Idaho National Laboratory
Arsenic Removal Video Script
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Clean, drinkable water is a national and global issue.

For millions of people in the U.S. and tens of millions around the world, arsenic contamination is a health-threatening reality.

EPA recently revised drinking water standards for arsenic down to 10 parts per billion, leaving 4,000 municipalities and nearly 14 million private homeowners at risk.

But now there is a new technology that offers a solution to deliver safe water into homes once again.

Nanotechnology researchers at Idaho National Laboratory have engineered a revolutionary material called Nano-Composite Arsenic Sorbent, or N-CAS, that is SEVEN times more effective than the best material currently available.

N-CAS contains extremely high concentrations of arsenic adsorbing nanoparticle metal oxides embedded in a strong composite polymer matrix shown in this series of micrographs.

The reaction kinetics, strength and the extreme surface of this material set it apart from all existing arsenic removal technologies.

The surface area of N-CAS particles is comparable to carbon nanotube materials. One gram of N-CAS contains 40% more adsorbent surface area than the square footage of the average American home.

N-CAS is so efficient, a gallon of these nanoparticles can effectively adsorb arsenic from 350-400,000 gallons of water compared to about 50,000 gallons for the next-best material.

It also lasts much longer and is strong enough to be regenerated 100 times more than the most durable material in use today.

Beyond being extremely effective, N-CAS is also affordable, costing about 10 cents to treat 1,000 gallons of water -- 1/5th the cost of current treatment technologies.

Arsenic contamination is a global problem causing skin lesions, disease and needless suffering throughout the world. Tens of thousands of communities and tens of millions of people need low-cost, highly effective arsenic removal technologies.

INL’s NCAS nanomaterial offers an affordable arsenic treatment solution that can bring cleaner water to consumers here in the U.S. and around the globe.