

Cost of Cr(VI) Removal from Groundwater

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Version 2.0

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Please Enter Known Information:		
Cr(VI) MCL Being Targeted:		
Cr(VI) MCL =	<input type="text" value="10"/>	µg/L
Target % of MCL in Treated Water =	<input type="text" value="80"/>	%
Well Information:		
Well Capacity =	<input type="text" value="1000"/>	gpm
Well % Utilization =	<input type="text" value="60"/>	%
Water Quality Information:		
Raw Water Cr(VI) =	<input type="text" value="16"/>	µg/L
Raw Water pH =	<input type="text" value="8.3"/>	
Raw Water Alkalinity =	<input type="text" value="113"/>	mg/L CaCO ₃
Raw Water Conductivity =	<input type="text" value="280"/>	µS/cm
Raw Water Uranium =	<input type="text" value="6.4"/>	µg/L
Raw Water Nitrate =	<input type="text" value="2.2"/>	mg/L NO ₃
Raw Water Sulfate =	<input type="text" value="22"/>	mg/L
Capital Financing Terms:		
Capital Amortization Period =	<input type="text" value="20"/>	years
Amortization Interest Rate =	<input type="text" value="5"/>	%

Treatment System Capacity =	<input type="text" value="533"/>	gpm
Please Answer the following Questions with Yes or No:		
Question 1:		
<i>The Regenerable Ion-Exchange Process (SBA) may generate a Salt Brine that contains 30 mg/L of Chromium and 53000 mg/L of Salt. Can you discharge this Brine to an onsite sewer without treatment? (Yes/No)</i>		
	<input type="text" value="no"/>	
Question 2:		
<i>If the answer to Question 1 is "Yes", skip this question and go to Question 3. If the answer to Question 1 is "No", can you discharge the waste brine to an onsite sewer if the Chromium is removed first from the brine? (Yes/No)</i>		
	<input type="text" value="no"/>	
Question 3:		
<i>The Reduction, Coagulation, & Filtration (RCF) process may generate 14 gpm of waste backwash water that contains 0.6 mg/L of Chromium. Can you discharge this waste washwater to an onsite sewer without treatment? (Yes/No)</i>		
	<input type="text" value="no"/>	
Question 4:		
<i>Is your well located in California? (Yes/No)</i>		
	<input type="text" value="yes"/>	

Opinion of Probable Costs (2012):		
Capital Cost (\$M):	Lower End	Upper End
SBA Treatment =	\$1.8	-\$3.8
WBA Treatment =	\$2.5	-\$5.4
RCF Treatment =	\$2.5	-\$5.3
Annual O&M Cost (\$/yr):	Lower End	Upper End
SBA Treatment =	\$127,000	-\$272,000
WBA Treatment =	\$182,000	-\$390,000
RCF Treatment =	\$152,000	-\$326,000
Total Annualized Cost (\$/yr):	Lower End	Upper End
SBA Treatment =	\$267,000	-\$573,000
WBA Treatment =	\$384,000	-\$824,000
RCF Treatment =	\$349,000	-\$747,000
Total Water Cost (\$/AF):	Lower End	Upper End
SBA Treatment =	\$277	-\$594
WBA Treatment =	\$398	-\$854
RCF Treatment =	\$361	-\$774