

Former US DOE Weapons Facility

Solidification of Legacy Oil Waste for

Shipment to Nevada Test Site

Summary:

This US DOE former weapons facility had many five-gallon cans filled with used “Seal Exhaust Oil” that was mildly radioactive. The cans had only a small bung hole on the top and lids that could not be removed without saw cutting.

In order to ship to the Nevada Test Site (NTS) for disposal, waste must be in a form that contains no free-standing and non-corrosive liquid. Waste must be processed into a solid form or packaged in sufficient sorbent to solidify twice the volume of the known liquid in the material.



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Numerous samples of possible sorbent materials were collected for evaluation. All sorbent needed to meet 40 CFR 264.314 requirements as a non-biodegradable sorbent.

Both common mineral sorbents were tested (clays, aluminosilicates, etc...) as well as assorted proprietary polymer sorbents.

Absorbency testing was a three-day process. Initial small-scale, lab bench tests were performed followed by large scale testing on days two and three.

Samples of the Seal Exhaust Oil were placed in beakers and measured amounts of the various sorbents were added until the oil was solidified.



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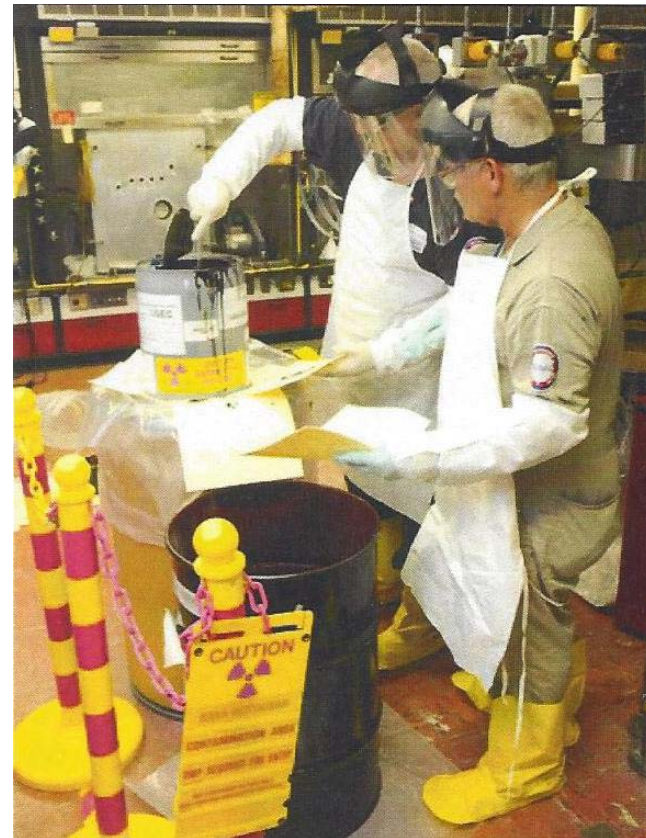
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Large scale testing consisted of five gallons of used Seal Exhaust Oil layered with 9-1/2 lbs of an absorbent inside a 30-gallon drum, then stirred for better mixing and maximum absorbency to ensure solidification.

After evaluating performance and economics, the team recommended using OrganoLock™ N-65.

Two pounds of sorbent absorb one gallon of waste oil. (To meet NTS Waste Acceptance Criteria (WAC) double the amount of sorbent was added.)



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OrganoLock™ N-65 is a block co-polymer that is highly effective in absorbing and solidifying waste oils and hydrocarbons. It is particularly effective in treating volatile organic liquids and materials with a high K_b -Value. (High solvency)

OrganoLock™ N-65 is a white, fluffy and slightly rubbery material that is non-toxic and not dusty.



For more information or samples, contact:

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