



ČESKÁ INSPEKCE  
ŽIVOTNÍHO PROSTŘEDÍ

# The results of inspection activities of the Czech Environmental Inspectorate (CEI) in investigating the elevated PCB values in Elbe river and repair of the state

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- I. Introduction
- II. Inspection control
- III. Removal of contaminated soils from the railway bridge space and temporary deposition of used abrasive
- IV. Occurrence of polychlorinated biphenyls in the Elbe river stream sediments

# I. Introduction

- Through the cooperation within the International Commission for the Protection of the Elbe and the Standing Committee of Saxony of the Czech-German Commission for Border Waters, the Ministry of the Environment was informed on the occurrence of elevated PCB values in the Elbe river stream in the border profile of Hřensko / Schmilka.
- From the information provided by the River Elbe River Administrator „Povodi Labe“, the State Enterprise, it came out, that on the Labe watercourse the PCB contents in the affected area are monitored in surface water samples in 5 measuring profiles, i.e Labe-Střekov, Labe-Velké Březno, Labe-Děčín and Labe-Hřensko/Schmilka on the right and left banks with a frequency of 1 per month. Furthermore, PCB concentrations are determined in monthly collected samples of sediments collected at the Labe-Děčín monitoring station.

# I. Introduction

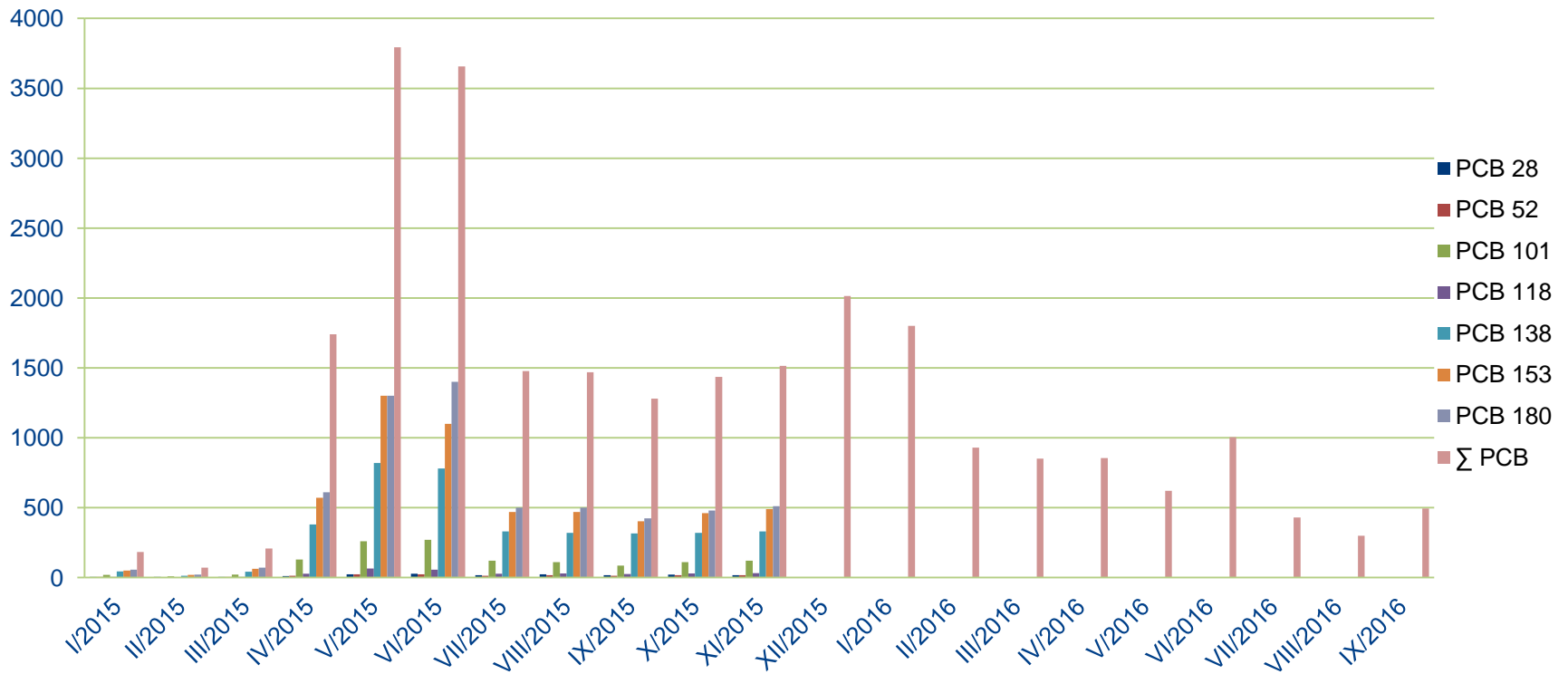
- In the first quarter of 2015, no increased PCB content was found in surface water samples, nor in sedimentable suspended solids samples. The findings were at a typical long-term level for these sites, i.e. in units up to tens of  $\mu\text{g}/\text{kg}$  in sedimentable suspended solids samples and below the limit of determination in units of  $\text{ng}/\text{l}$  in surface water samples of the Elbe River.
- From April 2015, a significant increase in PCB concentrations in the hundreds to first thousands of  $\mu\text{g}/\text{kg}$  with a maximum of **3,793  $\mu\text{g}/\text{kg}$**  in May 2015 was noted in mixed sedimentable suspended solids samples.
- In July 2015, the PCB content dropped to about half the value of the maximum findings, the negative state continued throughout the rest of the year 2015, when a slight increase in the value probably occurred due to the increasing flows in the Elbe at the end of the year.

# I. Introduction

- In the Labe-Střekov area, i.e. above the urban agglomeration of Ústí nad Labem, the increased contents of PCBs in the 1st and 2nd quarters of 2015 were not proven.
- According to available information a potential source of PCB contamination is located in the agglomeration of Ústí nad Labem.
- Intake of these substances was of a prolonged nature, or in the case of a one-off input, this input would have to be massive with a long-lasting negative impact on the quality of surface water and sedimentable floats in the Elbe.

# I. Introduction

Labe Decin Measurement Station: PCB Content ( $\mu\text{g}/\text{kg}$  dry matter) in monthly collected samples of sedimentable suspended solids



## II. Inspection control

## II. Inspection control

- The inspection was launched by CEI, Water Protection Department Ústí nad Labem in July 2015, on a request of the Ministry of the Environment of the Czech Republic, Water Protection Department.
- The inspection included:
  - ✓ Field Investigations - Physical tours to document the status
  - ✓ Stage sampling of river sediments, sludge, waste, etc.
  - ✓ Evaluation
  - ✓ Decision



## II. Inspection control

Physical inspection for status documentation was performed on the Elbe River in the following locations

### Ústí nad Labem

- Střekov waterfront to the railway bridge (1)
- from the railway bridge to the bridge Edvard Beneš (2)
- from Edvard Beneš Bridge to Mariansky Bridge (3)
- Eastern harbour Krásné Březno
- ferry Neštěmice
- WWTP Neštěmice

Povrly

Dobkovice



## II. Inspection control

Physical inspection for documentation of the condition was carried out on the Bílina water course in the following localities

### Ústí nad Labem

- Trmice - On the bridge
- Trmice – New Bridge at the Bělský Park
- the Railway bridge street - the mouth of Klíšský stream to Bílina river
- from Drazni street near West Railway Station in Ústí nad Labem, along Bílina river in the direction of Makro
- bridge over Bílina river between the roundabout and The Harbour street (OC Forum)
- along Bílina river from the roundabout towards Makro (Žižkova Street)

## II. Inspection control

### Monitoring of discharged waste water during the first half of 2015

- In connection with investigating the causes of increased PCB values in water samples and sedimentable suspended solids in the Elbe river, the monitoring of discharged waste water was carried out in selected entities according to valid water permits.
- The results of analyses of samples were examined:
  - discharged wastewater for entities that discharge waste water into the Elbe watercourse
  - selected entities which discharge wastewater into a single sewer and/or into the unified sewerage system in Ústí nad Labem, ending with the Waste Water Treatment Plant in Neštěmice.

# II. Inspection control

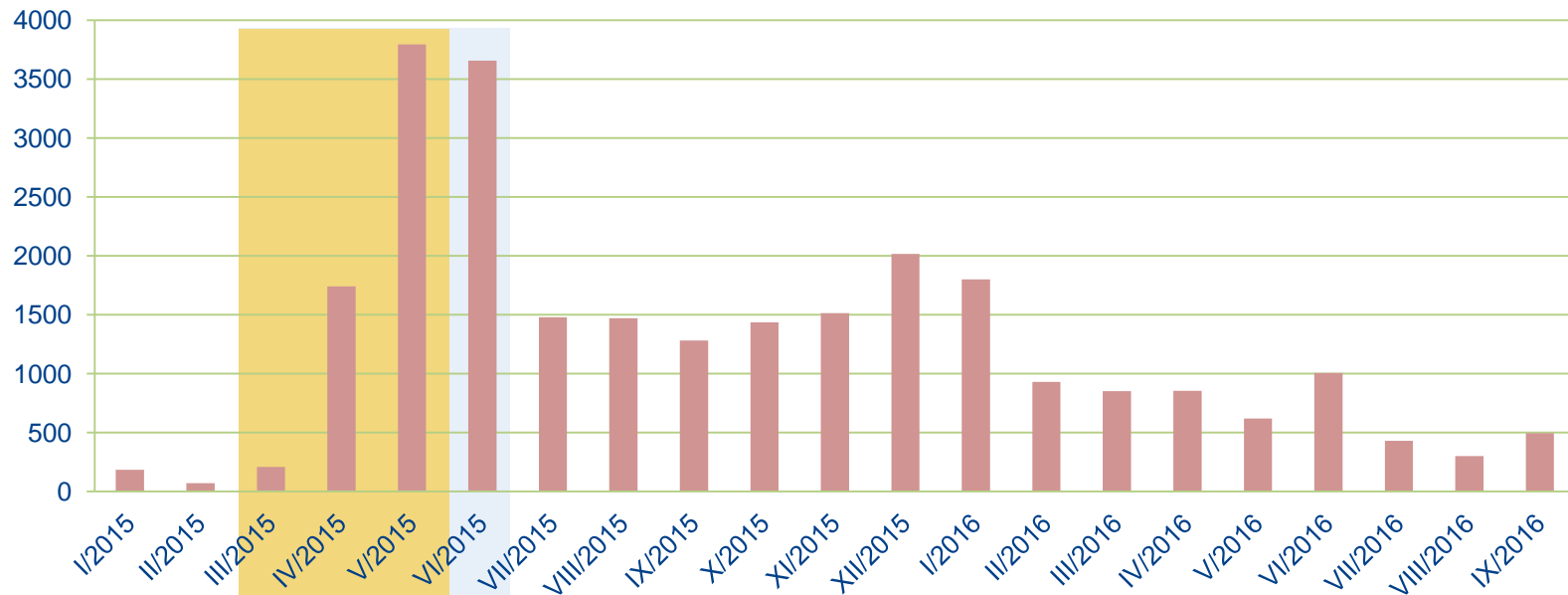
## Monitoring of discharged waste water for the first half of 2015

- WWTP Oleochem, a.s. (Elbe right bank), to which the wastewater from the entities operating on the site is discharged (Oleochem, a.s., ZEPP OIL, a.s., STZ Development, a.s., ENERGY Ústí nad Labem, Usti Oils s.r.o.)
- WWTP Ústí nad Labem - Neštěmice (Elbe left bank)
- WWTP Water glass, a.s. (Elbe left bank)
- WWTP Velké Březno (Elbe right bank)
- WWTP Copper Povrly a.s. (Elbe left bank)
- the Obalovny Úžín area, company EUROVIA Services, LLC, to Ždírnický stream (Bílina river)
- Area of the Association for Chemical and Metallurgical Production, a.s. (Spolchemie), (Bílina river)
- leakage water from the landfill Všebořice and waste water from the incinerator Trmice company SITA CZ a.s. brought into uniform sewerage system Ústí nad Labem and ending by WWTP Neštěmice
- Surveillance results of overflows at a time of increased rainfall from the premises of the Association for Chemical and Metallurgical Production, a.s., to Klíšský potok

**There were no deviations from the long-term results of analyses of waste water samples.**

# II. Inspection control

**Labe - Děčín Measurement Station: The content of  $\Sigma$ PCB ( $\mu\text{g}/\text{kg}$  dry matter) in monthly collected samples of sedimentable suspended solids compared to the realized activities on the Elbe River in Ústí nad Labem**



PROFICOLOR, a limited liability company, carried out the removal of old paint on the railway bridge

Povodí Labe, State Enterprise, realized extraction of sediments in the Elbe river stream from the locks Střekov, railway bridge to the Marian Bridge

## II. Inspection control

In the framework of investigation which was carried out by an accredited laboratory of Povodí Labe, State Enterprise and Povodí Ohře, State Enterprise, on July 17, 2015, five samples of sludge from selected WWTPs and 3 samples of fresh sediments from selected profiles on Bilina river, were taken.

Place of collection	$\Sigma$ PCB ( $\mu\text{g}/\text{kg}$ dry matter)
WWTP - BWWTP resin Association for chemical and metallurgical production, a.s. (Spolchemie)	37
WWTP - BWWTP Epitetra Association for chemical and metallurgical production, a.s.	51
WWTP Water glass, a.s. Ústí nad Labem-Neštěmice (former Tonaso)	11
WWTP Oleochem, a.s. Ústí nad Labem-Střekov (former Setuza)	120
WWTP Ústí nad Labem - Neštěmice	170
Bílina river above small hydroelectric powerat the Western Train Station	46
Bílina river cca 100 m under the outflow of Klíšský potok	80
Bílina river mouth to the Elbe	100

Based on the above results WWTPs, the MVE building at the West Railway Station, construction at the mouth of Klíšský stream to Bílina river and building above the roundabout at shopping centre Forum, can be excluded as potential sources of significant PCB contamination.

# II. Inspection control

CEI, as a part of the ongoing investigation, asked the following entities to indicate whether they operate PCB-containing equipment on the premises:

- Association for chemical and metallurgical production, a.s. (Spolchemie)
- Oleochem, a.s.
- ZEPPOIL, a.s.
- STZ Development, a.s.
- ENERGY Ústí nad Labem
- Usti Oils s.r.o.
- Copper Povrly, a.s.
- Village Velké Březno – WWTP Velké Březno
- North Bohemian water supply and sewerage, joint-stock company– WWTP Ústí nad Labem - Neštěmice
- Water glass a.s.
- EUROVIA Services, s.r.o. - Packaging Úžín
- Czech ports, a.s.- harbour area Ústí nad Labem, which manage Czech ports, a.s.
- ČSPL a.s. - port Děčín – Rozbělesy
- KOVOŠROT GROUP CZ a.s. – area in Děčín

# II. Inspection control

WWTP Ústí nad Labem – Neštěmice



WWTP Oleochem, a.s. Ústí nad Labem-Střekov



WWTP Water Glass, a.s. Ústí nad Labem -Neštěmice



WWTP BWWTP resin Association for Chemical and Metallurgical Production, a.s.



Bílina river cca 100 m under the outflow of Klíšský potok



Bílina river mouth to the Elbe





## II. Inspection control

- Sampling of fresh sediments was carried out on 20.7.2015 from the ship of Povodí Labe, state enterprise, and from the banks of the Elbe in the places where the sediments occur and the expected source of pollution.
- Chemical analyses were carried out by an accredited laboratory of Povodí Labe, a state enterprise.

# II. Inspection control

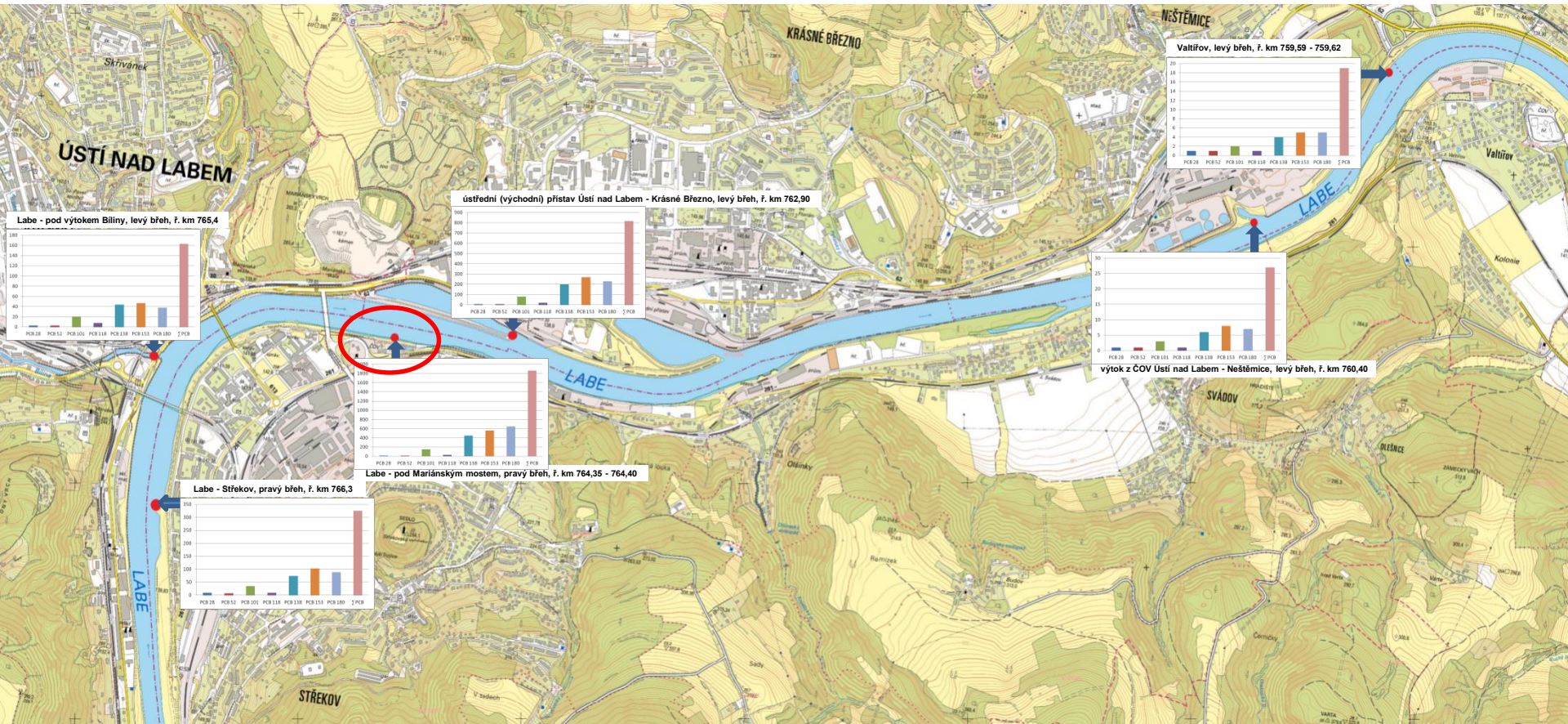
Sampling of sediments on 20.7.2015



## II. Inspection control

Place of collection	PCB 28	PCB 52	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180	Σ PCB
	µg/kg dry matter							
Labe - Střekov, right bank, river km 766,3	9	7	35	9	74	103	88	<b>325</b>
Labe – under the outflow of Bílina river, left bank, river km 765,4	3	3	20	8	44	47	38	<b>163</b>
Labe – under Mariánský bridge, right bank, river km 764,35 - 764,40	13	11	150	30	450	560	650	<b>1 864</b>
central (eastern) harbour Ústí nad Labem - Krásné Březno, left bank, river km 762,90	7	8	80	20	200	270	230	<b>815</b>
outflow from WWTP Ústí nad Labem - Neštětice, left bank, river km 760,40	< 1	< 1	3	< 1	6	8	7	<b>24</b>
Valtířov, left bank, river km 759,59 - 759,62	< 1	< 1	2	< 1	4	5	5	<b>16</b>

# II. Inspection control



Map source: <https://geoportal.gov.cz/>

## II. Inspection control

On August 27, 2015, an accredited laboratory of the Povodí Labe, a state enterprise, took samples of the sediments from the extractions deposited in the Elbe River under the railway bridge and under the Marian bridge.

Place of collection	PCB 28	PCB 52	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180	$\Sigma$ PCB
	µg/kg dry matter							
sediment extracted during extractions, river section 765,6-765,35 km (under the railway bridge)	4	4	55	11	150	210	230	<b>664</b>
sediment extracted during extractions, river section 764,6-764,4 km (under the Marian bridge)	1	2	23	5	64	89	99	<b>283</b>

# II. Inspection control

Sampling of the sediment extracted during extractions - under the railway bridge



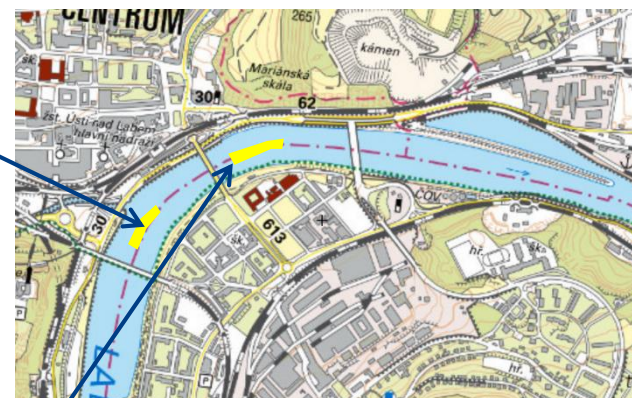
Sampling of the sediment extracted during extractions - under the railway bridge



Sampling of the sediment extracted during extractions - under the Mariánský bridge



Sampling of the sediment extracted during extractions - under the Mariánský bridge



Map source: <https://geoportal.gov.cz/>

# II. Inspection control

Analyses of chemical determinations on PCBs in soils in banks under the railway bridge

Pollutant	Left bank Povodí Labe, State Enterprise 12.10.2015		Right bank Povodí Labe, State Enterprise 12.10.2015		Left bank Povodí Labe, State Enterprise 8.2.2016		Right bank Povodí Labe, State Enterprise 12.10.2015		Average (Ø)	
	mg/kg dry matter	%	mg/kg dry matter	%	mg/kg dry matter	%	mg/kg dry matter	%	mg/kg dry matter	%
PCB 28	0,410	0,36	0,440	0,49	0,200	0,35	0,320	0,39	0,343	0,39
PCB 52	0,560	0,49	0,550	0,61	0,260	0,45	0,390	0,47	0,440	0,50
PCB 101	9,600	8,34	8,000	8,87	4,500	7,79	6,900	8,34	7,250	8,34
PCB 118	1,600	1,39	1,200	1,33	0,790	1,37	1,100	1,33	1,173	1,35
PCB 138	25,000	21,71	18,000	19,96	13,000	22,51	19,000	22,97	18,750	21,79
PCB 153	33,000	28,65	30,000	33,26	18,000	31,17	26,000	31,44	26,750	31,13
PCB 180	45,000	39,07	32,000	35,48	21,000	36,36	29,000	35,06	31,750	36,49
<b>Σ PCB</b>	<b>115,170</b>	<b>100</b>	<b>90,190</b>	<b>100</b>	<b>57,750</b>	<b>100,00</b>	<b>82,710</b>	<b>100</b>	<b>86,455</b>	<b>100</b>

# II. Inspection control

Analyses of chemical determination on PCBs in the old paint of the repaired railway bridge

Pollutant	DEKONTA, public limited company 11.1.2016		GEMATEST LLC. 3.4.2016		Povodí Labe, State Enterprise 8.2.2016		Average (Ø)	
	mg/kg dry matter	%	mg/kg dry matter	%	mg/kg dry matter	%	mg/kg dry matter	%
PCB 28	101,39	0,63	76,20	0,33	17,00	0,58	48,65	0,51
PCB 52	82,32	0,51	115,00	0,49	19,00	0,65	54,08	0,55
PCB 101	1 105,87	6,88	1 970,00	8,46	250,00	8,53	831,47	7,96
PCB 118	187,28	1,17	452,00	1,94	37,00	1,26	169,07	1,46
PCB 138	3 712,21	23,11	5 970,00	25,64	660,00	22,50	2 585,55	23,75
PCB 153	4 894,81	30,47	7 550,00	32,43	950,00	32,39	3 348,70	31,76
PCB 180	5 982,20	37,23	7 150,00	30,71	1 000,00	34,09	3 533,05	34,01
<b>Σ PCB</b>	<b>16 066,08</b>	<b>100</b>	<b>23 283,20</b>	<b>100,00</b>	<b>2 933,00</b>	<b>100</b>	<b>10 570,57</b>	<b>100</b>



## II. Inspection control

Analyses of chemical determination on PCBs in used abrasives

Pollutant	Povodí Labe, State enterprise (residues of used abrasives at the foot of the railway bridge, bicycle path) 31.7.2015		Povodí Labe, State enterprise (residues of used abrasives from temporary storage At the station building nb 13/1587) 19.2.2016		Average (Ø)	
	mg/kg dry matter	%	mg/kg dry matter	%	mg/kg dry matter	%
PCB 28	0,43	0,54	0,42	0,38	0,43	0,46
PCB 52	1,10	1,37	0,56	0,51	0,83	0,94
PCB 101	9,63	11,99	8,30	7,57	8,97	9,78
PCB 118	6,16	7,67	1,40	1,28	3,78	4,48
PCB 138	16,90	21,04	24,00	21,88	20,45	21,46
PCB 153	21,40	26,64	36,00	32,82	28,70	29,73
PCB 180	24,70	30,75	39,00	35,56	31,85	33,16
<b>Σ PCB</b>	<b>80,32</b>	<b>100</b>	<b>109,68</b>	<b>100</b>	<b>95,00</b>	<b>100</b>

# II. Inspection control

Railway bridge– original state



Railway bridge– original state



Railway bridge– original state



Railway bridge– during repair



Railway bridge– during repair

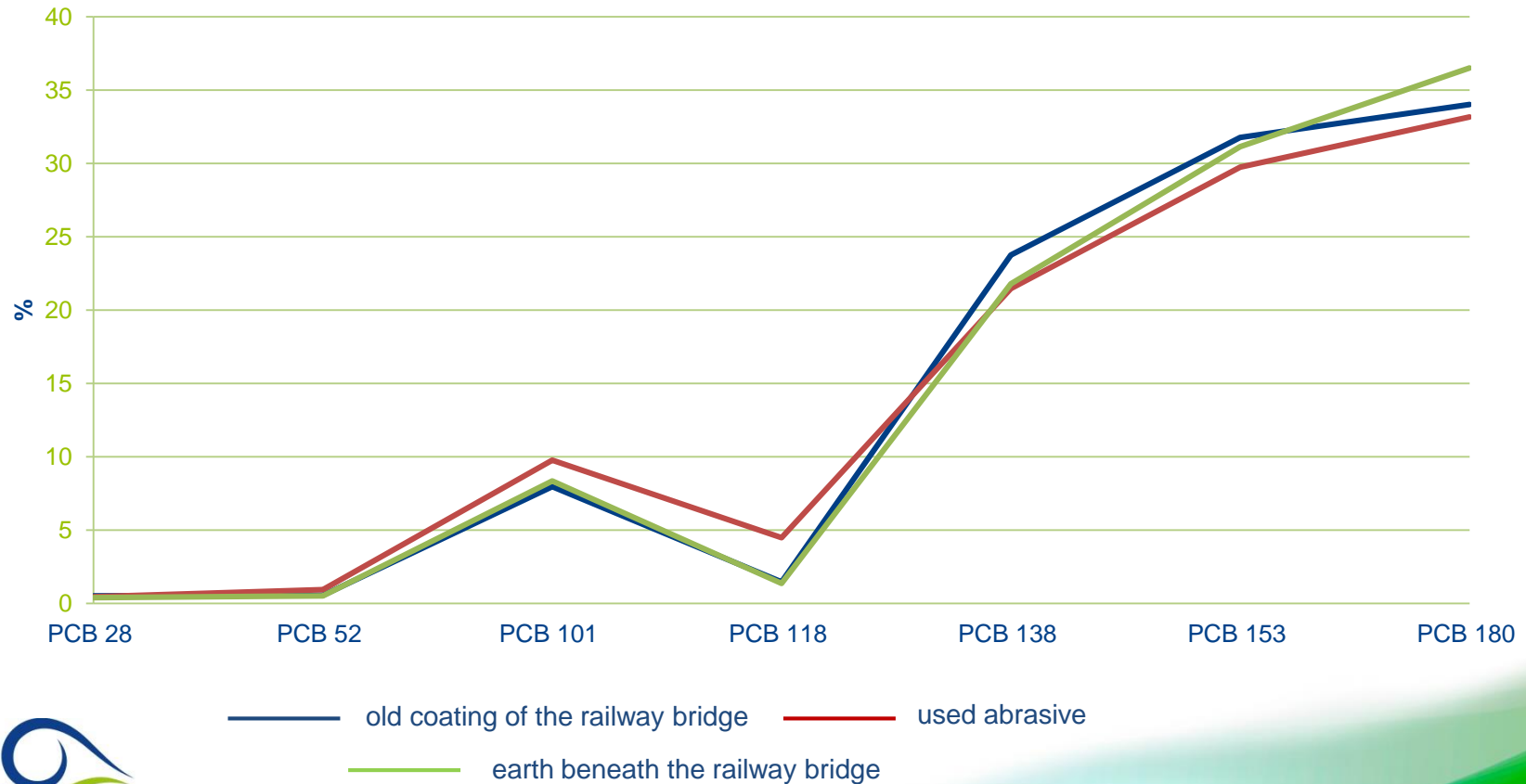


Railway bridge– during repair









# II. Inspection control

From the graph below, it is clear that the percentage of PCB congeners is the same in the case of the old coating of the railway bridge, in the used PCB - contaminated abrasive from the blasting of the railway bridge and the ground beneath the railway bridge.



## II. Inspection control

Potential source of contamination based on control of the Czech Environmental Inspectorate	YES/ NO
Enterprises in the city agglomeration Ústí nad Labem	
Discharged wastewaters into the surface waters of the Elbe and Bílina rivers	
Sedimentable suspended solids in the Bílina river	
Construction work on the Bílina river in the agglomeration of Ústí nad Labem	
Sedimentable suspended solids in the Elbe river - activities related to the extractions of bottom sediments in the Elbe river in the agglomeration of the town of Ústí nad Labem	
Activities related to the repair of the railway bridge over the river Elbe in Ústí nad Labem - blasting of the old coating	

# II. Inspection control

## Summary

- Although there is a general awareness of the contamination of the Elbe bottom sediments, no analyses of the contents of particularly hazardous substances were carried out prior to extraction in the bottom sediment extraction sites to verify the PCB concentrations in the sediments.
- Higher concentrations of PCBs in sediments have already been verified by previous analyses presented within the SedBiLa project results. Declared increased levels of PCBs in the lower Elbe River were proven in 2013 at its periphery (ports, blind arm of the river, etc.).
- According to the SedBiLa report of 2013, it was recommended to develop a plan for technical possibilities for the removal of sediments (Feasibility Study in accordance with methodological instruction of ME) from the Elbe River, predominantly in locations with a very significant risk.
- The sediments of the Elbe River, as well as the extracted river material located in the flow during the 2015 extractions, were contaminated by PCBs. Verified by the analyses provided by the CEI on the removed and temporarily stored material in the river Elbe under the railway bridge (664  $\mu\text{g}/\text{kg}$  dry matter) and further downstream under Mariánský Bridge (283  $\mu\text{g}/\text{kg}$  dry matter).

# II. Inspection control

## Summary

- Pollution of sedimentable suspended solids by PCBs in the Elbe was partly due to the leakage of abrasive material (siliceous sand) containing PCB, which was used to remove the original coating of the railway bridge in Ústí nad Labem. The repair was carried out by PROFICOLOR, a limited liability company.
- During the time the bridge was under repair, the used abrasive was trapped by rubber fabric and canvas cover and continuously transported away, but some of the material in the form of dust got into the air and then into the surface waters of the Elbe and to the terrain.
- The original paint of the bridge from the 1960s included PCBs.

# II. Inspection control

## Report from inspection

Department of Waste Management OI Ústí nad Labem decided under file no ČZIŽP/44/OOH/SR01/1505893.010/UJT dated 24. 11. 2015 to penalize company PROFICOLOR, limited liability company, **the fine of 300 000,00 CZK** for breaching the duties when handling hazardous waste.

The breaching involved:

- failure to keep continuous records of generated waste (used abrasive) containing PCB;
- waste containing PCB has not been passed on to an authorized person to take over this type of waste;
- storage of waste containing PCB on temporary storage in the area of the railway station Ústí nad Labem-Střekov without weather and leakage protection



**The decision came into force on 25th January 2016.**

# II. Inspection control

## Report from inspection

Department of Water Protection OI Ústí nad Labem decided under file no ČIŽP/44/OOV/SR01/1509850.006/16/UZS dated 21.1.2016 to penalize company PROFICOLOR, limited liability company, **the fine of 100 000,00 CZK** for failing to fulfil the obligations under the Water Act.

Failure to fulfil obligations concerned:

- when repairing the railway bridge, sand dropping, containing the original anticorrosion coating with PCBs from the blasted surface of the railway bridge construction into the Elbe watercourse and the terrain, was not sufficiently secured.



# II. Inspection control

During the administrative procedure, for the purposes of assessing the status and extent of the contamination of the soils in the Elbe river banks around the railway bridge and in the place of temporary storage of used abrasive, a new soil sampling including analyses of PCBs was carried out on instructions of CEI.

The new sampling was decided by the CEI for the following reasons:

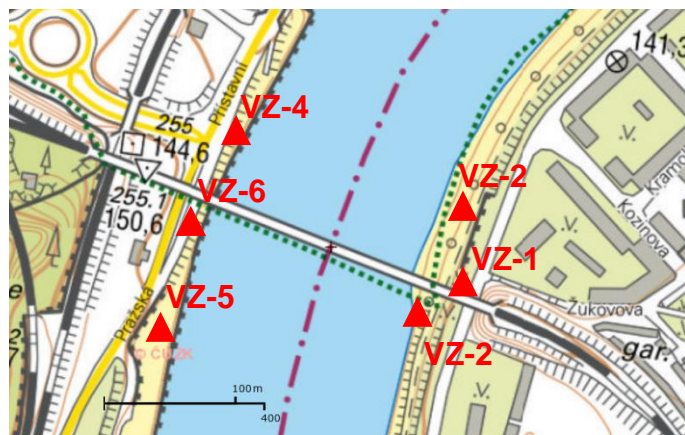
- only 2015 analyses were available from the area;
- representatives of the company PROFICOLOR, a limited liability company with which the administrative proceedings were started, questioned the results of the analyses in the appeal (they were not present at all sampling, the analyses were carried out mainly by laboratory of Povodí Labe, state enterprise)

Sampling on 21 September 2016 and chemical analyses were carried out by the accredited laboratory AQUATEST PLC.

The results of chemical analyses were used for decision on corrective measures.

# II. Inspection control

Place of collection	PCB 28	PCB 52	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180	Σ PCB
	µg/kg dry matter							
VZ-1	90,5	136	2 540	385	8 210	9 920	10 400	31 700
VZ-2	10,9	18,3	230	48,1	743	916	942	2 910
VZ-3	111	171	3 420	509	12 500	12 600	13 500	42 800
VZ-4	32,8	56,1	963	169	3 280	3 790	4 180	12 500
VZ-5	6,33	12,4	154	32,0	558	720	736	2 220
VZ-6	33,4	54,5	970	162	2 990	3 620	3 650	11 500
Set target parameter for soils according to the methodological instruction of MoE Pollution indicators from 2013								220



Map source: <https://geoportal.gov.cz/>

## II. Inspection control

On the basis of the updated data, CEI territorial inspectorat Ústí nad Labem decided under file no ČIŽP/44/OOV/SR02/1509850.016/16/ UHS dated 25.10.2016 to order corrective measures on **PROFICOLOR, a limited liability company, to remove the consequences of illegal handling of harmful substances** (abrasive with PCBs) carried out by PROFICOLOR,LLC, from October 2014 to May 2015 during renewal of anticorrosion protection of steel bridge structures of the railway bridge in Ústí nad Labem.

**The decision came into force on 11th November 2016.**

# II. Inspection control

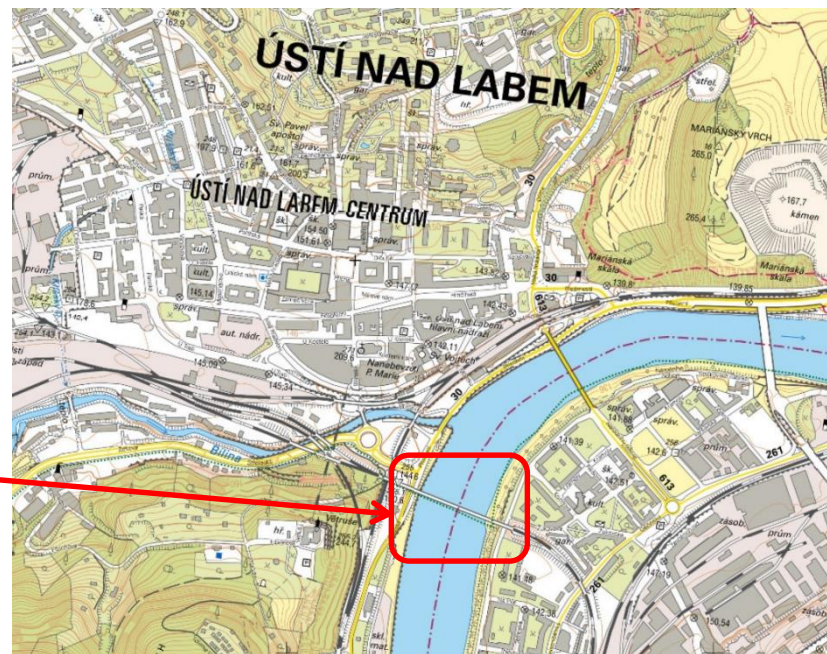
## Corrective measures included:

- To carry out next research on pollution of river banks under the railway bridge and its close environs up to 50 m on each side of the axis of the railway bridge.
- Update the Implementation project of decontamination works based on the results of the research to address the decontamination of both banks of the River Elbe under the railway bridge and its close environs , as well as the removal of residual contamination on the site next to the building At the Station 13/1587 (temporary storage).
- Remove above limit contaminated soil according to the updated Implementation project of decontamination works .
- To prepare a final report on carrying out the decontamination works and to send it to the CEI OI Ústí nad Labem and Povodí Labe, state enterprise.

# III. Removal of contaminated soil from the area of the railway bridge and temporary storage of abrasive used

# III. Removal of contaminated soils

Based on the confirmed contamination of PCBs in bank areas under the railway bridge to a distance of 50 m on each side of the axis of the railway bridge at a depth of 0 to 10 cm from landscaped terrain and at the site of the original temporary storage of used abrasive at building At the Station no. 13/1587 in the area of Střekovský railway station, DEKONTA, PLC decontaminated the area by displacing the contaminated soils.



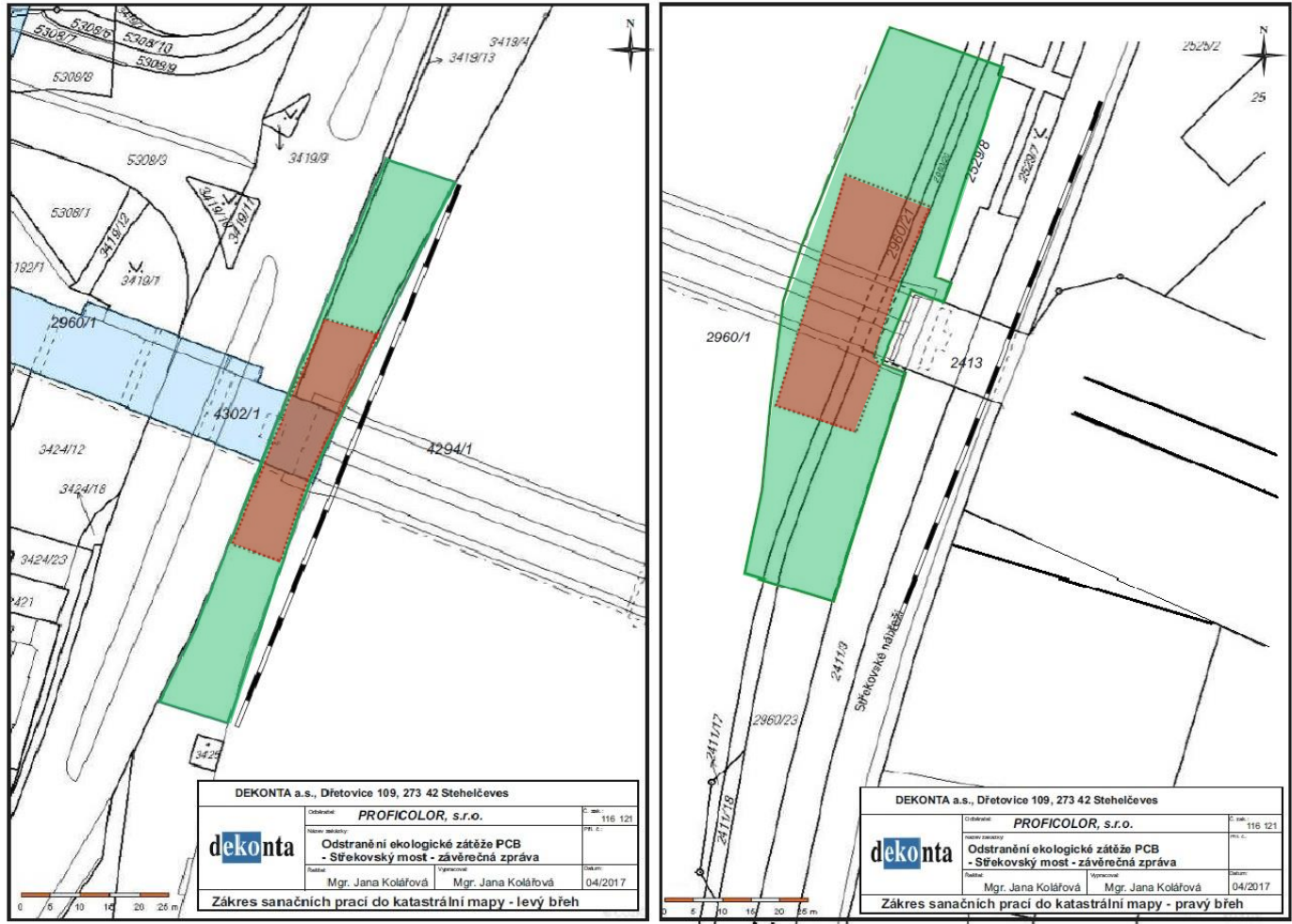
Place of realization

Map source: <https://geoportal.gov.cz/>



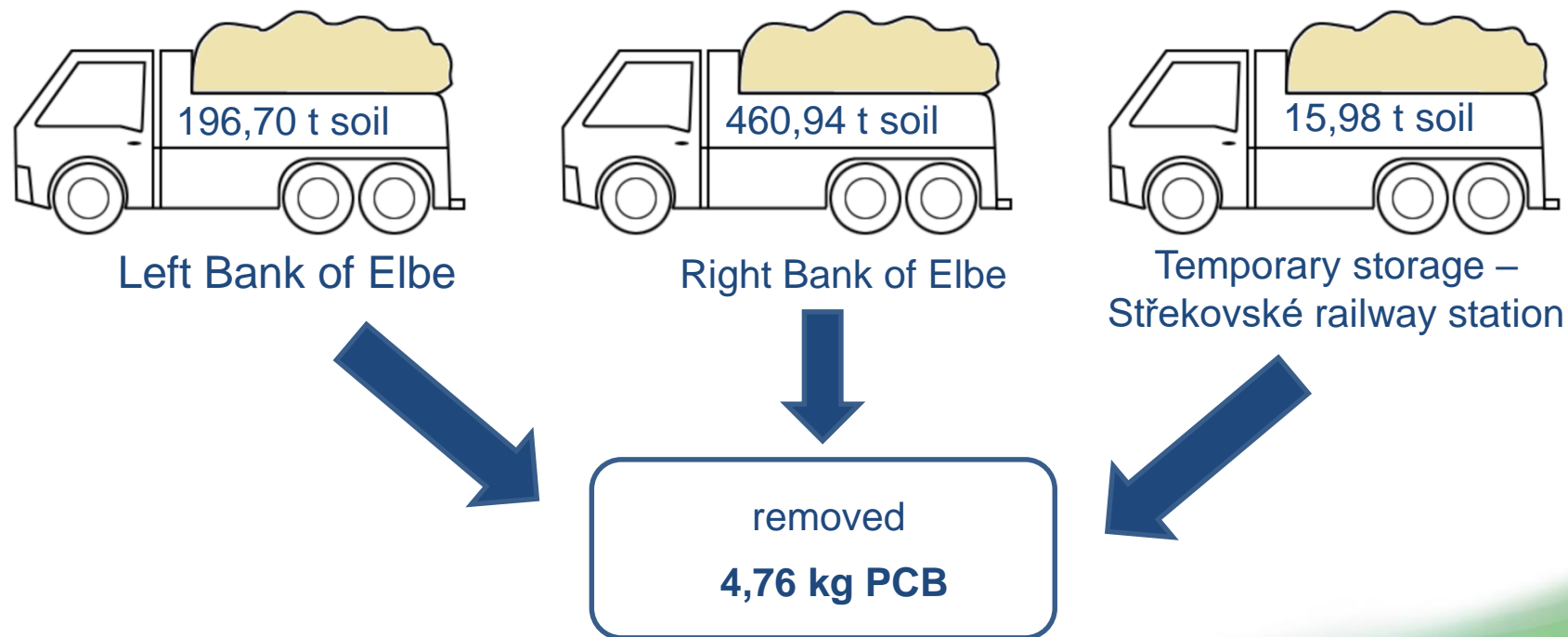
# III. Removal of contaminated soils

- 1st stage
- 2nd stage



# III. Removal of contaminated soils

## Amount of PCB removed by decontamination work





# III. Removal of contaminated soils

Left bank – before decontamination



Left bank – after removal of contaminated soil, final sampling



Left bank – after decontamination



Right bank – before decontamination



Right bank – after removal of contaminated soil, final sampling



Left bank – after decontamination



# III. Removal of contaminated soils

By implementation of the decontamination works was:

- fulfilled the decision issued by CEI TI Ústí nad Labem under file no. ČIŽP/44/OOV/SR02/1509850.016/16/UHS dated 25.10.2016, which ordered corrective measures
- removing of results of illegal handling of harmful substances

# IV. Occurrence of polychlorinated biphenyls in the Elbe river stream sediments

# Occurrence of PCBs in sediments

- there are no emission limit values for the presence of PCBs in river sediments in Czech legislation
- the detected PCBs values can only be compared with the criteria for a particular use of these sediments

# Occurrence of PCBs in sediments

Methodological instruction and legislation	PCB (µg/kg dry matter)
Methodological instruction MoE Pollution indicators 2013 - other areas	220
Methodological instruction MoE Pollution indicators 2013 - Industrially used area	740
Decree no. 257/2009 Sb., on the use of sediments on agricultural land, Annex 1 Limit values of hazardous elements and substances in sediment	200
Decree no. 294/2005 Sb., on the conditions of waste disposal at landfills and their use on the surface of the land and amending Decree nb.383/2001 Sb., details of waste management, Table no. 10.3 Requirements for the content of pollutants in sediments used on the terrain surface	200
Decree no. 153/2016 Sb., laying down detailed rules for the protection of the quality of agricultural land and amending Decree nb.13/1994 Sb., which regulates some details of the protection of the Agricultural land resources, Table no. 4 Indication values of hazardous substances , when they are exceeded human and animal health can be endangered	1 500

# Total content of PCBs in Elbe sediments

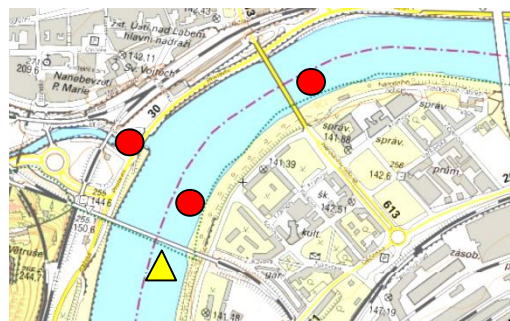
## Key:

$\Sigma$  PCB ( $\mu\text{g}/\text{kg}$  dry matter)

- < 10 – 219
- ▲ 220 – 1 499
- > 1 500

Analyses made by

- Ochrana podzemních vod, s.r.o.
- Povodí Labe, státní podnik
- ALS Czech Republic, s.r.o.



Map source: <https://geoportal.gov.cz/>

# Total content of PCBs in Elbe sediments

- Increased concentrations of PCBs in sediments form isolated enclaves, including areas with a significantly lower PCB content.
- The representation of individual PCB congeners in samples taken does not allow the resolution of any individual sources of pollution. The exception is the Bílina river sediments with a relatively higher proportion of PCB-28 and PCB-52.
- Elevated concentrations of PCBs were also found in the river sediments of the Elbe beyond the railway bridge up the river stream. Suspended solids with PCBs could be released from deeper layers of the river bed while extracting shipping trajectory and elevated levels of PCBs in sediments were caused by its remobilization.
- Part of the increased values of PCBs is due to the reckless use of these toxic substances in the past and their long-term storage in the river sediments of the Elbe.

# Total content of PCBs in Elbe sediments

- PCB content in river sediments can change significantly over time at the same site, which can be explained by hydrological processes, by washing out and re-sedimentation.
- Evaluation based on individual samples can not affect the actual distribution of contaminants.
- It is necessary to prepare the Feasibility Study in accordance with the methodological instruction ME, which will include pilot projects for extraction of selected sections of the Elbe River. The feasibility study must specify the technical and the climatic conditions for possible future extractions, including the conditions necessary for processing in the Plan of measures in emergency.
- Prior to commencing extraction of bottom sediments, it is always necessary to document their quality.



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# Thank you for your attention

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