DARAMEND-M® is a specially formulated version of Adventus' controlled-release, integrated carbon and zero valent iron (ZVI) technology for in situ chemical reduction. Similar to EHC-M® (http://www.adventusgroup.com/products/ehc_m.shtml), new DARAMEND-M encourages the precipitation and adsorption of arsenic and other dissolved metals (such as chromium, lead and mercury) to limit their mobility.

This new product from Adventus is capable of reducing the amount of metals that can leach from metal-impacted soil, in particular the amount of leachable metal in samples analyzed using the TCLP; Toxicity Characteristic Leaching Procedure (http://www.ehso.com/cssepa/TCLP.htm). Many regulatory jurisdictions have TCLP limits for a variety of metals whereby if a metal exceeds a certain TCLP value, it must be disposed of at a facility that is designed to handle that type of soil. This will often be much more expensive than disposal of soils that do not exceed the TCLP values. Pre-treatment of soil using DARAMEND-M may reduce the leachable metal concentrations, thus allowing for much more cost effective disposal. There may be other circumstances whereby soils can be treated and left in-place should they not exceed the TCLP values, in which case the economic benefit of applying the treatment will be even greater.

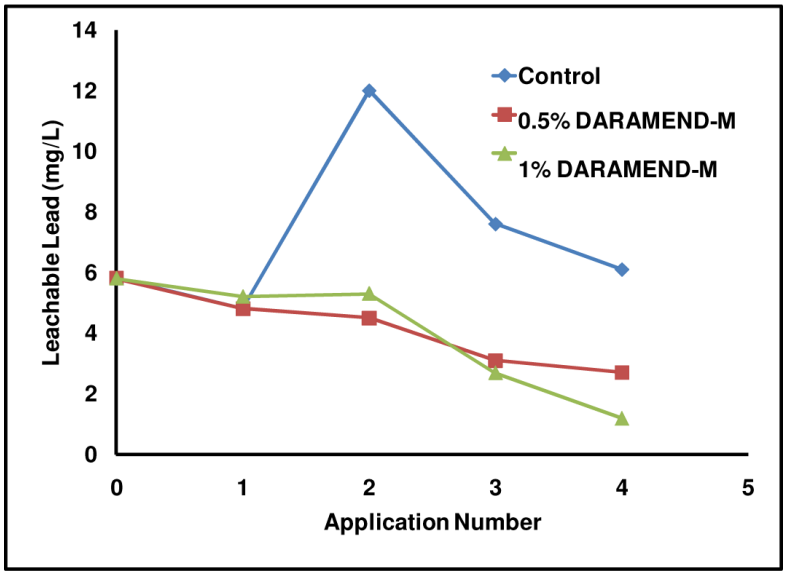

Figure 1. Influence of DARAMEND-M Application on Leachable Lead from Soil.

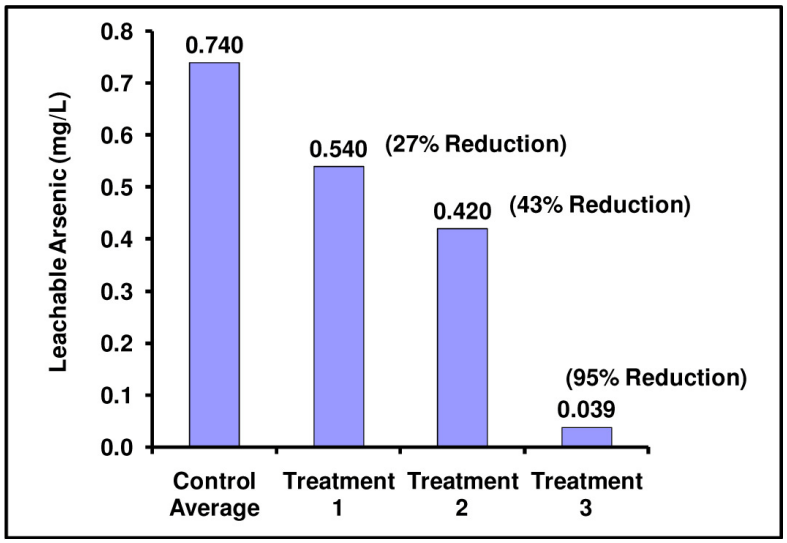

Figure 2. Influence of DARAMEND-M Treatment Methods on Leachable Arsenic from soil.

The technology has been demonstrated to be effective. Figure 1 above illustrates how the amount of lead that is leachable decreases with each additional application of DARAMEND-M. In this case application of the technology was able to reduce the amount of leachable lead to below the TCLP standard. Other results of laboratory treatability testing performed to develop the DARAMEND-M product, are shown in Figure 2. In these tests, the most effective treatment method reduced the amount of leachable arsenic by 95%, using an application rate of 3% weight of DARAMEND-M by dry weight of soil.