



ER Site No. 154: Bldg 9960 Septic Systems

ADS: 1295

Operable Unit: Septic Tanks and Drainfields

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Primary Contact: [Dick Fate](#)

Office Phone: 284-2568

Site History

ER Site 154 includes the septic system and high explosives (HE) seepage pits serving Bldg. 9960. Bldg. 9960, the Explosives Preparation Facility (Explosives Machining Facility), is located in the Coyote Test Field to the west of Lovelace Road, north of the intersection of the Coyote Springs Road, about 2.1 km (1.3 mi) east of Technical Area III. It was constructed in 1965 for the purpose of preparing explosive assemblies for tests at various locations in Coyote Test Field. Wastewater from hosing down explosive machining equipment and the floor contaminated with explosive cuttings such as TNT, PBX-9404, RDX, Composition B, Octol, Amatol, and Baratol, was discharged directly to the HE wastewater system. The HE wastewater system consisted of an open concrete channel lined with rubber matting leading to a filter basket and distribution/catch box on the southwest side of the building. The liquid from the distribution box discharged to two 1.5-m (5-ft) diameter by 7-m (23-ft) deep seepage pits. The cotton bags that lined the filter basket prior to 1980 often failed, resulting in the discharge of explosives residue to the seepage pits. They were replaced with polyester bags, which were disposed of by Air Force explosive ordinance disposal team every six months. Small quantities of alcohol cleaning solution may have been discharged to the drains. Up to 1,140 L (300 gal) per day of wastewater may have been generated from hosing down machines and the floor. The HE seepage pits are no longer in use. Liquid effluent from machining operations is currently diverted at the end of the trench to aboveground polyethylene tanks located nearby. The water in the tanks is analyzed periodically then disposed to the sanitary sewer system.

Bldg. 9960 contains one bathroom with shower, sink, toilet, and floor drain. These discharge to a septic system consisting of a 3,400-L (900-gal) septic tank and one 1.5-meter (5-foot) diameter by 3-meter (10-feet) deep seepage pit located about 12 meters (40 feet) north of the building. The septic system is no longer in use. Estimated effluent volumes range from 150 L/day (40 gal/day) to 1,500 L/day (400 gal/day).

The site is approximately 125 meters (411 feet) above the regional water table.

Constituents of Concern

The constituents of concern at the site include various explosive compounds (TNT, PBX-9404, RDX, HMX, Composition B, Octol, Amatol, and Baratol [with barium]). Aqueous samples obtained from the septic tank in 1991 detected phenols, chromium, copper, lead, manganese, and mercury. No releases of radioactive contaminants are known to have occurred.

Current Hazards

No known surface hazards have been identified, based on environmental soil and soil-gas sampling that has been conducted at the site. High explosive (HE) contaminants have been detected in subsurface soil samples collected from beneath the two HE seepage pits on the west side of Building 9960. HE compounds have been detected at a depth of 22 to 25 feet below the surface, and include TNT, HMX, and RDX. The metal barium has also been detected above naturally occurring background concentrations in some soil samples.

Current Status of Work

The septic tank was sampled for waste characterization in the spring of 1994.

A passive soil gas survey conducted in the summer of 1994 did not detect any volatile organic compound anomalies.

The first round of soil samples was collected from around the east septic system units, and from immediately around the HE seepage pits in October 1994. Relatively high concentrations of TNT and barium, and lesser amounts of the explosive compounds RDX and HMX were detected in soils immediately around, and beneath the HE pits. As a result, three additional rounds of soil sampling were completed in October 1995, June and July 1996, and March 1997, in order to fully define the extent of the HE and barium contamination around the HE pits at this site.

Wastes were removed from the septic tank, and the tank was closed in 1995. The tank was decontaminated, and concrete samples were collected to verify that no constituents of concern (COCs) remained. The decontaminated tank was then backfilled with clean soil.

A confirmatory sampling No Further Action (NFA) proposal for this site was submitted to the New Mexico Environment Department/ Hazardous Radioactive Materials Bureau (NMED/HRMB) in August 1997.

In response to requests by and negotiations with the NMED/HRMB and DOE/OB, re-sampling of soil from directly beneath the two HE pits at this site was completed in January 1998. Soil samples had been previously collected from pairs of borings located on either side of each of the HE pits, but this method was considered inadequate by NMED. Analytical results for soil samples collected from directly beneath the HE seepage pits were not significantly different from the analytical results for soil samples collected on either side of the seepage pits. NMED

regulators agreed with this conclusion, and determined that additional soil sampling beneath these seepage pits would not be required.

Comments on the August 1997 NFA proposal were received from the NMED in December 1999, and NMED required that a monitoring well be installed at this site. As a result, a groundwater monitoring well (well CTF-MW2) was installed at a location approximately 300 feet west of this site in August 2001.

Future Work Planned

Groundwater samples will be collected from well CTF-MW2 at some point in the future. The actual number of quarters of sampling, and analytical requirements for those samples had not been specified by NMED as of December 2001. Analytical results for these future groundwater samples, and for subsurface soil samples previously collected at the site will be reviewed, and the site will either be approved for NFA, or additional characterization work may be required. It is also possible that a remediation effort of some sort may eventually be required to reduce the HE concentrations in soils beneath the HE pits. The need for a remediation work will depend on the future land use determined for the site, human health and ecorisk calculations, decisions by regulatory personnel, etc.

Waste Volume Estimated/Generated

Nineteen drums of mixed waste were generated.

Information for ER Site 154 was last updated Jan 7, 2002.