

**Table VIII-12. Annual Monetized Net Benefits and Costs per Cancer Avoided from a Reduction in Exposure to Hexavalent Chromium**  
(millions of 2003 dollars)

PEL (ug/m <sup>3</sup> )	0.25	0.5	1	5	10	20
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**Discount Rate = 3 Percent**

	<b>Costs at 3 percent discount rate</b>					
	\$1,762	\$996	\$552	\$273	\$165	\$109
	<b>Net Benefits at 3 Percent</b>					
Minimum	-\$1,573	-\$820	-\$388	-\$161	-\$88	-\$68
Maximum	-\$175	\$500	\$830	\$623	\$418	\$179
Midpoint	-\$874	-\$160	\$221	\$231	\$165	\$56
	<b>Cost per Cancer Avoided</b>					
Minimum	\$6.0	\$3.6	\$2.2	\$1.7	\$1.5	\$2.1
Maximum	\$23.6	\$14.1	\$8.4	\$6.1	\$5.3	\$6.6
Average	\$14.8	\$8.8	\$5.3	\$3.9	\$3.4	\$4.3

**Discount Rate = 7 Percent**

	<b>Costs at 7 percent discount rate</b>					
	\$1,815	\$1,033	\$570	\$282	\$170	\$112
	<b>Net Benefits at 7 percent</b>					
Minimum	-\$1,755	-\$976	-\$517	-\$246	-\$145	-\$99
Maximum	-\$924	-\$192	\$206	\$222	\$158	\$50
Midpoint	-\$1,340	-\$584	-\$156	-\$12	\$6	-\$24
	<b>Cost per Cancer Avoided</b>					
Minimum	\$6.2	\$3.7	\$2.2	\$1.7	\$1.6	\$2.1
Maximum	\$24.3	\$14.6	\$8.6	\$6.3	\$5.5	\$6.7
Average	\$15.3	\$9.2	\$5.4	\$4.0	\$3.5	\$4.4

Source: U.S. Dept. of Labor, OSHA, Office of Regulatory Analysis, 2006.

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Nevertheless, the Agency agrees that additional information concerning the circumstances in which monetary benefits exceed costs would be a useful addition to the above table. OSHA found the following conditions key to determining whether benefits exceed costs:

- If the risk is at the lowest end of the range considered, then benefits do not exceed costs no matter what other variables are used.
- If the risk is at the high end of the range, and a discount rate of 7 percent

is used, then benefits exceed costs for PELs of 1 and 20 if the latency period is less than 20 years, and for PELs of 5 and 10 if the latency period is less than 25 years.

- If the risk is at the high end of the range, and a discount rate of 3 percent is used, then benefits exceed costs for a PEL of 0.5 if the latency period is twenty years or less, and benefits exceed costs for all latency periods for all higher PELs.

Incremental costs and benefits are those that are associated with increasing stringency of the standard. Comparison

of incremental benefits and costs provides an indication of the relative efficiency of the various PELs. OSHA cannot use this information in selecting a PEL, but it has conducted these calculations for informational purposes. Incremental costs, benefits, net benefits and cost per cancer avoided are presented in Table VIII-13.

In addition to examining alternative PELs, OSHA also examined alternatives to other provisions of the standard. These alternatives are discussed in the summary of the Final Regulatory Flexibility Analysis in the next section.