0078684

HNF-EP-0182, Rev. 242

Waste Tank Summary Report for Month Ending MAY 31, 2008

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

RECEIVED
SEP 03 2008
EDMC

CH2MHILL
Hanford Group, Inc.
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-99RL14047

Approved for Public Release; Further Dissemination Unlimited

S **CH2M HILL DOCUMENT RELEASE FORM**

(1) Document Number: HNF-EP-0182	(2) Revision Number: 242	(3) Effective Date: MAY 31, 2008	
(4) Document Type: ☐ Digital Image ☐ Hard copy ☒ PDF ☐ Video	(a) Number of pages (including the DRF) or number of digital images 42		
(5) Release Type ☐ New ☐ Cancel	☐ Page Change	☒ Complete Revision	
(6) Document Title: Waste Tank Summary Report for Month Ending May 31, 2008			
(7) Change/Release Description: Complete revision - Tables and text updated each month to reflect new status			
(8) Change Justification: DOE-ORP requires this document to be revised and issued monthly			

(9) Associated Structure, System, and Component (SSC) and Building Number:		
	(a) Structure Location: N/A	(c) Building Number: N/A
	(b) System Designator: N/A	(d) Equipment ID Number (EIN): N/A

(10) Impacted Documents:	(a) Document Type	(b) Document Number	(c) Document Revision
	N/A	N/A	N/A

(11) Approvals:

(a) Author (Print/Sign): M.J. Rodgers	Date: 8-14-08
(b) Responsible Manager (Print/Sign): D.J. Washenfelder	Date: 08-14-08
(c) Reviewer (Optional, Print/Sign):	Date:
(d) Reviewer (Optional, Print/Sign):	Date:

(12) Distribution:

(a) Name	(b) MSIN	(a) Name	(b) MSIN	Release Stamp
				AUG 27 2008 DATE: STA: 4 HANFORD RELEASE ID: 8

(13) Clearance	(a) Cleared for Public Release ☒ Yes ☐ No	(b) Restricted Information? ☐ Yes ☒ No	(c) Restriction Type:
(14) Clearance Review (Print/Sign): Ana B Garza			Date: 8.27.08

A-6003-881 (05/05)

WASTE TANK SUMMARY REPORT FOR MONTH ENDING MAY 31, 2008

MJ RODGERS
CH2M HILL HANFORD GROUP, INC.
Richland, WA 99352
U.S. Department of Energy Contract DE-AC27-99RL14047

EDT/ECN:	DRF	UC:	N/A
Cost Center:	74G10	Charge Code:	110279
B&R Code:	N/A	Total Pages:	42

Key Words: MONTHLY REPORT, WASTE TANK SUMMARY

Abstract: See page 9 (Purpose and Scope)

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

Printed in the United States of America. To obtain copies of this document, contact: Document Control Services, P.O. Box 950, Mailstop H6-08, Richland WA 99352, Phone (509) 372-2420; Fax (509) 376-4989.

DATE: AUG 27 2008
STA: 4 HANFORD RELEASE ID: 8

Release Approval — Date: 8-27-08 — Release Stamp

Approved For Public Release

Tank Farm Contractor (TFC) **RECORD OF REVISION**	(1) Document Number: **HNF-EP-0182**	Page 1

(2) Title:

WASTE TANK SUMMARY REPORT FOR MONTH ENDING MAY 31, 2008

Change Control Record

(3) Revision	(4) Description of Change – Replace, Add, and Delete Pages	Authorized for Release	
		(5) Resp. Engr. (print/sign/date)	(6) Resp. Mgr. (print/sign/date)
153	EDT-631372	BM Hanlon	JS Garfield
RS 242	Incorporation of DRF (Full Revision)	MJ Rodgers 08-25-08	DJ Washenfelder 09-14-08

HNF-EP-0182, Rev. 242

Waste Tank Summary Report for Month Ending May 31, 2008

M. J. Rodgers
CH2M HILL Hanford Group, Inc.

Date Published
August 2008

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-99RL14047

Approved for Public Release; Further Dissemination Unlimited

This page intentionally left blank.

CONTENTS

1.0 PURPOSE AND SCOPE 7

2.0 WASTE TANK STATUS 9
Table 2-1 Waste Tank Status 9

2.1 WASTE TANK STATUS HIGHLIGHTS 10
Table 2-2 Single-Shell Tanks in Retrieval Status 10

3.0 DOUBLE-SHELL TANKS MONTHLY SUMMARY TABLES 13
Table 3-1. Inventory and Status by Tanks - Double-Shell Tanks. 13
Table 3-2. Double-Shell Tank Space Allocation, Inventory and Waste Receipts 14

4.0 SINGLE-SHELL TANKS MONTHLY SUMMARY TABLES 15
Table 4-1. Inventory and Status by Tanks - Single-Shell Tanks 15
Table 4-2. Single-Shell Tanks Interim Stabilization Status 20
Table 4-3. Single-Shell Tank Leak Volume Estimates 24

5.0 MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES 29
Table 5-1. East and West Area Miscellaneous Underground Storage Tanks and Special Surveillance Facilities 29

APPENDIX A - TANK CONFIGURATION AND FACILITIES CHARTS A-1
Figure A-1. Underground Waste Storage Tank Configurations A-1
Figure A-2. Double-Shell Tank Instrumentation Configuration A-2
Figure A-3. Single-Shell Tank Instrumentation Configuration A-3

ACRONYMS

CH2M HILL	CH2M HILL Hanford Group, Inc.
DCRT	Double-Contained Receiver Tank
DIL	Drainable Interstitial Liquid
DLR	Drainable Liquid Remaining
DST	Double-Shell Tank
Gal	Gallon
GPM	Gallons Per Minute
ILL	Interstitial Liquid
Kgal	Kilogallons
IS	Interim Stabilized
MT/	Manual Tape/
ENRAF	ENRAF Corporation (surface level measurement devices)
OSD	Operating Specifications Document
PFP	Plutonium Finishing Plant
SACS	Surveillance Automated Control System
SST	Single-Shell Tank
TMACS	Tank Monitor and Control System
TPA	Hanford Federal Facility Consent and Compliance Order, "Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy," as amended (Tri-Party Agreement)
TWINS	Tank Waste Information Network System
UPR	Unplanned Release

GLOSSARY

General

Characterization - Characterization is understanding the Hanford tank waste chemical, physical, and radiological properties to the extent necessary to ensure safe storage and interim operation, and ultimate disposition of the waste.

Drainable Interstitial Liquid (DIL) -Drainable Interstitial Liquid is calculated based on saltcake and sludge volumes and calculated porosity values. Interstitial liquid is the liquid that fills the interstitial spaces of the solids waste. The sum of the interstitial liquid contained in saltcake and sludge minus an adjustment for capillary height is the initial volume of DIL. Interstitial liquid that is not held in place by capillary forces will, therefore, migrate or move with gravity.

Supernatant Liquid - The liquid above the solids or in large liquid pools covered by floating solids in waste storage tanks.

Total Waste - For purposes of this document, solids volume (sludge and saltcake including liquids) plus supernatant liquid.

Interim Stabilization (Single-Shell Tanks only)

Interim Stabilized (IS) - A tank which contains less than 50 Kgallons of drainable interstitial liquid and less than 5 Kgallons of supernatant. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow or saltwell screen inflow must also have been at or below 0.05 gpm before interim stabilization criteria are met.

Jet Pump - The centrifugal pump and jet assembly used to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise. Pumping rates vary from 0.05 to about 4 gpm.

Saltwell Screen - The saltwell system is a 10-inch diameter saltwell casing consisting of a stainless steel saltwell screen welded to a Schedule 40 carbon steel pipe. The casing and screen are to be inserted into the 12-inch tank riser located in the pump pit. The stainless steel screen portion of the system extend through the tank waste to near the bottom of the tank.

Retrieval/Closure-(Single-Shell Tanks only)

Closure (C) - Final closure of the operable units (tank farms) shall be defined as regulatory approval of completion of closure actions and commencement of post-closure actions. For the purposes of this agreement (Hanford Federal Facility Agreement and Consent Order Change Control Form, Change Number M-45-02-03), all units located within the boundary of each tank farm will be closed in accordance with Washington Administrative Code 173-303-610.

Retrieval (R) - The process of removing, to the maximum extent practical, all the waste from a given underground storage tank. The retrieval process is selected specific to each tank and accounts for the waste type stored and the access and support systems available. Per OSD-T-151-00031 a tank is officially in "retrieval status" if one of two conditions is meet: either waste has been physically removed from the tank by retrieval operations, or preparations for retrieval operations are directly responsible for rendering the leak or intrusion monitoring instrument "out of service".

Tank Integrity

Assumed Leaker - The integrity classification of a waste storage tank for which surveillance data indicate a loss of liquid attributed to a breach of integrity.

Sound - The integrity classification of a waste storage tank for which surveillance data indicate no loss of liquid attributed to a breach of integrity.75

Surveillance Instrumentation

Annulus - The annulus is the space between the inner and outer shells on DSTs only. Drain channels in the insulating and/or supporting concrete carry any leakage to the annulus space where conductivity probes are installed. The annulus conductivity probes or ENRAFs are the primary means of leak detection for all DSTs. The Leak Detection System may not be replaced by, but may be supplemented by, the operation of an annulus ventilation system Continuous Air Monitor (CAM).

Drywells - Historically, the drywells were monitored with gross logging tools as part of a secondary leak monitoring system. In some cases, neutron-moisture sensors were used to monitor moisture in the soil as a function of well depth, which could be indicative of tank leakage. The routine gross gamma logging data were stored electronically from 1974 through 1994; a program was initiated in 1995 to log each of the available drywells in each tank farm with a spectral gamma logging system. The spectral gamma logging system provides quantitative values for gamma-emitting radionuclides. The baseline spectral gamma logging database is available electronically.

Spectral drywell scans can be run by special request. A select subset of drywells is routinely monitored by the Vadose Zone Characterization Project to assess movement of gamma-emitting radionuclides in the subsurface.

ENRAF 854 ATG Level Detector - The ENRAF gauge, fabricated by ENRAF Incorporated, determines waste level by detecting variations in the weight of a displacer suspended in the tank waste. ENRAFs and future installations will transmit digital level data to TMACS via an ENRAF Computer Interface Unit (CIU). The CIU allows fully remote communication with the gauge, minimizing tank farm entry.

Laterals - Laterals are horizontal drywells positioned 8 to 10 feet under single-shell waste storage tanks, 3 per tank, to detect radionuclides in the soil which could be indicative of tank leakage. These drywells can be monitored by radiation detection probes. Laterals are located only in A and SX farms. There are currently no functioning laterals and no plan to prepare them for use.

Liquid Observation Well (LOW) - In-tank liquid observation wells are used for monitoring the ILL in single-shell tanks. The wells are usually constructed of fiberglass or TEFZEL-reinforced epoxy-polyester resin (TEFZEL is a trademark of E. I. du Pont de Nemours & Company). A few LOWs are constructed of steel. Gamma and neutron probes are used to monitor changes in the ILL, and can indicate intrusions or leakage by increases or decreases in the ILL. The OSD-T-151-00031 identifies which LOWs are designated as the primary monitoring device in the SSTs. All of the SST LOWs are monitored quarterly. Two LOWs installed in DSTs SY-102 and AW-103 are used for special, rather than routine, surveillance purposes only.

Surface Levels - The surface level measurements in all waste storage tanks are monitored by manual probes or ENRAFs, and recorded and transmitted via the Surveillance Analysis Computer System.

1.0 PURPOSE AND SCOPE

This report is the official inventory for radioactive waste stored in underground tanks in the 200 Areas at the Hanford Site. Data that depict the status of stored radioactive waste and tank vessel integrity are contained within the report. This report provides data on each of the existing 177 large underground waste storage tanks and 61 smaller miscellaneous underground storage tanks and special surveillance facilities, and supplemental information regarding tank surveillance anomalies and ongoing investigations. This report is intended to meet the requirement of U.S. Department of Energy Order 435.1 (DOE-HQ, August 28, 2001, Radioactive Waste Management, U.S. Department of Energy-Washington, D.C.) requiring the reporting of waste inventories and space utilization for the Hanford Site Tank Farm tanks.

This page intentionally left blank.

2.0 WASTE TANK STATUS

Table 2-1. Waste Tank Status

Double-Shell Tanks (DST)	28 double-shell	10/86 - date last DST tank was completed
Single-Shell Tanks (SST)	149 single-shell	1966 - date last SST tank was completed
Assumed Leaker Tanks	67 single-shell	07/93 - date last Assumed Leaker was identified
Sound Tanks	28 double-shell 82 single-shell	1986 - date DSTs determined sound 07/93 - date last SST determined sound
Interim Stabilized Tanks (IS)	149 single-shell	03/04 - date last IS occurred (1)
Retrieval	10 single-shell	12/06 - date last Retrieval completed (2)
Misc. Underground Storage Tanks (MUST) and Special Surveillance Facilities (Active)	10 Tanks East Area 7 Tanks West Area	03/01 - last date a tank was added or removed from MUST list
Misc. Underground Storage Tanks (IMUST) and Special Surveillance Facilities (Inactive)	18 Tanks East Area 25 Tanks West Area	11/01 - last date a tank was added or removed from IMUST list (3)

Table 2-0 Footnotes:

(1) Tanks are declared Interim Stabilized when pumping stops; the tank may be placed in evaluation at this time. Tank U-108 was placed in evaluation on March 18, 2004, due to major equipment failure; documentation was completed August 16 and the declaration letter sent to DOE-RL on September 8, 2004. A letter was submitted to DOE on September 29, 2005, that stated S-102 met interim stabilization criteria. Retrieval operations began in this tank on December 16, 2004 and are ongoing. Interim Stabilization requirements are held in abeyance during retrieval. (3rd Amendment to Consent Decree CT-99-5076-EFS)

Saltwell pumping for the tanks covered by the Consent Decree was completed in March 2004. (Tank C-106 is not included in the Consent Decree and is not Interim Stabilized; Retrieval was completed December 31, 2003). The Consent Decree table and footnotes have been removed from this document; all actions in this decree have been completed.

(2) Under a previous definition for retrieval status, the tank status for C-104, C-201, C-202, C-203, C-204, S-102, S-103, S-105 and S-106 was changed to "Retrieval," effective October 2002, and the tank status for C-103, C-105, C-106, and S-112 was changed to "Retrieval" in October 2003. Hanford Federal Facility Agreement and Consent Order (signed August 2004) modified Milestone M-45-00C (Change Order M-45-04-01) changing the regulatory requirements for retrieval of waste in tanks S-103, S-105, and S-106. Table 2-1 identifies the tanks currently in retrieval status (see Glossary for definition of Retrieval status).

(3) Inactive Miscellaneous Underground Storage Tanks (IMUST) reflect those tanks managed by CH2M HILL Hanford Group, Inc. (CH2M HILL).

2.1 WASTE TANK STATUS HIGHLIGHTS

Table 2-2. Single-Shell Tanks in Retrieval Status

Tank Number	Comments	Nominal Volume of Remaining Waste (ft^3) (1)	Reference
241-C-103	Declared "Retrieval Completed," August 26, 2006	338	(2)
241-C-106	Declared "Retrieval Completed," December 31, 2003	370.33	(3)
241-C-108	Retrieval in progress – retrieval initiated December 20, 2006	1029	
241-C-109	Retrieval in progress – retrieval initiated June 19, 2007	1323	
241-C-201	Declared "Retrieval Completed," March 23, 2006	19.2	(4)
241-C-202	Declared "Retrieval Completed," August 11, 2005	19.7	(5)
241-C-203	Declared "Retrieval Completed," March 24, 2005	18.5	(6)
241-C-204	Declared "Retrieval Completed," December 13, 2006	18.3	(7)
241-S-102	Retrieval in progress	4545	
241-S-112	Declared "Retrieval Completed," March 2, 2007	319	(8)

Table 2-1 Footnotes:

(1) Nominal volume of waste inventory is the best estimate of residual volume. Retrieval Data Reports also provide 95% upper confidence level volume as the bounding estimate of remaining waste.

(2) RPP-RPT-33060 Rev. 0 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-103*

(3) RPP-20577 Rev. 0 *Stage 2 Retrieval Data Report for Single-Shell Tank 241-C-106*

(4) RPP-29441 Rev. 0 *Post-Retrieval Waste Volume Determination for Single-Shell Tank 241-C-201*

(5) RPP-RPT-29095 Rev. 0 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-202*

(6) RPP-RPT-26475 Rev. 1 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-203*

(7) RPP-RPT-34062 Rev. 0 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-204*

(8) RRP-RPT-35112 Rev. 0 *Retrieval Data Report for Single-Shell Tank 241-S-112*

Hanford Federal Facility Agreement and Consent Order (HFFACO) Milestone M-46-21

The U.S. Department of Energy sent a letter (05-TPD-115) to the Department of Ecology on December 15, 2005 stating that the HFFACO Milestone M-46-21 has been completed. The milestone includes completing implementation of double-shell tank space optimization study recommendations and creating sufficient double-shell tank storage to accommodate retrieval and closure demonstrations at tanks C-104, C-106, S-102, S-103, S-105, S-106, and S-112. TPA Change Package M-45-04-01 substantially changed the tank retrieval sequence to eliminate retrieval of S-103, S-105 and S-106. The DST space saving measures of M-46-21 provide sufficient space to support retrieval of the C farm tanks that are to be retrieved in lieu of S-103, S-105 and S-106.

Tank Leak Volume Estimates

In *Waste Tank Summary Report for Month Ending September 30, 2005*, HNF-EP-0182, Rev. 210, the leak volume estimates were revised per *Tank Farm Vadose Zone Contamination Volume Estimates*, RPP-23405, Rev. 1. The Washington State Department of Ecology has submitted comments on *Tank Farm Vadose Zone Contamination Volume Estimates* and until these comments have been resolved, the previous leak volume estimates have been reinstated

Subsequent to issuance of RPP-23405, the U.S. Department of Energy and the Washington State Department of Ecology agreed on a process to update leak volume estimates and the conclusions presented in RPP-23405 (DOE-ORP 06-TPD-059). Pursuant to that commitment, RPP-32681, Rev. 0, *Process to Assess Tank Farm Leaks in Support of Retrieval and Closure Planning* established the process to develop estimates of tank farm leak loss inventories. The process is used to assess the source of tank farm leaks when necessary to support tank waste retrieval technology selections, and re-assess and update volume estimates and inventories for previously identified tank leaks. If the results suggest a change to the tank's integrity classification, the Tank Leak Assessment Process TFC-ENG-CHEM-D-42 would be invoked. The bases for revisions to leak volume estimates or for changes to tank integrity resulting from this activity are footnoted after table 4-3.

DST Space Gains

OSD-T-151-00007 *Operating Specification for Double-Shell Storage Tanks,* has updated the operating limits in the double-shell tanks. Currently all tank farms except AP-Farm assume Normal Operating Limits. AP-Farm assumes the Maximum Operating Limit of 449 inches, which results in space gains of 726 Kgal.

This page intentionally left blank.

3.0 DOUBLE-SHELL TANKS MONTHLY SUMMARY TABLES

Table 3-1. Inventory and Status by Tanks - Double-Shell Tanks

All volume data obtained from Tank Waste Information Network System (TWINS)

					Waste Volumes			
Tank	Tank Integrity	Tank Level (inches)	Total Waste (Kgal)	Available Space (Kgal)	Supernatant Liquid (Kgal)	Sludge (Kgal)	Saltcake (Kgal)	Solids Volume Update
241-AN TANK FARM STATUS								
AN-101	SOUND	415	1141	19	1110	0	31	12/31/03
AN-102	SOUND	384	1056	104	902	0	154	01/01/05
AN-103	SOUND	349	959	201	468	0	491	06/30/99
AN-104	SOUND	383	1052	108	607	0	445	06/30/99
AN-105	SOUND	410	1126	34	588	0	538	01/31/03
AN-106	SOUND	275	756	404	529	210	17	01/30/05
AN-107	SOUND	397	1091	69	861	0	230	12/31/03
7 TANKS - TOTAL			7181	939	5065	210	1906	
241-AP TANK FARM STATUS								
AP-101	SOUND	419	1152	95	1152	0	0	05/01/89
AP-102	SOUND	395	1086	161	1058	28	0	05/31/02
AP-103	SOUND	413	1135	112	1117	18	0	05/31/96
AP-104	SOUND	178	490	757	490	0	0	10/13/88
AP-105	SOUND	274	754	493	665	0	89	06/30/99
AP-106	SOUND	411	1130	117	1130	0	0	10/13/88
AP-107	SOUND	282	775	472	775	0	0	10/13/88
AP-108	SOUND	453	1246	1	1145	0	101	10/13/88
8 TANKS - TOTAL			7768	2208	7532	46	190	
241-AW TANK FARM STATUS								
AW-101	SOUND	411	1130	30	734	0	396	01/31/03
AW-102	SOUND	363	999	126	968	31	0	03/31/04
AW-103	SOUND	397	1092	68	760	292	40	07/21/04
AW-104	SOUND	387	1064	96	810	97	157	06/30/99
AW-105	SOUND	151	415	745	167	248	0	06/30/99
AW-106	SOUND	354	973	187	692	0	281	04/01/04
6 TANKS - TOTAL			5673	1252	4131	668	874	
241-AY TANK FARM STATUS								
AY-101	SOUND	332	913	88	807	106	0	06/30/99
AY-102	SOUND	352	969	32	818	151	0	04/01/04
2 TANKS - TOTAL			1768	234	1611	257	0	
241-AZ TANK FARM STATUS								
AZ-101	SOUND	304	836	165	784	52	0	06/30/98
AZ-102	SOUND	339	932	69	827	105	0	06/30/99
2 TANKS - TOTAL			1766	236	1609	157	0	
241-SY TANK FARM STATUS								
SY-101	SOUND	402	1105	55	846	0	259	06/30/99
SY-102	SOUND	205	564	596	342	211	11	09/30/03
SY-103	SOUND	268	738	422	381	0	357	06/30/99
3 TANKS - TOTAL			2407	1073	1569	211	627	

Notes:
1 Kgal differences are the result of computer rounding
Supernatant + Sludge (includes liquid) + Saltcake (includes liquid) = Total Waste
Available Space Volumes include restricted space
Tanks AN-103, AN-104, AN-105, AW-101, SY-101 and SY-103 contain retained gas in the saltcake

Table 3-2. Double-Shell Tank Space Allocation, Inventory and Waste Receipts (all volumes in kgallons)

TOTAL DST CAPACITY	
TOTAL=	32,505

TOTAL DST WASTE INVENTORY	
INVENTORY ON 5/31/08	26,679
INVENTORY ON 4/30/08	26,671
CHANGE =	8

ALLOCATION OF REMAINING DST SPACE	
TOTAL DST CAPACITY (*) =	32,505
WASTE INVENTORY =	-26,679
RESTRICTED USAGE SPACE (**) =	-1,000
EMERGENCY SPACE ALLOCATION (***) =	-1,265
AVAILABLE SPACE =	3,561

(*) Assumes Maximum Operating Limits per OSD-T-151-00007: AN, SY farms = 422", AW farm = 422" except AW-102 = 409"; AP farm = 454"; AY, AZ farms = 364". Volumes at maximum operating limit from RPP-CALC-33163 Rev. 0 and RPP-13019 Rev. 0

(**) Restricted space associated with flammable gas Waste Group A and tanks controlled for waste feed delivery per Feed Control List, HNF-SD-WM-OCD-015, Tank Farms Waste Transfer Compatibility report. These tanks are: AN-102, -103, -104, -105, -107; AW-101; AY-102; and SY-103.

(***) Includes 1265 kgallons emergency space allocation per HNF-3484 Rev. 8, and emergency WTP returns per 24950-WTP-ICD-MG-019, Rev. 4, ICD 19 - Interface Control Document for Waste Feed.

MAY DST WASTE RECEIPTS					
FACILITY GENERATIONS		OTHER GAINS ASSOCIATED WITH		OTHER LOSSES ASSOCIATED WITH	
222-S	0	AZ-301 CONDENSATE	6	242-A EVAPORATOR WVR (1)	0
242-A EVAPORATOR	0	INSTRUMENTATION (2)	0	INSTRUMENTATION (2)	0
TANK FARMS	2	MISCELLANEOUS	4	MISCELLANEOUS (3)	0
				WASTE EVAPORATION	4
TOTAL =	2	TOTAL=	10	TOTAL=	4

(1) 242-A EVAPORATOR WVR is total (before flush) waste volume reduction for 242-A Evaporator

(2) Adjustments due to instrumentation recalibrations and/or instrument flushing

(3) Adjustments for gas retention and release from Waste Group A tanks

DST NET WASTE INVENTORY CHANGE					
DATE	FACILITY GENERATION	GAINS	REDUCTIONS	NET WASTE VOLUME CHANGE	TOTAL DST WASTE INVENTORY
5/08	2	10	4	8	26,679

4.0 SINGLE SHELL TANKS MONTHLY SUMMARY TABLES

Table 4-1. Inventory and Status by Tanks - Single-Shell Tanks
All volume data obtained from Tank Waste Information Network System (TWINS)

				Waste Volumes							
Tank Number	Tank Integrity	Tank Status	Total Waste (Kgal)	Super-natant Liquid (Kgal)	Drainable Interstitial Liquid (Kgal)	Pumped this Month (Kgal)	Total Pumped (Kgal)	Drainable Liquid Remaining (Kgal)	Sludge (Kgal)	Salt-cake (Kgal)	Solids Volume Update
					241-A TANK FARM STATUS						
A-101	SOUND	IS/IP(4)	320	0	37	0	543	37	3	317	06/30/04
A-102	SOUND	IS	40	3	9	0	40	12	0	37	01/31/03
A-103	ASMD LKR	IS/IP	378	4	86	0	111	90	2	372	07/01/05
A-104	ASMD LKR	IS/IP	28	0	0	0	0	0	28	0	01/27/78
A-105	ASMD LKR	IS/IP	37	0	0	0	0	0	37	0	10/31/00
A-106	SOUND	IS/IP	79	0	9	0	0	9	50	29	01/01/02
6 TANKS - TOTAL			882	7					120	755	
					241-AX TANK FARM STATUS						
AX-101	SOUND	IS	358	0	44	0	369	44	3	355	12/31/03
AX-102	ASMD LKR	IS/IP	30	0	0	0	13	0	6	24	01/01/02
AX-103	SOUND	IS/IP	107	0	22	0	0	22	8	99	09/30/03
AX-104	ASMD LKR	IS/IP	7	0	0	0	0	0	7	0	01/01/02
4 TANKS - TOTAL			502	0					24	478	
					241-B TANK FARM STATUS						
B-101	ASMD LKR	IS/IP	109	0	20	0	0	20	28	81	01/01/02
B-102	SOUND	IS/IP	32	4	7	0	0	11	0	28	06/30/99
B-103	ASMD LKR	IS/IP	56	0	10	0	0	10	1	55	01/01/02
B-104	SOUND	IS/IP	374	0	45	0	0	45	309	65	01/01/02
B-105	ASMD LKR	IS/IP	290	0	20	0	0	20	28	262	01/01/02
B-106	SOUND	IS/IP	123	1	8	0	0	9	122	0	12/31/03
B-107	ASMD LKR	IS/IP	161	0	23	0	0	23	86	75	01/01/02
B-108	SOUND	IS/IP	92	0	19	0	0	19	27	65	06/30/04
B-109	SOUND	IS/IP	126	0	23	0	0	23	50	76	10/01/05
B-110	ASMD LKR	IS/IP	245	1	27	0	0	28	244	0	01/01/02
B-111	ASMD LKR	IS/IP	242	1	23	0	0	24	241	0	01/01/02
B-112	ASMD LKR	IS/IP	35	3	2	0	0	5	15	17	01/01/02
B-201	ASMD LKR	IS/IP	29	0	5	0	0	5	29	0	07/01/04
B-202	SOUND	IS/IP	28	0	4	0	0	4	28	0	07/01/04
B-203	ASMD LKR	IS/IP	50	1	5	0	0	6	49	0	07/01/04
B-204	ASMD LKR	IS/IP	50	1	5	0	0	6	49	0	07/01/05
16 TANKS - TOTAL			2042	12					1306	724	
					241-BX TANK FARM STATUS						
BX-101	ASMD LKR	IS/IP/CCS	48	0	4	0	0	4	48	0	01/01/02
BX-102	ASMD LKR	IS/IP/CCS	79	0	0	0	0	0	79	0	06/30/04
BX-103	SOUND	IS/IP/CCS	75	13	4	0	0	17	62	0	01/01/83
BX-104	SOUND	IS/IP/CCS	100	3	4	0	17	7	97	0	01/01/02
BX-105	SOUND	IS/IP/CCS	72	5	4	0	15	9	42	25	01/01/05
BX-106	SOUND	IS/IP/CCS	38	0	4	0	14	4	10	28	01/01/05
BX-107	SOUND	IS/IP/CCS	347	0	37	0	23	37	347	0	09/18/90
BX-108	ASMD LKR	IS/IP/CCS	31	0	4	0	0	4	31	0	01/31/01
BX-109	SOUND	IS/IP/CCS	193	0	25	0	8	25	193	0	09/17/90
BX-110	ASMD LKR	IS/IP/CCS	214	1	35	0	2	36	65	148	08/25/05
BX-111	ASMD LKR	IS/IP/CCS	188	0	6	0	117	6	32	156	08/25/05
BX-112	SOUND	IS/IP/CCS	164	1	9	0	4	10	163	0	01/01/02
12 TANKS - TOTAL			1549	23					1169	357	

Table 4-1. Inventory and Status by Tanks - Single-Shell Tanks

All volume data obtained from Tank Waste Information Network System (TWINS)

				Waste Volumes							
Tank Number	Tank Integrity	Tank Status	Total Waste (Kgal)	Super-natant Liquid (Kgal)	Drainable Interstitial Liquid (Kgal)	Pumped this Month (Kgal)	Total Pumped (Kgal)	Drainable Liquid Remaining (Kgal)	Sludge (Kgal)	Salt-cake (Kgal)	Solids Volume Update
				241-BY TANK FARM STATUS							
BY-101	SOUND	IS/IP	370	0	24	0	36	24	37	333	01/01/02
BY-102	SOUND	IS	278	0	40	0	159	40	0	278	08/25/05
BY-103	ASMD LKR	IS	414	0	55	0	96	55	9	405	07/01/05
BY-104	SOUND	IS/IP	405	0	44	0	330	44	46	359	01/01/02
BY-105	ASMD LKR	IS	481	0	47	0	45	47	48	433	03/31/03
BY-106	ASMD LKR	IS	430	0	37	0	99	37	32	398	12/31/03
BY-107	ASMD LKR	IS/IP	271	0	42	0	56	42	15	256	07/01/05
BY-108	ASMD LKR	IS/IP	222	0	33	0	28	33	40	182	01/01/02
BY-109	SOUND	IS	287	0	37	0	157	37	24	263	06/30/04
BY-110	SOUND	IS/IP	366	0	20	0	213	20	43	323	01/01/02
BY-111	SOUND	IS/IP	402	0	14	0	313	14	0	402	08/25/05
BY-112	SOUND	IS/IP	286	0	24	0	116	24	2	284	03/31/02
12 TANKS - TOTAL			4212	0					296	3916	
				241-C TANK FARM STATUS							
C-101	ASMD LKR	IS/IP	88	0	4	0	0	4	88	0	11/29/83
C-102	SOUND	IS/IP	316	0	62	0	47	62	316	0	09/30/95
C-103	SOUND	IS/R	3	Retrieval Completed 08/26/06 See Footnote (9)				0	3	0	08/26/06
C-104	SOUND	IS/IP	260	1	29	0	0	29	259	0	01/01/02
C-105	SOUND	IS	132	0	10	0	0	10	132	0	02/29/00
C-106	SOUND	IS/R	3	Retrieval Completed 12/31/03 See Footnote (1)				0	3	0	02/26/04
C-107	SOUND	IS/IP	247	0	30	0	41	30	247	0	06/30/04
C-108	SOUND	IS/IP/R	8	Retrieval in progress See Footnote (11)				4	7	0	04/27/07
C-109	SOUND	IS/IP/R	11	Retrieval in progress See Footnote (12)				4	9	0	08/13/07
C-110	ASMD LKR	IS/IP	178	1	37	0	16	38	177	0	06/14/95
C-111	ASMD LKR	IS/IP	57	0	4	0	0	4	57	0	06/30/04
C-112	SOUND	IS/IP	104	0	6	0	0	6	104	0	09/18/90
C-201	ASMD LKR	IS/IP/R	0	Retrieval Completed 03/23/06 See Footnote (8)				0	0	0	04/27/06
C-202	ASMD LKR	IS/IP/R	0	Retrieval Completed 08/11/05 See Footnote (2)				0	0	0	08/11/05
C-203	ASMD LKR	IS/IP/R	0	Retrieval Completed 03/24/05 See Footnote (5)				0	0	0	3/24/05
C-204	ASMD LKR	IS/IP/R	0	Retrieval Completed 12/13/06 See Footnote (10)				0	0	0	12/13/06
16 TANKS - TOTAL			1407	2					1401	0	
				241-S TANK FARM STATUS							
S-101	SOUND	IS	352	0	45	0	67	45	235	117	04/30/04
S-102	SOUND	IS/R	34	Retrieval in progress- See Footnote (6)					10	6	04/27/07
S-103	SOUND	IS (3)	237	1	45	0	24	46	9	227	06/30/04
S-104	ASMD LKR	IS/IP (4)	288	0	49	0	0	49	132	156	12/20/84
S-105	SOUND	IS/IP (3)	406	0	42	0	114	42	2	404	01/01/02
S-106	SOUND	IS (3)	455	0	26	0	204	26	0	455	02/28/01
S-107	SOUND	IS	358	0	42	0	83	42	320	38	02/26/04
S-108	SOUND	IS	550	0	4	0	200	4	5	545	01/01/02
S-109	SOUND	IS	533	0	16	0	34	16	13	520	07/01/04
S-110	SOUND	IS	389	0	30	0	203	30	96	293	07/01/04
S-111	SOUND	IS (4)	401	0	42	0	100	42	76	325	07/01/04
S-112	SOUND	IS/IP/R	3	Retrieval Completed See Footnote (7)				0	1	2	03/02/07
12 TANKS - TOTAL			4006	1					899	3088	

Table 4-1. Inventory and Status by Tanks - Single-Shell Tanks
All volume data obtained from Tank Waste Information Network System (TWINS)

				Waste Volumes							
Tank Number	Tank Integrity	Tank Status	Total Waste (Kgal)	Super-natant Liquid (Kgal)	Drainable Interstitial Liquid (Kgal)	Pumped this Month (Kgal)	Total Pumped (Kgal)	Drainable Liquid Remaining (Kgal)	Sludge (Kgal)	Salt-cake (Kgal)	Solids Volume Update
					241-SX TANK FARM STATUS						
SX-101	SOUND	IS	420	0	44	0	33	45	144	276	06/30/04
SX-102	SOUND	IS	342	0	37	0	98	37	55	287	08/31/04
SX-103	SOUND	IS	509	0	40	0	134	40	78	431	09/30/03
SX-104	ASMD LKR	IS/IP	446	0	48	0	231	48	136	310	04/30/00
SX-105	SOUND	IS	375	0	39	0	153	39	63	312	12/31/02
SX-106	SOUND	IS	396	0	37	0	148	37	0	396	01/31/03
SX-107	ASMD LKR	IS/IP	94	0	7	0	0	7	94	0	07/01/04
SX-108	ASMD LKR	IS/IP	74	0	0	0	0	0	74	0	06/30/04
SX-109	ASMD LKR	IS/IP	241	0	0	0	0	0	66	175	07/01/04
SX-110	ASMD LKR	IS/IP	56	0	0	0	0	0	49	7	07/01/04
SX-111	ASMD LKR	IS/IP	115	0	11	0	0	11	97	18	07/01/04
SX-112	ASMD LKR	IS/IP	75	0	6	0	0	6	75	0	07/01/04
SX-113	ASMD LKR	IS/IP	19	0	0	0	0	0	19	0	01/01/02
SX-114	ASMD LKR	IS/IP	155	0	30	0	0	30	126	29	07/01/04
SX-115	ASMD LKR	IS/IP	4	0	0	0	0	0	4	0	01/01/02
15 TANKS - TOTAL			3321	0					1080	2241	
					241-T TANK FARM STATUS						
T-101	ASMD LKR	IS	99	0	16	0	25	16	37	62	06/30/04
T-102	SOUND	IS/IP	32	13	3	0	0	16	19	0	08/31/84
T-103	ASMD LKR	IS/IP	27	4	3	0	0	7	23	0	11/29/83
T-104	SOUND	IS	317	0	31	0	150	31	317	0	11/30/99
T-105	SOUND	IS/IP	98	0	5	0	0	5	98	0	05/29/87
T-106	ASMD LKR	IS/IP	22	0	0	0	0	0	22	0	01/01/01
T-107	ASMD LKR	IS	173	0	34	0	11	34	173	0	05/31/96
T-108	ASMD LKR	IS/IP	16	0	4	0	0	4	5	11	01/01/01
T-109	ASMD LKR	IS/IP	62	0	11	0	0	11	0	62	01/01/02
T-110	SOUND	IS	370	1	48	0	50	49	369	0	03/31/02
T-111	ASMD LKR	IS	447	0	38	0	10	38	447	0	01/01/02
T-112	SOUND	IS/IP	67	7	4	0	0	11	60	0	04/28/82
T-201	SOUND	IS/IP	30	2	4	0	0	6	28	0	07/01/04
T-202	SOUND	IS/IP	20	0	3	0	0	3	20	0	07/01/04
T-203	SOUND	IS/IP	36	0	5	0	0	5	36	0	07/01/04
T-204	SOUND	IS/IP	36	0	5	0	0	5	36	0	07/01/04
16 TANKS - TOTAL			1852	27					1690	135	
					241-TX TANK FARM STATUS						
TX-101	SOUND	IS/IP/CCS	91	0	7	0	0	7	74	17	01/01/02
TX-102	SOUND	IS/IP/CCS	217	0	27	0	94	27	2	215	03/31/03
TX-103	SOUND	IS/IP/CCS	145	0	18	0	68	18	0	145	01/01/02
TX-104	SOUND	IS/IP/CCS	69	2	9	0	4	11	34	33	06/30/04
TX-105	ASMD LKR	IS/IP/CCS	576	0	25	0	122	25	8	568	01/01/02
TX-106	SOUND	IS/IP/CCS	348	0	37	0	135	37	5	343	03/31/02
TX-107	ASMD LKR	IS/IP/CCS	30	0	7	0	0	7	0	30	01/31/03
TX-108	SOUND	IS/IP/CCS	127	0	8	0	14	8	6	121	06/30/04
TX-109	SOUND	IS/IP/CCS	363	0	6	0	72	6	363	0	01/01/02
TX-110	ASMD LKR	IS/IP/CCS	467	0	14	0	115	14	37	430	01/01/02
TX-111	SOUND	IS/IP/CCS	364	0	10	0	98	10	43	321	06/30/04
TX-112	SOUND	IS/IP/CCS	634	0	26	0	94	26	0	634	01/01/02
TX-113	ASMD LKR	IS/IP/CCS	638	0	18	0	19	18	93	545	06/30/04
TX-114	ASMD LKR	IS/IP/CCS	532	0	17	0	104	17	4	528	01/01/02
TX-115	ASMD LKR	IS/IP/CCS	553	0	25	0	99	25	8	545	06/30/04
TX-116	ASMD LKR	IS/IP/CCS	599	0	21	0	24	21	66	533	04/30/03
TX-117	ASMD LKR	IS/IP/CCS	480	0	10	0	54	10	29	451	06/30/04
TX-118	SOUND	IS/IP/CCS	247	0	31	0	89	31	0	247	06/30/04
18 TANKS - TOTAL			6480	2					772	5706	

Table 4-1. Inventory and Status by Tanks - Single-Shell Tanks
All volume data obtained from Tank Waste Information Network System (TWINS)

				Waste Volumes							
Tank Number	Tank Integrity	Tank Status	Total Waste (Kgal)	Super-natant Liquid (Kgal)	Drainable Interstitial Liquid (Kgal)	Pumped this Month (Kgal)	Total Pumped (Kgal)	Drainable Liquid Remaining (Kgal)	Sludge (Kgal)	Salt-cake (Kgal)	Solids Volume Update
					241-TY TANK FARM STATUS						
TY-101	ASMD LKR	IS/IP/CCS	118	0	2	0	8	2	42	76	07/01/05
TY-102	SOUND	IS/IP/CCS	69	0	13	0	7	13	0	69	01/01/02
TY-103	ASMD LKR	IS/IP/CCS	154	0	23	0	12	23	103	51	06/30/04
TY-104	ASMD LKR	IS/IP/CCS	44	1	4	0	0	5	43	0	03/31/02
TY-105	ASMD LKR	IS/IP/CCS	231	0	12	0	4	12	231	0	04/28/82
TY-106	ASMD LKR	IS/IP/CCS	16	0	1	0	0	1	16	0	01/01/02
6 TANKS - TOTALS			632	1					435	196	
					241-U TANK FARM STATUS						
U-101	ASMD LKR	IS/IP	23	0	4	0	0	4	23	0	06/30/04
U-102	SOUND	IS	327	1	37	0	87	38	43	283	12/31/02
U-103	SOUND	IS	417	1	33	0	99	34	11	405	01/01/05
U-104	ASMD LKR	IS/IP	54	0	0	0	0	0	54	0	01/01/02
U-105	SOUND	IS	353	0	44	0	88	44	32	321	03/30/01
U-106	SOUND	IS	170	2	36	0	39	39	0	168	06/30/04
U-107	SOUND	IS	294	0	32	0	135	32	15	279	12/31/03
U-108	SOUND	IS	434	0	46	0	115	46	29	405	09/30/04
U-109	SOUND	IS	401	0	47	0	78	47	35	366	04/30/02
U-110	ASMD LKR	IS	176	0	16	0	0	16	176	0	01/01/02
U-111	SOUND	IS	222	0	31	0	86	31	26	196	08/31/03
U-112	ASMD LKR	IS/IP	45	0	4	0	0	4	45	0	02/10/84
U-201	SOUND	IS/IP	4	1	1	0	0	2	3	0	06/30/03
U-202	SOUND	IS/IP	4	1	0	0	0	1	3	0	06/30/03
U-203	SOUND	IS/IP	3	1	0	0	0	1	2	0	06/30/03
U-204	SOUND	IS/IP	3	1	0	0	0	1	2	0	06/30/03
16 TANKS - TOTALS			2930	8					499	2423	

Note: +/- 1 Kgal difference in volumes is due to rounding.
Tank farm totals do not include volumes from tanks in retrieval

Table 4-1 Footnotes:

(1) C-106: Nominal Waste Volume: Total waste 2771 gallons; sludge 2686 gallons; supernatant 85 gallons (RPP-20577 Rev. 0 *Stage 2 Retrieval Data Report for Single-Shell Tank 241-C-106*)

(2) C-202: Nominal Waste Volume: Total waste 147 gallons; sludge 145 gallons; supernatant 2 gallons (RPP-RPT-29095 Rev. 0 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-202*)

(3) Hanford Federal Facility Agreement and Consent Order (signed August 2004) modified Milestone M-45-00C (Change Order M-45-04-01) changed the regulatory requirements for retrieval of waste in tanks S-103, S-105, and S-106. "Retrieval" status in these tanks is thereby rescinded.

(4) Tank A-101 contains retained gas in saltcake; tanks S-102, S-111, U-103, and U-109 contain retained gas in saltcake and sludge.

(5) C-203 Nominal Waste Volume: Total waste 139 gallons; sludge 126 gallons; supernatant 13 gallons (RPP-RPT-26475 Rev. 1 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-203*)

(6) S-102: Volume estimate: Total waste 34000 gallons

(7) S-112: Nominal Waste Volume: Total waste 2387 gallons; sludge/saltcake 2263 gallons; supernatant 124 gallons (RRP-RPT-35112 Rev 0 *Retrieval Data Report for Single-Shell Tank 241-S-112*)

Table 4-1 Footnotes:

(8) C-201: Nominal Waste Volume: Total waste 144 gallons; sludge 145 gallons; supernatant 2 gallons (RPP-29441 Rev. 0 *Post-Retrieval Waste Volume Determination for Single-Shell Tank 241-C-201*)

(9) C-103: Nominal Waste Volume: Total waste 2529 gallons; sludge 2282 gallons; supernatant 247 gallons (RPP-RPT-33060 Rev. 0 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-103*)

(10) C-204 Nominal Waste Volume: Total waste 137 gallons; sludge 134 gallons; supernatant 3 gallons (RPP-RPT-34062 Rev. 0 *Demonstration Retrieval Data Report for Single-Shell Tank 241-C-204*)

(11) C-108: Volume estimate: Total waste 7700 gallons.

(12) C-109: Volume estimate: Total waste 9900 gallons

Table 4-2. Single-Shell Tanks Interim Stabilization Status

Tank Number	Tank Integrity	Interim Stabilization Date (1)	Interim Stabilization Method	Tank Number	Tank Integrity	Interim Stabilization Date (1)	Interim Stabilization Method
A-101	SOUND	11/03	JET (16)	BY-107	ASMD LKR	07/79	JET
A-102	SOUND	08/89	SN	BY-108	ASMD LKR	02/85	JET
A-103	ASMD LKR	06/88	AR	BY-109	SOUND	07/97	JET
A-104	ASMD LKR	09/78	AR (3)	BY-110	SOUND	01/85	JET
A-105	ASMD LKR	07/79	AR	BY-111	SOUND	01/85	JET
A-106	SOUND	08/82	AR	BY-112	SOUND	06/84	JET
AX-101	SOUND	06/03	JET (9)	C-101	ASMD LKR	11/83	AR
AX-102	ASMD LKR	09/88	SN	C-102	SOUND	09/95	JET (2)
AX-103	SOUND	08/87	AR	C-103	SOUND	Retrieval completed	
AX-104	ASMD LKR	08/81	AR	C-104	SOUND	09/89	SN
B-101	ASMD LKR	03/81	SN	C-105	SOUND	10/95	AR
B-102	SOUND	08/85	SN	C-106	SOUND	Retrieval Completed 12/31/03	
B-103	ASMD LKR	02/85	SN	C-107	SOUND	09/95	JET
B-104	SOUND	06/85	SN	C-108	SOUND	Retrieval in progress	
B-105	ASMD LKR	12/84	AR	C-109	SOUND	Retrieval in progress	
B-106	SOUND	03/85	SN	C-110	ASMD LKR	05/95	JET
B-107	ASMD LKR	03/85	SN	C-111	ASMD LKR	03/84	SN
B-108	SOUND	05/85	SN	C-112	SOUND	09/90	AR
B-109	SOUND	04/85	SN	C-201	ASMD LKR	Retrieval Completed 03/23/06	
B-110	ASMD LKR	12/84	AR	C-202	ASMD LKR	Retrieval Completed 08/11/05	
B-111	ASMD LKR	06/85	SN	C-203	ASMD LKR	Retrieval Completed 03/24/05	
B-112	ASMD LKR	05/85	SN	C-204	ASMD LKR	Retrieval Completed 12/13/06	
B-201	ASMD LKR	08/81	AR (3)	S-101	SOUND	12/03	JET (18)
B-202	SOUND	05/85	AR (2)	S-102	SOUND	Retrieval in progress	
B-203	ASMD LKR	06/84	AR	S-103	SOUND	04/00	JET
B-204	ASMD LKR	06/84	AR	S-104	ASMD LKR	12/84	AR
BX-101	ASMD LKR	09/78	AR (3)	S-105	SOUND	09/88	JET
BX-102	ASMD LKR	11/78	AR	S-106	SOUND	02/01	JET
BX-103	SOUND	11/83	AR (2) (3)	S-107	SOUND	08/03	JET (13)
BX-104	SOUND	09/89	SN	S-108	SOUND	12/96	JET
BX-105	SOUND	03/81	SN	S-109	SOUND	06/01	JET
BX-106	SOUND	07/95	SN	S-110	SOUND	01/97	JET
BX-107	SOUND	09/90	JET	S-111	SOUND	05/05	Jet (17)
BX-108	ASMD LKR	07/79	SN	S-112	SOUND	Retrieval completed	
BX-109	SOUND	08/90	JET	SX-101	SOUND	08/03	JET (12)
BX-110	ASMD LKR	08/85	SN	SX-102	SOUND	08/03	JET (14)
BX-111	ASMD LKR	03/95	JET	SX-103	SOUND	05/03	JET (8)
BX-112	SOUND	09/90	JET	SX-104	ASMD LKR	04/00	JET
BY-101	SOUND	05/84	JET	SX-105	SOUND	08/02	JET (6)
BY-102	SOUND	04/95	JET	SX-106	SOUND	05/00	JET
BY-103	ASMD LKR	11/97	JET (2)	SX-107	ASMD LKR	10/79	AR
BY-104	SOUND	01/85	JET	SX-108	ASMD LKR	08/79	AR
BY-105	ASMD LKR	03/03	JET	SX-109	ASMD LKR	05/81	AR
BY-106	ASMD LKR	12/03	JET (19)	SX-110	ASMD LKR	08/79	AR

Table 4-2. Single-Shell Tanks Interim Stabilization Status

Tank Number	Tank Integrity	Interim Stabilization Date (1)	Interim Stabilization Method	Tank Number	Tank Integrity	Interim Stabilization Date (1)	Interim Stabilization Method
SX-111	ASMD LKR	07/79	SN	TX-111	SOUND	04/83	JET
SX-112	ASMD LKR	07/79	AR	TX-112	SOUND	04/83	JET
SX-113	ASMD LKR	11/78	AR	TX-113	ASMD LKR	04/83	JET
SX-114	ASMD LKR	07/79	AR	TX-114	ASMD LKR	04/83	JET
SX-115	ASMD LKR	09/78	AR (3)	TX-115	ASMD LKR	09/83	JET
T-101	ASMD LKR	04/93	SN	TX-116	ASMD LKR	04/83	JET
T-102	SOUND	03/81	AR (2)(3)	TX-117	ASMD LKR	03/83	JET
T-103	ASMD LKR	11/83	AR	TX-118	SOUND	04/83	JET
T-104	SOUND	11/99	JET	TY-101	ASMD LKR	04/83	JET
T-105	SOUND	06/87	AR	TY-102	SOUND	09/79	AR
T-106	ASMD LKR	08/81	AR	TY-103	ASMD LKR	02/83	JET
T-107	ASMD LKR	05/96	AR	TY-104	ASND KJR	11/83	AR
T-108	ASMD LKR	11/78	AR	TY-105	ASMD LKR	02/83	JET
T-109	ASMD LKR	12/84	AR	TY-106	ASMD LKR	11/78	AR
T-110	SOUND	01/00	JET	U-101	ASMD LKR	09/79	AR
T-111	ASMD LKR	02/95	JET	U-102	SOUND	06/02	JET (5)
T-112	SOUND	03/81	AR (2)(3)	U-103	SOUND	09/00	JET
T-201	SOUND	04/81	AR (3)	U-104	ASMD LKR	10/78	AR
T-202	SOUND	08/81	AR	U-105	SOUND	03/01	JET
T-203	SOUND	04/81	AR	U-106	SOUND	03/01	JET
T-204	SOUND	08/81	AR	U-107	SOUND	10/03	JET (15)
TX-101	SOUND	02/84	AR	U-108	SOUND	03/04	(20)
TX-102	SOUND	04/83	JET	U-109	SOUND	04/02	JET (4)
TX-103	SOUND	08/83	JET	U-110	ASMD LKR	12/84	AR
TX-104	SOUND	09/79	SN	U-111	SOUND	06/03	JET (10)
TX-105	ASMD LKR	04/83	JET	U-112	ASMD LKR	09/79	AR
TX-106	SOUND	06/83	JET	U-201	SOUND	08/79	AR
TX-107	ASMD LKR	10/79	AR	U-202	SOUND	08/79	SN
TX-108	SOUND	03/83	JET	U-203	SOUND	08/79	AR
TX-109	SOUND	04/83	JET	U-204	SOUND	08/79	SN
TX-110	ASMD LKR	04/83	JET				

Table 4-2 Legend:

AR	Administratively Interim Stabilized
JET	Saltwell Jet Pumped to Remove Drainable Interstitial Liquid
SN	Supernatant Pumped (Non-Jet Pumped)
ASMD LKR	Assumed Leaker

Interim Stabilized Single-Shell Tanks	149 (21)
Total Single-Shell Tanks	149

Table 4-2 Footnotes:

(1) These dates indicate when the tanks were actually interim stabilized. In some cases, the official interim stabilization documents were issued at a later date.

Table 4-2 Footnotes:

(2) Although tanks 241-BX-103, T-102, and T-112 met the interim stabilization administrative procedure at the time they were stabilized, they no longer meet the updated administrative procedure. The tanks were re-evaluated in 1996 and a letter was issued to DOE-RL recommending that no further pumping be performed on these tanks, based on an economic evaluation. In February 2000, it was determined that five tanks no longer met the stabilization criteria (241-BX-103, T-102, and T-112 exceed the supernatant criteria, and BY-103 and C-102 exceed the Drainable Interstitial Liquid [DIL]criteria).

An intrusion investigation was completed on tank 241-B-202 in 1996 and it was determined that this tank no longer meets the recently updated administrative procedure for 200 series tanks.

(3) Original interim stabilization data are missing on four tanks: 241-B-201, T-102, T-112, and T-201. In February 2001, three additional tanks were added to those missing stabilization data: 241-A-104, BX-101, and SX-115.

(4) Tank 241-U-109 was declared Interim Stabilized on April 5, 2002. The declaration letter to DOE was issued on June 20, 2002. The surface is primarily a brown colored waste with irregular patches of white salt crystal. Approximately 70% of the waste surface is covered by the salt formations. The waste surface appears dry and shows signs of cracking due to saltwell pumping. There is no visible liquid within the tank.

(5) Tank 241-U-102 was declared Interim Stabilized on June 19, 2002. The declaration letter to DOE was issued June 28, 2002. The surface is primarily a gray-brown colored cracked waste with irregular patches of white salt crystal. Approximately 50% of the waste surface is covered by the salt formations. The waste surface appears dry and shows signs of cracking due to saltwell pumping. There is approximately a 5-foot wide pool of visible liquid within the saltwell screen depression.

(6) Tank 241-SX-105 was declared Interim Stabilized on August 1, 2002; the declaration letter to DOE was issued August 20, 2002. The surface is a rough, yellowish-gray saltcake waste with an irregular surface of visible cracks and shelves due to saltwell pumping. The waste surface appears to be dry and shows no standing water within the tank.

(7) Tank 241-BY-105 was declared Interim Stabilized on March 7, 2003; the declaration letter to DOE was issued March 25, 2003. An in-tank video was taken January 5, 2003. The surface is a rough, yellowish brown saltcake waste with an irregular surface of visible lumps and shelves that were created as the surface was dried out by saltwell pumping. The waste surface appears to be dry and shows no standing water within the tank. A large hole around the saltwell screen shows no evidence of supernatant liquid.

(8) Tank 241-SX-103 was declared Interim Stabilized on May 31, 2003; the declaration letter to DOE was issued June 13, 2003. An in-tank video was taken December 31, 2001. The upper waste surface is uneven and rough, with many cracks and shelves due to surface drying caused by saltwell pumping. All estimations regarding waste dimensions were obtained by comparison with known dimensions of installed in-tank equipment.

(9) Tank 241-AX-101 was declared Interim Stabilized on June 2, 2003. The declaration letter to DOE was issued January 19, 2004. An in-tank video was taken November 5, 2003. The surface is a dry flaky, crystalline, yellowish-white saltcake waste in a fairly uniform surface of large cracks that were created as the surface dried out by saltwell pumping. The surface is dry and shows no standing water in the tank.

(10) Tank 241-U-111 was declared Interim Stabilized on June 25, 2003, due to major equipment failure; the declaration letter to DOE was issued July 14, 2003. An in-tank video was taken March 25, 2003. The surface is a dry, crusty, flat surface saltcake waste with a fairly uniform surface of large cracks and pocked holes that were created as the surface was dried out by saltwell pumping. The waste surface is dry and shows no standing water.

(11) Tank 241-C-103 was declared Interim Stabilized on July 11, 2003, due to major equipment failure; the declaration letter to DOE was issued August 13, 2003. An in-tank video was taken March 3, 2003. The surface is a dry-cracked brown sludge type waste, which appears to be relatively level and to have more cracking near the tank walls. There is a roughly 3-foot diameter supernatant pool around the saltwell screen. There are also small supernatant pools around two risers and many liquid pockets across the center waste surface. The ENRAF is out of service and there is no liquid observation well (LOW) installed in the tank.

Table 4-2 Footnotes:

(12) Tank 241-SX-101 was declared Interim Stabilized on August 14, 2003; the declaration letter to DOE was issued August 22, 2003. An in-tank video was taken August 6, 2003. The surface is a rough, yellowish gray saltcake waste with an irregular surface of visible cracks and shelves that were created as the waste was dried out by saltwell pumping. The waste surface appears to be dry and shows no standing water. A cylindrical pool (approximately 5 foot diameter) around the saltwell screen shows evidence of apparent supernatant liquid, but upon closer examination, was determined to be interstitial liquid.

(13) Tank 241-S-107 was declared Interim Stabilized on August 28, 2003, due to major equipment failure. Interim Stabilization documentation was issued February 4, 2004; the declaration letter to DOE was issued February 26, 2004. An in-tank video was taken December 12, 2003. The waste appears as a flat, dark, sludge-type waste with an irregular surface of visible cracks created as the waste dried out from saltwell pumping. The waste surface appears to be dry except for a small pool surrounding the saltwell screen.

(14) Tank 241-SX-102 was declared Interim Stabilized on August 28, 2003, due to major equipment failure. The declaration letter to DOE was issued August 4, 2004. An in-tank video was taken December 10, 2003. The waste is a rough, yellowish-tray saltcake with an irregular surface of visible cracks and shelves that were created as the waste was dried out by saltwell pumping. The waste surface appears to be dry and shows no standing water on the surface.

(15) Tank 241-U-107 was declared Interim Stabilized on October 7, 2003. The declaration letter to DOE was issued January 19, 2004. An in-tank video was taken February 4, 2003. The surface is a smooth, brownish saltcake with irregular patches of white salt crystals created as the waste was dried out from saltwell pumping. The waste surface appears to be dry and shows no standing water on the surface.

(16) Tank 241-A-101 was declared Interim Stabilized on November 10, 2003. The declaration letter to DOE was issued June 30, 2004. An in-tank video was taken September 5, 2003. The waste appears as a flat, dark, sludge-type waste with an irregular surface with white clumps of a saltcake-type material. Cracks in the waste surface were created as the waste was dried out by saltwell pumping. The waste surface is dry except for a small pool around the saltwell screen.

(17) Tank 241-S-111 was declared Interim Stabilized on December 15, 2003, due to major equipment failure. The declaration letter to DOE was issued May 26, 2005.

(18) Tank 241-S-101 was declared Interim Stabilized on December 29, 2003. The declaration letter to DOE was issued April 30, 2004. An in-tank video was taken March 2, 2004. The waste appears to be a flat, dark, sludge-type waste with an irregular surface with white clumps of saltcake. Also visible are cracks in the waste surface that were created as the waste was dried out by saltwell pumping. The waste surface is dry except for this small pool.

(19) Tank BY-106 was declared Interim Stabilized on December 31, 2003. The declaration letter to DOE was issued June 30, 2005.

(20) Tank U-108 was declared Interim Stabilized on March 18, 2004, due to major equipment failure. The declaration letter to DOE was issued September 8, 2004. An in-tank video was taken March 8, 2004. The waste is a smooth, brownish saltcake waste with irregular patches of white salt crystals that were created as the waste was dried out by saltwell pumping. The surface appears to be dry with evidence of cracking and no standing water.

(21) Stabilization requirements are held in abeyance during retrieval. (3rd Amendment to Consent Decree CT-99-5076-EFS)

Table 4-3. Single-Shell Tank Leak Volume Estimates

Tank Number	Confirmed or Assumed Leaker (3)	Estimated Leak Volume Gallons (2)	Interim Stabilized (11)	Leak Estimate	
				Updated	Reference
241-A-103	1987	5500 (8)	06/88	1987	(j)
241-A-104	1975	500 to 2500	09/78	1983	(a)(p)
241-A-105 (1)	1963	10000 to 270000	07/79	1991	(b)(c)
241-AX-102	1988	3000 (8)	09/88	1989	(h)
241-AX-104	1977	-- (6)	08/81	1989	(g)
241-B-101	1974	-- (6)	03/81	1989	(g)
241-B-103	1978	-- (6)	02/85	1989	(g)
241-B-105	1978	-- (6)	12/84	1989	(g)
241-B-107	1980	8000 (8)	03/85	1986	(d)(f)
241-B-110	1981	10000 (8)	03/85	1986	(d)
241-B-111	1978	-- (6)	06/85	1989	(g)
241-B-112	1978	2000	05/85	1989	(g)
241-B-201	1980	1200 (8)	08/81	1984	(e)(f)
241-B-203	1983	300 (8)	06/84	1986	(d)
241-B-204	1984	400 (8)	06/84	1989	(g)
241-BX-101	1972	-- (6)	09/78	1989	(g)
241-BX-102	1971	70000	11/78	1986	(d)
241-BX-108	1974	2500	07/79	1986	(d)
241-BX-110	1976	-- (6)	08/85	1989	(g)
241-BX-111	1984 (13)	-- (6)	03/95	1993	(g)
241-BY-103	1973	<5000	11/97	1983	(a)
241-BY-105	1984	-- (6)	03/03	1989	(g)
241-BY-106	1984	-- (6)	N/A	1989	(g)
241-BY-107	1984	15100 (8)	07/79	1989	(g)
241-BY-108	1972	<5000	02/85	1983	(a)
241-C-101 (15)	1980	20000 (8)(10)	11/83	1986	(d)
241-C-110 (15)	1984	2000	05/95	1989	(g)
241-C-111 (15)	1968	5500 (8)	03/84	1989	(g)
241-C-201 (4)	1988	550	03/82	1987	(i)
241-C-202 (4)	1988	450	08/81	1987	(i)
241-C-203	1984	400 (8)	03/82	1986	(d)
241-C-204 (4)	1988	350	09/82	1987	(i)
241-S-104	1968	24000 (8)	12/84	1989	(g)
241-SX-104	1988	6000 (8)	04/00	1988	(k)
241-SX-107	1964	<5000	10/79	1983	(a)
241-SX-108 (5)(14)	1962	2400 to 35000	08/79	1991	(l)(p)(s)
241-SX-109 (5)(14)	1965	<10000	05/81	1992	(m)(s)
241-SX-110	1976	5500 (8)	08/79	1989	(g)
241-SX-111 (14)	1974	500 to 2000	07/79	1986	(d)(s)
241-SX-112 (14)	1969	30000	07/79	1986	(d)(s)
241-SX-113	1962	15000	11/78	1986	(d)
241-SX-114	1972	-- (6)	07/79	1989	(g)
241-SX-115	1965	50000	09/78	1992	(n)
241-T-101	1992	7500 (8)	04/93	1992	(o)
241-T-103	1974	<1000 (8)	11/83	1989	(g)
241-T-106	1973	115000 (8)	08/81	1986	(d)
241-T-107	1984	-- (6)	05/96	1989	(g)
241-T-108	1974	<1000 (8)	11/78	1980	(f)
241-T-109	1974	<1000 (8)	12/84	1989	(g)

Table 4-3. Single-Shell Tank Leak Volume Estimates

Tank Number	Confirmed or Assumed Leaker (3)	Estimated Leak Volume Gallons (2)	Interim Stabilized (11)	Leak Estimate	
				Updated	Reference
241-T-111	1979, 1994 (12)	<1000 (8)	02/95	1994	(f)(r)
241-TX-105	1977	-- (6)	04/83	1989	(g)
241-TX-107 (5)	1984	2500	10/79	1986	(d)
241-TX-110	1977	-- (6)	04/83	1989	(g)
241-TX-113	1974	-- (6)	04/83	1989	(g)
241-TX-114	1974	-- (6)	04/83	1989	(g)
241-TX-115	1977	-- (6)	09/83	1989	(g)
241-TX-116	1977	-- (6)	04/83	1989	(g)
241-TX-117	1977	-- (6)	03/83	1989	(g)
241-TY-101	1973	<1000 (8)	04/83	1980	(f)
241-TY-103	1973	3000	02/83	1986	(d)
241-TY-104	1981	1400 (8)	11/83	1986	(d)
241-TY-105	1960	35000	02/83	1986	(d)
241-TY-106	1959	20000	11/78	1986	(d)
241-U-101	1959	30000	09/79	1986	(d)
241-U-104	1961	55000	10/78	1986	(d)
241-U-110	1975	5000 to 8100 (8)	12/84	1986	(d)(p)
241-U-112	1980	8500 (8)	09/79	1986	(d)
67 Tanks					

Table 4-3 Footnotes:

(1) Current estimates [see Reference (b)] are that 610 Kgallons of cooling water was added to tank A-105 from November 1970 to December 1978 to aid in evaporative cooling. In accordance with Dangerous Waste Regulations [Washington Administrative Code 173-303-070 (2)(a)(ii), as amended, Washington State Department of Ecology, 1990, Olympia, Washington], any of this cooling water that has been added and subsequently leaked from the tank must be classified as a waste and should be included in the total leak volume. In August 1991, the leak volume estimate for this tank was updated in accordance with the WAC regulations. Previous estimates excluded the cooling water leaks from the total leak volume estimates because the waste content (concentration) in the cooling water which leaked should be much less than the original liquid waste in the tank (the sludge is relatively insoluble). The total leak volume estimate in this report (10 to 277 Kgallons) is based on the following (see References):

a. Reference (b) contains an estimate of 5 to 15 Kgallons for the initial leak prior to August 1968.

Reference (b) contains an estimate of 5 to 30 Kgallons for the leak while the tank was being sluiced from August 1968 to November 1970.

Reference (b) contains an estimate of 610 Kgallons of cooling water added to the tank from November 1970 to December 1978, but it was estimated that the leakage was small during this period. This reference contains the statement "Sufficient heat was generated in the tank to evaporate most, and perhaps nearly all, of this water." This results in a low estimate of zero gallons leakage from November 1970 to December 1978.

b. Reference (c) contains an estimate that 378 to 410 Kgallons evaporated out of the tank from November 1970 to December 1978. Subtracting the minimum evaporation estimate from the cooling water added estimate provides a range from 0 to 232 Kgallons of cooling water leakage from November 1970 to December 1978.

	Low Estimate	High Estimate
Prior to August 1968	5,000	15,000
August 1968 to November 1970	5,000	30,000
November 1970 to December 1978	0	232,000
Totals	10,000	277,000

Table 4-3 Footnotes:

(2) Tank leak volume estimates presented here are being updated as a result of tank leak volume assessments and review of tanks for retrieval/closure consideration. Tank leak volume estimates presented here do not include (with some exceptions), such things as: (a) cooling/raw water leaks, (b) intrusions (rain infiltration) and subsequent leaks, (c) leaks inside the tank farm but not through the tank liner (surface leaks, pipeline leaks, leaks at the joint for the overflow or fill lines, etc.), and (d) leaks from catch tanks, diversion boxes, encasements, etc.

(3) In many cases, a leak was suspected long before it was identified or confirmed. For example, Reference (d) shows that tank U-104 was suspected of leaking in 1956. The leak was confirmed in 1961. This report lists the "assumed leaker" date of 1961. Using present standards, tank U-104 would have been declared an assumed leaker in 1956. In 1984, the criteria designations of "suspected leaker," "questionable integrity," "confirmed leaker," "declared leaker," and "borderline and dormant" were merged into one category now reported as "assumed leaker." See Reference (f) for explanation of when, how long, and how fast some of the tanks leaked.

(4) The leak volume estimate date for these tanks is before the declared leaker date because the tank was in a suspected leaker or questionable integrity status; however, a leak volume had been estimated prior to the tank being reclassified.

(5) The increasing radiation levels in drywells and laterals associated with these three tanks could be indicating continuing leak or movement of existing radionuclides in the soil. There is no conclusive way to confirm these observations. (There are currently no functioning laterals and no plan to prepare them for use).

(6) Methods were used to estimate the leak volumes from these 19 tanks based on the assumption that their cumulative leakage is approximately the same as for 18 of the 24 tanks identified in footnote (9). For more details see Reference (g). The total leak volume estimate for these tanks is 150 Kgallons (rounded to the nearest Kgallon), for an average of approximately 8 Kgallons for each of 19 tanks.

(7) The total has been rounded to the nearest 50 Kgallons. Upper bound values were used in many cases in developing these estimates. It is likely that some of these tanks have not actually leaked.

(8) Leak volume estimate is based solely on observed liquid level decreases in these tanks. This is considered to be the most accurate method for estimating leak volumes.

(9) The curie content shown is as listed in the reference document and is not decayed to a consistent date: therefore, a cumulative total is inappropriate.

(10) Tank C-101 experienced a liquid level decrease in the late 1960s and was taken out of service and pumped to a minimum heel in December 1969. In 1970, the tank was classified as a "questionable integrity" tank. Liquid level data show decreases in level throughout the 1970s and the tank was saltwell pumped during the 1970s, ending in April 1979. The tank was reclassified as a "confirmed leaker" in January 1980. See References (p) and (q); refer to Reference (q) for information on the potential for there to have been leaks from other C-farm tanks (specifically, C-102, C-103, and C-109).

(11) These dates indicate when the tanks were declared to be interim stabilized. In some cases, the official interim stabilization documents were issued at a later date. Also, in some cases, the field work associated with interim stabilization was completed at an earlier date.

(12) Tank T-111 was declared an "assumed re-leaker" on February 28, 1994, due to a decreasing trend in surface level measurement. This tank was pumped, and interim stabilization completed on February 22, 1995.

(13) Tank BX-111 was declared an "assumed re-leaker" in April 1993. Preparations for pumping were delayed, following an administrative hold placed on all tank farm operations in August 1993. Pumping resumed and the tank was declared interim stabilized on March 15, 1995.

(14) The leak volume and curie release estimates on tanks SX-108, SX-109, SX-111, and SX-112 have been re-evaluated using a Historical Leak Model [see Reference (s)]. In general, the model estimates are much higher than the values listed in the table, both for volume and curies released. The values listed in the table do not reflect this revised estimate because, "In particular, it is worth emphasizing that this report was never meant to be a definitive update for the leak baseline at the Hanford Site. It was rather meant to be an attempt to view the issue of leak inventories with a new and different methodology." (This quote is from the first page of the referenced report).

Table 4-3 Footnotes:

(15) Leaks from Tanks C-101 and C-110 were re-assessed in RPP-ENV-33418 Rev. 0 *Hanford C-Farm Leak Assessments Report: 241-C-101 and 241-C-110.* The report is being revised to incorporate Tanks C-105, C-111, and C Tank Farm UPRs.

Table 4-3 References:

(a) Murthy, K. S., et al., June 1983, *Assessment of Single-Shell Tank Residual Liquid Issues at Hanford Site, Washington*, PNL-4688, Pacific Northwest Laboratory, Richland, Washington

(b) WHC, 1991a, *Tank 241-A-105 Leak Assessment*, WHC-MR-0264, Westinghouse Hanford Company, Richland, Washington

(c) WHC, 1991b, *Tank 241-A-105 Evaporation Estimate 1970 Through 1978*, WHC-EP-0410, Westinghouse Hanford Company, Richland, Washington

(d) Smith, D. A., January 1986, *Single-Shell Tank Isolation Safety Analysis Report*, SD-WM-SAR-006, Rev. 1, Rockwell Hanford Operations, Richland, Washington

(e) McCann, D. C., and T. S. Vail, September 1984, *Waste Status Summary*, RHO-RE-SR-14, Rockwell Hanford Operations, Richland, Washington

(f) Catlin, R. J., March 1980, *Assessment of the Surveillance Program of the High-Level Waste Storage Tanks at Hanford*, Office of Environmental Compliance and Review, for the U.S. Department of Energy, Washington D.C.

(g) Baumhardt, R. J., May 15, 1989, Letter to R. E. Gerton, U.S. Department of Energy-Richland Operations Office, *Single-Shell Tank Leak Volumes*, 8901832B R1, Westinghouse Hanford Company, Richland, Washington

(h) WHC, 1990a, Occurrence Report, *Surface Level Measurement Decrease in Single-Shell Tank 241-AX-102,* WHC-UO-89-023-TF-05, Westinghouse Hanford Company, Richland, Washington

(i) Groth, D. R., July 1, 1987, Internal Memorandum to R. J. Baumhardt, *Liquid Level Losses in Tanks 241-C-201, -202 and -204*, 65950-87-517, Westinghouse Hanford Company, Richland, Washington

(j) Groth, D. R., and G. C. Owens, May 15, 1987, Internal Memorandum to J. H. Roecker, *Tank 103-A Integrity Evaluation*, Rockwell Hanford Operations, Richland, Washington

(k) Dunford, G. L., July 8, 1988, Internal Memorandum to R. K. Welty, *Engineering Investigation: Interstitial Liquid Level Decrease in Tank 241-SX-104*, 13331-88-416, Westinghouse Hanford Company, Richland, Washington

(l) WHC, 1992a, *Tank 241-SX-108 Leak Assessment*, WHC-MR-0300, Westinghouse Hanford Company, Richland, Washington

(m) WHC, 1992b, *Tank 241-SX-109 Leak Assessment*, WHC-MR-0301, Westinghouse Hanford Company, Richland, Washington

(n) WHC, 1992c, *Tank 241-SX-115 Leak Assessment*, WHC-MR-0302, Westinghouse Hanford Company, Richland, Washington

(o) WHC, 1992d, Occurrence Report, *Apparent Decrease in Liquid Level in Single Shell Underground Storage Tank 241-T-101, Leak Suspected; Investigation Continuing*, RL-WHC-TANKFARM-1992-0073, Westinghouse Hanford Company, Richland, Washington

(p) WHC,1990b, *A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington

(q) WHC, 1993, *Assessment of Unsaturated Zone Radionuclide Contamination Around Single-Shell Tanks 241-C-105 and 241-C-106, WHC-SD-EN-TI-185,* REV OA, Westinghouse Hanford Company, Richland, Washington

Table 4-3 References:

(r) WHC, 1994, Occurrence Report, *Apparent Liquid Level Decrease in Single Shell Underground Storage Tank 241-T-111; Declared an Assumed Re-Leaker*, RL-WHC-TANKFARM-1994-0009, Westinghouse Hanford Company, Richland, Washington

(s) HNF, 1998, Agnew, S. F., and R. A. Corbin, August 1998, *Analysis of SX Farm Leak Histories - Historical Leak Model* (HLM), HNF-3233, Rev. 0, Los Alamos National Laboratory, Los Alamos, New Mexico

5.0 MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

Table 5-1. East and West Area Miscellaneous Underground Storage Tanks and Special Surveillance Facilities (1).

Facility	Location	Receives Waste From:	Waste (Gallons)	Monitored By:	Remarks
EAST AREA					
204-AR	W of A Farm Complex	Liquid waste from 100-Area, 300-Area Rail and Truck Tankers	Unknown	NM	Out of service (9)
209-E-TK-111	209 E Bldg.	Decon Catch Tank	Unknown	NM	Removed from service 1988
241-A-302-A	A Farm	A-151 DB	661	SACS/ENRAF/TMACS	
241-A-302-B	A Farm	A-152 DB	6265	SACS/MT	Isolated 1985, Project B-138, Interim Stabilized 1990, rain intrusion
241-AX-151 (5 tanks)	N. of PUREX	PUREX	Unknown	NM	Isolated 1985 (8)
241-AX-152	AX Farm	AX-152 DB	26	SACS/MT	Declared Assumed Leaker, pumped to AY-102, 3/01, no longer being used
241-AZ-151	AZ Farm	AZ-702 Condensate	1399	SACS/ENRAF/TMACS	Out-of-service 6/05. Isolated 6/06. (M-48-07)
241-AZ-154	AZ Farm		25	Zip Cord	Not monitored after 05/06
241-AZ-301 (11)	AZ Farm	AZ-702 Condensate	N/A	SACS/ENRAF/TMACS	Volume changes daily - pumped to AY-101 as needed
241-B-301-B	B Farm	B-151, 152, 153, 252 DB	22250	NM	Isolated 1985 (2)
241-B-302-B	B Farm	B-154 DB	4930	NM	Isolated 1985 (2)
241-BX-302-A	BX Farm	BR-152, BX-153, BXR-152, BYR-152 DB	840	NM	Isolated 1985 (2)
241-BX-302-B	BX Farm	BX-154 DB	1040	NM	Isolated 1985 (2)
241-BX-302-C	BX Farm	BX-155 DB	870	NM	Isolated 1985 (2)
241-BXR-TK/SMP-001	BX Farm	Transfer lines	7200	NM	Interim Stabilization 1985 (2)
241-BXR-TK/SMP-002	BX Farm	Transfer Lines	2180	NM	Interim Stabilization 1985 (2)
241-BXR-TK/SMP-003	BX Farm	Transfer Lines	1810	NM	Interim Stabilization 1985 (2)
241-BXR-TK/SMP-011	BX Farm	Transfer Lines	7100	NM	Interim Stabilization 1985 (2)
241-BY-ITS2-TK 1	BY Farm	Vapor condenser	Unknown	NM	Isolated
241-BY-ITS2-TK 2	BY Farm	Heater Flush Tank	Unknown	NM	Stabilized 1977
241-C-301-C	C Farm	C-151, 152, 153, 252 DB	10470	NM	Isolated 1985 (2)
241-ER-311	B Plant	ER-151, ER-152 DB	Unknown	SACS/ENRAF/Manual	Declared Assumed Leaker 3/2006 (3)
241-ER-311A	SW of B Plant	ER-151 DB	Empty	NM	Abandoned in place 1954
244-AR Vault (4 tanks)	A Complex	Between farms and B Plant	Unknown (7)		Stabilized 8/03, RPP-12051 Tanks 001-004 and Cell 1-3 Sumps monitored quarterly

Table 5-1. East and West Area Miscellaneous Underground Storage Tanks and Special Surveillance Facilities (1).

Facility	Location	Receives Waste From:	Waste (Gallons)	Monitored By:	Remarks
244-A-TK/SMP	A Complex	DCRT - Receives from several farms	4670	-SACS/WTF/MCS	WTF - Receives transfers and is pumped as needed
244-BX-TK/SMP	BX Complex		10970	SACS/MT	Out of Service 6/05. Isolated 6/06 (M-48-07)
241-A-350	A Farm	Collects drainage	460	SACS/WTF/MCS	WTF (uncorrected), pumped as needed
241-A-417	A Farm		1176	SACS/WTF/Manual	WTF
AR-204	AY Farm	Tanker trucks from various facilities	290	SACS/WTF/Manual	
CR-003-TK-SMP	C Farm	DCRT	2146	SACS/ZIP CORD/Manual	Zip cord installed; MT removed; more accurate conversion table used (10)
WEST AREA					
213-W-TK-1	E. of 213-W Compactor Facility	Water Retention Tank	Unknown	NM	Contains only water
231-W-151-001	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
231-W-151-002	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
240-S-302	S Plant	240-S-151-DB	8016		Assumed Leaker, EPDA 85-04 (4)
241-S-302A	S Farm	241-S-151-DB	0		Assumed Leaker TF-EFS-90-042
	Partially filled with grout 2/91, determined to be an Assumed Leaker after leak test. No surface level or intrusion readings obtainable. S-304 (active) replaced S-302				
241-S-302B	SX Farm	S Encasements	Empty	NM	Isolated 1985 (2)
241-S-304	S Farm	S-151 DB	1	SACS/ENRAF/Manual	Sump not alarming
241-SX-302	SX Farm	SX-151 DB, 151 TB	Unknown	NM	Isolated 1987
241-T-301	T Farm	DB T-151, 151, 153, 252	Unknown	NM	Isolated 1985 (T-301-B)
241-TX-302	TX Farm	TX-153 DB	Unknown	NM	Isolated 1985 (2)
241-TX-302B	E. of TX Farm	TX-155 DB	3312	SACS/ENRAF/TMACS	New ENRAF installed 9/02
241-TX-302-B(R)	E. of TX Farm	TX-155 DB	Unknown	NM	Isolated, replaced TX-302-B
241-TX-302C	T Plant	TX-154 DB	194	SACS/ENRAF/TMACS	
241-TX-302-X-B	TX Farm	TX Encasements	Unknown	NM	Isolated 1985 (2)
241-TY-302A	TY Farm	TX-153 DB	Unknown	NM	Isolated 1985 (2)
241-TY-302B	TY Farm	TY Encasements	Empty	NM	Isolated 1985 (2)
241-U-301B	U Farm	U-151, 152, 153, 252 DB	1438	SACS/ENRAF/Manual	Pumped to SY-101, 12/03
241-UX-302A	U Plant	UX-154	120	SACS/ENRAF/Manual	Catch Tank pumped in October 2006 (5)
241-Z-8	E. of Z Plant	Recuplex waste	Unknown	NM	Isolated, 1974, 1975
242-S TK C-100	242-S	Process Condensate	Unknown	NM	Process condensate receiver during 242-S Evaporator operation
242-T-135	T Evaporator	T Evaporator	Unknown	NM	Isolated
242-TA-R1	T Evaporator	Z Plant waste	Unknown	NM	Isolated
243-S-TK-1	NW of S	Personnel Decon.	Empty	NM	Isolated

Table 5-1. East and West Area Miscellaneous Underground Storage Tanks and Special Surveillance Facilities (1).

Facility	Location	Receives Waste From:	Waste (Gallons)	Monitored By:	Remarks
	Farm	Facility			
244-S-TK/SMP	S Farm	From SSTs for transfer to SY-102	3955	SACS/WTF/Manual	WTF. Out of Service 6/05. Isolated 6/06. (TPA M-48-07)
244-TXR-TK/SMP-001	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (2)
244-TXR-TK/SMP-002	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (2)
244-TXR-TK/SMP-003	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (2)
244-TX-TK/SMP	TX Farm		7043	SACS/MT	Received from 241-Z, tank D-5, 11/04
244-U –TK/SMP	U Farm	-	Unknown	NM	Never placed in service. Isolated 06/30/2006. May contain up to 10,000 gallons leak test raw water.
244-UR-001 Vault TK	U Farm	Tank, Sump and Cell	4220	NM	Stabilized 1985
244-UR-002 Vault TK	U Farm	Tank, Sump and Cell	1400	NM	Stabilized 1985
244-UR-003 Vault TK	U Farm	Tank, Sump and Cell	5996	NM	Stabilized 1985
244-UR-004 Vault TK	U Farm	Tank, Sump and Cell	Empty	NM	Stabilized 1985
241-EW-151 Vent Station Catch Tank		Cross Site Transfer Line	499	SACS/MT	MT. Rain intrusion, 1/03 (6)

Table 5-1 Legend:

DB, TB	Diversion Box, Transfer Box
DCRT	Double-Contained Receiver Tank
ENRAF, MT	Surface Level Measurement Devices
MCS	Monitor and Control System
Manual	Not connected to any automated system
MT	Manual Tape
NM	Not Monitored
O/S	Out of Service
SACS	Surveillance Automated Control System
TK, SMP	Tank, Sump
WTF	Weight Factor (can be recorded as WTF, WTF [uncorrected] or CWF [uncorrected])

Table 5-1 Footnotes:

(1) WHC-SD-WM-TI-356, Waste Storage Tank Status and Leak Detection Criteria, Rev. 0, September 30, 1988. Inactive Miscellaneous Underground Storage Tanks (IMUST) reflect only those tanks managed by CH2M HILL Hanford Group, Inc. (CH2M HILL).

(2) WHC-SD-WM-TI-356, Waste Storage Tank Status and Leak Detection Criteria, Rev. 0, September 30, 1988.

Table 5-1 Footnotes:

(3) A leak assessment was performed because of the 0.5 inch liquid level decrease between early October 2005 and January 31, 2006. The leak assessment concluded that a tank leak was the most likely explanation for the level trend. The leak assessment report (RPP-RPT-29163) was issued on March 17, 2006.

Solids volume in the tank is not known. Sample activities conducted during November, 1999 concluded that there were approximately 7 to 9" of solids beneath the east riser and no solids beneath the west riser (HNF-5985 Rev. 0 *ER-311 Flammable Gas Response and Findings*). The remaining liquid in the tank was evaporated to dryness between October 13, 2006 and February 15, 2007. A subsequent video inspection on March 17, 2007 indicated no remaining free liquid was present (07-TOD-026).

(4) A leak assessment was performed because of a steady, predictable liquid level decrease of ~ 0.33 inches/year since the early 1980's. The tank was designated as an "Assumed Leaker" in 1985, but had no record of a formal leak assessment. The leak assessment report (RPP-ASMT-35057) was issued on October 10, 2007.

(5) A leak assessment was performed because of the 0.7 inch level decrease between January 2004 and February 2006. The leak assessment concluded that a tank leak was the most likely explanation for the level trend. The leak assessment report (RPP-RPT-29711) was issued on May 12, 2006.

Pumping of the remaining free liquid from the tank was completed October 25, 2006 (06-TOD-090). An estimated 75 to 110 gallons of sludge, and 10 gallons of free liquid remain in the tank (RPP-RPT-31779 Rev. 0 *241-UX-302A Catch Tank Liquid Mitigation Completion Report*). The high estimate of 120 gallons total waste is reported in the table.

(6) A leak assessment was performed because of a 1.25 inch liquid level decrease between July, 2006 and November, 2006. The leak assessment concluded that the level decrease was the result of evaporation from an operating exhauster connected to tank 241-ER-311. This was confirmed when the exhauster was shut down and the liquid level stabilized. The tank remains classified as a "sound" tank. The leak assessment report (RPP-ASMT-33741) was issued on June 25, 2007.

(7) Following stabilization, the remaining volume of liquid in the tanks and sumps was estimated to total no more than 659 gallons; the volume of sludge <100 gallons (RPP-12051).

(8) 241-AX-151 consists of four 50 gallon diverter tanks (Tanks D – G) located in individual cells and the ~12,200 gallon capacity 241-AX-151-CT catch tank (stainless steel lined concrete vault and sump referred) receiving drainage from the pump pit and the four cells.

(9) 204-AR Customer Waste Unloading Facility includes a 1,500 gal catch tank enclosed in an stainless steel lined pit and pit sump; combined capacity of the catch tank and pit are 4,550 gallons (WHC-SC-WM-SAR-040 Rev. 1).

(10) 244-CR Vault contains two 40,000 gallon tanks CR-011 and CR-01, and two 15,000 gallon tanks CR-002 and CR-003 in individual cells. A 2004 liquid level assessment reported that 244-CR contained a total of 17,400 gallons of waste in the tanks and cells (04-TOD-085). Table 5-1 reports the liquid volume in tank CR-003 used previously as a saltwell receiver.

(11) AZ-301 is an active part of the DST system.

APPENDIX A - TANK CONFIGURATION AND FACILITIES CHARTS

Figure A-1. Underground Waste Storage Tank Configurations

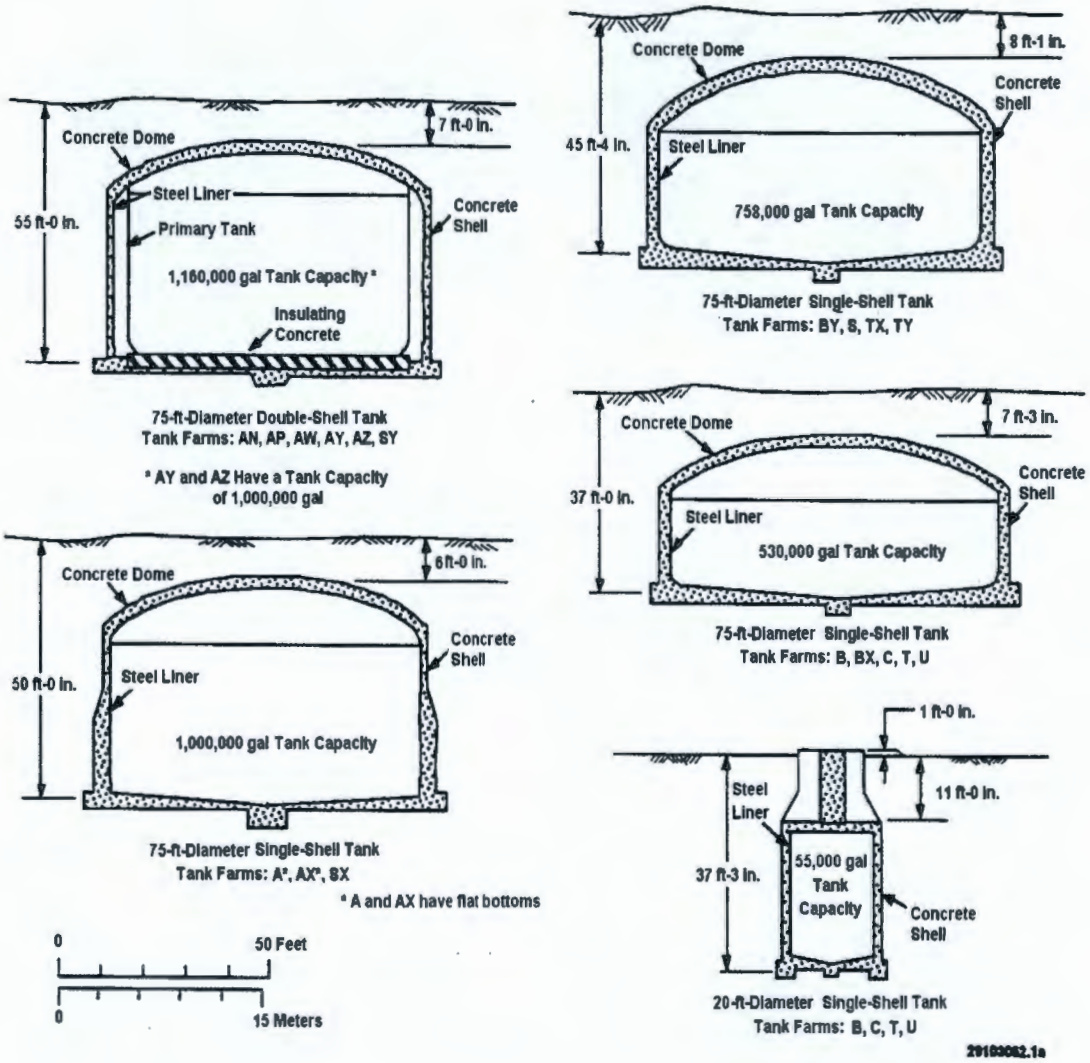


Figure A-2. Double-Shell Tank Instrumentation Configuration

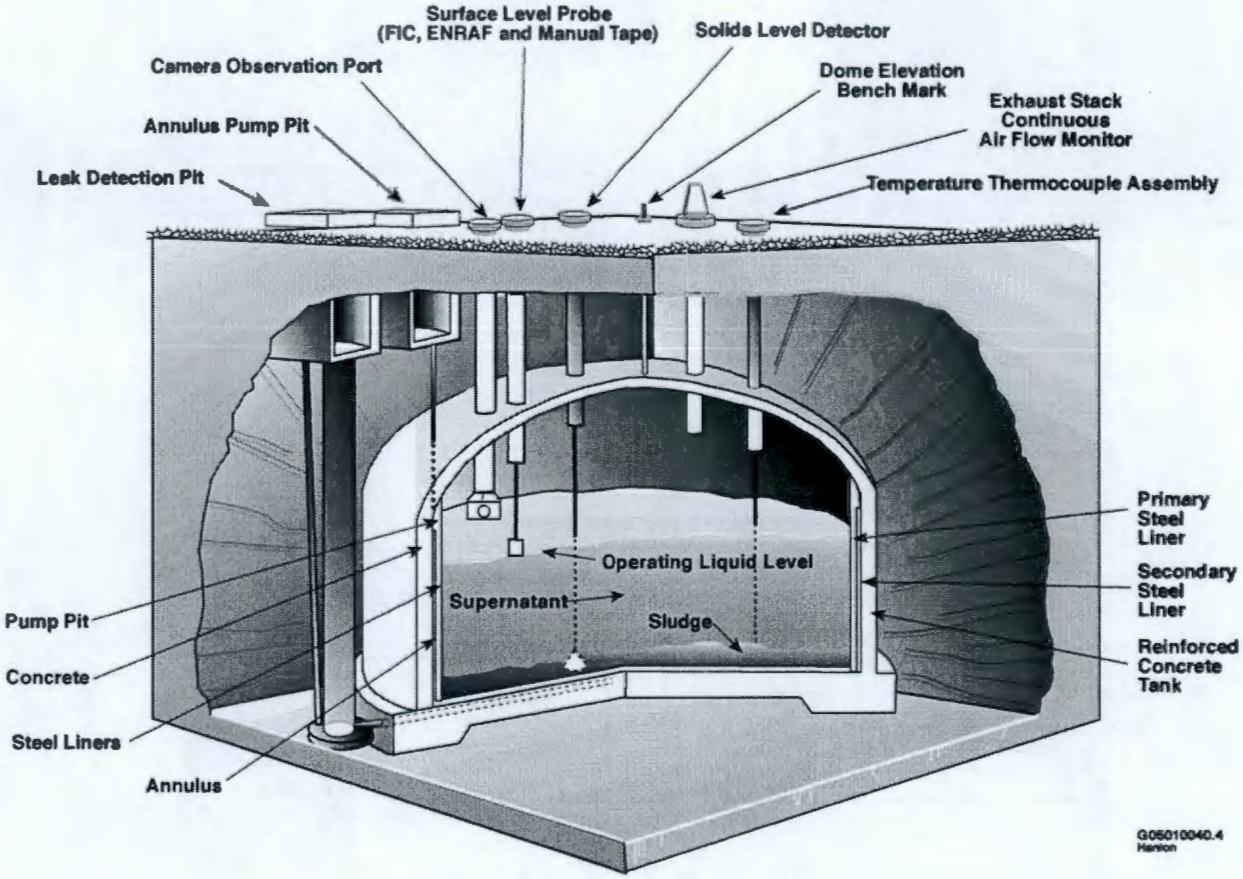
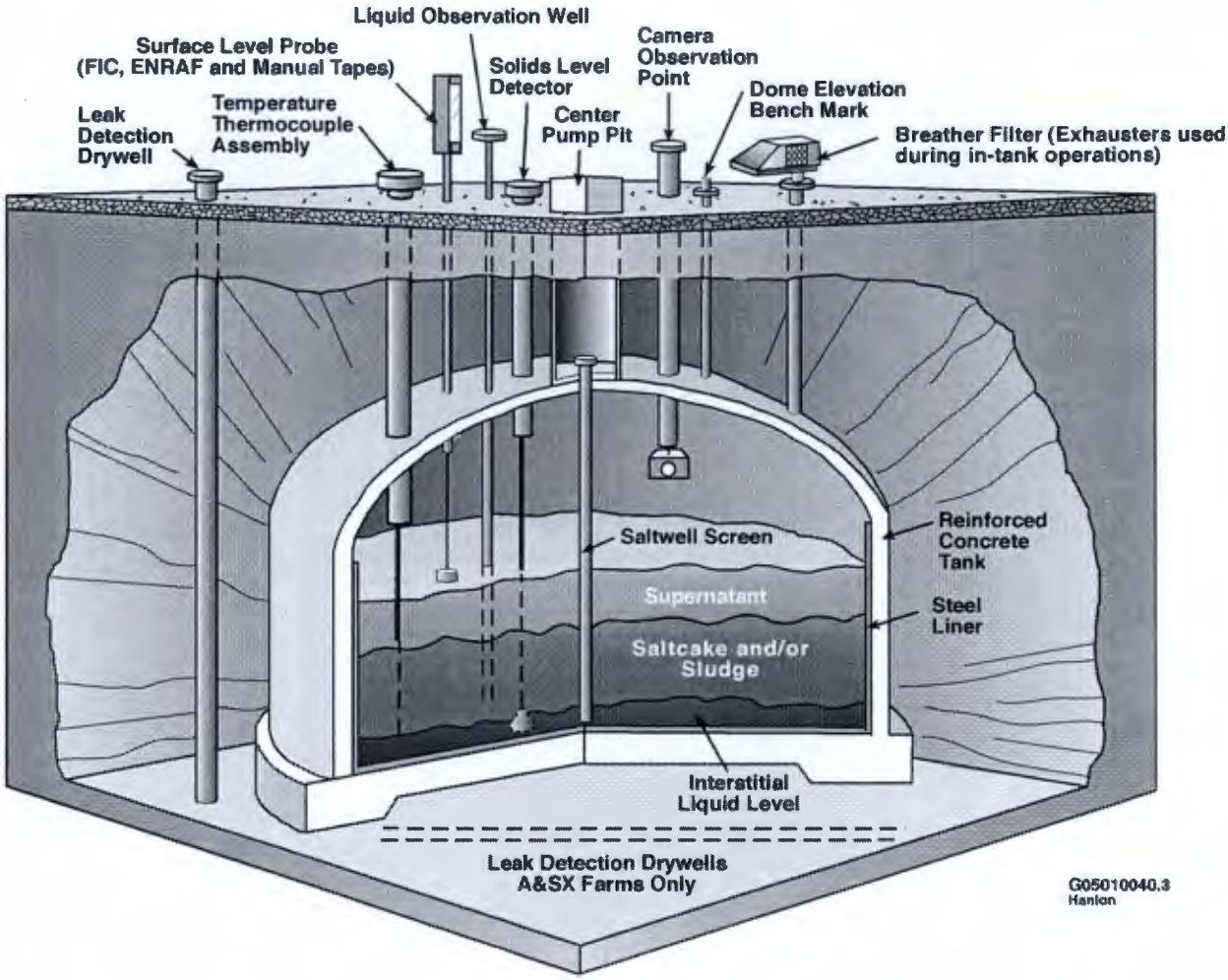


Figure A-3. Single-Shell Tank Instrumentation Configuration



DISTRIBUTION LIST

Number of copies

OFFSITE - USA

2 **Congress of the United States**
U.S. Senate
717 Hart Senate Building
Washington D.C. 20510

Senator Ron Wyden

U.S. House of Representatives
1323 Longworth House Office Building
Washington D. C. 20515

Congressman Richard "Doc" Hastings, 4th District
Atten: Jeff Markey

2 **U.S. Department of Energy-Headquarters**
19901 Germantown Rd
Germantown, MD 20874

Kurt Juroff EM-22 Cloverleaf Bldg.

1 **Washington State Department of Health**
Radiation Protection
7171 Cleanwater Lane
P. O. Box 47827
Olympia, WA 98504-7827

1 **Oregon Department of Energy**
Nuclear Safety Division
625 Marion St. NE
Salem, OR 97301

Dirk Dunning, P.E.

TRI-CITIES:

1 **Tri-City Herald**
P.O. Box 2608
Tri-Cities, WA 99302

Annette Carey

1 Robert J. Cash
114 Somerset
Richland, WA 99352-1966

1 Kenneth A. Gasper
162 Bradely Blvd
Richland, WA 99352

1 Richard Welty
409 S. 41st Ave
W. Richland, WA 99353

ONSITE

1	**S. M. Stoller Corporation**	
	P. D. Henwood	B2-62
1	**Government Accountability Office**	
	T.C. Perry	A1-80
6	**Washington State Department of Ecology**	
	L. A. Fort	H0-57
	J. J. Lyon	H0-57
	N. M. Menard	H0-57
	N. H. Uziemblo	H0-57
	Library	H0-57
2	**U.S. Environmental Protection Agency**	
	Tom Post	B1-46
10	**U.S. Department of Energy**	
	M. E. Burandt	H6-60
	J. R. Eschenberg	H6-60
	B. A. Harkins	H6-60
	W. Hewitt (YAHSGS)	H6-60
	D. H. Irby	H6-60
	D. L. Noyes	H6-60
	M. J. Royack	H6-60
	W. B. Scott	H6-60
	G.D. Trenchard	H6-60
	Reading Room (P.H. McCormick)	H2-53
1	**U.S. Defense Nuclear Facilities Safety Board**	
	R.G. Quirk	H6-60
1	**Bechtel National, Inc.**	
	P. J. Brackenbury	H4-02/MS6-P1
4	**CH2M HILL Hanford Group, Inc.**	
	M. V. Berriochoa	H6-04
	200 East Shift Office	S7-02
	WFO Shift Office	S5-15
	Environmental Data Mgmt Center	H6-08