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POLTAVA ENVIRONMENTAL IMPACT OF LANDFILL ON SOIL AND WATER

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The article investigates the Poltava city dump; characterization and influence on landfill soil and water Makuhivka village located nearby. In the article negative influence of dump are shown on the results of laboratory tests.

Hard domestic wastes, influence, soil, water, dump

The problem of solid waste due to significant amounts of their accumulation in the surrounding landscape territories and the negative impact on the environment.

The purpose and objectives of research. Study and justify the impact of solid waste (hereinafter - MSW) into an ecologically important properties of soil and water.

To realize the goal of such research tasks solved the impact of solid waste on agrolandscape and water quality.

The object of research - Poltava City garbage dump near the village Makuhivka.

Subject of research - the environmental impact of solid waste on agrolandscape. Research Methods: field, laboratory, comparative methods of mathematical statistics, economic evaluation.

Scientific novelty of the results. For the first time the influence of Poltava city dump on soil and water from 2010 to 2014.

Currently, the issue of waste management is in relation to the protection of the environment from pollution domestic components, and the protection of public health, which is in the zone of their direct or indirect influence. The development of human civilization the planet turns on the scrapyard, and nature has mechanisms recycling and disposal of waste produced by society because last accumulate in the biosphere exponentially.

The adopted law "On waste" is ineffective. Ukraine has not yet created adequate infrastructure, there is no reliable funding for waste management. Ukraine is one of the leading places in the world on the scale, depth and complexity of the problem of waste [2].

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General theoretical and methodological issues of environmental and economic aspects of solving economic problems and the effectiveness of conservation measures related to the problems of waste management in the work developed AF Balatskoho,

IK Bystryakov, PP Borschevsky, E. Boone, BM Danylyshyn,

SI Doroguntsov, AB Kaczynski, VA Limarenko, VS Mishchenko,

L. Miller, L. Hans, W. J. Shevchuk and others.

A significant contribution to the development of the definition of environmental and economic priorities of environmental protection for waste management, including solid waste, as well as guidance and regulatory support relevant activities, made his work Vashkulat M., D. Wilson BA Horlitsi, A. Dreyer, B. Manelys V. Mishchenko, EI Matorin, KS Nykolskyy, IJ Segal, FV Stolberh and others.

However, several aspects of waste management, including solid waste, are not resolved. Practically addressed such important issues as the definition of financial and legal security areas, taking into account the specifics of solid waste management.

An example of the imperfections in the waste management is the Poltava city landfill, which is located less than a kilometer from the village Makuhivky Poltava region. Landfill waste area is 18 hectares and 30 meters in height (a thickness of waste and almost the height of a 10-storey building). The bulk of Poltava landfill is located 300 meters from the village. The volume of waste is over 5 million tonnes of waste, 14 thousand m3 per week or 1.5 thousand tons per day of waste transported to the city dump Poltava. For more than 56 years of operation of the landfill pit was completely full, its edge Rising to an altitude over 100□. Array landfill of metals and organic substances per hour creates 30 m3 leachate, which adversely affects groundwater aquifers and drinking water, damage to the natural landscape. Rodents, noise from vehicles, destroying the environment Sawdust products Makuhivky village. Daily tractors deploying debris that had the ability to move equipment, and creating space for the next batch of waste. Makuhivtsi suffer from environmental threats and more than ten years requiring landfill closure. Practical use of modern technology recycling would not only solve the environmental problems of the village Makuhivky and Poltava in general, but also would provide utilities of the city with cheap electricity.

After World War II there was development of Poltava. Due to necessity, the sand began to produce in the territory of the tract White Mountain. With the tract was sand, but that did not go empty car out of town, they loaded debris that covered in sand mining space. As a result, in the 50 years in the territory of the White Mountains zapochatkuvalosya unauthorized landfill. Were not sustained any rules envisaged by state standards on the installation of landfill solid waste, not put tape on the bottom, do not have sanitation.

Poltava fell in ten cities, where gathered to build a modern high-tech facilities for solid waste. The project is 20 million euros envisaged processing plant at newly waste half the regional center. Investors recouped he had already 7 years. To build such a plant had 2015, but in the case of its building preserved. Pidshukovuyetsya away to landfill. [4] Today, in addition to Kyiv, in any city in the country not built recycling plant. Capital Factory built in Soviet times, it is very energy intensive. The result of the impact of landfills on the environment following Table 1 and 2.

1. Chemical analysis of soil in Poltava city landfill (sanitary protection zone of 300 m)

Date selection	Copper	manganese	Iron	zinc	chrome	mercury
1	2	3	4	5	6	7
07.07.2010	1,26	10,12	10,12	33,0	0,08	0,0012
	0,94	18,31	28,0	12,8	0,028	0,0016
	0,78	22,16	10,6	2,88	0,016	0,0018
1	2	3	4	5	6	7
22.03.11	0,21	3,94	3,14	3,7	0,12	‹0,0001
	0,48	8,0	0,36	33,7	0,05	‹0,0001
	1,97	2,55	3,82	17,0	0,26	‹0,0001
09.06.2011	0,73	25,9	20,0	8,8	‹0,002	‹0,0001
	3,9	92,7	33,4	24,58	0,07	‹0,0001
	0,6	18,9	27,2	2,14	0,11	‹0,0001
25.11.11 C. Makuhivka	1,2	18,26	3,6	21,5	1,4	‹0,0001
	0,96	33,18	35,6	8,4	1,2	‹0,0001
	1,2	31,21	21,14	7,9	1,0	‹0,0001
13.09.12 City dump	42,16	23,15	23,75	23,36		0,0003
	6,4	13,0	13,75	5,25		‹0,0001
	6,08	11,95	5,93	4,8		‹0,0001
10.06.13 -||- sanitary zone 500м	1,58	25,2	57,1	1,35		‹0,0001
	1,44	24,4	68,9	1,03		‹0,0001
	1,03	9,75	12,1	2,8		‹0,0001
05.03.14 scrap heap	2,7	23,15	23,75	4,1		‹0,0001
	1,81	21,11	30,11	2,97		‹0,0001
	1,58	21,16	27,17	3,03		‹0,0001
MPC	3,0	1500,0	н/н	23,0	5,0	0,002

Chemical analysis of water in Poltava city landfill (Sanitary protection zone)

Date and place of sampling	07.07.10. Well Engineering. control 300m	07.07.10. Well Engineering. Control 400m	07.07.10. Well Engineering. Control 500m	22.03.11 300m hole	22.03.11 400m hole	22.03.11 hole 500 m
1	2	3	4	5	6	7
The intensity of the odor in points	2	3	3	3	2	3
The nature odor	Stagnant	Stagnant	Stagnant	Stagnant	Stagnant	Stagnant
Color		Dark brown	Dark brown	The yellowish-dark	Tan	Dark brown
Transparency (cm)	3	0	0	0	2	2
Suspended substances (mg / dm3)		106,0	142,0	80,0	87,5	115,0

1	2	3	4	5	6	7
pH	8,04	8,8	8,6	8,4	8,8	8,4
BOD - 5 (02 mg / dm3)	15,0	13,8	27,6	12,4	9,6	31,6
Oxidation (02 mg / dm3)	23,04	25,2	25,9	12,8	28,8	35,2
Alkalinity (mg-yekv).	7,6	92,0	76,0	8,4	8,4	10,2
Total zhostkist (yekv mg. / Dm2)	12,0	10,2	10,8	3,8	5,9	6,4
The dry residue (mg / dm3)	625,5	596,5	593,0	296,5	621,5	627,5
Manganese (mg / dm3)	0,79	1,69	6,4	0,075	0,089	0,082
Iron overall	2,48	12,3	11,8	0,34	0,72	0,75

chlorides	360,25	246,28	279,03	383,8	410,03	217,46
Sulfates	141,1	121,36	144,4	105,52	142,75	258,15
Nitrogen ammonia	0,933	8,53	8,8	7,68	9,88	9,86
Nitrogen nitrite	0,886	0,811	0,813	0,263	0,448	0,444
nitrate Nitrogen	4,6	11,14	12,37	91,26	9,63	9,59
Oil	н/в	н/в	н/в	н/в		
Copper	0,9	0,83	0,88	‹0,005	‹0,005	‹0,005
Zinc	1,6	2,2	1,96	‹0,0001	‹0,0001	‹0,0001
slept	0,211	0,187	0,164	0,59	0,59	0,46
The intensity of the odor in points	4	3	5	3	0	0
The nature odor	Stagnant	Stagnant	Hydrogen sulfide	Stagnant	Odorless	Odorless
Transparency (cm)	0	0	30	0	20	23
Colour in degrees				50,83	32,89	29,9
Color				Dark brown	Light gray	
Suspended substances (mg / dm3)	85,0	160,0		25,0		
pH	8,8	9,1	7,74	8,48	8,27	8,62
BSC -5 (mh02 / dm3)			5,8	42,8	15,8	8,4

1	2	3	4	5	6	7
Okysnist				28,28	8,89	7,27
Alkalinity (mg yekv).	6,2	5,6	5,4	11,4	7,4	4,4
Total	7,1	8,1	0,38	15,1	13,5	7,2

hardness (yekv mg. / Dm 2)						
The dry residue (mg / dm3)	790,0	785,0	845,0	4685,0	1685,0	825,0
Magnesium	‹0,001	‹0,001	0,12			
Iron	0,98	0,79	0,48	3,9	0,44	0,42
chlorides	438,2	396,2	46,2	410,2	389,2	259,4
Sulfates	213,9	244,8		259,18	170,73	142,75
Nitrogen ammonia	8,91	8,63	0,24	89,9	0,82	1,01
Nitrogen nitrite	0,403	0,518	0,004	12,24	0,043	0,039
nitrate Nitrogen	11,2	14,6	‹0,002	27,1	3,19	15,51
Fluorine			0,84			
SPAR	0,61	0,83	0,44	2,3	2,19	2,12
Oil	н/в	н/в				
Copper	‹0,005	‹0,005	0,017	‹0,005	‹0,005	‹0,005
Zinc	‹0,0001	‹0,0001	0,008	‹0,0001	‹0,0001	‹0,0001
Manganese				0,1	0,001	0,005

Conclusions

1. The content of zinc and copper in the soil exceeds the norm.
2. Mercury in normal limits.
3. Landfill negative impact on the environment, so there is a need to close it and building a plant for processing waste.
4. At the time of closing of landfill conditions to improve its service.
5. To prevent accumulation of waste at landfills should properly sort waste in the collection, and therefore to fix legislatively separate sorting garbage.
6. Initiate introduction of administrative responsibility for violations in sorting waste.
7. Bring to the attention of the public about the separation and sorting of waste for noncompliance.

In the future we planned sampling of water and soil, their research and comparison. The influence of landfill on the health of residents of the village. Makuhivka.

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Статья посвящена исследованию полтавской городской свалки, характеристике и воздействии свалки на почву и воду села Макуховка, которая находится поблизости. В статье доказывается негативное влияние свалки результатами лабораторных исследований.

Твердые бытовые отходы, влияние, почва, вода, свалка