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Meeting Minutes Transmittal/Approval
Unit Managers Meeting: Single Shell Tanks & Double Shell Tanks
2704HV/Room G206
200 East Area Hanford Site, Washington

October 17, 1995

Appvl: Wendell R. Wrzesinski **Date:** 1/26/96
Wendell R. Wrzesinski, SST Unit Manager, DOE-RL

Appvl: Laura J. Cusack /for **Date:** 4/25/96
Scott McKinney, SST Unit Manager,
WA Department of Ecology

Appvl: Casey O. Ruud **Date:** 12/12/95
Casey O. Ruud, DST Unit Manager, DOE-RL

Appvl: Laura J. Cusack **Date:** 4/25/96
Laura J. Cusack, DST Unit Manager,
WA Department of Ecology

Appvl: George W. Griffith /for **Date:** 12/11/95
Lucinda E. Borneman, WHC, Coordinator
Representative

Meeting Minutes are attached. Minutes are comprised of the following:

Attachment #1, Meeting Summary/Summary of Action Items & Agreements
Attachment #2, Agenda for Meeting
Attachment #3, Attendance List

Handout 1 - Complete Closure of All Single-Shell Tank Farms (M-45)
Handout 2 - Interim Stabilization/Isolation SST UMM (M-41)
Handout 3 - Interim Stabilization/Isolation Sampling Issues (M-41)
Handout 4 - Tri-Party Agreement Milestones (Waste Tank Safety Program, M-40)
Handout 5 - Double and Single-Shell Tank Characterization (M-44)
Handout 6 - Provide Additional Double-Shell Tank Capacity (M-42)
Handout 7 - Replacement of Cross-Site Transfer System (M-43-07)
Handout 8 - DST Permitting Update
Handout 9 - Ecology Statement on DST WAP and Revised DST WAP
Handout 10 - Operations Update - Information Package on 240-S-151 Diversion Box

AUG 1996
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Attachment 1

SINGLE SHELL TANKS/DOUBLE SHELL TANKS UNIT MANAGERS MEETING

MEETING SUMMARY/SUMMARY OF ACTION ITEMS AND AGREEMENTS

October 17, 1995

M-45 SST/DST Retrieval/Closure (W. Wrzesinski) [Handout 1]

DST Waste Consolidation/Immobilization Support: Preparation for installation of two mixer pumps in Tank AZ-101 is underway. Existing pumps and hardware will be used if possible, as well as minimizing pulling out of old equipment to reduce costs.

Retrieval DQO Status: The Retrieval DQO was completed this last fiscal year.

> **ACTION**: The Retrieval/Closure program will send a copy of the Retrieval DQO to Ecology when available. (W. Wrzesinski - date not specified).

M-45-03A Initiate Sluicing Retrieval of C-106: Construction has begun. Projects personnel began excavation of the old transfer lines and cleanup in pump pits. Current plans include leaving old pumps in place, and removing jumpers and other loose equipment. Sludge from the pump pits will be removed through remote operation in order to maintain ALARA.

C-106 Air Chiller: The ability to install the air chiller in case of an emergency within the specified time limits has been maintained. The chiller will be on site in November, FY 1996, installed in February, FY 1996, and operational in May, FY 1996.

Issue - C-106 Air Chiller: Air Chiller installation into Tank C-106 was recommended by the Chemical Reaction Sub-TAP Committee as soon as possible, and operated as early as possible. Ecology concurs with this position, and does not feel those actions have been taken.

> **ACTION**: Send a copy of the letter on selecting initial W-211 tanks to Ecology (W. Wrzesinski - November 30, 1995).

M-41 Interim Stabilization/Isolation (D. Engelman) [Handouts 2 & 3]

Mr. D. Engelman provided an update on the pumping and sampling status for the Interim Stabilization/Isolation Program.

Issue - Additional Flammable Gas Watch List Tanks: The Battelle Screening Criteria identified 58 tanks that were indicating flammable gas, 21 of which

are already on the flammable gas watch list. The remaining 37 tanks listed in the report were evaluated for flammable gas characteristics, with 23 meeting the criteria. Tanks BY-109, -106, -103, and 4 tanks in S Tank Farm met the flammable gas criteria, causing a direct impact to the Interim Stabilization/Isolation Program. Currently, intrusive operations work in BY Tank Farm has ceased. Pump preparation for S Tank Farm continues. A letter to justify continuance of pumping on Tank BY-109 will be issued to RL on October 17, 1995. Based upon the present pumping rate in Tank BY-109, completing interim stabilization of this tank will be around November 30, 1995. This is also the TPA target milestone due date (M-41-01-T02). The milestone may be in jeopardy due to the pumping delay.

ACTION: Send an estimated schedule for future cross site transfers to Ecology when available (D. Engelman - ASAP).

Sampling: There are problems in West area with grab sampling due to unavailable saltwells, salt crust in the saltwell, or a saltcake bridge between the saltwell and jetpump. A path forward has been developed to mitigate these problems. This sampling is necessary for assessing the technical basis for consolidating waste, addressing the complexed/non-complexed waste issue in lieu of construction of new tanks.

M-40 Safety (S. Branch) [Handout 4]

Mr. S. Branch provided an update on the Tri-Party Agreement Milestones for the Waste Tank Safety Program.

M-40-03 and M-40-08: The Vapor Characterization Reports for TPA Milestones M-40-03 "Perform Vapor Characterization for all Ferrocyanide Watch List Tanks" and Milestone M-40-08 "Perform Vapor Characterization for all Organic Watch List Tanks" are close to completion.

ACTION: Ecology will review and provide comments on the Vapor Characterization Reports for TPA Milestones M-40-03 and M-40-08 by the beginning of November.

Issue - Vapor Sampling: Ecology stated that RL had made a commitment in past Unit Managers Meetings to vapor sample all tanks. Vapor sampling is now under the Characterization Program. Ecology stated that vapor sampling of all tanks is still expected.

M-40-10: TPA Milestone M-40-10 "Complete Vapor Space Monitoring of all Flammable Gas Generating Tanks" by 1/97 will be impacted by the addition of 23 new tanks to the flammable gas watch list.

Issue - C-106 Air Chiller: In July or August of 1994, the Chemical Reaction Sub-TAP Committee recommended installation of the air chiller into C-106 as soon as possible. Ecology also wants the air chiller installed and operating in C-106 as soon as possible, and is very displeased with RL's and the Safety Program's efforts on this issue. The Safety Program stated that no action had been made by RL or WHC as the contingency plan for air chiller installation is in place. Ecology will be transmitting a letter on this issue.

The chiller will be installed in February 1996. Performance tests will take place between the end of February and the end of April, 1996. The chiller will be operational by May, 1996. Ecology agrees with the installation date, but feels that the air chiller should not only be operational as soon as possible, but be operating as soon as possible.

Issue - High Carbon Dioxide Tank: A. Stone (Ecology) asked for an update on the high CO_2 tank in C Tank Farm. Early vapor data indicated methylisocyanate (MIC) and CO_2. Two white papers were being written, one addressing the CO_2 issue, and one addressing the MIC issue. The white papers will not be completed, however, the information from the papers has been included in the summary of the Vapor Tank Characterization Report chapters to support TPA Milestones M-40-08 and M-40-03. Mr. Stone requested that the above issues be maintained as a high priority, and that Ecology be updated on the progress toward resolution.

ACTION: Transmit the Vapor Tank Characterization Reports related to the above issues to A. Stone (RL Safety Program - when available).

ACTION: Transmit a status of the Safety DQOs and their completion dates to A. Stone (S. Branch - date not specified).

Mr. A. Stone requested an update on the status of the Safety Program's Multi-Year Program Plan (MYPP). Ms. C. Haass (RL) responded that revisions to the MYPPs were due October 13, 1995, so the MYPPs should be complete.

ACTION: Transmit the Safety Program Multi-Year Program Plan (MYPP) to Ecology (RL - 10/31/95 or when available).

Issue: Ecology inquired about Tank AP-107, a DST used to hold waste to be transferred to 242-A Evaporator for processing. Currently the tank is nearly empty, as the waste was processed during the Evaporator 95-1 campaign. Tank AP-107 was one of the tanks listed as a potential flammable gas tank in the Battelle Screening Criteria. Ecology is concerned that a tank with potential flammable gas characteristics was sent to the 242-A Evaporator and concentrated. Also, Ecology is concerned with what happened to the flammable gas in the waste when it was processed at the evaporator.

ACTION: Determine where the flammable gas in Tank AP-107 waste went once it was sent to the 242-A Evaporator for processing (S. Branch - ASAP).

M-44 Characterization (J. Thompson) [Handout 5]

J. Thompson provided an update on Double and Single-Shell Tank Characterization.

ACTION: Ecology will be reviewing and providing comments on the 30 Tank Characterization Reports that were submitted in September (M-44-08), and providing comments by the end of October.

TWAP & TCPs: The Tank Waste Analysis Plan (TWAP) for 1996 and 65 Tank Characterization Plans (TCPs) were submitted to RL and Ecology. Ecology reviewed and responded to the TWAP and TCPs via a letter issued to RL dated September 29, 1995.

Issue - Rotary Mode Core Sampling (RMCS): TPA Milestone M-44-00 requires a high level of sample scheduling and sampling completion to provide information necessary to characterize the tanks. Ecology is not satisfied with the 2.5 core samples scheduled, and the 1.5 core samples completed for fiscal year 1995. This schedule will not meet TPA Milestone M-44-00.

Issue - Oak Ridge & PNL Vapor Analyses Quality Concerns: RL reviewed the vapor analyses quality concerns at ORNL and PNL. Vapor sorbent samples are sent to ORNL, and summa canisters are sent to PNL. The analyses were completed correctly, however, qualifiers were not applied. The reports have been rewritten to include QA. All reports have been accepted.

Issue - RMCS Design Problems: Design problems will impact sampling of flammable gas tanks. The impact will be a one month delay until in tank videos are available. Ecology stated that it is not backing away from the TPA requirement for 40 TCRs. In addition, adding 23 new tanks requiring flammable gas controls to the list will impact the schedule. There are continuing efforts to qualify the RMCS for flammable gas tanks by June, 1996.

ACTION: Transmit the Characterization Program MYPP to Ecology (RL - 10/31/95 or when available).

M-42 Multi-Function Waste Tank Facility (J. Couey) [Handout 6]

Mr. J. Couey provided a brief update on the Multi-Function Waste Tank Facility.

Note: Mr. N. Hepner (Ecology) requested RL to begin reporting on TPA Milestone M-46 "Double-Shell Tank Space Evaluation" when reporting on MWTF ends.

M-43-07 Replacement of Cross-Site Transfer System (J. Couey) [Handout 7]

Mr. J. Couey provided an update on the Cross-Site Transfer System.

DST Part B Permit Application Update (K. Elsethagen) [Handout 8]

Ms. K. Elsethagen provided a brief status of the DST Part B Permit Application.

Issue - DST WAP: A. Huckaby (Ecology) stated the following: "Over the past year, the Department of Ecology has met with the Department of Energy and its contractors in an attempt to reach agreement on the Waste Analysis Plan to be included within the Part B Permit. Ecology has made its position very clear from the start. Ecology is most concerned about the continued safe interim storage of the mixed waste stored in the DST system. Therefore the WAP would

place the greatest emphasis on verification of the chemical and physical properties of wastes to be transferred. In support of this position, Ecology deferred many potentially complicated and expensive decisions until a final disposal option had been made, but only with the clear understanding that its safety concerns would be met. DOE agreed with this position at the time and unwillingly deferred many of the more complicated regulatory requirements until a future date. Subsequently, however, DOE has proven unwilling to meet Ecology's requirements for fulfilling compatible and safe interim storage of the mixed waste. Agreements made during DOE and Ecology workshops concerning Ecology's requirements were subsequently changed during internal DOE meetings. Through two formal and several informal revisions, the WAP was not updated as Ecology required and for the past six months little progress has been made.

Hyle. See Handout #9

Therefore Ecology has rewritten the WAP to reflect its requirements. The WAP to be included in the Part B Permit needs to address the points raised in this document or the agreements made initially between DOE and Ecology are no longer valid. If DOE and Ecology fail to reach agreement on the contents of the WAP, then this document represents the conditions Ecology will impose upon DOE at the time of issuance of the Part B Permit.

The document presented here is not complete as some minor corrections and changes still remain and it is necessary to obtain EPA input on LDR issues. However, it encompasses the basis for Ecology's requirements and a completed WAP will be presented by Ecology at the next Unit Manager Meeting."

WHC/RL will meet with Ecology on November 1, 1995, to discuss a path forward for the WAP.

Operations Update (I. Austin) [Handout 10]

Ms. I. Austin provided an update on operations related issues.

240-S-151 Diversion Box: During a pit inventory of 204-S-151 diversion box, approximately 4 feet (8,000 gallons) of liquid was discovered in the nozzle pit of the diversion box. A video taken at the time of pit inventory shows the lower pit nozzles covered with water. The lower nozzles have either process blanks, isolation blanks or vapor seals on them. Vapor seals will allow liquid to flow through connected piping.

Operations believes the source of most of the liquid is from raw water lines at Redox Facility that were not cut and capped until 1994. Catch tanks and diversion boxes downstream of 240-S-151 will be investigated for possible liquid intrusion from the 240-S-151 diversion box.

Samples will be taken through one of the openings in the middle cover block of the diversion box either the end of this week or early next, weather permitting. Sample results for a process sample can take from 3 to 10 days. A full RCRA analysis can take up to 60 days for results.

Methods for removing the liquid from the diversion box have been discussed but no final decision made. However, the liquid will not be pumped until sample results are received.

Vadose Zone Monitoring: Mr. C. Ruud (RL) reported that operations discovered the bore holes around a lot of the tanks are perforated all the way down, providing a pathway for contaminants. RL will determine how to proceed and will request Ecology's involvement.

RUST Geotech: Mr. C. Ruud also reported that RUST Geotech has completed the spectrogamma logging for 36 tanks and is working on the reports.

ACTION: Give a presentation on the RUST Geotech spectrogamma logging and subsequent reports at the next DST/SST UMM (RL - 12/12/95).

Note: Ms. L. Cusack (Ecology) left the DST/SST UMM due to illness, and might have additional questions at a later date.

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Attachment 2

SINGLE-SHELL TANKS/DOUBLE-SHELL TANKS
UNIT MANAGERS MEETING
2704HV/G206
OCTOBER 17, 1995

AGENDA			
Begin Time	End Time	Subject	Presenter
9:30	10:10	M-45 Retrieval/Closure	W. Wrzesinski
10:10	11:00	M-41 Interim Stabilization	D. Engelman
11:00	11:20	M-40 Safety	G. Dukelow
11:20	12:00	M-44 Characterization	J. Thompson
12:00	12:45	Lunch	
12:45	1:00	M-42 Multi-Function Waste Tanks	J. Couey
1:00	1:15	M-43 Cross-Site Transfer Lines	J. Couey
1:15	1:45	M-43 Tank Farm Upgrades	M. Ramsay
1:45	1:55	DST Permitting	K. Elsethagen
1:55	2:25	Operations Briefing	I. Austin
2:25	2:30	Signing of Meeting Minutes	
2:30		Adjournment	

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Attachment 3

SINGLE-SHELL TANKS/DOUBLE-SHELL TANKS
UNIT MANAGERS MEETING
2704HV/G-206
October 17, 1995

Name	Organization	MISN	Phone
WENDELL WRZESINSKI	DOE-RL		376-6751
WAHED ABDUL	DOE-RL		372-2355
MARC Stevenson	WHC/TPAI	B2-35	376-9668
Barbara Harper	PNL	K3-54	372-6490
DAVE NYLANDER	GSSC	S7-70	376 3919
Luis Soler	GSSC/EAP	B1-42	946-3680
BUD TREADWAY	WHC/ENV. COMPL.	R2-52	373-4216
Stan Barry	GSSC-TOP	S7-73	376-0889
CAROLYN HAASS	DOE-RL	S7-51	372-2731
THOMAS RAINEY	WHC	R2-54	373-3531
[illegible]	PNS		
BUY BISHOP	DOE	S7-54	372-1856
FRANK CALAPRISTI	WHC/TPAI	B2-35	376-6693
Scott McKinney	Ecology	Lacey	360 407-7146
Alex Stone	Ecology	B5-18	736-3018
[illegible] Cusack	Ecology	B5-18	736-3038
Alisa D. Hedtsky	Ecology	B5-18	736-3034
Lucinda Borneman	WHC	R1-52	373-2821
Kelly Elsethagen	WHC	R1-52	373-2984
Martha Campbell	WHC	R1-52	373-1131
Casey Ruud	DOE	S7-54	373-3478
Stanley Branch	DOE-RL	S7-54	376-9450
Mary Ann McLaughlin	WHC	B2-35	376-4084
Ko CHEN	DOE-RL	S7-54	376-9699
James F. Thompson Jr	CHD/RL	S7-54	373-9757
Larry Pennington	WHC	S7-21	376-1863
TOM KELLEY	WHC	S7-21	373-2038

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SINGLE-SHELL TANKS/DOUBLE-SHELL TANKS
UNIT MANAGERS MEETING
2704HV/G-206
October 17, 1995

Name	Organization	MISN	Phone
Jim Huckaby	PNL	K6-80	376-5524
David Forehand	WHC	S7-21	373-6595
Jim Couey	RL	S7-52	376-2457
Norm Hepner	Ecology	B5-18	736-3048
Inez Austin	WHC-WTFO	T4-01	373-9143
Jan Brown	WHC	S5-03	373-6397

Complete Closure of All Single Shell Tank Farms
Milestone M-45-00

W.R. Wrzesinski, DOE-RL **October 17, 1995**

1) FY96 MYPP Waste Retrieval Workscope

2) M-45-03A Initiate Sluicing Retrieval of C-106 (October 1997)

- Key Decision 3 (Approval for Construction) on August 14, 1995
- Met Key Project Milestones due September 1995:

  Begin DST Modification Work

  Start Construction

  Complete Safety Assessment
- Non-Rad NOC for Phase II Air Permitting approved October 6, 1995

3) DST Waste Consolidation/Immobilization Support

- W-151 proceeding with preparation for mixer pump installation (Tank 101-AZ)
- Title I Design and Supplements completed for Initial Tank Retrieval System (W-211)
- Selection of initial W-211 tanks to RL for concurrence
- Delegation of Authority for Key Decision 2 received for W-211

4) Closure Work Plan

- Craig West to be responsible for TWRS Closure
- Briefing of document available if desired

SINGLE-SHELL TANK UNIT MANAGERS MEETING

D. B. Engelman

October 17, 1995

PUMPING STATUS

- 241-BY-103 Pumped 18.0K gallons
- 241-BY-106 Pumped 55.8K gallons
- 241-BY-109 pumped 8.6K gallons; total pumped 52.3K gallons
- 241-T-107 Pumped 7.8K gallons

ACCOMPLISHMENTS

- 241-C-102 Declared Interim Stabilized; pumping complete July 15, 1995. Total pumped 46.7K gallons (M-41-01-T02)
- 241-C-107 Declared Interim Stabilized; pumping complete July 28, 1995. Total pumped 40.8K gallons (M-41-01-T02)
- Milestone M-41-12, "Start Interim Stabilization of Single-Shell Tanks 241-BX-106, 241-BY-103, and 241-BY-106," was completed ahead of schedule on August 10, 1995
  - 241-BX-106 Pumping started 07/09/95 and completed 07/14/95
  - 241-BY-103 Pumping started 08/04/95
  - 241-BY-106 Pumping started 08/10/95

ACCOMPLISHMENTS

- Milestone M-41-17, "Start Interim Stabilization of one Ferrocyanide Watchlist Tank in 241-T Tank Farm," due April 30, 1998, was completed on August 30, 1995
  - 241-T-107 Pumping started 08/30/95
- 235.7K gallons pumped from SSTs to DSTs in Fiscal Year 1995

CURRENT ACTIVITIES

- Pumping 241-BY-109 (M-41-01-T2)
  - Final tank to meet this milestone
- Pumping 241-BY-103 and 241-BY-106 (M-41-12-T02)
- Pumping 241-T-107 (M-41-17-T01)
- Continuing procurement of HLLW Cask (M-41-03B)

CURRENT ACTIVITIES

- Preparing to pump 7 Non-Watchlist Tanks in 241-S Farm (M-41-09)
- Preparing to pump 2 tanks in 241-A and 241-AX Farms (M-41-10)
- Preparing to pump 8 tanks in 241-U Farm (M-41-08, M-41-11, and M-41-13)
- Performing Interim Stabilization evaluation for tank 241-C-105

Fiscal Year 1996 ACTIVITIES

- Complete Milestone M-41-01-T01, "Complete Interim Stabilization of 5 Single-Shell Tanks" (last tank - 241-BY-109) November 30, 1995
- Complete Milestone M-41-03B, "Receive HLLW Cask" January 31, 1996
- Complete Milestone M-41-09, "Start Interim Stabilization of 7 Non-Watchlist Tanks in 241-S Farm" January 31, 1996
- Complete Milestone M-41-10, "Start Interim Stabilization of 2 Flammable Gas Watchlist Tanks in 241-A and 241-AX Farms" April 30, 1996
- Complete Milestone M-41-08, "Start Interim Stabilization of 1 Non-Watchlist Tank in 241-U Farm" August 31, 1996

August/September 1995 *INTERIM STABILIZATION/ISOLATION*

Fiscal Year 1996 ACTIVITIES

- Complete Milestone M-41-11, "Start Interim Stabilization of 4 Flammable Gas Watchlist Tanks in 241-U Farm" August 31, 1996
- Complete Milestone M-41-13, "Start Interim Stabilization of 3 Organic Watchlist Tanks in 241-U Farm" August 31, 1996
- Continue Pumping 241-BY-103 and 241-BY-106 (M-41-12-T01) December 31, 1997
- Complete Milestone M-41-12A-T01, "Determine Path Forward for 241-BY-105" November 30, 1995
- Complete Intrusion Prevention for 241-C-110
- Continue Pumping Tank 241-T-107 May 31, 1998

Cost/Schedule Assessment

Note: Dollars in Thousands	FY 1995	FY 1996
Budgeted Cost of Work Scheduled (BCWS)	$11,187.2	$15,092
Budgeted Cost of Work Performed (BCWP)	11,518.9	
Actual Cost of Work Performed (ACWP)	11,549,7.	
Variances		
Schedule	+331.7	
Cost	- 30.8	
Funding	9,895.0	15.092
Spending Limit	$11,170.0	$15,092

➡ *FY 1995 Cost Accounts*
1N1E51, 1N1E52, 1N1E53, 1N1E54, and 1N1E55

ISSUES/CONCERNS

- Concern
  Tank 241-BY-105 existing saltwell screen blocked. Portland cement on surface
  - Action
    Change Number M-41-95-03 revised milestone M-41-12 and created milestone M-41-12A-T01 (Completed)
  - Status
    Core sample indicates about six feet of liquid-bearing waste under cement rather than another hard surface

ISSUES/CONCERNS

- Concern
  Pumping of tank 241-BY-109 may delay completion of milestone M-41-01-T02.
  - Action
    Continue efforts to keep pump operating
- Concern
  Current safety envelope may not provide operational authority to pump flammable gas watch list tanks
  - Action
    Work to resolve issues

OTHER SST ISSUES

- Concern
  No liquid level reading ready for Tank 241-SX-104
  Two LOWs damaged
  - Action
    Replace one LOW within a week
    Reading to be available soon

ACTIONS

1. RL will provide pressure test results from BX and BY Single-Shell Tank Farms to Ecology. (Complete)

2. RL will submit a final milestone change request to Ecology by August 18, 1995, for Tank BY-105 (Complete)

3. Transmit a copy of the PNL Report, "Correlation Between Surface Level and Barometric Pressure," to Ecology (PNL 10821 provided)

4. The Interim Stabilization Program will provide a presentation at the next UMM for work done in the 200 West Area on the complexed waste issue (Presentation to follow)

INTERIM STABILIZATION / ISOLATION

SAMPLING ISSUES

D. B. Engelman

October 17, 1995

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West Area SST Grab Sampling

- Issues
  - Saltwell not available
  - Saltcrust inside saltwell
  - Saltcake bridge between saltwell and jetpump

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PATH FORWARD

Use temperature vapor probe with high pressure low volume water lance equipment to bore through the saltcake.

- ❑ Use LiBr tracer in injection water
- ❑ Sample 45 days later (waste equilibrium)
- ❑ Proven method installing TVP

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SCHEDULE

- *Draft Procedure* — *November 10*
- *Borehole SX-101* — *November 17*
- *Sample (verify method)* — *December 8*
- *Actual Grab Sample* — *January 5*

TANK	BOREHOLE SCHEDULE
SX-102	December
■ SX-103	December
■ SX-105	January
■ SX-106	January
■ S-112	January
■ S-111	February
■ T-110.	February

NOTE: Actual Sampling date 45 days after borehole date.

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TRI-PARTY AGREEMENT MILESTONES
WASTE TANK SAFETY PROGRAM

STATUS REPORT AS OF: 9/30/95

FY 1995 TPA Milestones -- 5 of 5 milestones were completed ahead of schedule.
FY 1996 TPA Milestones -- 2 milestones scheduled.

No.	Title	Due	Status	Remarks
M-40-02	Upgrade Temperature Monitoring Capabilities in Ferrocyanide Tanks.	09/95	Completed 08/24/95 ●	Completion of this TPA milestone was documented by RL in a letter to Ecology dated September 13, 1995.
M-40-05	Complete Safety Alternative Test in High-Heat Tank 241-C-106. (SI-2x38 - 06/95)	09/95	Completed 09/20/95 ●	Completion of this TPA milestone was documented by RL in a letter to Ecology dated September 27, 1995.
M-40-03	Perform Vapor Characterization for all Ferrocyanide Watch List Tanks. (SI-2o37 - 06/95)	11/95	⊕	All eleven ferrocyanide tanks scheduled for characterization in FY 1995 have been sampled and analyzed. The sampling and characterization reports, plus summary reports, were completed September 28, inclusive of all data qualification requested by RL.

Status:
⊕ Ahead of Schedule
● On Schedule
⊖ Behind Schedule
↑ Improving Schedule
↓ Deteriorating Schedule

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No.	Title	Due	Status	Remarks
M-40-08	Perform Vapor Characterization for all Organic Watch List Tanks. (SI-2o37 - 06/95)	11/95	⊕	All original nine (Group A) organic watchlist tanks have been sampled and analyzed in FY 1995. In addition, the additional 11 Group B organic watchlist tanks have been completed. The sampling and characterization reports, plus summary reports, were completed September 28, inclusive of all data qualification requested by RL.
M-40-10	Complete Vapor Space Monitoring of all Flammable Gas Generating Tanks.	01/97	⊕	Turnover of all the Standard Hydrogen Monitoring Systems to the operating staff for routine use was completed on September 19, 1995. All flammable gas watch list tanks now have SHMS systems installed. The data accumulated from these instruments and from grab sampling of the tank dome space are being analyzed for unusual conditions or periodic gas release events.

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Status:
⊕ Ahead of Schedule
● On Schedule
⊖ Behind Schedule
↑ Improving Schedule
↓ Deteriorating Schedule

No.	Title	Due	Status	Remarks
M-40-09	Close all Unreviewed Safety Questions (USQ) for Double-Shell & Single-Shell Tanks.	09/98	⊕	One USQ (flammable gas tanks) is outstanding. The Chemical Reactions SubTAP reviewed the package and found the 101-SY USQ closure package to be technically adequate. RL transmitted a letter to HQ on September 8, summarizing the technical basis and request for closure of the 101-SY USQ. Due to the technical complexity of the recommendation, DOE-RL also proposed to make a technical presentation to DOE-HQ at the earliest acceptable date.
M-40-12	Resolve Nuclear Criticality Safety Issue.	09/99	●	A strategy is in work for resolving this safety issue. The appropriate portion of the draft ASA has been revised. The procedure for waste transfers are reviewed for safety implications as transfers are proposed. Analyses of core samples for total alpha continue. In addition, representative tanks are being selected for additional analyses for plutonium and heavy metals. The revised safety screening DQO was issued to RL which includes appropriate revisions for this issue.

<u>Status:</u> ⊕ Ahead of Schedule ↑ Improving Schedule
● On Schedule ↓ Deteriorating Schedule
⊖ Behind Schedule

9613455.0293

No.	Title	Due	Status	Remarks
M-40-00	Mitigate/Resolve Tank Safety Issues for High Priority Watch List Tanks.	09/01	●	Schedules have been developed to provide a recommendation to DOE in FY 96 for resolution of the Ferrocyanide safety issue.

9613455.0294

Status:
⊕ Ahead of Schedule
● On Schedule
⊖ Behind Schedule
↑ Improving Schedule
↓ Deteriorating Schedule

DOUBLE AND SINGLE-SHELL TANK CHARACTERIZATION

MILESTONE M-44-00

U.S. Department of Energy / Richland Operations Office

James Thompson - U.S. DOE

9613455.0295

Unit Managers Meeting

October 17, 1995

Richland, Washington

TOPICS

- Accomplishments
- Sampling Activities
- Planned Activities
- Cost/Schedule Assessment
- TPA Milestone Status
- Issues/Problems
- Attachments

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ACCOMPLISHMENTS

- Thirty Tank Characterization Reports were submitted in September. These are listed in the Attachment.

- The Tank Waste Analysis Plan (TWAP) for 1996 and 65 Tank Characterization Plans (TCP) were submitted to RL and WDOE. A list of TCPs is attached at the end of this presentation.

- The tank data loaded into the electronic Tank Characterization Database (TCD) during FY-95 is listed in the attachment of analytical reports at the end of this presentation.

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ACCOMPLISHMENTS (Cont.)

- Characterization Basis updated to include Pretreatment, Retrieval, and Disposal DQO Information Needs.

- X-Ray Imager for core recovery measurement became operational.

- Rotary core sampler improvement testing completed. Significant gains in recovery from dry, crumbly saltcake and dry, soft saltcake have been realized.

- Adequate Operators have been Certified to place three core sampling crews in the field.

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SAMPLING ACTIVITIES

- Samples Taken: August and September, 1995

Mode	August				September			
	Tanks		Samples		Tanks		Samples	
	Plnd	Comp	Plnd	Comp	Plnd	Comp	Plnd	Comp
Rotary	0	1	4	6	1	0	2	0
Push	0	0	0	0	1	1	3	3
Auger	2	2	4	4	1	1	3	2
Grab	2	3	2	3	3	2	3	2
Vapor	2	6	2	6	1	1	1	1

Note: "Plnd" is from Schedule 4.4

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SAMPLING ACTIVITIES (Cont.)

- **Tanks Sampled During Months of August and September 1995**

Vapor	Grab	Auger	Push	Rotary
SX-109	AW-102	T-106	S-107	BY-108
T-110	AW-105	T-109		
U-108	AW-106	SX-108		
U-109	AN-101			
U-201	AY-102			
U-204				
C-301				

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Characterization Program Tank Sampling Status Summary

October 1, 1994 to September 30, 1995

	Tanks Scheduled/Completed	Samples Scheduled/Completed
Auger	23/23	46/45
Push	14/14	30/30
Rotary	2.5/1.5	9/9
Vapor	40/40	40/40
Grab	32/32	32/32

Notes:
Tank samples are counted as follows: Rotary, Push, and Auger 1 sample per riser/ average 2 risers per tank.
Grab and Vapor 1 sample per tank

Rev 4.4 schedule is approved. All rotary cores from BY-108 and 110 are being counted in both scheduled and completed columns.

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SAMPLING ACTIVITIES (Cont.)

Characterization Project Operations

Completed Activities 10/09 -- 10/13

Conduct of Ops Re-assessment ongoing

Rotary

RMCS #2 - BY-110, recover bent drill string	Continuing
Parts available Mon., mock-up on Tues.	
RMCS #3 - Support certification, Continuing Trng. drill	Continuing
RMCS #4 - BY-105 tear down, set-up BY-104	Aligning ramps

Auger

- BX-110, set-up (awaiting SAP) — Completed 2 cores

Push (RMCS #1)

- U-105, BLEAK safety basis issue (pursue B-203, B-204) — B-204 (1st core)

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SAMPLING ACTIVITIES (Cont.)

Vapor

• TX-111, hook-up HVP and sample	Complete
• Contingency HVP probes for A-102, A-103	Not done

Grab

• SY-102, preparations	Not done

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PLANNED ACTIVITIES FOR OCTOBER 1995

Characterization Project Operations

Planned Activities 10/16 -- 10/20

Conduct of Ops re-assessment ongoing

Rotary

RMCS #2 - BY-110, recover bent drill string,
resolve down force issues

RMCS #3 - Training

RMCS #4 - BY-104, complete ramp modifications,
begin sampling

Auger

- C-111 sleeve removal

Push - RMCS #1

- B-204, 2nd core

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PLANNED ACTIVITIES (Cont.)

Vapor

- A-102, A-103, install HVPs

Grab

- SY-102 (contingent)

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COST/SCHEDULE ASSESSMENT

For TPA Milestone M-44-08: "Issue 30 Tank Characterization Reports (TCRs) in accordance with the approved Tank Characterization Plans. Complete input of characterization information for 30 High Level Waste Tanks (HLW) to electronic database."

Note: Dollars in Thousands	Cumulative to Date	At Completion
Budget Cost Work Performed (BCWP)	83,348.0	83,348.0
Budget Cost Work Scheduled (BCWS)	83,700.0	83,700.0
Actual Cost Work Performed (ACWP)	73,240.0	73,240.0
Variances:		
Costs (Note 1)	+10,108.0	+10,108.0
Schedule (Note 2)	-352.0	-352.00

Note 1: BCWP - ACWP = Cost Variance
Note 2: BCWP - BCWS = Schedule Variance

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TPA Milestone Status

FY-95

NUMBER	DESCRIPTION	STATUS
M-44-01B	Draft Tank Waste Analysis Plan submitted to Ecology/EPA, on May 30, 1995.	Complete
M-44-02B	Submit Tank Waste Analysis Plan Annual to Ecology/EPA, due August 31, 1995.	Complete
M-44-08	Submit 30 Tank Characterization Reports in Accordance with the Approved Tank Characterization Plans. Complete input of Characterization information for 30 High Level Waste Tanks to Electronic Database, due September 29, 1995.	Complete

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TPA Milestone Status (Cont.)

FY-96

NUMBER	DESCRIPTION	STATUS
M-44-01C	Draft Tank Waste Analysis Plan submitted to Ecology/EPA, on May 30, 1996.	On Schedule
M-44-02C	Submit Tank Waste Analysis Plan Annual to Ecology/EPA, due August 31, 1996.	On Schedule
M-44-09	Submit 40 Tank Characterization Reports in Accordance with the Approved Tank Characterization Plans. Complete input of Characterization information for 40 High Level Waste Tanks to Electronic Database, due September 30, 1996.	On Schedule

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ISSUES / PROBLEMS

- 325 Laboratory Restart
  - Funding: 325 ACL A Hot Cell upgrade will be completed March 1996
  - The 325 Lab future mission will be backup production lab, specialty analysis, and sample exchange evaluation.

- Vapor analyses quality concerns at ORNL and PNL were discovered.
  - All Observations have been closed, except 5 from PNL.
  - All data in TCRs has been qualified.

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ISSUES / PROBLEMS (Cont.)

- Variability in TGA and DSC results:
  - Guidance for evaluating analytical results issued.
  - Equipment delivered and plan drafted for homogeneity studies to better understand sample variability.

- Conduct of Operations Events
  - Core sample conducted without sampler in place.
  - Vapor sample taken on wrong tank
  - Waste water transferred to TEDF without proper confirmation of limits

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ISSUES / PROBLEMS (Cont.)

- RMCS Design Problems:
  - Mechanical interference between drill string and sampler. Design corrected.
  - Sample receiver hydraulic pistons and supporting framework (Truck #2 only) under-designed. Compensatory controls in place. Retrofit will occur during next maintenance availability.
  - Currently evaluating reduced limit of 250 to 1000 lbs down force (depending on drill string length) to prevent possibility of drill string breaking. Limit may be raised if in-tank video is available.

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ISSUES / PROBLEMS (Cont.)

- Flammable Gas Controls on Non-Watchlist Tanks:
  - 16 new tanks have flammable gas controls imposed on them.
  - Possible expansion of flammable gas controls to additional tanks may further impact the schedule.
  - Urgent task underway to qualify RMCS for flammable gas tanks by June 1996.
  - Sampling of several Characterization Basis tanks is now delayed until RMCS qualification complete.

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ISSUES / PROBLEMS (Cont.)

Goal: Resolve the following issues with WDOE by end of 1st Quarter FY-96.

- **Adequacy of Tank Waste Analysis Plans and Tank Characterization Plans questioned by WDOE. Discussions in progress to resolve.**
- **MYPP does not support delivery of number of TCRs required by TPA Milestones if sampling is required for all tanks.**
- **Flammable Gas Issue will affect M44 Milestones completion.**

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ATTACHMENT: TANK CHARACTERIZATION PLANS

- **Tank Characterization Plans (TCPs), first issue or recent revisions, for the following tanks were issued:**

Title	Number	Rev	Date
Tank 241-T-108 TCP and Auger SAP	SD-WM-TSAP-013	0	7/13/95
Tank 241-BY-108 TCP	SD-WM-TP-275	0-D	7/19/95
Tank 241-T-109 TCP	SD-WM-TP-368	0	8/15/95
Tank 241-BY-108 TCP	SD-WM-TP-275	0-E	8/18/95
Tank 241-U-105 TCP	SD-WM-TP-289	0-A	8/24/95
Tank 241-BY-105 TCP	SD-WM-TP-218	1-B	8/24/95
Tank 241-TY-103 TCP	SD-WM-TP-300	0-B	8/24/95
Tank 241-BY-104 TCP	SD-WM-TP-230	0-A	8/24/95
Tank 241-BY-103 TCP	SD-WM-TP-231	1-B	8/24/95
Tank 241-BY-106 TCP	SD-WM-TP-217	1-A	8/24/95
Tank 241-S-101 TCP	SD-WM-TP-386	0	8/25/95

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ATTACHMENT: TANK CHARACTERIZATION PLANS (Cont.)

Title	Number	Rev	Date
Tank 241-U-109 TCP	SD-WM-TP-316	0	8/25/95
Tank 241-A-101 TCP	SD-WM-TP-331	0	8/25/95
Tank 241-U-108 TCP	SD-WM-TP-315	0	8/25/95
Tank 241-BX-110 TCP	SD-WM-TP-382	0	8/25/95
Tank 241-TX-109 TCP	SD-WM-TP-398	0	8/28/95
Tank 241-TX-104 TCP	SD-WM-TP-395	0	8/28/95
Tank 241-C-104 TCP	SD-WM-TP-208	0	8/28/95
Tank 241-S-109 TCP	SD-WM-TP-391	0	8/28/95
Tank 241-S-111 TCP	SD-WM-TP-317	0-A	8/28/95
Tank 241-TX-118 TCP	SD-WM-TP-241	0-A	8/28/95
Tank 241-TX-105 TCP	SD-WM-TP-293	0-A	8/28/95
Tank 241-S-102 TCP	SD-WM-TP-238	0-B	8/28/95
Tank 241-SX-103 TCP	SD-WM-TP-313	0-A	8/28/95
Tank 241-TX-112 TCP	SD-WM-TP-400	0	8/28/95
Tank 241-SX-109 TCP	SD-WM-TP-334	0	8/28/95

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ATTACHMENT: TANK CHARACTERIZATION PLANS (Cont.)

Title	Number	Rev	Date
Tank 241-AY-101 TCP	SD-WM-TP-406	0	8/28/95
Tank 241-S-112 TCP	SD-WM-TP-392	0	8/28/95
Tank 241-TX-116 TCP	SD-WM-TP-403	0	8/28/95
Tank 241-AX-101 TCP	SD-WM-TP-332	0	8/28/95
Tank 241-TX-113 TCP	SD-WM-TP-401	0	8/28/95
Tank 241-TX-115 TCP	SD-WM-TP-402	0	8/28/95
Tank 241-TX-111 TCP	SD-WM-TP-399	0	8/28/95
Tank 241-S-108 TCP	SD-WM-TP-390	0	8/28/95
Tank 241-S-106 TCP	SD-WM-TP-389	0	8/28/95
Tank 241-S-105 TCP	SD-WM-TP-388	0	8/28/95
Tank 241-S-103 TCP	SD-WM-TP-387	0	8/28/95
Tank 241-BX-110 TCP	SD-WM-TP-382	0-A	8/28/95
Tank 241-AN-106 TCP	SD-WM-TP-407	0	8/28/95
Tank 241-TX-101 TCP	SD-WM-TP-393	0	8/28/95
Tank 241-TX-106 TCP	SD-WM-TP-396	0	8/28/95

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ATTACHMENT: TANK CHARACTERIZATION PLANS (Cont.)

Title	Number	Rev	Date
Tank 241-TX-108 TCP	SD-WM-TP-397	0	8/28/95
Tank 241-SX-108 TCP	SD-WM-TP-405	0	8/28/95
Tank 241-AN-105 TCP	SD-WM-TP-385	0	8/28/95
Tank 241-TX-103 TCP	SD-WM-TP-394	0	8/28/95
Tank 241-AN-103 TCP	SD-WM-TP-383	0	8/28/95
Tank 241-AN-104 TCP	SD-WM-TP-384	0	8/28/95

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ATTACHMENT: TANK CHARACTERIZATION REPORTS

- **Tank Characterization Reports (TCRs), first issue or recent revisions, for the following tanks were issued in their final version by DOE-RL on Sept 28, 1995:**

Tank	Document Name	Document Number	Original Date
241-AW-101	*Tank Characterization Report for Double-Shell Tank 241-AW-101*	WHC-SD-WM-ER-470, Revision 0	7/26/95
241-AW-103	*Tank Characterization Report for Double-Shell Tank 241-AW-103*	WHC-SD-WM-ER-455, Revision 0	7/14/95
241-AW-104	*Tank Characterization Report for Double-Shell Tank 241-AW-104*	WHC-SD-WM-ER-453, Revision 0	7/14/95
241-AX-102	*Tank Characterization Report for Single-Shell Tank 241-AX-102*	WHC-SD-WM-ER-472, Revision 0-B	8/9/95*
241-AY-102	*Tank Characterization Report for Double-Shell Tank 241-AY-102*	WHC-SD-WM-ER-454, Revision 0	7/6/95
241-AZ-101	*Tank Characterization Report for Double-Shell Tank 241-AZ-101*	WHC-SD-WM-ER-410, Revision 0	7/27/95
241-AZ-102	*Tank Characterization Report for Double-Shell Tank 241-AZ-102*	WHC-SD-WM-ER-411, Revision 0	7/27/95

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ATTACHMENT: TANK CHARACTERIZATION REPORTS (Cont.)

241-B-102	*Tank Characterization Report for Single-Shell Tank 241-B-102*	WHC-SD-WM-ER-405, Revision 0-B	7/31/95
241-B-103	*Tank Characterization Report for Single-Shell Tank 241-B-103*	WHC-SD-WM-ER-488, Revision 0-A	8/7/95**
241-B-112	*Tank Characterization Report for Single-Shell Tank 241-B-112*	WHC-SD-WM-ER-466, Revision 0-B	8/7/95*
241-B-202	*Tank Characterization Report for Single-Shell Tank 241-B-202*	WHC-SD-WM-ER-371, Revision 0	8/8/95
241-BX-101	*Tank Characterization Report for Single-Shell Tank 241-BX-101*	WHC-SD-WM-ER-408, Revision 0-B	7/19/95*
241-BX-105	*Tank Characterization Report for Single-Shell Tank 241-BX-105*	WHC-SD-WM-ER-406, Revision 0-B	8/7/95*
241-BX-108	*Tank Characterization Report for Single-Shell Tank 241-BX-108*	WHC-SD-WM-ER-407, Revision 0-B	8/7/95*
241-C-101	*Tank Characterization Report for Single-Shell Tank 241-C-101*	WHC-SD-WM-ER-473, Revision 0-B	8/9/95*
241-C-105	*Tank Characterization Report for Single-Shell Tank 241-C-105*	WHC-SD-WM-ER-489, Revision 0-B	8/8/95*
241-C-107	*Tank Characterization Report for Single-Shell Tank 241-C-107*	WHC-SD-WM-ER-474, Revision 0-B	8/8/95*

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ATTACHMENT: TANK CHARACTERIZATION REPORTS (Cont.)

241-C-111	*Tank Characterization Report for Single-Shell Tank 241-C-111*	WHC-SD-WM-ER-475, Revision 0-B	8/9/95*
241-C-201	*Tank Characterization Report for Single-Shell Tank 241-C-201*	WHC-SD-WM-ER-476, Revision 0-B	8/4/95*
241-C-202	*Tank Characterization Report for Single-Shell Tank 241-C-202*	WHC-SD-WM-ER-477, Revision 0-B	8/7/95*
241-C-203	*Tank Characterization Report for Single-Shell Tank 241-C-203*	WHC-SD-WM-ER-478, Revision 0-B	8/7/95*
241-SX-113	*Tank Characterization Report for Single-Shell Tank 241-SX-113*	WHC-SD-WM-ER-480, Revision 0-B	8/4/95*
241-SY-101	*Tank Characterization Report for Double-Shell Tank 241-SY-101*	WHC-SD-WM-ER-409, Revision 0	8/4/95
241-SY-102	*Tank Characterization Report for Double-Shell Tank 241-SY-102*	WHC-SD-WM-ER-366, Revision 0	6/9/95
241-TY-104	*Tank Characterization Report for Single-Shell Tank 241-TY-104*	WHC-SD-WM-ER-481, Revision 0-A	8/3/95**
241-TY-106	*Tank Characterization Report for Single-Shell Tank 241-TY-106*	WHC-SD-WM-ER-482, Revision 0-B	7/7/95*
241-U-201	*Tank Characterization Report for Single-Shell Tank 241-U-201*	WHC-SD-WM-ER-483, Revision 0-B	8/7/95*

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ATTACHMENT: TANK CHARACTERIZATION REPORTS (Cont.)

241-U-202	*Tank Characterization Report for Single-Shell Tank 241-U-202*	WHC-SD-WM-ER-484, Revision 0-B	8/1/95*
241-U-203	*Tank Characterization Report for Single-Shell Tank 241-U-203*	WHC-SD-WM-ER-485, Revision 0-B	8/8/95*
241-U-204	*Tank Characterization Report for Single-Shell Tank 241-U-204*	WHC-SD-WM-ER-486, Revision 0-B	7/28/95*

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ATTACHMENT: TANK WASTE CHARACTERIZATION PROJECT
ANALYTICAL SERVICES 45-DAY SAFETY SCREENING
MILESTONE T2D-95-122

TANK	MODE	DOCUMENT NUMBER	TITLE	DATE DUE	DATE COMPLETED
SY-103	Push	WHC-SD-WM-DP-074	45-Day Safety Deliverable Safety Screening for Tank SY-103, Core 62	11/05/94	11/04/94
BX-105	Auger	WHC-SD-WM-DP-076	Single Shell Tank Waste Characterization 45-Day Safety Screening for Tank 241-BX-105 Auger Samples, Risers 2 and 6	11/20/94	11/17/94
B-102	Auger	WHC-SD-WM-DP-077	Single Shell Tank Waste Characterization 45-Day Safety Screening for Tank 241-B-102 Auger Samples, Riser 1	12/01/94	11/30/94
AP-106	Grab	WHC-SD-WM-DP-078	45-Day Safety Screen Results for Double Shell Tank 241-AP-106, Liquid Grab Samples, Riser 130' and 150' in Conjunction with Evaporator Campaign 95-1	01/02/95	12/15/94
C-108	Auger	WHC-SD-WM-DP-082	45-Day Safety Screen Results for Tank 241-C-108 Augers 94-012, 94-014, and 94-015	01/28/95	01/26/95
AP-107	Grab	WHC-SD-WM-DP-098	45-Day Safety Screen Report for Grab Samples	03/20/95	03/06/95
C-103	Push	WHC-SD-WM-DP-099	45-Day Safety Screen Results for Tank 241-C-103, Cores 63 and 66	03/26/95	03/23/95
AX-102	Auger	WHC-SD-WM-DP-100	45-Day Safety Screen Results for Tank 241-AX-102, Augers 95-Aug-006 and 95-Aug-007	04/01/95	03/28/95
TY-104	Auger	WHC-SD-WM-DP-101	45-Day Safety Screen Results for Tank 241-TY-104, Auger Samples 95-Aug-008 and 95-Aug-009	04/10/95	04/05/95
TY-106	Auger	WHC-SD-WM-DP-102	45-Day Safety Screen Results for Tank 241-TY-106, Auger Samples 95-Aug-010 and 95-Aug-011	04/17/95	04/13/95

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ATTACHMENT: TANK WASTE CHARACTERIZATION PROJECT
ANALYTICAL SERVICES 45-DAY SAFETY SCREENING
MILESTONE T2D-95-122

TANK	MODE	DOCUMENT NUMBER	TITLE	DATE DUE	DATE COMPLETED
BY-103	Auger	WHC-SD-WM-DP-104	45-Day Safety Screen Results for Tank 241-BY-103, Auger Samples 95-Aug-012 and 95-Aug-013	04/24/95	04/20/95
C-107	Push	WHC-SD-WM-DP-106	45-Day Safety Screen Results for Tank 241-C-107, Push Mode, Cores 68 and 69	04/27/95	04/26/95
B-112	Auger	WHC-SD-WM-DP-105	45-Day Safety Screen Results for Tank 241-B-112, Auger Samples 95-Aug-014 and 95-Aug-015	05/01/95	04/26/95
U-201	Push	WHC-SD-WM-DP-107	45-Day Safety Screen Results for Tank 241-U-201, Push Mode, Cores 70, 73, and 76	05/04/95	04/28/95
C-105	Push	WHC-SD-WM-DP-108	45-Day Safety Screen Results for Tank 241-C-105, Push Mode, Cores 72 and 76	05/07/95	05/03/95
U-202	Push	WHC-SD-WM-DP-110	45-Day Safety Screen Results for Tank 241-U-202, Push Mode, Cores 75 and 78	05/14/95	05/09/95
C-101	Auger	WHC-SD-WM-DP-111	45-Day Safety Screen Results for Tank 241-C-101, Auger Sample 95-Aug-019	05/14/95	05/10/95
U-203	Push	WHC-SD-WM-DP-109	45-Day Safety Screen Results for Tank 241-U-203, Push Mode, Cores 75 and 78	05/18/95	05/05/95
C-203	Auger	WHC-SD-WM-DP-112	45-Day Safety Screen Results and Final Report for Tank 241-C-203, Auger Samples, 95-Aug-020 and 95-Aug-021	05/21/95	05/17/95
U-204	Push	WHC-SD-WM-DP-113	45-Day Safety Screen Results for Tank 241-U-204, Push Mode. Cores 81 and 82	05/21/95	05/17/95

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ATTACHMENT: TANK WASTE CHARACTERIZATION PROJECT
ANALYTICAL SERVICES 45-DAY SAFETY SCREENING
MILESTONE T2D-95-122

TANK	MODE	DOCUMENT NUMBER	TITLE	DATE DUE	DATE COMPLETED
C-204	Auger	WHC-SD-WM-DP-115	45-Day Safety Screen Results for Tank 241-C-204, Auger Samples 95-Aug-022 and 95-Aug-023	06/17/95	06/14/95
C-201	Auger	WHC-SD-WM-DP-116	45-Day Safety Screen Results for Tank 241-C-201, Auger Samples 95-Aug-025 and 95-Aug-026	06/18/95	06/14/95
C-202	Auger	WHC-SD-WM-DP-132	45-Day Safety Screen Results and Final Report for Tank 241-C-202, Auger Samples 95-Aug-026 and 95-Aug-027	06/22/95	06/16/95
SX-113	Auger	WHC-SD-WM-DP-133	45-Day Safety Screen Results and Final Report for Tank 241-SX-113, Auger Samples 95-Aug-028 and 95-Aug-029	06/25/95	06/21/95
BX-103	Push	WHC-SD-WM-DP-135	45-Day Safety Screen Results for Tank 241-BX-103, Push Mode, Cores 86 and 87	07/16/95	07/14/95
B-103	Auger	WHC-SD-WM-DP-134	45-Day Safety Screen Results and Final Report for Tank 241-B-103, Auger Samples 95-Aug-031 and 95-Aug-032	07/17/95	07/18/95
A-102	Auger	WHC-SD-WM-DP-136	45-Day Safety Screen Results for Tank 241-A-102, Auger Sample 95-Aug-033	07/24/95	07/21/95
B-104	Push	WHC-SD-WM-DP-137	45-Day Safety Screen Results for Tank 241-B-104, Push Mode, Cores 88 and 89	07/30/95	07/28/95
B-101	Push	WHC-SD-WM-DP-139	45-Day Safety Screen Results for Tank 241-B-101, Push Mode, Cores 90 and 91	08/10/95	08/10/95
B-106	Push	WHC-SD-WP-DP-140	45-Day Safety Screen Results for Tank 241-B-106, Push Mode, Cores 93 and 94	09/01/95	08/18/95

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ATTACHMENT: TANK WASTE CHARACTERIZATION PROJECT
ANALYTICAL SERVICES 45-DAY SAFETY SCREENING
MILESTONE T2D-95-122

TANK	MODE	DOCUMENT NUMBER	TITLE	DATE DUE	DATE COMPLETED
T-108	Auger	WHC-SD-WM-DP-141	45-Day Safety Screen Results for Tank 241-T-108, Auger Samples 95-AUG-035 and 95-AUG-037	09/04/95	08/24/95
T-106	Auger	WHC-SD-WM-DP-143	45-Day Safety Screen Results for Tank 241-T-106, Auger Samples 95-AUG-038 and 95-AUG-039	09/25/95	09/20/95

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ATTACHMENT: TANK WASTE CHARACTERIZATION PROJECT
ANALYTICAL SERVICES 136 DAY DATA PACKAGES
MILESTONE T2D-95-126

TANK	MODE	DOCUMENT NUMBER	TITLE	DUE DATE	COMPLETION DATE
U-106	Grab	8E480-94-109	Results for Tank 241-U-106	11/14/94	10/17/94
AW-104	Grab		Faxed results to Customer per LOI 7E720-94-133	11/27/94	10/31/94
AW-103	Grab		Faxed results to the Customer per LOI 7E720-94-135	11/29/94	10/11/94
AY-101	Grab	8E480-94-108	Results for Tank 241-AY-101, Grab Samples per LOI 7E720-94-134	12/02/94	10/18/94
AN-102	Grab		Faxed to the Customer per LOI 7E720-94-135	12/20/94	10/28/94
AW-102	Grab		Reported; however no file record	01/01/95	11/11/94
AY-102	Grab	8E480-94-112	Results for Tank 241-AY-102	01/27/95	12/12/94
AP-101	Grab	8E480-95-001	Results for Tank 241-AP-101, Grab Samples per LOI 7E720-94-145	02/13/95	01/19/95
AY-101	Grab	8E480-95-003	Results for Tank 241-AY-101, Grab Samples	02/27/95	02/02/95
AZ-102	Grab	8E480-95-024	Results for Tank 241-AZ-102	04/25/95	04/11/95
AZ-101	Grab	8E480-95-023	Results for Tank 241-AZ-101, Grab Samples	05/02/95	04/11/95
BX-106	Grab	8E480-95-018	Results for Tank 241-BX-106, Grab Samples	05/16/95	04/04/95
BY-103	Grab	8E480-95-021	Results for Tank 241-BY-103, Grab Samples	05/22/95	04/13/95
BY-105	Grab	8E480-95-020	Results for Tank 241-BY-105	05/22/95	04/06/95
	Grab	8E480-95-017	Results for 244-A Catch Tank Samples	05/23/95	03/30/95

9613455.0326

ATTACHMENT: TANK WASTE CHARACTERIZATION PROJECT
ANALYTICAL SERVICES 136 DAY DATA PACKAGES
MILESTONE T2D-95-126

AP-101	Grab	8E480-95-022	Results for Tank 241-AP-101, Grab Samples	05/29/95	04/10/95
S-110	Grab	8E480-95-026	Waste Compatibility Results for 241-S-110, Grab Samples	06/06/95	05/24/95
U-107	Grab	8E480-95-027	Waste Compatibility Results for 241-U-107	06/11/95	05/24/95
U-103	Grab	75970-95-035	Waste Compatibility Results for 241-U-103	07/23/95	06/21/95
U-108	Grab	75970-95-043 Rev 1	Waste Compatibility Results for Tank 241-U-108, Grab Samples	07/31/95	07/14/95
U-109	Grab	75970-95-050	Waste Compatibility Results for Tank 241-U-109, Grab Samples	08/08/95	07/24/95
U-105	Grab	75970-95-052	Waste Compatibility Results for Tank 241-U-105, Grab Samples	08/14/95	08/01/95
S-102	Grab	75970-95-059	Waste Compatibility Results for Tank 241-S-102, Grab Samples	08/14/95	08/08/95

9613455.0327

ATTACHMENT:

TANK WASTE CHARACTERIZATION PROJECT ANALYTICAL SERVICES 172 DAY DATA REPORTS MILESTONE T2D-95-127

TANK	MODE	DOCUMENT NUMBER	TITLE	DUE DATE	COMPLETION DATE
AP-106	Grab	WHC-SD-WM-DP-078	Data Package for Analysis and Characterization of Double Shell Tank	04/03/95	03/31/95
AW-101	Auger	WHC-SD-WM-DP-097	136-Day Crust Burn Safety Issue Results for Tank 241-AW-101, Auger Samples 95-Aug-001, 95-Aug-004, and 95-Aug-005	06/12/95	05/11/95
AP-107	Grab	WHC-SD-WM-DP-098	Analyses and Characterization of Double Shell Tank 241-AP-107 for 242-A Evaporator Campaign 95-1	06/19/95	05/12/95
AN-107	Grab	8E110-PCL-94-092	Results of Caustic Demand Tests on Tank 107-AN Sludge	03/04/95	11/30/94

9613455.0328

ATTACHMENT:

TANK WASTE CHARACTERIZATION PROJECT ANALYTICAL SERVICES 216 DAY DATA REPORTS T2D-95-124

TANK	MODE	DOCUMENT NUMBER	TITLE	DUE DATE	COMPLETION DATE
SY-103	Push	WHC-SD-WM-DP-074	216-Day Final Report for Tank 241-SY-103 Push Mode, Core 62	06/16/95	08/07/95
C-108	Auger	WHC-SD-WM-DP-082 Rev. 1	216-Day Final Report for Tank 241-C-108, Auger Samples, 94-Aug-012, 94-Aug-014, 94-Aug-015, and Push Mode, Core 61	07/18/95	07/17/95
C-103	Push	WHC-SD-WM-DP-099 Rev. 1	Final Report for Tank 241-C-103, Push Mode, Cores 63 and 66	09/13/95	09/29/95
TY-104	Auger	WHC-SD-WM-DP-101	216-Day Safety Screen Results and Final Report for Tank 241-TY-104, Auger Samples 95-Aug-008 and 95-Aug-009	09/28/95	05/23/95
C-111	Auger	WHC-SD-WM-DP-079	216-Day Report for Tank 241-C-111, Cores 58 and 59	10/29/95	05/25/95
	Push	WHC-SD-WM-DP-113 Rev. 1	Final Report for Tank 241-U-204, Push Mode, Cores 81 & 82	11/08/95	08/22/95

9613455.0329

ATTACHMENT: CHARACTERIZATION BASIS TANKS

Appendix A and B refer the Tables in OSD-T-151-00030 that impose Watch List controls on tanks. These tanks have Flammable Gas controls imposed. TX-111 has had these controls imposed by Tank Farm Operations Manager Standing Order as temporary measure until the OSD can be revised.

ROTARY

TANK	CONSTRAINT/ STATUS
A-101	Appendix A
AX-101	Appendix A
BY-103	Appendix B
BY-104	Setting up
BY-105	Appendix B
BY-106	Appendix B
BY-108	Completed
BY-110	In progress
C-104	Appendix B

TANK	CONSTRAINT/ STATUS
SX-101	Appendix A
SX-103	Appendix A
SX-104	Appendix A
TX-111	Standing Order
TX-118	
TY-103	Level study
U-105	Appendix A
U-107	Appendix A
U-108	Appendix A

9613455.0330

ATTACHMENT: CHARACTERIZATION BASIS TANKS

TANK	CONSTRAINT/ STATUS
S-101	Appendix B
S-102	Appendix A
S-110	

TANK	CONSTRAINT/ STATUS
U-109	Appendix A
*U-111	

* Proposed addition

PUSH

TANK	CONSTRAINT/ STATUS
AW-101	Appendix A, RGS
AN-104	Appendix A, RGS
B-104	Completed

TANK	CONSTRAINT/ STATUS
AN-103	Appendix A, RGS
AN-105	Appendix A, RGS
S-107	Completed

9613455.0331

Attachment: Sampling Schedule for First Quarter (October thru December) 1996

Note: This schedule is being revised following the designation of additional tanks that require flammable gas controls.

TITLE	Early Start	Early Finish
BY-105 Rotary Sample 2 Segment 9 (Eberlein)	9/6/95	10/25/95
BY-104 Rotary Sample 2 Segment 7 (Eberlein)	9/26/95	11/14/95
AN-104 Grab Sample (Privatization)	10/2/95	10/4/95
AW-101 Push Sample 2 Segment 22 (Eberlein)	10/2/95	10/19/95
TX-111 Vapor Sample (3)	10/2/95	10/4/95
AN-105 Grab Sample (Privatization)	10/5/95	10/9/95
A-103 Vapor Sample (3)	10/9/95	10/11/95
B-204 Push Sample (2) Segment 14	10/10/95	10/20/95
AY-102 Grab Sample (Privatization)/Jones	10/12/95	10/13/95
BX-110 Auger Sample 2 Segment 1	10/16/95	10/20/95
BX-107 Vapor Sample (3)	10/16/95	10/18/95
AZ-101 Grab Sample Maclean/(Privatization)	10/18/95	10/20/95
SX-104 Grab Sample Compatibility-Sutey	10/23/95	10/25/95
BY-102 Vapor Sample (3)	10/23/95	10/25/95

9613455.0332

Attachment: Sampling Schedule for First Quarter (October thru December) 1996 (Cont.)

TITLE	Early Start	Early Finish
B-203 Push Sample (2) Segment 14	10/23/95	10/31/95
BY-103 Rotary Sample 2 Segment 8 (Eberlein)	10/26/95	12/18/95
A-101 Grab Sample Compatibility - Jones	10/30/95	11/1/95
S-110 Vapor Sample (3)	10/30/95	11/1/95
S-101 Vapor Sample (3)	11/2/95	11/6/95
AX-101 Grab Sample Compatibility - Jones	11/6/95	11/8/95
S-103 Vapor Sample (3)	11/9/95	11/13/95
AN-107 Grab Sample (Caustic Addition)	11/13/95	11/15/95
S-106 Vapor Sample (3)	11/14/95	11/16/95
BY-106 Rotary Sample 1 Segment 13 (Eberlein)	11/15/95	12/7/95
BX-112 Auger Sample 2 Segment 1	11/20/95	11/28/95
AP-105 CAMPAIGN 96-1 Grab Sample - Von Bargen	11/20/95	11/22/95
S-107 Vapor Sample (3)	11/28/95	11/30/95
SY-102 Grab Sample Compatibility - Sutey	11/29/95	12/1/95
AN-105 Push Sample 2 Segment 11 (12-22) Eberlein	11/30/95	12/19/95

9613455.0333

Attachment: Sampling Schedule for First Quarter (October thru December) 1996 (Cont.)

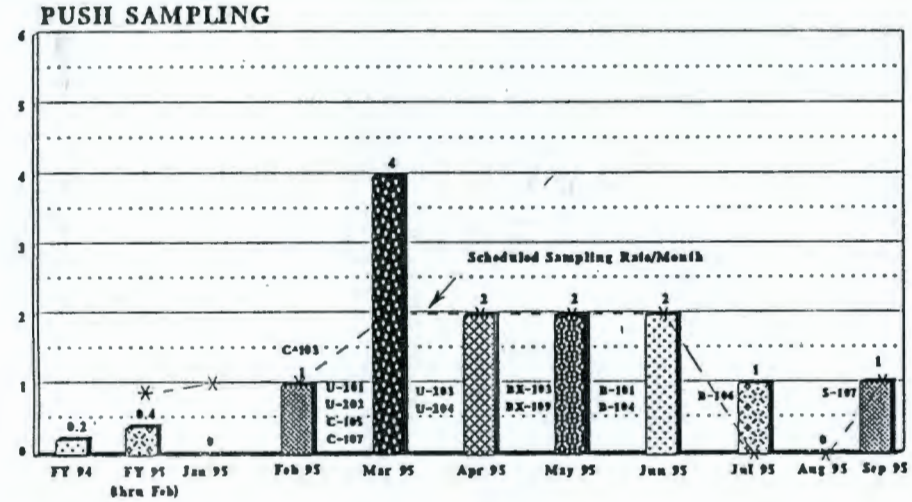
TITLE	Early Start	Early Finish
S-108 Vapor Sample (3)	12/1/95	12/4/95
AN-102 Grab Sample (Privatization)	12/4/95	12/5/95
AN-107 Grab Sample (Privatization)/Caustic	12/6/95	12/7/95
S-109 Vapor Sample (3)	12/7/95	12/11/95
AP-104 CAMPAIGN 96-2 Grab Sample - Von Bargen	12/12/95	12/14/95
S-105 Vapor Sample (3)	12/14/95	12/18/95
TX-118 Rotary Sample 6(5R) Segment 7 (Eberlein)	12/14/95	2/12/96
AW-101 Grab Sample Safety Screening	12/15/95	12/19/95
TX-111 Rotary Sample 5(4R) Segment 8 (Eberlein)	12/18/95	1/31/96
A-102 Vapor Sample (3)	12/21/95	12/22/95
AN-107 Grab Sample (Caustic Addition)	12/22/95	1/4/96

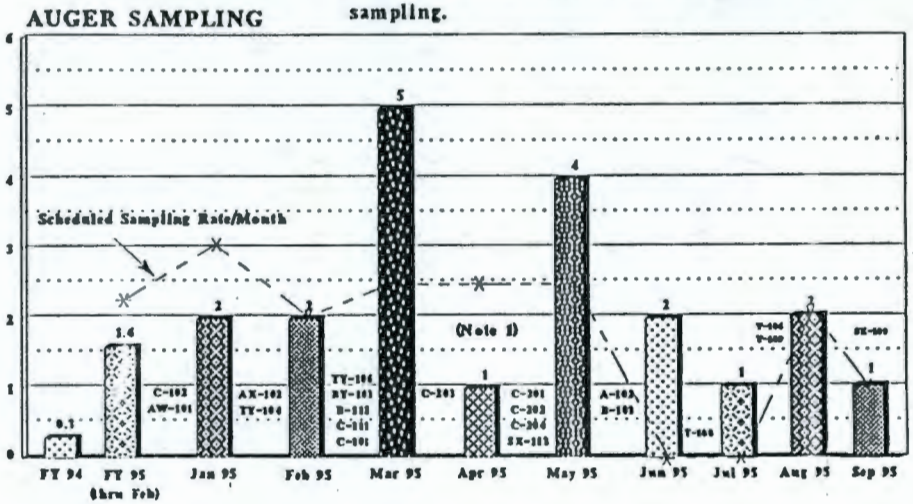
9613455.0334

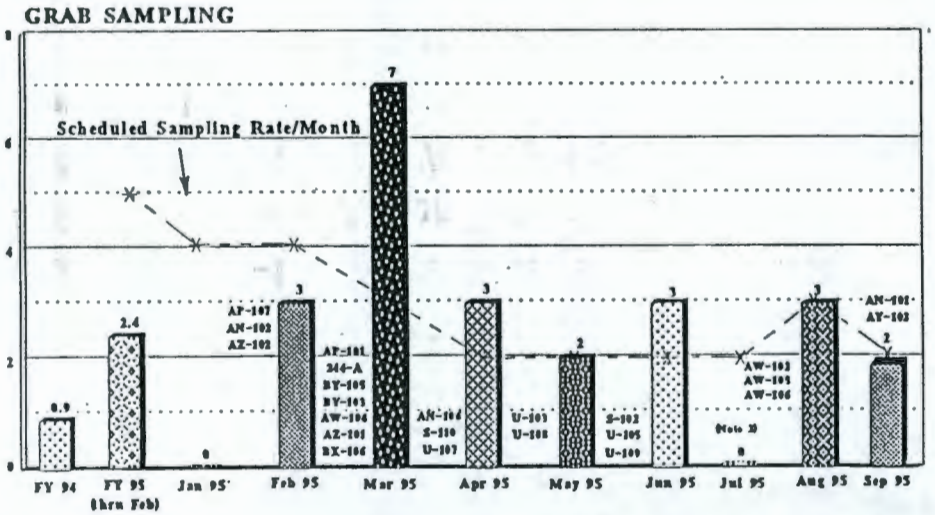
Improvements in Field Sampling Rates

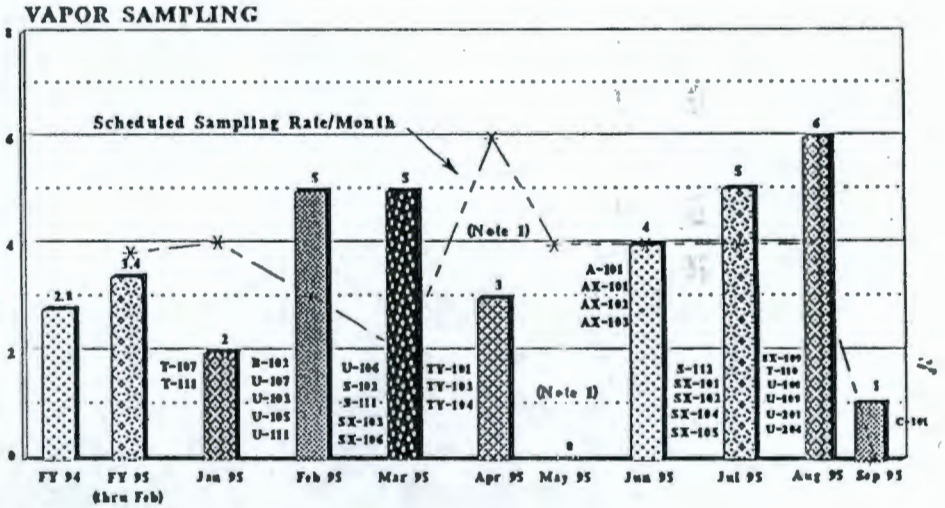
Tanks Sampled/Month

Note 1: All sampling activities suspended Apr/May 1995.
Note 2: Grab sampling suspended after 5 unsuccessful attempts on waste surface not compatible with sampling.









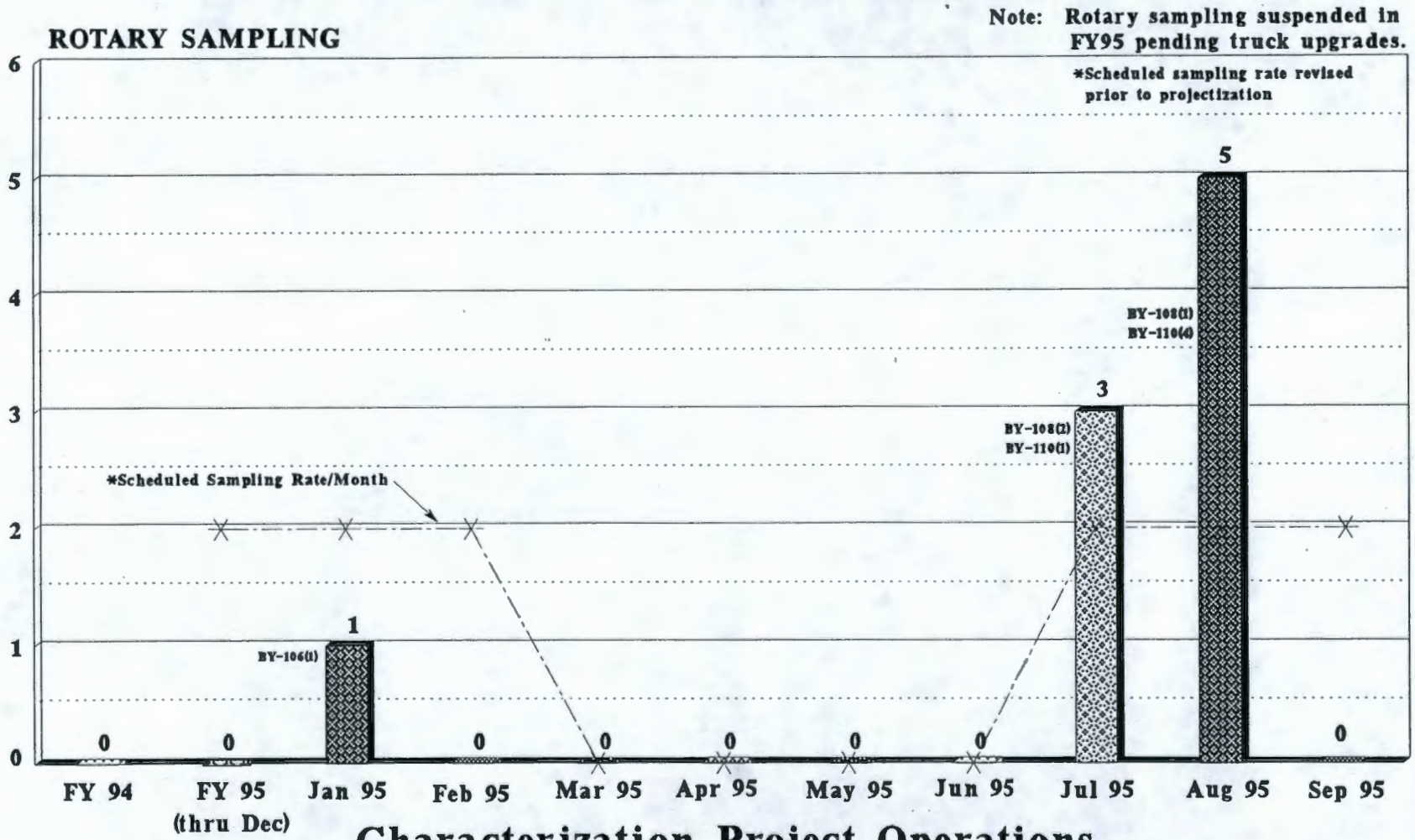
Characterization Project Operations

10/2/95

9613455.0335

Improvements in Field Sampling Rates

Cores Sampled/Month



Characterization Project Operations

10/2/95

9613455.0336

Handout 6

PROVIDE ADDITIONAL DOUBLE-SHELL TANK CAPACITY

MILESTONE M-42-00

J. E. Couey
RL, MULTI-FUNCTION WASTE TANK FACILITY
PROJECT OFFICE

October 17, 1995

9613455.0337

Accomplishments (Last three months)

- HQ delegated to RL authority to cancel project in September 1995.

Planned Actions (Next three months)

- Obtain Ecology and EPA approval of TPA change request in October 1995.
- RL approve baseline change request upon receipt of approved TPA change request.

9613455.0338

REPLACEMENT OF CROSS-SITE TRANSFER SYSTEM

MILESTONE M-43-07

J. E. Couey
RL, CROSS SITE TRANSFER SYSTEM
PROJECT OFFICE

October 17, 1995

9613455.0339

Accomplishments (Last three months)

- Definitive design completed in August 1995 in accordance with TPA target milestone M-43-07-T01 due 31 August 1995.

- SIS-EIS Notice of Availability approved by RL and issued 10 October 1995; will be published in Federal Register on 20 October 1995 in support of issuance of ROD on 20 November 1995.

- Tier III review of the PSAR initiated in September 1995.

- C-1 package (installation of pipe between tank farms) issued for bid.

9613455.0340

Accomplishments (Continued)

- C-2 package (installation of pipe within tank farms) undergoing preparation of work task packages.
- C-3 package (installation of diversion box and vent station) undergoing bid preparation.
- Independent Design Review initiated in September 1995.
- Independent Cost Estimate Validation initiated in September 1995.
- Independent Management Assessment initiated in August 1995.

9613455.0341

Planned Actions (Next three months)

- Issue ROD in November 1995.
- Complete Tier III review of PSAR and issue SER in November 1995.
- Award C-1 package (phase 1 only) in October 1995; issue notice to proceed for phase 2 in November 1995 upon receipt of ROD and SER.
- Issue authorization to proceed with C-2 package in November 1995 upon receipt of ROD and SER.
- Issue C-3 package for bid in November 1995.

9613455.0242

Planned Actions (Continued)

- Complete Independent Design Review in October 1995.
- Complete Independent Cost Estimate Validation in October 1995.
- Complete Management Assessment in October 1995.

9613455.0343

Special Topics

- Fiscal year 1996 funds are needed in hand before the notice to proceed can be issued for phase 2 of the C-1 package; the continuing resolution expires 13 November 1995. There is not enough fiscal year 1995 carry over funds to issue phase 2 of the C-1 package.

- The project will require an operational readiness review prior to start up; this requirement is reflected in the project schedule.

9613455.0344

Handout 8

DST PERMITTING UPDATE

K. A. Elsethagen
WHC, TWRS ENVIRONMENTAL COMPLIANCE

October 17, 1995

9613455.0345

Accomplishments

- The DST Waste Analysis Plan Revision 3 was issued September 29, 1995, and transmitted to Ecology on October 3, 1995.

- Chapters 7 "Contingency Plan" and 13 "Other Relevant Laws" were transmitted for review to Ecology and EPA on August 8, 1995.

- Chapter 8 "Personnel Training" was transmitted to Ecology and EPA on August 23, 1995.

Planned Actions

- Workshops with Ecology on Chapter 7 are scheduled to begin on October 18, 1995.

9613455.0346

Over the past year, the Department of Ecology has met with the Department of Energy and its contractors in an attempt to reach agreement on the Waste Analysis Plan to be included within the Part B Permit. Ecology has made its position very clear from the start. Ecology is most concerned about the continued safe interim storage of the mixed waste stored in the DST system. Therefore the WAP would place the greatest emphasis onverification of the chemical and physical properties of wastes to be transferred. In support of this position, Ecology deferred many potentially complicated and expensive decisions until a final disposal option had been made, but only with the clear understanding that its safety concerns would be met. DOE agreed with this position at the time and willingly deferred many of the more complicated regulatory requirements until a future date. Subsequently, however, DOE has proven unwilling to meet Ecology's requirements for fulfilling compatible and safe interim storage of the mixed waste. Agreements made during DOE and Ecology workshops concerning Ecology's requirements were subsequently changed during internal DOE meetings. Through two formal and several informal revisions, the WAP was not updated as Ecology required and for the past six months little progress has been made.

Therefore Ecology has rewritten the WAP to reflect its requirements. The WAP to be included in the Part B Permit needs to address the points raised in this document or the agreements made initially between DOE and Ecology are no longer valid. If DOE and Ecology fail to reach agreement on the contents of the WAP, then this document represents the conditions Ecology will impose upon DOE at the time of issuance of the Part B Permit.

The document presented here is not complete as some minor corrections and changes still remain and it is necessary to obtain EPA input on LDR issues. However, it encompasses the basis for Ecology's requirements and a completed WAP will be presented by Ecology at the next Unit Manager Meeting.

9613455.0348

DOUBLE-SHELL TANK SYSTEM
WASTE ANALYSIS PLAN

By

Charles H. Mulkey
Joseph M. Jones

Ecology version based upon DOE ~~set~~ version 3 submitted on Sept 29, 1995

edited by:
Laura Cusack
Alisa Huckaby
Alex Stone

~~WESTINGHOUSE HANFORD COMPANY~~
~~September 25, 1995~~
October 17, 1995

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ACRONYMS

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DQO	Data Quality Objective
DSC	Differential scanning Calorimeter
DST	Double-shell Tanks
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ETF	Effluent Treatment Facility
HASQAP	Hanford Analytical Services Quality Assurance Plan
LDR	Land disposal restrictions
OSD	Operational specification document
QA	Quality assurance
QC	Quality control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and analysis plan
SD	Supporting document
SST	Single-shell tank
TCLP	Toxicity characteristic leaching procedures
TGA	Thermogravimetric analysis
TPA	Tri-Party Agreement (*Hanford Federal Facility Agreement and Consent Order*)
TSD	Treatment, Storage, and Disposal Facility
USQ	Unreviewed safety question
WAC	Washington Administrative Code
WAP	Waste analysis plan
WHC	Westinghouse Hanford Company
WM	Waste Management (WHC)
WSPS	Waste stream profile sheet
WTEC	Waste tanks environmental compliance

DEFINITION OF TERMS

Compatible	Two or more wastes are deemed compatible as defined by the Compatibility (a) and Safety Screening (Babad et al 1995) DQOs. At a minimum wastes are not compatible, if when mixed, they (1) generate extreme heat or pressure, fire or explosion, or violent reaction; (2) produce uncontrolled toxic mists, dusts, or gases in sufficient quantities to threaten human health; (3) produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions; (4) damage the structural integrity of the device or facility containing the waste; or (5) through other like means threaten human health or the environment, (40 CFR 265.17(b) and WAC 173-303-070).
Compatibility DQO	The document entitled "Data Quality Objectives For Tank Farms Waste Compatibility Program" (Fowler 1995a).
DST Customer	The person or group who is responsible for transferring the waste to the DST system. The DST Customer is usually the waste generator but may be an intermediary.
DST Operator	Those parties responsible under the Part A Permit Application for the DST System which includes the Department of Energy as Owner and Operator of the Hanford Site and its designated contractor(s) as Co-operator(s).
DST System	The physical boundaries of the TSD unit which includes 28 Double-shell Tanks, 6 tanks in the waste transfer vaults, 1 tank in a transfer building, 5 double-contained receiver tanks, and ancillary equipment such as diversion boxes waste transfer pipelines and miscellaneous associated equipment.
Ignitable	A waste that meets one or more of the criteria of WAC 173-303-090(5).
Incompatible	Wastes that do not meet the definition of compatible waste are considered incompatible.
Initial Verification	The initial analysis of the list of analytes which occurs prior to WSPS approval.
List of Analytes	The analytes contained in Section V of the WSPS.
Mixed waste	A dangerous, extremely hazardous, or acutely hazardous waste that contains both a nonradioactive hazardous component and, as defined by 10 CFR 20.3, source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.). See WAC 173-303-040.

Periodic Verification	The analysis of the waste stream at a set frequency to confirm the chemical consistency of the waste stream entering the DST System.
Reactive	A waste that meets one or more of the criteria of WAC 173-303-090(7).
Safety Screening DQO	The document entitled "Tank Safety Screening Data Quality Objectives" (Babad et al. 1995).
Short List	The group of analytes contained in the list of analytes whose analytical values were identified to occur in concentrations above 1 mg/L during the initial verification.
Tank Farm Operations Waste Acceptance Office	The organization to which the DST Customer directs questions concerning completion of the WSPS and/or to which the DST Customer sends the completed WSPS in order to begin the evaluation process.

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INTRODUCTION

The double-shell tank (DST) system stores mixed waste until the waste can be treated for final disposal in another treatment, storage, and disposal (TSD) unit. Chapters 2.0 and 4.0 of the *Double-Shell Tank Part B System Dangerous Waste Permit Application* (DOE-RL 1991) describe the processes and activities associated with waste receipt and storage in the DST system in more detail. This document relies on the *Data Quality Objectives for the Waste Compatibility Program* (Fowler 1995a) and the *Tank Safety Screening Data Quality Objectives* (Babad et al. 1995) for determining the compounds that are needed to address safety issues and will need to be revised as those documents change. This document does not address the analyses required by M-44 of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1990).

PURPOSE

Information is required to properly manage waste being stored at the Hanford Facility. The process by which this information is obtained is an important aspect of dangerous waste management. One of the requirements of the Federal and State regulations is that this process be set forth in a waste analysis plan and submitted as part of the RCRA Part B Permit application.

This waste analysis plan (WAP) meets the intent of the regulations contained in *Washington Administrative Code* (WAC) 173-303 and Title 40, Parts 264, 265, and 268 of the *Code of Federal Regulations* (CFR) for the DST unit. These regulations require that (1) measures are taken to ensure that the proper waste has been received and (2) sufficient information is available about the waste to properly manage it. Regulatory, safety, and operational issues are addressed by establishing waste acceptance and storage criteria.

The DST system WAP uses the Compatibility (Fowler 1995a) and the *Tank Safety Screening Data Quality Objectives* (Babad et. al. 1995) as the basis for identifying data requirements and criteria for the safe storage and mixing of wastes. For purposes of this WAP, waste acceptance into the DST system is controlled by the approval of incoming waste streams as documented in waste stream profile sheets (WSPSs).

SCOPE

This WAP applies to all dangerous wastes as regulated by WAC 173-303 that are transferred to and are contained in the DST system. Many of these dangerous wastes are mixed wastes because they also contain radioactive constituents defined by the *Atomic Energy Act of 1954*. Issues specific to Watch List tanks are not discussed in this document because waste transferred into these tanks is restricted by Public Law 101-510 and is addressed in the Compatibility DQO (Fowler 1995a).

The radioactive portion of mixed waste is interpreted by the U.S. Department of Energy (DOE) to be regulated under the *Atomic Energy Act of 1954*; the nonradioactive dangerous portion of mixed waste is interpreted to be regulated

under the Resource Conservation and Recovery Act (RCRA) of 1976 and the State of Washington Department of Ecology (Ecology) Dangerous Waste Regulations. It is the position of DOE that any procedures, methods, data or information contained in this WAP that relate solely to the radioactive constituent of mixed wastes is outside the scope of the Hanford Facility RCRA Permit, but are included for the sake of completeness. It is the position of Ecology that the radioactive portion influences safe storage of the waste and must be designated as defined under WAC 173-303; therefore, information about radioactive constituents is necessary to ensure compliance with WAC-173-303 and the RCRA permit. Both agencies acknowledge the other's position, but to avoid a conflict on the issue, DOE has agreed to provide information on radioactive constituents without agreeing with Ecology's position, and Ecology has agreed to accept the information in this context without giving up its position. Should radioactive species become a regulatory issue, DOE and Ecology will resolve the issue at that time.

1.0 FACILITY DESCRIPTION

The DST system is a waste management unit within the Hanford Facility operating under interim status conditions for the storage and treatment of mixed wastes. Storage is the principal function of the DST system, although the *Double-Shell Tank System Dangerous Waste Permit Application* (DOE-RL 1991) does state that treatment also occurs. The following subsections provide an overview of the DST system but the latest edition of the *Double-Shell Tank System Dangerous Waste Permit Application* should be consulted for more detailed information. For the purposes of waste verification (Chapter 5), the 242-A Evaporator will be treated as a special case.

1.1 PROCESS AND ACTIVITIES

The function of the DST system is to store waste until it can be processed by other TSD units such as the 242-A Evaporator. There is no treatment to meet any land disposal restriction (LDR) requirements and there is no disposal of waste in the DST system.

Wastes received by the DST system are separated according to safety and operational concerns. This separation is based on organic content, level of radioactivity, and ability to be processed in the 242-A Evaporator. The varying combinations of waste codes given to incoming waste combined with limited storage capacity and system design has not made it feasible to implement a separation strategy based on waste code(s). Because the separation of wastes in the DSTs has been independent of waste designation, all waste in the DST System has been assigned the same dangerous waste numbers as listed in Part A of the RCRA Permit Application (Part A).

As shown in Table 1-1, there are 40 tanks in the DST system. The amount of waste in each tank is tracked and reported monthly in summary reports such as the *Waste Tank Summary Report for Month Ending in June 30, 1995* (WHC 1995). Waste enters the DST system either directly by pipeline or indirectly to the 204-AR Unloading Facility, where both truck and railcars are unloaded. Once within the DST system, waste is usually routed through several tanks before being staged in a tank(s) for processing in the 242-A Evaporator or for long-term storage. The *Double-Shell Tank System Dangerous waste Permit Application* (DOE-RL 1991) contains more detailed information on the various DSTs and the associated operating concerns.

For the processing of waste within the DST System, the 242-A Evaporator is treated as a special case. During operation, the DST feed and slurry receiving tanks are exempted from verification requirements as long as:

1) material sent to the feed tanks fulfill the dilute aqueous requirements as defined in Table 5-3, and

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1

2) the DST slurry receiving tank is emptied after each evaporator campaign. (Mixing of waste in the DST slurry receiving tank from multiple evaporator campaigns without a waste compatibility assessment is not allowed.)

Any transfers from the DST slurry receiving tank and/or from the evaporator feed tank(s) to other tanks within the DST system are treated as a regular intra-DST transfer and a waste compatibility assessment is required.

Although the DST system is under interim status for treatment and storage, treatment is limited. The only intentional treatment that occurs in the DST system is adjusting waste chemical composition to meet corrosion control specifications and maintain safe and operable waste temperatures. Section 4.2.5.2 of DOE-RL 1991 contains further description of the treatment that occurs in the DST system. In the DST system there is no treatment for removing any waste designation, or for meeting any of the LDR requirements. The dilution issue is discussed in Chapter 6.3.

The DST system also generates secondary waste as a result of various sampling, maintenance, and operational activities. Typically this secondary waste consists of tank monitoring and pumping equipment, protective clothing, and sampling equipment which either has contained or contacted the mixed wastes stored in the tanks. Because this waste is physically a solid, it is not amenable to storage in the DST system and is designated as required by WAC 173-303-070 and sent to another TSD unit(s) for storage and subsequent disposal. Because the DST system is just a generator of this type of waste and treatment, storage and/or disposal occurs at another TSD unit, designation, management, and disposal of the secondary wastes generated by the DST system are considered to be outside the scope of this WAP, but are discussed in Chapter 3 of DOE-RL 1991.

1.1.1 Waste Acceptance Criteria and Waste Transfers into the DST System

All waste transfers into the DST system must meet waste acceptance criteria set forth in this document. The waste acceptance approval process requires an evaluation of the waste stream based on information contained in waste stream profile sheets (WSPSs) and is summarized in Table 1-2. Table 1-3 lists the information required for the evaluation and acceptance of waste streams. Sections 1.1.1.1 to 1.1.1.8 discuss these requirements in more detail. Also, the Tank Farm Transition Projects organization may require the submittal of additional information needed to address DST System WAP concerns. Approval of the (WSPS) does not authorize or approve actual waste transfer, but does provide the approval for the waste stream to be accepted into the DST system.

Approval for actual waste transfer is given after completion and approval of transfer-specific information and documentation (see Table 1-5). Requirements for each transfer include, but are not limited to, (1) all analytical data listed as required with the approval of the WSPS, (2) treatment of the waste to meet DST corrosion specifications, (3) certification that the waste conforms to the information on the approved WSPS, and (4) verification as described in Chapter 5.0, that the waste shipment matches the information on the WSPS. The limits placed on waste transfers is summarized in Table 1-4.

In addition, more frequent sampling and analysis may be required by the DST Operator at any time for waste transfers into the DST System.

1.1.1.1 Waste Stream Profile Sheet. A WSPS is prepared as part of the pre-approval process for waste transfer into the DST system. The DST Operator uses the information contained in the WSPSs to evaluate the safety and operational acceptability, and provide a detailed analysis of the waste. WSPSs are required for each waste stream even if there is only a single waste transfer.

WSPSs are completed by using detailed chemical and physical analysis of a representative sample of the waste and by applying existing knowledge of the same or similar waste. The latter type of information is referred to as process knowledge and must be documented, as specified, in the WSPS instructions. The DST Customer's responsibility is to certify 1) all information used to complete the WSPS represents the waste to be shipped, 2) analyses are according to the sampling and analysis plan that is submitted as part of the approval process and 3) only representative samples are taken.

WSPSs shall be renewed or resubmitted annually. If a WSPS has not been approved or the certification has not been received by the DST Operator, the waste cannot be accepted into the DST system. The waste stream approval process is summarized in Table 1-2. The information required before approval of waste transfer is shown in Table 1-3. Typical waste acceptance limits for various parameters are shown in Table 1-4. Specific issues associated with waste acceptance are presented in the following sections.

WAC 173-303-300, "General Waste Analysis," requires the facility owner or operator to obtain a detailed analysis of a dangerous waste that is sufficient to manage the waste according to WAC 173-303. The key parameters determined to be necessary to meet this requirement are identified in the WSPSs. Verification procedures are described in Chapter 5.

Section 268.7(a)(5) of 40 CFR, requires that the DST Customer maintain documentation of how the LDR requirements were determined. The records in the DST Customers files should match the information on the WSPSs. The WSPS is included as Appendix A.

1.1.1.2 List of Applicable Waste Numbers. In Section VII of the WSPS, the DST Customer identifies all waste numbers associated with the waste to be shipped. The requirement for waste numbers helps prevent the acceptance of a waste that has not been approved for storage in the DST system. As part of the waste acceptance process, waste numbers listed on the WSPS will be compared to those listed in the DST Part A. Wastes with one or more numbers that are not included in the DST Part A, Form 3, Dangerous Waste Permit Application will not be accepted into the DST system.

1.1.1.3. Waste Profile Data Sheet Certification. The DST Customer must provide written certification that the composition of the waste at the time of the WSPS submittal matches the information on the WSPS and that no waste will subsequently be shipped to the DST System that does not conform to the WSPS information. It is necessary on the WSPS to document the LDR treatment standards (WAC 173-303-140 and 40 CFR Part 268) that apply to the waste. Also, this information is used to supply information on the applicability of

LDR requirements when the waste is transferred to another TSD unit. See Section 6.3 of this document for additional information on LDR.

1.1.1.4 Waste Transfer Documentation. The DST Customer must schedule waste transfers with the DST Operator after the waste stream has been approved as described in Section 1.1.1 and by Table 1-2 of this Chapter.

1.1.1.5 Waste Compatibility. Before transfer of any waste into the DST system the waste is evaluated for potential compatibility problems. A waste compatibility assessment between Section 5 WSPS parameter ranges and the maximum and minimum values in the WSPS is completed by the DST Operator. This ensures that the composition of the waste being transferred matches that stated in the WSPS.

1.1.1.6 DST Customer's WAP. The DST Customer's WAP or sampling analysis plan is required prior to receipt of waste into the DST System. It identifies the waste analyses that DST Customers have agreed to supply and provides an indication of the quality of analytical data used to fill out the WSPSs.

The DST Customer is responsible for obtaining the samples to complete the WSPS. The DST Operator is responsible for conducting the waste compatibility assessment.

1.1.1.7 DST System Verification Certification. The DST Operator's responsibility is to certify that verification information generated as described in Chapter 5, represents the waste to be shipped. During the verification procedures of Chapter 5, and prior to acceptance of additional shipments, the DST Operator must certify the above, in writing. The DST System will provide a copy of the certification and any information generated during verification procedures to the DST Customer for the RL 1991's next annual WSPS renewal or resubmittal.

1.1.2 Waste Storage and Transfer within the DST System

Section 1.1.2.1 presents activities relating to the storage of waste in the DSTs. Section 1.1.2.2 presents waste transfers within the DST system.

1.1.2.1 Waste Storage. The waste in the DSTs changes over time due to many factors such as radiolysis, evaporation, and salt formation. The *Tank Safety Screening Data Quality Objectives* (Babad et al 1995) is used to determine whether these changes have resulted in the tank becoming a potential safety problem. Controls are placed upon tanks that could pose a safety problem. Tanks which represent a significant hazard are placed on the Watch List and waste transfer to them is restricted, as required by Public Law 101-51.

1.1.2.2 Waste Transfers within the DST System. Compatibility is considered the major issue associated with waste transfers. The Compatibility DQO (Fowler 1995a) and Safety Screening DQO (Babad et al 1995) identify the parameters that are needed to ensure the mixing of wastes will not result in any condition which would jeopardize the health and safety of personnel and equipment and cause the release of contamination into the environment. A waste compatibility assessment is documented and is required before all transfers. Any analyses required by the waste compatibility assessment will be obtained prior to the transfer.

1.1.3 Waste Transfers Out of the DST System

Currently waste transfers out of the DST system are limited to sending some waste to the 242-A Evaporator where water and any volatile liquids are separated from the rest of the waste. The resulting slurry (portion which did not evaporate) is returned to the DST system for further storage. The final disposal of the waste in the DSTs is anticipated to be vitrification but this could change as new technologies are developed. Any TSD unit that receives DST waste will have its own waste acceptance criteria. Before transfer of waste to another TSD unit, analysis of the waste will be conducted, as necessary, to meet all regulatory requirements and to ensure that the DST waste meets the receiving TSD units waste acceptance criteria.

1.2 IDENTIFICATION/CLASSIFICATION AND QUANTITIES OF DANGEROUS WASTE MANAGED IN DSTS

The types of waste received by DSTs can be separated into two primary groups: (1) old waste generated during nuclear processing operations , and (2) waste generated from the ongoing Hanford Site cleanup activities. The old waste is no longer being generated. Waste from past operations has been stored in SSTs and some DSTs. Waste in SSTs will be transferred to DSTs as the SSTs are stabilized (aqueous waste only)and/or waste is retrieved (both aqueous and solid waste). The new waste is primarily a dilute aqueous waste generated by unit closures, laboratories, and various other cleanup activities. Chapter 3.0 of Part B Permit Application (DOE-RL 1991) contains descriptions of the types of waste received by the DST system.

The quantity of waste received each year is reported annually in the *Hanford Site Annual Dangerous Waste Report* (DOE-RL 1993 for calendar year 1993). Current and projected waste volumes in the DSTs are assessed monthly and published in the *Tank Farm Surveillance and Waste Status Summary Report* such as WHC 1995. The actual volume of waste sent to the DST system is variable and depends on current activities.

All waste in the DST system has currently been assigned the same hazardous waste numbers. When waste enters the DST system, it is automatically assigned the same waste numbers as the waste already in the tanks. No treatment activity occurs within the DST system to allow the removal of Listed waste codes.

1.3 DESCRIPTION OF DST SYSTEM

Currently the DST system includes 28 Double-shell Tanks (DSTs), 6 tanks in the waste transfer vaults, 1 tank in a transfer building, 5 double-contained receiver tanks, and ancillary equipment such as diversion boxes waste transfer pipelines and miscellaneous associated equipment. Table 1.1 and Section 2.1.3 of Part B Permit Application (DOE-RL 1991) provide further descriptions of these tanks. The DST system provides both interim and long-term storage of waste. Eventually, the waste stored in the DST system will be retrieved and treated, as necessary, for final disposal. The tanks in the DST system are listed on the Tank Table 1-1. The information presented in Table 1.1 includes tank numbers, locations, design capacities, and operational dates. A diagram

depicting the layout of the tank system locations in the 200 East and West Areas is provided in DOE-RL-91.

Table 1-1. Tanks Within the DST System.

Tank number	Location	Design capacity (gallons)	Operation date (Ref. DST part A, form 3)
1. Twenty-four 1,200,000-gallon nonaging DSTs in four tank farms.			
241- AN Tank Farm 101, 102, 103, 104, 105, 106, 107	200 East Area	1,200,000	9/81
241-AP Tank Farm 101, 102, 103, 104, 105, 106, 107, 108	200 East Area	1,200,000	10/86
241-AW Tank Farm 101, 102, 103, 104, 105, 106	200 East Area	1,200,000	8/80
241-SY- Tank Farm 101, 102, 103	200 West Area	1,200,000	4/77
2. Four aging waste DSTs in two tank Farms.			
241-AY Tank Farm 101, 102	200 East Area	1,000,000	101 in 4/71 102 In 4/76[1]
241-AZ Tank Farm 101, 102	200 East Area	1,000,000	11/76
3. Six tanks in the waste transfer vaults in two tank farms.			
244-AR Vault 001, 002, 003, 004	200 East Area	43,000 for # 001, 002 4,785 for # 003, 004	1977
244-CR Vault 003, 011,	200 East Area	14,660 for # 003 45,000 for # 011	1946
4. One 800-gallon tank in a transfer building.			
241-EW-151 Catch Tank	200 East Area Vent Station	800	11/55[1]
5. Five double-contained receiver tanks.			
244 Tanks BX, TX, U, A, S	200 East Area for BX 200 West Area for TX, U, A, and S	31,000 for BX, TX, U 16,280 for A 20,280 for S	1983 for BX 12/81 for TX 1987 for U, S 1975 for A

Note:

[1]Estimated operational date.

Table 1-2. Summary of Waste Stream Approval Process.

Step	Action
1	DST Customer submits a completed WSPS and certification of WSPS to DST Operator.
2	DST Operator evaluates the waste for conformance to safety, DST WAP and operational considerations and notifies DST Customer of the decision. The evaluation includes a waste compatibility assesment of WSPS information to Chapter 5 parameter ranges. If the DST WAP waste acceptance criteria is not met, the stated deficiencies must be resolved before waste acceptance and transfer. (see Chapter 5)
3	If the WSPS is found deficient, DST Customer submits any required additional information and submits new WSPS, repeating steps 1 and 2 as necessary.
4	DST Operator conducts verification procedures, as applicable and as specified in Chapter 5 and certifies that the verification sample is representative of the waste shipped.
5	DST Customer and DST system Operator resolve discrepancies as applicable and required by Chapter 5. Complete a new WSPS and return to Step 1.
6	DST Operator determines the acceptability of waste for transfer and notifies the DST Customer of its decision.
7	DST Customer receives notification of waste acceptability.
8	DST Customer schedules the waste transfer with DST Operator.

Table 1-3. Information Required Before Waste Acceptance Approval for Waste Transfers Into the DST System. (2 sheets)

Information requirement	Requirement(s)	Rationale
DST Customer completes the WSPS with sufficient analytical information and any relevant historical data and background information on waste contents. DST Customer certifies completed WSPS.	WAC 173-303-300 (1) & (2) WAC 173-303-380 (1) & (2) Compatibility (Fowler 1995a) and Safety Screening (Babad et al 1995) DQOs	Information required to determine suitability of waste to storage in the DST system. Information will be used to evaluate the waste for safety, regulatory, and operational considerations.
DST Customer lists the applicable dangerous waste numbers	WAC 173-303-070 WAC 173-303-380 (2)	The DST system can only legally accept waste numbers as listed in its Part A, Form 3, Dangerous Waste Permit Application.
DST Customer provides verification as required by Chapter 5.0 that the waste's composition matches the information contained on the WSPS.	WAC 173-303-300 (1), (2), (4), & (5) Compatibility (Fowler 1995a) and Safety Screening (Babad et al 1995) DQOs	Ensures that the WSPS accurately represents the waste being shipped.
DST Customer provides Certification on applicability of land disposal restriction regulations and identification of the required treatment standards.	40 CFR 268.7(a)(2) WAC 173-303-140	Tracks applicability of LDR requirements.
DST Customer provides appropriate waste transfer documentation in waste manifests or transfer data sheets that include: • Waste description in WSPS • Identifying the generator of the waste • Date(s) of transfer • Authorizing signature for transfer • Volume of transfer including flush volumes • Volume of waste received at the DST system	WAC 173-303-380 (1) & (2) Compatibility (Fowler 1995a) and Safety Screening (Babad et al 1995) DQOs	Verifies identity of waste as a last check before actual receipt of waste.

Table 1-3. Information Required Before Waste Acceptance Approval for Waste Transfers Into the DST System. (2 sheets)

Information requirement	Requirement(s)	Rationale
• Material balances • Applicable dangerous waste numbers and LDRs.		
DST Customer provides current WAP or equivalent sampling plan, and ensures that it is on file with Operator	WAC 173-303-300 (5) WAC 173-303-380 (1) and (2)	Evaluates the acceptability of the data furnished by the DST Customer.
DST Operator performs comparison of WSPS information and WAP Chapter 5 ranges and/or limits.	WAC 173-303-395	Prevents compatibility problems associated with mixing waste. The Compatibility and Safety Screening DQOs are the basis for this evaluation.

Table 1-4. Summary of DST Waste Acceptance Limits.[1]

Parameter	Limit
Waste stream profile sheet	Must be current
Compatibility	An evaluation by DST Operator must show that the waste is compatible with the waste contained in the receiving DST.
Corrosion control for waste going into a DST	pH > 12 and · For [NO_3^-] £ 1.0 M 0.01 M£ [OH^-] £5.0 M and 0.011 M £ [NO_2^-]£ 5.5 M · For 1.0 M < [NO_3^-] £ 3.0 M 0.1 * [NO_3^-] £[OH^-] < 10 M [OH^-] + [NO_2^-] ³ 0.4 * [NO_3^-] · For [NO_3^-] > 3.0 M 0.3 £ [OH^-] 10 M [OH^-] + [NO_2^-] ³ 1.2 M [NO_3^-] £ 5.5 M
Corrosion control for waste entering 204-AR	7 < pH < 14 and [Cl^-] < 0.01 M for rail tank car [Cl^-] < 0.035 M for tank trailer
Plutonium	Total plutonium in each waste transfer cannot exceed 0.5 g/gal and 200 g/transfer.
Waste composition	The waste conforms to the information contained in the approved WSPS.
Waste numbers	Waste numbers assigned to waste stream must be listed in the current version of the DST System Part A, Form 3, Dangerous Waste Permit Application.

Note:

[1]Waste shipments that are outside these limits may be accepted if there are mitigating measures which will allow receipt of the waste, while still meeting operating limits, DST WAP requirements, and DQO requirements, justification is provided to Ecology, and Ecology concurs with the action prior to waste transfer.

Table 1-5. Information Required Before Waste Transfers to the DST System.

Information requirement	Requirement(s)	Rationale
Waste compatibility assessment by DST Operator as required by the DST WAP.	WAC 173-303-395 Compatibility (Fowler 1995a) and Safety Screening (Babad et al 1995) DQOs	Prevents compatibility problems associated with mixing waste. The Compatibility and Safety ScreeningDQOs are the basis for this evaluation.
Appropriate waste transfer documentation in waste manifests or transfer data sheets that include information such as: • Tanks involved with the transfer • Date(s) of transfer • Signature authorization for transfer • Expected volume of transfer including flush volumes • Material balances • Change in applicable dangerous waste numbers and LDR requirements • Any verification required by Chapter 5.0 or in the approval of the WSPS	WAC 173-303-300 (1), (2), (4), & (5) WAC 173-303-380 (1) & (2) Compatibility (Fowler 1995a) and Safety Screening (Babad et al 1995) DQOs	Verifies the identity of the waste as a last check before actual receipt of waste.

2.0 WASTE ANALYSIS PARAMETERS

This section provides the basis for the selection of analytical parameters based on WAC 173-303-300(5) and the EPA WAP guidance manual (EPA 1994).

2.1 CRITERIA FOR PARAMETER SELECTION

The WSPS summarizes information needed for waste designation, operational considerations and safe storage of wastes entering the DST system. Sections II, III, VII and VIII of the WSPS focus on designation and characterization needs (i.e., ensuring that the DST system accepts only the waste codes identified on the Part A permit Application, ensuring that LDR requirements are documented and providing a general description of the waste). Sections IV and VI relate to operational issues such as pumpability of the waste. Safe storage and compatibility issues are addressed in Section V of the WSPS. The information used by the generator to complete the WSPS is based on knowledge of the waste and laboratory analyses. Laboratory analyses are required for verification of parameters included in Section V of the WSPS.

The following subsections provide specific issues for parameter selection in more detail.

2.1.1 Waste Identification

State and federal regulations that require information in TSD facilities be obtained, documented, and/or reported include WAC 173-303-300 (2) and (5), WAC 173-303-140, 40 CFR 265.13(a)(1) and (b)(1), and 40 CFR 268.7(a). The WSPS provides the format for collecting this information. These requirements include (1) ensuring that only wastes which meet DST system permit requirements are accepted, and (2) reporting the information required by WAC 173-303-380 , and 3) collecting information on the applicability of LDR requirements.

2.1.2 Identification of Incompatible Wastes

One of the most important aspects of the DST system is operating in a safe manner to ensure incompatible wastes are not mixed. The Compatibility DQO (Fowler 1995a) was written to address issues relating to the mixing of different wastes. The Compatibility DQO (Babad et al. 1995) was written to provide a screening tool to verify the safe status of the tanks. Table 2-1 lists the parameters that were identified in each of the referenced DQOs. The parameters selected for compatibility concerns are found in Section V of the WSPS. Parameters for operational concerns are found in other portions of the WSPS. Analytes listed in Section V of the WSPS require verification as specified in Chapter 5 of this document and comprise the "List of analytes".

Because the Compatibility and Safety Screening DQOs are living documents, the specific analytes required by this document will be revised as new editions of

these DQOs are issued. Revisions of the WSPS will require a modification of the Part B Permit or Part B Permit Application.

2.1.3 Operational Considerations

Sufficient information must be available to ensure that incoming waste streams meet operational acceptance limits. DST operational issues primarily relate to the segregation and pumpability of the waste into and within the DST system. These operating specifications are limits and controls imposed upon a process or operation that, if violated, could jeopardize the safety of personnel, could damage equipment within the TSD units, and/or release contamination to the environment. Operating specifications have been established from pertinent DQOs, operating experience, process knowledge, tests and calculations and are specified in waste transfer operating procedures. Some parameters are qualitative and directly applicable to maintaining the integrity of the tanks within the DST system. Chapter 4.0 of the *Double-Shell Part B Dangerous Waste Permit Application* (DOE-RL 1991) contains additional information on operational considerations and specifications.

2.2 PARAMETER SELECTION PROCESS

The requirements for safe handling and storage of the wastes managed in the DST system have been identified through the application of the DQO process. Fowler (1995a) and Babad et al. (1995) have been identified as the basis for development of the safety requirements presented in this WAP and contain the analytical requirements, the rationale for analyte selection, the nature and extent of the analytes required, and the sampling and analytical methods used address safety and operational issues. WAC 173-303, 40 CFR 264, 40 CFR 265, and EPA 1994 were reviewed to determine the regulatory requirements. Changes in these documents will be reflected in modifications of DOE-RL 1991 which will include updates of the WSPS.

2.3 RATIONALE FOR PARAMETER SELECTION

Parameters were selected based on regulatory requirements such asthose relating to the safe operation of the DST system. Operational parameters were chosen by the DST Operator and are included in the WSPS.

The Safety Screening (Babad et al. 1995) and Compatibility (Fowler 1995a) DQOs were used to determine what information is required to address safety related issues. The Safety Screening DQO was designed to sample tanks to determine whether the tank waste is being stored safely until disposal and the Compatibility DQO was designed to determine what information is needed to address safety and operational issues associated with waste transfers. The rationale for selecting these analytes is provided in these documents. Table 2-1 lists each analyte that was identified in the Compatibility and Safety Screening DQO and indicates whether the analytes are required for safety or operational purposes. All analytes identified in the DQOs which are associated with safety issues are required by this document for incoming

wastes. Chloride analysis is only required for waste streams entering the 204-AR facility to prevent corrosion in the piping system.

2.4 SPECIAL PARAMETER SELECTION

Wastes contained in the DST system have been designated as ignitable and reactive wastes. Certain tanks that have the potential to release flammable vapor have been put on the Flammable Gas Tank Watch List. The Safety Screening DQO (Babad et al. 1995) is used to evaluate the waste tanks to determine if the waste is being stored safely until disposal. The waste compatibility assessment conducted by the DST Operator serves to prevent the generation of safety problems via the improper mixing of waste.

Table 2-1. Rationale for the Selection of Parameters.[1] (4 sheets)

Parameter and source S = Compatibility DQO C = Compatibility DQO	Required for DST WAP	Rationale (see the specific DQOs for additional information)
Aluminum (C)	Yes	Needed to determine complexant status. Complexant status is used as one of the tank segregation criteria.
Americium-241(C)	Yes	Used for segregation purposes to determine if a waste needs to be sent to a tank containing TRU waste.
Carbonate (C)	Yes	Needed to determine complexant status. Complexant status is used as one of the tank segregation criteria.
Cooling curve (C)	No	Used on dense waste to prevent plugging problems by determining pumpability.
Chloride (C)	Yes, for waste streams entering 204-AR. No, for shipments directly into a DST.	Used to prevent corrosion in the 204-AR Unloading Facility piping. The metallurgy of the DSTs is different from that of the 204-AR and is unaffected by chloride levels.
Energetics Total fuel content = (S) Exotherm/endotherm ratio = (C)	Yes	Used to ensure that a chemical reaction cannot propagate thereby releasing contamination to the environment.
Fluoride (C)	Yes	Needed determine complexant status. Complexant status is used as one of the tank segregation criteria.

Table 2-1. Rationale for the Selection of Parameters.[1] (4 sheets)

Parameter and source S = Compatibility DQO C = Compatibility DQO	Required for DST WAP	Rationale (see the specific DQOs for additional information)
Gas composition of vapor in the tanks (S)	Yes	Needed to address flammability issues of vapor in a tank.
Hydroxide (C)	Yes	Minimum levels are needed to prevent tank corrosion.
Neutron sorbers (iron, manganese, uranium, chromium, nickel, aluminum, sodium, and silicon) (S)	No	Used as mitigating factors in criticality determinations. Verification of these analytes is used to verify that a tank is "safe" from a criticality concern because of the presence of neutron absorbing compounds. If the plutonium concentration is below a threshold then verification of mitigating factors is not necessary.
Moisture, % (S, C)	Yes	Used to determine whether there is sufficient water to absorb any generated heat so that an exothermic reaction could not be sustained.
Nitrate (C)	Yes	Levels need to be controlled to prevent tank corrosion.
Nitrite (C)	Yes	Levels need to be controlled to prevent tank corrosion.
Organic carbon (C)	Yes	Needed to determine complexant status. Complexant status is used as one of the tank

Table 2-1. Rationale for the Selection of Parameters.[1] (4 sheets)

Parameter and source S = Compatibility DQO C = Compatibility DQO	Required for DST WAP	Rationale (see the specific DQOs for additional information)
		segregation criteria.
Organics, separable (C)	Yes	Used to prevent the accumulation of an organic layer floating on the top of a tank. A floating organic layer would increase the potential for a flammability problem.
pH (C)	Yes	Used in conjunction with hydroxide to prevent tank corrosion.
Phosphate (C)	Yes	Needed to determine complexant status. Complexant status is used as one of the tank segregation criteria.
Plutonium-239/240 or total alpha[2] (S, C)	Yes	Used to determine fissile content which is used to prevent a criticality concern.
Solids, vol % (C)	Yes	Used in evaluating energetics.
Specific gravity (C)	Yes	Used to evaluate the potential for entrapment of gases.
Strontium- 90 (C)	Yes	Used for predicting the heat generation rate of a waste.
Sulfate (C)	Yes	Needed to determine complexant status. Complexant status is used as one of the tank segregation criteria.
Uranium (C)	Yes	Used in determining fissile content for

Table 2-1. Rationale for the Selection of Parameters.[1] (4 sheets)

Parameter and source S = Compatibility DQO C = Compatibility DQO	Required for DST WAP	Rationale (see the specific DQOs for additional information)
		criticality decisions.
Viscosity	No	Used for calculating the Reynolds number which is used in determining pumpability of a waste.

Notes:

(C) Denotes that the parameter was taken from the Compatibility DQO.
(S) Denotes that the parameter was taken from the safety screening DQO.

[1]Analytes were taken from Tables 2 and 3 of Babad et al 1995 and Table 6-1 of Fowler 1995a.

[2]Because plutonium analyses are needed for tracking purposes, total alpha should not be required.

3.0 SELECTION OF SAMPLING PROCEDURES

This section contains requirements for the verification sampling methods and procedures that must be used for all analytical requirements specified by this document. Samples not required by this document (for example waste retrieval studies, etc.) are considered outside of the scope of this document and do not have to adhere to these requirements. The two different types of samples required by this document are (1) samples collected by the DST Customer under the direction and control of the DST Operator for verification purposes and (2) samples taken in DSTs in support of safety evaluations and environmental compliance issues. Verification sampling of DSTs will be conducted according to requirements contained in sampling event specific sampling analysis plans (SAPs) or other document as required by M-44 of the Tri-Party Agreement (Ecology et al 1994).

3.1 SAMPLING STRATEGIES

Verification sampling strategies for samples required by this document must ensure that a representative sample is obtained. The strategies for obtaining samples are discussed in Sections 3.1.1 and 3.1.2.

3.1.1 Sampling Strategies Required for DST Customers

Requirements of this section apply to verification samples that are taken by the DST Customer under the direction and control of the DST Operator to verify the information contained in the WSPS as required by Chapter 5.0 of this document. The sampling strategy selected by the DST Customer must fulfill all requirements of this WAP and all verification sampling must be witnessed and certified by a representative of the DST system.

Sampling strategies must ensure that a representative sample is obtained and must be described in the DST Customer's WAP or equivalent document. The document must state the sampling strategy to be used and substantiate that the strategy will yield representative information. The sampling strategy should maximize data accuracy and minimize errors attributable to incorrectly selected sampling procedures. Section 2.3.1 of EPA 1994 should be used for guidance in developing the sampling strategy. Specific requirements for the plan are (1) the type and number of samples must be specified, (2) a sufficient number of samples must be taken to estimate the variability of the waste's actual composition, (3) sampling method must be stated, and (4) sample locations must be stated or the rationale for selecting locations must be given. The sampling documents must also ensure that analytical results for all parameters listed in Section V of the WSPS will be provided.

3.1.2 Sampling Strategies for Samples Taken Within the DST System

Requirements of this section apply to samples taken within the DST system. Sampling within the DST system is necessary for intra-DST waste transfers and the completion of a waste compatibility assessment prior to transfer. A WSPS is not required for intra-DST transfers. However, a waste compatibility assessment is required to ensure that no compatibility problem(s) is(are) caused due to the mixing of incompatible wastes. The parameters to be assessed are taken from the Compatibility (a) and Safety Screening (Babad et al 1995) DQOs and are listed in Table 4-1 of this document. Specific requirements for the SAPs are (1) the type and number of samples must be specified, (2) a statistically significant number of samples must be taken, (3) sampling methods must be stated, and (4) sample locations must be stated or the rationale for selecting locations must be given.

3.2 SELECTION OF SAMPLING EQUIPMENT

Sampling equipment selection must consider the physical and chemical properties of the waste and site-specific issues such as accessibility. The selected equipment should be specified in the pertinent sampling plan. Section 2.3.2 of EPA 1994 describes different types of sampling equipment and includes guidance for equipment selection. If a particular sampling method is specified in a pertinent DQO or the Hanford Analytical Services Quality Assurance Plan (HASQAP), then that equipment must be used. Sampling equipment must meet all applicable regulatory requirements specified by WAC 173-303.

3.3 MAINTAINING AND DECONTAMINATING FIELD EQUIPMENT

All equipment used to collect and transport samples must be free of all contamination that could alter test results. All equipment used to obtain and contain samples must be clean. Sampling equipment can be used equipment as long as it has been cleaned to remove any contamination that could alter analytical results. Also, new equipment can be used as long as it does not contain manufacturing or packaging residues that could affect analytical results. After use, sampling equipment that has come into contact with the waste, must be either cleaned or sent to an appropriate TSD facility for disposal. All equipment maintenance and decontamination methods specified in a pertinent DQO or by the HASQAP must be followed.

3.4 SAMPLE PRESERVATION AND STORAGE

Sample preservation must follow those procedures set forth for the specific analysis identified in the appropriate Tank Characterization Plan or sampling and analysis plan (SAP). The test methods adopted by the Hanford Site must comply with the requirements of WAC 173-303-110 and all requirements specified in pertinent DQOs and the HASQAP.

3.5 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

The quality assurance/quality control (QA/QC) procedures must meet, at a minimum, WAC 173-303-110. A chain-of-custody procedure is required for all sampling identified by this WAP. At a minimum, the chain-of-custody must include (1) description of waste collected, (2) names and dated signatures of samplers, (3) date and time of collection and number of containers in the sample, and (4) names and dated signatures of persons involved in transferring the samples.

Suggested QA/QC requirements for sampling are described in Section 2.3.5 of EPA 1994. If QA/QC procedures for blanks and duplicates have been specified in either a pertinent DQO, SAP, or WAP, then the procedures specified in the DQO/plan must be followed. If requirements for blanks and duplicates have not been specified, then the following requirements should be followed for every sampling event.

1. Check for sampling equipment contamination by taking at least one sample of an equipment rinse per sampling event.

2. Check for general replicability of results by taking at least one set of field duplicates and by requiring that the laboratory conduct a duplicate spike on at least one sample.

Whenever blanks and/or duplicates are taken, they must be treated as if they are actual samples. This treatment includes, but is not limited to, adding preservatives to the blanks in the same amount as added to the samples, and storing the blanks and duplicates in the same manner as samples.

3.6 HEALTH AND SAFETY PROTOCOLS

Safety and health protocol requirements are unit-specific and are incorporated into activity specific sampling procedures. One of the key considerations is to keep all exposure as low as reasonably achievable (ALARA). Because each sampling activity may be different, the specific protocols for ALARA and health and safety are not specified in this document but are included in the sample specific procedures written for each sample collection activity. Any specific requirements relating to safety and health protocols that are in pertinent DQOs, WAPs, and SAPs, must also be followed for all samples required in this document.

4.0 LABORATORY SELECTION AND TESTING AND ANALYTICAL METHODS

This section provides laboratory selection and the types of acceptable analytical methods.

4.1 LABORATORY SELECTION

Laboratory selection is limited. Only a few laboratories are equipped to handle mixed waste due to the special equipment and procedures that must be used to minimize personnel exposure. The preferred laboratory will be one of the laboratories on the Hanford Site but an offsite laboratory may be used. Laboratory selection will be dependent upon laboratory capability, nature of the sample, timing requirements, and cost. The DST Operator will select the laboratory. At a minimum the selected laboratory must provide data with sufficient quality to meet the requirements for making decisions described in the applicable DQOs. The selected laboratory must also comply with the requirements contained in the *Hanford Analytical Services Quality Assurance Plan (DOE-RL 1994)* and WAC 173-303-110.

4.2 TESTING AND ANALYTICAL METHODS

Verification sampling required by the WAP will be completed by the DST Customer under the direction and control of the DST Operator. Analyses will be conducted at an approved laboratory as directed by the Compatibility (a) and Safety Screening (Babad et al., 1995) DQOs. All analytical methods must meet all regulatory requirements such as those contained in WAC 173-303-110.

DST Customers are expected to obtain analyses for verification under the direction and control of the DST Operator and provide analyses needed as required in Section 5.0. Table 4-1 lists the analyses required for verification and the analytical methods which must be followed. These analyses are taken from the Safety Screening (Babad et al., 1995) and Compatibility (a) DQOs and will change as the DQOs are updated. The method(s) selected must comply with WAC 173-303-110. .

The verification sampling of waste already in the DST system will follow the methods specified by pertinent DQOs such as the Safety Screening (Babad, 1995) and Compatibility (a) DQOs. It is not necessary to complete a WSPS for a waste transfer within the DST system. However, a waste compatibility assessment based upon the parameters listed in Section V of the WSPS is required. Analytical methods must be specified in all pertinent DQOs and analysis plans..

Table 4-1. Required Analyses.[1]

Parameter	Test method	Analytical uncertainty (U) or sensitivity (S)±
Aluminum	see DQO	See DQO (C)
Americium-241	see DQO	see DQO (C)
Carbonate	see DQO	see DQO (C)
Chloride (only for samples going to 204-AR)	Ion chromatography	0.04 µg/ml (S)
Energetics	Differential scanning calorimetry supported by Thermo-gravimetric analysis (TGA) results to be reported in cal/g and whether there is a net exotherm.	±11.5 cal/g dry wt basis (U)
Flouride	Ion Chromatography	0.04 µg/ml (C)
Gas Composition of vapor in tanks	See DQO	See DQO (S)
Hydroxide	Titration	0.05 M (S)
Moisture, %	Thermogravimetric analysis	±1.7 % water (U)
Nitrate	Ion chromatography	0.24 µg/ml (S)
Nitrite	Ion chromatography	0.5 µg/ml (S)
Organic Carbon	See DQO	See DQO (C)
Organics, separable	Visual	Not specified
pH	Electrode	Not specified
Phosphate	See DQO	See DQO (C)
Plutonium-239/240 or total alpha[1]	Alpha Energy Analysis, or total alpha count	10^{-5} µci/sample
Solids, vol % (C)	Needs to be specified	Needs to be specified Not Specified
Specific gravity	Gravimetric / Volumetric	Not applicable
Strontium-90	See DQO	See DQO (C)

Sulfate	See DQO	See DQO (C)
Uranium (if the concentration of ^{235}U is greater than 1% of the total uranium content)	See DQO	See DQO (C)

Note:

[1]Taken from Table 7-2 of Fowler 1995a and Table 3 of Babad et al. 1995

5.0 WASTE VERIFICATION

Chemical analyses will be needed to verify that waste streams being received by the DST system conform to the information on the WSPS. Because of the configuration of the DST system, verification will consist of requirements for analysis of incoming waste as described below. The analytes that must be verified are the primary decision analytes that are specified in the Compatibility (a) and the Safety Screening (Babad et al., 1995) DQOs. These analytes are listed in Section V of the WSPS and will be referred to as the list of analytes. Sections 5.1 and 5.2 discuss verification in more detail and state how discrepancies will be resolved.

The potential exists for compatibility problems to occur and/or result from mixing different wastes that are already in the DST system. The requirements concerning verification of wastes within the DST system are contained in Section 5.3.

5.1 WASTE VERIFICATION OF WASTE RECEIVED BY THE DST SYSTEM

The WSPS is used as the basis for completing a compatibility assessment on incoming waste. Therefore, any information or analytical data that deviates from the WSPS indicates that the waste stream may have changed. Verification of every waste stream consists of (1) an initial analysis of all compounds on the list of analytes, and (2) periodic re-evaluation that verifies the waste stream has not changed from the initial analysis. Table 5-1 contains general requirements for each type of verification and Table 5-2 contains specific verification requirements for different waste types. If discrepancies are found between information contained in the WSPS and verification analysis, the discrepancy will be resolved as described in Section 5.1.2.

The purposes of each of the different types of verification are.

1) Initial analytical verification: This provides initial verification of the expected concentration of each compound on the list of analytes. This initial verification serves to document the presence or absence and concentration of compounds from the list of analytes and a comparison to the range established in the Compatibility (a) and Safety Screening (Babad et al 1995) DQOs.

2) Periodic verification: The periodic verification procedure checks for changes in the waste stream. Only those compounds on the list of analytes found to be above 1 mg/L during the initial verification are subjected to this re-evaluation. The group of analytes contained in the list of analytes which were found to be above this concentration (1 mg/L) during the initial verification is defined as the short list for that waste stream. Periodic verification by analysis of the short list is required at least annually after the initial verification, but may be required more frequently, if necessary (for more information on when additional verification sampling may be necessary, see the flow sheet in Figure 5-1). If after two consecutive annual analyses as required for periodic

verification (see Table 5-2), an analyte remains below 100 mg/L, that analyte may be dropped from the short list.

5.1.1 Determination of Discrepancy

There are three types of discrepancies. A type I discrepancy occurs when the verification results are outside the range indicated on the WSPS. A type II discrepancy occurs when the verification sample is outside the limits established in Fowler 1995a and Babad et al 1995. A type III discrepancy exists if the verification sample deviates from the historical range of previous verification analyses.

Type I and II discrepancies are determined by comparing the results of the verification sample to the information contained in the WSPS and to limits established by Fowler 1995a and Babad et al 1995. These limits are represented in Table 5.1. If the results of the verification analysis are outside the range indicated on the WSPS, a type I discrepancy exists. If the results of the verification sample are outside these limits, a type II discrepancy exists.

A type III discrepancy occurs when a verification results are within the boundaries indicated on the WSPS but demonstrates a dramatic deviation within the range established by historical verification analyses. All information provided and certified by the DST Customer will be evaluated by the DST Operator to determine if the waste stream may have changed. In determining a discrepancy, deviations of greater than 50% from the average verification results shall be used as guidelines.

5.1.2 RESOLUTION OF DISCREPANCIES BETWEEN WSPS AND ACTUAL ANALYSES

Any discrepancy identified in 5.1.1 must be resolved prior to waste shipment. Chart 5-1 provides a flowchart of the discrepancy resolution process. Key requirements for resolution of discrepant analytes are:

1. Before receipt of the waste into the DST can occur for any discrepancy, the following must be done:

   Type I Discrepancy: For a Type I discrepancy, an evaluation must be made to determine if the discrepancy with the WSPS will result in any compatibility problems. An analysis of the Section V analytes must occur to determine if the waste stream has changed and no longer conforms to the information on the WSPS. If it is determined by the sampling results that the discrepant waste remains within the limits contained in the Compatibility and Safety Screening DQOs (Fowler 1995a and Babad et al 1995, respectively), then the discrepancy will be documented, the WSPS will be updated and shipment of that particular waste can proceed. If the discrepancy with the WSPS has the potential to result in compatibility and/or safety problems, then the waste shipment will be rejected pending resolution of the issues. Reanalysis of the analyte(s) which were outside the range listed on the WSPS will be required for the next two shipments of that waste stream.

Type II Discrepancy: For a Type II discrepancy, the waste must be treated or undergo some process to bring it within DST acceptance limits. Once the treatment or other process has been completed, the waste stream will be considered a new waste and a new WSPS must be completed and an initial verification conducted.

Type III Discrepancy: For a Type III discrepancy, an evaluation must be made to determine if the waste stream has changed from the information contained on the WSPS. An analysis of Section V analytes must occur. If it is determined from the sampling results that the discrepant waste remains within the limits contained in the Compatibility and Safety Screening DQOs (Fowler 1995a and Babad et al 1995, respectively) and the variation is greater than originally predicted, the discrepancy will be documented, the WSPS will be updated and shipment of that particular waste can proceed. If the discrepancy indicates that more than 50% of the parameters are outside the ranges on the WSPS, the waste will be treated as a new waste stream, a new WSPS will be produced and the shipment of that particular waste can continue. If any of the analytes fall outside the ranges allowed in a, the waste stream must be treated, a new WSPS will be produced and an initial verification of the new waste stream completed. Reanalysis of the analyte(s) outside the range listed in Section V of the WSPS will be required for the next two shipments of that waste stream.

Figure 5-1. Resolution of Discrepancies.

5.2 VERIFICATION FOR SHIPMENTS WITHIN THE DST SYSTEM

The purpose for verification of waste composition within the DST system is to prevent the occurrence of an unsafe condition as a result of improper waste management. The mixing or commingling of potentially incompatible waste types at the Hanford Site is addressed prior to waste transfers between DSTs. A WSPS is not needed for transfers within the DST System. However a waste compatibility assessment is required. Waste compatibility assessments are generated by comparing compositions of the proposed waste source(s), waste receiver(s), and transfer conditions to the requirements of the Compatibility (a) and Safety Screening (Babad et al 1995) DQOs as represented in Section V of the WSPS. Waste compatibility assessments are performed using analytical results. Any data used for the comparison regardless of age must be certified by the DST Operator as being representative of the waste stored in the DST System.

These waste compatibility assessment documents the waste composition of the source(s) prior to waste transfers, the composition of the waste in both the transferred waste and the receiver tank(s) and the expected waste composition of the final mixture. Waste transfer verification within the DST System is addressed through a waste compatibility assessment.

The majority of DST to DST waste transfers involve the consolidation of supernate. This dilute material is not similar to the more concentrated wastes that were produced historically during active Hanford Site production. The supernate is primarily an alkaline aqueous mixture of water soluble sodium salts. It is unlikely that the commingling of different waste types, being predominantly alkaline aqueous mixtures, will result in a compatibility problem.

Verification of DST to DST transfers will follow the requirements contained in Table 5-3.

Table 5-1. Requirements For Analyses Required For Waste Verification.

Initial verification	1. Analyses must have been completed within two years prior to waste shipment. Any data older than 2 years and later than May 1989 as dictated by the TPA agreement must be certified as representative of the waste stream. If any analytes listed in Section V of the WSPS are absent based upon this data, the short list of analytes may be used for initial verification. 2. Analyses do not have to be completed before the submittal of the WSPS as long as the concentrations can be determined through process knowledge. However, all required analytical data must be completed and submitted before actual shipment of the waste. An exception to this requirement is allowed for shipments of wastes that occur within 90 days of the issuance of this document or May 1, 1996. 3. Results of analyses must be within the ranges specified on the WSPS. The WSPS shall be revised to reflect changes determined by analysis (see section 5.1.2).
Periodic verification	1. Analyses required for continuing verification will consist of the short list of analytes. Sample analyses must be provided at the direction of the DST system and will be conducted at least annually. . 2. Results of analyses must not be discrepant as defined in section 5.1.1.

Table 5-2. Minimum Waste Verification Analytical Requirements for DST System Waste Transfers.

Type of waste stream	Initial verification[1]	Periodic verification[1]
242-A Evaporator Slurry to DST System	Analysis of Section V list of analytes before waste being transferred out of the DST used by the Evaporator as a receiving tank during operation. To fulfill this requirement the sample can be taken from either the slurry as it exits the evaporator or from the receiving slurry tank.	The requirements for initial verification must be repeated for each campaign.
All other facilities	Analysis of entire list of Section V analytes from the WSPS.	Annual analysis of the short list of analytes as defined in Section 5.1.

Notes:

[1] An exception to the verification requirements can be made if:

1) Documentation is provided to the DST facility that the concentration of transuranics prevents chemical analysis at any of the onsite analytical laboratories and the volume shipped is less than 10,000 gal/year/DST

or

Documentation is provided to the DST facility that the concentration of transuranics prevents chemical analysis at any of the on-site analytical laboratories and the volume shipped is greater than or equal to 10,000 gal/year/DST and the Washington Department of Ecology concurs that verification is not necessary

and

2) The TOC value is less than the Compatibility DQO (a) determined value.

Table 5-3. Verification of Waste Within the DST System.

Type of waste transfer	Required verification
Transfers of aqueous waste (waste contains at least 90% water)	None
Transfers of non-aqueous waste (waste contains less than 90% water)	Analysis of all constituents in Section V of the WSPS. A waste compatibility assessment is necessary to verify that transfer of this material does not violate any of the parameters established in a and Babad et al 1995.

6.0 SPECIAL PROCEDURAL REQUIREMENTS

The following sections describe the special procedural requirements associated with wastes in the DST system.

6.1 PROCEDURES FOR RECEIVING WASTES GENERATED OFFSITE

The DST system does not accept waste generated off the Hanford Site.

6.2 PROCEDURES FOR IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

The DST system is permitted to store both reactive and ignitable wastes. As required by 40 CFR 265.198, any waste exhibiting the characteristic of reactivity and/or ignitability is treated and/or mixed before entering the DST system in such a way that the waste in the tanks does not exhibit either of these characteristics. Issues relating to reactivity and ignitability are addressed along with other compatibility issues during the waste compatibility assessment conducted before all transfers into and within the DST system. The waste compatibility assessment ensures that incompatible wastes are not mixed.

If the waste in a tank is found to exhibit the characteristic of reactivity and/or ignitability, it will be placed on the Watch List and transfers into and out of the tank would be prohibited. Chapters 3.0 and 4.0 of the *Double-Shell Part B Dangerous Waste Permit Application* (DOE-RL 1991) contain descriptive information on the waste in the DSTs.

6.3 PROVISIONS FOR COMPLYING WITH LDR REQUIREMENTS

Land disposal restrictions (LDR) are codified in 40 CFR 268 and WAC 173-303-140. These regulations are designed to ensure that Dangerous (hazardous) waste meets specified standards before its disposal to land. The LDR restrictions are placed on a waste when it is generated and are passed on with the waste until such time as the treatment requirements are met. In the DST system, there is no treatment to meet any LDR standard so the requirements that are placed on the waste when it is generated, remain with the waste while it is in the DST system.

The LDR requirements are tracked by requiring that DST Customers to identify any waste numbers and LDR requirements that are applicable to their waste streams on the WSPS. Because the DST system is not capable of segregating wastes according to waste codes or LDR treatment requirements, all waste numbers listed in the Part A Application are attached to each tank. Waste will not be allowed to enter the DST system if it carries a waste code that is not listed in the Part A. Any wastes entering the DST system will be assigned the same waste numbers assigned to the DST system.

There is no treatment for LDR requirements in the DST system, and all incoming requirements are passed along with the waste when it is transferred to another unit, there is no need to conduct sampling or analysis for LDR issues. Prior

to final or interim disposal of the waste, compliance with LDR requirements will have to be met. This is expected to occur in downstream treatment units.

6.4 DEVIATIONS FROM THE REQUIREMENTS OF THIS WAP

In order to address emergent issues, the DST Operator may approve deviations on a case by case basis from this WAP after informing the RL and Ecology unit managers. Ecology must concur with the need for these deviations before waste is accepted into the DST System. Any changes which are not of an emergency nature must be implemented in a permit modification. Any deviations agreed upon for emergency purposes must be documented in writing with a copy to be retained by the DST Operator .

7.0 REFERENCES

40 CFR 264 EPA, 1994, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities," *Code of Federal Regulations*, as amended.

40 CFR 265 EPA, 1994, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities," *Code of Federal Regulations*, as amended.

40 CFR 268 EPA, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.

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Mulkey, C.H. and J. M. Jones, 1994, *Double-Shell Tank Waste Analysis Plan*, WHC-SD-EV-053, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

WAC 173-303, 1994, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

WHC, 1995, *Tank Farm Summary Report for Month Ending June 30, 1995*, WHC-EP-0182-87, Westinghouse Hanford Company, Richland, Washington.

WHC, 1993, *Hanford Site Solid Waste Acceptance Criteria*, WHC-EP-0063, Rev. 4, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988, *Environmental Compliance*, WHC-CM-7-5, Release 69, Westinghouse Hanford Company, Richland, Washington.

APPENDIX A

WASTE STREAM PROFILE SHEET

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APPENDIX A
WASTE STREAM PROFILE SHEET

Follow attached instructions when filling out this waste stream profile sheet. Contact the Tank Farm Operations Waste Acceptance Office if, as the DST Customer, you have:

1) any questions concerning filling out the WSPS and/or

2) completed the WSPS and need to begin the waste compatibility assessment process.

I. WASTE GENERATOR INFORMATION

1. DST Customer (waste shipper/generator):

_____

2. Contact: _____

3. Phone: _____

4. Mail stop: _____

II. GENERAL WASTE INFORMATION

1. DST Customer: _____

2. Waste stream name: _____

3. Process generating waste: _____

4. Anticipated volume including any flush water

_____

_____

_____

5. Anticipated transfer frequency:

_____

6. Method of transfer (rail car, truck, pipeline):

_____

7. Was analytical data used to fill out this profile sheet?

_____ Yes _____ No

If yes, site document used as the basis for sampling and analysis (i.e., sampling or waste analysis plan) and attach a complete copy of the latest results.

III. WASTE STREAM COMPOSITION

List all major constituents including 40 CFR 261 Appendix VII Hazardous Constituents.

1. Component	2. Concentration range (units)	3. Average % (must total 100%)	4. Basis for composition
	_____ to _____		
	_____ to _____		
	_____ to _____		
	_____ to _____		
	_____ to _____		
	_____ to _____		
	_____ to _____		

IV. PHYSICAL PROPERTIES

1. Physical state at 70 °F (circle all applicable)

   Liquid Semisolid Solid
   Slurry Sludge Gas

2. Viscosity at 70°F _____ < 10 mPa s _____ >10 mPa s

3. Is waste multilayered? _____ Yes _____ No

   If yes describe and quantify each layer:

   a. (Top) _____ %

   b. (Middle) _____ %

   c. (Bottom) _____ %

   d. Suspended solids: ____ < 1%
   ____ between 1% and 10%
   ____ > 10%

   e. Flash point: ___ > 200 °F ___ between 100 & 200 °F ___ < 100 °F

f. Color: _____

V. SPECIFIC ANALYSIS OF WASTE

Fill in the following chart giving maximum, minimum, or average concentrations for each specific analyte. Also state whether this information is based on process knowledge or analytical data. If analytical data is used indicate the date of analysis.

Parameter	Minimum (specify units)	Maximum (specify units)	Average (specify units)	Basis (process knowledge or analysis)
Aluminum (mg/L)				
Americium (µci/L)				
Carbonate (mg/L)				
Chloride (only for samples going to 204-AR) (moles/liter)				
Energetics				
Fluoride (mg/L)				
Gas Composition				
Hydroxide (moles/liter)				
Moisture (volume %)				
Nitrate (moles/liter)				
Nitrite (moles/liter)				
Organic Carbon (wt % TOC)				
Organics, separable (visible or no visible organic layer)				
pH (pH units)				
Phosphate (mg/L)				
Plutonium-239/240 or total alpha (curries/liter)				
Solids (vol %)				
Specific gravity				
Strontium-90 (µci/L)				

Parameter	Minimum (specify units)	Maximum (specify units)	Average (specify units)	Basis (process knowledge or analysis)
Sulfate (mg/L)				
Uranium (if the concentration of ^{235}U is greater than 1% of the total uranium content) (curries/liter)				

VI. REACTIVITY AND STABILITY

1. What are the Reactivity Group number(s) for this waste? (See Design and Development of Hazardous Waste Reactivity Testing Protocol, "EPA Document No. EPA-600/2-84-057, February 1984.)

   _____

2. Is this material stable? _____ Yes _____ No

   If no, explain: _____

   _____

3. Is this material shock sensitive? _____ Yes _____ No

   If yes, explain: _____

   _____

VII. DANGEROUS WASTE INFORMATION

1. Is this waste a dangerous waste as defined by WAC 173-303-070?

   _____ Yes _____ No

2. If yes, list the applicable Hazardous and/or Dangerous Waste number(s) and explain the basis for the number. For example if you assign D001, the reason for selection is that the flash point is less than 140 °F.

Hazardous/Dangerous Waste number	Reason for selection

3. Is waste a mixed waste? _____ Yes _____ No

List any CERCLA reportable quantities applicable to the waste (see 40 CFR 302.4).

Constituent	Reportable quantity

VIII. LAND DISPOSAL RESTRICTION INFORMATION

Fill in the following information pertaining to all applicable Land Disposal Restrictions (See 40 CFR 268.40 and WAC 173-303-140). For waste designated as D001, D002, and/or D0012-D043, also indicate any underlying hazardous constituents which do not meet LDR requirements (see 40 CFR 268.7).

Waste Code (WA State and Federal)	Regulated constituent Place an * before the entry if this is for an underlying hazardous constituent.	Category wastewater or nonwastewater	Treatment standard Concentration in mg/kg unless noted as "mg/l TCLP"; or technology code

IX. SUPPLEMENTAL INFORMATION & ACCOUNTABILITY STATEMENT

1 Is there an attachment containing additional information?

_____ Yes _____ No (list below)

_____

_____

2. I hereby certify that to the best of my knowledge all information submitted in this and all attached documents contain true and accurate descriptions of this waste. Any sample that was analyzed or submitted was representative as specified in WAC 173-303-110. All relevant information regarding known or suspected hazards in the possession of the DST Customer has been disclosed.

I also hereby certify that no waste will be shipped and/or offered for shipment to the DST system that does not conform to the information submitted in this WSPS and all attached documents.

I also hereby certify that no analytical data procured prior to May 1989 was used in completing this WSPS. I also hereby certify that any analytical data used represents the waste being shipped and/or offered for shipment to the DST system.

_____

DST Customer signature

_____

Name and title

_____

Date

INSTRUCTIONS FOR FILLING OUT THE WASTE STREAM PROFILE SHEETS

GENERAL

1. Supporting information used to fill out this waste stream profile sheet must be documented. Acceptable documentation includes analysis for individual parameters and written process descriptions that detail chemical input and output.

2. One WSPS needs to be completed for each discrete waste type. A discrete waste type is defined as a waste stream originating from the same source and/or process that has the same composition. If the same process generates enough waste to fill more than one tank, all waste tanks associated with that one process may be considered a discrete waste type, requiring a single WSPS if the waste does not vary from tank to tank. The DST operator has the final decision on what constitutes a discrete waste type

3. All questions must be answered.

4. Answers must be completed in ink or be typed.

5. Contact the DST Operator if there are any questions concerning the completion of the WSPS.

6. A copy of the completed WSPS should be retained for your records and the original sent to DST Operator.

7. Contact the Tank Operations Waste Acceptance Office if, as the DST Customer, you have:

   1) any questions concerning filling out the WSPS and/or

   2) completed the WSPS and need to begin the waste compatibility assessment process.

I. WASTE GENERATOR INFORMATION

1. Enter the name of the organization that has generated the waste.

2. Enter the name of a contact person who is knowledgeable about the waste..

3. Enter the phone number for the contact given in No. 2.

4. Enter the mail stop or mailing address for the contact given in No. 2.

II. GENERAL WASTE INFORMATION

1. Enter the name of the DST Customer.

2. Enter the name given to the waste stream. Each waste stream must have a unique and identifying name.

3. Describe the process that generated the waste.

4. Enter the anticipated volume of each waste transfer. This volume should include any flush water that will be transferred with the waste and should represent the total volume received. This is not a commitment to send this volume of waste but is used for waste volume projections.

5. Enter the anticipated transfer frequency.

6. Provide the method of waste transfer (rail-car, truck, pipeline).

7. State whether laboratory analytical data was used to fill out the WSPS. If analytical data was used, provide a reference that documents the sampling methods, analytical methods and QA/QC requirements used for this sampling event (i.e., Waste and/or Sampling Analysis Plan), and attach a copy of the latest analytical results.

III. WASTE STREAM COMPOSITION

1. In the component column, list all constituents of the waste that are equal to or greater than 1 mg/l. For dangerous wastes, include the concentration of each constituent listed in WAC 173-303-9904 for all applicable waste numbers. For example if the waste has been designated as F005 because of toluene and benzene, then the concentrations of these two constituents must be reported.

2. In the concentration column enter the maximum and minimum values for each constituent. Units must be included for each value. It is acceptable to report values as less than or greater than values, but the worst case scenario will be used as the basis for the evaluation.

3. Enter the expected average concentration of each reported constituent.

4. For each component, indicate whether the information furnished is based on process knowledge (PK), analytical information (A), or a combination of the two (B). The total must equal 100%.

IV. PHYSICAL PROPERTIES

1. Indicate the physical state of the waste as it will be received by the DST system by circling one or more of the choices. For example, if the waste will consist of a combination of liquid and solids, then both liquids and solids should be circled.

2. Check the choice that best describes the viscosity of the waste.

3. Indicate whether there are multiple layers in the waste and give the approximate percent by volume of each layer. For example if a waste consists of 10 percent solids that settle to the bottom and 90 percent liquid then the yes box will be checked and 3a should read "liquid at 90 percent". "Solids" and "10 percent" will be entered on 3c . It is permissible to enter ranges if the percent of each layer is expected to vary.

   3d. Check the choice that best describes the amount of suspended solids in the waste. If there are no suspended solids then the <1% blank should be checked.

   3e. Check the choice that best describes the flash point.

   3f. Indicate the expected color of the waste.

V. SPECIFIC ANALYSIS

Indicate the maximum, minimum, and average concentration for each parameter. Also indicate whether process knowledge or analytical information is being used as the basis for the information. A value for each parameter must be given. It is permissible to enter concentrations as less than or greater than values. A unit must be specified for each value.

Note: Analysis for the parameters in this section should be no older than 2 years. If analytical data collected after May 1989 is used, it must represent the waste to be sent to the DST System. No analytical data prior to May 1989 may be used in any capacity to fill out the WSPS.

VI. REACTIVITY AND STABILITY

1. Enter the reactivity group number(s) for the waste. The numbers and procedure for their determination are contained in EPA's document No. EPA-600/2-84-057 and titled Design and Development of Hazardous Waste Reactivity Testing Protocol.

2. Indicate whether the waste is stable. If it is unstable (can detonate, deteriorate, or otherwise spontaneously change) indicate what may happen.

3. Indicate whether the waste is shock sensitive. If it is shock sensitive, state the reason for this property and indicate what may happen if the waste is exposed to shock.

VII. DANGEROUS WASTE INFORMATION

1. Indicate whether the waste is a dangerous waste as designated by WAC 173-303-070.

2. If the waste is a dangerous waste, indicate the waste numbers assigned to the waste and the reason for the application of the

waste number. If the waste is not a dangerous waste enter N/A in the first blank cell.

3. Indicate whether the waste is a mixed waste.

4. If any transfer of the waste will contain a reportable quantity of a chemical listed under CERCLA (see 40 CFR 302.4), identify the chemical and its reportable quantity. If no waste transfer will contain a reportable quantity, then enter N/A in the first cell.

VIII. LAND DISPOSAL RESTRICTION INFORMATION

This section is used to document all Land Disposal Restrictions (LDR) including any underlying hazardous constituents.

1. First column: List all Washington State and Federal waste numbers for components which do not meet LDR requirements. Each waste number must be placed on a separate line. If the waste is not subject to any LDR requirements, enter N/A and go to Section IX. If additional space is needed, continue the chart on an attachment.

2. Second column: Enter the name of the regulated constituent next to appropriate waste code. Identify any underlying hazardous constituents next to the referenced waste number (See 40 CFR 268.7 (a)).

3. Third column: State if the LDR requirement is for a wastewater or nonwastewater.

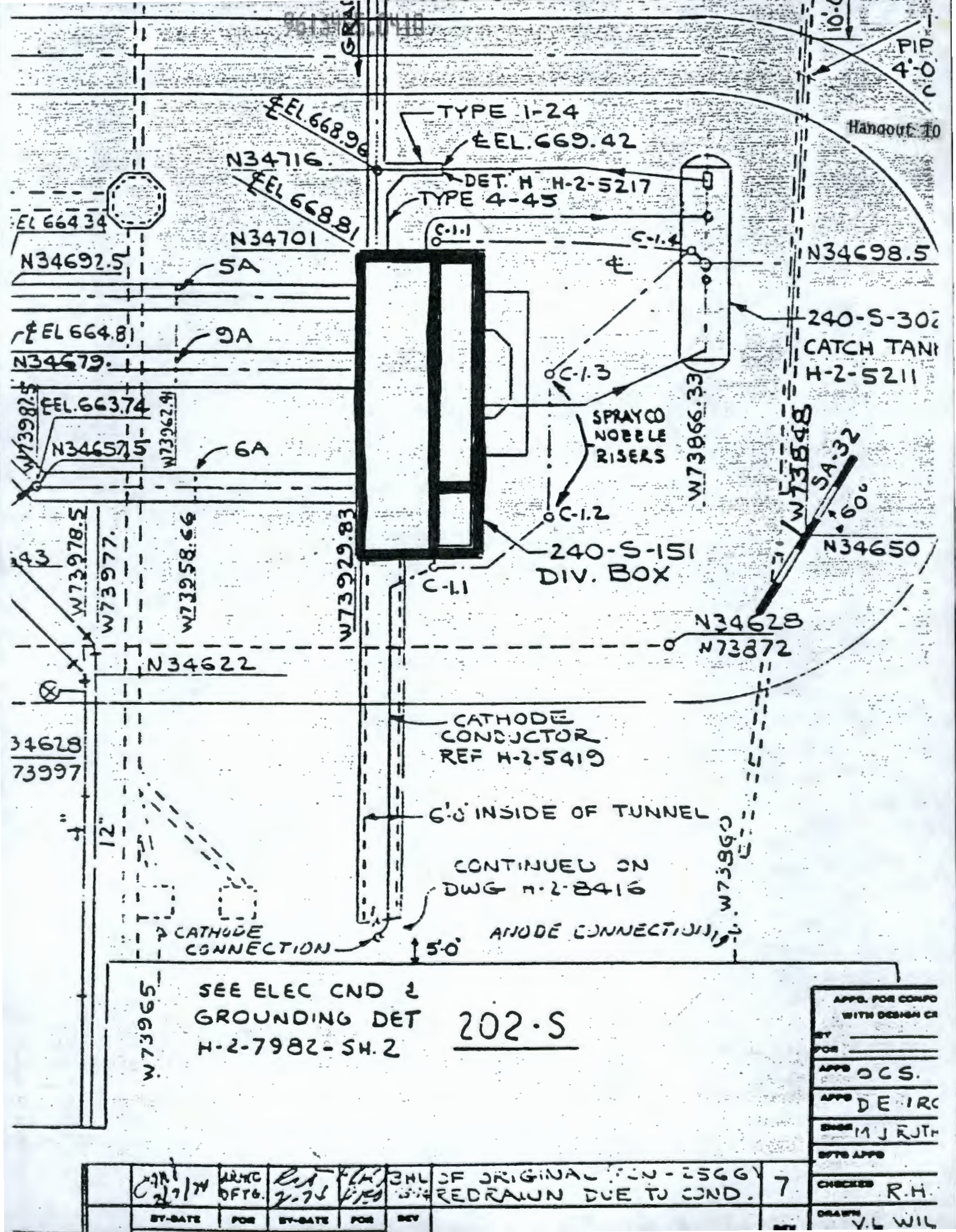
4. Identify the LDR limit which must be met. This will be either a concentration or a specified technology.

IX. SUPPLEMENTAL INFORMATION AND ACCOUNTABILITY STATEMENT

1. Indicate whether there are any attachments. If items are attached, they will also be identified.

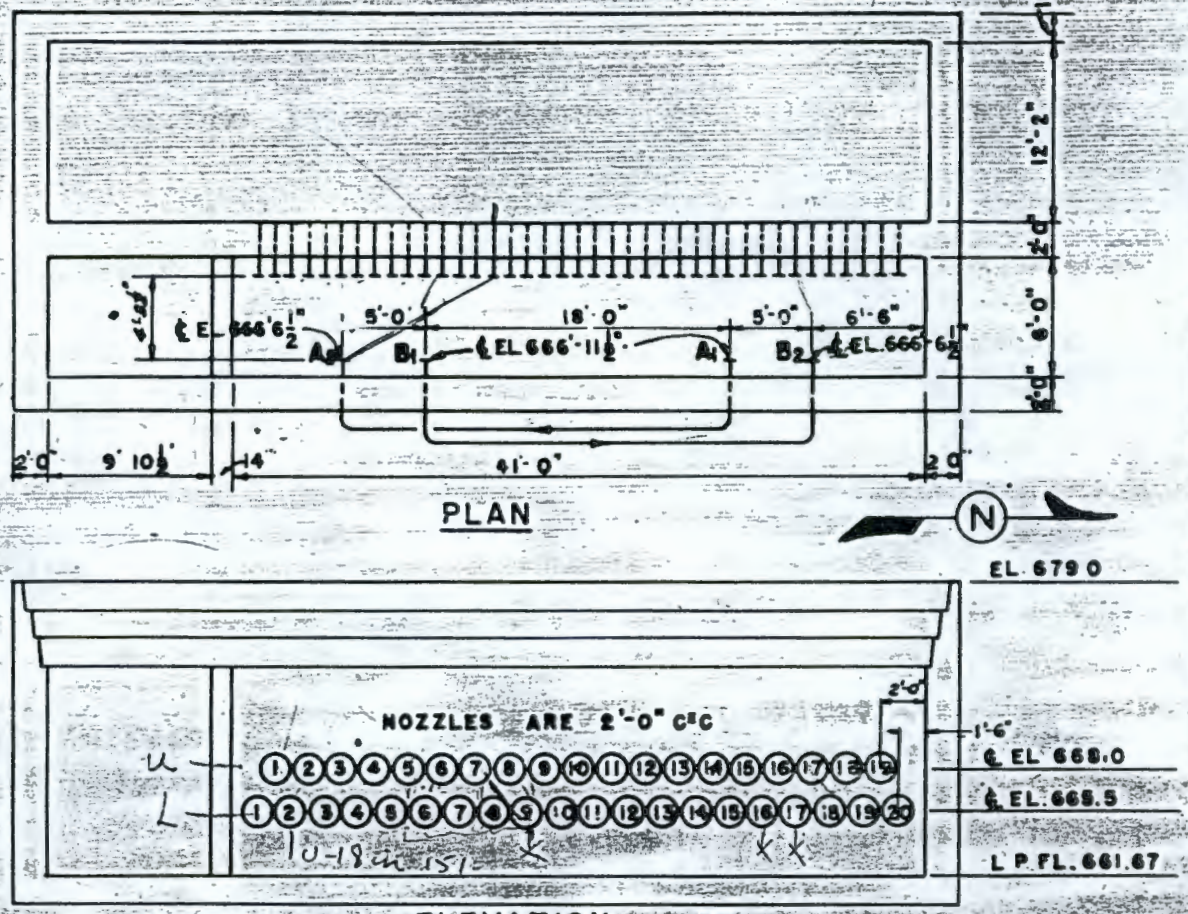
2. The signature on the WSPS is also used to certify that the DST Customer has completed the WSPS using the appropriate information as specified in the certification statement. It also certifies the applicability of analytical data and that the waste conforms to the information provided.

3. Have a knowledgeable person responsible for the facility generating the waste review and sign the profile sheet.


TYPE 1-24
℄ EL. 669.42
℄ EL. 668.96
N34716
DET. H H-2-5217
TYPE 4-45
℄ EL. 668.81
N34701
EL 664.34
N34692.5
5A
N34698.5
℄ EL 664.81
9A
N34679
C-1.1
C-1.4
℄
240-S-302
CATCH TANK
H-2-5211
C-1.3
SPRAYCO
NOBLE
RISERS
W73866.33
W73848
SA-32
60°
N34650
℄ EL. 663.74
N34657.5
6A
W73982.5
W73962.41
W73978.5
W73977
W73958.66
W73929.83
C-1.2
240-S-151
DIV. BOX
C-1.1
N34628
N73872
N34622
CATHODE
CONDUCTOR
REF H-2-5419
34628
73997
6'-0" INSIDE OF TUNNEL
CONTINUED ON
DWG H-2-8416
W73960
CATHODE
CONNECTION
ANODE CONNECTION
5'-0"
W73965
SEE ELEC CND &
GROUNDING DET
H-2-7982-SH. 2
202-S
APPD. FOR CONFO
WITH DESIGN CR
BY
FOR
APPD D C S.
APPD D E IRC
ENGR M J RJTH
BY/TO APPD
CHECKED R.H.
DRAWN V.L WIL
7
REDRAWN DUE TO COND.
BY-DATE
FOR
BY-DATE
FOR
REV

9613455.0411

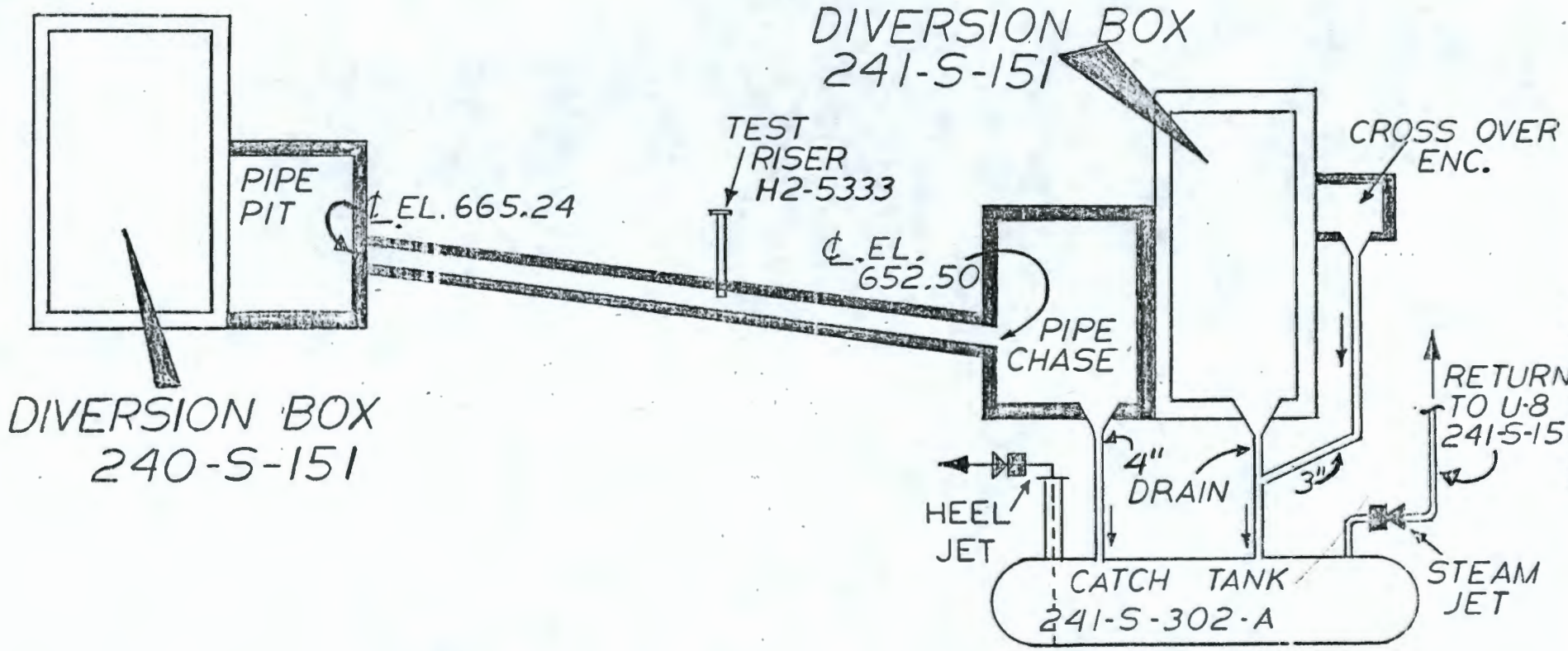
H-2-5204



	UPPER NOZZLES		LOWER NOZZLES
1	FROM TK-103 BLDG. 2025 Distillate coil	1	STUB TOWARD FUTURE TANK FARM
2	FROM TK-103 BLDG. 2025 Distillate coil	2	241-S-151 UPPER NOZ. #18
3	FROM STUB 15	3	STUB FUTURE CONN. TO 241-S-151
4	FROM TK-106 BLDG. 2025 H-1 coil	4	STUB TOWARD FUTURE TANK FARM
5	FROM TK-106 BLDG. 2025 H-10 coil	5	241-S-151 UPPER NOZ. #16
6	FROM TK-163 BLDG. 2025 D-8 JET *	6	241-S-151 UPPER NOZ. #12 PLUGGED
7	FROM TK-163 BLDG. 2025 D-8	7	241-S-151 UPPER NOZ. #15
8	STUB	8	STUB FUTURE CONN. TO 241-S-151
9	FROM TK-166 BLDG. 2025 D-2 H.T. coil	9	241-S-151 UPPER NOZZLE #14
10	FROM TK-189 BLDG. 2025 G-coil	10	STUB TOWARD FUTURE TANK FARM
11	FROM TK-189 BLDG. 2025 G-coil	11	TO 241-U-153 UPPER 3 (STEEL) C.
12	FROM CATCH TANK 240-S-302	12	241-S-151 UPPER NOZ. #11
13	FROM TK-115 BLDG. 2025 H-1	13	241-S-151 UPPER NOZ. #10
14	FROM TK-115 BLDG. 2025 H-4	14	STUB TOWARD FUTURE TANK FARM
15	FROM TK-166 BLDG 2025 (A-1) - D-1 & D-2	15	TO 241-U-153 UPPER 2 (STEEL) C.
16	FROM TK-166 BLDG. 2025 D-1 & D-2	16	TO 241-S-151 UPPER NOZ. #7
17	~~STUB~~ 240-S-152	17	TO 241-S-151 UPPER NOZ. #6
18	FROM TK-188 BLDG. 2025 A-coil Spare	18	STUB TOWARD FUTURE TANK FARM
19	FROM TK-188 BLDG. 2025 A coil Spare	19	TO 241-U-153 UPPER 1 (STEEL) C.
		20	STUB TOWARD FUTURE TANK FARM

HANFORD WORKS	APPROVED	DATE 3-31-52 DRAWN BY L.D.N.
DIV BOX 240-S-151	Eng 6/3/54	CHECKED [illegible] BLDG. NO. 241
NOZZLE IDENTIFICATION		DWG. NO. H-2-2338 SH #26

*-LINE PLUGGED TO 151-S



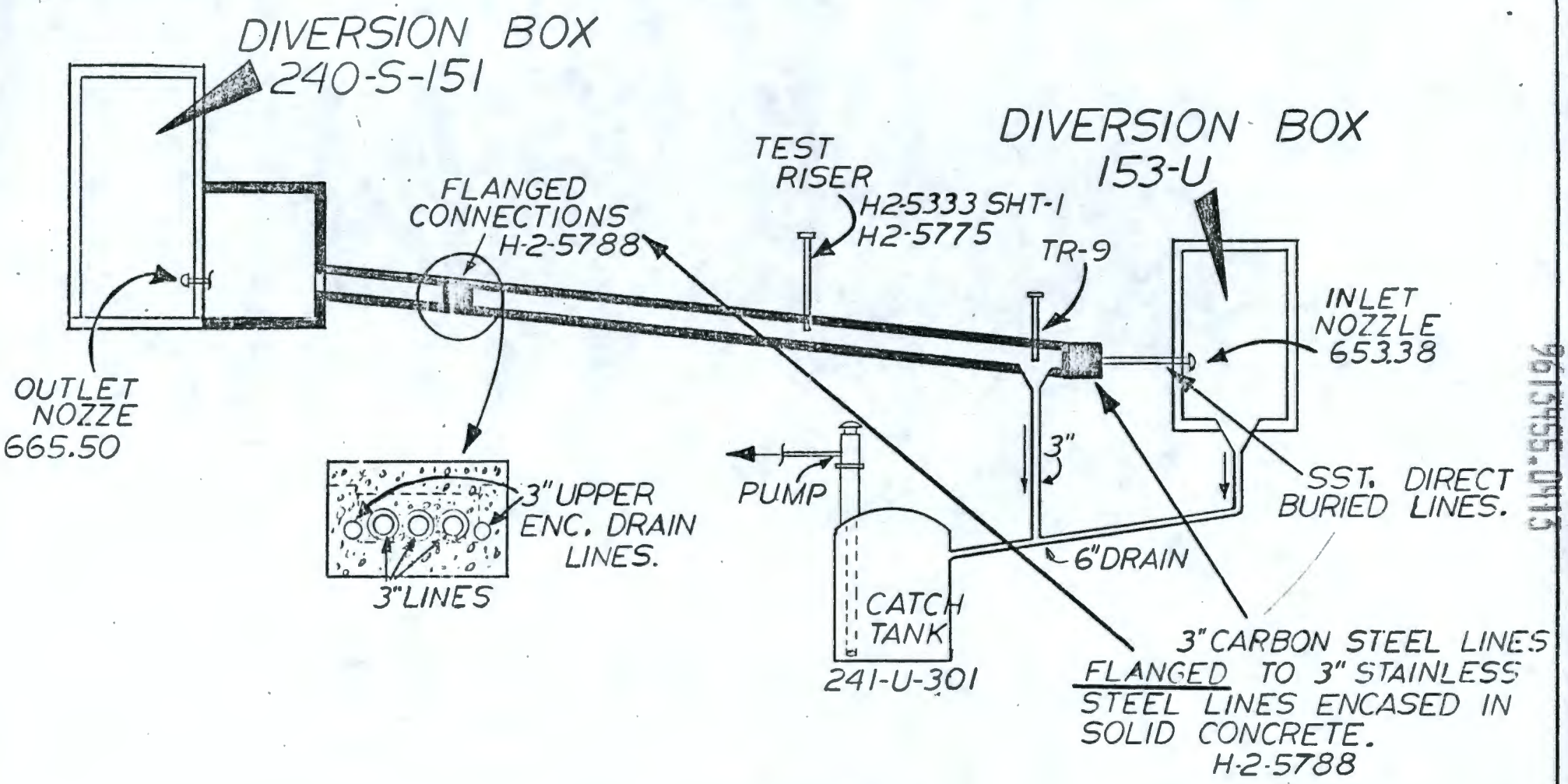
Concrete encasement between 240-S-151 Diversion Box to 241-S-151 Diversion Box. The encasement enclose the following lines: V508, V509, V512, V513, V514, V515, V516, V517, and V519. The encasement drain to the 241-S-151 Diversion Box pipe chase, which in turns drains to catch tank 241-S-302-A. The catch tank can be jetted back to 241-S-151 Diversion Box to nozzle upper 8. If jet fails or return line is broken or ruptured, a pump can be installed. A heel jet is used sometimes to empty out catch tank.

H2-5328 Sht. 1, 2 & 3	H2-34360	H2-1795
H2-5204	H2-1798	
H2-5330	H2-1796	
H2-5333 Sht. 2		

TFM 102

ENCASEMENT
240-S-151 TO
241-S-151

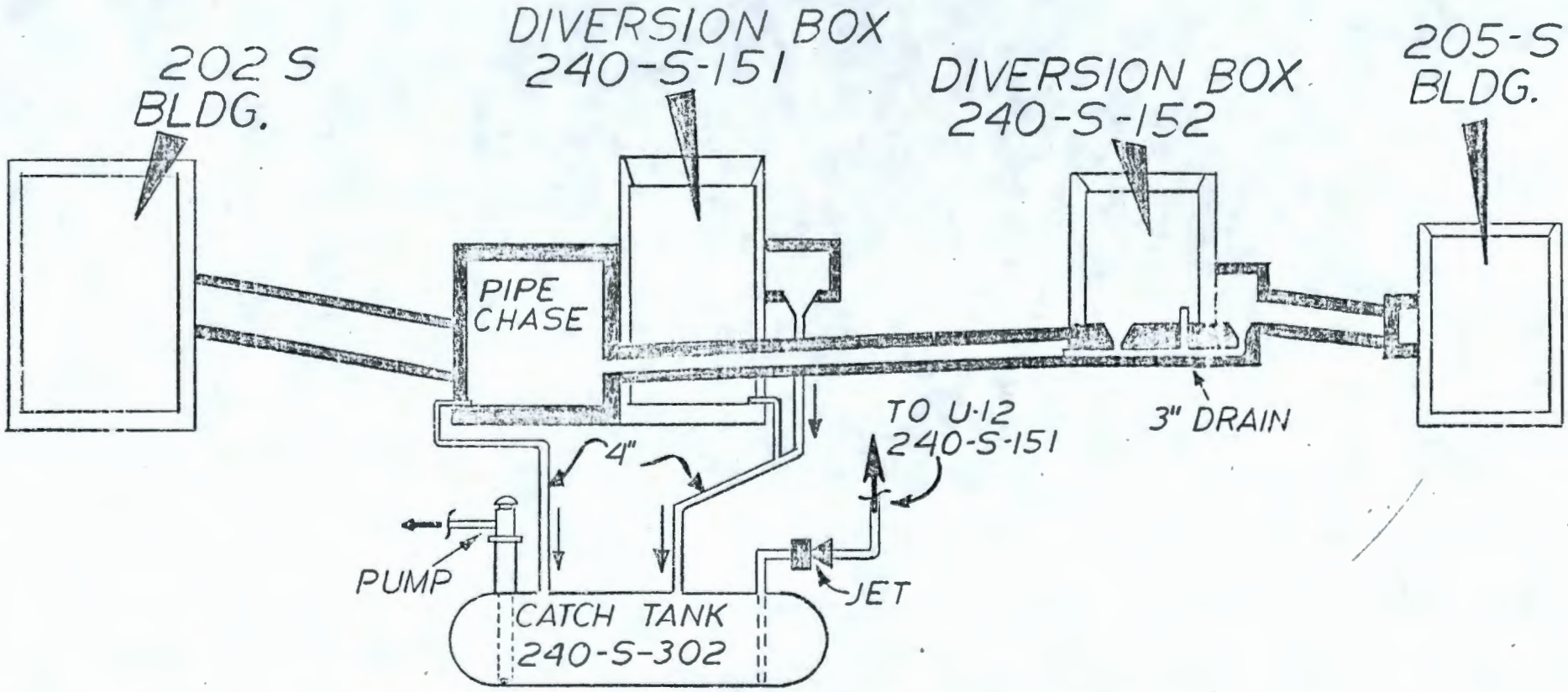
J.G. Rodgers | 9-13-72.



Concrete encasement between 240-S-151 to 153-U diversion box enclosing lines V458, V459 and V460. The encasement does not go all the way to the 153-U box but ends outside where the carbon steel lines are flanged to stainless steel lines in solid concrete. The stainless steel lines are direct buried into the box. The encasement drains to the 241-U-301 catch tank.

H2-5204	H2-5333 Sht. 1
H2-5200	H2-5775
H2-5201	H2-5787
H2-5788	W-72185

TFM 113	
ENCASEMENT 240-S-151 TO 153-U	
J.G. Rodgers	10-13-72



Concrete encasement between 202-S Bldg. to Diversion Box 240-S-151 pipe chase. The pipe chase drains to catch tank 240-S-302. Concrete encasement between Diversion Box 240-S-152 to Diversion Box 240-S-151 pipe chase. The 240-S-152 Diversion Box and pipe pit drain by a 3" drain to the encasement between the two boxes. The encasement between 240-S-152 and 205-S Bldg. drains back to the building. If the catch tank jet fails, a pump will be installed to pump it out.

H2-5801 Sht. 1, 2 & 3	H2-39736
H2-5200	H2-5219
H2-5201 Sht. 1, 2, 3 & 4	H2-5211
H2-30642	H2-5212
H2-5204 Sht. 1 & 2	H2-39631
H2-39737	

TFM 101

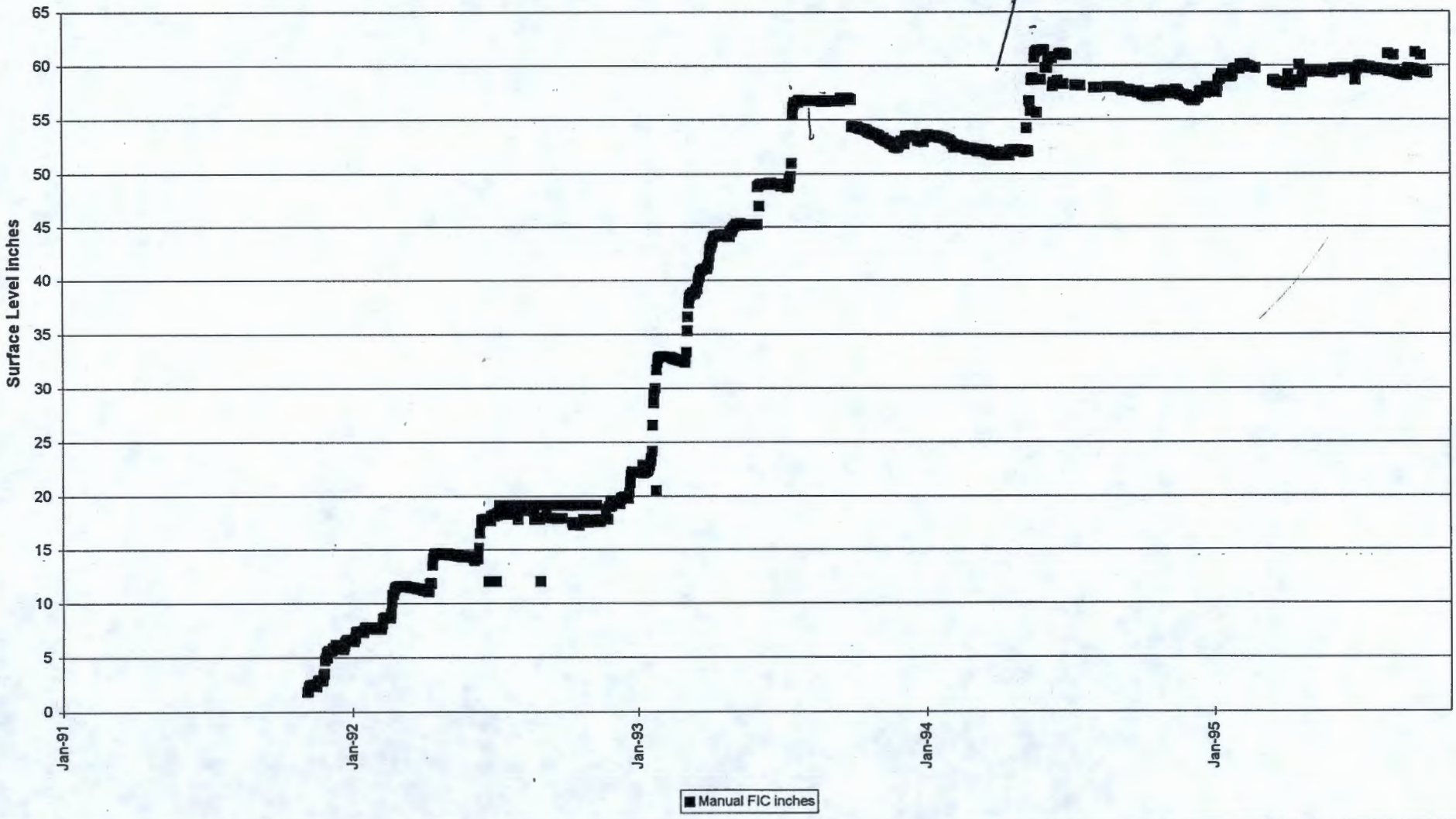
ENCASMENTS
240-S-151 TO
240-S-152 TO
205-S BLDG.

J.G. Rodgers | 9-13-72

Retrieval Date 10/4/95
Starting Date 1/1/87
Ending Date 10/4/95

S304

Data Type
Good
Transcribed



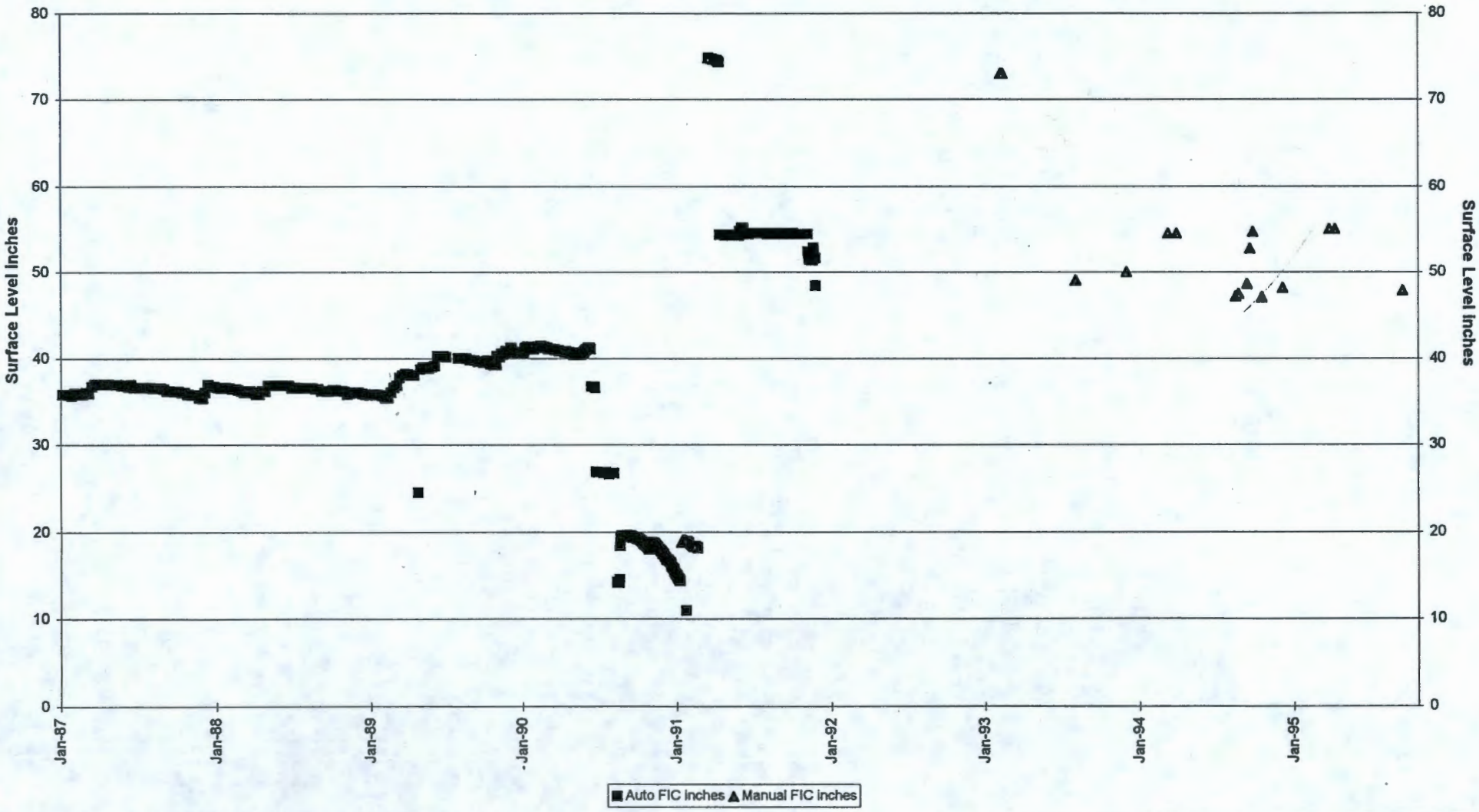
Surface Level Inches

9613455.0415

Retrieval Date 10/4/95
Starting Date 1/1/87
Ending Date 10/4/95

S302A

Data Type
Good
Transcribed



9140.55455.0416

9613455.0417

Unit Managers Meeting - Single Shell and Double Shell Tanks
TPA Milestones M-40, M-41, M-42, M-43, M-44, M-45
October 17, 1996

Westinghouse Hanford Company (WHC)

D. Alison	R1-51 (w/a)
L. D. Arnold	B2-35 (w/a)
L. E. Borneman	R1-90 (w/a)
J. F. Brown	S5-03*
F. T. Calapristi	B2-35*
K. A. Elsethagen	R1-52 (w/a)
D. B. Engelman	R1-49*
T. J. Kelley	S7-30*
M. A. McLaughlin	B2-35*
L. D. Pennington	S7-21*
T. E. Rainey	R2-54*
M. L. Ramsay	S7-52*
M. W. Stevenson	B2-35*
K. S. Tollefson	S7-01*
B. L. Treadway	R2-52*
RCRA Files	H6-21 (w/a)

Pacific Northwest National Laboratory

B. L. Harper	K3-54*
J. L. Huckaby	K6-80*

General Support Services Contractors

D. C. Nylander	S7-70*
L. Soler	B1-42*

* Received meeting minute text only. Distributed by cc:Mail

U.S. Department of Energy Richland Oprations Office (RL)

W. Abdul	S7-53*
G. E. Bishop	S7-54*
S. O. Branch	S7-54*
K. Chen	S7-54*
J. E. Couey	S7-52*
J. M. Gray	S7-54*
C. C. Haass	S7-51 (w/a)
D. E. Jackson	A5-15*
C. O. Ruud	S7-54 (w/a)
J. F. Thompson	S7-54*
W. R. Wrzesinski	S7-53*

State of Washington Department of Ecology (Ecology)

L. J. Cusack	B5-18 (w/a)
S. L. Dahl	B5-18 (w/a)
N. T. Hepner	B5-18*
A. D. Huckaby	B5-18*
S. McKinney	Lacey Office (w/a)
A. B. Stone	B5-18*

ADMINISTRATIVE RECORD: Double-Shell Tanks S-2-3, Single-Shell Tanks S-2-4, Tank Waste Remediation System, TPA Milestones M-40, M-41, M-42, M-43, M-44, M-45, [Care of EDMC, WHC (H6-08)]

Washington State Department of Ecology Nuclear and Mixed Waste Hanford Files, P.O. Box 47600, Olympia, Washington 98504-7600

Environmental Protection Agency Region 10, Seattle, Washington 98101, Mail Stop HW-070 (Records Center)