

# ***Camp Bonneville Site Inspection Confirms Contamination Found in Earlier Studies***

## ***Camp Bonneville - Environmental Site Inspection Report Available***

Vancouver, Washington

October 2012

In 2009, the Rosemere Neighborhood Association and Columbia Riverkeeper petitioned the U.S. Environmental Protection Agency (EPA) to do a Preliminary Assessment of environmental contamination at the Camp Bonneville site.

In 2011, EPA did a Preliminary Assessment followed by an Expanded Site Inspection. These activities are part of the Site Assessment process to determine if a site requires more study, and whether it is eligible to be added to the National Priorities List (NPL).

The NPL, commonly called the “Superfund” list, is EPA’s list of the nation’s most contaminated hazardous waste sites. The site assessment process does not include a complete characterization of the site, or evaluation of human health or ecological risk.

The Washington State Department of Ecology (Ecology), Clark County, and the Army have made progress investigating and cleaning up Camp Bonneville, in terms of both chemical and weapons contamination. Ecology is the lead regulatory agency for the site.

## **What the Assessment and Inspection Found**

EPA’s 2011 Expanded Site Inspection confirmed the findings of earlier studies that found hazardous substance contamination of onsite ground water and soil at Camp Bonneville.

**Perchlorate** was found in ground water samples collected from the site at concentrations ranging from 0.60 micrograms per liter (ug/L) to 470 ug/L. Concentrations of **RDX** found in ground water samples collected from the site range from 2.6 ug/L to 59 ug/L. The Ecology Model Toxics Control Act (MTCA) cleanup levels for perchlorate and RDX in ground water are 11 ug/L and 0.8 ug/L, respectively.

A subsurface soil sample collected from along the bank of North Fork Lacamas Creek revealed the presence of RDX at a concentration of 250 micrograms per kilogram (ug/kg). To protect ground water to the Ecology MTCA level of 0.8 ug/L, the corresponding soil cleanup level for RDX would be 0.3 ug/kg.

EPA’s inspection also includes data for sediment and surface water samples collected onsite from North Fork Lacamas Creek, Lacamas Creek, and tributaries to Lacamas Creek.

Perchlorate was found in a seep sample collected from North Fork Lacamas Creek next to the Demolition Area 1/Landfill 4 area at a concentration of 1.5 ug/kg.

Perchlorate was found in surface water samples collected on site from North Fork Lacamas Creek and Lacamas Creek at concentrations ranging from 0.023 ug/L to 0.13 ug/L.

As previously stated, the data gathered as part of the site inspection is not intended to evaluate possible risks to human health or the environment, but to determine if a site requires more detailed study, and whether it is eligible to be added to the NPL.

## EPA's next steps

Based on EPA's findings and past studies by other entities, EPA has determined that further detailed investigation of contamination at the site is necessary. Next, EPA will decide whether the site should be placed on the Superfund National Priorities List.

EPA will consider several factors, including the Expanded Site Inspection findings, the remedial investigation and cleanup being done under Ecology oversight, and community and Tribal interest and participation.

### What is Perchlorate?

Perchlorate is a manufactured salt that is found in rocket fuels, explosives, flares, fireworks, some bleach products, and some herbicides. It also occurs naturally in arid environments and has been found in natural fertilizers imported from Chile.

### What are RDX and HMX?

RDX is an acronym for Royal Demolition Explosive and HMX is an acronym for High Melting Explosive. Both are military high explosive compounds used in military munitions.

### How Can I Find EPA's Report on Camp Bonneville?

The Expanded Site Inspection report for the Camp Bonneville site in Vancouver, Washington, is now available. Find it online:

<http://yosemite.epa.gov/R10/cleanup.nsf/sites/cb> or visit the information repositories listed at the end of this document.

The report presents the results of samples collected at the site in May and August 2011. Samples were collected from ground water and surface water, surface and subsurface soil, and sediments.

#### **Cleanup Levels Are Set to Protect People's Health**

*EPA and Ecology have established limits on the amounts of contaminants considered "safe" for people to be exposed to. If the concentration of the contaminant is higher than these limits, cleanup, or preventing exposure to the contaminants, is recommended. Ecology's MTCA cleanup values for perchlorate and RDX in ground water and soil are noted in the previous section.*

## Site Background

*The Camp Bonneville site covers about 3,840 acres. Camp Bonneville is about five miles from the Vancouver City limits in Clark County. It borders both sides of Lacamas Creek and is about seven miles north of the Columbia River.*

*The Department of Defense operated Camp Bonneville for firing range practice and training from 1910 to 1995. During that time, military ammunitions were stored or used at the site for training troops. These included artillery ammunition, mortar ammunition, air-launched rockets, shoulder-fired rockets, guided missile bombs, land mines (practice only), grenades, fuses, and small arms ammunition.*

*The camp stopped operating in 1996. Since then, investigations were done to characterize the contamination from the munitions and other hazardous substance releases. A number of cleanups and removals have taken place across the site. Ecology states that 19 of the 21 small arms ranges with lead contamination have been cleaned up. Past studies also found that the*

*former Demolition Area 1/Landfill 4 area is a source of significant contamination.*

*A plume of ground water — contaminated with perchlorate — was found coming from the Demolition Area 1/Landfill 4 area. Ecology oversaw cleanups to remove much of the contaminated soil above the water table at the Demolition Area 1/Landfill 4 area. Some contaminated soil was left in place because of construction safety concerns and ground water intrusion into the excavation. Ecology determined that the contamination remaining at this depth would be remediated during a ground water remediation phase of work, if necessary. Ecology also required ground water monitoring, and for the past ten years, the groundwater contamination plume has been under investigation.*

*The Army transferred Camp Bonneville to Clark County in 2006, and continues to fund Clark County to perform environmental cleanup under Ecology oversight. After cleanup is completed, Clark County plans to develop the site into a regional park.*

## Risks

### What are the Health Risks from Perchlorate?

Perchlorate can damage thyroid function. Exposure over the long term may lead to hypothyroidism, which affects growth and development in the fetus, infant and child, as well as metabolism in all age groups. Pregnant women, fetuses, infants, children and people with hypothyroidism are considered the most sensitive to perchlorate exposure.

### What are the Health Risks from RDX and HMX?

Numerous federal and state agencies determined that RDX is a carcinogen.

HMX is not currently classified as a carcinogen, It may harm your liver and central nervous system if it is swallowed or gets on your skin.

For general information on perchlorate, <http://1.usa.gov/SApilh>

**Ecology's Toxics Cleanup Website**  
<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=11670>

On the right side of the page, under **Site Information**, under **Facility Site ID**, click the blue link **#69965472**

**EPA's Emerging Contaminants page**

1. Visit <http://go.usa.gov/YjwB>
2. Scroll down to **Additional Information**
3. Read the section on Perchlorate Resources

**Find More Information about RDX**  
visit: <http://1.usa.gov/UjmHyZ>

**Find More Information about HMX**  
visit: <http://1.usa.gov/Sv2PHW>

## For More Information

### Contact:

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Debra Sherbina,  
Community Involvement Coordinator  
✉ [Sherbina.debra@epa.gov](mailto:Sherbina.debra@epa.gov),  
☎ 800-424-4372 ext. 0247

*If you need materials in an alternative format, please contact Debra Sherbina at 1-800-424-4372 ext. 0247*

📄 *TDD users please call the Federal Relay Service: 800-877-8339 and give the operator Debra Sherbina's phone number.*

### Review the Expanded Site Inspection report at:

WSU Vancouver Library  
14202 NE Salmon Creek Avenue  
Vancouver, WA 98686  
360-546-9686

EPA Superfund Records Center  
Toll-free: 800-424-4372 ext. 4494  
1200 Sixth Avenue  
Seattle, WA 98101  
206-553-4494

Call for an appointment

To find the Expanded Site Inspection report online, and many other documents related to the site, visit:  
<http://yosemite.epa.gov/R10/cleanup.nsf/sites/cb>

## **Camp Bonneville Site Inspection Confirms Contamination Found in Earlier Studies**

### ***Look Inside for details***

- ***What the Assessment and Inspection Found***
- ***EPA's Next Steps***
- ***Risks from Perchlorate, RDX and HMX***

## ***Learn More on the Web***

EPA's Report on Camp Bonneville

<http://yosemite.epa.gov/R10/cleanup.nsf/sites/cb>

For general information on perchlorate, visit

<http://water.epa.gov/drink/contaminants/unregulated/perchlorate.cfm/>

Ecology's Toxics Cleanup Website

<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=11670>

EPA's Emerging Contaminants page

[http://www.epa.gov/fedfac/documents/emerging\\_contaminants.htm#ec](http://www.epa.gov/fedfac/documents/emerging_contaminants.htm#ec)

Find More Information about RDX

<http://www.atsdr.cdc.gov/toxfaqs/TF.asp?id=411&tid=72>

Find More Information about HMX

<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=876&tid=171>