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International POPs Elimination Project

*Fostering Active and Efficient Civil Society Participation in
Preparation for Implementation of the Stockholm Convention*

Hazardous waste incinerator in Lysa nad Labem and POPs waste stockpile in Milovice

Arnika Association

**Czech Republic
February 2006**

About the International POPs Elimination Project

On May 1, 2004, the International POPs Elimination Network (IPEN <http://www.ipen.org>) began a global NGO project called the International POPs Elimination Project (IPEP) in partnership with the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Program (UNEP). The Global Environment Facility (GEF) provided core funding for the project.

IPEP has three principal objectives:

- Encourage and enable NGOs in 40 developing and transitional countries to engage in activities that provide concrete and immediate contributions to country efforts in preparing for the implementation of the Stockholm Convention;
- Enhance the skills and knowledge of NGOs to help build their capacity as effective stakeholders in the Convention implementation process;
- Help establish regional and national NGO coordination and capacity in all regions of the world in support of longer term efforts to achieve chemical safety.

IPEP will support preparation of reports on country situation, hotspots, policy briefs, and regional activities. Three principal types of activities will be supported by IPEP: participation in the National Implementation Plan, training and awareness workshops, and public information and awareness campaigns.

For more information, please see <http://www.ipen.org>

IPEN gratefully acknowledges the financial support of the Global Environment Facility, Swiss Agency for Development and Cooperation, Swiss Agency for the Environment Forests and Landscape, the Canada POPs Fund, the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM), Mitchell Kapor Foundation, Sigrid Rausing Trust, New York Community Trust and others.

The views expressed in this report are those of the authors and not necessarily the views of the institutions providing management and/or financial support.

This report is available in the following languages: English

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Summary

Eggs and other food sources were sampled for dioxins, furans, and HCB near a hazardous waste incinerator located in Lysa nad Labem. The incinerator is located in a densely inhabited agricultural area. The vast majority of the inhabitants raise chickens or other animals for food. Dioxin and furan levels were more than 1.5 times higher than EU limits. Significant levels of PCBs and HCB were also found. The majority of poultry and game samples exceeded EU dioxin standards.

Description of the site and population

The hazardous waste incinerator in Lysa nad Labem: 50°13' north latitude and 14°51' east longitude; Milovice - POPs waste stockpile: 50°14' north latitude and 14°52' east longitude (see detailed map in Picture 1 (Annex 1).

Lysa nad Labem and Milovice are northwest of the city of Prague in the valley of the Czech Republic's largest river, the Labe (Elbe). The hazardous waste incinerator is situated on the northern border of the town Lysa nad Labem on the hill, Sibak, 600 metres from the nearest house in that town.

The hazardous waste stockpile near Milovice is located in a former military base area and became contaminated as a result of abandoned hazardous waste incinerator construction. Tons of hazardous waste containing PCBs, dioxins, and DDT were stored there for 10 years.

These hot spots are in a densely inhabited area with strong agricultural production of fruits and vegetables, especially potatoes. The vast majority of the inhabitants raise fowl and/or other farm animals (rabbits, goats, and sheep) at home.

More details about the hot spots

The hazardous waste incinerator in Lysa nad Labem has operated since June 2000 (trial operation was approved on April 12, 2000) and was built by REAN Company in between 1998 and 2000. The expected incinerator capacity is 3500 tons of hazardous solid and liquid waste yearly, but burns between 690 – 3,257 tons/year. It is an incinerator with rotary furnaces equipped with filters to control dioxins emissions to air. It produces 4,000 – 4,500 m³ of flue gas per hour. Its emission levels of dioxins (PCDD/Fs) range from 0.031 ng I-TEQ/m³, measured in 2004, up to 0.2711 ng I-TEQ/m³, measured in 2000. All detailed data are available at Arnika's archive (<http://english.arnika.org>).

Handling incinerator fly ash which contains high levels of dioxins may play a crucial role during contamination of the neighbouring environment. The handling results in considerable dust rising

which can be clearly seen on the masonry from the surrounding driveway where the fly ash is collected.

From the viewpoint of environment contamination by POPs it is important to mention, that on the same site of this new incinerator in Lysa nad Labem there was an older incinerator that operated up to the end of 1993.

Pollution pathways

The area potentially most affected by emissions from the hazardous waste incinerator is shown on the scatter map in Picture 2 (Annex 1). The largest area most affected by incinerator pollution is drained off to the brook, Mlynarice. Waterways are visible on the map in Picture 1 (Annex 1)

Other potential sources of POPs releases?

Besides the POPs leaking from the incinerator of hazardous wastes and the waste stockpile in Milovice the sources of POPs leaking in the past could have produced eventual waste stockpiles or reserves of oils with PCBs, or munitions containing HCB in the former Soviet Army military base. In Lysa nad Labem coal and wood burning are possible POPs sources, but only a relatively small percentage of households are heated this way. The central heating facility could be another source of POPs emissions but they have been using natural gas as a fuel over the last 10 years.

POPs measurements in the environment in Lysa nad Labem and its surrounding area

There were several samplings of soil, animals and human blood for POPs analysis since the beginning of 2003, when Arnika Association took the first samples of biota for POPs analysis (Petrlík, J., Havel, M. 2003).

The findings include dioxins (PCDD/Fs) at levels between 0.68 – 3.90 pg/g (I-TEQ) in soils (sources: Holoubek, I., Cupr, P. 2004, Petrlík, J., Havel, M. 2003 and Vacha, R. et al. 2003).

The majority of poultry and game samples exceeded EU standards for PCDD/Fs levels in food, which is 2 pg/g of fat (in WHO-TEQ) for poultry and game and 3 pg/g of fat (in WHO-TEQ) for eggs.

An overview of samples taken from animals and eggs are displayed in map in Picture 3. The levels of dioxins observed in samples were as follows:

- poultry (hens and cock) 3.5 – 4.6 pg/g of fat (in WHO-TEQ)
- hares 0.8 – 1.6 pg/g of fat (in WHO-TEQ)
- pheasants 5.8 – 14.6 pg/g of fat (in WHO-TEQ)
- chicken eggs 5.0 pg/g of fat (in WHO-TEQ)
- fish 5.6 – 22.9 pg/g of fat (in WHO-TEQ) and between 0.06 and 0.49 pg/g of fresh weight (in WHO-TEQ)
- and in human blood (Cerna, M. et al. 2004) 4.2 – 18.6 pg/g of fat (in WHO-TEQ)

Also PCBs were measured in some animal and human samples in Lysa nad Labem. Levels found were as follows:

- poultry (hen and cock) 9.9 – 11.3 pg/g of fat (in WHO-TEQ)
- eggs 21.7 pg/g of fat (in WHO-TEQ)
- fish 28.6 – 209.8 pg/g of fat (in WHO-TEQ)
- and in human blood (Cerna, M. et al. 2004) 7.1 – 40.2 pg/g of fat (in WHO-TEQ)

HCB was measured in eggs (46.2 ng/g of fat) and cock (1.05 ng/g of fat).

For more information about this hot spot, please see the references below. More information can be obtained also from Arnika –Toxics and Waste Programme or at its website:
<http://english.arnika.org>.

Information resources and literature:

Blaha, A. et al (1994): Ecological waste incinerator Lysa nad Labem. EIA document. INVESTprojekt, Brno 1994.

Cerna, M. et al (2004): Report on screening study results of exposition Lysa n. Labem inhabitants to polychlorinated dioxins, dibenzofurans and polychlorinated biphenyls with dioxin impact. Published by State Health Institute Prague 2004.

Cetl, P. et al (2004): Final fittings of hazardous waste incinerator in v Lysa nad Labem. Assessment of impact to the environment documentation. INVESTprojekt NNC, Brno 2004.

Commercial Academy in Lysa nad Labem (2004): Evaluation of research on public opinion. City Hall in Lysa nad Labem, 2004.

Holoubek, I., Cupr, P. (2004): Evaluation of PCDDs/Fs frequency in soil in the Czech Republic and comparison to values found in Lysa nad Labem location. TOCOEN Brno 2004.

Obrsal, Z. (2004): Assessment of impact to the environment documentation by law Czech National Board number 100/2001 Statutes in effective wording. Intention: Final fittings of hazardous waste incinerator in v Lysa nad Labem. Prague 2004.

Ocelka, T., Cerna, M. a Holoubek, I. (2004): Monitoring of polychlorinated dibenzo-p-dioxins, dibenzofurans and congeners polychlorinated biphenyls with dioxin impact in Lysa nad Labem. Health Institute Ostrava 2004.

Ocelka, T. et al (2004): Report on assays for POP identification, sampled on March 12, 2004 in location of Lysa nad Labem. Health Institute Ostrava 2004.

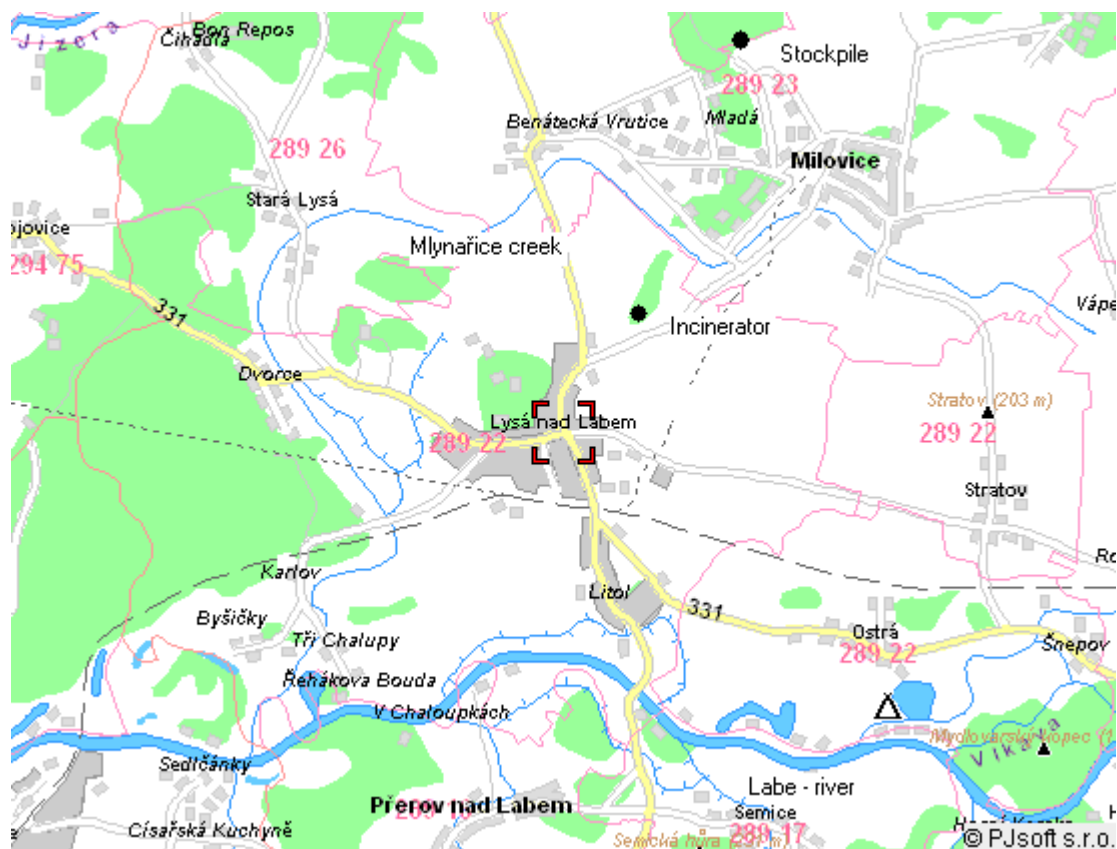
Petrlik, J., Havel, M. (2003a): Toxic chemicals in the environment - in the immediate neighbourhood of the hazardous waste incinerator in Lysa nad Labem. Arnika - Toxics and Waste Programme initial study published in 2003.

Petrlík, J., Havel, M. (2003b): Brief evaluation of end results fish analysis from Lysá nad Labem and Milovice. Arnika, Prague, 2003.

Vacha, R. et al (2003): Pollutant load of agricultural soil by hazardous materials, Lysá nad Labem. VUMOP Prague, Division of Soil Hygiene, Prague, September 2003.

Annex 1. Maps, tables, and pictures

Picture 1: General map of the region with hot spots. Incinerator = hazardous waste incinerator in Lysá nad Labem location, Stockpile = obsolete stockpile Milovice located at the site where an incinerator was originally planned.



Picture 2: Scanned copy of a map enclosed in the scatter study in the documentation evaluating the impact to the environment surrounding the hazardous waste incinerator in Lysá nad Labem (source: Blaha, A. et al 1994). We highlighted in the map area with the isoline of higher values of air pollution loads by toxic pollutants.

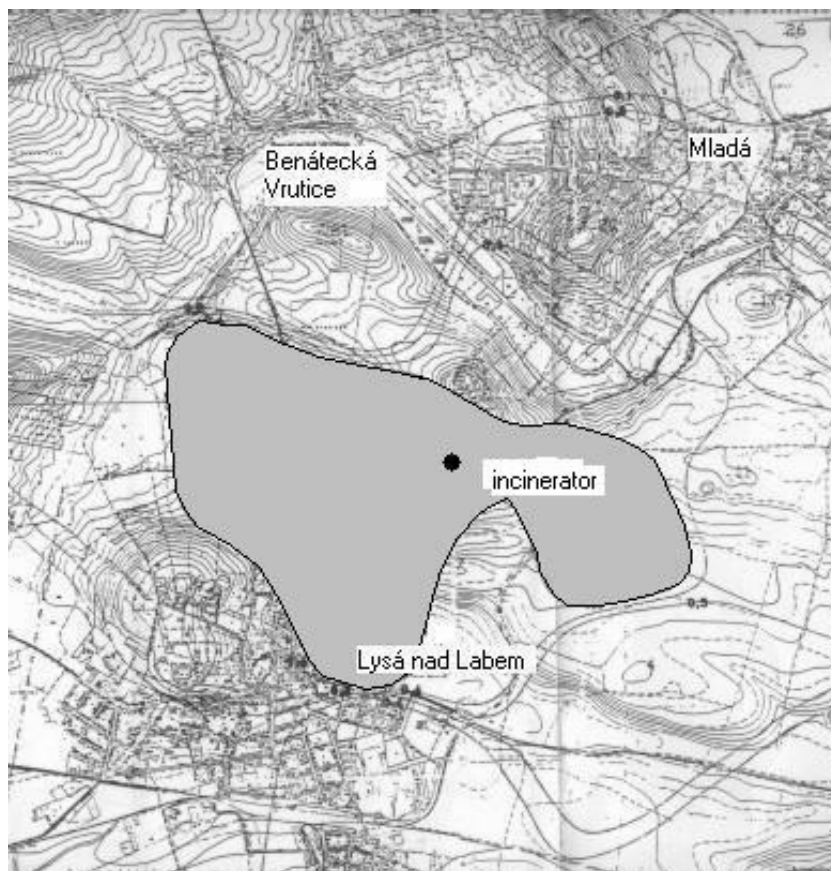


Table 1. Sampling history and PCDD/Fs analysis results for poultry, game, fish and eggs samples in Lysá nad Labem and surroundings. EU limits according to 2375/2001 EC in pg WHO – TEQ/g of fat.

	Organization	Sample No.	PCDD/Fs level in pg WHO-TEQ/g of fat	EU limits	Date of sampling
Cock	Arnika	3494	4.0	2	March 2003
Hen	Arnika	3648	3.5	2	July 2003
Hen	City of Lysa	3637	4.6	2	July 2003
Hen	City of Lysa	3636	3.5	2	July 2003
Hare	City of Lysa	3635	1.6	2	July 2003
Hare	City of Lysa	3634	0.8	2	July 2003
Pheasant	City of Lysa	3639	5.8	2	July 2003
Pheasant	City of Lysa	3638	14.6	2	July 2003
Fish	Czech Inspection for Environment	3643	22.9	-	July 2003
Fish	Czech Inspection for Environment	3644	17.5	-	July 2003
Fish	Czech Inspection for Environment	3645	5.6	-	July 2003
Fish	Czech Inspection for Environment	3646	6.9	-	July 2003
Eggs (4 eggs pool s.)	Arnika	4036	5.0	3	Feb. 2004

Picture 3: Map with marked sampling places of poultry, game, fish and eggs. Other information is displayed in Table 1.



Picture 4: Photo of the hazardous waste incinerator in Lysa nad Labem. Photo: Hana Marcanikova (2002).



Picture 5: Waste storage in the incinerator. Photo: Jana Matkova (2002).



Picture 6: Sampling site of the sample No. 3494 and of several soil samples taken by Arnika as well as by others (see resources for soil sampling in text). Photo: SZU Ostrava.

