



## Technetium Exists Only in the Stars....

*Created by stellar nuclear reactions*, it doesn't exist naturally on this earth. Yet, [uswca.com](http://uswca.com) technology and equipment are helping to eliminate this nasty pollutant from a U.S. Department of Energy facility.

Since the end of the Cold War, disarming Soviet Union nuclear weapons is creating radioactive Technetium

wastewater - uswca processes and decontaminates the wastewater. Ultimately, the radioactivity is isolated (for a few thousand years) in solid concrete. The Technetium contaminant is separated from the wastewater and converted into a solid form by using special absorbing and reactive metal media.

Elemental Technetium, discovered in 1937, has about 19 radioactive isotopes with atomic masses ranging from 90 to 108. Some isotopes decay rapidly. The isotope  $^{95m}\text{Tc}$  has a half life of 61 days. This rapidly decaying isotope is used as a tracer in the medical diagnosis of certain human ailments. Other isotopes have a half life measured in thousand of years. The isotope  $^{97}\text{Tc}$  has a half life of 2.6 million years. This is troublesome.

Technetium was the first element to be produced artificially. Searches for the element in terrestrial materials has been without success. However, Technetium has been found in the spectrum of S-, M-, and N-type stars.

Corbin Consulting has assisted with many projects. Each one has an interesting technical, commercial and/or manufacturing story.