

Basket Creek

Off-Camera Narrator:

In the late 1960s, in Douglas County Georgia, a ravine running through these rural woodlands was dammed and choked full with illegally dumped industrial solvents, paint removers, and other toxic wastes. The Basket Creek site, now only sparsely populated, has such high levels of contamination that conventional excavation of the soil could unearth a cloud of volatile gas. To prevent this from happening, a pre-fab metal fume house was built over the pit to contain and control the escaping gas.

Don Rigger, US EPA Region IV On Scene Coordinator:

What we're trying to accomplish here, here at the site is to conduct a cleanup with a minimum of impact to the residents in the neighborhood and to the environment. If we were to excavate and screen this material without any kind of control of fugitive emissions, we estimate that we would put approximately 1,800 lbs of volatile organic compounds into the air per day over a 3 to 4 week period.

Now we are attempting to capture and destroy our fugitive emissions from an excavation and screening operation and we've integrated that with a ex situ vapor extraction system for a treatment of some contaminated soil. The process is innovative in that although all of the technologies are proven, this is the first time to our knowledge that its all been put together on one site.

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Over 1,000 yd³ of soil, often with the consistency of sludge, will eventually be excavated. Using an enclosed cab excavator, the contaminated soil is carefully dug up and dumped onto a shaking screen, which then breaks up the dirt to release the fumes. Toxic gases released during the excavation and power screen process are channeled through a network of ducts to a bag house. Here particulates are removed. The filtered gas then flows to an incinerator where the volatiles are completely burned off.

In the second step of the operation, the screened dirt is piled over a series of perforated pipes. Over time these pipes will draw the remaining gases through the same process of filtration and incineration. The soil itself will not be burned.

Don Rigger, US EPA Region IV On Scene Coordinator:

Right now we are ready to start up our full-scale operations here at the site. We're in the process of testing all phases of our operation. One of the big parts of that is the emissions testing on the incinerator itself. We measure the concentration of contaminants going in to the unit, and then we measure that same concentration going out. We look at percent reduction. We also look at mass emission on the output. At the same time as we're doing the, the stack testing, we're also testing our process inside. Its very important to us that we are able to collect the fugitive emissions as they're given off at the excavation, otherwise we could develop an explosive atmosphere inside the building. So

we're constantly monitoring the conditions inside the building, to make sure that that's not the case.

Paul Meter, Technical Manager, Air Sampling Program:

This site was unique in that the contaminated soil was not removed and processed somewhere else. The soil remained essentially where it was and a building was constructed around the site. Air emissions from inside the building and activities that occurred inside the building were all vented to the thermal oxidizer. The test results indicate that the thermal oxidizer was capable of operating and maintaining a destruction efficiency greater than 99%.

Off-Camera Narrator:

Likewise testing will be ongoing throughout the neighborhood and surrounding areas to ensure that emissions are not leaking from the site as they might at a conventional excavation, where emissions routinely escape to the atmosphere. Once excavated, the dirt will remain piled on the vapor extraction system until it is no longer considered to be hazardous waste. At that time, it can be removed as industrial landfill saving countless dollars on the cost of the overall cleanup effort.

With the successful merger of the various technologies and the proven effectiveness of the controlled enclosure, the Basket Creek fume house stands

as a model for similar sites where fugitive emissions, as a result of excavation, could pose a risk to the community.

Don Rigger, US EPA Region IV On Scene Coordinator:

What that really means is we're exchanging pollution in the ground for pollution in the air and we don't consider that to be acceptable. What we've designed is a system that will contain and destroy those VOCs instead of putting them into the atmosphere.