96-0003039

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

JUL 19 1996

96-WSD-133

Mr. John T. Conway, Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W., Suite 700
Washington, D.C. 20004

Dear Mr. Conway:

TRANSMITTAL OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD (DNFSB) RECOMMENDATION 93-5 QUARTERLY REPORT FOR APRIL 1, 1996 THROUGH JUNE 30, 1996

The DNFSB Recommendation 93-5 quarterly report for April through June 1996 is enclosed. This report is submitted in accordance with Commitment 1.10 of the DNFSB Recommendation 93-5 Implementation Plan, Rev. 0.

As the DNFSB is aware, a revised version of this Implementation Plan was approved by Secretary O'Leary and sent to the DNFSB for approval in June 1996. This quarterly report addresses the status of commitments presented in both revisions of the Implementation Plan.

Two milestones presented in the revised plan have been completed and presented to the DNFSB. Commitment 5.4.3.5.a, "Report Documenting Analyses to Determine if Additional Tanks Have Potential to Exceed 25% of the Lower Flammability Limit" was transmitted to the DNFSB on June 28, 1996. Commitment 5.4.3.1.a, "Letter Reporting Completion of Comprehensive Source Terms Report" was transmitted to the DNFSB on June 30, 1996.

Detailed information on accomplishments, problems, and the status of open commitments is presented in this report.

If you have any questions, please contact me or your staff may contact Jackson Kinzer, Assistant Manager for Tank Waste Remediation System, on (509) 376-7591.

Sincerely,

John D. Wagoner
Manager

WSD:NWW

Enclosure

cc w/encl:
A. L. Alm, EM-1
R. J. Guimond, EM-2
J. C. Tseng, EM-4
M. A. Hunemuller, EM-38
K. T. Lang, EM-38
J. Poppiti, EM-38
M. B. Whitaker, S-3.1

cc w/encl:
S. L. Trine, RL DNFSB Liaison

DNFSB 93-5 QUARTERLY REPORT, APRIL 1 TO JUNE 30, 1996

EXECUTIVE SUMMARY

Significant accomplishments this Quarter were the approval by Secretary O'Leary of Revision 1 to the Recommendation 93-5 Implementation Plan, submittal to DNFSB of the first milestones due in Revision 1 to the Recommendation 93-5 Implementation Plan, improvement in the core sample recovery rate, good results from Retained Gas Sampling, improvement in the number of core segments per sampling shift, commencement of Type 4 In-Situ Vapor Sampling, Department of Energy Conduct of Operations assessment of Characterization Project Operations, completion of the initial test for the Propagating Reactive System Screening Tool, issuance of the report on the simulated new tank riser installation, removal of four tanks from the Ferrocyanide Tank Watchlist, and results of the Organic waste surrogate propagation tests.

The current issues discussed are progress in qualifying the Rotary Mode Core Sample System for use in Flammable Gas tanks, merger of the Tank Waste Remediation System Technical Basis and Waste Tank Safety Organizations, status of the Organic Nitrate Unreviewed Safety Question and Justification for Continued Operation, status of the Flammable Gas Unreviewed Safety Question and Justification for Continued Operation, need to conduct Retained Gas Sampling in a greater number of tanks, resolution of the approach to the 222-S core storage capacity limit, development of a revision to the Technical Basis document, core sample truck reliability issues, self evaluation of skin contamination events, and 222-S nitric acid injury.

The key item affecting completing core sampling the 28 Tank Waste Characterization Basis High Priority Tanks is the qualification of trucks for rotary core sampling in flammable gas tanks. The best estimate for starting rotary core sampling in flammable gas tanks is September 1996.

DNFSB 93-5 QUARTERLY REPORT, APRIL 1 TO JUNE 30, 1996

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DNFSB 93-5 QUARTERLY REPORT, APRIL 1 TO JUNE 30, 1996

1 PURPOSE

This quarterly report provides a report on High Level Waste Tank Characterization activities at the Hanford Site related to the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 93-5 during the period April 1 to June 30, 1996. This Recommendation dealt with the safe storage and characterization of the Hanford High-Level Tank wastes in both single and double-shell tanks. An Implementation Plan responding to Recommendation 93-5 was transmitted to the DNFSB by the Secretary of Energy in January 1994. The plan was accepted by the DNFSB on March 25, 1994. On June 17, 1996, Revision 1 to the Implementation Plan was submitted to the DNFSB for acceptance. This report will continue to address the commitments in Revision 0 until Revision 1 is accepted by the DNFSB. The status of each open Revision 0 commitment is described in Section 4 of this report. A tabular status of both Revision 0 and Revision 1 commitments and milestones is provided in Section 5.

2 QUARTERLY HIGHLIGHTS

2.1 Revision 1 to Implementation Plan Approved by Secretary O'Leary - Revision 1 to the Recommendation 93-5 Implementation Plan was submitted to the DNFSB for acceptance on June 17, 1996.

2.2 Revision 1 Milestones Submitted - Two Implementation Plan Revision 1 Milestones were submitted to DNFSB for completion during this quarter: Milestone 5.4.3.1a, Letter Reporting Completion of Comprehensive Source Terms Report; and Milestone 5.4.3.5a, Report Documenting Analyses to Determine If Additional Tanks Have Potential to Exceed 25% of the Lower Flammability Limit (LFL).

2.3 Core Recovery Rate Improvement - A continuing joint effort by Engineering and Operations to improve the core sample recovery rate has produced a significant increase in the average percent of recovery in the amount of tank waste collected in each segment from core sampling the waste tanks. The present average recovery rate for the rotary mode trucks is 83%, over the last 50 segments removed, and is rising. This is well above the FY 96 performance goal of 60% recovery. Some of the changes that account for the improved recovery include:

- Modification of the pintle rod release mechanism
- Modification of the ball valve trigger design
- Modification of a sampler insert thread sealant
- Procedure changes for increased use of X-ray images in the field
- Tightening of the core barrel dimensional requirements

Continued improvement of the average recovery rate is expected with the consistent application of the changes already implemented plus some additional improvements yet to be introduced.

2.4 Retained Gas Sampler Results - Core sampling of tank AW-101 for Retained Gas Sampling (RGS) was completed. The preliminary results of the analyses show very good agreement with the void volume measurements taken with the Void Fraction Instrument. Analyses of the gases indicate the presence of hydrogen, nitrous oxide, ammonia, methane, and nitrogen. Analysis of the gas composition and void volume that will provide an understanding of how to compensate these measurements for the solubility effect from the ammonia, the effect of water vapor, and other errors inherent in the sampling and extraction process, is continuing.

2.5 Core Segments per Shift Rate Improved - The field sampling rate for core segments obtained per shift has been significantly improved over last Fiscal Year. The current segment per shift sampling rate is 0.66, compared to 0.34 last year. This improvement has been achieved by the procurement of a weather protection tent for each core sample truck (four), the placement of four core sampling trucks in service, the qualification of four truck operating crews, the placement of lunchroom trailers at the fence line for those tank farms where sampling operations are frequent so the operators do not need to return to the office building for lunch, and the streamlining of the procedures controlling entry into the tank farms to eliminate access delays.

2.6 Commencement of Type 4 In-Situ Vapor Sampling (ISVS) - Over the past two years, tank headspace vapor sampling was conducted using a highly instrumented truck, called the

Type 3 Vapor Sampling System (VSS). This system is manpower intensive and requires a two to three-day setup, sample, and tear down time for each tank sample, and also required the preinstallation of a heated vapor probe into the tank riser. To reduce costs, a simpler sampling system contained in a small hand cart was designed and constructed. A technical improvement is the insertion of the sorbent tube sample media into the waste tank headspace during sampling to eliminate drop out of analyte compounds in the transfer tubing. This system requires only four to six hours to sample a tank, and does not require the installation of a heated vapor probe. To validate the equivalency of the ISVS to the VSS method, a side-by-side comparison study was conducted. Three tanks were sampled by both methods as close as possible in time and the analytical results compared. These methods were found to be comparable except for semi-volatile organic compounds sampled by the vapor canister method, where transfer tubing losses were significant in the ISVS method. These compounds are also accurately sampled by the ISVS sorbent tubes. Approval of this study permitted the starting of vapor sampling using the ISVS method during June.

2.7 Department of Energy (DOE) Conduct of Operations Assessment - A DOE RL assessment team was onsite the week of May 20, 1996, to conduct an assessment focusing on conduct of operations for Tank Waste Remediation System (TWRS) Characterization Project Operations (CPO). The assessment covered the performance of field activities and included industrial safety and hygiene, quality assurance, safety basis, and nuclear chemistry. The audit exit comments credited CPO with being a highly motivated, team oriented, and well-trained work group. Also, areas in the chemistry sampling program were reported in much better condition and have shown positive developments in content as well as sampling product, implementation, and results.

2.8 Laboratory Analysis Volume Exceeds 1995 Annual Volume - Through June 22, 1996 the total 222-S Laboratory Analytical Equivalency Units (AEUs) completed in support of the Tank Characterization Project for FY 96 was 38.3 AEUs. The total Laboratory AEU production for FY 1995 was 21.4 AEUs. This is an increase of 79% in the first nine months of the Fiscal Year over the last Fiscal Year's total production. When compared to approximately the same time period for FY 1995 (i.e. through June 1995) in which a total of 14.9 AEUs were completed, an increase of 157% in Laboratory production was realized. The increase in Laboratory production is directly attributed to the increased production of tank farm sampling and the improved sample analysis performance of the Laboratory.

2.9 Propagating Reactive System Screening Tool (PRSST) Initial Test - This instrument, fabricated by Fauske and Associates, was received in April 1996 and has been tested on simulants, surrogates, and an actual waste tank sample. Tests have concluded that the system works as designed by the vendor, provides strong indications of exothermic reactions that self-propagate through a sample when ignited by an external source, and can provide limited adiabatic calorimetric data on the sample if propagation does not occur. Operational procedures and documentation of test results are in preparation. This instrument will be used to test actual waste samples to confirm the safe storage criteria for the organic complexant safety issue.

2.10 New Riser Installation - The final report on a simulated riser installation has been issued. This report provides the details of a field demonstration for riser installation in single-shell tanks. The demonstration was a simulation using aged concrete slabs and not an actual tank. The report includes color photos of the equipment used and shows several of the key steps during the field demonstration. This successful demonstration utilized off the

shelf hardware in achieving all the objectives. The possible need for additional risers was identified early in the planning of the Characterization Program because some tanks have too few risers or the risers are not well located for representative sampling. The cost estimate for riser installation is: one riser, $1,035,000; additional risers, $250,000 each. The high cost associated with the installation of one riser includes the environmental assessment, operational readiness review, air permits, safety analysis, procedures, and engineering.

2.11 Hanford Tank Content Estimates (HTCE) on Compact Disc (CD) - The HTCE documents, previously available only in hard copy, are now available on compact disc by request, and are also accessible via a network connection. There are 4 HTCE volumes, each representing one of 4 quadrants encompassing all 177 underground waste storage tanks at Hanford. They provide documentation of the recorded history of the radioactive mixed waste stored in each tank in the 200 East and 200 West areas. These reports provide summaries and detailed historical information on subjects like waste history (transfers and receipts), temperature profiles, psychometric data, tank integrity, liquid observation well monitoring, occurrences, and tank level histories beginning when each tank began operating (as early as 1944). Aerial photographs for each of the 18 tank farms and in-tank photographs for all 177 tanks are also provided. Estimates of tank inventories are provided, derived from a model designed and managed by Los Alamos National Laboratory (LANL).

2.12 Historical Data Moved to Tank Characterization Database (TCD) - The remaining historical analytical data have been entered into the TCD. Over 38,000 records have been entered into TCD that were extracted from paper files in the Westinghouse Hanford Company (WHC) Tank Characterization Resource Center. The records are largely pre-Tri-Party Agreement (TPA) analysis results. This completes the task to retrieve data from over 150 tanks.

2.13 Tank Characterization Database Interface - A replacement World Wide Web based interface has been developed by Pacific Northwest National Laboratory (PNNL) and has been approved by WHC. The interface will be executed via the Hanford internal web and will greatly improve the ability to access and analyze data from the TCD. Training and demonstrations are in progress on the Hanford Site. Access is also available for external Web users upon request to TWRS Technical Basis. The current TWINS interface to the TCD will not be funded by DOE beyond the current Fiscal Year.

2.14 Removal of Tanks from Ferrocyanide Tank Watchlist - The Department of Energy Headquarters has approved the removal of the four C Tank Farm ferrocyanide tanks (C-108, C-109, C-111, and C-112) from the Ferrocyanide Tank Watch List. These tanks were removed because sampling confirmed that the ferrocyanide in these tanks has degraded (aged) significantly over the nearly 40 years of storage to the point where there is insufficient fuel value remaining to sustain a propagating reaction.

2.15 Organic Waste Surrogate Propagation Tests - Propagation tests were performed on waste surrogates containing both the organic complexants and their degradation products that are found in the Hanford Site High Level Waste Tanks. These test results will be used to refine the Total Organic Carbon, energy content, and water criteria for safe storage criteria. Following confirmation by propagation tests on real wastes, the Safety Screening and Organic Data Quality Objectives will be revised.

3 CURRENT ISSUES

3.1 Management/Administration

3.1.1 Merger of Technical Basis and Waste Tank Safety Organizations - To provide improved integration of their mutually dependent roles, the Characterization Technical Basis and the Waste Tank Safety Organizations have been placed under the same manager, and renamed TWRS Technical Basis. In addition, the TWRS Technical Basis Manager now reports directly to the TWRS Vice President and Manager. This organizational change will improve the integration of the characterization technical basis group with customer TWRS activities.

3.2 Technical

3.2.1 Qualification of Rotary Mode Core Sampling (RMCS) for Flammable Gas Tanks

Safety Assessment Progress - The second and third tier reviews of the "Safety Assessment of the Rotary Mode Core Sampling in Flammable Gas Single Shell Tanks: Hanford Site, Richland, Washington." are complete, and the resolution of the third tier comments is in progress. Final approval of the safety assessment by DOE is expected by the end of July.

Core Sampling Ignitability Testing - All planned tests for ignitability testing for RMCS core sampling were completed at the U.S. Bureau of Mines. There were two categories of testing:

- Ignition caused by bit/waste or drill string/tank riser interaction.
- Ignition caused by accidental dropping of RMCS equipment into or around the tank riser opening.

A minor modification to the push mode drill bit was made to prevent an ignition of flammable gas while sampling. Three different mixtures of flammable gasses were used representing combinations sensitive to low energy ignition. The gas mixtures were ignited electrically after every test to demonstrate the mix is flammable and had the potential to ignite, but was not ignited, as a result of the actual test. Drops of three foot sections of drill string were completed without ignition. A test report documenting all the final test results will be issued.

Rotary Mode Core Sample System Truck Modifications - Modifications to satisfy the requirements of the flammable gas tank safety assessment are in progress on RMCS Truck #4. Modification of Truck #3 is planned during the next fiscal year.

Qualification for Rotary Mode Core Drilling in Flammable Gas Tanks - The DOE Operational Readiness Evaluation for operating the RMCS System in a flammable gas environment is scheduled to complete in August 1996. This will permit starting sampling in September 1996.

3.2.2 Organic-Nitrate Unreviewed Safety Question (USQ) and Justification for Continued Operation (JCO) - On May 16, 1996, the TWRS Plant Review Committee (PRC) declared

that a Discovery USQ exists concerning the potential for an Organic-Nitrate chemical reaction as a result of a previously initiated USQ Evaluation. This was based on the determination that a localized, high energy ignition source is a credible initiator of an exothermic reaction in the waste at a credible frequency, provided the waste has sufficient fuel and is dry. Tank Farm Transition Project Standing Order 96-31 "Organic Nitrate Reactions" was issued to provide additional compensatory actions to ensure plant safety until a JCO is approved. Approval by DOE-RL is anticipated during the next quarter.

3.2.3 Flammable Gas USQ/JCO - A JCO for the Flammable Gas USQ will be submitted to DOE-RL for approval in the near future. This JCO will document the rationale and provide formal approval for the existing flammable gas tank controls.

3.2.4 Retained Gas Sampler Required for a Greater Number of Tanks - Development of the Flammable Gas JCO required the development of models for the retention of flammable gases in various types of waste. One method of verifying these models is to sample the condensed phases of the waste using the RGS. It is anticipated that this may increase the number of High Priority Tanks that require RGS sampling from five to twelve. At present only Core Sample Truck #1 can sample using RGS. RGS sampling is also not now compatible with rotary mode sampling. The modification of a rotary mode truck to accommodate RGS is being evaluated.

3.2.5 222-S Core Storage Capacity Approaching Limit - The current core equivalent sample (CES) inventory is 557. The 222-S Laboratory has a control limit of 640 CESs. To reduce the CES inventory, approximately 200 CESs of K Basin samples are being shipped to the 300 Area for storage. This action will provide relief for the current 222-S storage issue.

3.2.6 Technical Basis Revision in Development - The Tank Waste Characterization Basis containing the tank sampling priorities was issued in August 1995. Since then, changes have occurred in the sampling needs of some programs. The most significant of these are the impending closure of the Ferrocyanide Safety Issue, and the need to better understand tank waste phenomology that cause the organic and flammable gas issues. A revision to the Tank Waste Characterization Basis is being developed to fulfill the TWRS goal to update the document annually. Future Quarterly Reports will provide updates on this revision.

3.3 Personnel and Equipment

3.3.1 Core Sample Truck Reliability Issues

Mechanical Remote Latching Unit (RLU) Failures - The mechanical RLU failures noted in the last report have been resolved by incorporating the hydraulic RLU design. The hydraulic RLU system is being installed on Truck #4 during the present maintenance outage.

Sampler Connection Failure - Sampler connection failures have been corrected by replacing the aluminum coupling nut with a stainless steel nut. The quadra-latch finger mechanism used to hold the sampler in the drill string is being modified to incorporate the

use of stainless steel in place of carbon steel to satisfy safety concerns in flammable gas tanks.

Grapple Hoist Cable "Birdnesting" - The grapple hoist cable "birdnesting" noted in the last report is being rectified by replacing the existing mechanism with the new modifications that incorporate enlarged drum side plates, an improved spool guide with increased spring tension, and a grooved drum. These changes have been incorporated into trucks #3 & 4, and will be incorporated into truck #2 during it's next outage. Truck #1 hoist cable was modified to improve the first wrap of the cable and modify the cabling procedure to help with previous unspooling problems.

Reliability Modifications - The modifications completed last reporting period for truck #3 are presently being installed onto truck #4. As noted previously, these modifications will improve the system reliability, personnel safety, and equipment operability.

3.3.2 Skin Contamination Self Evaluation - In light of two recent skin contaminations, CPO is performing a self evaluation of the core sampling activities. The focus of the self evaluation is on personnel work practices and possible design problems. CPO is video taping several sampling evolutions and the sampling crews are evaluating their performance at the end of the shift. The intent is to heighten the awareness of good work practices and to encourage the workers to evaluate their performance critically and identify opportunities for improvement by doing periodic video self evaluations as part of standard operations. Drip pans that clamp onto the drill string have also been installed to prevent contamination from dripping off the drill string and contaminating auxiliary equipment.

3.3.3 222-S Nitric Acid Injury - A Chemical Technologist inadvertently poured concentrated nitric acid into a squeeze bottle containing ethanol. The chemical reaction caused the mixture to be expelled from the container, and some material got onto the technologist's face. Areas of concern identified during the critique included: the current methods of storage/handling of incompatible chemicals, labeling of containers, proper protocol for handling caustics and acids, and wearing the appropriate protective equipment for the work being performed. To correct these issues, five laboratory procedures were modified. Managers have been instructed to discuss the procedure modification (via Daily Operating Instruction) with their personnel and document the action. A review of the laboratory was conducted to confirm compliance with the new chemical labeling requirements.

4 STATUS OF REVISION 0 OPEN COMMITMENTS

4.1 Strengthen Technical Management

4.1.1 Commitment 1.5 - Implement Plan to Improve Tech Staff Competencies

This status and plan for completion of this commitment were reported to DNFSB by DOE-RL letter 95-CHD-111 dated January 8, 1996. This commitment was completed by validating that the Hanford site wide computerized training requirements and status matrix (TMX) reflects the required training for the Project organization and completing any identified training. WHC letter 9652763 dated June 21, 1996 reported completion of this commitment to DOE-RL.

4.1.2 Commitment 1.11 - Field Schedule for Sampling All Activities FY95 & 96

A schedule for the 28 Tank Waste Characterization Basis High Priority Tanks is included in Revision 1 to the 93-5 Implementation Plan. This includes the remainder of FY-96 and FY-97. The sampling schedule for the next Quarter is included in Section 5 of this report.

4.1.3 Commitment 1.20 - TWRS Risk Acceptance Criteria

DOE-RL letter 95-CHD-102 dated December 8, 1995 resubmitted the WHC Safety Manual, WHC-CM-4-46, Rev 4, Section 7, as the risk acceptance criteria for TWRS activities. WHC letter 9651582 dated April 5, 1996 submitted "Application of Risk Guidelines to Tank Waste Decisions," WHC-SD-WM-RA-013, to DOE-RL. DOE-HQ EM38 (Guimond) letter to DOE-RL (Manager) dated April 4, 1996 directed use of WHC-CM-4-46, Rev 0, a more conservative criteria.

4.2 Accelerate Safety-Related Characterization

4.2.1 Commitment 2.3 - Complete Sampling & Analysis of All Watch List Tanks

The completion date for this commitment depends upon the numbers and types of samples required by the Characterization Basis, the demonstrated reliability of the Rotary Mode Core Systems and the quality of the samples obtained, and the degree to which the assumptions of the Characterization Basis are confirmed by the sampling and analysis of the 28 High Priority Tanks. DOE reported that this commitment was not met on the due date by letter from H. O'Leary (DOE-HQ) to J. T. Conway (DNFSB) dated January 11, 1996.

4.3 Improve the Quality and Quantity of Sampling

4.3.1 Commitment 3.12 - Hire/Train/Qualify Four Additional Rotary Mode Crews

DOE EM-36 letter of March 9, 1995 reported to DNFSB that these additional crews would not be hired and trained until the Tank Waste Characterization Basis was issued and the numbers of samples required have been evaluated. The Tank Waste Characterization Basis recommends the sampling of 28 High Priority Tanks. Future acceleration of the

sampling rate will depend on the degree to which these tank samples validate the assumptions of the safety issue programs.

4.3.2 Commitment 3.13 - Deploy Prototype Cone Penetrometer

A truck mounted 45-ton Cone Penetrometer was ordered in September 1994. This decision was reevaluated in July 1995 and the order was changed to a skid mounted 35-ton unit on July 31, 1995. This unit is scheduled to be delivered during the next quarter.

4.3.3 Commitment 3.16 - Direct Drill Bit Temperature Monitoring

Laboratory testing of a prototype drill bit temperature monitor has been completed at Sandia National Laboratory. When this Implementation Plan was first written, direct monitoring of the drill bit temperature was thought to be the only method of insuring that the drill bit temperature stayed below the safety limits during rotary drilling. Since then, computer modeling and confirmation testing have shown that monitoring the down force, rotational speed, and purge gas flow are sufficient to control drill bit temperature. In addition, the greater system complexity that would result from the drill bit instrumentation, its consequence on system reliability, and the need to redesign the drill bit sensors each time the drill bit was modified, make this system costly. Consequently, field deployment of the direct drill bit temperature monitor is not planned.

4.4 Streamline Tank Access

All Commitments are Completed.

4.5 Improve the Quality and Quantity of Analyses

4.5.1 Commitment 5.2 - Complete Renovation of 325 'A' Hot Cell

WHC letter 9652518 dated June 4, 1996 reported completion of this commitment to DOE-RL.

4.5.2 Commitment 5.14 - Two PAS-1 Casks will be ready for use Jan. 1995

The Safety Analysis Report for the Packaging amendment was prepared by VECTRA Technologies. The report was submitted to DOE-RL and forwarded to DOE-HQ for approval in July 1994. Three rounds of questions concerning the Safety Analysis Report have been completed and all issues resolved. Issuance of the Certificate of Compliance by DOE is expected within the next quarter. The casks will be used to ship pretreatment process samples to LANL.

4.6 Improve Data Management

All Commitments are Completed.

4.7 Change Control

4.7.1 Commitment 7.1 - Formally Submit Changes to Commitments

Revision 1 to the 93-5 Implementation Plan was submitted to DNFSB on June 17, 1996.

4.7.2 Commitment 7.2 - Address Changes to Milestones in Quarterly

This commitment is ongoing. A status of all open milestones is provided in this report.

5 APPENDICES

5.1 High Priority Tanks Sampling and Analysis Status

Tank	Rank	Planned Samples	Samples Obtained	Sampling Completed	Lab Analysis Completed
BY-105[1]	100	2R[5]	1 partial core, need rotary to complete	10/6/95	4/29/96
U-105[1]	93	3R[3]	3 cores	3/18/96	6/25/96
U-109[1]	91	3R[3]	3 cores	1/18/96	6/29/96
BY-103[1]	86	2R[5]	need rotary		
U-108[1]	84	3R[3]	3 cores	5/6/96	
U-107[1]	76	3R[3]	3 partial cores, need rotary to complete	3/28/96	6/25/96
BY-106[1]	74	2R[3]	2 cores[6]	12/19/95	4/29/96
S-102	74	2R[3]	2 cores	3/8/96	
SX-103	67	2R[5]	need rotary		
BY-108[1]	65[2]	3R	3 cores	8/18/95	2/12/96
A-101	62	3R[5]	decision made 5/20/96 to push mode sample with RGS (truck #1) following completion of AN-105		
TX-118	61	3R[5]	need rotary		
SX-104	61	3R[5]	need rotary		
BY-110[1]	52[2]	3R	6 cores	10/20/95	4/25/95
TX-111	51	2R[5]	need rotary		
BY-104[1]	51	2R[3]	2 cores	11/15/95	5/2/96
C-104	50	2R[5]	decision made 5/20/96 to push mode sample		
S-107	50	3P	3 cores	9/28/95	
S-101	50	2R[3]	2 cores	4/3/96	
TY-103[1]	50	3R[5]	need rotary		
SX-101	49	2R[5]	need rotary		
S-110	47	2R[3]	1 partial core, need rotary to complete	4/11/96	
AW-101	47	2P[4]	2 RGS cores	5/6/96	
AN-104	46	2P[4]	need RGS (truck #1), follows A-101		
AX-101	43	3R[5]	need rotary		
AN-105	37	2P[4]	2 cores	6/28/96	
AN-103	36	2P[4]	need RGS (truck #1), follows AN-104		
B-104	15	2P	2 cores	6/14/95	10/1/95

General Notes:

P = push mode core sample
R = rotary mode core sample
RGS = Retained Gas Sample (RGS). RGS can only be used with truck #1 (push mode truck).

[1] High Priority Tanks (HPTs) designated for additional laboratory analysis (related to organic aging and organic solubility as well as propagation testing with real waste using the Propagating Reactive System Screening Tool (PRSST)) in the *Test Plan for Samples From Hanford Waste Tanks 241-BY-103, BY-104, BY-105, BY-106, BY-108, BY-110, TY-103, U-105, U-107, U-108, AND U-109* (WHC-SD-WM-TP-378).

[2] High Priority Tanks (BY-108 & BY-110) selected for rotary mode core sampling testing to develop rotary mode core sampling procedures (July 1995 - October 1995).

[3] High Priority Tanks originally scheduled for rotary mode core sampling which were push mode sampled using rotary trucks based on the results of the rotary mode core sampling testing conducted in BY-108 & BY-110. This allowed sampling of some HPTs to proceed until authorization for rotary mode core sampling in flammable gas atmospheres is obtained.

[4] High Priority Tanks which require sampling with truck #1 and Retained Gas Sampler. Retained Gas Sampler laboratory extrusion system completed December 1995. Originally, only HPTs AW-101, AN-103, AN-104 and AN-105 required sampling with the RGS. Tank A-101 was determined to require sampling with RGS on 5/20/96.

[5] High Priority Tanks which were determined to require rotary mode core sampling based on the results of the rotary mode core sampling conducted in BY-108 and BY-110 (July - October 1995).

[6] First rotary mode core obtained with nitrogen purge during period October 1994 to January 1995.

5.2 Tanks Sampled during Third Quarter 1996 (April through June)

SAMPLE	Actual Start	Actual Finish
A-101 Grab Sample	4/2/96	4/3/96
S-101 Rotary Samples 1 Segments 9 High Priority	3/29/96	4/3/96
S-102 Vapor Sample (3)	4/2/96	4/3/96
S-102 Temporal Vapor Sample (4)	4/2/96	4/3/96
S-110 Rotary Samples 2 Segments 8 High Priority	3/26/96	4/11/96
TY-102 Vapor Sample (3)	4/11/96	4/12/96
S-110 Grab Sample	4/9/96	4/15/96
B-102 Vapor Sample (3)	4/17/96	4/18/96
BX-105 Vapor Sample (3)	4/23/96	4/24/96
BX-110 Vapor Sample (3)	4/29/96	4/30/96
U-102 Rotary Samples 2 Segments 7 Off Ramp	4/11/96	5/1/96
T-103 Grab Sample	4/30/96	5/2/96
U-108 Rotary Samples 3 Segments 9 High Priority	3/29/96	5/6/96
U-106 Rotary Sample 2 Segments 5 Off Ramp	5/1/96	5/10/96
AY-102 Grab Sample	5/13/96	5/14/96
AW-101 Push Sample 2 Segments 22 High Priority	1/29/96	5/24/96
U-101 Grab Sample	5/28/96	5/30/96
S-109 Vapor Sample (4)	6/4/96	6/4/96
S-101 Vapor Sample (4)	6/6/96	6/6/96
S-103 Vapor Sample (4)	6/12/96	6/12/96
S-106 Vapor Sample (4)	6/13/96	6/13/96
S-111 Rotary Sample 2 Segments 11 Off Ramp	5/10/96	6/18/96
S-107 Vapor Sample (4)	6/18/96	6/18/96
C-201 Vapor Sample (4)	6/19/96	6/19/96
C-106 Grab Sample	6/21/96	6/24/96
C-202 Vapor Sample (4)	6/25/96	6/25/96
AN-105 Push Sample 2 Segments 22 High Priority	6/4/96	6/28/96
AW-101 Grab Sample	6/24/96	6/28/96

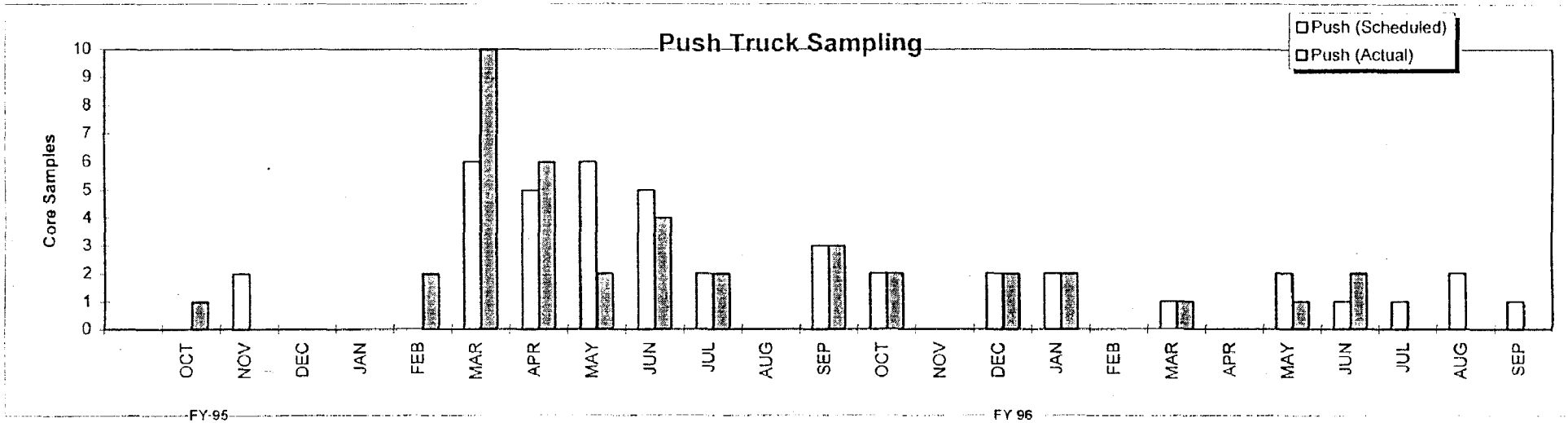
5.3 Chart of Samples Taken vs. Samples Scheduled

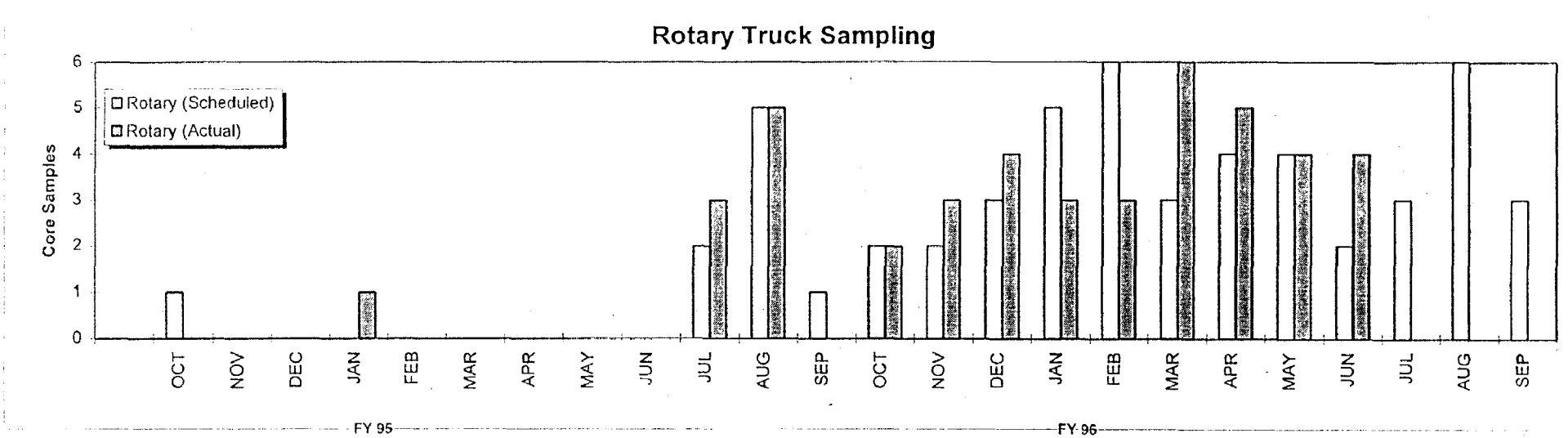
Two pages inserted following this page.

T·W·R·S Tank Waste Remediation System

Characterization

Push and Rotary Sampling

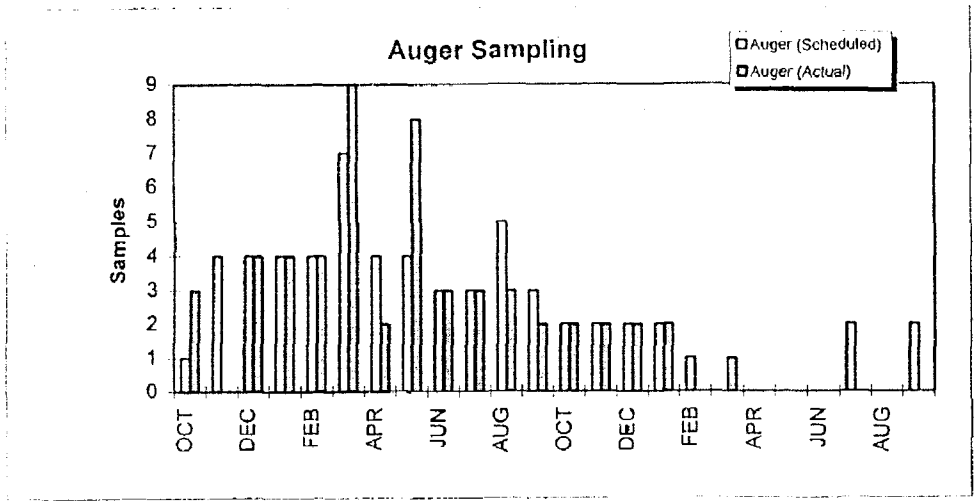


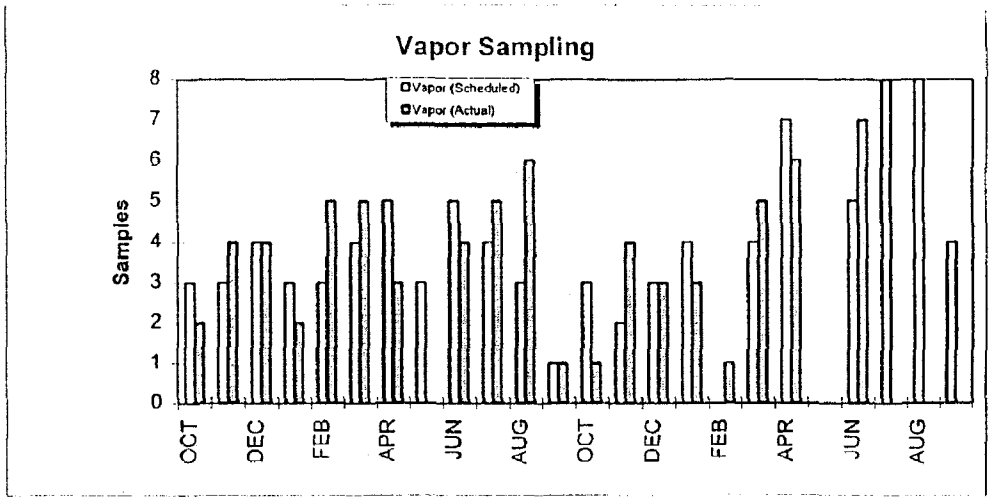


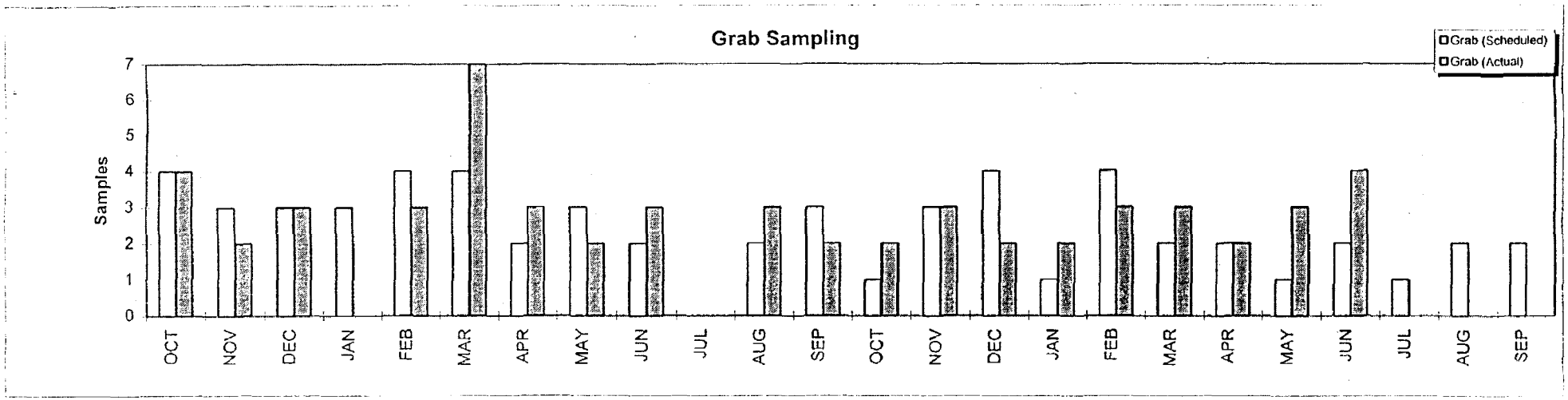
T·W·R·S Tank Waste Remediation System

Characterization

Auger, Vapor, and Grab Sampling







5.4 Sampling Schedule for Fourth Quarter 1996 (July through September)

TITLE	Early Start	Early Finish
S-109 Rotary Samples 2 Segments 11 Off Ramp	5/30/96	7/2/96
BY-107 Rotary Samples 2 Segments 6 Off Ramp	6/18/96	7/23/96
C-107 Temporal Vapor Sample (3)	7/1/96	7/2/96
A-101 Push Samples 3 Segments 19 High Priority	7/3/96	8/23/96
BY-108 Temporal Vapor Sample (3)	7/3/96	7/8/96
S-102 Temporal Vapor Sample (3)	7/9/96	7/10/96
AW-101 Grab Sample (Privatization)	7/11/96	7/15/96
BX-104 Temporal Vapor Sample (4)	7/11/96	7/12/96
T-103 Auger Sample 2 Segments 1	7/15/96	7/19/96
C-201 Vapor Sample (4)	7/15/96	7/17/96
C-202 Vapor Sample (4)	7/18/96	7/19/96
C-204 Vapor Sample (4)	7/22/96	7/23/96
U-112 Vapor Sample (4) (Rotary)	7/24/96	7/25/96
S-110 Rotary Samples 2 Segments 8 High Priority	7/25/96	8/27/96
C-104 Rotary Samples 2 Segments 5 High Priority	7/26/96	8/28/96
BY-102 Rotary Samples 2 Segments 5 Off Ramp	7/26/96	8/28/96
AY-102 Grab Sample	7/30/96	8/1/96
U-104 Vapor Sample (4)	8/5/96	8/6/96
T-106 Testing Light Duty Utility Arm	8/8/96	9/25/96
TX-104 Vapor Sample (4) (Rotary)	8/9/96	8/12/96
BY-101 Vapor Sample (4) (Rotary)	8/13/96	8/14/96
AN-107 Grab Sample - (Privatization)	8/14/96	8/16/96
B-202 Vapor Sample (4)	8/15/96	8/16/96
B-107 Vapor Sample (4) (Rotary)	8/19/96	8/20/96
B-105 Vapor Sample (4) (Rotary)	8/21/96	8/22/96

5.5 Tank Characterization Plan Completion Schedule

Sixty-five Tank Characterization Plans for tanks that may be sampled in FY-1996 were submitted to DOE-RL with the Tank Waste Analysis Plan (TWAP) on August 30, 1995. The additional plans listed in Section 5.5 below are those with emergent requirements for sampling or those requiring revision. The next planned submittal of Tank Characterization Plans is for FY-1997 in August 1996.

5.6 List of Tank Characterization Plans issued during the Quarter

Tank	Number	Rev	Date
A-101	WHC-SD-WM-TP-331	1	05/10/96
A-102	WHC-SD-WM-TP-358	3	04/03/96
A-104	WHC-SD-WM-TP-247	1	05/10/96
A-105	WHC-SD-WM-TP-445	0	05/10/96
AN-101	WHC-SD-WM-TP-413	2	04/03/96
AN-102	WHC-SD-WM-TP-216	3	04/03/96

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Tank	Number	Rev	Date
AN-103	WHC-SD-WM-TP-383	1	05/10/96
AN-104	WHC-SD-WM-TP-384	1	05/10/96
AN-105	WHC-SD-WM-TP-385	1	05/10/96
AN-106	WHC-SD-WM-TP-407	2	04/03/96
AN-107	WHC-SD-WM-TP-215	3	04/03/96
AP-104	WHC-SD-WM-TP-414	2	04/04/96
AP-108	WHC-SD-WM-TP-419	2	04/03/96
AX-101	WHC-SD-WM-TP-332	1	05/10/96
AX-104	WHC-SD-WM-TP-243	1	05/10/96
AY-101	WHC-SD-WM-TP-406	2	04/03/96
B-101	WHC-SD-WM-TP-350	3	04/03/96
B-104	WHC-SD-WM-TP-349	3	04/03/96
B-106	WHC-SD-WM-TP-353	3	04/03/96
B-108	WHC-SD-WM-TP-421	1	05/10/96
B-203	WHC-SD-WM-TP-354	2	04/03/96
B-204	WHC-SD-WM-TP-355	2	04/04/96
BX-103	WHC-SD-WM-TP-339	3	04/03/96
BX-104	WHC-SD-WM-TP-296	3	04/04/96
BX-106	WHC-SD-WM-TP-240	3	04/04/96
BX-109	WHC-SD-WM-TP-338	3	04/03/96
BX-110	WHC-SD-WM-TP-382	2	04/03/96
BX-112	WHC-SD-WM-TP-341	2	04/03/96
BY-102	WHC-SD-WM-TP-446	0	05/10/96
BY-103	WHC-SD-WM-TP-231	2	05/10/96
BY-104	WHC-SD-WM-TP-230	2	04/03/96
BY-105	WHC-SD-WM-TP-218	3	04/03/96
BY-106	WHC-SD-WM-TP-217	3	04/03/96
BY-107	WHC-SD-WM-TP-274	1	05/24/96
BY-108	WHC-SD-WM-TP-275	3	04/03/96
BY-110	WHC-SD-WM-TP-279	3	04/03/96
C-102	WHC-SD-WM-TP-206	2	05/10/96
C-103	WHC-SD-WM-TP-207	4	04/03/96
C-104	WHC-SD-WM-TP-208	1	05/10/96
C-106	WHC-SD-WM-TP-212	3	04/03/96
C-108	WHC-SD-WM-TP-211	4	04/04/96
C-204	WHC-SD-WM-TP-307	3	04/04/96
S-101	WHC-SD-WM-TP-386	2	04/03/96
S-102	WHC-SD-WM-TP-238	2	04/04/96
S-103	WHC-SD-WM-TP-387	1	05/10/96
S-105	WHC-SD-WM-TP-388	1	05/10/96
S-106	WHC-SD-WM-TP-389	1	05/10/96
S-107	WHC-SD-WM-TP-348	3	04/03/96
S-108	WHC-SD-WM-TP-390	1	05/10/96
S-109	WHC-SD-WM-TP-391	2	05/10/96
S-110	WHC-SD-WM-TP-205	2	05/10/96
S-111	WHC-SD-WM-TP-317	1	05/10/96

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Tank	Number	Rev	Date
S-112	WHC-SD-WM-TP-392	1	05/10/96
SX-101	WHC-SD-WM-TP-450	0	05/10/96
SX-103	WHC-SD-WM-TP-313	1	05/10/96
SX-104	WHC-SD-WM-TP-321	1	05/10/96
SX-107	WHC-SD-WM-TP-443	0	05/10/96
SX-108	WHC-SD-WM-TP-405	2	04/04/96
SX-109	WHC-SD-WM-TP-334	1	05/10/96
SX-115	WHC-SD-WM-TP-325	1	05/10/96
SY-103	WHC-SD-WM-TP-197	3	04/03/96
T-103	WHC-SD-WM-TP-424	1	05/10/96
T-106	WHC-SD-WM-TP-366	2	04/03/96
T-108	WHC-SD-WM-TP-367	2	04/03/96
T-109	WHC-SD-WM-TP-368	2	04/03/96
TX-101	WHC-SD-WM-TP-393	1	05/10/96
TX-105	WHC-SD-WM-TP-293	1	05/10/96
TX-107	WHC-SD-WM-TP-420	2	04/03/96
TX-111	WHC-SD-WM-TP-399	1	05/10/96
TX-116	WHC-SD-WM-TP-403	1	05/10/96
TX-118	WHC-SD-WM-TP-241	1	05/10/96
TY-102	WHC-SD-WM-TP-486	0	05/10/96
TY-103	WHC-SD-WM-TP-300	1	05/10/96
U-101	WHC-SD-WM-TP-370	0	05/10/96
U-102	WHC-SD-WM-TP-451	0	05/10/96
U-103	WHC-SD-WM-TP-288	2	05/10/96
U-105	WHC-SD-WM-TP-289	2	04/03/96
U-106	WHC-SD-WM-TP-245	1	05/10/96
U-107	WHC-SD-WM-TP-244	2	04/03/96
U-108	WHC-SD-WM-TP-315	1	05/10/96
U-109	WHC-SD-WM-TP-316	2	04/03/96
Vapor Sampling and Analysis Plan	WHC-SD-WM-TP-335	1-E 2 2A	04/03/96 04/09/96 6/13/96

5.7 List of Tank Characterization Reports issued during the Quarter

Tank	Document Name	Document Number	Original Date
241-B-101	Tank Characterization Report for Single-Shell Tank 241-B-101	WHC-SD-WM-ER-528, Rev. 0	4/01/96
241-T-108	Tank Characterization Report for Single-Shell Tank 241-T-108	WHC-SD-WM-ER-554, Rev. 0	4/02/96
241-BX-103	Tank Characterization Report for Tank 241-BX-103	WHC-SD-WM-ER-535, Rev. 0	4/03/96
241-T-108	Tank Characterization Report for Tank 241-T-108	WHC-SD-WM-ER-554, Rev. 0-A	5/01/96
241-C-112	Tank Characterization Report for Tank 241-C-112	WHC-SD-WM-ER-541, Rev. 0	5/15/96
241-BX-110	Tank Characterization Report for Single-Shell Tank 241-BX-110	WHC-SD-WM-ER-566, Rev. 0	5/22/96
241-U-110	Tank Characterization Report for Tank 241-U-110	WHC-SD-WM-ER-551, Rev. 0	5/23/96
241-B-111	Tank Characterization Report for Single-Shell Tank 241-B-111	WHC-SD-WM-ER-549, Rev. 0*	6/06/96
241-B-201	Tank Characterization Report for Single-Shell Tank 241-B-201	WHC-SD-WM-ER-550, Rev. 0**	6/06/96
241-BX-106	Tank Characterization Report for Single-Shell Tank 241-BX-106	WHC-SD-WM-ER-570, Rev. 0	6/12/96
241-BX-109	Tank Characterization Report for Single-Shell Tank 241-BX-109	WHC-SD-WM-ER-572, Rev. 0-A	6/26/96
241-C-103	Tank Characterization Report for Single-Shell Tank 241-C-103	WHC-SD-WM-ER-558, Rev. 0	6/26/96

5.8 List of 45 Day Reports Issued by Analytical Services

Tank	Type	Title	Number	Date
241-A-102	Auger	45-Day Safety Screening Results for Tank 241-A-102, Auger Sample 96-AUG-003	WHC-SD-WM-DP-177, Rev. 0	4/10/96
241-AY-101	Grab	45-Day Safety Screening Results for Tank 241-AY-101, Grab Samples 1AY-96-1 through 1AY-96-10 and 1AY-96-FB	WHC-SD-WM-DP-178, Rev. 0	4/22/96
241-S-102	Core	45-Day Safety Screening Results for Tank 241-S-102, Push Mode Cores 125 and 131	WHC-SD-WM-DP-179, Rev. 0	4/24/96
241-U-105	Rotary	45-Day Safety Screening Results for Tank 241-U-105, Cores 131, 133, and 136	WHC-SD-WM-DP-182, Rev. 0	5/24/96
241-U-109	Rotary	Safety Screening Results for Tank 241-U-109 Rotary and Push Mode Cores 123, 124, and 128	WHC-SD-WM-DP-181, Rev. 0	5/30/96
241-U-107	Push	45-Day Safety Screening Results for Tank 241-U-107, Push Mode Cores 129, 134, and 135	WHC-SD-WM-DP-184, Rev. 0	6/04/96
241-T-103	Grab	45-Day Safety Screening Results and Final Report for Tank 241-T-103, Grab Samples 3T-96-1, 3T-96-2, and 3T-96-FB	WHC-SD-WM-DP-187, Rev. 0	6/04/96
241-U-102	Push	45-Day Safety Screening Results for Tank 241-U-102, Push Mode Cores 143 and 144	WHC-SD-WM-DP-189, Rev. 0	6/28/96

5.9 Table of DNFSB 93-5 Implementation Plan Revision 0 Commitments Submitted to DOE-RL during the Quarter

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
1.05	Implement Plan to Improve Tech Staff Competencies	5/31/95	6/21/96	
1.10.61	Issue Quarterly Progress Reports	4/19/96	4/17/96	5/29/96
1.20	TWRS Risk Acceptance Criteria	8/31/94	4/5/96	
5.02	Complete Renovation of 325 'A' Hot Cell	9/30/95	6/4/96	

5.10 Table of DNFSB 93-5 Implementation Plan Revision 0 Commitments Recommended by DOE as Completed during the Quarter

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
1.10.61	Issue Quarterly Progress Reports	4/19/96	4/17/96	5/29/96
7.01	Formally Submit Changes to Commitments		2/29/96	6/17/96

5.11 Table of DNFSB 93-5 Implementation Plan Revision 0 Commitments Status

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
1.01	Enhance WHC Characterization Program Management Staff	2/28/94	2/28/94	6/27/94
1.02	Reduce Management Layers in WHC TWRS	3/31/94	3/24/94	6/30/94
1.03	Improve RL Oversight	5/31/94	5/26/94	5/26/94
1.04	Plan to Improve Char. Prog. Tech. Staff Competencies	4/30/94	4/29/94	4/29/94
1.05	Implement Plan to Improve Tech Staff Competencies	5/31/95	6/21/96	
1.06	Define Resp of Key Characterization Managers	3/31/94	3/31/94	7/12/94
1.07	Streamline DQO Process	1/31/94	12/31/93	5/26/94
1.08	Issue TWRS Characterization Quality Assurance Plan	2/28/94	2/28/94	5/26/94
1.09	Plan for Blind Samples	5/31/94	5/24/94	6/1/94
1.10.41	Issue Quarterly Progress Reports	4/30/94	5/3/94	5/3/94
1.10.42	Issue Quarterly Progress Reports	7/30/94	7/25/94	7/25/94
1.10.43	Issue Quarterly Progress Reports	10/30/94	10/20/94	10/20/94
1.10.44	Issue Quarterly Progress Reports	1/31/95	1/20/95	1/20/95
1.10.51	Issue Quarterly Progress Reports	4/30/95	4/21/95	5/10/95
1.10.52	Issue Quarterly Progress Reports	7/31/95	7/25/95	8/8/95
1.10.53	Issue Quarterly Progress Reports	10/20/95	10/13/95	12/5/95
1.10.54	Issue Quarterly Progress Reports	1/19/96	1/22/96	2/28/96
1.10.61	Issue Quarterly Progress Reports	4/19/96	4/17/96	5/29/96
1.10.62	Issue Quarterly Progress Reports	7/19/96		
1.10.63	Issue Quarterly Progress Reports	10/18/96		
1.11	Field Schedule for Sampling All Activities FY95 & 96	6/30/94	9/30/94	
1.12	Management Staff Complete System Eng Training	5/31/94	2/15/94	5/25/94
1.13	Charact. Functions/Requirements in Functional Analysis	1/31/94	4/28/94	6/1/94
1.14	Charact. Part of Initial Systems Eng Analysis Results	6/30/94	6/30/94	6/30/94

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Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
1.15	Integrate Vapor Sample Prog into Charact. Program	10/31/94	11/3/94	12/22/94
1.16	Complete Historical Tank Layering Models	9/30/94	5/18/95	9/18/95
1.17	Historical Tank Content Est Reports NE/SW	6/30/94	6/29/94	6/30/94
1.18	Historical Tank Content Est Reports NW/SE	3/31/95	7/30/95	8/24/95
1.19	Develop Statistical Tools for Samples Needed	12/30/94	12/29/94	8/8/95
1.20	TWRS Risk Acceptance Criteria	8/31/94	4/5/96	
1.21.01	Ferrocyanide Safety Issue DQO	12/15/93	5/1/95	9/12/95
1.21.02	C-103 Vapor DQO Draft Report	1/31/94	3/25/94	9/12/95
1.21.03	C-103 Dip Sample DQO	12/16/94	3/25/94	9/12/95
1.21.04	C-106 High Heat DQO Final Report	12/20/94	1/19/94	9/12/95
1.21.05	Organic Safety Issue DQO Report (PNL)	1/31/94	5/1/95	9/12/95
1.21.06	Safety Screening Module DQO	1/31/94	5/1/95	9/12/95
1.21.07	Waste Compatibility DQO Report	2/28/94	5/1/95	9/18/95
1.21.08	In-tank Generic Vapor DQO Final	3/3/94	5/1/95	9/29/95
1.21.09	Vapor Rotary Core DQO Final Draft Report	1/20/94	3/25/94	9/18/95
1.21.10	Hydrogen Generating DQO Final Report	4/29/94	5/1/95	9/12/95
1.21.11	Pretreatment DQO Draft Report	8/22/94	6/29/95	9/18/95
1.21.12	HLW Immobilization DQO Draft Report	9/6/94	6/29/95	9/18/95
1.21.13	LLW Immobilization DQO Draft Report	9/21/94	6/29/95	9/18/95
1.22	Update FY94 Field Sched to Incorp New Tech. Approach	2/28/94	2/8/94	6/27/94
1.23	Identify 'Bounding Tanks' for Disposal	11/30/94	6/29/95	1/8/96
2.01	DQOs for all Six Safety Issues	4/29/94	5/1/95	9/12/95
2.02	Safety Screening Module DQO Report	1/31/94	5/1/95	9/12/95
2.03	Complete Sampling & Analysis of All Watch List Tanks	10/31/95		
3.01	Initiate Const. of 2nd & 3rd Rotary Core Sample Trucks	11/30/93	11/1/93	11/15/93
3.02	Review Char. Field Proc's/DOE Conduct of Ops	1/31/94	9/20/95	10/4/95
3.03	Complete Qualif. of 1st Push Mode Crew	2/28/94	1/26/94	6/30/94
3.04	Redeploy Push Mode Core Sampling	3/31/94	3/30/94	6/30/94
3.05	Complete Training & Quals for Sampling Cog Engs	2/28/94	2/24/94	8/11/94
3.06	Restore Rotary Mode Sampling (TPA)	3/31/94	10/26/94	11/2/94
3.07	Complete Qual 1st Rotary Mode Crew	3/31/94	3/31/94	6/30/94
3.09	Detailed Plans for Acquiring/Training Add'l Crews	4/30/94	4/29/94	6/30/94
3.10	Qual of 2 Additional Crews/Push & Rotary Trucks	6/30/94	9/27/95	10/4/95
3.11	Additional Rotary Mode Core Systems	9/30/94	6/30/95	10/4/95
3.12	Hire/Train/Qualify 4 Add'l Rotary Mode Crews	10/31/94		
3.13	Deploy Prototype Cone Penetrometer	5/31/95		
3.14	Installation of Flammable Gas Monitors	4/30/95	4/24/95	6/23/95
3.15	Eng Eval for In Situ Moisture Monitoring	6/30/94	6/28/94	6/30/94
3.16	Direct Drill Bit Temperature Monitoring	1/31/95		
3.17	Review Procedures with Outside Drilling Experts	6/30/94	6/30/94	8/2/94
3.18	Dev. Means for Measuring Complete Sample Recovery	1/31/95	9/14/95	10/4/95
3.19	Eng Eval of New Risers on SSTs	8/31/94	8/31/94	9/12/94
4.01	Issue Approved Broad Based Environmental Assessment	2/28/94	2/10/94	2/25/94
4.02	DOE-RL submit Delegation of Authority request to HQ	1/31/94	1/10/94	1/10/94
4.03	Obtain Delegation of Authority for DOE-RL	4/30/94	1/10/94	7/28/94
5.01	Install Core Scanning in Hot Cell	9/30/94	9/1/94	8/11/95

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Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
5.02	Complete Renovation of 325 'A' Hot Cell	9/30/95	6/4/96	
5.03	Letter Assessing Operability of New Extruder	3/31/94	3/28/94	10/26/94
5.04	Cyanide Speciation Tech Transfer (PNL)	9/30/94	9/1/94	8/2/95
5.05	Issue Results of Sampler Exchange Phase II	3/31/94	3/31/94	6/30/94
5.06	Evaluate Laboratory Staff Training	6/30/94	6/30/94	7/13/94
5.07	Develop & Implement Training for Laboratory Staff	8/31/94	6/30/94	7/13/94
5.08	Procure & Receive 2 PAS-1 Casks	9/30/94	8/18/94	8/25/94
5.09	Plan to Upgrade INEL Lab	1/31/94	2/8/94	6/28/94
5.10	Plan to Upgrade LANL Lab	3/29/94	3/28/94	6/30/94
5.11	Develop Min/Max Lab Capacity Strategy	2/28/94	2/28/94	6/30/94
5.12	Upgrade INEL Lab to Ready to Serve Mode	10/31/94	10/31/94	11/4/94
5.13	Upgrade LANL Lab to Ready To Serve Mode	2/28/95	2/6/95	4/10/95
5.14	Two PAS-1 Casks will be ready for use Jan. 1995	1/31/95		
6.01	Prepare a Customer Needs Analysis (data)	4/30/94	5/2/94	6/23/94
6.02	Issue a Data Mgmt Improvement Plan	5/31/94	5/1/94	5/26/94
6.03	Initial On-Line Capability for LABCORE-1	1/31/94	1/31/94	6/23/94
6.04	Demonstrate Off-Site Access to Tank Charact. Database	1/31/94	1/28/94	7/12/94
6.05	Complete data Loading of 20 Tanks into Database	9/30/94	9/30/94	10/25/94
6.06	Evaluate 12 Validated Data Reports for Safety	1/31/94	4/25/94	6/30/94
7.01	Formally Submit Changes to Commitments		2/29/96	6/17/96
7.02	Address Changes to Milestones in Quarterly			

5.12 Table of DNFSB 93-5 Implementation Plan Revision 1 Commitments Submitted to DOE-RL during the Quarter

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
5.4.3.1a	Comprehensive Source Terms Report	6/30/96	4/26/96	6/30/96
5.4.3.1b	Report on Lightning Evaluation	8/31/96	6/5/96	
5.4.3.5a	Analyses to Determine If Additional Tanks Have Potential to Exceed 25% of the LFL	6/30/96	6/26/96	6/30/96
5.4.3.5b	Gas Monitoring Instrumentation Upgrade Needs for Additional Tanks with the Potential to Exceed 25% of the LFL	8/31/96	5/31/96	

5.13 Table of DNFSB 93-5 Implementation Plan Revision 1 Commitments Recommended by DOE as Completed during the Quarter

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
5.4.3.1a	Comprehensive Source Terms Report	6/30/96	4/26/96	6/30/96
5.4.3.5a	Analyses to Determine If Additional Tanks Have Potential to Exceed 25% of the LFL	6/30/96	6/26/96	6/30/96

5.14 Table of DNFSB 93-5 Implementation Plan Revision 1 Commitments Status

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
5.4.3.1a	Comprehensive Source Terms Report	6/30/96	4/26/96	6/30/96
5.4.3.1b	Report on Lightning Evaluation	8/31/96	6/5/96	
5.4.3.1c	Approved BIO	12/31/96		
5.4.3.1d	Approved FSAR	6/30/97		
5.4.3.2a	Topical Report on Resolution of Ferrocyanide Safety Issue	1/31/97		
5.4.3.3a	Supporting Technical Document on Organic Complexant Safety Issue	12/31/96		
5.4.3.3b	Confirm Safe Storage Criteria, and Organic Solubility and Aging Effects on Fuel Content	11/30/98		
5.4.3.4a	Safety Assessment Covering Pool and Entrained Organic Solvent Fires	10/31/96		
5.4.3.4b	Organic Speciation of Core Samples for By-108 and By-110, and Auger Samples for C-102	10/31/96		
5.4.3.4c	Supporting Technical Document for Organic Solvent Safety Issue	12/31/96		
5.4.3.4d	Vapor Sampling of all SSTs	12/31/99		
5.4.3.4e	Adequate Vent Path in All SSTs Suspected of Containing Organic Solvents	4/30/00		
5.4.3.4f	Letter Reporting Completion of Vapor Sampling of All DSTs	12/31/00		
5.4.3.5a	Analyses to Determine If Additional Tanks Have Potential to Exceed 25% of the LFL	6/30/96	6/26/96	6/30/96
5.4.3.5b	Gas Monitoring Instrumentation Upgrade Needs for Additional Tanks with the Potential to Exceed 25% of the LFL	8/31/96	5/31/96	

Number	Description	Due Date	Submitted to DOE-RL	Submitted to DNFSB
5.4.3.5c	Safety Assessment for Rotary Mode Core Sampling in Flammable Gas Tanks	9/30/96		
5.4.3.5d	Qualification of Rotary Mode Core Sampling System for Use in Flammable Gas Tanks	9/30/96		
5.4.3.5e	Safety Assessment for Saltwell Pumping in Flammable Gas Tanks	10/31/96		
5.4.3.5f	Letter Reporting Completion of AN Tank Farm Ventilation Upgrade	11/30/96		
5.4.3.5g	Flammable Gas Safety Screening of Remaining Passively Ventilated SSTs	11/30/96		
5.4.3.5h	Supporting Technical Document on Flammable Gas Safety Issue	12/31/96		
5.4.3.5i	External Equipment Spark Sources in Flammable Gas Tanks	12/31/96		
5.4.3.5j	Voidmeter and Viscometer Readings in Tanks AN-103, AN-104, and AN-105	12/31/96		
5.4.3.5k	Retained Gas Sampling in Tanks AW-101, AN-103, AN-104, AN-105, and U-103	3/31/97		
5.4.3.5l	Refinement of Flammable Gas Generation/Retention Models	5/31/97		
5.4.3.6a	C-106 Supernatant Sampling and Analysis	10/31/96		
5.4.3.6b	C-106 Retrieval Safety Assessment	7/31/97		
5.4.3.6c	Initiation of Tank C-106 Waste Retrieval	10/31/97		
5.4.3.6d	Topical Report to Resolve the High Heat Safety Issue	5/31/98		
5.4.3.7a	Topical Report to Resolve the Criticality Safety Issue	12/31/96		
5.5.6.1a	Completion of High Priority Tanks Sampling and Analysis for the Disposal Program	3/31/98		
5.6.3.1a	Comparison Between Truck and Cart Vapor Sampling Systems	9/30/96		
5.6.3.1b	Implementation of FTIR Moisture Analysis Capability in 222-S Laboratory	11/30/96		
5.6.3.1c	Proposed Content and Format of Tank-by-Tank Safety Status Evaluation	1/31/97		
5.6.3.1d	Updated HTCEs	6/30/97		
5.6.3.1e	Verification of Headspace Homogeneity	10/31/97		
5.6.3.1f	Standard Inventory Estimates for All Tanks	11/30/97		
5.6.3.1g	Completion of High Priority Tanks Sampling and Analysis	3/31/98		
5.6.3.1h	Tank-by-Tank Safety Status Evaluation	7/31/98		
5.6.3.1i	Update Tank Content Models	12/31/98		
5.6.3.1j	Completion of Core Sampling of All Tanks	12/31/02		

6 REFERENCES

None.