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Case Study: Use of TOTALSORB-Plus in Mixed Aqueous/Hydrocarbon LLRW



TOTALSORB<sup>®</sup> is a blend of expanded amorphous alumina silicate minerals used to absorb oils & hydrocarbons in emergency spill response and in environmental remediation. The mineral does have also some modest capacity to absorb water.

A new, blended product called TOTALSORB-Plus boosts water absorbency by combining 25% Waste Lock<sup>®</sup> 770 superabsorbent polymer with the TOTALSORB<sup>®</sup> mineral. The product is particularly useful in mixed waste applications where the aqueous waste contains high concentration of oils or hydrocarbons such as oil/gas drilling and fracking waste.

Brookhaven National Laboratory (BNL), a long-time customer that regularly uses the Waste Lock<sup>®</sup> 770 superabsorbent polymer, contacted us about an unusual waste stream that was mainly water but contained about 3% oil/hydrocarbon scintillation fluid as low level radioactive waste (LLRW). We suggested that they use the TOTALSORB-Plus for this waste. BNL purchased 30 bags ( $\pm$  25 lbs each) to absorb the 124 gallons of waste.

Upon receipt of the pallet of TOTALSORB-Plus, BNL ran some lab bench tests and found that, due to the high water content of this waste, additional superabsorbent polymer would be beneficial. They settled on a “recipe” where for each pound of TOTALSORB-Plus used they added an extra 0.5 lbs of the Waste Lock<sup>®</sup> 770.

The waste was solidified in a 275 gallon IBC container. Samples were subjected to Nevada Test Site (NTS) criteria including Paint Filter Test (EPA 9095) and Freeze-Thaw Tests. All samples passed and the packaged waste was successfully transported to NTS for disposal.