94-0003321

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

JUN 23 1994

94-OCH-049

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
Suite 700
625 Indiana Avenue, NW
Washington, D.C. 20004

Dear Mr. Conway:

TRANSMITTAL OF WESTINGHOUSE HANFORD COMPANY DOCUMENT "CUSTOMER NEEDS ANALYSIS", IN ACCORDANCE WITH COMMITMENT 6.1 OF THE DEPARTMENT OF ENERGY IMPLEMENTATION PLAN FOR BOARD RECOMMENDATION 93-5.

Reference: "Characterization Data Management Process Improvement Work Plan", WHC-SD-WM-WP-276, Rev. 0, May 1994.

The enclosed Westinghouse Hanford Company (WHC) letter (#9453038, dated April 29, 1994), with enclosure has been reviewed by Department of Energy, Richland Operations Office (RL). The subject document fulfills the requirements of the Recommendation 93-5 Implementation Plan commitment. This document identifies the customers of the Characterization Program and their needs; and will serve as a basis for evaluating the Characterization Program's ability to meet its customers needs.

In the enclosed letter, WHC stated that the subject document was to be included as an attachment to a Data Management Improvement Plan to be completed by May 31, 1994. WHC has since issued the above referenced plan with the subject document attached.

If you have any questions please contact myself or John M. Clark, Acting Manager of the TWRS Office of Characterization, on (509) 376-2246.

Sincerely,

T. R. Sheridan, Acting Program Manager
Office of Tank Waste Remediation System

Enclosure

cc w/encl:
K. Lang, EM-36, HQ
C. Defigh- Price, WHC, w/o encl.

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

94:3321

April 29, 1994 9453038

Mr. John M. Clark, Acting Manager
Office of Characterization
Office of Tank Waste Remediation System
U. S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Clark:

COMPLETION OF CUSTOMER NEEDS ANALYSIS, DEFENSE NUCLEAR FACILITIES SAFETY BOARD COMMITMENT 6.1

Reference: "Recommendation 93-5 Implementation Plan," U.S. Department of Energy, Richland Operations Office, DOE/RL 94-0001, January 1994.

Commitment 6.1 of the referenced Implementation Plan stated:

> "A document will be developed identifying the customers of the Characterization Program and their individual needs. This document will serve as a basis for evaluating the program's ability to meet its customers' needs."

The deliverable for this commitment was to be a document, with a due date of April 30, 1994 (see attachment). This document will serve as an attachment to a Data Management Improvement Plan, required in Commitment 6.2 of the Implementation Plan. The Needs Analysis presents customer perceptions and opinions and does not attempt to resolve these concerns at this time. The concerns will be addressed in the Improvement Plan, due by May 31, 1994.

If you have any questions regarding the completion of this commitment, please contact me on 373-2038.

Very truly yours,

C. DeFigh-Price

C. DeFigh-Price, Manager
Characterization Program
Tank Waste Remediation System Program Office

klh

Attachment

DOE/HQ - K. T. Lang

RL - R. O. Puthoff (w/o attachment)

PNL - S. F. Bobrowski
P. J. Mellinger

CUSTOMER NEEDS ANALYSIS

1.0 INTRODUCTION

1.1 PURPOSE OF DOCUMENT

This document addresses the internal and external customer needs and problems encountered to date in obtaining tank waste characterization information. An assessment of the current state of characterization data management is presented with recommendations from the customers on proposed improvements for characterization data dissemination. The prime and secondary customers are identified as are their specific concerns and needs for characterization data.

1.2 SCOPE OF DOCUMENT

This document will provide a definition of the needs of the tank waste Characterization Program and their customers for information and data management. The intended audience of this analysis is the tank Characterization Program and its customers. The results of this analysis is based on the collaboration with both internal and external customers, and the review of existing documents. This document also describes the following:

- The mission and responsibility of the Characterization Program;
- Functional relationships of the customers with the Characterization Program;
- Information flows between Characterization Program and the customer.

The mission of the TWRS Characterization Program is providing waste tank characterization data and information to our customers. This document describes the problems, issues and needs associated with the reporting, distributing, and archiving of waste tank Characterization information and data.

2.0 CHARACTERIZATION PROGRAM AND CUSTOMERS

2.1 THE CHARACTERIZATION PROGRAM'S MISSION

The following characterization program mission, goals, and objectives were identified in "Waste Tank Safety, Operations, and Remediation Strategic Plan" (Humphreys and Morgan, 1993, WHC-EP-0501).

The Characterization Program mission is to provide, in a timely and cost effective manner, required characterization data of appropriate quality to Tank Waste Remediation System program elements. This includes providing characterization data to complete or support *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) milestones.

2.2 THE CURRENT STATUS OF CHARACTERIZATION INFORMATION

Currently, the Characterization program has a large quantity of information and data in the form of documents, laboratory analysis, data sheets, and tank characterization reports. Approximately 1,500 documents are stored in 2750E (within file cabinets in the Characterization Support group.) Other data are located throughout the site in staff files or in long term storage. A database is being established for storing newly generated characterization data information. It is called the Tank Characterization Database (TCD). The Tank Characterization Database can be accessed through Tank Waste Information Network (TWINS). Presently, information on thirteen waste tanks have been added to Tank Characterization Database. The schedule for adding information from more waste tanks will continue throughout 1994. Additionally, normalized Track Radioactive Components (TRAC) data and Safety Analysis database will be added to these databases.

2.3 CHARACTERIZATION CUSTOMERS

The Characterization Program has both internal and external customers. The internal customers, identified as Westinghouse Hanford organizations and other Hanford contractors, need tank characterization data to perform their daily tasks. The external customers are composed mostly of agencies and oversight groups. These groups sometimes focus on the Characterization Program, but in general they view characterization as key input to be able to evaluate other TWRS activities, such as retrieval, pretreatment, or disposal plans.

The customers of the Characterization Program were contact via cc:mail, telephone conversation, and direct meetings. There were approximately 30 customers (organizations, groups, etc.) contacted for this survey. The primary means of communication was to use cc:mail and send a questionnaire to survey a list of known and potential customers. This cc:mail questionnaire was sent on March 10, 1994. Each point of contact was given until the close of business March 18, 1994 to respond to the questionnaire. During the time between March 10 and March 18, points of contact who had not responded to the cc:Mail was either contacted by telephone or direct meetings. The questionnaires used in this survey are presented in Appendix C.

Each identified customer organization had at least one point of contact. A total of 75 points of contact were contacted using cc:mail, with a 61.3 percent response rate (46 responses) supplying input to the customers need analysis. The customers with more than one point of contact took the option of allowing one or two points of contact to represent their group's input for this survey. The number of points of contact that took this option was approximately 26 or 34.7 percent. The remaining 4.0 percent gave responses via telephone conversations or direct meetings, expressing little or no interest in characterization information or data. These customers will be listed as indirect or potential customers of the Characterization Program.

The results from the customer survey yielded the following:

INTERNAL CUSTOMERS

Customers	Point of Contact	Data Use:
Tank Farms Environmental Engineering	C. H. Mulkey	Evaluate compliance with regulatoryrequirements and waste compatibility.
Nuclear Safety Standards and Requirements	D. O. Hess	Determine what radionuclides chemicals may have been introduced into the cribs and ditches associated with tank farm activities.
Waste Tank Operations	G. L. Dunford	Perform chemical content analysis for tank waste.
	D. P. Reber	Perform compatibility verification and engineering analysis on physical properties of tank waste.
Health Physics Programs	D. D. Beers	Prepare Safety Analysis Report support, occupational worker radiological protection support, environmental protection support.
TWRS Health Physics Technical Support	P. A. Olsen	Perform dose calculations and for contamination level estimations.
Waste Tank Safety Assurance	M. N. Islam	Aid in review and approval of safety-related documents and work associated with waste tanks.
Hanford Analytical Services	J. L. Deichman	Perform waste tank safety analysis and laboratory analysis to make analytical chemistry management decisions.
TWRS Environmental Engineering	G. M. Crummel	Obtain potential emissions (NESHAP/RCRA reporting).
Double Shell Tank Safety Analysis	R. J. Van Fleet	Safety Analysis Reports and other safety documents.

Customers	Point of Contact	Data Use
TWRS Projects	B. K. Horsager	Designing Pretreatment Processes to be in the Initial Pretreatment Module.
Safety and Environmental Advisory Council	D. E. Wood	Total tank or class inventory. Performance assessment and negotiation with the NRC over split between high level waste and low level waste.
Waste Transfer Projects	D. V. Vo	Corrosion evaluation and to revise the Function Design Criteria for the cross site transfer lines replacement project.
Criticality and Radiological Safety Analyses	B. E. Hey	Calculate unit doses for the tank farms, as a basis for shielding analysis, ALARA.
TWRS Safety Engineering	W. L. Cowley	Safety Analysis for Tank Farms.
East Systems Engineering	R. A. Dodd	Verify compliance with Operational Safety Document specification, establish calculated fissile inventories, identify waste transfer compatibility, development of transfer flow sheets.
TWRS Process Engineering	M. J. Kupfer	Inventory and flowsheet preparation for the Technical Options Report.
Process Laboratory Technology	L. Jensen	Perform a statistical analysis of the waste tank sample data.
Flammable Gas Tank Safety	G. D. Johnson	Access overall behavior and to determine if a tank exhibits the characteristics that would make it a Flammable Gas Tank.
Ferrocyanide Safety Program	J. E. Meacham	Determine the potential for ferrocyanide reaction in Hanford Site tanks.

Customers	Point of Contact	Data Use
PNL Waste Tank Safety Program	J. W. Brothers	Flammable gas safety, data analysis and evaluation.
PNL Chemical Process Development	G. F. Schiefelbein	Verify contents of ferrocyanide tanks; determine the character of ferrocyanide waste tanks.
PNL Hydrogen Mitigation Project	C. W. Stewart	Estimate physical and thermal properties of different layers in the tank. Also, to estimate heat generation rates versus position.
PNL Environmental Information Technologies Group	S. F. Bobrowski	Implement the Tank Characterization Database system.
PNL Analytic Sciences Department	B. A. Pulsipher	Determine sampling requirements, data quality assessments, tank clustering, estimate spatial, sampling, and analytical uncertainties.
PNL Waste Tank Organic Safety Project	R. M. Bean	Make project management decisions, plan research strategies, and plan new work strategies.
PNL Experimental Project	P. J. Mellinger	Determine physical properties used in establishing and verifying waste simulants.

EXTERNAL CUSTOMERS

Customers	Point of Contact	Data Use
DOE Tanks Advisory Panel	L. Kovach	Generate technical input for the Tanks Advisory Panel.
DOE Tanks Advisory Panel	D. O. Campbell	Estimate composition, inventories, etc., for processing waste and criticality concerns.
SAIC (DOE-HQ Contractor)	R. S. Daniels	Compatibility of waste streams, validity of safety and environmental assessments, and the closure of Unreviewed Safety Questions.

Customers	Point of Contact	Data Use
SAIC (DOE-HQ Contractor)	H. G. Sutter	In support of numerous headquarters support tasks.
DOE-RL Tank Waste Remediation Systems	J. R. Noble-Dial	Make decisions on the tank waste such as disposal, retrieval, pretreatment, etc.
Washington State Department of Ecology	M. Lerchen	Regulate waste management under RCRA and Washington's Dangerous Waste Regulations and the Tri-Party Agreement.

The customers of the Characterization Program are concerned that tank characterization data management adequately and efficiently track and archive tank waste samples, categorize and store tank waste analytical data, prepare tank characterization data packages, and support reduction, manipulation, and communication of tank characterization data.

3.0 PROBLEMS PAST AND PRESENT

This section addresses the past and present problems and issues from customers of the Characterization Program. An assessment of the current situation and an approach for supporting future data management needs will be presented.

3.1 SCOPE OF PROBLEM

A large volume of tank characterization data has been generated to meet numerous needs on the Hanford site. An increasing need for access to the characterization data for planning, scientific and regulatory purposes from multiple groups both onsite and offsite exists. However, customers and potential customers are experiencing a lack of availability to the characterization data or large volumes of data from which it is difficult to access needed information. Additionally, even if the current data were available, it could be misleading to the customer. There are is multiple related systems, data inconsistencies, and lack of integration. Tank characterization data management should address all tank waste data and anticipate future automation of existing manual processes.

Past practices has been for the Characterization personnel to receive information and enter the data manually. Data interpretation methods have not been standardized for visual interpretation of trends.

3.2 CHARACTERIZATION DATA PROBLEMS

The following assessment is compiled from information gathered through current data management related reviews, planning activities, and interviews with individual customers of the Characterization Program. This section addresses common areas of concern, and indicates the problems that may cause these concerns.

The survey was able to present several positive aspects of the current status of characterization data management. The results from the total customer response yielded that 25 percent of the customers did not have any specific problems with tank characterization data. The data sheets, waste tank safety analysis, tank characterization plans and reports, and laboratory analysis supplied these customers with enough usable data and information to perform their functions.

There were many specific problems summarized in each category below. These categories are listed in order of importance. There were 71 total specific problems, with 30 percent of these data controls and requirements related, 17 percent being data accessibility and availability related, 14 percent data presentation, data quality, and data format related, and lastly 11 percent data interface related. A significant number of customers expressed a need to have user friendly electronic databases available to access tank characterization data.

3.2.1 Specific Concerns and Problems

Specific concerns and problems in the areas of physical measurements, data quality, data controls and requirements, data accessibility and availability, data format, and data interfacing are:

Data Controls and Requirements Problems

- Reports are not timely. For example tank 241-AZ-101 was sampled in 1989 but the customer still has been unable to obtain the final report. Be more timely. Provide the information in a database format. Check for internal consistency of the data before issuing.
- Lack of core recovery and poor analyses of tank 241-T-107.
- Long delays in obtaining core analyses.
- It is sometimes difficult to collect it all, especially when it is issued piecemeal in the form of an original report and later supplements.
- Would like to see a single final report or updated file.
- Physical properties data incomplete or lacking totally.
- Uniform characterization procedures for all samples. Consistent entry into data bases.
- Data spread among disconnected reports and letters. Various units and characterization methods used.
- The database systems now being implemented should help tremendously.
- Prior to 1994, timeliness was a problem, also evaluation of data out of expected range.

- More rapid turnaround of samples and timely data reports, reviewed to ensure quality.

- Expeditious sampling and analysis of all tanks wastes. Enforcement of Data Quality Objective (DQO) process to ensure necessity and validity.

- Inability to know the location of characterization data and information.

- A user friendly electronic database is needed.

- No one place where data are held. Also, formats sometimes make it difficult to pull pertinent data out. Timely access has also been a problem in past.

- Technical Control Documents (TCD) will help, but will monitoring and surveillance data be in TCD? Where will it be located?

- There needs to be a single repository for characterization data. There are too many back corner spreadsheets that are being used as a basis for design and safety analysis. The TWRS data need to have better quality assurance, be kept up to date, and most importantly, be the recognized single source for tank composition and inventory.

- There was no central location for data on sample results for the double- and single-shell tanks. This customer hired a consulting company to put together radionuclide a chemical inventory documents for all tanks. It is currently under revision, with an expected release date of June 1994, for Revision 2.

- The customer believes that concerns are being addressed by setting up the Tank Characterization Database at PNL.

- Establish a central collection point or contact which can be used by all interested parties. Spread the word through cc:mail, Hanford Reach, managers meetings, etc. that characterization data have been centralized at a specified location or a certain group/person can provide characterization data.

<u>Data Accessibility and Availability Problems</u>

- Had difficulty finding out what analyses had been conducted on which tanks. Just determining who had the information was difficult.

- Accessing the tank characterization database, and getting data out of it. The customer is completely ignorant about this. Is there a set of instructions?

- The customer would like step-by step instructions as to how to access the tank characterization database directly from my Macintosh. Can Macintosh users use the network?

- Develop an easy access plan to the TCD and implement it.

- The problem so far is determining what information is available and where it can be obtained.
- Time delays and availability.
- The customer usually has to request the data from WHC people who are too busy resulting in excessive use of their time and a delay before the data are delivered.
- Good tank vapor and gaseous emission data not available.
- Unavailability, especially in the past.
- It is difficult to find the needed data without spending a lot of time trying to locate it.
- Data need to be consolidated and made available electronically.
- Data are not available for all tanks. Also representativeness of sample data.

Data Presentation Problems

- The data did not adequately characterize actual and potential degradation products in tank farm effluents, did not provide actual fractionation factors and did not provide data relating to actual quantities of radionuclides and chemicals that were released to the soil column.
- What is needed is a process description document that describes the chemicals introduced into the tanks and a description of the chemical processes occurring in the tanks based on the radiological and temperature environments present.
- In older data there is often inadequate definition of alpha and transuranic content. Also, uranic mass analysis has been needed, but is usually not available.
- Key samples should be selected for more complete analysis (like mass and unusual isotopes that may be important for certain purposes), but it is too expensive to do everything for all samples. The reported composition units are inconsistent.
- For chemical composition, report them in g-mole/L and provide the estimated total volume for each waste phases. The distributions are limited.
- More sampling. Better models. Continue collecting worthwhile historical data. Establish and maintain an organization whose responsibility is the collection, maintenance, QA, and accessibility of these data such that this organization is recognized as the place to obtain the latest and best available information on Hanford waste composition and inventory.

- Poor core recovery has hopefully already been addressed. The laboratory needs to have ownership of the core analyses and become more involved in understanding the drivers for the analyses they are performing. If they are included in this process, the quality should improve.

- Nickel content serves as a marker for amount of nickel ferrocyanide originally added to tank. The current method approved for determining nickel involves a fusion procedure carried out in a nickel crucible. Although the blanks are negligible, the use of nickel crucibles casts some doubt on the accuracy of the numbers.

- There is a need for characterization data as required by the regulations (RCRA, NESHAP, CAA, EPCRA, etc.)

Data Quality Problems

- Needs quality checks before distributing. Some data showed possible inventories and had to be reanalyzed and revised.

- The lack of usable waste tank characterization data can only be resolved by increased quality waste tank sampling and analysis. There is a need for increased quality waste samples and analysis. There has been a dependance on knowledgeable people outside of the Characterization Program to obtain it for disposal program.

- Quality check by people who have a gut feel for approximate contents, and can spot bad data from past experience and knowledge.

- Improve sample recoveries, avoid contamination, assure good quality analysis.

- Waste tank data quality varies over time. Most information that could explain discrepancies is not easily accessible, and some is only in site people's memories.

- Modernize the data management process; that is electronic media, databases, central storage area, etc. But that requires a data management design that includes an appropriate development of requirements and life cycle design.

- There is a need for improved emissions data.

- Outliers present meaningless quality indicators or no procedure for use of spike- or blank-corrections.

- Get statistical support within the analytical laboratories by developing and implementing a statistical quality control program within each laboratory. Most of the errors customers catch could be identified early if the analytical laboratory had access to qualified statisticians in house.

- It is only recently that safety analysis have had characterization data, thanks to the efforts of those working on the tank farms interim safety

basis (ISB) and Criticality Unreviewed Safety Question (USQ). The problem, and this is not the fault of the present characterization program, is the lack of quality data, or any data for many of the tanks. Much of the characterization data we currently have are based on decades old rock-on-a-bottle-on-a-string sampling. The data also lacks representation of the general tank composition or are obsolete due to later transfers.

Data Format problems

- The customer is unable to obtain data except from reports, and it takes too long to get them.
- Tank farm engineers and people involved with planning waste treatment need a centralized, indexed source of all sorts of information about the tanks, their contents, and the history. The information systems now seem to be fragmented and not well understood (undocumented).
- Assign much more effort than in the past. Problem seems to be thorough indexing. Also, there is much information in personal files, etc. that ought to be assembled so it is understandable and retrievable.
- It would be helpful to get this information updated more often than it is.
- Sample data often hard to interpret. Often multiple inconsistent data from different samples solve the problems.
- The data packages are very cumbersome and not very user friendly. Some of the pages are not copied well, making it very difficult to read (there have been times when pages were missing).
- The packages are not sent out as a complete package. WHC's 222-S laboratory will send out a package on a certain tank and for a specific core. Two or more months later customers receive a package from PNL on that same tank and core, containing a different set of analyses. There has never been any notification from either laboratory or Hanford Analytical Services stating that this package is incomplete and the material from PNL will be delivered at a later date.
- Data Quality Objectives should reduce some of the analytical burden, therefore, the paper stack should diminish also. When data are sent out incomplete, let the customer know that more data will follow later. An explanation of why the remaining data are late would be helpful, especially if the time exceeds the 215 day clock.
- The data packages were developed with specific need, and were not easily understood. It was also not easy to use the information that was presented.
- At a minimum, the analysis should cover process requirements and should verify compliance with the specs.

Data Interface Problems

- The customer sometimes doesn't know what to ask for and we give him the wrong answers.
- Working together to prepare critical documents such as Data Quality Objective and Tank Characterization Plans.
- The laboratory data are not well organized, is in non-standard formats, and is sometimes not available electronically.
- Mandated transmissions of laboratory data to the Technical Control Documents.
- It is very difficult to get the laboratories to release some of their data.
- The major problem is that many times the characterization data TWRS users data conflict with the characterization data being used by the staff in other departments who perform shielding analyses. The reason for the discrepancy is sometimes traced to the different approaches used to derive the data (i.e. flow sheet vs. laboratory sample); however, it has also been traced to transcription errors in the TWRS data.
- The customer has had a problem knowing what data were available for a given tank and where the data could be found.
- Individual responses are shown in Appendix B.

3.2.2 General problems.

Below is a summary of general problems associated with the present condition of characterization data management.

Tank Characterization Data availability to customers

One problem identified is the lack of availability of useful and accurate tank characterization data. This lack of available data apparently stems from limited access, multiple systems lacking proper integration, and the absence of standardized data management procedures. The customers want immediate access to the best available information. Presently, information is not readily available to internal or external customers. Historical and current tank characterization data reside in too many different locations.

In addition, there has been little or no response to requests for characterization information and data for both internal and external customers. Access to these data are needed, but it is often cumbersome or difficult to obtain. Currently data exist in many locations and forms, both hardcopies and electronic. Standardization could help provide consistency, but many current systems would exist on the current platform. There are existing systems for obtaining data, but gaining access is difficult. In some cases, multiple approvals are needed. Lack of available data can impact the

customer's ability to make decisions and resolve problems and meet regulatory data access requirements.

Data format needs improving

- Historical and current tank characterization data reside in too many different uncontrolled formats and forms.
- The older tank characterization reports are hard to use.
- Quick summaries or easy abstracts, that can be accessed easily are needed.
- Reports have been very thick and cumbersome to use to find critical data.
- Some consistency (notebooks with fixed formats, for example) may be very helpful.

Poor data controls and protection

- The current tank characterization data suffer from a lack of configuration control and management for both data and requirements.
- Characterization Program does not maintain and update a list of its customers that use tank characterization information.
- The existence of database media are not well known, and is difficult for some to access.
- Requirements for characterization data collection, control, and maintenance must be defined to assure the right data are obtained with traceability, reliability, and availability throughout the data life cycle.
- Processes and requirement for controlling characterization data are not being applied consistently.
- Furthermore, tank characterization data validity checks and official sources of information are not uniformly identified and documented.

Unestablished tank characterization data standards

- Data standards have not been established for much of the tank data.
- The current policies are not sufficient to ensure that required implementations will meet (or even adequately define) future characterization data management needs.

Poor data quality

- The lack of qualification of how the data were produced and the large variability in the quality of characterization data and affects useability.
- Because tank characterization data quality is not uniformly controlled, confidence in the data and information is affected.
- Data incompatibility is also a side effect of the numerous systems and lack of standards.
- In order to ensure the appropriate use of data, and guarantee accurate, reliable data for decision making, information about the quality of the data should be documented.

4.0 CONCLUSIONS

The questionnaire was able to present several positive aspects of the current status of characterization data management. There were data sheets, waste tank safety analysis, tank characterization plans and reports, and laboratory analysis that assisted some customers in performing their functions. There are areas that are in need of improvement. These will be addressed in a Data Management Improvement Plan, written by the Characterization Program in response to Defense National Facilities Safety Board (DNFSB) Commitment 6.2.

APPENDIX A

LIST OF CUSTOMERS CONTACTED

LIST OF CUSTOMERS CONTACTED

This section gives a list of the characterization customers who were contacted to determine their needs for characterization information and data.

ORGANIZATION	POINT OF CONTACT	COMPANY
Retrieval	P. K. Bhatia	WHC
Engineering Design	T. L. Moore	WHC
Regulations	R. D. Gustafson	WHC
Process Engineering	M. J. Kupfer	WHC
	D. J. Washenfelder	WHC
	K. D. Fowler	WHC
	J. S. Garfield	WHC
	G. L. Borsheim	WHC
	K. D. Boomer	WHC
Pretreatment	W. B. Barton	WHC
Plant Engineering	J. S. Schofield	WHC
	R. E. Raymond	WHC
	R. A. Dodd	WHC
Plant Review Committee	G. L. Dunford	WHC
Tank Farm Operation	R. Ni	WHC
	D. W. Hamilton	WHC
	D. P. Reber	WHC
Safety Analysis Report Services	L. D. Muhlestein	WHC
	D. Stepnewski	WHC
	J. M. Grigsby	WHC
Waste Tank Safety Assurance	M. N. Islam	WHC
Quality Assurance	D. C. Board	WHC
	T. E. Whelan	WHC
Tank Farms Health Physics Support	B. H. Lueck	WHC
	P. A. Olsen	WHC
Laboratory Development	J. R. Jewett	WHC
Project Engineering	H. K. Horsager	WHC
	D. L. Chase	WHC

ORGANIZATION	POINT OF CONTACT	COMPANY
SEAC	J. L. Deichman	WHC
	D. E. Wood	WHC
Waste Tank Safety Program	J. E. Meacham	WHC
	D. A. Turner	WHC
TPA (Integration)	B. A. Austin	WHC
	M. W. Stevenson	WHC
Air Permitting	C. E. Sowa	WHC
SAIC (Headquarters)	R. S. Daniels	
	H. G. Sutter	
Tank Advisory Panel	C. Abrams	
	L. Kovach	
	D. O. Campbell	
	C. W. Forsberg	
Department of Energy Richland Operations	R. F. Christensen	DOE
	T. Noble	DOE
	J. R. Noble-Dial	DOE
	E. M. Martin	DOE
Department of Ecology	M. Lerchan	
Tank Farms Environmental Engineering	C. H. Mulkey	WHC
	G. M. Crummel	WHC
Nuclear Safety Standards and Requirements	D. O. Hess	WHC
Double Shell Tank Safety Analysis	R. J. Van Vleet	WHC
Waste Transfer Projects	D. V. Vo	WHC
TWRS Safety Engineering	W. L. Cowley	WHC
Criticality and Radiological Safety Analyses	B. E. Hey	WHC
Process Laboratory Technology	L. Jensen	WHC
Flammable Gas Tank Safety	G. D. Johnson	WHC
Ferrocyanide Safety Program	J. E. Meacham	WHC
Waste Tank Safety Program	J. W. Brothers	PNL
Chemical Process Development	G. F. Schiefelbein	PNL
Hydrogen Mitigation Project	C. W. Stewart	PNL
Environmental Information Technologies Group	S. F. Bobrowski	PNL

ORGANIZATION	POINT OF CONTACT	COMPANY
Analytic Sciences Department	B. A. Pulsipher	PNL
Waste Tank Organic Safety Project	R. M. Bean	PNL
Experimental Projects	P. J. Mellinger	PNL
Analytical Lab Operations	S. G. McKinley	PNL
National Toxicology Program Office	J. D. Johnson	PNL
Advanced Organic Analytical Chemistry Group	S. C. Goheen	PNL
Health Physics Projects	D. D. Beers	WHC
Radiological Engineering	M. E. Hevland	WHC
	J. R. Ellis	WHC
Environmental Remediation Field and Analytical Support Services	W. S. Thompson	WHC
Public Relations	C. A. Kuhlman	WHC

APPENDIX B

RESPONSES FROM INDIVIDUALS

David O. (Dave) Hess
Principal Engineer
WHC/ESQ/Nuclear Safety Standards & Requirements

1. Have you ever used waste tank information? Yes.
   Do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? Yes.
   What was the information used to do?

   ANS: INFORMATION WAS USED TO DETERMINE WHAT RADIONUCLIDES AND CHEMICALSMAY HAVE BEEN INTRODUCED INTO THE CRIBS AND DITCHES ASSOCIATED WITH TANK FARM ACTIVITIES.

3. Do you use Characterization Information regularly? No.

4. How do you use TWRS characterization data?

   ANS: THE DATA WAS USED TO EVALUATE WHAT TO EXPECT DURING CHARACTERIZATIONDRILLING AT CRIBS THAT RECEIVED SUPERNATANT AND CONDENSATE FROM TANK FARM ACTIVITIES.

5. Have you had problems with TWRS Characterization Data? (be specific) Yes.

   Describe these problems.

   ANS: THE DATA DID NOT ADEQUATELY CHARACTERIZE ACTUAL AND POTENTIAL DEGRADATION PRODUCTS IN TANK FARM EFFLUENTS, DID NOT PROVIDE ACTUAL FRACTIONATION FACTORS AND DID NOT PROVIDE DATA RELATING TO ACTUAL QUANTITIES OF RADIONUCLIDES AND CHEMICALS THAT WERE RELEASED TO THE SOIL COLUMN.

6. What are your suggestions to solve the problems addressed in question 5?

   ANS: I BELIEVE THAT TWRS PERSONNEL ARE WORKING ON THIS PROBLEM, but WHAT IS NEEDED IS A PROCESS DESCRIPTION DOCUMENT THAT DESCRIBES THE CHEMICALS INTRODUCED INTO THE TANKS AND A DESCRIPTION OF THE CHEMICAL PROCESSES OCCURRING IN THE TANKS BASED ON THE RADIOLOGICAL AND TEMPERATURE ENVIRONMENTS PRESENT.

7. Have you ever had problems obtaining TWRS Characterization Data? No.
   Describe these problems.

8. How can we solve the problems addressed in question 7? N/A

9. How do you receive your TWRS characterization data?

[X] Data sheets, reports, hard copy information
[ ] Spreadsheets (electronic copies)
[ ] Electronic media (computers, database, etc.)
[ ] Strip Charts
[ ] Collect data myself
[ ] Other format [Describe]

10. What format would you prefer for receiving data?

ANS: HOPEFULLY, A WHC-SD-XXXX DOCUMENT. MY NEED IS FOR HISTORICAL DOCUMENTATION OF ACTUAL RADIONUCLIDE AND CHEMICAL RELEASES TO THE SOIL COLUMN, OR IN-TANK FRACTIONIZATION BETWEEN SUPERNATE, SLUDGE AND SALTCAKE AND CHEMICAL PROCESS INFORMATION TO ALLOW PRE-CHARACTERIZATION EVALUATION OF WHAT MAY BE PRESENT/FOUND DURING SOIL CHARACTERIZATION ACTIVITIES AT TANK FARM ASSOCIATED WASTE MANAGEMENT SITES. I DON'T NEED INFORMATION RELATING TO LIVE-TIME TANK PARAMETERS SUCH AS LEVEL, TEMPERATURE, WEIGHT FACTOR, ETC.

11. Where would you store your information?

ANS: AN SD DOCUMENT WOULD BE STORED ON A SHELF IN A BOOKCASE OR IN A FILE CABINET DRAWER.

****

Dennis W. Hamilton
Manager, Sampling Operations
WHC/TWRS/Tank Waste Operations

1. Have you ever used waste tank information? Yes.
Do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? No. What was the information used to do? N/A.

3. Do you use Characterization Information regularly? No.

4. How do you use TWRS characterization data? No.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems. No.

6. What are your suggestions to solve the problems addressed in question 5? N/A.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems. No.

8. How can we solve the problems addressed in question 7? N/A

9. How do you receive your TWRS characterization data?

[ ] Data sheets, reports, hard copy information
[ ] Spreadsheets (electronic copies)
[ ] Electronic media (computers, database, etc.)
[ ] Strip Charts
[x] Collect data myself
[ ] Other format [Describe]

10. What format would you prefer for receiving data?

Electronic.

11. Where would you store your information?

I wouldn't store the information.

****

Danny D. (Dan) Beers
Health Physicist
WHC/ESQ/HP/Health Physics Program and Integration

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

a. Yes.
b. Probably.

3. Do you use Characterization Information regularly? No.

4. How do you use TWRS characterization data?

ANS: Safety Analysis Report support; Occupational Worker Radiological Protection support; Environmental Protection support

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

6. What are your suggestions to solve the problems addressed in question 5?

ANS: Main issue in the past was quality assurance related.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [x] Data sheets, reports, hard copy information
   [x] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [x] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    ANS:Hard copy reports, after searching a keyword index.

11. Where would you store your information?

    ANS: Temporary files in office, then dispose of via recycled paper receptacles.

****

Gary L. Dunford
Manager,
WHC/WTO/WTUIT

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   ANS: Yes, TANK CONTENTS.

3. Do you use Characterization Information regularly? Yes.

4. How do you use TWRS characterization data?

   ANS: INFORMATION OR AS PART OF OTHER ANALYSIS.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   ANS: IT APPEARS TO PROVIDE DATA NOT INFORMATION.

6. What are your suggestions to solve the problems addressed in question 5?

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

[ ] Data sheets, reports, hard copy information
[ ] Spreadsheets (electronic copies)
[ ] Electronic media (computers, database, etc.)
[ ] Strip Charts
[ ] Collect data myself
[ ] Other format [Describe]

10. What format would you prefer for receiving data?

11. Where would you store your information?

****

Becky A. Austin
Manager
WHC/Restoration and Remediation/Tri-Party Agreement Integration

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   No. (although some in my organization may; was on distribution)

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Jackson R. Ellis
Health Physicist
WHC/Radiological Engineering/HP Technology

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? No, No.

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Louis Kovach
USDOE HLW TANKS ADVISORY PANEL MEMBER
USDOE HLW TANKS ADVISORY SUBPANEL, PRETREATMENT
NUCLEAR CONSULTING SERVICES, INC., PRESIDENT

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   TO GENERATE TECHNICAL INPUT FOR DECISION MAKING.

3. Do you use Characterization Information regularly? Yes.

4. How do you use TWRS characterization data? WITH A LARGE GRAIN OF SALT.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   SAMPLING AND ANALYTICAL QUALITY.

6. What are your suggestions to solve the problems addressed in question 5? IMPROVE SAMPLE RECOVERY, AVOID CONTAMINATION, ASSURE GOOD QUALITY ANALYSIS.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   ONLY TIME DELAY, NOT AVAILABILITY.

8. How can we solve the problems addressed in question 7?

   PRIORITIZE ANALYTICAL WORK AND REPORTING.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    ELECTRONIC MEDIA.

11. Where would you store your information? IN MY COMPUTER OR ON DISKS OR TAPE.

****

Thomas E. Whelan
Advanced Quality Engineer
WHC/38220/TWRS Programs Quality Assurance

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? No

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Pamela A. Olsen
Sr. Health Physicist
Tank Waste Remediation Health Physics Technical Support

1. Have you ever used waste tank information? Yes.
   Do you plan to use waste tank information in the future? Yes.

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

2. Have you ever used TWRS Characterization information? Yes.
   What was the information used to do?

   ANS: To perform dose rate calculations and for possible contamination level estimates.

3. Do you use Characterization Information regularly? Yes

4. How do you use TWRS characterization data?

   ANS: Look it up in the tables I have available to me.

5. Have you had problems with TWRS Characterization Data? (be specific)
   Describe these problems.

   ANS: I only use WHC-SD-TI-543 and 565.

6. What are your suggestions to solve the problems addressed in question 5?

   ANS: It would be helpful to get this information updated more often than it is.

7. Have you ever had problems obtaining TWRS Characterization Data? No.
   Describe these problems.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

[X] Data sheets, reports, hard copy information
[ ] Spreadsheets (electronic copies)
[ ] Electronic media (computers, database, etc.)
[ ] Strip Charts
[ ] Collect data myself
[ ] Other format [Describe]

10. What format would you prefer for receiving data?

ANS: Electronically.

11. Where would you store your information?

ANS: On the computer but if a computer database were available, there would be no need.

****

John L. Deichman
Manager, HAS Program
Management and Integration
WHC/Hanford Analytical Services

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes, yes.

NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

2. Have you ever used TWRS Characterization information? What was the information used to do?

ANS: Yes, tank safety issues, laboratory analysis.

3. Do you use Characterization Information regularly? Yes,

4. How do you use TWRS characterization data?

ANS: TO MAKE ANALYTICAL CHEMISTRY MANAGEMENT DECISIONS WITH OUR CUSTOMERS---MAINLY THE TANK CHARACTERIZATION PROGRAM. ALSO TO GUIDE THE LABORATORIES IN THEIR WORK TO ANALYZE TWRS SAMPLES.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

ANS: YES, THE CUSTOMER SOMETIMES DOESN'T KNOW WHAT TO ASK FOR AND WE GIVE HIM THE WRONG ANSWERS.

6. What are your suggestions to solve the problems addressed in question 5?

   ANS: WORKING TOGETHER TO PREPARE CRITICAL DOCUMENTS SUCH AS DQO'S AND TCP'S.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems. No.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [X] Spreadsheets (electronic copies)
   [X] Electronic media (computers, database, etc.)
   [X] Strip Charts
   [X] Collect data myself
   [X] Other format [Describe]

   ANS: FOR PEOPLE, I ASK FOR IT.

10. What format would you prefer for receiving data?

    ANS: IN BRIEF REPORTS WITHOUT A BUNCH OF GARBAGE LIKE HISTORICAL INFORMATION, EASY TO READ, WELL ORGANIZED AND CUSTOMER ORIENTED AND FRIENDLY.

11. Where would you store your information?

    ANS: I DON'T KEEP IT VERY LONG. David O. Campbell, Independent Consultant, member of Tanks Advisory Panel (TAP) and Chairman of TAP Pretreatment Subpanel.

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes and Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   ANS: I have used TWRS characterization reports to estimate compositions, inventories, etc., for processing waste and for criticality concerns. Also to try to estimate degree to which samples are reproducible and might represent what is really in tanks, in case of multiply-sampled tanks.

3. Do you use Characterization Information regularly?

   ANS: More or less

4. How do you use TWRS characterization data?

   ANS: See (2)

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   ANS: Yes. In older data there is often inadequate definition of alpha/TRU. I have also needed U mass analysis which is usually not available.

6. What are your suggestions to solve the problems addressed question 5?

   ANS: Key samples should be selected for more complete analysis (like mass and unusual isotopes that may be important for certain purposes), but it is too expensive to do everything for all samples.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   ANS: I am unable to obtain data except from reports, and they are usually long after the fact.

8. How can we solve the problems addressed in question 7?

   ANS: Issue partial reports before every last analysis is complete.

9. How do you receive your TWRS characterization data?

   ANS: In reports, as noted above. Sometimes from individuals who have other access.

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    ANS: This would take more thought. The reports are too long in some respects.

11. Where would you store your information?

    ANS: In computer files on hard disk or hard copy in my office.

****

Mark E. Hevland
Deputy Manager, Health Physics
Acting Manager, Radiological Engineering and ALARA

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   ANS: Yes. (I have used injury data, daily reports, shift operating instructions, etc. Not Characterization data). Your first question should have stated "Have your ever used Waste Tank Characterization information"

2. Have you ever used TWRS Characterization information? What was the information used to do? No.

3. Do you use Characterization Information regularly? No.

4. How do you use TWRS characterization data?

   ANS: N/A

****

Bryan K. Horsager
Project Engineering Manager, IPM Project
WHC/TWRS Projects/IPM Project

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes and Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   ANS: Our Architect Engineer for IPM Project uses tank characterization data for designing pretreatment processes that will be a part of IPM.

3. Do you use Characterization Information regularly?

   ANS: We need all the characterization data we can get as indicated by my answer to 2. above.

4. How do you use TWRS characterization data?

   ANS: See answer to 2. above.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   ANS: Just the lack of it.

6. What are your suggestions to solve the problems addressed in question 5?

   ANS: Can only be resolved by increased sampling and analysis.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   ANS: We have depended on knowledgeable people to obtain it for us; e.g., Blaine Barton et al. I don't know that there has been a mechanics problem.

8. How can we solve the problems addressed in question 7?

   ANS: I don't know that there's been a mechanics problem.

9. How do you receive your TWRS characterization data?

   ANS: See my answer to 7. above.

   [x] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    ANS: Electronic spreadsheets.

11. Where would you store your information?

    ANS: Computer disks.

****

Daniel L. (Dan) Chase
Manager, TWP Integration
WHC/TWRS Projects/Tank Waste Projects

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   ANS: No

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Donald E. Wood
Advisory Scientist
WHC/Engineering Analysis/TD

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes/Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   ANS: DST data as input inventory to grout performance assessment and negotiation with NRC over split between HLW/LLW.

3. Do you use Characterization Information regularly?

   No--special projects, on request.

4. How do you use TWRS characterization data?

   ANS: As total tank, or class, inventory--not raw sample data.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes. Needs sanity check before distributing. Some data showed impossible inventories-had to be reanalyzed and revised.

6. What are your suggestions to solve the problems addressed in question 5?

   ANS: Sanity check by people who have a gut feel for approximate contents, and can spot bad data from past experience and knowledge.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   No.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    ANS: Hard copy of analyzed and checked tank, or class, inventory.

11. Where would you store your information

ANS: Shelf.

****

Megan Lerchen
Nuclear Waste Chemistry Specialist
Washington State Department of Ecology

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes. Regulation of waste management under RCRA and Washington's Dangerous Waste Regulations and the TPA.

3. Do you use Characterization Information regularly?

   Yes.

4. How do you use TWRS characterization data?

   ANS: Varies depending on what facet of waste management Ecology is interested in.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   ANS: Accessibility and format.

6. What are your suggestions to solve the problems addressed in question 5? See TPA milestone M-44.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Not applicable.

8. How can we solve the problems addressed in question 7?

   ANS: Meeting the requirements of TPA milestone M-44 is intended to solve the problems.

9. How do you receive your TWRS characterization data?

[X] Data sheets, reports, hard copy information
[ ] Spreadsheets (electronic copies)
[X] Electronic media (computers, database, etc.)
[ ] Strip Charts
[ ] Collect data myself
[ ] Other format [Describe]

10. What format would you prefer for receiving data?

ANS: See TPA milestone M-44. (TCR's, TCD, and TWINS.)

11. Where would you store your information?

ANS: Too new of process to answer.

****

Douglas V. (Doug) Vo
Project W-058/W-028 System Engr
WHC/Project/Waste Transfer Projects

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes. Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

Yes, SST and DST chemical compositions tanks.

3. Do you use Characterization Information regularly? Yes.

4. How do you use TWRS characterization data?

I use it for corrosion evaluations and to revise the FDC.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

Yes, the reported composition units are inconsistent.

6. What are your suggestions to solve the problems addressed in question 5? For chemical composition, report them in g-mole/L and provide the estimated total volume for each waste phases.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

Yes, the distribution are limited.

8. How can we solve the problems addressed in question 7?

   May want to assign to each building????

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Released report document control.

11. Where would you store your information?

    At my desk or building library.

****

Randolph Ni
200 East Tank Farms Operations
Westinghouse Hanford

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? No.

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Donald C. Board
TWR Program QA
WHC/Quality Assurance

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   My activity involves interface with the waste tank characterization personnel, their vendors and customers, and developing the coordinating document called the Quality Assurance Program Plan which will define the controls for formal coordinating and planning of characterization activities. I am not sure how to answer your question. I believe in the context of the following questions, the answer is no.

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Steven F. Bobrowski
Project Manager, Tank Characterization Information Management Task, EDR Project
PNL, Computer Sciences Department, Environmental Information Technologies

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   In implementing the Tank Characterization Database system, we receive laboratory analysis data and various types of inventory data for the database. The task currently has limited scope: certain types of lab data, and the inventory data.

2. Have you ever used TWRS Characterization information?

   What was the information used to do? See 1.

3. Do you use Characterization Information regularly? See 1.

4. How do you use TWRS characterization data? See 1.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes. The lab data is not well organized, is in non-standard formats, and is sometimes not available electronically.

6. What are your suggestions to solve the problems addressed in question 5? Mandate the transmission of lab data to TCD.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes. It is very difficult to get the labs to release some of their data.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [X] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data? CC mail.

11. Where would you store your information? In TCD.

****

Gary F. Schiefelbein
Project Manager, PNL Ferrocyanide Safety Project
PNL/Materials & Chemical Sciences Center/Chemical Process Development Section

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes/Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes. Determine character of ferrocyanide waste tanks; C-112 and C-109.

3. Do you use Characterization Information regularly?

   No.

4. How do you use TWRS characterization data?

   Verify content of ferrocyanide tanks, particularly cyanide content.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Nickel content serves as a marker for amount of nickel ferrocyanide originally added to tank. The current method approved for determining nickel involves a fusion procedure carried out in a nickel crucible. Although the blanks are negligible, the use of nickel crucibles casts some doubt on the accuracy of the numbers.

6. What are your suggestions to solve the problems addressed in question 5?

   Use non-nickel crucibles.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   No.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Reports are ok.

11. Where would you store your information?

    Files or on computer disks.

****

Joe W. Brothers
(1) PNL Flammable Gas Project Manager, (2) Staff Scientist, (3) Robotics & Mechanical Systems Technical Group Leader
Pacific Northwest Laboratory, Applied Physics Center, Automation & Measurement Sciences Department, Robotics & Mechanical Systems Group, matrixed to the PNL TWRS Waste Tank Safety Program under Roger Bean.

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes - As part of our project activities we use waste tank information. We also generate waste tank information.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes, to address flammable gas safety issue resolution as directed by WHC activity manager.

3. Do you use Characterization Information regularly?

   Yes - daily within the project.

4. How do you use TWRS characterization data?

   Perform various forms of data analysis and evaluation.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Waste tank data quality varies over time. Most information that could explain discrepancies is not easily accessible, and some is only in site people's memories.

6. What are your suggestions to solve the problems addressed in question 5?

   Modernize the data management process. But that requires a data management design that includes an appropriate development of requirements and life cycle design.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   We usually have to request the data from WHC people we know are too busy resulting in excessive use of their time and a delay before the data is delivered that we find troublesome.

8. How can we solve the problems addressed in question 7?

   See 6. above.

9. How do you receive your TWRS characterization data?

   Reports, phone calls, network access, and more.

   [X] Data sheets, reports, hard copy information
   [X] Spreadsheets (electronic copies)
   [X] Electronic media (computers, database, etc.
   [X] Strip Charts
   [X] Collect data myself
   [X] Other format [Describe] Bernoulli, sneakernet, floppy disks, telephone calls

10. What format would you prefer for receiving data?

    Electronic, ASCII or efficient database files, in some cases CD's.

11. Where would you store your information?

    Server, workstation internal drives, floppies, tapes, Bernoulli disks, CD's.

****

Michael J. Kupfer
Principal scientist
WHC/TWRS Process Engineering

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes--Inventory and flowsheet preparation for technical Options Report.

3. Do you use Characterization Information regularly?

   Yes.

4. How do you use TWRS characterization data?

   Flowsheet information.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Sample data often hard to interpret. Often multiple inconsistent data from different samples solve the problems addressed in question 5?

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Not recently now that I know the data location

8. How can we solve the problems addressed in question 7?

   A user friendly electronic database is needed

9. How do you receive your TWRS characterization data?

   Letters and documents from char files.

   [x] Data sheets, reports, hard copy information
   [x] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [x] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

11. Where would you store your information?

    Computer.

****

Peter J. Mellinger
Staff Scientist/Technical Group Leader
PNL/Applied Physics Center/Automation and Measurement
Sciences Department/Electro-Optics Systems Group

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   No, have not used waste tank information in the past. I will need to become more familiar with the tank waste information system in the future to ensure that data resulting from new technologies are provided in a compatible format.

NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Gary M. Crummel
Senior Engineer
WHC/TWRS PLANT ENVIRONMENTAL ENGINEERING

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes/Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes. POTENTIAL EMISSIONS (NESHAP)/RCRA REPORTING

3. Do you use Characterization Information regularly?

   No.

4. How do you use TWRS characterization data?

   ALREADY TOLD YOU.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   GOOD EMISSION DATA NOT AVAILABLE YET.

6. What are your suggestions to solve the problems addressed in question 5?

   GET GOOD DATA.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes. UNAVAILABLE, ESPECIALLY IN THE PAST.

8. How can we solve the problems addressed in question 7?

   CONTINUING GETTING DATA AS REQUIRED BY THE REGULATIONS (RCRA, NESHAP, CAA, EPCRA, ETC).

9. How do you receive your TWRS characterization data?

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

   DOCUMENTS/REPORTS

10. What format would you prefer for receiving data?

    ELECTRONIC.

11. Where would you store your information?

    SHOULD BE AVAILABLE HANFORD WIDE/NETWORK.

****

Rick J. Van Vleet
Principal Engineer
Double Shell Tank Safety Analysis

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes, I have used it in the past and will probably use it in the future.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   No, TWRS information has not been available for my needs.

3. Do you use Characterization Information regularly?

   No, I don't use TWRS Characterization Information regularly.

4. How do you use TWRS characterization data?

   The information that I use is for safety documentation.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   There was no central location for data on sample results for the double- and single-shell tanks. I hired a consulting company to put together radionuclide and chemical inventory documents for all tanks. It is currently under revision, with an expected release date of June for Revision 2.

6. What are your suggestions to solve the problems addressed in question 5?

   I believe that they are being addressed by setting up the Characterization Database at PNL.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   See response to question 5.

8. How can we solve the problems addressed in question 7?

   See response to question 6.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [X] Strip Charts
   [X] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Electronic files on each tank.

11. Where would you store your information?

    Would like it to be on the network so I would NOT have to store it.

****

Charles H. Mulkey
Principal Scientist
Tank Farms Environmental Engineering

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Have tried to obtain information on the contents tanks to evaluate compliance with regulatory requirements. Information I obtained has been insufficient to accomplish this.

3. Do you use Characterization Information regularly?

   Presently no but I do expect to in the near future.

4. How do you use TWRS characterization data?

   Evaluate compliance with regulatory requirements and waste comparability.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   The problem so far is determining what information is available and where it can be obtained.

6. What are your suggestions to solve the problems addressed in question 5?

   Establish a central collection point or contact which can be used by all interested parties. Spread the word through CC: mail, Hanford Reach, Managers meetings, etc. that characterization data has been centralized at_____ or _____ can provide characterization data.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes. Had difficulty finding out what analyses had been conducted and which tanks. Just determining who had the information was difficult.

8. How can we solve the problems addressed in question 7?

   See answer to question 6.

9. How do you receive your TWRS characterization data?

   [x] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Hard copy and electronic.

11. Where would you store your information?

    In my office or department library.

****

Brent A. Pulsipher
Program Manager-Statistics
PNL Applied Physics Center, Analytic Sciences Dept

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes, Statistical analysis to characterize spatial, sampling and analytical uncertainties. Used to determine sampling requirements 3. Do you use Characterization Information regularly?

   Several members of my staff use it regularly.

4. How do you use TWRS characterization data?

   Statistical analysis and modeling. Used to determine sampling requirements, data quality assessments, tank clustering, estimate spatial, sampling, and analytical uncertainties.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes, outliers present, meaningless quality indicators, no procedure for use of spike- or blank-corrections,...

6. What are your suggestions to solve the problems addressed in question 5?

   Get statistical support within the analytical labs by developing and implementing a Statistical Quality Control Program within each lab. Most of the errors we catch could be identified early if the analytical lab had access to qualified statisticians in house.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes, no one place where data are held. Also, formats sometimes make it difficult to pull pertinent data out. Timely access has also been a problem in past.

8. How can we solve the problems addressed in question 7?

   TCD will help but will monitoring and surveillance data be in TCD?

9. How do you receive your TWRS characterization data?

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [x] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Electronic media.

11. Where would you store your information?

    On our STATLAB machine at PNL.

****

Charles W. Stewart
Staff Scientist - PNL Hydrogen Mitigation Project Manager

1. Have you ever used waste tank information?

   Yes, that's my job.

   And, do you plan to use waste tank information in the future?
   Yes, our project generates all info for SY 101.

2. Have you ever used TWRS Characterization information?

   Don't know if info came from TWRS or not. Typically use WHC and PNL core sample info. What was the information used to do? Estimate physical and thermal properties of different layers in the tank. Estimate heat generation rates vs position. We'll need to look into 103-SY and others pretty soon.

3. Do you use Characterization Information regularly?

   Don't know, see 2 above.

4. How do you use TWRS characterization data? see 2.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   I evidently don't know what TWRS Characterization Data (with leading capitals) is. I guess we've never used it. Should we?

6. What are your suggestions to solve the problems addressed in question 5? ??

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems. ??

8. How can we solve the problems addressed in question 7? ??

9. How do you receive your TWRS characterization data? N/A.

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Something we can read into EXCEL on macintosh, UNIX, and PC.

11. Where would you store your information?

    On individual PC's.

****

Roger M. Bean
MANAGER, PNL TANK WASTE SAFETY PROJECTS, AND MANAGER, PNL WASTE TANK ORGANIC SAFETY PROJECT.

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes AND Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   MAKE PROJECT MANAGEMENT DECISIONS, PLAN RESEARCH STRATEGY, PLAN NEW WORK.

3. Do you use Characterization Information regularly? Yes

4. How do you use TWRS characterization data? SEE #2

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes, ACCESSING THE TANK CHARACTERIZATION DATA BASE, AND GETTING DATA OUT OF IT. I'M COMPLETELY IGNoRANT ABOUT THIS. IS THERE A SET OF INSTRUCTIONS?

6. What are your suggestions to solve the problems addressed in question 5?

   SEE BELOW.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   I WOULD LIKE STEP-BY STEP INSTRUCTIONS AS TO HOW TO ACCESS THE TANK CHARACTERIZATION DATA BASE DIRECTLY FROM MY MACINTOSH. CAN I USE THE NETWORK?

8. How can we solve the problems addressed in question 7?

   DEVELOP AN EASY ACCESS PLAN TO THE TCDB AND IMPLEMENT IT

9. How do you receive your TWRS characterization data?

   FROM REPORTS SENT TO ME BY COGNIZANT STAFF, AND FROM 222S AND 325 LABS.

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data? ELECTRONIC.

11. Where would you store your information?

    ON REMOVABLE HARD DISK, AND SOME HARD COPIES IN FILES

****

Peter J. Mellinger
Manager, TWRS Characterization at PNL

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   No, but I passed (forwarded) this survey to my project managers who do use tank characterization data and to the other PNL end function managers. Thanks for the effort. Pete Mellinger

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Theodore (Ted) Noble

The answer to question #1 on your survey is no. According to your specifications I do not need to finish the rest.

****

Brit E. Hey
Principal Engineer
WHC

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes. I currently use and plan to use in the future, waste tank information.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes. I used the information to provide unit doses for the tank farms ISB and ASA, the basis for shielding analysis performed for 101-SY mixer pump, multi-port, ALARA. I am using it for calculating population doses for C-106 waste retrieval. I used it as the basis for safety analysis in the new tank farms (MWTF).

3. Do you use Characterization Information regularly?

   Yes. It is critical information for consequence analysis, our main line of work.

4. How do you use TWRS characterization data?

   Specifically, the data is used to provide conservative estimates of hypothetical accident consequences. Both radioactive material and chemical compositions are used along with inventories. Primarily, we are interested in conservative estimates of composition for virtually all high level waste tanks.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes. The major problem is that many times the TWRS data conflicts with the characterization data being used by the project. The reason for the discrepancy is sometimes traced to the different approaches used to derive the data (i.e., flow sheet vs. laboratory sample); but, it is also due to transcription errors in the TWRS data.

6. What are your suggestions to solve the problems addressed in question 5?

   There needs to be a single repository for characterization data. There are too many back corner spreadsheets that are being used as a basis for design and safety analysis. The TWRS data needs to have better QA, be kept up to date, and most importantly, be the recognized single source for tank composition and inventory.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   It is only recently that we (safety analysis) have had characterization data, thanks to the efforts of those working on the tank farms ISB and Criticality USQ. The problem, and this is not the fault of the above, is the lack of quality data, or any data for many of the tanks. Much of the characterization data we currently have is based on decades old rock-on-a-bottle-on-a-string sampling. The data also lacks representation of the general tank composition or is obsolete due to later transfers.

8. How can we solve the problems addressed in question 7?

   More sampling. Better models. Continue collecting worthwhile historical data. Establish and maintain an organization whose responsibility is the collection, maintenance, QA, and accessibility of this data such that this organization is recognized as THE place to obtain the latest and best available information on Hanford waste composition and inventory. In other words, a lot of hard work.

9. How do you receive your TWRS characterization data?

   [x] Data sheets, reports, hard copy information
   [x] Spreadsheets (electronic copies)
   [x] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Both hard copy and electronic formats are preferred for different reasons. The electronic format is needed for data reduction and analysis. A hard copy is needed for day-to-day table look-up, discussion, checking.

11. Where would you store your information?

    The hard copy I store in my office since it is frequently used in my work. The electronic copy is stored on the disk drive of my IBM compatible computer.

****

William L. Cowley
Safety Analyst
TWRS Safety Engineering

1. Yes

2. No

3. Yes

4. I use the information as part of Safety Analysis for Tank Farms.

5. It is difficult to find the needed data without spending a lot of time trying to locate it.

6. I think data needs to be consolidated and made available electronically.

7. See 6.

8.

9. Data sheets, reports and hard copy. I collect the data over the phone or in person from people who gather it.

10. Electronic or Hard copy.

11. I haven't thought this one out.

****

J. R. (Jacquie) Noble-Dial
Physical Scientist
DOE-RL OCH/TWRS

1. Yes. Yes.

2. Yes. So far, it really hasn't been used to do anything. Of course, I'm speaking as a customer that's not directly involved in the decision making process.

3. I receive TWRS Characterization data on a regular basis, I can't clearly define my use for it at this time.

4. TWRS Characterization data will eventually be used to make decisions on the tank waste, (i.e. disposal, retrieval, pretreatment, etc.)

5. The data packages are very cumbersome and not very user friendly. Some of the pages are not copied well, making it very difficult to read (there have been times when pages were missing).

   The packages are not sent out as a complete package. WHC's 222-S lab will send out a package on a certain tank and for a specific core. Two or more months later I'll receive a package from PNL on that same tank and core, of course it contains a different set of analyses. But, there has never been any notification from either lab or HASM (HAS) stating that this package is incomplete and the RHEOLOGY (whatever) from PNL will be delivered at a later date.

6. Well, DQOs should reduce some of the analytical burden, therefore, the paper stack should diminish also. When data is sent out incomplete, let the customer know that more data will follow later. An explanation of why

the remaining data is late would be helpful, especially if the time exceeds the 215 day clock.

7. No.

8. N/A

9. IN A BOX.

10. ELECTRONICALLY.

11. ON A DISK.

****

David P. Reber
West Tank Farms Technical Support Manager
WHC/TWRS/Waste Tank Operations

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes to both.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes for evaluation of compatibility and engineering analysis

3. Do you use Characterization Information regularly?

   Fairly.

4. How do you use TWRS characterization data?

   For compatibility verification and engineering analysis.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Not to date.

6. What are your suggestions to solve the problems addressed in question 5? N/A.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems. No.

8. How can we solve the problems addressed in question 7? N/A.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Same.

11. Where would you store your information?

    Local Files.

****

Ryan A. Dodd
Manager, East Systems Engineering
WHC/East Systems Engineering

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes, I have used waste tank characterization data for everything from verifying waste composition limits to calculating the fissile inventory.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   I have used characterization data, as stated above, to verify compliance with OSD specifications, establish calculated fissile inventories, identify waste transfer compatibility, and in the development of transfer flowsheets for the day to day operation of tank farms.

3. Do you use Characterization Information regularly?

   Yes, as often as I get it.

4. How do you use TWRS characterization data? See answer to # 2.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes, the data packages were developed with specific need, and were not easily understood. It was also not easy to use the information that was presented.

6. What are your suggestions to solve the problems addressed in question 5?

   At a minimum, the analysis should cover process requirements and should verify compliance with the specs.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   I have had a problem knowing what he latest data available on a tank was and where to find it.

8. How can we solve the problems addressed in question 7? ????

9. How do you receive your TWRS characterization data?

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [X] Other format [Describe] Historically, I have received the data packages for core samples etc.

10. What format would you prefer for receiving data?

    Data reports are fine, it would be nice to have a summary of information and results.

11. Where would you store your information?

    File cabinets set up for each tank.

****

James R. Jewett
Manager, Process Chemistry Laboratories
Process and Analytical Laboratories

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes and yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   No. We get our data from the lab or from TWRS engineering

3. Do you use Characterization Information regularly?

   No.

4. How do you use TWRS characterization data?

   N/A.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   N/A.

6. What are your suggestions to solve the problems addressed in question 5?

   Your tank farm engineers and people involved with planning waste treatment need a centralized, indexed source of all sorts of information about the tanks, their contents, and the history. The info systems now seem to be fragmented and not well understood (undocumented).

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   See above.

8. How can we solve the problems addressed in question 7?

   Assign much more effort than in the past. Problem seems to be thorough indexing. Also, there is much info in personal files, etc. that ought to be assembled so it is understandable and retrievable

9. How do you receive your TWRS characterization data?

   N/A.

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [x] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    N/A.

11. Where would you store your information?

    My unit produces data about the contents of waste tanks. It is written in laboratory notebooks, internal memos, and documents. The letters are compiled into the annual "Process Aids" which is a document itself.

****

Wendy S. Thompson
Manager, ER Field Sampling
Westinghouse Hanford Company /Environmental/ER Field & Analytical Support Services

1. Have you ever used waste tank information?
   No.

   And, do you plan to use waste tank information in the future? No

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

****

Ray S. Daniels
Program Manager
SAIC Support Contract to DOE EM-36

1. Have you ever used waste tank information? Yes

   And, do you plan to use waste tank information in the future? Yes

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Compatibility of waste streams, validity of safety and environmental assessments, closure of USQs.

3. Do you use Characterization Information regularly?

   Yes.

4. How do you use TWRS characterization data?

   Review reports, prepare issue papers, evaluate safety issues.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Prior to 1994, timeliness was a problem, also evaluation of outliers.

6. What are your suggestions to solve the problems addressed in question 5?

   More rapid turnaround of samples and timely data reports, reviewed to ensure quality.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Data not available for all tanks. Also representativeness of sample data.

8. How can we solve the problems addressed in question 7?

   Expeditious sampling and analysis of all tanks wastes. Enforcement of DQO process to ensure necessity and validity.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Would like electronic access via computer database information capability; e. g., TWINS (?).

11. Where would you store your information?

    Download necessary data or just access via computer without storage capability.

****

Herbert G. Sutter
Senior Scientist,
HQ Support Contractor, support EM-36, Characterization (Ken Lang)
SAIC (Science Applications International Corporation

1. I have used it and will continue to use it.

2. I have used characterization information in support of numerous headquarters support tasks.

3. Yes.

4. See the answer to 2.

5. It is sometimes difficult to collect it all, especially when it is issued piecemeal in the form of an original report and later supplements.

6. One final report or updated file.

7. No.

8. ---

9. Data sheets, reports, etc.

10. Reports and a good spread sheet.

11. In my computer and on my shelves.

****

Louis Jensen
Fellow Statistician
WHC/WA/HAS

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   My statisticians perform a statistical analysis of the tank sample data.

3. Do you use Characterization Information regularly?

   Yes, from each tank sampled SST and DST.

4. How do you use TWRS characterization data?

   Statistical analysis, provide the best estimate of the composition of the waste.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   You need to come and talk with me. The list is longer that I have time to write.

6. What are your suggestions to solve the problems addressed in question 5?

   Come and see me.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Come and see me.

8. How can we solve the problems addressed in question 7?

   Come and see me.

9. How do you receive your TWRS characterization data?

   [x] Data sheets, reports, hard copy information
   [x] Spreadsheets (electronic copies)
   [x] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Electronic & written.

11. Where would you store your information?

    PC @ files.

****

Susan G. McKinley
Project Manager
PNL/Analytical Chemistry Lab/Analytical Lab Operations

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes and Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes, to compare to other tank data and for planning purposes.

3. Do you use Characterization Information regularly?

   Several times a year.

4. How do you use TWRS characterization data? The data is used to provide the laboratory information on specific tanks or tank waste types.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   No.

6. What are your suggestions to solve the problems addressed in question 5?

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   I typically obtain data from the WHC 222-S Project Coordinator. They have always been very helpful.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Hard copy.

11. Where would you store your information?

    File.

****

Peter J. Mellinger
Sr. Research Engineer/Group Leader
PNL/Applied Physics Center/Analytic Sciences Department/Experimental Fluid Dynamics Group

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes/Yes.

2. Have you ever used TWRS Characterization information? Yes. What was the information used to do?

   Physical properties used in establishing/verifying waste simulants.

3. Do you use Characterization Information regularly? Yes.

4. How do you use TWRS characterization data?

   Always in search of better/more complete properties information.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Physical properties data incomplete or lacking totally.

6. What are your suggestions to solve the problems addressed in question 5?

   Uniform characterization procedures for all samples. Consistent entry into data bases.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes. Data spread among disconnected reports and letters. Various units and characterization methods used.

8. How can we solve the problems addressed in question 7?

   See #6. Also, the data base systems now being implemented should help tremendously.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [X] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Electronic media with search tools available.

11. Where would you store your information? Spreadsheets and hard copy for the limited amounts of data needed for simulant assessment.

****

Steven C. Goheen
Staff Scientist, Technical Group Leader, Project Manager
PNL, Materials and Chemical Sciences Center, Chemical Sciences Department, Atomic and Molecular Chemistry Section, Advanced Organic Analytical Chemistry Group.

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   The information was reported to WHC as part of our program deliverables.

3. Do you use Characterization Information regularly?

   We report characterization information regularly.

4. How do you use TWRS characterization data?

   In reports to WHC.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   No.

6. What are your suggestions to solve the problems addressed in question 5?

   N/A.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   We only use data we generate.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [X] Spreadsheets (electronic copies)
   [X] Electronic media (computers, database, etc.)
   [X] Strip Charts
   [ ] Collect data myself
   [X] Other format [Describe]: Vapor database

10. What format would you prefer for receiving data?

    The vapor database and completed reports.

11. Where would you store your information?

    RIDS

****

W. B. (Blaine) Barton
Engineer
WHC, TWRS Process Engineering

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Yes, Define pretreatment feeds, plan blending strategies.

3. Do you use Characterization Information regularly?

   Yes

4. How do you use TWRS characterization data?

   Because of the user unfriendliness of the presentation I find it very difficult to work with the tank characterization reports. Would prefer an electronic file or database.

5. Have you had problems with TWRS Characterization Data? (be specific). Describe these problems.

6. What are your suggestions to solve the problems addressed in question 5?

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes, Reports are not timely. For example tank 101-AZ was sampled in '89 but I still have been unable to obtain the final report.

8. How can we solve the problems addressed in question 7?

   Be more timely. Provide the information in a database format. Check for internal consistency of the data before issuing.

9. How do you receive your TWRS characterization data?

   Have to request individual documents from Leela Sasaki.

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Electronic media.

11. Where would you store your information?

    Diskettes or network file servers.

****

Muhammad N. Islam
Manager, Waste Tank Safety Assurance
WHC/Safety

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do?

   Review and approve all documents and work.

3. Do you use Characterization Information regularly?

   Yes, please see item 2 above.

4. How do you use TWRS characterization data?

   Please see item 2 above.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems. No.

6. What are your suggestions to solve the problems addressed in question 5?

   N/A.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems. N/A.

8. How can we solve the problems addressed in question 7? N/A.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Reports, hard copy.

11. Where would you store your information?

    Safety library.

****

Joseph E. Meacham
Senior Engineer
WHC/TWRS/Waste Tank Safety Programs/Ferrocyanide Safety Program

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? Yes. Yes.

2. Have you ever used TWRS Characterization information? What was the information used to do? Yes.

   To determine the potential for ferrocyanide reactions in Hanford Site tanks.

3. Do you use Characterization Information regularly? Yes.

4. How do you use TWRS characterization data?

   In quarterly reports and to make judgements/recommendations on waste tank safety.

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

   Yes. Lack of core recovery and poor analyses of tank T-107.

6. What are your suggestions to solve the problems addressed in question 5?

   Poor core recovery has hopefully already been addressed. The lab needs to have ownership of the core analyses and become more involved in understanding the drivers for the analyses they are performing. If they are included in this process, the quality should improve.

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

   Yes. Long delays in obtaining core analyses.

8. How can we solve the problems addressed in question 7?

   Hopefully this has been addressed in the 45 day commitment spelled out in the safety screening module.

9. How do you receive your TWRS characterization data?

   [X] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

    Hard copy and electronic media.

11. Where would you store your information?

    Files and computer hard drive.

****

Jerry D. Johnson
Sr Research Scientist
Battelle/Health/National Toxicology Program Office

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future? No.

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

APPENDIX C

CHARACTERIZATION QUESTIONNAIRE

CHARACTERIZATION QUESTIONNAIRE

The TWRS Characterization Program needs your help to address the improvement of TWRS information management. The information we are concerned about is tank waste characterization information (scientific, engineering, safety, etc.). Please take a few minutes and answer the questions below.

DIRECTIONS:

1. Please try to answer each question to the best of your abilities. DO NOT LEAVE ANY QUESTIONS BLANK.

A: What is your job title?

B: What company/organization/group do you work for?

1. Have you ever used waste tank information? And, do you plan to use waste tank information in the future?

   NOTE: IF YOU HAVE ANSWERED No TO QUESTION 1 PLEASE DISREGARD THE REST OF THIS QUESTIONNAIRE AND RETURN TO SENDER.

2. Have you ever used TWRS Characterization information? What was the information used to do?

3. Do you use Characterization Information regularly?

4. How do you use TWRS characterization data?

5. Have you had problems with TWRS Characterization Data? (be specific) Describe these problems.

6. What are your suggestions to solve the problems addressed in question 5?

7. Have you ever had problems obtaining TWRS Characterization Data? Describe these problems.

8. How can we solve the problems addressed in question 7?

9. How do you receive your TWRS characterization data?

   [ ] Data sheets, reports, hard copy information
   [ ] Spreadsheets (electronic copies)
   [ ] Electronic media (computers, database, etc.)
   [ ] Strip Charts
   [ ] Collect data myself
   [ ] Other format [Describe]

10. What format would you prefer for receiving data?

11. Where would you store your information?

Your input is of great importance to us, and we would appreciate your expedient response.

If you know of someone, who is not on this mail list, that uses TWRS characterization information/data please contact me with the name and I will make sure they get this questionnaire.

Additionally, I would like to arrange a time I can meet or talk with you to discuss any concerns and issues you may have.