

State of Oregon
 Department of Environmental Quality

**Industrial Stormwater Advisory Committee
 Meeting 5- November 17, 2009**

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Subject: Initial Metals Analysis of Historical Benchmark Monitoring Data

DEQ conducted an initial analysis of historical benchmark monitoring data for metals to evaluate how many facilities are meeting the benchmarks under the current permit and may meet the benchmarks in the new permit based on the MSGP benchmark concentrations. DEQ evaluated Discharge Monitoring Report (DMR) data from 576 facilities operating under the current 1200-Z permit, 128 facilities operating under the 1200-COLS permit, and 118 facilities operating under the administratively extended 1200-Z permit that expired in 2007.

DEQ calculated the geometric means of the pollutant concentrations for each benchmark parameter at each outfall. DEQ used all available data to calculate the geometric means and did not limit the calculation to four samples. Where pollutant concentrations were below analytical detection limits, half of the detection limit value was used in the calculations. DEQ then identified those facilities that had geometric means above benchmark values at any outfall. Tables 1-3 show examples of a type of benchmark analysis DEQ is conducting.

Table 1. Total Copper benchmark analysis using geometric mean

Permit	Total Copper (mg/L)	Hardness Range ^a (mg/L)	Number of Facilities		Number of Outfalls	
			Total	Benchmark Exceedance Based on Geometric Mean ^b	Total	Benchmark Exceedance Based on Geometric Mean
1200-Z	0.1	--	604	32 (5.3%)	1226	49 (4.0%)
1200-COLS	0.036	--	123	20 (16%)	233	28 (12%)
1200-Z&COLS	--	--	727	52 (7.2%)	1459	77 (5.3%)
EPA MSGP	0.0038	0-25	727	694 (95%)	1459	1373 (94%)
	0.0056	25-50		598 (82%)		1106 (76%)
	0.009	50-75		488 (67%)		862 (59%)
	0.0123	75-100		357 (49%)		584 (40%)
	0.0156	100-125		288 (40%)		452 (31%)
	0.0189	125-150		245 (34%)		370 (25%)
	0.0221	150-175		205 (28%)		302 (21%)
	0.0253	175-200		170 (23%)		252 (17%)
	0.0285	200-225		154 (21%)		225 (15%)
	0.0316	225-250		129 (18%)		194 (13%)
0.0332	250+	122 (17%)	186 (13%)			

a – Hardness of receiving water body; b – Exceedance of benchmark at a minimum of one outfall

Table 2. Total zinc benchmark analysis using geometric mean

Permit	Total Zinc (mg/L)	Hardness Range ^a (mg/L)	Number of Facilities		Number of Outfalls	
			Total	Benchmark Exceedance Based on Geometric Mean ^b	Total	Benchmark Exceedance Based on Geometric Mean
1200-Z	0.6	--	614	57 (9.3%)	1254	85 (6.8%)
1200-COLS	0.24	--	124	28 (23%)	236	44 (19%)
1200-Z&COLS	--	--	738	85 (12%)	1490	129 (8.7%)
EPA MSGP	0.04	0-25	738	633 (86%)	1490	1140 (77%)
	0.05	25-50		575 (78%)		1013 (68%)
	0.08	50-75		474 (64%)		812 (54%)
	0.11	75-100		391 (53%)		652 (44%)
	0.13	100-125		348 (47%)		563 (38%)
	0.16	125-150		292 (40%)		468 (31%)
	0.18	150-175		251 (34%)		405 (27%)
	0.2	175-200		227 (31%)		369 (25%)
	0.23	200-225		199 (27%)		322 (22%)
	0.25	225-250		179 (24%)		295 (20%)
	0.26	250+		173 (23%)		284 (19%)

a – Hardness of receiving water body; b – Exceedance of benchmark at a minimum of one outfall

Table 3. Total lead benchmark analysis using geometric mean

Permit	Total Lead (mg/L)	Hardness Range ^a (mg/L)	Number of Facilities		Number of Outfalls	
			Total	Benchmark Exceedance Based on Geometric Mean ^b	Total	Benchmark Exceedance Based on Geometric Mean
1200-Z	0.4	--	597	3 (0.5%)	1210	3 (0.2%)
1200-COLS	0.06	--	121	4 (3.3%)	231	6 (2.6%)
1200-Z&COLS	--	--	718	7 (1%)	1441	9 (0.6%)
EPA MSGP	0.014	0-25	718	233 (32%)	1441	433 (30%)
	0.023	25-50		164 (23%)		305 (21%)
	0.045	50-75		40 (5.6%)		59 (4.1%)
	0.069	75-100		21 (2.9%)		32 (2.2%)
	0.095	100-125		16 (2.2%)		25 (1.7%)
	0.122	125-150		12 (1.7%)		20 (1.4%)
	0.151	150-175		8 (1.1%)		13 (0.9%)
	0.182	175-200		8 (1.1%)		13 (0.9%)
	0.213	200-225		6 (0.8%)		10 (0.7%)
	0.246	225-250		6 (0.8%)		9 (0.6%)
	0.262	250+		4 (0.6%)		7 (0.5%)

a – Hardness of receiving water body; b – Exceedance of benchmark at a minimum of one outfall