



Report

Validation Study on the Determination of Selected Chlorinated Biphenyls (PCB) in Solid Waste

**Evaluation of the validation study on
prEN 15308**

organised by CEN/TC 292 / WG 5

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1 Scope

Determination of PCB in solid waste materials is subject of standard prEN 15308: 2006-09. It describes the determination of the 7 congeners PCB-28, 52, 101, 118, 138, 153 and 180. Extraction may be performed either by shaking, sonification or by soxhlet extraction. Several methods for clean-up of the extract are described. Final determination is performed by gas chromatography either with an electron capture detector or with a mass selective detector.

The present report describes a collaborative interlaboratory experiment which was performed in order to provide basic data concerning reproducibility and repeatability of the standard mentioned above.

2 Summary

Seven typical solid waste materials were investigated in this study: building debris, cable shredder, contaminated soil, electronic waste, sealant waste, shredder light fraction and waste wood. Additionally a PCB standard solution with a certifite concentrations was used for quality assurance purposes. Twenty laboratories took part in this study, representing eight European countries.

A summary of the performance characteristics is given in Table 1.

Table 1: Summary of performance characteristics of prEN 15308

sample	analyte	O (%)	p	N	outliers	m (mg/kg)	sR (mg/kg)	SR (%)	sr (mg/kg)	Sr (%)
building debris	PCB-028	5	20	40	1	1.203	0.454	37.7	0.069	5.7
	PCB-052	0	20	40	0	1.985	0.726	36.6	0.12	6.1
	PCB-101	0	20	40	0	7.992	3.306	41.4	0.366	4.6
	PCB-118	5.3	19	38	1	7.098	1.771	25.0	0.568	8.0
	PCB-138	0	20	40	0	8.84	2.741	31.0	0.513	5.8
	PCB-153	10	20	40	2	5.998	1.426	23.8	0.268	4.5
	PCB-180	5	20	40	1	3.581	0.913	25.5	0.342	9.6
	PCB SUM7	5.3	19	38	1	35.2	8.384	23.8	1.322	3.8
cable shredder	PCB-028	18.8	16	33	3	0.647	0.115	17.8	0.05	7.7
	PCB-052	25	16	34	4	0.498	0.147	29.5	0.035	7.0
	PCB-101	0	16	34	0	0.829	0.231	27.8	0.051	6.2
	PCB-118	6.7	15	32	1	0.601	0.172	28.6	0.043	7.1
	PCB-138	12.5	16	34	2	0.857	0.229	26.8	0.028	3.3
	PCB-153	12.5	16	34	2	0.704	0.124	17.7	0.021	2.9
	PCB-180	7.1	14	30	1	0.293	0.064	21.7	0.018	6.2
	PCB SUM7	14.3	14	30	2	4.659	1.17	25.1	0.131	2.8
contaminated soil	PCB-028	10	20	40	2	0.565	0.178	31.5	0.028	5.0
	PCB-052	10	20	40	2	0.886	0.316	35.7	0.093	10.5
	PCB-101	10	20	40	2	3.69	1.259	34.1	0.155	4.2
	PCB-118	0	19	38	0	4.125	1.751	42.4	0.277	6.7
	PCB-138	0	20	40	0	4.843	2.044	42.2	0.344	7.1
	PCB-153	0	20	40	0	3.53	1.562	44.3	0.219	6.2
	PCB-180	10	20	40	2	1.942	0.45	23.2	0.198	10.2
	PCB SUM7	0	19	38	0	19.818	8.488	42.8	0.966	4.9

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Table 1 (cont.)

sample	analyte	O (%)	p	N	outliers	m (mg/kg)	sR (mg/kg)	SR (%)	sr (mg/kg)	Sr (%)
electronic waste	PCB-028	11.8	17	35	2	0.008	0.003	33.6	0.002	21.0
	PCB-052	26.3	19	39	5	0.209	0.045	21.4	0.009	4.1
	PCB-101	0	19	39	0	0.815	0.366	44.9	0.071	8.7
	PCB-118	5.6	18	37	1	0.751	0.213	28.3	0.091	12.1
	PCB-138	0.0	19	39	0	0.879	0.322	36.6	0.118	13.5
	PCB-153	5.3	19	39	1	0.597	0.237	39.6	0.105	17.6
	PCB-180	5.6	18	37	1	0.133	0.051	38.3	0.025	19.1
	PCB SUM7	0.0	19	39	0	3.653	1.548	42.4	0.341	9.3
sealant waste	PCB-028	11.1	18	36	2	2.13	1.21	56.9	0.081	3.8
	PCB-052	5.3	19	38	1	311.9	84.4	27.1	9.002	2.9
	PCB-101	5.3	19	38	1	923.8	246.7	26.7	37.31	4.0
	PCB-118	0.0	18	36	0	783.8	192.5	24.6	34.64	4.4
	PCB-138	0.0	19	38	0	892.5	320.4	35.9	39.05	4.4
	PCB-153	5.3	19	38	1	554.4	130.3	23.5	27.36	4.9
	PCB-180	5.3	19	38	1	107.3	26.8	25.0	6.526	6.1
	PCB SUM7	0.0	18	36	0	3534.8	891.5	25.2	128.5	3.6
shredder light fraction	PCB-028	10	20	40	2	0.538	0.238	44.2	0.029	5.3
	PCB-052	15	20	40	3	0.393	0.104	26.5	0.015	3.9
	PCB-101	5	20	40	1	0.513	0.199	38.8	0.028	5.4
	PCB-118	5.3	19	38	1	0.399	0.141	35.4	0.022	5.4
	PCB-138	0	19	38	0	0.82	0.344	41.9	0.068	8.3
	PCB-153	5	20	40	1	0.669	0.277	41.4	0.06	9.0
	PCB-180	0	19	38	0	0.421	0.197	46.9	0.027	6.4
	PCB SUM7	5.3	19	38	1	3.769	1.403	37.2	0.132	3.5
waste wood	PCB-028	10	20	40	2	0.256	0.11	42.8	0.013	5.0
	PCB-052	10	20	40	2	0.335	0.107	31.9	0.011	3.4
	PCB-101	10.5	19	38	2	0.524	0.174	33.3	0.025	4.8
	PCB-118	5.3	19	38	1	0.511	0.12	23.5	0.036	7.0
	PCB-138	10.0	20	40	2	0.642	0.246	38.3	0.032	5.0
	PCB-153	5.3	19	38	1	0.483	0.125	25.8	0.035	7.3
	PCB-180	10.5	19	38	2	0.281	0.045	16.2	0.008	2.7
	PCB SUM7	5.3	19	38	1	3.081	0.76	24.7	0.172	5.6

p Number of laboratories before elimination of outliers

N Number of observed values

O Percentage of outliers

m General mean

sR Estimate of the reproducibility standard deviation

SR Estimate of the relative reproducibility standard deviation

sr Estimate of the repeatability standard deviation

Sr Estimate of the relative repeatability standard deviation

3 Organisation

- Sponsor:
German federal states program „water, soil, waste“
(Länderfinanzierungsprogramm “Wasser, Boden Abfall”)
- Project coordinator:
Dr. Klaus Furtmann, Landesumweltamt Nordrhein-Westfalen, Düsseldorf/Germany
- Contractor:
Bayer Industry Services GmbH, Leverkusen/Germany
- Sample materials:
Members of CEN/TC 292 WG 5

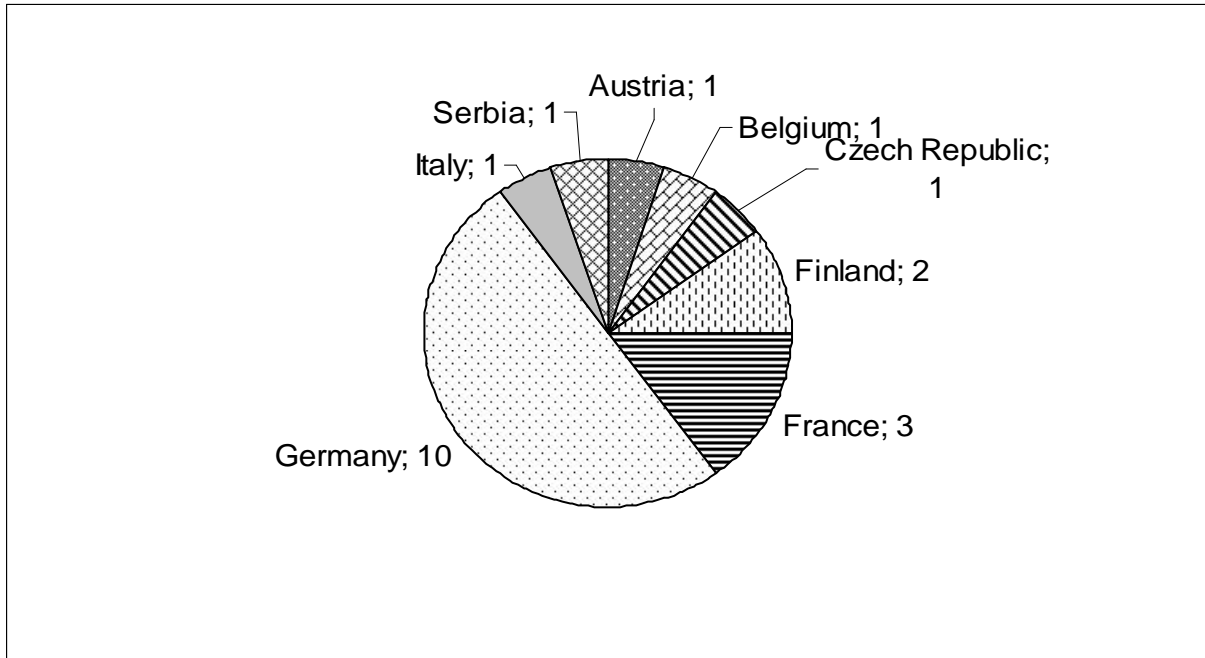
4 Time Schedule

November – December, 2006	Collection of samples
November, 2006 – January, 2007	Homogenisation of samples
December, 2006 – January, 2007	Homogenisation testing
February 12, 2007	Start of sample shipping
April 12, 2007	End of experimental phase
April 16 – April 20, 2007	Stability testing
April 27, 2007	Draft report sent to participants

5 Participants

In total, 26 laboratories were involved in this study. Results were obtained by 20 laboratories. They represent eight European countries. Details of participating laboratories are given in table 3.

Figure 1: Number of laboratories by countries



6 Samples

Contaminated soil, building debris, sealant waste and electronic waste were collected by Bayer Industry Services. The other materials were obtained by the sponsor, by Lobbe Entsorgung GmbH and by the Federal Institute for Material Testing and Research. Thanks is expressed to Mrs. A. Nussbaumer and to Mrs. P. Lehnik-Habrink.

6.1 Sample preparation

6.1.1 Building debris

The sample was collected from a building on a chemical industrial site. It consisted of parts of concrete, brick and gypsum. The material was crushed in a jaw crusher into particles < 10 mm. After milling in a ball mill the material was sieved again (1 mm) and finally homogenized by shaking in a plastic drum.

6.1.2 Cable shredder

The sample material was grinded with a centrifugal mill (ring sieve 0,50 mm) using liquid nitrogen. The grinding stock was air dried. The material was then sieved. The fraction < 2 mm was taken and homogenized in a plastic drum.

6.1.3 Contaminated Soil

The sample was taken from an old industrial site. In order to achieve the desired concentration it was mixed with non contaminated soil. The homogenized material was air-dried and sieved (5 mm). After milling in a ball mill the material was sieved again (1 mm) and finally homogenized by shaking in a plastic drum.

6.1.4 Electronic waste

Boards from different electronic devices were crushed manually into smaller pieces and grinded using a cutting mill. Two subsequent milling processes with sieves of 5 and 2 mm were performed. After sieving (1 mm), the material was grinded again with a centrifugal mill (ring sieve 0,75 mm) and finally homogenized in a plastic drum.

6.1.5 Sealant waste

This sample was collected from windows in a public school. In order to achieve the desired concentration the material was mixed with non contaminated samples. The mixture consisted of sealants based on silicone and polyacryl polymers. The sample was grinded with a cutting mill using liquid nitrogen. Three subsequent milling processes with sieves of 5, 2 and 1 mm were performed. The material was finally homogenized in a plastic drum.

6.1.6 Shredder light fraction

This material is a fraction of waste from used devices and vehicles. Typically it consists of 25 - 35% plastics, 20 - 30% elastomers, 10 - 16% glass 3 - 5% lacquers 3 - 6% textiles 3 - 6% wood/fibrous materials, 0.5 - 4% alumina, 1 - 3% copper, 3 - 13% iron 10 - 20% soil material and street dirt. The material was grinded using a cutting mill. The material was then sieved. The fraction < 1 mm was taken and homogenized in a plastic drum.

6.1.7 Standard solution

Commercially available solutions of 7 PCB congeners in iso-octane were mixed and diluted to the desired concentrations with cyclohexane. The concentration of the individual congeners was in the range of 0.2 to 1.2 µg/ml.

6.1.8 Waste wood

After grinding using a cutting mill two subsequent milling processes with sieves of 2 and 1 mm were performed in order to obtain visually homogenous material. In order to achieve the desired concentration the material was spiked with an extract of contaminated soil in acetone. After air-drying, the material was homogenized in a plastic drum.

7 Homogeneity and stability

In-bottle homogeneity of samples was tested by 8 repeated analyses from one sample container. For investigation of homogeneity of bottles, 8 repeated analyses from different sample vessels were performed. Data for homogeneity testing are given in table 4.

Stability of samples was tested at the end of the experimental part of the study. Results showed that all analytes were sufficiently stable.

8 Shipping of samples

After homogenisation, samples were filled into screw cap brown glass bottles with a volume of 50 ml or 100 ml. Typically, each glass bottle contained about 25 or 55 g. Samples were shipped to the laboratories by truck or by air mail.

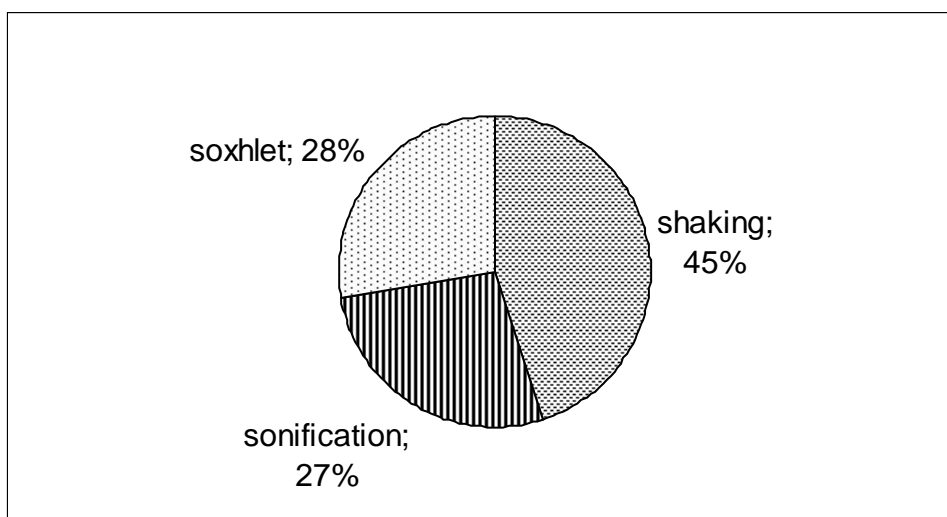
9 Analysis of samples

The laboratories were informed about the expected concentration range of the sum of 7 PCB. Additionally they were instructed about special requirement on sample handling e.g. type of extraction solvent. The samples were analyzed according to prEN 15308 (September 2006). On a reply sheet, laboratories were asked to describe details on the analyses e.g. type of sample extraction, clean-up and detector.

9.1 Extraction

The standard prEN 15308 describes three possibilities for extraction: soxhlet extraction, extraction by shaking and by sonification. Figure 2 shows the percentage of extraction procedures used by the participants.

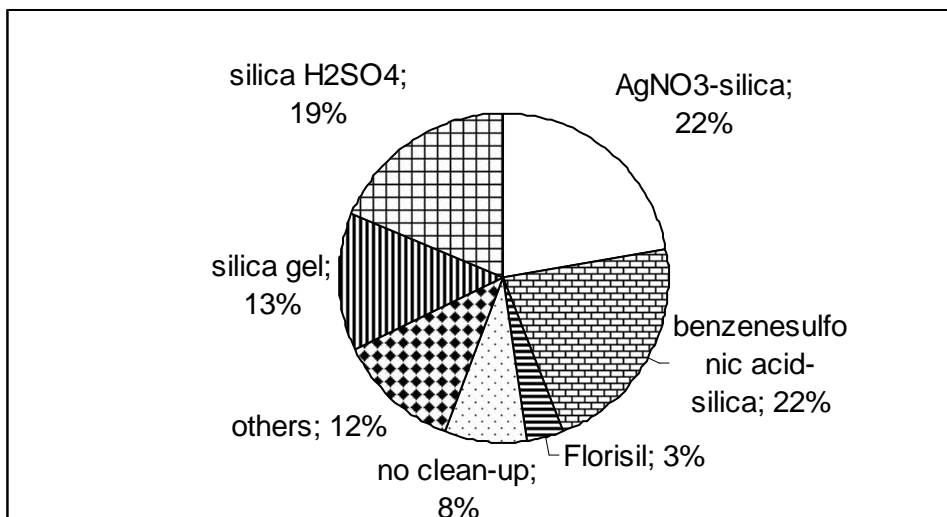
Figure 2: Extraction procedures used by participants



9.2 Clean-up

The standard prEN 15308 describes several possibilities for clean-up: AgNO₃-silica, benzenesulfonic acid-silica, Florisil, silica gel, silica H₂SO₄ or no clean-up. Figure 3 shows the percentage of clean-up procedures used by the participants.

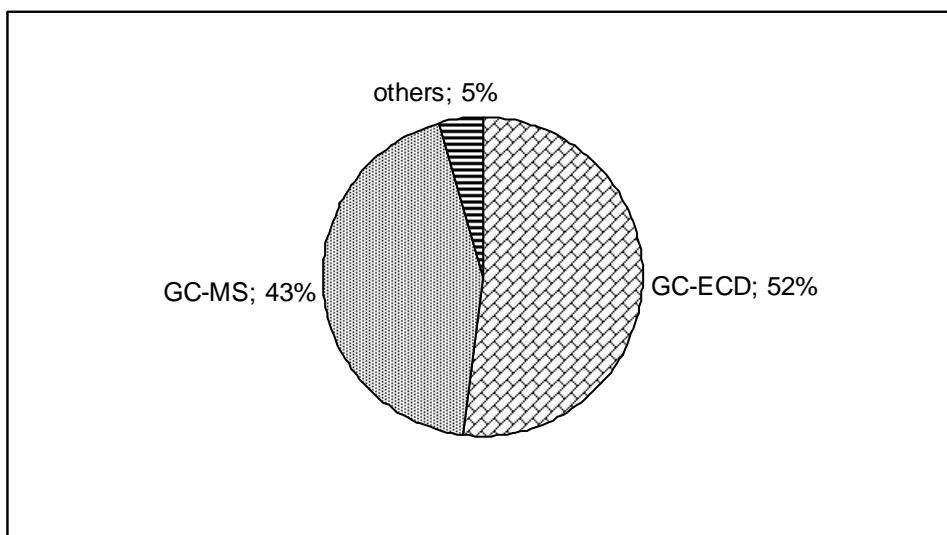
Figure 3: Clean-up prodecures used by participants



9.3 Detection

The standard prEN 15308 describes two possible GC detectors: mass spectrometry (GC-MS) and electron capture detector (GC-ECD). Figure 4 shows the percentage of detectors used by the participants.

Figure 4: Extraction prodecures used by participants



10 Data Evaluation

10.1 Expert Judgement

Prior to calculations, all results were checked for plausibility. Some laboratory managers were contacted and asked to re-examine their data. In some cases data were corrected.

In a second step the results were checked for completeness. Repeatability standard deviation can only be calculated if more than 1 result is reported by the laboratory. For this reason, all single results were excluded and not used for further calculations. This was the case for lab no. 2 (electronic waste) and lab no. 5 partially, 21 and 25 (cable shredder).

10.2 Calculations

Original laboratory results were evaluated according to DIN ISO 5725-2:2002-12. A commercial software package (ProLab; QuoData Gesellschaft für Qualitätsmanagement und Statistik mbH) was used for calculations and graphical data presentation. Result below the limit of determination are not used for calculation.

According to DIN ISO 5725-2, two types of outliers (according to Grubbs and according to Cochran) were identified. An outlier according to Grubbs indicates a strong deviation of the laboratory mean value from the overall mean value.

An outlier according to Cochran indicates a strong deviation of the in-laboratory repeatability standard deviation with respect to the overall repeatability standard deviation. The type of outlier is marked in Table 5 as well as in the graphical presentation (G = Grubbs, C = Cochran).

10.3 Quality Assurance

A standard solution of known reference concentrations of 7 PCB congeners was analysed by the participants. Table 2 shows the overall mean values with respect to the reference values.

Table 2: Analytical results of standard solution

	mean value	reproducibility standard deviation	reference concentration
	µg/ml	µg/ml	µg/ml
PCB 28	0.191	0.031	0.200
PCB 52	0.650	0.088	0.600
PCB 101	0.965	0.097	1.000
PCB 118	0.214	0.035	0.200
PCB 138	1.208	0.144	1.200
PCB 153	0.214	0.035	0.200
PCB 180	0.787	0.075	0.800
Sum PCB ₇	4.174	0.391	4.200

11 Results

Complete data delivered by participating laboratories are listed in table 5 and presented graphically in the annex.

12 Annex

Table 3: Participating laboratories

Laboratory manager	Company	Street	City-Code	City	Country
Alexander Ruderisch	AGROLAB GmbH	Dr. Paulingstr. 3	84079	Bruckberg	Germany
Anke Meilwes	Bergisches Wasser- und Umweltlabor der BTV-GmbH	Schützenstr. 34	42282	Wuppertal	Germany
Uwe Fichthorn	Bezirksregierung Arnsberg, Dez.53-Lp-41	Lipperoder Str. 8	59555	Lippstadt	Germany
Norbert Breidenich	Bezirksregierung Köln, Dezernat 53 - Umweltüberwachung	Lukasstr. 1	52070	Aachen	Germany
Petra Lehnik-Habrink	Bundesanstalt für Materialforschung- und Prüfung	Richard-Wilstätter-Str. 11	12489	Berlin	Germany
Christian Strasser	Chemcon techn. Büro	Zirkusgasse 23	1020	Wien	Austria
Jean-Claude Cannot	CTC environnement	4 rue Hermann Frenkel	69367	Lyon	France
Oili Riutta	Ekokem Oy AB	Kuulojankatu 1	11310	Riihimäki	Finland
Markus Eickeler	Imat-ue GmbH	Krefelder Str. 679-689	41066	Mönchengladbach	Germany
Jérôme Beaumont	INERIS	Parc technologique ALATA-BP2	60550	Verneuil-en-Halatte	France
Milan Lojkasek	Institute of Public Health	Partyzanske Náměstí 7	70200	Ostrava	Czech Republic
Vladica Cudic	Institute of Public Health	Bulevar despota Stefana 54a	11000	Belgrad	Serbia
Tiziano Borato	Lab-Control	Via Dell'Artignana-tto 173	45030	San Martino di Venezze	Italy
Klaus Sielex	LANUV NRW	Auf dem Draap 25	40221	Düsseldorf	Germany
Jorma Nordlund	Paavo Ristola Ltd.	Terveystie 2	15870	Hollola	Finland
Didier Cizaire	SGS Multilab	7, rue Jean Mermoz	91031	Evry Courcouronnes Cedex	France
Sabina König	Wessling Laboratorien	Oststr. 6	48341	Altenberge	Germany
Martin Kahle	Weßling Laboratorien	Am Umweltpark 1	44793	Bochum	Germany
Marion Lindner	Umwelt-Control-Labor	Brunnenstr. 138	44536	Lünen	Germany
Guido Vanermen	VITO departement MIM	Boeretang 200	2400	Mol	Belgium

Table 4: Homogeneity testing

Homogeneity tests from 1 sample container

	Contami- nated soil	Building debris	Cable shredder	Electronic waste	Sealant waste	Shredder light fraction	standard solution	Waste wood
	RSD	RSD	RSD	RSD	RSD	RSD	RSD	RSD
	%	%	%	%	%	%	%	%
PCB 28	3.4	2.9	14.8	4.4	2.0	8.5	0.0	6.5
PCB 52	2.4	1.8	6.5	19.8	3.8	7.4	0.7	6.5
PCB 101	3.3	2.2	8.7	28.8	3.9	8.1	1.8	6.3
PCB 118	3.2	2.0	5.5	30.3	4.0	3.8	3.7	5.9
PCB 153	3.1	2.3	5.5	29.0	4.4	16.1	2.1	5.6
PCB 138	4.5	1.4	5.0	30.0	3.6	7.6	0.6	4.9
PCB 180	3.1	1.8	6.7	14.7	7.4	4.7	0.7	4.7
sum PCB7	2.8	1.6	7.2	26.8	3.6	7.4	0.7	4.2

Homogeneity tests from 8 sample bottles

	Contami- nated soil	Building debris	Cable shredder	Electronic waste	Sealant waste	Shredder light fraction	standard solution	Waste wood
	RSD	RSD	RSD	RSD	RSD	RSD	RSD	RSD
	%	%	%	%	%	%	%	%
PCB 28	6.7	5.0	7.1	1.7	4.7	5.2	0.0	5.4
PCB 52	6.1	5.6	4.1	5.7	4.6	5.1	0.7	3.3
PCB 101	6.0	4.0	6.4	5.2	4.7	4.9	1.8	2.3
PCB 118	5.0	3.0	6.7	6.8	4.4	4.8	3.7	2.3
PCB 153	4.4	4.0	7.7	8.9	4.8	7.3	2.1	5.4
PCB 138	4.8	3.9	4.5	6.1	4.2	7.0	0.6	4.6
PCB 180	4.6	2.4	8.6	6.0	3.8	7.8	0.7	4.1
sum PCB7	4.9	3.6	5.0	6.0	4.4	5.0	0.7	1.8

RSD: relative standard deviation

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Table 5: Detailed laboratory results

Buidling debris

Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB028	LAB01	sonification	silica H2SO4	GC-MS	1.16	1.17	1.16	mg/kg	
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.90	0.76	0.83	mg/kg	
PCB028	LAB04	shaking	silica H2SO4	GC-MS	1.02	1.04	1.03	mg/kg	
PCB028	LAB05	sonification	others	GC-ECD	1.29	1.34	1.31	mg/kg	
PCB028	LAB07	shaking	others	GC-MS	2.30	2.30	2.30	mg/kg	
PCB028	LAB09	shaking	silica H2SO4	GC-ECD	0.33	0.34	0.34	mg/kg	
PCB028	LAB10	shaking	silica gel	GC-ECD	1.08	1.07	1.08	mg/kg	
PCB028	LAB11	soxhlet	none	GC-ECD	1.41	1.59	1.50	mg/kg	
PCB028	LAB12	sonification	none	GC-MS	0.66	0.73	0.70	mg/kg	
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	1.10	1.00	1.05	mg/kg	
PCB028	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	1.21	1.22	1.22	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-ECD	1.35	1.36	1.36	mg/kg	
PCB028	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	1.26	1.18	1.22	mg/kg	
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	1.47	1.55	1.51	mg/kg	
PCB028	LAB18	sonification	benzenesulfonic acid-silica	others	0.93	1.16	1.05	mg/kg	
PCB028	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.90	2.10	2.00	mg/kg	
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	1.54	1.52	1.53	mg/kg	
PCB028	LAB21	sonification	Florisil	GC-ECD	0.80	0.82	0.81	mg/kg	
PCB028	LAB23	soxhlet	silica gel	GC-MS	9.30	10.20	9.75	mg/kg	Cochran
PCB028	LAB25	sonification	silica gel	GC-MS	0.91	0.85	0.88	mg/kg	
PCB052	LAB01	sonification	silica H2SO4	GC-MS	2.16	2.20	2.18	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	1.76	1.41	1.59	mg/kg	
PCB052	LAB04	shaking	silica H2SO4	GC-MS	1.73	1.74	1.74	mg/kg	
PCB052	LAB05	sonification	others	GC-ECD	2.65	2.46	2.56	mg/kg	
PCB052	LAB07	shaking	others	GC-MS	4.00	4.20	4.10	mg/kg	
PCB052	LAB09	shaking	silica H2SO4	GC-ECD	1.70	1.77	1.74	mg/kg	
PCB052	LAB10	shaking	silica gel	GC-ECD	1.66	1.65	1.66	mg/kg	
PCB052	LAB11	soxhlet	none	GC-ECD	1.79	1.83	1.81	mg/kg	
PCB052	LAB12	sonification	none	GC-MS	0.98	0.91	0.95	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	1.70	1.80	1.75	mg/kg	
PCB052	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	1.60	1.59	1.60	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-ECD	2.47	2.47	2.47	mg/kg	
PCB052	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	2.05	1.81	1.93	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	2.36	2.39	2.38	mg/kg	
PCB052	LAB18	sonification	benzenesulfonic acid-silica	others	1.15	1.34	1.25	mg/kg	
PCB052	LAB19	soxhlet	AgNO3-silica	GC-ECD	2.70	2.80	2.75	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	2.09	1.84	1.97	mg/kg	
PCB052	LAB21	sonification	Florisil	GC-ECD	1.40	1.40	1.40	mg/kg	
PCB052	LAB23	soxhlet	silica gel	GC-MS	2.60	3.03	2.82	mg/kg	
PCB052	LAB25	sonification	silica gel	GC-MS	1.14	1.08	1.11	mg/kg	

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Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB101	LAB01	sonification	silica H2SO4	GC-MS	10.16	10.35	10.25	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	5.03	4.26	4.65	mg/kg	
PCB101	LAB04	shaking	silica H2SO4	GC-MS	7.18	7.23	7.21	mg/kg	
PCB101	LAB05	sonification	others	GC-ECD	8.31	8.33	8.32	mg/kg	
PCB101	LAB07	shaking	others	GC-MS	18.00	17.00	17.50	mg/kg	
PCB101	LAB09	shaking	silica H2SO4	GC-ECD	5.00	5.81	5.40	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	9.68	9.67	9.68	mg/kg	
PCB101	LAB11	soxhlet	none	GC-ECD	7.46	7.45	7.46	mg/kg	
PCB101	LAB12	sonification	none	GC-MS	4.42	4.55	4.49	mg/kg	
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	8.80	9.10	8.95	mg/kg	
PCB101	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	6.42	6.65	6.53	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-ECD	7.92	8.02	7.97	mg/kg	
PCB101	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	7.42	7.36	7.39	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	7.99	8.16	8.08	mg/kg	
PCB101	LAB18	sonification	benzenesulfonic acid-silica	others	4.29	4.86	4.58	mg/kg	
PCB101	LAB19	soxhlet	AgNO3-silica	GC-ECD	8.70	9.20	8.95	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	7.46	7.40	7.43	mg/kg	
PCB101	LAB21	sonification	Florisil	GC-ECD	6.20	4.90	5.55	mg/kg	
PCB101	LAB23	soxhlet	silica gel	GC-MS	14.31	15.01	14.66	mg/kg	
PCB101	LAB25	sonification	silica gel	GC-MS	4.99	4.66	4.83	mg/kg	
PCB118	LAB01	sonification	silica H2SO4	GC-MS	9.18	9.32	9.25	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	7.62	7.68	7.65	mg/kg	
PCB118	LAB04	shaking	silica H2SO4	GC-MS	7.32	7.33	7.33	mg/kg	
PCB118	LAB05	sonification	others	GC-ECD	6.78	6.82	6.80	mg/kg	
PCB118	LAB07	shaking	others	GC-MS	16.00	14.00	15.00	mg/kg	Grubbs
PCB118	LAB09	shaking	silica H2SO4	GC-ECD	5.75	6.72	6.23	mg/kg	
PCB118	LAB10	shaking	silica gel	GC-ECD	7.75	7.76	7.76	mg/kg	
PCB118	LAB11	soxhlet	none	GC-ECD	7.96	8.06	8.01	mg/kg	
PCB118	LAB12	sonification	none	GC-MS	3.66	3.48	3.57	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	7.80	8.50	8.15	mg/kg	
PCB118	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	6.61	6.80	6.71	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-ECD	8.12	8.08	8.10	mg/kg	
PCB118	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	7.58	7.17	7.37	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	8.47	8.60	8.54	mg/kg	
PCB118	LAB18	sonification	benzenesulfonic acid-silica	others	4.53	5.94	5.24	mg/kg	
PCB118	LAB19	soxhlet	AgNO3-silica	GC-ECD	10.00	11.00	10.50	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	7.30	7.03	7.17	mg/kg	
PCB118	LAB21	sonification	Florisil	GC-ECD	3.10	5.70	4.40	mg/kg	
PCB118	LAB25	sonification	silica gel	GC-MS	5.17	4.86	5.02	mg/kg	

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Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB138	LAB01	sonification	silica H2SO4	GC-MS	13.56	13.76	13.66	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	7.52	7.33	7.43	mg/kg	
PCB138	LAB04	shaking	silica H2SO4	GC-MS	7.16	7.16	7.16	mg/kg	
PCB138	LAB05	sonification	others	GC-ECD	8.85	8.98	8.91	mg/kg	
PCB138	LAB07	shaking	others	GC-MS	16.00	14.00	15.00	mg/kg	
PCB138	LAB09	shaking	silica H2SO4	GC-ECD	6.14	7.35	6.75	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	10.09	10.08	10.09	mg/kg	
PCB138	LAB11	soxhlet	none	GC-ECD	7.39	7.33	7.36	mg/kg	
PCB138	LAB12	sonification	none	GC-MS	4.82	5.49	5.16	mg/kg	
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	10.00	11.00	10.50	mg/kg	
PCB138	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	6.32	6.29	6.31	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-ECD	9.09	9.14	9.12	mg/kg	
PCB138	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	7.61	7.82	7.71	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	11.43	11.44	11.44	mg/kg	
PCB138	LAB18	sonification	benzenesulfonic acid-silica	others	5.88	6.24	6.06	mg/kg	
PCB138	LAB19	soxhlet	AgNO3-silica	GC-ECD	12.00	13.00	12.50	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	8.90	9.20	9.05	mg/kg	
PCB138	LAB21	sonification	Florisil	GC-ECD	6.70	6.80	6.75	mg/kg	
PCB138	LAB23	soxhlet	silica gel	GC-MS	10.67	9.22	9.95	mg/kg	
PCB138	LAB25	sonification	silica gel	GC-MS	6.10	5.75	5.93	mg/kg	
PCB153	LAB01	sonification	silica H2SO4	GC-MS	7.10	7.28	7.19	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	4.98	4.63	4.81	mg/kg	
PCB153	LAB04	shaking	silica H2SO4	GC-MS	6.02	6.10	6.06	mg/kg	
PCB153	LAB05	sonification	others	GC-ECD	5.61	5.67	5.64	mg/kg	
PCB153	LAB07	shaking	others	GC-MS	13.00	12.00	12.50	mg/kg	Grubbs
PCB153	LAB09	shaking	silica H2SO4	GC-ECD	4.26	5.10	4.68	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	5.57	5.57	5.57	mg/kg	
PCB153	LAB11	soxhlet	none	GC-ECD	6.51	6.49	6.50	mg/kg	
PCB153	LAB12	sonification	none	GC-MS	3.07	2.72	2.90	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	6.00	6.80	6.40	mg/kg	
PCB153	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	5.73	5.76	5.74	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-ECD	8.25	8.26	8.26	mg/kg	
PCB153	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	6.35	6.03	6.19	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	7.60	7.61	7.61	mg/kg	
PCB153	LAB18	sonification	benzenesulfonic acid-silica	others	5.62	5.68	5.65	mg/kg	
PCB153	LAB19	soxhlet	AgNO3-silica	GC-ECD	8.40	9.00	8.70	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	6.44	6.89	6.67	mg/kg	
PCB153	LAB21	sonification	Florisil	GC-ECD	4.70	5.10	4.90	mg/kg	
PCB153	LAB23	soxhlet	silica gel	GC-MS	8.15	10.66	9.41	mg/kg	Cochran
PCB153	LAB25	sonification	silica gel	GC-MS	4.70	4.34	4.52	mg/kg	

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Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB180	LAB01	sonification	silica H2SO4	GC-MS	4.07	4.16	4.11	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	3.32	3.56	3.44	mg/kg	
PCB180	LAB04	shaking	silica H2SO4	GC-MS	3.59	3.57	3.58	mg/kg	
PCB180	LAB05	sonification	others	GC-ECD	4.00	5.22	4.61	mg/kg	
PCB180	LAB07	shaking	others	GC-MS	7.90	7.20	7.55	mg/kg	Grubbs
PCB180	LAB09	shaking	silica H2SO4	GC-ECD	2.65	2.89	2.77	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	3.74	3.74	3.74	mg/kg	
PCB180	LAB11	soxhlet	none	GC-ECD	3.80	3.81	3.81	mg/kg	
PCB180	LAB12	sonification	none	GC-MS	2.03	2.34	2.19	mg/kg	
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	3.20	3.60	3.40	mg/kg	
PCB180	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	3.24	3.26	3.25	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-ECD	4.04	4.07	4.06	mg/kg	
PCB180	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	3.79	3.98	3.88	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4.18	4.20	4.19	mg/kg	
PCB180	LAB18	sonification	benzenesulfonic acid-silica	others	2.25	3.01	2.63	mg/kg	
PCB180	LAB19	soxhlet	AgNO3-silica	GC-ECD	5.90	6.20	6.05	mg/kg	
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	3.82	3.95	3.89	mg/kg	
PCB180	LAB21	sonification	Florisil	GC-ECD	2.70	3.10	2.90	mg/kg	
PCB180	LAB23	soxhlet	silica gel	GC-MS	2.48	3.78	3.13	mg/kg	
PCB180	LAB25	sonification	silica gel	GC-MS	2.50	2.35	2.43	mg/kg	
PCBSUM7	LAB01	sonification	silica H2SO4	GC-MS	47.39	48.23	47.81	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	31.13	29.63	30.38	mg/kg	
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	34.00	34.20	34.10	mg/kg	
PCBSUM7	LAB05	sonification	others	GC-ECD	37.48	38.81	38.15	mg/kg	
PCBSUM7	LAB07	shaking	others	GC-MS	77.00	71.00	74.00	mg/kg	Grubbs
PCBSUM7	LAB09	shaking	silica H2SO4	GC-ECD	25.83	29.98	27.91	mg/kg	
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	39.57	39.54	39.56	mg/kg	
PCBSUM7	LAB11	soxhlet	none	GC-ECD	36.32	36.56	36.44	mg/kg	
PCBSUM7	LAB12	sonification	none	GC-MS	19.64	20.22	19.93	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	38.60	41.80	40.20	mg/kg	
PCBSUM7	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	31.14	31.56	31.35	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-ECD	41.24	41.40	41.32	mg/kg	
PCBSUM7	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	36.05	35.34	35.70	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	43.50	43.95	43.73	mg/kg	
PCBSUM7	LAB18	sonification	benzenesulfonic acid-silica	others	24.66	28.23	26.45	mg/kg	
PCBSUM7	LAB19	soxhlet	AgNO3-silica	GC-ECD	50.00	53.00	51.50	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	37.55	37.83	37.69	mg/kg	
PCBSUM7	LAB21	sonification	Florisil	GC-ECD	25.60	27.82	26.71	mg/kg	
PCBSUM7	LAB25	sonification	silica gel	GC-MS	25.51	23.89	24.70	mg/kg	

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Cable shredder

Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB028	LAB01	sonification	silica H2SO4	GC-MS	0.68	0.62	0.65	mg/kg	
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.52	0.46	0.49	mg/kg	
PCB028	LAB04	shaking	silica H2SO4	GC-MS	0.79	0.73	0.76	mg/kg	
PCB028	LAB05	sonification	others	GC-ECD	0.50		0.50	mg/kg	excluded
PCB028	LAB09	shaking	others	GC-ECD	1.51	1.58	1.55	mg/kg	Grubbs
PCB028	LAB10	shaking	silica gel	GC-ECD	0.66	0.65	0.66	mg/kg	
PCB028	LAB11	shaking	silica gel	GC-ECD	0.70	0.68	0.69	mg/kg	
PCB028	LAB12	sonification	none	GC-MS	0.58	0.74	0.66	mg/kg	
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	0.63	0.67	0.65	mg/kg	
PCB028	LAB14	shaking	AgNO3-silica	GC-ECD	0.59	0.59	0.59	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-MS	0.71	0.85	0.78	mg/kg	
PCB028	LAB16	shaking	silica H2SO4	GC-MS	0.46	0.42	0.44	mg/kg	
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.67	0.70	0.69	mg/kg	
PCB028	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.20	1.20	1.20	mg/kg	Grubbs
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	0.81	0.78	0.79	mg/kg	
PCB028	LAB21	sonification	others	GC-ECD	0.09		0.09	mg/kg	excluded
PCB028	LAB23	soxhlet	silica gel	GC-MS	30.72	25.76	28.24	mg/kg	Cochran
PCB028	LAB25	sonification	silica H2SO4	GC-MS	0.32		0.32	mg/kg	excluded
PCB052	LAB01	sonification	silica H2SO4	GC-MS	0.56	0.55	0.55	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.43	0.36	0.40	mg/kg	
PCB052	LAB04	shaking	silica H2SO4	GC-MS	0.49	0.45	0.47	mg/kg	
PCB052	LAB05	sonification	others	GC-ECD	3.99	2.89	3.44	mg/kg	Cochran
PCB052	LAB09	shaking	others	GC-ECD	8.07	8.06	8.06	mg/kg	Grubbs
PCB052	LAB10	shaking	silica gel	GC-ECD	1.94	1.93	1.94	mg/kg	Grubbs
PCB052	LAB11	shaking	silica gel	GC-ECD	0.32	0.31	0.32	mg/kg	
PCB052	LAB12	sonification	none	GC-MS	0.47	0.40	0.44	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	0.52	0.56	0.54	mg/kg	
PCB052	LAB14	shaking	AgNO3-silica	GC-ECD	0.59	0.56	0.57	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-MS	0.70	0.76	0.73	mg/kg	
PCB052	LAB16	shaking	silica H2SO4	GC-MS	0.31	0.28	0.29	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.54	0.52	0.53	mg/kg	
PCB052	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.70	0.80	0.75	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	0.38	0.40	0.39	mg/kg	
PCB052	LAB21	sonification	others	GC-ECD	0.12		0.12	mg/kg	excluded
PCB052	LAB23	soxhlet	silica gel	GC-MS	11.25	10.45	10.85	mg/kg	Cochran
PCB052	LAB25	sonification	silica H2SO4	GC-MS	0.13		0.13	mg/kg	excluded

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Cable shredder (cont.)

Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB101	LAB01	sonification	silica H2SO4	GC-MS	0.91	0.90	0.90	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.82	0.78	0.80	mg/kg	
PCB101	LAB04	shaking	silica H2SO4	GC-MS	0.80	0.74	0.77	mg/kg	
PCB101	LAB05	sonification	others	GC-ECD	0.86	0.79	0.82	mg/kg	
PCB101	LAB09	shaking	others	GC-ECD	0.73	0.75	0.74	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	0.71	0.71	0.71	mg/kg	
PCB101	LAB11	shaking	silica gel	GC-ECD	1.38	1.47	1.43	mg/kg	
PCB101	LAB12	sonification	none	GC-MS	0.58	0.77	0.68	mg/kg	
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	0.96	0.93	0.95	mg/kg	
PCB101	LAB14	shaking	AgNO3-silica	GC-MS	0.58	0.63	0.61	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-MS	1.25	1.12	1.19	mg/kg	
PCB101	LAB16	shaking	silica H2SO4	GC-MS	0.54	0.50	0.52	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.71	0.75	0.73	mg/kg	
PCB101	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.90	0.90	0.90	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	0.71	0.72	0.71	mg/kg	
PCB101	LAB21	sonification	others	GC-ECD	0.31		0.31	mg/kg	excluded
PCB101	LAB23	soxhlet	silica gel	GC-MS	5.85	6.64	6.25	mg/kg	Cochran
PCB101	LAB25	sonification	silica H2SO4	GC-MS	0.14		0.14	mg/kg	excluded
PCB118	LAB01	sonification	silica H2SO4	GC-MS	0.55	0.55	0.55	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	1.00	0.85	0.93	mg/kg	
PCB118	LAB04	shaking	silica H2SO4	GC-MS	0.51	0.51	0.51	mg/kg	
PCB118	LAB05	sonification	others	GC-ECD	0.51	0.45	0.48	mg/kg	
PCB118	LAB09	shaking	others	GC-ECD	2.25	2.20	2.23	mg/kg	Grubbs
PCB118	LAB10	shaking	silica gel	GC-ECD	0.48	0.48	0.48	mg/kg	
PCB118	LAB11	shaking	silica gel	GC-ECD	0.65	0.74	0.70	mg/kg	
PCB118	LAB12	sonification	none	GC-MS	0.42	0.35	0.39	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	0.63	0.67	0.65	mg/kg	
PCB118	LAB14	shaking	AgNO3-silica	GC-ECD	0.52	0.61	0.57	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-MS	0.86	0.87	0.87	mg/kg	
PCB118	LAB16	shaking	silica H2SO4	GC-MS	0.41	0.38	0.39	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.65	0.63	0.64	mg/kg	
PCB118	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.80	0.80	0.80	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	0.47	0.49	0.48	mg/kg	
PCB118	LAB21	sonification	others	GC-ECD	0.18		0.18	mg/kg	excluded
PCB118	LAB25	sonification	silica H2SO4	GC-MS	0.05		0.05	mg/kg	excluded

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Cable shredder (cont.)

Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB138	LAB01	sonification	silica H2SO4	GC-MS	1.10	1.10	1.10	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.88	0.88	0.88	mg/kg	
PCB138	LAB04	shaking	silica H2SO4	GC-MS	0.58	0.54	0.56	mg/kg	
PCB138	LAB05	sonification	others	GC-ECD	0.88	0.81	0.84	mg/kg	
PCB138	LAB09	shaking	others	GC-ECD	0.82	0.78	0.80	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	1.22	1.23	1.23	mg/kg	
PCB138	LAB11	shaking	silica gel	GC-ECD	0.80	0.84	0.82	mg/kg	
PCB138	LAB12	sonification	none	GC-MS	0.74	0.71	0.73	mg/kg	
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	1.00	0.97	0.99	mg/kg	
PCB138	LAB14	shaking	AgNO3-silica	GC-ECD	0.67	0.65	0.66	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-MS	1.99	1.43	1.71	mg/kg	Cochran
PCB138	LAB16	shaking	silica H2SO4	GC-MS	0.53	0.52	0.53	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.98	0.96	0.97	mg/kg	
PCB138	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.20	1.30	1.25	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	0.64	0.66	0.65	mg/kg	
PCB138	LAB21	sonification	others	GC-ECD	0.25		0.25	mg/kg	excluded
PCB138	LAB23	soxhlet	silica gel	GC-MS	4.13	5.98	5.06	mg/kg	Cochran
PCB138	LAB25	sonification	silica H2SO4	GC-MS	0.07		0.07	mg/kg	excluded
PCB153	LAB01	sonification	silica H2SO4	GC-MS	0.79	0.78	0.79	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.65	0.62	0.64	mg/kg	
PCB153	LAB04	shaking	silica H2SO4	GC-MS	0.65	0.62	0.64	mg/kg	
PCB153	LAB05	sonification	others	GC-ECD	0.69	0.66	0.67	mg/kg	
PCB153	LAB09	shaking	others	GC-ECD	0.66	0.64	0.65	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	0.76	0.76	0.76	mg/kg	
PCB153	LAB11	shaking	silica gel	GC-ECD	0.67	0.72	0.70	mg/kg	
PCB153	LAB12	sonification	none	GC-MS	0.58	0.61	0.60	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	0.81	0.76	0.79	mg/kg	
PCB153	LAB14	shaking	AgNO3-silica	GC-ECD	0.76	0.81	0.79	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-MS	1.58	1.16	1.37	mg/kg	Cochran
PCB153	LAB16	shaking	silica H2SO4	GC-MS	0.51	0.49	0.50	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.77	0.78	0.78	mg/kg	
PCB153	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.00	1.00	1.00	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	0.57	0.58	0.58	mg/kg	
PCB153	LAB21	sonification	others	GC-ECD	0.44		0.44	mg/kg	excluded
PCB153	LAB23	soxhlet	silica gel	GC-MS	3.02	2.22	2.62	mg/kg	Cochran
PCB153	LAB25	sonification	silica H2SO4	GC-MS	0.11		0.11	mg/kg	excluded

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Cable shredder (cont.)

Analyte	Lab. No.	Extraction	clean-up	final determination	result 1	result 2	mean	unit	remark
PCB180	LAB01	sonification	silica H2SO4	GC-MS	0.34	0.32	0.33	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.30	0.30	0.30	mg/kg	
PCB180	LAB04	shaking	silica H2SO4	GC-MS	0.26	0.26	0.26	mg/kg	
PCB180	LAB05	sonification	others	GC-ECD	0.26	0.24	0.25	mg/kg	
PCB180	LAB09	shaking	others	GC-ECD	0.25	0.24	0.24	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	0.43	0.44	0.43	mg/kg	
PCB180	LAB11	shaking	silica gel	GC-ECD	0.23	0.28	0.26	mg/kg	
PCB180	LAB12	sonification	none	GC-MS	<0.01	<0.01		mg/kg	not used
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	0.32	0.29	0.31	mg/kg	
PCB180	LAB14	shaking	AgNO3-silica	GC-ECD	0.27	0.29	0.28	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-MS	0.75	0.38	0.57	mg/kg	Cochran
PCB180	LAB16	shaking	silica H2SO4	GC-MS	0.24	0.26	0.25	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.24	0.19	0.22	mg/kg	
PCB180	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.40	0.40	0.40	mg/kg	
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	0.27	0.30	0.29	mg/kg	
PCB180	LAB21	sonification	others	GC-ECD	0.19		0.19	mg/kg	excluded
PCB180	LAB25	sonification	silica H2SO4	GC-MS	0.01		0.01	mg/kg	excluded
PCBSUM7	LAB01	sonification	silica H2SO4	GC-MS	4.92	4.80	4.86	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	4.60	4.25	4.43	mg/kg	
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	4.08	3.85	3.97	mg/kg	
PCBSUM7	LAB05	sonification	others	GC-ECD	7.69		7.69	mg/kg	excluded
PCBSUM7	LAB09	shaking	others	GC-ECD	14.30	14.25	14.28	mg/kg	Grubbs
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	6.20	6.19	6.19	mg/kg	
PCBSUM7	LAB11	shaking	silica gel	GC-ECD	4.75	5.04	4.90	mg/kg	
PCBSUM7	LAB12	sonification	none	GC-MS	3.37	3.58	3.48	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	4.87	4.85	4.86	mg/kg	
PCBSUM7	LAB14	shaking	AgNO3-silica	GC-ECD	3.98	4.13	4.06	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-MS	7.84	6.57	7.21	mg/kg	Cochran
PCBSUM7	LAB16	shaking	silica H2SO4	GC-MS	3.00	2.85	2.92	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4.56	4.54	4.55	mg/kg	
PCBSUM7	LAB19	soxhlet	AgNO3-silica	GC-ECD	6.20	6.40	6.30	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	3.84	3.94	3.89	mg/kg	
PCBSUM7	LAB21	sonification	others	GC-ECD	1.58		1.58	mg/kg	excluded
PCBSUM7	LAB25	sonification	silica H2SO4	GC-MS	0.83		0.83	mg/kg	excluded

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Contaminated soil

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB028	LAB01	sonification	silica H2SO4	GC-MS	0.52	0.53	0.53	mg/kg	
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.46	0.47	0.47	mg/kg	
PCB028	LAB04	shaking	silica H2SO4	GC-MS	0.48	0.47	0.47	mg/kg	
PCB028	LAB05	sonification	others	GC-ECD	0.56	0.59	0.58	mg/kg	
PCB028	LAB07	shaking	others	GC-MS	1.40	1.30	1.35	mg/kg	Grubbs
PCB028	LAB09	shaking	silica H2SO4	GC-ECD	0.47	0.50	0.48	mg/kg	
PCB028	LAB10	shaking	silica gel	GC-ECD	0.54	0.54	0.54	mg/kg	
PCB028	LAB11	soxhlet	none	GC-ECD	0.77	0.76	0.77	mg/kg	
PCB028	LAB12	sonification	none	GC-MS	0.25	0.25	0.25	mg/kg	
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	0.53	0.55	0.54	mg/kg	
PCB028	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.58	0.57	0.57	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-ECD	0.64	0.65	0.65	mg/kg	
PCB028	LAB16	shaking	others	GC-MS	0.72	0.74	0.73	mg/kg	
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.79	0.83	0.81	mg/kg	
PCB028	LAB18	sonification	benzenesulfonic acid-silica	others	0.16	0.28	0.22	mg/kg	
PCB028	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.90	0.90	0.90	mg/kg	
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	0.66	0.65	0.65	mg/kg	
PCB028	LAB21	sonification	Florisil	GC-ECD	0.37	0.43	0.40	mg/kg	
PCB028	LAB23	soxhlet	silica gel	GC-MS	5.38	6.03	5.71	mg/kg	Cochran
PCB028	LAB25	soxhlet	silica gel	GC-MS	0.59	0.67	0.63	mg/kg	
PCB052	LAB01	sonification	silica H2SO4	GC-MS	1.07	1.03	1.05	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	1.15	0.76	0.96	mg/kg	
PCB052	LAB04	shaking	silica H2SO4	GC-MS	0.84	0.82	0.83	mg/kg	
PCB052	LAB05	sonification	others	GC-ECD	1.09	0.95	1.02	mg/kg	
PCB052	LAB07	shaking	others	GC-MS	2.30	2.30	2.30	mg/kg	Grubbs
PCB052	LAB09	shaking	silica H2SO4	GC-ECD	0.99	1.01	1.00	mg/kg	
PCB052	LAB10	shaking	silica gel	GC-ECD	0.83	0.84	0.83	mg/kg	
PCB052	LAB11	soxhlet	none	GC-ECD	0.89	0.80	0.85	mg/kg	
PCB052	LAB12	sonification	none	GC-MS	0.02	0.03	0.03	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	0.91	0.96	0.94	mg/kg	
PCB052	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.77	0.77	0.77	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-ECD	1.22	1.28	1.25	mg/kg	
PCB052	LAB16	shaking	others	GC-MS	0.96	0.91	0.94	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	1.23	1.33	1.28	mg/kg	
PCB052	LAB18	sonification	benzenesulfonic acid-silica	others	0.24	0.49	0.37	mg/kg	
PCB052	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.30	1.30	1.30	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	1.14	0.95	1.05	mg/kg	
PCB052	LAB21	sonification	Florisil	GC-ECD	0.74	0.84	0.79	mg/kg	
PCB052	LAB23	soxhlet	silica gel	GC-MS	1.34	2.09	1.72	mg/kg	Cochran
PCB052	LAB25	soxhlet	silica gel	GC-MS	0.69	0.74	0.72	mg/kg	

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Contaminated soil (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB101	LAB01	sonification	silica H2SO4	GC-MS	5.54	5.26	5.40	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	3.54	3.43	3.49	mg/kg	
PCB101	LAB04	shaking	silica H2SO4	GC-MS	3.77	3.69	3.73	mg/kg	
PCB101	LAB05	sonification	others	GC-ECD	4.56	4.62	4.59	mg/kg	
PCB101	LAB07	shaking	others	GC-MS	10.00	11.00	10.50	mg/kg	Cochran
PCB101	LAB09	shaking	silica H2SO4	GC-ECD	3.71	3.55	3.63	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	3.28	3.27	3.28	mg/kg	
PCB101	LAB11	soxhlet	none	GC-ECD	3.99	3.90	3.95	mg/kg	
PCB101	LAB12	sonification	none	GC-MS	0.11	0.14	0.13	mg/kg	
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	5.00	5.40	5.20	mg/kg	
PCB101	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	3.22	3.24	3.23	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-ECD	4.21	4.22	4.22	mg/kg	
PCB101	LAB16	shaking	others	GC-MS	3.61	3.59	3.60	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4.63	4.83	4.73	mg/kg	
PCB101	LAB18	sonification	benzenesulfonic acid-silica	others	1.35	1.94	1.65	mg/kg	
PCB101	LAB19	soxhlet	AgNO3-silica	GC-ECD	4.90	4.70	4.80	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	4.11	4.32	4.22	mg/kg	
PCB101	LAB21	sonification	Florisil	GC-ECD	2.90	3.10	3.00	mg/kg	
PCB101	LAB23	soxhlet	silica gel	GC-MS	9.80	8.23	9.02	mg/kg	Cochran
PCB101	LAB25	soxhlet	silica gel	GC-MS	3.49	3.74	3.62	mg/kg	
PCB118	LAB01	sonification	silica H2SO4	GC-MS	5.05	4.74	4.90	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	4.13	5.26	4.70	mg/kg	
PCB118	LAB04	shaking	silica H2SO4	GC-MS	3.96	3.84	3.90	mg/kg	
PCB118	LAB05	sonification	others	GC-ECD	3.92	4.12	4.02	mg/kg	
PCB118	LAB07	shaking	others	GC-MS	9.30	8.70	9.00	mg/kg	
PCB118	LAB09	shaking	silica H2SO4	GC-ECD	4.10	3.79	3.94	mg/kg	
PCB118	LAB10	shaking	silica gel	GC-ECD	2.72	2.71	2.72	mg/kg	
PCB118	LAB11	soxhlet	none	GC-ECD	4.39	4.42	4.41	mg/kg	
PCB118	LAB12	sonification	none	GC-MS	0.08	0.12	0.10	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	4.80	5.00	4.90	mg/kg	
PCB118	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	3.51	3.47	3.49	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-ECD	4.37	4.45	4.41	mg/kg	
PCB118	LAB16	shaking	others	GC-MS	3.81	3.61	3.71	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4.99	5.24	5.12	mg/kg	
PCB118	LAB18	sonification	benzenesulfonic acid-silica	others	1.42	2.10	1.76	mg/kg	
PCB118	LAB19	soxhlet	AgNO3-silica	GC-ECD	5.80	5.90	5.85	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	4.16	4.17	4.17	mg/kg	
PCB118	LAB21	sonification	Florisil	GC-ECD	3.20	3.50	3.35	mg/kg	
PCB118	LAB25	soxhlet	silica gel	GC-MS	3.68	4.25	3.97	mg/kg	

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Contaminated soil (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB138	LAB01	sonification	silica H2SO4	GC-MS	7.55	7.05	7.30	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	4.59	5.39	4.99	mg/kg	
PCB138	LAB04	shaking	silica H2SO4	GC-MS	3.79	3.68	3.74	mg/kg	
PCB138	LAB05	sonification	others	GC-ECD	4.99	5.05	5.02	mg/kg	
PCB138	LAB07	shaking	others	GC-MS	9.20	8.50	8.85	mg/kg	
PCB138	LAB09	shaking	silica H2SO4	GC-ECD	4.50	4.08	4.29	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	3.61	3.62	3.62	mg/kg	
PCB138	LAB11	soxhlet	none	GC-ECD	3.96	4.00	3.98	mg/kg	
PCB138	LAB12	sonification	none	GC-MS	0.13	0.12	0.13	mg/kg	
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	5.90	6.20	6.05	mg/kg	
PCB138	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	3.30	3.23	3.27	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-ECD	4.81	4.84	4.83	mg/kg	
PCB138	LAB16	shaking	others	GC-MS	3.79	3.86	3.83	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	6.49	6.73	6.61	mg/kg	
PCB138	LAB18	sonification	benzenesulfonic acid-silica	others	1.77	2.56	2.17	mg/kg	
PCB138	LAB19	soxhlet	AgNO3-silica	GC-ECD	6.60	6.60	6.60	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	5.17	5.52	5.35	mg/kg	
PCB138	LAB21	sonification	Florisil	GC-ECD	3.80	4.10	3.95	mg/kg	
PCB138	LAB23	soxhlet	silica gel	GC-MS	8.68	7.44	8.06	mg/kg	
PCB138	LAB25	soxhlet	silica gel	GC-MS	3.87	4.66	4.27	mg/kg	
PCB153	LAB01	sonification	silica H2SO4	GC-MS	3.94	3.71	3.82	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	3.24	3.65	3.45	mg/kg	
PCB153	LAB04	shaking	silica H2SO4	GC-MS	3.23	3.16	3.20	mg/kg	
PCB153	LAB05	sonification	others	GC-ECD	3.19	3.21	3.20	mg/kg	
PCB153	LAB07	shaking	others	GC-MS	8.00	7.50	7.75	mg/kg	
PCB153	LAB09	shaking	silica H2SO4	GC-ECD	3.06	2.81	2.93	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	1.70	1.71	1.71	mg/kg	
PCB153	LAB11	soxhlet	none	GC-ECD	3.52	3.54	3.53	mg/kg	
PCB153	LAB12	sonification	none	GC-MS	0.06	0.09	0.08	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	3.60	3.80	3.70	mg/kg	
PCB153	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	2.98	2.94	2.96	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-ECD	4.11	4.12	4.12	mg/kg	
PCB153	LAB16	shaking	others	GC-MS	2.94	3.05	2.99	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4.49	4.70	4.60	mg/kg	
PCB153	LAB18	sonification	benzenesulfonic acid-silica	others	1.71	2.54	2.13	mg/kg	
PCB153	LAB19	soxhlet	AgNO3-silica	GC-ECD	4.90	4.60	4.75	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	3.55	3.78	3.67	mg/kg	
PCB153	LAB21	sonification	Florisil	GC-ECD	2.90	3.20	3.05	mg/kg	
PCB153	LAB23	soxhlet	silica gel	GC-MS	6.20	5.78	5.99	mg/kg	
PCB153	LAB25	soxhlet	silica gel	GC-MS	2.78	3.22	3.00	mg/kg	

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Contaminated soil (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB180	LAB01	sonification	silica H2SO4	GC-MS	2.28	2.11	2.19	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	1.92	2.59	2.26	mg/kg	
PCB180	LAB04	shaking	silica H2SO4	GC-MS	1.91	1.87	1.89	mg/kg	
PCB180	LAB05	sonification	others	GC-ECD	1.97	2.01	1.99	mg/kg	
PCB180	LAB07	shaking	others	GC-MS	4.60	5.00	4.80	mg/kg	Grubbs
PCB180	LAB09	shaking	silica H2SO4	GC-ECD	1.71	1.69	1.70	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	1.80	1.80	1.80	mg/kg	
PCB180	LAB11	soxhlet	none	GC-ECD	2.03	2.05	2.04	mg/kg	
PCB180	LAB12	sonification	none	GC-MS	0.06	0.05	0.06	mg/kg	Grubbs
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	2.00	2.00	2.00	mg/kg	
PCB180	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	1.68	1.67	1.68	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-ECD	2.03	2.01	2.02	mg/kg	
PCB180	LAB16	shaking	others	GC-MS	1.98	2.05	2.02	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	2.39	2.50	2.45	mg/kg	
PCB180	LAB18	sonification	benzenesulfonic acid-silica	others	0.69	1.09	0.89	mg/kg	
PCB180	LAB19	soxhlet	AgNO3-silica	GC-ECD	2.90	3.10	3.00	mg/kg	
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	2.09	2.05	2.07	mg/kg	
PCB180	LAB21	sonification	Florisil	GC-ECD	1.70	1.80	1.75	mg/kg	
PCB180	LAB23	soxhlet	silica gel	GC-MS	1.91	1.11	1.51	mg/kg	
PCB180	LAB25	soxhlet	silica gel	GC-MS	1.58	1.83	1.71	mg/kg	
PCBSUM7	LAB01	sonification	silica H2SO4	GC-MS	25.95	24.43	25.19	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	19.03	21.55	20.29	mg/kg	
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	18.00	17.50	17.75	mg/kg	
PCBSUM7	LAB05	sonification	others	GC-ECD	20.28	20.54	20.41	mg/kg	
PCBSUM7	LAB07	shaking	others	GC-MS	45.00	44.00	44.50	mg/kg	
PCBSUM7	LAB09	shaking	silica H2SO4	GC-ECD	18.53	17.43	17.98	mg/kg	
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	14.48	14.48	14.48	mg/kg	
PCBSUM7	LAB11	soxhlet	none	GC-ECD	19.55	19.47	19.51	mg/kg	
PCBSUM7	LAB12	sonification	none	GC-MS	0.71	0.80	0.76	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	22.74	23.91	23.33	mg/kg	
PCBSUM7	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	16.04	15.89	15.97	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-ECD	21.39	21.57	21.48	mg/kg	
PCBSUM7	LAB16	shaking	others	GC-MS	17.81	17.80	17.80	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	25.01	26.16	25.59	mg/kg	
PCBSUM7	LAB18	sonification	benzenesulfonic acid-silica	others	7.34	11.01	9.18	mg/kg	
PCBSUM7	LAB19	soxhlet	AgNO3-silica	GC-ECD	27.00	27.00	27.00	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	20.88	21.44	21.16	mg/kg	
PCBSUM7	LAB21	sonification	Florisil	GC-ECD	15.61	16.97	16.29	mg/kg	
PCBSUM7	LAB25	soxhlet	silica gel	GC-MS	16.68	19.11	17.90	mg/kg	

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Electronic waste

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.04		0.04	mg/kg	excluded
PCB028	LAB04	shaking	silica H2SO4	GC-MS	<0.002	<0.002		mg/kg	not used
PCB028	LAB05	sonification	others	GC-ECD	<0.05	<0.05		mg/kg	not used
PCB028	LAB07	shaking	others	GC-MS	0.006	0.009	0.008	mg/kg	
PCB028	LAB09	shaking	silica H2SO4	GC-ECD	0.0056	0.003	0.004	mg/kg	
PCB028	LAB10	shaking	silica gel	GC-ECD	0.30	0.30	0.30	mg/kg	Grubbs
PCB028	LAB11	shaking	Silica gel	GC-ECD	<0.05	<0.05		mg/kg	not used
PCB028	LAB12	sonification	none	GC-ECD	<0.01	<0.01		mg/kg	not used
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	<0.06	<0.06		mg/kg	not used
PCB028	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.007	0.006	0.007	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-ECD	<0.01	<0.01		mg/kg	not used
PCB028	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.04	0.03	0.03	mg/kg	Grubbs
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.008	0.005	0.007	mg/kg	
PCB028	LAB18	sonification	benzenesulfonic acid-silica	others	0.01	0.01	0.01	mg/kg	
PCB028	LAB19	soxhlet	AgNO3-silica	GC-ECD	<0.04	<0.04		mg/kg	not used
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	0.013	0.009	0.011	mg/kg	
PCB028	LAB21	sonification	Florisil	GC-ECD	<0.1	<0.1		mg/kg	not used
PCB028	LAB25	sonification	silica H2SO4	GC-MS	0.01	0.01	0.01	mg/kg	
PCB052	LAB01	sonification	silica H2SO4	GC-MS	0.21	0.22	0.22	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.25		0.25	mg/kg	excluded
PCB052	LAB04	shaking	silica H2SO4	GC-MS	0.27	0.26	0.26	mg/kg	
PCB052	LAB05	sonification	others	GC-ECD	0.19	0.17	0.18	mg/kg	
PCB052	LAB07	shaking	others	GC-MS	0.52	0.55	0.54	mg/kg	Grubbs
PCB052	LAB09	shaking	silica H2SO4	GC-ECD	0.15	0.16	0.16	mg/kg	
PCB052	LAB10	shaking	silica gel	GC-ECD	2.77	2.76	2.77	mg/kg	Grubbs
PCB052	LAB11	shaking	silica gel	GC-ECD	0.19	0.20	0.20	mg/kg	
PCB052	LAB12	sonification	none	GC-MS	0.24	0.24	0.24	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	0.21	0.20	0.21	mg/kg	
PCB052	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.25	0.25	0.25	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-ECD	0.43	0.40	0.42	mg/kg	Grubbs
PCB052	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.15	0.16	0.15	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.23	0.24	0.24	mg/kg	
PCB052	LAB18	sonification	benzenesulfonic acid-silica	others	0.52	0.62	0.57	mg/kg	Cochran
PCB052	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.30	0.30	0.30	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	0.15	0.16	0.15	mg/kg	
PCB052	LAB21	sonification	Florisil	GC-ECD	0.21	0.18	0.20	mg/kg	
PCB052	LAB23	soxhlet	silica gel	GC-MS	0.98	1.03	1.01	mg/kg	Grubbs
PCB052	LAB25	sonification	silica H2SO4	GC-MS	0.18	0.19	0.19	mg/kg	

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Electronic waste (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB101	LAB01	sonification	silica H2SO4	GC-MS	0.80	0.82	0.81	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.80		0.80	mg/kg	excluded
PCB101	LAB04	shaking	silica H2SO4	GC-MS	1.04	1.01	1.03	mg/kg	
PCB101	LAB05	sonification	others	GC-ECD	0.84	0.80	0.82	mg/kg	
PCB101	LAB07	shaking	others	GC-MS	1.70	1.90	1.80	mg/kg	
PCB101	LAB09	shaking	silica H2SO4	GC-ECD	0.49	0.60	0.54	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	1.16	1.15	1.16	mg/kg	
PCB101	LAB11	shaking	silica gel	GC-ECD	1.19	1.23	1.21	mg/kg	
PCB101	LAB12	sonification	none	GC-MS	1.05	0.97	1.01	mg/kg	
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	0.71	0.71	0.71	mg/kg	
PCB101	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.89	0.83	0.86	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-ECD	1.09	1.08	1.09	mg/kg	
PCB101	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.52	0.61	0.57	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.83	0.75	0.79	mg/kg	
PCB101	LAB18	sonification	benzenesulfonic acid-silica	others	0.75	0.55	0.65	mg/kg	
PCB101	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.90	0.80	0.85	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	0.43	0.46	0.45	mg/kg	
PCB101	LAB21	sonification	Florisil	GC-ECD	0.68	0.49	0.59	mg/kg	
PCB101	LAB23	soxhlet	silica gel	GC-MS	0.37	0.52	0.45	mg/kg	
PCB101	LAB25	sonification	silica H2SO4	GC-MS	0.13	0.14	0.14	mg/kg	
PCB118	LAB01	sonification	silica H2SO4	GC-MS	0.65	0.66	0.65	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.97		0.97	mg/kg	excluded
PCB118	LAB04	shaking	silica H2SO4	GC-MS	0.94	0.94	0.94	mg/kg	
PCB118	LAB05	sonification	others	GC-ECD	0.61	0.57	0.59	mg/kg	
PCB118	LAB07	shaking	others	GC-MS	1.50	1.90	1.70	mg/kg	Grubbs
PCB118	LAB09	shaking	silica H2SO4	GC-ECD	0.56	0.64	0.60	mg/kg	
PCB118	LAB10	shaking	silica gel	GC-ECD	0.97	0.97	0.97	mg/kg	
PCB118	LAB11	shaking	silica gel	GC-ECD	0.93	1.03	0.98	mg/kg	
PCB118	LAB12	sonification	none	GC-MS	0.76	0.82	0.79	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	0.50	0.55	0.53	mg/kg	
PCB118	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.92	0.89	0.91	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-ECD	1.14	1.20	1.17	mg/kg	
PCB118	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.52	0.54	0.53	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.82	0.74	0.78	mg/kg	
PCB118	LAB18	sonification	benzenesulfonic acid-silica	others	0.93	0.58	0.76	mg/kg	
PCB118	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.00	0.80	0.90	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	0.41	0.45	0.43	mg/kg	
PCB118	LAB21	sonification	Florisil	GC-ECD	0.71	0.43	0.57	mg/kg	
PCB118	LAB25	sonification	silica H2SO4	GC-MS	0.68	0.70	0.69	mg/kg	

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Electronic waste (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB138	LAB01	sonification	silica H2SO4	GC-MS	0.91	0.92	0.92	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.93		0.93	mg/kg	excluded
PCB138	LAB04	shaking	silica H2SO4	GC-MS	0.91	0.92	0.91	mg/kg	
PCB138	LAB05	sonification	others	GC-ECD	0.77	0.74	0.75	mg/kg	
PCB138	LAB07	shaking	others	GC-MS	1.50	1.80	1.65	mg/kg	
PCB138	LAB09	shaking	silica H2SO4	GC-ECD	0.59	0.69	0.64	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	1.27	1.27	1.27	mg/kg	
PCB138	LAB11	shaking	silica gel	GC-ECD	0.83	0.87	0.85	mg/kg	
PCB138	LAB12	sonification	none	GC-MS	0.88	0.79	0.84	mg/kg	
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	0.56	0.65	0.61	mg/kg	
PCB138	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.87	0.84	0.85	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-ECD	1.21	1.47	1.34	mg/kg	
PCB138	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.56	0.60	0.58	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	1.00	0.96	0.98	mg/kg	
PCB138	LAB18	sonification	benzenesulfonic acid-silica	others	0.93	0.58	0.76	mg/kg	
PCB138	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.10	0.90	1.00	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	0.47	0.50	0.48	mg/kg	
PCB138	LAB21	sonification	Florisil	GC-ECD	0.36	0.52	0.44	mg/kg	
PCB138	LAB23	soxhlet	silica gel	GC-MS	1.04	1.32	1.18	mg/kg	
PCB138	LAB25	sonification	silica H2SO4	GC-MS	0.78	0.51	0.65	mg/kg	
PCB153	LAB01	sonification	silica H2SO4	GC-MS	0.45	0.46	0.46	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.62		0.62	mg/kg	excluded
PCB153	LAB04	shaking	silica H2SO4	GC-MS	0.70	0.71	0.70	mg/kg	
PCB153	LAB05	sonification	others	GC-ECD	0.46	0.43	0.45	mg/kg	
PCB153	LAB07	shaking	others	GC-MS	1.10	1.40	1.25	mg/kg	
PCB153	LAB09	shaking	silica H2SO4	GC-ECD	0.37	0.42	0.39	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	0.66	0.66	0.66	mg/kg	
PCB153	LAB11	shaking	silica gel	GC-ECD	0.63	0.72	0.68	mg/kg	
PCB153	LAB12	sonification	none	GC-MS	0.60	0.48	0.54	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	0.32	0.37	0.35	mg/kg	
PCB153	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.73	0.71	0.72	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-ECD	0.90	0.96	0.93	mg/kg	
PCB153	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.40	0.42	0.41	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.65	0.61	0.63	mg/kg	
PCB153	LAB18	sonification	benzenesulfonic acid-silica	others	0.82	0.47	0.65	mg/kg	
PCB153	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.70	0.60	0.65	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	0.23	0.27	0.25	mg/kg	
PCB153	LAB21	sonification	Florisil	GC-ECD	0.56	0.37	0.47	mg/kg	
PCB153	LAB23	soxhlet	silica gel	GC-MS	0.44	0.63	0.54	mg/kg	
PCB153	LAB25	sonification	silica H2SO4	GC-MS	0.50	0.80	0.65	mg/kg	

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Electronic waste (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	mean	unit	remark
PCB180	LAB01	sonification	silica H2SO4	GC-MS	0.09	0.09	0.09	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.12		0.12	mg/kg	excluded
PCB180	LAB04	shaking	silica H2SO4	GC-MS	0.14	0.14	0.14	mg/kg	
PCB180	LAB05	sonification	others	GC-ECD	0.09	0.09	0.09	mg/kg	
PCB180	LAB07	shaking	others	GC-MS	0.24	0.29	0.27	mg/kg	
PCB180	LAB09	shaking	silica H2SO4	GC-ECD	0.17	0.09	0.13	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	0.12	0.12	0.12	mg/kg	
PCB180	LAB11	shaking	silica gel	GC-ECD	0.13	0.16	0.15	mg/kg	
PCB180	LAB12	sonification	none	GC-MS	0.13	0.11	0.12	mg/kg	
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	0.06	0.08	0.07	mg/kg	
PCB180	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.13	0.12	0.13	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-ECD	0.18	0.19	0.19	mg/kg	
PCB180	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.11	0.11	0.11	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.12	0.12	0.12	mg/kg	
PCB180	LAB18	sonification	benzenesulfonic acid-silica	others	0.19	0.21	0.20	mg/kg	
PCB180	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.20	0.10	0.15	mg/kg	
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	0.08	0.08	0.08	mg/kg	
PCB180	LAB21	sonification	Florisil	GC-ECD	<0.1	<0.1		mg/kg	Not used
PCB180	LAB25	sonification	silica H2SO4	GC-MS	0.11	0.12	0.12	mg/kg	
PCBSUM7	LAB01	sonification	silica H2SO4	GC-MS	3.12	3.17	3.15	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	3.73		3.73	mg/kg	excluded
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	3.99	3.98	3.99	mg/kg	
PCBSUM7	LAB05	sonification	others	GC-ECD	2.97	2.79	2.88	mg/kg	
PCBSUM7	LAB07	shaking	others	GC-MS	6.60	7.80	7.20	mg/kg	
PCBSUM7	LAB09	shaking	silica H2SO4	GC-ECD	2.24	2.60	2.42	mg/kg	
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	7.25	7.22	7.23	mg/kg	
PCBSUM7	LAB11	shaking	silica gel	GC-ECD	3.90	4.21	4.06	mg/kg	
PCBSUM7	LAB12	sonification	none	GC-MS	3.66	3.41	3.54	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	2.36	2.56	2.46	mg/kg	
PCBSUM7	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	3.80	3.64	3.72	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-ECD	4.95	5.30	5.13	mg/kg	
PCBSUM7	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	2.29	2.48	2.38	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica		3.67	3.42	3.54	mg/kg	
PCBSUM7	LAB18	sonification	benzenesulfonic acid-silica	others	4.15	3.02	3.59	mg/kg	
PCBSUM7	LAB19	soxhlet	AgNO3-silica	GC-ECD	4.20	3.50	3.85	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	1.79	1.92	1.86	mg/kg	
PCBSUM7	LAB21	sonification	Florisil	GC-ECD	2.52	1.99	2.26	mg/kg	
PCBSUM7	LAB25	sonification	silica H2SO4	GC-MS	2.39	2.67	2.53	mg/kg	

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Sealant waste

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB028	LAB01	sonification	silica H2SO4	GC-MS	1.59	1.47	1.53	mg/kg	
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	5.00	5.00	5.00	mg/kg	
PCB028	LAB04	shaking	silica H2SO4	GC-MS	1.79	1.80	1.80	mg/kg	
PCB028	LAB05	sonification	none	GC-ECD	1.63	1.71	1.67	mg/kg	
PCB028	LAB07	shaking	Florisil	GC-MS	0.63	0.70	0.67	mg/kg	
PCB028	LAB09	shaking	silica H2SO4	GC-ECD	18.91	17.02	17.97	mg/kg	Cochran
PCB028	LAB10	shaking	silica gel	GC-ECD	1.10	1.11	1.10	mg/kg	
PCB028	LAB11	shaking	none	GC-ECD	<20.3	<20.3		mg/kg	not used
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	1.50	1.40	1.45	mg/kg	
PCB028	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	2.71	2.77	2.74	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-ECD	1.95	1.69	1.82	mg/kg	
PCB028	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	29.59	30.59	30.09	mg/kg	Cochran
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	2.21	2.31	2.26	mg/kg	
PCB028	LAB18	sonification	benzenesulfonic acid-silica	others	1.71	1.52	1.62	mg/kg	
PCB028	LAB19	shaking	AgNO3-silica	GC-ECD	<12.5	<12.5		mg/kg	not used
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	1.89	1.78	1.84	mg/kg	
PCB028	LAB21	sonification	Florisil	GC-ECD	<10	<10		mg/kg	not used
PCB028	LAB25	sonification	silica H2SO4	GC-MS	4.20	4.10	4.15	mg/kg	
PCB052	LAB01	sonification	silica H2SO4	GC-MS	344.5	337.0	340.7	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	429.0	438.0	433.5	mg/kg	
PCB052	LAB04	shaking	silica H2SO4	GC-MS	315.0	307.0	311.0	mg/kg	
PCB052	LAB05	sonification	none	GC-ECD	408.3	406.4	407.3	mg/kg	
PCB052	LAB07	shaking	Florisil	GC-MS	160.0	170.0	165.0	mg/kg	
PCB052	LAB09	shaking	silica H2SO4	GC-ECD	326.2	297.1	311.6	mg/kg	
PCB052	LAB10	shaking	silica gel	GC-ECD	387.0	387.0	387.0	mg/kg	
PCB052	LAB11	shaking	none	GC-ECD	336.7	330.7	333.7	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	320.0	320.0	320.0	mg/kg	
PCB052	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	264.1	273.3	268.7	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-ECD	323.1	338.7	330.9	mg/kg	
PCB052	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	274.0	263.2	268.6	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	350.0	340.0	345.0	mg/kg	
PCB052	LAB18	sonification	benzenesulfonic acid-silica	others	182.0	160.0	171.0	mg/kg	
PCB052	LAB19	shaking	AgNO3-silica	GC-ECD	470.0	470.0	470.0	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	302.0	323.0	312.5	mg/kg	
PCB052	LAB21	sonification	none	GC-ECD	200.0	200.0	200.0	mg/kg	
PCB052	LAB23	soxhlet	silica gel	GC-MS	1252.5	1340.2	1296	mg/kg	Cochran
PCB052	LAB25	sonification	silica H2SO4	GC-MS	246.0	230.0	238.0	mg/kg	

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Sealant waste (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB101	LAB01	sonification	silica H2SO4	GC-MS	1203.3	1172.1	1188	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	1150.0	1062.0	1106	mg/kg	
PCB101	LAB04	shaking	silica H2SO4	GC-MS	902.0	869.0	885.5	mg/kg	
PCB101	LAB05	sonification	none	GC-ECD	1349.6	1339.9	1345	mg/kg	
PCB101	LAB07	shaking	Florisil	GC-MS	440.0	460.0	450.0	mg/kg	
PCB101	LAB09	shaking	silica H2SO4	GC-ECD	989.4	878.8	934.1	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	1254.0	1254.0	1254	mg/kg	
PCB101	LAB11	shaking	none	GC-ECD	967.8	900.2	934.0	mg/kg	
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	1000.0	1100.0	1050	mg/kg	
PCB101	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	726.9	770.1	748.5	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-ECD	932.7	942.8	937.7	mg/kg	
PCB101	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	722.0	705.2	713.6	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	963.0	1044.0	1004	mg/kg	
PCB101	LAB18	sonification	benzenesulfonic acid-silica	others	466.0	423.0	444.5	mg/kg	
PCB101	LAB19	shaking	AgNO3-silica	GC-ECD	1100.0	1100.0	1100	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	905.0	910.0	907.5	mg/kg	
PCB101	LAB21	sonification	none	GC-ECD	930.0	920.0	925.0	mg/kg	
PCB101	LAB23	soxhlet	silica gel	GC-MS	3146.4	2865.1	3006	mg/kg	Cochran
PCB101	LAB25	sonification	silica H2SO4	GC-MS	725.0	678.0	701.5	mg/kg	
PCB118	LAB01	sonification	silica H2SO4	GC-MS	951.4	934.0	942.7	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	875.0	941.0	908.0	mg/kg	
PCB118	LAB04	shaking	silica H2SO4	GC-MS	781.0	747.0	764.0	mg/kg	
PCB118	LAB05	sonification	none	GC-ECD	1016.0	934.9	975.5	mg/kg	
PCB118	LAB07	shaking	Florisil	GC-MS	310.0	330.0	320.0	mg/kg	
PCB118	LAB09	shaking	silica H2SO4	GC-ECD	898.2	822.5	860.3	mg/kg	
PCB118	LAB10	shaking	silica gel	GC-ECD	908.0	908.0	908.0	mg/kg	
PCB118	LAB11	shaking	none	GC-ECD	856.8	794.2	825.5	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	810.0	870.0	840.0	mg/kg	
PCB118	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	674.9	714.2	694.5	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-ECD	835.7	873.6	854.6	mg/kg	
PCB118	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	628.1	623.8	625.9	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	882.0	971.0	926.5	mg/kg	
PCB118	LAB18	sonification	benzenesulfonic acid-silica	others	470.0	423.0	446.5	mg/kg	
PCB118	LAB19	shaking	AgNO3-silica	GC-ECD	1100.0	1100.0	1100	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	753.0	723.0	738.0	mg/kg	
PCB118	LAB21	sonification	none	GC-ECD	740.0	770.0	755.0	mg/kg	
PCB118	LAB25	sonification	silica H2SO4	GC-MS	647.0	600.0	623.5	mg/kg	

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Sealant waste (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB138	LAB01	sonification	silica H2SO4	GC-MS	1274.2	1259.6	1267	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	1065.0	1054.0	1060	mg/kg	
PCB138	LAB04	shaking	silica H2SO4	GC-MS	706.0	667.0	686.5	mg/kg	
PCB138	LAB05	sonification	none	GC-ECD	1142.1	1117.7	1130	mg/kg	
PCB138	LAB07	shaking	Florisil	GC-MS	320.0	350.0	335.0	mg/kg	
PCB138	LAB09	shaking	silica H2SO4	GC-ECD	934.3	838.7	886.5	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	1039.0	1039.0	1039	mg/kg	
PCB138	LAB11	shaking	none	GC-ECD	735.1	644.7	689.9	mg/kg	
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	960.0	990.0	975.0	mg/kg	
PCB138	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	597.0	632.7	614.8	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-ECD	913.4	879.9	896.7	mg/kg	
PCB138	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	587.2	566.4	576.8	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	1048.0	1155.0	1102	mg/kg	
PCB138	LAB18	sonification	benzenesulfonic acid-silica	others	485.0	448.0	466.5	mg/kg	
PCB138	LAB19	shaking	AgNO3-silica	GC-ECD	1200.0	1200.0	1200	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	850.0	842.0	846	mg/kg	
PCB138	LAB21	sonification	none	GC-ECD	800.0	820.0	810	mg/kg	
PCB138	LAB23	soxhlet	silica gel	GC-MS	1758.7	1624.0	1691	mg/kg	
PCB138	LAB25	sonification	silica H2SO4	GC-MS	708.0	662.0	685.0	mg/kg	
PCB153	LAB01	sonification	silica H2SO4	GC-MS	644.3	625.2	634.8	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	755.0	726.0	740.5	mg/kg	
PCB153	LAB04	shaking	silica H2SO4	GC-MS	543.0	515.0	529.0	mg/kg	
PCB153	LAB05	sonification	none	GC-ECD	694.6	666.5	680.5 6	mg/kg	
PCB153	LAB07	shaking	Florisil	GC-MS	280.0	290.0	285.0	mg/kg	
PCB153	LAB09	shaking	silica H2SO4	GC-ECD	614.1	562.7	588.4	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	622.0	622.0	622.0	mg/kg	
PCB153	LAB11	shaking	none	GC-ECD	595.6	514.6	555.1	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	560.0	560.0	560.0	mg/kg	
PCB153	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	499.5	528.3	513.9	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-ECD	498.7	537.1	517.9	mg/kg	
PCB153	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	462.7	408.1	435.4	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	695.0	754.0	724.5	mg/kg	
PCB153	LAB18	sonification	benzenesulfonic acid-silica	others	460.0	397.0	428.5	mg/kg	
PCB153	LAB19	shaking	AgNO3-silica	GC-ECD	780.0	800.0	790.0	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	435.0	448.0	441.5	mg/kg	
PCB153	LAB21	sonification	none	GC-ECD	470.0	490.0	480.0	mg/kg	
PCB153	LAB23	soxhlet	silica gel	GC-MS	1399.1	1431.3	1415	mg/kg	Grubbs
PCB153	LAB25	sonification	silica H2SO4	GC-MS	469.0	435.0	452.0	mg/kg	

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Seanlant waste (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB180	LAB01	sonification	silica H2SO4	GC-MS	119.1	117.4	118.3	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	84.0	124.0	104.0	mg/kg	Cochran
PCB180	LAB04	shaking	silica H2SO4	GC-MS	104.0	98.1	101.1	mg/kg	
PCB180	LAB05	sonification	none	GC-ECD	129.4	127.3	128.3	mg/kg	
PCB180	LAB07	shaking	Florisil	GC-MS	55.0	59.0	57.0	mg/kg	
PCB180	LAB09	shaking	silica H2SO4	GC-ECD	119.1	108.1	113.6	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	113.0	113.0	113.0	mg/kg	
PCB180	LAB11	shaking	none	GC-ECD	120.7	101.7	111.2	mg/kg	
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	95.0	97.0	96.0	mg/kg	
PCB180	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	99.2	101.1	100.2	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-ECD	95.1	100.6	97.8	mg/kg	
PCB180	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	104.9	94.7	99.8	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	121.0	122.0	121.5	mg/kg	
PCB180	LAB18	sonification	benzenesulfonic acid-silica	others	68.7	62.3	65.5	mg/kg	
PCB180	LAB19	shaking	AgNO3-silica	GC-ECD	180.0	180.0	180.0	mg/kg	
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	110.0	114.0	112.0	mg/kg	
PCB180	LAB21	sonification	none	GC-ECD	110.0	110.0	110.0	mg/kg	
PCB180	LAB23	soxhlet	silica gel	GC-MS	111.9	139.4	125.7	mg/kg	
PCB180	LAB25	sonification	silica H2SO4	GC-MS	84.0	78.0	81.0	mg/kg	
PCBSUM7	LAB01	sonification	silica H2SO4	GC-MS	4538.5	4446.7	4493	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	4363.0	4350.0	4357	mg/kg	
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	3350.0	3200.0	3275.	mg/kg	
PCBSUM7	LAB05	sonification	none	GC-ECD	4741.6	4594.3	4668	mg/kg	
PCBSUM7	LAB07	shaking	Florisil	GC-MS	1600.0	1700.0	1650	mg/kg	
PCBSUM7	LAB09	shaking	silica H2SO4	GC-ECD	3900.0	3525.0	3712	mg/kg	
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	4324.1	4324.1	4324	mg/kg	
PCBSUM7	LAB11	shaking	none	GC-ECD	3612.7	3286.1	3449	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	3746.5	3938.4	3843	mg/kg	
PCBSUM7	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	2864.0	3022.0	2943	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-ECD	3600.6	3674.4	3638	mg/kg	
PCBSUM7	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	2808.6	2691.9	2750	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4061.2	4388.3	4225	mg/kg	
PCBSUM7	LAB18	sonification	benzenesulfonic acid-silica	others	2130.0	1920.0	2025	mg/kg	
PCBSUM7	LAB19	shaking	AgNO3-silica	GC-ECD	4800.0	4900.0	4850	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	3357.0	3362.0	3360	mg/kg	
PCBSUM7	LAB21	sonification	none	GC-ECD	3250.0	3310.0	3280	mg/kg	
PCBSUM7	LAB25	sonification	silica H2SO4	GC-MS	2883.2	2687.1	2785	mg/kg	

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Shredder light fraction

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB028	LAB01	sonification	silica H2SO4	GC-MS	0.55	0.54	0.55	mg/kg	
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.53	0.55	0.54	mg/kg	
PCB028	LAB04	shaking	silica H2SO4	GC-MS	0.38	0.43	0.40	mg/kg	
PCB028	LAB05	sonification	others	GC-ECD	0.45	0.41	0.43	mg/kg	
PCB028	LAB07	shaking	others	GC-MS	1.20	1.20	1.20	mg/kg	
PCB028	LAB09	shaking	silica H2SO4	GC-ECD	0.38	0.40	0.39	mg/kg	
PCB028	LAB10	shaking	silica gel	GC-ECD	0.51	0.50	0.51	mg/kg	
PCB028	LAB11	shaking	silica gel	GC-ECD	0.55	0.60	0.58	mg/kg	
PCB028	LAB12	sonification	none	GC-MS	0.39	0.40	0.40	mg/kg	
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	0.42	0.49	0.46	mg/kg	
PCB028	LAB14	shaking	AgNO3-silica	GC-ECD	0.44	0.46	0.45	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-ECD	0.67	0.69	0.68	mg/kg	
PCB028	LAB16	shaking	others	GC-MS	0.26	0.26	0.26	mg/kg	
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.68	0.62	0.65	mg/kg	
PCB028	LAB18	sonification	benzenesulfonic acid-silica	others	0.27	0.30	0.29	mg/kg	
PCB028	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.00	0.90	0.95	mg/kg	
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	0.68	0.70	0.69	mg/kg	
PCB028	LAB21	sonification	others	GC-ECD	0.31	0.27	0.29	mg/kg	
PCB028	LAB23	soxhlet	silica gel	GC-MS	27.01	26.32	26.67	mg/kg	Cochran
PCB028	LAB25	sonification	silica H2SO4	GC-MS	1.81	1.47	1.64	mg/kg	Cochran
PCB052	LAB01	sonification	silica H2SO4	GC-MS	0.46	0.45	0.45	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.35	0.37	0.36	mg/kg	
PCB052	LAB04	shaking	silica H2SO4	GC-MS	0.33	0.37	0.35	mg/kg	
PCB052	LAB05	sonification	others	GC-ECD	0.45	0.42	0.44	mg/kg	
PCB052	LAB07	shaking	others	GC-MS	0.89	0.93	0.91	mg/kg	Grubbs
PCB052	LAB09	shaking	silica H2SO4	GC-ECD	0.36	0.38	0.37	mg/kg	
PCB052	LAB10	shaking	silica gel	GC-ECD	0.35	0.35	0.35	mg/kg	
PCB052	LAB11	shaking	silica gel	GC-ECD	0.38	0.39	0.39	mg/kg	
PCB052	LAB12	sonification	none	GC-MS	0.34	0.36	0.35	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	0.40	0.42	0.41	mg/kg	
PCB052	LAB14	shaking	AgNO3-silica	GC-ECD	0.37	0.38	0.38	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-ECD	0.60	0.60	0.60	mg/kg	
PCB052	LAB16	shaking	others	GC-MS	0.22	0.22	0.22	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.52	0.50	0.51	mg/kg	
PCB052	LAB18	sonification	benzenesulfonic acid-silica	others	0.36	0.35	0.36	mg/kg	
PCB052	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.60	0.60	0.60	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	0.25	0.25	0.25	mg/kg	
PCB052	LAB21	sonification	others	GC-ECD	0.28	0.33	0.31	mg/kg	
PCB052	LAB23	soxhlet	silica gel	GC-MS	11.10	10.55	10.83	mg/kg	Cochran
PCB052	LAB25	sonification	silica H2SO4	GC-MS	0.72	0.55	0.64	mg/kg	Cochran

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Shredder light fraction (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB101	LAB01	sonification	silica H2SO4	GC-MS	0.58	0.58	0.58	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.40	0.40	0.40	mg/kg	
PCB101	LAB04	shaking	silica H2SO4	GC-MS	0.38	0.43	0.41	mg/kg	
PCB101	LAB05	sonification	others	GC-ECD	0.59	0.57	0.58	mg/kg	
PCB101	LAB07	shaking	others	GC-MS	1.10	1.00	1.05	mg/kg	
PCB101	LAB09	shaking	silica H2SO4	GC-ECD	0.29	0.32	0.30	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	0.67	0.66	0.67	mg/kg	
PCB101	LAB11	shaking	silica gel	GC-ECD	0.45	0.45	0.45	mg/kg	
PCB101	LAB12	sonification	none	GC-MS	0.40	0.42	0.41	mg/kg	
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	0.57	0.63	0.60	mg/kg	
PCB101	LAB14	shaking	AgNO3-silica	GC-ECD	0.46	0.47	0.46	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-ECD	0.68	0.68	0.68	mg/kg	
PCB101	LAB16	shaking	others	GC-MS	0.29	0.31	0.30	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.57	0.61	0.59	mg/kg	
PCB101	LAB18	sonification	benzenesulfonic acid-silica	others	0.64	0.57	0.61	mg/kg	
PCB101	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.70	0.70	0.70	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	0.45	0.46	0.45	mg/kg	
PCB101	LAB21	sonification	others	GC-ECD	0.36	0.42	0.39	mg/kg	
PCB101	LAB23	soxhlet	silica gel	GC-MS	8.31	10.21	9.26	mg/kg	Cochran
PCB101	LAB25	sonification	silica H2SO4	GC-MS	0.13	0.12	0.13	mg/kg	
PCB118	LAB01	sonification	silica H2SO4	GC-MS	0.37	0.36	0.36	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.57	0.57	0.57	mg/kg	
PCB118	LAB04	shaking	silica H2SO4	GC-MS	0.27	0.30	0.29	mg/kg	
PCB118	LAB05	sonification	others	GC-ECD	0.36	0.34	0.35	mg/kg	
PCB118	LAB07	shaking	others	GC-MS	0.78	0.81	0.80	mg/kg	
PCB118	LAB09	shaking	silica H2SO4	GC-ECD	0.25	0.31	0.28	mg/kg	
PCB118	LAB10	shaking	silica gel	GC-ECD	0.34	0.34	0.34	mg/kg	
PCB118	LAB11	shaking	silica gel	GC-ECD	0.39	0.39	0.39	mg/kg	
PCB118	LAB12	sonification	none	GC-MS	0.26	0.26	0.26	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	0.39	0.40	0.40	mg/kg	
PCB118	LAB14	shaking	AgNO3-silica	GC-ECD	0.32	0.32	0.32	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-ECD	0.43	0.45	0.44	mg/kg	
PCB118	LAB16	shaking	others	GC-MS	0.24	0.24	0.24	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.40	0.43	0.42	mg/kg	
PCB118	LAB18	sonification	benzenesulfonic acid-silica	others	0.48	0.50	0.49	mg/kg	
PCB118	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.60	0.60	0.60	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	0.36	0.35	0.35	mg/kg	
PCB118	LAB21	sonification	others	GC-ECD	0.25	0.34	0.30	mg/kg	
PCB118	LAB25	sonification	silica H2SO4	GC-MS	0.56	0.43	0.50	mg/kg	Cochran

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Shredder light fraction (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB138	LAB01	sonification	silica H2SO4	GC-MS	0.96	0.95	0.95	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.70	0.68	0.69	mg/kg	
PCB138	LAB04	shaking	silica H2SO4	GC-MS	0.40	0.41	0.40	mg/kg	
PCB138	LAB05	sonification	others	GC-ECD	0.73	0.72	0.73	mg/kg	
PCB138	LAB07	shaking	others	GC-MS	1.40	1.40	1.40	mg/kg	
PCB138	LAB09	shaking	silica H2SO4	GC-ECD	0.44	0.45	0.44	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	1.40	1.39	1.40	mg/kg	
PCB138	LAB11	shaking	silica gel	GC-ECD	0.58	0.55	0.57	mg/kg	
PCB138	LAB12	sonification	none	GC-MS	0.50	0.60	0.55	mg/kg	
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	0.95	1.10	1.03	mg/kg	
PCB138	LAB14	shaking	AgNO3-silica	GC-ECD	0.46	0.46	0.46	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-ECD	1.39	1.22	1.31	mg/kg	
PCB138	LAB16	shaking	others	GC-MS	0.37	0.37	0.37	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.94	1.10	1.02	mg/kg	
PCB138	LAB18	sonification	benzenesulfonic acid-silica	others	0.77	0.74	0.76	mg/kg	
PCB138	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.20	1.10	1.15	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	0.69	0.70	0.69	mg/kg	
PCB138	LAB21	sonification	others	GC-ECD	0.54	0.60	0.57	mg/kg	
PCB138	LAB25	sonification	silica H2SO4	GC-MS	1.24	0.97	1.11	mg/kg	
PCB153	LAB01	sonification	silica H2SO4	GC-MS	0.61	0.60	0.60	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.52	0.48	0.50	mg/kg	
PCB153	LAB04	shaking	silica H2SO4	GC-MS	0.41	0.43	0.42	mg/kg	
PCB153	LAB05	sonification	others	GC-ECD	0.54	0.53	0.54	mg/kg	
PCB153	LAB07	shaking	others	GC-MS	1.50	1.40	1.45	mg/kg	
PCB153	LAB09	shaking	silica H2SO4	GC-ECD	0.34	0.39	0.36	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	0.72	0.73	0.73	mg/kg	
PCB153	LAB11	shaking	silica gel	GC-ECD	0.62	0.61	0.62	mg/kg	
PCB153	LAB12	sonification	none	GC-MS	0.38	0.38	0.38	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	0.66	0.74	0.70	mg/kg	
PCB153	LAB14	shaking	AgNO3-silica	GC-ECD	0.51	0.53	0.52	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-ECD	0.89	0.99	0.94	mg/kg	
PCB153	LAB16	shaking	others	GC-MS	0.34	0.33	0.34	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.74	0.86	0.80	mg/kg	
PCB153	LAB18	sonification	benzenesulfonic acid-silica	others	0.83	0.78	0.81	mg/kg	
PCB153	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.00	0.90	0.95	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	0.54	0.53	0.54	mg/kg	
PCB153	LAB21	sonification	others	GC-ECD	0.51	0.62	0.57	mg/kg	
PCB153	LAB23	soxhlet	silica gel	GC-MS	3.86	4.18	4.02	mg/kg	Grubbs
PCB153	LAB25	sonification	silica H2SO4	GC-MS	1.10	0.84	0.97	mg/kg	

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Shredder light fraction (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB180	LAB01	sonification	silica H2SO4	GC-MS	0.35	0.35	0.35	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.35	0.31	0.33	mg/kg	
PCB180	LAB04	shaking	silica H2SO4	GC-MS	0.22	0.21	0.22	mg/kg	
PCB180	LAB05	sonification	others	GC-ECD	0.27	0.27	0.27	mg/kg	
PCB180	LAB07	shaking	others	GC-MS	0.98	0.91	0.95	mg/kg	
PCB180	LAB09	shaking	silica H2SO4	GC-ECD	0.19	0.19	0.19	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	0.43	0.44	0.44	mg/kg	
PCB180	LAB11	shaking	silica gel	GC-ECD	0.40	0.39	0.40	mg/kg	
PCB180	LAB12	sonification	none	GC-MS	0.25	0.23	0.24	mg/kg	
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	0.46	0.48	0.47	mg/kg	
PCB180	LAB14	shaking	AgNO3-silica	GC-ECD	0.27	0.28	0.27	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-ECD	0.56	0.61	0.59	mg/kg	
PCB180	LAB16	shaking	others	GC-MS	0.23	0.22	0.23	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.53	0.49	0.51	mg/kg	
PCB180	LAB18	sonification	benzenesulfonic acid-silica	others	0.72	0.64	0.68	mg/kg	
PCB180	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.70	0.70	0.70	mg/kg	
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	0.46	0.46	0.46	mg/kg	
PCB180	LAB21	sonification	others	GC-ECD	0.28	0.37	0.33	mg/kg	
PCB180	LAB25	sonification	silica H2SO4	GC-MS	0.42	0.38	0.40	mg/kg	
PCBSUM7	LAB01	sonification	silica H2SO4	GC-MS	3.86	3.83	3.85	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	3.42	3.36	3.39	mg/kg	
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	2.39	2.57	2.48	mg/kg	
PCBSUM7	LAB05	sonification	others	GC-ECD	3.40	3.26	3.33	mg/kg	
PCBSUM7	LAB07	shaking	others	GC-MS	7.80	7.70	7.75	mg/kg	
PCBSUM7	LAB09	shaking	silica H2SO4	GC-ECD	2.23	2.44	2.33	mg/kg	
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	4.42	4.41	4.41	mg/kg	
PCBSUM7	LAB11	shaking	silica gel	GC-ECD	3.37	3.38	3.38	mg/kg	
PCBSUM7	LAB12	sonification	none	GC-MS	2.52	2.65	2.59	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	3.85	4.26	4.06	mg/kg	
PCBSUM7	LAB14	shaking	AgNO3-silica	GC-ECD	2.82	2.89	2.86	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-ECD	5.22	5.24	5.23	mg/kg	
PCBSUM7	LAB16	shaking	others	GC-MS	1.95	1.96	1.95	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	4.37	4.62	4.50	mg/kg	
PCBSUM7	LAB18	sonification	benzenesulfonic acid-silica	others	4.08	3.87	3.98	mg/kg	
PCBSUM7	LAB19	soxhlet	AgNO3-silica	GC-ECD	5.70	5.50	5.60	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	3.43	3.44	3.44	mg/kg	
PCBSUM7	LAB21	sonification	others	GC-ECD	2.53	2.95	2.74	mg/kg	
PCBSUM7	LAB25	sonification	silica H2SO4	GC-MS	5.98	4.76	5.37	mg/kg	Cochran

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Standard solution

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB028	LAB01			GC-MS	0.17	0.17	0.17	mg/l	
PCB028	LAB02			GC-ECD	0.13	0.11	0.12	mg/l	
PCB028	LAB04			GC-MS	0.20	0.20	0.20	mg/l	
PCB028	LAB05			GC-ECD	0.23	0.22	0.22	mg/l	
PCB028	LAB07			GC-MS	0.21	0.21	0.21	mg/l	
PCB028	LAB09			GC-ECD	0.18	0.19	0.19	mg/l	
PCB028	LAB10			GC-ECD	0.21	0.21	0.21	mg/l	
PCB028	LAB11			GC-ECD	0.18	0.18	0.18	mg/l	
PCB028	LAB13			GC-MS	0.17	0.16	0.17	mg/l	
PCB028	LAB14			GC-ECD	0.23	0.22	0.22	mg/l	
PCB028	LAB15			GC-ECD	0.22	0.22	0.22	mg/l	
PCB028	LAB16			GC-MS	0.24	0.24	0.24	mg/l	
PCB028	LAB17			GC-ECD	0.22	0.22	0.22	mg/l	
PCB028	LAB18			others	0.16	0.16	0.16	mg/l	
PCB028	LAB19			GC-ECD	0.20	0.30	0.25	mg/l	Cochran
PCB028	LAB20			GC-MS	0.19	0.19	0.19	mg/l	
PCB028	LAB21			GC-ECD	0.17	0.18	0.18	mg/l	
PCB028	LAB23			GC-ECD	0.04	0.04	0.04	mg/l	Grubbs
PCB028	LAB25			GC-MS	0.17	0.16	0.17	mg/l	
PCB052	LAB01			GC-MS	0.57	0.57	0.57	mg/l	
PCB052	LAB02			GC-ECD	0.66	0.60	0.63	mg/l	
PCB052	LAB04			GC-MS	0.66	0.69	0.68	mg/l	
PCB052	LAB05			GC-ECD	0.71	0.70	0.71	mg/l	
PCB052	LAB07			GC-MS	0.68	0.67	0.68	mg/l	
PCB052	LAB09			GC-ECD	0.63	0.62	0.63	mg/l	
PCB052	LAB10			GC-ECD	0.66	0.66	0.66	mg/l	
PCB052	LAB11			GC-ECD	0.57	0.57	0.57	mg/l	
PCB052	LAB13			GC-MS	0.57	0.58	0.58	mg/l	
PCB052	LAB14			GC-ECD	0.73	0.72	0.72	mg/l	
PCB052	LAB15			GC-ECD	0.76	0.76	0.76	mg/l	
PCB052	LAB16			GC-MS	0.69	0.71	0.70	mg/l	
PCB052	LAB17			GC-ECD	0.67	0.68	0.67	mg/l	
PCB052	LAB18			others	0.58	0.69	0.64	mg/l	
PCB052	LAB19			GC-ECD	0.80	0.90	0.85	mg/l	
PCB052	LAB20			GC-MS	0.50	0.52	0.51	mg/l	
PCB052	LAB21			GC-ECD	0.56	0.71	0.64	mg/l	
PCB052	LAB23			GC-ECD	0.05	0.06	0.05	mg/l	Grubbs
PCB052	LAB25			GC-MS	0.54	0.52	0.53	mg/l	

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Standard solution (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB101	LAB01			GC-MS	0.85	0.86	0.86	mg/l	
PCB101	LAB02			GC-ECD	0.87	0.85	0.86	mg/l	
PCB101	LAB04			GC-MS	1.00	1.00	1.00	mg/l	
PCB101	LAB05			GC-ECD	1.06	1.03	1.05	mg/l	
PCB101	LAB07			GC-MS	1.00	0.97	0.99	mg/l	
PCB101	LAB09			GC-ECD	0.93	0.93	0.93	mg/l	
PCB101	LAB10			GC-ECD	0.97	0.97	0.97	mg/l	
PCB101	LAB11			GC-ECD	0.90	0.92	0.91	mg/l	
PCB101	LAB13			GC-MS	0.88	0.88	0.88	mg/l	
PCB101	LAB14			GC-ECD	1.05	1.04	1.04	mg/l	
PCB101	LAB15			GC-ECD	1.00	1.00	1.00	mg/l	
PCB101	LAB16			GC-MS	1.11	1.16	1.14	mg/l	
PCB101	LAB17			GC-ECD	0.93	0.94	0.94	mg/l	
PCB101	LAB18			others	0.85	0.82	0.84	mg/l	
PCB101	LAB19			GC-ECD	1.10	1.20	1.15	mg/l	
PCB101	LAB20			GC-MS	1.04	0.99	1.02	mg/l	
PCB101	LAB21			GC-ECD	0.82	1.00	0.91	mg/l	Cochran
PCB101	LAB23			GC-ECD	0.07	0.10	0.08	mg/l	Grubbs
PCB101	LAB25			GC-MS	0.87	0.83	0.85	mg/l	
PCB118	LAB01			GC-MS	0.18	0.18	0.18	mg/l	
PCB118	LAB02			GC-ECD	0.20	0.21	0.21	mg/l	
PCB118	LAB04			GC-MS	0.21	0.22	0.22	mg/l	
PCB118	LAB05			GC-ECD	0.22	0.22	0.22	mg/l	
PCB118	LAB07			GC-MS	0.20	0.21	0.21	mg/l	
PCB118	LAB09			GC-ECD	0.21	0.22	0.22	mg/l	
PCB118	LAB10			GC-ECD	0.22	0.22	0.22	mg/l	
PCB118	LAB11			GC-ECD	0.19	0.19	0.19	mg/l	
PCB118	LAB13			GC-MS	0.18	0.18	0.18	mg/l	
PCB118	LAB14			GC-ECD	0.25	0.25	0.25	mg/l	
PCB118	LAB15			GC-ECD	0.25	0.25	0.25	mg/l	
PCB118	LAB16			GC-MS	0.24	0.25	0.25	mg/l	
PCB118	LAB17			GC-ECD	0.23	0.22	0.23	mg/l	
PCB118	LAB18			others	0.14	0.11	0.13	mg/l	Cochran
PCB118	LAB19			GC-ECD	0.30	0.30	0.30	mg/l	
PCB118	LAB20			GC-MS	0.20	0.19	0.19	mg/l	
PCB118	LAB21			GC-ECD	0.20	0.19	0.20	mg/l	
PCB118	LAB23			GC-ECD	0.05	0.05	0.05	mg/l	Grubbs
PCB118	LAB25			GC-MS	0.15	0.15	0.15	mg/l	

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Standard solution (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB138	LAB01			GC-MS	1.11	1.10	1.10	mg/l	
PCB138	LAB02			GC-ECD	1.11	1.07	1.09	mg/l	
PCB138	LAB04			GC-MS	1.20	1.20	1.20	mg/l	
PCB138	LAB05			GC-ECD	1.26	1.24	1.25	mg/l	
PCB138	LAB07			GC-MS	1.20	1.20	1.20	mg/l	
PCB138	LAB09			GC-ECD	1.19	1.19	1.19	mg/l	
PCB138	LAB10			GC-ECD	1.23	1.23	1.23	mg/l	
PCB138	LAB11			GC-ECD	1.11	1.13	1.12	mg/l	
PCB138	LAB13			GC-MS	1.10	1.10	1.10	mg/l	
PCB138	LAB14			GC-ECD	1.35	1.34	1.34	mg/l	
PCB138	LAB15			GC-ECD	1.26	1.27	1.27	mg/l	
PCB138	LAB16			GC-MS	1.40	1.50	1.45	mg/l	
PCB138	LAB17			GC-ECD	1.20	1.20	1.20	mg/l	
PCB138	LAB18			others	1.25	1.22	1.24	mg/l	
PCB138	LAB19			GC-ECD	1.50	1.60	1.55	mg/l	
PCB138	LAB20			GC-MS	1.01	1.04	1.03	mg/l	
PCB138	LAB21			GC-ECD	1.10	1.40	1.25	mg/l	Cochran
PCB138	LAB23			GC-ECD	0.11	0.14	0.13	mg/l	Grubbs
PCB138	LAB25			GC-MS	1.00	0.98	0.99	mg/l	
PCB153	LAB01			GC-MS	0.18	0.18	0.18	mg/l	
PCB153	LAB02			GC-ECD	0.25	0.23	0.24	mg/l	
PCB153	LAB04			GC-MS	0.20	0.21	0.21	mg/l	
PCB153	LAB05			GC-ECD	0.23	0.23	0.23	mg/l	
PCB153	LAB07			GC-MS	0.21	0.21	0.21	mg/l	
PCB153	LAB09			GC-ECD	0.21	0.22	0.22	mg/l	
PCB153	LAB10			GC-ECD	0.22	0.22	0.22	mg/l	
PCB153	LAB11			GC-ECD	0.19	0.18	0.19	mg/l	
PCB153	LAB13			GC-MS	0.18	0.18	0.18	mg/l	
PCB153	LAB14			GC-ECD	0.21	0.21	0.21	mg/l	
PCB153	LAB15			GC-ECD	0.26	0.26	0.26	mg/l	
PCB153	LAB16			GC-MS	0.22	0.24	0.23	mg/l	
PCB153	LAB17			GC-ECD	0.25	0.25	0.25	mg/l	
PCB153	LAB18			others	0.17	0.18	0.18	mg/l	
PCB153	LAB19			GC-ECD	0.30	0.30	0.30	mg/l	
PCB153	LAB20			GC-MS	0.20	0.20	0.20	mg/l	
PCB153	LAB21			GC-ECD	0.22	0.21	0.22	mg/l	
PCB153	LAB23			GC-ECD	0.04	0.04	0.04	mg/l	Grubbs
PCB153	LAB25			GC-MS	0.15	0.15	0.15	mg/l	

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Standard solution (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB180	LAB01			GC-MS	0.68	0.68	0.68	mg/l	
PCB180	LAB02			GC-ECD	0.80	0.77	0.79	mg/l	
PCB180	LAB04			GC-MS	0.81	0.82	0.82	mg/l	
PCB180	LAB05			GC-ECD	0.82	0.81	0.82	mg/l	
PCB180	LAB07			GC-MS	0.80	0.81	0.81	mg/l	
PCB180	LAB09			GC-ECD	0.78	0.78	0.78	mg/l	
PCB180	LAB10			GC-ECD	0.79	0.79	0.79	mg/l	
PCB180	LAB11			GC-ECD	0.75	0.77	0.76	mg/l	
PCB180	LAB13			GC-MS	0.71	0.72	0.72	mg/l	
PCB180	LAB14			GC-ECD	0.91	0.91	0.91	mg/l	
PCB180	LAB15			GC-ECD	0.80	0.80	0.80	mg/l	
PCB180	LAB16			GC-MS	0.92	0.96	0.94	mg/l	
PCB180	LAB17			GC-ECD	0.82	0.81	0.81	mg/l	
PCB180	LAB18			others	0.77	0.68	0.73	mg/l	
PCB180	LAB19			GC-ECD	1.10	1.20	1.15	mg/l	Grubbs
PCB180	LAB20			GC-MS	0.81	0.81	0.81	mg/l	
PCB180	LAB21			GC-ECD	0.79	1.00	0.90	mg/l	Cochran
PCB180	LAB23			GC-ECD	0.07	0.10	0.08	mg/l	Grubbs
PCB180	LAB25			GC-MS	0.65	0.65	0.65	mg/l	
PCBSUM7	LAB01			GC-MS	3.74	3.74	3.74	mg/l	
PCBSUM7	LAB02			GC-ECD	4.02	3.84	3.93	mg/l	
PCBSUM7	LAB04			GC-MS	4.30	4.40	4.35	mg/l	
PCBSUM7	LAB05			GC-ECD	4.54	4.43	4.49	mg/l	
PCBSUM7	LAB07			GC-MS	4.30	4.30	4.30	mg/l	
PCBSUM7	LAB09			GC-ECD	4.13	4.13	4.13	mg/l	
PCBSUM7	LAB10			GC-ECD	4.30	4.30	4.30	mg/l	
PCBSUM7	LAB11			GC-ECD	3.89	3.94	3.92	mg/l	
PCBSUM7	LAB13			GC-MS	3.79	3.80	3.80	mg/l	
PCBSUM7	LAB14			GC-ECD	4.72	4.69	4.70	mg/l	
PCBSUM7	LAB15			GC-ECD	4.55	4.56	4.56	mg/l	
PCBSUM7	LAB16			GC-MS	4.84	5.06	4.95	mg/l	
PCBSUM7	LAB17			GC-ECD	4.31	4.30	4.31	mg/l	
PCBSUM7	LAB18			others	3.92	3.86	3.89	mg/l	
PCBSUM7	LAB19			GC-ECD	5.30	5.80	5.55	mg/l	Cochran
PCBSUM7	LAB20			GC-MS	3.95	3.94	3.95	mg/l	
PCBSUM7	LAB21			GC-ECD	3.86	4.69	4.28	mg/l	Cochran
PCBSUM7	LAB23				0.42	0.54	0.48	mg/l	Grubbs
PCBSUM7	LAB25			GC-MS	3.53	3.44	3.49	mg/l	

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Waste wood

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB028	LAB01	soxhlet	silica H2SO4	GC-MS	0.29	0.30	0.29	mg/kg	
PCB028	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.04	0.06	0.05	mg/kg	
PCB028	LAB04	shaking	silica H2SO4	GC-MS	0.17	0.17	0.17	mg/kg	
PCB028	LAB05	sonification	others	GC-ECD	0.35	0.33	0.34	mg/kg	
PCB028	LAB07	shaking	others	GC-MS	0.68	0.60	0.64	mg/kg	
PCB028	LAB09	shaking	silica H2SO4	GC-ECD	0.28	0.23	0.26	mg/kg	
PCB028	LAB10	shaking	silica gel	GC-ECD	0.15	0.15	0.15	mg/kg	
PCB028	LAB11	soxhlet	silica gel	GC-ECD	0.38	0.38	0.38	mg/kg	
PCB028	LAB12	sonification	none	GC-MS	0.28	0.27	0.28	mg/kg	
PCB028	LAB13	soxhlet	AgNO3-silica	GC-MS	0.08	0.10	0.09	mg/kg	
PCB028	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.20	0.20	0.20	mg/kg	
PCB028	LAB15	shaking	AgNO3-silica	GC-ECD	0.28	0.28	0.28	mg/kg	
PCB028	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.20	0.19	0.20	mg/kg	
PCB028	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.34	0.31	0.32	mg/kg	
PCB028	LAB18	sonification	benzenesulfonic acid-silica	others	0.39	0.36	0.38	mg/kg	
PCB028	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.50	0.50	0.50	mg/kg	
PCB028	LAB20	soxhlet	AgNO3-silica	GC-MS	0.26	0.25	0.25	mg/kg	
PCB028	LAB21	sonification	Florisil	GC-ECD	0.19	0.20	0.20	mg/kg	
PCB028	LAB23	soxhlet	silica gel	GC-MS	2.44	3.86	3.15	mg/kg	Cochran
PCB028	LAB25	soxhlet	silica gel	GC-MS	0.28	0.30	0.29	mg/kg	
PCB052	LAB01	soxhlet	silica H2SO4	GC-MS	0.41	0.41	0.41	mg/kg	
PCB052	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.14	0.15	0.15	mg/kg	
PCB052	LAB04	shaking	silica H2SO4	GC-MS	0.26	0.26	0.26	mg/kg	
PCB052	LAB05	sonification	others	GC-ECD	0.45	0.43	0.44	mg/kg	
PCB052	LAB07	shaking	others	GC-MS	0.93	0.88	0.91	mg/kg	Grubbs
PCB052	LAB09	shaking	silica H2SO4	GC-ECD	0.32	0.33	0.32	mg/kg	
PCB052	LAB10	shaking	silica gel	GC-ECD	0.22	0.22	0.22	mg/kg	
PCB052	LAB11	soxhlet	silica gel	GC-ECD	0.33	0.32	0.33	mg/kg	
PCB052	LAB12	sonification	none	GC-MS	0.39	0.37	0.38	mg/kg	
PCB052	LAB13	soxhlet	AgNO3-silica	GC-MS	0.20	0.21	0.21	mg/kg	
PCB052	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.28	0.28	0.28	mg/kg	
PCB052	LAB15	shaking	AgNO3-silica	GC-ECD	0.45	0.48	0.47	mg/kg	
PCB052	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.29	0.31	0.30	mg/kg	
PCB052	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.44	0.41	0.42	mg/kg	
PCB052	LAB18	sonification	benzenesulfonic acid-silica	others	0.35	0.36	0.36	mg/kg	
PCB052	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.60	0.60	0.60	mg/kg	
PCB052	LAB20	soxhlet	AgNO3-silica	GC-MS	0.29	0.29	0.29	mg/kg	
PCB052	LAB21	sonification	Florisil	GC-ECD	0.28	0.30	0.29	mg/kg	
PCB052	LAB23	soxhlet	silica gel	GC-MS	0.65	1.12	0.89	mg/kg	Cochran
PCB052	LAB25	soxhlet	silica gel	GC-MS	0.32	0.35	0.34	mg/kg	

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Waste wood (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB101	LAB01	soxhlet	silica H2SO4	GC-MS	0.71	0.70	0.71	mg/kg	
PCB101	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.32	0.35	0.34	mg/kg	
PCB101	LAB04	shaking	silica H2SO4	GC-MS	0.42	0.41	0.42	mg/kg	
PCB101	LAB05	sonification	others	GC-ECD	0.81	0.83	0.82	mg/kg	
PCB101	LAB07	shaking	others	GC-MS	1.40	1.30	1.35	mg/kg	Grubbs
PCB101	LAB09	shaking	silica H2SO4	GC-ECD	0.48	0.49	0.49	mg/kg	
PCB101	LAB10	shaking	silica gel	GC-ECD	0.49	0.49	0.49	mg/kg	
PCB101	LAB11	soxhlet	silica gel	GC-ECD	0.54	0.53	0.54	mg/kg	
PCB101	LAB12	sonification	none	GC-MS	0.89	0.69	0.79	mg/kg	Cochran
PCB101	LAB13	soxhlet	AgNO3-silica	GC-MS	0.47	0.48	0.48	mg/kg	
PCB101	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.43	0.46	0.45	mg/kg	
PCB101	LAB15	shaking	AgNO3-silica	GC-ECD	0.63	0.64	0.64	mg/kg	
PCB101	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.50	0.54	0.52	mg/kg	
PCB101	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.64	0.64	0.64	mg/kg	
PCB101	LAB18	sonification	benzenesulfonic acid-silica	others	0.54	0.66	0.60	mg/kg	
PCB101	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.80	0.80	0.80	mg/kg	
PCB101	LAB20	soxhlet	AgNO3-silica	GC-MS	0.53	0.49	0.51	mg/kg	
PCB101	LAB21	sonification	Florisil	GC-ECD	0.38	0.42	0.40	mg/kg	
PCB101	LAB25	soxhlet	silica gel	GC-MS	0.10	0.10	0.10	mg/kg	
PCB118	LAB01	soxhlet	silica H2SO4	GC-MS	0.58	0.58	0.58	mg/kg	
PCB118	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.42	0.50	0.46	mg/kg	
PCB118	LAB04	shaking	silica H2SO4	GC-MS	0.38	0.37	0.38	mg/kg	
PCB118	LAB05	sonification	others	GC-ECD	0.55	0.53	0.54	mg/kg	
PCB118	LAB07	shaking	others	GC-MS	1.10	1.10	1.10	mg/kg	Grubbs
PCB118	LAB09	shaking	silica H2SO4	GC-ECD	0.57	0.56	0.56	mg/kg	
PCB118	LAB10	shaking	silica gel	GC-ECD	0.37	0.37	0.37	mg/kg	
PCB118	LAB11	soxhlet	silica gel	GC-ECD	0.64	0.62	0.63	mg/kg	
PCB118	LAB12	sonification	none	GC-MS	0.51	0.46	0.49	mg/kg	
PCB118	LAB13	soxhlet	AgNO3-silica	GC-MS	0.36	0.38	0.37	mg/kg	
PCB118	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.44	0.45	0.45	mg/kg	
PCB118	LAB15	shaking	AgNO3-silica	GC-ECD	0.56	0.57	0.57	mg/kg	
PCB118	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.45	0.48	0.47	mg/kg	
PCB118	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.56	0.59	0.58	mg/kg	
PCB118	LAB18	sonification	benzenesulfonic acid-silica	others	0.51	0.65	0.58	mg/kg	
PCB118	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.80	0.90	0.85	mg/kg	
PCB118	LAB20	soxhlet	AgNO3-silica	GC-MS	0.49	0.50	0.49	mg/kg	
PCB118	LAB21	sonification	Florisil	GC-ECD	0.37	0.41	0.39	mg/kg	
PCB118	LAB25	soxhlet	silica gel	GC-MS	0.44	0.48	0.46	mg/kg	

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Waste wood (cont.)

Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB138	LAB01	soxhlet	silica H2SO4	GC-MS	0.90	0.90	0.90	mg/kg	
PCB138	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.55	0.58	0.57	mg/kg	
PCB138	LAB04	shaking	silica H2SO4	GC-MS	0.41	0.39	0.40	mg/kg	
PCB138	LAB05	sonification	others	GC-ECD	0.74	0.74	0.74	mg/kg	
PCB138	LAB07	shaking	others	GC-MS	1.20	1.10	1.15	mg/kg	
PCB138	LAB09	shaking	silica H2SO4	GC-ECD	0.70	0.67	0.68	mg/kg	
PCB138	LAB10	shaking	silica gel	GC-ECD	0.70	0.70	0.70	mg/kg	
PCB138	LAB11	soxhlet	silica gel	GC-ECD	0.54	0.54	0.54	mg/kg	
PCB138	LAB12	sonification	none	GC-MS	1.05	0.73	0.89	mg/kg	Cochran
PCB138	LAB13	soxhlet	AgNO3-silica	GC-MS	0.59	0.62	0.61	mg/kg	
PCB138	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.45	0.46	0.45	mg/kg	
PCB138	LAB15	shaking	AgNO3-silica	GC-ECD	0.67	0.67	0.67	mg/kg	
PCB138	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.53	0.57	0.55	mg/kg	
PCB138	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.81	0.81	0.81	mg/kg	
PCB138	LAB18	sonification	benzenesulfonic acid-silica	others	0.59	0.83	0.71	mg/kg	Cochran
PCB138	LAB19	soxhlet	AgNO3-silica	GC-ECD	1.00	1.10	1.05	mg/kg	
PCB138	LAB20	soxhlet	AgNO3-silica	GC-MS	0.59	0.67	0.63	mg/kg	
PCB138	LAB21	sonification	Florisil	GC-ECD	0.49	0.52	0.51	mg/kg	
PCB138	LAB23	soxhlet	silica gel	GC-MS	0.03	0.08	0.05	mg/kg	
PCB138	LAB25	soxhlet	silica gel	GC-MS	0.55	0.58	0.57	mg/kg	
PCB153	LAB01	soxhlet	silica H2SO4	GC-MS	0.49	0.49	0.49	mg/kg	
PCB153	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.37	0.40	0.39	mg/kg	
PCB153	LAB04	shaking	silica H2SO4	GC-MS	0.36	0.36	0.36	mg/kg	
PCB153	LAB05	sonification	others	GC-ECD	0.48	0.46	0.47	mg/kg	
PCB153	LAB07	shaking	others	GC-MS	1.10	1.00	1.05	mg/kg	Grubbs
PCB153	LAB09	shaking	silica H2SO4	GC-ECD	0.44	0.46	0.45	mg/kg	
PCB153	LAB10	shaking	silica gel	GC-ECD	0.33	0.33	0.33	mg/kg	
PCB153	LAB11	soxhlet	silica gel	GC-ECD	0.50	0.50	0.50	mg/kg	
PCB153	LAB12	sonification	none	GC-MS	0.54	0.49	0.52	mg/kg	
PCB153	LAB13	soxhlet	AgNO3-silica	GC-MS	0.39	0.38	0.39	mg/kg	
PCB153	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.44	0.45	0.44	mg/kg	
PCB153	LAB15	shaking	AgNO3-silica	GC-ECD	0.59	0.61	0.60	mg/kg	
PCB153	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.45	0.44	0.45	mg/kg	
PCB153	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.60	0.60	0.60	mg/kg	
PCB153	LAB18	sonification	benzenesulfonic acid-silica	others	0.68	0.83	0.76	mg/kg	
PCB153	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.70	0.80	0.75	mg/kg	
PCB153	LAB20	soxhlet	AgNO3-silica	GC-MS	0.45	0.37	0.41	mg/kg	
PCB153	LAB21	sonification	Florisil	GC-ECD	0.38	0.42	0.40	mg/kg	
PCB153	LAB25	soxhlet	silica gel	GC-MS	0.40	0.43	0.42	mg/kg	

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Waste wood (cont.)

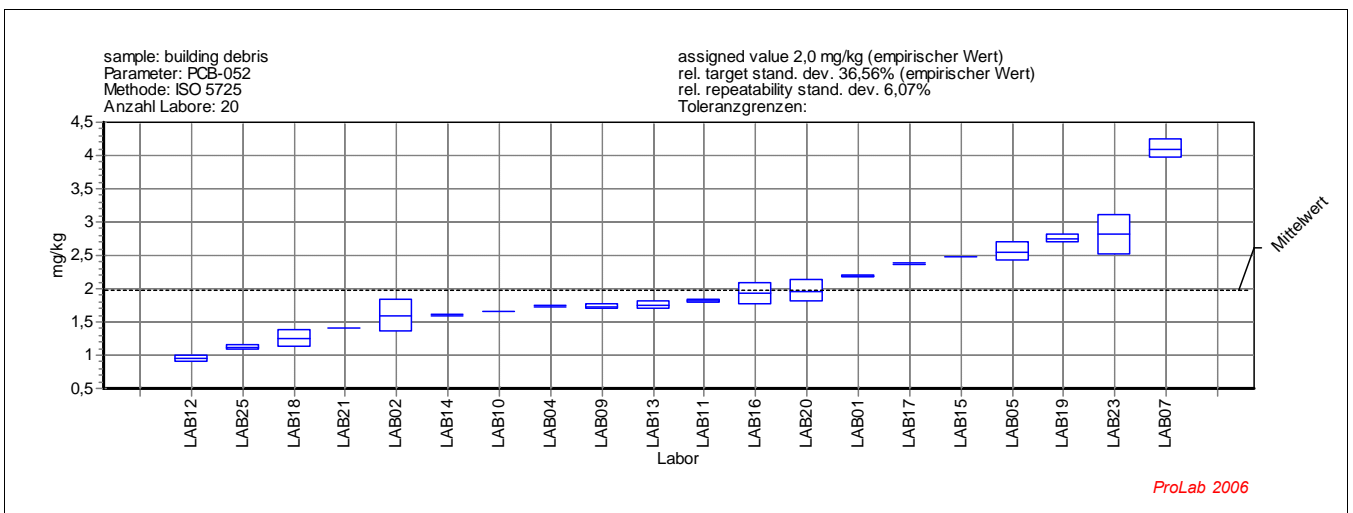
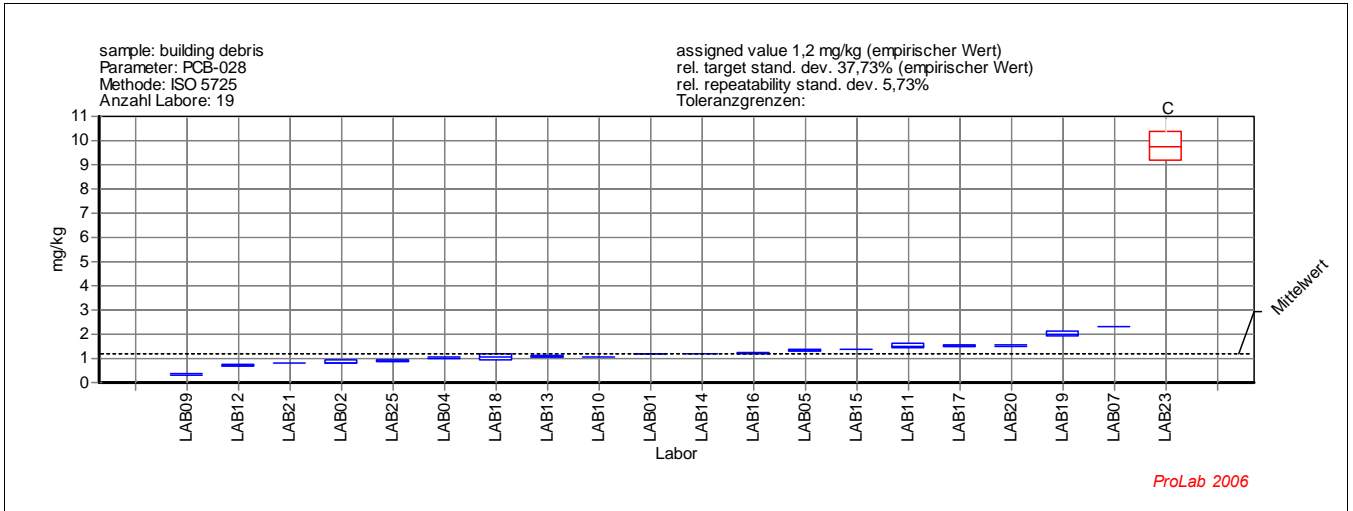
Analyte	Lab. No.	Extraction	clean-up	final de-termination	result 1	result 2	Mean	unit	remark
PCB180	LAB01	soxhlet	silica H2SO4	GC-MS	0.29	0.29	0.29	mg/kg	
PCB180	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	0.26	0.29	0.28	mg/kg	
PCB180	LAB04	shaking	silica H2SO4	GC-MS	0.23	0.22	0.23	mg/kg	
PCB180	LAB05	sonification	others	GC-ECD	0.27	0.27	0.27	mg/kg	
PCB180	LAB07	shaking	others	GC-MS	0.63	0.62	0.63	mg/kg	Grubbs
PCB180	LAB09	shaking	silica H2SO4	GC-ECD	0.30	0.29	0.29	mg/kg	
PCB180	LAB10	shaking	silica gel	GC-ECD	0.18	0.19	0.18	mg/kg	
PCB180	LAB11	soxhlet	silica gel	GC-ECD	0.32	0.32	0.32	mg/kg	
PCB180	LAB12	sonification	none	GC-MS	0.35	0.36	0.36	mg/kg	
PCB180	LAB13	soxhlet	AgNO3-silica	GC-MS	0.24	0.25	0.25	mg/kg	
PCB180	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	0.24	0.25	0.24	mg/kg	
PCB180	LAB15	shaking	AgNO3-silica	GC-ECD	0.31	0.31	0.31	mg/kg	
PCB180	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	0.30	0.32	0.31	mg/kg	
PCB180	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	0.31	0.32	0.31	mg/kg	
PCB180	LAB18	sonification	benzenesulfonic acid-silica	others	0.32	0.33	0.33	mg/kg	
PCB180	LAB19	soxhlet	AgNO3-silica	GC-ECD	0.50	0.50	0.50	mg/kg	Grubbs
PCB180	LAB20	soxhlet	AgNO3-silica	GC-MS	0.33	0.34	0.33	mg/kg	
PCB180	LAB21	sonification	Florisil	GC-ECD	0.24	0.25	0.25	mg/kg	
PCB180	LAB25	soxhlet	silica gel	GC-MS	0.24	0.25	0.25	mg/kg	
PCBSUM7	LAB01	soxhlet	silica H2SO4	GC-MS	3.67	3.66	3.66	mg/kg	
PCBSUM7	LAB02	shaking	benzenesulfonic acid-silica	GC-ECD	2.10	2.33	2.21	mg/kg	
PCBSUM7	LAB04	shaking	silica H2SO4	GC-MS	2.22	2.19	2.21	mg/kg	
PCBSUM7	LAB05	sonification	others	GC-ECD	3.64	3.58	3.61	mg/kg	
PCBSUM7	LAB07	shaking	others	GC-MS	7.00	6.70	6.85	mg/kg	Grubbs
PCBSUM7	LAB09	shaking	silica H2SO4	GC-ECD	3.07	3.04	3.05	mg/kg	
PCBSUM7	LAB10	shaking	silica gel	GC-ECD	2.44	2.44	2.44	mg/kg	
PCBSUM7	LAB11	soxhlet	silica gel	GC-ECD	3.25	3.21	3.23	mg/kg	
PCBSUM7	LAB12	sonification	none	GC-MS	4.01	3.37	3.69	mg/kg	
PCBSUM7	LAB13	soxhlet	AgNO3-silica	GC-MS	2.33	2.42	2.38	mg/kg	
PCBSUM7	LAB14	shaking	benzenesulfonic acid-silica	GC-ECD	2.47	2.55	2.51	mg/kg	
PCBSUM7	LAB15	shaking	AgNO3-silica	GC-ECD	3.49	3.56	3.53	mg/kg	
PCBSUM7	LAB16	shaking	benzenesulfonic acid-silica	GC-MS	2.72	2.85	2.79	mg/kg	
PCBSUM7	LAB17	soxhlet	benzenesulfonic acid-silica	GC-ECD	3.68	3.67	3.68	mg/kg	
PCBSUM7	LAB18	sonification	benzenesulfonic acid-silica	others	3.38	4.02	3.70	mg/kg	
PCBSUM7	LAB19	soxhlet	AgNO3-silica	GC-ECD	4.90	5.20	5.05	mg/kg	
PCBSUM7	LAB20	soxhlet	AgNO3-silica	GC-MS	2.93	2.90	2.92	mg/kg	
PCBSUM7	LAB21	sonification	Florisil	GC-ECD	2.33	2.52	2.43	mg/kg	
PCBSUM7	LAB25	soxhlet	silica gel	GC-MS	2.33	2.49	2.41	mg/kg	

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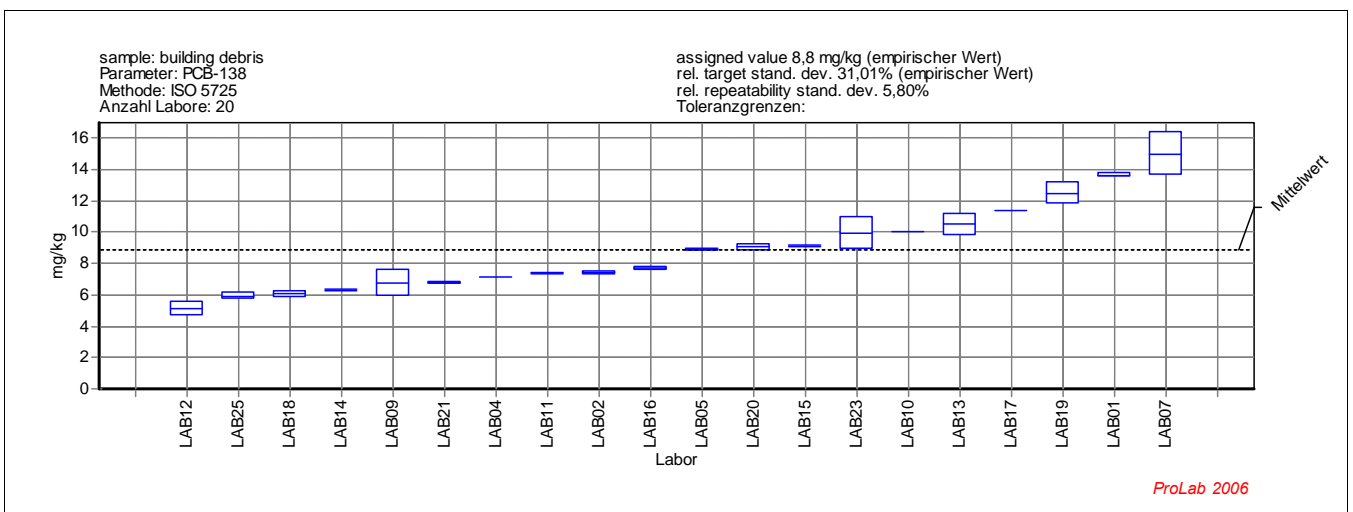
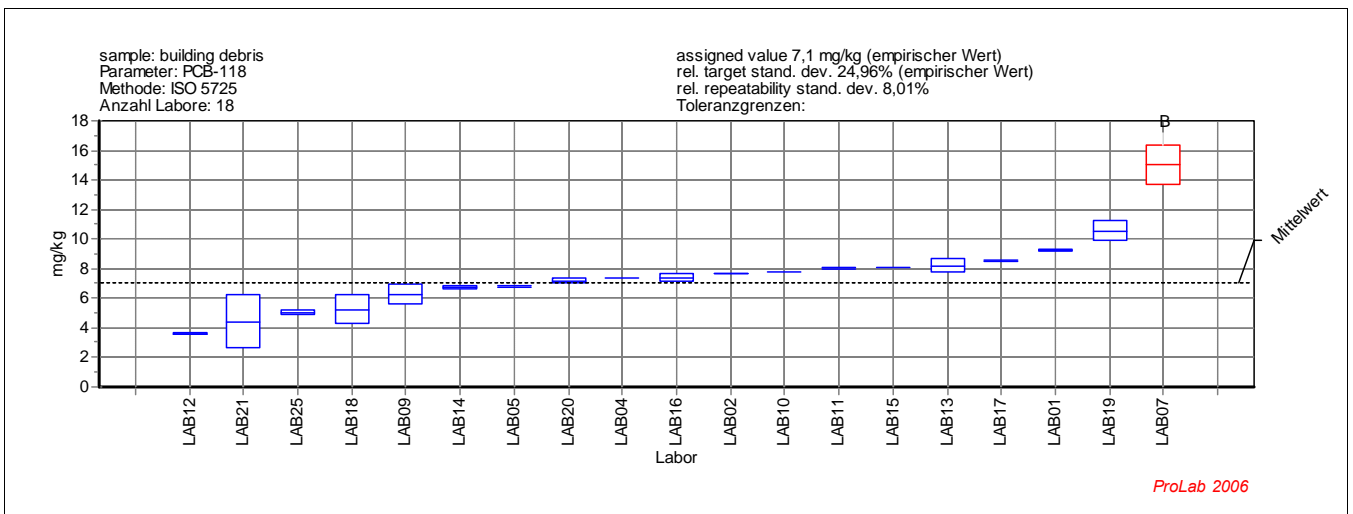
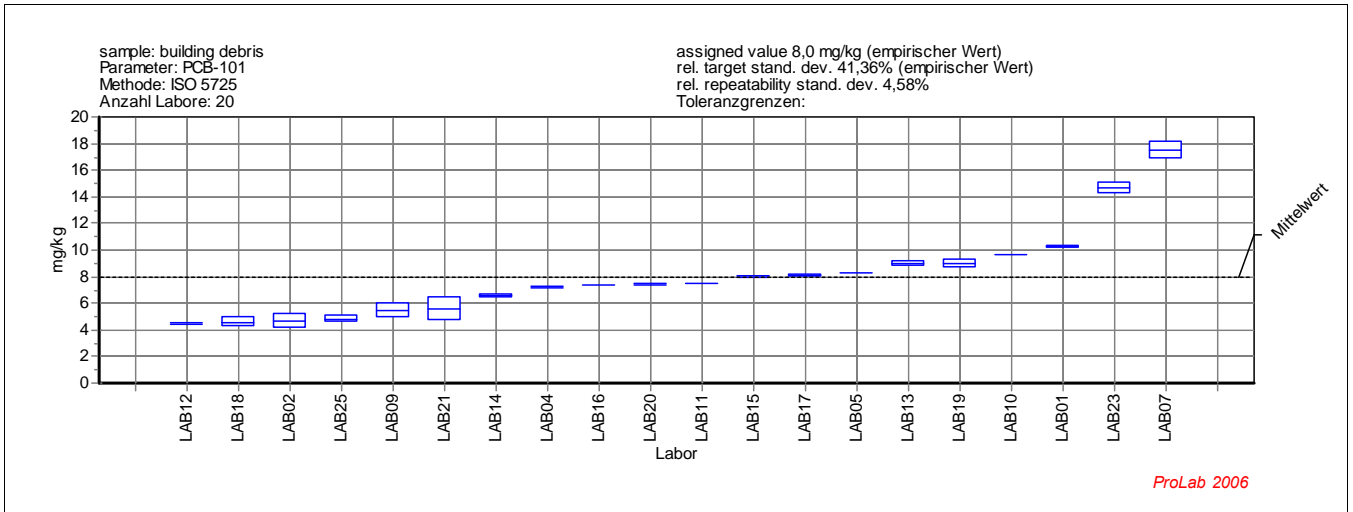
Graphical data presentation

Translations: Anzahl Labore (number of laboratories)
Mittelwert (mean value)
Rel. Soll-Std. (relative reproducibility standard deviation)

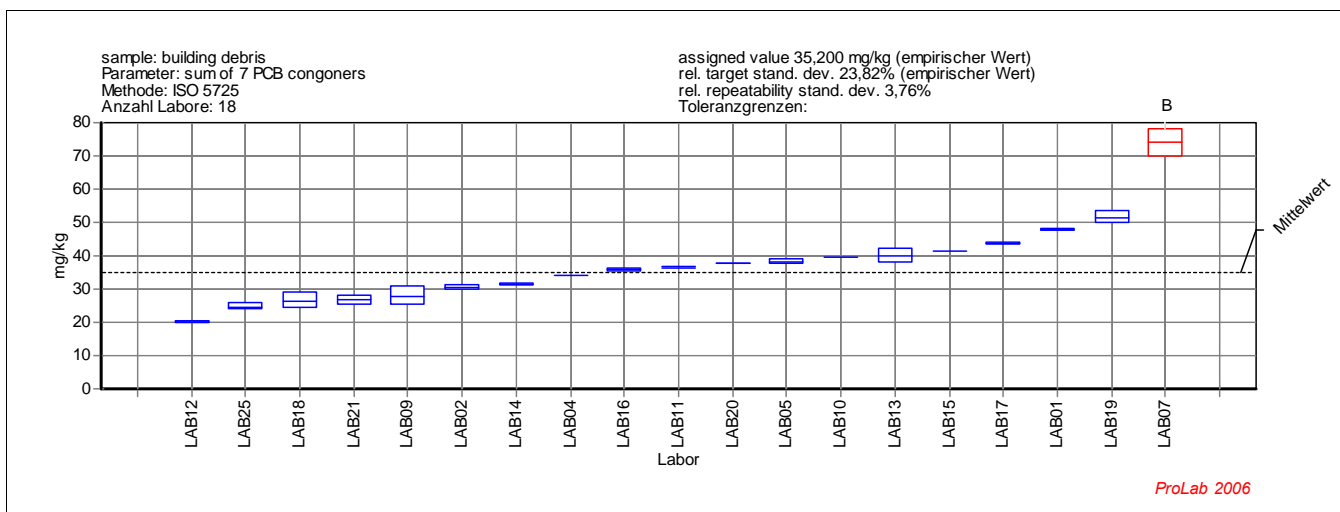
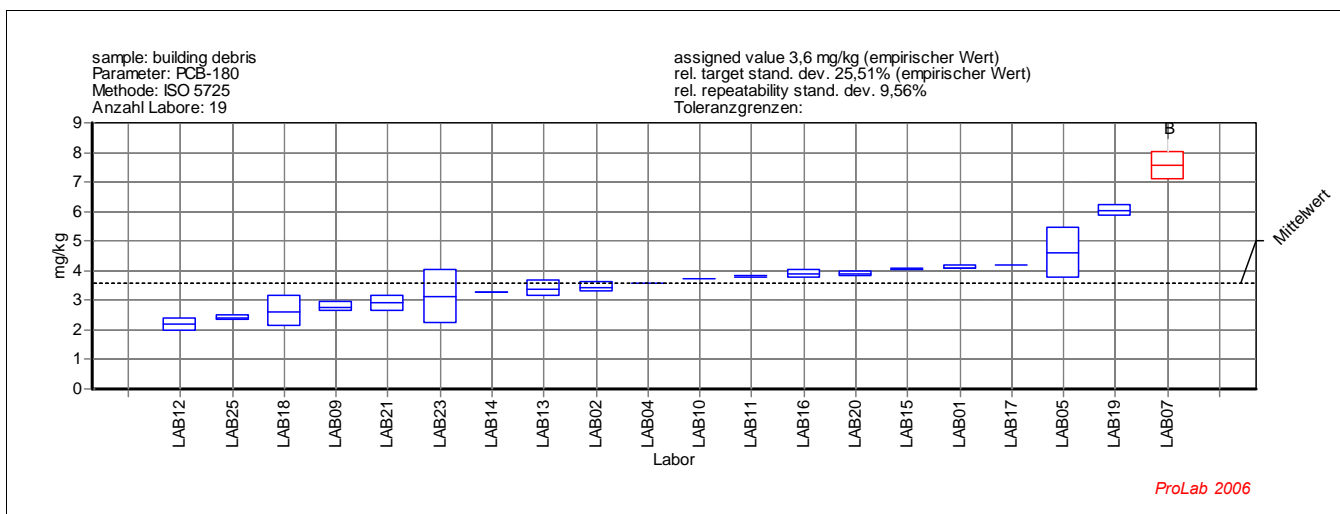
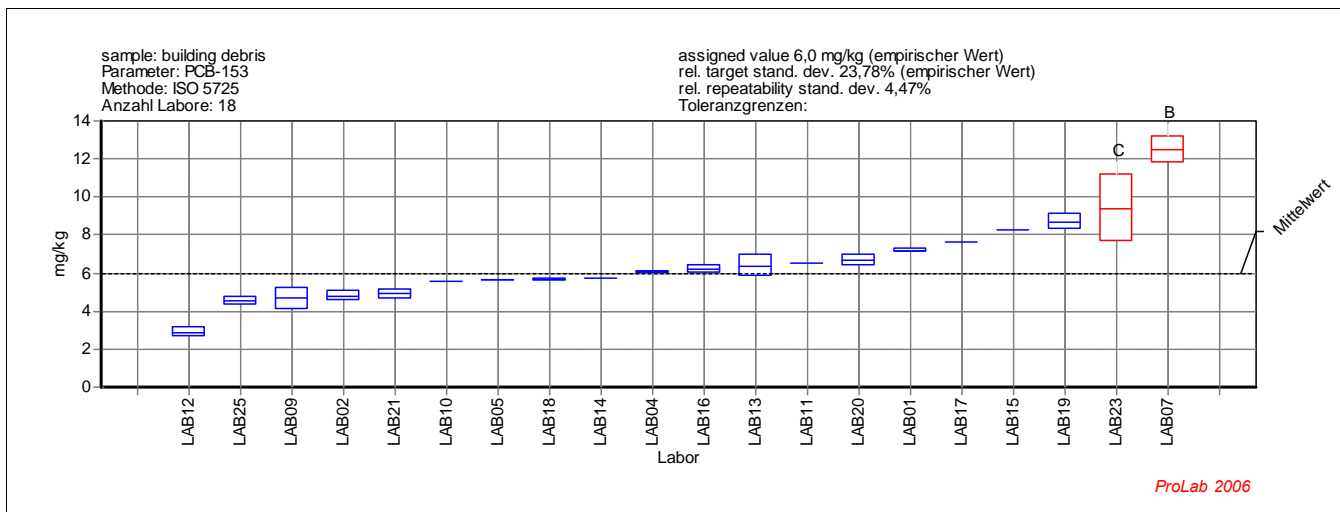
Building debris



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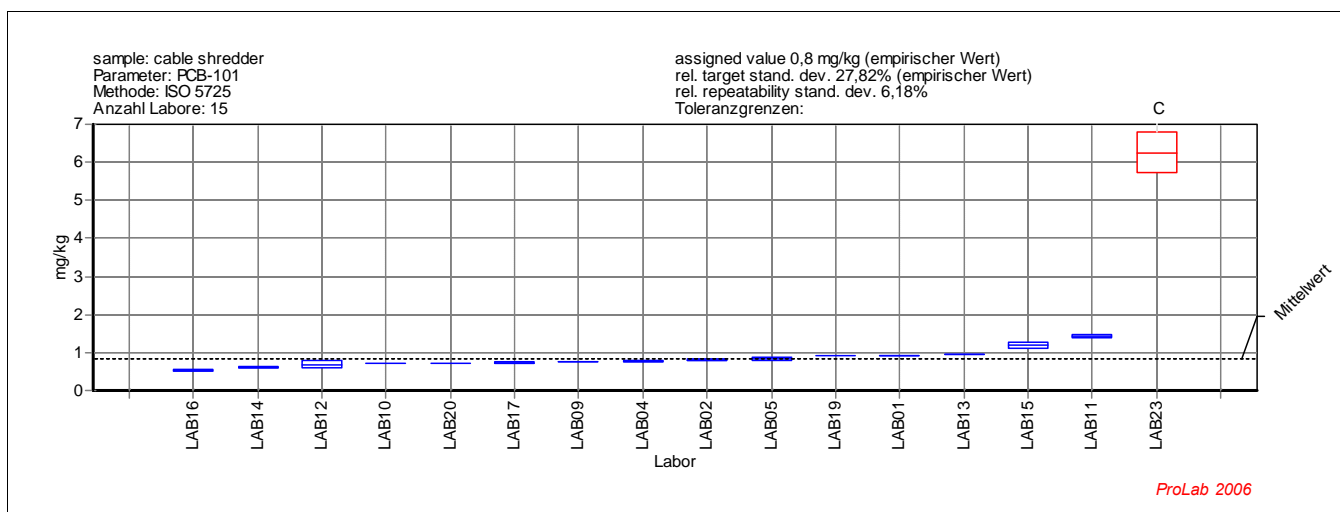
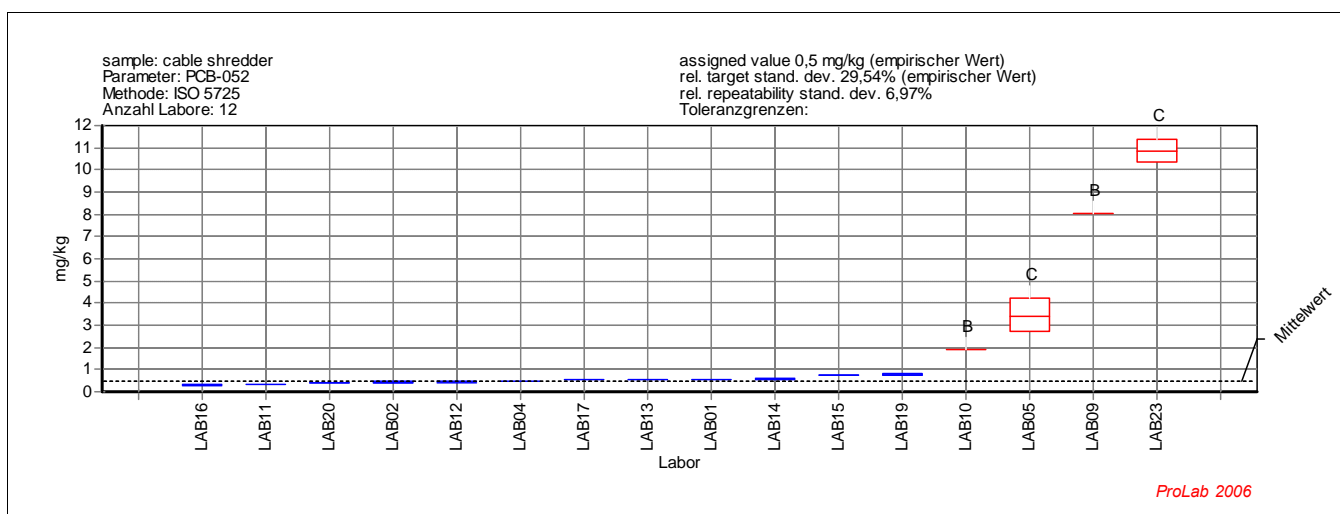
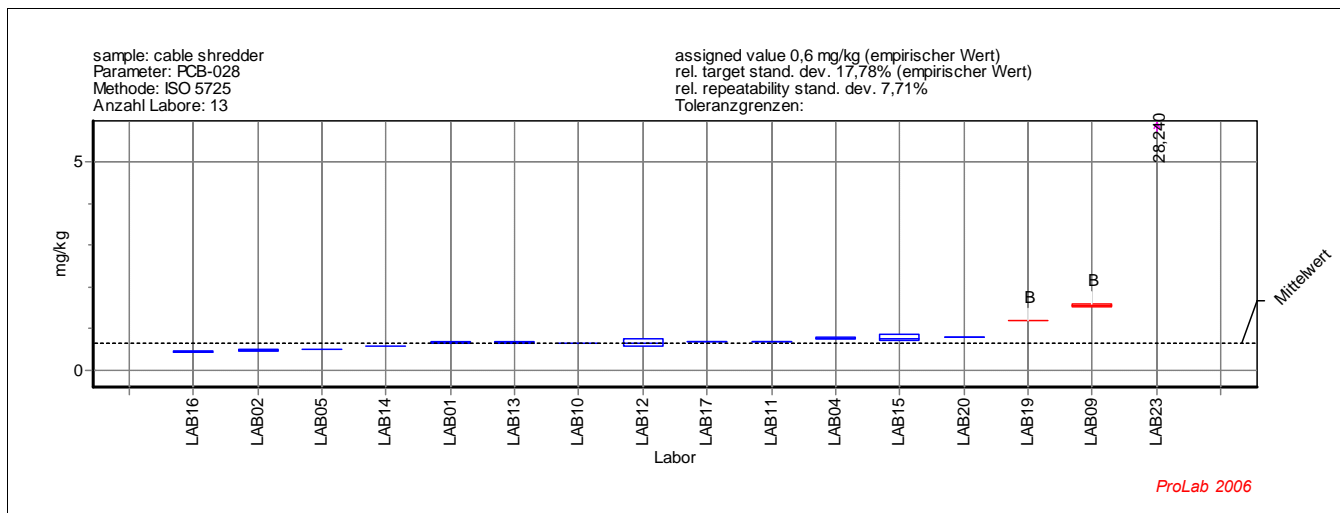


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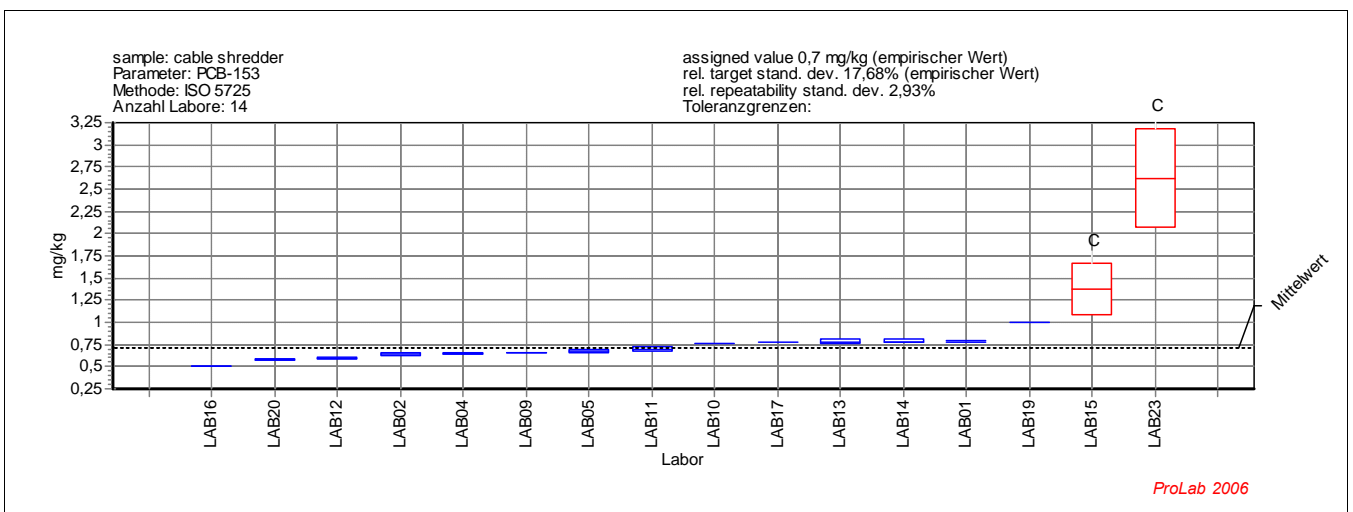
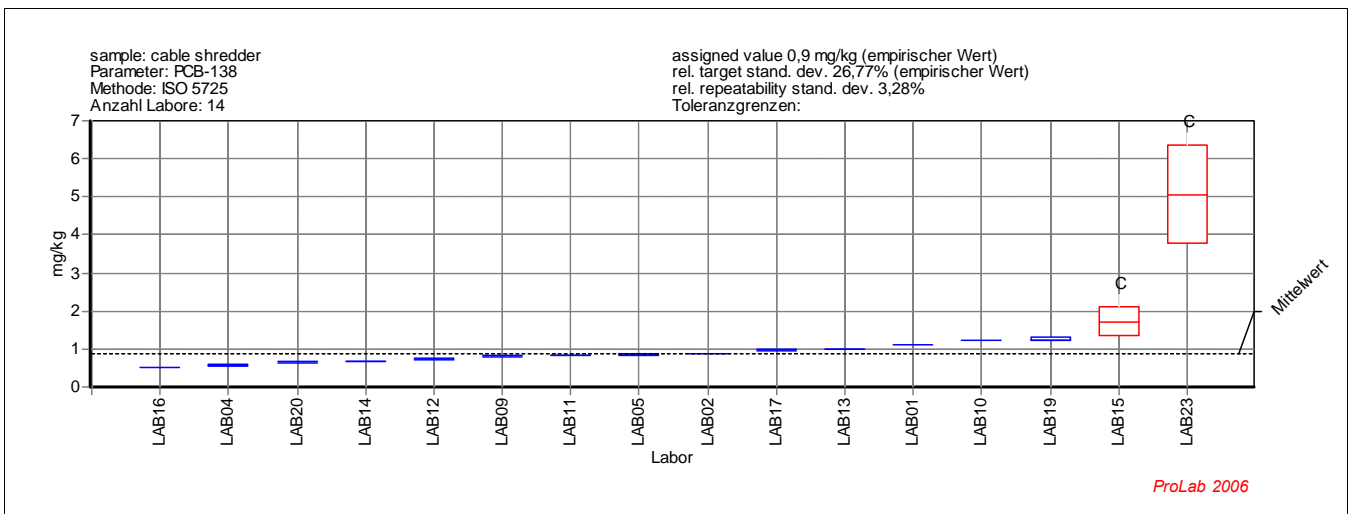
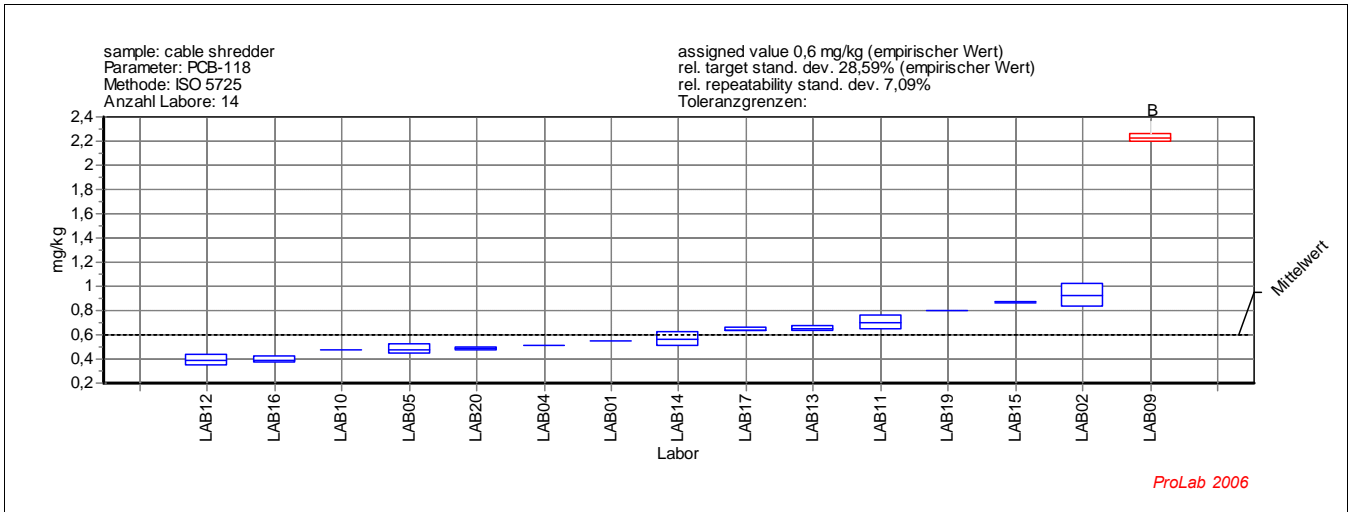


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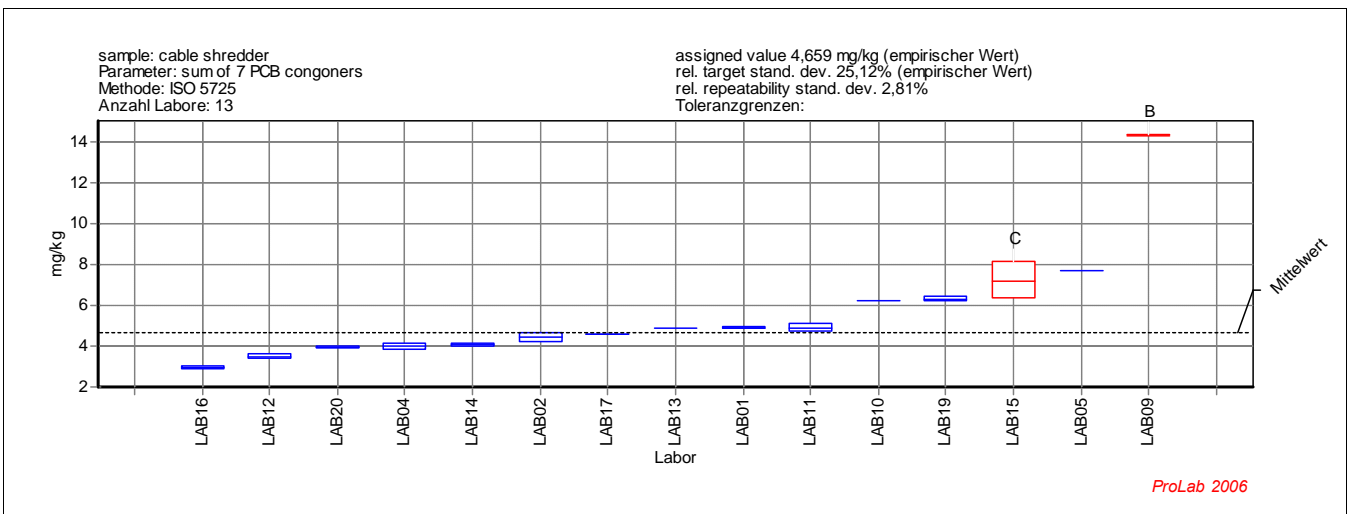
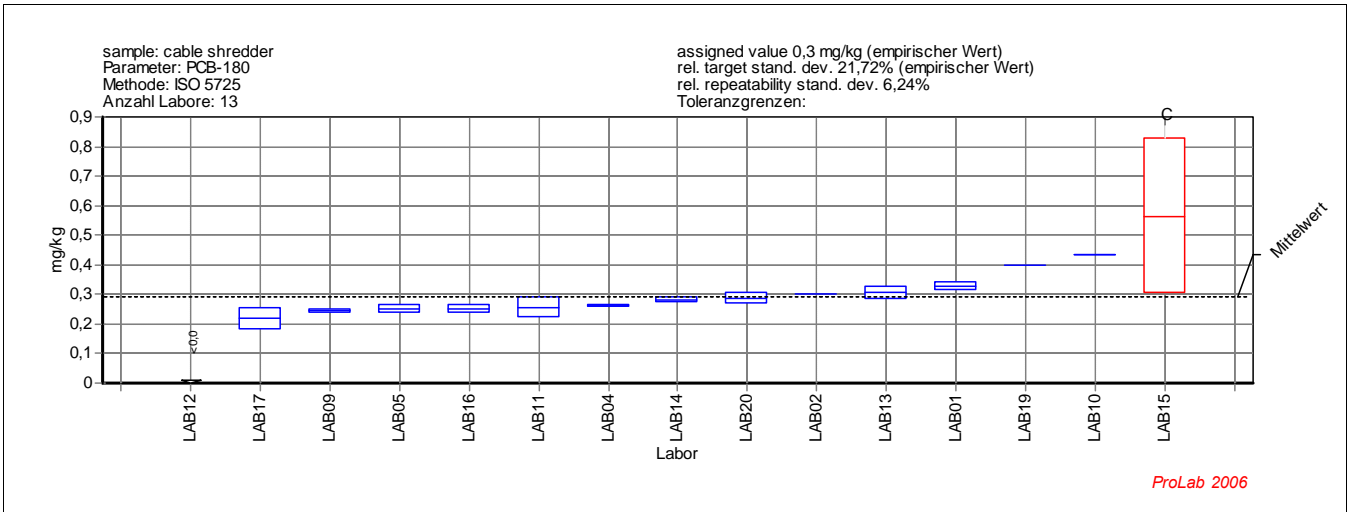
Cable shredder



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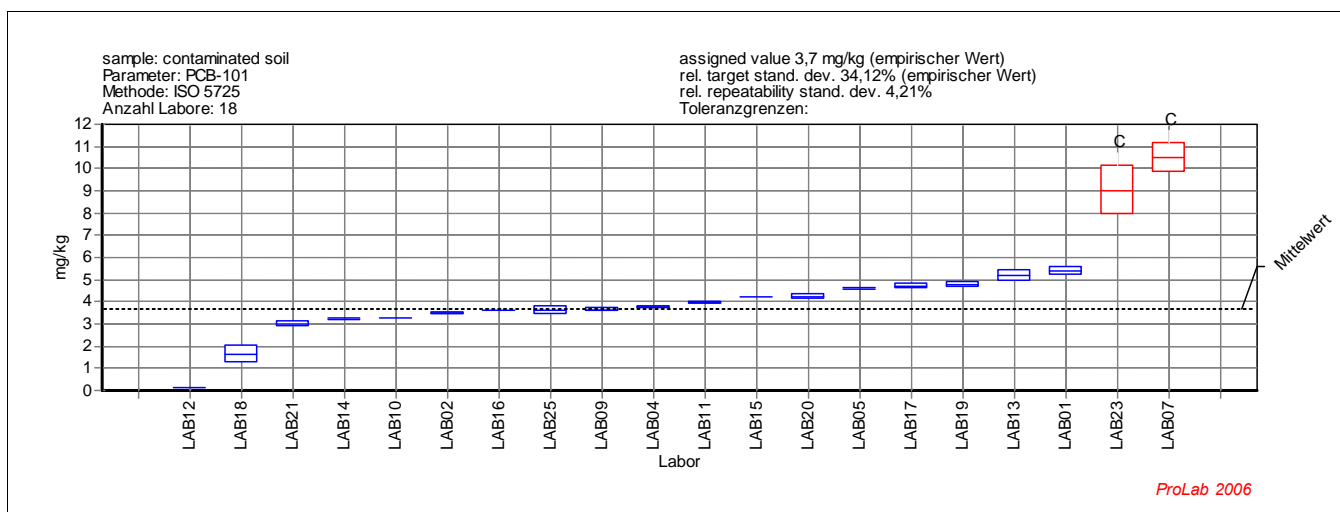
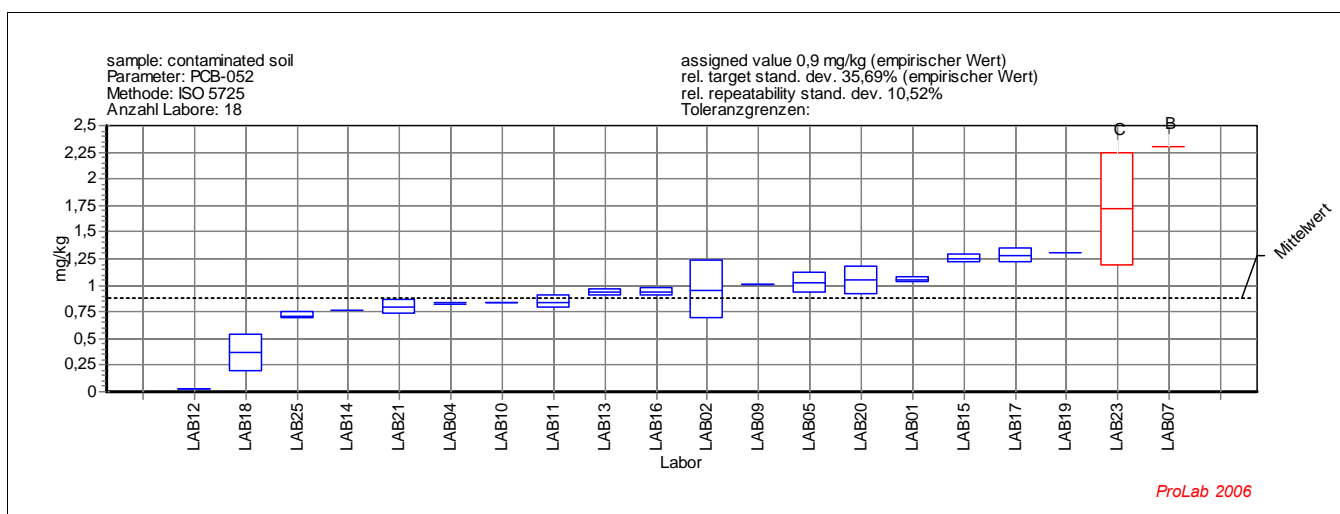
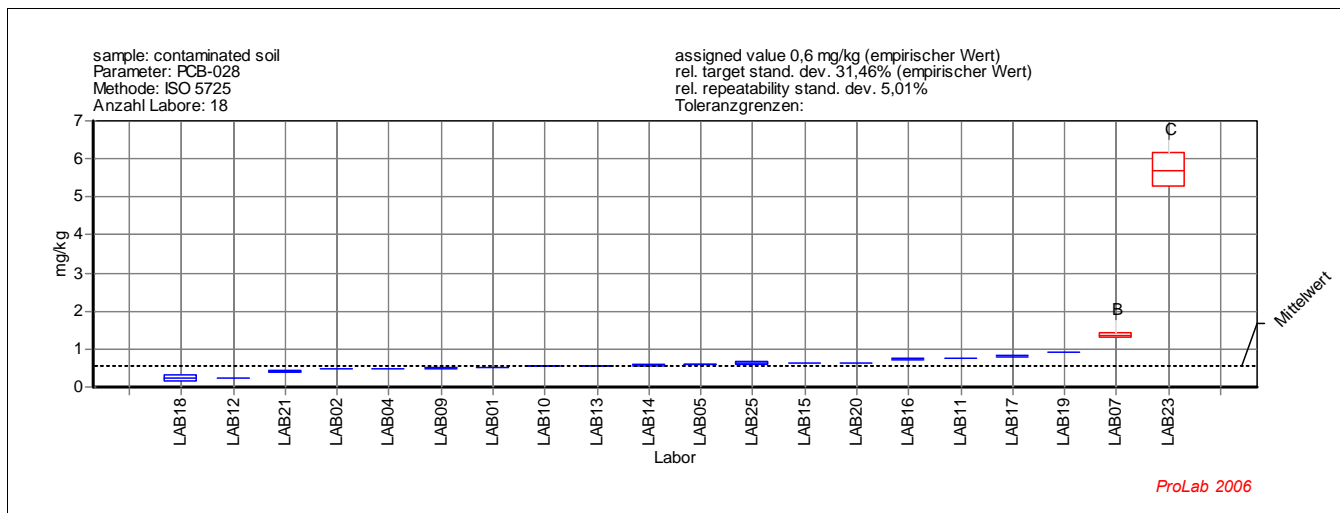


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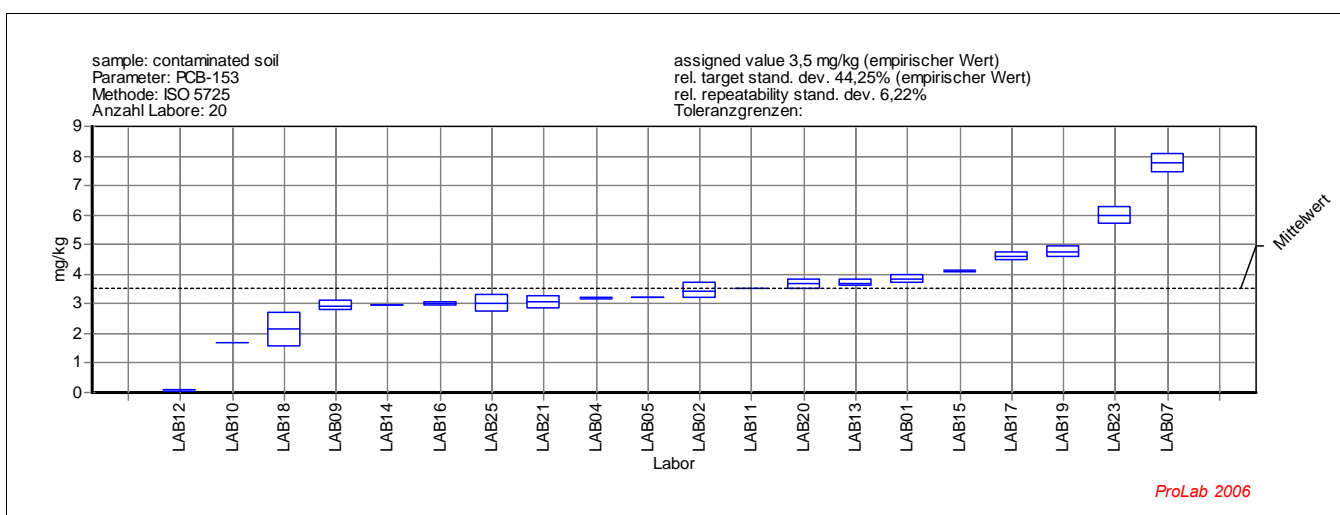
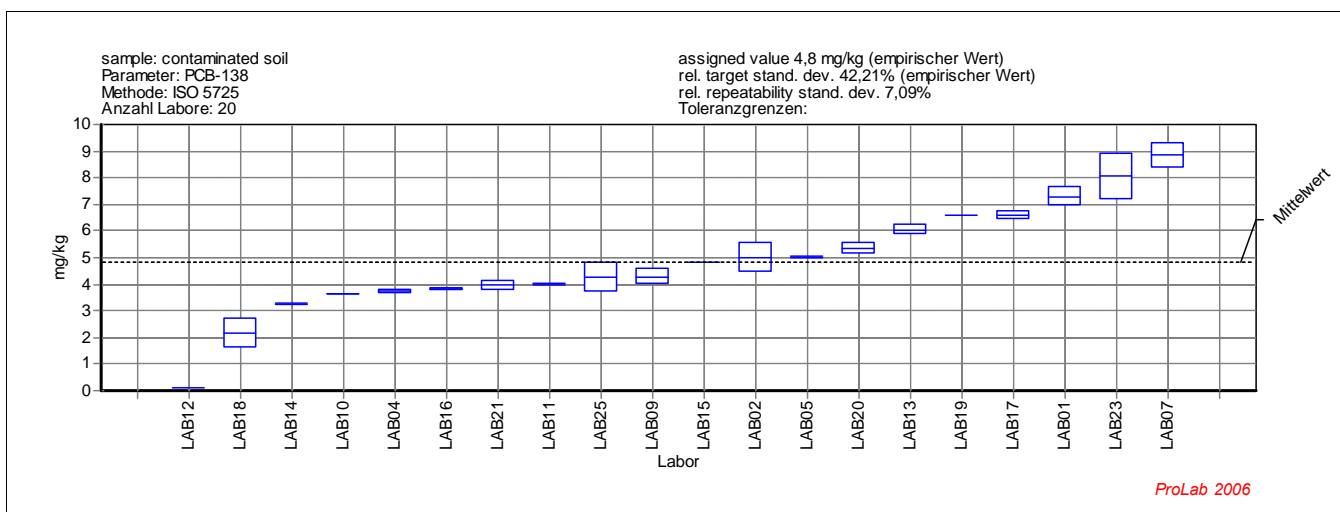
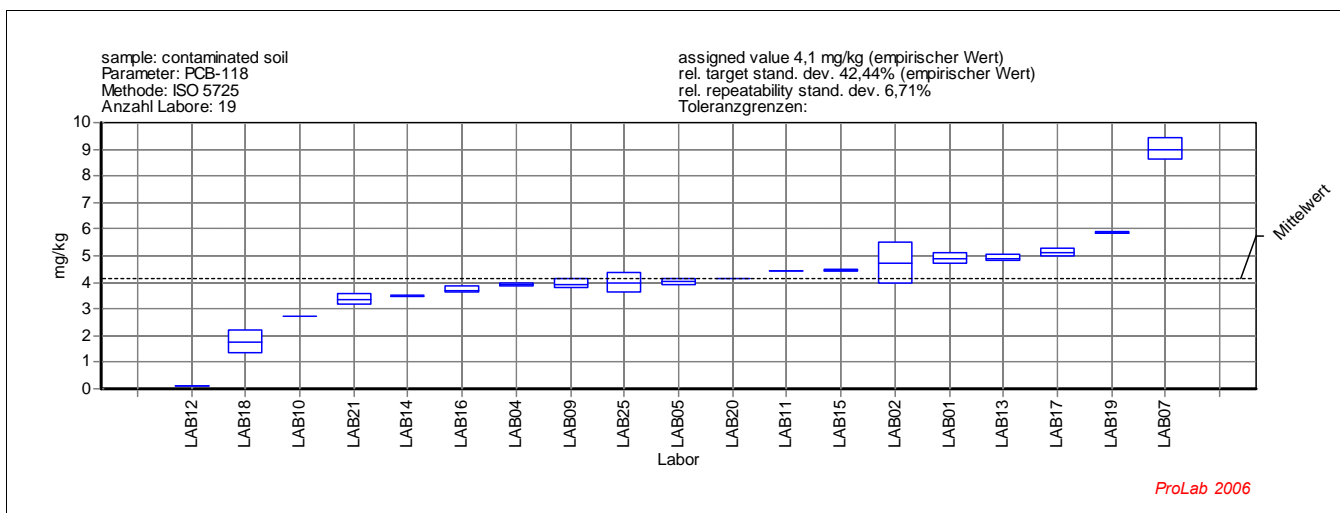


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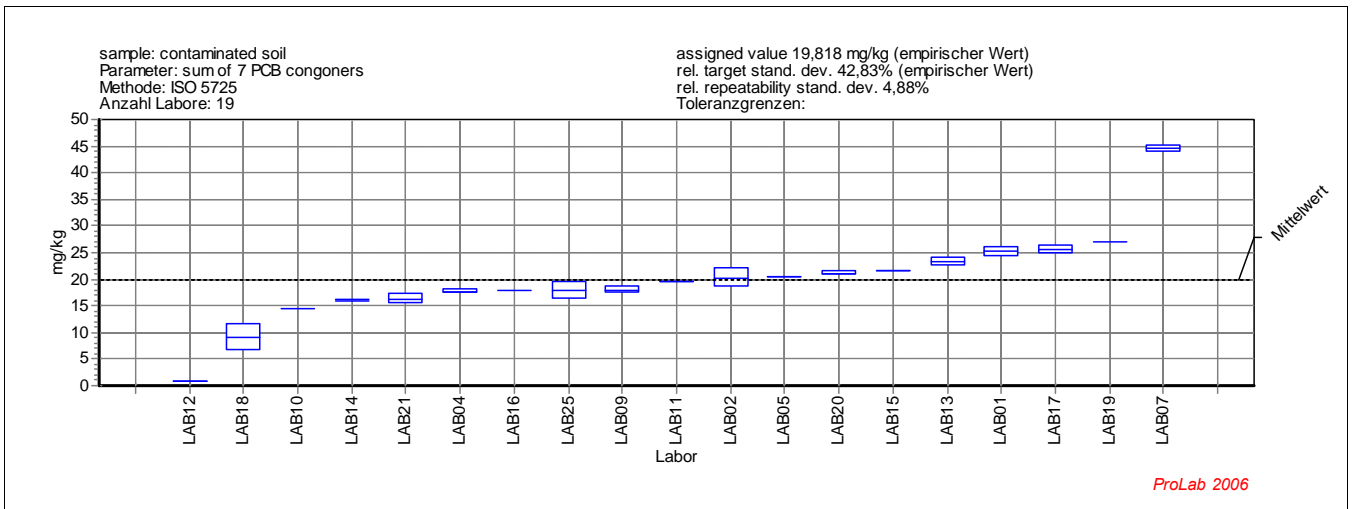
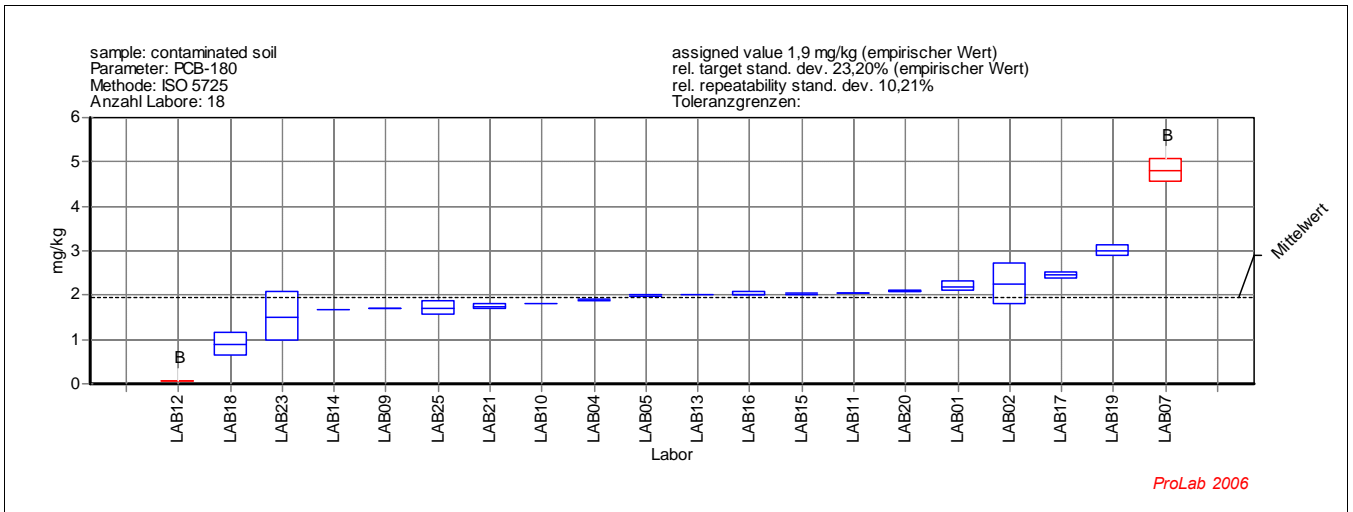
Contaminated soil



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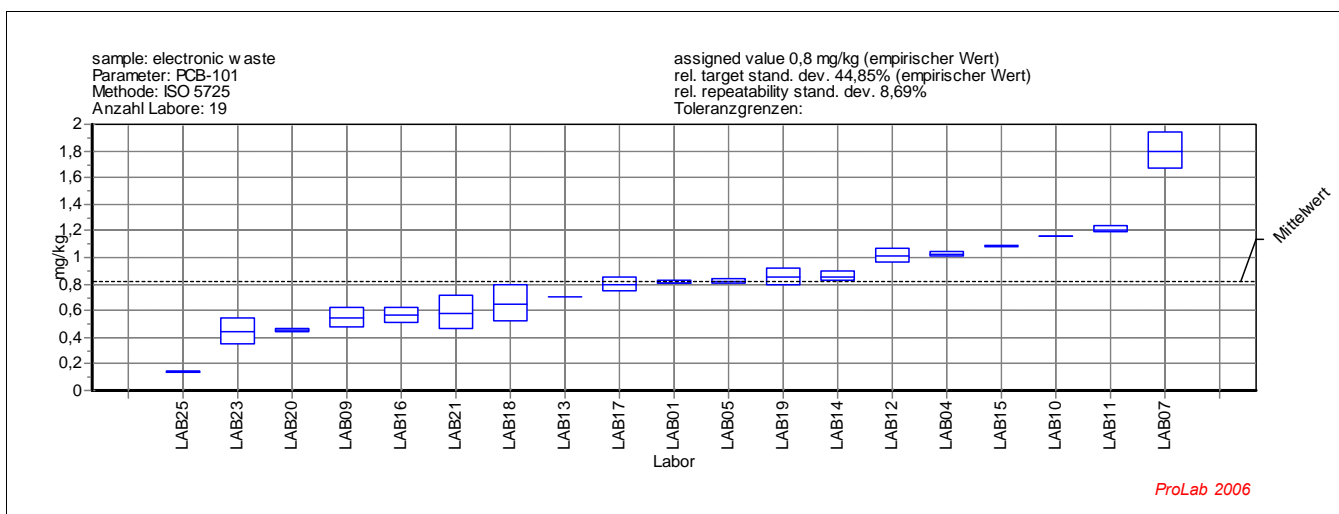
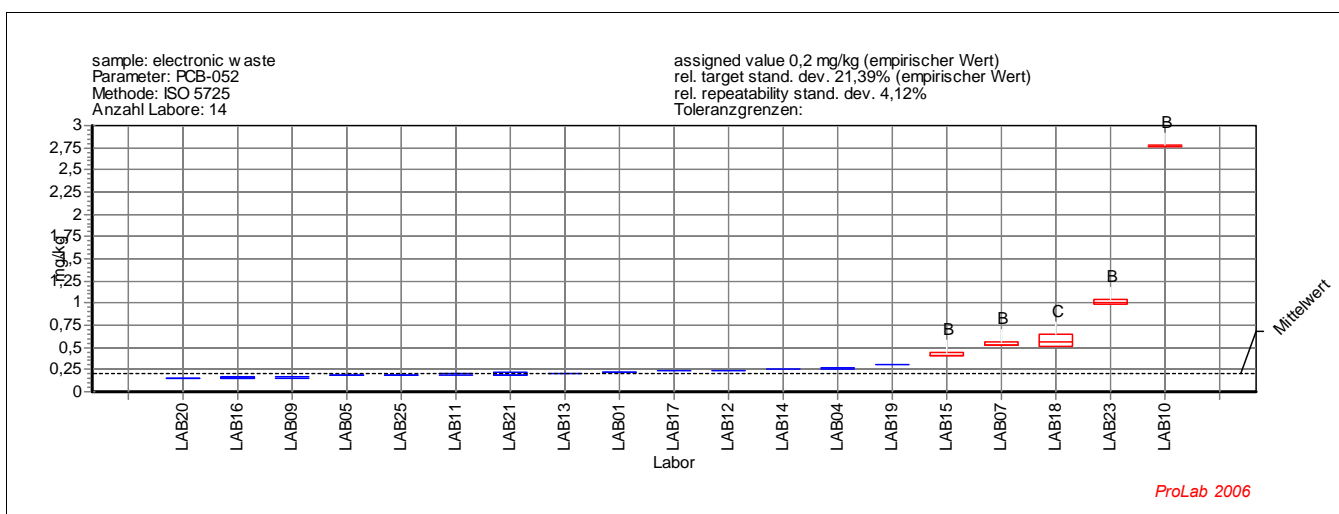
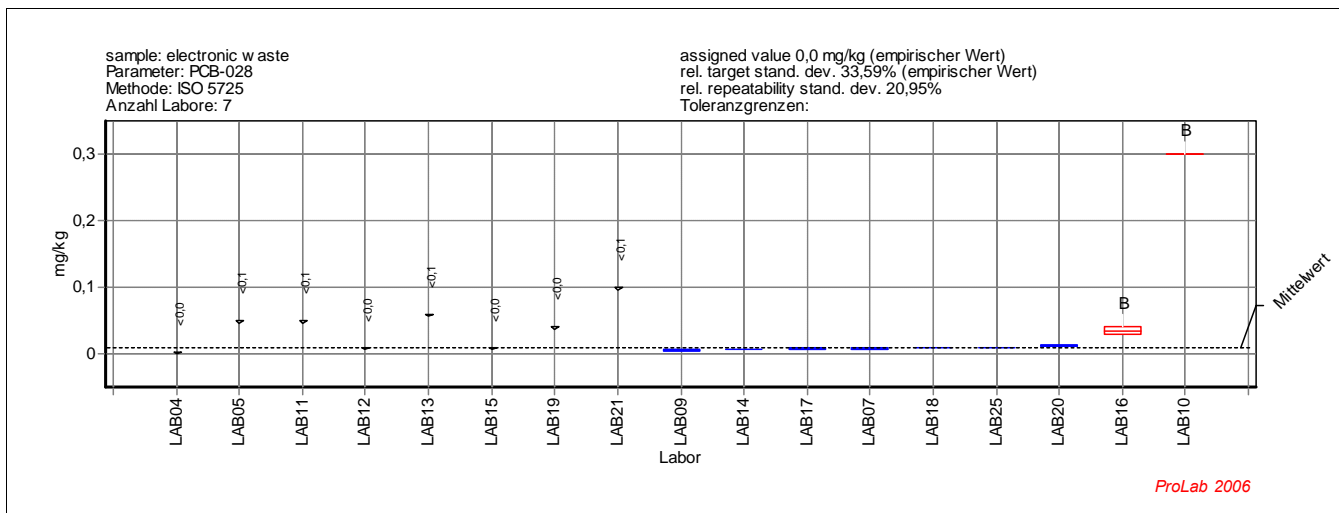


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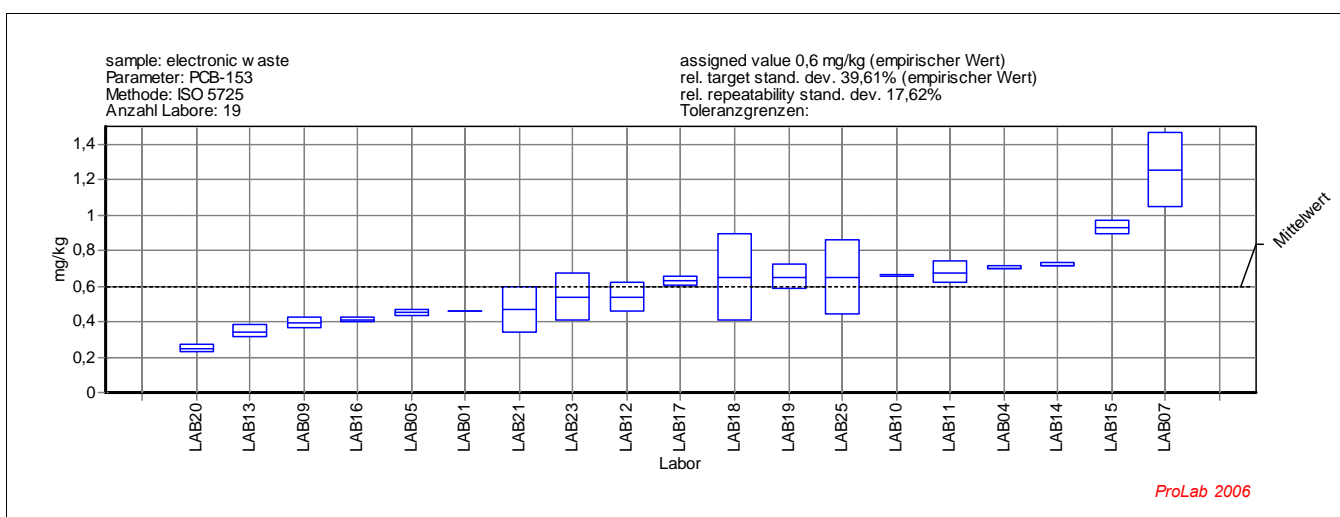
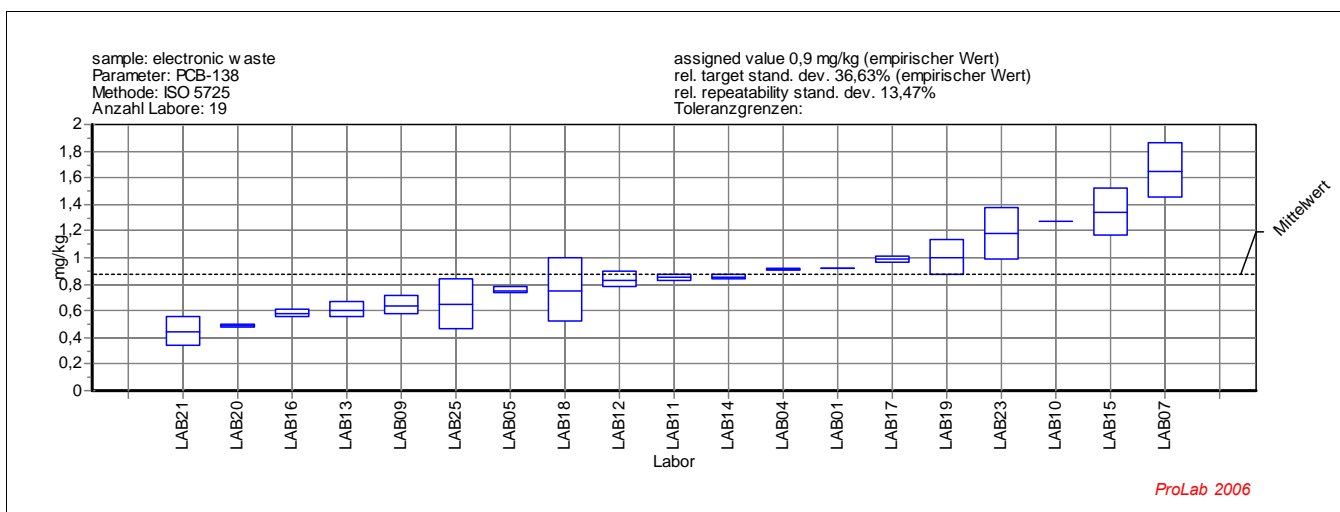
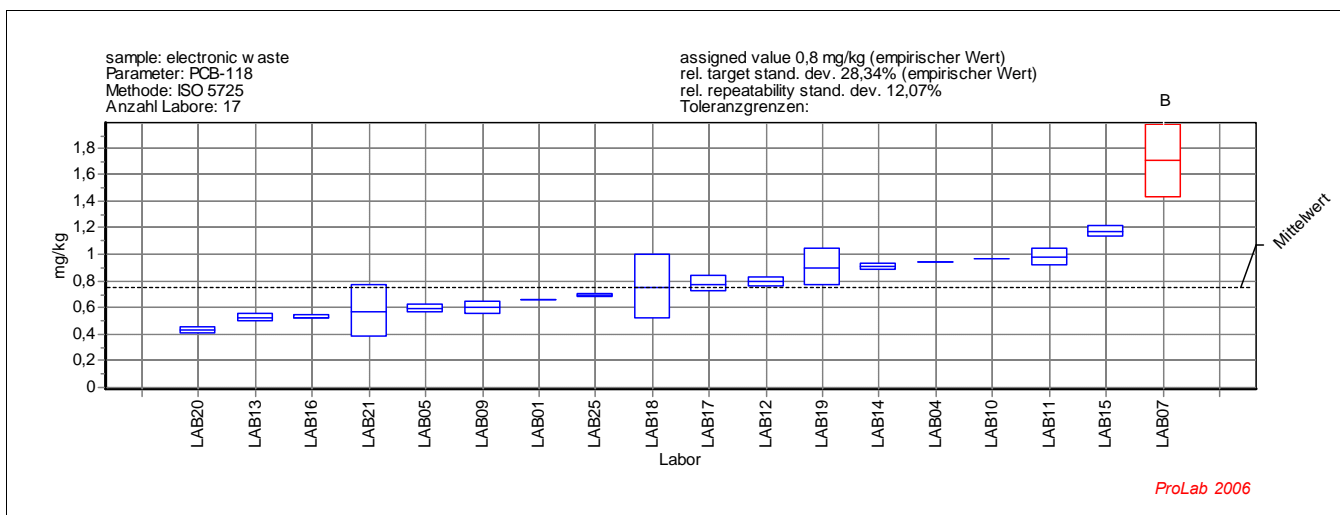


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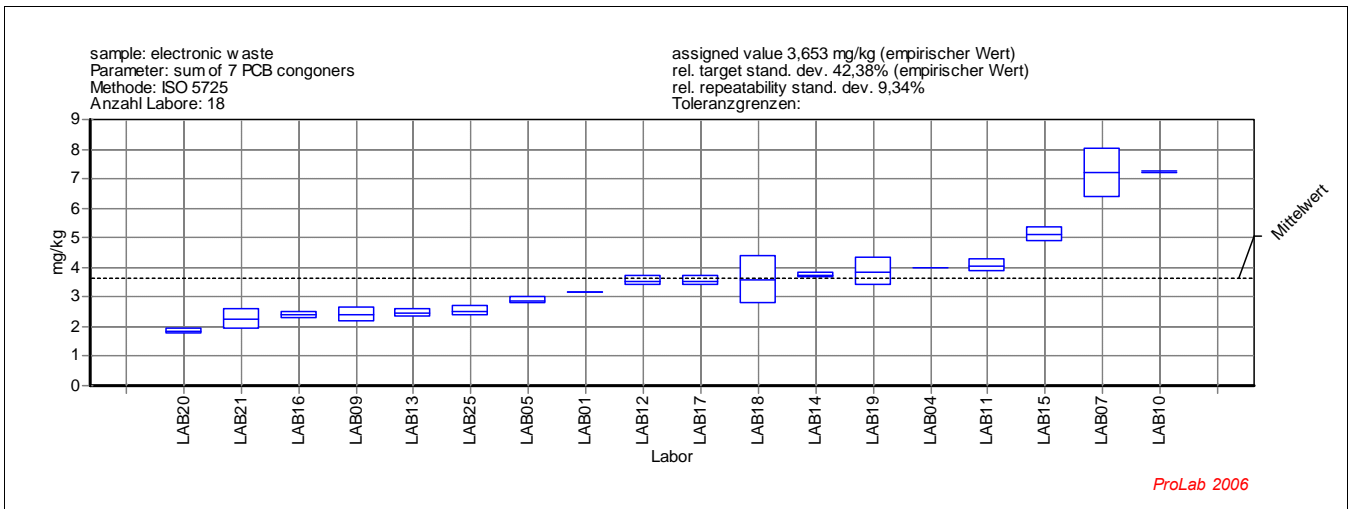
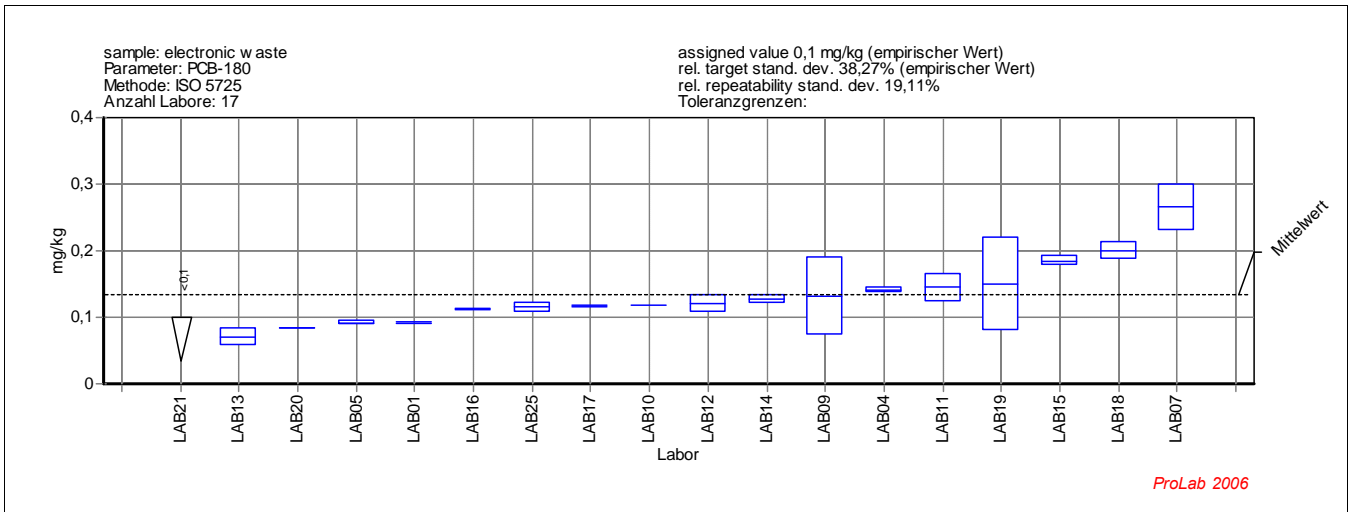
Electronic waste



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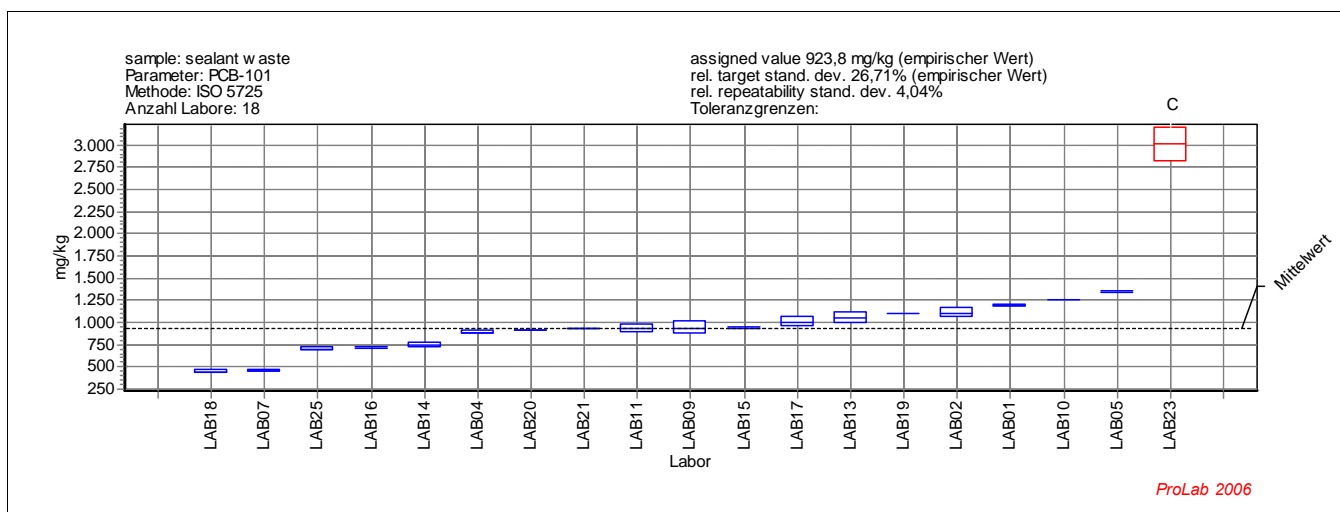
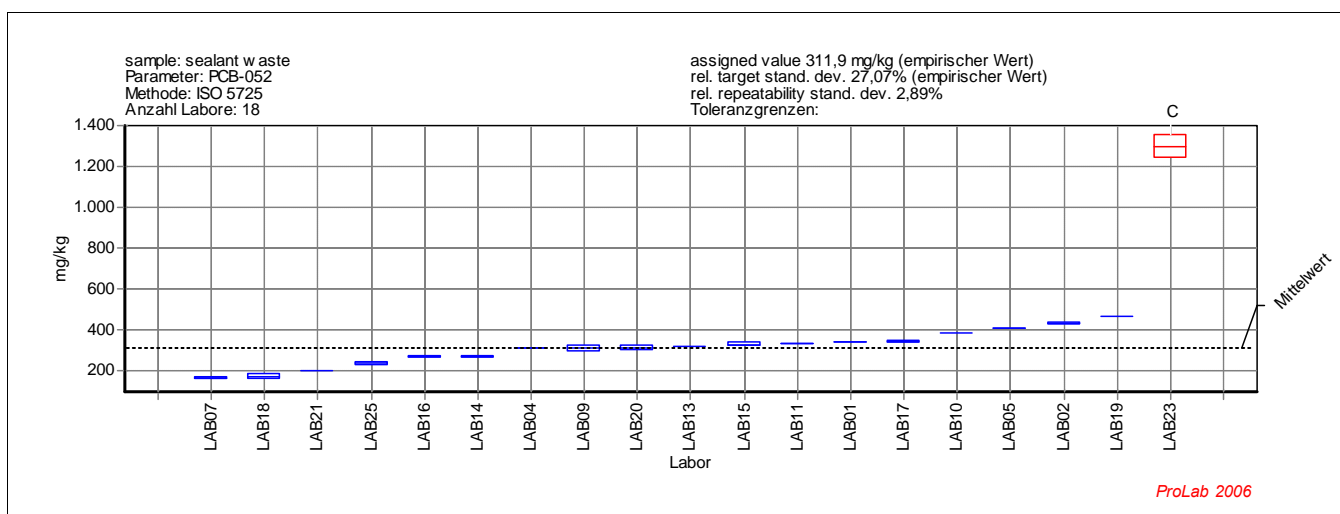
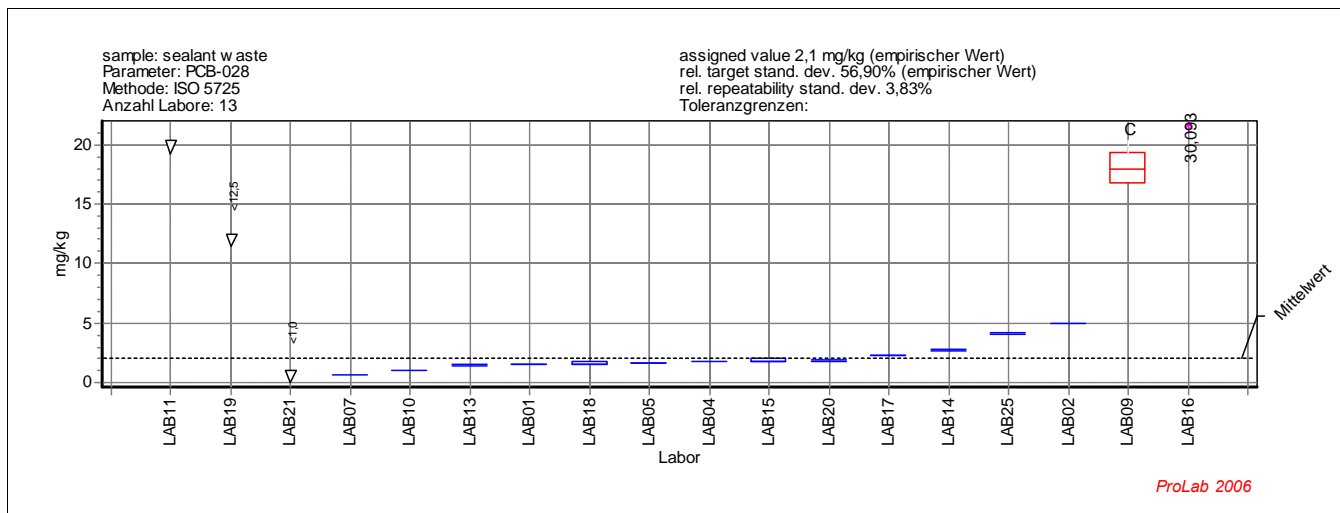


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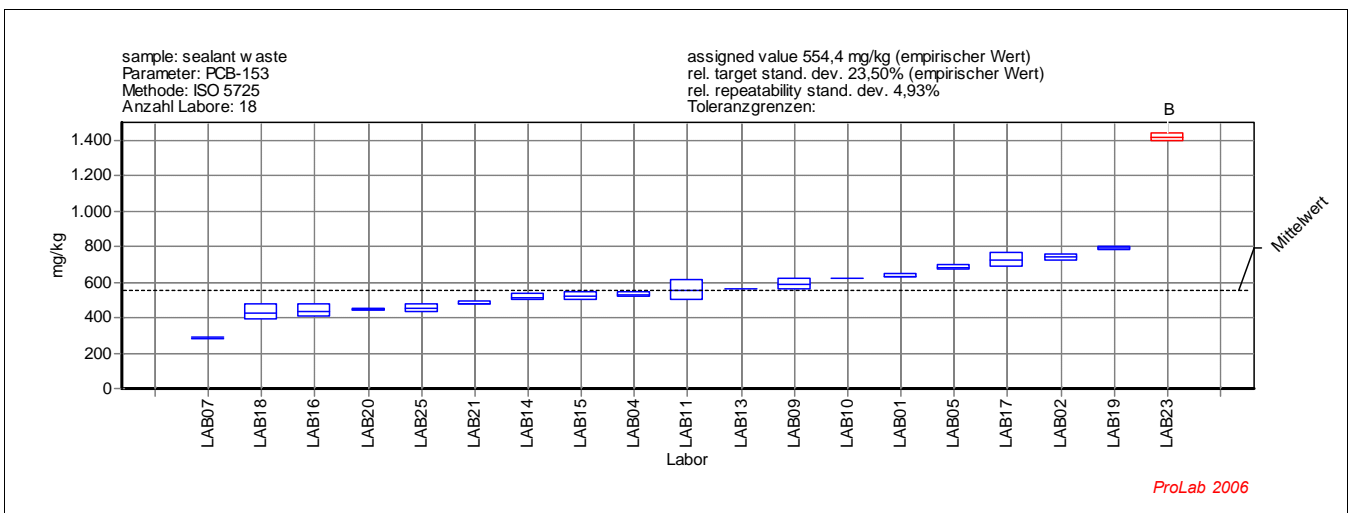
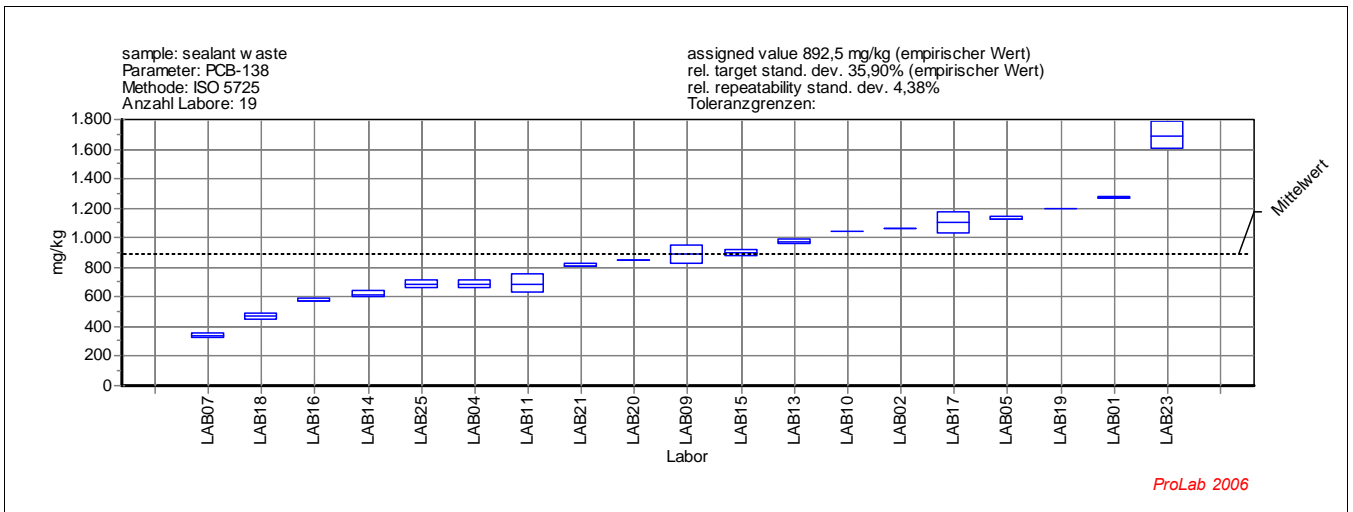
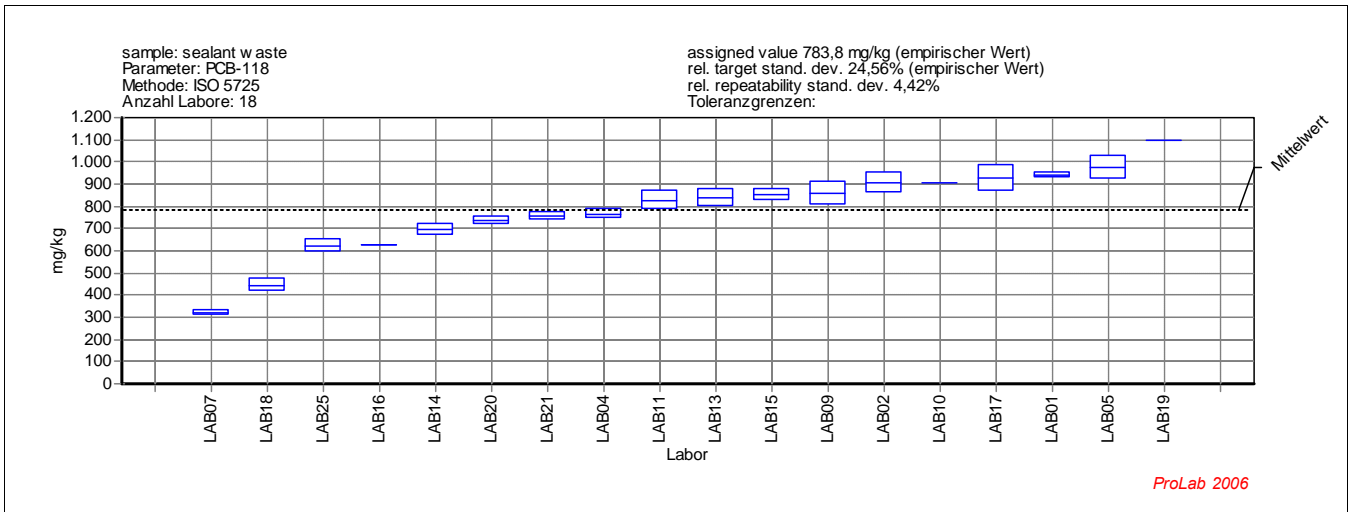


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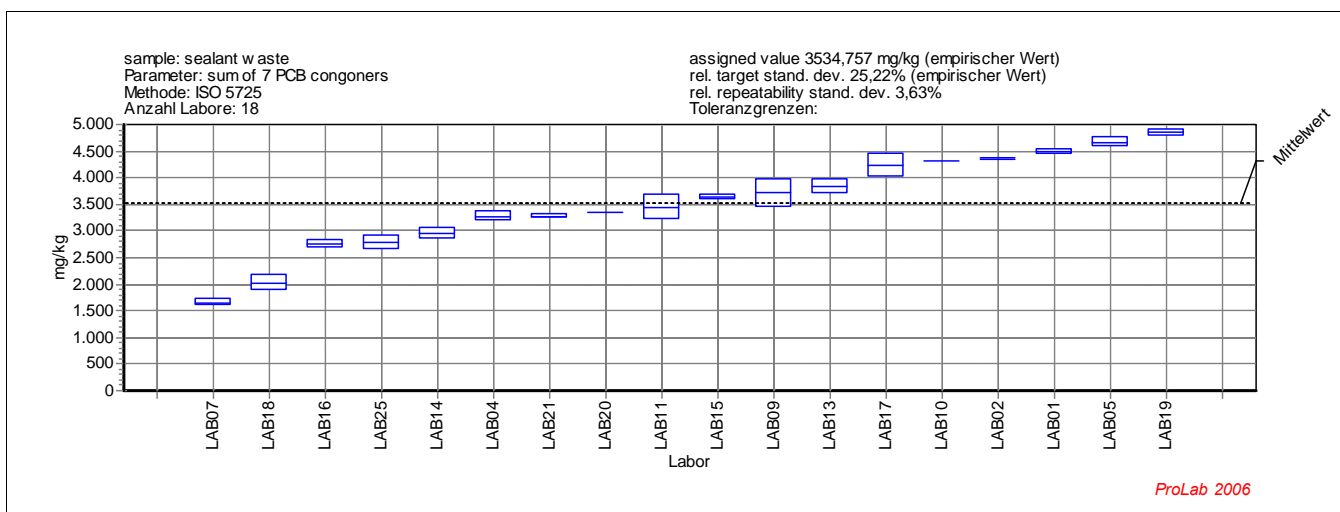
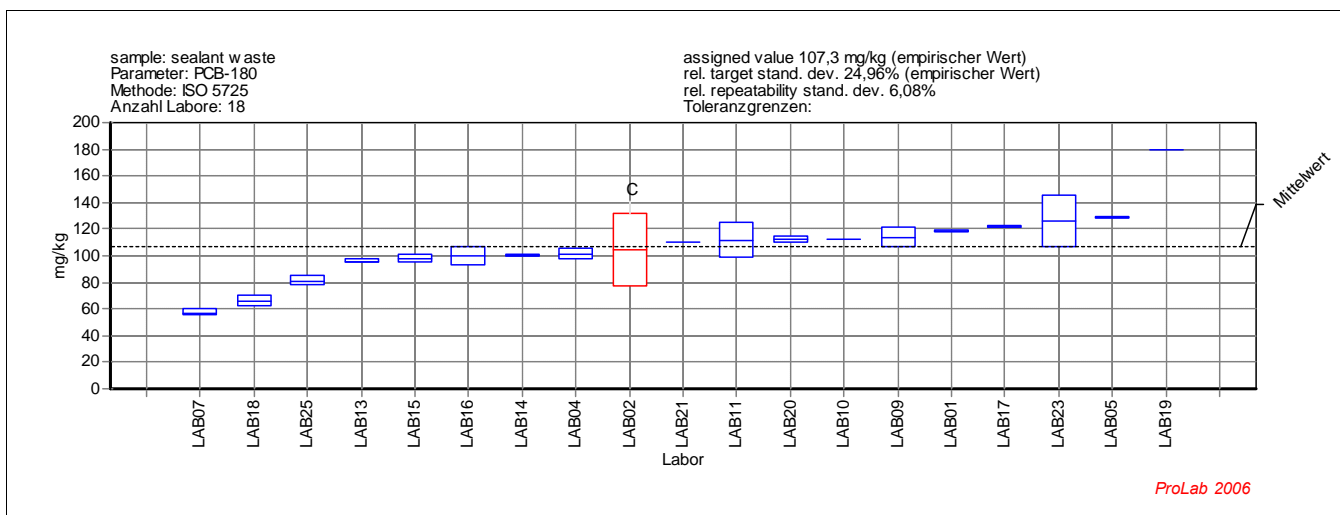
Sealant waste



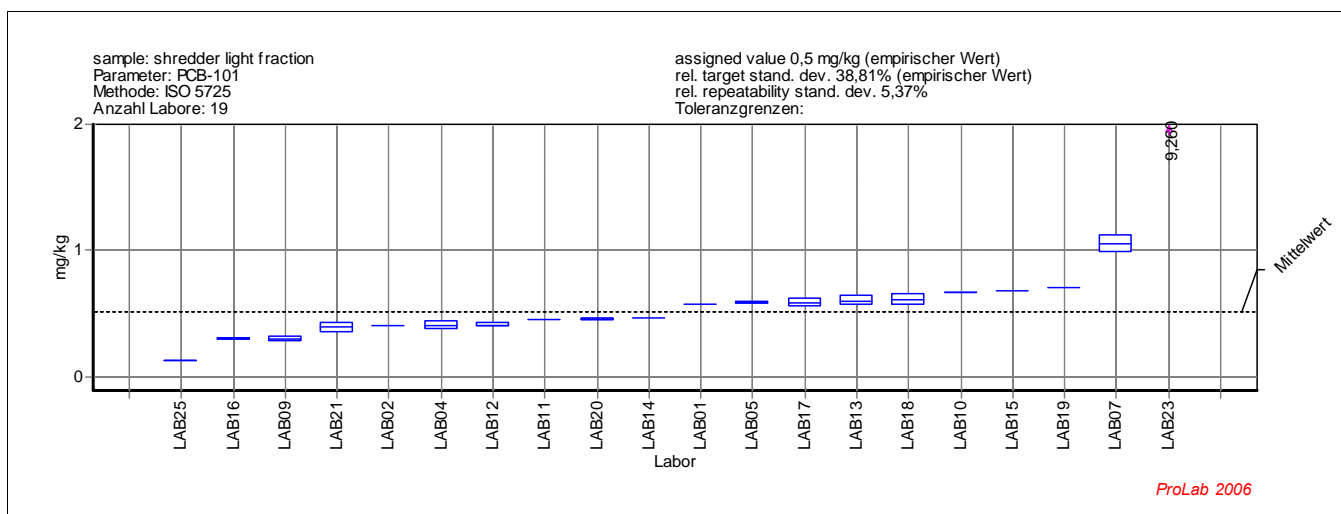
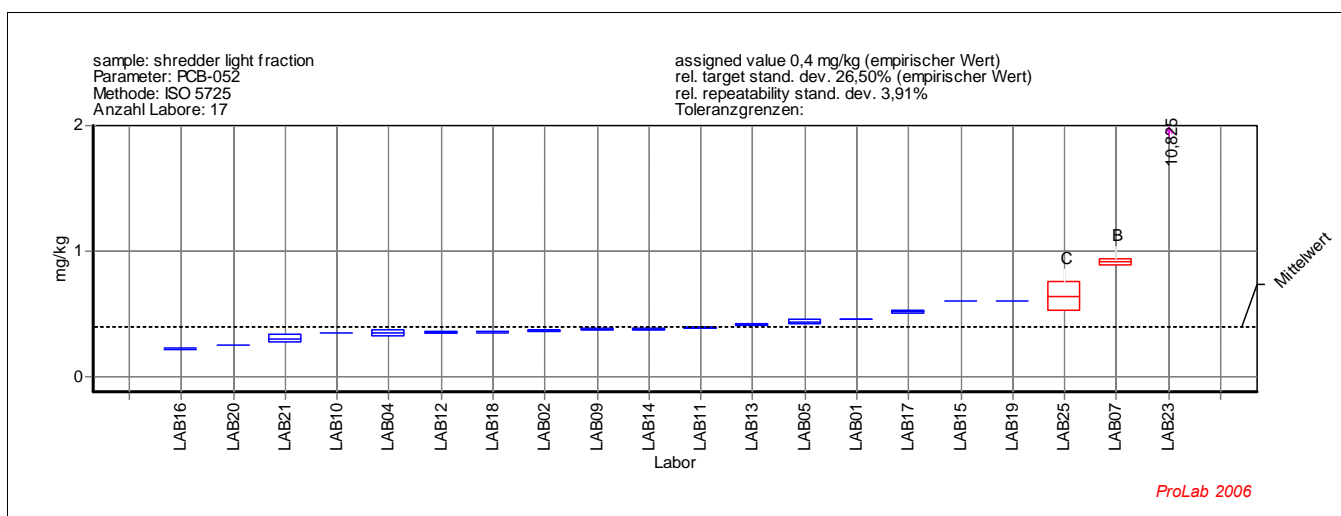
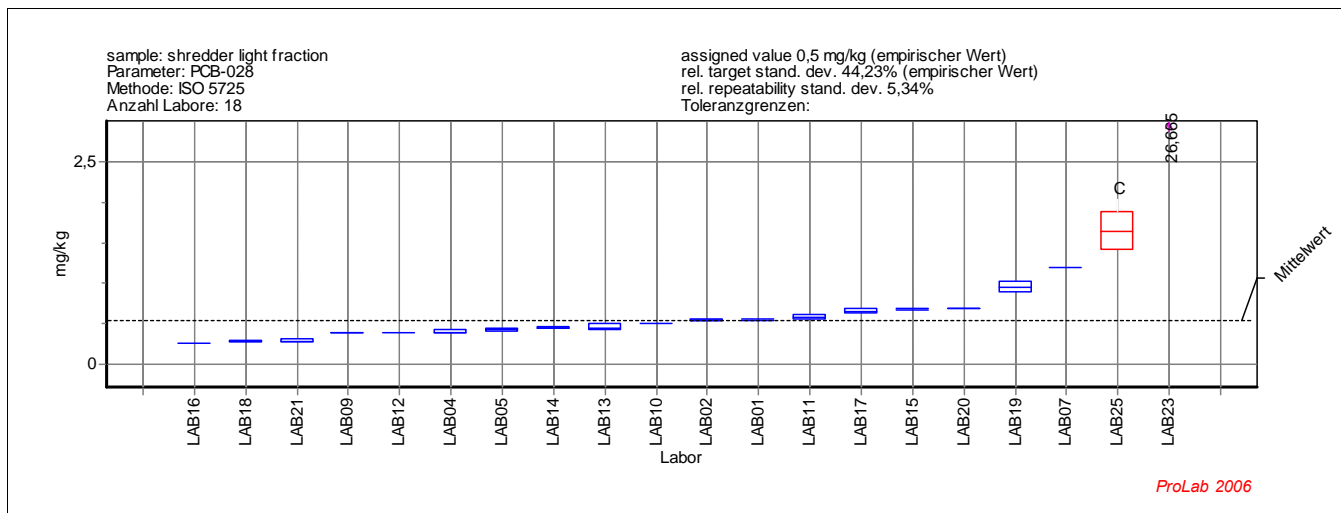
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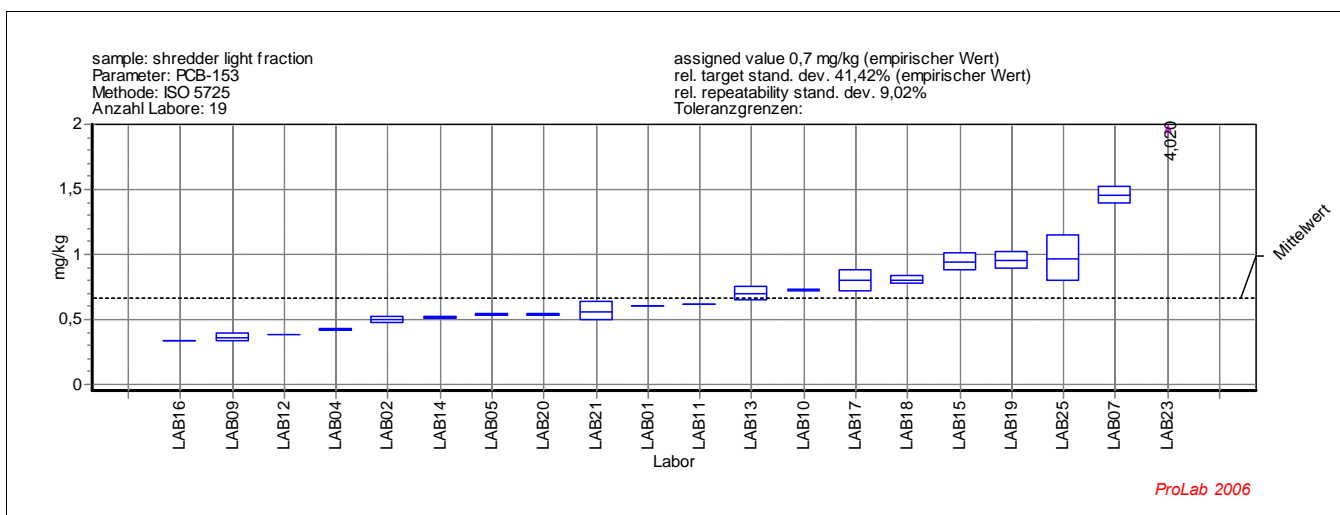
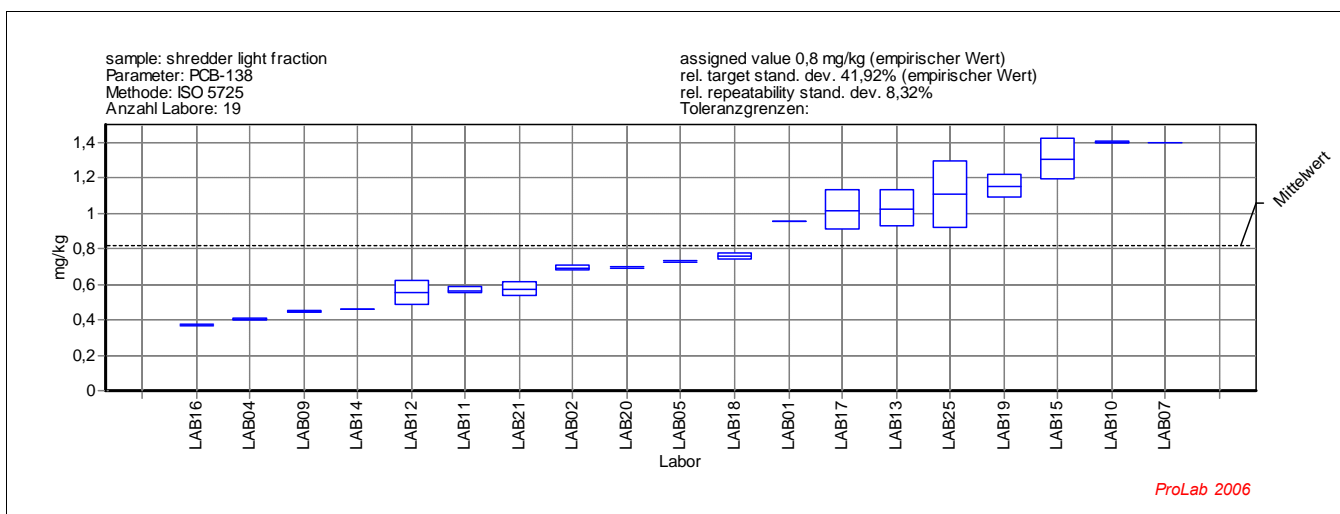
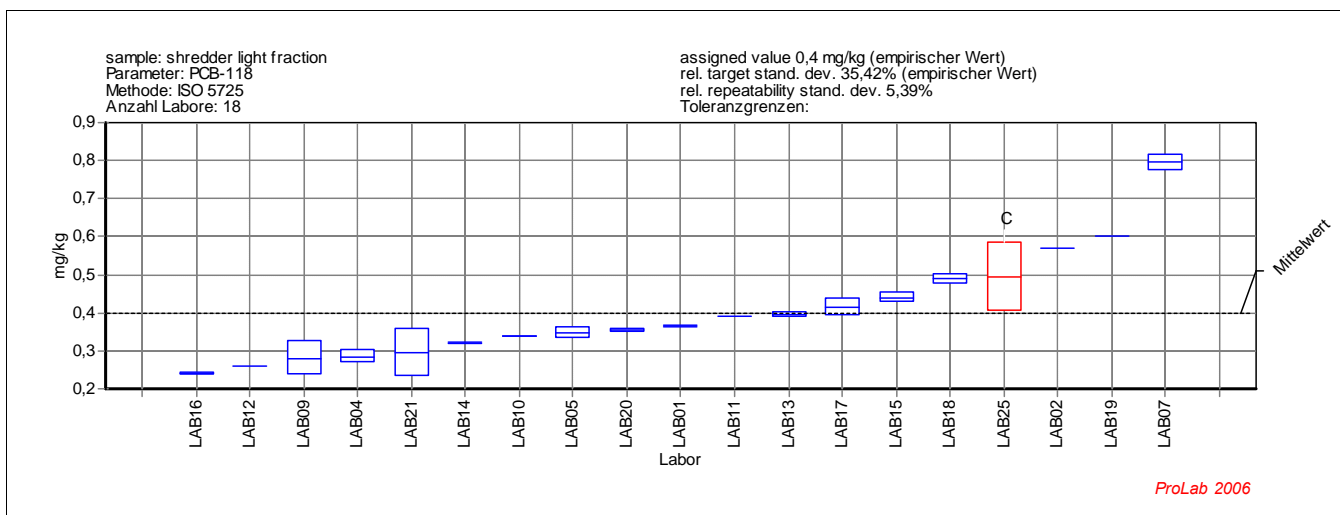
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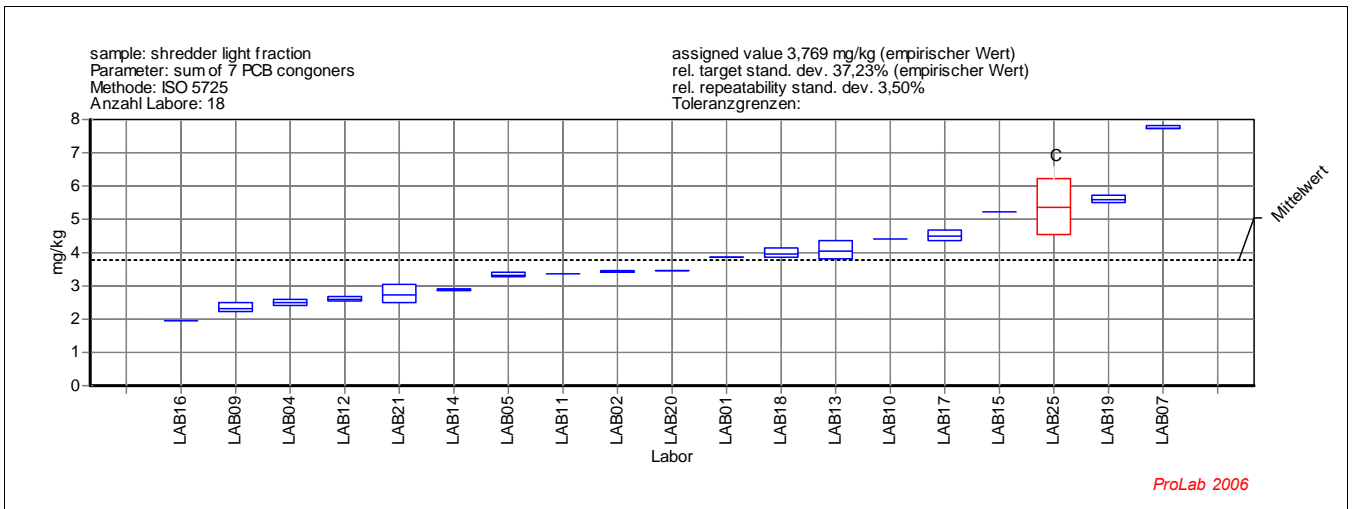
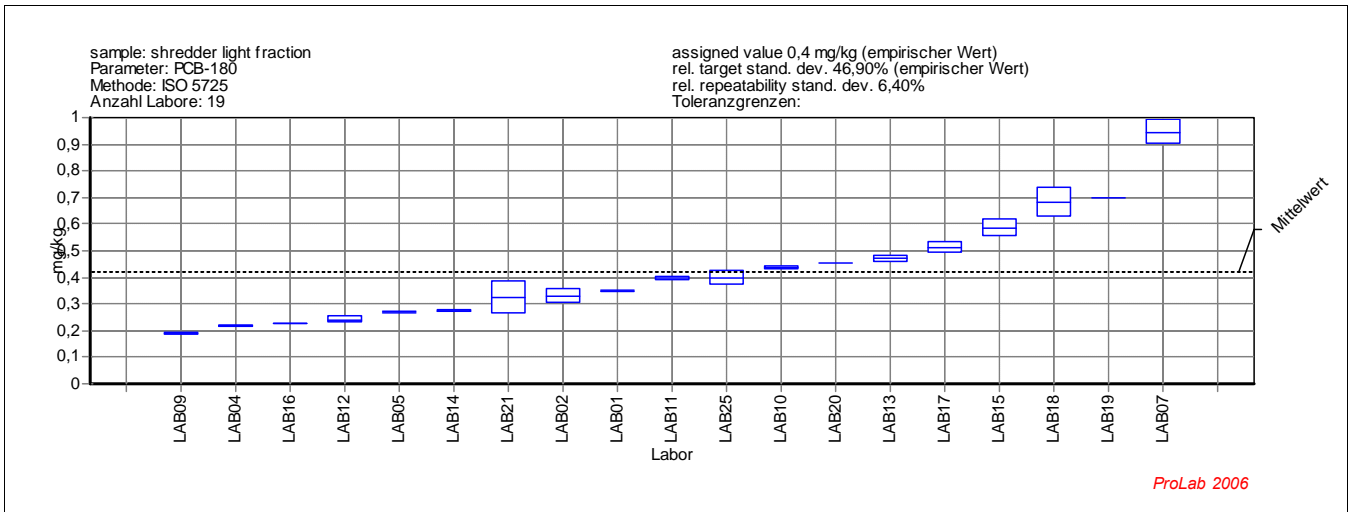
Shredder light fraction



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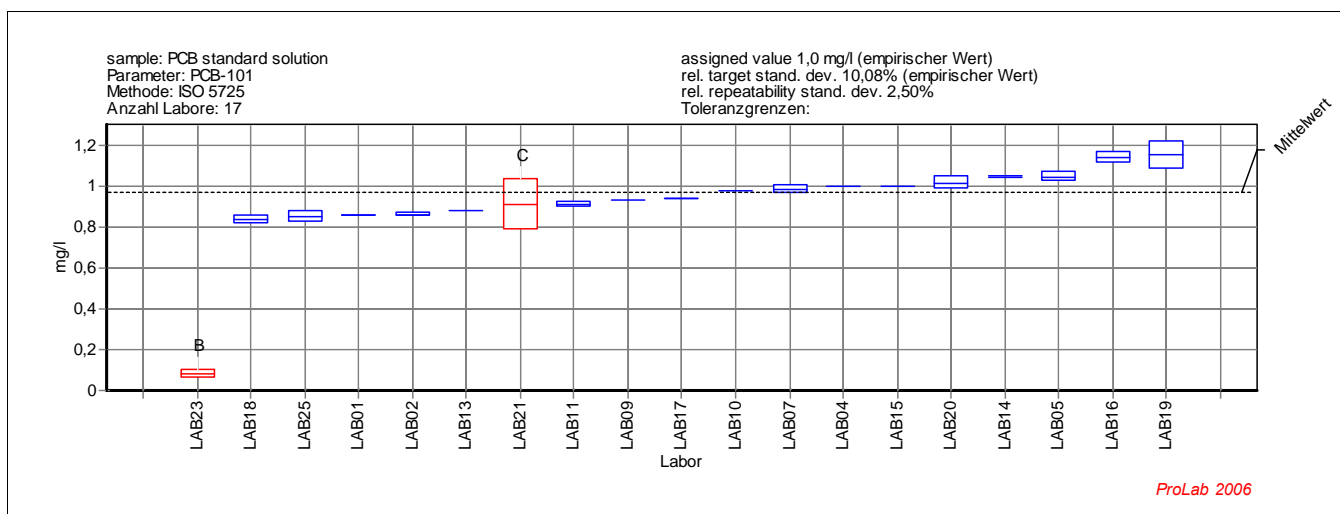
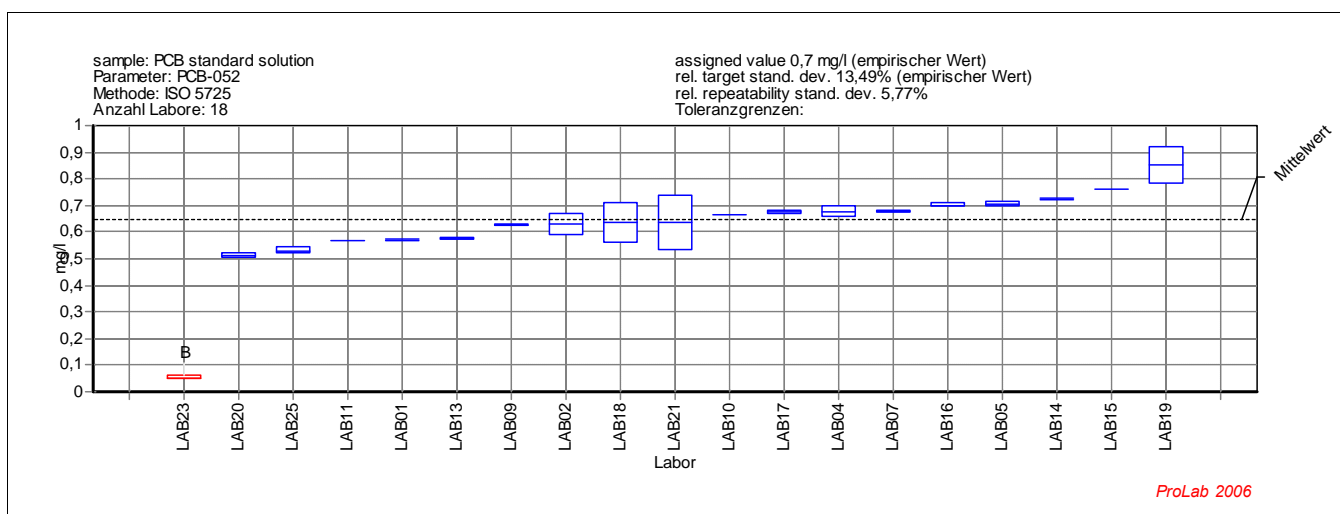
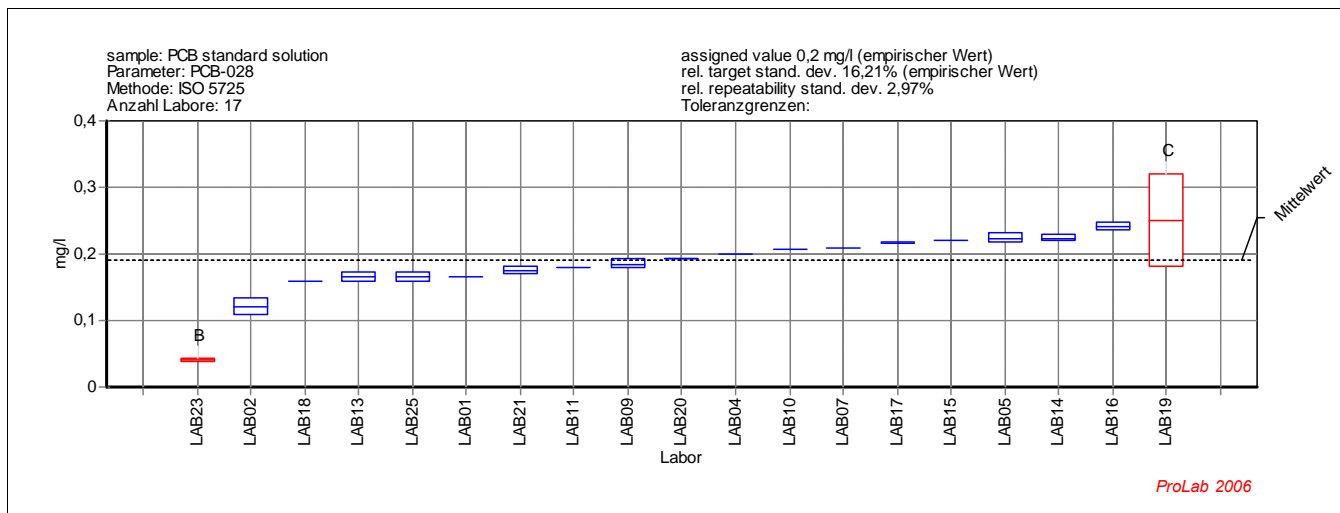


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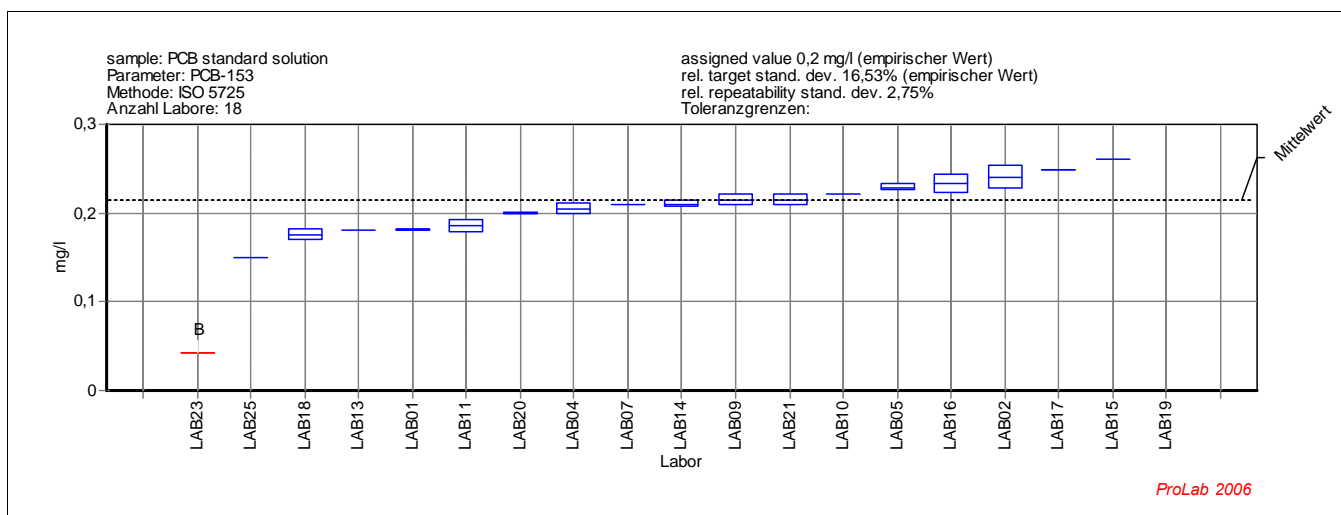
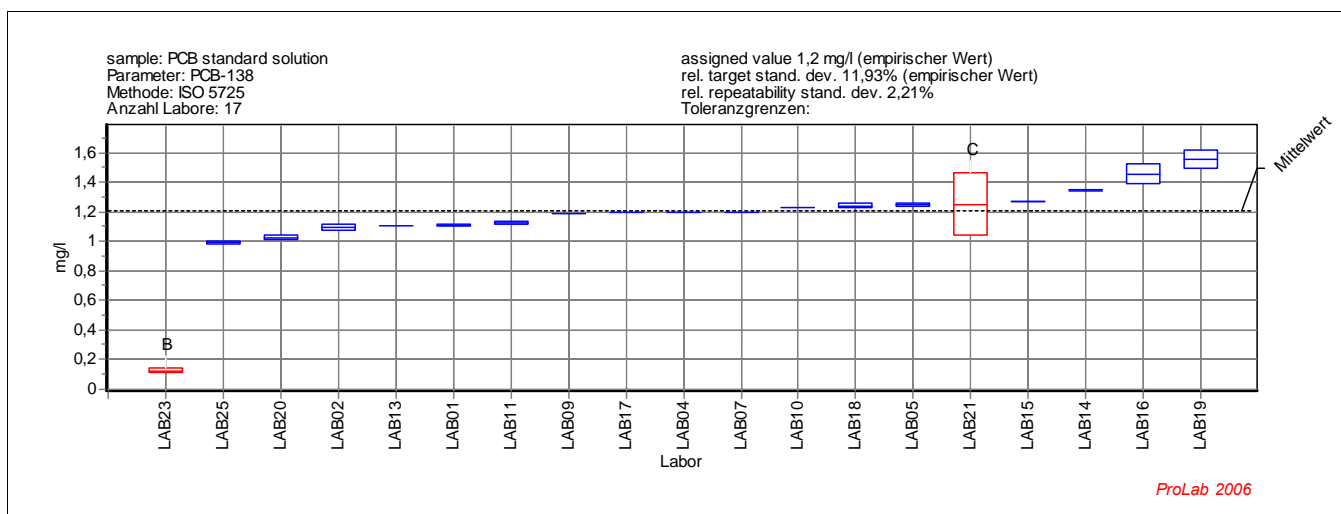
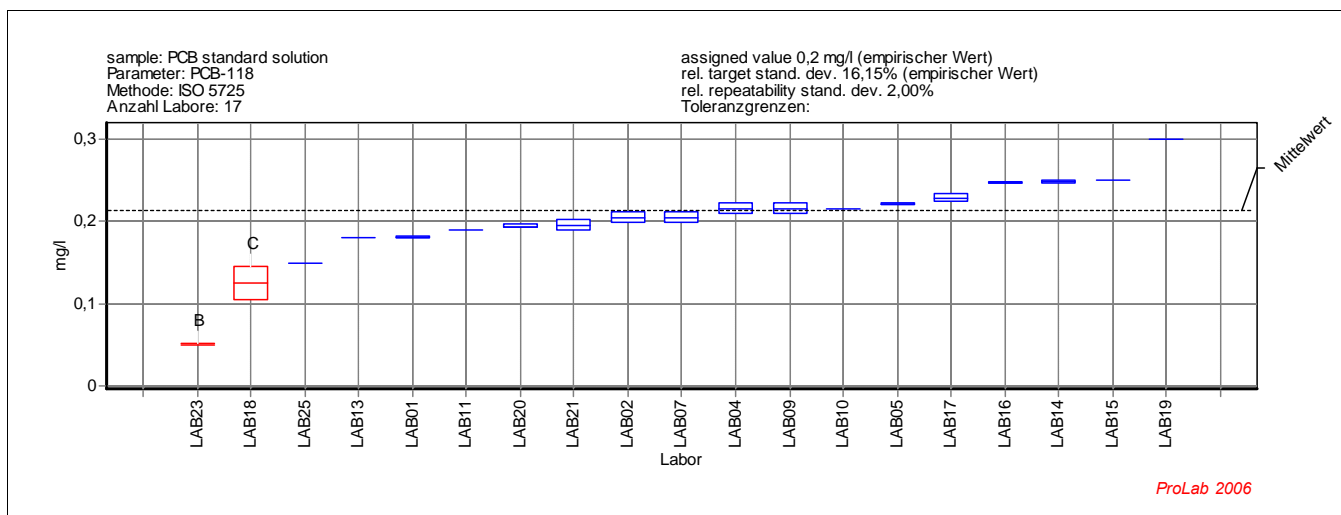


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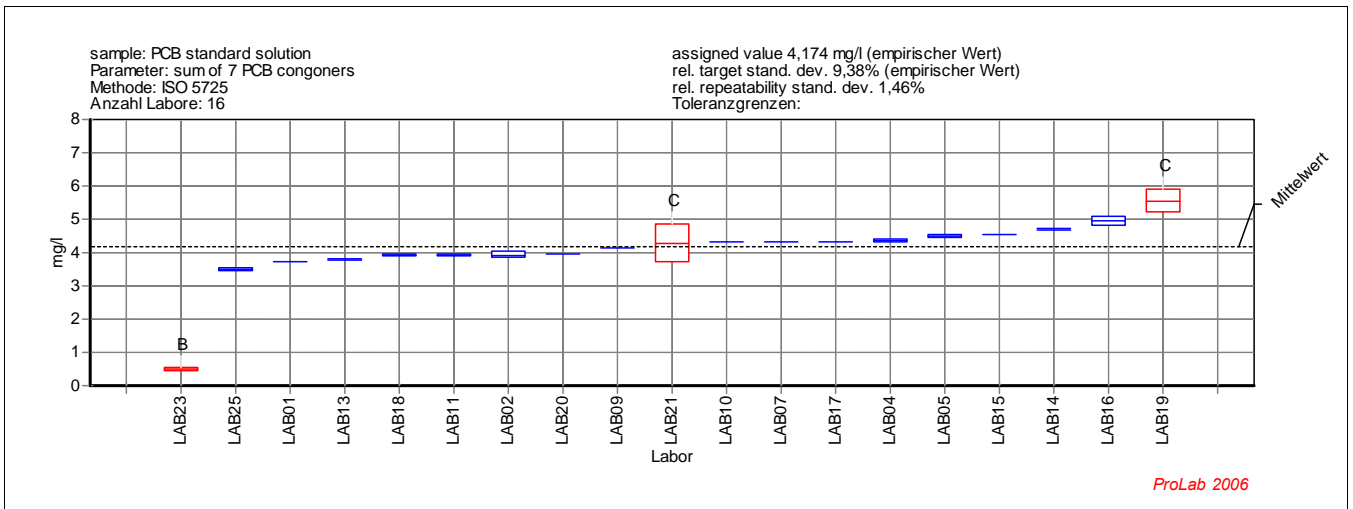
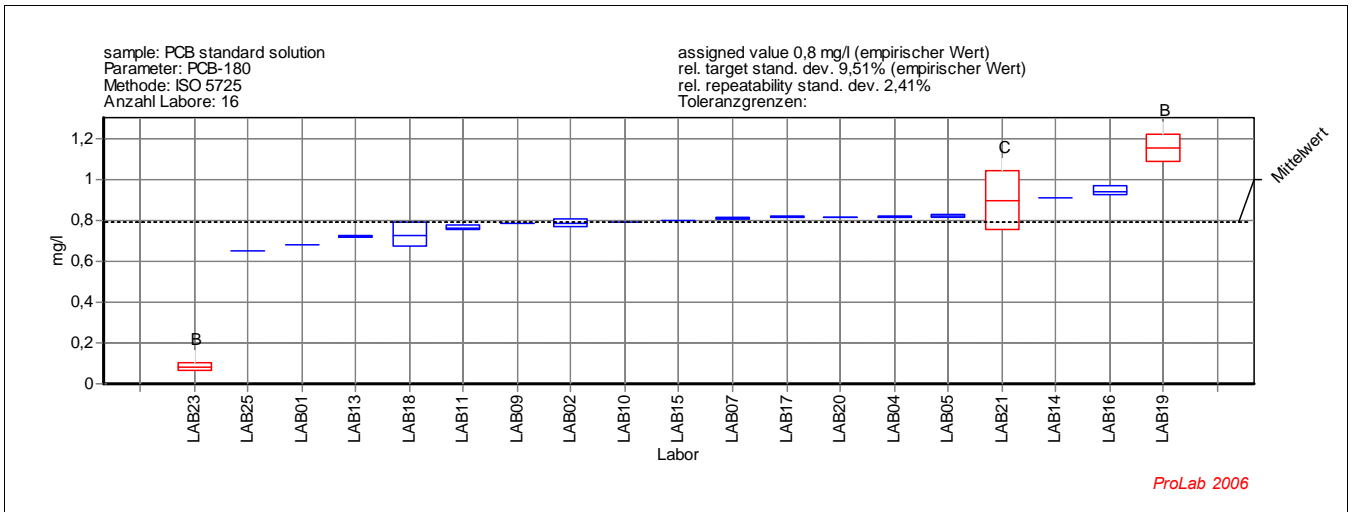
Standard solution



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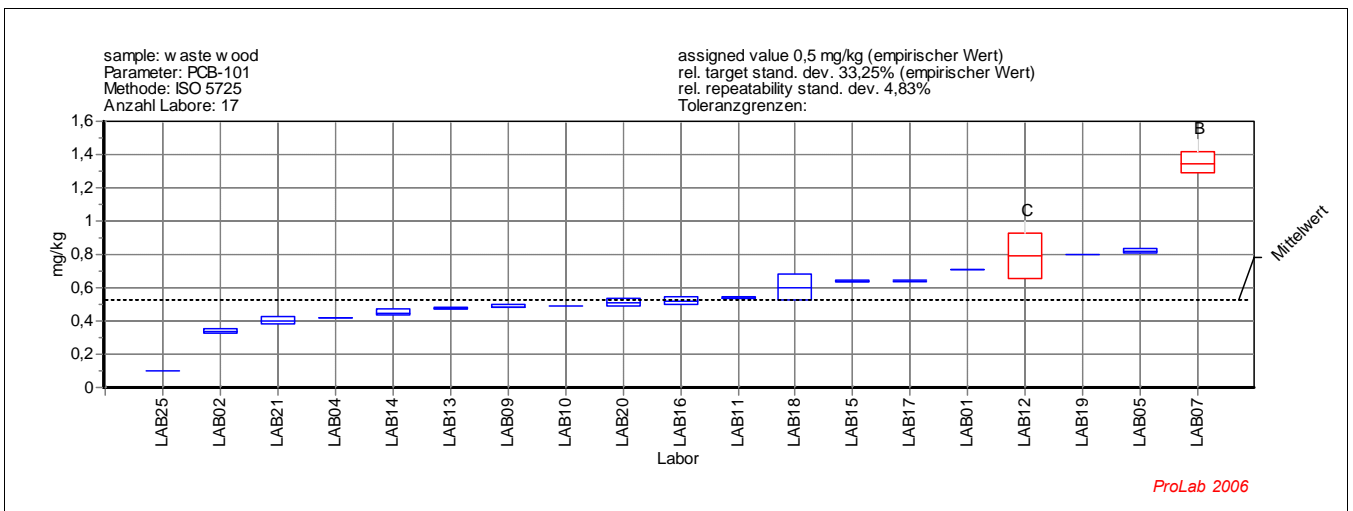
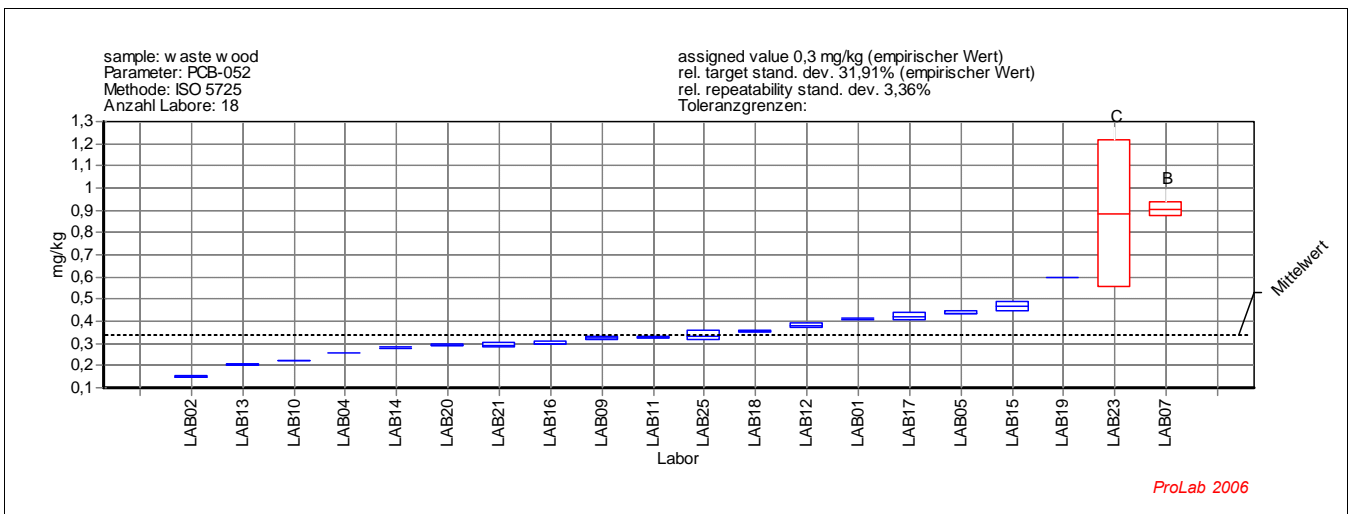
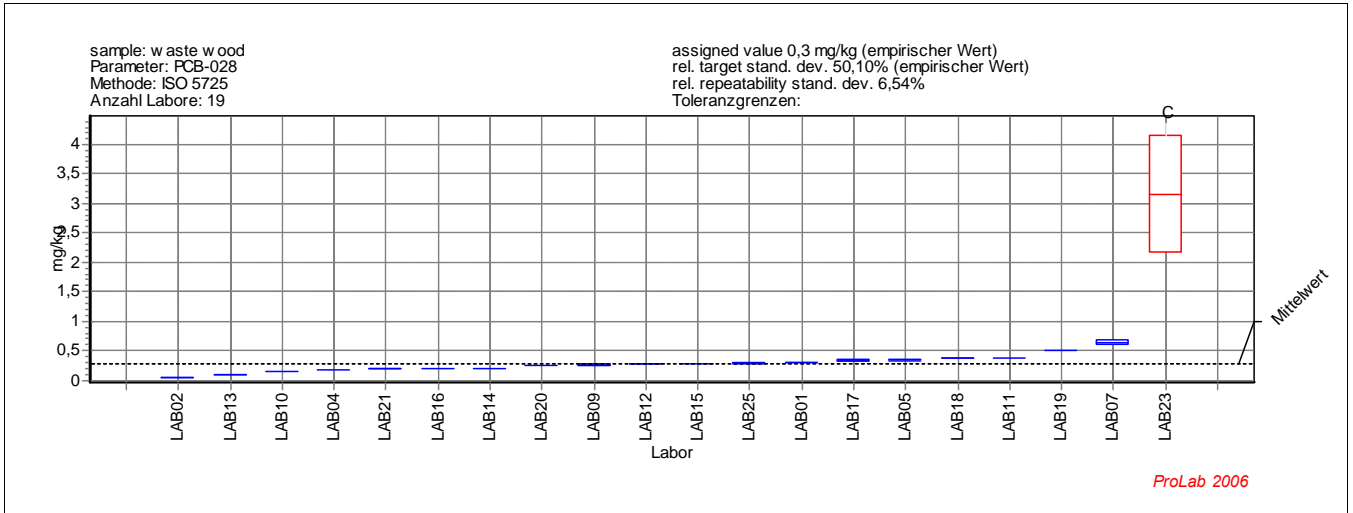


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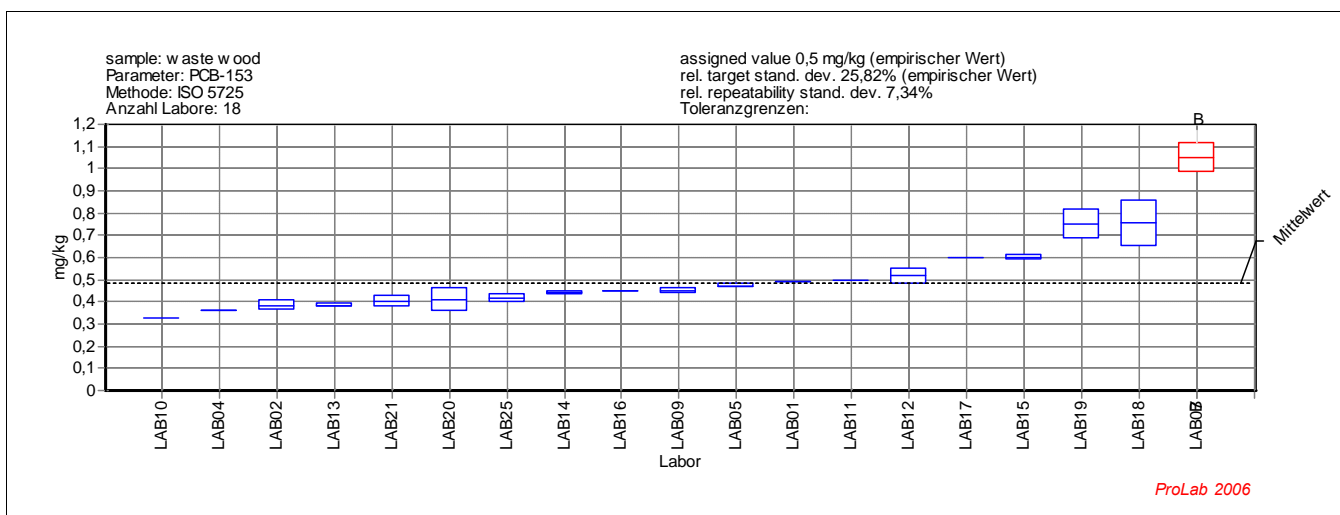
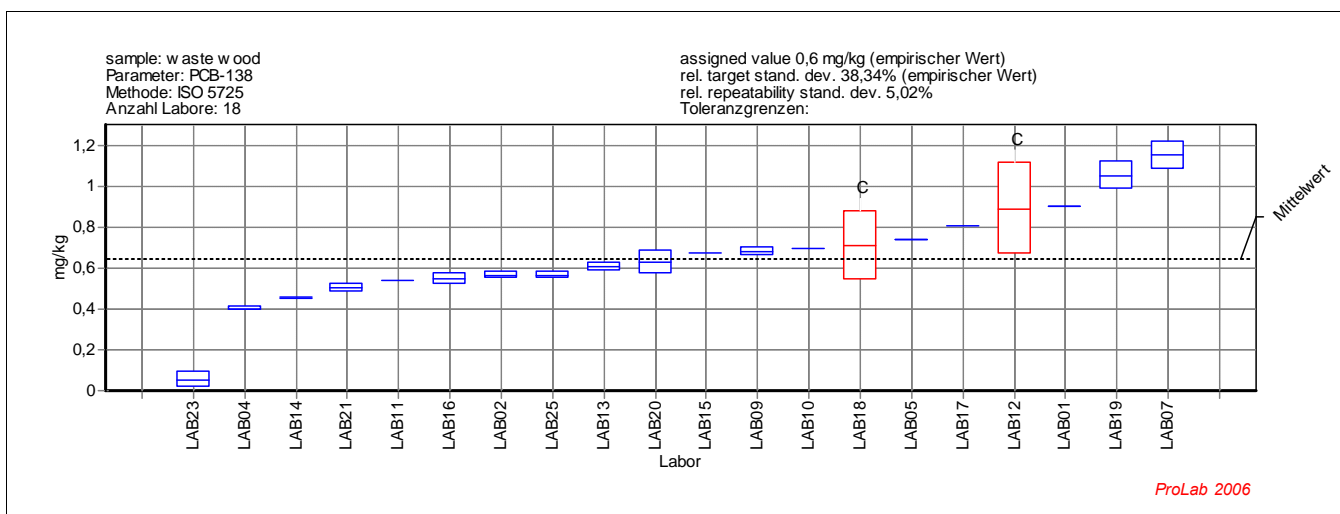
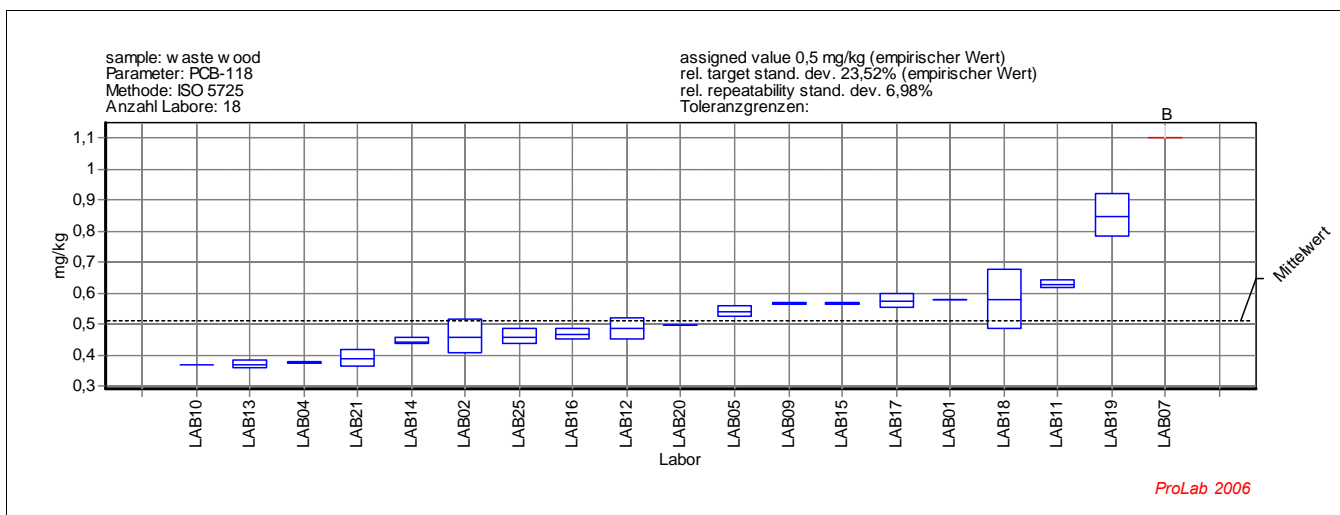


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Waste wood



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