



**Integrated hotspots management and saving the living Black Sea ecosystem -
HOT BLACK SEA
(2.2.1.72761.225 MIS-ETC 2303)**

Data necessary for Hot Spots Methodology

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Second Workshop – Hot Spots Methodology

22- 25 June 2015

Odessa, Ukraine

1. Name of the Hot Spot candidate: [Infoxvodokanal, Pivdenni WWTP](#)

2. Location:

City/settlement	Region	Country
Odesa	Odesa Oblast	Ukraine

3. Type:

Municipal	Industrial	Urban surface run-off	Irrigation system
1	2	3	4
1	-	-	-

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4. Waste water volume (**Q**), mln m³/year – **39,083**;
5. Number of days when discharge is performed - **365**;
6. Population in town/village, where the point source of pollution is located, th people– **1016**;
7. Type of waste water treatment used:

Absence of waste water treatment facilities	Mechanical	Physical	Chemical	Physica-mechanical	Physical-chemical	Biological
1	2	3	4	5	6	7
-	2	-	-	-	-	7

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8. Concentrations of pollutants, mg/l ;
 (or annual masses of pollutants, t/yr)

Ingredient	BOD	Oil	SS	Mineralisi ng	Sulpha tes (anion)	Clorides (anion)
Concentration	7,3	0,05	9,9	518	100	87,3

Ingredient	Salt ammonium (N)	Nitrite	Phospha tes	Nitrate	Iron general
Concentration	8,6	0,33	9,1	5,8	0,09

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9. Total annual nitrogen (for some countries total inorganic nitrogen). If data on total nitrogen are available – insert 1, if data on total inorganic nitrogen are available – insert 2.

	Bulgaria	Georgia	Romania	Turkey	Ukraine
Discharge of total nitrogen / inorganic nitrogen					2

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10. Total annual phosphorous (for some countries – total inorganic phosphorous). If data on total phosphorous are available – insert 1, if data on total inorganic phosphorous are available – insert 2.

	Bulgaria	Georgia	Romania	Turkey	Ukraine
Discharge of total nitrogen / inorganic phosphorous					2

11. Distance to the Black Sea – in case the Hot Spot candidate has discharges to the river / lake – distance through aquatic area (from 1 to 5);

discharge directly to the sea	discharge at a distance of less than 10 km	discharge at a distance of 10 to 50 km	discharge at a distance of 50 to 100 km	discharge at a distance of more than 100 km
5	4	3	2	1
5	–	–	–	–

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12. Characteristics of flow and mixing in the aqueous environment:

Open waters – sea	Semi-open estuaries, bays	Landlocked bays, estuaries with low mixing	Big rivers	Small rivers
1	2	3	4	5
1	-	-	-	-

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13. The degree of environmental hazard (it is necessary to study environmental programs / Hot Spots lists, etc. from 1 to 5):

the source is included in the list of local Hot Spots of the Black Sea	the source is included in the list of sub-national documents	the source is included in the list of national Hot Spots of the Black Sea	the source is included in the list of Hot Spots of the Black Sea	the source is included in the list of global Hot Spots
1	2	3	4	5
-	-	-	4	-

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14. Environmental tension in the location of Hot Spot candidate (expert assessment, background knowledge are necessary, from 1 to 5);

environmental tension is absent	environmental tension is low	environmental tension is medium	environmental tension is high	environmental tension is very high	environmental tension is extremely high
1	2	3	4	5	6
-	-	-	4	-	-

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15. Number of Hot Spot candidates for further evaluation – each country should decide:

Bulgaria	Georgia	Romania	Turkey	Ukraine
				10

16. Number of pollutants, measured in wastewater - **11**;

17. Water velocity in water body, m/s – **0.05** m/s

18. Average depth near the discharge point, m – **20** m;

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20. Distance from the shoreline (from 1 to 2)

Near the shoreline	Far from the shoreline
1	2
—	2

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21. Information from the area around the Hot Spot (for criteria “Recreation and protected areas” from 1 to 6)

Characteristics	Score	Pivdenni WWTP
Discharge is carried out directly in the recreation area or out in the conservation area or out in the vicinity of the wetland or out in the place of mass bird nesting	6	6
Discharges, which may cause a significant odour that directly affects a recreational area or are in the conservation area or in the location of wetlands or in the place of mass bird nesting from a distance of 500 m.	5	
Discharges with no odour at a distance of 1000 m from the recreational area, conservation area, wetlands and places of mass bird nesting.	4	
Discharges at a distance of 5000 m from the recreational area, conservation area, wetlands and places of mass bird nesting.	3	
Discharges causing a potential risk to the environment.	2	
No effect.	1	

22. For calculation of Level of potential impact on aquatic life (expert assessment, from 1 to 6).

Characteristics	Score	Pivdenni WWTP
Any discharge, which may reduce the oxygen content of the receiving waterbody below 0.5 mg O ₂ /l or containing a heavy metal concentration of more than 50 mg/l or containing an oil concentration of 400 mg/l	6	
Any discharge, which may reduce the oxygen content of the receiving body below 1 mg O ₂ /l or containing a heavy metal concentration of more than 30 mg/l or containing an oil concentration of 200 mg/l.	5	5
Any discharge, which may reduce the oxygen content of the receiving body below 2 mg O ₂ /l or containing a heavy metal concentration of more than 20 mg/l or containing oil concentration of 100 mg/l.	4	
Any discharge, which causes oxygen depletion.	3	
Any suspicious discharge.	2	
Discharge with no effect.	1	

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23. For calculation of Investment attractiveness of the region

23.1 Investment attractiveness of all region/administrative units in the country – if available. If no – another economic index, e.g. Regional GDP per capita.

Region	Odesa Oblast	Mykolaiv Oblast	Kherson Oblast	AR Crimea	Sevastopol'
Index	1,46	1,33	1,26	1,23	1,32

23.2 Average value of index of investment attractiveness (or another index) - X_m ;

23.3 The standard deviation for index of investment attractiveness (or another index) - SD

	Bulgaria	Georgia	Romania	Turkey	Ukraine
X_m					1,35
SD					0,08

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24. For calculation of Regional demographic development perspectives

24.1 Population growth rate for all regions/ administrative units.

Region	Odesa Oblast	Mykolaiv Oblast	Kherson Oblast	AR Crimea	Sevastopol ,
Index	-1,4	-3,2	-3	-1,1	-1,7

24.2 Average value of index of Regional development perspectives - X_m ;

24.3 The standard deviation for index of Regional development perspectives - SD

	Bulgaria	Georgia	Romania	Turkey	Ukraine
X_m					-2,92
SD					3,29

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Hotspots

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Thank you for your attention!

HOT BLACK SEA project web-site:
<http://www.bs-hotspots.eu/>