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**Pacific Northwest  
National Laboratory**

Operated by Battelle for the  
U.S. Department of Energy

# Hanford Site Annual Treatability Studies Report

Calendar Year 2001

E. L. Grohs

February 2002



Prepared for the U.S. Department of Energy  
under Contract DE-AC06-76RL01830

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*for the*  
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# **Hanford Site Annual Treatability Studies Report**

Calendar Year 2001

E. L. Grohs



**United States  
Department of Energy**  
Richland, Washington

Approved for Public Release

## **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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## 2001 ANNUAL REPORT FOR SMALL-QUANTITY TREATABILITY STUDIES CONDUCTED BY THE PACIFIC NORTHWEST NATIONAL LABORATORY

Location	Waste Type	Total Quantity in Storage (Daily)	Technology Tested	Dates of Study	Amount Tested Jan.-Dec. 2001 (Kg)	Amount to Be Tested Jan.-Dec. 2002 (Kg)	Final Disposal of Sample Portion	Final Disposal of Residues	Amount of Sample Shipped (Kg)	Date of Shipment
325	S-110	0 kg 1/1/01-3/1/01 0.211 kg 3/2/01- 6/11/01 0.064 kg 6/12/01-12/31/01	Sludge washing/leaching	4/2/01-6/11/01	0.147 kg	TBD	Material is currently being stored for potential further tests	NA	0	NA
325	T-110	0 kg 1/1/01-10/1/01 0.149 kg 10/2/01-12/20/00 0.019 kg 12/21/01-12/31/01	Sludge washing/leaching	11/13/01-12/31/01	0.130 kg	TBD	NA	Central Waste Complex	0	NA
325	AZ-101	0 kg 1/1/01-5/30/01 6.77 kg 5/31/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	10/31/01-12/31/01	6.77 kg	NA	NA	Central Waste Complex	NA	NA
325	AZ-102	0 kg 1/1/01-10/24/01 4.67 kg 10/25/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	12/3/01-12/31/01	4.67 kg	NA	NA	Central Waste Complex	NA	NA

NA Not applicable

**2001 ANNUAL REPORT FOR SMALL-QUANTITY TREATABILITY STUDIES CONDUCTED BY THE  
PACIFIC NORTHWEST NATIONAL LABORATORY (Continued)**

<b>Location</b>	<b>Waste Type</b>	<b>Total Quantity in Storage (Daily)</b>	<b>Technology Tested</b>	<b>Dates of Study</b>	<b>Amount Tested Jan.-Dec. 2001 (Kg)</b>	<b>Amount to Be Tested Jan.-Dec. 2002 (Kg)</b>	<b>Final Disposal of Sample Portion</b>	<b>Final Disposal of Residues</b>	<b>Amount of Sample Shipped (Kg)</b>	<b>Date of Shipment</b>
325	AP-104	<b>0 kg</b> 1/1/01-12/3/01 <b>4.92 kg</b> 12/4/01-12/5/01 <b>5.84 kg</b> 12/6/01-12/18/01 <b>0 kg</b> 12/19/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	12/17/01	5.84 kg	NA	NA	Central Waste Complex	NA	NA
325	AP-101	<b>.88 kg</b> 1/1/01- 1/16/01 <b>1.6 kg</b> 1/17/01-5/1/10 <b>0 kg</b> 5/2/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	4/30/01-5/1/01	1.6 kg	NA	NA	Central Waste Complex	NA	NA

NA Not applicable

**2001 ANNUAL REPORT FOR SMALL-QUANTITY TREATABILITY STUDIES CONDUCTED BY  
FLUOR HANFORD AND ITS MAJOR SUBCONTRACTORS**

<b>Location</b>	<b>Waste Type</b>	<b>Total Quantity in Storage (Daily)</b>	<b>Technology Tested</b>	<b>Dates of Study</b>	<b>Amount Tested Jan.- Dec. 2001 (or in Process) (Kg)</b>	<b>Amount to Be Tested Jan.- Dec. 2002 (Kg)</b>	<b>Final Disposal of Unused Sample Portion</b>	<b>Final Disposal of Residues</b>	<b>Amount of Sample Shipped (Kg)</b>	<b>Date of Shipment</b>
SRTC <sup>2</sup>	AW-101	<b>10.8 kg</b> 1/1/01-1/25/01 <b>0 kg</b> 1/26/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	9/1/01- 12/31/01	0 kg	TBD	TBD	TBD	0	1/25/01
SRTC <sup>2</sup>	AW-101	<b>9.4 kg</b> 1/1/01 to 3/1/01 <b>0 kg</b> 3/2/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	9/1/01- 12/31/01	0 kg	TBD	TBD	TBD	0	3/1/01
SRTC <sup>2</sup>	AY-102/C106	<b>0 kg</b> 1/1/01-2/28/01 <b>4.77 kg</b> 3/01 to 7/12/01 <b>0 kg</b> 7/13/01-12/31/01	Various (Filtration, IX, evaporation vitrification)	9/1/01- 12/31/01	0 kg	TBD	TBD	TBD	0	7/12/01
325 <sup>3</sup>	AZ-101	<b>6.77 kg</b> 1/1/01 to 5/31/01 <b>0 kg</b> 6/1/01-12/31/01	Various (evaporation, filtration, precipitation, IX, vitrification)	5/01/01- 12/31/01	0 kg	TBD	TBD	TBD	0	5/31/01

**2001 ANNUAL REPORT FOR SMALL-QUANTITY TREATABILITY STUDIES CONDUCTED BY  
FLUOR HANFORD AND ITS MAJOR SUBCONTRACTORS (Continued)**

<b>Location</b>	<b>Waste Type</b>	<b>Total Quantity in Storage (Daily)</b>	<b>Technology Tested</b>	<b>Dates of Study</b>	<b>Amount Tested Jan.-Dec. 2001 (or in Process) (Kg)</b>	<b>Amount to Be Tested Jan.-Dec. 2002 (Kg)</b>	<b>Final Disposal of Unused Sample Portion</b>	<b>Final Disposal of Residues</b>	<b>Amount of Sample Shipped (Kg)</b>	<b>Date of Shipment</b>
325 <sup>3</sup>	SY-101/ AP-104	<b>1.98 kg</b> 1/1/00 to 2/1/01 <b>0 kg</b> 2/2/01-12/31/01	Various (evaporation, filtration, precipitation, IX, vitrification)	5/01/01-13/31/01	0 kg	TBD	TBD	TBD	0	2/1/01

4 NA Not Applicable

<sup>2</sup> Waste shipped to Savannah River Laboratories, SRTC Building. 773A, Aiken, SC 29802 SC1890008989

<sup>3</sup> Waste shipped to Pacific Northwest National Laboratories, Richland WA 99352. 300 Area, RPL Building WA7890008967

**2001 ANNUAL REPORT FOR SMALL-QUANTITY TREATABILITY STUDIES CONDUCTED BY  
FLUOR HANFORD AND ITS MAJOR SUBCONTRACTORS (Continued)**

<b>Location</b>	<b>Waste Type</b>	<b>Total Quantity in Storage (Daily)</b>	<b>Technology Tested</b>	<b>Dates of Study</b>	<b>Amount Tested Jan.-Dec. 2001 (or in Process) (Kg)</b>	<b>Amount to Be Tested Jan.-Dec. 2002 (Kg)</b>	<b>Final Disposal of Unused Sample Portion</b>	<b>Final Disposal of Residues</b>	<b>Amount of Sample Shipped (Kg)</b>	<b>Date of Shipment</b>
WSCF	Treated <sup>1</sup> sample residue of radioactive dilute phosphoric acid solution	<b>8.95 kg</b> 1/1/01- 12/31/01	NA	NA	NA	NA	NA	Put into archive per customer request	0	NA

NA Not Applicable

<sup>1</sup> Waste received from the Puget Navel Shipyard, 1400 Farragut Ave, Bremerton, WA 98314, WA2170023418

**2001 ANNUAL REPORT FOR SMALL-QUANTITY TREATABILITY STUDIES CONDUCTED BY  
FLUOR HANFORD AND ITS MAJOR SUBCONTRACTORS (Continued)**

<b>Location</b>	<b>Waste Type</b>	<b>Total Quantity in Storage (Daily)</b>	<b>Technology Tested</b>	<b>Dates of Study</b>	<b>Amount Tested Jan.-Dec. 2001 (or in Process) (Kg)</b>	<b>Amount to Be Tested Jan.-Dec. 2002 (Kg)</b>	<b>Final Disposal of Unused Sample Portion</b>	<b>Final Disposal of Residues</b>	<b>Amount of Sample Shipped (Kg)</b>	<b>Date of Shipment</b>
272-W	Mop water with trace elements of heavy metals	<b>799.5 kg</b> 1/1/01- 3/13/01 <b>999.5 kg</b> 3/14/01- 6/28/01 <b>799.5 kg</b> 6/29/01- 7/2/01 <b>599.5 kg</b> 7/3/01- 7/9/01 <b>399.5 kg</b> 7/10/01- 7/17/01 <b>199.5 kg</b> 7/18/01- 7/19/01 <b>0 kg</b> 7/20/01- 12/31/01	Filtration and ion exchange to remove trace elements of metals	6/29/01 200 kg 7/3/01 200 kg 7/10/01 200 kg 7/18/01 200 kg 7/20/01 199.5 kg	2,399.5 kg	TBD	100% of sample in storage sampled-no unused portions	Residue (filtered mop water and spent filtration media) tested to confirm non- dangerous waste status. Filtered mop water sent to 300 Area TEDF; spent filtration media shipped to Roosevelt Regional Landfill through BDI transfer station	0 kg	NA

NA Not Applicable

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