

ONLINE RESOURCES

Clark County  
www.clark.wa.gov/public-works/camp-bonneville  
Washington State Department of Ecology  
https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=11670  
U.S. Environmental Protection Agency  
http://yosemite.epa.gov/R10/cleanup.nsf/sites/cb

MORE INFORMATION

Jerry Barnett, PE Project Manager Clark County Public Works (360) 773-7664 jerry.barnett@clark.wa.gov	Ben Forson, PE Site Manager Washington Department of Ecology (360) 407-7227 bfor461@ecy.wa.gov
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DOCUMENT  
REVIEW LOCATIONS

Washington State University  
Vancouver Library  
14204 NE Salmon Creek Ave.  
Vancouver, WA (360) 546-9680  
  
Washington State  
Department of Ecology  
300 Desmond Drive SE  
Lacey, WA 98503  
*By appointment only*  
Contact Carol Dorn (360) 407-7224  
carol.dorn@ecy.wa.gov



PROJECT BACKGROUND

Camp Bonneville, a former U.S. Army base, consists of 3,840 acres in the foothills of the Cascade Mountains, about seven miles north of the Columbia River. The property is largely undeveloped, and more than half of its six square miles are forested.

The base was established in 1909 as a drill field and rifle range for Vancouver Barracks. Various branches of the military used the property for training until the federal government decided to close it in 1995.

Clark County accepted ownership of Camp Bonneville in 2011 after the U.S. Army agreed to provide additional funding to clean up the property, with the understanding that more federal money will be needed to complete all work.

Agreements with the Army shield Clark County and its residents from financial responsibility for the cleanup. The county is legally obligated to complete only portions of the cleanup for which the Army has provided funding.

The Washington State Department of Ecology continues to regulate the overall site cleanup.

A report documenting the cleanup's progress is posted each month on the county's website at: [www.clark.wa.gov/public-works/camp-bonneville](http://www.clark.wa.gov/public-works/camp-bonneville).



Camp Bonneville's central valley floor.

Camp Bonneville news and information, March 2016

2015 was a year of steady progress for Weston Solutions, Clark County's cleanup contractor at Camp Bonneville.

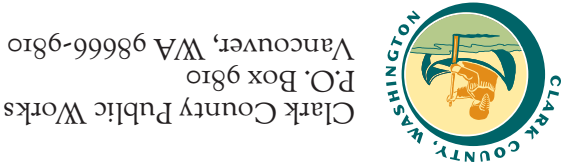
Weston's technicians have laboriously searched for unexploded ordnance and other munitions from 85 years of military training at the former U.S. Army base. Weston has cleared nearly 80 percent of Camp Bonneville's central valley floor, to a depth of 14 inches below ground.

Finding and removing munitions is a necessary step before Camp Bonneville can be opened for public use. Weston expects to complete work on the central valley floor this year, but additional cleanup will be needed before a portion of the site can be used as a regional park.



For other formats, contact the Clark County ADA Office: Voice: (360) 397-2322 Relay: 711 or (800) 833-6388 Fax: (360) 397-6165 Email: [ADA@clark.wa.gov](mailto:ADA@clark.wa.gov)

LEARN ABOUT  
THE CLEANUP AT  
CAMP BONNEVILLE



GROUNDWATER TESTING

Years ago, a plume of contaminated groundwater was identified below a former Army landfill/disposal area that contains elevated levels of perchlorate and other chemicals consistent with military use.

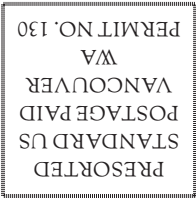
A small amount of perchlorate also was found in Lacamas Creek within the boundaries of Camp Bonneville.

Perchlorate is commonly used in rocket propellants, munitions and signal flares. It readily dissolves in water and infiltrates into soil and groundwater.

In 2011, the U.S. Environmental Protection Agency conducted a site inspection and confirmed the contamination that had been identified in previous studies.

Last summer, Clark County tested residential wells southwest of Camp Bonneville for perchlorate and other chemicals associated with explosives.

No contaminants were detected in any of the wells tested. The location of the wells was particularly important because groundwater flows toward the southwest.





CAMP BONNEVILLE CLEANUP 101

Weston Solutions uses a subcontractor to clear most brush, except for trees with trunks 6 inches or larger in diameter, before its technicians go to work. Heavy machinery, with plating to protect its operator from an unexpected explosion, is used to clear brush. The equipment makes quick work of most vegetation, even tree stumps.

The central valley floor has been divided into nearly 2,000 grids, each measuring 100 feet by 100 feet. A stake marks each grid’s northwest corner, and Weston technicians use rope to create 5-foot lanes within each grid.

Technicians searching for unexploded ordnance and other munitions may resemble amateur treasure hunters scavenging for coins and other buried items. In reality, cleanup technicians rely on far more sophisticated metal detectors that are specifically designed for finding unexploded ordnance. The locators are sensitive enough to screen out magnetic rock.

Technicians use their advanced metal detectors to sweep the width of lanes, keeping the locator’s search head about ½ inch off the ground as they methodically comb the site for buried hazards.

The technicians work in two-person teams, with one person operating the locator and the other with a shovel ready to carefully dig when the locator gets a metallic hit. A small scoop of dirt is removed, and the locator is passed over the spoils to determine if the team needs to dig deeper.

Most munitions of explosive concern have been found within 10 inches of the surface. Weston is clearing the central valley floor to 14 inches below ground, which reflects frost depth in the Pacific Northwest.



Weston Solutions technicians methodically search for buried munitions.



Items typically uncovered at Camp Bonneville include rifle shell casings and other debris.

Frost heaving occurs when winter freezing causes water to be drawn up from unfrozen soil. This triggers additional freezing and a potential upward expansion of soil, which can slowly push buried objects to the surface.

A vast arsenal of munitions was fired during training exercises that started before World War I and continued through the end of the Cold War. Rifle and pistol rounds, artillery shells, bazooka rounds, mortar shells and grenades all have been uncovered at Camp Bonneville, along with an assortment of practice munitions, illumination flares and smoke grenades.

Less than 1 percent of the items uncovered are actual live rounds. Some live rounds discovered are detonated in place while others are carefully removed and blown up elsewhere on the former military base.

Most of the items recovered are shell casings or grenade fragments, but there are literally millions of them at Camp Bonneville.

QUALITY CONTROL, QUALITY ASSURANCE

Weston Solutions, Clark County and the Washington State Department of Ecology all make checks to ensure technicians aren’t missing items. Once Weston finishes clearing an area, Clark County carefully checks one in five grids for remaining munitions.

Clark County also does “blind seeding” where an inert round is placed in a black plastic bag and buried in a grid to be cleared for cleanup crews to discover.

To date, Clark County has not detected any problems with Weston’s work.

UPCOMING CLEANUP PHASES

Weston Solutions expects to finish clearing the central valley floor in 2016. As that work continues, the contractor already has started on the cleanup’s second phase.

Last summer, the federal government agreed to provide \$4.8 million for Phase 2, which includes cleaning up artillery firing points, grenade ranges and demolition areas where out-of-date ordnance was destroyed. Weston expects to complete this phase sometime this year.

Two more cleanup phases are planned:

- Phase 3 – Central impact target area, where artillery gunners practiced firing at car bodies, refrigerators and other large items. This is a heavily contaminated portion of Camp Bonneville that will never be open for public use, even when the cleanup is complete.
- Phase 4 – Western slopes, the area to the west of the central valley floor.

The federal government has yet to provide money for these two phases of the cleanup. However, Clark County is legally obligated to follow the cleanup action plan, which was drafted by the Washington State Department of Ecology Department. Clark County will continue to seek federal funding to complete all phases of the cleanup.



Searching for munitions in the rainy Northwest can be a wet, muddy job.

