



## EFFICIENCIES IN GROUNDWATER TREATMENT ALONG THE COLUMBIA RIVER

The Department of Energy (DOE) and contractor CH2M HILL Plateau Remediation Company are using a new treatment material that is expected to increase treatment efficiency and reduce annual operating costs at treatment facilities by \$1 million per year at the Hanford Site in southeast Washington State.



Along the Columbia River, CH2M HILL manages five groundwater treatment systems that pump and treat contaminated groundwater from the aquifer. The systems use an ion exchange resin that essentially strips specific contaminants from the water before it is pumped back into the ground. The new resin material is being used in all five treatment systems, replacing an older resin.

The new treatment resin retains more than 15 times as much contaminant than previous resins. This means the resin does not have to be changed out as often, which reduces worker handling and material costs.

The new resin can be disposed of on the Hanford Site, eliminating costs and energy use associated with shipping the old resin several thousand miles for recharging at an off-site facility.

The anticipated cost savings are the result of effective materials selection. Based on technical recommendations from DOE, CH2M HILL engineers tested and compared multiple resins to determine

which product was capable of removing contaminants from the groundwater. The primary contaminant of concern, hexavalent chromium, resulted from discharges to the soil made during Hanford's plutonium production days.

The resin was originally installed at the 100-DX Groundwater Treatment Facility in 2010, and the facility operated over one year without a single resin change. With approximately 100 resin change-outs avoided and each change-out of the old resin costing approximately \$10,000, that is an annual savings of at least \$1.2-1.6 million.

CH2M HILL changed over all of the remaining treatment systems along the river to the new resin. Together, these facilities are helping DOE contain chromium contamination and prevent it from reaching the Columbia River.

### *Savings & Efficiencies*

*5 groundwater treatment systems using the new resin*

*>100 resin change-outs avoided per year*

*\$1+ million savings estimated per year*

*Onsite disposal eliminates off-site shipping and handling*

For more information about groundwater treatment and cleanup at the Hanford Site, visit:

[www.hanford.gov](http://www.hanford.gov)

[www.plateauremediation.hanford.gov](http://www.plateauremediation.hanford.gov)

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