Hanford Site Environmental Surveillance Master Sampling Schedule for Calendar Year 2009

LE Bisping

January 2009
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for the
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January 2009

Prepared for
the U.S. Department of Energy
under Contract DE-AC05-76RL01830

Pacific Northwest National Laboratory
Richland, Washington  99352
Summary

Environmental surveillance of the Hanford Site and surrounding areas is conducted by the Pacific Northwest National Laboratory (PNNL) for the U.S. Department of Energy (DOE). Sampling is conducted to evaluate levels of radioactive and nonradioactive pollutants in the Hanford environs, as required in DOE Order 450.1A, “Environmental Protection Program,” and DOE Order 5400.5, “Radiation Protection of the Public and the Environment.” The environmental surveillance sampling design is described in the Hanford Site Environmental Monitoring Plan, United States Department of Energy, Richland Operations Office (DOE/RL-91-50).

This document contains the calendar year 2009 schedule for the routine collection of samples for the Surface Environmental Surveillance Project (SESP) and Drinking Water Monitoring Project (DWMP). Each section includes sampling locations, sampling frequencies, sample types, and analyses to be performed. In some cases, samples are scheduled on a rotating basis. If a sample will not be collected in 2009, the anticipated year for collection is provided. Maps showing approximate sampling locations are included for media scheduled for collection in 2009.

Surface Environmental Surveillance Project Sampling

The SESP is a multimedia environmental surveillance effort to measure the concentrations of radionuclides and chemicals in environmental media to demonstrate compliance with applicable environmental quality standards and public exposure limits, and assess environmental impacts. Project personnel annually collect selected samples of ambient air, surface water, agricultural products, fish, wildlife, and sediments. Soil and vegetation samples are collected approximately every 5 years. Analytical capabilities include the measurement of radionuclides at environmental concentrations and, in selected media, nonradiological constituents including metals, anions, volatile organic compounds, and total organic carbon.

Drinking Water Monitoring Project Sampling

Fluor Hanford, Inc. is responsible for monitoring the quality of drinking water supplied by DOE to its onsite facilities in accordance with federal and state regulations. PNNL conducts radiological monitoring of onsite drinking water for Fluor Hanford, Inc. concurrent with SESP activities to promote sampling efficiency and consistency, use expertise developed over the years, and reduce costs associated with management, sample collection, procedure development, analytical contracting, data management, quality control, and reporting.

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1 Pacific Northwest National Laboratory is operated by Battelle for the U.S. Department of Energy.
Data Management

The Hanford Environmental Information System (HEIS) database is used as a repository for data gathered during environmental surveillance activities at the Hanford Site. For ease in retrieving SESP or drinking water data from the HEIS database (HEIS 1989), the majority of the location names in this document are the location names used in the database.

Schedule Changes

This schedule is subject to modification during the year in response to changes in site operations, program requirements, and the nature of the observed results. Operational limitations such as weather, mechanical failures, sample availability, and other factors may also impact scheduled sampling. Therefore, this document may not be an accurate record of samples collected during the year.

Multi-Agency Samples

By joint agreement, some samples are collected by SESP personnel and provided to the Washington State Department of Health (DOH) and the U.S. Food and Drug Administration (FDA). All planned cooperative sampling efforts are indicated in this schedule.

Additional Information

Questions relating to the content of this document can be directed to T. M. (Ted) Poston, Manager, SESP, (509) 372-6900 or G. W. (Greg) Patton, Manager, DWMP, (509) 371-7071.
### Acronyms and Symbols

#### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>ALE</td>
<td>Fitzner/Eberhardt Arid Lands Ecology Reserve</td>
</tr>
<tr>
<td>DOE</td>
<td>U.S. Department of Energy</td>
</tr>
<tr>
<td>DOH</td>
<td>Washington State Department of Health</td>
</tr>
<tr>
<td>DR</td>
<td>Downriver (from noted location)</td>
</tr>
<tr>
<td>DWMP</td>
<td>Drinking Water Monitoring Project</td>
</tr>
<tr>
<td>FDA</td>
<td>U.S. Food and Drug Administration</td>
</tr>
<tr>
<td>FFTF</td>
<td>Fast Flux Test Facility</td>
</tr>
<tr>
<td>HEIS</td>
<td>Hanford Environmental Information System</td>
</tr>
<tr>
<td>HRM</td>
<td>Hanford river markers</td>
</tr>
<tr>
<td>ICP-MS</td>
<td>Inductively coupled plasma mass spectrometry</td>
</tr>
<tr>
<td>NASQAN</td>
<td>National Stream Quality Accounting Network</td>
</tr>
<tr>
<td>PNNL</td>
<td>Pacific Northwest National Laboratory</td>
</tr>
<tr>
<td>PRD</td>
<td>Priest Rivers Dam</td>
</tr>
<tr>
<td>SESP</td>
<td>Surface Environmental Surveillance Project</td>
</tr>
<tr>
<td>UR</td>
<td>Upriver (from noted location)</td>
</tr>
<tr>
<td>USGS</td>
<td>U.S. Geological Survey</td>
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#### Frequency Symbols Used

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>A</td>
<td>annually</td>
</tr>
<tr>
<td>BE</td>
<td>biennially (every 2 years)</td>
</tr>
<tr>
<td>BW</td>
<td>biweekly (every 2 weeks)</td>
</tr>
<tr>
<td>M</td>
<td>monthly</td>
</tr>
<tr>
<td>M Comp.</td>
<td>monthly composite</td>
</tr>
<tr>
<td>Q</td>
<td>quarterly</td>
</tr>
<tr>
<td>Q Comp.</td>
<td>quarterly composite</td>
</tr>
<tr>
<td>SA</td>
<td>semiannually (twice each year)</td>
</tr>
<tr>
<td>TE</td>
<td>triennially (every 3 years)</td>
</tr>
</tbody>
</table>
Analytical Symbols Used

Generally, standard element, chemical, and isotope designations are used to indicate the analyses performed. Other analytical designations used include the following:

**Alpha**
gross alpha activity of sample

**Anions**
major anions – generally chloride, fluoride, nitrate, nitrite, sulfate

**Beta**
gross beta activity of sample

**Gamma Scan**
analysis of photon energy spectrum for individual photon-emitting radionuclides

**HTO**
tritiated water ($^3$H$^2$H$^1$O)

**Hg-CVAA**
mercury by cold vapor atomic absorbance spectrometry

**Hg-CVAF**
total mercury in water by cold vapor atomic fluorescence

**ICP-MS**
major metals by inductively coupled plasma mass spectrometry – samples unfiltered unless otherwise noted

**Lo $^3$H**
Low-level method for the electrolytic enrichment of tritium

**Pu**
isotopic plutonium ($^{239}$Pu, $^{239/240}$Pu)

**TOC**
total organic carbon

**U**
isotopic uranium ($^{234}$U, $^{235}$U, $^{238}$U)

**VOA**
volatile organic compounds
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# 1.0 Air Surveillance

## 1.1 Particulate Filter

<table>
<thead>
<tr>
<th>Location</th>
<th>Individual Samples</th>
<th>Composited Samples</th>
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<tr>
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<td>Location Number</td>
<td>Frequency</td>
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<td>Onsite</td>
<td></td>
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<tr>
<td>100 K Area</td>
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<td>BW</td>
</tr>
<tr>
<td>100 N-1325 Crib</td>
<td>2</td>
<td>BW</td>
</tr>
<tr>
<td>100 D Area</td>
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<tr>
<td>100 F Met Tower</td>
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<td>BW</td>
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<tr>
<td>Hanford Townsite</td>
<td>5</td>
<td>BW</td>
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<tr>
<td>Gable Mountain</td>
<td>6</td>
<td>BW</td>
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<td>200 ESE</td>
<td>7</td>
<td>BW</td>
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<td>S of 200 E</td>
<td>8</td>
<td>BW</td>
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<tr>
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<td>BW</td>
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<td>Army Loop Camp</td>
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<td>BW</td>
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<td>BW</td>
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<tr>
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<tr>
<td>200 W SE</td>
<td>13</td>
<td>BW</td>
</tr>
<tr>
<td>300 Water Intake</td>
<td>14</td>
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<td>BW</td>
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<td>300 South West</td>
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<td>BW</td>
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<td>300 Trench</td>
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<tr>
<td>400 N</td>
<td>22</td>
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<td>Perimeter</td>
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<td></td>
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<td>Ringold Met Tower</td>
<td>24</td>
<td>BW</td>
</tr>
<tr>
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<td>BW</td>
</tr>
<tr>
<td>Dogwood Met Tower</td>
<td>26</td>
<td>BW</td>
</tr>
<tr>
<td>Byers Landing</td>
<td>27</td>
<td>BW</td>
</tr>
<tr>
<td>Battelle Complex&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<td>BW</td>
</tr>
<tr>
<td>Horn Rapids Substa</td>
<td>29</td>
<td>BW</td>
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<tr>
<td>Prosser Barricade&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<td>Yakima Barricade&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<td>Rattlesnake Springs</td>
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<td>Wahluke Slope</td>
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<td>S End Vernita Bridge</td>
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<tr>
<td>100 Areas</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, Gamma Scan</td>
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<tr>
<td>Hanford Townsite</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, Gamma Scan</td>
</tr>
<tr>
<td>Gable Mountain</td>
<td>Q</td>
<td>Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>200 E Area</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>B Pond</td>
<td>Q</td>
<td>Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>200 W South East</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>300 Area</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>300 NE</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>400 Area</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, Gamma Scan</td>
</tr>
<tr>
<td>Ringold Met Tower</td>
<td>Q</td>
<td>Pu, Gamma Scan</td>
</tr>
<tr>
<td>W End of Fir Road&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>Dogwood Met Tower</td>
<td>Q</td>
<td>$^{90}$Sr, U, Gamma Scan</td>
</tr>
<tr>
<td>Byers Landing</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, U, Gamma Scan</td>
</tr>
<tr>
<td>Battelle Complex&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>U, Gamma Scan</td>
</tr>
<tr>
<td>Prosser Barricade&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, Gamma Scan</td>
</tr>
<tr>
<td>Yakima Barricade&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, Gamma Scan</td>
</tr>
<tr>
<td>Wahluke Slope</td>
<td>Q</td>
<td>$^{90}$Sr, Pu, Gamma Scan</td>
</tr>
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</table>

<sup>(b)</sup> Indicates beta and gamma analysis.
### Particulate Filter (contd)

<table>
<thead>
<tr>
<th>Location</th>
<th>Individual Samples</th>
<th>Composited Samples</th>
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<tbody>
<tr>
<td></td>
<td>Location Number(a)</td>
<td>Frequency</td>
</tr>
<tr>
<td>Community</td>
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</tr>
<tr>
<td>Basin City School</td>
<td>35</td>
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<tr>
<td>Leslie Groves-Rchlnd</td>
<td>36</td>
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<tr>
<td>Pasco Kennewick-Ely Street</td>
<td>37, 38</td>
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<tr>
<td>Benton City</td>
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<td>Mattawa</td>
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<tr>
<td>Othello</td>
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<tr>
<td>Distant</td>
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</table>

(a) Refer to Figure 1.1, “2009 Air Sampling Locations.”
(b) Washington State Department of Health (DOH) air sampler also at this location.
1.2 Tritium

<table>
<thead>
<tr>
<th>Location</th>
<th>Location Number(a)</th>
<th>Frequency</th>
<th>Analysis(b)</th>
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<td>100 K Area</td>
<td>1</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>100 N-1325 Crib</td>
<td>2</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>200 ESE</td>
<td>7</td>
<td>M</td>
<td>$^3$H</td>
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<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>300 Water Intake$^{(c)}$</td>
<td>14</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>300 South Gate$^{(d)}$</td>
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<td>$^3$H</td>
</tr>
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<td>16</td>
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<td>M</td>
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<tr>
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<td>19</td>
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<td>$^3$H</td>
</tr>
<tr>
<td>Perimeter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ringold Met Tower</td>
<td>24</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>W End of Fir Road</td>
<td>25</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>Dogwood Met Tower</td>
<td>26</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>Byers Landing</td>
<td>27</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>Battelle Complex$^{(c)}$</td>
<td>28</td>
<td>M</td>
<td>$^3$H</td>
</tr>
<tr>
<td>Prosser Barricade</td>
<td>30</td>
<td>M</td>
<td>$^3$H</td>
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</tr>
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<td>35</td>
<td>M</td>
<td>$^3$H</td>
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<tr>
<td>Leslie Groves-Rehlnrd</td>
<td>36</td>
<td>M</td>
<td>$^3$H</td>
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<td>Yakima</td>
<td>42</td>
<td>M</td>
<td>$^3$H</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 1.1, “2009 Air Sampling Locations.”
(b) As tritiated water (HTO).
(c) DOH air sampler also at this location.
(d) Two tritium samples are collected from this location.
Figure 1.1. 2009 Air Sampling Locations
## 2.0 Surface Water Surveillance

### 2.1 Columbia River

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
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</thead>
<tbody>
<tr>
<td>Priest Rapids-River</td>
<td>Cumulative</td>
<td>M Comp.(b)</td>
<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, $^{99}$Tc, U/DOH(c)</td>
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<tr>
<td></td>
<td>Particulate (filter)</td>
<td>M Comp.(d)</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q Comp.(d)</td>
<td>Pu</td>
</tr>
<tr>
<td></td>
<td>Soluble (resin)</td>
<td>M Comp.(d)</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q Comp.(d)</td>
<td>Pu</td>
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<td>Rich.Pmphs HRM 46.4</td>
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<td>M Comp.(b)</td>
<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, $^{99}$Tc, U</td>
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<td>Particulate (filter)</td>
<td>M Comp.(d)</td>
<td>Gamma Scan</td>
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<td></td>
<td>Q Comp.(d)</td>
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<tr>
<td></td>
<td>Soluble (resin)</td>
<td>M Comp.(d)</td>
<td>Gamma Scan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q Comp.(d)</td>
<td>Pu</td>
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</table>

Grab 3/Yr USGS-NASQAN(e)

Rich.Pmphs-1 HRM46.4(f) Transect Q Lo $^3$H, $^{90}$Sr, U, Anions
Rich.Pmphs-2 HRM46.4 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs-3 HRM46.4 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs-5 HRM46.4 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs-7 HRM46.4 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs-10 HRM46.4 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs HRM 43.5 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs HRM 43.9 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs HRM 45.0 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Rich.Pmphs HRM 45.8 Transect Q ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA

Vernita Grab 3/Yr USGS-NASQAN(e)
Vernita-1 HRM 0.3 Transect Q Lo $^3$H, $^{90}$Sr, U, Anions
Vernita-2 HRM 0.3 Transect Q $^{99}$Tc, ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Vernita-3 HRM 0.3 Transect Q $^{99}$Tc, ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
Vernita-4 HRM 0.3 Transect Q $^{99}$Tc, ICP-MS, Hg-CVAF, ICP-MS Filtered, VOA
<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N -1 HRM 9.5</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>100 N -2 HRM 9.5</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
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<tr>
<td>100 N -3 HRM 9.5</td>
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<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>100 N -5 HRM 9.5</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>100 N -7 HRM 9.5</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
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<td>100 N -10 HRM 9.5</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
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<tr>
<td>100 N Shore HRM 8.4</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>100 N Shore HRM 8.9</td>
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<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
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<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
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<tr>
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<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>Hanfrd TS-1 HRM 28.7</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, $^{99}$Tc, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>Hanfrd TS-2 HRM 28.7</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
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<tr>
<td>Hanfrd TS-3 HRM 28.7</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>Hanfrd TS-5 HRM 28.7</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>Hanfrd TS-7 HRM 28.7</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>Hanfrd TS-10 HRM 28.7</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>Hanfrd Twosite HRM26</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, $^{99}$Tc, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>Hanfrd Twosite HRM27</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, $^{99}$Tc, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>Hanfrd Twosite HRM28</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, $^{99}$Tc, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>Hanfrd Twosite HRM30</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, $^{99}$Tc, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>300 Area -1 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area -2 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area -3 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area -5 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area -7 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area -10 HRM 43.1</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area Shr HRM41.5</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>300 Area Spring 42-2</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>300 Area Spr DR 42-2</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
<tr>
<td>300 Area Shr HRM42.9</td>
<td>Transect</td>
<td>A</td>
<td>$^{3}$H, $^{89}$Sr, U, ICP-MS, ICP-MS Filtered, Anions/DOH(h)</td>
</tr>
</tbody>
</table>
### Columbia River (contd)

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 Area Outfl13</td>
<td>Grab</td>
<td>Q</td>
<td>Lo $^3$H, $^{89}$Sr, U, Anions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A ICP-MS, ICP-MS Filtered</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 2.1, “2009 Surface Water and Drinking Water Sampling Locations.” Hanford river markers (HRM) are a series of signposts along the Hanford Site shoreline of the Columbia River that are roughly 1.6 km (1 mi) apart. The Vernita Bridge is HRM #0 and Ferry Street in Richland is HRM #46. Samples collected between HRMs are assigned a decimal.

(b) Sample is collected weekly and composited monthly for analysis.

(c) Additional sample provided to the DOH (January and June only).

(d) Sample is collected biweekly and composited for analysis.

(e) Analyses are performed by the U.S. Geological Survey (USGS) in conjunction with the National Stream Quality Accounting Network (NASQAN) Program, and include conductance, pH, temperature, turbidity, dissolved oxygen, hardness, Ca, Mg, alkalinity, carbonates, sulfate, Cl, F, solids, NH4-N, NO3+NO2, N-Kjeldahl, P, Cr, Fe, and dissolved organic carbon.

(f) Quality assurance sample submitted for analyses twice per year.

(g) Quality assurance sample submitted for analyses once per year.

(h) Additional sample provided to the DOH.
### 2.2 River Shoreline Springs

<table>
<thead>
<tr>
<th>Location(^{(a)})</th>
<th>HRM(^{(b)})</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-B Spring 38-3</td>
<td>3.8</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, (^{99})Tc, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions, VOA/DOH(^{(c)})</td>
</tr>
<tr>
<td>100-B Spring 39-2</td>
<td>3.9</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, (^{99})Tc, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions, VOA/DOH(^{(c)})</td>
</tr>
<tr>
<td>100-K Spring 63-1</td>
<td>6.3</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions, VOA</td>
</tr>
<tr>
<td>100-K Spring 77-1</td>
<td>7.6</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions, VOA</td>
</tr>
<tr>
<td>100-N Spring 8-13</td>
<td>9.3</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>100-D Spring 102-1</td>
<td>10.2</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>100-D Spring 110-1</td>
<td>11.0</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>100-H Spring 145-1</td>
<td>14.4</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, (^{99})Tc, U, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>100-H Spring 153-1</td>
<td>15.3</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, (^{99})Tc, U, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>100-F Spring 207-1</td>
<td>21.3</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, U, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions, VOA</td>
</tr>
<tr>
<td>Hanford Spr UR 28-2(^{(d)})</td>
<td>27.8</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Tc, U, (^{129})I, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>Hanford Spring 28-2</td>
<td>28.1</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Tc, U, (^{129})I, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>Hanford Spr DR 28-2(^{(e)})</td>
<td>28.3</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Tc, U, (^{129})I, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>300 Area Spring 41-9</td>
<td>41.9</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, U, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions</td>
</tr>
<tr>
<td>300 Area Spring 42-2</td>
<td>42.1</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, U, (^{129})I, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>300 Area Spr DR 42-2(^{(e)})</td>
<td>42.4</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, U, (^{129})I, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions/DOH(^{(c)})</td>
</tr>
<tr>
<td>300 Area Spring 42-7</td>
<td>42.7</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, U, Gamma Scan, Anions</td>
</tr>
<tr>
<td>Richland Spr(SRL 437-1)</td>
<td>43.7</td>
<td>Grab</td>
<td>A</td>
<td>Alpha, Beta, (^3)H, (^{90})Sr, U, Gamma Scan, ICP-MS, Hg-CVAF, ICP-MS Filtered, Anions</td>
</tr>
</tbody>
</table>

\(^{(a)}\) Refer to Figure 2.1, "2009 Surface Water and Drinking Water Sampling Locations."

\(^{(b)}\) HRM are a series of signposts along the Hanford Site shoreline of the Columbia River that are roughly 1.6 km (1 mi) apart. The Vernita Bridge is HRM #0 and Ferry Street in Richland is HRM #46. Samples collected between HRMs are assigned a decimal.

\(^{(c)}\) Additional sample provided to the DOH.

\(^{(d)}\) UR = Upriver from noted location.

\(^{(e)}\) DR = Downriver from noted location.
### 2.3 Onsite Pond

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Lake</td>
<td>Grab</td>
<td>Q</td>
<td>$^3$H</td>
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<tr>
<td>FFTF Pond</td>
<td>Grab</td>
<td>Q</td>
<td>Alpha, Beta, $^3$H, Gamma Scan</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 2.1, “2009 Surface Water and Drinking Water Sampling Locations.”
(b) Quality assurance sample submitted for analyses once per year.

### 2.4 Offsite Irrigation

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverview Canal</td>
<td>Grab</td>
<td>3 (May-Sept)</td>
<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, U, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Horn Rapids Area</td>
<td>Grab</td>
<td>3 (May-Sept)</td>
<td>Alpha, Beta, Lo $^3$H, $^{90}$Sr, U, Gamma Scan/DOH</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 2.1, “2009 Surface Water and Drinking Water Sampling Locations.”
(b) Additional sample provided to the DOH.
Figure 2.1. 2009 Surface Water and Drinking Water Sampling Locations
### 3.0 Drinking Water Surveillance

#### 3.1 Onsite Drinking

<table>
<thead>
<tr>
<th>Location</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
<th>Composite Group</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N Area Grab</td>
<td>M&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>Beta</td>
<td>100 N Area</td>
<td>Q</td>
<td>Beta</td>
</tr>
<tr>
<td>200 W Area Grab</td>
<td>M&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>Beta</td>
<td>200 W Area</td>
<td>Q</td>
<td>Beta</td>
</tr>
<tr>
<td>100 K Area Grab</td>
<td>M&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>Beta</td>
<td>100 K Area</td>
<td>Q</td>
<td>Beta</td>
</tr>
<tr>
<td>400 Area Well P-14 Grab</td>
<td>M&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>Beta</td>
<td>400 Area Well P-14</td>
<td>Q</td>
<td>Beta</td>
</tr>
<tr>
<td>400 Area Grab</td>
<td>M&lt;sup&gt;(b)&lt;/sup&gt;</td>
<td>Q</td>
<td>Beta</td>
<td>400 Area</td>
<td>Q</td>
<td>Beta</td>
</tr>
<tr>
<td>100 N Area Grab</td>
<td>Q&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>A</td>
<td>90Sr, 3H</td>
<td>100 N Area</td>
<td>A</td>
<td>90Sr, 3H</td>
</tr>
<tr>
<td>200 W Area Grab</td>
<td>Q&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>A</td>
<td>90Sr, 3H</td>
<td>200 W Area</td>
<td>A</td>
<td>90Sr, 3H</td>
</tr>
<tr>
<td>100 K Area Grab</td>
<td>Q&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>A</td>
<td>90Sr, 3H</td>
<td>100 K Area</td>
<td>A</td>
<td>90Sr, 3H</td>
</tr>
<tr>
<td>400 Area Well P-14 Grab</td>
<td>Q&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>A</td>
<td>90Sr, 3H/DOH&lt;sup&gt;(d)&lt;/sup&gt;</td>
<td>400 Area Well P-14</td>
<td>A</td>
<td>90Sr, 3H/DOH&lt;sup&gt;(d)&lt;/sup&gt;</td>
</tr>
<tr>
<td>400 Area Grab</td>
<td>Q&lt;sup&gt;(c)&lt;/sup&gt;</td>
<td>A</td>
<td>90Sr</td>
<td>400 Area</td>
<td>A</td>
<td>90Sr</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 2.1, “2009 Surface Water and Drinking Water Sampling Locations.”
(b) Sample is collected monthly and composited for quarterly analysis.
(c) Sample is collected and analyzed quarterly and then composited for annual analysis.
(d) Additional sample provided quarterly to the DOH and then composited for annual analysis.
(e) Additional sample provided quarterly to the DOH for 3H analysis (January only).
4.0 Biota

4.1 Food and Farm Products

4.1.1 Milk

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Frequency</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Wahluke Area(b)</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>Sagenmoor Composite(b,c)</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Q</td>
<td>Lo $^3$H, $^{90}$Sr, Gamma Scan</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.1, “2009 Food and Farm Products Sampling Locations.”
(b) Sample composited from multiple dairies in each area.
(c) Quality assurance sample submitted for analyses once per year.

4.1.2 Leafy Vegetables

<table>
<thead>
<tr>
<th>Location(a,b)</th>
<th>Frequency(c)</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverview Area</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan/FDA(d)</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan/FDA(d)</td>
</tr>
<tr>
<td>Sagenmoor Area</td>
<td>BE (2009)</td>
<td>$^{90}$Sr, Gamma Scan/DOH(e)</td>
</tr>
<tr>
<td>East Wahluke Area</td>
<td>BE (2010)</td>
<td>$^{90}$Sr, Gamma Scan/DOH(e)</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.1, “2009 Food and Farm Products Sampling Locations.”
(b) Two samples collected for Pacific Northwest National Laboratory (PNNL) within each area; one sample is analyzed and one is archived.
(c) Samples are collected in 2009 according to their specified frequency unless otherwise noted.
(d) Two additional samples sent to the U.S. Food and Drug Administration (FDA).
(e) Additional sample provided to the DOH.

4.1.3 Vegetables

<table>
<thead>
<tr>
<th>Location(a,b)</th>
<th>Sample Type</th>
<th>Frequency(c)</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverview Area</td>
<td>Potatoes</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan/DOH(e)</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Potatoes</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan/FDA(f)</td>
</tr>
<tr>
<td>East Wahluke Area</td>
<td>Potatoes</td>
<td>A</td>
<td>$^{90}$Sr, Gamma Scan/DOH(e)</td>
</tr>
<tr>
<td>Horn Rapids Area</td>
<td>Potatoes</td>
<td>BE (2009)</td>
<td>$^{90}$Sr, Gamma Scan/DOH(e) FDA(f)</td>
</tr>
<tr>
<td>Sagenmoor Area</td>
<td>Potatoes</td>
<td>TE (2009)</td>
<td>$^{90}$Sr, Gamma Scan/DOH(e) FDA(f)</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.1, “2009 Food and Farm Products Sampling Locations.”
(b) Two samples collected for PNNL within each area; one sample is analyzed and one is archived.
(c) Samples are collected in 2009 according to their specified frequency unless otherwise noted.
(d) Other vegetables may be substituted if potatoes are not available.
(e) Additional sample provided to the DOH.
(f) Two additional samples sent to the FDA.
### 4.1.4 Fruits

<table>
<thead>
<tr>
<th>Location(ab)</th>
<th>Sample Type</th>
<th>Frequency(c)</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagemoor Area</td>
<td>Apples</td>
<td>TE (2009)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH, FDA</td>
</tr>
<tr>
<td></td>
<td>Grapes</td>
<td>TE (2010)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td></td>
<td>Cherries</td>
<td>TE (2011)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan/DOH, FDA</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Tomatoes</td>
<td>A</td>
<td>July</td>
<td>$^{90}$Sr, $^{3}$H, Gamma Scan</td>
</tr>
<tr>
<td></td>
<td>Apples</td>
<td>TE (2009)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td></td>
<td>Grapes</td>
<td>TE (2010)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td></td>
<td>Cherries</td>
<td>TE (2011)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Riverview Area(g)</td>
<td>Tomatoes</td>
<td>A</td>
<td>July</td>
<td>$^{90}$Sr, $^{3}$H, Gamma Scan</td>
</tr>
<tr>
<td></td>
<td>Apples</td>
<td>TE (2009)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH, FDA</td>
</tr>
<tr>
<td></td>
<td>Grapes</td>
<td>TE (2010)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH, FDA</td>
</tr>
<tr>
<td></td>
<td>Cherries</td>
<td>TE (2011)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Mattawa Area</td>
<td>Apples</td>
<td>TE (2009)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Cold Creek Area</td>
<td>Grapes</td>
<td>TE (2010)</td>
<td>September</td>
<td>$^{90}$Sr, Gamma Scan/DOH, FDA</td>
</tr>
<tr>
<td>Ringold Area</td>
<td>Cherries</td>
<td>TE (2011)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td>East Wahluke Area</td>
<td>Cherries</td>
<td>TE (2011)</td>
<td>June</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.1, “2009 Food and Farm Products Sampling Locations.”
(b) Two samples collected for the PNNL within each area; one sample is analyzed and one is archived.
(c) Samples are collected in 2009 according to their specified frequency unless otherwise noted.
(d) Additional sample provided to the DOH.
(e) Two additional samples sent to the FDA.
(f) Concord grapes preferred; table grapes acceptable if concord grapes are unavailable.
(g) Other fruits may be substituted due to availability.

### 4.1.5 Wines

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia Basin(b)</td>
<td>White</td>
<td>BE (2009)</td>
<td>December</td>
<td>Lo $^{3}$H, Gamma Scan/DOH</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>BE (2009)</td>
<td>December</td>
<td>Lo $^{3}$H, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Yakima Valley</td>
<td>White</td>
<td>BE (2009)</td>
<td>December</td>
<td>Lo $^{3}$H, Gamma Scan/DOH</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>BE (2009)</td>
<td>December</td>
<td>Lo $^{3}$H, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Mattawa Area</td>
<td>White</td>
<td>BE (2009)</td>
<td>December</td>
<td>Lo $^{3}$H, Gamma Scan/DOH</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>BE (2009)</td>
<td>December</td>
<td>Lo $^{3}$H, Gamma Scan/DOH</td>
</tr>
</tbody>
</table>

(a) Two samples of each type collected for PNNL within each area.
(b) Location refers to Benton and Franklin Counties.
(c) Additional sample provided to the DOH.

### 4.1.6 Alfalfa

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Sample Type</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagemoor Area</td>
<td>Alfalfa</td>
<td>BE (2009)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan</td>
</tr>
<tr>
<td>Riverview Area</td>
<td>Alfalfa</td>
<td>BE (2009)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan/DOH, FDA</td>
</tr>
<tr>
<td>Sunnyside Area</td>
<td>Alfalfa</td>
<td>BE (2009)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
<tr>
<td>Horn Rapids Area</td>
<td>Alfalfa</td>
<td>BE (2009)</td>
<td>May</td>
<td>$^{90}$Sr, Gamma Scan/DOH</td>
</tr>
</tbody>
</table>

(a) Two samples collected for PNNL within each area; one sample is analyzed and one is archived.
(b) Additional sample provided to the DOH.
(c) Two additional samples sent to the FDA.
Figure 4.1. 2009 Food and Farm Products Sampling Locations
## 4.2 Wildlife

### 4.2.1 Fish

<table>
<thead>
<tr>
<th>Location(a)</th>
<th>Species/Sample</th>
<th>Number of Samples</th>
<th>Frequency(b)</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-N to 100-D</td>
<td>Whitefish</td>
<td>Fillet</td>
<td>5</td>
<td>BE (2009)</td>
<td>Oct-Nov</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(d)</td>
<td>5</td>
<td>BE (2009)</td>
<td>Oct-Nov</td>
</tr>
<tr>
<td></td>
<td>Carp</td>
<td>Fillet</td>
<td>5</td>
<td>BE (2010)</td>
<td>April-July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2010)</td>
<td>April-July</td>
</tr>
<tr>
<td>Background – Priest Rapids/Wanapum Pools</td>
<td>Whitefish</td>
<td>Fillet</td>
<td>5</td>
<td>BE (2009)</td>
<td>November</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2009)</td>
<td>November</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(d)</td>
<td>5</td>
<td>BE (2009)</td>
<td>November</td>
</tr>
<tr>
<td>300 Area</td>
<td>Carp</td>
<td>Fillet</td>
<td>5</td>
<td>BE (2010)</td>
<td>April-July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>BE (2010)</td>
<td>April-July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(d)</td>
<td>5</td>
<td>BE (2010)</td>
<td>April-July</td>
</tr>
<tr>
<td>Background - Desert Aire/Vantage</td>
<td>Bass</td>
<td>Fillet</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(d)</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td>100 F Slough</td>
<td>Bass</td>
<td>Fillet</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(d)</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td>Hanford Slough</td>
<td>Bass</td>
<td>Fillet</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcass</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(d)</td>
<td>5</td>
<td>TE (2011)</td>
<td>April-June</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.2, “2009 Wildlife Sampling Locations.”
(b) Samples are collected in 2009 according to their specified frequency unless otherwise noted.
(c) Additional whole fish sample provided to the DOH.
(d) Ecological assessment sample.
### 4.2.2 Geese

<table>
<thead>
<tr>
<th>Location/ Sample</th>
<th>Species/ Sample</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Areas</td>
<td>Canada Goose</td>
<td>Muscle</td>
<td>5</td>
<td>BE (2009)</td>
<td>May-July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>5</td>
<td>BE (2009)</td>
<td>May-July</td>
</tr>
<tr>
<td>Hanf Townsite to 300 Area</td>
<td>Canada Goose</td>
<td>Liver (b)</td>
<td>5</td>
<td>BE (2009)</td>
<td>May-July</td>
</tr>
<tr>
<td>Background – Desert Aire/Vantage</td>
<td>Canada Goose</td>
<td>Muscle</td>
<td>5</td>
<td>BE (2009)</td>
<td>May-July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>5</td>
<td>BE (2009)</td>
<td>May-July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver (b)</td>
<td>5</td>
<td>BE (2009)</td>
<td>May-July</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.2, “2009 Wildlife Sampling Locations.”
(b) Ecological assessment sample.

### 4.2.3 Upland Game Birds

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/ Sample</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-D to 100-H</td>
<td>Pheasant</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver (b)</td>
<td>4</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td>100-H to 100-F</td>
<td>Pheasant</td>
<td>Muscle</td>
<td>6</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>6</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver (b)</td>
<td>6</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td>Background</td>
<td>Pheasant</td>
<td>Muscle</td>
<td>5</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>5</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver (b)</td>
<td>5</td>
<td>BE (2010)</td>
<td>September</td>
</tr>
</tbody>
</table>

(a) Pheasants preferred; chukars or quail acceptable if pheasants are unavailable.
(b) Ecological assessment sample.
(c) Additional whole bird sample provided to the DOH.
### 4.2.4 Rabbits

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/Sample</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N Area</td>
<td>Cottontail</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(c)</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td>200 E Area</td>
<td>Cottontail</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(c)</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td>200 West</td>
<td>Cottontail</td>
<td>Muscle</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(c)</td>
<td>4</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td>Background</td>
<td>Cottontail</td>
<td>Muscle</td>
<td>5</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>5</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(c)</td>
<td>5</td>
<td>BE (2009)</td>
<td>Jan-Dec</td>
</tr>
</tbody>
</table>

(a) Refer to Figure 4.2, “2009 Wildlife Sampling Locations.”
(b) Additional whole rabbit sample provided to the DOH.
(c) Ecological assessment sample.

### 4.2.5 Deer/Elk

<table>
<thead>
<tr>
<th>Location</th>
<th>Species/Sample</th>
<th>Number of Samples</th>
<th>Frequency</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 N Area</td>
<td>Mule Deer</td>
<td>Muscle</td>
<td>2</td>
<td>BE (2010)</td>
<td>Nov-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>2</td>
<td>BE (2010)</td>
<td>Nov-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(b)</td>
<td>2</td>
<td>BE (2010)</td>
<td>Nov-Dec</td>
</tr>
<tr>
<td>200 Areas</td>
<td>Mule Deer</td>
<td>Muscle</td>
<td>2</td>
<td>BE (2010)</td>
<td>Nov-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>2</td>
<td>BE (2010)</td>
<td>Nov-Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(b)</td>
<td>2</td>
<td>BE (2010)</td>
<td>Nov-Dec</td>
</tr>
<tr>
<td>Road Kill at Onsite Locations(c)</td>
<td>Mule Deer or Elk</td>
<td>Muscle</td>
<td>10</td>
<td>BE (2010)</td>
<td>As Available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>10</td>
<td>BE (2010)</td>
<td>As Available</td>
</tr>
<tr>
<td>Background(d)</td>
<td>Mule Deer</td>
<td>Muscle</td>
<td>2</td>
<td>BE (2010)</td>
<td>October</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bone</td>
<td>2</td>
<td>BE (2010)</td>
<td>October</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liver(b)</td>
<td>2</td>
<td>BE (2010)</td>
<td>October</td>
</tr>
</tbody>
</table>

(a) Additional sample provided to the DOH.
(b) Ecological assessment sample.
(c) As available, according to location.
(d) One of the two background samples obtained from the DOH.
Figure 4.2. 2009 Wildlife Sampling Locations
## 5.0 Soil and Vegetation

### 5.1 Soil

<table>
<thead>
<tr>
<th>Location</th>
<th>Frequency (a)</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 K Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
</tr>
<tr>
<td>NE of 100 N Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>E of 100 N Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
</tr>
<tr>
<td>100N Shore Above HGP</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>100N Spring Shoreline</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>Above 100D Pumphouse</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>100 Area Fire Stat</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>200 ENC</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>E of 200 E</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>200 ESE</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, $^{241}$Am</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
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<td>SW of B/C Cribs</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>E of 200 W Gate</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>S of 200 W</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>Rattlesnake Springs</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<tr>
<td>Yakima Barricade</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>400 E</td>
<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>SE Side of FFTF</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>North of 300 Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>South of 300 Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>Hanford Townsite</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<tr>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Sagemoor Farm (c)</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>Byers Landing</td>
<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Riverview-Harris</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<td>McNary Dam</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>June-Sept</td>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
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<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
</tr>
<tr>
<td>Othello</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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<tr>
<td>Wanapum</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH(b)</td>
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(a) Samples are collected once every 3 to 5 year and were collected in 2008. Next collection will occur between 2011 and 2013.

(b) Additional sample provided to the DOH.

(c) Quality assurance samples submitted for analyses.
### 5.2 Vegetation

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<th>Location</th>
<th>Frequency&lt;sup&gt;(a)&lt;/sup&gt;</th>
<th>Collection Period</th>
<th>Analyses/Agency</th>
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<tbody>
<tr>
<td>100 K Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<tr>
<td>NE of 100 N Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<tr>
<td>E of 100 N Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>100N Spring Shoreline</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>E of 200 W Gate</td>
<td>3 to 5 yrs</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
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<td>300 Area Shoreline</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<tr>
<td>Hanford Townsite</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<tr>
<td>Hanford Townsite HRM28</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<tr>
<td>Ringold Area</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
<tr>
<td>Sago Moor Farm</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
</tr>
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<td>Byers Landing</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Sunnyside</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>Toppenish</td>
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<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu</td>
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<td>George</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<tr>
<td>Othello</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<td>Wanapum</td>
<td>3 to 5 yrs</td>
<td>June-Sept</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu/DOH&lt;sup&gt;(b)&lt;/sup&gt;</td>
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<sup>(a)</sup> Samples are collected once every 3 to 5 years and were collected in 2008. Next collection will occur between 2011 and 2013.

<sup>(b)</sup> Additional sample provided to the DOH.
## 6.0 Sediment

### 6.1 Columbia River

<table>
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<tr>
<th>Location</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
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<tbody>
<tr>
<td>McNary Dam</td>
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</tr>
<tr>
<td>McNary-OR. Side Near Dam</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC/DOH</td>
</tr>
<tr>
<td>McNary-Wash. Side Near Dam</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC/DOH</td>
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<tr>
<td>Priest Rapids Dam (PRD)</td>
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<tr>
<td>PRD-Grant Side Near Dam</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC/DOH</td>
</tr>
<tr>
<td>PRD-Yakima Side Near Dam</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC/DOH</td>
</tr>
<tr>
<td>White Bluffs Slough</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC</td>
</tr>
<tr>
<td>100 F Slough</td>
<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC</td>
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<tr>
<td>Hanford Slough</td>
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<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC/DOH</td>
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<tr>
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<td>A</td>
<td>Gamma Scan, $^{90}$Sr, U, Pu, ICP-MS, Hg-CVAA, TOC</td>
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(a) Refer to Figure 6.1, “2009 Sediment Sampling Locations.”  
(b) Additional sample provided to the DOH.

### 6.2 River Shoreline Springs

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<tr>
<th>Location</th>
<th>Frequency</th>
<th>Analyses/Agency</th>
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<tbody>
<tr>
<td>100-B Spring 38-3</td>
<td>3.8</td>
<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA/DOH</td>
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<tr>
<td>100-K Spring 63-1</td>
<td>6.3</td>
<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA</td>
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<tr>
<td>100-H Spring 145-1</td>
<td>14.4</td>
<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA</td>
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<tr>
<td>100-F Spring 207-1</td>
<td>21.3</td>
<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA</td>
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<tr>
<td>Hanford Spr UR 28-2(d)</td>
<td>27.8</td>
<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA/DOH</td>
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<tr>
<td>Hanford Spr DR 28-2(e)</td>
<td>28.3</td>
<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA/DOH</td>
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<tr>
<td>300 Area Spring 41-9</td>
<td>41.9</td>
<td>A Gamma Scan, U</td>
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<tr>
<td>300 Area Spring 42-2</td>
<td>42.1</td>
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<td>300 Area Spr Dr 42-2(e)</td>
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<td>A Gamma Scan, $^{90}$Sr, U, ICP-MS, Hg-CVAA/DOH</td>
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<td>A Gamma Scan, U</td>
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(a) Refer to Figure 6.1, “2009 Sediment Sampling Locations.”  
(b) HRM are a series of signposts along the Hanford Site shoreline of the Columbia River that are roughly 1.6 km (1 mi) apart. The Vernita Bridge is HRM #0 and Ferry Street in Richland is HRM #46. Samples collected between HRMs are assigned a decimal.  
(c) Additional sample provided to the DOH.  
(d) UR = Upriver from noted location.  
(e) DR = Downriver from noted location.

### 6.3 Onsite Pond

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<tr>
<td>West Lake</td>
<td>SA (Feb &amp; June)</td>
<td>Gamma Scan, $^{90}$Sr, U, $^{99}$Tc, Alpha, Beta/DOH</td>
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</table>

(a) Refer to Figure 6.1, “2009 Sediment Sampling Locations.”  
(b) Additional sample provided to the DOH (February only).
Figure 6.1. 2009 Sediment Sampling Locations
7.0 References


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