Hanford Site Annual Treatability Studies Report – Calendar Year 2000

M. W. McCoy

February 2001

Prepared for the U.S. Department of Energy under Contract DE-AC06-76RL01830
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Prepared for
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Pacific Northwest National Laboratory
Richland, Washington  99352

United States
Department of Energy
Richland, Washington

Approved for Public Release
Executive Summary

This report provides information required to be reported annually by the Washington Administrative Code (WAC) 173-303-071 (3)(r)(ii)(F) and (3)(s)(ix) on the treatability studies conducted on the Hanford Site in 2000. These studies were conducted as required by WAC 173-303-071, “Excluded Categories of Waste,” sections (3)(r) and (s).

Unless otherwise noted, the waste samples were provided by and the treatability studies were performed for the U.S. Department of Energy, Richland Operations Office, P.O. Box 550, Richland, Washington 99352. The U.S. Environmental Protection Agency identification number for these studies is WA7890008967.
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Table 1. 2000 Annual Report For Small-Quantity Treatability Studies Conducted By The Pacific Northwest National Laboratory

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<thead>
<tr>
<th>Location</th>
<th>Waste Type</th>
<th>Total Quantity in Storage (Daily)</th>
<th>Technology Tested</th>
<th>Dates of Study</th>
<th>Amount Tested Jan.-Dec. 2000 (Kg)</th>
<th>Amount to Be Tested Jan.-Dec. 2001 (Kg)</th>
<th>Final Disposal of Sample Portion</th>
<th>Final Disposal of Residues</th>
<th>Amount of Sample Shipped (Kg)</th>
<th>Date of Shipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>325</td>
<td>Tank Waste (AN-102, AY-102, AP-101, C-104)</td>
<td>0Kg 1/1/00-2/9/00 3Kg 2/10/00-2/14/00 0Kg 2/15/00-11/8/00 4.6Kg 11/9/00-11/12/00 9.2Kg 11/13/00-11/14/00 13.9Kg 11/15/00-11/16/00 18.0Kg 11/17/00-11/26/00 0Kg 11/27/00-12/31/00</td>
<td>Hanford vitrification process</td>
<td>2/15/00-12/21/00</td>
<td>21.0</td>
<td>20</td>
<td>NA</td>
<td>CWC</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>325</td>
<td>Tank Waste Supernate (AW-101, C-104, AZ-102)</td>
<td>0.4Kg 1/1/00-1/4/00 0Kg 1/5/00-12/31/00</td>
<td>Cross-flow filtration, ion exchange, and vitrification</td>
<td>1/1/00-9/29/00</td>
<td>0.4</td>
<td>0</td>
<td>NA</td>
<td>CWC</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Location</td>
<td>Waste Type</td>
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</tr>
<tr>
<td>325</td>
<td>Tank Waste Supernate (AN-107)</td>
<td>0.563 Kg 1/1/00-1/4/00 0 Kg 1/5/00-12/31/00</td>
<td>Cross-flow filtration, ion exchange and vitrification</td>
<td>1/1/00-9/29/00</td>
<td>0.563</td>
<td>0</td>
<td>NA</td>
<td>CWC</td>
<td>0</td>
<td>NA</td>
</tr>
</tbody>
</table>

NA – Not applicable
Table 2. 2000 Annual Report For Small-Quantity Treatability Studies Conducted By Fluor Hanford and Its Major Subcontractors

<table>
<thead>
<tr>
<th>Location</th>
<th>Waste Type</th>
<th>Total Quantity in Storage (Daily)</th>
<th>Technology Tested</th>
<th>Dates of Study</th>
<th>Amount Tested Jan.-Dec. 2000 (or in Process) (Kg)</th>
<th>Amount to Be Tested Jan.-Dec. 2001 (Kg)</th>
<th>Final Disposal of Unused Sample Portion</th>
<th>Final Disposal of Residues</th>
<th>Amount of Sample Shipped (Kg)</th>
<th>Date of Shipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSCF</td>
<td>Radioactive dilute phosphoric acid solution(^1)</td>
<td>2.75 Kg 1/1/00-1/13/00 1 Kg 1/14/00-4/30/00 2 Kg 5/1/00-5/19/00 0 Kg 5/20/00</td>
<td>Grouting</td>
<td>1/1/00-1/13/00</td>
<td>1.75 Kg</td>
<td>0</td>
<td>NA</td>
<td>Put into archive.</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>WSCF</td>
<td>Treated sample residue of radioactive dilute phosphoric acid solution</td>
<td>0 Kg 1/1/00-1/13/00 3.75 Kg (^2) 1/14/00 5/19/00 8.95 Kg (^2) 5/20/00-12/31/00</td>
<td>N/A</td>
<td>N/A</td>
<td>NA</td>
<td>N/A</td>
<td>NA</td>
<td>Put onto archive per customer request.</td>
<td>0</td>
<td>NA</td>
</tr>
</tbody>
</table>

\(^{1}\) Waste received from the Puget Sound Naval Shipyards, 1400 Farragut Ave, Bremerton, WA 98314, WA2170023418.

\(^{2}\) Treated sample residue weight includes the acid solution and grout.
<table>
<thead>
<tr>
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<th>Amount of Sample Shipped (Kg)</th>
<th>Date of Shipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>272-W</td>
<td>Mop water with heavy metals</td>
<td>0 Kg 1/1/00-6/18/00 200 Kg 6/19/00-6/21/00 400Kg 6/22/00-8/16/00 600 Kg 8/17/00 8/31/00 800 Kg 9/1/00-12/1/00 799.5 Kg 12/2/00-12/31/00</td>
<td>Filtration and ion exchange to remove trace elements of metals</td>
<td>6/21/00 8/22/00 8/31/00</td>
<td>200.0 Kg 200.0 Kg 4.0 Kg 1000 Kg</td>
<td>In storage at 272 W for eventual disposal pending reuse in Treatability Study.</td>
<td>In storage at 272 W awaiting disposal as dangerous waste. Residue of sample shipped to offsite lab managed by lab to be manifested to TSD.</td>
<td>0.5 (a)</td>
<td>12/1/00</td>
<td></td>
</tr>
</tbody>
</table>

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