



**Workshop on Mercury Management and
decontamination in the framework of
the Mediterranean Regional Plan on
Mercury**

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Melisa Džonlić, HEIS, Sarajevo, BiH



Hydro-Engineering Institute - independent, market oriented scientific and research organization.

-science and research work, education, planning, consulting as well as revision of investment and technical documents from the fields of water and environment.

-independent, market oriented Laboratory for Water Quality Research as well as Team for Detection and Measurement of Water Losses in water supply systems.

- In last 5 years our team detected and prevented loss of more than 40.000 m³/d of water, which corresponds to daily demand of a city with 200.000 inhabitants.



- Key pieces of legislation relevant to water monitoring are each entities' Law on Water (FBiH 70/06 and RS 50/06 and 92/09).
 - two water agencies for the Sava River and Adriatic Sea Basin are responsible for establishment and management of the water management data processing system
 - the laws oblige all other legal bodies, institutions, companies that use water or are engaged in public water supply (public utility companies) or discharge wastewater, to install devices for measuring and control of water quality and quantity and to carry out measuring and testing, to keep proper records and to submit data to the FBiH PCWAs and RS MoAFW, respectively.

Monitoring on automatic hydrological stations in FBiH

www.voda.ba





- legislation relevant to water monitoring in FBiH 70/06:
- Regulation on Dangerous and Harmful Substances in Water (FBiH O.g. No 43/07)
- Regulation on Water Classification (SRBiH O.g. 42/67)
Limit for Hg 0,02 mikro g/l (I and II class) and 1,0 (III and IV)
- Rulebook on Drinking Water Safety (limit for Hg 0,001 mg/l)
- Rulebook on conditions for waste water discharge into natural waters and public sewerage discharged into surface recipients or in the municipal sewage system (FBiH O.g. 04/12) – according to EU standards



- **“Rulebook on conditions for waste water discharge into natural waters and public sewerage discharged into surface recipients or in the municipal sewage system 0,01 mg/l – for 5 year! 2012-2017**

For natural waters:

Substance	CAS	priority substances	annual conc. for Inland surface waters (µg/l)	annual conc. for for other surface water (µg/l)	annual conc. surface water (µg/l)	Limit for other surface water (µg/l)
Hg and Hg-compounds	7439-97-5	+	0,05	0,05	0,07	0,07

For industry discharges:

Parametar	Jedinica mjere	Granične vrijednosti emisije industrijskih otpadnih voda koje se ispuštaju u	
		površinska vodna tijela	javni kanalizacioni sistem
32 Živa, Hg	mg/l	0,01	0,01



- Environmental law and relevant Rulebooks which are in the force at the moment in Bosnia and Herzegovina do contain neither limit range, nor industry specific limit value for mercury emission. Therefore, there is a single limit value for mercury emission applicable to all industries on the territory of Bosna and Herzegovina.



- Laboratories analysis Hg in industry discharges only if that issued by the environment permits or specified by regulated laboratory;

Companies in BiH as possible Hg polluters are:

- Cement Factories in Kakanj (770 000 t/y of cement) and Lukavac (800 000 t/y of cement);
- Thermo Power plants in Kakanj (2300GWh), Tuzla (3100 GWh), Ugljevik (1560 GWh) and Gacko (1500 GWh).
- Pharmaceutical Company Bosnalijek SA;
- 9 laboratories in FBiH (www.voda.ba) and 11 in RS (<http://www.voders.org>)
- manufacture of polyurethane elastomers in company "Moj San", Kakanj and ZAHAREX d.o.o. Srebrenik
- <http://www.fmoit.gov.ba/userfiles/Federalni%20plan%20upravljanja%20otpadom%202012-2017%281%29.pdf>



- The estimated quantity of waste batteries and accumulators, which are generated in BiH is 6000-7000 t / year of which approximately 4,000 t / y occurs in the FBiH. Company manufacturing batteries, lead alloys, equipment and trade "Tesla" dd Brcko has a capacity of 30,000 tons of recycling of waste batteries and accumulators per year and currently is the only company in BiH dealing with this kind of activity. The company has propelled smelting plant with modern equipment for the recycling of old batteries and batteries, and has an environmental permit. So now there is a capacity for the disposal of these wastes within BiH (<http://www.fmoit.gov.ba/userfiles/Federalni%20plan%20upravljanja%20otpadom%202012-2017%281%29.pdf>)



- Mine Sase AD Srebrenica - leading Bosnian metal ore mining company, based in Srebrenica, Bosnia's Serb Republic. It specializes in lead, zinc and silver mining and related activities. Capacity for this year was 240 000 t/y of crude ore(<http://www.swot.ba/index.php?modul=vijesti&poziv=vijest&idr=23&idv=6261>)
- Mine of iron ore in Vareš is closed, and there are still a lot of not treated waste water and waste.



- soil monitoring does not exist in the country. Efforts are limited to ad hoc observations on the scope of projects, soil quality evaluations, studies and other activities performed by such institutions as the Institute for Agropedology in Sarajevo, the Agriculture Institute of Banja Luka and the Agronomy Institute of Mostar. One example includes the inventory of the post-war land resource situation in BiH, implemented under the Food and Agriculture Organization (FAO) project in 2007. Another example is a pilot project being implemented in several RS municipalities by the RS Agriculture Institute, to identify parameters, plots and pollutants for soil monitoring.



- **Air Quality**
- • Rulebook on Air Quality Monitoring, No. 12/05
- • Rule Book on Limit Values of Air Quality, No. 12/05
- **Network of air-quality monitoring stations doesn't measure Hg**



- Both FBiH and RS have a law on waste management (OG FBiH No. 33/03, OG RS No. 53/2 and amendment No. 65/08 respectively) and the two laws are harmonized ;
- The Law on Waste Management specifies that the landfill permit shall state the type of landfill concerned (municipal or hazardous) and a list of the types and quantity of waste to be accepted.
- Majority of existing dumpsites, as well as newly constructed regional landfills, are receiving a variety of types of waste, not limited to municipal waste, including hazardous household waste, medical, animal, and industrial waste.



- Specific by-laws and regulations on the handling of hazardous waste, except those for the transboundary movement of hazardous waste, do not yet exist, and there are no regulations or by-laws on handling and treatment of E-waste. According to the sanitary landfill operators, such waste is not accepted, and only a certain number of computer parts are recycled by the industrial waste recycling companies



- In BiH, there is no separate collection system for hazardous materials, i.e. batteries, mercury, etc. and everything ends up in landfills or dumpsites. There are 25 registered municipal landfills in RS and 50 in FBiH. Only a few landfills, i.e. in FBiH, Uborak in Mostar, Tešanj, Smiljevići in Sarajevo, and Moščanica in Zenica, and in RS, Bosanska Lupa, Bijeljina and Banja Luka, are categorized as sanitary or, at least, controlled landfills. According to the Law on Waste Management, it was decided that municipal landfills should all be closed by 2008, and only sanitary regional landfills would be used. However, according to government sources, the time limit proposed has been postponed until 2012.



- Countrywide in BiH, 10-15 per cent of illegal dumpsites have recently been closed, although there are estimates of 1,100 dumpsites still in use. These figures are often indicated in government documents. There is no inventory of illegal dumpsites, but according to the FBiH State of the Environment report, there are almost 2,000 “inventoried illegal” landfills in the entity. It is forbidden to dispose of hazardous industrial materials in landfills (Law on Waste Management), however in practice this is not strictly followed.
- hazardous waste from households, such as mercury and batteries, is not separately collected and treated and thus ends up in dumpsites. A number of such dumpsites are located close to riverbanks. This, combined with recent small-scale flooding in mountainous areas, caused the blossoming of the so-called “Balkan flowers” - used plastic bags and PET bottles hanging from trees and floating down rivers in beautiful mountain regions.



- **Generation of waste from production activities, 2008**

- **Sectors** **Total** **Hazardous**

Total	9,533,786	91,788
Mining and quarrying	5,612,627	39,905
Manufacturing	3,563,358	51,324
Electricity, gas, water supply	357,801	560



- F BiH estimates that only 10 per cent or less of the total volume of industrial waste is used as secondary raw material, e.g. using part of the slag and ash from thermal power plants for construction materials. Currently, between 150,000 and 200,000 tons of slag and ash are used in the cement industry.



- Companies in the Federation engaged in exporting and disposal of hazardous waste under the provisions of the Basel Convention are "Tuzlamet", LLC Tuzla

(Residues from the reaction distillation, waste mercury, fluorescent bulbs, electronic waste, waste oils, detergents, solvents, batteries, etc.)



- *Republika Sprska*
- • **Law on environmental protection, No. 53/02, amended 109/05, consolidated text 28/07**
- • **Law on Waters, No. 50/06**
- • **Law on Waste Management, No. 53/02, amended 65/08**
- • **Categories of waste, characteristics of HW, activities of recovery components and disposal rulebook, No. 39/05**
- • **Hazardous wastes shipments rulebook, No. 86/05**
- **Impact Statement, No. 118/05**
- • **Rulebook on Air Quality Monitoring, No. 39/05**
- • **Rulebook on Limit values of air quality, No. 39/05**
- • **Regulation of Emission Limit Values into Air from Combustion Plants, No. 39/05**
- • **Rulebook on monitoring of Emissions of pollutants into the air, No. 39/05**
- • **killing of wild animals, No. 85/05**
- • **Law on fertilizers and soil enriching means, No. 35/04**