

Army Recommends Remedial Alternatives at Three Inactive Sanitary Landfills (FLW-008, FLW-059, and FLW-060) at Fort Leonard Wood, Missouri

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U.S. Army Corps of Engineers
Kansas City District



Fort Leonard Wood
Directorate of Public Works -
Environmental Division

Introduction

The U.S. Department of Defense created the Installation Restoration Program to identify, assess, and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills at Department of Defense facilities. The Installation Restoration Program is carried out in compliance with federal, state, and local laws and regulations.

History

As part of the program, the Army, in partnership with the Missouri Department of Natural Resources, has performed a remedial investigation and focused feasibility study for three inactive sanitary landfills at Fort Leonard Wood, Missouri:

- **FLW-008**, also known as Landfill 6 or Rose Bowl Landfill, is located in the northeastern part of the post (Figure 1). The seven-acre site is an inactive sanitary landfill that reportedly operated from 1942 to 1950.
- **FLW-059** comprises a group of landfills east of Roubidoux Creek in the northwestern part of Fort Leonard Wood (Figure 2). The landfills at the site are inactive, municipal solid waste, trench-and-fill-type landfills that reportedly operated from the late 1950s until the early 1960s.
- **FLW-060**, also known as the Landfill on a Branch to Big Piney, is located in the northeastern part of Fort Leonard Wood (Figure 3). It likely was used for the disposal of household waste, but no written records of the landfill exist. The site is located in the northeastern part of the post and occupies about six acres.

Results

The Remedial Investigation identified the nature and extent of environmental contaminants in soil, sediment, groundwater, surface water, and soil gas. It evaluated potential risks that the contaminants pose to human health and the environment. Based on findings and a

review of environmental laws and regulations, the focused feasibility study developed remedial action objectives for each site. These objectives are specific goals for protecting human health and the environment.

To achieve the remedial action objectives, remedial alternatives were developed for each site. The alternatives were evaluated against nine criteria:

- Overall protection of human health and environment
- Compliance with applicable or relevant and appropriate requirements
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, and volume through treatment
- Short-term effectiveness
- Implementability
- Cost

Two additional criteria, State Acceptance and Community Acceptance, will be evaluated following the public comment on the selected remedy.

FLW-008

The human health risk assessment for FLW-008 found risk to be within acceptable levels for workers, construction workers, and offsite domestic groundwater users. Potential risk to future onsite residents was not evaluated since this land use is not reasonably foreseeable. Remedial action objectives were developed to prohibit future residential uses and limit activities to those scenarios that were evaluated and found to be within acceptable risk levels. They were also developed to enhance surface water drainage to minimize erosion of landfill wastes. The ecological risk assessment found risk to be negligible and concluded that no further investigation of the site is warranted.

Three remedial alternatives were developed for FLW-008:

- Alternative 1 – No Action
- Alternative 2 – Land Use Controls (LUCs)
- Alternative 3 – LUCs and Surface Water Drainage Enhancements.

Alternative 3 is recommended. It will prohibit future residential land use and construction at the site, ensure the soil cover is adequate and maintained, control the potential for exposure to landfill contents, and enhance surface water drainage to reduce erosion of landfill wastes.

FLW-059 and FLW-060

The human health risk assessments for FLW-059 and FLW-060 found risk at each site to be within acceptable levels for workers, construction workers, and offsite domestic groundwater users. Potential risk to future onsite residents was not evaluated since this land use is not reasonably foreseeable at either site. Remedial action objectives were developed to prohibit future residential uses and to limit activities to the scenarios evaluated and found to be within acceptable risk levels. The ecological risk assessment found risk at each site to be negligible, and it concluded that no further investigation is warranted at either site.

Two remedial alternatives were developed for FLW-059 and FLW-060:

- Alternative 1 – No Action
- Alternative 2 – LUCs.

Alternative 2 is recommended for each site. It will prohibit future residential land use and construction, ensure the soil cover is adequate and maintained, and control the potential for exposure to landfill contents.

For Additional Information

Questions regarding the three landfills may be addressed to the Fort Leonard Wood Public Affairs Office at 573-563-4015 or to Mark Lenox, Fort Leonard Wood Installation Restoration Manager, at 573-596-0882 or mark.lenox@us.army.mil. Additional information is also available at <http://dnr.mo.gov/env/hwp/fedfac/ffs-dod.htm#ftwood>.

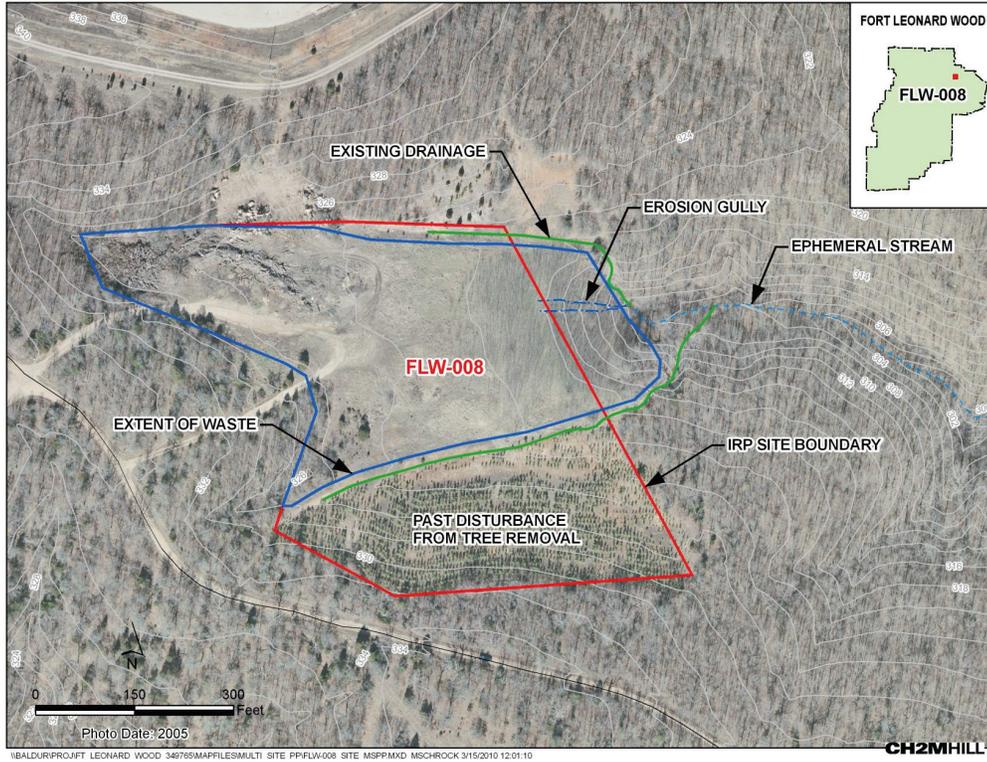


Figure 1. FLW-008, Landfill 6 (Rose Bowl)

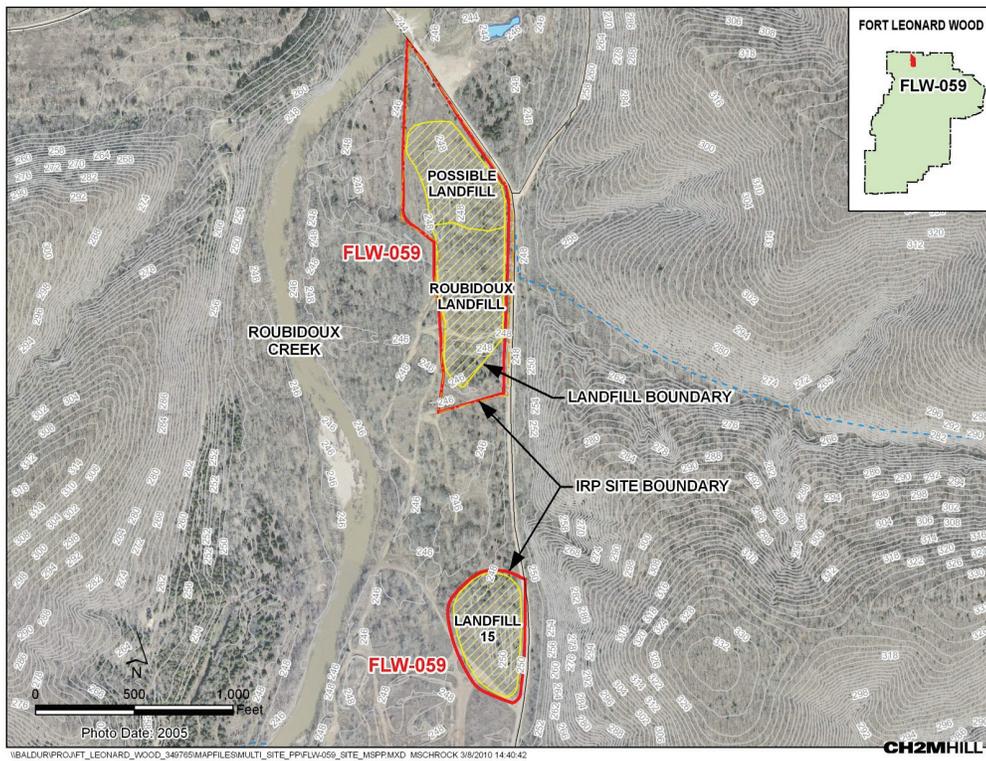


Figure 2. FLW-059, Municipal Landfill on South of Roubidoux

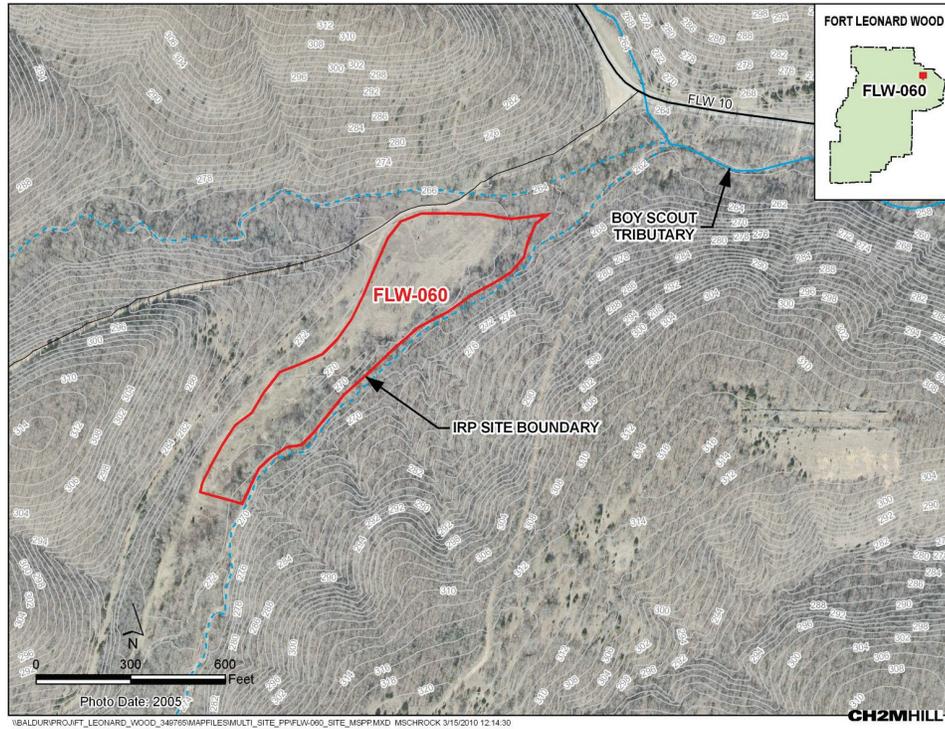


Figure 3. FLW-060, Landfill on a Branch to Big Piney