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Environmental project will clean up WWII munitions sites

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A 30-year, \$527 million project is under way to remediate 17 suspected chemical warfare burial sites on Redstone Arsenal. These sites date back to the end of World War II, when chemical weapons were drained, burned or blown up, and buried in trenches across Redstone as an effort to demilitarize the Arsenal's surplus munitions.

"In the 1940s, that was accepted practice," Jason Watson, manager of the restoration project, said about the demilitarization. "But when the Alabama Department of Environmental Management renewed our permit in 2010, they requested that we investigate and clean those areas up."

The munitions in question include 4.2-inch mortars and 105mm and 155mm chemically configured bombs that once contained agents such as mustard gas, lewisite, phosgene, white phosphorus and tabun. It's Watson's job to figure out where they're buried.

“There are over five miles of disposal trenches on the Arsenal, if you put them end to end,” he said. To tackle such an undertaking, the project has been broken into phases. The first phase, which begins in March, is the investigative phase, which is further subdivided into a nonintrusive phase and an intrusive phase.

The nonintrusive phase will last from March to September. Watson said that consists of using “handheld metal detectors to identify any anomalies and digital geophysical mapping to get an idea of exactly where everything is.” The intrusive phase will follow. “We’ll dig to see the limits of the trenches – how deep they are and where their boundaries are.”

Both portions of the investigative phase are being funded by the Defense Environmental Restoration Act. Once they conclude and the next phase, the restoration phase, begins in November 2014, funding will be provided by Chemical Agents and Munitions Destruction, Defense. “That’s managed through the Chemical Materials Activity out of Aberdeen Proving Ground (Md.),” Watson said. “Their mission is to destroy chemical munitions.”

Watson said the restoration phase will take considerably longer, because they have to follow precautions to ensure the safety of the project personnel. “We only plan to run the sites two at a time because of limited resources. And since there is a potential for chemical exposure, we want to have real-time air monitoring as we’re exposing the dirt,” he said.

After they’ve been unearthed, the munitions will be taken to predetermined storage igloos where they can be safely destroyed by the CMA. “We will dig them up and put them in the storage bunkers and then the CMA will come and get rid of the bombs and manage the disposal process,” Watson said. “There will be several different ways to do that, mainly through a chamberized destruction so that there aren’t any chemicals released into the environment.”

In the meantime, those who live and work on the installation should not be concerned about possible contamination or health hazards. “They did a pretty good job of burning them before they put them in the ground. Heat really gets rid of the chemical agents, so that’s why they demilitarized them like they did,” Watson said. “We have since found some chemical breakdown products, but we haven’t found any of the agents themselves from sampling to date. We have fencing around these sites, but there is not any direct risk to human health or the environment from them.”

Even though the investigation phase is still a few weeks from commencing, a lot of effort has already gone into laying the groundwork for the project. “You just can’t go out there and start digging up the munitions, since it is such a dangerous project,” Watson said. “We’ve been working on this since March of 2010, putting plans and assets in place prior to going after these, and that’s where the bulk of the work is going now.”

That includes establishing land use controls such as fences, signage or digging restrictions; soliciting approval for the location of the igloos; having the storage igloos permitted and cited; setting the igloos up; and determining the location for the destruction facility. “There are a lot of people who have to be involved in the project and a lot of boxes that need to be checked,” Watson said. “It’s a lot of red tape and paperwork and getting plans together.”

Despite all the frustrations and inevitable hurdles he must face, however, Watson said he feels “very lucky” to be a part of the project. “It’s very satisfying and fulfilling – I’m helping the environment, helping Redstone, helping the state of Alabama, helping the local community, and getting these things out of the ground,” he said.

As for whether or not he’ll still be there when the effort comes to its conclusion in 30 years, Watson can’t say for certain. “I’ll be retired before it ends,” he said. “But I hope once it’s cleaned up, I can come back and celebrate with them.”