measurement based on ISO 10390	200 g
AGH S-1	Polish soil 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	50 g
	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-5-100	Clean clay Please ask for details	100 g
RTC-CLN SOIL-5-250	Clean clay Please ask for details	250 g
<b>New</b> NIST-2701	Contaminated soil - Hexavalent chromium (high level) Certified values Hexavalent Cr.....551.2 mg/kg ± 34.5 mg/kg Fe..... 23.73 % ± 0.19 % Total Cr..... 4.26 % ± 0.12 % Mn ..... 0.2137 % ± 0.0014 % Indicative values for selected elements.	75 g
RTC-CRM041-030	Soil - Hexavalent Chromium VI Certified value Chromium VI, Cr(VI) ..... 91.4 mg/Kg	
<b>New</b> NIST-2709A	San Joaquin soil - Trace and constituent elements (baseline) Certified values Aluminum..... 7.37 ± 0.16 % Iron ..... 3.36 ± 0.07 % Sodium ..... 1.22 ± 0.03 % Antimony..... 1.55 ± 0.06 mg/kg Lead ..... 17.3 ± 0.1 mg/kg Strontium ..... 239 ± 6 mg/kg Calcium..... 1.91 ± 0.09 % Magnesium..... 1.46 ± 0.02 % Titanium ..... 0.336 ± 0.007 % Barium ..... 979 ± 28 mg/kg Manganese..... 529 ± 18 mg/kg Vanadium ..... 110 ± 11 mg/kg Cadmium ..... 0.371 ± 0.002 Phosphorus .. 0.0688 ± 0.0013 % Zirconium ..... 195 ± 46 mg/kg Chromium ..... 130 ± 9 mg/kg Potassium ..... 2.11 ± 0.06 % Cobalt ..... 12.8 ± 0.2 mg/kg Silicon..... 30.3 ± 0.4 %	50 g

## Soils

Code	Product	Unit
<b>New</b> NIST-2710A	Montana I soil - Trace and constituent elements (highly elevated) Certified values	50 g
	Aluminum..... 5.95 ± 0.05 %      Iron ..... 4.32 ± 0.08 %      Silicon ..... 31.1 ± 0.4 % Antimony ..... 52.5 ± 1.6 mg/kg      Lanthanum ..... 30.6 ± 1.2 mg/kg      Sodium ..... 0.894 ± 0.019 % Arsenic ..... 0.154 ± 0.010 %      Lead ..... 0.552 ± 0.003 %      Strontium ..... 255 ± 7 mg/kg Barium ..... 792 ± 36 mg/kg      Magnesium ..... 0.734 ± 0.038 %      Titanium ..... 0.311 ± 0.007 % Calcium ..... 0.964 ± 0.045 %      Manganese ..... 0.214 ± 0.006 %      Uranium ..... 9.11 ± 0.30 mg/kg Cadmium ..... 12.3 ± 0.3 mg/kg      Mercury ..... 9.88 ± 0.21 mg/kg      Zinc ..... 0.418 ± 0.015 % Cobalt ..... 5.99 ± 0.14 mg/kg      Phosphorus ..... 0.105 ± 0.004 % Copper ..... 0.342 ± 0.005 %      Potassium ..... 2.17 ± 0.13 %	
<b>New</b> NIST-2711A	Montana II Soil - Trace and constituent elements (mod. elevated) This Standard Reference Material (SRM <sup>®</sup> ) is intended primarily for use in the analysis of soils, sediments, or other materials of a similar matrix. One unit of NIST-2711a consists of 50 g of the dried, powdered soil.	50 g
	Al..... 6.72 ± 0.06 %      Hg ..... 7.42 ± 0.18 mg/kg      Sb ..... 23.8 ± 1.4 mg/kg As ..... 107 ± 5 mg/kg      K ..... 2.53 ± 0.10 %      Si ..... 31.4 ± 0.7 % Ba ..... 730 ± 15 mg/kg      Mg ..... 1.07 ± 0.06 %      Sr ..... 242 ± 10 mg/kg Ca ..... 2.42 ± 0.06 %      Mn ..... 675 ± 18 mg/kg      Ti ..... 0.317 ± 0.008 % Ca ..... 54.1 ± 0.5 mg/kg      Na ..... 1.20 ± 0.01 %      U ..... 3.01 ± 0.12 mg/kg Co ..... 9.89 ± 0.18 mg/kg      Ni ..... 21.7 ± 0.7 mg/kg      V ..... 80.7 ± 5.7 mg/kg Cr ..... 52.3 ± 2.9 mg/kg      P ..... 842 ± 11 mg/kg      Zn ..... 414 ± 11 mg/kg Cu ..... 140 ± 2 mg/kg      Pb ..... 0.140 ± 0.001 % Fe ..... 2.82 ± 0.04 %      Sa ..... 5.93 ± 0.28 mg/kg	
NIST-4355	Peruvian soil - Radioactivity Certified values	75 g
	<sup>241</sup> Am ..... 0.000004 Bq/g <sup>238</sup> Pu+ <sup>240</sup> Pu ..... 0.0000076 Bq/g <sup>230</sup> Th ..... 0.0397 Bq/g <sup>137</sup> Cs ..... 0.000033 Bq/g <sup>228</sup> Th ..... 0.0422 Bq/g <sup>232</sup> Th ..... 0.0430 Bq/g	
IAEA-SOIL-6	Soil - Radioactive isotopes The IAEA-SOIL-6 sample was collected near Ebensee in Upper Austria at an altitude of 1100 m above sea level. Recommended values	250 g
	<sup>137</sup> Cs ..... 53.65 Bq/kg <sup>226</sup> Ra ..... 79.92 Bq/kg <sup>239</sup> Pu + <sup>240</sup> Pu ..... 1.04 Bq/kg <sup>90</sup> Sr ..... 30.34 Bq/kg	
<b>New</b> NIM-GBW07424	Soil - Composition including trace elements Certified values	70 g
	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 <sub>2</sub> ..... 65.50 ± 0.12 % Dy ..... 4.7 ± 0.3 µg/g      Pr ..... 8.5 ± 0.5 µg/g      Al <sub>2</sub> O <sub>3</sub> ..... 13.80 ± 0.11 % Eu ..... 2.75 ± 0.17 µg/g      Rb ..... 108 ± 3 µg/g      Fe <sub>2</sub> O <sub>3</sub> (T) ..... 4.17 ± 0.03 % Er ..... 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 <sub>2</sub> O ..... 2.14 ± 0.06 % Gd ..... 5.2 ± 0.3 µg/g      Se ..... 0.21 ± 0.02 µg/g      K <sub>2</sub> O ..... 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 <sub>2</sub> O <sup>+</sup> , CO <sub>2</sub> Sb(DA) is result with aqua regia digestion	

Code	Product	Unit
<b>New</b> NIM-GBW07425	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 <sub>2</sub> ..... 69.42 ± 0.28 %
Er..... 2.46 ± 0.07 µg/g	Rb..... 110 ± 4 µg/g	Al <sub>2</sub> O <sub>3</sub> ..... 13.14 ± 0.06 %
Eu..... 1.18 ± 0.04 µg/g	S..... 217 ± 23 µg/g	Fe <sub>2</sub> O <sub>3</sub> (T)..... 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 <sub>2</sub> O..... 1.98 ± 0.07 %
Ge..... 1.3 ± 0.1 µg/g	Sm..... 5.5 ± 0.2 µg/g	K <sub>2</sub> O..... 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 <sub>2</sub> O <sup>+</sup> , CO <sub>2</sub>		
Sb(DA) is result with aqua regia digestion		

Code	Product	Unit
<b>New</b> NIM-GBW07426	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 <sub>2</sub> ..... 60.0 ± 0.3 %
Dy..... 4.9 ± 0.3 µg/g	Pr..... 7.0 ± 0.4 µg/g	Al <sub>2</sub> O <sub>3</sub> ..... 13.27 ± 0.11 %
Er..... 2.9 ± 0.2 µg/g	Rb..... 94 ± 3 µg/g	Fe <sub>2</sub> O <sub>3</sub> (T)..... 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 <sub>2</sub> O..... 2.00 ± 0.06 %
Ge..... 1.3 ± 0.1 µg/g	Sm..... 5.6 ± 0.4 µg/g	K <sub>2</sub> O..... 2.62 ± 0.05 %
Hf..... 5.5 ± 0.4 µg/g	Sn..... 2.8 ± 0.4 µg/g	CO <sub>2</sub> ..... 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 <sub>2</sub> O <sup>+</sup> , Corg.		
Sb(DA) is result with aqua regia digestion		

Code	Product	Unit
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 <sub>2</sub> ..... 64.9 ± 0.3 %
Cu..... 21.6 ± 0.8 µg/g	Pb..... 21.6 ± 1.2 µg/g	Al <sub>2</sub> O <sub>3</sub> ..... 11.8 ± 0.1 %
Dy..... 4.5 ± 0.3 µg/g	Pr..... 7.9 ± 0.5 µg/g	Fe <sub>2</sub> O <sub>3</sub> (T)..... 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 <sub>2</sub> O..... 1.86 ± 0.07 %
Gd..... 4.9 ± 0.3 µg/g	Sm..... 5.6 ± 0.3 µg/g	K <sub>2</sub> O..... 2.27 ± 0.04 %
Ge..... 1.27 ± 0.07 µg/g	Sn..... 3.3 ± 0.4 µg/g	CO <sub>2</sub> ..... 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 <sub>2</sub> O		
Sb(DA) is result with aqua regia digestion		

Code	Product	Unit
<b>New</b> NIM-GBW07428	Soil - Composition including trace elements	70 g
Certified values		
Ag .....	0.084 ± 0.007 µg/g	Ho.....0.93 ± 0.04 µg/g
As.....	6.5 ± 1.3 µg/g	I.....0.9 ± 0.2 µg/g
B.....	46 ± 3 µg/g	In.....0.057 ± 0.006 µg/g
Ba.....	608 ± 13 µg/g	La.....41 ± 2 µg/g
Be.....	2.44 ± 0.06 µg/g	Li.....39 ± 3 µg/g
Bi.....	0.35 ± 0.02 µg/g	Lu.....0.42 ± 0.02 µg/g
Br.....	1.7 ± 0.3 µg/g	Mn.....688 ± 15 µg/g
Cd.....	0.20 ± 0.02 µg/g	Mo.....0.65 ± 0.06 µg/g
Ce.....	80 ± 2 µg/g	N.....0.081 ± 0.012 %
Cl.....	50 ± 4 µg/g	Nb.....14.4 ± 0.6 µg/g
Co.....	14.6 ± 0.7 µg/g	Nd.....36 ± 3 µg/g
Cr.....	70 ± 3 µg/g	Ni.....33 ± 2 µg/g
Cs.....	7.0 ± 0.3 µg/g	P.....730 ± 28 µg/g
Cu.....	27.4 ± 1.1 µg/g	Pb.....31 ± 1 µg/g
Dy.....	4.8 ± 0.3 µg/g	Pr.....9.2 ± 0.6 µg/g
Er.....	2.6 ± 0.3 µg/g	Rb.....108 ± 4 µg/g
Eu.....	1.36 ± 0.06 µg/g	S.....173 ± 21 µg/g
F.....	619 ± 39 µg/g	Sb(DA).....0.73 ± 0.08 µg/g
Ga.....	18.8 ± 0.8 µg/g	Sc.....11.7 ± 0.3 µg/g
Gd.....	5.5 ± 0.5 µg/g	Se.....0.16 ± 0.02 µg/g
Ge.....	1.42 ± 0.11 µg/g	Sm.....6.4 ± 0.3 µg/g
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 <sub>2</sub> O <sup>+</sup> , CO <sub>2</sub>		
Sb(DA) is result with aqua regia digestion		

Code	Product	Unit
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
As.....	21.7 ± 1.2 µg/g	I.....2.3 ± 0.2 µg/g
B.....	63 ± 2 µg/g	In.....0.145 ± 0.021 µg/g
Ba.....	716 ± 16 µg/g	La.....47 ± 2 µg/g
Be.....	2.7 ± 0.1 µg/g	Li.....44 ± 3 µg/g
Bi.....	1.16 ± 0.06 µg/g	Lu.....0.54 ± 0.02 µg/g
Br.....	2.7 ± 0.3 µg/g	Mn.....963 ± 20 µg/g
Cd.....	0.21 ± 0.02 µg/g	Mo.....0.92 ± 0.07 µg/g
Ce.....	93 ± 4 µg/g	N.....0.094 ± 0.010 %
Cl.....	83 ± 15 µg/g	Nb.....18.6 ± 1.3 µg/g
Co.....	17.6 ± 0.7 µg/g	Nd.....41 ± 2 µg/g
Cr.....	87 ± 4 µg/g	Ni.....41 ± 1 µg/g
Cs.....	8.9 ± 0.4 µg/g	P.....560 ± 18 µg/g
Cu.....	37 ± 2 µg/g	Pb.....38 ± 2 µg/g
Dy.....	6.2 ± 0.4 µg/g	Pr.....10.3 ± 0.8 µg/g
Er.....	3.4 ± 0.2 µg/g	Rb.....116 ± 3 µg/g
Eu.....	1.56 ± 0.06 µg/g	S.....176 ± 22 µg/g
F.....	652 ± 48 µg/g	Sb(DA).....1.9 ± 0.2 µg/g
Ga.....	20.5 ± 1.0 µg/g	Sc.....14.8 ± 0.5 µg/g
Gd.....	6.8 ± 0.5 µg/g	Se.....0.31 ± 0.02 µg/g
Ge.....	1.63 ± 0.08 µg/g	Sm.....7.8 ± 0.3 µg/g
Hf.....	7.6 ± 0.4 µg/g	Sn.....4.5 ± 0.5 µg/g
Hg.....	0.094 ± 0.004 µg/g	Sr.....115 ± 4 µg/g
Indicative values for Re, Sb, Te, H <sub>2</sub> O <sup>+</sup> , CO <sub>2</sub>		
Sb(DA) is result with aqua regia digestion		

Code	Product	Unit
<b>New</b> NIM-GBW07430	Soil - Composition including trace elements	70 g
Certified values		
Ag .....	0.14 ± 0.02 µg/g	Ho.....1.41 ± 0.08 µg/g
As.....	18 ± 2 µg/g	I.....1.3 ± 0.1 µg/g
B.....	63 ± 4 µg/g	In.....0.095 ± 0.027 µg/g
Ba.....	411 ± 18 µg/g	La.....67 ± 3 µg/g
Be.....	3.8 ± 0.3 µg/g	Li.....51 ± 3 µg/g
Bi.....	1.44 ± 0.11 µg/g	Lu.....0.58 ± 0.05 µg/g
Br.....	2.6 ± 0.3 µg/g	Mn.....441 ± 20 µg/g
Cd.....	0.25 ± 0.02 µg/g	Mo.....1.15 ± 0.07 µg/g
Ce.....	133 ± 5 µg/g	N.....0.102 ± 0.011 %
Cl.....	78 ± 6 µg/g	Nb.....26 ± 1 µg/g
Co.....	13.6 ± 0.6 µg/g	Nd.....57 ± 4 µg/g
Cr.....	67 ± 3 µg/g	Ni.....27.4 ± 0.9 µg/g
Cs.....	13.9 ± 0.7 µg/g	P.....972 ± 34 µg/g
Cu.....	32 ± 2 µg/g	Pb.....61 ± 2 µg/g
Dy.....	7.4 ± 0.5 µg/g	Pr.....14.6 ± 1.1 µg/g
Er.....	3.8 ± 0.2 µg/g	Rb.....173 ± 5 µg/g
Eu.....	1.66 ± 0.07 µg/g	S.....261 ± 26 µg/g
F.....	790 ± 44 µg/g	Sb(DA).....1.7 ± 0.2 µg/g
Ga.....	25.1 ± 1.2 µg/g	Sc.....14.0 ± 0.5 µg/g
Gd.....	8.5 ± 0.7 µg/g	Se.....0.51 ± 0.05 µg/g
Ge.....	1.70 ± 0.12 µg/g	Sm.....10.4 ± 0.5 µg/g
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 <sub>2</sub> O <sup>+</sup> , CO <sub>2</sub>		
Sb(DA) is result with aqua regia digestion		

Code	Product	Unit
	NIM GBW07403 - 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	

New NIM-GBW07403	Soil - Composition including trace elements	70 g			
	Certified values				
Ag	0.091 ± 0.007 µg/g	I	1.3 ± 0.2 µg/g	Te	0.039 ± 0.013 µg/g
As	4.4 ± 0.6 µg/g	In	0.031 ± 0.010 µg/g	Th	6.0 ± 0.5 µg/g
B	23 ± 3 µg/g	La	21 ± 2 µg/g	Ti	2240 ± 80 µg/g
Ba	1210 ± 65 µg/g	Li	18.4 ± 0.8 µg/g	Tl	0.48 ± 0.05 µg/g
Be	1.4 ± 0.2 µg/g	Lu	0.29 ± 0.02 µg/g	Tm	0.28 ± 0.05 µg/g
Bi	0.17 ± 0.03 µg/g	Mn	304 ± 14 µg/g	U	1.3 ± 0.3 µg/g
Br	4.3 ± 0.8 µg/g	Mo	0.31 ± 0.06 µg/g	V	36 ± 3 µg/g
Cd	0.060 ± 0.009 µg/g	N	640 ± 50 µg/g	W	0.96 ± 0.12 µg/g
Ce	39 ± 4 µg/g	Nb	9.3 ± 1.5 µg/g	Y	15 ± 2 µg/g
Cl	57 ± 11 µg/g	Nd	18.4 ± 1.7 µg/g	Yb	1.7 ± 0.2 µg/g
Co	5.5 ± 0.7 µg/g	Ni	12 ± 2 µg/g	Zn	31 ± 3 µg/g
Cr	32 ± 4 µg/g	P	320 ± 18 µg/g	Zr	246 ± 14 µg/g
Cs	3.2 ± 0.4 µg/g	Pb	26 ± 3 µg/g	SiO <sub>2</sub>	74.72 ± 0.19 %
Cu	11.4 ± 1.1 µg/g	Pr	4.8 ± 0.4 µg/g	Al <sub>2</sub> O <sub>3</sub>	12.24 ± 0.09 %
Dy	2.6 ± 0.2 µg/g	Rb	85 ± 4 µg/g	Fe <sub>2</sub> O <sub>3</sub> (T)	2.00 ± 0.05 %
Er	1.5 ± 0.3 µg/g	S	123 ± 14 µg/g	FeO	0.50 ± 0.06 %
Eu	0.72 ± 0.04 µg/g	Sb	0.44 ± 0.08 µg/g	MgO	0.58 ± 0.04 %
F	246 ± 26 µg/g	Sc	5.0 ± 0.4 µg/g	CaO	1.27 ± 0.05 %
Ga	13.7 ± 0.9 µg/g	Se	0.09 ± 0.02 µg/g	Na <sub>2</sub> O	2.71 ± 0.06 %
Gd	2.9 ± 0.4 µg/g	Sm	3.3 ± 0.2 µg/g	K <sub>2</sub> O	3.04 ± 0.05 %
Ge	1.16 ± 0.13 µg/g	Sn	2.5 ± 0.3 µg/g	Corg	0.51 ± 0.03 %
Hf	6.8 ± 0.8 µg/g	Sr	380 ± 16 µg/g	TC	0.55 ± 0.05 %
Hg	0.060 ± 0.004 µg/g	Ta	0.76 ± 0.15 µg/g	L.O.I	2.67 ± 0.13 %
Ho	0.53 ± 0.06 µg/g	Tb	0.49 ± 0.06 µg/g		

New NIM-GBW07404	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 <sub>2</sub>	50.95 ± 0.14 %
Cu	40 ± 3 µg/g	Pr	8.4 ± 1.7 µg/g	Al <sub>2</sub> O <sub>3</sub>	23.45 ± 0.19 %
Dy	6.6 ± 0.6 µg/g	Rb	75 ± 4 µg/g	Fe <sub>2</sub> O <sub>3</sub> (T)	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 <sub>2</sub> O	0.11 ± 0.02 %
Ga	31 ± 3 µg/g	Se	0.64 ± 0.14 µg/g	K <sub>2</sub> O	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		

New NIM-GBW07405	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 <sub>2</sub>	52.57 ± 0.16 %
F	603 ± 28 µg/g	S	410 ± 54 µg/g	Al <sub>2</sub> O <sub>3</sub>	21.58 ± 0.15 %
Ga	32 ± 4 µg/g	Sb	35 ± 5 µg/g	Fe <sub>2</sub> O <sub>3</sub> (T)	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 <sub>2</sub> O	0.12 ± 0.02 %
Hf	8.1 ± 1.7 µg/g	Sm	4.0 ± 0.4 µg/g	K <sub>2</sub> O	1.50 ± 0.04 %
Hg	0.29 ± 0.03 µg/g	Sn	18 ± 3 µg/g		

Code	Product	Unit
<b>New</b> NIM-GBW07406	Soil - Composition including trace elements	70 g
Certified values		
Ag .....	0.20 ± 0.02 µg/g	Ho .....
As .....	220 ± 14 µg/g	I .....
B .....	57 ± 5 µg/g	In .....
Ba .....	118 ± 14 µg/g	La .....
Be .....	4.4 ± 0.7 µg/g	Li .....
Bi .....	49 ± 5 µg/g	Lu .....
Br .....	8.0 ± 0.7 µg/g	Mn .....
Cd .....	0.13 ± 0.03 µg/g	Mo .....
Ce .....	66 ± 6 µg/g	N .....
Cl .....	95 ± 7 µg/g	Nb .....
Co .....	7.6 ± 1.1 µg/g	Nd .....
Cr .....	75 ± 6 µg/g	Ni .....
Cs .....	10.8 ± 0.6 µg/g	P .....
Cu .....	390 ± 14 µg/g	Pb .....
Dy .....	3.3 ± 0.3 µg/g	Pr .....
Er .....	2.2 ± 0.3 µg/g	Rb .....
Eu .....	0.66 ± 0.04 µg/g	S .....
F .....	906 ± 45 µg/g	Sb .....
Ga .....	30 ± 3 µg/g	Sc .....
Gd .....	3.4 ± 0.3 µg/g	Se .....
Ge .....	3.2 ± 0.4 µg/g	Sm .....
Hf .....	7.5 ± 0.8 µg/g	Sn .....
Hg .....	0.072 ± 0.007 µg/g	Sr .....
		Ta .....
		Tb .....
		Te .....
		Th .....
		Ti .....
		Tl .....
		Tm .....
		U .....
		V .....
		W .....
		Y .....
		Yb .....
		Zn .....
		Zr .....
		SiO <sub>2</sub> .....
		Al <sub>2</sub> O <sub>3</sub> .....
		Fe <sub>2</sub> O <sub>3</sub> (T) .....
		MgO .....
		CaO .....
		Na <sub>2</sub> O .....
		K <sub>2</sub> O .....
		C org. ....
		TC .....

Code	Product	Unit
<b>New</b> NIM-GBW07407	Soil - Composition including trace elements	70 g
Certified values		
Ag .....	0.057 ± 0.011 µg/g	I .....
As .....	4.8 ± 1.3 µg/g	In .....
Ba .....	180 ± 27 µg/g	La .....
Be .....	2.8 ± 0.6 µg/g	Li .....
Bi .....	0.20 ± 0.04 µg/g	Lu .....
Br .....	5.1 ± 0.5 µg/g	Mn .....
Cd .....	0.08 ± 0.02 µg/g	Mo .....
Ce .....	98 ± 11 µg/g	N .....
Cl .....	100 ± 6 µg/g	Nb .....
Co .....	97 ± 6 µg/g	Nd .....
Cr .....	410 ± 23 µg/g	Ni .....
Cs .....	2.7 ± 0.8 µg/g	P .....
Cu .....	97 ± 6 µg/g	Pb .....
Dy .....	6.6 ± 0.6 µg/g	Pr .....
Er .....	2.7 ± 0.5 µg/g	Rb .....
Eu .....	3.4 ± 0.2 µg/g	S .....
F .....	321 ± 29 µg/g	Sb .....
Ga .....	39 ± 5 µg/g	Sc .....
Gd .....	9.6 ± 0.9 µg/g	Se .....
Ge .....	1.6 ± 0.3 µg/g	Sm .....
Hf .....	7.7 ± 0.5 µg/g	Sn .....
Hg .....	0.061 ± 0.006 µg/g	Sr .....
Ho .....	1.1 ± 0.2 µg/g	Ta .....
		Tb .....
		Th .....
		Ti .....
		Tl .....
		Tm .....
		U .....
		V .....
		W .....
		Y .....
		Yb .....
		Zn .....
		Zr .....
		SiO <sub>2</sub> .....
		Al <sub>2</sub> O <sub>3</sub> .....
		Fe <sub>2</sub> O <sub>3</sub> (T) .....
		MgO .....
		CaO .....
		Na <sub>2</sub> O .....
		K <sub>2</sub> O .....
		C org. ....
		TC .....

Code	Product	Unit
<b>New</b> NIM-GBW07408	Soil - Composition including trace elements	70 g
Certified values		
Ag .....	0.060 ± 0.009 µg/g	I .....
As .....	12.7 ± 1.1 µg/g	In .....
B .....	54 ± 4 µg/g	La .....
Ba .....	480 ± 23 µg/g	Li .....
Be .....	1.9 ± 0.2 µg/g	Lu .....
Bi .....	0.30 ± 0.04 µg/g	Mn .....
Br .....	2.5 ± 0.5 µg/g	Mo .....
Cd .....	0.13 ± 0.02 µg/g	N .....
Ce .....	66 ± 7 µg/g	Nb .....
Cl .....	68 ± 12 µg/g	Nd .....
Co .....	12.7 ± 1.1 µg/g	Ni .....
Cr .....	68 ± 6 µg/g	P .....
Cs .....	7.5 ± 0.7 µg/g	Pb .....
Cu .....	24.3 ± 1.2 µg/g	Pr .....
Dy .....	4.8 ± 0.4 µg/g	Rb .....
Er .....	2.8 ± 0.2 µg/g	Sb .....
Eu .....	1.2 ± 0.1 µg/g	Sc .....
F .....	577 ± 24 µg/g	Se .....
Ga .....	14.8 ± 1.1 µg/g	Sm .....
Gd .....	5.4 ± 0.5 µg/g	Sn .....
Ge .....	1.27 ± 0.20 µg/g	Sr .....
Hf .....	7.0 ± 0.8 µg/g	Ta .....
Hg .....	0.017 ± 0.003 µg/g	Tb .....
Ho .....	0.97 ± 0.08 µg/g	Te .....
		Th .....
		Ti .....
		Tl .....
		Tm .....
		U .....
		V .....
		W .....
		Y .....
		Yb .....
		Zn .....
		Zr .....
		SiO <sub>2</sub> .....
		Al <sub>2</sub> O <sub>3</sub> .....
		Fe <sub>2</sub> O <sub>3</sub> (T) .....
		FeO .....
		MgO .....
		CaO .....
		Na <sub>2</sub> O .....
		K <sub>2</sub> O .....
		CO <sub>2</sub> .....
		TC .....
		L.O.I. ....



Code	Product	Unit
<b>New</b> NIM-GBW07402	Soil - Trace elements and oxides	70 g
	Certified values	
Ag .....	0.054 ± 0.010 µg/g	Ho.....0.93 ± 0.15 µg/g
As.....	13.7 ± 1.8 µg/g	I.....1.8 ± 0.2 µg/g
B.....	36 ± 4 µg/g	In.....0.09 ± 0.03 µg/g
Ba.....	930 ± 81 µg/g	La.....164 ± 16 µg/g
Be.....	1.8 ± 0.3 µg/g	Li.....22 ± 1 µg/g
Bi.....	0.38 ± 0.06 µg/g	Lu.....0.32 ± 0.06 µg/g
Br.....	4.5 ± 0.6 µg/g	Mn.....510 ± 25 µg/g
Cd.....	0.071 ± 0.022 µg/g	Mo.....0.98 ± 0.17 µg/g
Ce.....	402 ± 25 µg/g	N.....630 ± 47 µg/g
Cl.....	-56 µg/g	Nb.....27 ± 3 µg/g
Co.....	8.7 ± 1.4 µg/g	Nd.....210 ± 22 µg/g
Cr.....	47 ± 6 µg/g	Ni.....19.4 ± 1.9 µg/g
Cs.....	4.9 ± 0.6 µg/g	P.....446 ± 38 µg/g
Cu.....	16.3 ± 1.4 µg/g	Pb.....20 ± 4 µg/g
Dy.....	4.4 ± 0.3 µg/g	Pr.....57 ± 6 µg/g
Er.....	2.1 ± 0.4 µg/g	Rb.....88 ± 5 µg/g
Eu.....	3.0 ± 0.3 µg/g	S.....210 ± 50 µg/g
F.....	2240 ± 175 µg/g	Sb.....1.3 ± 0.3 µg/g
Ga.....	12 ± 1 µg/g	Sc.....10.7 ± 0.8 µg/g
Gd.....	7.8 ± 0.6 µg/g	Se.....0.16 ± 0.04 µg/g
Ge.....	1.2 ± 0.2 µg/g	Sm.....18 ± 3 µg/g
Hf.....	5.8 ± 0.9 µg/g	Sn.....3.0 ± 0.4 µg/g
Hg.....	0.015 ± 0.004 µg/g	Sr.....187 ± 14 µg/g
	Ta.....0.78 ± 0.18 µg/g	Tb.....0.97 ± 0.40 µg/g
	Tb.....0.97 ± 0.40 µg/g	Th.....16.6 ± 1.2 µg/g
	Th.....16.6 ± 1.2 µg/g	Ti.....2710 ± 120 µg/g
	Ti.....2710 ± 120 µg/g	Tl.....0.62 ± 0.28 µg/g
	Tl.....0.62 ± 0.28 µg/g	Tm.....0.42 ± 0.13 µg/g
	Tm.....0.42 ± 0.13 µg/g	U.....1.4 ± 0.4 µg/g
	U.....1.4 ± 0.4 µg/g	V.....62 ± 6 µg/g
	V.....62 ± 6 µg/g	W.....1.08 ± 0.33 µg/g
	W.....1.08 ± 0.33 µg/g	Y.....22 ± 3 µg/g
	Y.....22 ± 3 µg/g	Yb.....2.0 ± 0.3 µg/g
	Yb.....2.0 ± 0.3 µg/g	Zn.....42 ± 5 µg/g
	Zn.....42 ± 5 µg/g	Zr.....219 ± 23 µg/g
	Zr.....219 ± 23 µg/g	SiO <sub>2</sub> .....73.35 ± 0.27 %
	SiO <sub>2</sub> .....73.35 ± 0.27 %	Al <sub>2</sub> O <sub>3</sub> .....10.31 ± 0.15 %
	Al <sub>2</sub> O <sub>3</sub> .....10.31 ± 0.15 %	Fe <sub>2</sub> O <sub>3</sub> (T).....3.52 ± 0.10 %
	Fe <sub>2</sub> O <sub>3</sub> (T).....3.52 ± 0.10 %	FeO.....0.57 ± 0.09 %
	FeO.....0.57 ± 0.09 %	MgO.....1.04 ± 0.06 %
	MgO.....1.04 ± 0.06 %	CaO.....2.36 ± 0.07 %
	CaO.....2.36 ± 0.07 %	Na <sub>2</sub> O.....1.62 ± 0.06 %
	Na <sub>2</sub> O.....1.62 ± 0.06 %	K <sub>2</sub> O.....2.54 ± 0.07 %
	K <sub>2</sub> O.....2.54 ± 0.07 %	Org.C.....0.49 ± 0.05 %
	Org.C.....0.49 ± 0.05 %	LOI.....4.4 ± 0.2 %
	LOI.....4.4 ± 0.2 %	
	Indicative values for Au, Te, H <sub>2</sub> O <sup>+</sup> , CO <sub>2</sub>	
NCS DC87101	Soil - Composition including trace elements	100 g
	Certified values	
SiO <sub>2</sub> .....	67.96 %	B.....46 µg/g
TiO <sub>2</sub> .....	0.72 %	Ba.....677 µg/g
Al <sub>2</sub> O <sub>3</sub> .....	14.35 %	Be.....2.4 µg/g
Fe <sub>2</sub> O <sub>3</sub> .....	4.69 %	Co.....15 µg/g
MnO.....	0.093 %	Cr.....93 µg/g
MgO.....	1.62 %	Cu.....23 µg/g
CaO.....	0.9 %	F.....458 µg/g
Na <sub>2</sub> O.....	1.78 %	Ga.....17 µg/g
K <sub>2</sub> O.....	2.56 %	Hg.....0.014 µg/g
P <sub>2</sub> O <sub>5</sub> .....	0.1 %	La.....43 µg/g
L.O.I.....	4.64 %	Li.....37 µg/g
N.....	0.035 %	Nb.....15 µg/g
As.....	10 µg/g	Ni.....41 µg/g
	Pb.....28 µg/g	Rb.....111 µg/g
	Rb.....111 µg/g	Sb.....0.73 µg/g
	Sb.....0.73 µg/g	Sr.....168 µg/g
	Sr.....168 µg/g	Te.....0.033 µg/g
	Te.....0.033 µg/g	Th.....12 µg/g
	Th.....12 µg/g	U.....1.9 µg/g
	U.....1.9 µg/g	V.....88 µg/g
	V.....88 µg/g	W.....1.8 µg/g
	W.....1.8 µg/g	Y.....24 µg/g
	Y.....24 µg/g	Zn.....68 µg/g
	Zn.....68 µg/g	Zr.....274 µg/g
	Zr.....274 µg/g	
NCS DC87102	Soil - Composition including trace elements	100 g
	Certified values	
SiO <sub>2</sub> .....	67.21 %	S.....0.034 %
TiO <sub>2</sub> .....	0.56 %	As.....9.8 µg/g
Al <sub>2</sub> O <sub>3</sub> .....	10.78 %	Ba.....469 µg/g
Fe <sub>2</sub> O <sub>3</sub> .....	2.28 %	Be.....2 µg/g
MnO.....	0.066 %	Cl.....600 µg/g
MgO.....	1.73 %	Co.....9.4 µg/g
CaO.....	5.21 %	Cr.....61 µg/g
Na <sub>2</sub> O.....	1.95 %	Cu.....12 µg/g
K <sub>2</sub> O.....	2.15 %	Ga.....17 µg/g
P <sub>2</sub> O <sub>5</sub> .....	0.15 %	Hg.....0.031 µg/g
H <sub>2</sub> O <sup>+</sup> .....	2.29 %	La.....36 µg/g
CO <sub>2</sub> .....	3.48 %	Li.....27 µg/g
L.O.I.....	6.73 %	Nb.....12 µg/g
N.....	0.064 %	Ni.....23 µg/g
	Pb.....21 µg/g	Rb.....86 µg/g
	Rb.....86 µg/g	Sb.....0.83 µg/g
	Sb.....0.83 µg/g	Se.....0.14 µg/g
	Se.....0.14 µg/g	Sn.....2.9 µg/g
	Sn.....2.9 µg/g	Sr.....197 µg/g
	Sr.....197 µg/g	Th.....9.6 µg/g
	Th.....9.6 µg/g	U.....1.9 µg/g
	U.....1.9 µg/g	V.....63 µg/g
	V.....63 µg/g	W.....1.5 µg/g
	W.....1.5 µg/g	Y.....21 µg/g
	Y.....21 µg/g	Zn.....51 µg/g
	Zn.....51 µg/g	Zr.....291 µg/g
	Zr.....291 µg/g	
NCS DC87103	Soil - Composition including trace elements	100 g
	Certified values	
SiO <sub>2</sub> .....	72.92 %	Ba.....524 µg/g
TiO <sub>2</sub> .....	0.69 %	Be.....1.9 µg/g
Al <sub>2</sub> O <sub>3</sub> .....	12.28 %	Co.....12 µg/g
Fe <sub>2</sub> O <sub>3</sub> .....	3.38 %	Cr.....56 µg/g
MnO.....	0.072 %	Cu.....23 µg/g
MgO.....	1.14 %	F.....383 µg/g
CaO.....	1.44 %	Ga.....15 µg/g
Na <sub>2</sub> O.....	2.2 %	Hg.....0.017 µg/g
K <sub>2</sub> O.....	2.16 %	La.....38 µg/g
P <sub>2</sub> O <sub>5</sub> .....	0.11 %	Li.....28 µg/g
N.....	0.029 %	Nb.....14 µg/g
As.....	6.3 µg/g	Ni.....22 µg/g
B.....	50 µg/g	Pb.....19 µg/g
	Rb.....91 µg/g	Sb.....0.65 µg/g
	Sb.....0.65 µg/g	Se.....0.11 µg/g
	Se.....0.11 µg/g	Sn.....3.2 µg/g
	Sn.....3.2 µg/g	Sr.....227 µg/g
	Sr.....227 µg/g	Th.....10 µg/g
	Th.....10 µg/g	U.....1.9 µg/g
	U.....1.9 µg/g	V.....74 µg/g
	V.....74 µg/g	W.....1.5 µg/g
	W.....1.5 µg/g	Y.....22 µg/g
	Y.....22 µg/g	Zn.....48 µg/g
	Zn.....48 µg/g	Zr.....331 µg/g
	Zr.....331 µg/g	

Code	Product	Unit
NCS DC87104	Soil - Composition including trace elements	100 g
	Certified values	
SiO <sub>2</sub> .....	60.76 %	B.....44 µg/g
TiO <sub>2</sub> .....	0.55 %	Ba.....448 µg/g
Al <sub>2</sub> O <sub>3</sub> .....	10.78 %	Be.....1.8 µg/g
Fe <sub>2</sub> O <sub>3</sub> .....	2.79 %	Bi.....0.24 µg/g
MnO.....	0.058 %	Cl.....222 µg/g
MgO.....	1.83 %	Co.....9.2 µg/g
CaO.....	9.07 %	Cr.....62 µg/g
Na <sub>2</sub> O.....	1.74 %	Cu.....17 µg/g
K <sub>2</sub> O.....	2.01 %	F.....559 µg/g
P <sub>2</sub> O <sub>5</sub> .....	0.087 %	Ga.....13 µg/g
CO <sub>2</sub> .....	6.44 %	La.....34 µg/g
L.O.I.....	9.62 %	Li.....38 µg/g
N.....	0.02 %	Nb.....11 µg/g
As.....	9.4 µg/g	Ni.....23 µg/g
		Pb.....19 µg/g
		Rb.....82 µg/g
		Sb.....0.78 µg/g
		Sn.....2.4 µg/g
		Sr.....296 µg/g
		Th.....9.4 µg/g
		U.....1.8 µg/g
		V.....65 µg/g
		W.....1.4 µg/g
		Y.....19 µg/g
		Zn.....45 µg/g
		Zr.....258 µg/g
NCS DC87105	Soil - Composition including trace elements	100 g
	Certified values	
SiO <sub>2</sub> .....	67.53 %	S.....0.0092 %
TiO <sub>2</sub> .....	0.54 %	As.....8.2 µg/g
Al <sub>2</sub> O <sub>3</sub> .....	10.84 %	B.....33 µg/g
Fe <sub>2</sub> O <sub>3</sub> (T).....	-3.26 %	Ba.....555 µg/g
Fe <sub>2</sub> O <sub>3</sub> .....	2.64 %	Be.....1.8 µg/g
MnO.....	0.062 %	Bi.....0.21 µg/g
MgO.....	1.68 %	Co.....8.9 µg/g
CaO.....	5.42 %	Cr.....54 µg/g
Na <sub>2</sub> O.....	1.87 %	Cu.....16 µg/g
K <sub>2</sub> O.....	2.18 %	F.....657 µg/g
P <sub>2</sub> O <sub>5</sub> .....	0.074 %	Ga.....13 µg/g
CO <sub>2</sub> .....	3.59 %	La.....32 µg/g
L.O.I.....	6.67 %	Li.....25 µg/g
N.....	0.021 %	Nb.....11 µg/g
		Ni.....22 µg/g
		Pb.....20 µg/g
		Rb.....83 µg/g
		Sb.....0.7 µg/g
		Sn.....2.2 µg/g
		Sr.....231 µg/g
		Th.....8.9 µg/g
		U.....2.4 µg/g
		V.....66 µg/g
		W.....1.3 µg/g
		Y.....19 µg/g
		Zr.....298 µg/g
<b>New</b> NIM-GBW08302	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 %
As.....	3,8 ± 0,7 µg/g	La.....41,9 ± 4,0 µg/g
Be.....	2,96 ± 0,08 µg/g	Mg.....1,53 ± 0,04 %
Ca.....	2,59 ± 0,04 %	Mn.....677 ± 23 µg/g
Cd.....	0,081 ± 0,015 µg/g	Na.....1,52 ± 0,11 %
Co.....	13,1 ± 1,1 µg/g	N.....0,128 ± 0,003 %
Ce.....	83,6 ± 3,3 µg/g	Nd.....42,3 ± 4,8 µg/g
Cr.....	60,8 ± 3,6 µg/g	Ni.....31,1 ± 1,6 µg/g
Cu.....	24,6 ± 2,8 µg/g	P.....0,86 ± 0,08 %
Eu.....	1,4 ± 0,3 µg/g	Pb.....14,2 ± 2,7 µg/g
Fe.....	3,34 ± 0,11 %	Rb.....135 ± 14 µg/g
		Sc.....10,8 ± 1,5 µg/g
		Si.....30,57 ± 0,11 %
		Sm.....7,1 ± 0,5 µg/g
		Sr.....163 ± 29 µg/g
		Th.....17,6 ± 0,7 µg/g
		Ti.....0,40 ± 0,03 %
		U.....3,84 ± 0,40 µg/g
		V.....77,5 ± 8,0 µg/g
		Zn.....58,0 ± 6,6 µg/g
		Yb.....3,1 ± 0,6 µg/g
		Se.....0,16 ± 0,04 µg/g

Code	Product	Unit
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**NIM-GBW07412A - NIM-GBW07417A and NCS DC85113**

These certified reference materials were prepared in accordance with the ISO guides 30-35. The intended use for these CRMs are the quality control in geochemical exploration, soil and eco-environment research analysis, the evaluation of analytical methods and the calibration of analytical instruments

Composition	Methods
Organic Matter	H <sub>2</sub> SO <sub>4</sub> ,K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> oxidation - Volumetric method
Total nitrogen	Kjeldahl method for Nitrogen (not include NO <sub>2</sub> - and NO <sub>3</sub> -)
pH	Water extraction - Potential method
Cation exchange capacity	CH <sub>3</sub> COONH <sub>4</sub> extraction - Volumetric method
Exchangeable Ca, Mg, Na, K, Mn	EDTA-CH <sub>3</sub> COONH <sub>4</sub> extraction - ICP-AES method (neutral, acid soil)
Hydrolyzable nitrogen	Alkali Hydrolysis - Diffuse method
Available phosphorus	NaHCO <sub>3</sub> extraction - Colorimetry (neutral, calcareous soil)
	NH <sub>4</sub> F, dilute HCl extraction - Molybdenum-antimony-ascorbic acid method (acid soil)
Effective potassium	CH <sub>3</sub> COONH <sub>4</sub> extraction - ICP-AES method or AAS
Slowly available potassium	Dilute nitric acid extraction - ICP-AES method or AAS
Available sulfur	(P) Phosphat- CH <sub>3</sub> COONH <sub>4</sub> extraction - ICP-AES (neutral, acid soil)
	(Ca) CaCl <sub>2</sub> solution extraction - ICP-AES (calcareous soil)
Available silicon	Citric acid extraction - ICP-AES or silicon molybdenum blue colorimetric method
Available Cu, Zn, Fe, Mn, Cd, Pb, Ni, Cr, Co	DTPA* solution extraction - ICP-AES and ICP-MS
Available Cu, Zn, Fe, Mn, Cd, Pb, Ni, Cr, Co	Dilute hydrochloric acid extraction- ICP-AES, ICP-MS or AFS (neutral, acid soil)
Available Cu, Zn, Cd, Pb, Ni, Cr	NaNO <sub>3</sub> extraction - ICP-AES and ICP-MS
Available molybdenum or I	Oxalic acid ammonium oxalate (Tamm solution)** - Extraction polarography ICP-AES
Available boron	Boiling water extraction - Curcumin colorimetric method and ICP-AES
Soluble selenium	Boiling water extraction - ICP-AES or AFS
Soluble fluorine	Water extraction - Ion selective electrode method
Soluble salts	
Total	Water extraction - Gravimetric method or conductivity method
Cl <sup>-</sup>	Water extraction - Titrimetric method
SO <sub>4</sub> <sup>2-</sup>	Water extraction - ICP-AES
Ca, Mg, K, Na	Water extraction- ICP-AES or AAS

\* DTPA solution 0.005mol/L C<sub>14</sub>H<sub>23</sub>N<sub>3</sub>O<sub>10</sub>-0.01mol/L CaCl<sub>2</sub>.0.1mol/L C<sub>6</sub>H<sub>15</sub>NO<sub>3</sub>, pH 7.3

\*\* Tamm solution 24.9g/L (NH<sub>4</sub>)<sub>2</sub>C<sub>2</sub>O<sub>4</sub>·H<sub>2</sub>O-12.6g/L H<sub>2</sub>C<sub>2</sub>O<sub>4</sub>·2H<sub>2</sub>O, pH 3.3

Code	Product	Unit
<b>New</b> NIM-GBW07412A	Soil (Brown soil) - Available nutrients	500 g
	Certified values	
	pH .....	6.80
	Organic matter .....	10 g/kg
	Total nitrogen .....	0.63 g/kg
	Hydrolysable nitrogen .....	54 mg/kg
	Available phosphorus (NaHCO <sub>3</sub> extraction) .....	100 mg/kg
	Effective potassium .....	0.38 g/kg
	Slowly available potassium .....	1.06 g/kg
	Available sulfur (phosphate extraction) .....	22 mg/kg
	Available silicon .....	0.83 g/kg
	Cation exchange capacity .....	21.6 cmol(+)/kg
	Exchangeable calcium .....	17.8 cmol (1/2Ca <sup>2+</sup> )/kg
	Exchangeable magnesium .....	4.3 cmol (1/2Mg <sup>2+</sup> )/kg
	Exchangeable sodium .....	0.31 cmol (Na <sup>+</sup> )/kg
	Exchangeable potassium .....	0.99 cmol (K <sup>+</sup> )/kg
	Exchangeable manganese .....	47 mg/kg
	Available molybdenum .....	0.24 mg/kg
	Available boron .....	0.42 mg/kg
	Soluble fluorine .....	5.1 mg/kg
	Soluble salt	
	Cl <sup>-</sup> .....	0.020 g/kg
	SO <sub>4</sub> <sup>2-</sup> .....	0.064 g/kg
	Ca <sup>2+</sup> .....	0.040 g/kg
	Mg <sup>2+</sup> .....	10 mg/kg
	K <sup>+</sup> .....	17 mg/kg
	Na <sup>+</sup> .....	27 mg/kg
	DTPA extraction	
	Available copper .....	3.3 mg/kg
	Available zinc .....	2.4 mg/kg
	Available iron .....	202 mg/kg
	Available manganese .....	31 mg/kg
	Available cadmium .....	0.033 mg/kg
	Available lead .....	1.9 mg/kg
	Available nickel .....	1.1 mg/kg
	Available cobalt .....	0.16 mg/kg
	Hydrochlorid acid extraction	
	Available copper .....	2.9 mg/kg
	Available zinc .....	5.4 mg/kg
	Available iron .....	111 mg/kg
	Available manganese .....	96 mg/kg
	Available cadmium .....	0.046 mg/kg
	Available lead .....	0.82 mg/kg
	Available nickel .....	2.4 mg/kg
	Available chromium .....	0.42 mg/kg
	Sodium nitrate extraction	
	Available copper .....	0.025 mg/kg
	Available nickel .....	0.035 mg/kg

Code	Product	Unit
<b>New</b> NIM-GBW07413A	Soil (Moist soil) - Available nutrients	500 g
	Certified values	
	pH .....	8.15
	Organic matter .....	13.2 g/kg
	Total nitrogen.....	0.77 g/kg
	Hydrolysable nitrogen .....	76 mg/kg
	Available phosphorus (NaHCO <sub>3</sub> extraction) .....	23.3 mg/kg
	Effective potassium .....	0.29 g/kg
	Slowly available potassium.....	0.95 g/kg
	Available sulfur (CaCl <sub>2</sub> extraction) .....	42 mg/kg
	Available sulfur (phosphate extraction).....	105 mg/kg
	Available silicon .....	0.46 g/kg
	Cation exchange capacity.....	12.8 cmol(+)/kg
	Exchangeable magnesium .....	3.0 cmo(1/2Mg <sup>2+</sup> )/kg
	Exchangeable sodium .....	0.26 cmol (Na <sup>+</sup> )/kg
	Exchangeable potassium .....	0.77 cmol (K <sup>+</sup> )/kg
	Available molybdenum .....	0.086 mg/kg
	Available boron .....	0.55 mg/kg
	Soluble fluorine.....	14.6 mg/kg
	Soluble salt	
	Cl <sup>-</sup> .....	0.022 g/kg
	SO <sub>4</sub> <sup>2-</sup> .....	0.125 g/kg
	Ca <sup>2+</sup> .....	0.17 g/kg
	Mg <sup>2+</sup> .....	22 mg/kg
	K <sup>+</sup> .....	31 mg/kg
	Na <sup>+</sup> .....	29 mg/kg
	DTPA extraction	
	Available copper .....	1.17 mg/kg
	Available zinc.....	1.08 mg/kg
	Available iron .....	55 mg/kg
	Available manganese .....	17.3 mg/kg
	Available cadmium .....	0.040 mg/kg
	Available lead .....	1.7 mg/kg
	Available nickel.....	0.27 mg/kg
	Available cobalt .....	0.13 mg/kg
	Sodium nitrate extraction	
	Available copper .....	0.047 mg/kg
<b>New</b> NIM-GBW07414A	Soil (Purple soil) - Available nutrients	500 g
	Please ask for details	

Code	Product	Unit
<b>New</b> NIM-GBW07415A	Soil (Paddy soil) - Available nutrients	500 g
	Certified values	
	pH .....	6.08
	Organic matter .....	33.3 g/kg
	Total nitrogen .....	1.97 g/kg
	Hydrolysable nitrogen .....	165 mg/kg
	Available phosphorus (NH <sub>4</sub> F extraction) .....	1.5 mg/kg
	Effective potassium .....	0.25 g/kg
	Slowly available potassium .....	0.46 g/kg
	Available sulfur (phosphate extraction) .....	76 mg/kg
	Available silicon .....	0.52 g/kg
	Cation exchange capacity .....	19 cmol(+)/kg
	Exchangeable calcium .....	13 cmol (1/2Ca <sup>2+</sup> )/kg
	Exchangeable magnesium .....	3.98 cmol (1/2Mg <sup>2+</sup> )/kg
	Exchangeable sodium .....	0.32 cmol (Na <sup>+</sup> )/kg
	Exchangeable potassium .....	0.63 cmol (K <sup>+</sup> )/kg
	Exchangeable manganese .....	43 mg/kg
	Available molybdenum .....	0.112 mg/kg
	Available boron .....	0.31 mg/kg
	Soluble fluorine .....	4.1 mg/kg
	Soluble salt	
	Cl <sup>-</sup> .....	0.058 g/kg
	SO <sub>4</sub> <sup>2-</sup> .....	0.236 g/kg
	Ca <sup>2+</sup> .....	0.128 g/kg
	Mg <sup>2+</sup> .....	33 mg/kg
	K <sup>+</sup> .....	24 mg/kg
	Na <sup>+</sup> .....	41 mg/kg
	DTPA extraction	
	Available copper .....	5.8 mg/kg
	Available zinc .....	1.14 mg/kg
	Available iron .....	252 mg/kg
	Available manganese .....	45 mg/kg
	Available cadmium .....	0.137 mg/kg
	Available lead .....	5.6 mg/kg
	Available nickel .....	0.58 mg/kg
	Available cobalt .....	0.34 mg/kg
	Hydrochloride acid extraction	
	Available copper .....	6.8 mg/kg
	Available zinc .....	3.1 mg/kg
	Available iron .....	428 mg/kg
	Available manganese .....	98 mg/kg
	Available cadmium .....	0.174 mg/kg
	Available lead .....	5.4 mg/kg
	Available nickel .....	1.23 mg/kg
	Available chromium .....	0.60 mg/kg
	Available selenium .....	6.8 mg/kg
	Sodium nitrate extraction	
	Available copper .....	0.066 mg/kg
<b>New</b> NIM-GBW07416A	Soil (Red soil) - Available nutrients	500 g
	Please ask for details	

Code	Product	Unit
<b>New</b> NIM-GBW07417A	Soil - Available nutrients	500 g
	Certified values	
	pH .....	6.80
	Organic matter .....	38.5 g/kg
	Total nitrogen.....	2.11 g/kg
	Hydrolysable nitrogen .....	155 mg/kg
	Available phosphorus (NaHCO <sub>3</sub> extraction) .....	90 mg/kg
	Effective potassium .....	0.162 g/kg
	Slowly available potassium.....	0.33 g/kg
	Available sulfur (phosphate extraction).....	105 mg/kg
	Available silicon .....	0.37 g/kg
	Cation exchange capacity.....	19.7 cmol(+)/kg
	Exchangeable calcium.....	18.9 cmol (1/2Ca <sup>2+</sup> )/kg
	Exchangeable magnesium .....	2.82 cmol (1/2Mg <sup>2+</sup> )/kg
	Exchangeable sodium .....	0.93 cmol (Na <sup>+</sup> )/kg
	Exchangeable potassium .....	0.41 cmol (K <sup>+</sup> )/kg
	Exchangeable manganese .....	128 mg/kg
	Available molybdenum .....	0.14 mg/kg
	Available boron.....	0.31 mg/kg
	Soluble fluorine.....	11.4 mg/kg
	Soluble salt	
	Cl <sup>-</sup> .....	0.16 g/kg
	SO <sub>4</sub> <sup>2-</sup> .....	0.335 g/kg
	Ca <sup>2+</sup> .....	0.166 g/kg
	Mg <sup>2+</sup> .....	25 mg/kg
	K <sup>+</sup> .....	18.7 mg/kg
	Na <sup>+</sup> .....	154 mg/kg
	DTPA extraction	
	Available copper .....	10.3 mg/kg
	Available zinc.....	2.1 mg/kg
	Available iron .....	258 mg/kg
	Available manganese .....	88 mg/kg
	Available cadmium .....	0.20 mg/kg
	Available lead .....	8.1 mg/kg
	Available nickel.....	0.47 mg/kg
	Available cobalt .....	0.43 mg/kg
	Hydrochlorid acid extraction	
	Available copper .....	10.6 mg/kg
	Available zinc.....	6.6 mg/kg
	Available iron .....	134 mg/kg
	Available manganese .....	295 mg/kg
	Available cadmium .....	0.30 mg/kg
	Available lead .....	6.7 mg/kg
	Available nickel.....	1.3 mg/kg
	Available chromium .....	0.64 mg/kg
	Available arsenic .....	0.094 mg/kg
	Sodium nitrate extraction	
	Available copper.....	0.064 mg/kg

Code	Product	Unit
<b>New</b> NCS DC85113	Soil - Available nutrients	500 g
	Certified values	
	pH .....	6.14
	Organic matter .....	34.5 g/kg
	Total nitrogen .....	1.62 g/kg
	Hydrolysable nitrogen .....	157 mg/kg
	Available phosphorus (NH <sub>4</sub> F extraction) .....	32 mg/kg
	Effective potassium .....	0.36 g/kg
	Slowly available potassium .....	0.98 g/kg
	Available sulfur (phosphate extraction) .....	33 mg/kg
	Available silicon .....	0.63 g/kg
	Cation exchange capacity .....	31 cmol(+)/kg
	Exchangeable calcium .....	22.5 cmol (1/2Ca <sup>2+</sup> )/kg
	Exchangeable magnesium .....	5.4 cmol(1/2Mg <sup>2+</sup> )/kg
	Exchangeable sodium .....	0.24 cmol (Na <sup>+</sup> )/kg
	Exchangeable potassium .....	0.94 cmol (K <sup>+</sup> )/kg
	Exchangeable manganese .....	80 mg/kg
	Available molybdenum .....	0.13 mg/kg
	Available boron .....	0.56 mg/kg
	Soluble fluorine .....	2.9 mg/kg
	Soluble salt	
	Cl <sup>-</sup> .....	0.016 g/kg
	SO <sub>4</sub> <sup>2-</sup> .....	0.109 g/kg
	Ca <sup>2+</sup> .....	0.080 g/kg
	Mg <sup>2+</sup> .....	19 mg/kg
	K <sup>+</sup> .....	18 mg/kg
	Na <sup>+</sup> .....	24 mg/kg
	DTPA extraction	
	Available copper .....	2.6 mg/kg
	Available zinc .....	2.3 mg/kg
	Available iron .....	142 mg/kg
	Available manganese .....	67 mg/kg
	Available cadmium .....	0.048 mg/kg
	Available lead .....	2.07 mg/kg
	Available nickel .....	2.4 mg/kg
	Available cobalt .....	0.39 mg/kg
	Hydrochloric acid extraction	
	Available copper .....	1.08 mg/kg
	Available zinc .....	3.6 mg/kg
	Available iron .....	16.3 mg/kg
	Available manganese .....	131 mg/kg
	Available cadmium .....	0.053 mg/kg
	Available lead .....	0.8 mg/kg
	Available nickel .....	3.3 mg/kg
	Available chromium .....	0.25 mg/kg
	Available arsenic .....	0.018 mg/kg
	Sodium nitrate extraction	
	Available copper .....	0.034 mg/kg
	Available zinc .....	0.068 mg/kg
	Available nickel .....	0.047 mg/kg



Code	Product	Unit	
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)	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',4,4',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		

Code	Product	Unit
	LGCQC3004 - 3006 Quality control reference materials from LGC	
LGCQC3004	Clay soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons Textural Classification <sup>(1)</sup> - 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 <sup>(1)</sup> According to UK Textural Soil Classification	2 x 250 g
LGCQC3005	Loamy Sand Soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons Textural Classification <sup>(1)</sup> - 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 <sup>(1)</sup> According to UK Textural Soil Classification	2 x 250 g

Code	Product	Unit
LGCQC3006	Sandy Loam Soil 1 - Metals, inorganics and polynuclear aromatic hydrocarbons Textural Classification <sup>(1)</sup> - 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 <sup>(1)</sup> According to UK Textural Soil Classification	2 x 250 g

LGC6115	Soil - PCBs and PAHs 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	50 g
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<b>New</b> ERM-CC135	Brick works soil - Extractable metals Collected from Hackney Brick Works The extractable/leachable metal content refers to metals soluble in Aqua Regia using methods based on ISO11466 (1995). <u>Total metals</u> 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 <u>Extractable metals</u> Certified values Al..... 22700 mg/kg      Cu..... 105 mg/kg      Na ..... 362 mg/kg Ba ..... 134 mg/kg      Fe..... 40900 mg/kg      Ni ..... 277 mg/kg Be ..... 1.4 mg/kg      Hg..... 3.2 mg/kg      Pb ..... 391 mg/kg Ca ..... 21900 mg/kg      K..... 5100 mg/kg      Se ..... 0.9 mg/kg Co ..... 20 mg/kg      Mg ..... 7000 mg/kg      V ..... 78 mg/kg Cr ..... 336 mg/kg      Mn ..... 348 mg/kg      Zn..... 316 mg/kg Indicative values for Li, Mo Sn, Ti	50 g
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Code	Product	Unit
LGC6145	Contaminated clay loam soil - Extractable metals, PAHs and inorganics 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 Cd .....0.65 mg/kg Cr .....47.6 mg/kg Cu .....62.2 mg/kg Ni .....39.0 mg/kg Assessed values Naphthalene .....9.3 mg/kg Acenaphthylene .....0.79 mg/kg Phenanthrene .....325 mg/kg Anthracene .....8.4 mg/kg Chrysene.....45 mg/kg Pb..... 45.1 mg/kg Se..... 1.81 mg/kg V ..... 53.9 mg/kg Zn ..... 137 mg/kg Benzo(b)fluoranthene..... 12 mg/kg Indeno(1,2,3-cd)pyrene ..... 0.97 mg/kg Water soluble chloride ..... 65 mg/kg Water soluble sulfate ..... 5.3 g/L 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 <sub>2</sub> O <sub>3</sub> , CaO, Fe <sub>2</sub> O <sub>3</sub> , K <sub>2</sub> O, MgO, SO <sub>3</sub> , SiO <sub>2</sub> , TiO <sub>2</sub> , Soil textural class (UK), Loss on drying, pH, Loss on ignition, Quartz SiO <sub>2</sub> , Kaoline clay, Muscovite clay	50 g
BCR-481	Industrial soil - PCBs Compound (IUPAC Code) 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 Certified value mg/kg Uncertainty mg/kg	25 g
BCR-524	Contaminated industrial soil - PAHs Compound Pyrene..... 173 ..... 1.1 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 Certified value mg/kg Uncertainty mg/kg	40 g
BCR-529	Industrial sandy soil - PCDDs and PCDFs Compound 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	50 g
BCR-530	Industrial clay soil - Dioxins and furans Compound 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 Certified value mg/kg Uncertainty mg/kg	50 g

## Soils

Code	Product	Unit														
ERM-CC008	Soil - Pentachlorophenol Certified value Pentachlorophenol... 2.04 mg/kg	30 g														
ERM-CC009	Soil - Pentachlorophenol Certified value Pentachlorophenol... 2.91 mg/kg	30 g														
ERM-CC010	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 1349.4 mg/kg AOX - Absorbed Organically Bound Halogens	5.7 g														
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 <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Naphthalene ..... 2.4 mg/kg</td> <td style="width: 50%;">Chrysene ..... 5.3 mg/kg</td> </tr> <tr> <td>Fluorene ..... 1.14 mg/kg</td> <td>Benzo(b)fluoranthene ..... 7.1 mg/kg</td> </tr> <tr> <td>Phenanthrene ..... 12.0 mg/kg</td> <td>Benzo(k)fluoranthene ..... 3.4 mg/kg</td> </tr> <tr> <td>Anthracene ..... 1.14 mg/kg</td> <td>Benzo(a)pyrene ..... 4.9 mg/kg</td> </tr> <tr> <td>Fluoranthene ..... 12.9 mg/kg</td> <td>Benzo(g,h,i)perylene ..... 4.6 mg/kg</td> </tr> <tr> <td>Pyrene ..... 9.6 mg/kg</td> <td>Indeno(1,2,3-c,d)pyrene ..... 5.2 mg/kg</td> </tr> <tr> <td>Benz(a)anthracene ..... 5.6 mg/kg</td> <td></td> </tr> </table>	Naphthalene ..... 2.4 mg/kg	Chrysene ..... 5.3 mg/kg	Fluorene ..... 1.14 mg/kg	Benzo(b)fluoranthene ..... 7.1 mg/kg	Phenanthrene ..... 12.0 mg/kg	Benzo(k)fluoranthene ..... 3.4 mg/kg	Anthracene ..... 1.14 mg/kg	Benzo(a)pyrene ..... 4.9 mg/kg	Fluoranthene ..... 12.9 mg/kg	Benzo(g,h,i)perylene ..... 4.6 mg/kg	Pyrene ..... 9.6 mg/kg	Indeno(1,2,3-c,d)pyrene ..... 5.2 mg/kg	Benz(a)anthracene ..... 5.6 mg/kg		81 g
Naphthalene ..... 2.4 mg/kg	Chrysene ..... 5.3 mg/kg															
Fluorene ..... 1.14 mg/kg	Benzo(b)fluoranthene ..... 7.1 mg/kg															
Phenanthrene ..... 12.0 mg/kg	Benzo(k)fluoranthene ..... 3.4 mg/kg															
Anthracene ..... 1.14 mg/kg	Benzo(a)pyrene ..... 4.9 mg/kg															
Fluoranthene ..... 12.9 mg/kg	Benzo(g,h,i)perylene ..... 4.6 mg/kg															
Pyrene ..... 9.6 mg/kg	Indeno(1,2,3-c,d)pyrene ..... 5.2 mg/kg															
Benz(a)anthracene ..... 5.6 mg/kg																
ERM-CC012	Soil - AOX (DIN 38414 Part 18) Certified value AOX ..... 102.3 mg/kg AOX - Absorbed Organically Bound Halogens	6.5 g														

Code	Product	Unit	
CIL-EDF-5184	Contaminated sediment - Organic contaminants	10 g	
	Reference values		
	Polychlorinated dioxins and furans		
2,3,7,8-TCDD	1.96 ± 1.10 ng/kg	1,2,3,7,8-PeCDF	122 ± 24.0 ng/kg
Total TCDD	25.0 ± 13.6 ng/kg	2,3,4,7,8-PeCDF	164 ± 50.4 ng/kg
1,2,3,7,8-PeCDD	5.79 ± 2.12 ng/kg	Total PeCDF	1,490 ± 800 ng/kg
Total PeCDD	45.8 ± 49.2 ng/kg	1,2,3,4,7,8-HxCDF	277 ± 42.8 ng/kg
1,2,3,4,7,8-HxCDD	5.61 ± 2.72 ng/kg	1,2,3,6,7,8-HxCDF	159 ± 23.6 ng/kg
1,2,3,6,7,8-HxCDD	10.9 ± 3.50 ng/kg	1,2,3,7,8,9-HxCDF	7.44 ± 7.38 ng/kg
1,2,3,7,8,9-HxCDD	6.88 ± 1.94 ng/kg	2,3,4,6,7,8-HxCDF	48.4 ± 18.7 ng/kg
Total HxCDD	193 ± 134 ng/kg	Total HxCDF	1,240 ± 398 ng/kg
1,2,3,4,6,7,8-HpCDD	231 ± 77.6 ng/kg	1,2,3,4,6,7,8-HpCDF	346 ± 45.6 ng/kg
Total HpCDD	497 ± 304 ng/kg	1,2,3,4,7,8,9-HpCDF	80.2 ± 30.4 ng/kg
OCDD	2,050 ± 580 ng/kg	Total HpCDF	659 ± 462 ng/kg
2,3,7,8-TCDF	219 ± 47.8 ng/kg	OCDF	301 ± 50.6 ng/kg
Total TCDF	1,680 ± 486 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)	3,390,000 ± 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',4,4',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',4,4',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		
	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

## Soils

Code	Product	Unit
<b>New</b> RTC-CRM090-100	Clay soil - Nutrients Lot 014687 Certified values Ammonia as N .....743 ± 35.2 mg/kg Kjeldahl nitrogen, total (TKN) .....2530 ± 104 mg/kg Phosphorus, total.....809 ± 79.5 mg/kg Total organic carbon (TOC).....5280 ± 592 mg/kg	100 g
RTC-CRM401-225	Superfund soil (Sludge) - TCLP organics Organic contaminated soil from a superfund site in the W estern United States. Certified using methods USEPA, SW 846, 3 <sup>rd</sup> edition, Extraction Method 1311 and analytical methods 8031, 8150 and 8270. Lot D5401 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.	225 g
RTC-CRM402-225	Superfund soil (Sandy loam) - TCLP organics The reference values were determined by USEPA SW 846 (3rd edition) Extraction Method 1311 and Analytical Methods 8081, 8150, and 8270. The sample is suitable for these and other similar methods. Certified values CD402 Nitrobenzene .....12.2 mg/L      BHC (Lindane) ..... 1.28 mg/L 2,4-Dinitrotoluene (2,4-DNT) .....0.619 mg/L      2,4-D ..... 67.1 mg/L	225 g
RTC-CRM910-050	Soil (Loam) - PCBs Real-world waste produced from a contaminated site in the Eastern United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value D910 Aroclor 1242 ..... 39.4 mg/kg	50 g
RTC-CRM911-050	Soil (Loam) - PCBs Real-world waste collected from a percolation pond at an electric generating facility in the Southeastern United States. The sample was certified by USEPA SW 846 (3rd edition) Methods 3540A/3545/3550 and 8082. The sample is suitable for use by these and other similar methods. Certified value BC911 Aroclor 1254 ..... 1.28 mg/kg	50 g
RTC-CRM913-050	Soil (Sandy loam) - PCBs Real-world waste collected from electric utility storage site W estern 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 Lot DG913 Aroclor 1254 ..... 5.93 mg/kg	50 g
RTC-CRM915-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the W estern United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified values Lot JG915 Aroclor 1260 ..... 1.50 mg/kg	50 g
RTC-CRM916-050	Soil (Loamy sand) - PCBs Real-world waste collected from a site in the W estern United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot IH916 Aroclor 1248 ..... 10.7 mg/kg	50 g
RTC-CRM917-050	Soil (Loamy sand) - PCBs Real-world waste collected from a site in the W estern United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot II917 Aroclor 1242 ..... 5.05 mg/kg	50 g

## Soils

Code	Product	Unit
RTC-CRM918-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot JI918 Aroclor 1252 ..... 274 mg/kg	50 g
RTC-CRM921-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value Lot AL921 Aroclor 1242 ..... 29.8 mg/kg	50 g
RTC-CRM922-050	Soil (Loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> 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-CRM923-050	Soil (Sandy loam) - PCBs Real-world waste collected from a site in the Western United States. The sample was certified by USEPA SW 846, 3 <sup>rd</sup> edition Method 3540A/8081 and is suitable for use by these and other similar methods. Certified value BL923 Aroclor 1254 ..... 5.47 mg/kg	50 g
RTC-CRM924-050	Soil (Silt loam) - PCBs Certified value Lot P76 Aroclor 1242 ..... 8.27 mg/kg	50 g
<b>New</b> RTC-CRM927-050	Soil (Clay loam) - PCBs The certified value was determined by USEPA SW 846 (3rd edition) Methods 8081A and 8082. The sample is suitable for use by these and other similar methods. Certified value Lot 002392 Aroclor 1242 ..... 7.03 mg/kg	50 g
<b>New</b> RTC-CRM961-050	Clay soil - PCBs Certified values Lot 013366 PCBs, total..... 3,100 ± 516 µg/kg 2,4,4'-Trichlorobiphenyl (PCB 28)..... 135 ± 19.8 µg/kg 2,2',5,5'-Tetrachlorobiphenyl (PCB 52)..... 85.9 ± 18.2 µg/kg 3,3',4,4'-Tetrachlorobiphenyl (PCB 77)..... 223 ± 31.5 µg/kg 3,4,4',5-Tetrachlorobiphenyl (PCB 81)..... 205 ± 35.8 µg/kg 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)..... 106 ± 11.0 µg/kg 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)..... 147 ± 18.5 µg/kg 2,3',4,4',5-Pentachlorobiphenyl (PCB 118)..... 173 ± 19.9 µg/kg 2,3',4,4',5'-Pentachlorobiphenyl (PCB 123)..... 170 ± 24.0 µg/kg 2,3,4,4',5-Pentachlorobiphenyl (PCB 114)..... 183 ± 28.9 µg/kg 3,3',4,4',5-Pentachlorobiphenyl (PCB 126)..... 213 ± 26.6 µg/kg 2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)..... 130 ± 22.8 µg/kg 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)..... 137 ± 18.5 µg/kg 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)..... 236 ± 43.7 µg/kg 3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)..... 124 ± 15.5 µg/kg 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)..... 116 ± 11.6 µg/kg 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)..... 247 ± 60.2 µg/kg PCB (156)+(157)..... 370 ± 4.59 µg/kg	50 g



Code	Product	Unit
<b>New</b> RTC-CRM962-050	Loamy sand - PCBs Certified values Lot 012222 2,4,4'-Trichlorobiphenyl (PCB 28)..... 180 ± 53.6 µg/kg 2,2',5,5'-Tetrachlorobiphenyl (PCB 52)..... 179 ± 40.7 µg/kg 3,3',4,4'-Tetrachlorobiphenyl (PCB 77)..... 221 ± 32.1 µg/kg 3,4,4',5'-Tetrachlorobiphenyl (PCB 81) ..... 165 ± 2.73 µg/kg 2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)..... 119 ± 39.5 µg/kg 2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)..... 108 ± 19.6 2 µg/kg 2,3',4,4',5'-Pentachlorobiphenyl (PCB 118)..... 154 ± 11.8 2 µg/kg 2,3',4,4',5'-Pentachlorobiphenyl (PCB 123) ..... 187 ± 28.0 µg/kg 2,3,4,4',5'-Pentachlorobiphenyl (PCB 114) ..... 128 ± 3.69 µg/kg 3,3',4,4',5'-Pentachlorobiphenyl (PCB 126)..... 124 ± 23.3 µg/kg 2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138) ..... 265 ± 84.9 µg/kg 2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153) ..... 204 ± 74.9 µg/kg 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157) ..... 241 ± 101 µg/kg 2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 156) ..... 211 ± 60.3 µg/kg 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167) ..... 225 ± 35.0 µg/kg 3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169) ..... 178 ± 32.9 µg/kg 2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180) ..... 287 ± 66.5 µg/kg 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189) ..... 204 ± 35.7 µg/kg PCB (156)+(157) ..... 450 ± 29.7 µg/kg	50 g
<b>New</b> RTC-CRM304-030	Soil - BETX This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The sample has been analyzed by a minimum of 20 laboratories to meet the requirements specified by the IPA/AALA RM-03, ISO Guides 34 and 35. The soil was certified by USEPA SW 846, 3rd edition Method 5030A and 8020A or 8040B and is suitable for use by these and other similar methods. Certified values Lot 002520 Benzene.....3.57 mg/kg Ethylbenzene .....8.73 mg/kg Toluene.....3.84 mg/kg m+p-Xylene.....2.43 mg/kg o-Xylene ..... 2.40 mg/kg Xylene, total ..... 7.02 mg/kg Gasoline range organics (C6-C12) ..... 65.5 mg/kg	30 g
<b>New</b> RTC-CRM305-030	Silt loam - BETX The sample was certified by USEPA SW 846, 3rd edition Method 5030A and 8020A or 8240B and is suitable for use by these and other similar methods. Certified values Lot 010406 Benzene.....57.5 mg/kg Ethylbenzene .....3.49 mg/kg Methyl tert-butyl ether (MTBE).....31.6 mg/kg Toluene.....15.5 mg/kg m+p-Xylene ..... 42.7 mg/kg o-Xylene ..... 23.2 mg/kg Xylene, total ..... 66.7 mg/kg Gasoline range organics (C6-C12) ..... 235 mg/kg	30 g
<b>New</b> RTC-CRM306-030	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 SW 846, 3rd edition Method 5030A and 8021B or 8260B and is suitable for use by these and other similar methods. Certified values Lot 010590 Benzene.....20.2 mg/kg Ethylbenzene .....40.1 mg/kg Methyl tert-butyl ether (MTBE).....9.45 mg/kg Toluene.....51.4 mg/kg o-Xylene ..... 33.6 mg/kg m+p Xylene ..... 30.4 mg/kg Total Xylene ..... 69.5 mg/kg	30 g
RTC-CRM307-030	Soil - BTEX This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW 846, 3rd edition Method 5030A and 8021B or 8260B and is suitable for use by these and other similar methods. The value for GRO was determined by GC method 8015M. Certified values Lot 015190 Benzene.....4240 µg/kg Ethylbenzene .....6540 µg/kg MTBE .....5430 µg/kg Napthalene .....3560 µg/kg Toluene.....2790 µg/kg 1,2,4-Trimethylbenzene .....2190 µg/kg 1,3,5-Trimethylbenzene ..... 1750 µg/kg m+p-Xylene ..... 6300 µg/kg o-Xylene ..... 3190 µg/kg Total Xylene ..... 9820 µg/kg Total purgeable hydrocarbons ..... 65500 µg/kg	30 g
RTC-CRM308-030	Soil - BTEX Certified values Lot 014714 Benzene.....4150 µg/kg 1,2-Dichlorobenzene.....6400 µg/kg 1,3-Dichlorobenzene.....1500 µg/kg 1,4-Dichlorobenzene.....5670 µg/kg Ethylbenzene .....1550 µg/kg Methyl tert-butyl ether (MTBE) .....4720 µg/kg Napthalene .....3200 µg/kg Toluene ..... 4940 µg/kg 1,2,4-Trimethylbenzene ..... 5100 µg/kg 1,3,5-Trimethylbenzene ..... 2690 µg/kg m+p-Xylene ..... 5170 µg/kg o-Xylene ..... 2320 µg/kg Xylene, total ..... 7390 µg/kg Total purgeable Hydrocarbons..... 67300 µg/kg	30 g

## Soils

Code	Product	Unit
<b>New</b> RTC-CRM309-030	Soil - BETX Certified values Lot 013253 Benzene.....2300 µg/kg Ethylbenzene .....6130 µg/kg Methyl tert-butyl ether (MTBE) .....5070 µg/kg Toluene.....5190 µg/kg	30 g    m+p-Xylene ..... 7240 µg/kg o-Xylene ..... 6440 µg/kg Xylenes, total..... 12100 µg/kg
<b>New</b> ERM-CC017	Mineral oil contaminated soil - Total petrol hydrocarbons (TPH) To be used for verification of analytical procedures for the determination of TPH in soils and sediments according to ISO 16703:2004 by GC/FID and for quality control in analytical laboratories. Certified values Total petrol hydrocarbons (TPH) .....6.6 ± 0.5 g/kg	81 g
<b>New</b> ERM-CC016	Waste - Total petrol hydrocarbons (TPH) The intended purpose of reference material ERM <sup>®</sup> -CC016 is the verification of analytical procedures for the determination of mineral oil hydrocarbons in waste and soils according to EN 14039 and ISO 16703 by GC-FID and for quality control in analytical laboratories. Certified value Total petrol hydrocarbons (TPH) .....3010 ± 220 mg/kg	83 g
<b>New</b> LGCQC3013	Loamy sand soil 2 - Total Petroleum Hydrocarbons Quality control reference material The method used for the determination of TPH was based on the ISO 16703:2004(E) Standard Soil Quality-Determination of content of hydrocarbons in the range of C10 to C40 by gas chromatography. Indicative values Textural classification Sand: 2.00-0.063 mm ..... 87 % Silt: 0.063 – 0.002..... 6 % Clay: < 0.002 mm..... 7 % Constituent Total Petroleum Hydrocarbons (C10-C40) .....4100 mg/kg	100 g
RTC-CRM352-100	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-CRM350-100	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 013246 TPH..... 8300 mg/kg	100 g
RTC-CRM353-100	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 012182 TPH..... 2200 mg/kg	100 g
RTC-CRM355-100	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 JC355 TPH..... 7040 mg/kg	100 g
RTC-CRM356-100	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 GK356 TPH.....3810 mg/kg      Diesel Range Organics (C10-C20) ..... 611 mg/kg	100 g
RTC-CRM358-100	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

## Soils

Code	Product	Unit
RTC-CRM359-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) (as diesel) Certified value Lot 015649 Diesel range organics, C10-C28 .....982 mg/kg      Total EPH ..... 1110 mg/kg Diesel Range Organics (DRO) ..... 1030 mg/kg	100 g
RTC-CRM360-100	Soil (Sandy loam) - Total petroleum hydrocarbons (TPH) as (30/40WT motor) oil The reference value for TPH was determined by USEPA SW 846 (3rd edition) Method 8015B and 8015M. TPH source is 30/40WT motor oil. Certified values Lot 013220 Residual Range Organics (RRO) C28-C35.....414 mg/kg	100 g
RTC-CRM357-100	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 JF357 TPH ..... 3220 mg/kg	100 g
<b>New</b> RTC-CRM372-100	Sandy soil - Total petroleum hydrocarbons (TPH) Certified values Lot 014092 Total Petroleum Hydrocarbon.....2020 mg/kg      C10 to C12 Aromatics..... 17.1 mg/kg C10 to C12 Aliphatics .....70.9 mg/kg      C12 to C16 Aromatics..... 112 mg/kg C12 to C16 Aliphatics .....314 mg/kg      C16 to C21 Aromatics..... 96.2 mg/kg C16 to C21 Aliphatics .....209 mg/kg      C21 to C35 Aromatics..... 39.4 mg/kg C21 to C35 Aliphatics .....460 mg/kg	100 g
<b>New</b> RTC-CRM373-100	Loamy Soil - TPH Banded The soil is to be extracted and analyzed using an appropriate extraction and analytical method for TPH, assuming a high concentration sample. The values given are based on GC-FID/PID and column separation methods for aliphatics and aromatics. Certified values Lot 014476 C10 to C12 Aliphatics .....93.6 ± 10.5 mg/kg C12 to C16 Aliphatics .....302 ± 23.2 mg/kg C16 to C21 Aliphatics .....205 ± 10.3 mg/kg C21 to C35 Aliphatics .....539 ± 30.9 mg/kg C10 to C12 Aromatics .....36.8 ± 8.15 mg/kg C12 to C16 Aromatics .....151 ± 24.0 mg/kg C16 to C21 Aromatics .....86.8 ± 11.1 mg/kg C21 to C35 Aromatics .....26.7 ± 6.50 mg/kg Total Petroleum Hydrocarbons.....1050 ± 101 mg/kg      (TPH), (C6-C35)	100 g
<b>New</b> RTC-CRM371-100	Loamy Soil - TPH Banded The soil is to be extracted and analyzed using an appropriate extraction and analytical method for TPH, assuming a high concentration sample. Certified values Lot 013042 C10 to C12 Aliphatics ..... 280 ± 14.8 mg/kg C12 to C16 Aliphatics ..... 764 ± 42.1 mg/kg C16 to C21 Aliphatics ..... 574 ± 30.4 mg/kg C21 to C35 Aliphatics ..... 63.4 ± 6.89 mg/kg C10 to C12 Aromatics ..... 60.0 ± 6.70 mg/kg C12 to C16 Aromatics ..... 210 ± 35.9 mg/kg C16 to C21 Aromatics ..... 168 ± 12.4 mg/kg C21 to C35 Aromatics ..... 23.6 ± 4.78 mg/kg Total Petroleum Hydrocarbons(C6-C35) (TPH) ..... 1,570 ± 286 mg/kg	100 g
RTC-CRM500-030	Soil (Sandy loam) - Gasoline The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods. Certified value Benzene.....9.03 mg/kg      m+p-Xylene..... 25.3 mg/kg Ethylbenzene .....6.16 mg/kg      o-Xylene ..... 9.23 mg/kg Naphthalene .....1.51 mg/kg      Xylene, total ..... 46.3 mg/kg Toluene.....30.1 mg/kg      Gasoline range organics (C5-C10) ..... 334 mg/kg	30 g
<b>New</b> RTC-CRM501-030	Soil (Loamy clay) - BTEX/GRO The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods. Certified values Lot 010589 Benzene.....10.5 mg/kg      o-Xylene ..... 12.6 mg/kg Ethylbenzene .....9.63 mg/kg      Xylene, total ..... 46.3 mg/kg Toluene.....42.6 mg/kg      Gasoline range organics (C6-C12) ..... 480 mg/kg m+p-Xylene.....34.2 mg/kg	30 g

## Soils

Code	Product	Unit
<b>New</b> RTC-CRM502-030	Soil (clay) - BTEX/GRO The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods. Certified values Lot 013606 Benzene.....8.79 mg/kg Ethylbenzene .....5.77 mg/kg Toluene.....27.4 mg/kg m+p-Xylene.....23.4 mg/kg	30 g o-Xylene ..... 8.66 mg/kg Xylene, total..... 33.0 mg/kg Gasoline range organics (C5-C10) ..... 357 mg/kg
RTC-CRM504-030	Soil (Sandy loam) - Gasoline The certified values were determined by USEPA SW 846 (3rd edition) Method 8015B. Certified values Lot 016116 GRO (Gasoline Range Organics) .....886 mg/kg Benzene.....22.5 mg/kg Ethylbenzene .....16.5 mg/kg Toluene.....76.9 mg/kg m+p-Xylene.....70.7 mg/kg	30 g o-Xylene ..... 26.1 mg/kg Total Xylene ..... 92.9 mg/kg Naphthalene..... 3.94 mg/kg GRO (C5-C10) ..... 685 mg/kg
<b>New</b> RTC-CRM513-030	Soil - BTEX/GRO Certified values Lot 011783 Benzene.....5.11 mg/kg Ethylbenzene .....3.86 mg/kg Toluene.....18.6 mg/kg m+p-Xylene.....14.5 mg/kg	30 g o-Xylene ..... 5.70 mg/kg Xylene, total..... 18.7 mg/kg Gasoline range organic (GRO), ..... 242 mg/kg C5-C10
RTC-CRM550-100	Soil (Sandy loam) - Diesel This soil is typical of that found in the backfill surrounding a leaking underground diesel storage tank (LUST). The soil was certified by USEPA SW 846 (3rd edition) Method 8015B. Certified value Lot 015644 Diesel Range Organics .....963mg/kg	100 g
<b>New</b> RTC-CRM555-100	Soil (Silty loam) - Diesel The reference value for DRO was determined by USEPA SW 846 (3rd edition) Method 8015B and 8015M. The reference value for TPH was determined by USEPA SW 846 (3rd edition) Method 413.1 and 418.1.	100 g
<b>New</b> RTC-CRM558-100	Soil (Clay loam)- Diesel The sample was certified by USEPA Method 8015B, and is suitable for use by this and other similar methods. Certified values EPH .....591 mg/kg Diesel range organics (DRO).....544 mg/kg	100 g
<b>New</b> RTC-CRM608-025	Sandy loam 1 - Volatile organic analytes (VOAs) Certified values Acetone.....8620 µg/Kg Benzene.....7750 µg/Kg Bromobenzene .....7660 µg/Kg Bromodichloromethane.....2490 µg/Kg Bromoform .....8840 µg/Kg 2-Butanone .....20900 µg/Kg (Methyl ethyl ketone, MEK) ..... 4-Methyl-2-pentanone Carbon tetrachloride .....3050 µg/Kg Chlorobenzene.....5730 µg/Kg 1,2-Dibromo-3-chloropropane (DBCP) .. 5200 µg/Kg 1,2-Dibromoethane .....7190 µg/Kg (EDB, Ethylene dibromide) .....Tetrachloroethylene Dibromomethane .....8620 µg/Kg 1,2-Dichlorobenzene.....2460 µg/Kg 1,3-Dichlorobenzene.....7150 µg/Kg 1,4-Dichlorobenzene.....5850 µg/Kg 1,1-Dichloroethane .....2270 µg/Kg 1,2-Dichloroethane .....8210 µg/Kg 1,1-Dichloroethylene .....9860 µg/Kg cis-1,2-Dichloroethylene .....7810 µg/Kg 1,2-Dichloropropane .....8690 µg/Kg cis-1,3-Dichloropropene.....7960 µg/Kg trans-1,3-Dichloropropene .....4300 µg/Kg trans-1,2-Dichloroethylene.....9050 µg/Kg Ethylbenzene .....7770 µg/Kg	25 g Hexachloroethane .....2030 µg/Kg 2-Hexanone.....16800 µg/Kg Isopropylbenzene .....5800 µg/Kg Methyl bromide.....5010 µg/Kg Methyl chloride .....2480 µg/Kg Methylene chloride (Dichloromethane) ...6220 µg/Kg 5690 µg/Kg Methyl tert-butyl ether.....3340 µg/Kg Naphthalene.....4830 µg/Kg Styrene .....4780 µg/Kg 1,1,2,2-Tetrachloroethane .....4060 µg/Kg 4460 µg/Kg (Perchloroethylene) Toluene .....8180 µg/Kg 1,2,4-Trichlorobenzene .....6160 µg/Kg 1,1,1-Trichloroethane .....5830 µg/Kg 1,1,2-Trichloroethane .....2050 µg/Kg Trichlorofluoromethane .....5140 µg/Kg 1,2,3-Trichloropropane.....2820 µg/Kg 1,2,4-Trimethylbenzene .....4670 µg/Kg 1,3,5-Trimethylbenzene .....6140 µg/Kg Vinyl chloride.....1560 µg/Kg m+p-Xylene .....9940 µg/Kg o-Xylene .....8350 µg/Kg Xylene, total.....18200 µg/Kg

Code	Product	Unit
RTC-CRM627-030	Soil (Sandy loam) - Volatile organic analytes (low level) The following sample was certified using USEPA SW 846, 3rd edition, method 8260, and is ideal for methanol extraction Certified values Benzene.....56.5 µg/kg Carbon tetrachloride .....44.8 µg/kg Chlorobenzene .....52.6 µg/kg 1,2-Dichlorobenzene.....40.9 µg/kg 1,3-Dichlorobenzene.....70.4 µg/kg 1,4-Dichlorobenzene.....74.9 µg/kg 1,2-Dichloroethane .....60.7 µg/kg Ethylbenzene .....88.4 µg/kg Hexachloroethane.....147 µg/kg Methyl chloride (Chloromethane).....23.3 µg/kg Methyl tert-butyl ether (MTBE).....121 µg/kg Styrene.....39 µg/kg 1,1,1,2-Tetrachloroethane.....99.8 µg/kg 1,1,2,2-Tetrachloroethane.....87.8 µg/kg Toluene .....75.7 µg/kg 1,2,4-Trichlorobenzene .....48.9 µg/kg 1,1,2-Trichloroethane.....71.3 µg/kg 1,2,3-Trichloropropane.....53 µg/kg 1,2,4-Trimethylbenzene .....90.5 µg/kg m+p-Xylene .....67.3 µg/kg o-Xylene .....49.9 µg/kg Xylene, total .....117 µg/kg	30 g
RTC-CRM633-030	Soil (Loamy sandy) - Volatile organic analytes (low level) Analytical data for certification was obtained using USEPA SW 846, 3rd edition method 8260 (VOCs by GC/MS). The sample is intended for use in analytical systems using this and related methods. Certified values Lot 015216 Acetone.....411 µg/kg Benzene.....52.2 µg/kg Bromobenzene .....153 µg/kg Bromodichloromethane .....65.1 µg/kg 2-Butanone (Methyl ethyl ketone, MEK) ....330 µg/kg Carbon tetrachloride .....145 µg/kg Chlorobenzene .....158 µg/kg Chloroethane .....92.2 µg/kg Chloroform .....120 µg/kg 1,2-Dibromo-3-chloropropane (DBCP) ....98.4 µg/kg Dibromochloromethane .....183 µg/kg 1,2-Dibromoethane (EDB) .....158 µg/kg Dibromomethane .....27.0 µg/kg 1,2-Dichlorobenzene.....49.9 µg/kg 1,3-Dichlorobenzene.....68.3 µg/kg 1,4-Dichlorobenzene.....40.0 µg/kg 1,2-Dichloroethane .....31.6 µg/kg 1,1-Dichloroethylene .....132 µg/kg cis-1,2-Dichloroethylene .....81.3 µg/kg 1,2-Dichloropropane .....37.2 µg/kg cis-1,3-Dichloropropene.....183µg/kg trans-1,2-Dichloroethylene.....49.6µg/kg Ethylbenzene .....56.6 µg/kg 2-Hexanone .....422 µg/kg Isopropylbenzene .....106 µg/kg Methyl bromide (Bromomethane) .....79.3 µg/kg Methyl chloride (Chloromethane) .....60.2 µg/kg Methyl tert-butyl ether (MTBE) .....82.3 µg/kg Naphthalene.....94.8 µg/kg Styrene.....81.9 µg/kg 1,1,1,2-Tetrachloroethane.....120 µg/kg Tetrachloroethylene .....131 µg/kg Toluene .....86.2 µg/kg 1,2,4-Trichlorobenzene .....83.8 µg/kg 1,1,1-Trichloroethane .....38.8 µg/kg 1,1,2-Trichloroethane .....127 µg/kg Trichloroethene (Trichloroethylene) .....188 µg/kg Trichlorofluoromethane .....102 µg/kg 1,2,3-Trichloropropane.....134 µg/kg 1,2,4-Trimethylbenzene .....132 µg/kg 1,3,5-Trimethylbenzene .....190 µg/kg Vinyl chloride.....63.2 µg/kg m+p-Xylene.....110 µg/kg o-Xylene .....47.7 µg/kg Xylene, total .....158 µg/kg	30 g
<b>New</b> RTC-CRM636-025	Loamy sand 4 - Volatile organic analytes Certified values Lot 016530 Acrolein.....1080 µg/kg Acetone.....27900 µg/kg Benzene.....5110 µg/kg Bromobenzene .....3810 µg/kg Bromodichloromethane .....3500 µg/kg 2-Butanone (Methyl ethyl ketone, MEK) 15800 µg/kg Carbon tetrachloride .....3110 µg/kg Chlorobenzene .....4740 µg/kg Chloroethane .....4010 µg/kg 2-Chloroethyl vinyl ether .....923 µg/kg Chloroform .....8260 µg/kg 1,2-Dibromo-3-chloropropane.....5280 µg/kg Dibromochloromethane .....8680 µg/kg Dibromomethane.....7950 µg/kg 1,2-Dichlorobenzene.....5330 µg/kg 1,3-Dichlorobenzene.....6440 µg/kg 1,4-Dichlorobenzene.....5680 µg/kg 1,1-Dichloroethane .....5770 µg/kg 1,2-Dichloroethane .....8540 µg/kg 1,1-Dichloroethylene .....5310 µg/kg cis-1,2-Dichloroethylene .....9050 µg/kg 1,2-Dichloropropane .....7800 µg/kg trans-1,3-Dichloropropene.....6690 µg/kg trans-1,2-Dichloroethylene.....6720 µg/kg Ethylbenzene .....6150 µg/kg 2-Hexanone .....11700 µg/kg Isopropylbenzene .....5440 µg/kg Methyl bromide.....1980 µg/kg Methyl chloride .....3620 µg/kg 4-Methyl-2-pentanone (MIBK) .....10700 µg/kg Methyl tert-butyl ether (MTBE) .....6600 µg/kg Naphthalene.....6780 µg/kg Styrene.....7070 µg/kg 1,1,1,2-Tetrachloroethane.....5580 µg/kg 1,1,2,2-Tetrachloroethane.....7070 µg/kg Tetrachloroethylene .....8430 µg/kg Toluene .....4840 µg/kg 1,2,4-Trimethylbenzene .....8400 µg/kg 1,1,2-Trichloroethane.....2260 µg/kg Trichloroethene .....7630 µg/kg Trichlorofluoromethane .....8280 µg/kg 1,2,3-Trichloropropane.....8550µg/kg 1,2,4-Trimethylbenzene .....7650 µg/kg 1,3,5-Trimethylbenzene .....12000 µg/kg Vinyl chloride.....5360 µg/kg m+p-Xylene.....8920 µg/kg o-Xylene .....2680 µg/kg Xylene .....11300 µg/kg	25 g

Code	Product	Unit
<b>New</b> RTC-CRM638-025	Clay 2- Volatile organic analytes Certified values Lot 015215 Acetone.....27900 µg/kg Benzene.....5390 µg/kg Bromobenzene.....3660 µg/kg Bromodichloromethane.....3870 µg/kg 2-Butanone (Methyl ethyl ketone, MEK) 11100 µg/kg Carbon tetrachloride.....6910 µg/kg Chlorobenzene.....9080 µg/kg Chloroethane.....4060 µg/kg Chloroform.....5800 µg/kg 1,2-Dibromo-3-chloropropane.....5730 µg/kg Dibromochloromethane.....3320 µg/kg 1,2-Dibromomethane.....6300 µg/kg Dibromomethane.....6240 µg/kg 1,2-Dichlorobenzene.....9130 µg/kg 1,3-Dichlorobenzene.....3600 µg/kg 1,4-Dichlorobenzene.....3320 µg/kg 1,2-Dichloroethane.....7970 µg/kg 1,1-Dichloroethylene.....5780 µg/kg cis-1,2-Dichloroethylene.....5050 µg/kg 1,2-Dichloropropane.....6900 µg/kg cis-1,3-Dichloropropene.....6640 µg/kg trans-1,2-Dichloroethylene.....9380 µg/kg Ethylbenzene.....6480 µg/kg 2-Hexanone.....15800 µg/kg Isopropylbenzene.....8520 µg/kg Methyl bromide.....5020 µg/kg Methyl chloride.....1970 µg/kg 4-Methyl-2-pentanone (MIBK).....10600 µg/kg Methyl tert-butyl ether (MTBE).....3060 µg/kg Naphthalene.....6250 µg/kg Styrene.....5650 µg/kg 1,1,1,2-Tetrachloroethane.....5280 µg/kg Tetrachloroethylene.....7200 µg/kg Toluene.....8060 µg/kg 1,2,4-Trichlorobenzene.....2960 µg/kg 1,1,1-Trichloroethane.....9380 µg/kg 1,1,2-Trichloroethane.....2940 µg/kg Trichloroethene.....7470 µg/kg Trichlorofluoromethane.....8400 µg/kg 1,2,3-Trichloropropane.....3490 µg/kg 1,2,4-Trimethylbenzene.....11400 µg/kg 1,3,5-Trimethylbenzene.....18800 µg/kg Vinyl chloride.....8370 µg/kg m+p-Xylene.....11500 µg/kg o-Xylene.....2790 µg/kg Xylene.....14500 µg/kg	25 g
RTC-CRM106-100	Soil (Sandy loam) - Semi-volatile organic analytes (Semi-VOAs) Soil contaminated with semi-volatile organic compounds, from the Western region of the United States. The sample was certified by USEPA SW 846, 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 Lot CF106 Phenol.....19.54 mg/kg Chlorophenol.....17.76 mg/kg 4-Methylphenol.....1.71 mg/kg 3-Nitroaniline.....11.64 mg/kg 2,4-Dinitrophenol.....3.90 mg/kg 4-Nitrophenol.....15.15 mg/kg 2,4-Dinitrotoluene.....29.31 mg/kg 2,6-Dinitrotoluene.....16.64 mg/kg Pentachlorophenol.....29.89 mg/kg Phenanthrene.....0.63 mg/kg Bis(2-ethylhexyl)phthalate.....24.14 mg/kg	100 g
RTC-CRM114-100	Soil (Loam) - Semi-volatile organic analytes (Semi-VOAs) 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 SW 846, 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 Lot II114 Benzo(a)anthracene.....11.5 mg/kg Benzo(a)pyrene.....33.8 mg/kg Benzo(ghi)perylene.....6.68 mg/kg 2-Chlorophenol.....30.7 mg/kg 2,4-Dichlorophenol.....24.6 mg/kg 2,4-Dinitrotoluene.....30.2 mg/kg Fluoranthene.....54.4 mg/kg Fluorene.....25.4 mg/kg Hexachlorobenzene.....77.1 mg/kg Hexachloroethane.....11.0 mg/kg 1- and 2-Methylnaphthalene.....61.3 mg/kg 3-Nitroaniline.....29.2 mg/kg Nitrobenzene.....29.9 mg/kg 4-Nitrophenol.....45.4 mg/kg Pentachlorophenol.....30.9 mg/kg Pyrene.....9.2 mg/kg	100 g
RTC-CRM109-100	Soil (Sandy loam) - Organic contaminants 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 SW 846, 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.	100 g
RTC-CRM110-100	Soil (Sandy loam) - Organic contaminants BNA contaminated soil from a site in the Western United States. The BNA values in the sample were certified by USEPA SW 846, 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 Lot LG110 Acenaphthene.....55.6 mg/kg Bis(2-ethylhexyl)phthalate.....13.1 mg/kg 2-Chlorophenol.....21.4 mg/kg Dibenzofuran.....47.8 mg/kg 2,4-Dinitrophenol.....9.98 mg/kg 2,4-Dinitrotoluene.....44.6 mg/kg 2,6-Dinitrotoluene.....19.4 mg/kg Fluoranthene.....11.8 mg/kg Fluorene.....14.2 mg/kg Hexachlorobenzene.....71.3 mg/kg Hexachloroethane.....8.79 mg/kg Naphthalene.....30.3 mg/kg 2-Nitroaniline.....46.3 mg/kg 4-Nitrophenol.....26.2 mg/kg Nitrobenzene.....15.1 mg/kg Pentachlorophenol.....27.1 mg/kg Phenol.....13.9 mg/kg Indicative value for 3-Nitroaniline	100 g

Code	Product	Unit
RTC-CRM111-100	Soil (Loamy sand) - Organic contaminants 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 SW 846, 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 Lot IH111 Acenaphthene.....21.3 mg/kg Bis(2-ethylhexyl)phthalate.....36.0 mg/kg Dibenzofuran .....6.91 mg/kg 2,4-Dinitrotoluene .....33.7 mg/kg 2,6-Dinitrotoluene .....15.4 mg/kg Fluoranthene.....56.1 mg/kg Fluorene.....21.4 mg/kg Hexachlorobenzene .....23.1 mg/kg Hexachloroethane ..... 7.51 mg/kg Naphthalene..... 10.8 mg/kg 2-Nitroaniline..... 30 mg/kg 3-Nitroaniline..... 5.85 mg/kg Nitrobenzene..... 30.7 mg/kg 4-Dinitrophenol..... 8.70 mg/kg Pentachlorophenol ..... 22.0 mg/kg	100 g
RTC-CRM113-100	Soil (Loamy sand) - Organic contaminants BNA contaminated soil from a site in the Western region of the United States. The BNA values in the sample were certified by USEPA SW 846, 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 Lot FI113 Bis(2-ethylhexyl)phthalate.....0.97 mg/kg Benzo(b)fluoranthene .....3.53 mg/kg Benzo(a)pyrene .....3.17 mg/kg Chrysene .....7.21 mg/kg 2,4-Dinitrophenol .....1.64 mg/kg 2,4-Dinitrotoluene .....16.0 mg/kg Fluoranthene.....6.51 mg/kg Fluorene.....8.41 mg/kg Hexachlorobenzene ..... 14.3 mg/kg Hexachloroethane..... 1.65 mg/kg 4-Methylphenol..... 7.55 mg/kg 2-Nitroaniline..... 14.5 mg/kg 3-Nitroaniline..... 0.98 mg/kg Nitrobenzene..... 5.88 mg/kg 4-Nitrophenol ..... 4.56 mg/kg Pyrene..... 37.0 mg/kg	100 g
RTC-CRM115-100	Soil (Loamy sand) - Organic contaminants PAH contaminated soil from a site in the Western Region of the United States. Certified values Lot JC115 Acenaphthene.....4.60 mg/kg Benzo(a)anthracene .....12.1 mg/kg Benzo(b)Fluoranthene .....0.930 mg/kg Chrysene .....16.8 mg/kg Dibenzofuran .....10.6 mg/kg Fluoranthene..... 22.1 mg/kg Fluorene ..... 13.0 mg/kg Naphthalene..... 1.34 mg/kg Phenanthrene ..... 0.080 mg/kg Pyrene..... 7.66 mg/kg Indicative values for Anthracene and Bis(2-ethylhexyl)phthalate	100 g
<b>New</b> RTC-CRM116-100	Soil (Loam) - Organic contaminants BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW 846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonication), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods. Certified values Lot JL116 Naphthalene ..... 2.81 mg/Kg Nitrobenzene ..... 3.89 mg/Kg Acenaphthene ..... 6.04 mg/Kg Acenaphthylene ..... 7.8 mg/Kg Anthracene ..... 6.15 mg/Kg Benzo(a)anthracene ..... 5.25 mg/Kg 4-Bromophenyl phenyl ether..... 9.92 mg/Kg 4-Chloro-3-methylphenol ..... 5.88 mg/Kg 2-Chlorophenol ..... 5.51 mg/Kg Chrysene ..... 1.38 mg/Kg Dibenzofuran ..... 5.91 mg/Kg Di-n-butyl phthalate..... 10.8 mg/Kg 2,4-Dichlorophenol..... 6.84 mg/Kg 2,4-Dinitrophenol ..... 4.02 mg/Kg 2,4-Dinitrotoluene (2,4-DNT) ..... 8.5 mg/Kg 2,6-Dinitrotoluene (2,6-DNT)..... 7.54 mg/Kg bis(2-Ethylhexyl) phthalate (DEHP) ..... 9.51 mg/Kg Fluoranthene ..... 7.08 mg/Kg Fluorene ..... 5.72 mg/Kg Hexachlorobenzene ..... 7.12 mg/Kg Isophorone ..... 6.63 mg/Kg 2-Methyl-4,6-dinitrophenol ..... 5.96 mg/Kg 2-Nitrophenol ..... 4.9 mg/Kg 4-Nitrophenol ..... 6.79 mg/Kg Pentachlorophenol ..... 6.55 mg/Kg Phenanthrene ..... 6.96 mg/Kg Phenol ..... 9.28 mg/Kg Pyrene..... 3.92 mg/Kg 2,4,6-Trichlorophenol ..... 5.35 mg/Kg	100 g

Code	Product	Unit																																																																
<b>New</b> RTC-CRM118-100	Soil (Sandy loam) - Organic contaminants The certified values were determined by USEPA SW 846 (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 Lot AI118	100 g																																																																
	<table border="0"> <tr> <td>1,2,4-Trichlorobenzene .....</td> <td>6.43 mg/kg</td> <td>Benzo(k)fluoranthene .....</td> <td>6.05 mg/kg</td> </tr> <tr> <td>2,4,5-Trichlorophenol .....</td> <td>8.75 mg/kg</td> <td>Dibenzofuran .....</td> <td>7.99 mg/kg</td> </tr> <tr> <td>2,4,6-Trichlorophenol .....</td> <td>6.60 mg/kg</td> <td>Diethylphthalate .....</td> <td>7.00 mg/kg</td> </tr> <tr> <td>2,4-Dichlorophenol .....</td> <td>7.05 mg/kg</td> <td>Di-n-butylphthalate .....</td> <td>7.30 mg/kg</td> </tr> <tr> <td>2,4-Dimethylphenol .....</td> <td>6.42 mg/kg</td> <td>Fluoranthene .....</td> <td>4.64 mg/kg</td> </tr> <tr> <td>2,4-Dinitrotoluene .....</td> <td>2.64 mg/kg</td> <td>Fluorene .....</td> <td>4.75 mg/kg</td> </tr> <tr> <td>2,6-Dinitrotoluene .....</td> <td>3.42 mg/kg</td> <td>Hexachlorobenzene .....</td> <td>5.48 mg/kg</td> </tr> <tr> <td>2-Chlorophenol .....</td> <td>5.99 mg/kg</td> <td>Hexachlorobutadiene .....</td> <td>4.61 mg/kg</td> </tr> <tr> <td>2-Nitrophenol .....</td> <td>7.08 mg/kg</td> <td>Hexachloroethane .....</td> <td>4.99 mg/kg</td> </tr> <tr> <td>4-Bromophenyl-phenylether.....</td> <td>11.80 mg/kg</td> <td>Isophorone .....</td> <td>5.83 mg/kg</td> </tr> <tr> <td>4-Chloro-3-methylphenol .....</td> <td>5.80 mg/kg</td> <td>Naphthalene.....</td> <td>7.79 mg/kg</td> </tr> <tr> <td>4-Nitrophenol .....</td> <td>8.25 mg/kg</td> <td>Nitrobenzene.....</td> <td>7.95 mg/kg</td> </tr> <tr> <td>Acenaphthene.....</td> <td>7.92 mg/kg</td> <td>Pentachlorophenol .....</td> <td>5.07 mg/kg</td> </tr> <tr> <td>Acenaphthylene .....</td> <td>7.91 mg/kg</td> <td>Phenanthrene.....</td> <td>5.69 mg/kg</td> </tr> <tr> <td>Anthracene .....</td> <td>8.35 mg/kg</td> <td>Phenol.....</td> <td>9.23 mg/kg</td> </tr> <tr> <td>Benzo(a)pyrene .....</td> <td>7.83 mg/kg</td> <td>Pyrene .....</td> <td>5.00 mg/kg</td> </tr> </table>	1,2,4-Trichlorobenzene .....	6.43 mg/kg	Benzo(k)fluoranthene .....	6.05 mg/kg	2,4,5-Trichlorophenol .....	8.75 mg/kg	Dibenzofuran .....	7.99 mg/kg	2,4,6-Trichlorophenol .....	6.60 mg/kg	Diethylphthalate .....	7.00 mg/kg	2,4-Dichlorophenol .....	7.05 mg/kg	Di-n-butylphthalate .....	7.30 mg/kg	2,4-Dimethylphenol .....	6.42 mg/kg	Fluoranthene .....	4.64 mg/kg	2,4-Dinitrotoluene .....	2.64 mg/kg	Fluorene .....	4.75 mg/kg	2,6-Dinitrotoluene .....	3.42 mg/kg	Hexachlorobenzene .....	5.48 mg/kg	2-Chlorophenol .....	5.99 mg/kg	Hexachlorobutadiene .....	4.61 mg/kg	2-Nitrophenol .....	7.08 mg/kg	Hexachloroethane .....	4.99 mg/kg	4-Bromophenyl-phenylether.....	11.80 mg/kg	Isophorone .....	5.83 mg/kg	4-Chloro-3-methylphenol .....	5.80 mg/kg	Naphthalene.....	7.79 mg/kg	4-Nitrophenol .....	8.25 mg/kg	Nitrobenzene.....	7.95 mg/kg	Acenaphthene.....	7.92 mg/kg	Pentachlorophenol .....	5.07 mg/kg	Acenaphthylene .....	7.91 mg/kg	Phenanthrene.....	5.69 mg/kg	Anthracene .....	8.35 mg/kg	Phenol.....	9.23 mg/kg	Benzo(a)pyrene .....	7.83 mg/kg	Pyrene .....	5.00 mg/kg	
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	Indicative value for 2,4-Dinitrophenol																																																																	

<b>New</b> RTC-CRM119-100	Soil (Sandy loam) - Organic contaminants The certified values were determined by USEPA SW 846 (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 Lot BC119	100 g																																																																				
	<table border="0"> <tr> <td>Acenaphthene.....</td> <td>4.77 mg/kg</td> <td>2,4-Dimethylphenol .....</td> <td>4.68 mg/kg</td> </tr> <tr> <td>Acenaphthylene .....</td> <td>4.52 mg/kg</td> <td>Dimethylphthalate .....</td> <td>9.73 mg/kg</td> </tr> <tr> <td>Anthracene .....</td> <td>3.90 mg/kg</td> <td>Diethylphthalate.....</td> <td>5.73 mg/kg</td> </tr> <tr> <td>Benzo(a)pyrene .....</td> <td>6.43 mg/kg</td> <td>Fluoranthene .....</td> <td>5.70 mg/kg</td> </tr> <tr> <td>Bis(2-ethylhexyl).....</td> <td>8.80 mg/kg</td> <td>Fluorene .....</td> <td>4.09 mg/kg</td> </tr> <tr> <td>4-Bromophenyl-phenylether.....</td> <td>10.3 mg/kg</td> <td>Isophorone .....</td> <td>4.46 mg/kg</td> </tr> <tr> <td>Butylbenzylphthalate .....</td> <td>14.2 mg/kg</td> <td>2-Methyl-4,6-dinitrophenol.....</td> <td>2.41 mg/kg</td> </tr> <tr> <td>4-Chloro-3-methylphenol .....</td> <td>7.65 mg/kg</td> <td>2-Methylnaphthalene.....</td> <td>11.6 mg/kg</td> </tr> <tr> <td>2-Chloronaphthalene .....</td> <td>7.26 mg/kg</td> <td>2-Methylphenol.....</td> <td>7.79 mg/kg</td> </tr> <tr> <td>2-Chlorophenol .....</td> <td>4.40 mg/kg</td> <td>4-Methylphenol.....</td> <td>8.47 mg/kg</td> </tr> <tr> <td>4-Chlorophenyl-phenylether.....</td> <td>9.87 mg/kg</td> <td>Naphthalene.....</td> <td>8.61 mg/kg</td> </tr> <tr> <td>Chrysene.....</td> <td>11.7 mg/kg</td> <td>2-Nitroaniline .....</td> <td>10.0 mg/kg</td> </tr> <tr> <td>Dibenzofuran.....</td> <td>4.12 mg/kg</td> <td>2-Nitrophenol.....</td> <td>7.09 mg/kg</td> </tr> <tr> <td>1,3-Dichlorobenzene.....</td> <td>3.79 mg/kg</td> <td>4-Nitrophenol.....</td> <td>3.47 mg/kg</td> </tr> <tr> <td>1,4-Dichlorobenzene.....</td> <td>2.35 mg/kg</td> <td>Pentachlorophenol .....</td> <td>7.50 mg/kg</td> </tr> <tr> <td>2,4-Dichlorophenol.....</td> <td>6.93 mg/kg</td> <td>Phenanthrene.....</td> <td>6.62 mg/kg</td> </tr> <tr> <td>Diethylphthalate .....</td> <td>4.73 mg/kg</td> <td></td> <td></td> </tr> </table>	Acenaphthene.....	4.77 mg/kg	2,4-Dimethylphenol .....	4.68 mg/kg	Acenaphthylene .....	4.52 mg/kg	Dimethylphthalate .....	9.73 mg/kg	Anthracene .....	3.90 mg/kg	Diethylphthalate.....	5.73 mg/kg	Benzo(a)pyrene .....	6.43 mg/kg	Fluoranthene .....	5.70 mg/kg	Bis(2-ethylhexyl).....	8.80 mg/kg	Fluorene .....	4.09 mg/kg	4-Bromophenyl-phenylether.....	10.3 mg/kg	Isophorone .....	4.46 mg/kg	Butylbenzylphthalate .....	14.2 mg/kg	2-Methyl-4,6-dinitrophenol.....	2.41 mg/kg	4-Chloro-3-methylphenol .....	7.65 mg/kg	2-Methylnaphthalene.....	11.6 mg/kg	2-Chloronaphthalene .....	7.26 mg/kg	2-Methylphenol.....	7.79 mg/kg	2-Chlorophenol .....	4.40 mg/kg	4-Methylphenol.....	8.47 mg/kg	4-Chlorophenyl-phenylether.....	9.87 mg/kg	Naphthalene.....	8.61 mg/kg	Chrysene.....	11.7 mg/kg	2-Nitroaniline .....	10.0 mg/kg	Dibenzofuran.....	4.12 mg/kg	2-Nitrophenol.....	7.09 mg/kg	1,3-Dichlorobenzene.....	3.79 mg/kg	4-Nitrophenol.....	3.47 mg/kg	1,4-Dichlorobenzene.....	2.35 mg/kg	Pentachlorophenol .....	7.50 mg/kg	2,4-Dichlorophenol.....	6.93 mg/kg	Phenanthrene.....	6.62 mg/kg	Diethylphthalate .....	4.73 mg/kg			
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	Indicative values for Carbazole, 2,6-Dichlorophenol, Di-n-butylphthalate and Phenol																																																																					

RTC-CRM131-100	Soil (Sandy loam) - Organic contaminants The values were determined by USEPA SW 846 (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 Lot 013243	100 g																																																																																								
	<table border="0"> <tr> <td>1,2-Dichlorobenzene.....</td> <td>1580 µg/kg</td> <td>2,6-Dichlorophenol .....</td> <td>959 µg/kg</td> </tr> <tr> <td>1,3-Dichlorobenzene.....</td> <td>1400 µg/kg</td> <td>Diethyl phthalate .....</td> <td>3950 µg/kg</td> </tr> <tr> <td>1,4-Dichlorobenzene.....</td> <td>502 µg/kg</td> <td>Dimethyl phthalate .....</td> <td>2970 µg/kg</td> </tr> <tr> <td>Hexachloroethane.....</td> <td>1180 µg/kg</td> <td>2,4-Dichlorophenol .....</td> <td>1550 µg/kg</td> </tr> <tr> <td>Naphthalene .....</td> <td>1200 µg/kg</td> <td>2,4-Dinitrotoluene.....</td> <td>1530 µg/kg</td> </tr> <tr> <td>Nitrobenzene.....</td> <td>1810 µg/kg</td> <td>2,6-Dinitrotoluene.....</td> <td>2340 µg/kg</td> </tr> <tr> <td>Acenaphthene.....</td> <td>260 µg/kg</td> <td>Di-n-octyl phthalate .....</td> <td>1990 µg/kg</td> </tr> <tr> <td>Anthracene .....</td> <td>389 µg/kg</td> <td>Fluoranthene .....</td> <td>3870 µg/kg</td> </tr> <tr> <td>Benzo(a)anthracene .....</td> <td>4060 µg/kg</td> <td>Fluorene .....</td> <td>5670 µg/kg</td> </tr> <tr> <td>Benzo(a)pyrene .....</td> <td>406 µg/kg</td> <td>Hexachlorobenzene .....</td> <td>1240 µg/kg</td> </tr> <tr> <td>Benzo(b)fluoranthene .....</td> <td>1560 µg/kg</td> <td>Indeno(1,2,3-cd) pyrene .....</td> <td>1840 µg/kg</td> </tr> <tr> <td>Benzo(g,h,i)perylene .....</td> <td>4720 µg/kg</td> <td>2-Methyl-4,6-dinitrophenol.....</td> <td>4250 µg/kg</td> </tr> <tr> <td>Benzo(k)fluoranthene .....</td> <td>3820 µg/kg</td> <td>2-Methylnaphthalene.....</td> <td>1350 µg/kg</td> </tr> <tr> <td>4-Bromophenyl phenyl ether .....</td> <td>8732 µg/kg</td> <td>2-Methylphenol (o-Cresol).....</td> <td>280 µg/kg</td> </tr> <tr> <td>Butyl benzyl phthalate .....</td> <td>2780 µg/kg</td> <td>4-Nitrophenol .....</td> <td>3550 µg/kg</td> </tr> <tr> <td>bis(2-Chloroethoxy)methane.....</td> <td>878 µg/kg</td> <td>n-Nitroso-di-n-propylamine.....</td> <td>2000 µg/kg</td> </tr> <tr> <td>bis(2-Chlorophenyl)ether .....</td> <td>1230 µg/kg</td> <td>Pentachlorophenol .....</td> <td>3190 µg/kg</td> </tr> <tr> <td>2-Chlorophenol .....</td> <td>3525 µg/kg</td> <td>Phenanthrene.....</td> <td>1900 µg/kg</td> </tr> <tr> <td>4-Chlorophenyl phenylether.....</td> <td>1180 µg/kg</td> <td>Phenol.....</td> <td>899 µg/kg</td> </tr> <tr> <td>Chrysene.....</td> <td>6790 µg/kg</td> <td>Pyrene .....</td> <td>1110 µg/kg</td> </tr> <tr> <td>Dibenz(a,h) anthracene .....</td> <td>4800 µg/kg</td> <td>2,4,6-Trichlorophenol .....</td> <td>5950 µg/kg</td> </tr> <tr> <td>Dibenzofuran.....</td> <td>4400 µg/kg</td> <td></td> <td></td> </tr> </table>	1,2-Dichlorobenzene.....	1580 µg/kg	2,6-Dichlorophenol .....	959 µg/kg	1,3-Dichlorobenzene.....	1400 µg/kg	Diethyl phthalate .....	3950 µg/kg	1,4-Dichlorobenzene.....	502 µg/kg	Dimethyl phthalate .....	2970 µg/kg	Hexachloroethane.....	1180 µg/kg	2,4-Dichlorophenol .....	1550 µg/kg	Naphthalene .....	1200 µg/kg	2,4-Dinitrotoluene.....	1530 µg/kg	Nitrobenzene.....	1810 µg/kg	2,6-Dinitrotoluene.....	2340 µg/kg	Acenaphthene.....	260 µg/kg	Di-n-octyl phthalate .....	1990 µg/kg	Anthracene .....	389 µg/kg	Fluoranthene .....	3870 µg/kg	Benzo(a)anthracene .....	4060 µg/kg	Fluorene .....	5670 µg/kg	Benzo(a)pyrene .....	406 µg/kg	Hexachlorobenzene .....	1240 µg/kg	Benzo(b)fluoranthene .....	1560 µg/kg	Indeno(1,2,3-cd) pyrene .....	1840 µg/kg	Benzo(g,h,i)perylene .....	4720 µg/kg	2-Methyl-4,6-dinitrophenol.....	4250 µg/kg	Benzo(k)fluoranthene .....	3820 µg/kg	2-Methylnaphthalene.....	1350 µg/kg	4-Bromophenyl phenyl ether .....	8732 µg/kg	2-Methylphenol (o-Cresol).....	280 µg/kg	Butyl benzyl phthalate .....	2780 µg/kg	4-Nitrophenol .....	3550 µg/kg	bis(2-Chloroethoxy)methane.....	878 µg/kg	n-Nitroso-di-n-propylamine.....	2000 µg/kg	bis(2-Chlorophenyl)ether .....	1230 µg/kg	Pentachlorophenol .....	3190 µg/kg	2-Chlorophenol .....	3525 µg/kg	Phenanthrene.....	1900 µg/kg	4-Chlorophenyl phenylether.....	1180 µg/kg	Phenol.....	899 µg/kg	Chrysene.....	6790 µg/kg	Pyrene .....	1110 µg/kg	Dibenz(a,h) anthracene .....	4800 µg/kg	2,4,6-Trichlorophenol .....	5950 µg/kg	Dibenzofuran.....	4400 µg/kg			
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Code	Product	Unit
<b>New</b> RTC-CRM143-040	Sandy loam - Organic contaminants	40 g
	Certified values	
	Lot 016496	
	1,3-Dichlorobenzene.....5470 µg/kg	2,4-Dichlorophenol..... 6810 µg/kg
	1,4-Dichlorobenzene.....7770 µg/kg	Diethyl phthalate ..... 7340 µg/kg
	Hexachlorobutadiene.....4300 µg/kg	2,4-Dimethylphenol ..... 3640 µg/kg
	Hexachloroethane.....6100 µg/kg	2,4-Dinitrophenol..... 1630 µg/kg
	Naphthalene .....4460 µg/kg	2,4-Dinitrotoluene (2,4-DNT)..... 5880 µg/kg
	Nitrobenzene .....5510 µg/kg	2,6-Dinitrotoluene (2,6-DNT)..... 8710 µg/kg
	1,2,4-Trichlorobenzene.....1240 µg/kg	bis(2-Ethylhexyl) phthalate..... 4840 µg/kg
	Acenaphthene.....2050 µg/kg	Di-n-octyl phthalate ..... 9910 µg/kg
	Acenaphthylene .....4040 µg/kg	Fluoranthene..... 6520 µg/kg
	Anthracene .....2810 µg/kg	Fluorene..... 5370 µg/kg
	Benzo(a)anthracene .....4000µg/kg	Indeno(1,2,3-cd) pyrene..... 1000 µg/kg
	Benzo(a)pyrene .....3860µg/kg	Isophorone ..... 4580 µg/kg
	Benzo(b)fluoranthene .....3670µg/kg	2-Methylnaphthalene..... 2880 µg/kg
	Benzo(g,h,i)perylene.....5050 µg/kg	2-Methylphenol (o-Cresol)..... 4040 µg/kg
	Benzo(k)fluoranthene .....3870 µg/kg	4-Methylphenol (p-Cresol)..... 4090 µg/kg
	4-Bromophenyl phenyl ether.....11200 µg/kg	2-Nitroaniline ..... 2510 µg/kg
	Butyl benzyl phthalate.....6480 µg/kg	2-Nitrophenol ..... 5780 µg/kg
	Carbazole .....1730 µg/kg	4-Nitrophenol ..... 4680 µg/kg
	bis(2-Chloroethoxy) methane .....6830µg/kg	n-Nitrosodiphenylamine ..... 4480 µg/kg
	bis (2-Chloroethyl) ether .....9680µg/kg	Pentachlorophenol ..... 2890 µg/kg
	4-Chlorophenyl phenylether.....4810 µg/kg	Phenanthrene ..... 8080 µg/kg
	Chrysene .....3630 µg/kg	Phenol..... 7250 µg/kg
	Dibenz(a,h) anthracene .....2280 µg/kg	Pyrene..... 1450 µg/kg
	Dibenzofuran .....3820 µg/kg	2,4,6-Trichlorophenol ..... 7570 µg/kg

Code	Product	Unit
RTC-CRM121-100	Soil (Loam) - Organic contaminants	100 g
	BNA contaminated soil from a site in the Western United States. The certified values were determined by USEPA SW 846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonication), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.	
	Certified values	
	Lot BL121	
	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)	

Code	Product	Unit
RTC-CRM123-100	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 SW 846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonication), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.	
	Certified values	
	Lot CD123	
	Acenaphthene.....7.52 mg/kg	Dimethylphthalate ..... 9.56 mg/kg
	Acenaphthylene .....7.24 mg/kg	2,4-Dinitrotoluene..... 17.5 mg/kg
	Anthracene .....6.94 mg/kg	Di-n-octylphthalate ..... 11.4 mg/kg
	Benzo(a)anthracene .....8.38 mg/kg	Fluoranthene ..... 9.31 mg/kg
	Benzo(a)pyrene.....7.77 mg/kg	Fluorene..... 6.88 mg/kg
	Bis(2-ethylhexyl)phthalate.....8.90 mg/kg	Hexachlorobenzene ..... 6.81 mg/kg
	4-Bromophenyl-phenylether.....13.0 mg/kg	Hexachlorobutadiene ..... 5.46 mg/kg
	4-Chloro-3-methylphenol .....7.60 mg/kg	Hexachloroethane..... 10.6 mg/kg
	2-Chloronaphthalene .....7.42 mg/kg	Isophorone ..... 8.07 mg/kg
	2-Chlorophenol .....8.45 mg/kg	2-Methylphenol (o-Cresol)..... 7.70 mg/kg
	4-Chlorophenyl-phenylether.....9.39 mg/kg	3-Methylphenol (m-Cresol)..... 9.80 mg/kg
	Chrysene .....11.3 mg/kg	4-Methylphenol (p-Cresol)..... 7.04 mg/kg
	Dibenzofuran .....8.19 mg/kg	Naphthalene..... 9.73 mg/kg
	Di-n-butylphthalate .....16.8 mg/kg	Nitrobenzene ..... 10.6 mg/kg
	1,2-Dichlorobenzene .....5.15 mg/kg	2-Nitrophenol ..... 6.30 mg/kg
	1,3-Dichlorobenzene.....4.25 mg/kg	Phenanthrene ..... 7.94 mg/kg
	1,4-Dichlorobenzene.....3.98 mg/kg	Pyrene ..... 6.75 mg/kg
	2,4-Dichlorophenol.....10.6 mg/kg	2,4,5-Trichlorophenol ..... 5.29 mg/kg
	2,4-Dimethylphenol.....9.25 mg/kg	

Code	Product	Unit	
<b>New</b> RTC-CRM125-100	Soil - Organic contaminants	100 g	
The values were determined by USEPA SW 846 (3rd edition) Extraction Method 3540C (soxhlet) and 3550 (sonication), and Analysis Method 8270C (semivolatile organics by GC/MS). The sample is suitable for these and other similar methods.			
Certified values (on a dry basis)			
Lot 012218			
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-Bromophenylphenylether.....	8043.07 µg/kg	3+4-Methylphenol(m+p-Cresol).....	2296.70 µg/kg
Butylbenzylphthalate.....	7286.12 µg/kg	4-Nitroaniline.....	1841.66 µg/kg
4-Chloro-3-methylphenol.....	3359.15 µg/kg	2-Nitrophenol.....	4882.89 µg/kg
bis(2-Chloroethoxy)methane.....	5348.24 µg/kg	n-Nitrosodimethylamine.....	777.05 µg/kg
bis(2-Chloroethyl)ether.....	966.61 µg/kg	n-Nitrosodiphenylamine.....	348.50 µg/kg
4-Chlorophenylphenylether.....	6402.37 µg/kg	n-Nitrosodi-n-propylamine.....	6481.25 µg/kg
Chrysene.....	1213.74 µg/kg	Phenanthrene.....	57.99 µg/kg
Dibenz(a,h)anthracene.....	1231.21 µg/kg	Phenol.....	5906.13 µg/kg
Dibenzofuran.....	1745.31 µg/kg	2,4,5-Trichlorophenol.....	5305.96 µg/kg
Di-n-butylphthalate.....	7326.39 µg/kg	2,4,6-Trichlorophenol.....	3165.24 µg/kg
<b>New</b> RTC-CRM126-100	Soil (Clay loam) - Organic contaminants	100 g	
Certified values			
Lot 010572			
1,2-Dichlorobenzene.....	2.86 mg/kg	4-Chlorophenyl phenylether.....	8.33 mg/kg
1,3-Dichlorobenzene.....	2.57 mg/kg	Chrysene.....	2.37 mg/kg
Hexachlorobutadiene.....	1.66 mg/kg	Dibenzofuran.....	1.91 mg/kg
Hexachloroethane.....	0.450 mg/kg	Di-n-butyl phthalate.....	1.34 mg/kg
Naphthalene.....	0.610 mg/kg	2,4-Dichlorophenol.....	0.500 mg/kg
Nitrobenzene.....	6.03 mg/kg	Dimethyl phthalate.....	4.08 mg/kg
1,2,4-Trichlorobenzene.....	1.57 mg/kg	2,4-Dinitrotoluene (2,4-DNT).....	0.880 mg/kg
Acenaphthene.....	4.25 mg/kg	Di-n-octyl phthalate.....	1.34 mg/kg
Anthracene.....	0.280 mg/kg	bis(2-Ethylhexyl) phthalate (DEHP).....	4.88 mg/kg
Benzo(a)pyrene.....	0.630 mg/kg	Fluoranthene.....	0.120 mg/kg
Benzo(b)fluoranthene.....	0.610 mg/kg	Fluorene.....	1.45 mg/kg
Benzo(g,h,i)perylene.....	0.570 mg/kg	Hexachlorobenzene.....	0.620 mg/kg
Benzo(k)fluoranthene.....	0.720 mg/kg	Isophorone.....	6.12 mg/kg
Benzo(b+k)fluoranthene.....	1.29 mg/kg	2-Methyl-4,6-dinitrophenol.....	3.93 mg/kg
Benzyl alcohol.....	7.10 mg/kg	2-Methylphenol (o-Cresol).....	2.57 mg/kg
4-Bromophenyl phenyl ether.....	10.6 mg/kg	3+4-Methylphenol (m+p-Cresol).....	3.58 mg/kg
4-Chloro-3-methylphenol.....	0.650 mg/kg	4-Nitrophenol.....	5.83 mg/kg
4-Chloroaniline.....	0.580 mg/kg	Pentachlorophenol.....	0.380 mg/kg
2-Chloronaphthalene.....	3.89 mg/kg	Phenol.....	0.740 mg/kg
2-Chlorophenol.....	1.99 mg/kg	2,4,5-Trichlorophenol.....	2.26 mg/kg
RTC-CRM135-100	Soil (Silty clay) - Semi-volatile organic analytes	100 g	
Certified values			
Lot 010382			
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

Code	Product	Unit
RTC-CRM136-100	Soil (Clay) - Organic contaminants	100 g
	Certified values	
	Lot 010772	
	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 ..... 473 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	

Code	Product	Unit
New RTC-CRM142-100	Soil (Silty loam) - PAHs	100 g
	The organic sample is a soil containing extractable PAHs for analysis by 8100, 8270, 8310 or equivalent methods.	
	Certified values	
	Lot 014105	
	Acenaphthene.....118 ± 19.0 µg/kg	Chrysene..... 295 ± 33.1 µg/kg
	Acenaphthylene .....53.4 ± 19.3 µg/kg	Dibenz(a,h) anthracene ..... 320 ± 27.6 µg/kg
	Anthracene .....109 ± 27.6 µg/kg	Fluoranthene..... 507 ± 63.7 µg/kg
	Benzo(a)anthracene .....356 ± 39.4 µg/kg	Fluorene ..... 126 ± 21.2 µg/kg
	Benzo(a)pyrene .....126 ± 20.9 µg/kg	Indeno(1,2,3-cd) pyrene..... 316 ± 38.0 µg/kg
	Benzo(b)fluoranthene .....257 ± 27.1 µg/kg	Phenanthrene ..... 532 ± 79.0 µg/kg
	Benzo(g,h,i)perylene.....569 ± 58.2 µg/kg	Pyrene..... 272 ± 36.2 µg/kg
	Benzo(k)fluoranthene .....327 ± 40.0 µg/kg	

Code	Product	Unit
RTC-CRM112-100	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 SW 846, 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 approaches. The sample is suitable for these and other similar methods.	
	Certified values	
	Lot LH112	
	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	

Code	Product	Unit
RTC-CRM107-100	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 SW 846, 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	
	Lot KG107	
	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	

## Soils

Code	Product	Unit
RTC-CRM803-050	Soil (Sandy loam) - Herbicides Soil contaminated with herbicide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW 846, 3rd edition Methods 8151 (herbicides by GC). The sample is suitable for these and other similar methods. Certified values Lot GF803 2,4-D ..... 44600 µg/kg      2,4,5-T ..... 25746 µg/kg      2,4,5-TP ..... 41334 µg/kg	50 g
RTC-CRM804-050	Soil (Sandy loam) - Pesticides Soil contaminated with pesticide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW 846, 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 Lot DG804 Aldrin ..... 18 µg/kg      4,4'-DDT ..... 1060 µg/kg      Endosulfan II ..... 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	50 g
RTC-CRM805-050	Soil (Sandy loam) - Pesticides Soil contaminated with pesticide compounds from an agricultural region in the Western region of the United States. The sample was certified by USEPA SW 846, 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 Lot FH805 DDD ..... 19500 µg/kg      Endosulfan I ..... 6900 µg/kg      Endrine aldehyde ..... 95.5 µg/kg DDE ..... 18613 µg/kg      Endosulfan II ..... 5940 µg/kg      Lindane ..... 10618 µg/kg DDT ..... 786 µg/kg      Endrin ..... 12967 µg/kg      Methoxychlor ..... 15800 µg/kg	50 g
RTC-CRM808-050	Soil (Loam) - Herbicides Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW 846 (3rd edition) method 8151 (herbicides by GC). The sample is suitable for these and other similar methods. Certified values Lot AC808 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	50 g
RTC-CRM810-050	Soil (Loamy sand) - Herbicides Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW 846 (3rd edition) method 8151A (herbicides by GC). The sample is suitable for these and other similar methods. Certified values Lot BC810 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	50 g
RTC-CRM817-050	Soil (Loam) - Herbicides Soil fortified with herbicides to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW 846 (3rd edition) method 8151A (herbicides by GC). The sample is suitable for these and other similar methods. Certified values Lot BE817 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	50 g
RTC-CRM831-050	Soil (Loam) - Herbicides Fortified to meet the requirements of NELAC Fields of Testing, RCRA Solid. The Reference Values were determined by USEPA SW 846 (3rd edition) Analysis Method 8151 (herbicides by GC). Certified values Lot 001679 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	50 g

Code	Product	Unit
<b>New</b> RTC-CRM814-050	Soil (Sandy loam) - Pesticides The sample was certified by USEPA SW 846 (3rd edition) method 8081A (Pesticides by GC). The sample is suitable for these and other similar methods. Certified values Lot 014692 Aldrin.....80.1 µg/kg 4,4'-DDD .....189 µg/kg 4,4'-DDE .....410 µg/kg 4,4'-DDT .....322 µg/kg Dieldrin.....182 µg/kg Endosulfan I.....425 µg/kg Endosulfan II.....58.3 µg/kg Endosulfan sulfate .....62.0 µg/kg Endrin .....393 µg/kg Endrin aldehyde.....149 µg/kg Endrin ketone .....125 µg/kg Heptachlor.....99.4 µg/kg Hexachlorobenzene .....255 µg/kg alpha-HCH .....258 µg/kg beta-HCH .....140 µg/kg gamma-HCH (Lindane).....276 µg/kg alpha- Chlordane .....92.5 µg/kg gamma – Chlordane .....63.9 µg/kg Methoxychlor.....327 µg/kg Propachlor.....98.0 µg/kg	50 g
RTC-CRM824-050	Soil (Sandy loam) - Pesticides Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW 846 (3rd edition) method 8081A (Pesticides by GC). The sample is suitable for these and other similar methods. Certified values Lot BL824 4,4'-DDD .....367 µg/kg 4,4'-DDE .....396 µg/kg 4,4'-DDT .....363 µg/kg Endosulfan I.....361 µg/kg Endosulfan II.....340 µg/kg Endosulfan sulfate .....327 µg/kg Endrin .....358 µg/kg Endrin aldehyde .....398 µg/kg Heptachlor.....338 µg/kg Heptachlor epoxide (beta).....317 µg/kg alpha-HCH .....361 µg/kg beta-HCH .....382 µg/kg gamma-HCH (Lindane).....371 µg/kg Methoxychlor.....365 µg/kg Indicative value for Endrin ketone	50 g
<b>New</b> RTC-CRM821-050	Soil (Sandy loam) - Organophosphorus pesticides Certified values Lot 014702 Azinphos-methyl (Guthion) .....0.792 mg/kg Chlorfenvinphos.....0.186 mg/kg Chlorpyrifos.....0.150 mg/kg Diazinon.....0.509 mg/kg EPN .....0.508 mg/kg Ethoprop .....0.328 mg/kg Famphur .....0.526 mg/kg Fenthion.....0.311 mg/kg Malathion .....0.277 mg/kg Parathion, methyl.....0.629 mg/kg Parathion, ethyl .....0.432 mg/kg Phorate .....0.0903 mg/kg Ronnell.....0.250 mg/kg Sulfotepp.....0.026 mg/kg Tetrachlorvinphos .....0.642 mg/kg Disulfoton .....0.117 mg/kg	50 g
RTC-CRM827-050	Soil (Sandy loam) - Organophosphorus pesticides Soil fortified with pesticide compounds to meet the requirements of NELAC Fields of Testing. The sample was certified by USEPA SW 846 (3rd edition) method 8141A. The sample is suitable for these and other similar methods. Certified values Lot BL827 Azinphos methyl (guthion) .....1.52 mg/kg Dichlorvos (DDVP) .....0.887 mg/kg Demeton-S .....0.525 mg/kg Ronnell .....0.830 mg/kg Phorate .....0.48 mg/kg Demeton-O .....0.710 mg/kg Diazinon .....3.76 mg/kg Malathion .....8.02 mg/kg Parathion, ethyl .....4.88 mg/kg Stirophos (tetrachlorovinphos) .....4.24 mg/kg	50 g
RTC-CRM837-050	Soil (Silty loam) - Organophosphorus pesticides The reference values were determined by USEPA SW 846 (3rd edition) Analysis Method 8141A. Certified values Lot 015621 Azinphos-methyl (Guthion) .....299 µg/kg Chlorpyrifos.....292 µg/kg Diazinon.....624 µg/kg EPN .....553 µg/kg Ethoprop .....300 µg/kg Malathion .....706 µg/kg Methyl parathion (Parathion, methyl) .....227 µg/kg Parathion, ethyl .....782 µg/kg Ronnell.....180 µg/kg Tetrachlorvinphos .....254 µg/kg	50 g
<b>New</b> RTC-CRM851-050	Soil (Silty loam) - Organophosphorus pesticides Certified values Lot 002536 Azinphos-methyl (Guthion) .....1.76 mg/kg Chlorfenvinphos.....1.76 mg/kg Diazinon .....0.217 mg/kg Malathion .....4.14 mg/kg Parathion, methyl.....5.80 mg/kg Parathion, ethyl .....3.23 mg/kg Ronnell.....2.14 mg/kg Tetrachlorvinphos .....0.673 mg/kg Disulfoton .....5.18 mg/kg	50 g

## Soils

Code	Product	Unit
<b>New</b> RTC-CRM806-100	Soil (Loamy sand) - Chlordane The certified value was determined by USEPA SW 846 (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 Lot FH806 Chlordane ..... 7.19 mg/kg	100 g
RTC-CRM812-050	Soil (Sandy loam) - Chlordane The certified value was determined by USEPA SW 846 (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 Lot AL812 Chlordane ..... 205 µg/kg	50 g
RTC-CRM825-050	Soil (Sandy loam) - Chlordane The certified value was determined by USEPA SW 846 (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 Lot BL825 Chlordane ..... 392 µg/kg	50 g
<b>New</b> RTC-CRM852-050	Sediment - Chlordane Certified value Lot 002531 Chlordane (total) ..... 235 µg/kg	50 g
RTC-CRM828-050	Soil (Silty loam) - Pesticides Fortified to meet the requirements of NELAC Fields of Testing, RCRA Solid. The Reference Values were determined by USEPA SW 846 (3rd edition) method 8081A. Certified values Lot 001682 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	50 g
RTC-CRM846-050	Soil (Loamy sand) - Pesticides The reference values were determined by USEPA SW 846 (3rd edition) method 8081A. The sample is suitable for this and other similar methods. Certified values Lot 015141 Aldrin ..... 63.8 µg/kg      Endrin ketone ..... 82.7 µg/kg alpha-Chlordane ..... 98.3 µg/kg      Endrin ..... 222 µg/kg gamma-Chlordane ..... 376 µg/kg      delta-HCH ..... 100 µg/kg 4,4'-DDD ..... 259 µg/kg      alpha-HCH ..... 256 µg/kg 4,4'-DDE ..... 243 µg/kg      beta-HCH ..... 327 µg/kg 4,4'-DDT ..... 190 µg/kg      gamma-HCH (Lindane) ..... 147 µg/kg Dieldrin ..... 290 µg/kg      Heptachlor ..... 70.8 µg/kg Endosulfan I ..... 187 µg/kg      Heptachlor epoxide ..... 238 µg/kg Endosulfan II ..... 119 µg/kg      Methoxychlor ..... 238 µg/kg Endosulfan sulfate ..... 160 µg/kg      Propachlor ..... 287 µg/kg Endrin aldehyde ..... 116 µg/kg      Trifluralin ..... 282 µg/kg	50 g
RTC-CRM829-050	Soil (Silty loam) - Toxaphenes Certified value Lot 01678 Toxaphene ..... 221 µg/kg	50 g
RTC-CRM826-050	Soil (Sandy loam) - Toxaphene The Certified value was determined by USEPA SW 846 (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 Lot BL826 Toxaphene ..... 257 µg/kg	50 g

Code	Product	Unit
RTC-CRM813-050	Soil (Sandy loam) - Toxaphene The certified value was determined by USEPA SW 846 (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 Lot BC813 Toxaphene..... 254 µg/kg	50 g
<b>New</b> RTC-CRM853-050	Soil (Clay) - Toxaphenes Certified value Lot 010770 Toxaphene..... 306 µg/kg	50 g
RTC-CRM847-050	Soil (Clay Loam) - Pesticides The certified values were determined by USEPA SW 846 (3rd edition) method 8081A. The sample is suitable for this and other similar methods. Certified values Lot 002405 4,4'-DDD ..... 228 µg/kg 4,4'-DDE ..... 218 µg/kg 4,4'-DDT ..... 172 µg/kg Aldrin..... 115 µg/kg Dieldrin..... 125 µg/kg Endosulfan I ..... 160 µg/kg Endosulfan II..... 233 µg/kg Endosulfan sulfate ..... 270 µg/kg Endrin ..... 377 µg/kg Endrin aldehyde ..... 49.3 µg/kg alpha-HCH ..... 225 µg/kg beta-HCH ..... 92.4 µg/kg delta-HCH..... 67.6 µg/kg gamma-HCH (Lindane)..... 340 µg/kg Heptachlor..... 109 µg/kg Heptachlor epoxide (beta)..... 98.7 µg/kg Methoxychlor ..... 172 µg/kg	50 g
<b>New</b> RTC-CRM981-010	Clay loam - Dioxins/Furans Certified values Lot 013623 1,2,3,4,6,7,8-HpCDF..... 789 ± 50.7 pg/g 1,2,3,4,6,7,8-HpCDD ..... 196 ± 12.4 pg/g HpCDD (total) ..... 196 ± 11.0 pg/g HpCDF (total)..... 796 ± 54.3 pg/g 1,2,3,4,7,8-HxCDD ..... 479 ± 40.5 pg/g 1,2,3,6,7,8-HxCDD ..... 87.0 ± 11.0 pg/g 1,2,3,7,8,9-HxCDD ..... 908 ± 55.5 pg/g HxCDD (total) ..... 1430 ± 137 pg/g 1,2,3,4,7,8-HxCDF ..... 228 ± 13.0 pg/g HxCDF (total)..... 235 ± 10.2 pg/g 1,2,3,4,6,7,8,9-OCDF ..... 700 ± 64.3 pg/g 1,2,3,4,6,7,8,9-OCDD ..... 305 ± 36.9 pg/g 1,2,3,7,8-PeCDD..... 83.9 ± 8.43 pg/g PeCDD (total)..... 95.4 ± 2.34 pg/g 2,3,7,8-TCDD..... 804 ± 57.6 pg/g 2,3,7,8-TCDF ..... 306 ± 28.9 pg/g TCDF (total) ..... 323 ± 30.0 pg/g TCDD (total)..... 804 ± 56.9 pg/g PCDD (total)..... 2750 ± 136 pg/g PCDD + PCDF (total)..... 4690 ± 275 pg/g PCDF (total) ..... 1950 ± 183 pg/g	10 g
RTC-CRM141-050	Soil (Loamy clay) - PAHs The organic sample is a soil containing extractable PAHs for analysis by 8100, 8270, 8310 or equivalent methods. Certified values Lot: 015161 Naphthalene ..... 188 ± 40.3 µg/kg Acenaphthene..... 693 ± 174 µg/kg Acenaphthylene ..... 176 ± 45.5 µg/kg Anthracene ..... 393 ± 130 µg/kg Benzo(a)anthracene ..... 409 ± 83.0 µg/kg Benzo(a)pyrene ..... 198 ± 25.8 µg/kg Benzo(b)fluoranthene ..... 364 ± 48.6 µg/kg Benzo(g,h,i)perylene..... 618 ± 109 µg/kg Benzo(k)fluoranthene..... 253 ± 43.9 µg/kg Chrysene..... 316 ± 52.0 µg/kg Dibenzo(a,h)anthracene ..... 451 ± 70.4 µg/kg Fluoranthene ..... 176 ± 40.3 µg/kg Fluorene..... 338 ± 111 µg/kg Indeno(1,2,3-cd)pyrene..... 394 ± 52.0 µg/kg Phenanthrene ..... 719 ± 221 µg/kg Pyrene..... 331 ± 62.0 µg/kg	50 g
<b>New</b> RTC-CRM860-050	Soil (Clay Loam) - Pesticides Certified values Lot 010760 Hexachlorobenzene..... 83.3 µg/kg delta-BHC ..... 65.7 µg/kg alpha-BHC (alpha-Hexachlorocyclohexane)..... 115 µg/kg beta-BHC (beta-Hexachlorocyclohexane) ..... 109 µg/kg alpha-Chlordane ..... 74.0 µg/kg gamma-Chlordane..... 101 µg/kg 4,4'-DDD ..... 116 µg/kg 4,4'-DDE ..... 70.8 µg/kg 4,4'-DDT ..... 49.4 µg/kg Dieldrin..... 79.7 µg/kg Endosulfan I..... 91.5 µg/kg Endosulfan II..... 111 µg/kg Endosulfan sulfate ..... 58.6 µg/kg Endrin aldehyde..... 50.2 µg/kg Endrin ketone ..... 119 µg/kg Endrin ..... 75.3 µg/kg Heptachlor ..... 68.1 µg/kg Heptachlor epoxide..... 106 µg/kg Methoxychlor..... 96.6 µg/kg	50 g

Code	Product	Unit
RTC-CRM020-050	Dry soil No. 2 (Sandy loam) - Trace elements Soil is from a USEPA Superfund site located in the Western United States. The certified values were determined by USEPA SW 846 (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 Lot D020 pH ..... 2.96 Ag ..... 38.5 mg/kg Al ..... 1760 mg/kg As ..... 400 mg/kg Ba ..... 24.8 mg/kg Ca ..... 25584 mg/kg Cd ..... 15.4 mg/kg Co ..... 4.51 mg/kg Cr ..... 13.6 mg/kg Cu ..... 729 mg/kg Fe ..... 191706 mg/kg Hg ..... 1.12 mg/kg Mg ..... 2687 mg/kg Mn ..... 945 mg/kg Ni ..... 16.9 mg/kg Pb ..... 5111 mg/kg Sb ..... 8.38 mg/kg Se ..... 6.57 mg/kg Tl ..... 5.91 mg/kg V ..... 6.47 mg/kg Zn ..... 3010 mg/kg Indicative values for K, Na, Sr	50 g
RTC-CRM021-100	Dry soil No. 3 (Sandy loam) - Trace elements Soil is from a waste site in the Midwestern United States. The certified values were determined by USEPA SW 846 (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 Lot E021 Ag ..... 6.5 mg/kg Al ..... 2725 mg/kg As ..... 24.8 mg/kg Ba ..... 586 mg/kg Ca ..... 5426 mg/kg Cd ..... 1.2 mg/kg Cr ..... 10.7 mg/kg Cu ..... 4792 mg/kg Fe ..... 6481 mg/kg Hg ..... 4.7 mg/kg K ..... 1006 mg/kg Mn ..... 174 mg/kg Na ..... 380 mg/kg Ni ..... 12.6 mg/kg Sb ..... 4950 mg/kg Zn ..... 546 mg/kg Indicative values for Co, Mg, Pb, Sn, Tl, V	100 g
RTC-CRM022-020	Dry soil No. 5 (Loam) - Trace elements and cyanide This soil is from a waste site in the Western United States. The certified values were determined by USEPA SW 846 (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 Lot D522 Al ..... 10060 mg/kg As ..... 5.4 mg/kg Ba ..... 109 mg/kg Be ..... 0.5 mg/kg Ca ..... 27242 mg/kg Cd ..... 3.1 mg/kg Cr ..... 18.8 mg/kg Co ..... 5.7 mg/kg Cu ..... 12.4 mg/kg Fe ..... 13555 mg/kg Hg ..... 5 mg/kg K ..... 3170 mg/kg Mg ..... 9524 mg/kg Mn ..... 318 mg/kg Na ..... 268 mg/kg Ni ..... 16 mg/kg Pb ..... 415 mg/kg V ..... 23 mg/kg Zn ..... 46 mg/kg Cyanide ..... 26.6 mg/kg Indicative values for B, Ag, Hg, Sb, Se, Si, Sn, Sr, Tl	20 g
RTC-CRM008-050	Sediment 1 - Trace elements Sediment/soil from a river bank and bottom near the Chesapeake Bay. The certified values were determined by USEPA SW 846 (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 Lot J408 Al ..... 23906 mg/kg As ..... 14 mg/kg Ba ..... 54 mg/kg Be ..... 1 mg/kg Ca ..... 2935 mg/kg Cr ..... 48 mg/kg Co ..... 11 mg/kg Cu ..... 36 mg/kg Fe ..... 33042 mg/kg Hg ..... 0.72 mg/kg K ..... 3948 mg/kg Mg ..... 6742 mg/kg Mn ..... 261 mg/kg Na ..... 8706 mg/kg Ni ..... 26 mg/kg Pb ..... 95.9 mg/kg V ..... 44.4 mg/kg Zn ..... 134 mg/kg Indicative values for Ag, B, Cd, Mo, Sb, Se, Si, Sn, Sr, Tl	50 g
RTC-CRM023-050	Soil (Sandy loam) - Metals Soil is from a contaminated site located in the Western United States. The certified values were determined by USEPA SW 846 (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 Lot DG023 Ag ..... 132 mg/kg Al ..... 8472 mg/kg As ..... 380 mg/kg Ba ..... 75.5 mg/kg Be ..... 0.4 mg/kg Ca ..... 5425 mg/kg Cd ..... 0.9 mg/kg Cr ..... 31.1 mg/kg Co ..... 8.9 mg/kg Cu ..... 4.7 mg/kg Fe ..... 10678 mg/kg Hg ..... 77.8 mg/kg K ..... 2231 mg/kg Mg ..... 3064 mg/kg Mn ..... 206 mg/kg Na ..... 295 mg/kg Ni ..... 11.0 mg/kg Pb ..... 213 mg/kg Se ..... 116 mg/kg Sr ..... 32.6 mg/kg Tl ..... 111.51 mg/kg V ..... 21.7 mg/kg Zn ..... 93.8 mg/kg Indicative values for B, Si	50 g



Code	Product	Unit
RTC-CRM024-050	Soil (Sandy loam) - Metals This soil is from a site in the Western United States. The certified values were determined by USEPA SW 846 (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 Lot 11024 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, TI	50 g
RTC-CRM025-050	Soil (Sandy loam) - Metals This soil is from a moderate contaminated site located in the Western United States. The certified values were determined by USEPA SW 846 (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 Lot JG025 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, TI	50 g
RTC-CRM026-050	Soil (Sandy loam) - Metals 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 SW 846 (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 Lot BE026 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, TI The following certified values were determined by using USEPA SW 846 Method 7060A for Arsenic, by using USEPA SW 846 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	50 g
RTC-CRM027-050	Soil (Sandy loam) - Metals This soil is from a moderately contaminated site located in the Western United States. The Reference Values were determined by USEPA SW 846 (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 Lot HC027 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, TI	50 g

Code	Product	Unit
RTC-CRM028-050	Soil (Sandy loam) - Metals This soil is from a moderately contaminated site location in the Western United States. The Reference Values were determined by USEPA SW 846 (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 Lot IH028 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	50 g
RTC-CRM030-050	Soil (Sandy loam) - Metals This soil is from a moderately contaminated site location in the Western United States. The Reference Values were determined by USEPA SW 846 (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.	50 g
<b>New</b> RTC-CRM033-050	Soil - Metals The values were determined by USEPA SW 846 (3rd edition) Methods 3050B/3051, 6010B, and 7000 series. The sample is suitable for these and other similar methods. Certified values Lot 013545 Antimony, Sb ..... 60.6 mg/kg      Molybdenum, Mo..... 67.7 mg/kg Arsenic, As..... 132 mg/kg      Nickel, Ni..... 201 mg/kg Barium, Ba..... 487 mg/kg      Potassium, K..... 18900 mg/kg Beryllium, Be..... 218 mg/kg      Selenium, Se..... 304 mg/kg Boron, B..... 139 mg/kg      Silicon, Si ..... 858 mg/kg Cadmium, Cd..... 56.6 mg/kg      Silver, Ag..... 82.1 mg/kg Calcium, Ca..... 7830 mg/kg      Sodium, Na ..... 1540 mg/kg Chromium, Cr (total) ..... 302 mg/kg      Strontium, Sr ..... 125 mg/kg Cobalt, Co..... 108 mg/kg      Thallium, Tl ..... 72.7 mg/kg Copper, Cu ..... 61.1 mg/kg      Titanium, Ti ..... 287 mg/kg Iron, Fe..... 11100 mg/kg      Tin, Sn..... 107 mg/kg Lead, Pb ..... 315 mg/kg      Vanadium, V ..... 314 mg/kg Lithium, Li ..... 128 mg/kg      Zinc, Zn ..... 251 mg/kg Magnesium, Mg ..... 9990 mg/kg      Aluminum, Al..... 11900 mg/kg Manganese, Mn ..... 680 mg/kg      pH..... 7.76 Mercury, Hg ..... 25.4 mg/kg      Phosphorus, P ..... 162 mg/kg	50 g
<b>New</b> RTC-CRM034-050	Soil (Loamy sand) - Metals The values were determined by USEPASW 846 (3rd edition) Methods 3050B/3051, 6010B, and 7000 series. The sample is suitable for these and other similar methods. Certified values Lot AL034 Ag ..... 27.0 mg/kg      Co..... 49.7 mg/kg      Mo..... 76.4 mg/kg Al..... 13500 mg/kg      Cr..... 207 mg/kg      Na ..... 463 mg/kg As..... 148 mg/kg      Cu..... 76.1 mg/kg      Ni ..... 192 mg/kg B ..... 136 mg/kg      Fe ..... 11900 mg/kg      Pb ..... 60.6 mg/kg Ba ..... 227 mg/kg      Hg..... 13.0 mg/kg      Se ..... 68.0 mg/kg Be ..... 101 mg/kg      K ..... 3420 mg/kg      Tl..... 97.6 mg/kg Ca ..... 11300 mg/kg      Mg ..... 4190 mg/kg      V ..... 47.1 mg/kg Cd ..... 31.3 mg/kg      Mn ..... 559 mg/kg      Zn..... 324 mg/kg Indicative values for pH, Sb, Sn	50 g
<b>New</b> RTC-CRM036-050	Soil (Loamy sand) - Metals This fortified soil is from a site located in the Western United States. The certified values were determined by USEPA SW 846 (3rd edition) Methods 3050B/3051, 6010B, and 7000 series. The sample is suitable for these and other similar methods. Certified values Lot 12014 Aluminum, Al ..... 6770 mg/kg      Cobalt, Co ..... 163 mg/kg      Potassium, K..... 14200 mg/kg Antimony, Sb ..... 56.6 mg/kg      Copper, Cu ..... 266 mg/kg      Selenium, Se ..... 188 mg/kg Arsenic, As..... 114 mg/kg      Iron, Fe ..... 8200 mg/kg      Silver, Ag ..... 84.0 mg/kg Barium, Ba..... 298 mg/kg      Lead, Pb ..... 188 mg/kg      Sodium, Na ..... 9590 mg/kg Beryllium, Be..... 108 mg/kg      Magnesium, Mg ..... 8350 mg/kg      Thallium, Tl ..... 85.4 mg/kg Boron, B ..... 86.6 mg/kg      Manganese, Mn..... 951 mg/kg      Tin, Sn ..... 102 mg/kg Cadmium, Cd..... 224 mg/kg      Mercury, Hg ..... 1.26 mg/kg      Vanadium, V ..... 97.4 mg/kg Calcium, Ca ..... 3310 mg/kg      Molybdenum, Mo ..... 235 mg/kg      Zinc, Zn ..... 197 mg/kg Chromium, Cr (total) 77.6 mg/kg      Nickel, Ni ..... 221 mg/kg      pH ..... 6.91	50 g

Code	Product	Unit																																	
<b>New</b> RTC-CRM043-050	Soil (Sandy loam) - Metals The certified values were determined by USEPA SW 846 (3 <sup>rd</sup> edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods. Certified values Lot 016111	50 g																																	
	<table> <tbody> <tr> <td>Al..... 19100 mg/kg</td> <td>Fe..... 22500 mg/kg</td> <td>Sn..... 196 mg/kg</td> </tr> <tr> <td>Ag..... 87.7 mg/kg</td> <td>Hg..... 27.2 mg/kg</td> <td>Sr..... 357 mg/kg</td> </tr> <tr> <td>As..... 190 mg/kg</td> <td>K..... 5040 mg/kg</td> <td>Ti..... 514 mg/kg</td> </tr> <tr> <td>B..... 128 mg/kg</td> <td>Mg..... 6640 mg/kg</td> <td>Tl..... 140 mg/kg</td> </tr> <tr> <td>Ba..... 690 mg/kg</td> <td>Mn..... 789 mg/kg</td> <td>V..... 127 mg/kg</td> </tr> <tr> <td>Be..... 122 mg/kg</td> <td>Mo..... 110 mg/kg</td> <td>Zn..... 424 mg/kg</td> </tr> <tr> <td>Ca..... 16600 mg/kg</td> <td>Na..... 402 mg/kg</td> <td>pH..... 5.67</td> </tr> <tr> <td>Cd..... 223 mg/kg</td> <td>Ni..... 176 mg/kg</td> <td>Phosphorus, P..... 523 mg/kg</td> </tr> <tr> <td>Co..... 146 mg/kg</td> <td>Pb..... 143 mg/kg</td> <td>Silica..... 1380 mg/kg</td> </tr> <tr> <td>Cr..... 301 mg/kg</td> <td>Sb..... 40.6 mg/kg</td> <td></td> </tr> <tr> <td>Cu..... 131 mg/kg</td> <td>Se..... 144 mg/kg</td> <td></td> </tr> </tbody> </table>	Al..... 19100 mg/kg	Fe..... 22500 mg/kg	Sn..... 196 mg/kg	Ag..... 87.7 mg/kg	Hg..... 27.2 mg/kg	Sr..... 357 mg/kg	As..... 190 mg/kg	K..... 5040 mg/kg	Ti..... 514 mg/kg	B..... 128 mg/kg	Mg..... 6640 mg/kg	Tl..... 140 mg/kg	Ba..... 690 mg/kg	Mn..... 789 mg/kg	V..... 127 mg/kg	Be..... 122 mg/kg	Mo..... 110 mg/kg	Zn..... 424 mg/kg	Ca..... 16600 mg/kg	Na..... 402 mg/kg	pH..... 5.67	Cd..... 223 mg/kg	Ni..... 176 mg/kg	Phosphorus, P..... 523 mg/kg	Co..... 146 mg/kg	Pb..... 143 mg/kg	Silica..... 1380 mg/kg	Cr..... 301 mg/kg	Sb..... 40.6 mg/kg		Cu..... 131 mg/kg	Se..... 144 mg/kg		
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RTC-CRM048-050	Soil (Sandy loam) - Metals The values were determined by USEPA SW 846 (3 <sup>rd</sup> edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. Certified values Lot 017065	50 g																																	
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RTC-CRM044-050	Soil (Silty loam) - Metals The values were determined by using USEPA SW 846 Method 7060A for arsenic, by using USEPA SW 846 Method 7471B for mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc. Certified values Lot CF044	50 g																																	
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RTC-CRM045-050	Soil (Silty clay) - Metals The values were determined by using USEPA SW 846 Method 7060A for arsenic, by using USEPA SW 846 Method 7471B for Mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc. Certified values Lot CF045	50 g																																	
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RTC-CRM046-050	Soil (Clay) - Metals The values were determined by using USEPA SW 846 Method 7060A for arsenic, by using USEPA SW 846 Method 7471B for Mercury, and by using Aqua Regia Method for cadmium, chromium, copper, lead, nickel, and zinc. Certified values Lot CF046	50 g																																	
	<table> <tbody> <tr> <td>As..... 7.47 mg/kg</td> <td>Cu..... 62.2 mg/kg</td> <td>Ni..... 37.5 mg/kg</td> </tr> <tr> <td>Cd..... 7.01 mg/kg</td> <td>Pb..... 45.3 mg/kg</td> <td>Zn..... 114 mg/kg</td> </tr> <tr> <td>Cr..... 45.7 mg/kg</td> <td>Mn..... 118 mg/kg</td> <td></td> </tr> <tr> <td>Co..... 8.22 mg/kg</td> <td>Hg..... 0.153 mg/kg</td> <td></td> </tr> </tbody> </table>	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																							
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RTC-CRM049-050	Soil (Sandy clay) - Metals The values were determined by USEPA SW 846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods. Certified values Lot 10248	50 g																																																																		
	<table> <tr><td>Ag .....</td><td>125 mg/kg</td><td>Cu .....</td><td>88.5 mg/kg</td><td>Sb .....</td><td>123 mg/kg</td></tr> <tr><td>Al .....</td><td>560 mg/kg</td><td>Fe .....</td><td>9170 mg/kg</td><td>Se .....</td><td>72.1 mg/kg</td></tr> <tr><td>As .....</td><td>65.3 mg/kg</td><td>Hg .....</td><td>13.5 mg/kg</td><td>Si .....</td><td>168 mg/kg</td></tr> <tr><td>B .....</td><td>59 mg/kg</td><td>K .....</td><td>3020 mg/kg</td><td>Sn .....</td><td>236 mg/kg</td></tr> <tr><td>Ba .....</td><td>12.7 mg/kg</td><td>Mg .....</td><td>899 mg/kg</td><td>Sr .....</td><td>8.62 mg/kg</td></tr> <tr><td>Be .....</td><td>60.5 mg/kg</td><td>Mn .....</td><td>636 mg/kg</td><td>Ti .....</td><td>47.1 mg/kg</td></tr> <tr><td>Ca .....</td><td>4790 mg/kg</td><td>Mo .....</td><td>98.6 mg/kg</td><td>Tl .....</td><td>125 mg/kg</td></tr> <tr><td>Cd .....</td><td>80 mg/kg</td><td>Na .....</td><td>665 mg/kg</td><td>V .....</td><td>57.8 mg/kg</td></tr> <tr><td>Co .....</td><td>84 mg/kg</td><td>Ni .....</td><td>344 mg/kg</td><td>Zn .....</td><td>542 mg/kg</td></tr> <tr><td>Cr .....</td><td>355 mg/kg</td><td>Pb .....</td><td>111 mg/kg</td><td>pH .....</td><td>2,23</td></tr> </table>	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							
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RTC-CRM051-050	Soil (Clay) - Metals The values were determined by USEPA SW 846 (3rd edition) Methods 3050B/3051, 6010B, 6020, and 7000 series. The sample is suitable for these and other similar methods. Certified values Lot 16485	50 g																																																																		
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Ca .....	8320 mg/kg	Na .....	857 mg/kg	Zn .....	256 mg/kg																																																															
Cd .....	48.3 mg/kg	Ni .....	76 mg/kg	pH .....	4.34																																																															
Co .....	59.2 mg/kg	Pb .....	181 mg/kg	Phosphorus, P .....	414 mg/kg																																																															
Cr .....	171 mg/kg	Sb .....	105 mg/kg	Sulfur, S .....	471 mg/kg																																																															
Cu .....	327 mg/kg	Se .....	76.9 mg/kg																																																																	
RTC-CRM052-050	Soil (Loamy clay) - Metals 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 Lot 015055	50 g																																																																		
	<table> <tr><td>Ag .....</td><td>23.0 mg/kg</td><td>Mn .....</td><td>217 mg/kg</td></tr> <tr><td>Al .....</td><td>9660 mg/kg</td><td>Mo .....</td><td>34.3 mg/kg</td></tr> <tr><td>As .....</td><td>33.4 mg/kg</td><td>Ni .....</td><td>50.8 mg/kg</td></tr> <tr><td>Ba .....</td><td>239 mg/kg</td><td>Pb .....</td><td>82.9 mg/kg</td></tr> <tr><td>Be .....</td><td>46.0 mg/kg</td><td>Sb .....</td><td>37.9 mg/kg</td></tr> <tr><td>B .....</td><td>90.5 mg/kg</td><td>Se .....</td><td>25.3 mg/kg</td></tr> <tr><td>Cd .....</td><td>43.0 mg/kg</td><td>Si .....</td><td>667 mg/kg</td></tr> <tr><td>Ca .....</td><td>2860 mg/kg</td><td>Na .....</td><td>319 mg/kg</td></tr> <tr><td>Co .....</td><td>44.1 mg/kg</td><td>Sr .....</td><td>148 mg/kg</td></tr> <tr><td>Cr .....</td><td>57.8 mg/kg</td><td>Sn .....</td><td>77.5 mg/kg</td></tr> <tr><td>Cu .....</td><td>56.5 mg/kg</td><td>Tl .....</td><td>113 mg/kg</td></tr> <tr><td>Fe .....</td><td>14700 mg/kg</td><td>Ti .....</td><td>43.2 mg/kg</td></tr> <tr><td>Hg .....</td><td>2.40 mg/kg</td><td>V .....</td><td>107 mg/kg</td></tr> <tr><td>K .....</td><td>2390 mg/kg</td><td>Zn .....</td><td>94.3 mg/kg</td></tr> <tr><td>Li .....</td><td>101 mg/kg</td><td>pH .....</td><td>7.02</td></tr> <tr><td>Mg .....</td><td>1690 mg/kg</td><td></td><td></td></tr> </table>	Ag .....	23.0 mg/kg	Mn .....	217 mg/kg	Al .....	9660 mg/kg	Mo .....	34.3 mg/kg	As .....	33.4 mg/kg	Ni .....	50.8 mg/kg	Ba .....	239 mg/kg	Pb .....	82.9 mg/kg	Be .....	46.0 mg/kg	Sb .....	37.9 mg/kg	B .....	90.5 mg/kg	Se .....	25.3 mg/kg	Cd .....	43.0 mg/kg	Si .....	667 mg/kg	Ca .....	2860 mg/kg	Na .....	319 mg/kg	Co .....	44.1 mg/kg	Sr .....	148 mg/kg	Cr .....	57.8 mg/kg	Sn .....	77.5 mg/kg	Cu .....	56.5 mg/kg	Tl .....	113 mg/kg	Fe .....	14700 mg/kg	Ti .....	43.2 mg/kg	Hg .....	2.40 mg/kg	V .....	107 mg/kg	K .....	2390 mg/kg	Zn .....	94.3 mg/kg	Li .....	101 mg/kg	pH .....	7.02	Mg .....	1690 mg/kg					
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<b>New</b> RTC-CRM059-050	Soil (Loamy clay) - Metals Certified values Lot 010755	50 g																																																																		
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## Soils

Code	Product	Unit
<b>New</b> RTC-CRM2003-050	Taiwan clay - Trace metals The certified values were determined by using USEPA SW 846 Method 7060A for Arsenic, by using USEPA SW 846 Method 7471B for Mercury, and by using Aqua Regia Method for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc. Certified values Lot A-21 Arsenic, As .....20.7 mg/kg Cadmium, Cd.....1.66 mg/kg Chromium, Cr (total) .....86.8 mg/kg Cobalt, Co.....13.5 mg/kg Copper, Cu .....126 mg/kg Lead, Pb.....44.1 mg/kg Manganese, Mn .....292 mg/kg Mercury, Hg.....0.865 mg/kg Nickel, Ni.....206 mg/kg Zinc, Zn .....342 mg/kg	50 g
<b>New</b> RTC-CRM2004-050	Taiwan clay - Trace metals The certified values were determined by using USEPA SW 846 Method 7060A for Arsenic, by using USEPA SW 846 Method 7471B for Mercury, and by using Aqua Regia Method for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc. Certified values Lot B-22 Arsenic, As .....7.81 mg/kg Cadmium, Cd.....7.89 mg/kg Chromium, Cr (total) .....47.1 mg/kg Cobalt, Co.....8.22 mg/kg Copper, Cu .....65.1 mg/kg Lead, Pb.....44.9 mg/kg Manganese, Mn .....118 mg/kg Mercury, Hg.....0.140 mg/kg Nickel, Ni.....38.5 mg/kg Zinc, Zn .....118 mg/kg	50 g
RTC-CRM202-225	Soil (Sandy loam) - TCLP metals 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 in the Method 1311 extract Lot 000109 Ag .....4.33 mg/L As.....1.70 mg/L Ba .....4.51 mg/L Cd.....21.4 mg/L Cr .....3.64 mg/L Hg.....2.13 mg/L Pb .....38.2 mg/L Se .....1.96 mg/L Zn.....0.449 mg/L	225 g
RTC-CRM204-225	Soil (Sandy loam) - TCLP Metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000107 As.....0.5 mg/L Cd .....14.8 mg/L Cr .....3.31 mg/L Pb.....4.51 mg/L Indicative values for Ag, Ba, Hg, Se	225 g
RTC-CRM206-225	Soil (Sandy loam) - TCLP Metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000117 Ag .....0.605 mg/L As.....11.7 mg/L Ba .....0.247 mg/L Cd.....8.20 mg/L Cr .....0.0747 mg/L Hg.....1.17 mg/L Pb .....1.78 mg/L Se .....20.3 mg/L	225 g
RTC-CRM207-225	Soil (Loamy sand) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000165 Ag .....0.965 mg/L As.....8.61 mg/L Ba .....0.426 mg/L Cd.....7.30 mg/L Cr .....0.762 mg/L Hg.....0.0304 mg/L Pb .....2.54 mg/L Se .....21.1 mg/L	225 g
RTC-CRM208-225	Soil (Sandy loam) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000162 As.....5.16 mg/L Ba .....34.6 mg/L Cd.....46.0 mg/L Cr .....0.727 mg/L Hg .....1.33 mg/L Pb .....1.76 mg/L	225 g

## Soils

Code	Product	Unit
RTC-CRM209-225	Soil (Sandy loam) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000153 As..... 12.3 mg/L      Cd..... 4.75 mg/L      Pb ..... 31.3 mg/L Ba ..... 0.265 mg/L      Cr..... 0.243 mg/L	225 g
RTC-CRM210-225	Soil (Sandy loam) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000442 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	225 g
RTC-CRM211-225	Soil (Sandy loam) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000534 As..... 4.49 mg/L      Cr..... 0.533 mg/L      Zn..... 1.43 mg/L Ba ..... 0.320 mg/L      Pb..... 0.867 mg/L Cd ..... 3.18 mg/L      Se..... 1.68 mg/L	225 g
RTC-CRM212-225	Soil (Loamy sand) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000609 As..... 0.295 mg/L      Cd..... 0.377 mg/L      Se ..... 0.310 mg/L Ba ..... 0.716 mg/L      Cr..... 0.0187 mg/L Indicative values for Cu, Ag, Hg, Zn	225 g
RTC-CRM213-225	Soil (Loamy sand) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000718 As..... 3.12 mg/L      Cd..... 13.1 mg/L      Hg ..... 1.36 mg/L Ag ..... 0.0335 mg/L      Cr..... 0.280 mg/L      Se ..... 7.56 mg/L Ba ..... 2.12 mg/L      Pb..... 4.83 mg/L	225 g
RTC-CRM215-225	Soil (Sandy loam) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot 000962 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	225 g
RTC-CRM217-225	Soil (Sandy loam) - TCLP metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. Certified values Lot BC217 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	225 g

## Soils

Code	Product	Unit
<b>New</b> RTC-CRM218-225	Soil (Loam) - TCLP Metals 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, 3 <sup>rd</sup> edition, 1311, 6011 and 7000 series. All values are expressed in mg/L in the Method 1311 extract. Certified values Lot 017197 As..... 5.04 mg/L      Cu..... 0.0572 mg/L      Se ..... 40.6 mg/L Ag ..... 0.0377 mg/L      Hg..... 1.03 mg/L      V ..... 0.794 mg/L Ba ..... 49.4 mg/L      Pb..... 6.73 mg/L      Zn..... 41.3 mg/L Cd ..... 48.6 mg/L      Ni..... 0.0213 mg/L Cr..... 0.243 mg/L      Sb..... 0.0154 mg/L	225 g
BCR-143R	Sewage sludge amended soil - Major and trace elements 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	40 g
BCR-483	Sewage sludge amended soil - Extractable trace elements EDTA-extractable Certified values Cd ..... 24.3 mg/kg      Cu..... 215 mg/kg      Pb ..... 229 mg/kg Cr ..... 28.6 mg/kg      Ni..... 28.7 mg/kg      Zn..... 612 mg/kg Acetic acid-extractable Certified values Cd ..... 18.3 mg/kg      Cu..... 33.5 mg/kg      Pb ..... 2.10 mg/kg Cr ..... 18.7 mg/kg      Ni..... 25.8 mg/kg      Zn..... 620 mg/kg Indicative values for the calcium chloride extractable content, the sodium nitrate extractable content and the ammonium nitrate extractable content.	70 g
BCR-484	Sewage sludge amended (terra rossa) soil - Extractable trace elements EDTA-extractable Certified values Cd ..... 0.51 mg/kg      Ni..... 1.39 mg/kg      Zn..... 383 mg/kg Cu ..... 88 mg/kg      Pb..... 59.7 mg/kg Acetic acid-extractable Certified values Cd ..... 0.48 mg/kg      Ni..... 1.69 mg/kg      Zn..... 193 mg/kg Cu ..... 33.9 mg/kg      Pb..... 1.17 mg/kg Indicative values for the calcium chloride extractable content, the sodium nitrate extractable content and the ammonium nitrate extractable content.	70 g
RTC-CRM005-050	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 SW 846 (3 <sup>rd</sup> 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 Lot J050 Ag ..... 36.3 mg/kg      Cr ..... 41.4 mg/kg      Na ..... 2490 mg/kg Al..... 15300 mg/kg      Cu..... 465 mg/kg      Ni ..... 26 mg/kg As..... 6.91 mg/kg      Fe ..... 12700 mg/kg      Pb ..... 89.2 mg/kg Ba ..... 853 mg/kg      Hg..... 3.32 mg/kg      Se ..... 19.9 mg/kg Be ..... 1 mg/kg      K ..... 6230 mg/kg      V ..... 109 mg/kg Ca ..... 119000 mg/kg      Mg ..... 6706 mg/kg      Zn..... 625 mg/kg Cd ..... 13.7 mg/kg      Mn ..... 172 mg/kg Co ..... 6.18 mg/kg      Mo ..... 14 mg/kg Indicative values for P, Ti	50 g
<b>New</b> RTC-PB-2000	Clay loam - Lead RTC-Pb-2000 was certified using methods USEPA SW 846, 3 <sup>rd</sup> edition, 3050 (hot block), 3051 (microwave), 6010 (ICP-EOS), 6020 (ICP-MS) and 7000 (AES) series. Certified value Lot 091103/ Lot 01932 Lead, Pb ..... 2000 mg/kg	50 g
<b>New</b> RTC-PB-3000	Soil - Lead RTC-Pb-3000 was certified using methods USEPA SW 846, 3 <sup>rd</sup> edition, 3050 (hot block), 3051 (microwave), 6010 (ICP-EOS), 6020 (ICP-MS) and 7000 (AES) series. Certified value Lot 015429 Lead, Pb ..... 3000 mg/kg	50 g

Code	Product	Unit
<b>New</b> RTC-CRM499-100	Loamy sand - pH The soil is to be extracted and analyzed using an appropriate extraction and analytical method to determine pH corrosivity such as USEPA Method SW -846 9040B or 9045C. Lot 015063 pH ..... 9.18 ± 0.0577	100 g
<b>New</b> RTC-CRM498-100	Clay soil - pH, conductivity The soil is to be extracted and analyzed using an appropriate extraction and analytical method to determine pH corrosivity such as USEPA Method SW -846 9040B or 9045C. Lot 015914 Specific conductance Conductivity (25°C) ..... 2100 ± 389 µmhos/cm pH ..... 9.20 ± 0.0754	100 g
<b>New</b> METRANAL-31	Light sandy soil - Trace elements METRANAL™ The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.  Indicative values <u>Total</u> 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 <u>Aqua regia extractable content according to ISO 11466(1995)</u> 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 <u>Boiling 2 mol/L nitric acid</u> 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 <u>Cold 2 mol/L nitric acid</u> 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	80 g
<b>New</b> METRANAL-32	Light sandy soil - Trace elements METRANAL™ The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purpose.  Indicative values <u>Total</u> 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 <u>Aqua regia extractable content according to ISO 11466(1995)</u> 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 <u>Boiling 2 mol/L nitric acid</u> 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 <u>Cold 2 mol/L nitric acid</u> 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	80 g



Code	Product	Unit			
<b>New</b> METRANAL-33	Silty clay loam - Trace elements METRANAL™ The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.	80 g			
Indicative values					
<u>Total</u>					
Be .....	2.18 µg/g	Cu..... 29.1 µg/g			
Cd .....	0.32 µg/g	Hg..... 0.096 µg/g			
Co .....	11.5 µg/g	Mn..... 600 µg/g			
Cr .....	79.8 µg/g	Ni..... 31.3 µg/g			
<u>Aqua regia extractable content according to ISO 11466(1995)</u>					
As.....	11.6 µg/g	Cr .....	42.4 µg/g	Pb .....	33.5 µg/g
Be .....	1.29 µg/g	Cu.....	25.4 µg/g	V .....	76.2 µg/g
Cd .....	0.32 µg/g	Mn .....	529 µg/g	Zn.....	81.0 µg/g
Co .....	10.3 µg/g	Ni.....	28.8 µg/g		
<u>Boiling 2 mol/L nitric acid</u>					
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		
<u>Cold 2 mol/L nitric acid</u>					
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		

<b>New</b> METRANAL-34	Loam - Trace elements METRANAL™ The material is primarily designed for internal and external quality control purposes in the determination of total element contents and contents of element fraction extractable by the below described conventional procedures in soils and materials of similar matrix (quality control charts, inter-laboratory comparisons, estimation of bias etc.) but not for ensuring traceability of measurements and calibration purposes.	80 g			
Indicative values					
<u>Total</u>					
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
<u>Aqua regia extractable content according to ISO 11466(1995)</u>					
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		
<u>Boiling 2 mol/L nitric acid</u>					
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		
<u>Cold 2 mol/L nitric acid</u>					
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

## WEPAL soil reference materials

The Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL) runs 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. The WEPAL soil reference samples are supplied with certificates including consensus values, indicative values and values for information, based on the results of the proficiency programme. The certificates are available on request.

For each soil there are values for several sample preparation methods e.g.:

- Real totals
- Acid extractable (so-called totals)
- Aqua Regia (ISO 11466)
- Extraction with boiling 2 M HNO<sub>3</sub>
- Extraction with 0.1 M NaNO<sub>3</sub>
- Extraction with 0.01 M CaCl<sub>2</sub> 1:10
- Extraction with 1 M NH<sub>4</sub>NO<sub>3</sub> 1:2.5 (w/v) (DIN 19730)
- Extraction with 1 M NH<sub>4</sub>.acetate
- Extraction with BaCl<sub>2</sub>
- Soil characteristics

	Code	Product	Unit
<b>New</b>	WEPAL-ISE-880	Cat clay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-882	Heavy clay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-886	Riverclay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-912	Loess (soil under Forest) - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-921	Riverclay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-930	Moist Clay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-934	Loess - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-936	Organic clay soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-938	Andosol - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-944	Subsoil loess - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-946	Salt-marsh soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-948	Forest subsoil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-950	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-951	Riverclay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-953	Heavy clay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-955	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-957	Latosol - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-959	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-963	Irish coarse - Inorganic composition (please ask for detailed information)	55 g
<b>New</b>	WEPAL-ISE-967	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-968	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-972	Marine clay - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-973	Organic sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-974	Loess (acid brown earth) - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-975	Loess (acid brown earth) - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-977	Sandy soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-979	Rendzina soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-980	Forrest soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-982	Regolith on granodioritic rock - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-983	Marine sediment - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-984	Marine sediment - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-991	Rock soil - Inorganic composition (please ask for detailed information)	100 g
<b>New</b>	WEPAL-ISE-999	Moist clay - Inorganic composition (please ask for detailed information)	100 g

