

Case Study #2

Lead Contaminated Soil

Former Shooting Range - Fremont, NE

LBI was provided with a soil sample from a former shooting range that was undergoing site remediation. Residual lead pellets were removed from the soil and a soil sample was collected to represent a worst case scenario, soils near a target box. The base soil was analyzed for total lead and had a reported concentration of 13,400 mg/kg (EPA Method 6010, Preparation Method EPA 3050).

Three equal mass test samples of the base soil were prepared, each weighing one pound. Next, three varying portions of dehydrated DualZorb were weighed. Test 1 contained equal amounts of DualZorb and contaminated soil. Test 2 contained two pounds of DualZorb to one pound of contaminated soil. Test 3 contained three pounds of DualZorb to one pound of contaminated soil. In each test, DualZorb was hydrated with tap water in a separate container. The DualZorb was allowed to hydrate for approximately two minutes before being mixed with the contaminated soil. After two minutes of mixing DualZorb with the contaminated soil, samples of the treated soil were sent out for laboratory analysis.

In addition to the three test samples, a sample of the untreated soil was submitted to our testing laboratory, Inter-Mountain Laboratories in Sheridan, WY, for a Toxicity Characteristic Leaching Procedure (TCLP) extraction and analysis. The results are summarized below:

Mixture Ratio	TCLP Lead Concentration	% Reduction
Base	48.2 mg/L	--
Test 1 (1:1)	6.7 mg/L	86%
Test 2 (1:2)	2.7 mg/L	94%
Test 3 (1:3)	1.9 mg/L	96%

Data collected clearly shows that DualZorb is effective at removing lead contamination from soil. Experiments conducted since these tests indicate that if the hydration water was introduced to the soil and DualZorb mixture (soil washing), a greater lead removal level is expected. See Case Study #3 where the metals are in a liquid.