

Annex A3

Laboratory analysis of soil  
samples for Polychlorinated  
Biphenyl (PCBs) &  
Polychlorinated dibenzo-p-  
dioxins and dibenzofurans  
(PCDD/Fs)

## **A3.1**            **PURPOSE AND APPROACH**

### **A3.1.1**        **PURPOSE OF THE ANALYSIS**

To reassure the soil underneath the concrete pavement is not contaminated with Polychlorinated Biphenyl (PCBs) and Polychlorinated dibenzo-p-dioxins & dibenzofurans (PCDD/Fs) due to the operation of the CCPP.

### **A3.1.2**        **SOIL SAMPLING & TESTING**

The site investigation was conducted during 21 to 22 February 2008. Soil samples were obtained from 6 sampling locations within the CCPP site (plus one QC sample). Soil sampling locations can be referred to Contamination Assessment Plan (CAP) and Contamination Assessment Report (CAR). At each location, soil samples are collected underneath the concrete pavement and at 1.5m below ground.

For the PCBs and PCDD/Fs testing, soil samples obtained from areas next to the rotary kiln, cyclone and the MRF building (where the residues are temporary stored after the completion of the trial) are analysed as these areas have the highest potential of dioxins contamination (if any) due to operation of the CCPP or release of the residues. As the CCPP has only operated for a very short period, it is considered adequate to analyse the samples collected underneath the concrete pavement.

A total of 3 soil samples will be analysed for dioxins (ie Samples S1, S5 and S7, please refer to *Figure 3.1a* of the CAR). The samples were sent to accredited chemical analysis laboratory for PCBs and PCDD/Fs testing.

The Laboratory analysis reports are attached in this *Annex*. Levels of PCBs, dioxins and furans analysed in all samples were well below the RBRG values for soil in industrial area. Detailed discussion and land contamination assessment should be referred to the *Chapter 4* of the *EIA Report*.

## Annex No. 1 to test Report No. 12194/1/2008

Sample: HK0802860-1 S1

### 1. Measurement results PCDD/F:

Sample:		HK0802860-1 S1		Final extract [ $\mu$ l]:		75
Sample weight [g]:		5.240		Injection volume [ $\mu$ l]:		2
Dry matter [%]:		91.9		Acquisition date [d.m.y h:m]:		12.6.08 20:59
2,3,7,8-PCDD/Fs	Content [ng/g dw]	Limit of Detection [ng/g dw]	Limit of Quantification [ng/g dw]	<sup>1</sup> I-TEFs	I-TEQ [ng/g dw]	
2,3,7,8-TCDD	0.0087	0.00030	0.00060	1	0.0087	
1,2,3,7,8-PeCDD	0.026	0.00047	0.00094	0.5	0.013	
1,2,3,4,7,8-HxCDD	0.015	0.00078	0.0016	0.1	0.0015	
1,2,3,6,7,8-HxCDD	0.025	0.00078	0.0016	0.1	0.0025	
1,2,3,7,8,9-HxCDD	0.021	0.00078	0.0016	0.1	0.0021	
1,2,3,4,6,7,8-HpCDD	0.11	0.00088	0.0018	0.01	0.0011	
OCDD	0.14	0.0015	0.0029	0.001	0.00014	
2,3,7,8-TCDF	0.11	0.00033	0.00065	0.1	0.011	
1,2,3,7,8-PeCDF	0.094	0.00047	0.00095	0.05	0.0047	
2,3,4,7,8-PeCDF	0.11	0.00047	0.00095	0.5	0.053	
1,2,3,4,7,8-HxCDF	0.08	0.00088	0.0018	0.1	0.0080	
1,2,3,6,7,8-HxCDF	0.076	0.00088	0.0018	0.1	0.0076	
1,2,3,7,8,9-HxCDF	0.0063	0.00088	0.0018	0.1	0.00063	
2,3,4,6,7,8-HxCDF	0.044	0.00088	0.0018	0.1	0.0044	
1,2,3,4,6,7,8-HpCDF	0.17	0.0010	0.0020	0.01	0.0017	
1,2,3,4,7,8,9-HpCDF	0.015	0.0010	0.0020	0.01	0.00015	
OCDF	0.023	0.0011	0.0021	0.001	0.000023	
<b>I-TEQ from quantified 2,3,7,8-PCDD/Fs [ng 2,3,7,8-TCDD/g dw]-"Lowerbound"</b>					<b>0.12</b>	
I-TEQ from quantified 2,3,7,8-PCDDs [ng 2,3,7,8-TCDD/g dw]					0.029	
I-TEQ from quantified 2,3,7,8-PCDFs [ng 2,3,7,8-TCDD/g dw]					0.092	
I-TEQ from n.d. and non quantified 2,3,7,8-PCDD/Fs [ng 2,3,7,8-TCDD/g dw]					0	
<b>Maximum possible I-TEQ [ng 2,3,7,8-TCDD/g dw]-"Upperbound"</b>					<b>0.12</b>	
PCDDs	Content [ng/g dw]		PCDFs	Content [ng/g dw]		
Tetra-CDDs	0.62		Tetra-CDFs	4.4		
Penta-CDDs	0.68		Penta-CDFs	1.9		
Hexa-CDDs	0.57		Hexa-CDFs	0.80		
Hepta-CDDs	0.23		Hepta-CDFs	0.24		
OCDD	0.14		OCDF	0.023		
<b>Total PCDDs</b>	<b>2.2</b>		<b>Total PCDFs</b>	<b>7.4</b>		

<sup>1</sup>I-TEF according to NATO.

The limits of quantification are defined as the double of the detection limits.

The limit of detection is defined as the amount of analyte producing a signal with  $S/N \geq 3$ .

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double ( $k=2$ ) relative standard deviation (RSD%), and corresponds to 95% interval of reliability.

Estimation of uncertainty of each 2,3,7,8-PCDD/F congener is 30% and total I-TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are situated in the interval of the limit of detection and the limit of quantification and are not quantified.

Results marked "n.d." are lower than the limit of detection.

"Lowerbound" and "Upperbound" are levels defined in Directive 2002/69/EC and 2002/70/EC.

## Annex No. 1 to test Report No. 12194/1/2008

### 2. Measurement results PCB:

<b>Sample:</b>	HK0802860-1 S1		Final extract [µl]:	750	
Sample weight [g]:	5.240		Injection volume [µl]:	2	
Dry matter [%]:	91.9		Acquisition date [d.m.y h:m]:	12.6.08 22:01	
	Content	Limit of Detection	Limit of Quantification	<sup>1</sup> TEFs	TEQ
<b>mono- and di-orthoPCBs</b>	[ng/g dw]	[ng/g dw]	[ng/g dw]		[ng/g dw]
PCB #105	< 0.13	0.0023	0.13	0.0001	0
PCB #114	< 0.017	0.0027	0.017	0.0005	0
PCB #118	< 0.17	0.0024	0.17	0.0001	0
PCB #123	< 0.0082	0.0027	0.0082	0.0001	0
PCB #156	< 0.058	0.0033	0.058	0.0005	0
PCB #157	< 0.014	0.0034	0.014	0.0005	0
PCB #167	< 0.022	0.0033	0.022	0.00001	0
PCB #170	< 0.020	0.0068	0.020	0.0001	0
PCB #180	< 0.058	0.0051	0.058	0.00001	0
PCB #189	n.d.	0.0051	0.010	0.0001	0
<b>Total TEQ from quantified mono- and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0</b>
TEQ from n.d. and non quantified mono- and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]					0.000078
<b>Maximum possible TEQ from mono-and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.000078</b>

<b>Sample:</b>	HK0802860-1 S1		Final extract [µl]:	750	
Sample weight [g]:	5.240		Injection volume [µl]:	2	
Dry matter [%]:	91.9		Acquisition date [d.m.y h:m]:	12.6.08 22:01	
	Content	Limit of Detection	Limit of Quantification	<sup>1</sup> TEFs	TEQ
<b>non-orthoPCBs</b>	[ng/g dw]	[ng/g dw]	[ng/g dw]		[ng/g dw]
PCB #77	0.31	0.0024	0.091	0.0005	0.00015
PCB #81	0.044	0.0024	0.0048	-	-
PCB #126	0.095	0.0023	0.0047	0.1	0.0095
PCB #169	0.011	0.0040	0.0079	0.01	0.00011
<b>Total TEQ from quantified non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.0097</b>
TEQ from n.d. and non quantified non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]					0
<b>Maximum possible TEQ from non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.0097</b>

<sup>1</sup>TEFs according to Ahlborg et al. 1994; Chemosphere, Vol. 28, No. 6, 1049-1067.

The limits of quantification are defined on the base of blank level or as double of the detection limits.

The limit of detection is defined as the amount of analyte producing a signal with  $S/N \geq 3$ .

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double ( $k=2$ ) relative standard deviation (RSD%), and corresponds to 95% interval of reliability.

Estimation of uncertainty of each PCB congener is 30% and total TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are situated in the interval of the limit of detection and the limit of quantification and are not quantified.

Results marked "n.d." are lower than the limit of detection.

"Lowerbound" and "Upperbound" are levels defined in Directive 2002/69/EC and 2002/70/EC.

## Annex No. 1 to test Report No. 12194/1/2008

Sample: HK0802860-5 S5

### 1. Measurement results PCDD/F:

Sample:		HK0802860-5 S5			
		Final extract [ $\mu$ l]:	75		
Sample weight [g]:		4.755	Injection volume [ $\mu$ l]:	2	
Dry matter [%]:		92.3	Acquisition date [d.m.y h:m]:	12.6.08 23:13	
2,3,7,8-PCDD/Fs	Content [ng/g dw]	Limit of Detection [ng/g dw]	Limit of Quantification [ng/g dw]	<sup>1</sup> I-TEFs	I-TEQ [ng/g dw]
2,3,7,8-TCDD	n.d.	0.00035	0.00070	1	0
1,2,3,7,8-PeCDD	0.0015	0.00063	0.0013	0.5	0.00076
1,2,3,4,7,8-HxCDD	< 0.0019	0.00093	0.0019	0.1	0
1,2,3,6,7,8-HxCDD	0.0030	0.00093	0.0019	0.1	0.00030
1,2,3,7,8,9-HxCDD	0.0020	0.00093	0.0019	0.1	0.00020
1,2,3,4,6,7,8-HpCDD	0.018	0.0011	0.0022	0.01	0.00018
OCDD	0.23	0.0020	0.0039	0.001	0.00023
2,3,7,8-TCDF	0.0053	0.00042	0.00083	0.1	0.00053
1,2,3,7,8-PeCDF	0.0039	0.00059	0.0012	0.05	0.00020
2,3,4,7,8-PeCDF	0.0048	0.00059	0.0012	0.5	0.0024
1,2,3,4,7,8-HxCDF	0.0032	0.0010	0.0020	0.1	0.00032
1,2,3,6,7,8-HxCDF	0.0028	0.0010	0.0020	0.1	0.00028
1,2,3,7,8,9-HxCDF	n.d.	0.0010	0.0020	0.1	0
2,3,4,6,7,8-HxCDF	< 0.0020	0.0010	0.0020	0.1	0
1,2,3,4,6,7,8-HpCDF	0.0098	0.0012	0.0024	0.01	0.000098
1,2,3,4,7,8,9-HpCDF	n.d.	0.0012	0.0024	0.01	0
OCDF	0.0033	0.0014	0.0029	0.001	0.000033
<b>I-TEQ from quantified 2,3,7,8-PCDD/Fs [ng 2,3,7,8-TCDD/g dw]-"Lowerbound"</b>					<b>0.0055</b>
I-TEQ from quantified 2,3,7,8-PCDDs [ng 2,3,7,8-TCDD/g dw]					0.0017
I-TEQ from quantified 2,3,7,8-PCDFs [ng 2,3,7,8-TCDD/g dw]					0.0038
I-TEQ from n.d. and non quantified 2,3,7,8-PCDD/Fs [ng 2,3,7,8-TCDD/g dw]					0.00085
<b>Maximum possible I-TEQ [ng 2,3,7,8-TCDD/g dw]-"Upperbound"</b>					<b>0.0063</b>
PCDDs	Content [ng/g dw]		PCDFs	Content [ng/g dw]	
Tetra-CDDs	0.040		Tetra-CDFs	0.21	
Penta-CDDs	0.069		Penta-CDFs	0.091	
Hexa-CDDs	0.074		Hexa-CDFs	0.035	
Hepta-CDDs	0.038		Hepta-CDFs	0.014	
OCDD	0.23		OCDF	0.0033	
<b>Total PCDDs</b>	<b>0.45</b>		<b>Total PCDFs</b>	<b>0.35</b>	

<sup>1</sup>I-TEF according to NATO.

The limits of quantification are defined as the double of the detection limits.

The limit of detection is defined as the amount of analyte producing a signal with  $S/N \geq 3$ .

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double ( $k=2$ ) relative standard deviation (RSD%), and corresponds to 95% interval of reliability.

Estimation of uncertainty of each 2,3,7,8-PCDD/F congener is 30% and total I-TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are situated in the interval of the limit of detection and the limit of quantification and are not quantified.

Results marked "n.d." are lower than the limit of detection.

"Lowerbound" and "Upperbound" are levels defined in Directive 2002/69/EC and 2002/70/EC.

## Annex No. 1 to test Report No. 12194/1/2008

### 2. Measurement results PCB:

<b>Sample:</b>	HK0802860-5 S5		Final extract [µl]:	750	
Sample weight [g]:	4.755		Injection volume [µl]:	2	
Dry matter [%]:	92.3		Acquisition date [d.m.y h:m]:	13.6.08 0:15	
	Content	Limit of Detection	Limit of Quantification	<sup>1</sup> TEFs	TEQ
<b>mono- and di-orthoPCBs</b>	[ng/g dw]	[ng/g dw]	[ng/g dw]		[ng/g dw]
PCB #105	< 0.034	0.0022	0.034	0.0001	0
PCB #114	n.d.	0.0025	0.0050	0.0005	0
PCB #118	< 0.089	0.0023	0.089	0.0001	0
PCB #123	n.d.	0.0025	0.0051	0.0001	0
PCB #156	< 0.012	0.0031	0.012	0.0005	0
PCB #157	n.d.	0.0033	0.0067	0.0005	0
PCB #167	< 0.0072	0.0031	0.0072	0.00001	0
PCB #170	< 0.030	0.0064	0.030	0.0001	0
PCB #180	< 0.068	0.0048	0.068	0.00001	0
PCB #189	n.d.	0.0053	0.011	0.0001	0
<b>Total TEQ from quantified mono- and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0</b>
TEQ from n.d. and non quantified mono- and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]					0.000026
<b>Maximum possible TEQ from mono-and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.000026</b>

<b>Sample:</b>	HK0802860-5 S5		Final extract [µl]:	750	
Sample weight [g]:	4.755		Injection volume [µl]:	2	
Dry matter [%]:	92.3		Acquisition date [d.m.y h:m]:	13.6.08 0:15	
	Content	Limit of Detection	Limit of Quantification	<sup>1</sup> TEFs	TEQ
<b>non-orthoPCBs</b>	[ng/g dw]	[ng/g dw]	[ng/g dw]		[ng/g dw]
PCB #77	< 0.040	0.0023	0.040	0.0005	0
PCB #81	n.d.	0.0022	0.0045	-	-
PCB #126	< 0.0051	0.0025	0.0051	0.1	0
PCB #169	n.d.	0.0052	0.010	0.01	0
<b>Total TEQ from quantified non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0</b>
TEQ from n.d. and non quantified non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]					0.00058
<b>Maximum possible TEQ from non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.00058</b>

<sup>1</sup>TEFs according to Ahlborg et al. 1994; Chemosphere, Vol. 28, No. 6, 1049-1067.

The limits of quantification are defined on the base of blank level or as double of the detection limits.

The limit of detection is defined as the amount of analyte producing a signal with  $S/N \geq 3$ .

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double ( $k=2$ ) relative standard deviation (RSD%), and corresponds to 95% interval of reliability.

Estimation of uncertainty of each PCB congener is 30% and total TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are situated in the interval of the limit of detection and the limit of quantification and are not quantified.

Results marked "n.d." are lower than the limit of detection.

"Lowerbound" and "Upperbound" are levels defined in Directive 2002/69/EC and 2002/70/EC.

## Annex No. 1 to test Report No. 12194/1/2008

Sample: HK0802860-71 S7

### 1. Measurement results PCDD/F:

Sample:		HK0802860-7 S7			
		Final extract [ $\mu$ l]:	75		
Sample weight [g]:		4.951	Injection volume [ $\mu$ l]:	2	
Dry matter [%]:		83.6	Acquisition date [d.m.y h:m]:	13.6.08 1:27	
2,3,7,8-PCDD/Fs	Content [ng/g dw]	Limit of Detection [ng/g dw]	Limit of Quantification [ng/g dw]	<sup>1</sup> I-TEFs	I-TEQ [ng/g dw]
2,3,7,8-TCDD	< 0.00081	0.00040	0.00081	1	0
1,2,3,7,8-PeCDD	0.0019	0.00063	0.0013	0.5	0.00095
1,2,3,4,7,8-HxCDD	< 0.0020	0.0010	0.0020	0.1	0
1,2,3,6,7,8-HxCDD	0.0023	0.0010	0.0020	0.1	0.00023
1,2,3,7,8,9-HxCDD	< 0.0020	0.0010	0.0020	0.1	0
1,2,3,4,6,7,8-HpCDD	0.014	0.0013	0.0025	0.01	0.00014
OCDD	0.20	0.0020	0.0040	0.001	0.00020
2,3,7,8-TCDF	0.0087	0.00045	0.0009	0.1	0.00087
1,2,3,7,8-PeCDF	0.0056	0.00062	0.0012	0.05	0.00028
2,3,4,7,8-PeCDF	0.0065	0.00062	0.0012	0.5	0.0033
1,2,3,4,7,8-HxCDF	0.0058	0.0012	0.0024	0.1	0.00058
1,2,3,6,7,8-HxCDF	0.0053	0.0012	0.0024	0.1	0.00053
1,2,3,7,8,9-HxCDF	n.d.	0.0012	0.0024	0.1	0
2,3,4,6,7,8-HxCDF	0.0031	0.0012	0.0024	0.1	0.00031
1,2,3,4,6,7,8-HpCDF	0.017	0.0014	0.0028	0.01	0.00017
1,2,3,4,7,8,9-HpCDF	n.d.	0.0014	0.0028	0.01	0
OCDF	0.0042	0.0015	0.0029	0.001	0.0000042
<b>I-TEQ from quantified 2,3,7,8-PCDD/Fs [ng 2,3,7,8-TCDD/g dw]-"Lowerbound"</b>					<b>0.0075</b>
I-TEQ from quantified 2,3,7,8-PCDDs [ng 2,3,7,8-TCDD/g dw]					0.0015
I-TEQ from quantified 2,3,7,8-PCDFs [ng 2,3,7,8-TCDD/g dw]					0.0060
I-TEQ from n.d. and non quantified 2,3,7,8-PCDD/Fs [ng 2,3,7,8-TCDD/g dw]					0.0013
<b>Maximum possible I-TEQ [ng 2,3,7,8-TCDD/g dw]-"Upperbound"</b>					<b>0.0089</b>
PCDDs	Content [ng/g dw]		PCDFs	Content [ng/g dw]	
Tetra-CDDs	0.039		Tetra-CDFs	0.29	
Penta-CDDs	0.050		Penta-CDFs	0.13	
Hexa-CDDs	0.048		Hexa-CDFs	0.059	
Hepta-CDDs	0.032		Hepta-CDFs	0.023	
OCDD	0.20		OCDF	0.0042	
<b>Total PCDDs</b>	<b>0.37</b>		<b>Total PCDFs</b>	<b>0.51</b>	

<sup>1</sup>I-TEF according to NATO.

The limits of quantification are defined as the double of the detection limits.

The limit of detection is defined as the amount of analyte producing a signal with  $S/N \geq 3$ .

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double ( $k=2$ ) relative standard deviation (RSD%), and corresponds to 95% interval of reliability.

Estimation of uncertainty of each 2,3,7,8-PCDD/F congener is 30% and total I-TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are situated in the interval of the limit of detection and the limit of quantification and are not quantified.

Results marked "n.d." are lower than the limit of detection.

"Lowerbound" and "Upperbound" are levels defined in Directive 2002/69/EC and 2002/70/EC.



## Annex No. 1 to test Report No. 12194/1/2008

### 2. Measurement results PCB:

<b>Sample:</b>	HK0802860-7 S7		Final extract [µl]:	750	
Sample weight [g]:	4.951		Injection volume [µl]:	2	
Dry matter [%]:	83.6		Acquisition date [d.m.y h:m]:	13.6.08 2:29	
	Content	Limit of Detection	Limit of Quantification	<sup>1</sup> TEFs	TEQ
<b>mono- and di-orthoPCBs</b>	[ng/g dw]	[ng/g dw]	[ng/g dw]		[ng/g dw]
PCB #105	< 0.041	0.0026	0.041	0.0001	0
PCB #114	n.d.	0.0030	0.0059	0.0005	0
PCB #118	< 0.096	0.0027	0.096	0.0001	0
PCB #123	n.d.	0.0030	0.0059	0.0001	0
PCB #156	< 0.017	0.0034	0.017	0.0005	0
PCB #157	n.d.	0.0036	0.0071	0.0005	0
PCB #167	< 0.0075	0.0034	0.0075	0.00001	0
PCB #170	< 0.024	0.0071	0.024	0.0001	0
PCB #180	< 0.071	0.0053	0.071	0.00001	0
PCB #189	n.d.	0.0051	0.010	0.0001	0
<b>Total TEQ from quantified mono- and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0</b>
TEQ from n.d. and non quantified mono- and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]					0.000029
<b>Maximum possible TEQ from mono-and di-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.000029</b>

<b>Sample:</b>	HK0802860-7 S7		Final extract [µl]:	750	
Sample weight [g]:	4.951		Injection volume [µl]:	2	
Dry matter [%]:	83.6		Acquisition date [d.m.y h:m]:	13.6.08 2:29	
	Content	Limit of Detection	Limit of Quantification	<sup>1</sup> TEFs	TEQ
<b>non-orthoPCBs</b>	[ng/g dw]	[ng/g dw]	[ng/g dw]		[ng/g dw]
PCB #77	< 0.057	0.0026	0.057	0.0005	0
PCB #81	n.d.	0.0025	0.0050	-	-
PCB #126	< 0.0053	0.0026	0.0053	0.1	0
PCB #169	n.d.	0.0048	0.010	0.01	0
<b>Total TEQ from quantified non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0</b>
TEQ from n.d. and non quantified non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]					0.000061
<b>Maximum possible TEQ from non-ortho PCBs [ng 2,3,7,8-TCDD/g dw]</b>					<b>0.000061</b>

<sup>1</sup>TEFs according to Ahlborg et al. 1994; Chemosphere, Vol. 28, No. 6, 1049-1067.

The limits of quantification are defined on the base of blank level or as double of the detection limits.

The limit of detection is defined as the amount of analyte producing a signal with  $S/N \geq 3$ .

The value of the detection limit is mentioned as the actual value at the acquisition date.

Measurement uncertainty is expressed as a double ( $k=2$ ) relative standard deviation (RSD%), and corresponds to 95% interval of reliability.

Estimation of uncertainty of each PCB congener is 30% and total TEQ is 20%.

These values were ensured by analyses of certified reference material under conditions of internal reproducibility. Results marked "<" are situated in the interval of the limit of detection and the limit of quantification and are not quantified.

Results marked "n.d." are lower than the limit of detection.

"Lowerbound" and "Upperbound" are levels defined in Directive 2002/69/EC and 2002/70/EC.



ALS Czech Republic, s.r.o., Na Harfě 336/9, 190 00 Praha 9

Telephone: +420 284 081 645, +420 284 081 646  
 Fax: +420 284 081 750  
 Internet: www.alsglobal.com, www.alsglobal.cz  
 E-mail: info@alsglobal.com

ALS Technichem (HK) Pty Ltd  
 11/F, Chung Shun Knitting Centre  
 Richard Fung  
 1-3 Wing Yip Street  
 Kwai Chung  
 Hong Kong

**Test Report No. 12194 / 1 / 2008**

**Prague : 22.7.2008**

**Project:** Shipment No.: 941708519728  
**Date of sampling:** 22.2.2008  
**Date of receipt:** 9.6.2008  
**Sampling procedure:** Sampling was performed by the client  
**Date of test performance:** 9.6. - 16.6.2008  
**Place of test performance:** ALS Czech Republic, s.r.o., Laboratoř HRMS, V Ráji 906, 530 02 Pardubice  
**Test specification, deviations, additions to or exclusions from the test specification and any other information:**  
 D06\_06\_173 Determination of sum PCB and planar congeners PCB by HRMS by internal instruction. Analysed by HRGC/HRMS syst. - Agilent 6890N/Finnigan MAT 95XP resp. Trace GC Ultra/DFS. Resol. HRMS: 10000. GC column: RTX-500 60 m, 0,25 mm ID; film 0,1 µm  
 D06\_06\_175 Determination of polychlorinated dibenzo-p-dioxins and dibenzofurans according to US EPA 1613. Analysed by technique: HRGC/HRMS system - Agilent 6890N/Finnigan MAT 95XP resp. Trace GC Ultra/DFS. Resolution HRMS: 10000

**Measurement results**

sample name	HK0802860-1	HK0802860-5	HK0802860-7					
	S1	S5	S7					
matrix	soil	soil	soil					
parameter	result	MU	result	MU	result	MU	unit	test specification
Dry matter at 105 °C	91,9	±2	92,3	±2	83,6	±2	%	D06_06_175 A
I-TEQ (PCDD/F) lowerbound	0,12	±20	0,0055	±20	0,0075	±20	ng/g dw	D06_06_175 A
I-TEQ (PCDD/F) upperbound	0,12		0,0063		0,0089		ng/g dw	D06_06_175 A
I-TEQ (PCB) lowerbound	0,0097	±20	0	±20	0	±20	ng/g dw	D06_06_173 A
I-TEQ (PCB) upperbound	0,0098		0,00061		0,00064		ng/g dw	D06_06_173 A

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 The laboratory declares that the test results relate only to the items tested and do not substitute any other documents.



**Ing. Emilie Pokorna**  
 Quality Manager

Measurement uncertainty (MU [%]) is expressed as expanded measurement uncertainty with coverage factor  $k = 2$ , representing of 95 % significance level.

Parameters indexed by 'A' in the last column of the table are accredited, parameters indexed by 'N' are not accredited.