S

ENGINEERING CHANGE NOTICE

Page 1 of 2

1 ECN 671068

Proj ECN

2 ECN Category (mark one)	3 Originator's Name Organization MSIN and Telephone No	4 USQ Required?	5 Date
Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☐ Cancel/Void ☐	B M Hanlon, Inventory & Flowsheet Eng R3-72 373-2053	☐ Yes ☒ No	01/07/02
	6 Project Title/No /Work Order No Waste Tank Summary Report for Month Ending November 30 2001	7 Bldg /Sys /Fac No N/A	8 Approval Designator N/A
	9 Document Numbers Changed by this ECN (includes sheet no and rev) HNF-EP-0182 Rev 163	10 Related ECN No(s) N/A	11 Related PO No N/A

12a Modification Work	12b Work Package No	12c Modification Work Completed	12d Restored to Original Condition (Temp or Standby ECNs only)
☐ Yes (fill out Blk 12b) ☒ No (NA Blks. 12b 12c 12d)	N/A	N/A Design Authority/Cog Engineer Signature & Date	N/A Design Authority/Cog Engineer Signature & Date

13a Description of Change

13b Design Baseline Document? ☐ Yes ☒ No

Complete revision

Computer generated

File \\AP001\CHG-DOC-TRANSFER-TEMP-HNF-EP-0182 1,590 KB ~~1,593KB~~ 1,587 KB

Size 1 55MB (1,628,160 bytes) ~~1,630,720 Bytes~~ ~~1,624,576 bytes~~ 1.54MB Bmh

Modified Wednesday JANUARY 16, 2002 3 51 50 pm Bmh ~~Thursday Jan 16, 2002~~ 12 55 06 pm Mon, Feb 4 2002 10 23 06 AM

14a Justification (mark one)	14b Justification Details
Criteria Change ☐ Design Improvement ☐ Environmental ☐ Facility Deactivation ☐ As-Found ☐ Facilitate Const ☐ Const Error/Omission ☐ Design Error/Omission ☐	This ECN is being generated to update waste tank farm summary information

15 Distribution (include name MSIN and no of copies)

Distribution list attached following document

Also Electronic copy to John Vann only

RELEASE STAMP

FEB 04 2002

DATE

STA. 4

HANFORD RELEASE

ID 8

ENGINEERING CHANGE NOTICE

1 ECN (use no from pg 1): 671068

16 Design Verification Required
- ☐ Yes
- ☒ No

17 Cost Impact

	ENGINEERING	CONSTRUCTION
Additional	☐ $	☐ $
Savings	☐ $	☐ $

18 Schedule Impact (days)
- Improvement ☐
- Delay ☐

19 Change Impact Review Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13 Enter the affected document number in Block 20

SDD/DD	☐	Seismic/Stress Analysis	☐	Tank Calibration Manual	☐
Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec	☐	Maintenance Procedure	☐	ASME Coded Item	☐
Const Spec	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEFD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac Proc Samp Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐	_____	☐
Environmental Permit	☐	Inventory Adjustment Request	☐	_____	☐

20 Other Affected Documents (NOTE Documents listed below will not be revised by this ECN) Signatures below indicate that the signing organization has been notified of other affected documents listed below

Document Number/Revision	Document Number/Revision	Document Number/Revision
N/A		

21 Approvals

	Signature	Date		Signature	Date
Design Authority			Design Agent		
Cog Eng	B M Hanlon BM Hanlon	1/7/02	PE		
Cog Mgr	N W Kirch NW Kirch	1/17/02	QA		
QA			Safety		
Safety			Design		
Environ			Environ		
Other			Other		

DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

ADDITIONAL

HNF-EP-0182 Rev 164

Waste Tank Summary Report for Month Ending November 30, 2001

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

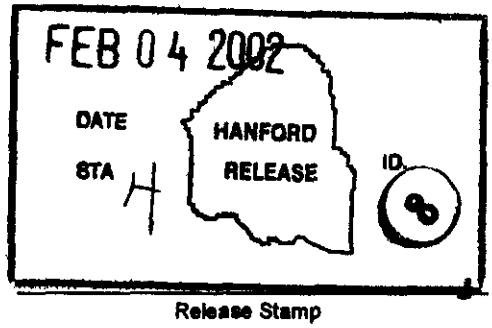
WASTE TANK SUMMARY REPORT FOR MONTH ENDING NOVEMBER 30, 2001

BM HANLON
CH2M HILL Hanford Group Inc
Richland WA 99352
U S Department of Energy Contract DE AC27 99RL14047

EDT/ECN ECN-671068 UC
Cost Center Charge Code
B&R Code Total Pages 68 5 JM 2/4/02

Key Words REPORT WASTE TANK SUMMARY

Abstract See page iii of document



Release Approval 1/17/02 Date

Release Stamp

Approved For Public Release

RECORD OF REVISION	(1) Document Number HNF-EP-0182	Page 1

(2) Title
WASTE TANK SUMMARY REPORT FOR MONTH ENDING NOVEMBER 30 2001

Change Control Record

(3) Revision	(4) Description of Change Replace Add and Delete Pages	Authorized for Release	
		(5) Cog Engr	(6) Cog Mgr Date
153	(7) EDT-631372	BM Hanlon	JS Garfield
RS 164	Incorporation of ECN-671068	BM Hanlon	NW Kirch 11-7-02

HNF-EP-0182, Rev 164

Waste Tank Summary Report for Month Ending November 30, 2001

B M Hanlon
CH2M HILL Hanford Group Inc

Date Published
January 2001

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

CH2MHILL
Hanford Group, Inc

P O Box 1500
Richland Washington

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

WASTE TANK SUMMARY REPORT

B M Hanlon

ABSTRACT

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 60 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 Hanford Tank Farm tanks

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TABLE OF CONTENTS

METRIC CONVERSION CHART		
1 inch	=	2 54 centimeters
1 foot	=	30 48 centimeters
1 gallon	=	3 79 liters
1 ton	=	0 91 metric tons

$$°F = \left(\frac{9}{5}°C\right) + 32$$

1 Btu/h = 0 2931 watts
(International Table)

WASTE TANK SUMMARY REPORT
For Month Ending November 30 2001

Note Changes from the previous month are in **bold print**

I WASTE TANK STATUS

Double Shell Tanks (DST)	28 double shell	10/86
Single Shell Tanks (SST)	149 single shell	1966
Assumed Leaker Tanks	67 single shell	07/93
Sound Tanks	28 double shell 82 single shell	1986 07/93
Interim Stabilized Tanks (IS)	129 single shell	06/01
Not Interim Stabilized[b]	20 single shell	06/01
Isolated Intrusion Prevention Completed (IP)	108 single shell	09/96
Controlled, Clean, and Stable (CCS)	36 single shell	09/96
Misc Underground Storage Tanks and Special Surveillance Facilities (Active)	10 Tanks East Area 7 Tanks West Area	03/01
Misc Underground Storage Tanks and Special Surveillance Facilities (Inactive)[d]	**18 Tanks East Area** **25 Tanks West Area**	**11/01**

Of the 129 tanks classified as Interim Stabilized 65 are listed as Assumed Leakers (See Table B-5)

[b] Two of these tanks are Assumed Leakers (BY 105 and BY 106) (See Table B 5)

The TY tank farm was officially declared Controlled, Clean and Stable (CCS) in March 1996 The TX tank farm and BX tank farms were declared CCS in September 1996

[d] Tables C 2 and C 3 the Inactive Underground Storage Tanks (IMUST) now reflect only those tanks managed by CHG

II WASTE TANK INVESTIGATIONS

This section includes all single or double shell tanks or catch tanks which are showing surface level or interstitial liquid level (ILL) decreases or drywell radiation level increases in excess of established criteria

A Assumed Leakers or Assumed Re leakers (See Appendix D for definition of Re leaker)

This section includes all single or double shell tanks or catch tanks for which an off-normal or unusual occurrence report has been issued or for which a waste tank investigation is in progress for assumed leaks or re leaks Tanks/catch tanks will remain on this list until either

a) completion of Interim Stabilization, b) the updated occurrence report indicates that the tank/catch tank is not an assumed leaker or c) the investigation is completed

B Tanks with increases indicating possible intrusion

This section includes all single shell tanks and related receiver tanks for which the surveillance data show that the surface level or ILL has met or exceeded the increase criteria, or are still being investigated

Candidate Intrusion List **As a result of a detailed review of the surface level behavior and physical phenomenon, the four tanks listed below are removed from the Candidate Intrusion List (Reference D T Heimberger to K. M Hodgson, November 28, 2001, Memo 7G300-01-KMH-001, "Tank Intrusion Evaluation ")**

Tank 241 B 202
Tank 241 BX 101
Tank 241 BX 103
Tank 241 BY 103

III SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS

A Single Shell Tanks Saltwell Jet Pumping (See Table B 1 footnotes for further information)

Tank 241 A 101 Pumping began May 6 2000 No pumping has occurred since August 2000 a total of 14 1 Kgallons has been pumped from this tank since the start of pumping in May 2000

Tank 241-AX-101 Pumping began July 29 2000 No pumping occurred between August 2000 and March 2001 pumping began again on March 22 2001 Pumping was shut down on April 3 2001 due to a transfer line failure A total of 21 7 Kgallons has been pumped since the start of pumping in July 2000

Tank 241 BY 105 – Pumping began July 11 2001 During July a total of 8 8 Kgallons was pumped from this tank Pumping was halted in August 2001 due to transfer line leak detectors not meeting all operability requirements of the Technical Safety Requirements Compensatory actions have been established to allow resumption of pumping **During November 2001 a total of 3 4 Kgallons was pumped from this tank, a total of 12 2 Kgallons has been pumped since the start of pumping in July 2001**

Tank 241 BY 106 – Pumping originally started in August 1995 and was halted in October 1995 due to an Unreviewed Safety Question (USQ) evaluation for flammable gas concerns Pumping was restarted July 11 2001 Pumping was halted in August 2001 due to transfer line leak detectors not meeting all operability requirements of the Technical Safety Requirements (TSR) Compensatory actions have been established to allow resumption of pumping **Pumping resumed in November 2001 During November 2001 a total of 12 1 Kgallons were pumped**

from this tank, a total of 82 1 Kgallons has been pumped since the start of pumping in July 2001

Tank 241 S 102 Pumping problems forced many shutdowns The pump was replaced and pumping resumed on February 19 2000 Problems with the new pump forced a shutdown on March 23 2000 Pumping was interrupted in early June 2000 Pumping was shut down due to equipment failure the lower piping needs to be replaced No pumping has occurred since June 2000 a total of 56 8 Kgallons has been pumped from this tank since the start of pumping in March 1999

Tank 241 SX 101 Pumping began November 22 2000 The pump failed on December 9 2000 and pumping was shut down Pumping resumed in September 2001 following replacement of the saltwell pump and lower piping **Pumping was shut down in November 2001 due to high motor bearing temperature and low pump pressures** A total of 31 8 Kgallons has been pumped from this tank since the start of pumping in November 2000

Tank 241 SX 103 Pumping began October 26 2000 Pumping was shut down on April 22 2001 due to leak detector and subsequent shielding problems in the pump pit Pumping resumed on September 14 2001 **During November 2001, a total of 1 2 Kgallons was pumped, a total of 127 0 Kgallons has been pumped from this tank since the start of pumping in October 2000**

Tank 241 SX 105 Pumping began August 8 2000 Pumping was shut down in late April 2001 when the saltwell screen in flow rate was measured at approximately 0 02 GPM This tank is being evaluated to determine if it can be declared interim stabilized A total of 152 6 Kgallons has been pumped since the start of pumping in August 2000

Tank 241 U 102 Pumping began January 20 2000 During September 2001 a total of 200 gallons was pumped a total of 86 5 Kgallons has been pumped from this tank since the start of pumping in January 2000 This tank was placed in observation mode in September 2001 to evaluate whether interim stabilization has been completed

Tank 241 U 107 – Pumping began September 29 2001 **Pumping was shut down during November 2001 and will remain down until the annual leak test is completed satisfactorily on two transfer lines No pumping in November 2001** A total of 11 7 Kgallons has been pumped from this tank since the start of pumping in September 2001 (net decrease of zero gallons in September due to equipment/priming flushes)

Tank 241 U 109 Pumping began March 11 2000 The saltwell pump was replaced following its failure in December 2000 and pumping was restarted March 30 2001 The tank was last pumped in September 2001 when 100 gallons were transferred a total of 78 4 Kgallons has been pumped from this tank since the start of pumping in March 2000 This tank was placed in observation mode in September 2001 to evaluate whether interim stabilization has been completed

C Changes to this Report

Tables C-2 and C 3, Inactive Miscellaneous Underground Storage Tanks (IMUST) and Special Surveillance Facilities, only reflect those facilities managed by CH2MHILL Hanford Group

Table A-1, Inventory and Status by Tank – Double-Shell Tanks, now reflects the maximum volume limits per HNF-SD-WM SP 012, "Tank Farm Contractor and Utilization Plan," Rev 3, dated September 27, 2001 See Table A-1 for further details

APPENDIX A

DOUBLE SHELL TANKS

MONTHLY SUMMARY TABLES

TABLE A 1 INVENTORY AND STATUS BY TANK DOUBLE SHELL TANKS

November 30 2001

TANK	TANK INTEGRITY	TANK STATUS	EQUIVALENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL SPACE (1) (Kgal)	WASTE VOLUMES: SUPERNATANT LIQUID (Kgal)	WASTE VOLUMES: SLUDGE (Kgal)	WASTE VOLUMES: SALTCAKE (Kgal)	SOLIDS VOLUME UPDATE	PHOTOS/VIDEOS: LAST IN TANK PHOTO	PHOTOS/VIDEOS: LAST IN TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
AN TANK FARM STATUS												
AN 101	SOUND	DRCVR	91 6	252	892	252	0	0	06/30/99			
AN-102	SOUND	CWHT	392 7	1080	64	991	0	89	06/30/99			
AN-103	SOUND	CWHT	349 1	960	184	501	0	459	06/30/99	10/29/87		
AN-104	SOUND	CWHT	383 3	1054	90	609	0	445	06/30/99	08/19/88		
AN 105	SOUND	CWHT	409 8	1127	17	635	0	492	06/30/99	01/26/88		
AN 106	SOUND	CWHT	13 8	38	1106	21	0	17	06/30/99			
AN 107	SOUND	CWHT	378 5	1041	103	794	0	247	06/30/99	09/01/88		
7 DOUBLE SHELL TANKS			TOTALS	5552	2456	3803	0	1749				
AP TANK FARM STATUS												
AP 101	SOUND	DRCVR	405 1	1114	30	1114	0	0	05/01/89			
AP-102	SOUND	DRCVR	33 1	91	1053	91	0	0	07/11/89			
AP 103	SOUND	DRCVR	102 2	281	863	281	0	0	05/31/96			
AP 104	SOUND	DRCVR	402 9	1108	36	1108	0	0	10/13/88			
AP-105	SOUND	CWHT	412 0	1133	11	1044	0	89	06/30/99		09/27/95	
AP 106	SOUND	DRCVR	415 3	1142	2	1142	0	0	10/13/88			
AP 107	SOUND	DRCVR	354 9	976	168	976	0	0	10/13/88			
AP-108	SOUND	DRCVR	285 5	785	359	785	0	0	10/13/88			
8 DOUBLE SHELL TANKS			TOTALS	6630	2522	6541	0	89				
AW TANK FARM STATUS												
AW 101	SOUND	CWHT	410 2	1128	16	740	0	388	10/31/00	03/17/88		
AW 102	SOUND	EVFD	34 2	94	1034	64	30	0	01/31/01	02/02/83		
AW 103	SOUND	DRCVR	400 7	1102	42	789	273	40	06/30/99			
AW 104	SOUND	DRCVR	114 5	315	829	92	66	157	06/30/99	02/02/83		
AW 105	SOUND	DRCVR	154 9	426	718	171	255	0	06/30/99			
AW 106	SOUND	SRCVR	107 6	296	848	57	0	239	06/30/99	02/02/83		
6 DOUBLE SHELL TANKS			TOTALS	3361	3487	1913	624	824				

TABLE A 1 INVENTORY AND STATUS BY TANK DOUBLE-SHELL TANKS

November 30 2001

TANK	TANK INTEGRITY	TANK STATUS	EQUIVALENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL SPACE (1) (Kgal)	WASTE VOLUMES: SUPERNATANT LIQUID (Kgal)	WASTE VOLUMES: SLUDGE (Kgal)	WASTE VOLUMES: SALTCAKE (Kgal)	SOLIDS VOLUME UPDATE	PHOTOS/VIDEOS: LAST IN TANK PHOTO	PHOTOS/VIDEOS: LAST IN TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
AY TANK FARM STATUS												
AY 101	SOUND	DRCVR	65 5	180	821	84	96	0	06/30/99	12/28/82		
AY 102	SOUND	DRCVR	225 8	621	380	437	184	0	10/31/00	04/28/81		
2 DOUBLE SHELL TANKS		TOTALS		801	1201	521	280	0				
AZ TANK FARM STATUS												
AZ 101	SOUND	CWHT	350 2	963	38	911	52	0	06/30/98	08/18/83		
AZ 102	SOUND	DRCVR	362 5	997	4	892	105	0	06/30/99	10/24/84		
2 DOUBLE SHELL TANKS		TOTALS		1960	42	1803	157	0				
SY TANK FARM STATUS												
SY 101	SOUND	CWHT	352 4	969	175	694	0	275	06/30/99	04/12/89		
SY 102	SOUND	DRCVR	370 9	1020	106	949	71	0	06/30/99	04/29/81		
SY 103	SOUND	CWHT	268 7	739	405	397	0	342	06/30/99	10/01/85		
3 DOUBLE SHELL TANKS		TOTALS		2728	686	2040	71	617				
GRAND TOTAL				21106	10274	16697	1132	3279				

Note +/ 1 Kgal differences are the result f computer rounding

Maximum volume limits per HNF SD-WM-SP-012 Tank Farm Contractor and Utilization Plan Rev 3 dated September 27 2001

Tank Farms		Exceptions.	
AN AP AW	1144 Kgal	AW 102	1128 Kgal
AY AZ	1001 Kgal		
SY	1144 Kgal	SY 102	1082 Kgal

NOTE Supernatant + Sludg (includes liquid) + Saltcak (includes liquid) = Total Wast

(1) Available Spac volumes include restricted pace

TABLE A 2 SUMMARY OF WASTE TRANSACTIONS IN THE DOUBLE SHELL TANK (DST) SYSTEM

November 30 2001

All volumes in Kilo-Gallons (Kgals)

The DST system received waste additions from SST pumping AZ 151 A-350 nitrite BX 244 (DCRT) & raw water in November
There was a net change of +115 000 gallons in the DST system for November
The total DST inventory as of November 30 2001 was 21 108 million gallons
There were ~41 Kgals of Saltwell Liquid (SWL) pumped to the East Area DSTs (AP 102) in November which reflect two transfers of BX 244 (DCRT) to AP 102 not the volume pumped from SSTs BY 105 and BY 106 in November BX 244 is used for interim storage of BY farm stabilization waste The first BX 244 to AP 102 transfer contained waste from the BY farm that was pumped in July 2001
There were ~6 Kgals of SWL (1 Kgal SWL + 5 Kgal water) pumped to the West Area DSTs (SY 102) in November
The SWL numbers are preliminary and are subject to change once the system engineers do a validation the volumes reported contain the actual waste volume plus any water added for dilution and transfer line flushes
A transfer of ~2 833 gallons of waste was sent from tank AP 108 to tank AP 106 (for transfer pump priming) prior to a transfer of ~520 273 gallons from tank AP 106 to tank AP 108 After the AP 106 to AP 108 transfer tank AP 106 received ~1 038 950 gallons from Tank AP 102 These transfers free up storage space in AP 102 to now receive and store cross-site transfer and newly generated waste receipts
The PFP facility sent ~4 000 gallons of waste to DCRT TX 244 for interim storage in November This waste will be accounted for when TX 244 is transferred to the DST system TX 244 presently contains ~13 211 gallons of PFP waste and water plus ~6 000 gallons of waste & water from SWL pumping of tanks T 104 and T 110
The maximum volume limits for each of the DST s were adjusted in November These new volume limits are provided by HNF SD-WM SP-012 Tank Farm Contractor and Utilization Plan Rev 3 dated September 27 2001

NOVEMBER 2001 DST WASTE RECEIPTS

FACILITY GENERATIONS		OTHER GAINS ASSOCIATED WITH		OTHER LOSSES ASSOCIATED WITH	
SWL (West)	+6 Kgal (SY 102)	SLURRY	+3 Kgal	SLURRY	-4 Kgal
SWL (East)	+41 Kgal (AP-102)	CONDENSATE	+13 Kgal	CONDENSATE	-5 Kgal
Nitrite (NaNO)	+63 Kgal (AY 102)	INSTRUMENTATION	+0 Kgal	INSTRUMENTATION	-0 Kgal
Tank Farms	+3 Kgal (AP 102 AW 102)	UNKNOWN	+1 Kgal	UNKNOWN	-6 Kgal
TOTAL =	+113 Kgal	TOTAL=	+17 Kgal	TOTAL=	15 Kgal

PROJECTED VERSUS ACTUAL WASTE VOLUMES

	ACTUAL DST WASTE RECEIPTS	PROJECTED DST WASTE RECEIPTS (1)	MISC DST CHANGES (+/)	PROJECTED WVR (1)	NET DST CHANGE	TOTAL DST VOLUME
OCT 01	74	114	-5	0	69	20993
NOV 01	113	388	2	0	115	21108
DEC 01	0	647	0	0	0	0
JAN 02	0	544	0	0	0	0
FEB 02	0	528	0	0	0	0
MAR 02	0	151	0	0	0	0
APR 02	0	316	0	0	0	0
MAY 02	0	185	0	0	0	0
JUN 02	0	160	0	0	0	0
JUL 02	0	-678	0	0	0	0
AUG 02	0	168	0	0	0	0
SEP 02	0	109	0	0	0	0

242 A Evaporator Waste Volume Reduction

Campaign 94-1 (04/15/94 06/13/94)	2417
Campaign 94-2 (09/22/94 11/18/94)	2787
Campaign 95-1 (06/09/95 07/26/95)	2161
Campaign 96-1 (05/07/96 05/25/96)	1117
Campaign 97 1 (03/24/97 04/02/97)	-351
Campaign 97 2 (09/16/97 09/30/97)	-653
Campaign 99-1 (07/24/99 08/15/99)	-818
Campaign 00-1 (04/20/00 05/05/00)	-682
Campaign 01 1 (03/13/01 03/27/01)	-682
Total waste reduction (WVR) since restart on 4/15/94	11668

TOTAL AVAILABLE DST SPACE	
NON-AGING	27378
AGING	4004
TOTAL =	31382

MONTHLY INVENTORY CHANGE	
INVENTORY ON 10/31/01	20993
INVENTORY ON 11/30/01	21108
CHANGE =	115

Tank Space Usage

UNUSED TANK SPACE CHANGE	
10/31/01 TANK SPACE	10304
11/30/01 TANK SPACE	10274
CHANGE =	-30

OPERATIONAL SPACE	
N-101	892
[illegible]	[illegible]
AW 102	1034
AW 105	718
AW 106	848
SY 102	57
TOTAL =	3908

RESTRICTED SPACE	
AN 102	64
AN-103	184
AN 104	90
AN 105	17
AN-107	103
AP 102	1053
AP 106	2
AW 101	16
AZ 101	25
AZ 102	5
SY 103	405
TOTAL =	1964

NON-ALLOCATED SPACE	
AN-106	1106
AP 101	30
AP 103	863
AP 104	36
AP 105	11
AP 107	168
AW 103	42
AW 104	829
AY 101	822
AY 102	320
SY-101	175
TOTAL =	4402
EMERGENCY SPACE	1144
LAW or HLW RETURN	1144
REMAINING SPACE	1947

Inventory Calculation by Waste Type

DILUTE SUPERNATANT (DN/DC)	
AN 101	252
AP 107 (DC)	976
AP 108	785
AW 102	64
AW 104	92
AW 105	171
AY 101 (DC)	83
AY 102	497
SY 102 (DC)	954
TOTAL DN/DC =	3874
TOTAL SOLIDS =	859

SLURRY SUPERNATANT (DSS/DSSF)	
AN-103	501
AN-104	609
AN-105	635
AP 101	1114
AP 105	1044
AW 101	740
AW 103	789
AW 106	57
TOTAL DSS/DSSF=	5489
TOTAL SOLIDS =	2425

COMPLEXED SUPERNATANT (CC)	
AN 102	991
AN-106	21
AN-107	794
AP 103	281
AP 104	1106
SY 101	694
SY 103	397
TOTAL DC/CC =	4286
TOTAL SOLIDS	97

AGING SUPERNATANT (A	
TOTAL AW =	1815
TOTAL SOLIDS	157

PHOSPHATE SUPERNATANT (CP)	
AP 102=	91
AP 106	1142
TOTAL CP =	1233
TOTAL SOLIDS	0

Note Unused Tank Space Change does not equal Monthly Inventory Change because the maximum volume limits for the tanks were changed this month (**see** Table A 1)

GRAND TOTALS	
DILUTE SUPERNATANT (DN/DC) =	3874
SLURRY (DSS/DSSF) =	5489
CONCENTRATED COMPLEXED (CC) =	4286
CONCENTRATED PHOSPHATE (CP) =	1233
AGING SUPERNATANT (AW) =	1815
DST SOLIDS (SL/SC) =	4411
TOTAL =	21108

TABLE A-4 DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS
November 30 2001

All Double-Shell Tanks were in compliance this month

Legend	
O/C	Noncompliance with applicable documentation
FIC/ENRAF/MT (a)	Surface level measurement devices
OSD	OSD-T 151-0007, OSD T 151-00031
FSAR/TSR	Final Safety Analysis Report/Technical Safety Requirements
None	Applicable equipment not installed
N/A	Not Applicable (not monitored or no monitoring scheduled)

(a) ENRAF is a trademark of the ENRAF Corporation, Houston, Texas

Notes

Psychrometrics monitoring is on an as needed basis
In tank photos/videos are taken on an as needed basis
Drywell monitoring is no longer required

APPENDIX B

SINGLE SHELL TANKS

MONTHLY SUMMARY TABLES

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements.

See footnotes for information on tanks in process of Interim Stabilization

				WASTE VOLUMES									PHOTOS/VIDEOS		
TANK NO.	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)	PUMPABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
A TANK FARM STATUS															
A-101	SOUND	/PI	877	(a)	(a)	0.0	14.1	(a)	(a)	3	380	09/30/99	08/21/85		(a)
A-102	SOUND	IS/PI	41	4	8	0.0	39.5	12	4	15	22	07/27/89	07/20/89		
A-103	ASMD LKR	IS/IP	371	5	45	0.0	111.0	50	43	366	0	06/03/88	12/28/88		
A-104	ASMD LKR	IS/IP	28	0	4	0.0	0.0	4	0	28	0	01/27/78	06/25/86		
A-105	ASMD LKR	IS/IP	37	0	0	0.0	0.0	0	0	37	0	10/31/00	08/20/86		
A-106	SOUND	IS/IP	125	0	9	0.0	0.0	9	1	125	0	09/07/82	08/19/86		
6 TANKS - TOTALS			1479							574	402				
AX TANK FARM STATUS															
AX-101	SOUND	/PI	662	(b)	(b)	0.0	21.7	(b)	(b)	3	295	09/30/99	08/18/87		(b)
AX-102	ASMD LKR	IS/IP	30	0	7	0.0	13.0	7	0	7	23	06/30/99	06/05/89		
AX-103	SOUND	IS/IP	112	0	23	0.0	0.0	23	11	8	104	06/30/99	08/13/87		
AX-104	ASMD LKR	IS/IP	8	0	1	0.0	0.0	1	0	8	0	06/30/99	08/18/87		
4 TANKS - TOTALS			812							26	422				
B TANK FARM STATUS															
B-101	ASMD LKR	IS/IP	113	0	24	0.0	0.0	24	17	0	113	06/30/99	05/19/83		
B-102	SOUND	IS/IP	32	4	7	0.0	0.0	11	4	0	28	06/30/99	08/22/85		
B-103	ASMD LKR	IS/IP	59	0	11	0.0	0.0	11	3	0	59	06/30/99	10/13/88		
B-104	SOUND	IS/IP	371	1	45	0.0	0.0	46	42	309	61	06/30/99	10/13/88		
B-105	ASMD LKR	IS/IP	158	0	20	0.0	0.0	20	16	28	130	06/30/99	05/19/88		
B-106	SOUND	IS/IP	117	1	25	0.0	0.0	26	19	0	116	02/29/00	02/28/85		
B-107	ASMD LKR	IS/IP	165	1	22	0.0	0.0	23	19	93	71	06/30/99	02/28/85		
B-108	SOUND	IS/IP	94	0	15	0.0	0.0	15	11	53	41	06/30/99	05/10/85		
B-109	SOUND	IS/IP	127	0	21	0.0	0.0	21	17	63	64	06/30/99	04/02/85		
B-110	ASMD LKR	IS/IP	246	1	27	0.0	0.0	28	20	245	0	02/28/85	03/17/88		
B-111	ASMD LKR	IS/IP	237	1	23	0.0	0.0	24	29	236	0	06/28/85	06/26/85		
B-112	ASMD LKR	IS/IP	33	3	4	0.0	0.0	7	3	30	0	05/31/85	05/29/85		
B-201	ASMD LKR	IS/IP	29	1	4	0.0	0.0	5	1	28	0	04/28/82	11/12/86	06/23/95	
B-202	SOUND	IS/IP	27	0	4	0.0	0.0	4	0	27	0	05/31/85	05/29/85	06/15/95	
B-203	ASMD LKR	IS/IP	51	1	5	0.0	0.0	6	1	50	0	05/31/84	11/13/86		
B-204	ASMD LKR	IS/IP	50	1	5	0.0	0.0	6	1	49	0	05/31/84	10/22/87		
16 TANKS - TOTALS			1909							1211	683				

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

See footnotes for information on tanks in process of Interim Stabilization

TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	WASTE VOLUMES: SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	PUMPABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	PHOTOS/VIDEOS: LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
BX TANK FARM STATUS															
BX-101	ASMD LKR	IS/IP/CCS	43	1	4	0.0	0.0	5	1	42	0	04/28/82	11/24/88	11/10/94	
BX-102	ASMD LKR	IS/IP/CCS	96	0	0	0.0	0.0	0	0	96	0	04/28/82	09/18/85		
BX-103	SOUND	IS/IP/CCS	71	9	4	0.0	0.0	13	9	62	0	11/29/83	10/31/86	10/27/94	
BX-104	SOUND	IS/IP/CCS	93	3	4	0.0	17.4	7	3	90	0	02/29/00	09/21/89		
BX-105	SOUND	IS/IP/CCS	51	5	4	0.0	15.0	9	5	46	0	06/30/99	10/23/86		
BX-106	SOUND	IS/IP/CCS	38	0	4	0.0	14.0	4	0	38	0	08/01/95	05/19/88	07/17/95	
BX-107	SOUND	IS/IP/CCS	345	1	36	0.0	23.1	37	33	344	0	09/18/90	09/11/90		
BX-108	ASMD LKR	IS/IP/CCS	26	0	4	0.0	0.0	4	0	26	0	07/31/79	05/05/94		
BX-109	SOUND	IS/IP/CCS	193	0	25	0.0	8.2	25	20	193	0	09/17/90	09/11/90		
BX-110	ASMD LKR	IS/IP/CCS	207	3	28	0.0	1.5	31	26	133	71	06/30/99	07/15/94	10/13/94	
BX-111	ASMD LKR	IS/IP/CCS	162	1	5	0.0	116.9	6	2	25	136	06/30/99	05/19/94	02/28/95	
BX-112	SOUND	IS/IP/CCS	165	1	9	0.0	4.1	10	7	164	0	09/17/90	09/11/90		
12 TANKS - TOTALS			1490							1259	207				
BY TANK FARM STATUS															
BY-101	SOUND	IS/IP	387	0	28	0.0	35.8	28	24	109	278	05/30/84	09/19/89		
BY-102	SOUND	IS/PI	277	0	40	0.0	159.0	40	33	0	277	05/01/95	09/11/87	04/11/95	
BY-103	ASMD LKR	IS/PI	400	0	58	0.0	95.9	58	53	9	391	06/30/99	09/07/89	02/24/97	
BY-104	SOUND	IS/IP	326	0	40	0.0	329.5	40	36	150	176	06/30/99	04/27/83		
BY-105	ASMD LKR	/PI	491	(c)	(c)	3.4	12.2	(c)	(c)	48	443	11/30/01	07/01/86		(c)
BY-106	ASMD LKR	/PI	544	(d)	(d)	12.1	82.1	(d)	(d)	84	460	11/30/01	11/04/82		(d)
BY-107	ASMD LKR	IS/IP	266	0	39	0.0	56.4	39	35	40	226	06/30/99	10/15/86		
BY-108	ASMD LKR	IS/IP	228	0	33	0.0	27.5	33	26	154	74	04/28/82	10/15/86		
BY-109	SOUND	IS/PI	290	0	31	0.0	157.1	31	26	57	233	07/08/87	06/18/97		
BY-110	SOUND	IS/IP	398	0	21	0.0	213.3	21	17	103	295	09/10/79	07/26/84		
BY-111	SOUND	IS/IP	459	0	14	0.0	313.2	14	6	0	459	06/30/99	10/31/86		
BY-112	SOUND	IS/IP	291	0	24	0.0	116.4	24	12	0	291	06/30/99	04/14/88		
12 TANKS - TOTALS			4357							754	3603				

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 2001

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See footnotes for information on tanks in process of Interim Stabilization

TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	WASTE VOLUMES: SUPERNATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	PUMPABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	PHOTOS/VIDEOS: LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
C TANK FARM STATUS															
C-101	ASMD LKR	IS/IP	88	0	4	0.0	0.0	4	0	88	0	11/29/83	11/17/87		
C-102	SOUND	IS/IP	316	0	62	0.0	46.7	62	55	316	0	09/30/95	05/18/76	08/24/95	
C-103	SOUND	/PI	198	79	18	0.0	0.0	97	83	119	0	12/31/98	07/28/87		
C-104	SOUND	IS/IP	263	0	0	0.0	0.0	0	0	263	0	02/01/00	07/25/90		
C-105	SOUND	IS/PI	132	0	20	0.0	0.0	20	0	132	0	02/29/00	08/05/94	08/30/95	
C-106	SOUND	/PI	48	42	0	0.0	0.0	42	9	6	0	10/31/99	08/05/94	08/08/94	
C-107	SOUND	IS/IP	257	0	30	0.0	40.8	30	25	257	0	06/30/99	00/00/00		
C-108	SOUND	IS/IP	66	0	4	0.0	0.0	4	0	66	0	02/24/84	12/05/74	11/17/94	
C-109	SOUND	IS/IP	66	4	4	0.0	0.0	8	4	62	0	11/29/83	01/30/76		
C-110	ASMD LKR	IS/IP	178	1	37	0.0	15.5	38	30	177	0	06/14/95	08/12/86	05/23/95	
C-111	ASMD LKR	IS/IP	57	0	4	0.0	0.0	4	0	57	0	04/28/82	02/25/70	02/02/95	
C-112	SOUND	IS/IP	104	0	6	0.0	0.0	6	1	104	0	09/18/90	09/18/90		
C-201	ASMD LKR	IS/IP	2	0	0	0.0	0.0	0	0	2	0	03/31/82	12/02/86		
C-202	ASMD LKR	IS/IP	1	0	0	0.0	0.0	0	0	1	0	01/19/79	12/09/86		
C-203	ASMD LKR	IS/IP	5	0	0	0.0	0.0	0	0	5	0	04/28/82	12/09/86		
C-204	ASMD LKR	IS/IP	3	0	0	0.0	0.0	0	0	3	0	04/28/82	12/09/86		
16 TANKS - TOTALS			1784							1856	0				
S TANK FARM STATUS															
S-101	SOUND	/PI	427	12	83	0.0	0.0	95	80	211	204	12/31/98	03/18/88		
S-102	SOUND	/PI	492	(e)	(e)	0.0	56.8	(e)	(e)	105	387	05/31/00	03/18/88		(e)
S-103	SOUND	IS/PI	237	1	45	0.0	23.9	46	39	9	227	04/30/00	06/01/89	01/28/00	
S-104	ASMD LKR	IS/IP	294	1	34	0.0	0.0	35	31	293	0	12/20/84	12/12/84		
S-105	SOUND	IS/IP	456	0	42	0.0	114.3	42	33	2	454	09/26/88	04/12/89		
S-106	SOUND	IS/PI	455	0	26	0.0	203.6	26	2	0	455	02/28/01	03/17/89	01/28/00	
S-107	SOUND	/PI	376	14	61	0.0	0.0	75	61	293	69	06/30/99	03/12/87		
S-108	SOUND	IS/PI	432	0	0	0.0	199.8	0	0	5	427	10/01/99	03/12/87	12/03/96	
S-109	SOUND	IS/PI	533	0	16	0.0	34.0	16	12	13	520	06/30/01	12/31/98		
S-110	SOUND	IS/PI	390	0	30	0.0	203.1	30	27	131	259	05/14/92	03/12/87	12/11/96	
S-111	SOUND	/PI	501	48	82	0.0	3.3	130	97	116	337	09/30/99	08/10/89		
S-112	SOUND	/PI	523	0	81	0.0	125.1	81	70	6	517	12/31/98	03/24/87		
12 TANKS - TOTALS			5116							1184	3856				

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 2001

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See footnotes for information on tanks in process of Interim Stabilization

				WASTE VOLUMES									PHOTOS/VIDEOS		
TANK NO.	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)	PUMPABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
SX TANK FARM STATUS															
SX-101	SOUND	/PI	426	(f)	(f)	0.0	22.5	(f)	(f)	0	426	09/30/01	03/10/89		(f)
SX-102	SOUND	/PI	514	134	95	0.0	0.0	229	216	0	380	04/30/00	01/07/88		
SX-103	SOUND	/PI	507	(g)	(g)	1.2	127.0	(g)	(g)	109	398	11/30/01	12/17/87		(g)
SX-104	ASMD LKR	IS/PI	446	0	48	0.0	231.3	48	44	136	310	04/30/00	09/08/88	02/04/98	
SX-105	SOUND	/PI	484	(h)	(h)	0.0	152.6	(h)	(h)	65	419	04/30/01	06/15/88		(h)
SX-106	SOUND	IS/PI	397	0	37	0.0	147.5	37	31	0	397	05/31/99	06/01/89		
SX-107	ASMD LKR	IS/IP	102	0	0	0.0	0.0	0	0	85	17	10/31/00	03/06/87		
SX-108	ASMD LKR	IS/IP	87	0	0	0.0	0.0	0	0	87	0	12/31/93	03/06/87		
SX-109	ASMD LKR	IS/IP	249	0	0	0.0	0.0	0	0	60	189	10/31/00	05/21/86		
SX-110	ASMD LKR	IS/IP	62	0	0	0.0	0.0	0	0	62	0	10/06/76	02/20/87		
SX-111	ASMD LKR	IS/IP	122	0	8	0.0	0.0	8	3	122	0	06/30/99	06/09/94		
SX-112	ASMD LKR	IS/IP	108	0	6	0.0	0.0	6	1	108	0	06/30/99	03/10/87		
SX-113	ASMD LKR	IS/IP	31	0	0	0.0	0.0	0	0	31	0	06/30/99	03/18/88		
SX-114	ASMD LKR	IS/IP	165	0	0	0.0	0.0	0	0	44	121	10/31/00	02/26/87		
SX-115	ASMD LKR	IS/IP	12	0	0	0.0	0.0	0	0	12	0	04/28/82	03/31/88		
15 TANKS - TOTALS:			3712							921	2657				
T TANK FARM STATUS															
T-101	ASMD LKR	IS/PI	102	1	20	0.0	25.3	21	16	37	64	06/30/99	04/07/93		
T-102	SOUND	IS/IP	32	13	3	0.0	0.0	16	11	19	0	08/31/84	06/28/89		
T-103	ASMD LKR	IS/IP	27	4	3	0.0	0.0	7	3	23	0	11/29/83	07/03/84		
T-104	SOUND	IS/PI	317	0	31	0.0	149.5	31	27	317	0	12/31/99	06/29/89	10/07/99	
T-105	SOUND	IS/IP	98	0	5	0.0	0.0	5	0	98	0	05/29/87	05/14/87		
T-106	ASMD LKR	IS/IP	21	2	0	0.0	0.0	2	2	19	0	04/28/82	06/29/89		
T-107	ASMD LKR	IS/PI	173	0	34	0.0	11.0	34	20	173	0	05/31/96	07/12/84	05/09/96	
T-108	ASMD LKR	IS/IP	44	0	5	0.0	0.0	5	0	21	23	06/30/99	07/17/84		

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 2001

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TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	WASTE VOLUMES									PHOTOS/VIDES		SEE FOOTNOTES FOR THESE CHANGES
				SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIA LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	PUMPABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	
T-109	ASMD LKR	IS/IP	58	0	10	0.0	0.0	10	3	0	58	06/30/99	02/25/93		
T-110	SOUND	IS/PI	369	1	48	0.0	50.3	48	43	368	0	01/31/00	07/12/84	10/07/99	
T-111	ASMD LKR	IS/PI	446	0	38	0.0	9.6	38	35	446	0	04/18/94	04/13/94	02/13/95	
T-112	SOUND	IS/IP	67	7	4	0.0	0.0	11	7	60	0	04/28/82	08/01/84		
T-201	SOUND	IS/IP	29	1	4	0.0	0.0	5	1	28	0	05/31/78	04/15/86		
T-202	SOUND	IS/IP	21	0	3	0.0	0.0	3	0	21	0	07/12/81	07/06/89		
T-203	SOUND	IS/IP	35	0	5	0.0	0.0	5	0	35	0	01/31/78	08/03/89		
T-204	SOUND	IS/IP	38	0	5	0.0	0.0	5	0	38	0	07/22/81	08/03/89		
16 TANKS - TOTALS			1877							1703	145				
TX TANK FARM STATUS															
TX-101	SOUND	IS/IP/CCS	87	3	8	0.0	0.0	11	7	74	10	06/30/99	10/24/85		
TX-102	SOUND	IS/IP/CCS	217	0	27	0.0	94.4	27	16	0	217	08/31/84	10/31/85		
TX-103	SOUND	IS/IP/CCS	157	0	18	0.0	68.3	18	11	0	157	06/30/99	10/31/85		
TX-104	SOUND	IS/IP/CCS	65	5	9	0.0	3.6	14	9	23	37	06/30/99	10/16/84		
TX-105	ASMD LKR	IS/IP/CCS	609	0	25	0.0	121.5	25	14	0	609	08/22/77	10/24/89		
TX-106	SOUND	IS/IP/CCS	341	0	37	0.0	134.6	37	30	0	341	06/30/99	10/31/85		
TX-107	ASMD LKR	IS/IP/CCS	36	1	6	0.0	0.0	7	1	8	27	06/30/99	10/31/85		
TX-108	SOUND	IS/IP/CCS	134	0	8	0.0	13.7	8	1	6	128	06/30/99	09/12/89		
TX-109	SOUND	IS/IP/CCS	384	0	6	0.0	72.3	6	2	384	0	06/30/99	10/24/89		
TX-110	ASMD LKR	IS/IP/CCS	462	0	14	0.0	115.1	14	10	37	425	06/30/99	10/24/89		
TX-111	SOUND	IS/IP/CCS	370	0	10	0.0	98.4	10	6	43	327	06/30/99	09/12/89		
TX-112	SOUND	IS/IP/CCS	649	0	26	0.0	94.0	26	21	0	649	05/30/83	11/19/87		
TX-113	ASMD LKR	IS/IP/CCS	653	0	30	0.0	19.2	30	0	0	653	10/31/00	04/11/83	09/23/94	
TX-114	ASMD LKR	IS/IP/CCS	535	0	17	0.0	104.3	17	11	4	531	06/30/99	04/11/83	02/17/95	
TX-115	ASMD LKR	IS/IP/CCS	568	0	25	0.0	99.1	25	15	0	568	06/30/99	06/15/88		
TX-116	ASMD LKR	IS/IP/CCS	631	0	21	0.0	23.8	21	17	68	563	06/30/99	10/17/89		
TX-117	ASMD LKR	IS/IP/CCS	626	0	10	0.0	54.3	10	5	29	597	06/30/99	04/11/83		
TX-118	SOUND	IS/IP/CCS	286	0	0	0.0	89.1	0	0	21	265	02/01/00	12/19/79		
18 TANKS - TOTALS			6810							697	6104				

TABLE B-1. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

November 30, 2001

These volumes are the result of engineering calculations and may not agree with surface level measurements

See footnotes for information on tanks in process of Inerim Stabilization

TANK NO.	TANK INTEGRITY	TANK STATUS	TOTAL WASTE (Kgal)	WASTE VOLUMES: SUPER-NATANT LIQUID (Kgal)	DRAINABLE INTERSTITIAL LIQUID (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAINING (Kgal)	PUMPABLE LIQUID REMAINING (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	PHOTOS/VIDEOS: LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
TY TANK FARM STATUS															
TY-101	ASMD LKR	IS/IP/CCS	118	0	2	0.0	8.2	2	0	72	46	06/30/99	08/22/89		
TY-102	SOUND	IS/IP/CCS	64	0	12	0.0	6.6	12	5	0	64	06/28/82	07/07/87		
TY-103	ASMD LKR	IS/IP/CCS	162	0	20	0.0	11.5	20	16	162	0	07/09/82	08/22/89		
TY-104	ASMD LKR	IS/IP/CCS	43	0	4	0.0	0.0	4	0	43	0	06/27/90	11/03/87		
TY-105	ASMD LKR	IS/IP/CCS	231	0	12	0.0	3.6	12	10	231	0	04/28/82	09/07/89		
TY-106	ASMD LKR	IS/IP/CCS	21	0	3	0.0	0.0	3	0	21	0	06/30/99	08/22/89		
6 TANKS - TOTALS			639							529	110				
U TANK FARM STATUS															
U-101	ASMD LKR	IS/IP	25	3	3	0.0	0.0	6	2	22	0	04/28/82	06/19/79		
U-102	SOUND	/PI	289	(l)	(l)	0.0	86.3	(l)	(l)	43	246	08/31/01	06/08/89		(i)
U-103	SOUND	IS/PI	418	1	33	0.0	98.9	34	28	13	404	05/31/00	09/13/88		
U-104	ASMD LKR	IS/IP	122	0	0	0.0	0.0	0	0	79	43	06/30/99	08/10/89		
U-105	SOUND	IS/PI	353	0	44	0.0	87.5	44	32	32	321	03/31/01	07/07/88		
U-106	SOUND	IS/PI	172	2	36	0.0	39.1	38	30	0	170	03/31/01	07/07/88		
U-107	SOUND	/PI	397	(j)	(j)	0.0	11.7	(j)	(j)	15	349	10/31/01	10/27/88		(j)
U-108	SOUND	/PI	468	24	108	0.0	0.0	132	124	29	415	12/31/98	09/12/84		
U-109	SOUND	/PI	387	(k)	(k)	0.0	78.4	(k)	(k)	35	352	08/31/01	07/07/88		(k)
U-110	ASMD LKR	IS/PI	186	0	18	0.0	0.0	18	14	186	0	12/30/84	12/11/84		
U-111	SOUND	/PI	329	0	80	0.0	0.0	80	71	26	303	12/31/98	06/23/88		
U-112	ASMD LKR	IS/IP	49	4	4	0.0	0.0	8	4	45	0	02/10/84	08/03/89		
U-201	SOUND	IS/IP	5	1	1	0.0	0.0	2	1	4	0	08/15/79	08/08/89		
U-202	SOUND	IS/IP	5	1	1	0.0	0.0	2	1	4	0	08/15/79	08/08/89		
U-203	SOUND	IS/IP	3	1	0	0.0	0.0	1	1	2	0	08/15/79	06/13/89		
U-204	SOUND	IS/IP	3	1	0	0.0	0.0	1	1	2	0	08/15/79	06/13/89		
16 TANKS - TOTALS			3211							537	2603				
GRAND TOTAL			33196							11053	20792				

TABLE B-1 INVENTORY AND STATUS BY TANK – SINGLE SHELL TANKS

November 30 2001

Footnotes

Total waste is calculated as the sum of Sludge and Saltcake plus Supernatant. The category Interim Isolated (II)" was changed to Intrusion Prevention (IP) in June 1993

Stabilization information is from WHC SD RE TI 178 "SST Stabilization Record," latest revision, or from the SST Stabilization Project or the System Engineer

All estimated initial volumes are per HNF 2978 Rev 2 Updated Pumpable Liquid Volume Estimates and Jet Pump Operations for Interim Stabilization of Remaining Single Shell Tanks " August 2000

(a) A 101 Initial estimated Pumpable Liquid volume 588 5 Kgal

Pumping began on May 6 2000 No pumping since August 2000 **It is expected pumping will resume in December 2001**

Final volumes will be determined at completion of Interim Stabilization.

(b) AX 101 Initial estimated Pumpable Liquid volume 444 0 Kgal

Pumping began July 29 2000 shut down in August 2000 and resumed March 22 2001 Pumping shut down April 3 2001 due to failure of the transfer line No pumping since April 2001 **It is expected pumping will resume in December 2001**

Final volumes will be determined at completion of Interim Stabilization

(c) BY 105 Initial estimated Pumpable Liquid volume 109 9 Kgal

Pumping began July 11 2001 Remaining volumes are based on HNF 2978 Rev 2 Saltcake volume adjusted to correspond to current waste removal

Pumping was shut down in August 2001 due to transfer line leak detectors not meeting all operability requirements of the TSR. Compensatory actions were established to allow resumption of pumping Additionally field work for Project W 314 "Tank Farm Upgrades," took the primary transfer route out of service **No pumping from August to November 2001 when pumping resumed.**

Final volumes will be determined at completion of Interim Stabilization

(d) BY 106 Initial estimated Pumpable Liquid volume 182 7 Kgal

Pumping was originally started August 10 1995 and shut down October 17 1995 due to an Unreviewed Safety Question (USQ) for flammable gas concerns Total pumped by October 1995 was 63 7 Kgal

Pumping was restarted July 11 2001 Pumping was shut down in August 2001 due to transfer line leak detectors not meeting all operability requirements of the TSR. Compensatory actions were established to allow resumption of pumping Additionally field work for Project W 314 'Tank Farm Upgrades " has taken the primary transfer route out of service **No pumping from July to November 2001 when pumping resumed**

Final volumes will be determined at completion of Interim Stabilization

(e) S 102 Initial estimated Pumpable Liquid volume 145 8 Kgal

Pumping commenced March 18 1999 Many pumping problems occurred over the following months, and the pump was replaced several times Pumping was interrupted again in June 2000 No pumping since June 2000

Final volumes will be determined at completion of Interim Stabilization

(f) SX 101 Initial estimated Pumpable Liquid volume 99 0 Kgal

Pumping began November 22 2000 No pumping since December 2000 due to pump failure Pumping resumed in September 2001 following replacement of the saltwell pump and lower piping. No pumping in October or November 2001

Final volumes will be determined at completion of Interim Stabilization

(g) SX 103 Initial estimated Pumpable Liquid volume 132 0 Kgal

Pumping began October 26 2000 Pumping was shut down April 22 2001 due to leak detector and subsequent shielding problems in the pump pit Pumping resumed September 14 2001

Final volumes will be determined at completion of Interim Stabilization

(h) SX 105 Initial estimated Pumpable Liquid volume 141 0 Kgal

Saltwell pumping began August 8 2000 Pumping was shut down in late April 2001 when the saltwell screen in flow rate was measured at about 0 02 gpm. Interstitial fluid level is now being allowed to stabilize to determine if the tank can be declared interim stabilized An in tank video will be taken.

Final volumes will be determined at completion of Interim Stabilization

(i) U 102 Initial estimated Pumpable Liquid volume 93 0 Kgal

Pumping began in this tank on January 20 2000

This tank was placed in observation mode in September 2001 for evaluation to determine if it meets the interim stabilization criteria.

Final volumes will be determined at completion of Interim Stabilization

(j) U 107 Initial estimated Pumpable Liquid volume 115 0 Kgal

Pumping began September 29 2001

Final volumes will be determined at completion of Interim Stabilization

(k) U 109 Initial estimated Pumpable Liquid volume 119 4 Kgal

Pumping began March 11 2000 Pumping was shut down on December 3 2000 due to jet pump failure Attempts to restart the pump were unsuccessful the pump was replaced and restarted March 30 2001

This tank has been placed in observation mode for evaluation to determine if it meets the interim stabilization criteria.

Final volumes will be determined at completion of Interim Stabilization

TABLE B-2. SINGLE-SHELL TANKS STABILIZATION STATUS SUMMARY

November 30, 2001

Partial Interim Isolated (PI)

EAST AREA
A-101
A-102
AX-101
BY-102
BY-103
BY-105
BY-106
BY-109
C-103
C-105
C-106
East Area 11

WEST AREA
S-101
S-102
S-103
S-106
S-107
S-108
S-109
S-110
S-111
S-112
SX-101
SX-102
SX-103
SX-104
SX-105
SX-106
T-101
T-104
T-107
T-110
T-111
U-102
U-103
U-105
U-106
U-107
U-108
U-109
U-110
U-111
West Area 29
Total 40

Intrusion Prevention Completed (IP)

EAST AREA
A-103
A-104
A-105
A-106
AX-102
AX-103
AX-104
B-FARM - 16 tanks
BX-FARM - 12 tanks
BY-101
BY-104
BY-107
BY-108
BY-110
BY-111
BY-112
C-101
C-102
C-104
C-107
C-108
C-109
C-110
C-111
C-112
C-201
C-202
C-203
C-204
East Area 55

WEST AREA
S-104
S-105
SX-107
SX-108
SX-109
SX-110
SX-111
SX-112
SX-113
SX-114
SX-115
T-102
T-103
T-105
T-106
T-108
T-109
T-112
T-201
T-202
T-203
T-204
TX-FARM - 18 tanks
TY-FARM - 6 tanks
U-101
U-104
U-112
U-201
U-202
U-203
U-204
West Area 53
Total 108

Interim Stabilized (IS)

EAST AREA
A-102
A-103
A-104
A-105
A-106
AX-102
AX-103
AX-104
B-FARM - 16 tanks
BX-FARM - 12 tanks
BY-101
BY-102
BY-103
BY-104
BY-107
BY-108
BY-109
BY-110
BY-111
BY-112
C-101
C-102
C-104
C-105
C-107
C-108
C-109
C-110
C-111
C-112
C-201
C-202
C-203
C-204
East Area 60

WEST AREA
S-103
S-104
S-105
S-106
S-108
S-109
S-110
SX-104
SX-106
SX-107
SX-108
SX-109
SX-110
SX-111
SX-112
SX-113
SX-114
SX-115
T-Farm - 16 tanks
TX-Farm - 18 tanks
TY-Farm - 6 tanks
U-101
U-103
U-104
U-105
U-106
U-110
U-112
U-201
U-202
U-203
U-204
West Area 69
Total 129

Controlled, Clean, and Stable (CCS)

EAST AREA		WEST AREA	
BX-FARM - 12 Tanks		TX-FARM - 18 tanks TY FARM - 6 tanks	
East Area	12	West Area	24
		Total	36

Note: CCS activities have been deferred until funding is available for this work.

TABLE B-3. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS

November 30, 2001

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method	Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
A-101	SOUND	N/A		C-101	ASMD LKR	11/83	AR	T-108	ASMD LKR	11/78	AR
A-102	SOUND	08/89	SN	C-102	SOUND	09/95	JET(2)	T-109	ASMD LKR	12/84	AR
A-103	ASMD LKR	06/88	AR	C-103	SOUND	N/A		T-110	SOUND	01/00 (5)	JET
A-104	ASMD LKR	09/78	AR(2)	C-104	SOUND	09/89	SN	T-111	ASMD LKR	02/95	JET
A-105	ASMD LKR	07/79	AR	C-105	SOUND	10/95	AR	T-112	SOUND	03/81	AR(2)(3)
A-106	SOUND	08/82	AR	C-106	SOUND	N/A		T-201	SOUND	04/81	AR (3)
AX-101	SOUND	N/A		C-107	SOUND	09/95	JET	T-202	SOUND	08/81	AR
AX-102	ASMD LKR	09/88	SN	C-108	SOUND	03/84	AR	T-203	SOUND	04/81	AR
AX-103	SOUND	08/87	AR	C-109	SOUND	11/83	AR	T-204	SOUND	08/81	AR
AX-104	ASMD LKR	08/81	AR	C-110	ASMD LKR	05/95	JET	TX-101	SOUND	02/84	AR
B-101	ASMD IKR	03/81	SN	C-111	ASMD LKR	03/84	SN	TX-102	SOUND	04/83	JET
B-102	SOUND	08/85	SN	C-112	SOUND	09/90	AR	TX-103	SOUND	08/83	JET
B-103	ASMD IKR	02/85	SN	C-201	ASMD LKR	03/82	AR	TX-104	SOUND	09/79	SN
B-104	SOUND	06/85	SN	C-202	ASMD LKR	08/81	AR	TX-105	ASMD LKR	04/83	JET
B-105	ASMD IKR	12/84	AR	C-203	ASMD LKR	03/82	AR	TX-106	SOUND	06/83	JET
B-106	SOUND	03/85	SN	C-204	ASMD LKR	09/82	AR	TX-107	ASMD LKR	10/79	AR
B-107	ASMD LKR	03/85	SN	S-101	SOUND	N/A		TX-108	SOUND	03/83	JET
B-108	SOUND	05/85	SN	S-102	SOUND	N/A		TX-109	SOUND	04/83	JET
B-109	SOUND	04/85	SN	S-103	SOUND	04/00	JET (6)	TX-110	ASMD LKR	04/83	JET
B-110	ASMD LKR	12/84	AR	S-104	ASMD LKR	12/84	AR	TX-111	SOUND	04/83	JET
B-111	ASMD LKR	06/85	SN	S-105	SOUND	09/88	JET	TX-112	SOUND	04/83	JET
B-112	ASMD LKR	05/85	SN	S-106	SOUND	02/01	JET (10)	TX-113	ASMD LKR	04/83	JET
B-201	ASMD LKR	08/81	AR (3)	S-107	SOUND	N/A		TX-114	ASMD LKR	04/83	JET
B-202	SOUND	05/85	AR(2)	S-108	SOUND	12/96	JET	TX-115	ASMD LKR	09/83	JET
B-203	ASMD LKR	06/84	AR	S-109	SOUND	06/01	JET (13)	TX-116	ASMD LKR	04/83	JET
B-204	ASMD LKR	06/84	AR	S-110	SOUND	01/97	JET	TX-117	ASMD LKR	03/83	JET
BX-101	ASMD LKR	09/78	AR	S-111	SOUND	N/A		TX-118	SOUND	04/83	JET
BX-102	ASMD LKR	11/78	AR	S-112	SOUND	N/A		TY-101	ASMD LKR	04/83	JET
BX-103	SOUND	11/83	AR(2)(3)	SX-101	SOUND	N/A		TY-102	SOUND	09/79	AR
BX-104	SOUND	09/89	SN	SX-102	SOUND	N/A		TY-103	ASMD LKR	02/83	JET
BX-105	SOUND	03/81	SN	SX-103	SOUND	N/A		TY-104	ASMD LKR	11/83	AR
BX-106	SOUND	07/95	SN	SX-104	ASMD LKR	04/00	JET (7)	TY-105	ASMD LKR	02/83	JET
BX-107	SOUND	09/90	JET	SX-105	SOUND	N/A		TY-106	ASMD LKR	11/78	AR
BX-108	ASMD LKR	07/79	SN	SX-106	SOUND	05/00	JET (8)	U-101	ASMD LKR	09/79	AR
BX-109	SOUND	33117	JET	SX-107	ASMD LKR	10/79	AR	U-102	SOUND	N/A	
BX-110	ASMD LKR	08/85	SN	SX-108	ASMD LKR	08/79	AR	U-103	SOUND	09/00	JET (9)
BX-111	ASMD LKR	03/95	JET	SX-109	ASMD LKR	05/81	AR	U-104	ASMD LKR	10/78	AR
BX-112	SOUND	09/90	JET	SX-110	ASMD LKR	08/79	AR	U-105	SOUND	03/01	JET (11)
BY-101	SOUND	05/84	JET	SX-111	ASMD LKR	07/79	SN	U-106	SOUND	03/01	JET (12)
BY-102	SOUND	04/95	JET	SX-112	ASMD LKR	07/79	AR	U-107	SOUND	N/A	
BY-103	ASMD LKR	11/97	JET	SX-113	ASMD LKR	11/78	AR	U-108	SOUND	N/A	
BY-104	SOUND	01/85	JET	SX-114	ASMD LKR	07/79	AR	U-109	SOUND	N/A	
BY-105	ASMD LKR	N/A		SX-115	ASMD LKR	09/78	AR(3)	U-110	ASMD LKR	12/84	AR
BY-106	ASMD LKR	N/A		T-101	ASMD LKR	04/93	SN	U-111	SOUND	N/A	
BY-107	ASMD LKR	07/79	JET	T-102	SOUND	03/81	AR(2)(3)	U-112	ASMD LKR	09/79	AR
BY-108	ASMD LKR	02/85	JET	T-103	ASMD LKR	11/83	AR	U-201	SOUND	08/79	AR
BY-109	SOUND	07/97	JET	T-104	SOUND	11/99 (4)	JET	U-202	SOUND	08/79	SN
BY-110	SOUND	01/85	JET	T-105	SOUND	06/87	AR	U-203	SOUND	08/79	AR
BY-111	SOUND	01/85	JET	T-106	ASMD LKR	08/81	AR	U-204	SOUND	08/79	SN
BY-112	SOUND	06/84	JET	T-107	ASMD LKR	05/96	JET				

LEGEND:

AR = Administratively interim stabilized
JET = Saltwell jet pumped to remove drainable interstitial liquid
SN = Supernatant pumped (Non-Jet pumped)
N/A = Not yet interim stabilized
ASMD LKR = Assumed Leaker

Interim Stabilized Tanks	129
Not Yet Interim Stabilized	20
Total Single-Shell Tanks	149

TABLE B 3 SINGLE SHELL TANKS INTERIM STABILIZATION STATUS

Footnotes (in chronological order)

(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

(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 recently updated administrative procedure The tanks were re-evaluated in 1996 and letter 9654456 J H Wicks to J K McClusky DOE RL dated September 1996 was issued which recommended that no further pumping be performed on these tanks, based on an economic evaluation

Document RPP 5556 Rev 0 "Updated Drainable Interstitial Liquid Volume Estimates for 119 Single Shell Tanks Declared Stabilized, J G Field, February 7 2000 states that five tanks no longer meet 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 because of a detected increase in surface level As a result of this investigation, it was determined that this tank no longer meets the recently updated administrative procedure for 200 series tanks

(3) Earlier versions of HNF SD RE TI 178 "SST Stabilization Record, indicated that original Interim Stabilization data are missing on four tanks 241 B 201 T 102 T 112 and T 201 HNF SD RE TI 178 Rev 7 dated February 9 2001 added three additional tanks to those missing stabilization data 241 A 104 BX 101 and SX 115

(4) Tank 241 T 104 was Interim Stabilized on November 19 1999 In-tank video taken October 7 1999 shows the surface is clearly sludge-type waste with no saltcake present. No visible supernatant on the surface Waste surface appears level across tank with numerous cracks There is a minimal collapsed area around the saltwell screen, with no visible bottom

(5) Tank 241 T 110 was Interim Stabilized on January 5 2000 after a major equipment failure An in tank video taken October 7 1999 (pumping was discontinued on August 12 1999) showed the surface of this tank as smooth, brown tinted sludge with visible cracks.

(6) Tank 241 S 103 was declared Interim Stabilized April 18 2000 The surface is a rough, black and brown colored waste with yellow patches of saltcake visible throughout. The surface appears to be damp but not saturated, and shows irregular cracking typically seen with surfaces beginning to dry out A pool of supernatant liquid (10 feet in diameter 5 feet deep 1 0 Kgallons) is visible from video observations

(7) Tank 241 SX 104 was declared Interim Stabilized April 26 2000 after a major equipment failure The surface is a rough, yellowish gray saltcake waste with an irregular surface of visible cracks and shelves that were created as the surface dried out The waste surface appears to be dry and shows no standing liquid within the tank.

(8) Tank 241 SX 106 was declared Interim Stabilized May 5 2000 The surface is a smooth, white-colored saltcake waste The surface level slopes slightly from the tank sidewall down to a large depression in the center of the tank A second depression surrounds both saltwell screens and an abandoned Liquid Observation Well (LOW) The waste surfaces appear dry and show no standing liquid within the tank.

(9) Tank 241 U 103 was declared Interim Stabilized September 11 2000 The surface is a brown colored waste with irregular patches of white salt crystal Approximately 30% of the waste surface is covered by the salt formations The surface level slopes slightly from the tank sidewall down to the first of two depressions in the center of the tank The waste surface appears dry and shows signs of drying and cracking due to saltwell pumping LOW readings indicate an average adjusted ILL of 60 2 inches There is a small pool of supernatant estimated to be 500 gallons

(10) Tank 241 S 106 was declared Interim Stabilized on February 1 2001 The surface is a rough, brown and yellow-colored saltcake waste with an irregular surface of mounds and saltcake crystals that were created as the surface was dried out The waste surface appears to be dry and shows no standing liquid within the tank. There is no evidence of supernatant from video observations The waste surface slopes gradually from the tank sidewall to the depression in the center of the tank The depression surrounds both of the saltwell screens, but does not extend around the temperature probe and ENRAF devices

(11) Tank 241 U 105 was declared Interim Stabilized on March 29 2001 after a major equipment failure The surface is a brown colored waste with irregular patches of white salt crystal Approximately 15% of the surface is covered by the salt formations The surface level slopes to the first of two depressions in the center of the tank the first depression is cone shaped and estimated to be 22 feet in diameter The second depression, inside the first, is cylindrically shaped and has a diameter of approximately 10 feet Both depressions are centered on the saltwell screen The waste surface appears dry and shows signs of cracking due to saltwell pumping. There is no visible liquid in the tank

(12) Tank 241 U 106 was declared Interim Stabilized on March 9 2001 The surface is a dark brown/yellow colored waste that is covered with many stalagmite type crystals growing on the surface The crystals cover approximately 75% of the waste surface The waste surface is irregular appears dry and shows only minimal signs of cracking due to saltwell pumping The supernatant pool is estimated to be 13 3 feet in diameter based on the visible portion of the saltwell screen. The pool is centered on the saltwell screen

(13) Tank 241 S 109 was declared Interim Stabilized on June 11 2001 The surface is primarily a white colored salt crystal with small patches of dark salt visible due to saltwell/sampling activities Approximately 95% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to a depression in the center of the tank. The waste surface appears rough and dry and shows signs of cracking and slumping due to saltwell pumping

TABLE B-4 SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES

November 30 2001

New single-shell tank interim stabilization milestones were negotiated in 1999 and are identified in the "Consent Decree The Consent Decree was approved on August 16 1999

CONSENT DECREE
Attachments A 1 and A 2

The following table is the schedule for pumping liquid waste from the remaining twenty nine (29) single shell tanks. This schedule is enforceable pursuant to the terms of the Decree except for the Projected Pumping Completion Dates which are estimates only and not enforceable Also this schedule does not include tank C 106

Tank Designation	Project Pumping Start Date	Actual Pumping Start Date	Projected Pumping Completion Date	Interim Stabilization Date
1 T 104	Already initiated	March 24 1996	May 30 1999	November 19 1999
2 T 110	Already initiated	May 12 1997	May 30 1999	January 5 2000
3 SX 104	Already initiated	September 26 1997	December 30 2000	April 26 2000
4 SX 106	Already initiated	October 6 1998	December 30 2000	May 5 2000
5 S 102	Already initiated	March 18 1999	March 30 2001	
6 S 106	Already initiated	April 16 1999	March 30 2001	February 1 2001
7 S 103	Already initiated	June 4 1999	March 30 2001	April 18 2000
8 U 103 *	June 15 2000	September 26 1999	April 15 2002	September 11 2000
9 U 105 *	June 15 2000	December 10 1999	April 15 2002	March 29 2001
10 U 102 *	June 15 2000	January 20 2000	April 15 2002	
11 U 109 *	June 15 2000	March 11 1000	April 15 2002	
12 A 101	October 30 2000	May 6 2000	September 30 2003	
13 AX 101	October 30 2000	July 29 2000	September 30 2003	
14 SX 105	March 15 2001	August 8 2000	February 28 2003	
15 SX 103	March 15 2001	October 26 2000	February 28 2003	
16 SX 101	March 15 2001	November 22 2000	February 28 2003	
17 U 106 *	March 15 2001	August 24 2000	February 28 2003	March 9 2001
18 BY 106	July 15 2001	July 11 2001	June 30 2003	
19 BY 105	July 15 2001	July 11 2001	June 30 2003	
20 U 108	December 30 2001		August 30 2003	
21 U 107	December 30, 2001	September 29 2001	August 30 2003	
22 S 111	December 30 2001		August 30 2003	
23 SX 102	December 30 2001		August 30 2003	
24 U 111	November 30 2001		September 30 2003	
25 S 109	November 30 2002	September 23 2000	September 30 2003	June 11 2001
26 S 112	November 30 2002		September 30 2003	
27 S 101	November 30 2002		September 30 2003	
28 S 107	November 30 2002		September 30 2003	
29 C 103	The Decree states that no later than December 30 2000 DOE will determine whether the organic layer and pumpable liquids will be pumped from this tank together or separately and will establish a deadline for initiating pumping of this tank, the parties will incorporate the initiation deadline into this schedule as provided in Section VI of the Decree This action is complete ORP issued a letter to WDOE on December 22 2000 meeting the requirements of this milestone			

* Tanks containing organic complexants

Completion of Interim Stabilization. DOE will complete interim stabilization of all 29 single-shell tanks listed above by September 30 2004

Percentage of Pumpable Liquid Remaining to be Removed

93% of Total Liquid	9/30/1999 (1)
38% of Organic Complexed Pumpable Liquids	9/30/2000 (2)
5% of Organic Complexed Pumpable Liquids	9/30/2001 (3)
18% of Total Liquid	9/30/2002
2% of Total Liquid	9/30/2003

The "percentage of pumpable liquid remaining to be removed" is calculated by dividing the volume of pumpable liquid remaining to be removed from tanks not yet interim stabilized by the sum of the total amount of liquid that has been pumped and the pumpable liquid that remains to be pumped from all tanks

(1) The Pumpable Liquid Remaining was reduced to 88% by September 30 1999 Reference LMHC 9957926 R1 D I Allen, LHMC to D C Bryson, DOE-ORP dated October 26 1999

(2) The Complexed Pumpable Liquid Remaining was reduced to 38% by September 15 2000 Reference CHG-0004752 R. F Wood, CHG to J J Short, DOE-ORP dated September 13 2000

(3) Reference CHG-0104859 R. F Wood, CHG to J S O Connor DOE-ORP dated September 20 2001 this reference states that tanks U 102 and U 109 appear to have met the interim stabilization criteria, thereby reducing the Complexed Pumpable Liquid Remaining to zero however it may take three or more months before the settling waste levels approach equilibrium so that the final liquid levels and volumes can be calculated

TABLE B-5. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (Sheet 1 of 6)

November 30, 2001

Tank Number	Date Declared Confirmed or Assumed Leaker (3)	Volume Gallons (2)	Associated KiloCuries 137 Cs (9)	Interim Stabilized Date (11)	Leak Estimate Updated	Leak Estimate Reference
241-A-103	1987	5500 (8)		06/88	1987	(j)
241-A-104	1975	500 to 2500	0.8 to 1.8 (q)	09/78	1983	(a)(q)
241-A-105 (1)	1963	10000 to 277000	85 to 760 (b)	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	50 (l)	11/78	1986	(d)
241-BX-108	1974	2500	0.5 (l)	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)		N/A	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	1980	20000 (8)(10)		11/83	1986	(d)
241-C-110	1984	2000		05/95	1989	(g)
241-C-111	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	17 to 140 (m)(q)(t)	08/79	1991	(m)(q)(t)
241-SX-109 (5)(14)	1965	<10000	<40 (n)(t)	05/81	1992	(n)(t)
241-SX-110	1976	5500 (8)		08/79	1989	(g)
241-SX-111 (14)	1974	500 to 2000	0.6 to 2.4 (l)(q)(t)	07/79	1986	(d)(q)(t)
241-SX-112 (14)	1969	30000	40 (l)(t)	07/79	1986	(d)(t)
241-SX-113	1962	15000	8 (l)	11/78	1986	(d)
241-SX-114	1972	-- (6)		07/79	1989	(g)
241-SX-115	1965	50000	21 (o)	09/78	1992	(o)
241-T-101	1992	7500 (8)		04/93	1992	(p)
241-T-103	1974	<1000 (8)		11/83	1989	(g)
241-T-106	1973	115000 (8)	40 (l)	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)
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	0.7 (l)	02/83	1986	(d)
241-TY-104	1981	1400 (8)		11/83	1986	(d)
241-TY-105	1960	35000	4 (l)	02/83	1986	(d)
241-TY-106	1959	20000	2 (l)	11/78	1986	(d)
241-U-101	1959	30000	20 (l)	09/79	1986	(d)
241-U-104	1961	55000	0.09 (l)	10/78	1986	(d)
241-U-110	1975	5000 to 8100 (8)	0.05 (q)	12/84	1986	(d)(q)
241-U-112	1980	8500 (8)		09/79	1986	(d)
67 Tanks		<750,000 - 1,050,000 (7)				

N/A = not applicable (not yet interim stabilized)

TABLE B 5 SINGLE SHELL TANKS LEAK VOLUME ESTIMATES

Footnotes

(1) Current estimates [see Reference (b)] are that 610 Kgallons of cooling water was added to tank 241 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)

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

2 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

3 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

4 Reference (c) contains an estimate the 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

(2) These leak volume estimates 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 241-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 241-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 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. It is highly likely that there have been undetected leaks from single-shell tanks because of the nature of their design and instrumentation

(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 (Repeat spectral drywell scans are not part of the current Tank Farm leak detection program but can be run on request a special needs arise A select subset of drywells is routinely monitored by the Vadose Zone Characterization Project to assess movement of gamma-emitting radionuclides in the subsurface 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 241-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 (q) and (r) refer to Reference (s) 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 241 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 241 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 241 SX 108 SX 109 SX 111 and SX 112 have been re-evaluated using a Historical Leak Model [see Reference (t)] 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)

(15) In July 1998 the Washington State Department of Ecology (Ecology) directed the U S Department of Energy (DOE) to develop corrective action plans for eight single shell tank farms (B/BX/BY/S/SX/T/TX/TY) where groundwater contamination likely originated from tank farm operations. A Tri Party Agreement milestone (M-45 series) was developed that established a formalized approach for evaluating impacts on groundwater quality of loss of tank wastes to the vadose zone underlying these tank farms. Planning documents have been completed for the S SX, B BX, and BY tank farms and will be completed shortly for the T TX and TY farms The phase 1 field investigation is near completion in the

S and SX tank farms and has begun in the B BX and BY farms Field work is anticipated in FY-02 for the T TX, and TY tank farms The remaining four single shell tank farms are expected to be included in corrective action plans in the near future

All of the information included in this appendix is currently under review and significant revisions are anticipated Recently major tank farm vadose zone investigative efforts (such as the baseline spectral gamma ray logging of all drywells in all single shell tank farms as well as drilling and sampling in the SX tank farm) were completed This appendix will be revised as a better understanding of past tank leak events is developed

SST Vadose Zone Project drilling and testing activities near tank 241 BX 102 were completed in March 2001 A borehole (299 E33-45) was drilled through the postulated uranium plume resulting from the 1951 tank 241 BX 102 overfill event to confirm the presence of uranium, define its present depth, and survey other contaminants of interest such as Tc 99 Thirty five split-spoon samples were collected for laboratory analyses This borehole was decommissioned after collection and analysis of groundwater samples.

Borehole W33-46 adjacent to tank 241 B 110 was drilled to a depth of approximately 190 feet in July 2001 Soil samples were collected for analysis as part of the tank farm vadose zone characterization activities During decommissioning, this borehole was completed as a vadose zone monitoring structure Work was accomplished in cooperation with scientists from Idaho National Engineering and Environmental Laboratory and Pacific Northwest National Laboratory This borehole is now the first fully instrumented vadose zone hydrographic monitoring structure to be completed in a Hanford site tank farm.

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 Westinghouse Hanford Company 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* Hanford Engineering Development Laboratory Richland Washington.

(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* Westinghouse Hanford Company 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) ERDA 1975 *Final Environmental Statement Waste Management Operations Hanford Reservation Richland Washington* ERDA 1538 2 vols U S Energy Research and Development Administration, Washington, D C

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

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

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

(p) 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.

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

(r) WHC 1993a, *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

(s) 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

(t) 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

TABLE B-6 SINGLE SHELL TANKS MONITORING COMPLIANCE STATUS

149 Tanks
November 30 2001

All Single Shell Tanks were in compliance for this month

Legend	
O/C	Noncompliance with applicable documentation
N/A	Not Applicable (not monitored, or no monitoring schedule)
None	Applicable equipment not installed
LOW	LOW reading taken by Neutron Probe (Exception Tank AX 101 taken by gamma sensors)
POP	Plant Operating Procedure TO-040-650
MT/FIC/ENRAF	Surface level measurement devices
OSD	Operating Specification Document OSD T 151-00013 -00030 and -00031
FSAR/TSR	Final Safety Analysis Report/Technical Safety Requirements

Notes

All Dome Elevation Survey monitoring is in compliance
Drywell monitoring is no longer required
Psychrometrics monitoring is on an as needed basis
In tank photos/videos are taken on an as needed basis

TABLE B 7 TEMPERATURE MONITORING
November 30 2001

SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>26,000 Btu/hr)

Twelve single-shell tanks have been identified as having high heat loads, of which nine tanks have other characteristics that require temperature surveillance (HNF SD WM TSR-006 *Tank Farm Technical Safety Requirements*). In an analysis WHC SD WM SARR-010 Rev 1 *Heat Removal Characteristics of Waste Storage Tanks* Kummerer 1995 it was estimated that these nine tanks have heat sources >26 000 Btu/hr which is the criterion for determining high heat load tanks

Temperatures in these tanks did not exceed the Technical Safety Requirements (TSR) for this month. The tanks are monitored by TMACS

	Tank No	
C 106 (1)	SX 108	SX 111
SX 103	SX 109	SX 112
SX 107	SX 110	SX 114

(1) The final thermal analysis report for tank C 106 was issued August 9 2000 (RPP-6463 Rev 0) and concluded that the best estimate for C 106 was between 7 000 and 11 000 Btu/hr therefore this tank no longer meets the criterion for a high heat load tank An AB Amendment is required to revise the temperature control limits and monitoring frequency for C 106 **It is expected this AB Amendment will be approved by ORP in December 2001**

Active ventilation
There are 13 SX tanks on active ventilation (SX 101 through SX 114 with the exception of SX 113) Eight of these SX tanks are on the high heat load tank list – see above

SINGLE SHELL TANKS WITH LOW HEAT LOADS (<26,000Btu/hr)

There are 137 low heat load tanks Temperatures in tanks connected to TMACS are monitored by TMACS temperatures in those tanks not yet connected to TMACS are manually taken semiannually in January and July These temperatures have been within historical ranges for the applicable tank

No temperatures have been obtained for several years in the 14 tanks listed below Most of these tanks have no thermocouple trees

		Tank No		
BX 104	C 104	T 102	TX 110	TX 117
BY 102	C 204	T 105	TX 114	U 104
BY 109	SX 115	TX 101	TX 116	

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APPENDIX C

MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

TABLE C 1 EAST AND WEST AREA MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

ACTIVE still running transfers through the associated diversion boxes or pipeline encasements

November 30 2001

FACILITY	LOCATION	PURPOSE (receives waste from.)	WASTE (Gallons)	MONITORED BY	REMARKS
EAST AREA					
241 A 302 A	A Farm	A 151 DB	668	SACS/ENRAF/Manually	Pumped to AW 105 7/00
241 ER 311	B Plant	ER 151 ER 152 DB	2152	SACS/ENRAF/Manually	
241 AZ 151	AZ Farm	AZ 702 condensate	2340	SACS/ENRAF/TMACS	Volume changes daily pumped to AZ 101 or AZ 102 as needed
241 AZ 154	AZ Farm		25	SACS/MT	
244-BX TK/SMP	BX Complex	DCRT Receives from several farms	24086	SACS/MT	Using Manual Tape for tank/sump Pumped several times 7/01 to 11/01 Sump O/S 2/5/01
244-A TK/SMP	A Complex	DCRT Receives from several farms	7569	MCS/SACS/WTF	WTF pumped 3/99 to AP 108
A 350	A Farm	Collects drainage	257	MCS/SACS/WTF	WTF (uncorrected) pumped as needed
AR 204	AY Farm	Tanker trucks from various facilities	360	DIP TUBE	Alarms on SACS-pumped to AP 108 7/00
A 417	A Farm		13814	SACS/WTF	Pumped 4/98 WTF O/S 6/01 readings taken with zip cord
CR-003 TK/SUMP	C Farm	DCRT	2984	MT/ZIP CORD	Zip cord in sump O/S 3/96 water intrusion 1/98
WEST AREA					
241 TX 302 C	TX Farm	TX 154 DB	165	SACS/ENRAF/Manually	
241 U 301 B	U Farm	U 151 U 152 U 153 U 252 DB	8024	SACS/ENRAF/Manually	Returned to service 12/30/93
241 UX 302 A	U Plant	UX 154 DB	3488	SACS/ENRAF/Manually	
241 S 304	S Farm	S 151 DB	130	SACS/ENRAF/Manually	Replaced S 302 A 10/91 ENRAF installed 7/98 Sump not alarming
244-S TK/SMP	S Farm	From original tanks to SY 102	27340	SACS/Manually	WTF (uncorrected) transferred from S 219 6/01
244-TX TK/SMP	TX Farm	From original tanks to SY 102	17017	SACS/Manually	MT pumped PFP 241 Z tank D-5 to 244-TX DCRT 12/1/01 level now 93 75 in
Vent Station Catch Tank		Cross Country Transfer Line	376	SACS/Manually	MT

Total Active Facilities	17

LEGEND		
	DB	Diversion Box
	DCRT	Double-Contained Receiver Tank
	TK SMP	Tank Sump
	FIC ENRAF	Surface Level Measurement Devices
	MT	Manual Tape Surface Level Measurement Device
	Zip Cord	Surface Level Measurement Device
	WTF-	Weight Time Factor can be recorded as WTF CWF (corrected) and Uncorrected WTF
	SACS	Surveillance Automated Control System
	MCS	Monitor and Control System
	Manually	Not connected to any automated system
	O/S	Out of Service

TABLE C 2 EAST AREA INACTIVE MISC UNDERGROUND STORAGE TANKS AND SPECIAL SURV FACILITIES (CURRENTLY MANAGED BY CHG)

INACTIVE no longer receiving waste transfers

November 30 2001

FACILITY	LOCATION	RECEIVED WASTE FROM (or descrip.)	WASTE (Gallons)	MONITORED BY	REMARKS
209 E TK 111	209 E Bldg	Decon Catch Tank	Empty	NM	Removed from service 1988
216-BY 201	BY Farm	TBP Waste Line	Unknown	NM	
241 A 302 B	A Farm	A 152 DB	5798	SACS/MT	Isolated 1985 Project B-138 Interim Stabilized 1990 Rain intrusion
241 AX 151	N of PUREX	PUREX	Unknown	NM	Isolated 1985
241 AX 152	AX Farm	AX 152 DB	0	SACS/MT	Declared Assumed Leaker pumped to AY 102 3/1/01 no longer being used
241 B-301 B	B Farm	B-151 B-152 B-153 B-252 DB	22250	NM	Isolated 1985 (1)
241 B-302 B	B Farm	B-154 DB	4930	NM	Isolated 1985 (1)
241 BX 302 A	BX Farm	BR 152 BX 153 BXR 152 BYR 152 DB	840	NM	Isolated 1985 (1)
241 BX 302 B	BX Farm	BX 154 DB	1040	NM	Isolated 1985 (1)
241 BX 302 C	BX Farm	BX 155 DB	870	NM	Isolated 1985 (1)
241 BY ITS2 Tk 2	BY Farm	Heater Flush Tank	Unknown	NM	Stabilized 1977
241 C 301-C	C Farm	C 151 C 152 C 153 C 252 DB	10470	NM	Isolated 1985 (1)
241 ER 311A	SW B Plant	ER 151 DB	Empty	NM	Abandoned in place 1954
244-AR Vault	A Complex	Between farms & B-Plant	Unknown	NM	Not actively being used systems activated for final clean out
244-BXR TK/SMP 001	BX Farm	Transfer lines	7200	NM	Interim Stabilization 1985 (1)
244-BXR TK/SMP-002	BX Farm	Transfer lines	2180	NM	Interim Stabilization 1985 (1)
244-BXR TK/SMP-003	BX Farm	Transfer lines	1810	NM	Interim Stabilization 1985 (1)
244-BXR TK/SMP-011	BX Farm	Transfer lines	7100	NM	Interim Stabilization 1985 (1)

Total East Area Inactive Facilities	18

LEGEND		
	DB	Diversion Box
	DCRT	Double-Contained Receiver Tank
	MT	Manual Tape
	SACS	Surveillance Automated Control System
	TK SMP	Tank Sump
	R	Replacement
	NM	Not Monitored

(1) SOURCE WHC SD-WM-TI 356 Waste Storage Tank Status & Leak Detection Criteria Rev 0 September 30 1988

TABLE C 3 WEST AREA INACTIVE MISC UNDERGROUND STORAGE TANKS AND SPECIAL SURV FACILITIES (CURRENTLY MANAGED BY CHG)

INACTIVE no longer receiving waste transfers

November 30 2001

FACILITY	LOCATION	RECEIVED WASTE FROM (or descr	WASTE (Gallons)	MONITORED BY	REMARKS
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
241 S 302	S Farm	240-S 151 DB	8340	SACS/ENRAF	Assumed Leaker EPDA 85-04
241 S 302 A	S Farm	241 S 151 DB	0		Assumed Leaker TF-EFS 90-042
	Partially filled with grout 2/91 determined still to be an assumed leaker after leak test Manual FIC readings are unobtainable due to dry grouted surface				
	CASS monitoring system retired 2/23/99 intrusion readings discontinued S 304 replaced S 302 A				
241 S 302 B	S Farm	S Encasements	Empty	NM	Isolated 1985 (1)
241 SX 302 (SX 304)	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 (241 T 301B)
241 TX 302	TX Farm	TX 153 DB	Unknown	NM	Isolated 1985 (1)
241 TX 302 X B	TX Farm	TX Encasements	Unknown	NM	Isolated 1985 (1)
241 TX 302 B	TX Farm	TX 155 DB	1600	SACS/MT	New MT installed 7/16/93
241 TX 302 B(R)	E of TX Farm	TX 155 DB	Unknown	NM	Isolated
241 TY 302 A	TY Farm	TX 153 DB	Unknown	NM	Isolated 1985 (1)
241 TY 302 B	TY Farm	TY Encasements	Empty	NM	Isolated 1985 (1)
241 Z 8	E of Z Plant	Recuplex waste	Unknown	NM	Isolated 1974 1975
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	N of S Farm	Personnel Decon Facility	Empty	NM	Isolated
244-TXR TK/SMP-001	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized MT removed 1984 (1)
244-TXR TK/SMP-002	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized MT removed 1984 (1)
244-TXR TK/SMP-003	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized MT removed 1984 (1)
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

Total West Area Inactive Facilities 25

LEGEND		
	DB TB	Diversion Box Transfer Box
	DCRT	Double-Contained Receiver Tank
	FIC ENRAF	Surface Level Measurement Devices
	MT	Manual Tape Surface Level Measurement Device
	TK SMP	Tank Sump
	SACS	Surveillance Automated Control System
	R	Replacement
	NM	Not Monitored

(1) SOURCE WHC SD WM TI 356 Waste Storage Tank Status & Leak Detection Criteria Rev 0 September 30 1988

APPENDIX D

GLOSSARY OF TERMS

TABLE D 1 GLOSSARY OF TERMS

1 TANK STATUS CODES

TANK USE (Double Shell Tanks Only)

CWHT	Concentrated Waste Holding Tank
DRCVR	Dilute Receiver Tank
EVFD	Evaporate Feed Tank
SRCVR	Slurry Receiver Tank

2 DEFINITIONS

WASTE TANKS General

Waste Tank Safety Issue

A potentially unsafe condition in the handling of waste material in underground storage tanks that requires corrective action to reduce or eliminate the unsafe condition There are currently no waste tank safety issues

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

WASTE TYPES

Aging Waste (AW)

High level first cycle solvent extraction waste from the PUREX plant (NCAW)

Concentrated Complexant (CC)

Concentrated product from the evaporation of dilute complexed waste

Concentrated Phosphate Waste (CP)

Waste originating from the decontamination of the N Reactor in the 100 N Area. Concentration of this waste produces concentrated phosphate waste

Dilute Complexed Wate (DC)

Characterized by a high content of organic carbon including organic complexants ethylenediaminetetraacetic acid (EDTA) citric acid, and hydroxyethyl-ethylenediaminetriacetic acid (HEDTA) were the major complexants used Main sources of DC waste in the DST system are saltwell liquid inventory (from SSTs)

Dilute Non-Complexed Waste (DN)

Low activity liquid waste originating from S and T Plants the 300 and 400 Areas PUREX facility (decladding supernatant and miscellaneous wastes) 100 N Area (sulfate waste) B Plant, saltwells and PFP (supernatant)

Drainable Interstitial Liquid (DIL)

Interstitial liquid that is not held in place by capillary forces and will therefore migrate or move by gravity (See also Section 3 below)

Double Shell Slurry (DSS)

Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits For reporting purposes, DSS is considered a solid.

Double Shell Slurry Feed (DSSF)

Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits This form is not as concentrated as DSS

Supernatant Liquid

The liquid above the solids or in large liquid pools covered by floating solids in waste storage tanks (See also Section 3 below)

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 jet pump system includes 1) a jet assembly with foot valve mounted to the base of two pipes that extend from the top of the well casing to near the bottom of the well casing inside the saltwell screen, 2) a centrifugal pump to supply power fluid to the down hole jet assembly 3) flexible or rigid transfer jumpers 4) a flush line and 5) a flowmeter The jumpers contain piping, valves and pressure and limit switches

The centrifugal pump and jet assembly are needed to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise The power fluid passes through a nozzle in the jet assembly and acts to convert fluid pressure head to velocity head, thereby reducing the pressure in the jet assembly chamber The reduction in pressure allows the interstitial liquid to enter the jet assembly chamber and mix with the power fluid. Velocity head is converted to pressure head above the nozzle lifting power fluid, and interstitial liquid to the pump pit 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 will extend through the tank waste to near the bottom of the tank The saltwell screen portion of the casing is an approximately 10 foot length of 300 Series 10 inch diameter stainless steel pipe with screen openings (slots) of 0 05 inches

Emergency Pumping Trailer

A 45 foot tractor type trailer is equipped to provide storage space and service facilities for emergency pumping equipment this consists of two dedicated jet pump jumpers and two jet pumps, piping and dip tubes for each, two submersible pumps and attached piping, and a skid mounted Weight Factor Instrument Enclosure with an air compressor and electronic recording instruments The skid also contains a power control station for the pumps pump pit leak detection, and instrumentation A rack for over 100 feet of overground double-contained piping is also in the trailer

INTRUSION PREVENTION (ISOLATION) (Single Shell Tanks only)

Partially Interim Isolated (PI)

The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for isolation of risers and piping that is required for jet pumping or for other methods of stabilization.

Interim Isolated (II)

The administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box In June 1993 the term "Interim Isolation" was replaced by Intrusion Prevention."

Intrusion Prevention (IP)

Intrusion Prevention is the administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump catch tank, or diversion box Under no circumstances are electrical or instrumentation devices disconnected or disabled during the intrusion prevention process (with the exception of the electrical pump)

Controlled, Clean, and Stable (CCS)

Controlled, Clean, and Stable reflects the completion of several objectives "Controlled" provide remote monitoring for required instrumentation and implement controls required in the TWRS Authorization Basis Clean" remove surface soil contamination and downpost the Tank Farms to RBA/URMA/RA radiological control status, remove abandoned equipment, and place reusuable equipment in compliant storage and "Stable" remove pumpable liquids from the SSTs and IMUSTs and isolate the tanks

TANK 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

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

Assumed Re Leaker

A condition that exists after a tank has been declared as an assumed leaker" and then the surveillance data indicate a new loss of liquid attributed to a breach of integrity

TANK INVESTIGATION

Intrusion

A term used to describe the infiltration of liquid into a waste tank.

SURVEILLANCE INSTRUMENTATION

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 The routine gross gamma logging program ended in 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

Repeat spectral drywell scans are not part of the established Tank Farm leak detection program, but they can be run on request if special needs arise A select subset of drywells is routinely monitored by the Vadose Zone Characterization Project to assess movement of gamma-emitting radionuclides in the subsurface.

Laterals

Laterals are horizontal drywells positioned under single shell waste storage tanks to detect radionuclides in the soil which could be indicative of tank leakage These drywells can be monitored by radiation detection probes Laterals are 4 inch inside diameter steel pipes located 8 to 10 feet below the tank s concrete base There are three laterals per tank. Laterals are located only in A and SX farms. There are currently no functioning laterals and no plan to prepare them for use

Surface Levels

The surface level measurements in all waste storage tanks are monitored by manual or automatic conductivity probes and recorded and transmitted or entered into the Surveillance Analysis Computer System (SACS)

Automatic FIC

An automatic waste surface level measurement device is manufactured by the Food Instrument Company (FIC) The instrument consists of a conductivity electrode (plummet) connected to a calibrated steel tape a steel tape reel housing and a controller that automatically raises and lowers the plummet to obtain a waste surface level reading. The controller can provide a digital display of the data and until February 1999 the majority of the FICs transmitted readings to the CASS Since CASS retirement, all FIC gauges are read manually FICs are being replaced by ENRAF detectors (see below)

ENRAF 854 ATG Level Detector

FICs and some manual tapes are in the process of being replaced by the ENRAF ATG 854 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 The displacer is connected to a wire wound onto a precision measuring drum. A change in the waste level causes a change in the weight of the displacer which will be detected by the force transducer Electronics within the gauge causes the servo motor to adjust the position of the displacer and compute the tank level based on the new position of the displacer drum. The gauge displays the level in decimal inches The first few ENRAFs that received remote reading capability transmit liquid level data via analog output to the TMACS The remaining 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

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 and radiation detectors are the primary means of leak detection for all DSTs

Liquid Observation Well (LOW)

In-tank liquid observation wells are used for monitoring the interstitial liquid level (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) There are a few LOWs constructed of steel LOWs are sized to extend to within 1 inch of the bottom of the waste tank, are sealed at their bottom ends, and have a nominal outside diameter of 3 5 inches 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 There are 65 LOWs (64 are in operation) installed in SSTs that contain or are capable of containing greater than 50 Kgallons of drainable interstitial liquid. Two LOWs installed in DSTs SY 102 and AW 103 are used for special, rather than routine surveillance purposes only

Thermocouple (TC)

A thermocouple is a thermoelectric device used to measure temperature More than one thermocouple element on a device (probe) is called a thermocouple tree In DSTs there may be one or more thermocouple trees in risers in the primary tank. In addition, in DSTs only there are TC elements installed in the insulating concrete the lower primary tank knuckle the secondary tank concrete foundation, and in the outer structural concrete

These monitor temperature gradients within the concrete walls bottom of the tank, and the domes In SSTs, one or more thermocouples may be installed directly in a tank, although some SSTs do not have any trees installed. A single TC element may be installed in a riser or lowered down an existing riser or LOW There are also four thermocouple laterals beneath tank 105 A in which temperature readings are taken in 34 TC elements

In-tank Photographs and Videos

In-tank photographs and videos may be taken to aid in resolving in-tank measurement anomalies and determine tank integrity Photographs and videos help determine sludge and liquid levels by visual examination.

ACRONYMS

CCS	Controlled, Clean and Stable (tank farms)
FSAR	Final Safety Analysis Report effective October 18 1999
II	Interim Isolated
IP	Intrusion Prevention Completed
IS	Interim Stabilized
MT/FIC/ ENRAF	Manual Tape Food Instrument Corporation, ENRAF Corporation (surface level measurement devices)
OSD	Operating Specifications Document
PI	Partial Interim Isolated
SAR	Safety Analysis Report
SHMS	Standard Hydrogen Monitoring System
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)
TSR	Technical Safety Requirement
USQ	Unreviewed Safety Question

3 INVENTORY AND STATUS BY TANK – COLUMN VOLUME CALCULATIONS AND DEFINITIONS FOR TABLE B 1 (Single Shell Tanks only)

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Total Waste	Solids volume plus Supernatant Liquid Solids include sludge and saltcake (see definitions below)
Supernatant Liquid (1)	May be either measured or estimated Supernatant is either the estimated or measured liquid floating on the surface of the waste or under a floating solids crust. In tank photographs or videos are useful in estimating the liquid volumes liquid floating on solids and core sample data are useful in estimating large liquid pools under a floating crust

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Drainable Interstitial Liquid (DIL) (1)	This is initially calculated Drainable interstitial liquid is calculated based on the saltcake and sludge volumes, using calculated porosity values from past pumping or actual data for each tank Interstitial liquid is 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 drainable interstitial liquid
Pumped This Month	Net total gallons of liquid pumped from the tank during the month. If supernatant is present, pump production is first subtracted from the supernatant volume The remainder is then subtracted from the drainable interstitial liquid volume
Total Pumped (1)	Cumulative net total gallons of liquid pumped from 1979 to date
Drainable Liquid Remaining (DLR) (1)	Supernatant plus Drainable Interstitial Liquid. The total Drainable Liquid Remaining is the sum of drainable interstitial liquid and supernatant.
Pumpable Liquid Remaining (PLR) (1)	Drainable Liquid Remaining minus unpumpable volume Not all drainable interstitial liquid is pumpable
Sludge	Solids formed during sodium hydroxide additions to waste Sludge was usually in the form of suspended solids when the waste was originally received in the tank from the waste generator In-tank photographs or videos may be used to estimate the volume
Saltcake	Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator. If saltcake is layered over sludge it is only possible to measure total solids volume In-tank photographs or videos may be used to estimate the saltcake volume
Solids Volume Update	Indicates the latest update of any change in the solids volume
Solids Update Source See Footnote	Indicates the source or basis of the latest solids volume update
Last In Tank Photo	Date of last in-tank photographs taken
Last In Tank Video	Date of last in-tank video taken.
See Footnotes for These Changes	Indicates any change made the previous month A footnote explanation for the change follows the Inventory and Status by Tank Appendix (Table B 1)

(1) Volumes for supernatant DIL DLR, and PLR are not shown in these columns until interim stabilization is completed Total gallons pumped total waste sludge and saltcake volumes are shown and adjusted based on actual pumping volumes

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APPENDIX E

TANK CONFIGURATION AND FACILITIES CHARTS

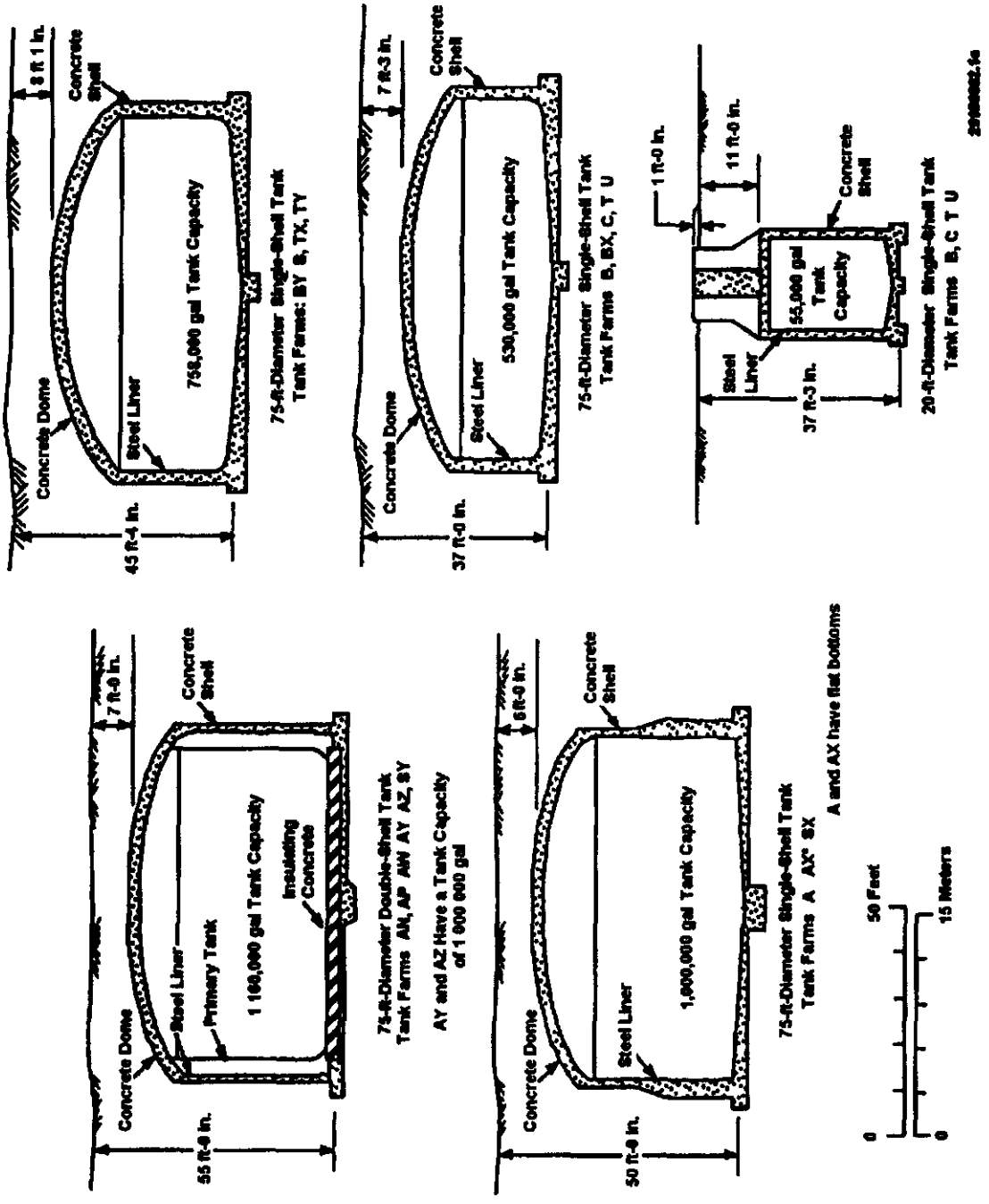

Figure E-1 High-Level Waste Tank Configuration

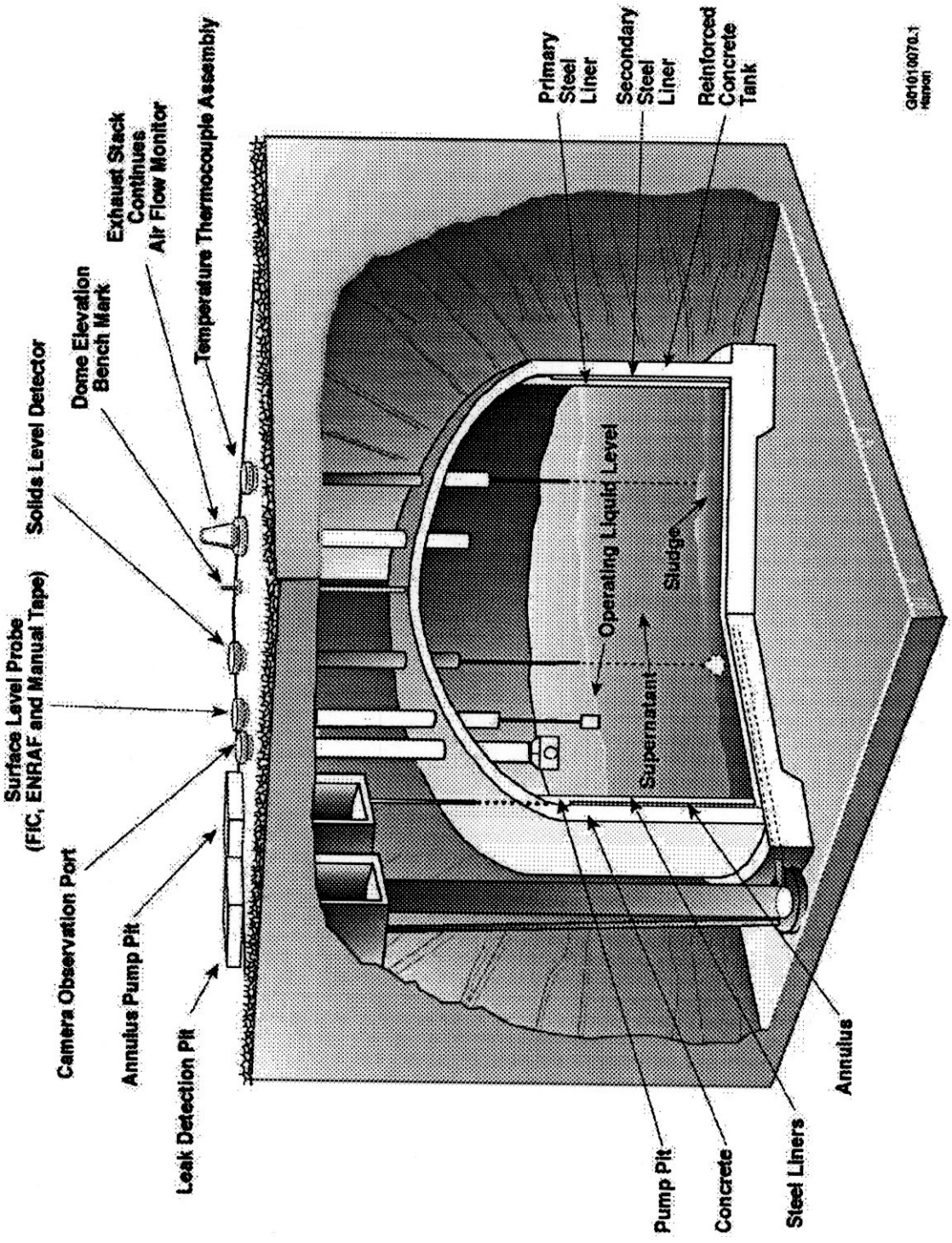

Figure E-2. Double-Shell Tank Instrumentation Configuration

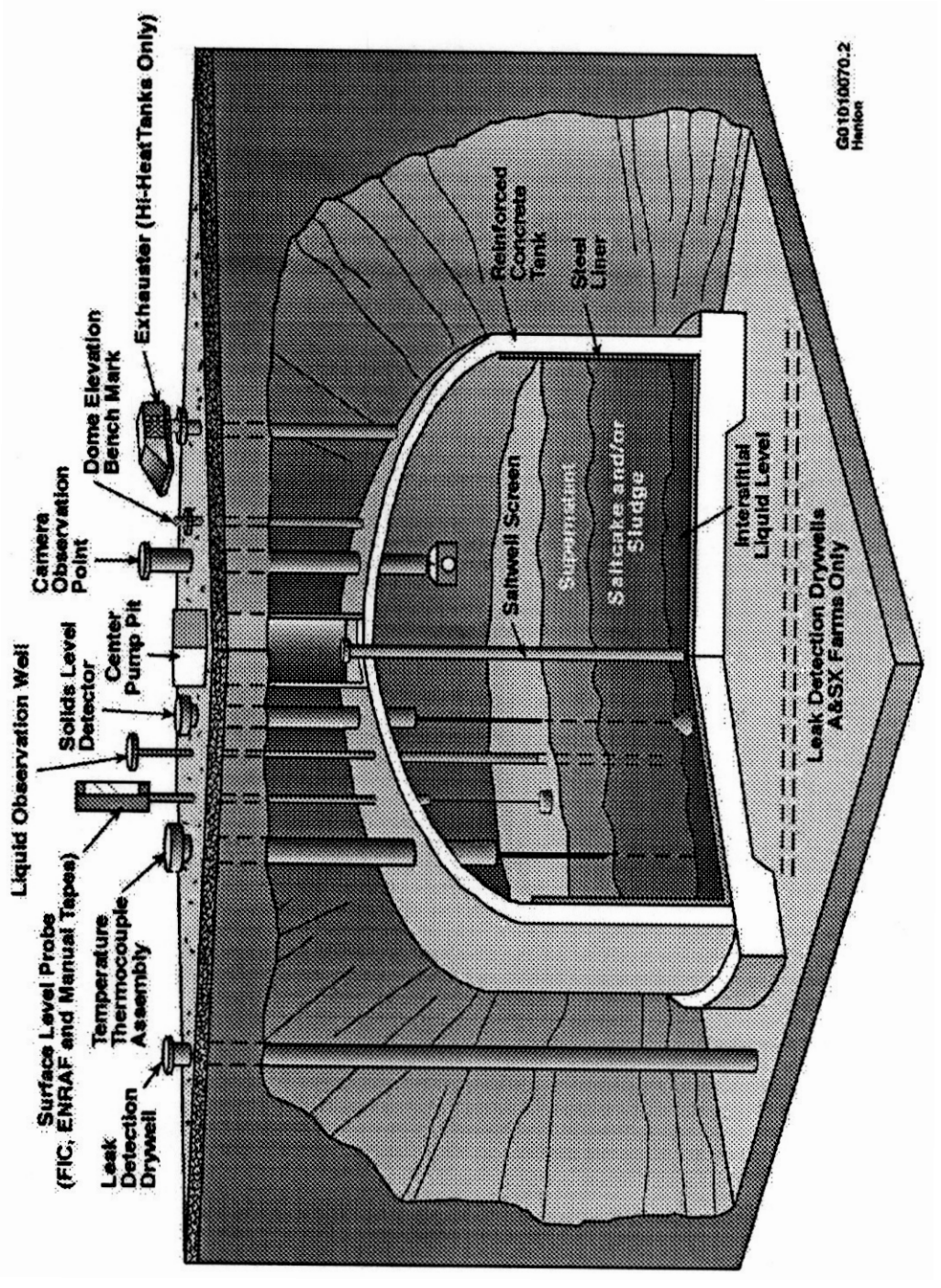

Figure E-3. Single-Shell Tank Instrumentation Configuration

THE TANK FARM FACILITIES CHARTS (colored foldouts)

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