**SUPPORTING DOCUMENT FOR THE
HISTORICAL TANK CONTENT
ESTIMATE FOR**

AX TANK FARM

WORK ORDER ER4945

Prepared for

Westinghouse Hanford Company

June 1994

Prepared by

**ICF Kaiser Hanford Company
Richland, Washington**

MASTER

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AX TANK FARM

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1.0 Introduction

1.1 Purpose

This document provides historical evaluations of the radioactive mixed wastes stored in the Hanford Site 200-East Area underground single-shell tanks (SSTs). A Historical Tank Content Estimate has been developed by reviewing the process histories, waste transfer data, and available physical and chemical characterization data from various Department of Energy (DOE) and Department of Defense (DOD) contractors.

The historical data will supplement information gathered from in-tank core sampling activities that are currently underway. A tank history review that is accompanied by current characterization data creates a complete and reliable inventory estimate. Additionally, historical review of the tanks may reveal anomalies or unusual contents that are critical to characterization and post characterization activities. Complete and accurate tank waste characterizations are critical first steps for DOE and Westinghouse Hanford Company safety programs, waste pretreatment, and waste retrieval activities.

1.2 Scope

The scope of this document is limited to the SSTs in the AX Tank Farm of the northeast quadrant of the 200 East Area. For summarized characterization data on all SST's in the northeast quadrant, refer to the Historical Tank Content Estimate Report (Brevick 1994). The northeast and southeast quadrants represent an approximate geographical division of the 200-East Area tank farms. The division was made as follows:

- NE Quadrant: A, AX, B, BX, BY, C
- SE Quadrant: AN, AZ, AP, AW, AY, SY

The following map depicts the 200-East Area.

1.3 Approach

This report is a compilation of work performed by ICF Kaiser Hanford Company, Los Alamos National Laboratories, and Westinghouse Hanford Company.

Westinghouse Hanford Company requested that ICF Kaiser Hanford Company review the history of the tanks in each of the four quadrants and incorporate the tank layering models and inventory estimates being developed by Los Alamos National Laboratories into the report. Historical waste transfer and level data, tank physical information, temperature data, sampling data, and drywell and liquid observation well data have been compiled for this report.

200 East Area

1.3.1 Surveillance Techniques for the Hanford Radioactive Mixed Waste Storage Tanks

Surveillance information is used for tank characterization. Tank integrity (i.e., sound, assumed leaker, assumed re-leaker) is investigated by comparing the changing liquid levels to liquid observation well data and drywell activity. Waste temperatures can be used to correlate the inventories of heat-generating radionuclides (^{137}Cs and ^{91}Sr) in the tanks. The instrumentation and methods used for tank surveillance are described in the following sections.

■ In-Tank Surface Levels

Surface levels within the SSTs are monitored by instruments consisting of calibrated steel tapes with an electrode plummet on the end that will complete a circuit when it contacts a conducting surface (i.e., liquid). The surface level measurements are usually taken with Food Instrument Corporation gauges and manual tapes. The tank monitoring device, manufactured by the Food Instrument Corporation, automatically moves up and down and contacts the waste. The gauge is often set to the intrusion mode by placing the plummet a short distance above the waste. If an intrusion occurs in the tank, the Food Instrument Corporation gauge will record the event when the surface level rises to meet the plummet. The manual tapes are similar to the Food Instrument Corporation gauge, except that manual operation of the tape and manual recording of the readings are required. Some tanks contain both types of level monitoring devices. The measurements are recorded on a computer automated surveillance system (CASS).

■ Interstitial Liquid Level (Liquid Observation Wells)

Food Instrument Corporation gauges and manual tapes are limited to surface level measurement; therefore, liquid observation wells in many tanks have been installed specifically to monitor the interstitial liquid level within the SSTs. The interstitial liquid is the liquid trapped within and underneath the solid waste. Fiberglass or TEFZEL-reinforced epoxy-polyester resin liquid observation well tubes (by E.I. du Pont de Nemours and Company) are sealed on the bottom and vertically installed approximately 1 in. from the tank bottom. Gamma, neutron, and acoustic probes may be lowered into the liquid observation wells to determine the interstitial liquid levels within the tank. A gamma probe detects the difference between saltcake and saltcake containing liquid, based on the principle that the liquid is the primary source of gamma emissions. A neutron probe distinguishes between the existing dry saltcake, wet saltcake, and liquid phases. Distinct differences exist in the neutron count rates of each material type. An acoustic probe emits a pulse that is reflected off the interface between the outer wall of the liquid observation well and the waste. A fiberglass/liquid interface produces a minimal reflected pulse and a fiberglass/air interface produces a maximum pulse reflection. Wet saltcake will fall between the limits appropriately; therefore, interpretation of the records will determine the liquid level. Each probe scan is fully automatic and

successful scans are input to the computer automated surveillance system.

■ **Internal Tank Temperatures (Thermocouples)**

Temperatures usually are recorded automatically in the Computer Automated Surveillance System (CASS). Temperatures are monitored with thermocouple trees that are comprised of stainless steel pipe with 4 to 18 thermocouples. Usually, the lowest sensor is located approximately 4 in. from the tank bottom and the other sensors progress up the tree at 2-ft intervals. More frequent temperature readings are available for a few select tanks due to an upgrade in the surveillance data acquisition system to the tank monitor and control system (TMACS) in 1991.

Generally, a single thermocouple sensor is sent down the liquid observation well to take semiannual readings in tanks that do not contain a thermocouple tree. The temperatures are recorded manually in degrees Fahrenheit and are entered into the surveillance analysis computer system (SACS) that is currently using the ORACLE database.

■ **External Leak Detection (Drywells)**

Drywells are located around the circumference of each SST and throughout the tank farms to determine if tank wastes have leaked. The drywells are generally 6-in. diameter carbon steel pipe, between 75- and 250-ft deep. The wells are termed dry because they are not deep enough to reach ground water. Scan profiles of radiation or moisture in the soil as a function of well depth are obtained with gamma radiation or neutron sensors. Scintillation monitors, Geiger-Mueller instruments, and neutron sensors are used to monitor the drywells. Scintillation monitors are radiation detection instruments based on the principle that light pulses are produced in some materials when they are exposed to radiation. Geiger-Mueller instruments detect low-level beta and gamma radiation. Neutron probes are equipped with a neutron source and detector that determine if moisture is present in the soil. The frequency of and probe used for drywell monitoring are specified in a schedule from the "Waste Storage Tank Status and Leak Detection Criteria" (Welty 1989).

Drywell readings are recorded at 1-ft intervals. The peak readings and the depth of the readings are recorded on a summary sheet. If a drywell indicates a new or unusual increase in activity, a rerun is requested and the drywell is retested. The wells are sealed when they are not being tested.

The drywells described in this report have a 6-digit computer identification number: the first two digits denote the tank farm (i.e., A=10, AX=11, B=20, BX=21, BY=22, and C=30), the third and fourth are the last two digits of the tank number (i.e., 241-A-105 would be 10-05 and 00 indicates a non-specific tank), and the fifth and sixth describe the clockwise location of the well from due north. For example, the identification number of the first drywell for Tank 241-BY-102 would be 22-02-01.

Laterals (i.e., horizontal drywells) are positioned under some SSTs to detect radionuclides in the soil which could be indicative of tank leakage. The drywells are monitored by radiation detection probes and occasionally by a temperature probe. Laterals have 4-in. inside diameter steel pipes located 8 to 10 ft below the concrete base of the tank, and each tank has three laterals. Laterals are located only in the A Tank Farm and a portion of the SX Tank Farm.

■ In-Tank Photography

In-tank photography is another waste volume determination method used to resolve in-tank measurement anomalies and determine tank integrity. Photographs can help determine sludge and liquid levels, provide a degree of corroboration with other waste management processes, and are a source of information on foreign objects contained in the tanks. The photos can be compared to see if tank wastes with similar histories have similar characteristics.

1.3.2 Approach and Development of Supporting Information Contained in the Historical Tank Content Estimate and Supporting Documents

Extensive information was gathered for each tank. This document contains a comprehensive data set on each tank, that are summarized in the Historical Tank Characterization Estimates.

■ Tank Level Histories

The tank level histories are graphical representations of waste levels over the lifetime of a tank. They include information such as pH, in-tank photo dates, waste types, transfer data, and physical data. Information from the mid 1940s to 1980 was compiled from two Westinghouse Hanford Company documents (Anderson 1990 and Welty 1988). Data from 1977 to the present were obtained from the monthly waste status summary reports. The following Hanford Site operating contractors prepared summaries: Atlantic Richfield Hanford Company from 1973 to 1977, Rockwell Hanford Operations from 1977 to 1987, and Westinghouse Hanford Company from 1987 to present. Script files were imported from a spreadsheet to AutoCAD 12 to graph the surface level data. Liquid observation well data were obtained from the Westinghouse Hanford Company Tank Farm Surveillance group in a spreadsheet format. Additional information was gathered from various documents and comments were added directly to each drawing.

The liquid, solid, and interstitial liquid levels (liquid observation wells data) are shown on the tank level history graphs as volumes and tank elevations. The following formulas were used to relate the volumes to the respective elevation for each tank farm design:

FORMULAS

$$\frac{\text{Total Gallons}}{2750 \frac{\text{Gallons}}{\text{Inch}}} = \text{Total Inches} \quad (1)$$

$$\frac{\text{Total Gallons} - 12,500 \text{ Gallons}}{2750 \frac{\text{Gallons}}{\text{Inch}}} + 12 \text{ Inches} = \text{Total Inches} \quad (2)$$

$$\frac{\text{Total Gallons} - 12,500 \text{ Gallons}}{2750 \frac{\text{Gallons}}{\text{Inch}}} = \text{Total Inches} \quad (3)$$

$$\frac{\text{Total Gallons} - 18,500 \text{ Gallons}}{2750 \frac{\text{Gallons}}{\text{Inch}}} + 12 \text{ Inches} = \text{Total Inches} \quad (4)$$

$$\frac{\text{Total Gallons} - 590 \text{ Gallons}}{196 \frac{\text{Gallons}}{\text{Inch}}} + 6 \text{ Inches} = \text{Total Inches} \quad (5)$$

Equation No.	Applicable Tank Farms:	Tank Diameter
1	A, AN, AP, AW, AX, AY, AZ, SY	75 ft
2	BY, S, TX, TY	75 ft
3	B, BX, C, T, U	75 ft
4	SX	75 ft
5	B, C, T, U (200 Series)	20 ft

■ Temperature Plots

There are two categories of temperature data, one or few temperature readings per day and thermocouple temperature data. The documentation used for the first category includes Waste Status Summary Reports (Roberts, R.E. 2/58 - 10/58, Thress, M.A. 11/58 - 2/59, Lentz, J.E. 3/59-12/60, and Roberts, R.E. 6/61 - 6/62), RHO-CD-1172, and HW-83906. The thermocouple temperature data were obtained from the Westinghouse Hanford Company ORACLE database commonly known as the Surveillance Analysis Computer System (SACS) and various retrieved hand-entered temperature data sheets. Temperature versus time plots were developed for both categories of temperature data. Historical temperature plots cover the time span between January 1957 and January 1973. The common temperature span used for these plots is 350 degrees. There are no tanks that have temperature data outside the sliding 350 degree temperature range.

No thermocouple information has been located prior to 1973. The thermocouple temperature information was parsed in an EXCEL spreadsheet and graphed to show each individual thermocouple probe. January of 1973 is then the starting date for all thermocouple plots. The temperature range for all tank thermocouple plots in all tank farms was kept to a 120 degree F span, except where the data exceeded this range. In the few tanks where the temperature span exceeds this sliding range the data are shown using the smallest temperature range possible. A consistent time frame and temperature range is essential in comparing temperature information from one tank to another. If documentation was available, thermocouple elevations were included in the plots for tanks currently containing thermocouple trees. Thermocouples are ordered from the bottom to the top of the tank. Therefore, a plot of thermocouple 1 over time would indicate the temperature near the bottom of the tank. In-tank temperature information is available in Appendix D.

■ Surface Level Plots

The surface level data from 1991 to 1993 were obtained from the Westinghouse Hanford Company ORACLE database. The information was parsed in an EXCEL spreadsheet and graphed to show the waste level versus time. Current in-tank surface level information is available in Appendix E.

■ Drywell Plots

The drywell information was obtained from the manual records of the Westinghouse Hanford Company Tank Farm Surveillance Group. Data from 1990 to the present were input into an EXCEL spreadsheet and graphed to show the peaks in counts/second (c/s) and the peak depths in feet (ft) versus the date on the same chart. Tank drywell information is available in Appendix F.

■ Tank Profiles and Other Drawings

The drawings included in this report have been compiled from several sources including as-built drawings, the Waste Storage Tank Status and Leak Detection Criteria (Welty 1988), and the Riser Configuration Document for Single-Shell Waste Tanks (Alstad 1991).

The risers and penetrations throughout the tank dome are used for many purposes. Some risers were installed during the original tank construction and others were added later.

Through the years, sleeves or smaller risers were installed in many of the larger risers. For the riser configurations in this report, a tank may have a riser number followed by a letter which means that a larger riser was fitted with smaller sleeves. Depending on the intended use, the riser sleeves can be as large as 12 in. or as small as 4 in.. For example, a saltwell pump and screen require a 12-in. riser but a thermocouple tree requires only a 4-in. riser. The tank profile drawings are in Appendix K.

■ Photographs

The tank farm photos were labeled to indicate the relative position of each tank in the farm and arrows were added to show the cascade series of each tank farm.

The latest in-tank and tank farm photos were obtained from Pacific Northwest Laboratory. In-tank photos have been arranged to show the contents of each tank. The auxiliary equipment within each photo collage was identified if possible and labeled appropriately. The latest in-tank and tank farm photos are available in Appendix I.

■ Historical Sample Analysis Data

The sampling data were obtained from the WHC Tank Waste and Retrieval Group. Tables were made for the samples that were taken prior to September 1989. The information was compiled in EXCEL to present the data in as similar a manner as possible. The tables include physical data, chemical analysis data by component, and radiological analysis data by component. Any other data included with the sample references are summarized as text. Tank historical sample analysis data are available in Appendix H.

1.3.3 Approach and Development of the Process-Based Historical Tank Content Estimate

The process-based historical tank content estimates presented in this report were taken from work being performed by Los Alamos National Laboratories. The tank content estimates are the primary source of tank characterization data until the tank characterization reports are completed. The tank characterization reports will incorporate current core sampling and analysis results with historical-based tank content estimates to present the most current evaluation of the tank waste constituents.

Generating historical tank content estimates involves management and evaluation of large quantities of data. Several smaller components of the data management effort make up the system of generating historical tank estimates. The components are described in the following sections.

■ Waste Status and Transaction Record Summary Database

The waste status and transaction record summary database (i.e., transaction summary) is a database of all known waste transfer records. Historically, when waste was pumped from a process plant to tank or tank to tank, a record of the pumped waste volume and type was kept. The transaction summary is the recorded waste level of the solids and supernatant.

The waste status and transaction record summary database is being partitioned into four separate sections (i.e., quadrants). The waste status and transaction record summary database for the northeast quadrant is available in WHC-SD-WM-TI-615 Rev. 0 (Agnew 1994).

■ Tank Layering Model

The tank layering model is derived from the waste status and transaction record summary database. The purpose of the tank layering model is to predict the waste types and volumes in each tank. The transaction summary database records the types of waste that enter each tank and the corresponding increase in the solids volume from each waste entry. Each waste type that increases the solids volume in the tank is recorded in the tank layering model. Therefore, the completeness and accuracy of the information in the tank layering model is directly related to the completeness and accuracy of the transaction summary database.

The tank layering model was created to develop historical tank content estimates. The results of the tank layering model are reported in this document. The tank layering model is presented graphically with the inventory estimate described below in Appendix K.

■ Defined Waste Types

Early in the development of the historical tank content estimates, a need to compile the chemical compositions of all known waste types into one source document was recognized. This compilation was performed by Los Alamos National Laboratories. The Hanford defined waste document was developed independently of the waste status and transaction record summaries database and the tank layering model. However, the Hanford defined waste list will be used with the tank layering model to obtain the actual tank waste inventory estimates as described below.

The Hanford defined waste document gives the compositions for all known Hanford waste types that went into the double-shell and single-shell tanks. For more details of the methods used to develop these waste types, refer to the Hanford Defined Wastes Document (Agnew 1994).

■ Inventory Estimates

The end result of combining the tank layer model and the Hanford defined waste types is the tank inventory estimate. When the volumes and compositions of each waste type in a particular tank are known from the tank layering model and the Hanford defined

wastes document, a calculation of the total chemical inventory in the tank is performed. The individual tank results are presented in tabular form in Appendix K.

The inventory estimates developed by Los Alamos National Laboratory are quality checked against existing data from current sample analyses, thermal and physical models, and historical records. The checking constitutes a large portion of the time required to develop the estimates. When estimates are checked against existing data, the models used may be reevaluated. Thus, the process of generating estimates will iterate and the associated errors will be reduced over time as the historical knowledge of the tank waste operations increases.

1.3.4 Assumptions

The quality of the historical information available for the tanks often requires that assumptions and judgement calls be made on the applicability and validity of the data. Some assumptions were used to interpret the data.

■ Temperature Data

The lines joining the data points on the temperature plots were detached to show gaps in data of more than three years.

The single thermocouple tree in some tanks was removed and replaced with two trees. The original single thermocouple tree and tree 1 data were plotted on the same graph, and the tree 2 data were graphed separately.

No conclusion has been made on the status of thermocouples with less than 5 data points. In general, when there is thermocouple data with less than 5 data points, the data are retained on the temperature data sheets, but have not been plotted. Some possible explanations for the limited data are that the thermocouple failed, it was inoperable when readings were taken, or the operator misrepresented the number of thermocouples and the temperature data in the tank.

The thermocouples used in the trees were installed as purchased. There were no field calibrations before 1991. In 1991, a survey of Ferrocyanide Watch List thermocouple trees was conducted. The thermocouple tree probe temperatures were tested against probes inserted in liquid observation wells or by other methods as specified in Engineering Evaluation of Thermocouples in FeCN Watchlist Tanks, (Bussell 1992). Thermocouples, with equipment that could be repaired outside the tank, were made operable at this time.

It is assumed that the sinusoidal variances in the data can be attributed to seasonal and diurnal trends which are clear after 1991 due to an upgrade in thermocouple surveillance to a computerized data acquisition system, i.e., Tank Monitor and

Control System (TMACS). Also, in general, the temperatures decrease from the bottom to the top of the tanks.

All the temperature data received by ICF Kaiser Hanford Company was reviewed for suspect data points. Data that obviously deviate from the temperature trend for a any tank are marked as suspect and designated in the comment column as either "suspect data (low)" or "suspect data (high)". Typically, suspect data sharply deviates from the data trend 15 degrees F or more (See historical and thermocouple temperature data in Appendix D - Temperature Graphs and Data).

After review of the data, it was determined that some data was recorded in degrees Celsius rather than in degrees Fahrenheit as it was electronically received. The data are converted to Fahrenheit and evaluated against the rest of the data set. Where the converted data are found to be consistent with the temperature trend, they are designated in the comment column as "raw data - assumed degree C". Other delineations used to flag suspect data or substantiate the degree Celsius conversions are found from the Tank Waste Information Network System (TWINS) database, property of Battelle - Pacific Northwest Laboratory. Data recorded in degree C or input incorrectly and confirmed with TWINS are delineated in the comments column as: "degree C/TWINS confirm" and "wrong input/TWINS confirm", respectively (See historical and thermocouple temperature data in Appendix D - Temperature Graphs and Data).

In addition, some of the lines of data were flagged in the comment column by Westinghouse Hanford Company (WHC) before transmission of the data. Some of the WHC comment flags include "cass" or "SET#2 FROM CASS". It is assumed that "cass", an acronym for Computer Automated Surveillance System, applies to all the data taken on that particular day, and that "SET#2 FROM CASS" applies to the contiguous data designated under the TREE SET # column as 2 (See historical and thermocouple temperature data in Appendix D - Temperature Graphs and Data).

Sources of temperature data are located in the footnotes of both the temperature plots and data. Some Historical Temperature plots use data from Waste Status Summary Reports (Roberts, R.E. 2/58 - 10/58, Thress, M.A. 11/58 - 2/59, Lentz, J.E. 3/59-12/60, and Roberts, R.E. 6/61 - 6/62). If these reports are used, footnotes on the temperature plots indicate by including the source of data concisely as from "Waste Status Summary Reports" (See historical temperature plots in Appendix D - Temperature Graphs and Data).

■ Drywell Data

The drywell data did not appear to have had a quality review; therefore, the following assumptions were made about the data:

-A data point is considered suspect if an apparent rerun has been performed.

-A data point is considered to be a rerun if the preceding data are erratic and the rerun is performed on the same day if monitored daily, within one or two days if monitored weekly, or within several days if monitored monthly or yearly.

-If suspect data were indeed relevant, the appropriate surveillance organizations would have followed the appropriate procedures to identify any problems.

■ **Sampling Data**

The data obtained from the historical analytical information are understood to be widely variable in type, quality, and scope. The data range from process control data obtained from a grab sample on a few selected analyses to a total characterization suite performed on a core sample. There are no specific quantitative data quality criteria for the information incorporated into the historical tank content estimate. A qualitative assessment of the information sources is done during construction of the historical tank content estimate. The available data are assessed for suitability and consistency in the study and each data source is weighted appropriately for its contribution to the overall estimates.

When the sampling data were compiled, a sample was considered a solids sample if it was greater than 30% solids. Sludge/slurry samples were included.

■ **Inventory Estimates**

Solid waste formations vary by type and are determined individually by examination of the historical fill records. Further refinement and bounding of the solids formation are provided by conformation to physically attainable systems (e.g., waste volumes contained in the tanks do not exceed the tank capacity and negative void fractions are not possible).

Waste stream compositions were based on process flow sheet information and previous analytical data.

Solids were evenly distributed throughout tank. The solids were assumed to be evenly distributed throughout the slurry during their transfer and their settling rate was assumed to be uniform throughout the tank.

Complete settling of the sludge occurred and the solids settled in a pseudo-pancake formation (i.e., flat layers conforming to the boundaries of the tank) which was a simplifying assumption. Localized mounding and pocketing in various areas of the tank may have occurred due to inlet/outlet phenomena (e.g., cascades and transfers from the floating suction pumps that remove or deposit sludge). This phenomenon would have affected only a small fraction of the tank area and does not impact the overall results of this study. However, spatial variability within physical configuration and process history is acknowledged. No method is currently available that would adequately model this discrepancy. An effort

is underway to develop this concept and incorporate it into the tank characterization process, but it is incomplete at this time.

Solids from a specifically designated waste type are homogeneous, which is a simplifying assumption. Variation and layering of the sludge due to component concentration differences between batches, precipitate particle size, and particle density were quite likely. The effect of these factors on the distribution of analyses within the solids is unknown; however, the effect was probably small and not detectable with the present sample collection and analysis process.

Solids compaction did not occur and was not accounted for in the study which is a simplifying assumption. Although compaction probably occurred in the history of the tanks because of the formation of additional solids layers on top of each other, the degree of compression was not known and, therefore, was not incorporated.

Density and other physical characteristics of the solids were determined by individual waste type using available information or were based on approximate physical analogues.

The capacity of the tanks was never exceeded during transfers. Tank capacity is dependent on fill status, fill order, tank location in a cascade, and tank type.

Leaking of the tanks was not incorporated during the time of the study but was accounted for at the end.

Cascades, tank transfers, and crib line effluents were normally free of particulate; therefore, the majority of solids were confined to their initial receiver tanks and were not cribbed or transferred extensively from tank to tank. This assumption based on cases of plugged cascade lines when appreciable amounts of solids tried to cascade, and the pumping equipment typically was not designed to transfer of substantial quantities of solids (except when sluicing or specifically transferring solids). Monitors on the crib discharge lines should have indicated significant solids contamination, and the tank farm operating procedures would have prevented solids discharges to the ground.

1.4 Historical Information Quality

The quality of historical data compiled for this report varied greatly. Some data came from published documentation. Other data were retrieved electronically from various Westinghouse Hanford Company databases. The quality of data used in the estimates is described in the following section.

■ Level Histories

The level history narrative is designed to give a general description of the waste types contained in a specific tank from startup to the present. The history presents physical

characteristics of the waste such as waste pH values and the latest maximum temperature of the waste. It also presents information on when the tank was removed from service, if it was stabilized, the method of stabilization, if it ever leaked, and the current stabilization status. It is not designed to be a detailed summary of every waste type and transaction for that tank. The waste types are general and usually are given only for large transactions (i.e., if a waste is not of sufficient volume to significantly impact the total volume of the tank then it was not reported in the narrative)...For a more complete record of transactions and types of wastes involved, see the waste status and transaction record summary (Agnew 1994).

The accuracy of the tank level histories relies on the completeness of the Westinghouse Hanford Company document "A History of the 200 Area Tank Farms" (Anderson 1990); the monthly Westinghouse Hanford Company, Atlantic Richfield Hanford Company, and Rockwell Hanford Operations waste summary reports; and the waste status and transaction record summary (Agnew 1994).

Surface level readings may be affected by several factors: plummet error, flushing water accumulation, and waste surface irregularities. Crystalline wastes (i.e., saltcake) can build up on the end of the plummet gradually and contact the waste which indicates a false surface level increase. Significant level discrepancies occur when the buildup breaks off or when the measuring instrument plummet is flushed to remove the saltcake buildups. Flushing the Food Instrument Corporation Gauge, manual tapes, or any other equipment may cause accumulated wash water to collect under the plummet which indicates a false increase in the overall volume of waste within the tank. Surface level readings often are difficult to obtain from tanks that have a relatively dry saltcake surface. Some tanks have crystalline buildup on in-tank equipment (i.e., pumps, thermocouples, liquid observation wells, and other protruding equipment). As the supernatant is pumped from the tanks, the crystalline structure may remain attached to the equipment and be suspended above the liquid. Therefore, an accurate surface level measurement would be difficult if the breakup of the crystalline structure was inconsistent and a nonuniform waste surface was created. Steel tapes that are bent or warped from operation or those discarded on the waste surface are other sources of altered surface level readings.

Routine measurements of solids and sludges in most SSTs were not reported in the Anderson document until 1965. The solids measurements are taken with a steel donut on a string and operators interpret the sludge level. The interpretation could introduce a wide range of variability in the recorded solids level. Sometimes estimates taken from photographic data and saltwell pumping activities are the only indications of the solids levels.

■ Liquid Observation Well Data

The liquid observation well data were obtained electronically from the Westinghouse Hanford Company Surveillance Group. Some

discrepancies exist in the liquid observation well readings for tanks with liquid waste surfaces. The discrepancies were supposed to be addressed in a December 1993 rebaselining of the liquid observation well data. Agreement between the liquid observation well plots and the data obtained from the surveillance group has been verified; however, errors in the data prior to the exchange of information could still exist. The liquid observation well data were understood to be unverified prior to the exchange. Therefore, the data should be reviewed before being used for any design purposes or safety evaluations.

■ Temperature Readings

The single-shell tank temperature profiles are provided by electronic data from Westinghouse Hanford Company. Agreement between the thermocouple plots and the data obtained from the surveillance group has been verified; however, errors in the data prior to the exchange of information could still exist. Thermocouples used in the thermocouple trees were purchased and installed according to the American Society of Testing and Materials (ASTM) standard. There were no field calibrations before 1991 when a survey of Ferrocyanide Watch List thermocouple trees was conducted and a few of the thermocouple trees were compared against a thermocouple probe inserted in a liquid observation well.

During a review of the plots, some thermocouples were found to have outlying data points and many of them have only one or two readings. The unusual readings may be the result of the thermocouples functioning on only one occasion, the operator misrepresenting the number of thermocouples in the tank, unnecessary thermocouples readings, or possible thermocouple failure.

Occasionally the operator would read the temperature in degrees celsius instead of degrees fahrenheit and would not indicate this on the data sheets. The thermocouple data were understood to be unverified prior to the exchange. An attempt has been made by ICF Kaiser Hanford to validate and verify the data, however, the data should be checked before being used for any design purposes or safety evaluations.

■ Surface Level Data

The surveillance automated computer system data were obtained electronically from the Westinghouse Hanford Company Surveillance Group and were plotted. The data are actual surface levels recorded from the surveillance equipment. If the surveillance equipment in a particular tank riser was removed from service, the readings may show a level change when a new instrument and/or riser is used, especially if the waste surface shows severe heterogeneity.

Agreement between the plots and the data obtained from the surveillance group has been verified; however, errors in the data prior to the exchange of information could still exist. The surveillance automated computer system data were understood to be

unverified prior to the exchange. Therefore, the data should be reviewed before being used for any design purposes or safety evaluations.

■ **Drywell Data**

The drywell information is received on data sheets for each drywell. If the readings are questionable, Westinghouse Hanford Company often will request a rerun of the drywell scan. Because the reruns are not indicated on the data sheets, it can be difficult to determine if the data sheet has been superseded. In some wells, several scans occurred on the same day with no explanation; therefore, the scan with the accepted results is not identifiable.

■ **Riser Configuration**

The riser configuration was determined from the WHC Riser Configuration Document for Single-Shell Waste Tanks (Alstad 1991). The information was current as of June 1991; therefore, any changes made after that date would not be included.

■ **Photographs**

The photo collages were made from the latest available in-tank photographs. In some tanks, photos have not been taken since the early 1970s. Some tanks had fogging problems in the vapor space which prevented use of the latest photos. Sometimes a review of the older photos was useful to determine the waste changes. Collages made from older photos may not be indicative of current tank contents, especially if the tank has been pumped since the last photo date.

■ **Historical Sample Analysis Data**

The historical sample results only refer to sample and analysis information obtained before August 1989. The historical sample and analysis results have not been validated by the characterization program. When validation occurs, they will be reissued in a later revision of the Historical Tank Content Estimate report and supporting documentation. The sample data often were retrieved from memos that indicated the results of the sample analysis. The analytical methods, holding times, and quality control information are unavailable. The location at which the sample was taken was not provided which leads to integration of some uncertainty into the sampling results. The analytical scope performed in many cases was quite narrow which limited the available data set. However, the data set is the only available historical chemical characterization information.

1.5 Background NE Quadrant

The SSTs located on the Hanford Site near Richland, Washington were built between 1943 and 1964 to provide interim storage for high-level nuclear wastes. Processes such as plutonium separation from spent nuclear fuel and uranium metal recovery generated the millions of gallons of mixed radioactive hazardous waste solutions stored within these tanks.

Several waste tanks are on watch lists. The definition of a watch list tank is explained in a later section of this report. Wastes stored in the NE quadrant were generated mostly from Plutonium Uranium Extraction (PUREX) and a Bismuth Phosphate Plant (B Plant); however, some tanks in the quadrant received wastes from the other onsite separation processes. The separation processes went through many changes as new technologies became available. Liquid waste volumes were reduced by evaporators, in-tank solidification units, or chemical precipitation of radionuclides. The resulting supernatant was disposed of in the ground. Vaults were used for temporary storage or treatment of waste and they were the intermediate storage point for tank waste or waste awaiting further processing. A special rail car facility in the NE quadrant was used to unload onsite waste that was distributed to an evaporator, tanks, or processing facilities. The facilities were sources of the waste that exists in the SSTs of the NE quadrant.

1.5.1 Waste Generating Processes

Although not all of the processes listed below contributed waste directly to tanks in the NE quadrant, the waste they generated could have been indirectly transferred to the quadrant through tank to tank transfers. The plants and processes that generated waste now contained in the SSTs and the DSTs are presented in chronological order.

■ T Plant

T Plant was the first-full scale separations plant at Hanford. It was constructed in 1944 and was used as a separation facility for irradiated production reactor fuel until 1956. The bismuth phosphate separation process used at T Plant was identical to the one used at B Plant. Since 1957, T Plant has been used as a decontamination and repair facility. The facility was modified in 1978 for storage of pressurized water reactor (PWR) core II fuel assemblies. T Plant provided facilities for decontamination, decomposition, repair, testing, shipping, and burial of contaminated tools and equipment from onsite and offsite locations.

The following wastes were sent to SSTs: waste solution from equipment decontamination efforts at T Plant, decontamination waste (DW), metal waste (MW) from the bismuth phosphate process, first-cycle (1C) decontamination waste from the bismuth phosphate process, and second-cycle (2C) decontamination waste from the bismuth phosphate process.

■ B Plant

B Plant was constructed between August 1943 and February 1945. The bismuth phosphate process ran until 1952. One of the first plants built along with T Plant, B Plant was designed to separate plutonium from uranium and the bulk of fission products in irradiated fuel via the bismuth phosphate separation process. In 1968, B Plant became a waste fractionation plant and was retrofitted to remove cesium 137 and strontium 90 from PUREX acid

waste, high-level supernatant liquids, and sludge from self-boiling liquid wastes.

B Plant contained 40 processing cells that served several functions (e.g. equipment storage, radionuclide purification, liquid waste concentration, and solvent extraction). Cells 5, 23, 24 and 25 were used as liquid waste concentrators for the B Plant processing. Cell 23 of B Plant was used as a waste concentrator from July 28, 1967 to February 2, 1968. Because B Plant was being upgraded to a waste fractionation plant, the Cell 23 concentrator was running specifically to concentrate intermediate level waste in the single-shell tanks.

In 1974, the Waste Encapsulation and Storage Facility (WESF) was added to B plant to encapsulate strontium and cesium that was recovered from the B Plant process. The cesium capsules were leased commercially for irradiation of food, medical supplies, and lumber. The strontium and cesium capsules are stored in water basins for future retrieval. Currently most of B Plant is going through closure except for the plant sections that are needed to support the WESF mission. The closures result from a 1991 evaluation of the future B Plant mission.

The following B Plant waste streams were sent to SSTs: B Plant high-level waste (B), B Plant flush (BFSH), low-level waste from the waste fractionation plant (BL), complex concentrate (CC) or (CCPL), complexed waste (CPLX), fission products waste (FP), metal waste (MW), REDOX ion exchange waste processed at B Plant (RIX), ion exchange (IX), strontium sludge (SRS), cell 5 tank 6 waste (5-6), first-cycle waste (1C), and second-cycle waste (2C).

■ Bismuth Phosphate Process

The B and T Plants used a bismuth phosphate extraction to remove plutonium from uranium fuel elements. The extraction waste that resulted was a metal waste that still contained 90% of the fission products and 99% of the original uranium. The metal waste was sent to specific tank cascades in the 200-East and 200-West Areas. First-cycle decontamination waste (1C), which contained approximately 10% of the fission products, was also stored in other underground waste tanks in the 200 Areas.

■ Plutonium Finishing Plant

The Plutonium Finishing Plant (PFP or Z Plant), previously called Plutonium Recovery and Finishing Operations, began operation in late 1949 to process plutonium and prepare plutonium products. PFP operations included plutonium handling, plutonium reclamation, plutonium conversion, and decontamination and decommissioning.

Waste from this plant contained minor amounts of fission products and low concentrations of plutonium and other transuranic elements, but was high in metallic nitrates. Initially, the waste was discharged via cribs to soil columns, which absorbed the transuranic elements and retained them close to the point of

discharge. Later waste from Z plant was stored along with other waste in underground tanks.

The following waste was sent to tanks: waste from the Plutonium Reclamation Facility and the remote mechanical C line (Z).

■ Uranium Oxide Plant

The 224-U Building was completed in 1944 as part of the U Plant complex. The building was converted to a UO_3 plant in 1951. The 224-UA building was constructed in 1957 with six installed calciners. The UO_3 plant was able to handle the uranyl nitrate hexahydrate (UNH) stream from REDOX, U Plant, and PUREX. The UO_3 plant shut down in 1972 and restarted in 1984 with the feed lines from REDOX and the U Plant canyon disconnected. Since 1984, there have been 17 campaigns at the plant that averaged 8 days each. The plant can calcine UNH much faster than the PUREX plant can produce it. Final deactivation was ordered for the plants in 1992. In April 1993, the UO_3 plant resumed operations to convert 200,000 gal of remaining UNH to uranium oxide powder. A final deactivation plan for the facility was prepared in the summer of 1993 and will be carried out in the next few years.

In the basic UO_3 process, calcining consisted of concentrating and heating liquid UNH until it was converted to a stable orange-yellow powder. The nitric acid in the UNH solution was also recovered in the same process. The UO_3 powder was the base material needed to manufacture uranium hexafluoride (UF_6) which is the primary feed material for gaseous diffusion plants in the United States.

■ REDOX

The Reduction and Oxidation extraction (REDOX) plant was built between May 1950 and August 1951 and operated until July 1967. Uranium and plutonium were extracted from solid uranium metal slugs that were irradiated in the Hanford reactors or piles into a methyl isobutyl ketone (hexone) solvent by a continuous solvent extraction process. The REDOX process was the first at Hanford to recover both plutonium and uranium.

The waste stream which was slightly acidic contained fission products and large quantities of aluminum nitrate that were used to promote the extraction of plutonium and uranium. The waste was then neutralized and stored in SSTs.

The following wastes were sent to SSTs: REDOX process waste resulting from the dissolution of aluminum and zircaloy fuel element cladding, REDOX coating waste (CWR), REDOX high-level waste (R), and the supernatant liquid portion of waste generated by the REDOX process, REDOX supernatant (RSN). RSN is found above the sludge in the underground storage tanks.

■ U Plant

U Plant (221-U) was built as one of three original bismuth phosphate process facilities although it was not used for that purpose. U Plant was modified extensively and used for the uranium recovery process. U Plant operated from 1952 to 1958. The main canyon at U Plant currently stores failed equipment.

Uranium in waste from the BiPO_4 process initially was stored in the SSTs. Later it was mined by sluicing, dissolved in nitric acid, and processed through a solvent extraction process. For every gallon of metal waste originally stored, the uranium extraction process yielded approximately 1.4 gal of UR waste. The waste volume increase made development of a technology that would reduce the volume of the stored waste a priority. This need resulted in the development/implementation of the ferrocyanide scavenging process.

The waste sent to the SSTs from U Plant was called tributyl phosphate (TBP). In reality it contained very little TBP; therefore, to eliminate confusion, it will be referred to as uranium recovery (UR) waste in this report.

■ Strontium Semiworks

The strontium or hot semiworks processing facility (i.e., C Plant) was built in 1949 as a hot pilot plant for the REDOX process, but was later converted to a pilot plant for the PUREX process. In 1960, the plant was reactivated and used later as a process demonstration for the conversion of B Plant to a waste fractionation facility and was used to recover strontium 90, promethium 147, and cesium 144 from PUREX waste. The building and building site have been decontaminated and decommissioned.

The strontium semiworks waste sent to SSTs was known as hot semiworks (HS), strontium semiworks (SSW), and fission products waste (FP).

■ PUREX

The Plutonium Uranium Extraction (PUREX) plant (i.e., A Plant) was an advanced solvent extraction process that used tributyl phosphate in a paraffin hydrocarbon solvent to recover uranium and plutonium from nitric acid solutions of irradiated uranium. PUREX was built between April 1953 and April 1955, it operated until 1972 when it was closed for 11 years. Two thorium campaigns were conducted in the PUREX plant between 1966 and 1971. The irradiated waste was similar to the PUREX waste but it contained thorium and uranium 233 rather than uranium and plutonium which was extracted from typical PUREX waste. It began operating again in November 1983 and was shut down in 1988 after a safety violation. The PUREX Plant was shut down several times between 1988 and 1990 for various reasons. In October 1990, the PUREX Plant was put in standby mode and was eventually identified for closure in December 1992 by Secretary of Energy James Watkins.

The following PUREX waste streams were sent to SSTs: cladding waste (CW) or (CWP), organic solvent wash waste (OWW), neutralized PUREX plant acid waste (P), low-level waste from PUREX (PL), PUREX sludge supernatant liquid (PSS), organic wash waste using sodium carbonate (CARB), cesium feed (CF), and concentrated neutralized high-level waste (1WW).

1.5.2 Waste Management Operations

This section describes the different waste concentrating methods used in the 200 Areas. Evaporating, concentrating, and scavenging are all methods used to reduce liquid volumes or precipitate solids out of the supernatant solutions. The operations are presented in chronological order.

■ 242-T Evaporator

The 242-T Evaporator was built in the early 1950s to reclaim nonboiling waste storage capacity in existing tanks. The evaporator was shut down in the summer of 1955 and modified for tributyl phosphate scavenging, although scavenging was never performed in this evaporator. The 242-T Evaporator restarted in 1965 and operated until 1976. Tank 241-TX-118 was the feed tank for the evaporator.

The following wastes were sent to tanks from the 242 T Evaporator: Slurry product from the evaporator bottoms (EB), evaporator feed (EF), and terminal liquor (TL).

■ 242-B Evaporator

The 242-B Evaporator was built south of the B Tank Farm and started operating in December 1951. It received feed waste until November 1954 and was shut down in September 1955. The evaporator was never reactivated. Tanks 241-B-105 and -106 were used as the bottoms and feed tank respectively. The evaporator operated at atmospheric pressure.

■ Ferrocyanide Scavenging

Ferrocyanide scavenging was developed to reduce waste volumes. The ferrocyanide flow sheet was first tested in U Plant in October 1953. In-farm scavenging was completed in March 1956 and December 1957 for the 200-West and 200-East Areas respectively. The ferrocyanide scavenging program was designed to remove fission products such as ^{137}Cs (half life: 28.6 yr) and ^{90}Sr (half life: 30.2 yr) from the UR and 1C wastes as a precipitate. Because the ^{90}Sr was essentially insoluble in the neutralized UR waste, the strontium compounds would precipitate as phosphates, sulfates, or hydrated oxides when the acidic waste was neutralized. However, common cesium compounds are quite soluble even at alkaline pHs. Development of the nickel ferrocyanide scavenging process provided a relatively simple process to precipitate ^{137}Cs and enhance the precipitation of ^{90}Sr . The precipitating chemicals were added in stainless steel process vessels with agitation (i.e. U Plant, T Plant, or the CR vault) and the waste slurry was routed

to specific SSTs for settling. After the ^{137}Cs and ^{90}Sr precipitates settled, the clarified supernatant was sampled and disposed of in cribs. After the ^{137}Cs and ^{90}Sr precipitates settled, the clarified supernatant was sampled and disposed of in cribs.

■ In-Tank Solidification

The primary function of the in-tank solidification systems was to concentrate the nonboiling waste directly inside of specially designed tanks that would produce a saltcake slurry. Each in-tank solidification system included a heat exchanger for water evaporation and a series of bottoms tanks. The first in-tank solidification unit (ITS #1) operated with an airlift circulator through Tank 241-BY-102 and the second in-tank solidification unit (ITS #2) operated with a similar circulator through Tank 241-BY-112. Tank 241-BY-112 contained a 4,000 kW electric immersion heater. Tank 241-BY-101 contained an in-tank solidification prototype that was used only for demonstration purposes. In-tank solidification units 1 and 2 began operating in 1965 and 1968, respectively. In 1971 in-tank solidification unit 1 became the cooler for in-tank solidification unit 2. Both units were shut down in 1974.

■ REDOX Concentrator

The REDOX concentrator was used for volume reduction of dilute 200-West Area tank farm wastes by removing water. The concentrator received tank farm wastes from July 28, 1967 until June 30, 1972. Cell D in the REDOX process was the concentration and neutralization section of the plant.

■ 242-S Evaporator/Crystallizer

The 242-S Evaporator/Crystallizer began operating in November 1973 and shut down in 1981. It was designed as a reduced pressure (i.e., partial vacuum) evaporator/crystallizer. Aqueous salt wastes were converted in the evaporator to salt crystals for storage in underground tanks in the S and SX Tank Farms.

The following waste types were sent to SSTs from the 242-S Evaporator: non-complexed waste concentrated until the solution was nearly saturated with sodium aluminate known as double-shell slurry feed (DSSF), slurry product from the evaporator bottoms (EB), evaporator feed (EF), Hanford defense residual liquor (HDRL), partial neutralized feed waste (PNF), and terminal liquor (TL).

■ 242-A Evaporator/Crystallizer

Construction of the 242-A Evaporator/Crystallizer was completed in 1976. The evaporator began operation in March 1977 with a design life of 10 years. In 1987, design changes were developed to extend the facilities operating life by 10 years. The evaporator was shut down in April 1989 because of regulatory issues and restarted in May 1994 after extensive modifications.

The following evaporated wastes were sent to SSTs: evaporator bottoms from B Plant low-level waste feed (BLEB), non-complexed

waste concentrated in evaporators known as double-shell slurry feed (DSSF), evaporator feed (EF) or (EVAP), evaporator bottoms (EB), and terminal liquor (TL).

1.5.3 Miscellaneous Waste Sources and Equipment

There are various other sources of waste on the Hanford Site, as well as other material added to the tanks. Some wastes are from the 300 Area, 100 Area production reactors, various laboratories, and catch tanks. Unique contents added to SSTs included laboratory wastes, diatomaceous earth, Portland cement, shroud tubes, ceramic balls, experimental fuel elements, and relatively small amounts of enriched uranium, plutonium, cobalt, and natural uranium.

The following wastes contribute to SST waste: diatomaceous earth (DE), Hanford defense residual liquor (HDRL), Hanford laboratory operations (HLO), filtered Hanford water (H₂O), phosphate decontamination waste from N reactor (N), and non-complexed waste (NCPL).

■ Critical Mass Lab

The critical mass lab was used to develop data on the factors that are necessary to make a criticality or self-sustained nuclear reaction occur. Because plutonium is the key radioactive element on the Hanford Site, the research was based on plutonium criticality safety in various fuel cycles. This facility was located next to the strontium semiworks and ran from the early 1950s to the early 1980s. The plutonium used in the lab was reprocessed in PUREX.

■ 244-AR, -BXR, and -CR Process Vaults

There are three process vaults in the NE quadrant: the AR Vault, the BXR Vault, and the CR Vault. The vaults were composed of several process vessels or tanks used to prepare the waste for treatment or storage. Specific wastes from tanks can be pumped temporarily to the vaults and the wastes can be sent directly to desired tanks or processing facilities later.

The AR Vault was designed and constructed between 1964 and 1968 and is located next to the A and AX Tank Farms. The AR Vault has been in standby mode since 1978.

The 244-BXR Vault is located south of the 241-BX Tank Farm and was constructed between 1950 and 1951. The BXR Vault began operating in 1952 and became inactive in 1956. The waste in the vault was difficult to handle, so the vault was high-pressure steam jetted in 1976. The vault was interim isolated after 1976 and interim stabilized in March 1985. Tank BXR-004 was removed in 1963.

The CR Vault was constructed in 1952 and is located next to the C Tank Farm. Saltwell waste from the C Tank Farm is interim stored in the CR Vault. The 244-BXR and -CR Vaults were constructed to aid in the recovery of uranium from bismuth

phosphate metal waste. The CR Vault received waste from the Strontium Semiworks Plant en route to the 241-C Tank Farm.

■ **204-AR and 204-S Railroad Car Facilities**

The 204-AR rail car unloading facility was built in 1981 and replaced the 204-S rail car unloading facility. The facilities were built for unloading radioactive liquid waste tank cars.

Liquids or slurries from the 1314-N Building in the 100 Area and the 340 Building in the 300 Area are unloaded at the 204-AR unloading facility.

1.5.4 Timeline

The following timeline represents the times and spans of different events that occurred during the lifetime of major Hanford plants in the 200-East and 200-West Areas. The plants were the main contributors of waste currently contained in SSTs. The following list of abbreviations and corresponding meanings are used on the timeline:

PUREX:	Plutonium uranium extraction process
UO ₃ :	Uranium trioxide
PPF:	Plutonium finishing plant
RG-RB:	Rubber glove - remote button line
RMA:	Remote mechanical "A" line
RSE:	Recuplex solvent extraction
RMC:	Remote mechanical "C" line
PRF:	Plutonium reclamation facility
PCB:	Polychlorinated biphenyls
WESF:	Waste encapsulation and storage facility
ITS:	In-tank solidification (units 1 and 2)
PWR:	Pressurized water reactor
REDOX:	Reduction oxidation process

PROCESSES PRODUCING WASTE CONTAINED IN 200 AREA TANK FARMS

1.6 Safety Issues

The safety issues that effect the tanks can be divided into two groups: watch list and non-watch list. The watch lists are listings of the tanks believed to pose potential safety hazards to the environment and the public. Non-watch list issues are of concern because they may impact the environment.

1.6.1 Watch List Safety Issues

Issues in these tanks were identified as "issues/situations that contain most necessary conditions that could lead to worker (onsite) or offsite radiation exposure through an uncontrolled release of fission products" under Public Law 101-510, Section 3137, of the National Defense Authorization Act of Fiscal Year 1991 (i.e., the Wyden Amendment). As of October 1993, 45 SSTs and 6 double-shell tanks are on a watch list. In the NE quadrant, 21 of the 66 SSTs are on a watch list. The four watch list designations described in this report are: ferrocyanide, hydrogen/flammable gas, organic salts, and high-heat load. The following sections provide a general description and criteria of the different watch lists. For a more complete explanation, refer to the Hanford Site Tank Farm Facilities Interim Safety Basis (WHC 1993).

■ Ferrocyanide

A tank containing or believed to contain greater than 1,000 gram moles of ferrocyanide (dry basis) is on the Ferrocyanide Watch List.

■ Hydrogen and Flammable Gas

Most tanks were placed on the Hydrogen/Flammable Gas Watch List because of the potential to contain flammable gases rather than the verified presence of hazardous concentrations. Hydrogen/Flammable Gas Watch List tanks have been identified as unreviewed safety questions due to the concern of a flammable gas burn resulting in a radiological release.

■ Organic Salts

Tanks containing or believed to contain more than the equivalent of 10% by weight of sodium acetate or 3 wt% total organic carbon (TOC) on a dry basis received a watch list designation as in the Tank Farm Surveillance and Waste Status Summary Report (Hanlon 1993).

■ High-Heat Loads

Tanks with a heat load greater than 40,000 Btu/hr are designated as high-heat load tanks. Tank 241-C-106 is the only high-heat load tank on the High-Heat Load Watch List.

A tank that does not appear on a watch list but has a heat load less than 40,000 Btu/hr is considered a low-heat load tank by default.

The following table lists the tanks in the NE quadrant that appeared on a watch list as of October 1993. A current list is published monthly in the Tank Farm Surveillance and Waste Status Summary Report (Hanlon 1993).

NE Quadrant Watch List Tanks

Tank	Category	Tank	Category
A-101	Hydrogen	BY-108	Ferrocyanide
AX-101	Hydrogen	BY-110	Ferrocyanide
AX-103	Hydrogen	BY-111	Ferrocyanide
B-103	Organic Salts	BY-112	Ferrocyanide
BX-102	Ferrocyanide	C-103	Organic Salts
BX-106	Ferrocyanide	C-106	High-Heat Load
BY-103	Ferrocyanide	C-108	Ferrocyanide
BY-104	Ferrocyanide	C-109	Ferrocyanide
BY-105	Ferrocyanide	C-111	Ferrocyanide
BY-106	Ferrocyanide	C-112	Ferrocyanide
BY-107	Ferrocyanide		

1.6.2 Non-Watch List Safety Issues

Tank leaks are a safety hazard because of the potential chemical and radioactive liquid releases to the ground. Corrosion is the main cause of tank leaks and stabilization, integrity, and intrusion prevention are discussed in the corrosion section of this report. Criticality, tank bumps, and toxic vapor releases are other safety issues that do not require a watch list designation and/or continual monitoring under the Wyden Amendment.

■ Corrosion

Corrosion is believed to be caused by localized or general reduction in SST mild carbon liner thickness. Localized liner thickness reduction is caused by three types of corrosion: pitting corrosion, stress corrosion cracking, and crevice cracking. General liner thickness reduction may be caused by uniform corrosion.

The SSTs were removed from service on or before November 21, 1980 and no longer accept wastes. When the SSTs are deactivated, an effort is made to minimize potential leaks into the earth by reducing the liquid waste contained in the SSTs. Primary stabilization is the first deactivation process of removing the supernatant or free liquid above the solid wastes within the SSTs. Supernatant is removed by turbine or jet pumps in a saltwell system, low-volume submersible pumps, or in situ drying. In

saltwell systems, the liquid is pumped from the waste through a pipe screen in a manner similar to ground water pumping. Tanks with less than 50,000 gal of drainable interstitial liquid and less than 5,000 gal of supernatant liquid are known as interim stabilized tanks. Liquid waste is sent to the evaporator/crystallizer concentrating facilities and the concentrated waste is deposited into double-shell tanks (DSTs).

Eventually, SSTs will be interim stabilized and prepared for intrusion prevention (formerly known as interim isolation). Stabilization efforts will be completed prior to final closure of the SSTs. Partial isolation of the tanks includes sealing the piping and risers that are not required for pumping or other stabilization methods. Intrusion prevention is the total physical and administrative effort involved in sealing inactive storage tank accesses against liquid additions while still allowing for long-term surveillance.

There are 67 assumed/confirmed leaking SSTs in the 200 East and West Areas with 32 in the NE quadrant. The remaining 34 tanks in the NE quadrant are sound. There are 51 interim stabilized tanks in the NE quadrant and 15 noninterim stabilized tanks. Intrusion prevention is in place for 46 SSTs in the NE quadrant, and 20 tanks are at the partial interim isolation stage.

■ Criticality

Criticality is an inadvertent self-sustained nuclear chain reaction. Studies have concluded that a nuclear criticality accident in the tank farms is probably not an imminent risk. However, definitive knowledge of the fissile material inventory and distribution within the tanks is lacking. Therefore, criticality remains a safety issue. The key criticality radionuclide on the Hanford Site is plutonium. A fissile material criticality prevention specification of 125 kg has been placed on the tanks. An unusual occurrence report involving nuclear criticality was filed in June 1991 for Tank 241-C-104. An inventory of 56 kg was calculated later which indicated a low probability for criticality. Criticality is considered an unreviewed safety question but is not affected by the Wyden Amendment according to the Hanford Site Tank Farm Facilities Interim Safety Basis (WHC 1993).

■ Tank Bumps

Tank bumps have been an issue at Hanford since 1953 with the last bump occurring in 1968. The A Tank Farm is known to have had tank bumps. Tank bumps occur when heat from the hotter solid waste in the lower portion of the tank is suddenly transferred to a near boiling supernatant. Mixing can be achieved by "roll over" or sudden restart of airlift circulators which results in rapid fluid vaporization and a sudden internal tank pressurization that causes a bump. The three documented bumps that have occurred were due to airlift circulator failure followed by rapid startup of the airlift circulators which causes rapid mixing. Two key factors have been identified to control bumping: liquid and solid temperatures must be maintained as far away from the local boiling point as possible

and airlift circulators and ventilation systems must be operated as designed. A tank bump is extremely unlikely if airlift circulators and vent flow rates are maintained at 500 to 1,000 ft³/min per tank and 50 ft³/min to the airlift circulators, according to the Hanford Site Tank Farm Facilities Interim Safety Basis (WHC 1993).

■ Toxic Vapor Releases

The safety concern of toxic vapor releases have been analyzed recently at Hanford. Odors have been released from the C Tank Farm in the NE quadrant and from Tank 241-SY-101. Tank 241-C-105 has experienced releases that have resulted in worker exposure. If toxic vapors are determined to exist in a tank, three safety recommendations should be followed: determine a release rate, determine offsite and onsite exposure concentrations, and determine if the release is a spray effect. The entire issue of toxic gas releases at the tank farms has just begun to be understood, Hanford Site Tank Farm Facilities Interim Safety Basis (WHC 1993).

2.0 AX Tank Farm

2.0.1 AX Tank Farm History

The AX Tank Farm is located east of Buffalo Avenue, west of Canton Avenue, and north of the A Tank Farm. The AX Tank Farm contains four 100 series, 1,000,000-gal, 75-ft diameter single-shell tanks. Except for a grid of drain slots below the SST liner used for leak detection and no cascade overflow lines between tanks, the AX tanks were designed similar to the flat bottom tanks in the A Tank Farm. The SSTs were designed for PUREX and B Plant aging waste, which is boiling or self-concentrating with a maximum fluid temperature of 250°F and a 5 to 10 year boiling period. The AX Tank Farm is the fifth and final generation of SSTs built on the Hanford Site.

One tank contains double-shell slurry feed, two tanks contain concentrated complexant waste, and one tank contains non-complexed waste. The 1993 color aerial photograph of the AX Tank Farm shows 100 series tank orientation, a diversion station, valve pits, a vehicle crossing pad, and a north arrow (see Appendix I). The valve pit and diversion box marked with 241-AY, are used for the 241-AY Tank Farm DSTs located west of the 241-AX Tank Farm. Finally, no cascade overflow lines are shown on the aerial photograph because the tanks were not equipped with cascade overflow lines.

The AX Tank Farm was constructed under project CAS-945 using specification HW-8237. The cylindrical tanks are 75 ft in diameter with a flat bottom and a 6-in. radius knuckle bottom. Similar to other single-shell tanks, the AX tanks were designed with a primary steel tank liner, a concrete shell and dome, and flat bottoms. The tanks are covered with approximately 6 ft of overburden. Because the tanks are used specifically for boiling waste, airlift circulators were installed to control waste temperatures.

Various coatings and sealants were used to ensure that no leaks and intrusions exist. The steel liner and risers were given two coats of red lead paint. Two methods were used on the outside of the tank for sealing purposes. The concrete against the steel liner had copper strips installed between lifts, and a mastic caulk was used to seal the tank steel liner and the concrete dome.

2.0.1.1 AX Tank Farm Waste History

The AX Tank Farm was designed for storage of self-concentrating waste. PUREX organic and high-level waste was stored in Tank 241-AX-103 while B Plant high-level waste was stored in Tanks 241-AX-101 and -102.

Tank sluicing was used to reduce the amount of strontium in the sludge and the amount of cesium in the liquid. These two radioactive isotopes were found to be the main heat generating sources in the A and AX tanks. The A and AX Tank Farms were

sluiced in the early 1970s. The sluiced waste was sent to the AR sludge processing vault. Tanks 241-AX-101, -102, and -103 were sluiced to a small heel and released to be saltcake waste receivers. After the AX tanks were sluiced in the 1970s, Tank 241-AX-104 was found to be leaking and was removed from service.

2.0.1.2 AX Tank Farm Temperature History

Each of the four tanks in the AX Tank Farm contains one thermocouple tree with a minimum of 18 thermocouple probes. Tank 241-AX-102 has 18 probes, 8 of which have temperature readings recorded. Tanks 241-AX-101 and -103 are Hydrogen Watch List tanks and have a weekly temperature reading requirement. Tanks 241-AX-102 and -104 have a semiannual reading requirement.

2.0.1.3 AX Tank Farm Integrity

The four 1-Mgal tanks in the AX Tank Farm are out of service. As of July 1993, Tanks 241-AX-101 and -103 are categorized as sound and Tanks 241-AX-102 and -104 are assumed leakers. Tank integrity surveillance methods include liquid observation wells, surface level measurements, and leak detection wells (i.e., drywells). If a discrepancy is observed as a result of the surveillance activities, notification, reporting, documentation, and investigation of the surveillance anomaly (data outside the criteria limits), changing trend, or departure from steady state is conducted in accordance with the appropriate procedure. Generally, the first plan of action is to determine if the discrepancy is caused by something other than a tank leak or intrusions.

Tank 241-AX-101 has a liquid observation well that is used to monitor the interstitial liquid level. The maximum deviation from the established baseline value is a 0.3-ft increase or a 0.4-ft decrease. The interstitial liquid level is monitored on a weekly basis with a neutron probe and on request with a gamma probe.

Surface level monitoring for manual measurement devices in the AX Tank Farm is conducted quarterly. The maximum allowable deviations from the established baseline are 2 to 3 in. for an increase and no criterion for a decrease, depending on the tank. The no criterion designation was established for waste tanks containing sludge with little or no solution. For these tanks, a surface level decrease is not a valid means of leak detection because the level may decrease due to sludge slumpage (especially during saltwell pumping), tape flushes, or perforation of the exposed sludge at the point of probe contact. Tanks with a saltcake surface and an automatic Food Instrument Corporation gauge may have a 10-in. decrease criteria which was established to alert the operating personnel if the gauge unwinds in search of a conductive liquid surface.

The AX Tank Farm has 31 leak detection wells that were drilled from 1974 to 1978. The drywells are monitored monthly or on request with a scintillation probe with the following action

criteria for increasing activity: if the normal readings are less than 200 c/s, the readings must double and exceed 200 c/s; if the normal readings are greater than 200 c/s, the readings must double. If the above limits are exceeded, drywells associated with assumed leaking tanks are monitored for contamination migration. The criteria limits do not apply except where new radiation peaks occur. If increasing drywell activity has not exceeded the action criteria stated above, appropriate personnel will determine if increased monitoring is required.

The figure showing the AX Tank Farm layout and including information on the peak drywell, tank integrity, and tank isolation is in Appendix F. The drywell information is based on summarized data prior to 1987 and data collected from January 1990 to the present.

2.0.1.4 AX Tank Farm Historical Sample Analysis Data

Tank waste samples have been analyzed to characterize the supernatant, sludge, and saltcake in each tank. Data have been compiled for this report from samples obtained from the late 1950s to September 1989.

2.0.2 Current Status of AX Tank Farm

Two tanks in the AX Tank Farm are identified on the Hydrogen Watch List: Tanks 241-AX-101 and -103 were added officially in January 1991 and are declared unreviewed safety questions because of the potential consequence of a radiological release resulting from a flammable gas burn. Previous safety analysis did not investigate this potential. These tanks are monitored for temperature on a weekly basis.

The total volume of waste in the AX Tank Farm is 906,000 gal: 3,000 gal of supernatant; 233,000 gal saltslurry; 633,000 gal of saltcake; 7,000 gal of unknown solids; and 40,000 gal of sludge.

2.0.2.1 AX Tank Farm In-Tank Photographs

The AX Tank Farm is a fifth generation tank farm and contains the youngest single-shell tanks (i.e., four tanks built in 1963-64). To help maintain homogeneity in the waste, 22 airlift circulators were installed in each tank. Dry wells were dispersed throughout each tank to measure the interstitial liquid level. A temperature probe and a level measurement tape are next to each dry well. The latest photos for each tank date from August 1987 to June 1989. Little or no activity has occurred since the photos were taken; therefore, they should be accurate representation of the current tank contents.

2.1 Tank 241-AX-101

2.1.1 241-AX-101 Tank History

2.1.1.1 Waste History Tank 241-AX-101

The waste history narrative in the following paragraph is from "A History of the 200 Area Tank Farms" (Anderson 1990). Tank 241-AX-101 filling began in the first quarter of 1965. The tank received PUREX waste, fission product waste, and organic wash waste between the first quarter of 1965 and the last quarter of 1967. From the first quarter of 1968 to the first quarter of 1973, B-Plant high-level waste was sent to the tank. From the second quarter of 1973 to the second quarter of 1975, the tank received PUREX sludge supernatant. The tank was sluiced for strontium and cesium recovery and for the reduction of sludge for saltcake storage from the third quarter of 1975 through the first quarter of 1976. During the fourth quarter of 1976 and the first quarter of 1977, the tank contained 242-A Evaporator waste. The tank contained residual evaporator liquor or double-shell slurry feed from the second quarter of 1977 until the fourth quarter of 1980. Presently, the tank waste is classified as double-shell slurry feed.

The waste history narrative of the primary additions that follow in this paragraph are from the "Waste Status and Transaction Record Summary" (Agnew 1994). Tank 241-AX-101 received PUREX organic wash waste from the first quarter of 1965 until the fourth quarter of 1967. The tank received B Plant high-level waste from the first quarter of 1968 until first quarter of 1969. From the second quarter of 1968 until the third quarter of 1980 the tank received PUREX high-level waste. The tank received PUREX low-level waste from the second quarter of 1968 until the second quarter of 1969. During the third quarter of 1974 the tank received wastewater. From the third quarter of 1975 until the second quarter of 1976, the tank received strontium recovery waste.

The tank was deactivated on November 3, 1980 and a level adjustment was made in May 1952. The tank was partially isolated in December 1982. The tank integrity is classified as sound, but the tank is awaiting interim stabilization. The liquid observation well data appear to be off baseline (see sketch ES-TKS-E7). In-tank photographs were taken on the following dates: August 1977, September 1978, February 1980, October 1981, and August 1987. Three pH readings are listed on Sketch ES-TKS-E7 in Appendix C: 10.4 in May 1953, 12.5 in July 1975, and >14.0 in November of 1980. The current maximum temperature reading from October 1993 is 138° F. Sketch ES-TKS-E7, which shows a graphical representation of Tank 241-AX-101 level history, and the historical waste level data used to make it are in Appendix C.

2.1.1.2 Temperature History 241-AX-101

There are 19 thermocouple probes in Tank 241-AX-101 on a single thermocouple tree in riser 9B. Other risers previously used for monitoring the waste temperature were risers 7A, 7B, 7C, 7D, 11A, 11B, 11C, 13A, 13B, and 13C. Specific thermocouple elevations are available for all probes except thermocouple 19. In-tank temperature readings from the tank in-service date to October 1976 are sporadic. Thermocouples 1 through 10 have very similar temperature readings that span from October 1976 to the present. Thermocouples 11 through 16 show the same trends and cover the same time frame as the lower thermocouples, although readings are as much as 55°F cooler. Data are available from February 1984 to the present for thermocouples 17 and 18. The only temperature reading available for thermocouple 19 is in May 1993, so the probability that this probe exists is minimal.

Review of the Tank 241-AX-101 level history indicates that until the end of 1976, thermocouples 1 through 15 were located in or near the liquid level, and thermocouples 16 through 19 were in the vapor space. In January 1977, the first 9 thermocouples were in or near the solids level, thermocouples 10 through 14 were in or near the liquid level, and the rest were in the vapor space. Thermocouples 12 through 14 appear to have been in the vapor space caused by a liquid level drop in October 1977. Another liquid level decrease from October 1979 to April 1980 shifted thermocouples 10 and 11 into the vapor space. From April 1980 to March 1981, there was a liquid level spike with an inverse spike in the solids level where thermocouples 1 through 5 were in the solids level, thermocouples 6 through 13 were in the liquid level, and the rest appear to have been in the vapor space. Thereafter, thermocouples 1 through 11 measured in or near the solids level and the rest appear to have been in the vapor space.

The first available, high, or only waste temperature reading in May 1969 was approximately 240°F. A sum of the squares regression line fit for thermocouples 1 through 10 starting in 1976 shows an overall zero slope $\pm 9.6^\circ\text{F}$ with an average r square value of 0.06. However, a sum of the squares regression line fit for thermocouples 11 through 18 starting the same time shows a slightly negative near zero slope $\pm 12.2^\circ\text{F}$ with an average r square value of 0.22. For the first 12 thermocouples, there is an increase of 55°F starting in October 1976. A pronounced temperature increase spike of 40°F is apparent between 1980 and 1981 for thermocouples 11 through 16. An abrupt low temperature of approximately 40°F is apparent in thermocouples 2 through 12 in August 1993. Because there is only one point available for thermocouple 19, a regression and variability analysis is impossible. An annual temperature undulation is evident for thermocouples 11 through 18 starting in January 1991. From October 1976 to the present, the median temperature was 129°F with a minimum of 65°F and a maximum of 168°F.

Tank 241-AX-101 is a Hydrogen Watch List tank with weekly temperature monitoring requirements. Graphical representations of the thermocouple readings are in Appendix D.

2.1.1.3 Integrity of Tank 241-AX-101

Tank 241-AX-101 is categorized as sound and is partially isolated. The surface level in Tank 241-AX-101 is monitored with a Food Instrument Corporation gauge through riser 8C. A photographic evaluation is used to determine liquid waste volume, while a Food Instrument Corporation gauge is used for solid waste volume. The gauge is set in the intrusion mode for a 1-in. increase. If the Food Instrument Corporation gauge fails, manual field measurements will be conducted quarterly, and the maximum allowable increase from the 278.2-in. baseline is 3 in. There is no criterion for a decrease. Data are not available for a surface level plot due to the Food Instrument Corporation gauge setting.

The Tank 241-AX-101 liquid observation well is located in riser 9A. The interstitial liquid level is monitored weekly with a neutron probe and on request with a gamma probe. The maximum allowable deviations from the baseline value are a 0.3-ft decrease and a 0.4-ft increase. Sketch ES-TKS-E7 in section 4.1.1.1 is a graphical representation of the liquid observation well data.

Eight drywells are identified for Tank 241-AX-101. Drywells 11-01-04 (not active prior to 1986, current readings < 200 (c/s)), 11-01-05 (active prior to 1990, current readings < 200 c/s), 11-01-09 (not active prior to 1990, current readings < 200 c/s), and 11-01-10 (not active prior to 1990, current readings < 200 c/s) have or had readings greater than the 50 counts/second (c/s) background radiation.

Graphical representations of the active drywells from January 1990 to the present are in Appendix F. Each graph includes the peak c/s, the depth at which the peak occurred, and the date of the reading.

2.1.1.4 Historical Sample Analysis Data for Tank 241-AX-101

The results of two waste analyses for Tank 241-AX-101, one in October and one in November of 1980, are included in this report. The first analysis, taken at the surface, contained 50% settled solids. The solids were primarily carbonate and nitrate. The second analysis included two samples (one 2 ft and one 4 ft below the waste surface) that were used to determine the composition and viscosity of the waste. Both samples contained greater than 60% by volume solids at room temperature. The solids were primarily sodium nitrate with sodium nitrite present. Data have also been tabulated for a strontium and a cesium analysis performed in 1976. Tables presenting the results of these analyses are in Appendix H.

2.1.2 Current Status of Tank 241-AX-101

Tank 241-AX-101 entered service in 1965 and currently stores 748,000 gal of waste. The waste is comprised of 223,000 gal of saltslurry; 512,000 gal of saltcake; 13,000 gal of sludge; and no supernatant with 298,000 gal of pumpable interstitial liquid remaining. The tank has been on the Hydrogen Watch List since January 1991 and is passively ventilated. The tank is categorized as sound with partial interim isolation completed. Tanks in the AX Tank Farm do not cascade. A plan view and tank cross-section that depict the approximate waste level and riser configuration are in appendix G. Tank 241-AX-101 has 59 risers and ten of the risers are available for use: one 12-in. riser (no.3A), one 4-in. riser (no.6), and eight 6-in. risers (nos. 8A, 8B, 8D, 8E, 8F, 8G, 9C, and 9F).

2.1.2.1 Waste Layer Volume Approximation for Tank 241-AX-101

A comparative analysis of all layer approximations for the entire tank farm and the data used to derive the tank layer approximations are located in Appendix K.

2.1.2.2 In-Tank Photograph 241-AX-101

The 1988 photographic montage of the Tank 241-A-101 interior displays a yellow-grey to grey saltcake surface with no visible liquid (see Appendix I). The tank contains about 750,000 gal of waste which corresponds to a depth of approximately 22.5 ft. The heating coil in the top right corner was used to keep the waste from cooling too quickly, thus preventing the thermal gradient limitations on the steel and concrete surrounding the tank from being exceeded. The typical airlift circulator shown in the bottom right is representative of all the other unlabelled circulators in the photo. No waste has been added to or removed from this tank since these photographs were taken; therefore, the picture should be representative of current tank contents.

2.1.3 Synopsis Tank 241-AX-101

(To be completed)

2.2 Tank 241-AX-102

2.2.1 241-AX-102 Tank History

2.2.1.1 Waste History Tank 241-AX-102

The waste history narrative in the following paragraph is from "A History of the 200 Area Tank Farms" (Anderson 1990). Tank 241-AX-102 had a water heel for the last two quarters of 1965 and the first two quarters of 1966. The tank began receiving PUREX high-level waste and organic wash waste in the third quarter of 1966 which continued until the fourth quarter of 1968. During the last quarter of 1968, Tank 241-AX-102 was declared a spare tank. From the first quarter of 1969 through the third quarter of 1975, the tank received B Plant high-level waste. From the fourth quarter of 1975 to the second quarter of 1976, the tank was sluiced to recover strontium and cesium and prepare the tank for saltcake storage. From the third quarter of 1976 until the second quarter of 1977, the tank contained evaporator feed. In 1977, a P-10 pump was installed to be used later for supernatant pumping. From the third quarter of 1977 to the first quarter of 1978, the tank contained residual liquor from the 242-A Evaporator. From the second quarter of 1978 to 1980, the tank received complexant waste or concentrated complexant waste. Presently the tank waste is classified as concentrated complexant waste.

The waste history narrative of the primary additions that follow in this paragraph are from the "Waste Status and Transaction Record Summary" (Agnew 1994). Tank 241-AX-102 received wastewater from the third quarter of 1965 until the third quarter of 1975. From the third quarter of 1966 until the third quarter of 1967 the tank received PUREX organic wash waste. The tank received B Plant high-level waste from the second quarter of 1969 until the first quarter of 1971. During the second and third quarters of 1969 the tank received PUREX low-level waste. From the second quarter of 1971 until the third quarter of 1975 the tank received "washed" PUREX sludge waste.

The tank was declared inactive in 1980 and intrusion prevention was completed in 1982. A level adjustment was made in the fourth quarter of 1983. In 1988, the tank was declared an assumed leaker with a 3,000 gal leak volume. A level adjustment was made prior to pumping in 1988 to determine if evaporation was the cause of liquid loss. Because evaporation was not the cause of liquid loss, Tank 241-AX-102 was supernatant pumped and declared interim stabilized in September 1988. In-tank photographs were taken on the following dates: several in 1977, February 1979, May 1981, November 1983, August 1987, several in 1988, and June 1989.

Two pH readings are shown on sketch ES-TKS-E8: 13.7 in January 1980 and 11.3 in August 1988. The current maximum temperature reading from July 1993 is 76° F. Sketch ES-TKS-E8, which shows a graphical representation of Tank 241-AX-102 level history, and the historical waste level data used to make it are in Appendix C.

2.2.1.2 Temperature History 241-AX-102

The single thermocouple tree in Tank 241-AX-102 has 18 thermocouple probes to monitor the waste temperature through riser 9C. Other risers previously used for monitoring the waste temperature were 7A, 7B, 7C, 7D, 11A, 11B, 11C, 13A, 13B, and 13C. Elevations are available for all the thermocouple probes. Recorded temperature readings from the tank in-service date to January 1991 are sporadic. Relative to the other tanks in the AX Tank Farm, very little temperature data are available for this tank and readings have been recorded with thermocouples 1 through 6, 17, and 18. The probes show one data point except for 5 and 18 which have 5 and 2 readings respectively. The data for thermocouples with one and two readings were recorded in 1993. Data currently available for thermocouple 5 span from 1990 to the present. Review of the Tank 241-AX-102 level history indicates that thermocouple 1 was in or near the solids level and the rest were in the vapor space.

The first available waste temperature reading, in the vapor space, in July 1969 was approximately 200°F. A sum of the squares regression line fit from January 1990 to the present is applicable only to thermocouple 5 which shows an overall zero slope ± 10.4 with an r square value of 0.06. From January 1990 to the present, the high temperature was 131°F and the low temperature was 73°F, with a median temperature of 91°F. By September 1993, thermocouple 5 was designated as the only working probe. Tank 241-AX-102 is a low-heat load tank, and is scheduled to have semiannual temperature data taken in January and July.

Plots of the thermocouple readings in Tank 241-AX-102 are in Appendix D.

2.2.1.3 Integrity of Tank 241-AX-102

Tank 241-AX-102 is categorized as an assumed leaker and is interim stabilized with intrusion prevention completed. The Tank 241-AX-102 surface level is monitored quarterly with a manual tape. A Food Instrument Corporation gauge is used to determine liquid waste volume while a sludge measurement device is used for solid waste volume. The maximum allowable increase from the 13.25-in. baseline is 2 in. There is no criterion for a decrease. As of July 1993, the surface level monitoring is out of compliance with applicable documentation. A graphical representation of the surface level measurements from January 1991 to the present is in Appendix E. The surface level plot for the past year has a decreasing trend. The surface level peaked at 15 in. during the fourth quarter of 1992 and steadily decreased to 9.5 in. during the fourth quarter of 1993. Two inaccurate data points that have been superseded by apparent reruns are also included on the plot.

In May 1989, Tank 241-AX-102 had a decrease criteria limit that was exceeded and an unusual occurrence report was issued. The decrease was attributed to settling solids in the tank after it was pumped.

Tank 241-AX-102 does not have a liquid observation well. Ten drywells are identified for Tank 241-AX-102. Drywells 11-02-11 (no longer active) and 11-02-12 (active prior to 1990, current readings < 200 c/s) have or had readings greater than the 50 counts/second (c/s) background radiation.

A graphical representation of the active drywell from January 1990 to the present is in Appendix F. The graph includes the peak c/s, the depth at which the peak occurred, and the date of the reading.

2.2.1.4 Historical Sample Analysis Data for Tank 241-AX-102

Samples from Tank 241-AX-102 were submitted for analysis on five occasions between September 1974 and November 1988. In September 1974, a sludge analysis showed the waste to be very soft and reddish-brown containing 9.31 curies/liter of ⁸⁹⁺⁹⁰Sr. After Tank AX-102 was sluiced, the residual sludge was analyzed for heat output in July 1977. Of six samples, all but one were dark, reddish-brown, viscous, and sticky. The remaining sample was dark brown, dry, hard, and solid. In January 1980, a hot boildown analysis showed that the waste contained significant amounts of organic carbon and carbonate. TOC for this tank was found to be 23.3 g/l in 1990. A follow-up analysis in February 1980 was conducted to determine the nucleation and crystallization point of the tank waste. In November 1988, an analysis was conducted in response to indications that the tank was no longer sound. The waste sample was a dark, coffee-brown liquid with no solids content. Five tables presenting the results of these analyses are in Appendix H.

2.2.2 Current Status of Tank 241-AX-102

Tank 241-AX-102 entered service in 1966 and currently stores 39,000 gal of waste. The waste is comprised of 3,000 gal of supernatant; 7,000 gal of unknown waste; 23,000 gal of saltcake; and 6,000 gal of sludge with 3,000 gal of pumpable liquid remaining. The tank is identified as a low-heat load tank, is passively ventilated, and is categorized as an assumed leaker with interim stabilization and intrusion prevention completed. Tanks in the AX Tank Farm do not cascade. A plan view and tank cross-section that depict the approximate waste level and riser configuration are in appendix G. Tank 241-AX-102 has 58 risers and ten risers are available for use: one 16-in. riser (no.3A), one 4-in. riser (no.7A), and eight 6-in. risers (nos. 8A, 8B, 8C, 8D, 8E, 8F, 8G, and 9F).

2.2.2.1 Waste Layer Volume Approximation for Tank 241-AX-102

A comparative analysis of all layer approximations for the entire tank farm and the data used to derive the tank layer approximations are located in Appendix K.

2.2.2.2 In-Tank Photograph 241-AX-102

The picture in Appendix I made up of 1989 photographs that indicate a dark blue surface with some reddish-brown solid material floating on a mostly liquid surface. These colors appear to have been heavily influenced by the photographic developing process. The picture is a little hazy or out-of-focus; however, major equipment items can be identified. The tank contains about 40,000 gal of waste which corresponds to a depth of approximately 1.5 ft. The typical airlift circulator shown in the bottom right is representative of all the other unlabelled circulators in the photo. The photographs were taken in 1989 and there haven't been any changes in the tank since then; therefore, the picture should be representative of the current tank contents.

2.2.3 Synopsis Tank 241-AX-102

(To be completed)

2.3 Tank 241-AX-103

2.3.1 241-AX-103 Tank History

2.3.1.1 Waste History Tank 241-AX-103

The waste history narrative in the following paragraph is from "A History of the 200 Area Tank Farms" (Anderson 1990). Tank 241-AX-103 received PUREX waste from the first quarter 1965 until the last quarter of 1972. From the first quarter of 1973 to the fourth quarter of 1975, the tank received PUREX sludge supernatant. The tank was sluiced for strontium and cesium recovery during the second and third quarters of 1976. From the third quarter of 1976 to the fourth quarter of 1977, the tank contained 242-A Evaporator feed waste. In the third quarter of 1977, the tank was sluiced again. A level adjustment was made in January 1978 and concentrated complexant waste was sent to the tank in the first quarter of 1978. The tank was sluiced during the first quarter of 1978 to prepare for saltcake waste. During the second, third, and fourth quarters of 1978, non-complexed waste was contained in the tank. A saltwell screen and pump were installed in the third quarter of 1978. During the first and second quarters of 1979, the tank received complexed and concentrated complexant waste. A level adjustment was made during May 1979. The tank began receiving double-shell slurry feed from the third quarter of 1979 until the second quarter of 1980. In the third quarter of 1980, the tank received non-complexed waste. Presently, the tank waste is classified as concentrated complexant.

The waste history narrative of the primary additions that follow in this paragraph are from the "Waste Status and Transaction Record Summary" (Agnew 1994). Tank 241-AX-101 received PUREX high-level waste from the second quarter of 1965 until the third quarter of 1980. From the third quarter of 1965 until the third quarter of 1980, the tank received PUREX organic wash waste. The tank received B Plant low-level waste during the second quarter of 1968. From the second quarter of 1968 until the first quarter of 1969, the tank received PUREX low-level waste. From the first quarter of 1969 until the fourth quarter of 1972, the tank received B Plant high-level waste. During 1975, the tank received wastewater. From the third and fourth quarters of 1975, the tank received washed PUREX sludge waste.

In October 1980, Tank 241-AX-103 became inactive and a level adjustment was made. Intrusion prevention was completed in 1982. A level adjustment was made during August 1987 and the tank was declared interim stabilized in August 1978. In-tank photographs were taken on the following dates: September 1976, several in 1977, April 1979, April 1980, December 1982, November 1983, and August 1987. Four pH readings are shown on Sketch ES-TKS-E9: 13.9 in November 1974, 10.1 in April 1975, 12.9 in March 1979, and >14.0 in December 1980. The current maximum temperature reading from October 1993 is 118° F. Sketch ES-TKS-E9, which shows a graphical

represents the Tank 241-AX-103 level history, and the historical waste level data used to make it are in Appendix C.

2.3.1.2 Temperature History 241-AX-103

The single thermocouple tree in Tank 241-AX-103 has 18 thermocouples to monitor the waste temperature through riser 13C. Other risers previously used for monitoring the waste temperature are 7A, 7B, 7C, 7D, 9A, 9B, 11A, 11B, 11C, 13A, and 13B. Elevations are available for thermocouple probes 1 through 6. Recorded temperature readings from the tank in-service date to January 1991 are sporadic. From October 1976 to the present, the 18 thermocouples have recorded similar temperatures with data covering different time periods. Data for thermocouples 1 through 6 span from 1976 to the present and data for thermocouples 7 and 8 span from 1976 to 1985. Data from thermocouples 9 through 16 differ slightly from the first 8 thermocouples and span from 1976 to 1985. Only two data points are available for thermocouples 17 and 18 in 1977.

The first available average waste temperature reading in January 1965 was approximately 185°F. A sum of the squares regression line fit of thermocouples 1 through 16 starting in 1976 shows an overall zero slope $\pm 7.4^\circ\text{F}$ with an r square value of 0.28. The only pronounced temperature increase for most thermocouples was between 40°F and 55°F from 1979 to 1981. Thermocouples 17 and 18 do not contain enough data points for an accurate regression or variability analysis. From October 1976 to the present, the median temperature is 92°F with a minimum of 58°F and a maximum of 148°F. Annual temperature undulations for thermocouples 1 through 6 are apparent starting after January 1991. Tank 241-AX-103 is a Hydrogen Watch List tank with a weekly temperature monitoring requirement.

Plots of the thermocouple readings for Tank 241-AX-103 are in Appendix D.

2.3.1.3 Integrity of Tank 241-AX-103

Tank 241-AX-103 is categorized as sound and is interim stabilized with intrusion prevention completed. The Tank 241-AX-103 surface level is monitored with a Food Instrument Corporation gauge through riser 9B. A Food Instrument Corporation gauge is used to determine liquid waste volume and a sludge measurement device is used for solid waste volume. The gauge is set in the intrusion mode for a 1-in. increase. If the Food Instrument Corporation gauge fails, manual field measurements will be conducted quarterly and the maximum allowable increase from the 41½-in. baseline value is 3 in. There is no criterion for a decrease. A graphical representation of the available surface level measurements, which are limited due to the current setting of the Food Instrument Corporation gauge, for the third and fourth quarters of 1991 and the first quarter of 1992 are in Appendix E.

The surface level remained steady during this time with readings ranging from 39.1 to 39.7 in.

An occurrence report was issued in March 1979 due to a liquid level increase in a leak detection pit. The cause for the intrusion was attributed to groundwater seepage through the drain bellows assembly into the leak detection pit.

Tank 241-AX-103 does not have a liquid observation well. Six drywells are identified for Tank 241-AX-103. Drywells 11-03-02 (active prior to 1990, current readings > 200 c/s), 11-03-07, and 11-03-09 (both no longer active) have or had readings greater than the 50 c/s background radiation.

Graphical representations of the active drywells from January 1990 to the present are in Appendix F. Each graph includes the peak c/s (some wells have multiple peaks), the depth at which the peak occurred, and the date of the reading.

2.3.1.4 Historical Sample Analysis Data for Tank 241-AX-103

Samples from Tank 241-AX-103 were taken at least six times between November 1974 and September 1980. In November 1974, a sludge sample was reported as being dark brown and very soft with a high silicon content. The particle size of 66 weight percent of the sludge was between 5 and 50 μm , 23 weight percent was between 55 and 100 μm , and 10 weight percent was greater than 100 μm . In 1976, ^{90}Sr content was reported at 22.4 Ci/l and ^{137}Cs at 3.11 Ci/l. In March and August 1979 hot buildown analyses were conducted. To support the deactivation of Tank 241-AX-103 scheduled for January 1981, a follow-on composition analysis was conducted in September 1980 which showed that the waste had crystallized and was thicker than indicated in earlier samples. One sample taken at this time was green and appeared to have solids suspended in it. Tables presenting the data obtained from these analyses are in Appendix H.

2.3.2 Current Status of Tank 241-AX-103

Tank 241-AX-103 entered service in 1965 and currently stores 112,000 gal of waste. The waste is comprised of 106,000 gal of saltcake; 6,000 gal of sludge; and no supernatant with 3,000 gal of pumpable interstitial liquid remaining. The tank has been on the Hydrogen Watch List since January 1991 and is passively ventilated. The tank is categorized as sound with interim stabilization and intrusion prevention completed. Tanks in the AX Tank Farm do not cascade. A plan view and tank cross-section that depict the approximate waste level and riser configuration are in Appendix G. Tank 241-AX-103 has 57 risers and eight risers are available for use: one 16-in. riser (no. 3A) and seven 6-in. risers (nos. 8B, 8D, 8E, 8F, 8G, 9F, and 9G).

2.3.2.1 Waste Layer Volume Approximation for Tank 241-AX-103

A comparative analysis of all layer approximations for the entire tank farm and the data used to derive the tank layer approximations are located in Appendix K.

2.3.2.2 In-Tank Photograph 241-AX-103

The 1989 montage for the Tank 241-AX-103 interior is hazy; however, it does indicate a light-brown or gray waste surface (difficult to determine), with visible features (see Appendix I). The major equipment items are visible and they have been labelled. About 118,000 gallons of waste are in the tank which corresponds to a depth of approximately 3.5 ft. The typical airlift circulator shown in the bottom right is representative of all the other unlabelled circulators in the photo. There has been little or no activity in the tank since the photographs were taken; therefore, the picture should be representative of the current tank contents.

2.3.3 Synopsis Tank 241-AX-103

(To be completed)

2.4 Tank 241-AX-104

2.4.1 241-AX-104 Tank History

2.4.1.1 Waste History Tank 241-AX-104

The waste history narrative in the following paragraph is from "A History of the 200 Area Tank Farms" (Anderson 1990). Tank 241-AX-104 received PUREX waste between the third quarter of 1965 and the fourth quarter of 1972. From the first quarter of 1973 to the second quarter of 1976, the tank contained PUREX sludge supernatant. Water was added in the second quarter of 1974. The tank contained evaporator feed from the third quarter of 1976 through the first quarter of 1978. Cesium feed was sluiced in the third quarter of 1976. The tank was sluiced for strontium and cesium recovery during the third quarter of 1977. The tank was declared an assumed leaker in 1977 with an approximate 8,000-gal leak volume. The leak was attributed to a vapor line and vessel vent header. A level adjustment was made during May 1978 and the tank was primary stabilized in September 1978. Presently, the tank waste is classified as non-complexed.

The waste history narrative of the primary additions that follow in this paragraph are from the "Waste Status and Transaction Record Summary" (Agnew 1994). Tank 241-AX-104 received wastewater from the third quarter of 1965 until the third quarter of 1974. From the third quarter of 1966 until the second quarter of 1968, the tank received PUREX high-level waste. The tank received PUREX organic wash waste during the first and second quarters of 1968. From the second quarter of 1968 until the first quarter of 1969, the tank received B Plant high-level waste. The tank received PUREX low-level waste from the second quarter of 1968 until the second quarter of 1969. During the first quarter of 1976, the tank received washed PUREX sludge waste.

A level adjustment was made in April 1984. Interim isolation and interim stabilization were completed in December 1982. In-tank photographs were taken on the following dates: several in 1977, several in 1978, May 1981, November 1983, and August 1987. One pH reading of 10.0 was taken in May 1975. The current maximum temperature reading from July 1993 is 98° F. Sketch ES-TKS-E10 which graphically represents the Tank 241-AX-104 level history and the historical waste level data used to make it are in Appendix C.

2.4.1.2 Temperature History 241-AX-104

The single thermocouple tree in Tank 241-AX-104 has 18 thermocouple probes in riser 9C. Other risers previously used for monitoring the waste temperature were 7A, 7B, 11A, 11B, 11C, 13A, 13B, and 13C. Elevations are available for all the thermocouple probes. Recorded temperature readings from the tank in-service date to October 1976 are sporadic. Thermocouples 1 through 16 have similar temperature readings that span from 1976 to 1993. Data are available from 1984 to 1993 for thermocouples 17 and 18. Review of

the Tank 241-AX-104 level history indicates that from April 1976 to July 1977 there was a liquid level increase, and that thermocouple 1 was in or near the solids level, thermocouples 2 through 12 were in or near the liquid level, and thermocouples 13 through 18 were in the vapor space. After July 1977, all the thermocouples appear to have been in the vapor space.

The first available average waste temperature reading in September 1966 was approximately 195°F. A sum of the squares regression line fit for all the thermocouples starting in 1976 to the present shows an overall zero slope $\pm 12.6^\circ\text{F}$ with an r square value of 0.05. An initial rapid temperature decrease is noticeable from 1976 to 1978 for thermocouples 1 through 12, where lower elevation thermocouples record more of a drop in temperature, in the range of 70°F to 120°F. From October 1976 to the present, the median tank temperature is 96°F with a minimum of 68°F and a maximum of 242°F. Tank 241-AX-104 is a low-heat load tank and is scheduled for semiannual temperature monitoring in January and July.

Plots of the thermocouple readings for Tank 241-AX-104 are in Appendix D.

2.4.1.3 Integrity of Tank 241-AX-104

Tank 241-AX-104 is categorized as an assumed leaker and is interim stabilized with intrusion prevention completed. The Tank 241-AX-104 surface level is monitored quarterly with a manual tape through riser 9A. A photographic evaluation is used to determine liquid waste volume while a manual tape is used for solid waste volume. The maximum allowable increase from the 3-in. baseline is 2 in. There is no criterion for a decrease. A graphical representation of the surface level measurements from January 1991 to the present are in Appendix E. The surface level has remained steady with the readings ranging between 1.25 and 4 in. Two erratic data points that have been superseded with apparent reruns are included on the plot measurements.

Tank 241-AX-104 does not have a liquid observation well.

Seven drywells are identified for Tank 241-AX-104. Drywells 11-04-01, 11-04-08, and 11-04-11 (all no longer active) had readings greater than the 50 c/s background radiation.

An occurrence report was issued in January 1976 due to increased drywell activity. The activity was attributed to migration of a vapor header leak identified from a preliminary ARHCO occurrence report issued in April 1975.

2.4.1.4 Historical Sample Analysis Data for Tank 241-AX-104

A strontium and a cesium analysis was performed in 1976; ^{90}Sr content was reported at 93.5 Ci/l and ^{137}Cs at 2.02 Ci/l. The waste in Tank 241-AX-104 was analyzed twice in 1977 to determine the $^{89+90}\text{Sr}$ content of the sludge. One sample was reported to be dark brown

and soft with interspersed small chunks of hard material. A sample received in the laboratory in 1974 and one received in 1977 were dissolved and evaluated in 1977 and from them five separate sets of analytical data were obtained. These analyses all were high in iron and aluminum. Tables presenting the results of these analyses are in Appendix H.

2.4.2 Current Status of Tank 241-AX-104

Tank 241-AX-104 entered service in 1966 and currently stores 7,000 gal of sludge with no pumpable liquid remaining. It is identified as a low-heat load tank that is passively ventilated. The tank is categorized as an assumed leaker with interim stabilization and intrusion prevention completed. Tanks in the AX Tank Farm do not cascade. A plan view and tank cross-section that depict the approximate waste level and riser configuration are in Appendix G. Tank 241-AX-104 has 60 risers and seven are available for use: one 14-in. riser (no.3A), four 6-in. risers (nos. 8B, 8D, 8F, and 8G), and two 4-in. risers (nos. 16B and 16C).

2.4.2.1 Waste Layer Volume Approximation for Tank 241-AX-104

A comparative analysis of all layer approximations for the entire tank farm and the data used to derive the tank layer approximations are located in Appendix K.

2.4.2.2 In-Tank Photograph 241-AX-104

The Tank 241-AX-104 montage in Appendix I is made from 1987 photographs that indicate a thin layer of sludge with about 7,000 gal of waste which converts to approximately a 0.5 ft thick. The surface color varies from white to reddish-brown. The waste surface and the in-tank equipment are illustrated clearly in the picture and most equipment has been identified and labelled. The typical airlift circulator shown in the bottom right is representative of all the other unlabelled circulators in the photo. There have been no changes in the tank since these photographs were taken; therefore, the picture should be representative of the current tank contents.

2.4.3 Synopsis Tank 241-AX-104

(To be completed)

GLOSSARY

0.17	Transaction flag key-monthly volumes derived from semiannual reports.
0.33	Transaction flag key-monthly volumes derived from quarterly reports.
-1	Monthly report.
1AYIN	See Waste Abbreviations.
1AZIN	See Waste Abbreviations.
1C	See Waste Abbreviations.
1CEB	See Waste Abbreviations.
1CS	See Waste Abbreviations.
1st Generation Tank	The original tank design encompassing Tank Farms B, C, T, U (excluding the 200 series tanks), and BX. These tanks have an operating capacity of 530,000 gal, a 75-ft diameter, a 12-in. dish bottom, and a 4-ft knuckle. Also see Type II tanks.
222-B	See Facilities.
222-C	See Facilities.
222-T	See Facilities.
222-U	See Facilities.
224	See Waste Abbreviations.
224-F	See Waste Abbreviations.
231Z	See Waste Abbreviations.
242-A	See Facilities.
242-B	See Facilities.

242-S	See Facilities.
242-T	See Facilities.
2AYIN	See Waste Abbreviations.
2AZIN	See Waste Abbreviations.
2C	See Waste Abbreviations.
2nd Generation Tank	Same as original tank design (1st generation, or type II) except the operating capacity was increased to 758,000 gal. Also see Type III tanks.
2SYIN	See Waste Abbreviations.
3	Quarterly report.
3AWIN	See Waste Abbreviations.
3rd Generation Tank	The first generation of the type IV tanks, contains the SX Tank Farm only. These tanks have a 1,000,000 gal operating capacity, a 75-ft diameter, a 14.875-in. dish bottom, and no knuckle. Also see Type IV tanks.
4th Generation Tank	The second generation of the type IV tanks, contains the A Tank Farm only. These tanks are the same as the 3rd generation except they have a flat bottom. Also see Type IV tanks.
5	See Waste Abbreviations.
5-6#	Cells 5 and 6 from B-Plant.
5AWIN	See Waste Abbreviations.
5th Generation Tank	The third generation of the type IV tanks, contains the AX Tank Farm only. These tanks are the same as the 4th generation with the addition of grid drain slots beneath the steel liner bottom.
6	Semiannual report.

6AWIN	See Waste Abbreviations.
A Plant (PUREX)	See Facilities.
A1 SLTCK	See LANL Defined Waste List.
A2 SLTSLRY	See LANL Defined Waste List.
Active Tank	A tank that contains more than 33,000 gal of waste and/or is still involved in waste management operations.
Active Drywell	Drywell in which radiation readings of greater than 50 counts/second are detected. To be considered active, the readings must be consistent as to depth and radiation level for repeated readings.
ADD	Add primary waste from process.
ADJ	Adjustment to waste amount-see CORR.
AGE, AGING	Waste Abbreviation.
Aging Waste	High-level, first-cycle solvent extraction waste from the PUREX Plant (NCAW).
Airlift Circulator	The airlift circulators are installed in tanks used to age wastes. The circulators promote mixing of the supernate and prevent agglomeration of radionuclides. By maintaining motion within the body of liquid, the circulators minimize superheat buildup and, consequently, minimize bumping.
Annulus	A vessel space in the form of a ring; the space between concentric walls.
AR Vault	A structure containing tanks and chemical processing equipment that is used for waste processing or storage operations.
AR	See LANL Defined Waste List.

Assumed Leaker	A waste storage tank for which surveillance data, in the past, has indicated a loss of liquid attributed to a breach of integrity.
Assumed Re-leaker	A designation that exists after a tank has been declared an "assumed leaker" and then the surveillance data indicate a new loss of liquid attributed to a breach of integrity.
Assumed Leaking Tank	In 1984, the criteria designations of "suspect leaker," "questionable integrity," "confirmed leaker," "declared leaker," "borderline," and "dormant" were merged into one category now reported as "assumed leaker."
B SLTCK	See LANL Defined Waste List.
B	See Waste Abbreviations.
B Plant (222-B)	See Facilities.
B860N	See Waste Abbreviations.
Background Radiation	Radioactivity from naturally occurring sources; primarily radiation from cosmogenic and naturally occurring radionuclides.
Baseline	A reference; for example, a specified liquid level or radiation level against which new information is compared.
BFSH	See Waste Abbreviations.
BL	See Waste Abbreviations.
BLEB	See Waste Abbreviations.
BLIX	See Waste Abbreviations.
BLIXB	See Waste Abbreviations.
BNW	Battelle Northwest Laboratory.
BNW	See Waste Abbreviations.

BPDCC	See Waste Abbreviations.
BPDCS	See Waste Abbreviations.
BPDCV	See Waste Abbreviations.
BPFPS	See Waste Abbreviations.
BPLCS	See Waste Abbreviations.
BPLDC	See Waste Abbreviations.
BPLDN	See Waste Abbreviations.
Bumping, Tank Bump	A tank bump occurs when solids overheat in the lower portion of the tank. The hot solids rapidly transfer heat to the liquid, some of which quickly vaporizes. The sudden pressurization caused by vapor generation is called a "bump".
BVCLN	See Waste Abbreviations.
BY SLTCK	See LANL Defined Waste List.
C Plant (222-C)	See Facilities.
C PLANT	See SSW.
Caisson	An underground structure used to store high-level waste; typical designs include corrugated metal or concrete cylinders, 55-gal drums welded end-to-end, and vertical steel pipes below grade.
Calcine	To heat a substance to a high temperature, but below its melting point, causing loss of volatile constituents such as moisture; refers also to the material produced by this process.
CARB	See Waste Abbreviations.
CAS	Cascade-see SET and END. This process filled three tanks with one pump using overflow siphoning. Normal use was with

a sequence of tanks such as 101, 102, 103, or 110, 111, 112.

Cascade	Eleven of the single-shell tank farms (all except the AX Tank Farm) were equipped with overflow lines between tanks. The tanks were connected in series and were placed at different elevations creating a downhill gradient for liquids to flow from one tank to another.
CASS	Acronym for Computer Automated Surveillance System.
Catch Tanks	Small capacity single-shell tanks associated with diversion boxes and diverter stations. The tanks are designed to receive any transfer line cleanout, spills or leakage from the boxes, or leakage from the adjacent pipe encasement.
CAW	Current acid waste; this is PUREX acid HLW.
CC	See Waste Abbreviations.
CCGL	See Waste Abbreviations.
CCGR	See Waste Abbreviations.
CCPL	See Waste Abbreviations.
CCPLX	See Waste Abbreviations.
CCW	Concentrated customer waste.
CDF	Composition data file or transaction flag key-unit volume assumed to make stream active.
CE	See Waste Abbreviations.
CELL 23	Waste from cell 23 at B-Plant. Cell 23 contained an evaporator.
CEM	See Waste Abbreviations.

CF	See Waste Abbreviations.
CON	See Waste Abbreviations.
COND	Condensate-see EVAP, EB.
Condensate	Liquid formed from cooling vapors.
Conductivity Probe	A device that completes an electrical circuit when contacted by a conductive material.
Confirmed or Storage Declared Leaker	The designation of any underground waste tank where the data are considered sufficient to support a conclusion with 95 percent confidence that the tank has leaked.
COOL	Change in waste volume due to cooling. See CORR.
CORR	Correction to waste amount-see ADJ, LEAK, COOL.
CP	See Waste Abbreviations.
CPLX	See Waste Abbreviations.
CR Vault	Facility located adjacent to C Farm, used for scavenging campaign following uranium recovery. Ferrocyanide was added to tank supernatants in CR Vault and the slurry was returned to C-Farm.
Crib	A linear excavation approximately 15 ft in depth, with a perforated pipe in the bottom. The ditch is backfilled with broken rock or other loose material and then covered by soil and by a liquid impermeable membrane; the pipe is then used to distribute intermediate level liquid wastes along the crib.
Crust	A hard surface layer that has formed on top of the liquid in many waste tanks that contain concentrated solutions.
CSFD	See Waste Abbreviations.

CSR	See Waste Abbreviations.
CST	See Waste Abbreviations.
CSWLE	See Waste Abbreviations.
CSWLW	See Waste Abbreviations.
CTW	Caustic waste for makeup.
CW	See Waste Abbreviations
CWP	See Waste Abbreviations.
CWP/ZR	See Waste Abbreviations.
CWP2	See LANL Defined Waste List.
CWR	See Waste Abbreviations.
CX70	See Waste Abbreviations.
D	Transaction Flag Key-Amount by difference.
DBP	Dibutyl phosphate.
DC	See Waste Abbreviations.
DCS	Acronym for dilute caustic solutions
DE	Acronym for diatomaceous earth that was added to Tanks 241-BX-102, -SX-113, -TX-106, and -U-104 from 1970 to 1972.
DE	See LANL Defined Waste List.
Deliquescent	A solid that is capable of absorbing moisture from the air and becoming a liquid.
Desiccant	A drying agent such as diatomaceous earth.
Diatomaceous Earth	Diatomite, a light friable siliceous material, derived chiefly from diatom (algae) remains that is added to selected underground waste storage tanks

to absorb and, thereby, immobilize residual liquids (i.e help to stabilize the tank).

DBP	Dibutyl phosphate.
DIL	Dilution
DILFD	Dilute feed
Ditch	A linearly oriented excavation often used for the temporary diversion or disposal of process waste streams.
Diversion Box	A below grade concrete enclosure containing the remotely maintained jumpers and spare nozzles for the routing of waste solution to storage tank farms.
DN/PT	See Waste Abbreviations.
DN/PD	See Waste Abbreviations.
DN	See Waste Abbreviations.
Double-Shell Tank	The newer underground waste storage tanks consisting of a concrete shell and two concentric carbon steel liners with an annular space between the liners.
Double-Shell Slurry	Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.
Double-Shell Slurry Feed (DSSF)	Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as DSS.
Drywell	A steel casing, generally 6 inches in diameter drilled into the ground to various depths, and used to insert monitoring instruments for measuring the presence of radioactivity or moisture

content.

Drywell (in-tank)	A sealed casing within a tank that is attached to a riser. It is used to insert experimental equipment, such as neutron or acoustical probes, to determine the level of drainable interstitial liquor.
DSS	See Waste Abbreviations.
DSSF	See Waste Abbreviations.
DUMM	See Waste Abbreviations.
DUMMY	See Waste Abbreviations.
DW	See Waste Abbreviations.
DWBIX	See Waste Abbreviations.
E	Transaction flag key-waste transferred through evaporator.
EB	See Waste Abbreviations.
EDTA	Ethylenediaminetetraacetic acid.
EF	See Waste Abbreviations.
EFD	See Waste Abbreviations.
END	Disconnect Cascaded Tanks, see CAS, Set.
Environs	Surrounding area, vicinity.
EV	Evaporation.
EVAP	See Waste Abbreviations.
EVAPF	See Waste Abbreviations.
Evaporator Feed	Any waste liquid that can be concentrated to form saltcake; e.g., low heat waste, dilute interstitial liquor, aged waste, and other radioactive waste solutions.

Evaporator-Crystallizer	242-A and 242-S waste concentration facilities that operate at a reduced pressure (vacuum) and are capable of producing a slurry containing about 30 volume percent solids at a specific gravity of greater than 1.6.
EVS	Partial neutralization in the 242-S Evaporator.
EVT	HEDTA destruction in the 242-B or 242-T Evaporators.
FD	See Waste Abbreviations.
FECN	Ferrocyanide wastes created during a scavenging campaign in 1953-57. See SCAV, POO, TOO.
Ferrocyanide	An ion composed of iron and cyanide with the chemical formula of $\text{Fe}(\text{CN})_6^{4-}$.
FIC	A Food Instrument Corporation automatic liquid level gauge based on a conductivity probe. At Hanford, they are electrically connected to a computer for data transmission, analysis, and reporting. Local readings may also be obtained from a dial.
First- And Second-Cycle Decontamination Wastes	Waste contained 10 percent of the original fission product activity and 2 percent of the products. By-product cake solution was mixed with product waste and neutralized with 50 percent caustic. The waste contained a mixture of suspended solids, hydroxides, carbonate and phosphate, scavenger metals, chromium, iron, sodium, and silicofluoride.
FLSH	See Waste Abbreviations.
FP	Fission Product Waste. Waste produced at B Plant and Hot Semiworks in campaigns for Cs and Sr recovery during the 1960s. Cs was removed from PUREX supernatant and Sr was removed from

	PUREX sludge; both were removed from acidic waste.
FP	See Waste Abbreviations.
GA	Gain to tank.
Gamma Ray	Electromagnetic radiation sometimes emitted by the nuclei of radioactive substances during decay, similar in nature to X-rays.
GAS	Slurry growth as a result of gas generation.
GM Instrument	Instrument for detecting low-level beta and gamma radiation using a Geiger-Mueller tube.
GROUP	A group of tanks where ITS averaged the supernatant phases-see ITS.
Gunitite	A building material consisting of a mixture of cement, sand, and water that is sprayed onto a mold.
H ₂ O	Water.
HDRL	See Waste Abbreviations.
HEAT	A tank correction, see CORR, COOL.
HEDTA	N hydroxy-ethylenediaminetriacetic acid.
Heel	The amount remaining in a vessel or container after most of the contents have been removed.
Hexone	Methyl isobutyl ketone, an organic solvent used in the REDOX solvent extraction process. Also known as Isobutyl methyl ketone, Methyl isobutyl ketone, 4-Methyl 2-pentanone, MIBK.
High-Level Waste	Waste from the fuel reprocessing operations in separations plants.
Historical Information	All information obtained from material

referenced in published documentation and unpublished sources. Unpublished sources include electronically retrieved data (i.e. temperatures, liquid observation well, sampling, and surface level) and photographs.

HLO	See Waste Abbreviations.
HLO	Hanford Laboratory Operations.
HLW	See Waste Abbreviations.
HOT-SEMI	See HS, SSW.
HS	See Waste Abbreviations.
HS	Hot Semi-Works. A pilot facility that had a variety of operations. C Plant.
HWVP	Dilute, non-complexed waste from the vitrification plant.
I&S	Tank isolated and stabilized.
Inactive Tank	A tank that has been removed from liquid-processing service, has been pumped to less than 33,000 gal of waste, and is waiting to be, or is in the process of being, stabilized and interim isolated. Includes all tanks not in active or active-restricted categories. Otherwise inactive contingency spares that would be used if an active tank failed are also included.
INST	Change in tank level due to change in instrumentation.
Interim Isolated	An administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box.
Interim Stabilized	A tank which contains less than 50,000 gallons of drainable interstitial liquid

and has less than 5,000 gallons of supernatant liquid. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow must also have been at or below 0.05 gallons per minute before interim stabilization is completed.

Interstitial Liquor	The liquid that fills the interstices or the void volume in the solid material in a waste tank.
Interstitial	The volume within a solid matrix made up of the crevices, cracks, and void spaces.
Intrusion Mode FIC Setting	The FIC probe is positioned a short distance above the waste surface. If the surface level of the waste in the tank increases, thereby touching the probe tip, a positive indication is received.
Intrusion Prevention	This is an administrative designation reflecting the completion of the physical effort required to minimize the addition of liquid into an inactive storage tank, process vault, catch tank, sump, or diversion box.
ISO	Tank is interim-isolated.
ITS	The In-Tank Solidification Program was a program used to reduce waste volume directly by evaporating the wastes from inside certain tanks in the BX and BY Farms. The process used both hot air (ITS-1) and an electric heater (ITS-2).
IWW	See Waste Abbreviations.
IX	See Waste Abbreviations.
Jet Pump	A modified commercially available low capacity jet pump used as a salt well pump.
Knuckle	Point where the side wall and the bottom

	curved surface of a tank meet.
L222S	See Waste Abbreviations.
L3A4A	See Waste Abbreviations.
LaF	See Waste Abbreviations.
Lateral	Horizontal drywell under A Farm and certain SX Farm waste storage tanks.
Leak Detection Pit	Collection point for any leakage from AX Farm tanks. The pits are equipped with radiation and liquid detection instruments.
LEAK	Tank leak volume, see CORR.
LETF	Liquid effluent treatment facility from N-Reactor.
Level Adjustment	Any update in the waste inventory (or tank level) in a tank. The adjustments usually result from surveillance observations or historical investigations.
Level History	A diagram that shows the history of the waste level and waste level changes in a tank. The diagram also includes other related data.
Liquid Observation Well (LOW)	Liquid observation wells are used to monitor the interstitial liquid level (ILL) in single-shell waste storage tanks. Three probes are used to monitor changes in the ILL: acoustic, gamma, and neutron. Each method can indicate intrusions or leakage by increases or decreases in the ILL.
Liquid Level Best Engineering Judgement Line	During the initial fill of certain single-shell tanks, only the liquid level was reported. To adjust for the big increase in level height, which occurred when solids were added to the record, a sloped line was used to reflect solids volume between the

	initial fill and the time the solids data was recorded.
LO	Loss from tank.
LUNC	See Waste Abbreviations.
LW	See Waste Abbreviations.
Metal Waste (MW)	Waste from the extraction containing all the uranium, approximately 90 percent of the original fission product activity, and approximately 1 percent of the product. This waste was brought just to the neutral point with 50 percent caustic and then treated with an excess of sodium carbonate. This procedure yielded almost completely soluble waste at a minimum total volume. The exact composition of the carbonate compounds was not known but was assumed to be an uranium phosphate carbonate mixture.
Molarity	Number of gram molecular weights (moles) per liter of solution.
Mole	The amount of a substance with weight equal to the molecular weight in grams.
MW	See Waste Abbreviations.
MWF	See Waste Abbreviations.
N	See Waste Abbreviations.
NCAW	See Waste Abbreviations.
NCPL	See Waste Abbreviations.
NCPLEX	See Waste Abbreviations.
NCPLX	See Waste Abbreviations.
NCRW	See Waste Abbreviations.
Neutralized PUREX Acid Waste	The original plant in 1956 neutralized all the high-level waste and sent it to the 241-A Tank Farm. As fission product

	recovery started, a portion of the waste was treated for strontium recovery and then neutralized. As of 1967, all of the high-level waste left PUREX as an acid solution for treatment at B Plant.
Neutron Probe	Probe equipped with a neutron source and detector. They are used in dry well monitoring to determine the moisture content of the soil as one means for detecting leaks in underground waste storage tanks or pipelines.
NFAW	See Waste Abbreviations.
NHAW	See Waste Abbreviations.
NIT	HNO ₃ /KMNO ₄ solution added during evaporator operation.
Noise At The Bottom Of Well--Drywell Probe	Erroneous reading caused by probe coming contact with foreign objects at the bottom of a well.
Non-Complexed (NCPLX)	General waste term applied to all Hanford Site liquors not identified as complexed (containing organics).
NPH	Normal paraffin hydrocarbon.
NRAW	See Waste Abbreviations.
NRP82	See Waste Abbreviations.
NRPO4	See Waste Abbreviations.
NRSO4	See Waste Abbreviations.
NTA	Nitrilotriacetic acid.
Nuclear reactor	A device for creating a controlled nuclear chain reaction using atomic fuel, as for the production of energy.
Open Hole Salt Well	A well in which a pump is inserted in solid waste. Frequently used to remove the liquid from tanks containing less than 2 feet of sludge.

Organic Wash Waste (OWW)	The solvent used in PUREX was treated before reuse by washing with potassium permanganate and sodium carbonate, followed by dilute nitric acid and then a sodium carbonate wash.
Out-of-Service-Tank	A tank that does not meet the definition of an in-service tank. Before September 1988, these tanks were defined as inactive. {Note: all single-shell tanks (SSTs) are out of service.}
OWW	See Waste Abbreviations.
P	See Waste Abbreviations.
P1:	See LANL Defined Waste List.
P2:	See LANL Defined Waste List.
PADFG	See Waste Abbreviations.
PADWG	See Waste Abbreviations.
Partially Interim Isolated	The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for the isolation of risers and piping that will be required for jet pumping or for other methods of stabilization.
PAS	See Waste Abbreviations.
PASF	See Waste Abbreviations.
PAW	See Waste Abbreviations.
PD	See Waste Abbreviations.
PDBNG	See Waste Abbreviations.
PDBSU	See Waste Abbreviations.
PDBTG	See Waste Abbreviations.
PDCSS	See Waste Abbreviations.

PDL87	See Waste Abbreviations.
PDL89	See Waste Abbreviation.
PDNSG	See Waste Abbreviations.
PDS87	See Waste Abbreviations.
PDS89	See Waste Abbreviations.
PDSLGL	See Waste Abbreviations.
PDSUP	See Waste Abbreviations.
PFeCN	See Waste Abbreviations.
PFeCN1:	See LANL Defined Waste List.
PFeCN2:	See LANL Defined Waste List.
PFMMS	See Waste Abbreviations.
PFP (Z-Plant)	See facilities.
PFP	Plutonium finishing plant waste (see Z, 224, PRF).
PFPGR	See Waste Abbreviations.
PFPNT	See Waste Abbreviations.
PFPPT	See Waste Abbreviations.
PFPSL	See Waste Abbreviations.
pH	A measure of the hydrogen ion concentration in a solution.
Pile	An early term used to describe a nuclear reactor.
PL	See Waste Abbreviations.
PML89	See Waste Abbreviations.
PMS89	See Waste Abbreviations.
PN	See Waste Abbreviations.

PNF	See Waste Abbreviations.
POO-P##	In-Plant scavenging with FeCN-see SCAV, TOO-T##.
Portland Cement	A hydraulic cement made by finely pulverizing the clinker produced by calcining to incipient fusion a mixture of clay and limestone or similar materials.
PRF	Plutonium Reclamation Facility-Type of waste generated in Z-Plant for "finishing wastes". Solvent based extraction process using CCl ₄ /TBP.
Primary Addition	An addition of waste from a specific plant or process vault. These additions come from the "waste Status and Transaction Record Summary", WHC-SD-WM-TI-614 & -615 Rev. 0 DRAFT.
Primary Stabilization	The condition of an inactive waste storage tank after all liquid above the solids, other than isolated surface pockets, has been removed. Isolated surface pockets of liquid are those not pumpable by conventional techniques.
Probe	A device used to get information about the environment. In this report, an instrument package designed to be inserted in drywells, risers, or ports to measure waste characteristics.
PSL	See Waste Abbreviations.
PSS	See Waste Abbreviations.
PSSF	See Waste Abbreviations.
Psychrometry	Determination of humidity or dew point from wet and dry bulb temperatures with the difference in the two used as a measure of dryness in the atmosphere.
PT	See Waste Abbreviations.

PUREX	See Facilities.
PX86S	See Waste Abbreviations.
PXBAW	See Waste Abbreviations.
PXBSG	See Waste Abbreviations.
PXFTF	See Waste Abbreviations.
PXLOW	See Waste Abbreviations.
PXMET	See Waste Abbreviations.
PXMSC	See Waste Abbreviations.
PXNAW	See Waste Abbreviations.
Questionable Integrity	Any tank that has a small decrease in liquid level or a radiation increase in an associated dry well, for which the data are insufficient to support a conclusion with 95 percent confidence that the tank is sound.
R	See Waste Abbreviations.
R SLTCK:	See LANL Defined Waste List.
R1:	See LANL Defined Waste List.
R2:	See LANL Defined Waste List.
Radiation Zone	An area containing radioactive materials in quantities significant enough to require control of personnel entry to the area.
Radiation	Particles and electromagnetic energy emitted by nuclear transformations that are capable of producing ions when interacting with matter.
Readily available have Risers	Risers located above grade which do not apparatus attached to or contained in them.

REC	Receive waste from another tank-see XFER.
REDOX	See Facilities.
Removed From Service is not (Tanks)	Any tank that is a confirmed leaker or intended for reuse.
Rerun Drywell Data	Surveillance data which supersedes "suspect data".
RESO	See Waste Abbreviations.
RIX	See Waste Abbreviations.
RMC	Remote Mechanical C-Line -Process used in Z-Plant.
RSN	See Waste Abbreviations.
RSS	See Waste Abbreviations.
RTX	See Waste Abbreviations.
S	Transaction Flag Key-Partial neutralization (PNF).
S-Plant (REDOX)	See Facilities.
S1 SLTCK:	See LANL Defined Waste List.
S2 SLTSLRY:	See LANL Defined Waste List.
Salt Cake	Crystallized nitrate and other salts deposited in waste tanks, usually after active measures are taken to remove moisture.
Salt Well	A hole drilled or sluiced into a salt cake and lined with a cylindrical screen to permit drainage and jet pumping of interstitial liquors.
SCAV	Scavenging campaign with FECN on TBP, 1952-57. See TOO-T##, POO-P##.
Scavenged	Waste which has been treated with ferrocyanide to remove cesium from the

	supernatant by precipitating it into the sludge.
Scintillation Monitor	A radiation detection instrument based on the principle that light pulses are produced in some materials when they are exposed to radiation.
Self Concentrating	High-level liquid radioactive waste whose constituent radionuclides contribute sufficient decay heat to cause the solution to boil and/or self-concentrate.
Self-Evaporation	A waste material in which moisture is being lost as the moisture changes to a vapor and diffuses into the atmosphere.
SET	Connect cascaded tanks together-see CAS and END.
SIX	See Waste Abbreviations.
SL	See Waste Abbreviations.
SL3SY	See Waste Abbreviations.
Sludge	Primarily insoluble metal hydroxides and oxides precipitated from neutralized waste.
Slugs	An early term for uranium fuel elements which had been machined or extruded into short cylinders which were then clad or encased in corrosion-resistant metals.
Sluicing, or sluiced	To wash with water. At Hanford, this has meant to dissolve or suspend in solution by action of a high pressure water stream.
Slurry	Insoluble material suspended in water or aqueous solution.
Sound Tank	The classification of a waste storage tank for which surveillance data indicates there has been no loss of liquid attributed to a breach of

integrity.

SPRG	Sparge-transfer of water or volume
SRR	See Waste Abbreviations.
SRS	See Waste Abbreviations.
SRS	See Waste Abbreviations.
SSW	See Waste Abbreviations.
STAB	Tank stabilized by removal of liquid. Both floating suction and salt-well jet pumps used to remove liquid.
Stabilization	The removal, or immobilization, as completely as possible, of the liquid contained in a radioactive waste storage tank by salt well pumping, open hole salt well pumping, diatomaceous earth addition, etc.
Static Tank	A tank with no significant change in liquid level or involvement in transfer operations during a stated period of time.
Strontium Semi-Works	Called C-Plant or Hot Semi-Works, was a pilot plant for both Redox and Purex, then reconfigured for strontium recovery.
SU	See Waste Abbreviations.
Supernatant (Supernatant Liquid)	In waste storage tanks, the liquid quantity defined by the difference between the measured liquid level and the measured average solids level in a tank.
Surveillance	Regular or systematic watch kept over someone or something.
Suspect Data	Surveillance data which does not fall within the expected range and is superseded by "reruns."

SV	Transaction Flag Key-Amount by difference in solids.
SW RCR	Salt-well Receiver.
SWLIQ	See Waste Abbreviations.
SWLQW	See Waste Abbreviation.
T-Plant (222-T)	See Facilities.
T1 SLTCK:	See LANL Defined Waste List.
T2 SLTCK:	See LANL Defined Waste List.
Tank Farm	An area containing a number of storage tanks; i.e., a chemical tank farm for storage of chemicals used in a plant, or underground waste tank storage of radioactive waste.
TBP	Tributyl phosphate, a solvent used in the PUREX solvent extraction process.
TBP	See Waste Abbreviations.
TCO	See Waste Abbreviations.
Terminal Liquor	The liquid product from the evaporation-crystallization process which, upon further concentration, forms an unacceptable solid for storage in single-shell tanks. Terminal liquor is characterized by a caustic concentration of approximately 5.5 <u>M</u> (the caustic molarity will be lower if the aluminum salt saturation is reached first).
TFeCN	See Waste Abbreviations.
TH	See Waste Abbreviations.
Thermocouple Tree	A group of thermocouples assembled in a pipe and inserted into a waste tank for measuring temperatures at regular (normally 2 feet) vertical intervals.
Thermocouple,	A probe for measuring temperature,

Thermocouple probe	consisting of two dissimilar metal wires joined at one end (hot junction) with the free ends joined to a measuring instrument. Electrical potential changes due to temperature changes at the hot end are measured and calibrated to read out as temperature.
Thermowell	A well in a waste tank which contains thermocouples.
THL	See Waste Abbreviations.
Thorium	A chemical element which is also a fertile material. By fertile is meant that when subjected to radiation in a nuclear reactor it will be converted, in this case, to ²³³ uranium, a potential fuel.
TK	Tank. TK-17-2, however, was an early designation for B-Plant.
TL	See Waste Abbreviations.
TOO-T##	In-Tank scavenging with FECN, see SCAV, P##.
TPLAL	See Waste Abbreviations.
TPLAN	See Waste Abbreviations.
TPLAS	See Waste Abbreviations.
TR	Transfer from tank.
Trench	A deep furrow in the ground. At Hanford they are used for the disposal of solid waste.
trFlag	Transaction Flag Keys-used.by W-Trac-see CDF, D, E, S, SV, 1, 3, 6, 0.17, 0.33.
Tributyl Phosphate (TBP)	A chemical compound, also an organic solvent used in the PUREX solvent extraction process.

Type I Tank	These are the 200 series B, C, T, and U Farm tanks. They have an operating capacity of 55,000 gal, a 20-ft diameter, a 6-in. dish bottom, and a 3-ft knuckle. There is no generation associated with type I tanks.
Type II Tank	These are the original, 1st generation, tank designs, encompassing B, C, T, U (excluding the 200 series tanks), and BX Tank Farms. Also see 1st Generation Tank.
Type III Tank	These are the 2nd Generation tank designs, encompassing BY, S, TX, and TY Tank Farms. Also see 2nd Generation Tank.
Type IV Tank	These include 3rd, 4th, and 5th generation tank designs, encompassing SX, A, and AX Tank Farms respectively. Also see 3rd Generation Tank, 4th Generation Tank, and 5th Generation Tank.
Type V Tank	These are the first double shell tank designs, encompassing AY, AZ, and SY Tank Farms.
U-Plant (222-U)	See Facilities.
U1U2	See Waste Abbreviations.
UNKN	Unknown waste origin sink.
UNKNOWN:	See LANL Defined Waste List.
UR	Uranium recovery operation in 222-U, 1952-57. Created TBP (primary waste) and FECN (scavenging wastes). See TFeCN, PFeCN, POO, TOO, FeCN.
UR:	See LANL Defined Waste List.
Watch List Tank	An underground storage tank containing waste that requires special safety precautions because it may have a serious potential for release of high-level radioactive waste because of

uncontrolled increases in temperature or pressure. Special restrictions have been placed on these tanks by "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the National Defense Authorization Act for Fiscal Year 1991, November 5, 1990, Public Law 101-501 (also known as the Wyden Amendment).

WATER	Flush water from various sources.
WTR	Water.
WVP	Waste volume projections
XFER	Transfer of waste out of tank.
Z	See Waste Abbreviations
Z-Plant	See Facilities
Z-PLANT	PFP. Plutonium Finishing Plant.
ZAW	See Waste Abbreviations.
ZHIGH	See Waste Abbreviations.
ZLAB	See Waste Abbreviations.
ZLOW	See Waste Abbreviations.
ZPRFL	See Waste Abbreviations.
ZPRFS	See Waste Abbreviations.
ZRM	See Waste Abbreviations.
ZRMCL	See Waste Abbreviations.
ZRMCS	See Waste Abbreviations.

WASTE ABBREVIATIONS

1AYIN	Concentrated complex waste from 101 AY inventory
1AZIN	Pre 2-81 101AZ inventory
1C	First cycle waste
1CEB	1st cycle evaporator bottoms
1CS	1st cycle scavenging waste
224	224-U waste
224-F	224-U waste. LaF Pu finishing plant
231Z	Dilute, phosphate waste from 231Z laboratories
2AYIN	Pre 2-81 102AY inventory
2AZIN	Pre 2-81 concentrated complex waste from 102AZ inventory
2C	Second cycle waste
2SYIN	Pre 2-81 102SY inventory
3AWIN	Pre 2-81 103AW inventory
5-6	B-Plant tank 5,6 waste
5AWIN	Pre 2-81 105AW inventory
6AWIN	Concentrated phosphate waste in 106AW inventory
AGE, AGING	Aging waste
B	B-Plant high- level waste
B860N	Dilute, non-complexed waste from B Plant cell drainage
BFSH	B-Plant flush waste water
BL	B-Plant low-level waste

BLEB	B-Plant low-level evaporator bottoms
BLIX	B-Plant low level ion exchange?
BLIXB	B-Plant low level ion exchange bottoms?
BNW	Battelle Northwest Laboratory waste
BPDCC	Dilute, complexed waste from B Plant cesium processing
BPDCS	Dilute, complexed waste from B Plant strontium processing
BPDCV	Dilute, complexed waste from B Plant vessel clean-out
BPFPS	B Plant high Tru solids from retrieved PFP solids
BPLCS	Dilute, non-complexed waste from B Plant strontium processing
BPLDC	Dilute, complexed waste from B Plant cesium processing
BPLDN	Dilute, non-complexed waste from B Plant cesium processing
BVCLN	Dilute, non-complexed waste from B Plant vessel clean-out
CARB	PUREX organic wash waste
CC	Complexant concentrate waste
CCGL	B-Plant high Tru solids from retrieved complexed concentrate
CCGR	Dilute, non-complexed waste from retrieved complexed concentrate
CCPL	Complexant concentrate
CCPLX	Complexant concentrate-see CPLX

CE	Evaporator concentrate
CEM	Concrete-see CON
CF	Cesium feed
CON	Concrete-see CEM
CP	Concentrated phosphate waste from N Reactor decontamination
CPLX	Complex waste
CSFD	Cesium feed
CSR	Waste sent to B-Plant for cesium recovery
CST	Caustic solution
CSWLE	Complexed salt well liquid east area
CSWLW	Complexed salt well liquid west area
CW	Coating waste
CWP/ZR	Coating waste (PUREX), Zirconium cladding
CWP	Coating waste (PUREX)
CWR	Coating waste (REDOX)
CX70	Dilute, complexed mixture hot-semiworks Tru solids
DC	Dilute complexed waste
DN/PD	DN with P Tru solids
DN	Dilute non-complexed waste
DN/PT	DN with PFP Tru solids
DSS	Double-shell slurry
DSSF	Double-shell slurry feed

DUMM	Dummy waste
DUMMY	Dummy waste
DW	Decontamination waste
DWBIX	Decontamination waste and B-Plant ion exchange
EB	Evaporator bottoms
EF	Evaporator feed
EFD	Evaporator feed dilute
EVAP	Evaporator feed (post 1976)
EVAPF	Dilute, non-complexed waste from evaporator pad flush
FD	Feed dilute
FLSH	Flush water
FP	Fission product waste
HDRL	Hanford defense residual liquor
HLO	Hanford laboratory operations waste
HLW	High level waste-generic for all Hanford tank wastes
HS	Hot semiworks waste
IWW	PUREX #1 acid concentrator waste
IX	Ion exchange waste
L222S	222S laboratory, dilute non-complexed waste
L3A4A	Dilute non-complexed laboratory wastes from 300 & 400 areas
LaF	Lanthanum fluoride waste generated in PFP

LUNC	Dilute, non-complexed waste from UNC fuels fabrication
LW	Laboratory waste
MW	Metal waste
MWF	Metal waste feed
N	N-Reactor waste
NCAW	Neutralized current acid waste, primary HLW stream from PUREX process
NCPLEX	Non-complexed waste-see NCPLX
NCPLX	Non-complexed waste-see NCPLEX
NCPL	Non-Complexed waste
NCRW	Neutralized cladding removal waste-same as CWP.
NFAW	Aging waste from PUREX/PFM high level waste
NHAW	Aging waste from PUREX/PFM processing of NPR fuel
NRAW	Aging waste from PUREX/PFM residue acid waste
NRP82	Dilute, non-complexed waste from FY82 100-N area waste transfer
NRPO4	Dilute, phosphate waste from 100N area
NRSO4	Dilute, non-complexed waste from 100N area
OWW	Organic wash waste
P	PUREX waste
PADFG	Purex ammonia destruction waste, from fuels grade fuel
PADWG	Purex ammonia destruction waste, from

	weapons grade fuel
PAS	Purex acidified sludge
PASF	Purex ammonia scrubber feed
PAW	Purex acidified waste
PD	Purex decladding waste
PDBNG	Decladding sludge (non-Tru) from B Plant processing
PDBSU	Dilute, non-complexed waste from B Plant decladding waste
PDBTG	B Plant aging waste solids from Purex decladding waste
PDCSS	Dilute non-complexed Purex decladding waste, FY1986 only
PDL87	Purex decladding supernatant, 1987
PDL89	Purex decladding supernatant, non-Tru, spent metathesis removed
PDNSG	Non-Tru decladding sludge from Purex
PDS87	Purex decladding sludge
PDS89	Purex decladding sludge after FY89
PDSLGL	Purex decladding sludge sol Purex
PDSUP	Dilute, non-complexed waste, Purex decladding waste
PFeCN	Ferrocyanide sludge produced by in-plant scavenging of waste from uranium recovery
PFMMS	Dilute, non-complexed waste from shear/leach processing of NPR fuel
PFPGR	Dilute, non-complexed waste from retrieved PFP solids

PFPNT	Non-tru sludge from the PFP sol Z Plant
PFPPT	Dilute, non-complexed waste from the PFP (with TRUEX)
PFPSL	High-tru sludge from the PFP sol Z Plant
PL	PUREX low-level waste
PML89	Purex spent metathesis liquid after FY89
PMS89	Purex spent metathesis solids after FY89
PN	Purex neutralized cladding waste
PNF	Partial neutralized waste
PSL	Purex sludge sluiced during recovery of strontium
PSS	PUREX sludge supernatant
PSSF	Purex sludge supernatant feed
PT	Tru solids from 200W
PX86S	Dilute, non-complexed waste from Purex miscellaneous streams (NPR fuel) FY86
PXBAW	B Plant aging waste supernatant from retrieved aging waste
PXBSG	B Plant aging waste solids from retrieved aging waste
PXFTF	Dilute, non-complexed waste from Purex miscellaneous streams (FFTF)
PXLOW	Purex low level waste
PXMET	Purex dilute, non-complexed decladding: spent metathesis
PXMSC	Dilute, non-complexed waste from Purex miscellaneous streams (NPR fuel)
PXNAW	Aging waste from Purex high level waste

R	REDOX waste
RESL	Residual evaporator liquor
RIX	REDOX ion exchange waste
RSN	REDOX supernatant
RSS	Redox sludge supernatant
RTX	Redox ion exchange
SIX	PUREX ion exchange waste
SL	Sludge
SL3SY	Double shell slurry from end of FY80, 103SY inventory
SRR	Waste sent to B-Plant for strontium recovery
SRS	Strontium sludge
SRS	Strontium recovery supernatant
SSW	Strontium semiworks waste
SU	Supernatant
SWLIQ	Dilute, non-complexed waste from east area single shell tanks
SWLQW	Dilute, non-complexed waste from west area single shell tanks
TBP	Tri-Butyl Phosphate
TCO	Dilute non-complexed waste from terminal cleanout
TFeCN	Ferrocyanide sludge produced by in-tank or in-farm scavenging
TH	Thoria HLW or cladding waste
THL	Thoria low level waste

TL	Terminal liquor
TPLAL	Dilute, non-complexed waste from T Plant
TPLAN	Dilute, non-complexed waste from T Plant
TPLAS	Sludge from T Plant operations
U1U2	Dilute, non-complexed waste from U1/U2 groundwater pumping
Z	Z-Plant waste
ZAW	Purex waste stream from zirconium clad fuel
ZHIGH	Dilute, non-complexed waste from the PFP (without Truex)
ZLAB	Dilute, non-complexed waste from the PFP laboratories
ZLOW	Dilute, non-complexed waste from Pre-FY85 Z Plant operations
ZPRFL	Dilute, non-complexed waste from PRF processing
ZPRFS	PFP Tru solids from PRF processing
ZRMCL	Dilute, non-complexed waste from PFP RMC processing
ZRMCS	PFP Tru solids from PFP RMC processing

A. LANL Defined Wastes

LANL DEFINED WASTE LIST

A1 SLTCK	Saltcake waste generated from the 242-A evaporator-crystallizer from 1977 until 1980.
A2 SLTSLRY	Salt slurry waste generated from the 242-A evaporator-crystallizer from 1981 until 1994.
AR	"Washed" PUREX sludge from the AR vault.
B SLTCK	Saltcake waste generated from the 242-B evaporator from 1951 until 1955.
BY SLTCK	Saltcake waste generated from in-tank solidification units 1 and 2 between 1965 and 1974.
CWP2	Cladding waste-PUREX 2???
DE	Diatomaceous earth.
P1	PUREX high-level waste generated between 1955 and 1962.
P2	PUREX high-level waste generated between 1963 and 1967.
PFeCN1	Ferrocyanide sludge generated from in-plant scavenging of waste from uranium recovery.
PFeCN2	Same as PFeCN1, except used 0.0025 M ferrocyanide.
R SLTCK	Salt cake waste from the REDOX concentrator.
R1	REDOX waste generated between 1952 and 1957.
R2	REDOX waste generated between 1958 and 1966.

S1 SLTCK	Saltcake waste generated from the 242-S evaporator/crystallizer from 1973 until 1976.
S2 SLTSLRY	Salt slurry waste generated from the 242-S evaporator-crystallizer from 1977 until 1980.
T1 SLTCK	Saltcake waste generated from the 242-T evaporator from 1951 until 1955.
T2 SLTCK	Saltcake waste generated from the 242-T evaporator from 1965 until 1955.
UNKNOWN	Unkown waste type.
UR	Uranium recovery waste (also known as tributyl phosphate (TBP) waste).

FACILITIES

A Plant (PUREX)	The facility at Hanford which contains the latest solvent extraction process for recovery of both plutonium and uranium.
B Plant (222-B)	One of the three original bismuth-phosphate processing facilities. Later converted to a waste fractionation plant.
C Plant (222-C)	Initially a pilot plant for Redox, later a pilot plant for Purex and B-Plant waste partitioning.
S Plant (REDOX)	The facility at Hanford which contains the original extraction process for recovery of both plutonium and uranium.
T Plant (222-T)	One of the three original bismuth-phosphate processing facilities. Later converted to a decontamination facility.
U Plant (222-U)	One of the three original bismuth-phosphate processing facilities. Later converted to a uranium recovery plant.
PFP (Z Plant)	Plutonium Finishing Plant. The final operations for production of plutonium products are carried out in this facility.
242-A	A forced circulation vacuum evaporation system.
242-B	An evaporator that operates at atmospheric pressure. Also referred to as an open air type evaporator.
242-S	A forced circulation vacuum evaporation system.
242-T	An evaporator that operates at atmospheric pressure. Also referred to as an open air type evaporator.

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NOTES:
 CONSTRUCTED 1963-1964
 NOMINAL CAPACITY: 1,000,000 GAL
 75 FOOT DIAMETER TANK
 6 INCH RADIUS KNUCKLE.
 SURFACE LEVEL READING: PHOTO
 (LIQUIDS), FIC (SOLIDS)
 WHC REPORT WHC-EP-0347 SUPPLEMENT
 WHC REPORT WHC-EP-0182 (MONTHLY)
 WHC REPORT WHC-MR-0132
 WHC REPORT SD-WM-TI-356
 RHO-CD-0014 (MONTHLY)
 DWG. H-2-44562
 DWG. H-2-44565
 P. PUREX HIGH-LEVEL WASTE
 OWM. ORGANIC WASH WASTE
 FP. FISSION PRODUCT WASTE
 B. B-PLANT HIGH LEVEL WASTE
 DSSF. DOUBLE SHELL SLURRY FEED
 PSS. PUREX SLUDGE SUPERNATANT
 H₂O. WATER
 PL. PUREX LOW-LEVEL WASTE
 WTR. WASTE WATER
 SRR. STRONTIUM RECOVERY WASTE

LEGEND
 LIQUID OBSERVATION
 WELL (LOW)
 LIQUID LEVEL
 SOLIDS LEVEL
 SOLIDS LEVEL BEST
 ENGINEERING JUDGEMENT
 SUSPECT DATA UNDER INVESTIGATION BY WESTINGHOUSE HANFORD CO. *

AX TANK FARM
 NO CASCADE
 103 101
 104 102

U.S. DEPARTMENT OF ENERGY
 RICHLAND FIELD OFFICE
 ICF KAISER HANFORD
 241-AX-101 SINGLE-SHELL TANK
 LEVEL HISTORY 1965 TO 1993
 SOUND/NON-STABILIZED TANK
 WATCH LIST: HYDROGEN
 ES-TKS-E7
 DATE 6/94
 SCALE NONE
 SHEET 1 OF 1

ANDERSON 1990
WASTE TYPES

PRIMARY
ADDITIONS

P. OWM: B
H2O: HDRL: CPLX: EVAP: CC:

WTR: OWM: F.L: B: AR:

LEVEL IN
FEET
LEVEL IN
INCHES

NO OVERFLOW
INSTALLED

SUPERNATANT	3 K GAL
UNKNOWN	7 K GAL
SLTCK	23 K GAL
	1 K GAL
	5K GAL

T=76°F (7/93)

See Glossary for abbreviations and definitions

LEGEND
 LIQUID OBSERVATION WELL (LOW)
 LIQUID LEVEL
 SOLIDS LEVEL
 SOLIDS LEVEL BEST ENGINEERING JUDGEMENT

AX TANK FARM
NO CASCADE

NOTES:
 CONSTRUCTED 1963-1964
 NOMINAL CAPACITY: 1,000,000 GAL
 FLAT BOTTOM TANK, 6 INCH RADIUS KNUCKLE,
 75 FOOT DIAMETER TANK, FIVE (5) SOLIDS,
 SURFACE LEVEL MEASUREMENT DEVICE (SOLIDS),
 SLUDGE MEASUREMENT DEVICE (SOLIDS)
 WHC REPORT WHC-EP-0317 SUPPLEMENT
 WHC REPORT WHC-EP-0182 (MONTHLY)
 WHC REPORT WHC-EP-0152 (MONTHLY)
 WHC REPORT WHC-EP-0155 (MONTHLY)
 RHO-CD-0014 (MONTHLY)
 DWG. H-2-44562
 DWG. H-2-44563
 P. PUREX HIGH-LEVEL WASTE
 OWM: ORGANIC WASH WASTE
 HDRL: HANFORD DEFENSE RESIDUAL LIQUOR
 B-PLANT HIGH-LEVEL WASTE
 CPLX: COMPLEX WASTE
 EVAP: EVAPORATOR FEED
 CC: COMPLEXANT CONCENTRATE
 H2O: WATER
 WTR: WASTE WATER
 WTR: PUREX LOW-LEVEL WASTE
 PL: WASHED PUREX SLUDGE
 AR: WASHED PUREX SLUDGE

U.S. DEPARTMENT OF ENERGY
 RICHMOND FIELD OFFICE
 ICF KAISER HANFORD
 241-AX-102 SINGLE-SHELL TANK
 LEVEL HISTORY 1965 TO 1993
 ASSUMED LEAKER/STABILIZED TANK
 WATCH LIST: N/A

SITE	BLDG NO.	DATE	BY	CHK
B	2-1	ES-TKS-ER	6/94	
STATE	10010	10010	10010	10010

NOTES
CONSTRUCTED 1963-1964
NOMINAL CAPACITY: 1,000,000 GAL
FLAT BOTTOM TANK, 6 INCH RADIIUS KNUCKLE
7.5 FOOT DIAMETER TANK, FIC (140UNDS),
SURFACE LEVEL READING DEVICE (SOLIDS),
SLUDGE MEASUREMNT DEVICE (SOLIDS)
WHC REPORT WHC-EP-0317 SUPPLEMENT
WHC REPORT WHC-EP-0132 (NONHITLY)
WHC REPORT WHC-EP-0133 (NONHITLY)
WHC REPORT SD-WH-01-0256
RHO-CD-0014 (NONHITLY)

DWG. H-2-44552	P. PUREX HIGH-LEVEL WASTE
DWG. H-2-44552	NCPLX. NON-COMPLEXED WASTE
	DSSR. DOUBLE-SHELLED SLURRY FEED
	PLANT. PLANT WASTE
	CSLX. COMPLEXED SLUDGE SUPERNATANT
	H2O. CONCENTRATE
	WATER
	PUREX. ORGANIC WASH WASTE
	B. PLANT LOW-LEVEL WASTE
	WIR. WASTE WATER
	PUREX. HIGH-LEVEL WASTE
	PUREX. WASTE WATER
	PUREX. LOW-LEVEL WASTE

LEGEND

LIQUID OBSERVATION

SOLIDS LEVEL BEST
ENGINEERING JUDGEMENT

AX TANK FARM
NO CASCADE

A diagram showing a 2x2 grid of circles. The top-left circle contains the number 101, the top-right circle contains 102, the bottom-left circle contains 103, and the bottom-right circle contains 104.

U.S. DEPARTMENT OF ENERGY RICHLAND FIELD OFFICE ICF KAISER HANFORD	241-AX-103 SINGLE-SHELL TANK LEVEL HISTORY 1965 TO 1993 SOUND/STABILIZED TANK WATCH LIST: HYDROGEN
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SIZE	BLOC NO	OWC NO	DATE
B	241	ES-TKS-E9	6/94
SCALE	NONE	DOB NO	INCHES 1 OF 1

ANDERSON 1990	P:	PSS:	NCPX:
WASTE TYPES	OWW:	EF:	
	H ₂ O:	H ₂ O:	
PRIMARY	WTR:	B:	AR:
ADDITIONS			

NOTES:
 CONSTRUCTED 1963-1964
 1,056,000 GAL
 FLAT BOTTOM TANK, 6 INCH RADIUS KNUCKLE,
 75 FOOT DIAMETER TANK
 SURFACE LEVEL READING: PHOTO (LIQUIDS),
 MANUAL TAPE (SOLIDS)
 WHC REPORT WHC-EP-0347 SUPPLEMENT
 WHC REPORT WHC-EP-0182 (MONTHLY)
 WHC REPORT WHC-MR-0132
 WHC REPORT SD-WM-1-356
 RHO-CD-0014 (MONTHLY)
 DWG: H-2-44562
 DWG: H-2-44565

P: PUREX HIGH-LEVEL WASTE
 P-S: PUREX SLUDGE SUPERNATANT
 EF: FUMIGATOR FEED
 NCPX: NON-COMPLEXED WASTE
 IWN: PUREX #1 ACID CONCENTRATOR WASTE
 OWW: ORGANIC WASH WASTE
 H₂O: WATER
 WTR: WASTE WATER
 B: PLANT HIGH-LEVEL WASTE
 P: PUREX LOW-LEVEL WASTE
 AR: WASHED PUREX SLUDGE

LEGEND
 - - - - - LIQUID OBSERVATION
 - - - - - WELL (LOW)
 - - - - - LIQUID LEVEL
 / / / / / SOLIDS LEVEL
 BEST
 ENGINEERING JUDGEMENT

AX TANK FARM
 NO CASCADE

U.S. DEPARTMENT OF ENERGY
 RICHLAND FIELD OFFICE
 ICF KAISER HANFORD
 241-AX-104 SINGLE-SHELL TANK
 LEVEL HISTORY 1965 TO 1993
 ASSUMED LEAKER/STABILIZED TANK
 WATCH LIST: N/A

SITE	BLDG NO	DWG NO	ES-TKS-E10	DATE
B	2-1	100	6/94	
SCALE	1/1000	1/1000	1/1000	1/1000

241-AX-101 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)	LOW (in)
1-1965	847	308			
2					
3	646	235			
4	459	167			
1-1966	490	178			
2	820	298			
3	990	360			
4	682	248			
1-1967	674	245			
2	672	244			
3	666	242			
4	743	270			
1-1968	839	305			
2	839	305			
3	831	302			
4	833	303	41	15	
1-1969	985	358	39	14	
2	985	358	25	9	
3	990	360	26	9	
4	985	358	30	11	
1-1970	976	355	41	15	
2	987	359	69	25	
3	985	358	69	25	
4	989	360	69	25	
1-1971	985	358	56	20	
2	990	360	56	20	
3	990	360	56	20	
4	990	360	56	20	
1-1972	987	359	56	20	
2	984	358	56	20	
3	976	355	56	20	
4	111	40	58	21	
1-1973	110	40	58	21	
2	111	40	58	21	
3	132	48	58	21	
4	329	120	77	28	
1-1974	796	289	77	28	
2	714	260	77	28	
3	784	285	77	28	
4	787	286	69	25	
1-1975	495	180	69	25	
2	330	120	69	25	
3	74	27	61	22	
4	80	29	45	16	
1-1976	28	10	8	3	
2	8	3	4	1	

241-AX-101 SINGLE-SHELL WEC-SD-WM-ER-309, Rev.0
TANK LEVEL HISTORY

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)	LOW (in)
3	3	1	3	1	
4	66	24	3	1	
1-1977	286	104	3	1	
2	960	349	184	67	
3	954	347	578	210	
4	963	350	627	228	
1-1978	963	350	627	228	
2	963	350	627	228	
3	723	263	627	228	
4	723	263	627	228	
1-1979	723	263	627	228	
2	723	263	627	228	
3	723	263	627	228	
4	627	228	627	228	
1-1980	613	223	600	218	
2	605	220	600	218	
3	831	302	289	105	
4	762	277	525	191	
1-1981	762	277	762	277	
2	762	277	762	277	
3	762	277	762	277	
4	762	277	762	277	
1-1982	762	277	762	277	
2	748	272	748	272	
3	749	272	748	272	
4	748	272	748	272	
1-1983	748	272	748	272	
2	748	272	748	272	
3	748	272	748	272	
4	748	272	748	272	
1-1984	748	272	748	272	
2	748	272	748	272	
3	748	272	748	272	
4	748	272	748	272	
1-1985	748	272	748	272	
2	748	272	748	272	
3	748	272	748	272	
4	748	272	748	272	
1-1986	748	272	748	272	283
2	748	272	748	272	283
3	748	272	748	272	282
4	748	272	748	272	284
1-1987	748	272	748	272	283
2	748	272	748	272	284
3	748	272	748	272	282
4	748	272	748	272	282

241-AX-101 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)	LOW (in)
1-1988	748	272	748	272	284
2	748	272	748	272	282
3	748	272	748	272	284
4	748	272	748	272	283
1-1989	748	272	748	272	284
2	748	272	748	272	283
3	748	272	748	272	283
4	748	272	748	272	282
1-1990	748	272	748	272	283
2	748	272	748	272	
3	748	272	748	272	282
4	748	272	748	272	282
1-1991	748	272	748	272	283
2	748	272	748	272	281
3	748	272	748	272	283
4	748	272	748	272	
1-1992	748	272	748	272	
2	748	272	748	272	
3	748	272	748	272	282
4	748	272	748	272	283
1-1993	748	272	748	272	
2	748	272	748	272	281
3					282
4					

241-AX-102 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
1-1965				
2				
3	179	65		
4	184	67		
1-1966	184	67		
2	184	67		
3	330	120		
4	883	321		
1-1967	578	210		
2	359	131		
3	135	49		
4	594	216		
1-1968	648	236		
2	964	351		
3	704	256		
4	294	107	14	5
1-1969	663	241	0	0
2	820	298	17	6
3	895	325	19	7
4	858	312	10	4
1-1970	880	320	12	4
2	946	344	17	6
3	954	347	11	4
4	954	347	28	10
1-1971	954	347	38	14
2	954	347	32	12
3	963	350	38	14
4	960	349	38	14
1-1972	953	347	38	14
2	957	348	50	18
3	952	346	63	23
4	954	347	47	17
1-1973	113	41	50	18
2	113	41	50	18
3	126	46	50	18
4	129	47	50	18
1-1974	132	48	50	18
2	151	55	50	18
3	238	87	50	18
4	314	114	50	18
1-1975	349	127	50	18
2	50	18	50	18
3	77	28	50	18
4	66	24	47	17
1-1976	248	90	22	8
2	583	212	17	6

241-AX-102 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
3	767	279	17	6
4	72	26	19	7
1-1977	11	4	11	4
2	6	2	6	2
3	30	11	6	2
4	28	10	6	2
1-1978	28	10	6	2
2	149	54	6	2
3	94	34	6	2
4	91	33	6	2
1-1979	105	38	6	2
2	168	61	39	14
3	388	141	39	14
4	539	196	39	14
1-1980	740	269	39	14
2	87	32	39	14
3	54	20	29	11
4	54	20	29	11
1-1981	54	20	29	11
2	54	20	29	11
3	54	20	29	11
4	52	19	29	11
1-1982	52	19	29	11
2	52	19	29	11
3	52	19	29	11
4	52	19	29	11
1-1983	52	19	29	11
2	52	19	29	11
3	52	19	29	11
4	52	19	29	11
1-1984	52	19	29	11
2	52	19	29	11
3	52	19	29	11
4	52	19	29	11
1-1985	52	19	29	11
2	52	19	29	11
3	52	19	29	11
4	52	19	29	11
1-1986	52	19	29	11
2	52	19	29	11
3	52	19	29	11
4	52	19	29	11
1-1987	52	19	29	11
2	52	19	29	11
3	52	19	29	11
4	52	19	29	11

241-AX-102 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
1-1988	52	19	29	11
2	48	17	29	11
3	39	14	32	12
4	39	14	32	12
1-1989	39	14	36	13
2	39	14	36	13
3	39	14	36	13
4	39	14	36	13
1-1990	39	14	36	13
2	39	14	36	13
3	39	14	36	13
4	39	14	36	13
1-1991	39	14	36	13
2	39	14	36	13
3	39	14	36	13
4	39	14	36	13
1-1992	39	14	36	13
2	39	14	36	13
3	39	14	36	13
4	39	14	36	13
1-1993	39	14	36	13
2	39	14	36	13
3				
4				

241-AX-103 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
1-1965	844	307		
2				
3	913	332		
4	883	321		
1-1966	888	323		
2	996	362		
3	987	359		
4	985	358		
1-1967	967	352		
2	917	333		
3	908	330	14	5
4	946	344		
1-1968	985	358		
2	976	355		
3	932	339		
4	946	344	77	28
1-1969	974	354	83	30
2	1000	364	76	28
3	986	359	83	30
4	965	351	83	30
1-1970	985	358	80	29
2	986	359	83	30
3	971	353	69	25
4	971	353	69	25
1-1971	974	354	66	24
2	974	354	66	24
3	974	354	66	24
4	971	353	66	24
1-1972	976	355	66	24
2	976	355	66	24
3	685	249	66	24
4	567	206	69	25
1-1973	654	238	69	25
2	558	203	69	25
3	556	202	69	25
4	575	209	69	25
1-1974	568	207	69	25
2	653	237	69	25
3	870	316	72	26
4	822	299	88	32
1-1975	987	359	88	32
2	828	301	88	32
3	622	226	88	32
4	173	63	88	32
1-1976	88	32	88	32
2	72	26	70	25

241-AX-103 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
3	52	19	17	6
4	17	6	6	2
1-1977	11	4	11	4
2	6	2	6	2
3	25	9	6	2
4	17	6	6	2
1-1978	39	14	6	2
2	28	10	6	2
3	33	12	6	2
4	44	16	6	2
1-1979	547	199	6	2
2	545	198	6	2
3	888	323	6	2
4	888	323	6	2
1-1980	891	324	6	2
2	944	343	10	4
3	879	320		
4	121	44	121	44
1-1981	121	44	121	44
2	121	44	121	44
3	121	44	121	44
4	121	44	121	44
1-1982	121	44	121	44
2	120	44	120	44
3	120	44	120	44
4	120	44	120	44
1-1983	120	44	120	44
2	120	44	120	44
3	120	44	120	44
4	120	44	120	44
1-1984	120	44	120	44
2	120	44	120	44
3	120	44	120	44
4	120	44	120	44
1-1985	120	44	120	44
2	120	44	120	44
3	120	44	120	44
4	120	44	120	44
1-1986	120	44	120	44
2	120	44	120	44
3	120	44	120	44
4	120	44	120	44
1-1987	120	44	120	44
2	120	44	120	44
3	112	41	112	41
4	112	41	112	41

241-AX-103 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
1-1988	112	41	112	41
2	112	41	112	41
3	112	41	112	41
4	112	41	112	41
1-1989	112	41	112	41
2	112	41	112	41
3	112	41	112	41
4	112	41	112	41
1-1990	112	41	112	41
2	112	41	112	41
3	112	41	112	41
4	112	41	112	41
1-1991	112	41	112	41
2	112	41	112	41
3	112	41	112	41
4	112	41	112	41
1-1992	112	41	112	41
2	112	41	112	41
3	112	41	112	41
4	112	41	112	41
1-1993	112	41	112	41
2	112	41	112	41
3				
4				

241-AX-104 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
1-1965				
2				
3	344	125		
4	355	129		
1-1966	355	129		
2	400	145		
3	762	277		
4	886	322		
1-1967	872	317		
2	872	317		
3	869	316		
4	869	316		
1-1968	952	346		
2	979	356		
3	985	358		
4	979	356	10	4
1-1969	957	348	8	3
2	953	347	8	3
3	964	351	11	4
4	987	359	27	10
1-1970	998	363	58	21
2	998	363	48	17
3	1000	364	44	16
4	1000	364	52	19
1-1971	1001	364	47	17
2	1001	364	47	17
3	989	360	47	17
4	990	360	47	17
1-1972	984	358	47	17
2	984	358	47	17
3	245	89	47	17
4	677	246	55	20
1-1973	825	300	55	20
2	109	40	55	20
3	105	38	55	20
4	126	46	44	16
1-1974	114	41	44	16
2	111	40	44	16
3	763	277	44	16
4	732	266	47	17
1-1975	690	251	47	17
2	644	234	47	17
3	586	213	47	17
4	547	199	47	17
1-1976	352	128	44	16
2	325	118	44	16

241-AX-104 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
3	261	95	47	17
4	789	287	47	17
1-1977	171	62	55	20
2	61	22	22	8
3	17	6	11	4
4	25	9	3	1
1-1978	22	8	8	3
2	11	4	3	1
3	3	1	3	1
4	3	1	3	1
1-1979	6	2	3	1
2	6	2	3	1
3	6	2	3	1
4	6	2	3	1
1-1980	6	2	3	1
2	6	2	3	1
3	6	2	3	1
4	6	2	3	1
1-1981	6	2	3	1
2	6	2	3	1
3	5	2	5	2
4	5	2	5	2
1-1982	5	2	5	2
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1983	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1984	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1985	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1986	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1987	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3

241-AX-104 SINGLE-SHELL
TANK LEVEL HISTORY

WHC-SD-WM-ER-309, Rev.0

Year	Total (K gal)	Total (in)	Solids (K gal)	Solids (in)
1-1988	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1989	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1990	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1991	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1992	7	3	7	3
2	7	3	7	3
3	7	3	7	3
4	7	3	7	3
1-1993	7	3	7	3
2	7	3	7	3
3				
4				

Tank 241-AX-101
Historical High Or Only Waste Temperature

D-1

Tank 241-AX-102
Historical High Or Only Waste Temperature

Data obtained from RHO-CD-1172.

Tank 241-AX-103
Historical Average Waste Temperature

D-3

Data obtained from RHO-CD-1172.

Tank 241-AX-103
Historical High Or Only Waste Temperature

Data obtained from RHO-CD-1172.

Tank 241-AX-104
Historical Average Waste Temperature

Data obtained from RHO-CD-1172.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

**241-AX-101
Thermocouple 13**

25.33 ft.

Suspect data point for March 1993 ommitted.

**241-AX-101
Thermocouple 14**

27.33 ft.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993, and TWINS database July 1994.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

**241-AX-103
Thermocouple 5**

(Thermocouple Elevation Unavailable)

**241-AX-103
Thermocouple 6**

(Thermocouple Elevation Unavailable)

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

241-AX-103
Thermocouple 15

(Thermocouple Elevation Unavailable)

241-AX-103
Thermocouple 16

(Thermocouple Elevation Unavailable)

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

241-AX-104
Thermocouple 1

1.07 ft.

241-AX-104
Thermocouple 2

3.07 ft.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

241-AX-104
Thermocouple 7
13.07 ft.

241-AX-104
Thermocouple 8
15.07 ft.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

**241-AX-104
Thermocouple 9**

17.07 ft.

**241-AX-104
Thermocouple 10**

19.07

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

241-AX-104
Thermocouple 15

29.07 ft.

241-AX-104
Thermocouple 16

31.07 ft.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

Historical High or Only Waste Temperature Data							
Tank 241-AX-101							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
3/31/69		247	raw data - assumed year 1968	12/10/69		259	
4/14/69		253	raw data - assumed year 1969	12/16/69		257	
4/24/69		257	raw data - assumed year 1969	12/25/69		252	
4/26/69		246	raw data - assumed year 1969	12/29/69		252	
4/28/69		259	raw data - assumed year 1969	12/31/69		246	
5/1/69		253	raw data - assumed year 1969	1/1/70		238	
5/3/69		254		1/4/70		248	
5/8/69		258		1/8/70		247	
5/16/69		255		1/9/70		254	
5/21/69		254		1/13/70		252	
5/27/69		255		1/16/70		256	
5/29/69		260		1/19/70		250	
6/8/69		248		1/23/70		256	
6/13/69		253		1/28/70		243	
6/19/69		251		2/2/70		250	
6/26/69		252		2/7/70		248	
7/4/69		253		2/7/70		246	
7/5/69		253		2/13/70		251	
7/13/69		256		2/21/70		241	
7/20/69		251		2/23/70		237	
7/25/69		252		2/24/70		251	
7/31/69		248		2/27/70		249	
8/7/69		249		3/6/70		250	
8/12/69		249		3/14/70		241	
8/27/69		257		3/16/70		260	
8/29/69		253		3/18/70		247	
8/31/69		247		3/21/70		250	
9/4/69		248		3/24/70		243	
9/10/69		260		3/29/70		244	
9/14/69		241		3/29/70		247	
9/19/69		250		4/4/70		248	
9/21/69		252		4/7/70		260	
9/26/69		251		4/13/70		239	
10/1/69		254		4/15/70		238	
10/5/69		250		4/21/70		246	
10/13/69		251		4/25/70		249	
10/26/69		244		4/29/70		242	
10/29/69		246		4/30/70		244	
11/1/69		210		5/7/70		245	
11/6/69		242		5/8/70		257	
11/8/69		251		5/11/70		244	
11/12/69		245		5/18/70		242	
11/17/69		256		5/22/70		246	
11/19/69		254		5/24/70		254	
11/24/69		260		5/28/70		247	
11/27/69		254		5/29/70		237	
11/29/69		256		6/5/70		254	
12/3/69		246		6/5/70		243	
12/6/69		254		6/10/70		245	

Data obtained from Document RHO-CD-1172.

Historical High or Only Waste Temperature Data							
Tank 241-AX-101							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
6/13/70		250		7/19/71		248	
6/18/70		250		7/26/71		246	
6/21/70		251		8/1/71		248	
6/25/70		250		8/9/71		245	
6/27/70		252		8/14/71		246	
7/4/70		248		8/17/71		246	
7/28/70		246		7/6/70		238	
7/31/70		252		7/8/70		248	
8/9/70		247		7/11/70		252	
8/17/70		247		7/15/70		250	
8/20/70		251		7/18/70		249	
8/25/70		258		7/24/70		256	
8/31/70		252		8/26/71		244	
9/6/70		259		9/4/71		246	
9/12/70		243		9/7/71		246	
9/15/70		249		9/12/71		244	
9/19/70		246					
9/20/70		253					
9/23/70		250					
9/26/70		240					
9/30/70		250					
10/4/70		249					
10/9/70		259					
10/14/70		253					
10/19/70		252					
10/26/70		249					
10/30/70		253					
11/7/70		254					
11/13/70		256					
11/19/70		254					
11/28/70		257					
12/30/70		255					
1/7/71		254					
1/14/71		251					
1/22/71		250					
1/29/71		249					
2/6/71		252					
2/13/71		253					
2/20/71		243					
3/4/71		253					
3/15/71		251					
3/18/71		250					
3/23/71		250					
3/28/71		247					
4/4/71		246					
4/12/71		248					
4/27/71		246					
5/2/71		250					
5/9/71		252					
5/24/71		249					
5/29/71		255					
6/19/71		249					
6/27/71		244					
7/6/71		248					
7/12/71		246					

Data obtained from Document RHO-CD-1172.

Historical High or Only Waste Temperature Data							
Tank 241-AX-102							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
4/6/69		199	raw data - assumed year 1969	11/27/69		233	
4/12/69		200	raw data - assumed year 1969	11/29/69		223	
4/13/69		202	raw data - assumed year 1969	12/5/69		235	
4/18/69		205	raw data - assumed year 1969	12/7/69		231	
4/18/69		208	raw data - assumed year 1969	12/13/69		241	
4/22/69		213	raw data - assumed year 1969	12/16/69		230	
4/23/69		216	raw data - assumed year 1969	12/23/69		242	
4/29/69		221	raw data - assumed year 1969	12/26/69		225	
7/3/69		218		12/28/69		242	
7/6/69		216		12/31/69		229	
7/11/69		222		1/2/70		240	
7/11/69		224		1/5/70		229	
7/15/69		227		1/9/70		243	
7/18/69		217		1/13/70		227	
7/21/69		218		1/17/70		237	
7/24/69		213		1/25/70		242	
7/26/69		217		1/30/70		234	
7/29/69		213		2/9/70		243	
8/3/69		220		2/19/70		235	
8/11/69		221		2/27/70		243	
8/16/69		221		3/6/70		243	
8/18/69		234		3/10/70		238	
8/20/69		219		3/16/70		242	
8/25/69		230		3/20/70		238	
8/30/69		221		3/25/70		242	
9/6/69		218		3/30/70		238	
9/13/69		224		4/5/70		243	
9/16/69		219		4/15/70		237	
9/18/69		231		4/19/70		241	
9/25/69		230		4/25/70		246	
9/27/69		227		5/3/70		238	
10/5/69		232		5/8/70		240	
10/9/69		227		5/15/70		238	
10/12/69		233		5/21/70		238	
10/13/69		224		5/24/70		233	
10/18/69		233		5/28/70		243	
10/24/69		222		5/31/70		236	
10/29/69		222		6/5/70		245	
10/30/69		216		6/8/70		239	
11/5/69		222		6/12/70		246	
11/5/69		205		6/28/70		231	
11/11/69		231		6/29/70		244	
11/15/69		221		7/4/70		232	
11/17/69		233		7/5/70		240	
11/21/69		202		7/9/70		230	
11/23/69		237		7/11/70		240	
11/25/69		227		7/16/70		243	

Data obtained from Document RHO-CD-1172.

Historical High or Only Waste Temperature Data							
Tank 241-AX-102							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
7/24/70		244		5/13/71		239	
7/31/70		244		5/18/71		236	
8/6/70		241		5/30/71		236	
8/8/70		235		6/11/71		236	
8/18/70		249		6/17/71		236	
8/20/70		235		6/22/71		237	
8/23/70		242		7/2/71		237	
8/28/70		238		7/10/71		235	
8/31/70		243		7/16/71		232	
9/8/70		240		7/22/71		230	
9/15/70		241		7/31/71		230	
9/25/70		241		8/4/71		231	
10/2/70		240		8/8/71		229	
10/8/70		238		8/12/71		228	
10/14/70		240		8/19/71		226	
10/20/70		240		8/20/71		224	
10/29/70		244		8/25/71		221	
11/5/70		242		8/29/71		221	
11/13/70		247		9/1/71		224	
11/21/70		242		9/8/71		227	
11/27/70		250		9/15/71		225	
12/1/70		249					
12/7/70		243					
12/11/70		237					
12/12/70		243					
12/13/70		250					
12/15/70		252					
12/15/70		243					
12/18/70		249					
12/19/70		243					
12/21/70		249					
12/25/70		244					
1/3/71		243					
1/7/71		242					
1/14/71		239					
1/20/71		241					
1/28/71		243					
2/6/71		242					
2/8/71		240					
2/16/71		239					
2/19/71		236					
2/23/71		233					
3/1/71		236					
3/5/71		241					
3/10/71		237					
3/14/71		232					
3/21/71		236					
3/29/71		237					
4/2/71		240					
4/10/71		239					
4/17/71		239					
4/24/71		237					
4/27/71		238					
5/3/71		242					
5/8/71		244					

Data obtained from Document RHO-CD-1172.

Historical Average Waste Temperature Data
Tank 241-AX-103

Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
12/31/64		182		4/22/66	286		
1/13/65		185		4/28/66	283		
1/23/65		182		5/16/66	306		
1/30/65		182		5/20/66	308		
2/7/65		173		6/4/66	302		
2/15/65		177		6/29/66	301		
2/28/65		168		7/5/66	300		
3/16/65		191		7/29/66	301		
3/16/65		194		8/6/66	311		
4/3/65		211		8/13/66	310		
4/15/65		211		8/19/66	288		
4/17/65		209		8/21/66	282		
5/6/65		210		9/9/66	193		
5/16/65		212		9/11/66	282		
5/22/65		211		9/15/66	191		
6/4/65		212		9/22/66	305		
6/11/65		214		9/23/66	195		
6/19/65		212		10/9/66	217		
6/27/65		212		10/14/66	305		
7/1/65		228		10/14/66	220		
7/8/65		213		10/22/66	308		
7/28/65		213		10/22/66	240		
8/1/65		221		10/28/66	238		
8/10/65		243		11/12/66	242		
8/10/65		246		11/18/66	237		
8/19/65		243		11/25/66	308		
8/25/65		247		11/29/66	245		
9/8/65		249		12/3/66	306		
9/11/65		251		12/5/66	247		
9/18/65		253		12/8/66	284		
9/27/65		247		12/14/66	245		
10/11/65		251		12/26/66	245		
10/18/65		249		1/5/67	244		
10/24/65		251		1/22/67	283		
11/1/65		249		1/22/67	243		
11/8/65		256		1/26/67	254		
11/16/65		254		1/28/67	280		
11/22/65		256		2/1/67	250		
11/28/65		253		2/4/67	259		
12/6/65		258		2/10/67	248		
12/14/65		253		2/15/67	247		
12/26/65		256		2/20/67	252		
1/5/66		249		2/28/67	250		
1/13/66		255		3/7/67	258		
1/25/66		258		3/10/67	241		
1/31/66		262		3/31/67	255		
2/12/66		262		4/13/67	251		
2/23/66		264		4/21/67	259		
3/2/66		260		4/30/67	255		
3/13/66		259		5/1/67	259		
3/18/66		259		5/11/67	256		
3/24/66		258		5/12/67	259		
4/6/66		264		5/21/67	254		
4/8/66		268		5/27/67	255		
4/17/66		276		6/3/67	254		

Data obtained from Document RHO-CD-1172.

Historical Average Waste Temperature Data							
Tank 241-AX-103							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
6/6/67		258		5/31/68		234	
6/16/67		257		6/6/68		232	
6/23/67		257		6/11/68		233	
7/1/67		254		6/25/68		220	
7/13/67		257		6/28/68		229	
7/14/67		259		6/30/68		226	
7/20/67		259		7/12/68		227	
7/26/67		255		7/28/68		232	
8/3/67		258		8/4/68		231	
8/3/67		253		8/10/68		232	
8/16/67		258		8/19/68		230	
8/26/67		257		8/26/68		240	
9/5/67		259		8/31/68		220	
9/5/67		255		9/9/68		236	
9/11/67		259		9/25/68		237	
9/13/67		255		9/29/68		225	
9/15/67		255		10/15/68		232	
9/17/67		246		10/26/68		245	
9/20/67		258		10/30/68		237	
10/3/67		250		11/13/68		238	
10/9/67		248		11/18/68		236	
10/12/67		252		11/27/68		243	
10/16/67		253		11/30/68		238	
10/20/67		245		12/13/68		237	
10/23/67		253		12/26/68		237	
10/27/67		254		12/29/68		231	
10/31/67		257		1/5/69		236	
11/10/67		249		1/15/69		237	
11/17/67		248		1/22/69		240	
11/20/67		251		1/27/69		241	
11/25/67		263		2/6/69		235	
12/3/67		259		2/19/69		240	
12/10/67		259		2/27/69		236	
12/23/67		246		3/5/69		234	
12/26/67		266		3/13/69		236	
1/1/68		239		3/21/69		236	
1/7/68		238		3/26/69		229	
1/11/68		236		3/29/69		228	
1/19/68		243		4/7/69		237	
1/26/68		240		4/14/69		236	
2/2/68		237		4/20/69		232	
2/12/68		232		4/25/69		234	
2/27/68		234		4/30/69		230	
2/29/68		229		5/6/69		235	
3/8/68		233		5/17/69		235	
3/22/68		235		5/29/69		232	
3/28/68		231		6/1/69		234	
4/12/68		233		6/6/69		232	
4/20/68		234		6/14/69		237	
4/26/68		232		6/30/69		233	
5/1/68		232		7/8/69		235	
5/8/68		235		7/13/69		237	
5/12/68		236		7/21/69		229	
5/20/68		234		7/24/69		231	
5/25/68		228		7/30/69		234	

Data obtained from Document RHO-CD-1172.

Historical Average Waste Temperature Data							
Tank 241-AX-103							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
8/6/69		232		10/15/70		213	
8/10/69		231		10/24/70		222	
8/19/69		241		11/6/70		222	
8/27/69		232		11/14/70		230	
10/2/69		230		11/29/70		227	
10/7/69		231		12/15/70		234	
10/13/69		224		12/29/70		224	
10/17/69		225		1/4/71		226	
10/29/69		238		1/15/71		220	
11/6/69		231		1/21/71		229	
11/14/69		228		1/27/71		218	
11/20/69		236					
11/26/69		227					
11/29/69		220					
12/2/69		207					
12/7/69		216					
12/13/69		224					
12/20/69		218					
12/23/69		233					
12/28/69		234					
12/29/69		244					
1/11/70		241					
1/19/70		236					
2/5/70		233					
2/12/70		234					
2/20/70		229					
2/25/70		234					
2/28/70		241					
3/15/70		237					
3/22/70		237					
3/30/70		243					
4/6/70		241					
4/14/70		228					
4/23/70		237					
4/30/70		236					
5/10/70		250					
5/16/70		228					
5/29/70		234					
6/2/70		232					
6/7/70		233					
6/28/70		229					
7/1/70		237					
7/8/70		232					
7/22/70		236					
7/27/70		231					
7/31/70		233					
8/7/70		230					
8/15/70		229					
8/23/70		228					
8/28/70		227					
9/1/70		233					
9/5/70		228					
9/13/70		229					
9/25/70		227					
10/6/70		228					

Data obtained from Document RHO-CD-1172.

Historical High or Only Waste Temperature Data							
Tank 241-AX-103							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
4/3/66		274		7/10/67		304	
4/16/66		277		7/18/67		302	
4/21/66		297		7/24/67		301	
4/23/66		310		7/28/67		305	
5/1/66		312		8/9/67		299	
5/4/66		323		8/17/67		296	
5/7/66		328		8/25/67		296	
5/12/66		332		9/4/67		300	
5/14/66		333		9/15/67		305	
5/30/66		330		9/26/67		298	
6/3/66		324		10/4/67		299	
6/17/66		324		10/11/67		298	
6/20/66		323		10/16/67		297	
6/28/66		330		10/29/67		304	
7/3/66		315		11/4/67		300	
7/6/66		320		11/17/67		302	
7/13/66		324		11/25/67		300	
7/20/66		325		11/29/67		298	
7/25/66		323		12/5/67		299	
7/30/66		321		12/10/67		297	
8/8/66		333		12/16/67		306	
8/12/66		329		12/25/67		303	
8/15/66		323		12/29/67		301	
8/21/66		323		12/30/67		306	
8/31/66		318		1/7/68		296	
9/5/66		325		1/12/68		280	
9/9/66		322		1/20/68		304	
9/27/66		321		1/26/68		292	
10/1/66		315		1/31/68		297	
10/17/66		320		2/1/68		300	
10/23/66		324		2/6/68		297	
10/26/66		320		2/12/68		289	
10/29/66		318		2/20/68		293	
11/20/66		317		2/28/68		293	
11/28/66		319		3/1/68		286	
12/12/66		314		3/8/68		294	
12/24/66		317		3/19/68		294	
1/19/67		309		3/22/68		294	
2/3/67		310		3/30/68		292	
2/10/67		307		4/6/68		294	
2/17/67		311		4/21/68		290	
2/23/67		312		4/29/68		293	
3/13/67		309		5/1/68		288	
3/20/67		305		5/14/68		293	
3/28/67		308		5/27/68		288	
4/4/67		303		6/14/68		288	
4/16/67		309		6/26/68		271	
4/23/67		310		6/28/68		285	
4/29/67		297		7/1/68		281	
5/7/67		306		7/7/68		283	
5/16/67		306		7/14/68		279	
6/4/67		302		7/22/68		280	
6/10/67		308		7/27/68		285	
6/18/67		307		7/29/68		292	
6/26/67		302		8/6/68		286	

Data obtained from Document RHO-CD-1172.

Historical High or Only Waste Temperature Data							
Tank 241-AX-103							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
8/12/68		289		8/30/69		277	
8/19/68		288		9/30/69		273	
8/25/68		302		10/8/69		276	
8/29/68		300		10/12/69		265	
8/31/68		284		10/19/69		274	
9/6/68		298		10/26/69		281	
9/12/68		300		10/30/69		281	
9/19/68		298		11/5/69		274	
9/24/68		300		11/10/69		270	
9/29/68		287		11/20/69		278	
10/7/68		293		11/24/69		272	
10/12/68		297		11/29/69		262	
10/24/68		314		12/2/69		240	
10/30/68		308		12/7/69		260	
11/6/68		307		12/9/69		267	
11/19/68		307		12/14/69		268	
11/23/68		311		12/16/69		261	
11/29/68		307		12/17/69		254	
12/13/68		301		12/20/69		253	
12/26/68		303		12/23/69		254	
12/30/68		288		12/24/69		266	
1/1/69		290		12/26/69		273	
1/5/69		302		12/28/69		267	
1/12/69		301		1/5/70		280	
1/26/69		306		1/8/70		282	
2/5/69		294		1/12/70		279	
2/14/69		294		1/18/70		275	
2/19/69		298		1/25/70		271	
3/6/69		292		1/31/70		267	
3/14/69		293		2/2/70		273	
3/18/69		293		2/5/70		267	
3/24/69		290		2/9/70		272	
3/30/69		286		2/19/70		252	
4/6/69		294		2/26/70		261	
4/19/69		290		3/2/70		276	
4/26/69		288		3/21/70		269	
5/1/69		284		3/30/70		276	
5/7/69		288		4/7/70		271	
5/29/69		283		4/13/70		264	
6/2/69		285		4/22/70		270	
6/9/69		283		5/1/70		267	
6/15/69		285		5/7/70		286	
6/20/69		285		5/12/70		262	
6/28/69		283		5/21/70		262	
7/11/69		278		5/27/70		266	
7/14/69		281		6/1/70		264	
7/21/69		280		6/8/70		265	
7/25/69		279		6/15/70		262	
7/28/69		275		6/21/70		262	
7/31/69		278		6/26/70		256	
8/6/69		278		7/4/70		260	
8/12/69		276		7/8/70		259	
8/18/69		274		7/15/70		267	
8/22/69		277		7/19/70		267	
8/26/69		286		7/27/70		260	

Data obtained from Document RHO-CD-1172.

Historical High or Only Waste Temperature Data								
Tank 241-AX-103								
Date	Temp (C)	Temp (F)	Comments		Date	Temp (C)	Temp (F)	Comments
8/2/70		261						
8/7/70		258						
8/22/70		262						
8/25/70		258						
8/29/70		258						
8/31/70		265						
9/6/70		260						
9/29/70		260						
10/28/70		252						
11/3/70		253						
11/7/70		251						
11/12/70		254						
11/20/70		256						
11/26/70		252						
12/3/70		255						
12/8/70		256						
12/14/70		261						
12/20/70		253						
12/26/70		254						
1/6/71		256						
1/13/71		254						
1/22/71		256						
1/26/71		254						

Data obtained from Document RHO-CD-1172.

Historical Average Waste Temperature Data							
Tank 241-AX-104							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
9/9/66		193		8/25/68		271	
9/15/66		191		8/30/68		270	
9/23/66		195		9/7/68		276	
10/9/66		217		9/18/68		267	
10/14/66		220		9/28/68		256	
10/22/66		240		10/5/68		251	
10/28/66		238		10/27/68		265	
11/12/66		242		10/30/68		266	
11/18/66		237		11/2/68		265	
11/29/66		245		11/9/68		262	
12/5/66		247		11/15/68		262	
12/14/66		245		11/22/68		268	
12/26/66		245		12/21/68		262	
1/5/67		244		12/29/68		269	
1/22/67		243		1/7/69		271	
1/26/67		254		1/26/69		256	
2/1/67		250		1/30/69		260	
2/10/67		248		2/4/69		259	
2/15/67		247		2/6/69		271	
2/20/67		252		2/12/69		265	
2/28/67		250		2/18/69		268	
3/10/67		241		2/22/69		261	
3/31/67		255		2/26/69		267	
4/13/67		251		3/1/69		266	
4/21/67		259		3/7/69		270	
4/30/67		255		3/19/69		262	
5/11/67		256		3/25/69		266	
5/12/67		259		3/28/69		260	
5/21/67		254		3/30/69		263	
5/27/67		255		4/1/69		261	
6/3/67		254		4/10/69		271	
6/16/67		257		4/19/69		262	
6/23/67		257		4/20/69		268	
7/1/67		254		4/24/69		268	
7/13/67		257		5/2/69		262	
7/20/67		259		5/9/69		266	
7/26/67		255		5/14/69		261	
8/3/67		253		5/16/69		262	
8/16/67		258		5/20/69		267	
8/26/67		257		5/26/69		263	
9/5/67		255		5/30/69		266	
9/13/67		255		6/3/69		259	
9/17/67		246		6/8/69		263	
10/20/67		245		6/15/69		261	
12/23/67		246		6/19/69		261	
1/1/68		239		6/28/69		268	
1/7/68		238		6/30/69		267	
1/11/68		236		7/21/69		276	
1/19/68		243		7/29/69		268	
1/26/68		240		8/6/69		265	
6/30/68		266		8/10/69		268	
7/18/68		273		8/17/69		262	
7/26/68		270		8/22/69		260	
8/9/68		274		8/26/69		257	
8/17/68		266		8/29/69		263	

Data obtained from Document RHO-CD-1172.

Historical Average Waste Temperature Data							
Tank 241-AX-104							
Date	Temp (C)	Temp (F)	Comments	Date	Temp (C)	Temp (F)	Comments
10/1/69		263		5/18/70		304	
10/3/69		271		5/28/70		296	
10/6/69		260		5/31/70		308	
10/11/69		268		6/7/70		320	
10/15/69		262		6/12/70		323	
10/21/69		271		6/21/70		315	
10/27/69		268		6/25/70		319	
10/30/69		280		7/13/70		302	
11/2/69		262		7/21/70		299	
11/4/69		270		7/27/70		306	
11/8/69		264					
11/11/69		278					
11/12/69		260					
11/16/69		271					
11/19/69		262					
11/27/69		268					
11/30/69		261					
12/3/69		259					
12/7/69		261					
12/7/69		266					
12/11/69		268					
12/14/69		268					
12/16/69		261					
12/17/69		254					
12/19/69		268					
12/20/69		241					
12/25/69		269					
12/26/69		274					
12/30/69		258					
1/5/70		266					
1/8/70		262					
1/12/70		272					
1/15/70		258					
1/24/70		271					
1/29/70		255					
2/1/70		273					
2/5/70		266					
2/8/70		272					
2/12/70		269					
2/15/70		278					
2/20/70		265					
2/26/70		263					
3/1/70		273					
3/4/70		268					
3/11/70		265					
3/30/70		293					
4/2/70		287					
4/7/70		291					
4/14/70		288					
4/15/70		314					
4/21/70		301					
5/6/70		318					
5/9/70		306					
5/11/70		312					
5/14/70		306					

Data obtained from Document RHO-CD-1172.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	10/24/76	1	1		65	N	
1	10/24/76	2	1		66	N	
1	10/24/76	3	1		68	Y	
1	10/24/76	4	1		67	N	
1	10/24/76	5	1		67	N	
1	10/24/76	6	1		67	N	
1	10/24/76	7	1		67	N	
1	10/24/76	8	1		67	N	
1	10/24/76	9	1		67	N	
1	10/24/76	10	1		68	N	
1	10/24/76	11	1		68	N	
1	10/24/76	12	1		68	N	
1	1/11/77	1	1		79	N	
1	1/11/77	2	1		79	N	
1	1/11/77	3	1		81	Y	
1	1/11/77	4	1		72	N	
1	1/11/77	5	1		70	N	
1	1/11/77	6	1		70	N	
1	1/11/77	7	1		70	N	
1	1/11/77	8	1		70	N	
1	1/11/77	9	1		70	N	
1	1/11/77	10	1		70	N	
1	1/11/77	12	1		70	N	
1	2/13/77	1	1		85	N	
1	2/13/77	2	1		84	N	
1	2/13/77	3	1		87	N	
1	2/13/77	4	1		89	Y	
1	2/13/77	5	1		89	N	
1	2/13/77	6	1		89	N	
1	2/13/77	7	1		89	N	
1	2/13/77	8	1		84	N	
1	2/13/77	9	1		84	N	
1	2/13/77	10	1		84	N	
1	2/13/77	11	1		83	N	
1	2/13/77	12	1		83	N	
1	3/25/77	1	1		112	Y	
1	3/25/77	2	1		112	N	
1	3/25/77	3	1		112	N	
1	3/25/77	4	1		112	N	
1	3/25/77	5	1		112	N	
1	3/25/77	6	1		112	N	
1	3/25/77	7	1		112	N	
1	3/25/77	8	1		112	N	
1	3/25/77	9	1		112	N	
1	3/25/77	10	1		111	N	
1	3/25/77	11	1		111	N	
1	3/25/77	12	1		107	N	
1	3/25/77	13	1		107	N	
1	3/25/77	14	1		107	N	
1	3/25/77	15	1		106	N	
1	3/25/77	16	1		106	N	
1	4/6/77	1	1		119	N	
1	4/6/77	2	1		120	Y	
1	4/6/77	3	1		120	N	
1	4/6/77	4	1		120	N	
1	4/6/77	5	1		120	N	
1	4/6/77	6	1		119	N	
1	4/6/77	7	1		110	N	
1	4/6/77	8	1		105	N	
1	4/6/77	9	1		105	N	
1	4/6/77	10	1		104	N	
1	4/6/77	11	1		104	N	
1	4/6/77	12	1		104	N	
1	4/6/77	13	1		104	N	
1	4/6/77	14	1		104	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	4/6/77	15	1		104	N	
1	4/6/77	16	1		104	N	
1	5/28/77	1	1		125	Y	
1	5/28/77	2	1		123	N	
1	5/28/77	3	1		122	N	
1	5/28/77	4	1		123	N	
1	5/28/77	5	1		124	N	
1	5/28/77	6	1		125	N	
1	5/28/77	7	1		125	N	
1	5/28/77	8	1		125	N	
1	5/28/77	9	1		125	N	
1	5/28/77	10	1		125	N	
1	5/28/77	11	1		126	N	
1	5/28/77	12	1		128	N	
1	5/28/77	13	1		109	N	
1	5/28/77	14	1		115	N	
1	6/10/77	1	1		126	Y	
1	6/10/77	2	1		124	N	
1	6/10/77	3	1		123	N	
1	6/10/77	4	1		123	N	
1	6/10/77	5	1		124	N	
1	6/10/77	6	1		125	N	
1	6/10/77	7	1		126	N	
1	6/10/77	8	1		125	N	
1	6/10/77	9	1		128	N	
1	6/10/77	10	1		126	N	
1	6/10/77	11	1		126	N	
1	6/10/77	12	1		125	N	
1	6/10/77	13	1		126	N	
1	6/10/77	14	1		125	N	
1	8/11/77	1	1		131	Y	
1	8/11/77	2	1		129	N	
1	8/11/77	3	1		127	N	
1	8/11/77	4	1		125	N	
1	8/11/77	5	1		122	N	
1	8/11/77	6	1		120	N	
1	8/11/77	7	1		120	N	
1	8/11/77	8	1		120	N	
1	8/11/77	9	1		120	N	
1	8/11/77	10	1		120	N	
1	8/11/77	11	1		120	N	
1	8/11/77	12	1		120	N	
1	8/11/77	13	1		120	N	
1	8/11/77	14	1		119	N	
1	8/18/77	1	1		127	Y	
1	8/18/77	2	1		125	N	
1	8/18/77	3	1		123	N	
1	8/18/77	4	1		121	N	
1	8/18/77	5	1		117	N	
1	8/18/77	6	1		115	N	
1	8/18/77	7	1		115	N	
1	8/18/77	8	1		116	N	
1	8/18/77	9	1		115	N	
1	8/18/77	10	1		115	N	
1	8/18/77	11	1		115	N	
1	8/18/77	12	1		115	N	
1	8/18/77	13	1		115	N	
1	8/18/77	14	1		115	N	
1	8/18/77	15	1		100	N	
1	8/18/77	16	1		89	N	
1	8/21/77	1	1		132	Y	
1	8/21/77	2	1		129	N	
1	8/21/77	3	1		127	N	
1	8/21/77	4	1		125	N	
1	8/21/77	5	1		121	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/21/77	6	1		120	N	
1	8/21/77	7	1		119	N	
1	8/21/77	8	1		120	N	
1	8/21/77	9	1		119	N	
1	8/21/77	10	1		119	N	
1	8/21/77	11	1		119	N	
1	8/21/77	12	1		119	N	
1	8/21/77	13	1		119	N	
1	8/21/77	14	1		119	N	
1	8/21/77	15	1		104	N	
1	8/21/77	16	1		94	N	
1	8/30/77	1	1		142	Y	
1	8/30/77	2	1		139	N	
1	8/30/77	3	1		137	N	
1	8/30/77	4	1		134	N	
1	8/30/77	5	1		131	N	
1	8/30/77	6	1		128	N	
1	8/30/77	7	1		128	N	
1	8/30/77	8	1		128	N	
1	8/30/77	9	1		128	N	
1	8/30/77	10	1		128	N	
1	8/30/77	11	1		128	N	
1	8/30/77	12	1		128	N	
1	8/30/77	13	1		128	N	
1	8/30/77	14	1		128	N	
1	8/30/77	15	1		128	N	
1	8/30/77	16	1		128	N	
1	9/7/77	1	1		140	Y	
1	9/7/77	2	1		138	N	
1	9/7/77	3	1		135	N	
1	9/7/77	4	1		133	N	
1	9/7/77	5	1		129	N	
1	9/7/77	6	1		126	N	
1	9/7/77	7	1		126	N	
1	9/7/77	8	1		126	N	
1	9/7/77	9	1		126	N	
1	9/7/77	10	1		126	N	
1	9/7/77	11	1		126	N	
1	9/7/77	12	1		126	N	
1	9/7/77	13	1		126	N	
1	9/7/77	14	1		126	N	
1	9/7/77	15	1		110	N	
1	9/7/77	16	1		98	N	
1	9/12/77	1	1		139	Y	
1	9/12/77	2	1		136	N	
1	9/12/77	3	1		134	N	
1	9/12/77	4	1		131	N	
1	9/12/77	5	1		127	N	
1	9/12/77	6	1		124	N	
1	9/12/77	7	1		124	N	
1	9/12/77	8	1		124	N	
1	9/12/77	9	1		124	N	
1	9/12/77	10	1		124	N	
1	9/12/77	11	1		124	N	
1	9/12/77	12	1		124	N	
1	9/12/77	13	1		124	N	
1	9/12/77	14	1		124	N	
1	9/12/77	15	1		109	N	
1	9/12/77	16	1		97	N	
1	9/21/77	1	1		144	Y	
1	9/21/77	2	1		142	N	
1	9/21/77	3	1		139	N	
1	9/21/77	4	1		136	N	
1	9/21/77	5	1		132	N	
1	9/21/77	6	1		129	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	9/21/77	7	1		129	N	
1	9/21/77	8	1		129	N	
1	9/21/77	9	1		129	N	
1	9/21/77	10	1		129	N	
1	9/21/77	11	1		129	N	
1	9/21/77	12	1		129	N	
1	9/21/77	13	1		129	N	
1	9/21/77	14	1		129	N	
1	9/21/77	15	1		114	N	
1	9/21/77	16	1		102	N	
1	10/7/77	1	1		145	Y	
1	10/7/77	2	1		142	N	
1	10/7/77	3	1		139	N	
1	10/7/77	4	1		136	N	
1	10/7/77	5	1		131	N	
1	10/7/77	6	1		128	N	
1	10/7/77	7	1		128	N	
1	10/7/77	8	1		129	N	
1	10/7/77	9	1		129	N	
1	10/7/77	10	1		129	N	
1	10/7/77	11	1		129	N	
1	10/7/77	12	1		129	N	
1	10/7/77	13	1		129	N	
1	10/7/77	14	1		128	N	
1	10/7/77	15	1		111	N	
1	10/7/77	16	1		98	N	
1	11/7/77	1	1		145	Y	
1	11/7/77	2	1		142	N	
1	11/7/77	3	1		139	N	
1	11/7/77	4	1		135	N	
1	11/7/77	5	1		130	N	
1	11/7/77	6	1		127	N	
1	11/7/77	7	1		127	N	
1	11/7/77	8	1		127	N	
1	11/7/77	9	1		127	N	
1	11/7/77	10	1		127	N	
1	11/7/77	11	1		127	N	
1	11/7/77	12	1		126	N	
1	11/7/77	13	1		127	N	
1	11/7/77	14	1		126	N	
1	11/7/77	15	1		109	N	
1	11/7/77	16	1		95	N	
1	12/4/77	1	1		145	Y	
1	12/4/77	2	1		141	N	
1	12/4/77	3	1		137	N	
1	12/4/77	4	1		133	N	
1	12/4/77	5	1		127	N	
1	12/4/77	6	1		125	N	
1	12/4/77	7	1		125	N	
1	12/4/77	8	1		125	N	
1	12/4/77	9	1		125	N	
1	12/4/77	10	1		125	N	
1	12/4/77	11	1		125	N	
1	12/4/77	12	1		125	N	
1	12/4/77	13	1		125	N	
1	12/4/77	14	1		122	N	
1	12/4/77	15	1		103	N	
1	12/4/77	16	1		86	N	
1	1/11/78	1	1		149	Y	
1	1/11/78	2	1		145	N	
1	1/11/78	3	1		141	N	
1	1/11/78	4	1		136	N	
1	1/11/78	5	1		130	N	
1	1/11/78	6	1		128	N	
1	1/11/78	7	1		128	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/11/78	8	1		128	N	
1	1/11/78	9	1		128	N	
1	1/11/78	10	1		128	N	
1	1/11/78	11	1		127	N	
1	1/11/78	12	1		127	N	
1	1/11/78	13	1		128	N	
1	1/11/78	14	1		121	N	
1	1/28/78	1	1		146	Y	
1	1/28/78	2	1		141	N	
1	1/28/78	3	1		135	N	
1	1/28/78	4	1		125	N	
1	1/28/78	5	1		124	N	
1	1/28/78	6	1		124	N	
1	1/28/78	7	1		124	N	
1	1/28/78	8	1		124	N	
1	1/28/78	9	1		124	N	
1	1/28/78	10	1		124	N	
1	1/28/78	11	1		124	N	
1	1/28/78	12	1		124	N	
1	1/28/78	13	1		124	N	
1	1/28/78	14	1		116	N	
1	2/26/78	1	1		146	Y	
1	2/26/78	2	1		141	N	
1	2/26/78	3	1		135	N	
1	2/26/78	4	1		127	N	
1	2/26/78	5	1		124	N	
1	2/26/78	6	1		124	N	
1	2/26/78	7	1		125	N	
1	2/26/78	8	1		125	N	
1	2/26/78	9	1		125	N	
1	2/26/78	10	1		125	N	
1	2/26/78	11	1		124	N	
1	2/26/78	12	1		125	N	
1	2/26/78	13	1		125	N	
1	2/26/78	14	1		117	N	
1	4/24/78	1	1		156	Y	
1	4/24/78	2	1		149	N	
1	4/24/78	3	1		138	N	
1	4/24/78	4	1		134	N	
1	4/24/78	5	1		130	N	
1	4/24/78	6	1		130	N	
1	4/24/78	7	1		130	N	
1	4/24/78	8	1		130	N	
1	4/24/78	9	1		130	N	
1	4/24/78	10	1		130	N	
1	4/24/78	11	1		130	N	
1	4/24/78	12	1		130	N	
1	5/19/78	1	1		148	Y	
1	5/19/78	2	1		143	N	
1	5/19/78	3	1		133	N	
1	5/19/78	4	1		129	N	
1	5/19/78	5	1		125	N	
1	5/19/78	6	1		125	N	
1	5/19/78	7	1		125	N	
1	5/19/78	8	1		125	N	
1	5/19/78	9	1		125	N	
1	5/19/78	10	1		125	N	
1	5/19/78	11	1		125	N	
1	5/19/78	12	1		125	N	
1	5/19/78	13	1		125	N	
1	5/19/78	14	1		117	N	
1	5/19/78	15	1		101	N	
1	5/19/78	16	1		85	N	
1	6/17/78	1	1		150	Y	
1	6/17/78	2	1		144	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101 THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	6/17/78	3	1		133	N	
1	6/17/78	4	1		127	N	
1	6/17/78	5	1		126	N	
1	6/17/78	6	1		126	N	
1	6/17/78	7	1		126	N	
1	6/17/78	8	1		126	N	
1	6/17/78	9	1		126	N	
1	6/17/78	10	1		126	N	
1	6/17/78	11	1		126	N	
1	6/17/78	12	1		126	N	
1	6/17/78	13	1		126	N	
1	6/17/78	14	1		126	N	
1	6/17/78	15	1		126	N	
1	6/17/78	16	1		126	N	
1	7/15/78	1	1		147	Y	
1	7/15/78	2	1		141	N	
1	7/15/78	3	1		131	N	
1	7/15/78	4	1		125	N	
1	7/15/78	5	1		123	N	
1	7/15/78	6	1		123	N	
1	7/15/78	7	1		123	N	
1	7/15/78	8	1		123	N	
1	7/15/78	9	1		123	N	
1	7/15/78	10	1		123	N	
1	7/15/78	11	1		123	N	
1	7/15/78	12	1		123	N	
1	7/15/78	13	1		123	N	
1	7/15/78	14	1		123	N	
1	7/15/78	15	1		123	N	
1	7/15/78	16	1		123	N	
1	8/13/78	1	1		146	Y	
1	8/13/78	2	1		140	N	
1	8/13/78	3	1		133	N	
1	8/13/78	4	1		125	N	
1	8/13/78	5	1		123	N	
1	8/13/78	6	1		123	N	
1	8/13/78	7	1		122	N	
1	8/13/78	8	1		122	N	
1	8/13/78	9	1		122	N	
1	8/13/78	10	1		122	N	
1	8/13/78	11	1		122	N	
1	8/13/78	12	1		112	N	
1	8/13/78	13	1		102	N	
1	8/13/78	14	1		98	N	
1	8/13/78	15	1		98	N	
1	8/13/78	16	1		97	N	
1	9/9/78	1	1		156	Y	
1	9/9/78	2	1		150	N	
1	9/9/78	3	1		138	N	
1	9/9/78	4	1		135	N	
1	9/9/78	5	1		132	N	
1	9/9/78	6	1		132	N	
1	9/9/78	7	1		132	N	
1	9/9/78	8	1		132	N	
1	9/9/78	9	1		130	N	
1	9/9/78	10	1		126	N	
1	9/9/78	11	1		118	N	
1	9/9/78	12	1		109	N	
1	9/9/78	13	1		100	N	
1	9/9/78	14	1		100	N	
1	9/9/78	15	1		100	N	
1	9/9/78	16	1		100	N	
1	10/8/78	1	1		148	Y	
1	10/8/78	2	1		143	N	
1	10/8/78	3	1		132	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/8/78	4	1		128	N	
1	10/8/78	5	1		126	N	
1	10/8/78	6	1		126	N	
1	10/8/78	7	1		126	N	
1	10/8/78	8	1		126	N	
1	10/8/78	9	1		125	N	
1	10/8/78	10	1		120	N	
1	10/8/78	11	1		111	N	
1	10/8/78	12	1		97	N	
1	10/8/78	13	1		95	N	
1	10/8/78	14	1		94	N	
1	10/8/78	15	1		94	N	
1	10/8/78	16	1		94	N	
1	11/8/78	1	1		151	Y	
1	11/8/78	2	1		144	N	
1	11/8/78	3	1		133	N	
1	11/8/78	4	1		128	N	
1	11/8/78	5	1		128	N	
1	11/8/78	6	1		128	N	
1	11/8/78	7	1		128	N	
1	11/8/78	8	1		128	N	
1	11/8/78	9	1		128	N	
1	11/8/78	10	1		123	N	
1	11/8/78	11	1		112	N	
1	11/8/78	12	1		96	N	
1	11/8/78	13	1		93	N	
1	11/8/78	14	1		93	N	
1	11/8/78	15	1		93	N	
1	11/8/78	16	1		93	N	
1	1/2/79	1	1		156	Y	
1	1/2/79	2	1		149	N	
1	1/2/79	3	1		139	N	
1	1/2/79	4	1		134	N	
1	1/2/79	5	1		133	N	
1	1/2/79	6	1		133	N	
1	1/2/79	7	1		133	N	
1	1/2/79	8	1		133	N	
1	1/2/79	9	1		133	N	
1	1/2/79	10	1		127	N	
1	1/2/79	11	1		114	N	
1	1/2/79	12	1		92	N	
1	1/2/79	13	1		89	N	
1	1/2/79	14	1		89	N	
1	1/2/79	15	1		89	N	
1	1/2/79	16	1		89	N	
1	2/9/79	1	1		148	Y	
1	2/9/79	2	1		141	N	
1	2/9/79	3	1		130	N	
1	2/9/79	4	1		125	N	
1	2/9/79	5	1		124	N	
1	2/9/79	6	1		123	N	
1	2/9/79	7	1		124	N	
1	2/9/79	8	1		124	N	
1	2/9/79	9	1		124	N	
1	2/9/79	10	1		116	N	
1	2/9/79	11	1		102	N	
1	2/9/79	12	1		80	N	
1	2/9/79	13	1		77	N	
1	2/9/79	14	1		76	N	
1	2/9/79	15	1		76	N	
1	2/9/79	16	1		76	N	
1	10/8/79	1	1		135	Y	
1	10/8/79	2	1		128	N	
1	10/8/79	3	1		118	N	
1	10/8/79	4	1		121	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/8/79	5	1		121	N	
1	10/8/79	6	1		121	N	
1	10/8/79	7	1		121	N	
1	10/8/79	8	1		121	N	
1	10/8/79	9	1		118	N	
1	10/8/79	10	1		113	N	
1	10/8/79	11	1		106	N	
1	10/8/79	12	1		95	N	
1	10/8/79	13	1		93	N	
1	10/8/79	14	1		93	N	
1	10/8/79	15	1		92	N	
1	10/8/79	16	1		92	N	
1	2/9/80	1	1		139	Y	
1	2/9/80	2	1		132	N	
1	2/9/80	3	1		124	N	
1	2/9/80	4	1		127	N	
1	2/9/80	5	1		127	N	
1	2/9/80	6	1		126	N	
1	2/9/80	7	1		123	N	
1	2/9/80	8	1		118	N	
1	2/9/80	9	1		103	N	
1	2/9/80	10	1		94	N	
1	2/9/80	11	1		93	N	
1	2/9/80	12	1		93	N	
1	2/9/80	13	1		92	N	
1	2/9/80	14	1		92	N	
1	2/9/80	15	1		92	N	
1	2/9/80	16	1		92	N	
1	10/26/80	1	1		154	N	
1	10/26/80	2	1		154	N	
1	10/26/80	3	1		150	N	
1	10/26/80	4	1		153	N	
1	10/26/80	5	1		152	N	
1	10/26/80	6	1		153	N	
1	10/26/80	7	1		154	N	
1	10/26/80	8	1		155	Y	
1	10/26/80	9	1		155	N	
1	10/26/80	10	1		155	N	
1	10/26/80	11	1		155	N	
1	10/26/80	12	1		155	N	
1	10/26/80	13	1		135	N	
1	10/26/80	14	1		133	N	
1	10/26/80	15	1		133	N	
1	10/26/80	16	1		133	N	
1	1/9/81	1	1		157	Y	
1	1/9/81	2	1		154	N	
1	1/9/81	3	1		151	N	
1	1/9/81	4	1		151	N	
1	1/9/81	5	1		151	N	
1	1/9/81	6	1		152	N	
1	1/9/81	7	1		152	N	
1	1/9/81	8	1		153	N	
1	1/9/81	9	1		152	N	
1	1/9/81	10	1		147	N	
1	1/9/81	11	1		136	N	
1	1/9/81	12	1		119	N	
1	1/9/81	13	1		106	N	
1	1/9/81	14	1		105	N	
1	1/9/81	15	1		105	N	
1	1/9/81	16	1		105	N	
1	2/6/81	1	1		156	Y	
1	2/6/81	2	1		153	N	
1	2/6/81	3	1		146	N	
1	2/6/81	4	1		150	N	
1	2/6/81	5	1		150	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	2/6/81	6	1		151	N	
1	2/6/81	7	1		152	N	
1	2/6/81	8	1		152	N	
1	2/6/81	9	1		150	N	
1	2/6/81	10	1		144	N	
1	2/6/81	11	1		133	N	
1	2/6/81	12	1		116	N	
1	2/6/81	13	1		101	N	
1	2/6/81	14	1		100	N	
1	2/6/81	15	1		100	N	
1	2/6/81	16	1		99	N	
1	6/7/81	1	1		148	Y	
1	6/7/81	2	1		144	N	
1	6/7/81	3	1		140	N	
1	6/7/81	4	1		144	N	
1	6/7/81	5	1		144	N	
1	6/7/81	6	1		144	N	
1	6/7/81	7	1		144	N	
1	6/7/81	8	1		143	N	
1	6/7/81	9	1		140	N	
1	6/7/81	10	1		133	N	
1	6/7/81	11	1		122	N	
1	6/7/81	12	1		108	N	
1	6/7/81	13	1		92	N	
1	6/7/81	14	1		99	N	
1	6/7/81	15	1		91	N	
1	2/5/82	1	1		150	Y	
1	2/5/82	2	1		147	N	
1	2/5/82	3	1		144	N	
1	2/5/82	4	1		147	N	
1	2/5/82	5	1		147	N	
1	2/5/82	6	1		147	N	
1	2/5/82	7	1		146	N	
1	2/5/82	8	1		144	N	
1	2/5/82	9	1		140	N	
1	2/5/82	10	1		134	N	
1	2/5/82	11	1		125	N	
1	2/5/82	12	1		110	N	
1	2/5/82	13	1		93	N	
1	2/5/82	14	1		92	N	
1	2/5/82	15	1		91	N	
1	2/5/82	16	1		91	N	
1	2/8/82	1	1		167	Y	
1	2/8/82	2	1		163	N	
1	2/8/82	3	1		164	N	
1	2/8/82	4	1		164	N	
1	2/8/82	5	1		164	N	
1	2/8/82	6	1		164	N	
1	2/8/82	7	1		164	N	
1	2/8/82	8	1		161	N	
1	2/8/82	9	1		157	N	
1	2/8/82	10	1		149	N	
1	2/8/82	11	1		135	N	
1	2/8/82	12	1		117	N	
1	2/8/82	13	1		95	N	
1	2/8/82	14	1		94	N	
1	2/8/82	15	1		94	N	
1	2/8/82	16	1		93	N	
1	6/9/82	1	1		156	Y	
1	6/9/82	2	1		152	N	
1	6/9/82	3	1		148	N	
1	6/9/82	4	1		152	N	
1	6/9/82	5	1		152	N	
1	6/9/82	6	1		152	N	
1	6/9/82	7	1		151	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	6/9/82	8	1		148	N	
1	6/9/82	9	1		143	N	
1	6/9/82	10	1		136	N	
1	6/9/82	11	1		126	N	
1	6/9/82	12	1		112	N	
1	6/9/82	13	1		97	N	
1	6/9/82	14	1		95	N	
1	6/9/82	15	1		96	N	
1	6/9/82	16	1		96	N	
1	10/15/82	1	1		152	Y	
1	10/15/82	2	1		149	N	
1	10/15/82	3	1		149	N	
1	10/15/82	4	1		149	N	
1	10/15/82	5	1		149	N	
1	10/15/82	6	1		149	N	
1	10/15/82	7	1		149	N	
1	10/15/82	8	1		146	N	
1	10/15/82	9	1		142	N	
1	10/15/82	10	1		136	N	
1	10/15/82	11	1		127	N	
1	10/15/82	12	1		114	N	
1	10/15/82	13	1		99	N	
1	10/15/82	14	1		98	N	
1	10/15/82	15	1		98	N	
1	10/15/82	16	1		98	N	
1	6/8/83	1	1		151	Y	
1	6/8/83	2	1		149	N	
1	6/8/83	3	1		145	N	
1	6/8/83	4	1		149	N	
1	6/8/83	5	1		149	N	
1	6/8/83	6	1		149	N	
1	6/8/83	7	1		149	N	
1	6/8/83	8	1		145	N	
1	6/8/83	9	1		141	N	
1	6/8/83	10	1		135	N	
1	6/8/83	11	1		126	N	
1	6/8/83	12	1		113	N	
1	6/8/83	13	1		97	N	
1	6/8/83	14	1		96	N	
1	6/8/83	15	1		96	N	
1	6/8/83	16	1		96	N	
1	2/16/84	1	1		145	Y	
1	2/16/84	2	1		143	N	
1	2/16/84	3	1		142	N	
1	2/16/84	4	1		143	N	
1	2/16/84	5	1		143	N	
1	2/16/84	6	1		143	N	
1	2/16/84	7	1		143	N	
1	2/16/84	8	1		140	N	
1	2/16/84	9	1		137	N	
1	2/16/84	10	1		131	N	
1	2/16/84	11	1		121	N	
1	2/16/84	12	1		107	N	
1	2/16/84	13	1		89	N	
1	2/16/84	14	1		87	N	
1	2/16/84	15	1		87	N	
1	2/16/84	16	1		87	N	
1	2/16/84	17	1		87	N	
1	2/16/84	18	1		87	N	
1	3/5/84	1	1		145	Y	
1	3/5/84	2	1		143	N	
1	3/5/84	3	1		143	N	
1	3/5/84	4	1		143	N	
1	3/5/84	5	1		143	N	
1	3/5/84	6	1		143	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/5/84	7	1		142	N	
1	3/5/84	8	1		140	N	
1	3/5/84	9	1		136	N	
1	3/5/84	10	1		130	N	
1	3/5/84	11	1		120	N	
1	3/5/84	12	1		106	N	
1	3/5/84	13	1		88	N	
1	3/5/84	14	1		87	N	
1	3/5/84	15	1		87	N	
1	4/27/84	1	1		147	Y	
1	4/27/84	2	1		145	N	
1	4/27/84	3	1		145	N	
1	4/27/84	4	1		145	N	
1	4/27/84	5	1		145	N	
1	4/27/84	6	1		145	N	
1	4/27/84	7	1		145	N	
1	4/27/84	8	1		142	N	
1	4/27/84	9	1		138	N	
1	4/27/84	10	1		131	N	
1	4/27/84	11	1		122	N	
1	4/27/84	12	1		107	N	
1	4/27/84	13	1		90	N	
1	4/27/84	14	1		88	N	
1	4/27/84	15	1		88	N	
1	4/28/84	1	1		149	Y	
1	4/28/84	2	1		147	N	
1	4/28/84	3	1		146	N	
1	4/28/84	4	1		146	N	
1	4/28/84	5	1		147	N	
1	4/28/84	6	1		147	N	
1	4/28/84	7	1		146	N	
1	4/28/84	8	1		143	N	
1	4/28/84	9	1		139	N	
1	4/28/84	10	1		133	N	
1	4/28/84	11	1		123	N	
1	4/28/84	12	1		108	N	
1	4/28/84	13	1		91	N	
1	4/28/84	14	1		90	N	
1	4/28/84	15	1		90	N	
1	4/29/84	1	1		145	Y	
1	4/29/84	2	1		144	N	
1	4/29/84	3	1		143	N	
1	4/29/84	4	1		144	N	
1	4/29/84	5	1		144	N	
1	4/29/84	6	1		143	N	
1	4/29/84	7	1		143	N	
1	4/29/84	8	1		140	N	
1	4/29/84	9	1		136	N	
1	4/29/84	10	1		129	N	
1	4/29/84	11	1		120	N	
1	4/29/84	12	1		105	N	
1	4/29/84	13	1		88	N	
1	4/29/84	14	1		86	N	
1	4/29/84	15	1		86	N	
1	3/1/85	1	1		150	Y	
1	3/1/85	2	1		149	N	
1	3/1/85	3	1		149	N	
1	3/1/85	4	1		149	N	
1	3/1/85	5	1		149	N	
1	3/1/85	6	1		149	N	
1	3/1/85	7	1		148	N	
1	3/1/85	8	1		146	N	
1	3/1/85	9	1		142	N	
1	3/1/85	10	1		136	N	
1	3/1/85	11	1		126	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/1/85	12	1		111	N	
1	3/1/85	13	1		93	N	931 - suspect data (high) assumed wrong input
1	3/1/85	14	1		92	N	
1	3/1/85	15	1		92	N	
1	3/1/85	16	1		91	N	
1	3/2/85	1	1		146	Y	
1	3/2/85	2	1		145	N	
1	3/2/85	3	1		145	N	
1	3/2/85	4	1		145	N	
1	3/2/85	5	1		145	N	
1	3/2/85	6	1		145	N	
1	3/2/85	7	1		145	N	
1	3/2/85	8	1		141	N	
1	3/2/85	9	1		138	N	
1	3/2/85	10	1		132	N	
1	3/2/85	11	1		122	N	
1	3/2/85	12	1		108	N	
1	3/2/85	13	1		90	N	
1	3/2/85	14	1		88	N	
1	3/2/85	15	1		88	N	
1	3/2/85	16	1		88	N	
1	4/26/85	1	1		147	Y	
1	4/26/85	2	1		145	N	
1	4/26/85	3	1		147	N	
1	4/26/85	4	1		147	N	
1	4/26/85	5	1		147	N	
1	4/26/85	6	1		147	N	
1	4/26/85	7	1		146	N	
1	4/26/85	8	1		143	N	
1	4/26/85	9	1		139	N	
1	4/26/85	10	1		132	N	
1	4/26/85	11	1		122	N	
1	4/26/85	12	1		108	N	
1	4/26/85	13	1		91	N	
1	4/26/85	14	1		90	N	
1	4/26/85	15	1		90	N	
1	4/26/85	16	1		89	N	
1	4/26/85	17	1		89	N	
1	4/26/85	18	1		89	N	
1	7/2/85	1	1		156	Y	
1	7/2/85	2	1		155	N	
1	7/2/85	3	1		155	N	
1	7/2/85	4	1		155	N	
1	7/2/85	5	1		155	N	
1	7/2/85	6	1		155	N	
1	7/2/85	7	1		154	N	
1	7/2/85	8	1		152	N	
1	7/2/85	9	1		146	N	
1	7/2/85	10	1		139	N	
1	7/2/85	11	1		130	N	
1	7/2/85	12	1		116	N	
1	7/2/85	13	1		100	N	
1	7/2/85	14	1		99	N	
1	7/2/85	15	1		99	N	
1	7/2/85	16	1		99	N	
1	7/8/85	1	1		148	Y	
1	7/8/85	2	1		148	N	
1	7/8/85	3	1		148	N	
1	7/8/85	4	1		148	N	
1	7/8/85	5	1		148	N	
1	7/8/85	6	1		148	N	
1	7/8/85	7	1		148	N	
1	7/8/85	8	1		148	N	
1	7/8/85	9	1		142	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/8/85	10	1		140	N	
1	7/8/85	11	1		131	N	
1	7/8/85	12	1		120	N	
1	7/8/85	13	1		100	N	
1	7/8/85	14	1		100	N	
1	7/8/85	15	1		100	N	
1	7/8/85	16	1		100	N	
1	10/4/85	1	1		146	Y	
1	10/4/85	2	1		144	N	
1	10/4/85	3	1		146	N	
1	10/4/85	4	1		146	N	
1	10/4/85	5	1		146	N	
1	10/4/85	6	1		146	N	
1	10/4/85	7	1		145	N	
1	10/4/85	8	1		143	N	
1	10/4/85	9	1		139	N	
1	10/4/85	10	1		134	N	
1	10/4/85	11	1		126	N	
1	10/4/85	12	1		115	N	
1	10/4/85	13	1		100	N	
1	10/4/85	14	1		99	N	
1	10/4/85	15	1		99	N	
1	10/4/85	16	1		99	N	
1	10/4/85	17	1		99	N	
1	10/4/85	18	1		99	N	
1	11/1/85	1	1		150	Y	
1	11/1/85	2	1		149	N	
1	11/1/85	3	1		149	N	
1	11/1/85	4	1		149	N	
1	11/1/85	5	1		149	N	
1	11/1/85	6	1		149	N	
1	11/1/85	7	1		148	N	
1	11/1/85	8	1		146	N	
1	11/1/85	9	1		143	N	
1	11/1/85	10	1		137	N	
1	11/1/85	11	1		129	N	
1	11/1/85	12	1		117	N	
1	11/1/85	13	1		102	N	
1	11/1/85	14	1		101	N	
1	11/1/85	15	1		100	N	
1	11/1/85	16	1		100	N	
1	11/1/85	17	1		100	N	
1	11/1/85	18	1		100	N	
1	12/13/85	1	1		150	Y	
1	12/13/85	2	1		149	N	
1	12/13/85	3	1		149	N	
1	12/13/85	4	1		149	N	
1	12/13/85	5	1		149	N	
1	12/13/85	6	1		149	N	
1	12/13/85	7	1		148	N	
1	12/13/85	8	1		146	N	
1	12/13/85	9	1		142	N	
1	12/13/85	10	1		137	N	
1	12/13/85	11	1		128	N	
1	12/13/85	12	1		114	N	
1	12/13/85	13	1		98	N	
1	12/13/85	14	1		96	N	
1	12/13/85	15	1		96	N	
1	12/13/85	16	1		96	N	
1	12/13/85	17	1		96	N	
1	12/13/85	18	1		96	N	
1	1/6/86	1	1		168	Y	
1	1/6/86	2	1		166	N	
1	1/6/86	3	1		167	N	
1	1/6/86	4	1		167	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	1/6/86	5	1		167	N	
1	1/6/86	6	1		168	N	
1	1/6/86	7	1		167	N	
1	1/6/86	8	1		164	N	
1	1/6/86	9	1		160	N	
1	1/6/86	10	1		153	N	
1	1/6/86	11	1		143	N	
1	1/6/86	12	1		127	N	
1	1/6/86	13	1		108	N	
1	1/6/86	14	1		106	N	
1	1/6/86	15	1		106	N	
1	1/6/86	16	1		106	N	
1	2/3/86	1	1		147	Y	
1	2/3/86	2	1		147	N	
1	2/3/86	3	1		147	N	
1	2/3/86	4	1		147	N	
1	2/3/86	5	1		147	N	
1	2/3/86	6	1		147	N	
1	2/3/86	7	1		146	N	
1	2/3/86	8	1		144	N	
1	2/3/86	9	1		140	N	
1	2/3/86	10	1		154	N	
1	2/3/86	11	1		125	N	
1	2/3/86	12	1		112	N	
1	2/3/86	13	1		95	N	
1	2/3/86	14	1		92	N	
1	2/3/86	15	1		92	N	
1	2/3/86	16	1		92	N	
1	4/18/86	1	1		149	Y	CASE
1	4/18/86	2	1		148	N	
1	4/18/86	3	1		149	N	
1	4/18/86	4	1		149	N	
1	4/18/86	5	1		149	N	
1	4/18/86	6	1		149	N	
1	4/18/86	7	1		147	N	
1	4/18/86	8	1		145	N	
1	4/18/86	9	1		141	N	
1	4/18/86	10	1		134	N	
1	4/18/86	11	1		124	N	
1	4/18/86	12	1		110	N	
1	4/18/86	13	1		93	N	
1	4/18/86	14	1		92	N	
1	4/18/86	15	1		92	N	
1	4/18/86	16	1		91	N	
1	4/18/86	17	1		91	N	
1	4/18/86	18	1		91	N	
1	7/7/86	1	1		160	Y	
1	7/7/86	2	1		159	Y	
1	7/7/86	3	1		159	Y	
1	7/7/86	4	1		159	Y	
1	7/7/86	5	1		159	Y	
1	7/7/86	6	1		159	Y	
1	7/7/86	7	1		158	Y	
1	7/7/86	8	1		155	Y	
1	7/7/86	9	1		150	Y	
1	7/7/86	10	1		143	Y	
1	7/7/86	11	1		133	Y	
1	7/7/86	12	1		119	Y	
1	7/7/86	13	1		104	Y	
1	7/7/86	14	1		102	Y	
1	7/7/86	15	1		102	Y	
1	7/7/86	16	1		102	Y	
1	9/5/86	1	1		148	Y	CASE
1	9/5/86	2	1		147	N	
1	9/5/86	3	1		147	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/5/86	4	1		147	N	
1	9/5/86	5	1		148	N	
1	9/5/86	6	1		148	N	
1	9/5/86	7	1		147	N	
1	9/5/86	8	1		144	N	
1	9/5/86	9	1		140	N	
1	9/5/86	10	1		135	N	
1	9/5/86	11	1		127	N	
1	9/5/86	12	1		116	N	
1	9/5/86	13	1		103	N	
1	9/5/86	14	1		102	N	
1	9/5/86	15	1		102	N	
1	9/5/86	16	1		101	N	
1	9/5/86	17	1		101	N	
1	9/5/86	18	1		100	N	
1	10/6/86	1	1		143	N	
1	10/6/86	2	1		145	N	
1	10/6/86	3	1		146	Y	
1	10/6/86	4	1		146	N	
1	10/6/86	5	1		146	N	
1	10/6/86	6	1		146	N	
1	10/6/86	7	1		145	N	
1	10/6/86	8	1		143	N	
1	10/6/86	9	1		140	N	
1	10/6/86	10	1		134	N	
1	10/6/86	11	1		127	N	
1	10/6/86	12	1		116	N	
1	10/6/86	13	1		103	N	
1	10/6/86	14	1		102	N	
1	10/6/86	15	1		102	N	
1	10/6/86	16	1		102	N	
1	10/10/86	1	1		149	Y	CASS
1	10/10/86	2	1		148	N	
1	10/10/86	3	1		147	N	
1	10/10/86	4	1		147	N	
1	10/10/86	5	1		147	N	
1	10/10/86	6	1		147	N	
1	10/10/86	7	1		146	N	
1	10/10/86	8	1		144	N	
1	10/10/86	9	1		141	N	
1	10/10/86	10	1		135	N	
1	10/10/86	11	1		127	N	
1	10/10/86	12	1		116	N	
1	10/10/86	13	1		102	N	
1	10/10/86	14	1		101	N	
1	10/10/86	15	1		101	N	
1	10/10/86	16	1		101	N	
1	10/10/86	17	1		101	N	
1	10/10/86	18	1		101	N	
1	11/3/86	1	1		146	Y	
1	11/3/86	2	1		144	N	
1	11/3/86	3	1		144	N	
1	11/3/86	4	1		145	N	
1	11/3/86	5	1		145	N	
1	11/3/86	6	1		145	N	
1	11/3/86	7	1		145	N	
1	11/3/86	8	1		143	N	
1	11/3/86	9	1		139	N	
1	11/3/86	10	1		134	N	
1	11/3/86	11	1		126	N	
1	11/3/86	12	1		114	N	
1	11/3/86	13	1		100	N	
1	11/3/86	14	1		99	N	
1	11/3/86	15	1		88	N	
1	11/3/86	16	1		96	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/28/86	1	1		147	Y	cass
1	11/28/86	2	1		146	N	
1	11/28/86	3	1		146	N	
1	11/28/86	4	1		146	N	
1	11/28/86	5	1		146	N	
1	11/28/86	6	1		146	N	
1	11/28/86	7	1		145	N	
1	11/28/86	8	1		143	N	
1	11/28/86	9	1		140	N	
1	11/28/86	10	1		134	N	
1	11/28/86	11	1		128	N	
1	11/28/86	12	1		113	N	
1	11/28/86	13	1		98	N	
1	11/28/86	14	1		96	N	
1	11/28/86	15	1		96	N	
1	11/28/86	16	1		96	N	
1	11/28/86	17	1		96	N	
1	11/28/86	18	1		96	N	
1	2/3/87	1	1		146	Y	
1	2/3/87	2	1		145	N	
1	2/3/87	3	1		145	N	
1	2/3/87	4	1		145	N	
1	2/3/87	5	1		145	N	
1	2/3/87	6	1		146	N	
1	2/3/87	7	1		145	N	
1	2/3/87	8	1		142	N	
1	2/3/87	9	1		139	N	
1	2/3/87	10	1		133	N	
1	2/3/87	11	1		124	N	
1	2/3/87	12	1		111	N	
1	2/3/87	13	1		94	N	
1	2/3/87	14	1		92	N	
1	2/3/87	15	1		92	N	
1	2/3/87	16	1		92	N	
1	3/6/87	1	1		147	Y	cass
1	3/6/87	2	1		146	N	
1	3/6/87	3	1		146	N	
1	3/6/87	4	1		146	N	
1	3/6/87	5	1		146	N	
1	3/6/87	6	1		146	N	
1	3/6/87	7	1		145	N	
1	3/6/87	8	1		143	N	
1	3/6/87	9	1		139	N	
1	3/6/87	10	1		133	N	
1	3/6/87	11	1		123	N	
1	3/6/87	12	1		109	N	
1	3/6/87	13	1		92	N	
1	3/6/87	14	1		91	N	
1	3/6/87	15	1		91	N	
1	3/6/87	16	1		90	N	
1	3/6/87	17	1		90	N	
1	3/6/87	18	1		90	N	
1	5/1/87	1	1		146	Y	cass
1	5/1/87	2	1		145	N	
1	5/1/87	3	1		146	N	
1	5/1/87	4	1		146	N	
1	5/1/87	5	1		146	N	
1	5/1/87	6	1		146	N	
1	5/1/87	7	1		145	N	
1	5/1/87	8	1		142	N	
1	5/1/87	9	1		138	N	
1	5/1/87	10	1		132	N	
1	5/1/87	11	1		122	N	
1	5/1/87	12	1		109	N	
1	5/1/87	13	1		94	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/1/87	14	1		92	N	
1	5/1/87	15	1		92	N	
1	5/1/87	16	1		92	N	
1	5/1/87	17	1		92	N	
1	5/1/87	18	1		92	N	
1	6/5/87	1	1		146	Y	case
1	6/5/87	2	1		145	N	
1	6/5/87	3	1		146	N	
1	6/5/87	4	1		146	N	
1	6/5/87	5	1		146	N	
1	6/5/87	6	1		146	N	
1	6/5/87	7	1		145	N	
1	6/5/87	8	1		134	N	
1	6/5/87	9	1		138	N	
1	6/5/87	10	1		132	N	
1	6/5/87	11	1		123	N	
1	6/5/87	12	1		111	N	
1	6/5/87	13	1		96	N	
1	6/5/87	14	1		95	N	
1	6/5/87	15	1		94	N	
1	6/5/87	16	1		94	N	
1	6/5/87	17	1		94	N	
1	6/5/87	18	1		94	N	
1	7/6/87	1	1		138	Y	
1	7/6/87	2	1		137	N	
1	7/6/87	3	1		137	N	
1	7/6/87	4	1		138	N	
1	7/6/87	5	1		138	N	
1	7/6/87	6	1		138	N	
1	7/6/87	7	1		137	N	
1	7/6/87	8	1		134	N	
1	7/6/87	9	1		131	N	
1	7/6/87	10	1		125	N	
1	7/6/87	11	1		117	N	
1	7/6/87	12	1		105	N	
1	7/6/87	13	1		91	N	
1	7/6/87	14	1		90	N	
1	7/6/87	15	1		90	N	
1	7/6/87	16	1		90	N	
1	8/3/87	1	1		135	N	
1	8/3/87	2	1		136	Y	
1	8/3/87	3	1		136	N	
1	8/3/87	4	1		136	N	
1	8/3/87	5	1		136	N	
1	8/3/87	6	1		136	N	
1	8/3/87	7	1		136	N	
1	8/3/87	8	1		132	N	
1	8/3/87	9	1		129	N	
1	8/3/87	10	1		124	N	
1	8/3/87	11	1		118	N	
1	8/3/87	12	1		108	N	
1	8/3/87	13	1		98	N	
1	8/3/87	14	1		96	N	
1	8/3/87	15	1		96	N	
1	8/3/87	16	1		96	N	
1	1/2/88	1	1		137	Y	
1	1/2/88	2	1		136	N	
1	1/2/88	3	1		137	N	
1	1/2/88	4	1		137	N	
1	1/2/88	5	1		137	N	
1	1/2/88	6	1		137	N	
1	1/2/88	7	1		137	N	
1	1/2/88	8	1		134	N	
1	1/2/88	9	1		130	N	
1	1/2/88	10	1		126	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/2/88	11	1		116	N	
1	1/2/88	12	1		104	N	
1	1/2/88	13	1		89	N	
1	1/2/88	14	1		87	N	
1	1/2/88	15	1		87	N	
1	1/2/88	16	1		86	N	
1	1/4/88	1	1		146	Y	
1	1/4/88	2	1		146	N	
1	1/4/88	3	1		146	N	
1	1/4/88	4	1		146	N	
1	1/4/88	5	1		146	N	
1	1/4/88	6	1		146	N	
1	1/4/88	7	1		146	N	
1	1/4/88	8	1		143	N	
1	1/4/88	9	1		140	N	
1	1/4/88	10	1		135	N	
1	1/4/88	11	1		126	N	
1	1/4/88	12	1		112	N	
1	1/4/88	13	1		96	N	
1	1/4/88	14	1		95	N	
1	1/4/88	15	1		95	N	
1	1/4/88	16	1		94	N	
1	4/1/88	1	1		145	Y	case
1	4/1/88	2	1		144	N	
1	4/1/88	3	1		145	N	
1	4/1/88	4	1		145	N	
1	4/1/88	5	1		145	N	
1	4/1/88	6	1		145	N	
1	4/1/88	7	1		144	N	
1	4/1/88	8	1		141	N	
1	4/1/88	9	1		138	N	
1	4/1/88	10	1		131	N	
1	4/1/88	11	1		122	N	
1	4/1/88	12	1		108	N	
1	4/1/88	13	1		92	N	
1	4/1/88	14	1		91	N	
1	4/1/88	15	1		90	N	
1	4/1/88	16	1		90	N	
1	4/1/88	17	1		90	N	
1	4/1/88	18	1		90	N	
1	5/6/88	1	1		145	Y	
1	5/6/88	2	1		145	N	
1	5/6/88	3	1		145	N	
1	5/6/88	4	1		144	N	
1	5/6/88	5	1		145	N	
1	5/6/88	6	1		145	N	
1	5/6/88	7	1		144	N	
1	5/6/88	8	1		141	N	
1	5/6/88	9	1		137	N	
1	5/6/88	10	1		131	N	
1	5/6/88	11	1		122	N	
1	5/6/88	12	1		109	N	
1	5/6/88	13	1		93	N	
1	5/6/88	14	1		92	N	
1	5/6/88	15	1		92	N	
1	5/6/88	16	1		91	N	
1	5/6/88	17	1		91	N	
1	5/6/88	18	1		91	N	
1	6/17/88	1	1		145	Y	case
1	6/17/88	2	1		144	N	
1	6/17/88	3	1		145	N	
1	6/17/88	4	1		144	N	
1	6/17/88	5	1		145	N	
1	6/17/88	6	1		145	N	
1	6/17/88	7	1		143	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	6/17/88	8	1		141	N	
1	6/17/88	9	1		137	N	
1	6/17/88	10	1		131	N	
1	6/17/88	11	1		122	N	
1	6/17/88	12	1		110	N	
1	6/17/88	13	1		95	N	
1	6/17/88	14	1		94	N	
1	6/17/88	15	1		94	N	
1	6/17/88	16	1		94	N	
1	6/17/88	17	1		94	N	
1	6/17/88	18	1		94	N	
1	8/5/88	1	1		144	Y	CASS
1	8/5/88	2	1		143	N	
1	8/5/88	3	1		144	N	
1	8/5/88	4	1		144	N	
1	8/5/88	5	1		144	N	
1	8/5/88	6	1		144	N	
1	8/5/88	7	1		143	N	
1	8/5/88	8	1		141	N	
1	8/5/88	9	1		137	N	
1	8/5/88	10	1		131	N	
1	8/5/88	11	1		123	N	
1	8/5/88	12	1		112	N	
1	8/5/88	13	1		99	N	
1	8/5/88	14	1		98	N	
1	8/5/88	15	1		98	N	
1	8/5/88	16	1		98	N	
1	8/5/88	17	1		98	N	
1	8/5/88	18	1		97	N	
1	10/28/88	1	1		144	Y	CASS
1	10/28/88	2	1		143	N	
1	10/28/88	3	1		144	N	
1	10/28/88	4	1		144	N	
1	10/28/88	5	1		144	N	
1	10/28/88	6	1		144	N	
1	10/28/88	7	1		143	N	
1	10/28/88	8	1		141	N	
1	10/28/88	9	1		138	N	
1	10/28/88	10	1		132	N	
1	10/28/88	11	1		124	N	
1	10/28/88	12	1		113	N	
1	10/28/88	13	1		100	N	
1	10/28/88	14	1		99	N	
1	10/28/88	15	1		98	N	
1	10/28/88	16	1		98	N	
1	10/28/88	17	1		98	N	
1	10/28/88	18	1		98	N	
1	11/18/88	1	1		144	Y	CASS
1	11/18/88	2	1		143	N	
1	11/18/88	3	1		144	N	
1	11/18/88	4	1		144	N	
1	11/18/88	5	1		144	N	
1	11/18/88	6	1		144	N	
1	11/18/88	7	1		144	N	
1	11/18/88	8	1		141	N	
1	11/18/88	9	1		138	N	
1	11/18/88	10	1		133	N	
1	11/18/88	11	1		125	N	
1	11/18/88	12	1		113	N	
1	11/18/88	13	1		99	N	
1	11/18/88	14	1		98	N	
1	11/18/88	15	1		98	N	
1	11/18/88	16	1		97	N	
1	11/18/88	17	1		97	N	
1	11/18/88	18	1		97	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	12/23/88	1	1		144	Y	cass
1	12/23/88	2	1		143	N	
1	12/23/88	3	1		143	N	
1	12/23/88	4	1		143	N	
1	12/23/88	5	1		144	N	
1	12/23/88	6	1		144	N	
1	12/23/88	7	1		143	N	
1	12/23/88	8	1		141	N	
1	12/23/88	9	1		137	N	
1	12/23/88	10	1		132	N	
1	12/23/88	11	1		124	N	
1	12/23/88	12	1		111	N	
1	12/23/88	13	1		96	N	
1	12/23/88	14	1		94	N	
1	12/23/88	15	1		94	N	
1	12/23/88	16	1		94	N	
1	12/23/88	17	1		94	N	
1	12/23/88	18	1		94	N	
1	1/2/89	1	1		137	Y	
1	1/2/89	2	1		136	N	
1	1/2/89	3	1		137	N	
1	1/2/89	4	1		137	N	
1	1/2/89	5	1		137	N	
1	1/2/89	6	1		137	N	
1	1/2/89	7	1		137	N	
1	1/2/89	8	1		134	N	
1	1/2/89	9	1		130	N	
1	1/2/89	10	1		126	N	
1	1/2/89	11	1		116	N	
1	1/2/89	12	1		104	N	
1	1/2/89	13	1		89	N	
1	1/2/89	14	1		87	N	
1	1/2/89	15	1		87	N	
1	1/2/89	16	1		86	N	
1	1/23/89	1	1		144	Y	cass
1	1/23/89	2	1		143	N	
1	1/23/89	3	1		143	N	
1	1/23/89	4	1		143	N	
1	1/23/89	5	1		144	N	
1	1/23/89	6	1		144	N	
1	1/23/89	7	1		143	N	
1	1/23/89	8	1		140	N	
1	1/23/89	9	1		137	N	
1	1/23/89	10	1		131	N	
1	1/23/89	11	1		123	N	
1	1/23/89	12	1		109	N	
1	1/23/89	13	1		93	N	
1	1/23/89	14	1		92	N	
1	1/23/89	15	1		92	N	
1	1/23/89	16	1		91	N	
1	1/23/89	17	1		91	N	
1	1/23/89	18	1		91	N	
1	1/1/90	1	1		145	Y	
1	1/1/90	2	1		144	N	
1	1/1/90	3	1		145	N	
1	1/1/90	4	1		145	N	
1	1/1/90	5	1		145	N	
1	1/1/90	6	1		145	N	
1	1/1/90	7	1		144	N	
1	1/1/90	8	1		142	N	
1	1/1/90	9	1		139	N	
1	1/1/90	10	1		134	N	
1	1/1/90	11	1		125	N	
1	1/1/90	12	1		112	N	
1	1/1/90	13	1		96	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101 THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/1/90	14	1		94	N	
1	1/1/90	15	1		94	N	
1	1/1/90	16	1		94	N	
1	1/1/90	17	1		94	N	
1	1/1/90	18	1		94	N	
1	2/18/91	1	1		144	Y	890523512-20
1	2/18/91	2	1		143	N	
1	2/18/91	3	1		143	N	
1	2/18/91	4	1		143	N	
1	2/18/91	5	1		143	N	
1	2/18/91	6	1		143	N	
1	2/18/91	7	1		142	N	
1	2/18/91	8	1		140	N	
1	2/18/91	9	1		136	N	
1	2/18/91	10	1		130	N	
1	2/18/91	11	1		120	N	
1	2/18/91	12	1		106	N	
1	2/18/91	13	1		90	N	
1	2/18/91	14	1		89	N	
1	2/18/91	15	1		88	N	
1	2/18/91	16	1		88	N	
1	2/26/91	1	1		138	Y	J 890523512-47
1	2/26/91	2	1		137	N	
1	2/26/91	3	1		137	N	
1	2/26/91	4	1		138	N	
1	2/26/91	5	1		138	N	
1	2/26/91	6	1		138	N	
1	2/26/91	7	1		137	N	
1	2/26/91	8	1		134	N	
1	2/26/91	9	1		130	N	
1	2/26/91	10	1		125	N	
1	2/26/91	11	1		115	N	
1	2/26/91	12	1		102	N	
1	2/26/91	13	1		86	N	
1	2/26/91	14	1		85	N	
1	2/26/91	15	1		85	N	
1	2/26/91	16	1		85	N	
1	3/5/91	1	1		143	Y	J 2E-OP-021
1	3/5/91	2	1		142	N	
1	3/5/91	3	1		142	N	
1	3/5/91	4	1		142	N	
1	3/5/91	5	1		143	N	
1	3/5/91	6	1		142	N	
1	3/5/91	7	1		141	N	
1	3/5/91	8	1		139	N	
1	3/5/91	9	1		135	N	
1	3/5/91	10	1		129	N	
1	3/5/91	11	1		120	N	
1	3/5/91	12	1		106	N	
1	3/5/91	13	1		90	N	
1	3/5/91	14	1		89	N	
1	3/5/91	15	1		88	N	
1	3/5/91	16	1		88	N	
1	3/9/91	1	1		143	Y	2E-OP-021
1	3/9/91	2	1		142	N	
1	3/9/91	3	1		142	N	
1	3/9/91	4	1		142	N	
1	3/9/91	5	1		143	N	
1	3/9/91	6	1		143	N	
1	3/9/91	7	1		141	N	
1	3/9/91	8	1		139	N	
1	3/9/91	9	1		129	N	
1	3/9/91	10	1		124	N	
1	3/9/91	11	1		120	N	
1	3/9/91	12	1		106	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/9/91	13	1		90	N	
1	3/9/91	14	1		89	N	
1	3/9/91	15	1		89	N	
1	3/9/91	16	1		88	N	
1	3/17/91	1	1		143	N	J 2E-OP-020
1	3/17/91	2	1		142	N	
1	3/17/91	3	1		143	N	
1	3/17/91	4	1		143	N	
1	3/17/91	5	1		143	Y	
1	3/17/91	6	1		143	N	
1	3/17/91	7	1		142	N	
1	3/17/91	8	1		139	N	
1	3/17/91	9	1		136	N	
1	3/17/91	10	1		129	N	
1	3/17/91	11	1		120	N	
1	3/17/91	12	1		106	N	
1	3/17/91	13	1		90	N	
1	3/17/91	14	1		89	N	
1	3/17/91	15	1		89	N	
1	3/17/91	16	1		89	N	
1	3/23/91	1	1		144	Y	J 890523512-20
1	3/23/91	2	1		143	N	
1	3/23/91	3	1		143	N	
1	3/23/91	4	1		143	N	
1	3/23/91	5	1		144	N	
1	3/23/91	6	1		144	N	
1	3/23/91	7	1		142	N	
1	3/23/91	8	1		140	N	
1	3/23/91	9	1		136	N	
1	3/23/91	10	1		129	N	
1	3/23/91	11	1		120	N	
1	3/23/91	12	1		106	N	
1	3/23/91	13	1		90	N	
1	3/23/91	14	1		89	N	
1	3/23/91	15	1		89	N	
1	3/23/91	16	1		88	N	
1	3/31/91	1	1		141	N	J 777-13-20-010
1	3/31/91	2	1		141	N	
1	3/31/91	3	1		141	N	
1	3/31/91	4	1		141	N	
1	3/31/91	5	1		142	Y	
1	3/31/91	6	1		141	N	
1	3/31/91	7	1		140	N	
1	3/31/91	8	1		138	N	
1	3/31/91	9	1		134	N	
1	3/31/91	10	1		128	N	
1	3/31/91	11	1		118	N	
1	3/31/91	12	1		105	N	
1	3/31/91	13	1		89	N	
1	3/31/91	14	1		88	N	
1	3/31/91	15	1		88	N	
1	3/31/91	16	1		88	N	
1	4/7/91	1	1		143	Y	J 2E-OP-020
1	4/7/91	2	1		142	N	
1	4/7/91	3	1		142	N	
1	4/7/91	4	1		142	N	
1	4/7/91	5	1		143	N	
1	4/7/91	6	1		143	N	
1	4/7/91	7	1		141	N	
1	4/7/91	8	1		139	N	
1	4/7/91	9	1		135	N	
1	4/7/91	10	1		129	N	
1	4/7/91	11	1		119	N	
1	4/7/91	12	1		106	N	
1	4/7/91	13	1		90	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	4/7/91	14	1		89	N	
1	4/7/91	15	1		89	N	
1	4/7/91	16	1		88	N	
1	4/14/91	1	1		143	Y	J 890523512-20
1	4/14/91	2	1		142	N	
1	4/14/91	3	1		143	N	
1	4/14/91	4	1		143	N	
1	4/14/91	5	1		143	N	
1	4/14/91	6	1		143	N	
1	4/14/91	7	1		142	N	
1	4/14/91	8	1		139	N	
1	4/14/91	9	1		135	N	
1	4/14/91	10	1		129	N	
1	4/14/91	11	1		120	N	
1	4/14/91	12	1		106	N	
1	4/14/91	13	1		91	N	
1	4/14/91	14	1		90	N	
1	4/14/91	15	1		89	N	
1	4/14/91	16	1		89	N	
1	4/21/91	1	1		143	Y	J 2E-OP-020
1	4/21/91	2	1		142	N	
1	4/21/91	3	1		142	N	
1	4/21/91	4	1		143	N	
1	4/21/91	5	1		143	N	
1	4/21/91	6	1		143	N	
1	4/21/91	7	1		142	N	
1	4/21/91	8	1		139	N	
1	4/21/91	9	1		135	N	
1	4/21/91	10	1		129	N	
1	4/21/91	11	1		119	N	
1	4/21/91	12	1		106	N	
1	4/21/91	13	1		91	N	
1	4/21/91	14	1		90	N	
1	4/21/91	15	1		89	N	
1	4/21/91	16	1		89	N	
1	4/28/91	1	1		143	Y	J 2E-OP-020
1	4/28/91	2	1		142	N	
1	4/28/91	3	1		142	N	
1	4/28/91	4	1		142	N	
1	4/28/91	5	1		143	N	
1	4/28/91	6	1		143	N	
1	4/28/91	7	1		141	N	
1	4/28/91	8	1		139	N	
1	4/28/91	9	1		135	N	
1	4/28/91	10	1		129	N	
1	4/28/91	11	1		119	N	
1	4/28/91	12	1		106	N	
1	4/28/91	13	1		91	N	
1	4/28/91	14	1		90	N	
1	4/28/91	15	1		90	N	
1	5/4/91	1	1		141	Y	J JJ-99A-J
1	5/4/91	2	1		140	N	
1	5/4/91	3	1		141	N	
1	5/4/91	4	1		141	N	
1	5/4/91	5	1		141	N	
1	5/4/91	6	1		141	N	
1	5/4/91	7	1		140	N	
1	5/4/91	8	1		137	N	
1	5/4/91	9	1		133	N	
1	5/4/91	10	1		127	N	
1	5/4/91	11	1		118	N	
1	5/4/91	12	1		105	N	
1	5/4/91	13	1		90	N	
1	5/4/91	14	1		89	N	
1	5/4/91	15	1		89	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/4/91	16	1		89	N	
1	5/24/91	1	1		141	Y	J 890523512-20
1	5/24/91	2	1		140	N	
1	5/24/91	3	1		140	N	
1	5/24/91	4	1		140	N	
1	5/24/91	5	1		140	N	
1	5/24/91	6	1		140	N	
1	5/24/91	7	1		139	N	
1	5/24/91	8	1		136	N	
1	5/24/91	9	1		132	N	
1	5/24/91	10	1		126	N	
1	5/24/91	11	1		118	N	
1	5/24/91	12	1		105	N	
1	5/24/91	13	1		90	N	
1	5/24/91	14	1		89	N	
1	5/24/91	15	1		89	N	
1	5/24/91	16	1		89	N	
1	5/26/91	1	1		143	Y	J 2E-OP-020
1	5/26/91	2	1		142	N	
1	5/26/91	3	1		143	N	
1	5/26/91	4	1		143	N	
1	5/26/91	5	1		143	N	
1	5/26/91	6	1		143	N	
1	5/26/91	7	1		141	N	
1	5/26/91	8	1		139	N	
1	5/26/91	9	1		135	N	
1	5/26/91	10	1		129	N	
1	5/26/91	11	1		120	N	
1	5/26/91	12	1		107	N	
1	5/26/91	13	1		92	N	
1	5/26/91	14	1		91	N	
1	5/26/91	15	1		91	N	
1	5/26/91	16	1		91	N	
1	6/1/91	1	1		141	Y	J 890523512-20
1	6/1/91	2	1		140	N	
1	6/1/91	3	1		140	N	
1	6/1/91	4	1		140	N	
1	6/1/91	5	1		141	N	
1	6/1/91	6	1		141	N	
1	6/1/91	7	1		139	N	
1	6/1/91	8	1		137	N	
1	6/1/91	9	1		133	N	
1	6/1/91	10	1		127	N	
1	6/1/91	11	1		118	N	
1	6/1/91	12	1		105	N	
1	6/1/91	13	1		91	N	
1	6/1/91	14	1		90	N	
1	6/1/91	15	1		90	N	
1	6/1/91	16	1		90	N	
1	6/9/91	1	1		142	Y	J 2E-OP-021
1	6/9/91	2	1		142	N	
1	6/9/91	3	1		141	N	
1	6/9/91	4	1		142	N	
1	6/9/91	5	1		142	N	
1	6/9/91	6	1		142	N	
1	6/9/91	7	1		140	N	
1	6/9/91	8	1		138	N	
1	6/9/91	9	1		134	N	
1	6/9/91	10	1		128	N	
1	6/9/91	11	1		119	N	
1	6/9/91	12	1		107	N	
1	6/9/91	13	1		92	N	
1	6/9/91	14	1		91	N	
1	6/9/91	15	1		91	N	
1	6/9/91	16	1		91	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	6/16/91	1	1		141	Y	J 890523512-20
1	6/16/91	2	1		138	N	
1	6/16/91	3	1		140	N	
1	6/16/91	4	1		140	N	
1	6/16/91	5	1		140	N	
1	6/16/91	6	1		140	N	
1	6/16/91	7	1		139	N	
1	6/16/91	8	1		136	N	
1	6/16/91	9	1		132	N	
1	6/16/91	10	1		126	N	
1	6/16/91	11	1		118	N	
1	6/16/91	12	1		106	N	
1	6/16/91	13	1		92	N	
1	6/16/91	14	1		91	N	
1	6/16/91	15	1		91	N	
1	6/16/91	16	1		91	N	
1	6/23/91	1	1		141	Y	J 890523512-20
1	6/23/91	2	1		140	N	
1	6/23/91	3	1		140	N	
1	6/23/91	4	1		140	N	
1	6/23/91	5	1		140	N	
1	6/23/91	6	1		140	N	
1	6/23/91	7	1		139	N	
1	6/23/91	8	1		136	N	
1	6/23/91	9	1		132	N	
1	6/23/91	10	1		126	N	
1	6/23/91	11	1		118	N	
1	6/23/91	12	1		106	N	
1	6/23/91	13	1		92	N	
1	6/23/91	14	1		91	N	
1	6/23/91	15	1		91	N	
1	6/23/91	16	1		91	N	
1	6/29/91	1	1		143	Y	J 2E000247
1	6/29/91	2	1		142	N	
1	6/29/91	3	1		142	N	
1	6/29/91	4	1		143	N	
1	6/29/91	5	1		143	N	
1	6/29/91	6	1		143	N	
1	6/29/91	7	1		141	N	
1	6/29/91	8	1		139	N	
1	6/29/91	9	1		135	N	
1	6/29/91	10	1		129	N	
1	6/29/91	11	1		120	N	
1	6/29/91	12	1		108	N	
1	6/29/91	13	1		94	N	
1	6/29/91	14	1		93	N	
1	6/29/91	15	1		93	N	
1	6/29/91	16	1		93	N	
1	7/6/91	1	1		143	Y	J 2E000247
1	7/6/91	2	1		142	N	
1	7/6/91	3	1		142	N	
1	7/6/91	4	1		142	N	
1	7/6/91	5	1		142	N	
1	7/6/91	6	1		142	N	
1	7/6/91	7	1		141	N	
1	7/6/91	8	1		139	N	
1	7/6/91	9	1		135	N	
1	7/6/91	10	1		129	N	
1	7/6/91	11	1		120	N	
1	7/6/91	12	1		108	N	
1	7/6/91	13	1		94	N	
1	7/6/91	14	1		94	N	
1	7/6/91	15	1		93	N	
1	7/6/91	16	1		93	N	
1	7/14/91	1	1		139	Y	J 910126143-64

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/14/91	2	1		138	N	
1	7/14/91	3	1		138	N	
1	7/14/91	4	1		139	N	
1	7/14/91	5	1		139	N	
1	7/14/91	6	1		139	N	
1	7/14/91	7	1		137	N	
1	7/14/91	8	1		135	N	
1	7/14/91	9	1		131	N	
1	7/14/91	10	1		125	N	
1	7/14/91	11	1		117	N	
1	7/14/91	12	1		106	N	
1	7/14/91	13	1		93	N	
1	7/14/91	14	1		92	N	
1	7/14/91	15	1		92	N	
1	7/14/91	16	1		92	N	
1	7/14/91	17	1		92	N	
1	7/14/91	18	1		91	N	
1	7/20/91	1	1		142	Y	J 2E-OP-021
1	7/20/91	2	1		141	N	
1	7/20/91	3	1		141	N	
1	7/20/91	4	1		141	N	
1	7/20/91	5	1		142	N	
1	7/20/91	6	1		142	N	
1	7/20/91	7	1		140	N	
1	7/20/91	8	1		138	N	
1	7/20/91	9	1		134	N	
1	7/20/91	10	1		128	N	
1	7/20/91	11	1		120	N	
1	7/20/91	12	1		108	N	
1	7/20/91	13	1		95	N	
1	7/20/91	14	1		94	N	
1	7/20/91	15	1		94	N	
1	7/20/91	16	1		94	N	
1	7/27/91	1	1		140	Y	J 890523512-20
1	7/27/91	2	1		139	N	
1	7/27/91	3	1		139	N	
1	7/27/91	4	1		139	N	
1	7/27/91	5	1		140	N	
1	7/27/91	6	1		140	N	
1	7/27/91	7	1		138	N	
1	7/27/91	8	1		136	N	
1	7/27/91	9	1		132	N	
1	7/27/91	10	1		126	N	
1	7/27/91	11	1		118	N	
1	7/27/91	12	1		107	N	
1	7/27/91	13	1		94	N	
1	7/27/91	14	1		93	N	
1	7/27/91	15	1		93	N	
1	7/27/91	16	1		93	N	
1	8/3/91	1	1		142	N	J2E-OP-02
1	8/3/91	2	1		141	N	
1	8/3/91	3	1		141	N	
1	8/3/91	4	1		141	Y	
1	8/3/91	5	1		141	N	
1	8/3/91	6	1		141	N	
1	8/3/91	7	1		140	N	
1	8/3/91	8	1		138	N	
1	8/3/91	9	1		134	N	
1	8/3/91	10	1		128	N	
1	8/3/91	11	1		120	N	
1	8/3/91	12	1		109	N	
1	8/3/91	13	1		96	N	
1	8/3/91	14	1		95	N	
1	8/3/91	15	1		95	N	
1	8/3/91	16	1		95	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/11/91	1	1		140	Y	J 910126143-42
1	8/11/91	2	1		139	N	
1	8/11/91	3	1		139	N	
1	8/11/91	4	1		139	N	
1	8/11/91	5	1		140	N	
1	8/11/91	6	1		140	N	
1	8/11/91	7	1		138	N	
1	8/11/91	8	1		136	N	
1	8/11/91	9	1		132	N	
1	8/11/91	10	1		127	N	
1	8/11/91	11	1		119	N	
1	8/11/91	12	1		108	N	
1	8/11/91	13	1		96	N	
1	8/11/91	14	1		95	N	
1	8/11/91	15	1		95	N	
1	8/11/91	16	1		95	N	
1	8/11/91	17	1		95	N	
1	8/11/91	18	1		95	N	
1	8/17/91	1	1		142	Y	J-2E-OP-020
1	8/17/91	2	1		141	N	
1	8/17/91	3	1		141	N	
1	8/17/91	4	1		141	N	
1	8/17/91	5	1		142	N	
1	8/17/91	6	1		142	N	
1	8/17/91	7	1		140	N	
1	8/17/91	8	1		138	N	
1	8/17/91	9	1		134	N	
1	8/17/91	10	1		129	N	
1	8/17/91	11	1		121	N	
1	8/17/91	12	1		110	N	
1	8/17/91	13	1		98	N	
1	8/17/91	14	1		97	N	
1	8/17/91	15	1		97	N	
1	8/17/91	16	1		97	N	
1	8/24/91	1	1		139	Y	J 890423320-42
1	8/24/91	2	1		138	N	
1	8/24/91	3	1		139	N	
1	8/24/91	4	1		139	N	
1	8/24/91	5	1		139	N	
1	8/24/91	6	1		139	Y	
1	8/24/91	7	1		138	N	
1	8/24/91	8	1		135	N	
1	8/24/91	9	1		132	N	
1	8/24/91	10	1		126	N	
1	8/24/91	11	1		119	N	
1	8/24/91	12	1		108	N	
1	8/24/91	13	1		96	N	
1	8/24/91	14	1		95	N	
1	8/24/91	15	1		95	N	
1	8/24/91	16	1		95	N	
1	8/31/91	1	1		141	Y	J 2E000247
1	8/31/91	2	1		140	N	
1	8/31/91	3	1		140	N	
1	8/31/91	4	1		141	N	J-0126143-64
1	9/7/91	1	1		139	Y	
1	9/7/91	2	1		138	N	
1	9/7/91	3	1		139	N	
1	9/7/91	4	1		139	N	
1	9/7/91	5	1		139	N	
1	9/7/91	6	1		139	N	
1	9/7/91	7	1		138	N	
1	9/7/91	8	1		135	N	
1	9/7/91	9	1		132	N	
1	9/7/91	10	1		126	N	
1	9/7/91	11	1		119	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	9/7/91	12	1		109	N	
1	9/7/91	13	1		97	N	
1	9/7/91	14	1		96	N	
1	9/7/91	15	1		96	N	
1	9/7/91	16	1		96	N	
1	9/14/91	1	1		141	Y	J-2E000247
1	9/14/91	2	1		141	N	
1	9/14/91	3	1		141	N	
1	9/14/91	4	1		141	N	
1	9/14/91	5	1		141	N	
1	9/14/91	6	1		141	N	
1	9/14/91	7	1		140	N	
1	9/14/91	8	1		138	N	
1	9/14/91	9	1		134	N	
1	9/14/91	10	1		129	N	
1	9/14/91	11	1		121	N	
1	9/14/91	12	1		111	N	
1	9/14/91	13	1		98	N	
1	9/14/91	14	1		97	N	
1	9/14/91	15	1		97	N	
1	9/14/91	16	1		97	N	
1	9/14/91	17	1		97	N	
1	9/14/91	18	1		97	N	
1	9/22/91	1	1		139	Y	J-910126143-75
1	9/22/91	2	1		138	N	
1	9/22/91	3	1		138	N	
1	9/22/91	4	1		138	N	
1	9/22/91	5	1		139	N	
1	9/22/91	6	1		139	N	
1	9/22/91	7	1		138	N	
1	9/22/91	8	1		135	N	
1	9/22/91	9	1		132	N	
1	9/22/91	10	1		127	N	
1	9/22/91	11	1		119	N	
1	9/22/91	12	1		109	N	
1	9/22/91	13	1		97	N	
1	9/22/91	14	1		96	N	
1	9/22/91	15	1		96	N	
1	9/22/91	16	1		96	N	
1	9/28/91	1	1		141	Y	J-2E000247
1	9/28/91	2	1		140	N	
1	9/28/91	3	1		141	N	
1	9/28/91	4	1		141	N	
1	9/28/91	5	1		141	N	
1	9/28/91	6	1		141	N	
1	9/28/91	7	1		140	N	
1	9/28/91	8	1		138	N	
1	9/28/91	9	1		134	N	
1	9/28/91	10	1		129	N	
1	9/28/91	11	1		121	N	
1	9/28/91	12	1		111	N	
1	9/28/91	13	1		99	N	
1	9/28/91	14	1		98	N	
1	9/28/91	15	1		98	N	
1	9/28/91	16	1		98	N	
1	10/5/91	1	1		139	Y	J-890523512-47
1	10/5/91	2	1		138	N	
1	10/5/91	3	1		139	N	
1	10/5/91	4	1		139	N	
1	10/5/91	5	1		139	N	
1	10/5/91	6	1		139	N	
1	10/5/91	7	1		138	N	
1	10/5/91	8	1		136	N	
1	10/5/91	9	1		132	N	
1	10/5/91	10	1		127	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/5/91	11	1		120	N	
1	10/5/91	12	1		109	N	
1	10/5/91	13	1		97	N	
1	10/5/91	14	1		97	N	
1	10/5/91	15	1		96	N	
1	10/5/91	16	1		96	N	
1	10/13/91	1	1		136	N	J-890423320-42
1	10/13/91	2	1		135	N	
1	10/13/91	3	1		136	N	
1	10/13/91	4	1		136	N	
1	10/13/91	5	1		136	N	
1	10/13/91	6	1		137	Y	
1	10/13/91	7	1		136	N	
1	10/13/91	8	1		133	N	
1	10/13/91	9	1		130	N	
1	10/13/91	10	1		125	N	
1	10/13/91	11	1		118	N	
1	10/13/91	12	1		108	N	
1	10/13/91	13	1		95	N	
1	10/13/91	14	1		95	N	
1	10/13/91	15	1		95	N	
1	10/13/91	16	1		94	N	
1	10/19/91	1	1		139	Y	J-HH-99A-J
1	10/19/91	2	1		139	N	
1	10/19/91	3	1		138	N	
1	10/19/91	4	1		138	N	
1	10/19/91	5	1		138	N	
1	10/19/91	6	1		139	N	
1	10/19/91	7	1		139	N	
1	10/19/91	8	1		138	N	
1	10/19/91	9	1		135	N	
1	10/19/91	10	1		132	N	
1	10/19/91	11	1		127	N	
1	10/19/91	12	1		120	N	
1	10/19/91	13	1		109	N	
1	10/19/91	14	1		97	N	
1	10/19/91	15	1		96	N	
1	10/19/91	16	1		96	N	
1	10/26/91	1	1		139	N	J-890523512-47
1	10/26/91	2	1		138	N	
1	10/26/91	3	1		138	N	
1	10/26/91	4	1		138	N	
1	10/26/91	5	1		138	N	
1	10/26/91	6	1		139	Y	
1	10/26/91	7	1		138	N	
1	10/26/91	8	1		135	N	
1	10/26/91	9	1		132	N	
1	10/26/91	10	1		127	N	
1	10/26/91	11	1		120	N	
1	10/26/91	12	1		109	N	
1	10/26/91	13	1		96	N	
1	10/26/91	14	1		95	N	
1	10/26/91	15	1		95	N	
1	10/26/91	16	1		95	N	
1	11/3/91	1	1		135	N	J-890523512-47
1	11/3/91	2	1		138	N	
1	11/3/91	3	1		138	N	
1	11/3/91	4	1		138	N	
1	11/3/91	5	1		139	N	
1	11/3/91	6	1		139	Y	
1	11/3/91	7	1		138	N	
1	11/3/91	8	1		135	N	
1	11/3/91	9	1		132	N	
1	11/3/91	10	1		127	N	
1	11/3/91	11	1		120	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/3/91	12	1		109	N	
1	11/3/91	13	1		95	N	
1	11/3/91	14	1		95	N	
1	11/3/91	15	1		94	N	
1	11/3/91	16	1		94	N	
1	11/3/91	17	1		94	N	
1	11/3/91	18	1		94	N	
1	11/10/91	1	1		138	Y	J-910126143-75
1	11/10/91	2	1		138	N	
1	11/10/91	3	1		138	N	
1	11/10/91	4	1		138	N	
1	11/10/91	5	1		138	N	
1	11/10/91	6	1		138	N	
1	11/10/91	7	1		138	N	
1	11/10/91	8	1		135	N	
1	11/10/91	9	1		132	N	
1	11/10/91	10	1		127	N	
1	11/10/91	11	1		119	N	
1	11/10/91	12	1		108	N	
1	11/10/91	13	1		95	N	
1	11/10/91	14	1		94	N	
1	11/10/91	15	1		94	N	
1	11/10/91	16	1		94	N	
1	11/10/91	17	1		94	N	
1	11/10/91	18	1		93	N	
1	11/14/91	1	1		139	Y	J-HH-99A-J
1	11/14/91	2	1		138	N	
1	11/14/91	3	1		138	N	
1	11/14/91	4	1		138	N	
1	11/14/91	5	1		138	N	
1	11/14/91	6	1		138	N	
1	11/14/91	7	1		138	N	
1	11/14/91	8	1		135	N	
1	11/14/91	9	1		132	N	
1	11/14/91	10	1		127	N	
1	11/14/91	11	1		119	N	
1	11/14/91	12	1		108	N	
1	11/14/91	13	1		95	N	
1	11/14/91	14	1		94	N	
1	11/14/91	15	1		94	N	
1	11/14/91	16	1		94	N	
1	11/14/91	17	1		93	N	
1	11/14/91	18	1		93	N	
1	11/24/91	1	1		139	Y	J-890523512-47
1	11/24/91	2	1		138	N	
1	11/24/91	3	1		138	N	
1	11/24/91	4	1		138	N	
1	11/24/91	5	1		138	N	
1	11/24/91	6	1		138	N	
1	11/24/91	7	1		138	N	
1	11/24/91	8	1		136	N	
1	11/24/91	9	1		132	N	
1	11/24/91	10	1		127	N	
1	11/24/91	11	1		119	N	
1	11/24/91	12	1		108	N	
1	11/24/91	13	1		94	N	
1	11/24/91	14	1		93	N	
1	11/24/91	15	1		93	N	
1	11/24/91	16	1		92	N	
1	11/24/91	17	1		92	N	
1	11/24/91	18	1		92	N	
1	11/30/91	1	1		138	Y	J-890523512-47
1	11/30/91	2	1		138	N	
1	11/30/91	3	1		138	N	
1	11/30/91	4	1		138	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101 THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/30/91	5	1		138	N	
1	11/30/91	6	1		138	N	
1	11/30/91	7	1		138	N	
1	11/30/91	8	1		135	N	
1	11/30/91	9	1		132	N	
1	11/30/91	10	1		127	N	
1	11/30/91	11	1		119	N	
1	11/30/91	12	1		107	N	
1	11/30/91	13	1		93	N	
1	11/30/91	14	1		92	N	
1	11/30/91	15	1		92	N	
1	11/30/91	16	1		92	N	
1	11/30/91	17	1		92	N	
1	11/30/91	18	1		91	N	
1	12/5/91	1	1		139	Y	J-890523512-47
1	12/5/91	2	1		138	N	
1	12/5/91	3	1		138	N	
1	12/5/91	4	1		138	N	
1	12/5/91	5	1		139	N	
1	12/5/91	6	1		139	N	
1	12/5/91	7	1		138	N	
1	12/5/91	8	1		135	N	
1	12/5/91	9	1		132	N	
1	12/5/91	10	1		127	N	
1	12/5/91	11	1		119	N	
1	12/5/91	12	1		107	N	
1	12/5/91	13	1		93	N	
1	12/5/91	14	1		92	N	
1	12/5/91	15	1		92	N	
1	12/5/91	16	1		91	N	
1	12/5/91	17	1		91	N	
1	12/5/91	18	1		91	N	
1	12/6/91	1	1		138	Y	J-890523512-47
1	12/6/91	2	1		138	N	
1	12/6/91	3	1		138	N	
1	12/6/91	4	1		138	N	
1	12/6/91	5	1		138	N	
1	12/6/91	6	1		138	N	
1	12/6/91	7	1		138	N	
1	12/6/91	8	1		135	N	
1	12/6/91	9	1		132	N	
1	12/6/91	10	1		127	N	
1	12/6/91	11	1		119	N	
1	12/6/91	12	1		107	N	
1	12/6/91	13	1		93	N	
1	12/6/91	14	1		92	N	
1	12/6/91	15	1		91	N	
1	12/6/91	16	1		91	N	
1	12/15/91	1	1		138	N	J-HH-99A-J
1	12/15/91	2	1		138	N	
1	12/15/91	3	1		138	N	
1	12/15/91	4	1		138	N	
1	12/15/91	5	1		138	Y	
1	12/15/91	6	1		138	N	
1	12/15/91	7	1		138	N	
1	12/15/91	8	1		135	N	
1	12/15/91	9	1		132	N	
1	12/15/91	10	1		126	N	
1	12/15/91	11	1		118	N	
1	12/15/91	12	1		106	N	
1	12/15/91	13	1		92	N	
1	12/15/91	14	1		91	N	
1	12/15/91	15	1		91	N	
1	12/15/91	16	1		90	N	
1	12/15/91	17	1		90	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	12/15/91	18	1		90	N	
1	12/19/91	1	1		138	Y	J-890523512-47
1	12/19/91	2	1		138	N	
1	12/19/91	3	1		138	N	
1	12/19/91	4	1		138	N	
1	12/19/91	5	1		138	N	
1	12/19/91	6	1		138	N	
1	12/19/91	7	1		138	N	
1	12/19/91	8	1		135	N	
1	12/19/91	9	1		132	N	
1	12/19/91	10	1		127	N	
1	12/19/91	11	1		118	N	
1	12/19/91	12	1		106	N	
1	12/19/91	13	1		91	N	
1	12/19/91	14	1		90	N	
1	12/19/91	15	1		90	N	
1	12/19/91	16	1		90	N	
1	12/19/91	17	1		90	N	
1	12/19/91	18	1		90	N	
1	12/26/91	1	1		138	Y	J-910126143-14
1	12/26/91	2	1		138	N	
1	12/26/91	3	1		138	N	
1	12/26/91	4	1		138	N	
1	12/26/91	5	1		138	N	
1	12/26/91	6	1		138	N	
1	12/26/91	7	1		137	N	
1	12/26/91	8	1		135	N	
1	12/26/91	9	1		132	N	
1	12/26/91	10	1		126	N	
1	12/26/91	11	1		118	N	
1	12/26/91	12	1		106	N	
1	12/26/91	13	1		91	N	
1	12/26/91	14	1		90	N	
1	12/26/91	15	1		90	N	
1	12/26/91	16	1		90	N	
1	12/26/91	17	1		89	N	
1	12/26/91	18	1		89	N	
1	1/2/92	1	1		140	Y	J-910126143-20
1	1/2/92	2	1		139	N	
1	1/2/92	3	1		140	N	
1	1/2/92	4	1		140	N	
1	1/2/92	5	1		140	N	
1	1/2/92	6	1		140	N	
1	1/2/92	7	1		139	N	
1	1/2/92	8	1		137	N	
1	1/2/92	9	1		133	N	
1	1/2/92	10	1		128	N	
1	1/2/92	11	1		119	N	
1	1/2/92	12	1		107	N	
1	1/2/92	13	1		91	N	
1	1/2/92	14	1		90	N	
1	1/2/92	15	1		90	N	
1	1/2/92	16	1		90	N	
1	1/2/92	17	1		90	N	
1	1/2/92	18	1		89	N	
1	1/12/92	1	1		139	Y	910126143-48
1	1/12/92	2	1		139	N	
1	1/12/92	3	1		139	N	
1	1/12/92	4	1		139	N	
1	1/12/92	5	1		139	N	
1	1/12/92	6	1		139	N	
1	1/12/92	7	1		138	N	
1	1/12/92	8	1		136	N	
1	1/12/92	9	1		132	N	
1	1/12/92	10	1		127	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/12/92	11	1		118	N	
1	1/12/92	12	1		106	N	
1	1/12/92	13	1		90	N	
1	1/12/92	14	1		89	N	
1	1/12/92	15	1		89	N	
1	1/12/92	16	1		89	N	
1	1/12/92	17	1		96	N	
1	1/12/92	18	1		96	N	
1	1/16/92	1	1		134	N	J 910126143-32
1	1/16/92	2	1		139	N	
1	1/16/92	3	1		139	N	
1	1/16/92	4	1		139	N	
1	1/16/92	5	1		139	N	
1	1/16/92	6	1		139	Y	
1	1/16/92	7	1		138	N	
1	1/16/92	8	1		136	N	
1	1/16/92	9	1		132	N	
1	1/16/92	10	1		127	N	
1	1/16/92	11	1		118	N	
1	1/16/92	12	1		106	N	
1	1/16/92	13	1		90	N	
1	1/16/92	14	1		89	N	
1	1/16/92	15	1		89	N	
1	1/16/92	16	1		88	N	
1	1/23/92	1	1		138	Y	J-910126143-14
1	1/23/92	2	1		137	N	
1	1/23/92	3	1		138	N	
1	1/23/92	4	1		138	N	
1	1/23/92	5	1		138	N	
1	1/23/92	6	1		138	N	
1	1/23/92	7	1		137	N	
1	1/23/92	8	1		134	N	
1	1/23/92	9	1		131	N	
1	1/23/92	10	1		126	N	
1	1/23/92	11	1		116	N	
1	1/23/92	12	1		104	N	
1	1/23/92	13	1		88	N	
1	1/23/92	14	1		87	N	
1	1/23/92	15	1		87	N	
1	1/23/92	16	1		87	N	
1	1/24/92	1	1		141	Y	J-calibration box
1	1/24/92	2	1		140	N	
1	1/24/92	3	1		141	N	
1	1/24/92	4	1		141	N	
1	1/24/92	5	1		141	N	
1	1/24/92	6	1		141	N	
1	1/24/92	7	1		140	N	
1	1/24/92	8	1		138	N	
1	1/24/92	9	1		134	N	
1	1/24/92	10	1		128	N	
1	1/24/92	11	1		120	N	
1	1/24/92	12	1		120	N	
1	1/24/92	13	1		91	N	
1	1/24/92	14	1		90	N	
1	1/24/92	15	1		90	N	
1	1/24/92	16	1		90	N	
1	1/28/92	1	1			N	ACCESS RESTRICTED 1/28 - 2/22 DUE TO BATTERY FUME INCIDENT
1	1/31/92	1	1		138	N	J- 890523512-47
1	1/31/92	2	1		137	N	
1	1/31/92	3	1		138	N	
1	1/31/92	4	1		138	N	
1	1/31/92	5	1		138	Y	
1	1/31/92	6	1		138	N	
1	1/31/92	7	1		137	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/31/92	8	1		135	N	
1	1/31/92	9	1		131	N	
1	1/31/92	10	1		125	N	
1	1/31/92	11	1		117	N	
1	1/31/92	12	1		104	N	
1	1/31/92	13	1		88	N	
1	1/31/92	14	1		87	N	
1	1/31/92	15	1		87	N	
1	1/31/92	16	1		86	N	
1	2/22/92	1	1		139	Y	J-910126143-32
1	2/22/92	2	1		138	N	
1	2/22/92	3	1		138	N	
1	2/22/92	4	1		139	N	
1	2/22/92	5	1		139	N	
1	2/22/92	6	1		139	N	
1	2/22/92	7	1		138	N	
1	2/22/92	8	1		135	N	
1	2/22/92	9	1		132	N	
1	2/22/92	10	1		126	N	
1	2/22/92	11	1		117	N	
1	2/22/92	12	1			N	88 - suspect data (low)
1	2/22/92	14	1		87	N	
1	2/22/92	15	1		87	N	
1	2/22/92	16	1		87	N	
1	2/27/92	1	1		139	Y	J-910126143-32
1	2/27/92	2	1		139	N	
1	2/27/92	3	1		139	N	
1	2/27/92	4	1		139	N	
1	2/27/92	5	1		139	N	
1	2/27/92	6	1		139	N	
1	2/27/92	7	1		138	N	
1	2/27/92	8	1		136	N	
1	2/27/92	9	1		138	N	
1	2/27/92	10	1		126	N	
1	2/27/92	11	1		117	N	
1	2/27/92	12	1		104	N	
1	2/27/92	13	1		88	N	
1	2/27/92	14	1		87	N	
1	2/27/92	15	1		87	N	
1	2/27/92	16	1		87	N	
1	3/6/92	1	1		141	Y	J 910126143-48
1	3/6/92	2	1		140	N	
1	3/6/92	3	1		139	N	
1	3/6/92	4	1		140	N	
1	3/6/92	5	1		140	N	
1	3/6/92	6	1		140	N	
1	3/6/92	7	1		139	N	
1	3/6/92	8	1		136	N	
1	3/6/92	9	1		133	N	
1	3/6/92	10	1		127	N	
1	3/6/92	11	1		118	N	
1	3/6/92	12	1		104	N	
1	3/6/92	13	1		88	N	
1	3/6/92	14	1		87	N	
1	3/6/92	15	1		87	N	
1	3/6/92	16	1		87	N	
1	3/12/92	1	1		139	Y	J 900925741-79
1	3/12/92	2	1		139	N	
1	3/12/92	3	1		138	N	
1	3/12/92	4	1		138	N	
1	3/12/92	5	1		139	N	
1	3/12/92	6	1		139	N	
1	3/12/92	7	1		138	N	
1	3/12/92	8	1		135	N	
1	3/12/92	9	1		131	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/12/92	10	1		125	N	
1	3/12/92	11	1		116	N	
1	3/12/92	12	1		103	N	
1	3/12/92	13	1		88	N	
1	3/12/92	14	1		87	N	
1	3/12/92	15	1		86	N	
1	3/12/92	16	1		86	N	
1	3/19/92	1	1		141	N	J SN91012614332 TI-038
1	3/19/92	2	1		140	N	
1	3/19/92	3	1		140	N	
1	3/19/92	4	1		140	N	
1	3/19/92	5	1		141	N	
1	3/19/92	6	1		141	Y	
1	3/19/92	7	1		139	N	
1	3/19/92	8	1		137	N	
1	3/19/92	9	1		133	N	
1	3/19/92	10	1		127	N	
1	3/19/92	11	1		118	N	
1	3/19/92	12	1		104	N	
1	3/19/92	13	1		89	N	
1	3/19/92	14	1		88	N	
1	3/19/92	15	1		88	N	
1	3/19/92	16	1		87	N	
1	3/26/92	1	1		139	Y	
1	3/26/92	2	1		139	N	
1	3/26/92	3	1		139	N	
1	3/26/92	4	1		139	N	
1	3/26/92	5	1		139	N	
1	3/26/92	6	1		139	N	
1	3/26/92	7	1		138	N	
1	3/26/92	8	1		135	N	
1	3/26/92	9	1		131	N	
1	3/26/92	10	1		125	N	
1	3/26/92	11	1		117	N	
1	3/26/92	12	1		104	N	
1	3/26/92	13	1		88	N	
1	3/26/92	14	1		87	N	
1	3/26/92	15	1		87	N	
1	3/26/92	16	1		87	N	
1	3/26/92	17	1		87	N	
1	3/26/92	18	1		87	N	
1	4/3/92	1	1		139	Y	J 910126143-66
1	4/3/92	2	1		138	N	
1	4/3/92	3	1		138	N	
1	4/3/92	4	1		138	N	
1	4/3/92	5	1		138	N	
1	4/3/92	6	1		138	N	
1	4/3/92	7	1		137	N	
1	4/3/92	8	1		135	N	
1	4/3/92	9	1		131	N	
1	4/3/92	10	1		125	N	
1	4/3/92	11	1		116	N	
1	4/3/92	12	1		105	N	
1	4/3/92	13	1		88	N	
1	4/3/92	14	1		87	N	
1	4/3/92	15	1		87	N	
1	4/3/92	16	1		87	N	
1	4/3/92	17	1		87	N	
1	4/3/92	18	1		86	N	
1	4/9/92	1	1		140	Y	J 890523528-80
1	4/9/92	2	1		140	N	
1	4/9/92	3	1		140	N	
1	4/9/92	4	1		140	N	
1	4/9/92	5	1		140	N	
1	4/9/92	6	1		140	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	4/9/92	7	1		139	N	
1	4/9/92	8	1		136	N	
1	4/9/92	9	1		133	N	
1	4/9/92	10	1		127	N	
1	4/9/92	11	1		118	N	
1	4/9/92	12	1		105	N	
1	4/9/92	13	1		90	N	
1	4/9/92	14	1		89	N	
1	4/9/92	15	1		89	N	
1	4/9/92	16	1		88	N	
1	4/16/92	1	1		139	Y	J 910126143 48
1	4/16/92	2	1		138	N	
1	4/16/92	3	1		138	N	
1	4/16/92	4	1		138	N	
1	4/16/92	5	1		138	N	
1	4/16/92	6	1		138	N	
1	4/16/92	7	1		137	N	
1	4/16/92	8	1		135	N	
1	4/16/92	9	1		131	N	
1	4/16/92	10	1		125	N	
1	4/16/92	11	1		116	N	
1	4/16/92	12	1		103	N	
1	4/16/92	13	1		88	N	
1	4/16/92	14	1		87	N	
1	4/16/92	15	1		87	N	
1	4/16/92	16	1		87	N	
1	4/23/92	1	1		139	Y	J 910126143-64
1	4/23/92	2	1		138	N	
1	4/23/92	3	1		138	N	
1	4/23/92	4	1		139	N	
1	4/23/92	5	1		139	N	
1	4/23/92	6	1		139	N	
1	4/23/92	7	1		138	N	
1	4/23/92	8	1		135	N	
1	4/23/92	9	1		131	N	
1	4/23/92	10	1		125	N	
1	4/23/92	11	1		116	N	
1	4/23/92	12	1		104	N	
1	4/23/92	13	1		89	N	
1	4/23/92	14	1		88	N	
1	4/23/92	15	1		88	N	
1	4/23/92	16	1		87	N	
1	4/23/92	17	1		87	N	
1	4/23/92	18	1		87	N	
1	4/30/92	1	1		139	Y	J 910126143-48
1	4/30/92	2	1		138	N	
1	4/30/92	3	1		138	N	
1	4/30/92	4	1		138	N	
1	4/30/92	5	1		138	N	
1	4/30/92	6	1		138	N	
1	4/30/92	7	1		137	N	
1	4/30/92	8	1		134	N	
1	4/30/92	9	1		130	N	
1	4/30/92	10	1		125	N	
1	4/30/92	11	1		115	N	
1	4/30/92	12	1		103	N	
1	4/30/92	13	1		89	N	
1	4/30/92	14	1		88	N	
1	4/30/92	15	1		88	N	
1	4/30/92	16	1		88	N	
1	5/7/92	1	1		138	Y	J TI-022
1	5/7/92	2	1		138	N	
1	5/7/92	3	1		138	N	
1	5/7/92	4	1		138	N	
1	5/7/92	5	1		138	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/7/92	6	1		138	N	
1	5/7/92	7	1		137	N	
1	5/7/92	8	1		134	N	
1	5/7/92	9	1		130	N	
1	5/7/92	10	1		124	N	
1	5/7/92	11	1		116	N	
1	5/7/92	12	1		103	N	
1	5/7/92	13	1		89	N	
1	5/7/92	14	1		89	N	
1	5/7/92	15	1		88	N	
1	5/7/92	16	1		88	N	
1	5/7/92	17	1		88	N	
1	5/7/92	18	1		88	N	
1	5/14/92	1	1		138	N	J 91026143-48
1	5/14/92	2	1		138	N	
1	5/14/92	3	1		138	N	
1	5/14/92	4	1		138	N	
1	5/14/92	5	1		138	N	
1	5/14/92	6	1		139	Y	
1	5/14/92	7	1		137	N	
1	5/14/92	8	1		134	N	
1	5/14/92	9	1		130	N	
1	5/14/92	10	1		124	N	
1	5/14/92	11	1		116	N	
1	5/14/92	12	1		103	N	
1	5/14/92	13	1		89	N	
1	5/14/92	14	1		88	N	
1	5/14/92	15	1		88	N	
1	5/14/92	17	1		88	N	
1	5/14/92	18	1		88	N	
1	5/22/92	1	1		137	Y	J 890523512-47
1	5/22/92	2	1		136	N	
1	5/22/92	3	1		136	N	
1	5/22/92	4	1		136	N	
1	5/22/92	5	1		136	N	
1	5/22/92	6	1		136	N	
1	5/22/92	7	1		135	N	
1	5/22/92	8	1		133	N	
1	5/22/92	9	1		129	N	
1	5/22/92	10	1		123	N	
1	5/22/92	11	1		114	N	
1	5/22/92	12	1		102	N	
1	5/22/92	13	1		88	N	
1	5/22/92	14	1		87	N	
1	5/22/92	15	1		87	N	
1	5/22/92	16	1		87	N	
1	5/28/92	1	1		137	Y	J 890523512-47
1	5/28/92	2	1		136	N	
1	5/28/92	3	1		136	N	
1	5/28/92	4	1		136	N	
1	5/28/92	5	1		137	N	
1	5/28/92	6	1		137	N	
1	5/28/92	7	1		135	N	
1	5/28/92	8	1		133	N	
1	5/28/92	9	1		129	N	
1	5/28/92	10	1		123	N	
1	5/28/92	11	1		115	N	
1	5/28/92	12	1		103	N	
1	5/28/92	13	1		89	N	
1	5/28/92	14	1		88	N	
1	5/28/92	15	1		88	N	
1	5/28/92	16	1		88	N	
1	6/4/92	1	1		136	Y	J 890523512-47
1	6/4/92	2	1		135	N	
1	6/4/92	3	1		135	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	6/4/92	4	1		135	N	
1	6/4/92	5	1		135	N	
1	6/4/92	6	1		135	N	
1	6/4/92	7	1		134	N	
1	6/4/92	8	1		132	N	
1	6/4/92	9	1		128	N	
1	6/4/92	10	1		122	N	
1	6/4/92	11	1		113	N	
1	6/4/92	12	1		102	N	
1	6/4/92	13	1		88	N	
1	6/4/92	14	1		87	N	
1	6/4/92	15	1		87	N	
1	6/4/92	16	1		87	N	
1	6/11/92	1	1		136	Y	J 890523512-47
1	6/11/92	2	1		135	N	
1	6/11/92	3	1		135	N	
1	6/11/92	4	1		135	N	
1	6/11/92	5	1		135	N	
1	6/11/92	6	1		135	N	
1	6/11/92	7	1		134	N	
1	6/11/92	8	1		131	N	
1	6/11/92	9	1		127	N	
1	6/11/92	10	1		122	N	
1	6/11/92	11	1		113	N	
1	6/11/92	12	1		102	N	
1	6/11/92	13	1		89	N	
1	6/11/92	14	1		88	N	
1	6/11/92	15	1		88	N	
1	6/11/92	16	1		88	N	
1	6/11/92	17	1		88	N	
1	6/11/92	18	1		88	N	
1	6/27/92	1	1		135	Y	J 890523512-47
1	6/27/92	2	1		135	N	
1	6/27/92	3	1		134	N	
1	6/27/92	4	1		135	N	
1	6/27/92	5	1		135	N	
1	6/27/92	6	1		135	N	
1	6/27/92	7	1		134	N	
1	6/27/92	8	1		132	N	
1	6/27/92	9	1		128	N	
1	6/27/92	10	1		122	N	
1	6/27/92	11	1		114	N	
1	6/27/92	12	1		103	N	
1	6/27/92	13	1		91	N	
1	6/27/92	14	1		90	N	
1	6/27/92	15	1		90	N	
1	6/27/92	16	1		89	N	
1	7/3/92	1	1		139	Y	J 910126143-29
1	7/3/92	2	1		138	N	
1	7/3/92	3	1		138	N	
1	7/3/92	4	1		138	N	
1	7/3/92	5	1		139	N	
1	7/3/92	6	1		139	N	
1	7/3/92	7	1		137	N	
1	7/3/92	8	1		135	N	
1	7/3/92	9	1		131	N	
1	7/3/92	10	1		125	N	
1	7/3/92	11	1		117	N	
1	7/3/92	12	1		106	N	
1	7/3/92	13	1		94	N	
1	7/3/92	14	1		93	N	
1	7/3/92	15	1		93	N	
1	7/3/92	16	1		93	N	
1	7/9/92	1	1		139	Y	J 910126143-29
1	7/9/92	2	1		138	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/9/92	3	1		138	N	
1	7/9/92	4	1		138	N	
1	7/9/92	5	1		138	N	
1	7/9/92	6	1		138	N	
1	7/9/92	7	1		138	N	
1	7/9/92	8	1		135	N	
1	7/9/92	9	1		131	N	
1	7/9/92	10	1		125	N	
1	7/9/92	11	1		117	N	
1	7/9/92	12	1		106	N	
1	7/9/92	13	1		94	N	
1	7/9/92	14	1		93	N	
1	7/9/92	15	1		93	N	
1	7/9/92	16	1		93	N	
1	7/9/92	17	1		93	N	
1	7/9/92	18	1		93	N	
1	7/17/92	1	1		138	Y	J 910126143-42
1	7/17/92	2	1		137	N	
1	7/17/92	3	1		137	N	
1	7/17/92	4	1		138	N	
1	7/17/92	5	1		138	N	
1	7/17/92	6	1		138	N	
1	7/17/92	7	1		136	N	
1	7/17/92	8	1		134	N	
1	7/17/92	9	1		130	N	
1	7/17/92	10	1		125	N	
1	7/17/92	11	1		117	N	
1	7/17/92	12	1		106	N	
1	7/17/92	13	1		94	N	
1	7/17/92	14	1		93	N	
1	7/17/92	15	1		93	N	
1	7/17/92	16	1		93	N	
1	7/23/92	1	1		140	Y	J 910126143-32
1	7/23/92	2	1		139	N	
1	7/23/92	3	1		139	N	
1	7/23/92	4	1		140	N	
1	7/23/92	5	1		140	N	
1	7/23/92	6	1		140	N	
1	7/23/92	7	1		138	N	
1	7/23/92	8	1		136	N	
1	7/23/92	9	1		132	N	
1	7/23/92	10	1		127	N	
1	7/23/92	11	1		119	N	
1	7/23/92	12	1		108	N	
1	7/23/92	13	1		96	N	
1	7/23/92	14	1		95	N	
1	7/23/92	15	1		95	N	
1	7/23/92	16	1		95	N	
1	7/30/92	1	1		139	Y	j 910126143-29
1	7/30/92	2	1		138	N	
1	7/30/92	3	1		138	N	
1	7/30/92	4	1		138	N	
1	7/30/92	5	1		138	N	
1	7/30/92	6	1		138	N	
1	7/30/92	7	1		137	N	
1	7/30/92	8	1		135	N	
1	7/30/92	9	1		131	N	
1	7/30/92	10	1		126	N	
1	7/30/92	11	1		118	N	
1	7/30/92	12	1		108	N	
1	7/30/92	13	1		96	N	
1	7/30/92	14	1		95	N	
1	7/30/92	15	1		95	N	
1	7/30/92	16	1		95	N	
1	7/30/92	17	1		94	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/30/92	18	1		94	N	
1	8/6/92	1	1		138	Y	J 910126143-42
1	8/6/92	2	1		138	N	
1	8/6/92	3	1		138	N	
1	8/6/92	4	1		138	N	
1	8/6/92	5	1		138	N	
1	8/6/92	6	1		138	N	
1	8/6/92	7	1		137	N	
1	8/6/92	8	1		135	N	
1	8/6/92	9	1		131	N	
1	8/6/92	10	1		125	N	
1	8/6/92	11	1		118	N	
1	8/6/92	12	1		108	N	
1	8/6/92	13	1		95	N	
1	8/6/92	14	1		95	N	
1	8/6/92	15	1		94	N	
1	8/6/92	16	1		94	N	
1	8/6/92	17	1		94	N	
1	8/6/92	18	1		94	N	
1	8/13/92	1	1		138	Y	J 910126143-42
1	8/13/92	2	1		138	N	
1	8/13/92	3	1		138	N	
1	8/13/92	4	1		138	N	
1	8/13/92	5	1		138	N	
1	8/13/92	6	1		138	N	
1	8/13/92	7	1		137	N	
1	8/13/92	8	1		135	N	
1	8/13/92	9	1		131	N	
1	8/13/92	10	1		125	N	
1	8/13/92	11	1		118	N	
1	8/13/92	12	1		108	N	
1	8/13/92	13	1		96	N	
1	8/13/92	14	1		96	N	
1	8/13/92	15	1		96	N	
1	8/13/92	16	1		96	N	
1	8/21/92	1	1		138	Y	J 910126143-42
1	8/21/92	2	1		137	N	
1	8/21/92	3	1		138	N	
1	8/21/92	4	1		138	N	
1	8/21/92	5	1		138	N	
1	8/21/92	6	1		138	N	
1	8/21/92	7	1		137	N	
1	8/21/92	8	1		135	N	
1	8/21/92	9	1		131	N	
1	8/21/92	10	1		126	N	
1	8/21/92	11	1		119	N	
1	8/21/92	12	1		109	N	
1	8/21/92	13	1		97	N	
1	8/21/92	14	1		96	N	
1	8/21/92	15	1		96	N	
1	8/21/92	16	1		96	N	
1	8/27/92	1	1		139	Y	J HH 99A-J
1	8/27/92	2	1		131	N	
1	8/27/92	3	1		138	N	
1	8/27/92	4	1		138	N	
1	8/27/92	5	1		138	N	
1	8/27/92	6	1		138	N	
1	8/27/92	7	1		131	N	
1	8/27/92	8	1		135	N	
1	8/27/92	9	1		131	N	
1	8/27/92	10	1		126	N	
1	8/27/92	11	1		119	N	
1	8/27/92	12	1		109	N	
1	8/27/92	13	1		97	N	
1	8/27/92	14	1		96	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/27/92	15	1		96	N	
1	8/27/92	16	1		96	N	
1	9/3/92	1	1		139	Y	J 910126143-32
1	9/3/92	2	1		139	N	
1	9/3/92	3	1		139	N	
1	9/3/92	4	1		139	N	
1	9/3/92	5	1		139	N	
1	9/3/92	6	1		139	N	
1	9/3/92	7	1		132	N	
1	9/3/92	8	1		136	N	
1	9/3/92	9	1		132	N	
1	9/3/92	10	1		127	N	
1	9/3/92	11	1		120	N	
1	9/3/92	12	1		110	N	
1	9/3/92	13	1		98	N	
1	9/3/92	14	1		97	N	
1	9/3/92	15	1		97	N	
1	9/3/92	16	1		97	N	
1	9/10/92	1	1		136	Y	J 890423320-42
1	9/10/92	2	1		136	N	
1	9/10/92	3	1		136	N	
1	9/10/92	4	1		136	N	
1	9/10/92	5	1		136	N	
1	9/10/92	6	1		136	N	
1	9/10/92	7	1		135	N	
1	9/10/92	8	1		133	N	
1	9/10/92	9	1		130	N	
1	9/10/92	10	1		125	N	
1	9/10/92	11	1		118	N	
1	9/10/92	12	1		108	N	
1	9/10/92	13	1		96	N	
1	9/10/92	14	1		95	N	
1	9/10/92	15	1		95	N	
1	9/10/92	16	1		95	N	
1	9/17/92	1	1		137	Y	J 890423320-42
1	9/17/92	2	1		136	N	
1	9/17/92	3	1		136	N	
1	9/17/92	4	1		136	N	
1	9/17/92	5	1		137	N	
1	9/17/92	6	1		137	N	
1	9/17/92	7	1		136	N	
1	9/17/92	8	1		134	N	
1	9/17/92	9	1		130	N	
1	9/17/92	10	1		125	N	
1	9/17/92	11	1		118	N	
1	9/17/92	12	1		108	N	
1	9/17/92	13	1		96	N	
1	9/17/92	14	1		95	N	
1	9/17/92	15	1		95	N	
1	9/17/92	16	1		95	N	
1	9/25/92	1	1		137	Y	J TI-045
1	9/25/92	2	1		136	N	
1	9/25/92	3	1		136	N	
1	9/25/92	4	1		136	N	
1	9/25/92	5	1		137	N	
1	9/25/92	6	1		137	Y	
1	9/25/92	7	1		136	N	
1	9/25/92	8	1		134	N	
1	9/25/92	9	1		130	N	
1	9/25/92	10	1		125	N	
1	9/25/92	11	1		118	N	
1	9/25/92	12	1		108	N	
1	9/25/92	13	1		96	N	
1	9/25/92	14	1		95	N	
1	9/25/92	15	1		95	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/25/92	16	1		95	N	
1	9/25/92	17	1		95	N	
1	9/25/92	18	1		95	N	
1	10/1/92	1	1		137	Y	J 890423320-42
1	10/1/92	2	1		136	N	
1	10/1/92	3	1		136	N	
1	10/1/92	4	1		136	N	
1	10/1/92	5	1		137	N	
1	10/1/92	6	1		137	N	
1	10/1/92	7	1		136	N	
1	10/1/92	8	1		134	N	
1	10/1/92	9	1		130	N	
1	10/1/92	10	1		125	N	
1	10/1/92	11	1		118	N	
1	10/1/92	12	1		108	N	
1	10/1/92	13	1		96	N	
1	10/1/92	14	1		95	N	
1	10/1/92	15	1		95	N	
1	10/1/92	16	1		95	N	
1	10/13/92	1	1		138	Y	J 910126143-40
1	10/13/92	2	1		137	N	
1	10/13/92	3	1		137	N	
1	10/13/92	4	1		137	N	
1	10/13/92	5	1		138	N	
1	10/13/92	6	1		138	N	
1	10/13/92	7	1		137	N	
1	10/13/92	8	1		135	N	
1	10/13/92	9	1		131	N	
1	10/13/92	10	1		126	N	
1	10/13/92	11	1		119	N	
1	10/13/92	12	1		109	N	
1	10/13/92	13	1		96	N	
1	10/13/92	14	1		96	N	
1	10/13/92	15	1		95	N	
1	10/13/92	16	1		95	N	
1	10/13/92	17	1		95	N	
1	10/13/92	18	1		95	N	
1	10/15/92	1	1		139	Y	J 89052
1	10/15/92	2	1		139	N	
1	10/15/92	3	1		139	N	
1	10/15/92	4	1		139	N	
1	10/15/92	5	1		139	N	
1	10/15/92	6	1		139	N	
1	10/15/92	7	1		138	N	
1	10/15/92	8	1		136	N	
1	10/15/92	9	1		133	N	
1	10/15/92	10	1		128	N	
1	10/15/92	11	1		120	N	
1	10/15/92	12	1		110	N	
1	10/15/92	13	1		97	N	
1	10/15/92	14	1		97	N	
1	10/15/92	15	1		96	N	
1	10/15/92	16	1		96	N	
1	10/22/92	1	1		136	Y	J 890423320-42
1	10/22/92	2	1		136	N	
1	10/22/92	3	1		136	N	
1	10/22/92	4	1		136	N	
1	10/22/92	5	1		136	N	
1	10/22/92	6	1		136	N	
1	10/22/92	7	1		135	N	
1	10/22/92	8	1		133	N	
1	10/22/92	9	1		130	N	
1	10/22/92	10	1		125	N	
1	10/22/92	11	1		118	N	
1	10/22/92	12	1		108	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/22/92	13	1		95	N	
1	10/22/92	14	1		94	N	
1	10/22/92	15	1		94	N	
1	10/22/92	16	1		94	N	
1	10/29/92	1	1		136	N	J 890423320-42
1	10/29/92	2	1		135	N	
1	10/29/92	3	1		136	N	
1	10/29/92	4	1		136	N	
1	10/29/92	5	1		136	N	
1	10/29/92	6	1		136	Y	
1	10/29/92	7	1		135	N	
1	10/29/92	8	1		133	N	
1	10/29/92	9	1		130	N	
1	10/29/92	10	1		125	N	
1	10/29/92	11	1		118	N	
1	10/29/92	12	1		107	N	
1	10/29/92	13	1		94	N	
1	10/29/92	14	1		94	N	
1	10/29/92	15	1		93	N	
1	10/29/92	16	1		93	N	
1	10/29/92	17	1		93	N	
1	10/29/92	18	1		93	N	
1	11/6/92	1	1		138	Y	J 910125143-48
1	11/6/92	2	1		137	N	
1	11/6/92	3	1		137	N	
1	11/6/92	4	1		137	N	
1	11/6/92	5	1		138	N	
1	11/6/92	6	1		138	N	
1	11/6/92	7	1		137	N	
1	11/6/92	8	1		135	N	
1	11/6/92	9	1		131	N	
1	11/6/92	10	1		126	N	
1	11/6/92	11	1		119	N	
1	11/6/92	12	1		108	N	
1	11/6/92	13	1		95	N	
1	11/6/92	14	1		94	N	
1	11/6/92	15	1		94	N	
1	11/6/92	16	1		94	N	
1	11/13/92	1	1		138	Y	J 910126143-48
1	11/13/92	2	1		137	N	
1	11/13/92	3	1		137	N	
1	11/13/92	4	1		137	N	
1	11/13/92	5	1		138	N	
1	11/13/92	6	1		138	N	
1	11/13/92	7	1		137	N	
1	11/13/92	8	1		135	N	
1	11/13/92	9	1		131	N	
1	11/13/92	10	1		126	N	
1	11/13/92	11	1		119	N	
1	11/13/92	12	1		108	N	
1	11/13/92	13	1		94	N	
1	11/13/92	14	1		94	N	
1	11/13/92	15	1		93	N	
1	11/13/92	16	1		93	N	
1	11/13/92	17	1		93	N	
1	11/13/92	18	1		93	N	
1	11/26/92	1	1		140	Y	J 890523512-20
1	11/26/92	2	1		139	N	
1	11/26/92	3	1		139	N	
1	11/26/92	4	1		139	N	
1	11/26/92	5	1		139	N	
1	11/26/92	6	1		139	N	
1	11/26/92	7	1		138	N	
1	11/26/92	8	1		136	N	
1	11/26/92	9	1		133	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	11/26/92	10	1		128	N	
1	11/26/92	11	1		120	N	
1	11/26/92	12	1		109	N	
1	11/26/92	13	1		94	N	
1	11/26/92	14	1		93	N	
1	11/26/92	15	1		93	N	
1	11/26/92	16	1		93	N	
1	11/26/92	17	1		93	N	
1	11/26/92	18	1		93	N	
1	12/3/92	1	1		140	Y	J 890523512-20
1	12/3/92	2	1		139	N	
1	12/3/92	3	1		139	N	
1	12/3/92	4	1		139	N	
1	12/3/92	5	1		140	N	
1	12/3/92	6	1		140	N	
1	12/3/92	7	1		139	N	
1	12/3/92	8	1		136	N	
1	12/3/92	9	1		133	N	
1	12/3/92	10	1		128	N	
1	12/3/92	11	1		120	N	
1	12/3/92	12	1		109	N	
1	12/3/92	13	1		94	N	
1	12/3/92	14	1		93	N	
1	12/3/92	15	1		93	N	
1	12/3/92	16	1		93	N	
1	12/3/92	17	1		93	N	
1	12/3/92	18	1		93	N	
1	12/10/92	1	1		140	Y	J 89052
1	12/10/92	2	1		139	N	
1	12/10/92	3	1		139	N	
1	12/10/92	4	1		139	N	
1	12/10/92	5	1		140	N	
1	12/10/92	6	1		140	N	
1	12/10/92	7	1		139	N	
1	12/10/92	8	1		136	N	
1	12/10/92	9	1		133	N	
1	12/10/92	10	1		128	N	
1	12/10/92	11	1		120	N	
1	12/10/92	12	1		108	N	
1	12/10/92	13	1		93	N	
1	12/10/92	14	1		92	N	
1	12/10/92	15	1		92	N	
1	12/10/92	16	1		92	N	
1	12/10/92	17	1		92	N	
1	12/10/92	18	1		92	N	
1	12/18/92	1	1		138	Y	J TI-042
1	12/18/92	2	1		138	N	
1	12/18/92	3	1		138	N	
1	12/18/92	4	1		138	N	
1	12/18/92	5	1		138	N	
1	12/18/92	6	1		138	N	
1	12/18/92	7	1		137	N	
1	12/18/92	8	1		135	N	
1	12/18/92	9	1		132	N	
1	12/18/92	10	1		127	N	
1	12/18/92	11	1		119	N	
1	12/18/92	12	1		107	N	
1	12/18/92	13	1		91	N	
1	12/18/92	14	1		91	N	
1	12/18/92	15	1		90	N	
1	12/18/92	16	1		90	N	
1	12/24/92	1	1		138	Y	J 890523512-20
1	12/24/92	2	1		138	N	
1	12/24/92	3	1		138	N	
1	12/24/92	4	1		138	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	12/24/92	5	1		138	N	
1	12/24/92	6	1		138	N	
1	12/24/92	7	1		137	N	
1	12/24/92	8	1		135	N	
1	12/24/92	9	1		132	N	
1	12/24/92	10	1		126	N	
1	12/24/92	11	1		118	N	
1	12/24/92	12	1		106	N	
1	12/24/92	13	1		91	N	
1	12/24/92	14	1		90	N	
1	12/24/92	15	1		90	N	
1	12/24/92	16	1		90	N	
1	12/24/92	17	1		89	N	
1	12/24/92	18	1		89	N	
1	1/2/93	1	1		138	N	J 890523512-47
1	1/2/93	2	1		137	N	
1	1/2/93	3	1		138	N	
1	1/2/93	4	1		138	N	
1	1/2/93	5	1		138	N	
1	1/2/93	6	1		138	Y	
1	1/2/93	7	1		137	N	
1	1/2/93	8	1		135	N	
1	1/2/93	9	1		132	N	
1	1/2/93	10	1		126	N	
1	1/2/93	11	1		118	N	
1	1/2/93	12	1		105	N	
1	1/2/93	13	1		90	N	
1	1/2/93	14	1		89	N	
1	1/2/93	15	1		89	N	
1	1/2/93	16	1		88	N	
1	1/2/93	17	1		88	N	
1	1/2/93	18	1		88	N	
1	1/7/93	1	1		136	Y	J 890423320-42
1	1/7/93	2	1		135	N	
1	1/7/93	3	1		136	N	
1	1/7/93	4	1		136	N	
1	1/7/93	5	1		136	N	
1	1/7/93	6	1		136	N	
1	1/7/93	7	1		135	N	
1	1/7/93	8	1		132	N	
1	1/7/93	9	1		129	N	
1	1/7/93	10	1		124	N	
1	1/7/93	11	1		115	N	
1	1/7/93	12	1		103	N	
1	1/7/93	13	1		87	N	
1	1/7/93	14	1		86	N	
1	1/7/93	15	1		86	N	
1	1/7/93	16	1		85	N	
1	1/7/93	17	1		85	N	
1	1/7/93	18	1		85	N	
1	1/14/93	1	1		139	N	J 890523512-47
1	1/14/93	2	1		139	N	
1	1/14/93	3	1		139	N	
1	1/14/93	4	1		139	N	
1	1/14/93	5	1		139	N	
1	1/14/93	6	1		139	Y	
1	1/14/93	7	1		138	N	
1	1/14/93	8	1		136	N	
1	1/14/93	9	1		133	N	
1	1/14/93	10	1		127	N	
1	1/14/93	11	1		118	N	
1	1/14/93	12	1		106	N	
1	1/14/93	13	1		90	N	
1	1/14/93	14	1		88	N	
1	1/14/93	15	1		88	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/14/93	16	1		88	N	
1	1/14/93	17	1		88	N	
1	1/14/93	18	1		89	N	
1	1/21/93	1	1		140	Y	J 900925741-29
1	1/21/93	2	1		139	N	
1	1/21/93	3	1		139	N	
1	1/21/93	4	1		139	N	
1	1/21/93	5	1		139	N	
1	1/21/93	6	1		139	N	
1	1/21/93	7	1		138	N	
1	1/21/93	8	1		136	N	
1	1/21/93	9	1		132	N	
1	1/21/93	10	1		127	N	
1	1/21/93	11	1		118	N	
1	1/21/93	12	1		105	N	
1	1/21/93	13	1		89	N	
1	1/21/93	14	1		88	N	
1	1/21/93	15	1		87	N	
1	1/21/93	16	1		87	N	
1	1/28/93	1	1		139	Y	J 890523512-47
1	1/28/93	2	1		138	N	
1	1/28/93	3	1		138	N	
1	1/28/93	4	1		138	N	
1	1/28/93	5	1		139	N	
1	1/28/93	6	1		139	N	
1	1/28/93	7	1		138	N	
1	1/28/93	8	1		135	N	
1	1/28/93	9	1		132	N	
1	1/28/93	10	1		126	N	
1	1/28/93	11	1		117	N	
1	1/28/93	12	1		104	N	
1	1/28/93	13	1		88	N	
1	1/28/93	14	1		87	N	
1	1/28/93	15	1		87	N	
1	1/28/93	16	1		87	N	
1	2/4/93	1	1		136	Y	J 890423320-42
1	2/4/93	2	1		135	N	
1	2/4/93	3	1		135	N	
1	2/4/93	4	1		135	N	
1	2/4/93	5	1		135	N	
1	2/4/93	6	1		135	N	
1	2/4/93	7	1		134	N	
1	2/4/93	8	1		132	N	
1	2/4/93	9	1		128	N	
1	2/4/93	10	1		123	N	
1	2/4/93	11	1		114	N	
1	2/4/93	12	1		100	N	
1	2/4/93	13	1		84	N	
1	2/4/93	14	1		83	N	
1	2/4/93	15	1		83	N	
1	2/4/93	16	1		83	N	
1	2/4/93	17	1		83	N	
1	2/4/93	18	1		83	N	
1	2/11/93	1	1		136	Y	J 890423320-42
1	2/11/93	2	1		135	N	
1	2/11/93	3	1		135	N	
1	2/11/93	4	1		136	N	
1	2/11/93	5	1		136	N	
1	2/11/93	6	1		136	N	
1	2/11/93	7	1		135	N	
1	2/11/93	8	1		132	N	
1	2/11/93	9	1		129	N	
1	2/11/93	10	1		123	N	
1	2/11/93	11	1		114	N	
1	2/11/93	12	1		101	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	2/11/93	13	1		85	N	
1	2/11/93	14	1		84	N	
1	2/11/93	15	1		83	N	
1	2/11/93	16	1		83	N	
1	2/11/93	17	1		83	N	
1	2/11/93	18	1		83	N	
1	2/18/93	1	1		139	N	J 910126143-64
1	2/18/93	2	1		138	N	
1	2/18/93	3	1		138	N	
1	2/18/93	4	1		138	N	
1	2/18/93	5	1		139	N	
1	2/18/93	6	1		139	Y	
1	2/18/93	7	1		138	N	
1	2/18/93	8	1		135	N	
1	2/18/93	9	1		131	N	
1	2/18/93	10	1		126	N	
1	2/18/93	11	1		116	N	
1	2/18/93	12	1		103	N	
1	2/18/93	13	1		87	N	
1	2/18/93	14	1		85	N	
1	2/18/93	15	1		85	N	
1	2/18/93	16	1		85	N	
1	2/26/93	1	1		138	Y	J 910126143-48
1	2/26/93	2	1		137	N	
1	2/26/93	3	1		137	N	
1	2/26/93	4	1		137	N	
1	2/26/93	5	1		137	N	
1	2/26/93	6	1		137	N	
1	2/26/93	7	1		136	N	
1	2/26/93	8	1		134	N	
1	2/26/93	9	1		130	N	
1	2/26/93	10	1		124	N	
1	2/26/93	11	1		115	N	
1	2/26/93	12	1		102	N	
1	2/26/93	13	1		85	N	
1	2/26/93	14	1		84	N	
1	2/26/93	15	1		84	N	
1	2/26/93	16	1		84	N	
1	2/26/93	17	1		83	N	
1	2/26/93	18	1		83	N	
1	3/4/93	1	1		138	N	J 910126143-40
1	3/4/93	2	1		137	N	
1	3/4/93	3	1		137	N	
1	3/4/93	4	1		137	N	
1	3/4/93	5	1		138	Y	
1	3/4/93	6	1		138	N	
1	3/4/93	7	1		136	N	
1	3/4/93	8	1		134	N	
1	3/4/93	9	1		130	N	
1	3/4/93	10	1		124	N	
1	3/4/93	11	1		115	N	
1	3/4/93	12	1		101	N	
1	3/4/93	13	1		85	N	
1	3/4/93	14	1		84	N	
1	3/4/93	15	1		83	N	
1	3/4/93	16	1		83	N	
1	3/4/93	17	1		83	N	
1	3/4/93	18	1		83	N	
1	3/11/93	1	1		137	Y	J 910126143-48
1	3/11/93	2	1		137	N	
1	3/11/93	3	1		137	N	
1	3/11/93	4	1		137	N	
1	3/11/93	5	1		137	N	
1	3/11/93	6	1		137	N	
1	3/11/93	7	1		136	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/11/93	8	1		134	N	
1	3/11/93	9	1		130	N	
1	3/11/93	10	1		124	N	
1	3/11/93	11	1		114	N	
1	3/11/93	12	1		101	N	
1	3/11/93	13	1		84	N	
1	3/11/93	14	1		83	N	
1	3/11/93	15	1		83	N	
1	3/11/93	16	1		83	N	
1	3/11/93	17	1		83	N	
1	3/11/93	18	1		83	N	
1	3/18/93	1	1		136	Y	J 890423320-42
1	3/18/93	2	1		135	N	
1	3/18/93	3	1		135	N	
1	3/18/93	4	1		135	N	
1	3/18/93	5	1		136	N	
1	3/18/93	6	1		136	N	
1	3/18/93	7	1		134	N	
1	3/18/93	8	1		132	N	
1	3/18/93	9	1		128	N	
1	3/18/93	10	1		122	N	
1	3/18/93	11	1		113	N	
1	3/18/93	12	1		99	N	
1	3/18/93	13	1		82	N	
1	3/18/93	14	1		82	N	
1	3/18/93	15	1		81	N	
1	3/18/93	16	1		81	N	
1	3/18/93	17	1		81	N	
1	3/18/93	18	1		81	N	
1	3/25/93	1	1		137	Y	J 91026143-32
1	3/25/93	2	1		136	N	
1	3/25/93	3	1		136	N	
1	3/25/93	4	1		136	N	
1	3/25/93	5	1		137	N	
1	3/25/93	6	1		136	N	
1	3/25/93	7	1		135	N	
1	3/25/93	8	1		133	N	
1	3/25/93	9	1		129	N	
1	3/25/93	10	1		123	N	
1	3/25/93	11	1		114	N	
1	3/25/93	12	1		100	N	
1	3/25/93	13	1		84	N	
1	3/25/93	14	1		83	N	
1	3/25/93	15	1		83	N	
1	3/25/93	16	1		82	N	
1	4/1/93	1	1		138	Y	J 910126143-40
1	4/1/93	2	1		137	N	
1	4/1/93	3	1		137	N	
1	4/1/93	4	1		137	N	
1	4/1/93	5	1		138	N	
1	4/1/93	6	1		138	N	
1	4/1/93	7	1		136	N	
1	4/1/93	8	1		134	N	
1	4/1/93	9	1		130	N	
1	4/1/93	10	1		123	N	
1	4/1/93	11	1		114	N	
1	4/1/93	12	1		101	N	
1	4/1/93	13	1		84	N	
1	4/1/93	14	1		83	N	
1	4/1/93	15	1		83	N	
1	4/1/93	16	1		83	N	
1	4/9/93	1	1		139	Y	J-T1-038
1	4/9/93	2	1		138	N	
1	4/9/93	3	1		138	N	
1	4/9/93	4	1		138	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	4/9/93	5	1		138	N	
1	4/9/93	6	1		138	N	
1	4/9/93	7	1		137	N	
1	4/9/93	8	1		134	N	
1	4/9/93	9	1		130	N	
1	4/9/93	10	1		124	N	
1	4/9/93	11	1		114	N	
1	4/9/93	12	1		101	N	
1	4/9/93	13	1		85	N	
1	4/9/93	14	1		84	N	
1	4/9/93	15	1		83	N	
1	4/9/93	16	1		83	N	
1	4/9/93	17	1		83	N	
1	4/9/93	18	1		83	N	
1	4/15/93	1	1		138	Y	TYPE J 910126143-42
1	4/15/93	2	1		137	N	
1	4/15/93	3	1		137	N	
1	4/15/93	4	1		138	N	
1	4/15/93	5	1		138	N	
1	4/15/93	6	1		138	N	
1	4/15/93	7	1		136	N	
1	4/15/93	8	1		134	N	
1	4/15/93	9	1		130	N	
1	4/15/93	10	1		123	N	
1	4/15/93	11	1		114	N	
1	4/15/93	12	1		100	N	
1	4/15/93	13	1		84	N	
1	4/15/93	14	1		83	N	
1	4/15/93	15	1		83	N	
1	4/15/93	16	1		83	N	
1	4/23/93	1	1		138	Y	J 910126143-50
1	4/23/93	2	1		137	N	
1	4/23/93	3	1		138	N	
1	4/23/93	4	1		138	N	
1	4/23/93	5	1		138	N	
1	4/23/93	6	1		138	N	
1	4/23/93	7	1		136	N	
1	4/23/93	8	1		134	N	
1	4/23/93	9	1		130	N	
1	4/23/93	10	1		123	N	
1	4/23/93	11	1		114	N	
1	4/23/93	12	1		101	N	
1	4/23/93	13	1		85	N	
1	4/23/93	14	1		84	N	
1	4/23/93	15	1		84	N	
1	4/23/93	16	1		84	N	
1	4/29/93	1	1		139	Y	J 910126143-64
1	4/29/93	2	1		138	N	
1	4/29/93	3	1		138	N	
1	4/29/93	4	1		138	N	
1	4/29/93	5	1		138	N	
1	4/29/93	6	1		138	N	
1	4/29/93	7	1		137	N	
1	4/29/93	8	1		134	N	
1	4/29/93	9	1		130	N	
1	4/29/93	10	1		124	N	
1	4/29/93	11	1		115	N	
1	4/29/93	12	1		102	N	
1	4/29/93	13	1		86	N	
1	4/29/93	14	1		85	N	
1	4/29/93	15	1		85	N	
1	4/29/93	16	1		85	N	
1	5/7/93	1	1		139	Y	J
1	5/7/93	2	1		138	N	
1	5/7/93	3	1		138	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101 THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/7/93	4	1		138	N	
1	5/7/93	5	1		139	N	
1	5/7/93	6	1		138	N	
1	5/7/93	7	1		137	N	
1	5/7/93	8	1		134	N	
1	5/7/93	9	1		130	N	
1	5/7/93	10	1		124	N	
1	5/7/93	11	1		115	N	
1	5/7/93	12	1		102	N	
1	5/7/93	13	1		87	N	
1	5/7/93	14	1		85	N	
1	5/7/93	15	1		85	N	
1	5/7/93	16	1		85	N	
1	5/7/93	17	1		85	N	
1	5/7/93	18	1		85	N	
1	5/7/93	19	1		85	N	
1	5/15/93	1	1		139	Y	J910126143
1	5/15/93	2	1		138	N	
1	5/15/93	3	1		138	N	
1	5/15/93	4	1		138	N	
1	5/15/93	5	1		138	N	
1	5/15/93	6	1		138	N	
1	5/15/93	7	1		137	N	
1	5/15/93	8	1		134	N	
1	5/15/93	9	1		130	N	
1	5/15/93	10	1		124	N	
1	5/15/93	11	1		114	N	
1	5/15/93	12	1		102	N	
1	5/15/93	13	1		87	N	
1	5/15/93	14	1		86	N	
1	5/15/93	15	1		86	N	
1	5/15/93	16	1		86	N	
1	5/15/93	17	1		86	N	
1	5/15/93	18	1		85	N	
1	5/23/93	1	1		138	Y	J 910126143-64
1	5/23/93	2	1		137	N	
1	5/23/93	3	1		137	N	
1	5/23/93	4	1		137	N	
1	5/23/93	5	1		138	N	
1	5/23/93	6	1		138	N	
1	5/23/93	7	1		138	N	
1	5/23/93	8	1		133	N	
1	5/23/93	9	1		129	N	
1	5/23/93	10	1		123	N	
1	5/23/93	11	1		114	N	
1	5/23/93	12	1		102	N	
1	5/23/93	13	1		88	N	
1	5/23/93	14	1		87	N	
1	5/23/93	15	1		87	N	
1	5/23/93	16	1		86	N	
1	5/23/93	17	1		86	N	
1	5/23/93	18	1		86	N	
1	5/27/93	1	1		138	Y	J 890523512-20
1	5/27/93	2	1		138	N	
1	5/27/93	3	1		138	N	
1	5/27/93	4	1		138	N	
1	5/27/93	5	1		138	N	
1	5/27/93	6	1		138	N	
1	5/27/93	7	1		136	N	
1	5/27/93	8	1		134	N	
1	5/27/93	9	1		129	N	
1	5/27/93	10	1		123	N	
1	5/27/93	11	1		115	N	
1	5/27/93	12	1		102	N	
1	5/27/93	13	1		88	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/27/93	14	1		87	N	
1	5/27/93	15	1		87	N	
1	5/27/93	16	1		87	N	
1	6/3/93	1	1		138	Y	J TI-022
1	6/3/93	2	1		137	N	
1	6/3/93	3	1		137	N	
1	6/3/93	4	1		137	N	
1	6/3/93	5	1		137	N	
1	6/3/93	6	1		137	N	
1	6/3/93	7	1		140	N	
1	6/3/93	8	1		133	N	
1	6/3/93	9	1		129	N	
1	6/3/93	10	1		123	N	
1	6/3/93	11	1		114	N	
1	6/3/93	12	1		102	N	
1	6/3/93	13	1		88	N	
1	6/3/93	14	1		88	N	
1	6/3/93	15	1		87	N	
1	6/3/93	16	1		87	N	
1	6/3/93	17	1		87	N	
1	6/3/93	18	1		87	N	
1	6/10/93	1	1		138	Y	J 910126143-48
1	6/10/93	2	1		137	N	
1	6/10/93	3	1		137	N	
1	6/10/93	4	1		137	N	
1	6/10/93	5	1		137	N	
1	6/10/93	6	1		137	N	
1	6/10/93	7	1		136	N	
1	6/10/93	8	1		133	N	
1	6/10/93	9	1		129	N	
1	6/10/93	10	1		123	N	
1	6/10/93	11	1		114	N	
1	6/10/93	12	1		102	N	
1	6/10/93	13	1		88	N	
1	6/10/93	14	1		87	N	
1	6/10/93	15	1		87	N	
1	6/10/93	16	1		87	N	
1	6/10/93	17	1		87	N	
1	6/10/93	18	1		87	N	
1	6/17/93	1	1		138	Y	J 890523512-20
1	6/17/93	2	1		137	N	
1	6/17/93	3	1		137	N	
1	6/17/93	4	1		137	N	
1	6/17/93	5	1		137	N	
1	6/17/93	6	1		138	N	
1	6/17/93	7	1		136	N	
1	6/17/93	8	1		133	N	
1	6/17/93	9	1		129	N	
1	6/17/93	10	1		123	N	
1	6/17/93	11	1		115	N	
1	6/17/93	12	1		103	N	
1	6/17/93	13	1		89	N	
1	6/17/93	14	1		88	N	
1	6/17/93	15	1		88	N	
1	6/17/93	16	1		88	N	
1	6/17/93	17	1		88	N	
1	6/17/93	18	1		88	N	
1	6/26/93	1	1		136	Y	J 910126143-14
1	6/26/93	2	1		136	N	
1	6/26/93	3	1		136	N	
1	6/26/93	4	1		136	N	
1	6/26/93	5	1		136	N	
1	6/26/93	6	1		136	N	
1	6/26/93	7	1		134	N	
1	6/26/93	8	1		132	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	6/26/93	9	1		128	N	
1	6/26/93	10	1		122	N	
1	6/26/93	11	1		114	N	
1	6/26/93	12	1		102	N	
1	6/26/93	13	1		89	N	
1	6/26/93	14	1		88	N	
1	6/26/93	15	1		88	N	
1	6/26/93	16	1		88	N	
1	6/30/93	1	1		138	Y	J 910126143-29
1	6/30/93	2	1		137	N	
1	6/30/93	3	1		137	N	
1	6/30/93	4	1		137	N	
1	6/30/93	5	1		137	N	
1	6/30/93	6	1		137	N	
1	6/30/93	7	1		136	N	
1	6/30/93	8	1		133	N	
1	6/30/93	9	1		129	N	
1	6/30/93	10	1		123	N	
1	6/30/93	11	1		115	N	
1	6/30/93	12	1		103	N	
1	6/30/93	13	1		90	N	
1	6/30/93	14	1		89	N	
1	6/30/93	15	1		89	N	
1	6/30/93	16	1		89	N	
1	6/30/93	17	1		89	N	
1	6/30/93	18	1		89	N	
1	7/2/93	1	1		140	Y	J TI-042
1	7/2/93	2	1		139	N	
1	7/2/93	3	1		139	N	
1	7/2/93	4	1		140	N	
1	7/2/93	5	1		140	N	
1	7/2/93	6	1		140	N	
1	7/2/93	7	1		138	N	
1	7/2/93	8	1		136	N	
1	7/2/93	9	1		131	N	
1	7/2/93	10	1		125	N	
1	7/2/93	11	1		117	N	
1	7/2/93	12	1		105	N	
1	7/2/93	13	1		92	N	
1	7/2/93	14	1		91	N	
1	7/2/93	15	1		91	N	
1	7/2/93	16	1		91	N	
1	7/2/93	17	1		91	N	
1	7/2/93	18	1		91	N	
1	7/18/93	1	1		137	Y	TYPE J 910126143-50
1	7/18/93	2	1		136	N	
1	7/18/93	3	1		136	N	
1	7/18/93	4	1		136	N	
1	7/18/93	5	1		137	N	
1	7/18/93	6	1		137	N	
1	7/18/93	7	1		135	N	
1	7/18/93	8	1		133	N	
1	7/18/93	9	1		128	N	
1	7/18/93	10	1		123	N	
1	7/18/93	11	1		115	N	
1	7/18/93	12	1		104	N	
1	7/18/93	13	1		90	N	
1	7/18/93	14	1		89	N	
1	7/18/93	15	1		89	N	
1	7/18/93	16	1		89	N	
1	7/18/93	17	1		93	N	
1	7/18/93	18	1		93	N	
1	7/23/93	1	1		137	Y	J 910126143-42
1	7/23/93	2	1		137	N	
1	7/23/93	3	1		137	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/23/93	4	1		137	N	
1	7/23/93	5	1		137	N	
1	7/23/93	6	1		137	N	
1	7/23/93	7	1		135	N	
1	7/23/93	8	1		133	N	
1	7/23/93	9	1		129	N	
1	7/23/93	10	1		123	N	
1	7/23/93	11	1		115	N	
1	7/23/93	12	1		104	N	
1	7/23/93	13	1		91	N	
1	7/23/93	14	1		90	N	
1	7/23/93	15	1		90	N	
1	7/23/93	16	1		90	N	
1	7/30/93	1	1		138	Y	J 910126143-50
1	7/30/93	2	1		137	N	
1	7/30/93	3	1		137	N	
1	7/30/93	4	1		137	N	
1	7/30/93	5	1		137	N	
1	7/30/93	6	1		137	N	
1	7/30/93	7	1		136	N	
1	7/30/93	8	1		133	N	
1	7/30/93	9	1		129	N	
1	7/30/93	10	1		124	N	
1	7/30/93	11	1		116	N	
1	7/30/93	12	1		105	N	
1	7/30/93	13	1		92	N	
1	7/30/93	14	1		91	N	
1	7/30/93	15	1		91	N	
1	7/30/93	16	1		91	N	
1	7/30/93	17	1		90	N	
1	7/30/93	18	1		90	N	
1	8/6/93	1	1		138	Y	J 910126143-39
1	8/6/93	2	1		137	N	
1	8/6/93	3	1		137	N	
1	8/6/93	4	1		137	N	
1	8/6/93	5	1		137	N	
1	8/6/93	6	1		137	N	
1	8/6/93	7	1		135	N	
1	8/6/93	8	1		133	N	
1	8/6/93	9	1		129	N	
1	8/6/93	10	1		124	N	
1	8/6/93	11	1		116	N	
1	8/6/93	12	1		105	N	
1	8/6/93	13	1		93	N	
1	8/6/93	14	1		92	N	
1	8/6/93	15	1		92	N	
1	8/6/93	16	1		92	N	
1	8/6/93	17	1		92	N	
1	8/6/93	18	1		92	N	
1	8/14/93	1	1		137	Y	
1	8/14/93	2	1		137	N	
1	8/14/93	3	1		137	N	
1	8/14/93	4	1		137	N	
1	8/14/93	5	1		137	N	
1	8/14/93	6	1		137	N	
1	8/14/93	7	1		136	N	
1	8/14/93	8	1		133	N	
1	8/14/93	9	1		129	N	
1	8/14/93	10	1		124	N	
1	8/14/93	11	1		116	N	
1	8/14/93	12	1		105	N	
1	8/14/93	13	1		93	N	
1	8/14/93	14	1		92	N	
1	8/14/93	15	1		92	N	
1	8/14/93	16	1		92	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	8/14/93	17	1		92	N	
1	8/14/93	18	1		92	N	
1	8/19/93	2	1		115	N	115 - suspect data (low)
1	8/19/93	3	1		111	N	111 - suspect data (low)
1	8/19/93	4	1		105	N	105 - suspect data (low)
1	8/19/93	5	1		99	N	99 - suspect data (low)
1	8/19/93	6	1		91	N	91 - suspect data (low)
1	8/19/93	7	1		86	N	86 - suspect data (low)
1	8/19/93	8	1		86	N	86 - suspect data (low)
1	8/19/93	9	1		86	N	86 - suspect data (low)
1	8/19/93	10	1		86	N	86 - suspect data (low)
1	8/19/93	11	1		86	N	86 - suspect data (low)
1	8/19/93	12	1		86	N	
1	8/19/93	13	1		86	N	
1	8/19/93	14	1		86	N	
1	8/19/93	15	1		86	N	
1	8/19/93	16	1		86	N	
1	8/20/93	1	1		137	Y	J 910126143-39
1	8/20/93	2	1		136	N	
1	8/20/93	3	1		136	N	
1	8/20/93	4	1		137	N	
1	8/20/93	5	1		137	N	
1	8/20/93	6	1		137	N	
1	8/20/93	7	1		135	N	
1	8/20/93	8	1		133	N	
1	8/20/93	9	1		129	N	
1	8/20/93	10	1		124	N	
1	8/20/93	11	1		116	N	
1	8/20/93	12	1		106	N	
1	8/20/93	13	1		94	N	
1	8/20/93	14	1		93	N	
1	8/20/93	15	1		93	N	
1	8/20/93	16	1		93	N	
1	8/20/93	17	1		92	N	
1	8/20/93	18	1		92	N	
1	8/26/93	1	1		138	Y	J TI 037
1	8/26/93	2	1		138	N	
1	8/26/93	3	1		138	N	
1	8/26/93	4	1		138	N	
1	8/26/93	5	1		138	N	
1	8/26/93	6	1		138	N	
1	8/26/93	7	1		137	N	
1	8/26/93	8	1		134	N	
1	8/26/93	9	1		130	N	
1	8/26/93	10	1		125	N	
1	8/26/93	11	1		117	N	
1	8/26/93	12	1		107	N	
1	8/26/93	13	1		94	N	
1	8/26/93	14	1		94	N	
1	8/26/93	15	1		94	N	
1	8/26/93	16	1		93	N	
1	8/26/93	17	1		93	N	
1	8/26/93	18	1		93	N	
1	9/3/93	1	1		137	Y	J 910125143-48
1	9/3/93	2	1		136	N	
1	9/3/93	3	1		136	N	
1	9/3/93	4	1		136	N	
1	9/3/93	5	1		137	N	
1	9/3/93	6	1		137	N	
1	9/3/93	7	1		135	N	
1	9/3/93	8	1		133	N	
1	9/3/93	9	1		129	N	
1	9/3/93	10	1		124	N	
1	9/3/93	11	1		116	N	
1	9/3/93	12	1		106	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/3/93	13	1		94	N	
1	9/3/93	14	1		93	N	
1	9/3/93	15	1		93	N	
1	9/3/93	16	1		93	N	
1	9/3/93	17	1		92	N	
1	9/3/93	18	1		92	N	
1	9/11/93	1	1		137	Y	J 910426540-36
1	9/11/93	2	1		136	N	
1	9/11/93	3	1		136	N	
1	9/11/93	4	1		136	N	
1	9/11/93	5	1		137	N	
1	9/11/93	6	1		137	N	
1	9/11/93	7	1		135	N	
1	9/11/93	8	1		133	N	
1	9/11/93	9	1		129	N	
1	9/11/93	10	1		124	N	
1	9/11/93	11	1		117	N	
1	9/11/93	12	1		107	N	
1	9/11/93	13	1		95	N	
1	9/11/93	14	1		94	N	
1	9/11/93	15	1		94	N	
1	9/11/93	16	1		94	N	
1	9/16/93	1	1		137	Y	
1	9/16/93	2	1		136	N	
1	9/16/93	3	1		136	N	
1	9/16/93	4	1		136	N	
1	9/16/93	5	1		137	N	
1	9/16/93	6	1		137	N	
1	9/16/93	7	1		135	N	
1	9/16/93	8	1		133	N	
1	9/16/93	9	1		129	N	
1	9/16/93	10	1		124	N	
1	9/16/93	11	1		117	N	
1	9/16/93	12	1		107	N	
1	9/16/93	13	1		94	N	
1	9/16/93	14	1		94	N	
1	9/16/93	15	1		94	N	
1	9/16/93	16	1		93	N	
1	9/23/93	1	1		137	Y	J 91042654036
1	9/23/93	2	1		136	N	
1	9/23/93	3	1		136	N	
1	9/23/93	4	1		136	N	
1	9/23/93	5	1		137	N	
1	9/23/93	6	1		137	N	
1	9/23/93	7	1		135	N	
1	9/23/93	8	1		133	N	
1	9/23/93	9	1		130	N	
1	9/23/93	10	1		124	N	
1	9/23/93	11	1		117	N	
1	9/23/93	12	1		107	N	
1	9/23/93	13	1		95	N	
1	9/23/93	14	1		94	N	
1	9/23/93	15	1		94	N	
1	9/23/93	16	1		94	N	
1	9/23/93	17	1		94	N	
1	9/23/93	18	1		93	N	
1	9/30/93	1	1		136	Y	J 910426540-36
1	9/30/93	2	1		135	N	
1	9/30/93	3	1		135	N	
1	9/30/93	4	1		136	N	
1	9/30/93	5	1		136	N	
1	9/30/93	6	1		136	N	
1	9/30/93	7	1		135	N	
1	9/30/93	8	1		132	N	
1	9/30/93	9	1		129	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/30/93	10	1		124	N	
1	9/30/93	11	1		117	N	
1	9/30/93	12	1		107	N	
1	9/30/93	13	1		94	N	
1	9/30/93	14	1		94	N	
1	9/30/93	15	1		94	N	
1	9/30/93	16	1		94	N	
1	9/30/93	17	1		94	N	
1	9/30/93	18	1		94	N	
1	10/7/93	1	1		135	Y	J 890A233804-42
1	10/7/93	2	1		134	N	
1	10/7/93	3	1		135	N	
1	10/7/93	4	1		135	N	
1	10/7/93	5	1		135	N	
1	10/7/93	6	1		135	N	
1	10/7/93	7	1		134	N	
1	10/7/93	8	1		131	N	
1	10/7/93	9	1		128	N	
1	10/7/93	10	1		123	N	
1	10/7/93	11	1		115	N	
1	10/7/93	12	1		105	N	
1	10/7/93	13	1		93	N	
1	10/7/93	14	1		92	N	
1	10/7/93	15	1		92	N	
1	10/7/93	16	1		92	N	
1	10/7/93	17	1		92	N	
1	10/7/93	18	1		92	N	
1	10/18/93	1	1		137	N	J 90092574179
1	10/18/93	2	1		137	N	
1	10/18/93	3	1		137	N	
1	10/18/93	4	1		138	Y	
1	10/18/93	5	1		138	N	
1	10/18/93	6	1		138	N	
1	10/18/93	7	1		137	N	
1	10/18/93	8	1		134	N	
1	10/18/93	9	1		131	N	
1	10/18/93	10	1		126	N	
1	10/18/93	11	1		118	N	
1	10/18/93	12	1		108	N	
1	10/18/93	13	1		95	N	
1	10/18/93	14	1		94	N	
1	10/18/93	15	1		94	N	
1	10/18/93	16	1		94	N	
1	10/18/93	17	1		94	N	
1	10/18/93	18	1		94	N	
1	10/20/93	1	1		137	Y	J 910126143-29
1	10/20/93	2	1		136	N	
1	10/20/93	3	1		137	N	
1	10/20/93	4	1		137	N	
1	10/20/93	5	1		137	N	
1	10/20/93	6	1		137	N	
1	10/20/93	7	1		136	N	
1	10/20/93	8	1		133	N	
1	10/20/93	9	1		130	N	
1	10/20/93	10	1		125	N	
1	10/20/93	11	1		117	N	
1	10/20/93	12	1		107	N	
1	10/20/93	13	1		94	N	
1	10/20/93	14	1		93	N	
1	10/20/93	15	1		93	N	
1	10/20/93	16	1		93	N	
1	10/20/93	17	1		93	N	
1	10/20/93	18	1		93	N	
1	10/26/93	1	1		135	Y	J 8904233206-42
1	10/26/93	2	1		134	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	10/26/93	3	1		135	N	
1	10/26/93	4	1		135	N	
1	10/26/93	5	1		135	N	
1	10/26/93	6	1		135	N	
1	10/26/93	7	1		134	N	
1	10/26/93	8	1		132	N	
1	10/26/93	9	1		128	N	
1	10/26/93	10	1		123	N	
1	10/26/93	11	1		116	N	
1	10/26/93	12	1		105	N	
1	10/26/93	13	1		92	N	
1	10/26/93	14	1		92	N	
1	10/26/93	15	1		91	N	
1	10/26/93	16	1		91	N	
1	10/28/93	1	1		137	Y	J 910126143-50
1	10/28/93	2	1		137	N	
1	10/28/93	3	1		137	N	
1	10/28/93	4	1		137	N	
1	10/28/93	5	1		137	N	
1	10/28/93	6	1		137	N	
1	10/28/93	7	1		136	N	
1	10/28/93	8	1		134	N	
1	10/28/93	9	1		130	N	
1	10/28/93	10	1		125	N	
1	10/28/93	11	1		118	N	
1	10/28/93	12	1		107	N	
1	10/28/93	13	1		94	N	
1	10/28/93	14	1		93	N	
1	10/28/93	15	1		93	N	
1	10/28/93	16	1		93	N	
1	10/28/93	17	1		93	N	
1	10/28/93	18	1		93	N	
1	11/5/93	1	1		135	Y	J 890423320-40
1	11/5/93	2	1		134	N	
1	11/5/93	3	1		134	N	
1	11/5/93	4	1		134	N	
1	11/5/93	5	1		134	N	
1	11/5/93	6	1		135	N	
1	11/5/93	7	1		133	N	
1	11/5/93	8	1		131	N	
1	11/5/93	9	1		127	N	
1	11/5/93	10	1		122	N	
1	11/5/93	11	1		115	N	
1	11/5/93	12	1		104	N	
1	11/5/93	13	1		91	N	
1	11/5/93	14	1		90	N	
1	11/5/93	15	1		90	N	
1	11/5/93	16	1		90	N	
1	11/5/93	17	1		90	N	
1	11/5/93	18	1		90	N	
1	11/8/93	1	1		134	N	J 890A2332042
1	11/8/93	2	1		134	N	
1	11/8/93	3	1		134	N	
1	11/8/93	4	1		134	N	
1	11/8/93	5	1		134	N	
1	11/8/93	6	1		135	Y	
1	11/8/93	7	1		133	N	
1	11/8/93	8	1		131	N	
1	11/8/93	9	1		128	N	
1	11/8/93	10	1		123	N	
1	11/8/93	11	1		115	N	
1	11/8/93	12	1		105	N	
1	11/8/93	13	1		91	N	
1	11/8/93	14	1		90	N	
1	11/8/93	15	1		90	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	11/8/93	16	1		90	N	
1	11/11/93	1	1		134	Y	J 890423380-42
1	11/11/93	2	1		134	N	
1	11/11/93	3	1		134	N	
1	11/11/93	4	1		134	N	
1	11/11/93	5	1		134	N	
1	11/11/93	6	1		134	N	
1	11/11/93	7	1		133	N	
1	11/11/93	8	1		130	N	
1	11/11/93	9	1		127	N	
1	11/11/93	10	1		122	N	
1	11/11/93	11	1		114	N	
1	11/11/93	12	1		103	N	
1	11/11/93	13	1		90	N	
1	11/11/93	14	1		89	N	
1	11/11/93	15	1		89	N	
1	11/11/93	16	1		89	N	
1	11/11/93	17	1		89	N	
1	11/11/93	18	1		88	N	
1	11/15/93	1	1		134	Y	J 890423320-42
1	11/15/93	2	1		133	N	
1	11/15/93	3	1		134	N	
1	11/15/93	4	1		134	N	
1	11/15/93	5	1		134	N	
1	11/15/93	6	1		134	N	
1	11/15/93	7	1		133	N	
1	11/15/93	8	1		130	N	
1	11/15/93	9	1		127	N	
1	11/15/93	10	1		122	N	
1	11/15/93	11	1		115	N	
1	11/15/93	12	1		104	N	
1	11/15/93	13	1		90	N	
1	11/15/93	14	1		89	N	
1	11/15/93	15	1		89	N	
1	11/15/93	16	1		89	N	
1	11/15/93	17	1		89	N	
1	11/15/93	18	1		89	N	
1	11/22/93	1	1		134	Y	J 89042320-42
1	11/22/93	2	1		133	N	
1	11/22/93	3	1		133	N	
1	11/22/93	4	1		133	N	
1	11/22/93	5	1		134	N	
1	11/22/93	6	1		134	N	
1	11/22/93	7	1		133	N	
1	11/22/93	8	1		130	N	
1	11/22/93	9	1		127	N	
1	11/22/93	10	1		122	N	
1	11/22/93	11	1		114	N	
1	11/22/93	12	1		103	N	
1	11/22/93	13	1		89	N	
1	11/22/93	14	1		88	N	
1	11/22/93	15	1		88	N	
1	11/22/93	16	1		88	N	
1	11/25/93	1	1		137	Y	J 910126143-50
1	11/25/93	2	1		137	N	
1	11/25/93	3	1		137	N	
1	11/25/93	4	1		137	N	
1	11/25/93	5	1		137	N	
1	11/25/93	6	1		137	N	
1	11/25/93	7	1		136	N	
1	11/25/93	8	1		134	N	
1	11/25/93	9	1		130	N	
1	11/25/93	10	1		125	N	
1	11/25/93	11	1		117	N	
1	11/25/93	12	1		106	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/25/93	13	1		91	N	
1	11/25/93	14	1		90	N	
1	11/25/93	15	1		90	N	
1	11/25/93	16	1		90	N	
1	11/25/93	17	1		90	N	
1	11/25/93	18	1		90	N	
1	11/29/93	1	1		137	N	
1	11/29/93	2	1		136	N	
1	11/29/93	3	1		137	N	
1	11/29/93	4	1		137	N	
1	11/29/93	5	1		137	N	
1	11/29/93	6	1		137	Y	
1	11/29/93	7	1		136	N	
1	11/29/93	8	1		134	N	
1	11/29/93	9	1		130	N	
1	11/29/93	10	1		125	N	
1	11/29/93	11	1		117	N	
1	11/29/93	12	1		106	N	
1	11/29/93	13	1		91	N	
1	11/29/93	14	1		90	N	
1	11/29/93	15	1		90	N	
1	11/29/93	16	1		90	N	
1	11/29/93	17	1		90	N	
1	11/29/93	18	1		90	N	
1	12/2/93	1	1		137	Y	J 910126143-50
1	12/2/93	2	1		136	N	
1	12/2/93	3	1		136	N	
1	12/2/93	4	1		136	N	
1	12/2/93	5	1		137	N	
1	12/2/93	6	1		137	N	
1	12/2/93	7	1		136	N	
1	12/2/93	8	1		133	N	
1	12/2/93	9	1		130	N	
1	12/2/93	10	1		125	N	
1	12/2/93	11	1		117	N	
1	12/2/93	12	1		105	N	
1	12/2/93	13	1		90	N	
1	12/2/93	14	1		89	N	
1	12/2/93	15	1		89	N	
1	12/2/93	16	1		89	N	
1	12/6/93	1	1		137	Y	J 910126143-50
1	12/6/93	2	1		137	N	
1	12/6/93	3	1		137	N	
1	12/6/93	4	1		137	N	
1	12/6/93	5	1		137	N	
1	12/6/93	6	1		137	N	
1	12/6/93	7	1		136	N	
1	12/6/93	8	1		134	N	
1	12/6/93	9	1		130	N	
1	12/6/93	10	1		125	N	
1	12/6/93	11	1		117	N	
1	12/6/93	12	1		105	N	
1	12/6/93	13	1		90	N	
1	12/6/93	14	1		89	N	
1	12/6/93	15	1		89	N	
1	12/6/93	16	1		89	N	
1	12/6/93	17	1		89	N	
1	12/6/93	18	1		89	N	
1	12/9/93	1	1		134	Y	J 8904-23320-42
1	12/9/93	2	1		133	N	
1	12/9/93	3	1		133	N	
1	12/9/93	4	1		133	N	
1	12/9/93	5	1		134	N	
1	12/9/93	6	1		134	N	
1	12/9/93	7	1		132	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-101							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	12/9/93	8	1		130	N	
1	12/9/93	9	1		127	N	
1	12/9/93	10	1		122	N	
1	12/9/93	11	1		114	N	
1	12/9/93	12	1		102	N	
1	12/9/93	13	1		87	N	
1	12/9/93	14	1		86	N	
1	12/9/93	15	1		86	N	
1	12/9/93	16	1		86	N	
1	12/9/93	17	1		86	N	
1	12/9/93	18	1		86	N	
1	12/20/93	1	1		137	Y	J 910126143-45
1	12/20/93	2	1		136	N	
1	12/20/93	3	1		136	N	
1	12/20/93	4	1		136	N	
1	12/20/93	5	1		137	N	
1	12/20/93	6	1		137	N	
1	12/20/93	7	1		136	N	
1	12/20/93	8	1		133	N	
1	12/20/93	9	1		130	N	
1	12/20/93	10	1		124	N	
1	12/20/93	11	1		116	N	
1	12/20/93	12	1		104	N	
1	12/20/93	13	1		88	N	
1	12/20/93	14	1		88	N	
1	12/20/93	15	1		88	N	
1	12/20/93	16	1		88	N	
1	12/20/93	17	1		87	N	
1	12/20/93	18	1		87	N	
1	12/27/93	1	1		137	Y	J 910126143-50
1	12/27/93	2	1		137	N	
1	12/27/93	3	1		137	N	
1	12/27/93	4	1		137	N	
1	12/27/93	5	1		137	N	
1	12/27/93	6	1		137	N	
1	12/27/93	7	1		136	N	
1	12/27/93	8	1		134	N	
1	12/27/93	9	1		130	N	
1	12/27/93	10	1		125	N	
1	12/27/93	11	1		116	N	
1	12/27/93	12	1		104	N	
1	12/27/93	13	1		88	N	
1	12/27/93	14	1		87	N	
1	12/27/93	15	1		87	N	
1	12/27/93	16	1		87	N	
1	12/27/93	17	1		87	N	
1	12/27/93	18	1		87	N	

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 12, 1993.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y= MAX TEMP	COMMENTS
1	10/24/76	1			104		
1	10/24/76	2			105		
1	10/24/76	3			131		
1	10/24/76	4			103		
1	10/24/76	5			116		
1	10/24/76	6			105		
1	10/24/76	7			103		
1	10/24/76	8			105		
1	Oct-76	9			114		
1	Oct-76	10			103		
1	Oct-76	11			106		
1	Oct-76	12			120		
1	1/11/77	1			83		
1	1/11/77	2			82		
1	1/11/77	3			146		
1	1/11/77	4			83		
1	1/11/77	5			83		
1	1/11/77	6			83		
1	1/11/77	7			88		
1	1/11/77	8			85		
1	Jan-77	9			86		
1	Jan-77	10			86		
1	Jan-77	11			86		
1	2/13/77	1			90		
1	2/13/77	2			91		
1	2/13/77	3			99		
1	2/13/77	4			90		
1	2/13/77	5			90		
1	2/13/77	6			90		
1	2/13/77	7			90		
1	2/13/77	8			93		
1	Feb-77	9			94		
1	Feb-77	10			94		
1	3/25/77	1			70		
1	3/25/77	2			69		
1	3/25/77	3			77		
1	3/25/77	4			70		
1	3/25/77	5			70		
1	3/25/77	6			70		
1	3/25/77	7			70		
1	3/25/77	8			70		
1	Mar-77	9			62		
1	Mar-77	10			74		
1	Mar-77	11			74		
1	Mar-77	12			75		
1	Mar-77	13			75		
1	Mar-77	16			76		
1	4/6/77	1			71		
1	4/6/77	2			72		
1	4/6/77	3			74		
1	4/6/77	4			72		
1	4/6/77	5			74		
1	4/6/77	6			75		
1	4/6/77	7			77		
1	4/6/77	8			78		
1	Apr-77	9			77		
1	Apr-77	10			79		
1	Apr-77	11			79		
1	Apr-77	15			80		
1	Apr-77	16					55 - suspect data (low)
1	5/28/77	1			66		
1	5/28/77	1			66		
1	5/28/77	2			66		
1	5/28/77	2			66		
1	5/28/77	3			57		
1	5/28/77	3			57		
1	5/28/77	4			68		
1	5/28/77	4			68		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y= MAX TEMP	COMMENTS
1	5/28/77	5			68		
1	5/28/77	5			68		
1	5/28/77	6			68		
1	5/28/77	6			68		
1	5/28/77	7			65		
1	5/28/77	7			65		
1	5/28/77	8			72		
1	5/28/77	8			72		
1	May-77	9			76		
1	May-77	9			70		
1	May-77	10			70		
1	May-77	10			70		
1	May-77	11			76		
1	May-77	11			70		
1	May-77	14			72		
1	May-77	14			72		
1	6/10/77	1			66		
1	6/10/77	1			66		
1	6/10/77	2			67		
1	6/10/77	2			67		
1	6/10/77	3					49 - suspect data (low)
1	6/10/77	3					49 - suspect data (low)
1	6/10/77	4			69		
1	6/10/77	4			69		
1	6/10/77	5			69		
1	6/10/77	5			69		
1	6/10/77	6			69		
1	6/10/77	6			69		
1	6/10/77	7			69		
1	6/10/77	7			69		
1	6/10/77	8			70		
1	6/10/77	8			70		
1	Jun-77	9			70		
1	Jun-77	9			70		
1	Jun-77	10			71		
1	Jun-77	10			71		
1	Jun-77	11			71		
1	Jun-77	11			71		
1	Jun-77	14			72		
1	Jun-77	14			72		
1	Jun-77	15			63		
1	Jun-77	15			63		
1	Jun-77	16			72		
1	Jun-77	16			72		
1	8/7/77	1			85		
1	8/7/77	2			88		
1	8/7/77	3			61		
1	8/7/77	4			87		
1	8/7/77	5			88		
1	8/7/77	6			82		
1	8/7/77	7			56		
1	8/7/77	8			110		
1	Aug-77	9			91		
1	Aug-77	10			77		
1	Aug-77	11			92		
1	Aug-77	14			93		
1	Aug-77	16			96		
1	8/11/77	1			73		
1	8/11/77	2			79		
1	8/11/77	3			62		
1	8/11/77	4			75		
1	8/11/77	5			75		
1	8/11/77	6			68		
1	8/11/77	8			77		
1	Aug-77	9			79		
1	Aug-77	10			73		
1	Aug-77	11			79		
1	Aug-77	14			81		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/12/77	1			80		
1	8/12/77	1			80		
1	8/12/77	2			86		
1	8/12/77	2			84		
1	8/12/77	3			87		
1	8/12/77	3			84		
1	8/12/77	4			84		
1	8/12/77	4			83		
1	8/12/77	5			84		
1	8/12/77	5			83		
1	8/12/77	6			75		
1	8/12/77	6			83		
1	8/12/77	7			78		
1	8/12/77	7			78		
1	8/12/77	8			113		
1	Aug-77	9			87		
1	Aug-77	9			118		
1	Aug-77	10			66		
1	Aug-77	10			86		
1	Aug-77	11			87		
1	Aug-77	11			73		
1	Aug-77	12			87		
1	Aug-77	12			87		
1	Aug-77	14			90		
1	Aug-77	16			92		
1	8/18/77	1			87		
1	8/18/77	2			94		
1	8/18/77	3			102		
1	8/18/77	4			91		
1	8/18/77	5			90		
1	8/18/77	6			77		
1	8/18/77	8			66		
1	Aug-77	9			88		
1	Aug-77	10			70		
1	Aug-77	11			89		
1	Aug-77	14			90		
1	Aug-77	16			93		
1	8/21/77	1			93		
1	8/21/77	1			82		
1	8/21/77	1			82		
1	8/21/77	2			99		
1	8/21/77	2			90		
1	8/21/77	2			90		
1	8/21/77	3			100		
1	8/21/77	3			94		
1	8/21/77	3			94		
1	8/21/77	4			99		
1	8/21/77	4			97		
1	8/21/77	4			97		
1	8/21/77	5			91		
1	8/21/77	5			86		
1	8/21/77	5			86		
1	8/21/77	6			87		
1	8/21/77	6			86		
1	8/21/77	6			86		
1	8/21/77	7		27	80.6		raw data - assumed degree C
1	8/21/77	8			96		
1	8/21/77	8			116		
1	Aug-77	9			97		
1	Aug-77	9			88		
1	Aug-77	9			88		
1	Aug-77	10			84		
1	Aug-77	10			74		
1	Aug-77	10			74		
1	Aug-77	11			95		
1	Aug-77	11			88		
1	Aug-77	11			88		
1	Aug-77	14			97		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	Aug-77	14			90		
1	Aug-77	14			90		
1	Aug-77	16			99		
1	Aug-77	16			91		
1	Aug-77	16			91		
1	Aug-77	17			121		
1	Aug-77	18			99		
1	8/25/77	1			98		
1	8/25/77	2			102		
1	8/25/77	3			99		
1	8/25/77	4			103		
1	8/25/77	5			103		
1	8/25/77	6			98		
1	8/25/77	7			75		
1	8/25/77	8			116		
1	Aug-77	9			106		
1	Aug-77	10			100		
1	Aug-77	11			107		
1	Aug-77	14			107		
1	Aug-77	16			109		
1	Aug-77	17			128		
1	Aug-77	18			107		
1	8/30/77	1			98		
1	8/30/77	2			101		
1	8/30/77	3			103		
1	8/30/77	4			102		
1	8/30/77	5			103		
1	8/30/77	6			99		
1	8/30/77	7			75		
1	8/30/77	8			172		
1	Aug-77	9			106		
1	Aug-77	10			103		
1	Aug-77	11			107		
1	Aug-77	14			104		
1	Aug-77	16			105		
1	9/7/77	1			85		
1	9/12/77	1			80		
1	9/21/77	1			82		
1	10/7/77	1			75		
1	10/7/77	1			75		
1	10/7/77	2			84		
1	10/7/77	2			84		
1	10/7/77	3			76		
1	10/7/77	3			76		
1	10/7/77	4			143		
1	10/7/77	4			143		
1	10/7/77	5			77		
1	10/7/77	5			77		
1	10/7/77	6			75		
1	10/7/77	6			75		
1	10/7/77	7			71		
1	10/7/77	7			71		
1	10/7/77	8			73		
1	10/7/77	8			93		
1	Oct-77	9			79		
1	Oct-77	9			79		
1	Oct-77	10			68		
1	Oct-77	10			68		
1	Oct-77	11			86		
1	Oct-77	11			80		
1	Oct-77	14			82		
1	Oct-77	14			82		
1	Oct-77	16			84		
1	Oct-77	16			84		
1	11/7/77	1			73		
1	11/7/77	2			69		
1	11/7/77	3					48 - suspect data (low)
1	11/7/77	4			81		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y= MAX TEMP	COMMENTS
1	11/7/77	5			73		
1	11/7/77	6			78		
1	11/7/77	7		50	122		raw data - assumed degree C
1	11/7/77	8			88		
1	Nov-77	9			76		
1	Nov-77	10			74		
1	Nov-77	11			76		
1	Nov-77	14			79		
1	Nov-77	16			80		
1	12/4/77	1			66		
1	12/4/77	2			73		
1	12/4/77	4			118		
1	12/4/77	5			66		
1	12/4/77	6			69		
1	12/4/77	8			173		
1	Dec-77	9			68		
1	Dec-77	10			63		
1	Dec-77	11			68		
1	Dec-77	12		41	105.8		raw data - assumed degree C
1	Dec-77	13			47		
1	Dec-77	14			71		
1	Dec-77	16			71		
1	1/11/78	1			68		
1	1/11/78	2			67		
1	1/11/78	3			57		
1	1/11/78	4			113		
1	1/11/78	5			67		
1	1/11/78	6			63		
1	1/11/78	8			89		
1	Jan-78	9			90		
1	Jan-78	11			70		
1	Jan-78	14			71		
1	1/28/78	1			65		
1	1/28/78	2			67		
1	1/28/78	3			62		
1	1/28/78	4			106		
1	1/28/78	5			65		
1	1/28/78	6			67		
1	1/28/78	8			108		
1	Jan-78	9			67		
1	Jan-78	11			67		
1	Jan-78	14			68		
1	2/21/78	1			66		
1	2/21/78	2			76		
1	2/21/78	3					48 - suspect data (low)
1	2/21/78	4			75		
1	2/21/78	5			65		
1	2/21/78	6			66		
1	2/21/78	8			101		
1	Feb-78	9			68		
1	Feb-78	11			68		
1	Feb-78	14			69		
1	3/26/78	1			149		
1	3/26/78	2			143		
1	3/26/78	3			133		
1	3/26/78	4			129		
1	3/26/78	5			126		
1	3/26/78	6			126		
1	3/26/78	7			126		
1	3/26/78	8			126		
1	Mar-78	9			126		
1	Mar-78	10			126		
1	Mar-78	11			126		
1	Mar-78	12			115		
1	Mar-78	13			161		
1	Mar-78	14			119		
1	Mar-78	15			111		
1	Mar-78	16			91		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y= MAX TEMP	COMMENTS
1	4/24/78	1			129		
1	4/24/78	2			115		
1	4/24/78	3			117		
1	4/24/78	4			115		
1	4/24/78	5			103		
1	4/24/78	6			103		
1	4/24/78	7		51	123.8		raw data - assumed degree C
1	4/24/78	8			126		
1	Apr-78	9			89		
1	Apr-78	11			90		
1	5/19/78	1			144		
1	5/19/78	2			101		
1	5/19/78	3			88		
1	5/19/78	4			104		
1	5/19/78	5			106		
1	5/19/78	6			102		
1	5/19/78	8			120		
1	May-78	9			112		
1	May-78	11			100		
1	6/17/78	1			125		
1	6/17/78	2			107		
1	6/17/78	3			71		
1	6/17/78	4			100		
1	6/17/78	5			111		
1	6/17/78	6			109		
1	6/17/78	8			115		
1	Jun-78	9			109		
1	Jun-78	11			111		
1	Jun-78	14			113		
1	7/15/78	1			149		
1	8/9/78	1			113		
1	8/9/78	2			86		
1	8/9/78	3			65		
1	8/9/78	4			82		
1	8/9/78	5			88		
1	8/9/78	6			87		
1	8/9/78	7			59		
1	8/9/78	8			94		
1	Aug-78	9			89		
1	Aug-78	11			92		
1	Aug-78	14			92		
1	Aug-78	16			92		
1	8/13/78	1			115		
1	8/13/78	2			78		
1	8/13/78	3					50 - suspect data (low)
1	8/13/78	4			75		
1	8/13/78	5			81		
1	8/13/78	6			80		
1	8/13/78	7					37 - suspect data (low)
1	8/13/78	8			64		
1	Aug-78	9			82		
1	Aug-78	11			84		
1	Aug-78	14			85		
1	Aug-78	16			86		
1	10/8/78	1			105		
1	10/8/78	2			79		
1	10/8/78	3			71		
1	10/8/78	4			76		
1	10/8/78	5			77		
1	10/8/78	6			78		
1	10/8/78	7			62		
1	10/8/78	8			91		
1	Oct-78	9			81		
1	Oct-78	11			82		
1	Oct-78	14			82		
1	Oct-78	16			82		
1	11/8/78	1			115		
1	11/8/78	2			76		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y= MAX TEMP	COMMENTS
1	11/8/78	3					53 - suspect data (low)
1	11/8/78	4			75		
1	11/8/78	5			77		
1	11/8/78	6			78		
1	11/8/78	7			63		
1	11/8/78	8			81		
1	Nov-78	9			79		
1	Nov-78	11			80		
1	Nov-78	14			81		
1	Nov-78	16			81		
1	1/2/79	1			87		
1	1/2/79	2			93		
1	1/2/79	4			75		
1	1/2/79	5			73		
1	1/2/79	6			74		
1	1/2/79	7			135		
1	1/2/79	8			76		
1	Jan-79	9			75		
1	Jan-79	11			76		
1	Jan-79	14			78		
1	Jan-79	16			78		
1	2/9/79	1			145		
1	2/9/79	2			65		
1	2/9/79	3		19	66.2		raw data - assumed degree C
1	2/9/79	4			53		
1	2/9/79	5			60		
1	2/9/79	6		46	114.8		raw data - assumed degree C
1	2/9/79	8			60		
1	Feb-79	9			63		
1	Feb-79	11			65		
1	Feb-79	14			66		
1	Feb-79	16			66		
1	10/8/79	2			90		
1	10/8/79	4			85		
1	10/8/79	5			80		
1	10/8/79	6			79		
1	10/8/79	8			72		
1	Oct-79	9			75		
1	Oct-79	11			76		
1	Oct-79	14			77		
1	Oct-79	16			77		
1	2/9/80	2			194		
1	2/9/80	4			86		
1	2/9/80	5			89		
1	2/9/80	6			123		
1	2/9/80	8			99		
1	Feb-80	9			89		
1	Feb-80	11			90		
1	Feb-80	14			88		
1	Feb-80	16			163		
1	10/26/80	2			140		
1	10/26/80	4			97		
1	10/26/80	5			90		
1	10/26/80	6			96		
1	Oct-80	9			91		
1	Oct-80	11			93		
1	Oct-80	14			94		
1	2/6/81	2			177		
1	2/6/81	5			78		
1	Feb-81	9			78		
1	Feb-81	11			80		
1	Feb-81	14			80		
1	6/7/81	2			165		
1	6/7/81	5			72		
1	Jun-81	9			72		
1	Jun-81	11			74		
1	Jun-81	14			74		
1	2/8/82	2			166		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	2/5/83	2			90		
1	2/5/83	5			73		
1	6/8/83	2			88		
1	6/8/83	3			85		
1	6/8/83	5			74		
1	2/16/84	2			135		
1	2/16/84	5			74		
1	Feb-84	14			80		
1	Feb-84	18			78		
1	3/5/84	2			139		
1	3/5/84	5			73		
1	Mar-84	14			71		
1	1/12/85	2		26	78.8		raw data - assumed degree C
1	1/12/85	5			90		
1	Jan-85	14			80		
1	Jan-85	18			79		
1	3/2/85	5			76		
1	7/2/85	2			60		
1	7/2/85	3			65		
1	7/2/85	5			76		
1	7/2/85	7			60		
1	7/8/85	1			67		
1	7/8/85	2			70		
1	7/8/85	3			75		
1	7/8/85	5			80		
1	7/8/85	6			80		
1	7/8/85	7			80		
1	10/4/85	2			69		
1	10/4/85	5			89		
1	Oct-85	14			79		
1	Oct-85	17					34 - suspect data (low)
1	Oct-85	18			88		
1	11/1/85	2			65		
1	11/1/85	5			92		
1	Nov-85	14			83		
1	Nov-85	18			82		
1	1/6/86	2			91		
1	1/6/86	5			87		
1	2/3/86	7			65		
1	4/18/86	2			78		
1	4/18/86	5			87		
1	Apr-86	14			70		
1	6/17/86	2		42	107.6		raw data - assumed degree C
1	6/17/86	5			89		
1	Jun-86	16					314 - suspect data (high)
1	Jun-86	17			58		
1	Jun-86	18			78		
1	7/7/86	2			59		
1	7/7/86	5			76		
1	Jul-86	14			75		
1	10/6/86	2			124		
1	10/6/86	5			85		
1	Oct-86	14			90		
1	10/10/86	2			59		
1	10/10/86	5			92		
1	Oct-86	14			82		
1	Oct-86	18			82		
1	11/3/86	2			116.7		
1	11/3/86	5			62.8		
1	Nov-86	14			69.7		
1	11/28/86	2			57		
1	11/28/86	5			90		
1	Nov-86	14			80		
1	Nov-86	18			80		
1	3/6/87	2			96		
1	3/6/87	5			87		
1	Mar-87	14			76		
1	Mar-87	16			148		

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102 THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	Mar-87	17			109		
1	Mar-87	18			76		
1	5/1/87	2			61		
1	5/1/87	5			87		
1	May-87	14			76		
1	May-87	17					54 - suspect data (low)
1	May-87	18			76		
1	6/5/87	2			54		
1	6/5/87	5			88		
1	Jun-87	14			77		
1	Jun-87	17		44	111.2		raw data - assumed degree C
1	Jun-87	18			78		
1	7/6/87	2			60		
1	7/6/87	5			72		
1	7/6/87	6			114		
1	8/3/87	5			80		
1	Aug-87	14			57		
1	4/1/88	5			87		
1	Apr-88	18			76		
1	5/6/88	5			87		
1	May-88	16			169		
1	May-88	17		23	73.4		raw data - assumed degree C
1	May-88	18			77		
1	6/17/88	2		42	107.6		raw data - assumed degree C
1	6/17/88	5			89		
1	Jun-88	16					314 - suspect data (high)
1	Jun-88	17			58		
1	Jun-88	18			78		
1	8/5/88	5			91		
1	Aug-88	16			130		
1	Aug-88	17		17	62.6		raw data - assumed degree C
1	Aug-88	18			80		
1	10/28/88	5			89		
1	Oct-88	18			79		
1	11/18/88	5			89		
1	Nov-88	18			78		
1	12/23/88	5			89		
1	Dec-88	18			78		
1	1/1/90	5	1		78	Y	
1	12/31/90	1	1			N	Refer to old logbooks for data 1976-1990
1	11/20/91	5	1		77.3	Y	TC #1-4,6 O/S
1	11/4/92	1	1			N	#S&DA-92-488 NO RDGS SINCE JANUARY 1992
1	11/6/92	5	1		95.7	N	
1	6/30/93	5	1		73.4	N	J 910126143-29 TC 1-4, 6-16 O/S
1	6/30/93	17	1		130.5	Y	
1	6/30/93	18	1		74.2	N	
1	7/2/93	1					483 - suspect data (high)
1	7/2/93	2		12.6	54.68		raw data - assumed degree C
1	7/2/93	5			75.3		
1	7/2/93	7					1452 - suspect data (high)
1	7/2/93	8					1098 - suspect data (high)
1	Jul-93	17			123.7		
1	7/2/93	18	1		75.9	Y	
1	7/19/93	1					404 - suspect data (high)
1	7/19/93	5			74.8		
1	7/19/93	8			162.5		
1	Jul-93	17			117		
1	Jul-93	18			75.4		
1	7/24/93	1					500 - suspect data (high)
1	7/24/93	5			76.3		
1	7/30/93	1	1			N	UNABLE TO DIAGNOSE BAD READINGS-WIRE BOX CONTAMINATED
1	12/20/93	1	1		113.8	Y	J 910126143-45
1	12/20/93	2	1		100	N	
1	12/20/93	3	1		91.6	N	
1	12/20/93	4	1		91.2	N	
1	12/20/93	5	1		91.1	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-102							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y= MAX TEMP	COMMENTS
1	12/20/93	6	1		90.3	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993 and TWINS database, July 1994.

TANK 241-AX-103 THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/24/76	1	1		95	Y	
1	10/24/76	2	1		92	N	
1	10/24/76	3	1		92	N	
1	10/24/76	4	1		92	N	
1	10/24/76	5	1		92	N	
1	10/24/76	6	1		92	N	
1	10/24/76	7	1		92	N	
1	10/24/76	8	1		92	N	
1	10/24/76	9	1		92	N	
1	10/24/76	10	1		92	N	
1	10/24/76	11	1		92	N	
1	10/24/76	12	1		92	N	
1	1/11/77	1	1		72	Y	
1	1/11/77	2	1		72	N	
1	1/11/77	3	1		72	N	
1	1/11/77	4	1		72	N	
1	1/11/77	5	1		72	N	
1	1/11/77	6	1		72	N	
1	1/11/77	7	1		72	N	
1	1/11/77	8	1		72	N	
1	1/11/77	9	1		72	N	
1	1/11/77	10	1		72	N	
1	1/11/77	11	1		72	N	
1	1/11/77	12	1		72	N	
1	2/13/77	1	1		74	Y	
1	2/13/77	2	1		74	N	
1	2/13/77	3	1		74	N	
1	2/13/77	4	1		74	N	
1	2/13/77	5	1		74	N	
1	2/13/77	6	1		74	N	
1	2/13/77	7	1		74	N	
1	2/13/77	8	1		74	N	
1	2/13/77	9	1		74	N	
1	2/13/77	10	1		74	N	
1	2/13/77	11	1		74	N	
1	2/13/77	12	1		74	N	
1	3/15/77	1	1		91	N	
1	3/15/77	2	1		91	N	
1	3/15/77	3	1		92	Y	
1	3/15/77	4	1		92	N	
1	3/15/77	5	1		92	N	
1	3/15/77	6	1		92	N	
1	3/15/77	7	1		92	N	
1	3/15/77	8	1		92	N	
1	3/15/77	9	1		92	N	
1	3/15/77	10	1		92	N	
1	3/15/77	11	1		91	N	
1	3/15/77	12	1		91	N	
1	3/15/77	13	1		91	N	
1	3/15/77	14	1		91	N	
1	3/25/77	1	1		91	N	
1	3/25/77	2	1		91	N	
1	3/25/77	3	1		92	Y	
1	3/25/77	4	1		92	N	
1	3/25/77	5	1		92	N	
1	3/25/77	6	1		92	N	
1	3/25/77	7	1		92	N	
1	3/25/77	8	1		92	N	
1	3/25/77	9	1		92	N	
1	3/25/77	10	1		92	N	
1	3/25/77	11	1		91	N	
1	3/25/77	12	1		91	N	
1	3/25/77	13	1		91	N	
1	3/25/77	14	1		91	N	
1	3/25/77	15	1		91	N	
1	3/25/77	16	1		91	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	4/6/77	1	1		86	N	
1	4/6/77	2	1		87	N	
1	4/6/77	3	1		87	N	
1	4/6/77	4	1		87	N	
1	4/6/77	5	1		88	N	
1	4/6/77	6	1		88	N	
1	4/6/77	7	1		87	N	
1	4/6/77	8	1		87	N	
1	4/6/77	9	1		88	N	
1	4/6/77	10	1		89	N	
1	4/6/77	11	1		88	N	
1	4/6/77	12	1		89	N	
1	4/6/77	13	1		89	N	
1	4/6/77	14	1		89	N	
1	4/6/77	15	1		90	Y	
1	4/6/77	16	1		88	N	
1	5/28/77	1	1		80	Y	
1	5/28/77	2	1		79	N	
1	5/28/77	3	1		79	N	
1	5/28/77	4	1		78	N	
1	5/28/77	5	1		78	N	
1	5/28/77	6	1		78	N	
1	5/28/77	7	1		79	N	
1	5/28/77	8	1		79	N	
1	5/28/77	9	1		78	N	
1	5/28/77	10	1		78	N	
1	5/28/77	11	1		78	N	
1	5/28/77	12	1		78	N	
1	5/28/77	13	1		78	N	
1	5/28/77	14	1		78	N	
1	6/10/77	1	1		79	Y	
1	6/10/77	2	1		79	N	
1	6/10/77	3	1		79	N	
1	6/10/77	4	1		79	N	
1	6/10/77	5	1		79	N	
1	6/10/77	6	1		79	N	
1	6/10/77	7	1		79	N	
1	6/10/77	8	1		79	N	
1	6/10/77	9	1		79	N	
1	6/10/77	10	1		79	N	
1	6/10/77	11	1		79	N	
1	6/10/77	12	1		78	N	
1	6/10/77	13	1		79	N	
1	6/10/77	14	1		79	N	
1	6/10/77	15	1		78	N	
1	6/10/77	16	1		78	N	
1	8/11/77	1	1		80	Y	
1	8/11/77	2	1		79	N	
1	8/11/77	3	1		79	N	
1	8/11/77	4	1		79	N	
1	8/11/77	5	1		79	N	
1	8/11/77	6	1		79	N	
1	8/11/77	7	1		79	N	
1	8/11/77	8	1		79	N	
1	8/11/77	9	1		79	N	
1	8/11/77	10	1		79	N	
1	8/11/77	11	1		79	N	
1	8/11/77	12	1		79	N	
1	8/11/77	13	1		79	N	
1	8/11/77	14	1		79	N	
1	8/18/77	1	1		77	Y	
1	8/18/77	2	1		77	N	
1	8/18/77	3	1		77	N	
1	8/18/77	4	1		76	N	
1	8/18/77	5	1		77	N	
1	8/18/77	6	1		77	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	8/18/77	7	1		77	N	
1	8/18/77	8	1		77	N	
1	8/18/77	9	1		76	N	
1	8/18/77	10	1		77	N	
1	8/18/77	11	1		77	N	
1	8/18/77	12	1		77	N	
1	8/18/77	13	1		77	N	
1	8/18/77	14	1		76	N	
1	8/18/77	15	1		77	N	
1	8/18/77	16	1		77	N	
1	8/21/77	1	1		81	Y	
1	8/21/77	2	1		81	N	
1	8/21/77	3	1		80	N	
1	8/21/77	4	1		80	N	
1	8/21/77	5	1		80	N	
1	8/21/77	6	1		80	N	
1	8/21/77	7	1		80	N	
1	8/21/77	8	1		80	N	
1	8/21/77	9	1		80	N	
1	8/21/77	10	1		80	N	
1	8/21/77	11	1		80	N	
1	8/21/77	12	1		80	N	
1	8/21/77	13	1		80	N	
1	8/21/77	14	1		80	N	
1	8/21/77	15	1		80	N	
1	8/21/77	16	1		80	N	
1	8/21/77	17	1		80	N	
1	8/21/77	18	1		80	N	
1	8/25/77	1	1		87	Y	
1	8/25/77	2	1		86	N	
1	8/25/77	3	1		86	N	
1	8/25/77	4	1		86	N	
1	8/25/77	5	1		86	N	
1	8/25/77	6	1		86	N	
1	8/25/77	7	1		86	N	
1	8/25/77	8	1		86	N	
1	8/25/77	9	1		86	N	
1	8/25/77	10	1		86	N	
1	8/25/77	11	1		86	N	
1	8/25/77	12	1		86	N	
1	8/25/77	13	1		86	N	
1	8/25/77	14	1		86	N	
1	8/25/77	15	1		86	N	
1	8/25/77	16	1		86	N	
1	8/25/77	17	1		86	N	
1	8/25/77	18	1		86	N	
1	9/3/77	1	1		85	N	
1	9/3/77	2	1		86	N	
1	9/3/77	3	1		87	Y	
1	9/3/77	4	1		87	N	
1	9/3/77	5	1		87	N	
1	9/3/77	6	1		87	N	
1	9/3/77	7	1		87	N	
1	9/3/77	8	1		87	N	
1	9/3/77	9	1		87	N	
1	9/3/77	10	1		87	N	
1	9/3/77	11	1		87	N	
1	9/3/77	12	1		87	N	
1	9/3/77	13	1		87	N	
1	9/3/77	14	1		87	N	
1	9/3/77	15	1		87	N	
1	9/3/77	16	1		87	N	
1	9/7/77	1	1		85	N	
1	9/7/77	2	1		86	N	
1	9/7/77	3	1		87	Y	
1	9/7/77	4	1		87	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	9/7/77	5	1		87	N	
1	9/7/77	6	1		87	N	
1	9/7/77	7	1		87	N	
1	9/7/77	8	1		87	N	
1	9/7/77	9	1		87	N	
1	9/7/77	10	1		87	N	
1	9/7/77	11	1		87	N	
1	9/7/77	12	1		87	N	
1	9/7/77	13	1		87	N	
1	9/7/77	14	1		87	N	
1	9/7/77	15	1		87	N	
1	9/7/77	16	1		87	N	
1	9/12/77	1	1		85	Y	
1	9/12/77	2	1		85	N	
1	9/12/77	3	1		85	N	
1	9/12/77	4	1		85	N	
1	9/12/77	5	1		85	N	
1	9/12/77	6	1		85	N	
1	9/12/77	7	1		85	N	
1	9/12/77	8	1		85	N	
1	9/12/77	9	1		85	N	
1	9/12/77	10	1		85	N	
1	9/12/77	11	1		85	N	
1	9/12/77	12	1		85	N	
1	9/12/77	13	1		85	N	
1	9/12/77	14	1		85	N	
1	9/12/77	15	1		85	N	
1	9/12/77	16	1		85	N	
1	9/21/77	1	1		90	Y	
1	9/21/77	2	1		89	N	
1	9/21/77	3	1		89	N	
1	9/21/77	4	1		89	N	
1	9/21/77	5	1		89	N	
1	9/21/77	6	1		89	N	
1	9/21/77	7	1		89	N	
1	9/21/77	8	1		89	N	
1	9/21/77	9	1		89	N	
1	9/21/77	10	1		89	N	
1	9/21/77	11	1		89	N	
1	9/21/77	12	1		89	N	
1	9/21/77	13	1		89	N	
1	9/21/77	14	1		89	N	
1	9/21/77	15	1		89	N	
1	9/21/77	16	1		89	N	
1	10/7/77	1	1		85	Y	
1	10/7/77	2	1		85	N	
1	10/7/77	3	1		85	N	
1	10/7/77	4	1		85	N	
1	10/7/77	5	1		85	N	
1	10/7/77	6	1		85	N	
1	10/7/77	7	1		85	N	
1	10/7/77	8	1		85	N	
1	10/7/77	9	1		85	N	
1	10/7/77	10	1		85	N	
1	10/7/77	11	1		85	N	
1	10/7/77	12	1		85	N	
1	10/7/77	13	1		85	N	
1	10/7/77	14	1		85	N	
1	10/7/77	15	1		85	N	
1	10/7/77	16	1		85	N	
1	11/7/77	1	1		80	N	
1	11/7/77	2	1		80	N	
1	11/7/77	3	1		79	N	
1	11/7/77	4	1		83	Y	
1	11/7/77	5	1		83	N	
1	11/7/77	6	1		83	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103
THERMOCOUPLE DATA

TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/7/77	7	1		83	N	
1	11/7/77	8	1		83	N	
1	11/7/77	9	1		83	N	
1	11/7/77	10	1		83	N	
1	11/7/77	11	1		82	N	
1	11/7/77	12	1		82	N	
1	11/7/77	13	1		82	N	
1	11/7/77	14	1		82	N	
1	11/7/77	15	1		82	N	
1	11/7/77	16	1		82	N	
1	12/4/77	1	1		73	N	
1	12/4/77	2	1		73	N	
1	12/4/77	3	1		74	Y	
1	12/4/77	4	1		74	N	
1	12/4/77	5	1		73	N	
1	12/4/77	6	1		73	N	
1	12/4/77	7	1		74	N	
1	12/4/77	8	1		74	N	
1	12/4/77	9	1		74	N	
1	12/4/77	10	1		74	N	
1	12/4/77	11	1		73	N	
1	12/4/77	12	1		73	N	
1	12/4/77	13	1		73	N	
1	12/4/77	14	1		73	N	
1	12/4/77	15	1		73	N	
1	12/4/77	16	1		73	N	
1	1/11/78	1	1		72	Y	
1	1/11/78	2	1		71	N	
1	1/11/78	3	1		71	N	
1	1/11/78	4	1		71	N	
1	1/11/78	5	1		71	N	
1	1/11/78	6	1		71	N	
1	1/11/78	7	1		71	N	
1	1/11/78	8	1		71	N	
1	1/11/78	9	1		71	N	
1	1/11/78	10	1		71	N	
1	1/11/78	11	1		71	N	
1	1/11/78	12	1		71	N	
1	1/11/78	13	1		71	N	
1	1/11/78	14	1		71	N	
1	1/28/78	1	1		71	Y	
1	1/28/78	2	1		71	N	
1	1/28/78	3	1		71	N	
1	1/28/78	4	1		71	N	
1	1/28/78	5	1		71	N	
1	1/28/78	6	1		71	N	
1	1/28/78	7	1		71	N	
1	1/28/78	8	1		71	N	
1	1/28/78	9	1		71	N	
1	1/28/78	10	1		71	N	
1	1/28/78	11	1		71	N	
1	1/28/78	12	1		71	N	
1	1/28/78	13	1		71	N	
1	1/28/78	14	1		71	N	
1	2/26/78	1	1		73	Y	
1	2/26/78	2	1		73	N	
1	2/26/78	3	1		73	N	
1	2/26/78	4	1		73	N	
1	2/26/78	5	1		73	N	
1	2/26/78	6	1		73	N	
1	2/26/78	7	1		73	N	
1	2/26/78	8	1		73	N	
1	2/26/78	9	1		73	N	
1	2/26/78	10	1		73	N	
1	2/26/78	11	1		73	N	
1	2/26/78	12	1		73	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	2/26/78	13	1		73	N	
1	2/26/78	14	1		73	N	
1	3/26/78	1	1		73	N	
1	3/26/78	2	1		74	Y	
1	3/26/78	3	1		74	N	
1	3/26/78	4	1		74	N	
1	3/26/78	5	1		74	N	
1	3/26/78	6	1		74	N	
1	3/26/78	7	1		74	N	
1	3/26/78	8	1		74	N	
1	3/26/78	9	1		74	N	
1	3/26/78	10	1		74	N	
1	3/26/78	11	1		74	N	
1	3/26/78	12	1		74	N	
1	3/26/78	13	1		74	N	
1	3/26/78	14	1		74	N	
1	3/26/78	15	1		74	N	
1	3/26/78	16	1		74	N	
1	4/24/78	1	1		84	Y	
1	4/24/78	2	1		82	N	
1	4/24/78	3	1		82	N	
1	4/24/78	4	1		82	N	
1	4/24/78	5	1		82	N	
1	4/24/78	6	1		82	N	
1	4/24/78	7	1		82	N	
1	4/24/78	8	1		82	N	
1	4/24/78	9	1		82	N	
1	4/24/78	10	1		82	N	
1	4/24/78	11	1		82	N	
1	4/24/78	12	1		82	N	
1	4/24/78	13	1		82	N	
1	4/24/78	14	1		82	N	
1	5/19/78	1	1		77	Y	
1	5/19/78	2	1		76	N	
1	5/19/78	3	1		76	N	
1	5/19/78	4	1		76	N	
1	5/19/78	5	1		76	N	
1	5/19/78	6	1		76	N	
1	5/19/78	7	1		76	N	
1	5/19/78	8	1		76	N	
1	5/19/78	9	1		76	N	
1	5/19/78	10	1		76	N	
1	5/19/78	11	1		76	N	
1	5/19/78	12	1		76	N	
1	5/19/78	13	1		76	N	
1	5/19/78	14	1		76	N	
1	6/17/78	1	1		80	Y	
1	6/17/78	2	1		79	N	
1	6/17/78	3	1		79	N	
1	6/17/78	4	1		79	N	
1	6/17/78	5	1		79	N	
1	6/17/78	6	1		79	N	
1	6/17/78	7	1		79	N	
1	6/17/78	8	1		79	N	
1	6/17/78	9	1		79	N	
1	6/17/78	10	1		79	N	
1	6/17/78	11	1		79	N	
1	6/17/78	12	1		79	N	
1	6/17/78	13	1		79	N	
1	6/17/78	14	1		79	N	
1	7/15/78	1	1		79	Y	
1	7/15/78	2	1		79	N	
1	7/15/78	3	1		79	N	
1	7/15/78	4	1		79	N	
1	7/15/78	5	1		79	N	
1	7/15/78	6	1		79	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103 THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/15/78	7	1		79	N	
1	7/15/78	8	1		76	N	
1	7/15/78	9	1		76	N	
1	7/15/78	10	1		76	N	
1	7/15/78	11	1		76	N	
1	7/15/78	12	1		76	N	
1	7/15/78	13	1		76	N	
1	7/15/78	14	1		76	N	
1	8/13/78	1	1		81	Y	
1	8/13/78	2	1		81	N	
1	8/13/78	3	1		81	N	
1	8/13/78	4	1		81	N	
1	8/13/78	5	1		81	N	
1	8/13/78	6	1		81	N	
1	8/13/78	7	1		81	N	
1	8/13/78	8	1		81	N	
1	8/13/78	9	1		81	N	
1	8/13/78	10	1		81	N	
1	8/13/78	11	1		81	N	
1	8/13/78	12	1		81	N	
1	8/13/78	13	1		81	N	
1	8/13/78	14	1		81	N	
1	8/13/78	15	1		81	N	
1	8/13/78	16	1		81	N	
1	9/9/78	1	1		88	N	
1	9/9/78	2	1		87	N	
1	9/9/78	3	1		90	N	
1	9/9/78	4	1		91	Y	
1	9/9/78	5	1		90	N	
1	9/9/78	6	1		90	N	
1	9/9/78	7	1		90	N	
1	9/9/78	8	1		90	N	
1	9/9/78	9	1		90	N	
1	9/9/78	10	1		90	N	
1	9/9/78	11	1		90	N	
1	9/9/78	12	1		90	N	
1	9/9/78	13	1		90	N	
1	9/9/78	14	1		90	N	
1	9/9/78	15	1		90	N	
1	9/9/78	16	1		90	N	
1	10/8/78	1	1		82	Y	
1	10/8/78	2	1		81	N	
1	10/8/78	3	1		81	N	
1	10/8/78	4	1		81	N	
1	10/8/78	5	1		81	N	
1	10/8/78	6	1		81	N	
1	10/8/78	7	1		81	N	
1	10/8/78	8	1		81	N	
1	10/8/78	9	1		82	N	
1	10/8/78	10	1		82	N	
1	10/8/78	11	1		82	N	
1	10/8/78	12	1		82	N	
1	10/8/78	13	1		82	N	
1	10/8/78	14	1		82	N	
1	10/8/78	15	1		82	N	
1	10/8/78	16	1		82	N	
1	11/8/78	1	1		79	Y	
1	11/8/78	2	1		79	N	
1	11/8/78	3	1		79	N	
1	11/8/78	4	1		79	N	
1	11/8/78	5	1		79	N	
1	11/8/78	6	1		79	N	
1	11/8/78	7	1		79	N	
1	11/8/78	8	1		79	N	
1	11/8/78	9	1		79	N	
1	11/8/78	10	1		79	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	11/8/78	11	1		79	N	
1	11/8/78	12	1		79	N	
1	11/8/78	13	1		79	N	
1	11/8/78	14	1		79	N	
1	11/8/78	15	1		79	N	
1	11/8/78	16	1		79	N	
1	1/2/79	1	1		81	Y	
1	1/2/79	2	1		79	N	
1	1/2/79	3	1		79	N	
1	1/2/79	4	1		79	N	
1	1/2/79	5	1		79	N	
1	1/2/79	6	1		79	N	
1	1/2/79	7	1		79	N	
1	1/2/79	8	1		79	N	
1	1/2/79	9	1		79	N	
1	1/2/79	10	1		79	N	
1	1/2/79	11	1		79	N	
1	1/2/79	12	1		79	N	
1	1/2/79	13	1		79	N	
1	1/2/79	14	1		79	N	
1	1/2/79	15	1		79	N	
1	1/2/79	16	1		79	N	
1	2/9/79	1	1		70	Y	
1	2/9/79	2	1		69	N	
1	2/9/79	3	1		69	N	
1	2/9/79	4	1		69	N	
1	2/9/79	5	1		69	N	
1	2/9/79	6	1		69	N	
1	2/9/79	7	1		69	N	
1	2/9/79	8	1		69	N	
1	2/9/79	9	1		69	N	
1	2/9/79	10	1		69	N	
1	2/9/79	11	1		69	N	
1	2/9/79	12	1		69	N	
1	2/9/79	13	1		69	N	
1	2/9/79	14	1		69	N	
1	2/9/79	15	1		69	N	
1	2/9/79	16	1		69	N	
1	10/8/79	1	1		122	Y	
1	10/8/79	2	1		111	N	
1	10/8/79	3	1		102	N	
1	10/8/79	4	1		102	N	
1	10/8/79	5	1		102	N	
1	10/8/79	6	1		102	N	
1	10/8/79	7	1		102	N	
1	10/8/79	8	1		102	N	
1	10/8/79	9	1		101	N	
1	10/8/79	10	1		99	N	
1	10/8/79	11	1		99	N	
1	10/8/79	12	1		99	N	
1	10/8/79	13	1		99	N	
1	10/8/79	14	1		99	N	
1	10/8/79	15	1		98	N	
1	10/8/79	16	1		98	N	
1	2/9/80	1	1		148	Y	
1	2/9/80	2	1		134	N	
1	2/9/80	3	1		123	N	
1	2/9/80	4	1		121	N	
1	2/9/80	5	1		121	N	
1	2/9/80	6	1		120	N	
1	2/9/80	7	1		120	N	
1	2/9/80	8	1		119	N	
1	2/9/80	9	1		109	N	
1	2/9/80	10	1		105	N	
1	2/9/80	11	1		105	N	
1	2/9/80	12	1		104	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	2/9/80	13	1		104	N	
1	2/9/80	14	1		105	N	
1	2/9/80	15	1		100	N	
1	2/9/80	16	1		99	N	
1	10/26/80	1	1		139	Y	
1	10/26/80	2	1		116	N	
1	10/26/80	3	1		101	N	
1	10/26/80	4	1		102	N	
1	10/26/80	5	1		102	N	
1	10/26/80	6	1		102	N	
1	10/26/80	7	1		102	N	
1	10/26/80	8	1		102	N	
1	10/26/80	9	1		102	N	
1	10/26/80	10	1		102	N	
1	10/26/80	11	1		102	N	
1	10/26/80	12	1		102	N	
1	10/26/80	13	1		102	N	
1	10/26/80	14	1		102	N	
1	10/26/80	15	1		102	N	
1	10/26/80	16	1		102	N	
1	1/9/81	1	1		122	Y	
1	1/9/81	2	1		102	N	
1	1/9/81	3	1		88	N	
1	1/9/81	4	1		89	N	
1	1/9/81	5	1		89	N	
1	1/9/81	6	1		89	N	
1	1/9/81	7	1		89	N	
1	1/9/81	8	1		89	N	
1	1/9/81	9	1		89	N	
1	1/9/81	10	1		89	N	
1	1/9/81	11	1		89	N	
1	1/9/81	12	1		89	N	
1	1/9/81	13	1		89	N	
1	1/9/81	14	1		89	N	
1	1/9/81	15	1		89	N	
1	1/9/81	16	1		89	N	
1	2/6/81	1	1		120	Y	
1	2/6/81	2	1		101	N	
1	2/6/81	3	1		87	N	
1	2/6/81	4	1		87	N	
1	2/6/81	5	1		87	N	
1	2/6/81	6	1		87	N	
1	2/6/81	7	1		87	N	
1	2/6/81	8	1		88	N	
1	2/6/81	9	1		87	N	
1	2/6/81	10	1		88	N	
1	2/6/81	11	1		88	N	
1	2/6/81	12	1		88	N	
1	2/6/81	13	1		87	N	
1	2/6/81	14	1		88	N	
1	2/6/81	15	1		88	N	
1	2/6/81	16	1		88	N	
1	6/7/81	1	1		112	Y	
1	6/7/81	2	1		97	N	
1	6/7/81	3	1		86	N	
1	6/7/81	4	1		85	N	
1	6/7/81	5	1		85	N	
1	6/7/81	6	1		85	N	
1	6/7/81	7	1		85	N	
1	6/7/81	8	1		85	N	
1	6/7/81	9	1		85	N	
1	6/7/81	10	1		85	N	
1	6/7/81	11	1		85	N	
1	6/7/81	12	1		85	N	
1	6/7/81	13	1		85	N	
1	6/7/81	14	1		85	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	6/7/81	15	1		85	N	
1	6/7/81	16	1		85	N	
1	2/8/82	1	1		125	Y	
1	2/8/82	2	1		108	N	
1	2/8/82	3	1		92	N	
1	2/8/82	4	1		92	N	
1	2/8/82	5	1		91	N	
1	2/8/82	6	1		91	N	
1	2/8/82	7	1		92	N	
1	2/8/82	8	1		92	N	
1	2/8/82	9	1		92	N	
1	2/8/82	10	1		92	N	
1	2/8/82	11	1		92	N	
1	2/8/82	12	1		91	N	
1	2/8/82	13	1		91	N	
1	2/8/82	14	1		91	N	
1	2/8/82	15	1		91	N	
1	2/8/82	16	1		91	N	
1	6/9/82	1	1		105	Y	
1	6/9/82	2	1		95	N	
1	6/9/82	3	1		94	N	
1	6/9/82	4	1		94	N	
1	6/9/82	5	1		94	N	
1	6/9/82	6	1		94	N	
1	6/9/82	7	1		94	N	
1	6/9/82	8	1		94	N	
1	6/9/82	9	1		94	N	
1	6/9/82	10	1		94	N	
1	6/9/82	11	1		94	N	
1	6/9/82	12	1		94	N	
1	6/9/82	13	1		94	N	
1	6/9/82	14	1		94	N	
1	6/9/82	15	1		94	N	
1	6/9/82	16	1		95	N	
1	10/15/82	1	1		116	Y	
1	10/15/82	2	1		101	N	
1	10/15/82	3	1		90	N	
1	10/15/82	4	1		89	N	
1	10/15/82	5	1		89	N	
1	10/15/82	6	1		89	N	
1	10/15/82	7	1		89	N	
1	10/15/82	8	1		89	N	
1	10/15/82	9	1		89	N	
1	10/15/82	10	1		89	N	
1	10/15/82	11	1		89	N	
1	10/15/82	12	1		89	N	
1	10/15/82	13	1		89	N	
1	10/15/82	14	1		89	N	
1	10/15/82	15	1		89	N	
1	10/15/82	16	1		89	N	
1	2/5/83	1	1		114	Y	
1	2/5/83	2	1		101	N	
1	2/5/83	3	1		90	N	
1	2/5/83	4	1		89	N	
1	2/5/83	5	1		89	N	
1	2/5/83	6	1		89	N	
1	2/5/83	7	1		89	N	
1	2/5/83	8	1		89	N	
1	2/5/83	9	1		89	N	
1	2/5/83	10	1		89	N	
1	2/5/83	11	1		89	N	
1	2/5/83	12	1		89	N	
1	2/5/83	13	1		89	N	
1	2/5/83	14	1		89	N	
1	2/5/83	15	1		89	N	
1	2/5/83	16	1		89	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	6/8/83	1	1		118	Y	
1	6/8/83	2	1		104	N	
1	6/8/83	3	1		94	N	
1	6/8/83	4	1		94	N	
1	6/8/83	5	1		94	N	
1	6/8/83	6	1		94	N	
1	6/8/83	7	1		94	N	
1	6/8/83	8	1		94	N	
1	6/8/83	9	1		94	N	
1	6/8/83	10	1		93	N	
1	11/7/83	1	1		120	Y	
1	11/7/83	2	1		105	N	
1	11/7/83	3	1		98	N	
1	11/7/83	4	1		91	N	
1	11/7/83	5	1		91	N	
1	11/7/83	6	1		91	N	
1	3/5/84	2	1		94	N	
1	4/2/84	1	1		107	Y	
1	4/2/84	2	1		89	N	
1	4/2/84	3	1		82	N	
1	4/2/84	4	1		81	N	
1	4/2/84	5	1		80	N	
1	4/2/84	6	1		79	N	
1	4/26/85	1	1		100	N	
1	6/10/85	1	1			Y	73 - suspect data (low)
1	6/10/85	2	1			N	72 - suspect data (low)
1	6/10/85	3	1			N	70 - suspect data (low)
1	6/10/85	4	1			N	64 - suspect data (low)
1	6/10/85	5	1			N	58 - suspect data (low)
1	7/2/85	6	1		70	N	
1	7/2/85	7	1		74	Y	
1	7/2/85	8	1		73	N	
1	10/7/85	1	1		119	Y	
1	10/7/85	3	1		97	N	
1	10/7/85	4	1		97	N	
1	10/7/85	5	1		97	N	
1	10/7/85	6	1		96	N	
1	11/7/85	1	1		105	Y	
1	11/7/85	2	1		103	N	
1	11/7/85	3	1		103	N	
1	11/7/85	4	1		103	N	
1	11/7/85	5	1		103	N	
1	11/7/85	6	1		102	N	
1	11/7/85	7	1		103	N	
1	11/7/85	8	1		102	N	
1	11/7/85	9	1		102	N	
1	11/7/85	10	1		102	N	
1	11/7/85	11	1		102	N	
1	11/7/85	12	1		102	N	
1	11/7/85	13	1		102	N	
1	11/7/85	14	1		102	N	
1	11/7/85	15	1		102	N	
1	11/7/85	16	1		102	N	
1	12/1/85	1	1		127.2	Y	
1	12/1/85	2	1		125	Y	
1	12/1/85	3	1		120	Y	
1	12/1/85	4	1		113	Y	
1	12/1/85	5	1		103	Y	
1	12/1/85	6	1		91.5	Y	
1	12/1/85	7	1		92	Y	
1	12/1/85	8	1		92	Y	
1	12/1/85	9	1		90	Y	
1	12/1/85	10	1		89	Y	
1	12/1/85	11	1		89	Y	
1	12/1/85	12	1		89	Y	
1	12/1/85	13	1		90	Y	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103 THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	12/1/85	14	1		90	Y	
1	12/1/85	15	1		89	Y	
1	12/1/85	16	1		89.5	Y	
1	1/8/86	1	1			N	UNABLE TO GET RDGS
1	2/3/86	1	1			N	UNABLE TO GET RDGS
1	4/18/86	1	1			N	UNABLE TO GET RDGS
1	7/7/86	1	1			N	UNABLE TO GET RDGS
1	9/1/86	1	1			N	UNABLE TO GET RDGS
1	10/6/86	1	1			N	UNABLE TO GET RDGS
1	10/10/86	1	1			N	UNABLE TO GET RDGS
1	11/3/86	1	1			N	UNABLE TO GET RDGS
1	5/1/87	1	1			N	UNABLE TO GET RDGS
1	7/6/87	1	1			N	UNABLE TO GET RDGS
1	8/3/87	1	1			N	UNABLE TO GET RDGS
1	12/8/87	1	1			N	UNABLE TO GET RDGS
1	2/1/88	1	1			N	UNABLE TO GET RDGS
1	5/2/88	1	1			N	UNABLE TO GET RDGS
1	5/6/88	1	1			N	UNABLE TO GET RDGS
1	6/6/88	1	1			N	OUT OF SERVICE
1	6/12/88	1	1			N	UNABLE TO GET RDGS
1	9/5/88	1	1		121	Y	
1	9/5/88	2	1		119	N	
1	9/5/88	3	1		101	N	
1	9/5/88	4	1		100	N	
1	9/5/88	5	1		100	N	
1	9/5/88	6	1		99	N	
1	9/5/88	7	1		100	N	
1	12/5/88	1	1			N	UNABLE TO GET RDGS
1	1/2/89	1	1			N	OUT OF SERVICE
1	2/6/89	1	1			N	OUT OF SERVICE
1	3/6/89	1	1			N	OUT OF SERVICE
1	4/4/89	1	1			N	OUT OF SERVICE
1	5/1/89	1	1			N	OUT OF SERVICE
1	6/5/89	1	1			N	OUT OF SERVICE
1	1/1/90	1	1			N	OUT OF SERVICE
1	2/5/90	1	1			N	OUT OF SERVICE
1	6/4/90	1	1			N	OUT OF SERVICE
1	6/9/90	1	1		117.9	Y	
1	6/9/90	2	1		103.6	N	
1	6/9/90	3	1		110	N	
1	6/9/90	4	1		95.5	N	
1	6/9/90	5	1		94.9	N	
1	6/9/90	6	1		93.9	N	
1	1/2/91	1	1		105.3	Y	
1	1/2/91	2	1		92.9	N	
1	1/2/91	3	1		86.5	N	
1	1/2/91	4	1		85.8	N	
1	1/2/91	5	1		85.2	N	
1	1/2/91	6	1		83.7	N	
1	2/10/91	1	1		117.5	Y	OMEGA 890523512-20 99AJ
1	2/10/91	2	1		101.7	N	
1	2/10/91	3	1		92	N	
1	2/10/91	4	1		92.3	N	
1	2/10/91	5	1		92	N	
1	2/10/91	6	1		91.5	N	
1	2/19/91	1	1		117.5	Y	890523512-20
1	2/19/91	2	1		101.7	N	
1	2/19/91	3	1		92	N	
1	2/19/91	4	1		92.3	N	
1	2/19/91	5	1		92	N	
1	2/19/91	6	1		91.5	N	
1	2/26/91	1	1			N	J Plug broken. Letter written to OPS
1	3/7/91	1	1		117.5	Y	J 2E-OP-020
1	3/7/91	2	1		102.2	N	
1	3/7/91	3	1		93.5	N	
1	3/7/91	4	1		92.7	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103 THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	3/7/91	5	1		92.5	N	
1	3/7/91	6	1		92	N	
1	3/17/91	1	1			N	Work Package 2E-91-4323 & 2E-90-02740
1	3/31/91	1	1		116	Y	J 777-13-20-010
1	3/31/91	2	1		101	N	
1	3/31/91	3	1		93	N	
1	3/31/91	4	1		92	N	
1	3/31/91	5	1		92	N	
1	3/31/91	6	1		91	N	
1	4/7/91	1	1		116.6	Y	J 2E-OP-020
1	4/7/91	2	1		101.8	N	
1	4/7/91	3	1		93.3	N	
1	4/7/91	4	1		92.5	N	
1	4/7/91	5	1		92	N	
1	4/7/91	6	1		91.2	N	
1	4/15/91	1	1		115.4	Y	J 890523512-20
1	4/15/91	2	1		100.5	N	
1	4/15/91	4	1		91.7	N	
1	4/15/91	5	1		91.6	N	
1	4/15/91	6	1		90.9	N	
1	4/21/91	1	1		115.2	Y	J 2E OP-020
1	4/21/91	2	1		101.1	N	
1	4/21/91	4	1		91.8	N	
1	4/21/91	5	1		90.8	N	
1	4/21/91	6	1		89.8	N	
1	4/28/91	1	1		116.6	Y	J 2E-OP-020
1	4/28/91	2	1		101.6	N	
1	4/28/91	4	1		92.8	N	
1	4/28/91	5	1		92.7	N	
1	4/28/91	6	1		92	N	
1	5/4/91	1	1		115	Y	J 2E-OP-020
1	5/4/91	2	1		100	N	
1	5/4/91	3	1		93	N	
1	5/4/91	4	1		92	N	
1	5/4/91	5	1		91	N	
1	5/4/91	6	1		90	N	
1	5/24/91	1	1		113.8	Y	J 890523512-20
1	5/24/91	2	1		99.8	N	
1	5/24/91	3	1		92.5	N	
1	5/24/91	4	1		92	N	
1	5/24/91	5	1		92	N	
1	5/24/91	6	1		90.8	N	
1	5/26/91	1	1			N	wo 04783 issued
1	6/1/91	1	1		114.3	Y	J 890523512-20
1	6/1/91	2	1		101.2	N	
1	6/1/91	3	1		94.5	N	
1	6/1/91	4	1		93.8	N	
1	6/1/91	5	1		92.7	N	
1	6/1/91	6	1		91.3	N	
1	6/9/91	1	1		114.4	Y	J 2E-OP-021
1	6/9/91	2	1		100.8	N	
1	6/9/91	3	1		93.3	N	
1	6/9/91	4	1		92.4	N	
1	6/9/91	5	1		91.8	N	
1	6/9/91	6	1		91.5	N	
1	6/16/91	1	1		114.9	Y	J 890523512-20
1	6/16/91	2	1		101.7	N	
1	6/16/91	3	1		94.2	N	
1	6/16/91	4	1		93.3	N	
1	6/16/91	5	1		92.8	N	
1	6/16/91	6	1		91.9	N	
1	6/23/91	1	1		113.6	Y	J 890523512-20
1	6/23/91	2	1		100.6	N	
1	6/23/91	3	1		93.6	N	
1	6/23/91	4	1		92.7	N	
1	6/23/91	5	1		91.9	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103						
THERMOCOUPLE DATA						
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP
1	6/23/91	6	1		90.7	N
1	6/29/91	1	1		116.7	Y
1	6/29/91	2	1		102.8	N
1	6/29/91	3	1		95.1	N
1	6/29/91	4	1		94.7	N
1	6/29/91	5	1		94.6	N
1	6/29/91	6	1		93.9	N
1	7/6/91	1	1		117.5	Y
1	7/6/91	2	1		104.3	N
1	7/6/91	3	1		97	N
1	7/6/91	4	1		96.3	N
1	7/6/91	5	1		96.2	N
1	7/6/91	6	1		94.8	N
1	7/14/91	1	1		113.7	Y
1	7/14/91	2	1		100.7	N
1	7/14/91	3	1		93.5	N
1	7/14/91	4	1		92.8	N
1	7/14/91	5	1		92.3	N
1	7/14/91	6	1		91.6	N
1	7/20/91	1	1		116.8	Y
1	7/20/91	2	1		103.9	N
1	7/20/91	3	1		96.9	N
1	7/20/91	4	1		96.4	N
1	7/20/91	5	1		96.1	N
1	7/20/91	6	1		94.8	N
1	7/27/91	1	1		114.4	N
1	7/27/91	2	1		101.5	N
1	7/27/91	3	1		94.2	N
1	7/27/91	4	1		93.3	N
1	7/27/91	5	1		92.8	N
1	7/27/91	6	1		92.2	N
1	8/3/91	1	1		115.6	Y
1	8/3/91	2	1		102.7	N
1	8/3/91	3	1		95.6	N
1	8/3/91	4	1		94.6	N
1	8/3/91	5	1		93.8	N
1	8/3/91	6	1		93.1	N
1	8/11/91	1	1		116.6	Y
1	8/11/91	2	1		104.1	N
1	8/11/91	3	1		96.4	N
1	8/11/91	4	1		96	N
1	8/11/91	5	1		95.8	N
1	8/11/91	6	1		93.6	N
1	8/17/91	1	1		117	Y
1	8/17/91	2	1		105	N
1	8/17/91	3	1		98	N
1	8/17/91	4	1		97	N
1	8/17/91	5	1		96	N
1	8/17/91	6	1		95	N
1	8/24/91	1	1		116.7	Y
1	8/24/91	2	1		104.4	N
1	8/24/91	3	1		97.1	N
1	8/24/91	4	1		96.4	N
1	8/24/91	5	1		96.1	N
1	8/24/91	6	1		95	N
1	9/7/91	1	1		111.5	Y
1	9/7/91	2	1		99.6	N
1	9/7/91	3	1		92	N
1	9/7/91	4	1		91.2	N
1	9/7/91	5	1		90.8	N
1	9/7/91	6	1		89.6	N
1	9/14/91	1	1		116.8	Y
1	9/14/91	2	1		104.1	N
1	9/14/91	3	1		97.2	N
1	9/14/91	4	1		96.2	N
1	9/14/91	5	1		95.3	N

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/14/91	6	1		94.7	N	
1	9/22/91	1	1		116	Y	J-910126143-75
1	9/22/91	2	1		103.4	N	
1	9/22/91	3	1		96.5	N	
1	9/22/91	4	1		95.8	N	
1	9/22/91	5	1		95.4	N	
1	9/22/91	6	1		95	N	
1	9/28/91	1	1		118.1	Y	J-2E000247
1	9/28/91	2	1		105	N	
1	9/28/91	3	1		98	N	
1	9/28/91	4	1		97.5	N	
1	9/28/91	5	1		97.4	N	
1	9/28/91	6	1		96.8	N	
1	10/5/91	1	1		117.1	Y	J-890523512-47
1	10/5/91	2	1		104.9	N	
1	10/5/91	3	1		98	N	
1	10/5/91	4	1		97.3	N	
1	10/5/91	5	1		96.5	N	
1	10/5/91	6	1		95.6	N	
1	10/13/91	1	1		120	Y	J-890423320-42
1	10/13/91	2	1		107	N	
1	10/13/91	3	1		99.7	N	
1	10/13/91	4	1		99.1	N	
1	10/13/91	5	1		98.3	N	
1	10/13/91	6	1		97.5	N	
1	10/19/91	1	1		116.5	Y	J-HH-99A-J
1	10/19/91	2	1		104.2	N	
1	10/19/91	3	1		97.4	N	
1	10/19/91	4	1		95.8	N	
1	10/19/91	5	1		95	N	
1	10/19/91	6	1		94.1	N	
1	10/26/91	1	1		116.5	Y	J-890523512-47
1	10/26/91	2	1		103.4	N	
1	10/26/91	3	1		96.2	N	
1	10/26/91	4	1		95.9	N	
1	10/26/91	5	1		95.7	N	
1	10/26/91	6	1		95.1	N	
1	11/2/91	1	1		116.5	Y	J-910126143-75
1	11/2/91	2	1		103.2	N	
1	11/2/91	3	1		98	N	
1	11/2/91	4	1		95.2	N	
1	11/2/91	5	1		94.5	N	
1	11/2/91	6	1		93.9	N	
1	11/10/91	1	1		117.1	Y	J-910126143-75
1	11/10/91	2	1		103.5	N	
1	11/10/91	3	1		96.1	N	
1	11/10/91	4	1		95.7	N	
1	11/10/91	5	1		95.6	N	
1	11/10/91	6	1		95	N	
1	11/14/91	1	1		117.2	Y	J-HH-99A-J
1	11/14/91	2	1		103.7	N	
1	11/14/91	3	1		96.2	N	
1	11/14/91	4	1		95.3	N	
1	11/14/91	5	1		94.9	N	
1	11/14/91	6	1		94.6	N	
1	11/24/91	1	1		117.2	Y	J-89052512-47
1	11/24/91	2	1		102.8	N	
1	11/24/91	3	1		95.5	N	
1	11/24/91	4	1		94.6	N	
1	11/24/91	5	1		94.7	N	
1	11/24/91	6	1		94.1	N	
1	11/30/91	1	1		116.2	Y	J-890523512-47
1	11/30/91	2	1		102.7	N	
1	11/30/91	3	1		95.2	N	
1	11/30/91	4	1		94.6	N	
1	11/30/91	5	1		93.9	N	

TANK 241-AX-103						
THERMOCOUPLE DATA						
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP
1	11/30/91	6	1		92.7	N
1	12/5/91	1	1		116.5	Y
1	12/5/91	2	1		102.4	N
1	12/5/91	3	1		94.8	N
1	12/5/91	4	1		94.3	N
1	12/5/91	5	1		94.2	N
1	12/5/91	6	1		93.5	N
1	12/6/91	1	1		115.7	Y
1	12/6/91	3	1		94	N
1	12/6/91	4	1		92.8	N
1	12/6/91	5	1		93.2	N
1	12/6/91	6	1		92.8	N
1	12/15/91	1	1		116	Y
1	12/15/91	2	1		102.2	N
1	12/15/91	3	1		94.1	N
1	12/15/91	4	1		93.3	N
1	12/15/91	5	1		93	N
1	12/15/91	6	1		92.2	N
1	12/19/91	1	1		116.2	Y
1	12/19/91	2	1		101.9	N
1	12/19/91	3	1		93.3	N
1	12/19/91	4	1		92.6	N
1	12/19/91	5	1		92.4	N
1	12/19/91	6	1		91.8	N
1	12/26/91	1	1		115.7	Y
1	12/26/91	2	1		101.4	N
1	12/26/91	3	1		93.4	N
1	12/26/91	4	1		92.8	N
1	12/26/91	5	1		92.5	N
1	12/26/91	6	1		91.9	N
1	1/1/92	1	1		116.6	Y
1	1/1/92	2	1		102.1	N
1	1/1/92	3	1		94.2	N
1	1/1/92	4	1		93.7	N
1	1/1/92	5	1		93.6	N
1	1/1/92	6	1		92.9	N
1	1/12/92	1	1		116.5	Y
1	1/12/92	2	1		102.8	N
1	1/12/92	3	1		94.4	N
1	1/12/92	4	1		93.4	N
1	1/12/92	5	1		92.8	N
1	1/12/92	6	1		91.7	N
1	1/16/92	1	1		116.7	Y
1	1/16/92	2	1		102.4	N
1	1/16/92	3	1		94.2	N
1	1/16/92	4	1		93.6	N
1	1/16/92	5	1		93.1	N
1	1/16/92	6	1		92.5	N
1	1/23/92	1	1		115	Y
1	1/23/92	2	1		100	N
1	1/23/92	3	1		92	N
1	1/23/92	4	1		91	N
1	1/23/92	5	1		91	N
1	1/23/92	6	1		91	N
1	1/24/92	1	1		117	Y
1	1/24/92	2	1		102	N
1	1/24/92	3	1		94	N
1	1/24/92	4	1		93	N
1	1/24/92	5	1		93	N
1	1/24/92	6	1		92	N
1	1/28/92	1	1			N
1	1/31/92	1	1		114.3	Y
1	1/31/92	2	1		99.6	N
1	1/31/92	3	1		91.2	N
1	1/31/92	4	1		90.6	N

ACCESS RESTRICTED 1/28 - 2/22 DUE TO
BATTERY FUME INCIDENT
J 89052351247

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/31/92	5	1		90.5	N	
1	1/31/92	6	1		89.9	N	
1	2/22/92	1	1		116	Y	J-910126143-32
1	2/22/92	2	1		102	N	
1	2/22/92	3	1		93	N	
1	2/22/92	4	1		92	N	
1	2/22/92	5	1		91	N	
1	2/22/92	6	1		90	N	
1	2/27/92	1	1		114.8	Y	J-910126143-32
1	2/27/92	2	1		100.5	N	
1	2/27/92	3	1		92	N	
1	2/27/92	4	1		91.5	N	
1	2/27/92	5	1		91.3	N	
1	2/27/92	6	1		90.6	N	
1	3/6/92	1	1		113.4	Y	J 910126143-48
1	3/6/92	2	1		99.2	N	
1	3/6/92	3	1		90.9	N	
1	3/6/92	4	1		89.1	N	
1	3/6/92	5	1		88.8	N	
1	3/6/92	6	1		88	N	
1	3/12/92	1	1		113.3	Y	J 900925741-79
1	3/12/92	2	1		99.4	N	
1	3/12/92	3	1		90.8	N	
1	3/12/92	4	1		90.1	N	
1	3/12/92	5	1		88.6	N	
1	3/12/92	6	1		88.2	N	
1	3/19/92	1	1		114.9	Y	
1	3/19/92	2	1		100.7	N	
1	3/19/92	3	1		92.5	N	
1	3/19/92	4	1		91.8	N	
1	3/19/92	5	1		91.2	N	
1	3/19/92	6	1		90	N	
1	3/26/92	1	1		112.6	Y	
1	3/26/92	2	1		98.7	N	
1	3/26/92	3	1		91.7	N	
1	3/26/92	4	1		90.3	N	
1	3/26/92	5	1		89.9	N	
1	3/26/92	6	1		88.7	N	
1	4/3/92	1	1		113	Y	J 910126143-66
1	4/3/92	2	1		99.1	N	
1	4/3/92	3	1		90.9	N	
1	4/3/92	4	1		90.1	N	
1	4/3/92	5	1		89.4	N	
1	4/3/92	6	1		89.4	N	
1	4/9/92	1	1		115.5	Y	
1	4/9/92	2	1		100.7	N	
1	4/9/92	3	1		93	N	
1	4/9/92	4	1		94.5	N	
1	4/9/92	5	1		92.4	N	
1	4/9/92	6	1		91.9	N	
1	4/16/92	1	1		112.8	Y	J 910126143 48
1	4/16/92	2	1		98.7	N	
1	4/16/92	3	1		90.8	N	
1	4/16/92	4	1		90.4	N	
1	4/16/92	5	1		90.2	N	
1	4/16/92	6	1		89.5	N	
1	4/23/92	1	1		114.3	Y	
1	4/23/92	2	1		101.1	N	
1	4/23/92	3	1		93.6	N	
1	4/23/92	4	1		93.2	N	
1	4/23/92	5	1		92.8	N	
1	4/23/92	6	1		91.5	N	
1	4/30/92	1	1		108.5	Y	J 910126143-48
1	4/30/92	2	1		96.2	N	
1	4/30/92	3	1		89.6	N	
1	4/30/92	4	1		88.4	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103						
THERMOCOUPLE DATA						
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP
1	4/30/92	5	1		86.8	N
1	4/30/92	6	1		85.3	N
1	5/7/92	1	1		113.2	Y
1	5/7/92	2	1		99.8	N
1	5/7/92	3	1		91.7	N
1	5/7/92	4	1		90.4	N
1	5/7/92	5	1		89.9	N
1	5/7/92	6	1		88.8	N
1	5/14/92	1	1		112.7	Y
1	5/14/92	2	1		99.6	N
1	5/14/92	3	1		92.8	N
1	5/14/92	4	1		92.3	N
1	5/14/92	5	1		91.8	N
1	5/14/92	6	1		89.7	N
1	5/22/92	1	1		110.3	Y
1	5/22/92	2	1		96.8	N
1	5/22/92	3	1		89.9	N
1	5/22/92	4	1		89.1	N
1	5/22/92	5	1		88.4	N
1	5/22/92	6	1		88	N
1	5/28/92	1	1		112	Y
1	5/28/92	2	1		99.2	N
1	5/28/92	3	1		92.3	N
1	5/28/92	4	1		91.6	N
1	5/28/92	5	1		91.1	N
1	5/28/92	6	1		89.7	N
1	6/4/92	1	1		110	Y
1	6/4/92	2	1		96.8	N
1	6/4/92	3	1		89.5	N
1	6/4/92	4	1		88.5	N
1	6/4/92	5	1		88.1	N
1	6/4/92	6	1		87.6	N
1	6/11/92	1	1		110.6	Y
1	6/11/92	2	1		97.4	N
1	6/11/92	3	1		98.2	N
1	6/11/92	4	1		89.6	N
1	6/11/92	5	1		89.4	N
1	6/11/92	6	1		88.7	N
1	6/27/92	1	1		110.4	Y
1	6/27/92	2	1		98.24	N
1	6/27/92	3	1		91.7	N
1	6/27/92	4	1		90.7	N
1	6/27/92	5	1		90.2	N
1	6/27/92	6	1		89.1	N
1	7/3/92	1	1		113.7	Y
1	7/3/92	2	1		100.7	N
1	7/3/92	3	1		93.8	N
1	7/3/92	4	1		93	N
1	7/3/92	5	1		92.6	N
1	7/3/92	6	1		92.3	N
1	7/9/92	1	1		114.5	Y
1	7/9/92	2	1		101.7	N
1	7/9/92	3	1		94.4	N
1	7/9/92	4	1		93.4	N
1	7/9/92	5	1		93.5	N
1	7/9/92	6	1		93.2	N
1	7/9/92	7	1		92.5	N
1	7/17/92	1	1		114.9	Y
1	7/17/92	2	1		103.5	N
1	7/17/92	3	1		96.7	N
1	7/17/92	4	1		96	N
1	7/17/92	5	1		95.2	N
1	7/17/92	6	1		94.1	N
1	7/23/92	1	1		115.8	Y
1	7/23/92	2	1		102.7	N
1	7/23/92	3	1		95.7	N

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	7/23/92	4	1		95.2	N	
1	7/23/92	5	1		95.5	N	
1	7/23/92	6	1		94.9	N	
1	7/30/92	1	1		116	Y	J 910126143-29
1	7/30/92	2	1		103.8	N	
1	7/30/92	3	1		97.2	N	
1	7/30/92	4	1		96.4	N	
1	7/30/92	5	1		95.9	N	
1	7/30/92	6	1		94.8	N	
1	8/6/92	1	1		115	Y	J 910126143-42
1	8/6/92	2	1		102	N	
1	8/6/92	3	1		95	N	
1	8/6/92	4	1		95	N	
1	8/6/92	5	1		95	N	
1	8/6/92	6	1		93	N	
1	8/13/92	1	1		114.9	Y	J 910126143-42
1	8/13/92	2	1		102.1	N	
1	8/13/92	3	1		95.8	N	
1	8/13/92	4	1		95.4	N	
1	8/13/92	5	1		94.9	N	
1	8/13/92	6	1		94.2	N	
1	8/21/92	1	1		114.8	Y	J 910126143-42
1	8/21/92	2	1		101.9	N	
1	8/21/92	3	1		95.5	N	
1	8/21/92	4	1		95.2	N	
1	8/21/92	5	1		94.9	N	
1	8/21/92	6	1		94.3	N	
1	8/27/92	1	1		115.8	Y	J H-H-99A-J
1	8/27/92	2	1		103.4	N	
1	8/27/92	3	1		96.6	N	
1	8/27/92	4	1		95.4	N	
1	8/27/92	5	1		94.6	N	
1	8/27/92	6	1		93.8	N	
1	9/3/92	1	1		116.4	Y	J 910126143-32
1	9/3/92	2	1		103.5	N	
1	9/3/92	3	1		97.1	N	
1	9/3/92	4	1		96.7	N	
1	9/3/92	5	1		96.5	N	
1	9/3/92	6	1		95.8	N	
1	9/10/92	1	1		115.9	Y	J 890423320-42
1	9/10/92	2	1		103.5	N	
1	9/10/92	3	1		97.1	N	
1	9/10/92	4	1		96.4	N	
1	9/10/92	5	1		96	N	
1	9/10/92	6	1		95	N	
1	9/17/92	1	1		114.7	Y	J 890423320-42
1	9/17/92	2	1		102.3	N	
1	9/17/92	3	1		95.9	N	
1	9/17/92	4	1		94.9	N	
1	9/17/92	5	1		94.2	N	
1	9/17/92	6	1		93.5	N	
1	9/25/92	1	1		117.7	Y	J TI-045
1	9/25/92	2	1		105.5	N	
1	9/25/92	3	1		98	N	
1	9/25/92	4	1		97.2	N	
1	9/25/92	5	1		96.7	N	
1	9/25/92	6	1		95.7	N	
1	10/1/92	1	1		114.5	Y	J 890423320-42
1	10/1/92	2	1		102.3	N	
1	10/1/92	3	1		95.9	N	
1	10/1/92	4	1		95.3	N	
1	10/1/92	5	1		94.7	N	
1	10/1/92	6	1		93.5	N	
1	10/8/92	1	1		116.4	Y	J 910126143-48
1	10/8/92	2	1		103.3	N	
1	10/8/92	3	1		96.6	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103						
THERMOCOUPLE DATA						
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP
1	10/8/92	4	1		96.2	N
1	10/8/92	5	1		96	N
1	10/8/92	6	1		95.6	N
1	10/15/92	1	1		119.7	Y
1	10/15/92	2	1		106.6	N
1	10/15/92	3	1		99.7	N
1	10/15/92	4	1		98.9	N
1	10/15/92	5	1		98.5	N
1	10/15/92	6	1		96.9	N
1	10/22/92	1	1		115.1	Y
1	10/22/92	2	1		102.2	N
1	10/22/92	3	1		95.2	N
1	10/22/92	4	1		94.5	N
1	10/22/92	5	1		94	N
1	10/22/92	6	1		93.5	N
1	10/29/92	1	1		115.6	Y
1	10/29/92	2	1		102.4	N
1	10/29/92	3	1		95.6	N
1	10/29/92	4	1		95.1	N
1	10/29/92	5	1		95	N
1	10/29/92	6	1		94.5	N
1	11/6/92	1	1		116.4	Y
1	11/6/92	2	1		102.9	N
1	11/6/92	3	1		96.1	N
1	11/6/92	4	1		95.6	N
1	11/6/92	5	1		95.7	N
1	11/6/92	6	1		94.9	N
1	11/13/92	1	1		116.5	Y
1	11/13/92	2	1		102.9	N
1	11/13/92	3	1		95.7	N
1	11/13/92	4	1		95.2	N
1	11/13/92	5	1		95.1	N
1	11/13/92	6	1		94.5	N
1	11/20/92	1	1		118.1	Y
1	11/20/92	2	1		104.3	N
1	11/20/92	3	1		96.7	N
1	11/20/92	4	1		95.7	N
1	11/20/92	5	1		94.8	N
1	11/20/92	6	1		94.9	N
1	11/26/92	1	1		117.8	Y
1	11/26/92	2	1		104.6	N
1	11/26/92	3	1		97.4	N
1	11/26/92	4	1		96.1	N
1	11/26/92	5	1		95.2	N
1	11/26/92	6	1		94.7	N
1	12/3/92	1	1		119.4	Y
1	12/3/92	2	1		105.7	N
1	12/3/92	3	1		97.9	N
1	12/3/92	4	1		97.1	N
1	12/3/92	5	1		96.3	N
1	12/10/92	1	1		119	Y
1	12/10/92	2	1		104.6	N
1	12/10/92	3	1		96.5	N
1	12/10/92	4	1		96	N
1	12/10/92	5	1		95.8	N
1	12/10/92	6	1		95.3	N
1	12/18/92	1	1		116.7	Y
1	12/18/92	2	1		102.5	N
1	12/18/92	3	1		94.6	N
1	12/24/92	1	1		117.9	Y
1	12/24/92	2	1		103.5	N
1	12/24/92	3	1		95.2	N
1	12/24/92	4	1		93.8	N
1	12/24/92	5	1		92.8	N
1	12/24/92	6	1		92.1	N
1	1/2/93	1	1		116.5	Y

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	1/2/93	2	1		101.5	N	
1	1/2/93	3	1		92	N	
1	1/2/93	4	1		93	N	
1	1/2/93	5	1		93.4	N	
1	1/2/93	6	1		92	N	
1	1/7/93	1	1		115.2	Y	J 890423320-42
1	1/7/93	2	1		100.5	N	
1	1/7/93	3	1		92.5	N	
1	1/7/93	4	1		91.2	N	
1	1/7/93	5	1		90.2	N	
1	1/7/93	6	1		89.6	N	
1	1/14/93	1	1		115.9	Y	J 890523512-47
1	1/14/93	2	1		101.2	N	
1	1/14/93	3	1		92.6	N	
1	1/14/93	4	1		92.2	N	
1	1/14/93	5	1		92.1	N	
1	1/14/93	6	1		91.4	N	
1	1/21/93	1	1		116	Y	J 900925741-29
1	1/21/93	2	1		101	N	
1	1/21/93	3	1		93	N	
1	1/21/93	4	1		93	N	
1	1/21/93	5	1		92	N	
1	1/21/93	6	1		92	N	
1	1/28/93	1	1		115.3	Y	J 890523512-47
1	1/28/93	2	1		100.7	N	
1	1/28/93	3	1		92.3	N	
1	1/28/93	4	1		91.6	N	
1	1/28/93	5	1		91.2	N	
1	1/28/93	6	1		90.3	N	
1	2/4/93	1	1		112.8	Y	J 890423320-42
1	2/4/93	2	1		98.3	N	
1	2/4/93	3	1		90.1	N	
1	2/4/93	4	1		88.5	N	
1	2/4/93	5	1		87.7	N	
1	2/4/93	6	1		86.5	N	
1	2/11/93	1	1		116	Y	J 890423320-42
1	2/11/93	2	1		101	N	
1	2/11/93	3	1		92	N	
1	2/11/93	4	1		92	N	
1	2/11/93	5	1		91	N	
1	2/11/93	6	1		90	N	
1	2/18/93	1	1		115.6	Y	J 910126143-64
1	2/18/93	2	1		100.1	N	
1	2/18/93	3	1		92	N	
1	2/18/93	4	1		91.3	N	
1	2/18/93	5	1		91.2	N	
1	2/18/93	6	1		90.3	N	
1	2/26/93	1	1		114.2	Y	J 910126143-48
1	2/26/93	2	1		99.6	N	
1	2/26/93	3	1		90.5	N	
1	2/26/93	4	1		90.5	N	
1	2/26/93	5	1		90.1	N	
1	2/26/93	6	1		89.4	N	
1	3/4/93	1	1		112.2	Y	J 910126143-40
1	3/4/93	2	1		97.4	N	
1	3/4/93	3	1		89.3	N	
1	3/4/93	4	1		88.6	N	
1	3/4/93	5	1		88.4	N	
1	3/4/93	6	1		87.9	N	
1	3/11/93	1	1		113.3	Y	J 910126143-48
1	3/11/93	2	1		99.2	N	
1	3/11/93	3	1		90	N	
1	3/11/93	4	1		89.1	N	
1	3/11/93	5	1		88.6	N	
1	3/11/93	6	1		87.9	N	
1	3/18/93	1	1		111.3	Y	J 890423320-42

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103						
THERMOCOUPLE DATA						
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP
1	3/18/93	2	1		96.8	N
1	3/18/93	3	1		88.7	N
1	3/18/93	4	1		87.9	N
1	3/18/93	5	1		87.2	N
1	3/18/93	6	1		86	N
1	3/25/93	1	1		113.5	Y
1	3/25/93	2	1		99.6	N
1	3/25/93	3	1		90.7	N
1	3/25/93	4	1		89.6	N
1	3/25/93	5	1		89.1	N
1	3/25/93	6	1		87.7	N
1	4/1/93	1	1		112.2	Y
1	4/1/93	2	1		97.3	N
1	4/1/93	3	1		89.2	N
1	4/1/93	4	1		88.1	N
1	4/1/93	5	1		87.7	N
1	4/1/93	6	1		86.8	N
1	4/9/93	1	1		113.5	Y
1	4/9/93	2	1		98.5	N
1	4/9/93	3	1		90.3	N
1	4/9/93	4	1		89.4	N
1	4/9/93	5	1		89	N
1	4/9/93	6	1		88	N
1	4/23/93	1	1		112.8	Y
1	4/23/93	2	1		98.58	N
1	4/23/93	3	1		90.7	N
1	4/23/93	4	1		90.74	N
1	4/23/93	5	1		90	N
1	4/23/93	6	1		88.8	N
1	4/29/93	1	1		112.6	Y
1	4/29/93	2	1		98	N
1	4/29/93	3	1		90.4	N
1	4/29/93	4	1		89.5	N
1	4/29/93	5	1		89.2	N
1	4/29/93	6	1		88.3	N
1	5/7/93	1	1		112.3	Y
1	5/7/93	2	1		98.9	N
1	5/7/93	3	1		91.8	N
1	5/7/93	4	1		91	N
1	5/7/93	5	1		90.5	N
1	5/7/93	6	1		89.1	N
1	5/15/93	1	1		112.1	Y
1	5/15/93	2	1		98.3	N
1	5/15/93	3	1		91	N
1	5/15/93	4	1		90.2	N
1	5/15/93	5	1		89.8	N
1	5/15/93	6	1		88.5	N
1	5/26/93	1	1		112	Y
1	5/26/93	2	1		99	N
1	5/26/93	3	1		91.1	N
1	5/26/93	4	1		91.2	N
1	5/26/93	5	1		90.8	N
1	5/26/93	6	1		89.6	N
1	5/27/93	1	1		111.1	Y
1	5/27/93	2	1		97.7	N
1	5/27/93	3	1		90	N
1	5/27/93	4	1		89.2	N
1	5/27/93	5	1		89	N
1	5/27/93	6	1		88.1	N
1	6/3/93	1	1		112.9	Y
1	6/3/93	2	1		99.3	N
1	6/3/93	3	1		91.8	N
1	6/3/93	4	1		90.6	N
1	6/3/93	5	1		90.6	N
1	6/3/93	6	1		89.6	N
1	6/10/93	1	1		111.8	Y

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	6/10/93	2	1		98.5	N	
1	6/10/93	3	1		91.6	N	
1	6/10/93	4	1		90.8	N	
1	6/10/93	5	1		90.3	N	
1	6/10/93	6	1		89.3	N	
1	6/17/93	1	1		111.7	Y	J 890523512-20
1	6/17/93	2	1		99.2	N	
1	6/17/93	3	1		92.9	N	
1	6/17/93	4	1		92	N	
1	6/17/93	5	1		91.8	N	
1	6/17/93	6	1		90.3	N	
1	6/26/93	1	1		111.5	Y	J 910126143-14 HOOKUP HAS LOOSE CONNECTIONS
1	6/26/93	2	1		99.1	N	
1	6/26/93	3	1		92.8	N	
1	6/26/93	4	1		91.2	N	
1	6/26/93	5	1		90.8	N	
1	6/26/93	6	1		89.7	N	
1	6/30/93	1	1		111.4	N	J 910126143-29
1	6/30/93	2	1		98.4	N	
1	6/30/93	3	1		91.2	N	
1	6/30/93	4	1		90.2	N	
1	6/30/93	5	1		89.7	N	
1	6/30/93	6	1		88.8	N	
1	7/2/93	1	1		113.5	Y	J TI-042
1	7/2/93	2	1		100.3	N	
1	7/2/93	3	1		92.53	N	
1	7/2/93	4	1		91.5	N	
1	7/2/93	5	1		91	N	
1	7/2/93	6	1		90.1	N	
1	7/18/93	1	1		111.6	Y	TYPE J 910126143-50
1	7/18/93	2	1		98.7	N	
1	7/18/93	3	1		92	N	
1	7/18/93	4	1		90.9	N	
1	7/18/93	5	1		90.1	N	
1	7/18/93	6	1		89.3	N	
1	7/23/93	1	1		111.8	Y	J 910126143-42
1	7/23/93	2	1		96.3	N	
1	7/23/93	3	1		91.8	N	
1	7/23/93	4	1		91.2	N	
1	7/23/93	5	1		91.5	N	
1	7/23/93	6	1		90.7	N	
1	7/30/93	1	1		111.9	Y	J 910126143-50 TC#7 O/S
1	7/30/93	2	1		99.5	N	
1	7/30/93	3	1		92.2	N	
1	7/30/93	4	1		91.9	N	
1	7/30/93	5	1		91.5	N	
1	7/30/93	6	1		90.9	N	
1	8/6/93	1	1		112.8	Y	J 910126143-39
1	8/6/93	2	1		100.3	N	
1	8/6/93	3	1		93.9	N	
1	8/6/93	4	1		93.3	N	
1	8/6/93	5	1		93	N	
1	8/6/93	6	1		92.1	N	
1	8/14/93	1	1		112.3	Y	
1	8/14/93	2	1		99.8	N	
1	8/14/93	3	1		93	N	
1	8/14/93	4	1		92.6	N	
1	8/14/93	5	1		92.5	N	
1	8/14/93	6	1		91.8	N	
1	8/19/93	1	1		111.5	Y	J 910125143-48
1	8/19/93	2	1		100.5	N	
1	8/19/93	3	1		93.6	N	
1	8/19/93	4	1		92.8	N	
1	8/19/93	5	1		92.2	N	
1	8/19/93	6	1		91.4	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/26/93	1	1		114	Y	J TI 037 TC 2&4 O/S
1	8/26/93	3	1		96	N	
1	8/26/93	5	1		95	N	
1	8/26/93	6	1		94	N	
1	9/3/93	1	1		113.2	Y	J 910125143-48
1	9/3/93	2	1		101.6	N	
1	9/3/93	3	1		95	N	
1	9/3/93	4	1		94.3	N	
1	9/3/93	5	1		93.4	N	
1	9/3/93	6	1		92.5	N	
1	9/11/93	1	1		114.3	Y	J 910426540-36
1	9/11/93	2	1		101.8	N	
1	9/11/93	3	1		94.7	N	
1	9/11/93	4	1		93.8	N	
1	9/11/93	5	1		93.8	N	
1	9/11/93	6	1		93.3	N	
1	9/16/93	1	1		114.9	Y	
1	9/16/93	2	1		102.3	N	
1	9/16/93	3	1		95.1	N	
1	9/16/93	4	1		94.3	N	
1	9/16/93	5	1		94.2	N	
1	9/16/93	6	1		93.5	N	
1	9/23/93	1	1		114.9	Y	J 910426540-36
1	9/23/93	2	1		103	N	
1	9/23/93	3	1		96.5	N	
1	9/23/93	4	1		95.7	N	
1	9/23/93	5	1		94.9	N	
1	9/23/93	6	1		93.7	N	
1	9/30/93	1	1		112.9	Y	J 910426540-36
1	9/30/93	2	1		101.2	N	
1	9/30/93	3	1		94.2	N	
1	9/30/93	4	1		92.9	N	
1	9/30/93	5	1		92.2	N	
1	9/30/93	6	1		91.4	N	
1	10/7/93	1	1		113.3	Y	J 890A233804-42
1	10/7/93	2	1		101.3	N	
1	10/7/93	3	1		93.8	N	
1	10/7/93	4	1		93.2	N	
1	10/7/93	5	1		92.9	N	
1	10/7/93	6	1		92.1	N	
1	10/18/93	1	1		118	Y	J 90092574179
1	10/18/93	2	1		105	N	
1	10/18/93	3	1		97	N	
1	10/18/93	4	1		96	N	
1	10/18/93	5	1		96	N	
1	10/18/93	6	1		95	N	
1	10/20/93	1	1		116	Y	J 910126143-29
1	10/20/93	2	1		103.1	N	
1	10/20/93	3	1		95.6	N	
1	10/20/93	4	1		95	N	
1	10/20/93	5	1		95	N	
1	10/20/93	6	1		94.6	N	
1	10/26/93	1	1		116.2	Y	J 8904233206-42
1	10/26/93	2	1		103.4	N	
1	10/26/93	3	1		95.7	N	
1	10/26/93	4	1		95.6	N	
1	10/26/93	5	1		93.8	N	
1	10/26/93	6	1		94.5	N	
1	10/28/93	1	1		115.3	Y	J 910126143-50
1	10/28/93	2	1		102.1	N	
1	10/28/93	3	1		94.9	N	
1	10/28/93	4	1		94.5	N	
1	10/28/93	5	1		94.4	N	
1	10/28/93	6	1		93.8	N	
1	11/5/93	1	1		112.9	Y	J 890423320-40
1	11/5/93	2	1		100.1	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-103							
THERMOCOUPLE DATA							
TREE#	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/5/93	3	1		92.6	N	
1	11/5/93	4	1		91.6	N	
1	11/5/93	5	1		90.7	N	
1	11/5/93	6	1		90.3	N	
1	11/8/93	1	1		113.9	Y	J 890A2332042
1	11/8/93	2	1		101.3	N	
1	11/8/93	3	1		94.3	N	
1	11/8/93	4	1		93.2	N	
1	11/8/93	5	1		92.2	N	
1	11/8/93	6	1		91.3	N	
1	11/11/93	1	1		115	Y	J 890423380-42
1	11/11/93	2	1		102.2	N	
1	11/11/93	3	1		95.2	N	
1	11/11/93	4	1		93.9	N	
1	11/11/93	5	1		92.6	N	
1	11/11/93	6	1		91.7	N	
1598 records selected.							

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/24/76	1	1		231	Y	
1	10/24/76	2	1		151	N	
1	10/24/76	3	1		150	N	
1	10/24/76	4	1		148	N	
1	10/24/76	5	1		145	N	
1	10/24/76	6	1		144	N	
1	10/24/76	7	1		144	N	
1	10/24/76	8	1		144	N	
1	10/24/76	9	1		141	N	
1	10/24/76	10	1		141	N	
1	10/24/76	11	1		140	N	
1	10/24/76	12	1		140	N	
1	1/11/77	1	1		242	Y	
1	1/11/77	2	1		163	N	
1	1/11/77	3	1		163	N	
1	1/11/77	4	1		163	N	
1	1/11/77	5	1		163	N	
1	1/11/77	6	1		163	N	
1	1/11/77	7	1		163	N	
1	1/11/77	8	1		163	N	
1	1/11/77	9	1		164	N	
1	1/11/77	10	1		155	N	
1	1/11/77	11	1		145	N	
1	1/11/77	12	1		138	N	
1	2/13/77	1	1		239	Y	
1	2/13/77	2	1		159	N	
1	2/13/77	3	1		156	N	
1	2/13/77	4	1		156	N	
1	2/13/77	5	1		156	N	
1	2/13/77	6	1		156	N	
1	2/13/77	7	1		156	N	
1	2/13/77	8	1		156	N	
1	2/13/77	9	1		156	N	
1	2/13/77	10	1		143	N	
1	2/13/77	11	1		143	N	
1	2/13/77	12	1		134	N	
1	2/25/77	1	1		216	Y	
1	2/25/77	2	1		125	N	
1	2/25/77	3	1		121	N	
1	2/25/77	4	1		119	N	
1	2/25/77	5	1		119	N	
1	2/25/77	6	1		119	N	
1	2/25/77	7	1		119	N	
1	2/25/77	8	1		118	N	
1	2/25/77	9	1		118	N	
1	2/25/77	10	1		118	N	
1	2/25/77	11	1		118	N	
1	2/25/77	12	1		118	N	
1	2/25/77	13	1		118	N	
1	2/25/77	14	1		118	N	
1	2/25/77	15	1		118	N	
1	2/25/77	16	1		118	N	
1	3/25/77	2	1		125	Y	
1	3/25/77	3	1		121	N	
1	3/25/77	4	1		119	N	
1	3/25/77	5	1		119	N	
1	3/25/77	6	1		119	N	
1	3/25/77	7	1		119	N	
1	3/25/77	8	1		118	N	
1	3/25/77	9	1		118	N	
1	3/25/77	10	1		118	N	
1	3/25/77	11	1		118	N	
1	3/25/77	12	1		118	N	
1	3/25/77	13	1		118	N	
1	3/25/77	14	1		118	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	4/6/77	1	1		133	Y	
1	4/6/77	2	1		114	N	
1	4/6/77	3	1		113	N	
1	4/6/77	4	1		107	N	
1	4/6/77	5	1		106	N	
1	4/6/77	6	1		107	N	
1	4/6/77	7	1		108	N	
1	4/6/77	8	1		107	N	
1	4/6/77	9	1		107	N	
1	4/6/77	10	1		107	N	
1	4/6/77	11	1		107	N	
1	4/6/77	12	1		107	N	
1	4/6/77	13	1		107	N	
1	4/6/77	14	1		108	N	
1	4/6/77	15	1		108	N	
1	4/6/77	16	1		108	N	
1	4/9/77	1	1		133	Y	
1	4/9/77	2	1		112	N	
1	4/9/77	3	1		106	N	
1	4/9/77	4	1		106	N	
1	4/9/77	5	1		106	N	
1	4/9/77	6	1		106	N	
1	4/9/77	7	1		106	N	
1	4/9/77	8	1		106	N	
1	4/9/77	9	1		106	N	
1	4/9/77	10	1		106	N	
1	4/9/77	11	1		106	N	
1	4/9/77	12	1		105	N	
1	4/9/77	13	1		105	N	
1	4/9/77	14	1		105	N	
1	4/9/77	15	1		105	N	
1	4/9/77	16	1		105	N	
1	4/10/77	1	1		123	Y	
1	4/10/77	2	1		108	N	
1	4/10/77	3	1		102	N	
1	4/10/77	4	1		101	N	
1	4/10/77	5	1		101	N	
1	4/10/77	6	1		101	N	
1	4/10/77	7	1		101	N	
1	4/10/77	8	1		101	N	
1	4/10/77	9	1		101	N	
1	4/10/77	10	1		101	N	
1	4/10/77	11	1		101	N	
1	4/10/77	12	1		101	N	
1	4/10/77	13	1		101	N	
1	4/10/77	14	1		101	N	
1	4/10/77	15	1		101	N	
1	4/10/77	16	1		101	N	
1	4/12/77	1	1		144	Y	
1	4/12/77	2	1		109	N	
1	4/12/77	3	1		102	N	
1	4/12/77	4	1		102	N	
1	4/12/77	5	1		102	N	
1	4/12/77	6	1		102	N	
1	4/12/77	7	1		102	N	
1	4/12/77	8	1		102	N	
1	4/12/77	9	1		102	N	
1	4/12/77	10	1		102	N	
1	4/12/77	11	1		102	N	
1	4/12/77	12	1		102	N	
1	4/12/77	13	1		102	N	
1	4/12/77	14	1		102	N	
1	4/12/77	15	1		102	N	
1	4/12/77	16	1		102	N	
1	4/14/77	1	1		121	Y	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	4/14/77	2	1		109	N	
1	4/14/77	3	1		99	N	
1	4/14/77	4	1		98	N	
1	4/14/77	5	1		98	N	
1	4/14/77	6	1		98	N	
1	4/14/77	7	1		98	N	
1	4/14/77	8	1		99	N	
1	4/14/77	9	1		99	N	
1	4/14/77	10	1		99	N	
1	4/14/77	11	1		98	N	
1	4/14/77	12	1		98	N	
1	4/14/77	13	1		98	N	
1	4/14/77	14	1		98	N	
1	4/14/77	15	1		99	N	
1	4/14/77	16	1		99	N	
1	5/28/77	1	1		127	Y	
1	5/28/77	2	1		119	N	
1	5/28/77	3	1		111	N	
1	5/28/77	4	1		111	N	
1	5/28/77	5	1		110	N	
1	5/28/77	6	1		110	N	
1	5/28/77	7	1		110	N	
1	5/28/77	8	1		110	N	
1	5/28/77	9	1		110	N	
1	5/28/77	10	1		110	N	
1	5/28/77	11	1		110	N	
1	5/28/77	12	1		109	N	
1	5/28/77	13	1		110	N	
1	5/28/77	14	1		110	N	
1	6/10/77	1	1		112	Y	
1	6/10/77	2	1		97	N	
1	6/10/77	3	1		97	N	
1	6/10/77	4	1		97	N	
1	6/10/77	5	1		97	N	
1	6/10/77	6	1		97	N	
1	6/10/77	7	1		98	N	
1	6/10/77	8	1		98	N	
1	6/10/77	9	1		98	N	
1	6/10/77	10	1		98	N	
1	6/10/77	11	1		98	N	
1	6/10/77	12	1		98	N	
1	6/10/77	13	1		98	N	
1	6/10/77	14	1		98	N	
1	6/10/77	15	1		98	N	
1	6/10/77	16	1		98	N	
1	8/18/77	1	1		89	N	
1	8/18/77	2	1		90	N	
1	8/18/77	3	1		90	N	
1	8/18/77	4	1		90	N	
1	8/18/77	5	1		90	N	
1	8/18/77	6	1		90	N	
1	8/18/77	7	1		90	N	
1	8/18/77	8	1		91	Y	
1	8/18/77	9	1		90	N	
1	8/18/77	10	1		90	N	
1	8/18/77	11	1		90	N	
1	8/18/77	12	1		91	N	
1	8/18/77	13	1		91	N	
1	8/18/77	14	1		91	N	
1	8/18/77	15	1		90	N	
1	8/18/77	16	1		91	N	
1	8/21/77	1	1		93	Y	
1	8/21/77	2	1		93	N	
1	8/21/77	3	1		93	N	
1	8/21/77	4	1		93	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/21/77	5	1		93	N	
1	8/21/77	6	1		93	N	
1	8/21/77	7	1		93	N	
1	8/21/77	8	1		93	N	
1	8/21/77	9	1		93	N	
1	8/21/77	10	1		93	N	
1	8/21/77	11	1		93	N	
1	8/21/77	12	1		93	N	
1	8/21/77	13	1		93	N	
1	8/21/77	14	1		93	N	
1	8/21/77	15	1		93	N	
1	8/21/77	16	1		93	N	
1	8/30/77	1	1		88	N	
1	8/30/77	2	1		89	N	
1	8/30/77	3	1		89	N	
1	8/30/77	4	1		89	N	
1	8/30/77	5	1		89	N	
1	8/30/77	6	1		89	N	
1	8/30/77	7	1		90	Y	
1	8/30/77	8	1		90	N	
1	8/30/77	9	1		90	N	
1	8/30/77	10	1		90	N	
1	8/30/77	11	1		90	N	
1	8/30/77	12	1		90	N	
1	8/30/77	13	1		90	N	
1	8/30/77	14	1		90	N	
1	8/30/77	15	1		90	N	
1	8/30/77	16	1		90	N	
1	9/7/77	1	1		84	N	
1	9/7/77	2	1		87	N	
1	9/7/77	3	1		87	N	
1	9/7/77	4	1		87	N	
1	9/7/77	5	1		87	N	
1	9/7/77	6	1		87	N	
1	9/7/77	7	1		87	N	
1	9/7/77	8	1		87	N	
1	9/7/77	9	1		88	Y	
1	9/7/77	10	1		88	N	
1	9/7/77	11	1		88	N	
1	9/7/77	12	1		88	N	
1	9/7/77	13	1		88	N	
1	9/7/77	14	1		88	N	
1	9/12/77	1	1		85	N	
1	9/12/77	2	1		89	N	
1	9/12/77	3	1		89	N	
1	9/12/77	4	1		89	N	
1	9/12/77	5	1		89	N	
1	9/12/77	6	1		89	N	
1	9/12/77	7	1		89	N	
1	9/12/77	8	1		89	N	
1	9/12/77	9	1		89	N	
1	9/12/77	10	1		90	Y	
1	9/12/77	11	1		90	N	
1	9/12/77	12	1		90	N	
1	9/12/77	13	1		90	N	
1	9/12/77	14	1		90	N	
1	9/12/77	15	1		90	N	
1	9/12/77	16	1		90	N	
1	9/21/77	1	1		91	N	
1	9/21/77	2	1		93	N	
1	9/21/77	3	1		93	N	
1	9/21/77	4	1		94	Y	
1	9/21/77	5	1		94	N	
1	9/21/77	6	1		94	N	
1	9/21/77	7	1		94	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/21/77	8	1		94	N	
1	9/21/77	9	1		94	N	
1	9/21/77	10	1		94	N	
1	9/21/77	11	1		94	N	
1	9/21/77	12	1		94	N	
1	9/21/77	13	1		94	N	
1	9/21/77	14	1		94	N	
1	9/21/77	15	1		94	N	
1	9/21/77	16	1		94	N	
1	10/7/77	1	1		88	Y	
1	10/7/77	2	1		88	N	
1	10/7/77	3	1		87	N	
1	10/7/77	4	1		87	N	
1	10/7/77	5	1		87	N	
1	10/7/77	6	1		87	N	
1	10/7/77	7	1		87	N	
1	10/7/77	8	1		88	N	
1	10/7/77	9	1		88	N	
1	10/7/77	10	1		88	N	
1	10/7/77	11	1		88	N	
1	10/7/77	12	1		88	N	
1	10/7/77	13	1		88	N	
1	10/7/77	14	1		88	N	
1	10/7/77	15	1		88	N	
1	10/7/77	16	1		88	N	
1	11/7/77	1	1		85	N	
1	11/7/77	2	1		84	N	
1	11/7/77	3	1		83	N	
1	11/7/77	4	1		86	Y	
1	11/7/77	5	1		86	N	
1	11/7/77	6	1		86	N	
1	11/7/77	7	1		86	N	
1	11/7/77	8	1		86	N	
1	11/7/77	9	1		86	N	
1	11/7/77	10	1		86	N	
1	11/7/77	11	1		86	N	
1	11/7/77	12	1		86	N	
1	11/7/77	13	1		86	N	
1	11/7/77	14	1		86	N	
1	11/7/77	15	1		86	N	
1	11/7/77	16	1		86	N	
1	12/4/77	1	1		74	Y	
1	12/4/77	2	1		73	N	
1	12/4/77	3	1		74	N	
1	12/4/77	4	1		74	N	
1	12/4/77	5	1		74	N	
1	12/4/77	6	1		74	N	
1	12/4/77	7	1		74	N	
1	12/4/77	8	1		74	N	
1	12/4/77	9	1		74	N	
1	12/4/77	10	1		74	N	
1	12/4/77	11	1		74	N	
1	12/4/77	12	1		74	N	
1	12/4/77	13	1		74	N	
1	12/4/77	14	1		74	N	
1	12/4/77	15	1		74	N	
1	12/4/77	16	1		74	N	
1	1/11/78	1	1		70	Y	
1	1/11/78	2	1		68	N	
1	1/11/78	3	1		68	N	
1	1/11/78	4	1		68	N	
1	1/11/78	5	1		68	N	
1	1/11/78	6	1		68	N	
1	1/11/78	7	1		68	N	
1	1/11/78	8	1		68	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/11/78	9	1		68	N	
1	1/11/78	10	1		68	N	
1	1/11/78	11	1		68	N	
1	1/11/78	12	1		68	N	
1	1/11/78	13	1		68	N	
1	1/11/78	14	1		68	N	
1	1/28/78	1	1		71	Y	
1	1/28/78	2	1		68	N	
1	1/28/78	3	1		69	N	
1	1/28/78	4	1		69	N	
1	1/28/78	5	1		68	N	
1	1/28/78	6	1		68	N	
1	1/28/78	7	1		69	N	
1	1/28/78	8	1		69	N	
1	1/28/78	9	1		69	N	
1	1/28/78	10	1		69	N	
1	1/28/78	11	1		69	N	
1	1/28/78	12	1		68	N	
1	1/28/78	13	1		69	N	
1	1/28/78	14	1		69	N	
1	2/26/78	1	1		73	Y	
1	2/26/78	2	1		70	N	
1	2/26/78	3	1		70	N	
1	2/26/78	4	1		70	N	
1	2/26/78	5	1		70	N	
1	2/26/78	6	1		70	N	
1	2/26/78	7	1		70	N	
1	2/26/78	8	1		70	N	
1	2/26/78	9	1		70	N	
1	2/26/78	10	1		70	N	
1	2/26/78	11	1		69	N	
1	2/26/78	12	1		69	N	
1	2/26/78	13	1		70	N	
1	2/26/78	14	1		70	N	
1	3/26/78	1	1		80	Y	
1	3/26/78	2	1		78	N	
1	3/26/78	3	1		77	N	
1	3/26/78	4	1		77	N	
1	3/26/78	5	1		78	N	
1	3/26/78	6	1		78	N	
1	3/26/78	7	1		78	N	
1	3/26/78	8	1		78	N	
1	3/26/78	9	1		78	N	
1	3/26/78	10	1		78	N	
1	3/26/78	11	1		78	N	
1	3/26/78	12	1		78	N	
1	3/26/78	13	1		78	N	
1	3/26/78	14	1		78	N	
1	3/26/78	15	1		78	N	
1	3/26/78	16	1		78	N	
1	4/24/78	1	1		89	Y	
1	4/24/78	2	1		84	N	
1	4/24/78	3	1		84	N	
1	4/24/78	4	1		85	N	
1	4/24/78	5	1		85	N	
1	4/24/78	6	1		85	N	
1	4/24/78	7	1		85	N	
1	4/24/78	8	1		85	N	
1	4/24/78	9	1		85	N	
1	4/24/78	10	1		85	N	
1	4/24/78	11	1		85	N	
1	4/24/78	12	1		85	N	
1	4/24/78	13	1		85	N	
1	4/24/78	14	1		85	N	
1	4/24/78	15	1		85	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/19/78	1	1		77	Y	
1	5/19/78	2	1		77	N	
1	5/19/78	3	1		77	N	
1	5/19/78	4	1		77	N	
1	5/19/78	5	1		77	N	
1	5/19/78	6	1		77	N	
1	5/19/78	7	1		77	N	
1	5/19/78	8	1		77	N	
1	5/19/78	9	1		77	N	
1	5/19/78	10	1		77	N	
1	5/19/78	11	1		77	N	
1	5/19/78	12	1		77	N	
1	5/19/78	13	1		77	N	
1	5/19/78	14	1		77	N	
1	6/17/78	1	1		82	Y	
1	6/17/78	2	1		81	N	
1	6/17/78	3	1		81	N	
1	6/17/78	4	1		81	N	
1	6/17/78	5	1		81	N	
1	6/17/78	6	1		81	N	
1	6/17/78	7	1		81	N	
1	6/17/78	8	1		81	N	
1	6/17/78	9	1		81	N	
1	6/17/78	10	1		81	N	
1	6/17/78	11	1		81	N	
1	6/17/78	12	1		81	N	
1	6/17/78	13	1		81	N	
1	6/17/78	14	1		81	N	
1	7/15/78	1	1		84	Y	
1	7/15/78	2	1		84	N	
1	7/15/78	3	1		83	N	
1	7/15/78	4	1		83	N	
1	7/15/78	5	1		83	N	
1	7/15/78	6	1		83	N	
1	7/15/78	7	1		83	N	
1	7/15/78	8	1		83	N	
1	7/15/78	9	1		83	N	
1	7/15/78	10	1		83	N	
1	7/15/78	11	1		83	N	
1	7/15/78	12	1		83	N	
1	7/15/78	13	1		83	N	
1	7/15/78	14	1		83	N	
1	8/13/78	1	1		87	Y	
1	8/13/78	2	1		86	N	
1	8/13/78	3	1		86	N	
1	8/13/78	4	1		85	N	
1	8/13/78	5	1		85	N	
1	8/13/78	6	1		85	N	
1	8/13/78	7	1		85	N	
1	8/13/78	8	1		85	N	
1	8/13/78	9	1		85	N	
1	8/13/78	10	1		85	N	
1	8/13/78	11	1		86	N	
1	8/13/78	12	1		86	N	
1	8/13/78	13	1		86	N	
1	8/13/78	14	1		86	N	
1	8/13/78	15	1		86	N	
1	8/13/78	16	1		86	N	
1	9/9/78	1	1		98	Y	
1	9/9/78	2	1		95	N	
1	9/9/78	3	1		95	N	
1	9/9/78	4	1		95	N	
1	9/9/78	5	1		96	N	
1	9/9/78	6	1		95	N	
1	9/9/78	7	1		95	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/9/78	8	1		95	N	
1	9/9/78	9	1		95	N	
1	9/9/78	10	1		95	N	
1	9/9/78	11	1		95	N	
1	9/9/78	12	1		95	N	
1	9/9/78	13	1		95	N	
1	9/9/78	14	1		95	N	
1	9/9/78	15	1		95	N	
1	9/9/78	16	1		95	N	
1	10/8/78	1	1		94	Y	
1	10/8/78	2	1		92	N	
1	10/8/78	3	1		92	N	
1	10/8/78	4	1		92	N	
1	10/8/78	5	1		91	N	
1	10/8/78	6	1		91	N	
1	10/8/78	7	1		91	N	
1	10/8/78	8	1		91	N	
1	10/8/78	9	1		91	N	
1	10/8/78	10	1		91	N	
1	10/8/78	11	1		91	N	
1	10/8/78	12	1		91	N	
1	10/8/78	13	1		91	N	
1	10/8/78	14	1		91	N	
1	10/8/78	15	1		91	N	
1	10/8/78	16	1		91	N	
1	11/8/78	1	1		93	Y	
1	11/8/78	2	1		92	N	
1	11/8/78	3	1		92	N	
1	11/8/78	4	1		91	N	
1	11/8/78	5	1		91	N	
1	11/8/78	6	1		91	N	
1	11/8/78	7	1		91	N	
1	11/8/78	8	1		91	N	
1	11/8/78	9	1		91	N	
1	11/8/78	10	1		91	N	
1	11/8/78	11	1		91	N	
1	11/8/78	12	1		91	N	
1	11/8/78	13	1		91	N	
1	11/8/78	14	1		91	N	
1	11/8/78	15	1		91	N	
1	11/8/78	16	1		91	N	
1	1/2/79	1	1		89	Y	
1	1/2/79	2	1		87	N	
1	1/2/79	3	1		88	N	
1	1/2/79	4	1		87	N	
1	1/2/79	5	1		87	N	
1	1/2/79	6	1		87	N	
1	1/2/79	7	1		87	N	
1	1/2/79	8	1		87	N	
1	1/2/79	9	1		87	N	
1	1/2/79	10	1		87	N	
1	1/2/79	11	1		87	N	
1	1/2/79	12	1		87	N	
1	1/2/79	13	1		87	N	
1	1/2/79	14	1		87	N	
1	1/2/79	15	1		87	N	
1	1/2/79	16	1		87	N	
1	2/9/79	1	1		79	Y	
1	2/9/79	2	1		77	N	
1	2/9/79	3	1		77	N	
1	2/9/79	4	1		77	N	
1	2/9/79	5	1		76	N	
1	2/9/79	6	1		76	N	
1	2/9/79	7	1		77	N	
1	2/9/79	8	1		76	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104						
THERMOCOUPLE DATA						
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP
1	2/9/79	9	1		77	N
1	2/9/79	10	1		76	N
1	2/9/79	11	1		76	N
1	2/9/79	12	1		76	N
1	2/9/79	13	1		76	N
1	2/9/79	14	1		76	N
1	2/9/79	15	1		76	N
1	2/9/79	16	1		76	N
1	11/8/79	1	1		95	Y
1	11/8/79	2	1		93	N
1	11/8/79	3	1		93	N
1	11/8/79	4	1		93	N
1	11/8/79	5	1		93	N
1	11/8/79	6	1		93	N
1	11/8/79	7	1		93	N
1	11/8/79	8	1		93	N
1	11/8/79	9	1		93	N
1	11/8/79	10	1		93	N
1	11/8/79	11	1		92	N
1	11/8/79	12	1		92	N
1	11/8/79	13	1		92	N
1	11/8/79	14	1		92	N
1	11/8/79	15	1		92	N
1	11/8/79	16	1		92	N
1	2/9/80	1	1		94	Y
1	2/9/80	2	1		93	N
1	2/9/80	3	1		93	N
1	2/9/80	4	1		92	N
1	2/9/80	5	1		92	N
1	2/9/80	6	1		92	N
1	2/9/80	7	1		93	N
1	2/9/80	8	1		92	N
1	2/9/80	9	1		92	N
1	2/9/80	10	1		92	N
1	2/9/80	11	1		92	N
1	2/9/80	12	1		91	N
1	2/9/80	13	1		92	N
1	2/9/80	14	1		92	N
1	2/9/80	15	1		92	N
1	2/9/80	16	1		91	N
1	10/26/80	1	1		107	Y
1	10/26/80	2	1		104	N
1	10/26/80	3	1		104	N
1	10/26/80	4	1		104	N
1	10/26/80	5	1		104	N
1	10/26/80	6	1		104	N
1	10/26/80	7	1		104	N
1	10/26/80	8	1		104	N
1	10/26/80	9	1		104	N
1	10/26/80	10	1		104	N
1	10/26/80	11	1		104	N
1	10/26/80	12	1		104	N
1	10/26/80	13	1		104	N
1	10/26/80	14	1		104	N
1	10/26/80	15	1		104	N
1	10/26/80	16	1		104	N
1	2/6/81	1	1		94	Y
1	2/6/81	2	1		92	N
1	2/6/81	3	1		92	N
1	2/6/81	4	1		92	N
1	2/6/81	5	1		92	N
1	2/6/81	6	1		92	N
1	2/6/81	7	1		92	N
1	2/6/81	8	1		92	N
1	2/6/81	9	1		92	N

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	2/6/81	10	1		92	N	
1	2/6/81	11	1		92	N	
1	2/6/81	12	1		92	N	
1	2/6/81	13	1		92	N	
1	2/6/81	14	1		92	N	
1	2/6/81	15	1		92	N	
1	2/6/81	16	1		92	N	
1	6/7/81	1	1		90	Y	
1	6/7/81	2	1		88	N	
1	6/7/81	3	1		88	N	
1	6/7/81	4	1		87	N	
1	6/7/81	5	1		87	N	
1	6/7/81	6	1		87	N	
1	6/7/81	7	1		87	N	
1	6/7/81	8	1		87	N	
1	6/7/81	9	1		87	N	
1	6/7/81	10	1		87	N	
1	6/7/81	11	1		87	N	
1	6/7/81	12	1		87	N	
1	6/7/81	13	1		87	N	
1	6/7/81	14	1		87	N	
1	6/7/81	15	1		87	N	
1	6/7/81	16	1		87	N	
1	2/8/82	1	1		100	Y	
1	2/8/82	2	1		98	N	
1	2/8/82	3	1		98	N	
1	2/8/82	4	1		98	N	
1	2/8/82	5	1		97	N	
1	2/8/82	6	1		97	N	
1	2/8/82	7	1		98	N	
1	2/8/82	8	1		97	N	
1	2/8/82	9	1		98	N	
1	2/8/82	10	1		98	N	
1	2/8/82	11	1		97	N	
1	2/8/82	12	1		97	N	
1	2/8/82	13	1		97	N	
1	2/8/82	14	1		97	N	
1	2/8/82	15	1		97	N	
1	2/8/82	16	1		97	N	
1	6/9/82	1	1		101	Y	
1	6/9/82	2	1		99	N	
1	6/9/82	3	1		99	N	
1	6/9/82	4	1		99	N	
1	6/9/82	5	1		99	N	
1	6/9/82	6	1		99	N	
1	6/9/82	7	1		99	N	
1	6/9/82	8	1		99	N	
1	6/9/82	9	1		99	N	
1	6/9/82	10	1		99	N	
1	6/9/82	11	1		99	N	
1	6/9/82	12	1		99	N	
1	6/9/82	13	1		99	N	
1	6/9/82	14	1		99	N	
1	6/9/82	15	1		99	N	
1	6/9/82	16	1		99	N	
1	10/15/82	1	1		100	Y	
1	10/15/82	2	1		99	N	
1	10/15/82	3	1		97	N	
1	10/15/82	4	1		97	N	
1	10/15/82	5	1		96	N	
1	10/15/82	6	1		96	N	
1	10/15/82	7	1		96	N	
1	10/15/82	8	1		96	N	
1	10/15/82	9	1		96	N	
1	10/15/82	10	1		96	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	10/15/82	11	1		96	N	
1	10/15/82	12	1		96	N	
1	10/15/82	13	1		96	N	
1	10/15/82	14	1		96	N	
1	10/15/82	15	1		96	N	
1	10/15/82	16	1		96	N	
1	2/5/83	1	1		98	Y	
1	2/5/83	2	1		96	N	
1	2/5/83	3	1		96	N	
1	2/5/83	4	1		96	N	
1	2/5/83	5	1		96	N	
1	2/5/83	6	1		95	N	
1	2/5/83	7	1		95	N	
1	2/5/83	8	1		95	N	
1	2/5/83	9	1		95	N	
1	2/5/83	10	1		95	N	
1	2/5/83	11	1		95	N	
1	2/5/83	12	1		95	N	
1	2/5/83	13	1		95	N	
1	2/5/83	14	1		95	N	
1	2/5/83	15	1		95	N	
1	2/5/83	16	1		95	N	
1	6/8/83	1	1		101	Y	
1	6/8/83	2	1		99	N	
1	6/8/83	3	1		98	N	
1	6/8/83	4	1		98	N	
1	6/8/83	5	1		98	N	
1	6/8/83	6	1		98	N	
1	6/8/83	7	1		98	N	
1	6/8/83	8	1		98	N	
1	6/8/83	9	1		98	N	
1	6/8/83	10	1		98	N	
1	6/8/83	11	1		98	N	
1	6/8/83	12	1		97	N	
1	6/8/83	13	1		97	N	
1	6/8/83	14	1		97	N	
1	6/8/83	15	1		97	N	
1	6/8/83	16	1		97	N	
1	2/16/84	1	1		101	Y	
1	2/16/84	2	1		99	N	
1	2/16/84	3	1		98	N	
1	2/16/84	4	1		98	N	
1	2/16/84	5	1		98	N	
1	2/16/84	6	1		98	N	
1	2/16/84	7	1		98	N	
1	2/16/84	8	1		98	N	
1	2/16/84	9	1		98	N	
1	2/16/84	10	1		98	N	
1	2/16/84	11	1		98	N	
1	2/16/84	12	1		98	N	
1	2/16/84	13	1		98	N	
1	2/16/84	14	1		98	N	
1	2/16/84	15	1		97	N	
1	2/16/84	16	1		97	N	
1	2/16/84	17	1		97	N	
1	2/16/84	18	1		97	N	
1	3/5/84	1	1		99	Y	
1	3/5/84	2	1		96	N	
1	3/5/84	3	1		96	N	
1	3/5/84	4	1		96	N	
1	3/5/84	5	1		95	N	
1	3/5/84	6	1		95	N	
1	3/5/84	7	1		96	N	
1	3/5/84	8	1		96	N	
1	3/5/84	9	1		95	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/5/84	10	1		95	N	
1	3/5/84	11	1		95	N	
1	3/5/84	12	1		95	N	
1	3/5/84	13	1		95	N	
1	3/5/84	14	1		95	N	
1	3/5/84	15	1		95	N	
1	4/27/84	1	1		96	Y	
1	4/27/84	2	1		94	N	
1	4/27/84	3	1		94	N	
1	4/27/84	4	1		94	N	
1	4/27/84	5	1		93	N	
1	4/27/84	6	1		93	N	
1	4/27/84	7	1		93	N	
1	4/27/84	8	1		93	N	
1	4/27/84	9	1		93	N	
1	4/27/84	10	1		93	N	
1	4/27/84	11	1		93	N	
1	4/27/84	12	1		93	N	
1	4/27/84	13	1		93	N	
1	4/27/84	14	1		93	N	
1	4/27/84	15	1		93	N	
1	4/28/84	1	1		98	Y	
1	4/28/84	2	1		96	N	
1	4/28/84	3	1		95	N	
1	4/28/84	4	1		95	N	
1	4/28/84	5	1		95	N	
1	4/28/84	6	1		95	N	
1	4/28/84	7	1		95	N	
1	4/28/84	8	1		95	N	
1	4/28/84	9	1		95	N	
1	4/28/84	10	1		95	N	
1	4/28/84	11	1		95	N	
1	4/28/84	12	1		95	N	
1	4/28/84	13	1		94	N	
1	4/28/84	14	1		94	N	
1	4/28/84	15	1		94	N	
1	4/29/84	1	1		95	Y	
1	4/29/84	2	1		93	N	
1	4/29/84	3	1		92	N	
1	4/29/84	4	1		92	N	
1	4/29/84	5	1		92	N	
1	4/29/84	6	1		92	N	
1	4/29/84	7	1		92	N	
1	4/29/84	8	1		92	N	
1	4/29/84	9	1		92	N	
1	4/29/84	10	1		92	N	
1	4/29/84	11	1		92	N	
1	4/29/84	12	1		92	N	
1	4/29/84	13	1		92	N	
1	4/29/84	14	1		92	N	
1	4/29/84	15	1		91	N	
1	3/2/85	1	1		94	Y	E type
1	3/2/85	2	1		92	N	
1	3/2/85	3	1		92	N	
1	3/2/85	4	1		92	N	
1	3/2/85	5	1		92	N	
1	3/2/85	6	1		92	N	
1	3/2/85	7	1		92	N	
1	3/2/85	8	1		92	N	
1	3/2/85	9	1		92	N	
1	3/2/85	10	1		91	N	
1	3/2/85	11	1		92	N	
1	3/2/85	12	1		92	N	
1	3/2/85	13	1		91	N	
1	3/2/85	14	1		91	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	3/2/85	15	1		91	N	
1	3/2/85	16	1		91	N	
1	3/2/85	1	2		98	Y	
1	3/2/85	2	2		96	N	
1	3/2/85	3	2		96	N	
1	3/2/85	4	2		96	N	
1	3/2/85	5	2		95	N	
1	3/2/85	6	2		95	N	
1	3/2/85	7	2		96	N	
1	3/2/85	8	2		96	N	
1	3/2/85	9	2		96	N	
1	3/2/85	10	2		96	N	
1	3/2/85	11	2		95	N	
1	3/2/85	12	2		95	N	
1	3/2/85	13	2		95	N	
1	3/2/85	14	2		95	N	
1	3/2/85	15	2		95	N	
1	3/2/85	16	2		95	N	
1	4/26/85	1	1		96	Y	
1	4/26/85	2	1		93	N	
1	4/26/85	3	1		93	N	
1	4/26/85	4	1		93	N	
1	4/26/85	5	1		93	N	
1	4/26/85	6	1		93	N	
1	4/26/85	7	1		93	N	
1	4/26/85	8	1		93	N	
1	4/26/85	9	1		93	N	
1	4/26/85	10	1		93	N	
1	4/26/85	11	1		93	N	
1	4/26/85	12	1		93	N	
1	4/26/85	13	1		93	N	
1	4/26/85	14	1		93	N	
1	4/26/85	15	1		93	N	
1	4/26/85	16	1		93	N	
1	4/26/85	17	1		93	N	
1	7/2/85	1	1		105	Y	
1	7/2/85	2	1		104	N	
1	7/2/85	3	1		103	N	
1	7/2/85	4	1		103	N	
1	7/2/85	5	1		103	N	
1	7/2/85	6	1		103	N	
1	7/2/85	7	1		103	N	
1	7/2/85	8	1		102	N	
1	7/2/85	9	1		102	N	
1	7/2/85	10	1		102	N	
1	7/2/85	11	1		102	N	
1	7/2/85	12	1		102	N	
1	7/2/85	13	1		102	N	
1	7/2/85	14	1		102	N	
1	7/2/85	15	1		102	N	
1	7/2/85	16	1		102	N	
1	10/4/85	1	1		102	Y	
1	10/4/85	2	1		100	N	
1	10/4/85	3	1		100	N	
1	10/4/85	4	1		100	N	
1	10/4/85	5	1		99	N	
1	10/4/85	6	1		99	N	
1	10/4/85	7	1		99	N	
1	10/4/85	8	1		99	N	
1	10/4/85	9	1		99	N	
1	10/4/85	10	1		99	N	
1	10/4/85	11	1		99	N	
1	10/4/85	12	1		99	N	
1	10/4/85	13	1		99	N	
1	10/4/85	14	1		99	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	10/4/85	15	1		99	N	
1	10/4/85	16	1		99	N	
1	10/4/85	17	1		99	N	
1	10/4/85	18	1		99	N	
1	11/1/85	1	1		107	Y	
1	11/1/85	2	1		104	N	
1	11/1/85	3	1		105	N	
1	11/1/85	4	1		104	N	
1	11/1/85	5	1		104	N	
1	11/1/85	6	1		104	N	
1	11/1/85	7	1		104	N	
1	11/1/85	8	1		104	N	
1	11/1/85	9	1		104	N	
1	11/1/85	10	1		104	N	
1	11/1/85	11	1		104	N	
1	11/1/85	12	1		104	N	
1	11/1/85	13	1		104	N	
1	11/1/85	14	1		104	N	
1	11/1/85	15	1		103	N	
1	11/1/85	16	1		103	N	
1	11/1/85	17	1		103	N	
1	11/1/85	18	1		103	N	
1	12/13/85	1	1		104	Y	
1	12/13/85	2	1		102	N	
1	12/13/85	3	1		102	N	
1	12/13/85	4	1		102	N	
1	12/13/85	5	1		102	N	
1	12/13/85	6	1		102	N	
1	12/13/85	7	1		102	N	
1	12/13/85	8	1		101	N	
1	12/13/85	9	1		102	N	
1	12/13/85	10	1		102	N	
1	12/13/85	11	1		101	N	
1	12/13/85	12	1		101	N	
1	12/13/85	13	1		101	N	
1	12/13/85	14	1		101	N	
1	12/13/85	15	1		101	N	
1	12/13/85	16	1		101	N	
1	12/13/85	17	1		101	N	
1	12/13/85	18	1		101	N	
1	1/6/86	1	1		119	Y	
1	1/6/86	2	1		117	N	
1	1/6/86	3	1		117	N	
1	1/6/86	4	1		116	N	
1	1/6/86	5	1		116	N	
1	1/6/86	6	1		116	N	
1	1/6/86	7	1		116	N	
1	1/6/86	8	1		116	N	
1	1/6/86	9	1		116	N	
1	1/6/86	10	1		116	N	
1	1/6/86	11	1		116	N	
1	1/6/86	12	1		116	N	
1	1/6/86	13	1		116	N	
1	1/6/86	14	1		116	N	
1	1/6/86	15	1		116	N	
1	1/6/86	16	1		116	N	
1	2/3/86	1	1		100	Y	
1	2/3/86	2	1		99	N	
1	2/3/86	3	1		97	N	
1	2/3/86	4	1		98	N	
1	2/3/86	5	1		98	N	
1	2/3/86	6	1		98	N	
1	2/3/86	7	1		98	N	
1	2/3/86	8	1		98	N	
1	2/3/86	9	1		98	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	2/3/86	10	1		98	N	
1	2/3/86	11	1		97	N	
1	2/3/86	12	1		97	N	
1	2/3/86	13	1		97	N	
1	2/3/86	14	1		97	N	
1	2/3/86	15	1		97	N	
1	2/3/86	16	1		97	N	
1	4/18/86	1	1		100	Y	
1	4/18/86	2	1		98	N	
1	4/18/86	3	1		98	N	
1	4/18/86	4	1		98	N	
1	4/18/86	5	1		97	N	
1	4/18/86	6	1		97	N	
1	4/18/86	7	1		97	N	
1	4/18/86	8	1		97	N	
1	4/18/86	9	1		97	N	
1	4/18/86	10	1		97	N	
1	4/18/86	11	1		97	N	
1	4/18/86	12	1		97	N	
1	4/18/86	13	1		97	N	
1	4/18/86	14	1		96	N	
1	4/18/86	15	1		96	N	
1	4/18/86	16	1		96	N	
1	4/18/86	17	1		96	N	
1	4/18/86	18	1		96	N	
1	7/7/86	1	1		109	Y	
1	7/7/86	2	1		106	N	
1	7/7/86	3	1		106	N	
1	7/7/86	4	1		105	N	
1	7/7/86	5	1		105	N	
1	7/7/86	6	1		105	N	
1	7/7/86	7	1		105	N	
1	7/7/86	8	1		105	N	
1	7/7/86	9	1		105	N	
1	7/7/86	10	1		105	N	
1	7/7/86	11	1		105	N	
1	7/7/86	12	1		105	N	
1	7/7/86	13	1		105	N	
1	7/7/86	14	1		105	N	
1	7/7/86	15	1		105	N	
1	7/7/86	16	1		105	N	
1	7/7/86	17	1		105	N	
1	7/7/86	18	1		105	N	
1	8/8/86	1	1		105	Y	case
1	8/8/86	2	1		102	N	
1	8/8/86	3	1		102	N	
1	8/8/86	4	1		102	N	
1	8/8/86	5	1		102	N	
1	8/8/86	6	1		102	N	
1	8/8/86	7	1		101	N	
1	8/8/86	8	1		101	N	
1	8/8/86	9	1		101	N	
1	8/8/86	10	1		101	N	
1	8/8/86	11	1		101	N	
1	8/8/86	12	1		101	N	
1	8/8/86	13	1		101	N	
1	8/8/86	14	1		101	N	
1	8/8/86	15	1		101	N	
1	8/8/86	16	1		101	N	
1	8/8/86	17	1		101	N	
1	8/8/86	18	1		101	N	
1	9/1/86	1	1		108	Y	case
1	9/1/86	2	1		104	N	
1	9/1/86	3	1		104	N	
1	9/1/86	4	1		104	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	9/1/86	5	1		103	N	
1	9/1/86	6	1		103	N	
1	9/1/86	7	1		103	N	
1	9/1/86	8	1		103	N	
1	9/1/86	9	1		103	N	
1	9/1/86	10	1		103	N	
1	9/1/86	11	1		103	N	
1	9/1/86	12	1		103	N	
1	9/1/86	13	1		103	N	
1	9/1/86	14	1		103	N	
1	9/1/86	15	1		103	N	
1	9/1/86	16	1		103	N	
1	9/1/86	17	1		103	N	
1	9/1/86	18	1		103	N	
1	10/6/86	1	1		108	Y	
1	10/6/86	2	1		106	N	
1	10/6/86	3	1		106	N	
1	10/6/86	4	1		106	N	
1	10/6/86	5	1		106	N	
1	10/6/86	6	1		106	N	
1	10/6/86	7	1		106	N	
1	10/6/86	8	1		105	N	
1	10/6/86	9	1		105	N	
1	10/6/86	10	1		105	N	
1	10/6/86	11	1		105	N	
1	10/6/86	12	1		105	N	
1	10/6/86	13	1		105	N	
1	10/6/86	14	1		105	N	
1	10/6/86	15	1		105	N	
1	10/6/86	16	1		105	N	
1	10/10/86	1	1		106	Y	
1	10/10/86	2	1		104	N	
1	10/10/86	3	1		104	N	
1	10/10/86	4	1		104	N	
1	10/10/86	5	1		104	N	
1	10/10/86	6	1		103	N	
1	10/10/86	7	1		103	N	
1	10/10/86	8	1		103	N	
1	10/10/86	9	1		103	N	
1	10/10/86	10	1		103	N	
1	10/10/86	11	1		103	N	
1	10/10/86	12	1		103	N	
1	10/10/86	13	1		103	N	
1	10/10/86	14	1		103	N	
1	10/10/86	15	1		103	N	
1	10/10/86	16	1		103	N	
1	10/10/86	17	1		103	N	
1	10/10/86	18	1		103	N	
1	11/3/86	1	1		104	Y	
1	11/3/86	2	1		102	N	
1	11/3/86	3	1		103	N	
1	11/3/86	4	1		102	N	
1	11/3/86	5	1		102	N	
1	11/3/86	6	1		102	N	
1	11/3/86	7	1		102	N	
1	11/3/86	8	1		102	N	
1	11/3/86	9	1		102	N	
1	11/3/86	10	1		102	N	
1	11/3/86	11	1		102	N	
1	11/3/86	12	1		102	N	
1	11/3/86	13	1		102	N	
1	11/3/86	14	1		102	N	
1	11/3/86	15	1		102	N	
1	11/3/86	16	1		102	N	
1	11/28/86	1	1		103	Y	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y=MAX TEMP	COMMENTS
1	11/28/86	2	1		101	N	
1	11/28/86	3	1		101	N	
1	11/28/86	4	1		100	N	
1	11/28/86	5	1		100	N	
1	11/28/86	6	1		100	N	
1	11/28/86	7	1		100	N	
1	11/28/86	8	1		100	N	
1	11/28/86	9	1		100	N	
1	11/28/86	10	1		100	N	
1	11/28/86	11	1		100	N	
1	11/28/86	12	1		100	N	
1	11/28/86	13	1		100	N	
1	11/28/86	14	1		100	N	
1	11/28/86	15	1		100	N	
1	11/28/86	16	1		100	N	
1	11/28/86	17	1		100	N	
1	11/28/86	18	1		100	N	
1	2/3/87	1	1		99	Y	
1	2/3/87	2	1		97	N	
1	2/3/87	3	1		97	N	
1	2/3/87	4	1		97	N	
1	2/3/87	5	1		97	N	
1	2/3/87	6	1		96	N	
1	2/3/87	7	1		97	N	
1	2/3/87	8	1		97	N	
1	2/3/87	9	1		96	N	
1	2/3/87	10	1		97	N	
1	2/3/87	11	1		96	N	
1	2/3/87	12	1		96	N	
1	2/3/87	13	1		96	N	
1	2/3/87	14	1		96	N	
1	2/3/87	15	1		96	N	
1	2/3/87	16	1		96	N	
1	3/6/87	1	1		99	Y	case
1	3/6/87	2	1		97	N	
1	3/6/87	3	1		97	N	
1	3/6/87	4	1		96	N	
1	3/6/87	5	1		96	N	
1	3/6/87	6	1		96	N	
1	3/6/87	7	1		96	N	
1	3/6/87	8	1		96	N	
1	3/6/87	9	1		96	N	
1	3/6/87	10	1		96	N	
1	3/6/87	11	1		96	N	
1	3/6/87	12	1		96	N	
1	3/6/87	13	1		96	N	
1	3/6/87	14	1		96	N	
1	3/6/87	15	1		96	N	
1	3/6/87	16	1		96	N	
1	3/6/87	17	1		95	N	
1	3/6/87	18	1		95	N	
1	5/1/87	1	1		99	Y	case
1	5/1/87	2	1		97	N	
1	5/1/87	3	1		97	N	
1	5/1/87	4	1		97	N	
1	5/1/87	5	1		97	N	
1	5/1/87	6	1		96	N	
1	5/1/87	7	1		96	N	
1	5/1/87	8	1		96	N	
1	5/1/87	9	1		96	N	
1	5/1/87	10	1		96	N	
1	5/1/87	11	1		96	N	
1	5/1/87	12	1		96	N	
1	5/1/87	13	1		96	N	
1	5/1/87	14	1		96	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	5/1/87	15	1		96	N	
1	5/1/87	16	1		96	N	
1	5/1/87	17	1		95	N	
1	5/1/87	18	1		95	N	
1	6/5/87	1	1		101	Y	
1	6/5/87	2	1		98	N	
1	6/5/87	3	1		98	N	
1	6/5/87	4	1		98	N	
1	6/5/87	5	1		98	N	
1	6/5/87	6	1		98	N	
1	6/5/87	7	1		98	N	
1	6/5/87	8	1		98	N	
1	6/5/87	9	1		98	N	
1	6/5/87	10	1		98	N	
1	6/5/87	11	1		97	N	
1	6/5/87	12	1		97	N	
1	6/5/87	13	1		97	N	
1	6/5/87	14	1		97	N	
1	6/5/87	15	1		97	N	
1	6/5/87	16	1		97	N	
1	6/5/87	17	1		97	N	
1	6/5/87	18	1		97	N	
1	7/6/87	1	1		95	Y	
1	7/6/87	2	1		93	N	
1	7/6/87	3	1		93	N	
1	7/6/87	4	1		93	N	
1	7/6/87	5	1		92	N	
1	7/6/87	6	1		92	N	
1	7/6/87	7	1		92	N	
1	7/6/87	8	1		92	N	
1	7/6/87	9	1		92	N	
1	7/6/87	10	1		92	N	
1	7/6/87	11	1		92	N	
1	7/6/87	12	1		92	N	
1	7/6/87	13	1		92	N	
1	7/6/87	14	1		92	N	
1	7/6/87	15	1		92	N	
1	7/6/87	16	1		92	N	
1	8/3/87	1	1		101	Y	
1	8/3/87	2	1		98	N	
1	8/3/87	3	1		98	N	
1	8/3/87	4	1		98	N	
1	8/3/87	5	1		98	N	
1	8/3/87	6	1		98	N	
1	8/3/87	7	1		98	N	
1	8/3/87	8	1		98	N	
1	8/3/87	9	1		98	N	
1	8/3/87	10	1		98	N	
1	8/3/87	11	1		98	N	
1	8/3/87	12	1		98	N	
1	8/3/87	13	1		98	N	
1	8/3/87	14	1		98	N	
1	8/3/87	15	1		98	N	
1	8/3/87	16	1		97	N	
1	1/4/88	1	1		102	Y	
1	1/4/88	2	1		100	N	
1	1/4/88	3	1		100	N	
1	1/4/88	4	1		100	N	
1	1/4/88	5	1		100	N	
1	1/4/88	6	1		100	N	
1	1/4/88	7	1		100	N	
1	1/4/88	8	1		100	N	
1	1/4/88	9	1		100	N	
1	1/4/88	10	1		100	N	
1	1/4/88	11	1		99	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/4/88	12	1		99	N	
1	1/4/88	13	1		99	N	
1	1/4/88	14	1		99	N	
1	1/4/88	15	1		99	N	
1	1/4/88	16	1		98	N	
1	4/1/88	1	1		99	Y	
1	4/1/88	2	1		97	N	
1	4/1/88	3	1		97	N	
1	4/1/88	4	1		96	N	
1	4/1/88	5	1		96	N	
1	4/1/88	6	1		96	N	
1	4/1/88	7	1		96	N	
1	4/1/88	8	1		96	N	
1	4/1/88	9	1		96	N	
1	4/1/88	10	1		96	N	
1	4/1/88	11	1		96	N	
1	4/1/88	12	1		96	N	
1	4/1/88	13	1		96	N	
1	4/1/88	14	1		96	N	
1	4/1/88	15	1		96	N	
1	4/1/88	16	1		95	N	
1	4/1/88	17	1		95	N	
1	4/1/88	18	1		95	N	
1	5/6/88	1	1		99	Y	
1	5/6/88	2	1		97	N	
1	5/6/88	3	1		97	N	
1	5/6/88	4	1		97	N	
1	5/6/88	5	1		96	N	
1	5/6/88	6	1		96	N	
1	5/6/88	7	1		96	N	
1	5/6/88	8	1		96	N	
1	5/6/88	9	1		96	N	
1	5/6/88	10	1		96	N	
1	5/6/88	11	1		96	N	
1	5/6/88	12	1		96	N	
1	5/6/88	13	1		96	N	
1	5/6/88	14	1		96	N	
1	5/6/88	15	1		96	N	
1	5/6/88	16	1		96	N	
1	5/6/88	17	1		96	N	
1	5/6/88	18	1		96	N	
1	6/17/88	1	1		101	Y	
1	6/17/88	2	1		98	N	
1	6/17/88	3	1		98	N	
1	6/17/88	4	1		98	N	
1	6/17/88	5	1		98	N	
1	6/17/88	6	1		98	N	
1	6/17/88	7	1		98	N	
1	6/17/88	8	1		97	N	
1	6/17/88	9	1		97	N	
1	6/17/88	10	1		97	N	
1	6/17/88	11	1		97	N	
1	6/17/88	12	1		97	N	
1	6/17/88	13	1		97	N	
1	6/17/88	14	1		97	N	
1	6/17/88	15	1		97	N	
1	6/17/88	16	1		97	N	
1	6/17/88	17	1		97	N	
1	6/17/88	18	1		97	N	
1	8/5/88	1	1		103	Y	
1	8/5/88	2	1		101	N	
1	8/5/88	3	1		100	N	
1	8/5/88	4	1		100	N	
1	8/5/88	5	1		100	N	
1	8/5/88	6	1		100	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	8/5/88	7	1		100	N	
1	8/5/88	8	1		100	N	
1	8/5/88	9	1		100	N	
1	8/5/88	10	1		100	N	
1	8/5/88	11	1		99	N	
1	8/5/88	12	1		99	N	
1	8/5/88	13	1		99	N	
1	8/5/88	14	1		99	N	
1	8/5/88	15	1		99	N	
1	8/5/88	16	1		99	N	
1	8/5/88	17	1		98	N	
1	8/5/88	18	1		98	N	
1	10/28/88	1	1		105	Y	
1	10/28/88	2	1		103	N	
1	10/28/88	3	1		102	N	
1	10/28/88	4	1		102	N	
1	10/28/88	5	1		102	N	
1	10/28/88	6	1		102	N	
1	10/28/88	7	1		102	N	
1	10/28/88	8	1		101	N	
1	10/28/88	9	1		102	N	
1	10/28/88	10	1		101	N	
1	10/28/88	11	1		101	N	
1	10/28/88	12	1		101	N	
1	10/28/88	13	1		101	N	
1	10/28/88	14	1		101	N	
1	10/28/88	15	1		101	N	
1	10/28/88	16	1		101	N	
1	10/28/88	17	1		101	N	
1	10/28/88	18	1		101	N	
1	1/1/90	1	1		102	Y	
1	1/1/90	2	1		100	N	
1	1/1/90	3	1		100	N	
1	1/1/90	4	1		100	N	
1	1/1/90	5	1		100	N	
1	1/1/90	6	1		99	N	
1	1/1/90	7	1		100	N	
1	1/1/90	8	1		100	N	
1	1/1/90	9	1		100	N	
1	1/1/90	10	1		100	N	
1	1/1/90	11	1		99	N	
1	1/1/90	12	1		99	N	
1	1/1/90	13	1		99	N	
1	1/1/90	14	1		99	N	
1	1/1/90	15	1		99	N	
1	1/1/90	16	1		99	N	
1	1/1/90	17	1		99	N	
1	1/1/90	18	1		99	N	
1	11/20/91	1	1		99.6	Y	J-890523512-47
1	11/20/91	2	1		97.4	N	
1	11/20/91	3	1		97.4	N	
1	11/20/91	4	1		97.3	N	
1	11/20/91	5	1		97.1	N	
1	11/20/91	6	1		96.8	N	
1	11/20/91	7	1		97.2	N	
1	11/20/91	8	1		97	N	
1	11/20/91	9	1		97.1	N	
1	11/20/91	10	1		97.1	N	
1	11/20/91	11	1		96.7	N	
1	11/20/91	12	1		96.5	N	
1	11/20/91	13	1		96.8	N	
1	11/20/91	14	1		96.8	N	
1	11/20/91	15	1		96.6	N	
1	11/20/91	16	1		96.5	N	
1	11/20/91	17	1		96.4	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	11/20/91	18	1		96.2	N	
1	1/1/92	1	1		98.4	Y	J-910126143-29
1	1/1/92	2	1		96.1	N	
1	1/1/92	3	1		96.2	N	
1	1/1/92	4	1		96	N	
1	1/1/92	5	1		95.8	N	
1	1/1/92	6	1		95.7	N	
1	1/1/92	7	1		95.9	N	
1	1/1/92	8	1		95.9	N	
1	1/1/92	9	1		95.9	N	
1	1/1/92	10	1		95.9	N	
1	1/1/92	11	1		95.7	N	
1	1/1/92	12	1		95.4	N	
1	1/1/92	13	1		95.7	N	
1	1/1/92	14	1		95.7	N	
1	1/1/92	15	1		95.4	N	
1	1/1/92	16	1		95.4	N	
1	1/1/92	17	1		95.3	N	
1	1/1/92	18	1		95.1	N	
1	7/3/92	1	1		98.2	Y	J 910126143-29
1	7/3/92	2	1		95.9	N	
1	7/3/92	3	1		95.7	N	
1	7/3/92	4	1		95.5	N	
1	7/3/92	5	1		95.3	N	
1	7/3/92	6	1		95.2	N	
1	7/3/92	7	1		95.3	N	
1	7/3/92	8	1		95.2	N	
1	7/3/92	9	1		95.1	N	
1	7/3/92	10	1		95.1	N	
1	7/3/92	11	1		95	N	
1	7/3/92	12	1		95	N	
1	7/3/92	13	1		95	N	
1	7/3/92	14	1		95	N	
1	7/3/92	15	1		94.9	N	
1	7/3/92	16	1		94.8	N	
1	10/15/92	1	1		101.8	Y	J 89052
1	10/15/92	2	1		99.5	N	
1	10/15/92	3	1		99.3	N	
1	10/15/92	4	1		99.1	N	
1	10/15/92	5	1		99	N	
1	10/15/92	6	1		98.9	N	
1	10/15/92	7	1		99	N	
1	10/15/92	8	1		98.9	N	
1	10/15/92	9	1		98.9	N	
1	10/15/92	10	1		98.8	N	
1	10/15/92	11	1		98.8	N	
1	10/15/92	12	1		98.7	N	
1	10/15/92	13	1		98.7	N	
1	10/15/92	14	1		98.6	N	
1	10/15/92	15	1		98.6	N	
1	10/15/92	16	1		98.6	N	
1	1/2/93	1	1		96.7	Y	J 890523512-47
1	1/2/93	2	1		95.1	N	
1	1/2/93	3	1		95.2	N	
1	1/2/93	4	1		94.5	N	
1	1/2/93	5	1		94.7	N	
1	1/2/93	6	1		94.8	N	
1	1/2/93	7	1		95	N	
1	1/2/93	8	1		94.7	N	
1	1/2/93	9	1		94.9	N	
1	1/2/93	10	1		95	N	
1	1/2/93	11	1		94.6	N	
1	1/2/93	12	1		94.4	N	
1	1/2/93	13	1		94.7	N	
1	1/2/93	14	1		94.6	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

TANK 241-AX-104							
THERMOCOUPLE DATA							
TREE #	DATE	THERMO #	TREE SET #	TEMP C	TEMP F	Y = MAX TEMP	COMMENTS
1	1/2/93	15	1		94.5	N	
1	1/2/93	16	1		94.2	N	
1	1/2/93	17	1		94.1	N	
1	1/2/93	18	1		94	N	
1	6/30/93	1	1		95.5	Y	J 910126143-29
1	6/30/93	2	1		93.2	N	
1	6/30/93	3	1		92.8	N	
1	6/30/93	4	1		92.7	N	
1	6/30/93	5	1		92.5	N	
1	6/30/93	6	1		92.3	N	
1	6/30/93	7	1		92.5	N	
1	6/30/93	8	1		92.6	N	
1	6/30/93	9	1		92.4	N	
1	6/30/93	10	1		92.3	N	
1	6/30/93	11	1		92.3	N	
1	6/30/93	12	1		92.2	N	
1	6/30/93	13	1		92.3	N	
1	6/30/93	14	1		92.2	N	
1	6/30/93	15	1		92.2	N	
1	6/30/93	16	1		92.2	N	
1	6/30/93	17	1		92.2	N	
1	6/30/93	18	1		92.1	N	
1	7/2/93	1	1		97.8	Y	TI-042
1	7/2/93	2	1		95.4	N	
1	7/2/93	3	1		95	N	
1	7/2/93	4	1		94.9	N	
1	7/2/93	5	1		94.8	N	
1	7/2/93	6	1		94.6	N	
1	7/2/93	7	1		94.7	N	
1	7/2/93	8	1		94.7	N	
1	7/2/93	9	1		94.6	N	
1	7/2/93	10	1		94.5	N	
1	7/2/93	11	1		94.5	N	
1	7/2/93	12	1		94.4	N	
1	7/2/93	13	1		94.4	N	
1	7/2/93	14	1		94.3	N	
1	7/2/93	15	1		94.3	N	
1	7/2/93	16	1		94.3	N	
1	7/2/93	17	1		94.3	N	
1	7/2/93	18	1		94.2	N	

Data obtained from WHC Surveillance Analysis Computer (SACS), June 2, 1993.

**241-AX-102
Surface Level Data**

Manual Tape

241-AX-103
Surface Level Data

**241-AX-104
Surface Level Data**

Manual Tape

Data obtained from WHC Surveillance Analysis Computer System (SACS), November 16, 1993.

E-4

F-1

241-AX FARM

241-AX-101 Drywell Activity
Well #11-01-10 Well Depth 73'
Scintillation Probe

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

WHC-SD-WM-ER-309, Rev. 0

**241-AX-102 Drywell Activity
Well #111-02-12 Well Depth 51'
Scintillation Probe**

—◇— Peak C/S — Depth ft.

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

241-AX-103 Drywell Activity
Well #11-03-02 Well Depth 100'
Scintillation Probe
1st Peak

WHC-SD-WM-ER-309, Rev. 0

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

241-AX-103 Drywell Activity
Well #11-03-02 Well Depth 100'
Scintillation Probe
2nd Peak

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

241-AX-103 Drywell Activity
Well #11-03-02 Well Depth 100'
Scintillation Probe
3rd Peak

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

241-AX-101 DRYWELL ACTIVITY						
WELL #11-01-10 WELL DEPTH 73'						
SCINTILLATION PROBE						
Date	Peak C/S	Depth ft.		Date	Peak C/S	Depth ft.
1/3/90	46	23		8/23/90	49	22
1/10/90	45	21		8/29/90	46	22
1/15/90	53	22		9/4/90	43	22
1/24/90	45	22		9/11/90	40	23
1/29/90	42	22		9/17/90	41	23
2/5/90	44	21		9/27/90	47	22
2/14/90	40	23		10/1/90	49	22
2/20/90	43	22		10/10/90	45	22
2/21/90	43	22		10/16/90	51	22
2/27/90	45	21		10/22/90	38	29
*3/5/90	52	20		10/29/90	45	32
3/6/90	50	22		11/6/90	38	22
3/13/90	50	22		11/13/90	43	23
*3/22/90	43	22		11/20/90	45	22
3/22/90	46	22		11/28/90	42	22
*3/28/90	39	39		12/5/90	41	21
*3/29/90	45	21		12/13/90	42	22
3/29/90	44	22		12/17/90	41	22
4/3/90	43	21		12/24/90	45	22
*4/10/90	46	23		1/3/91	51	22
4/11/90	44	22		1/10/91	47	22
4/18/90	39	22		1/16/91	48	23
4/24/90	41	23		1/23/91	46	22
5/3/90	43	22		1/28/91	53	22
*5/7/90	44	22		2/4/91	54	22
5/7/90	51	22		2/12/91	49	22
5/14/90	44	22		2/20/91	38	23
5/22/90	47	23		2/28/91	45	23
5/31/90	44	22		3/5/91	70	49
6/1/90	50	22		3/7/91	49	22
6/5/90	52	22		3/13/91	51	22
6/13/90	57	22		3/20/91	43	22
6/18/90	42	22		3/25/91	46	23
6/25/90	40	34		4/1/91	48	22
*7/2/90	46	22		4/9/91	45	22
*7/3/91	37	22		4/16/91	47	23
7/3/90	45	22		4/23/91	42	22
7/9/90	43	22		4/30/91	41	22
7/18/90	43	22		5/6/91	43	29
7/23/90	42	22		5/13/91	47	22
7/30/90	39	22		5/20/91	42	22
8/7/90	48	22		5/28/91	44	22
*8/14/90	48	22		6/4/91	39	22
8/15/90	50	22		6/12/91	37	21
*8/22/90	54	22		6/18/91	50	22

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

*Suspect Data

WELL #11-01-10 WELL DEPTH 73'						
SCINTILLATION PROBE						
Date	Peak C/S	Depth ft.		Date	Peak C/S	Depth ft.
6/25/91	44	22		6/8/92	43	22
7/1/91	44	22		6/16/92	45	22
7/10/91	46	22		6/23/92	43	21
7/15/91	40	22		6/29/92	40	22
7/22/91	42	21		7/7/90	43	22
7/30/91	54	22		7/13/92	43	22
8/5/91	42	22		7/21/92	43	23
8/14/91	47	22		7/27/92	43	23
8/21/91	46	22		8/3/92	49	22
8/27/91	49	22		8/11/92	43	23
9/3/91	45	23		8/17/92	37	22
9/9/91	46	21		8/25/92	40	23
9/16/91	45	22		8/31/92	48	22
9/24/91	51	22		9/8/92	42	23
10/2/91	45	21		9/14/92	35	22
10/7/91	54	22		9/21/92	40	22
10/15/91	50	22		9/28/92	45	22
10/22/91	47	23		10/8/92	46	22
10/29/91	55	22		*10/13/92	125	25
11/4/91	48	22		10/15/92	50	22
11/12/91	44	22		10/20/92	41	22
11/18/91	55	21		10/26/92	43	22
11/25/91	47	22		11/4/92	45	21
12/3/91	45	23		11/9/92	46	22
12/10/91	42	21		11/17/92	45	21
12/17/91	49	22		11/23/92	47	22
12/23/91	45	22		12/1/92	46	22
12/30/91	49	22		12/7/92	44	22
1/7/92	41	21		12/14/92	48	22
1/13/92	40	22		12/21/92	54	22
1/20/92	39	23		12/28/92	44	22
1/27/92	40	22		1/5/93	41	21
2/20/92	51	21		1/11/93	39	29
2/26/92	44	22		1/20/93	43	23
3/4/92	46	21		1/28/93	44	21
3/9/92	50	22		2/1/93	51	23
3/16/92	42	22		2/8/93	48	22
3/25/92	45	21		2/16/93	42	22
3/30/92	46	22		2/22/93	51	22
4/7/92	59	22		3/4/93	40	29
4/13/92	44	23		3/8/93	49	22
4/20/92	39	54		3/16/93	31	36
4/27/92	48	22		*3/18/93	86	54
5/5/92	42	29		*3/18/93	52	22
5/11/92	48	21		3/18/93	52	22
5/18/92	41	22		3/23/93	36	23

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

*Suspect Data

[illegible]

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

• Suspect Data

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241-AX-102 DRYWELL ACTIVITY						
WELL #11-02-12 WELL DEPTH 51'						
SCINTILLATION PROBE						
Date	Peak C/S	Depth ft.		Date	Peak C/S	Depth ft.
1/15/90	51	21		1/11/93	56	21
2/14/90	53	21		2/8/93	45	21
3/13/90	68	21		3/8/93	42	21
*4/10/90	51	21		4/6/93	52	21
4/11/90	46	21		4/19/93	54	21
5/7/90	68	21		5/3/93	42	28
6/5/90	52	21		6/1/93	49	21
*7/2/90	44	21		6/28/93	55	38
7/3/90	52	21		6/30/93	41	21
7/30/90	54	21		7/26/93	43	22
8/29/90	66	21		8/23/93	41	21
9/27/90	52	21		9/20/93	44	21
10/22/90	50	21		10/18/93	41	21
11/20/90	46	21		11/15/93	44	21
12/17/90	46	21				
1/16/91	57	21				
2/12/91	49	21				
2/14/91	49	22				
3/13/91	58	21				
4/9/91	59	21				
5/6/91	57	21				
6/4/91	45	21				
7/1/91	51	21				
7/30/91	43	21				
8/27/91	55	21				
9/24/91	45	21				
10/22/91	64	21				
11/18/91	53	21				
12/17/91	48	21				
*1/13/92	76	35				
1/13/92	51	21				
*2/13/92	397	48				
2/14/92	60	21				
3/9/92	58	21				
4/7/92	42	21				
5/5/92	46	22				
6/1/92	50	21				
*6/29/92	44	21				
6/29/92	44	25				
7/27/92	53	21				
8/25/92	51	21				
9/21/92	44	21				
10/20/92	59	21				
11/17/92	49	21				
12/14/92	63	21				

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

*Suspect Data

[illegible]

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

[illegible]

Data obtained from WHO Surveillance Data Acquisition (SDA), November 30, 1993.

[illegible]

Data obtained from WHC Surveillance Data Acquisition (SDA), November 30, 1993.

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241-AX-101		
NO.	DIA.	DESCRIPTION AND COMMENTS
1A	34"	STEAM COIL
1B	12"	(SLUICER)
3A	16"	OBSRV PORT
4	20"	U.G. VENT LINE - BG
5A	12"	(PUMP MOUNT)
5B	12"	(SALTWELL SCREEN)
6	4"	FLANGE, BM
7A	4"	WC - PROFILE TEMPERATURE
7B	4"	WC - PROFILE TEMPERATURE
7C	4"	WC - PROFILE TEMPERATURE
7D	4"	WC - PROFILE TEMPERATURE
8A	6"	PLUG
8B	6"	PLUG
8C	6"	FIC
8D	6"	PLUG
8E	6"	PLUG
8F	6"	FLANGE, BM
8G	6"	PLUG
9A	6"	LOW
9B	6"	TEMPERATURE PROBE, TO CASS
9C	6"	FLANGE
9D	6"	SMP
9E	6"	BREATHER FILTER
9F	6"	FLANGE
9G	6"	SMP
10	4"	(PIT DRAIN)
11A	7.75"	STRUCTURAL TEMPERATURE - CONCRETE PLUG
11B	7.75"	STRUCTURAL TEMPERATURE - BG
11C	7.75"	STRUCTURAL TEMPERATURE - BG
12	4"	PIT DRAIN - BG
13A	4"	WC
13B	4"	WC
13C	4"	WC
14	45"	STEAM COIL
15	4"	BG
23	12"	(SLUICING NOZZLE)
24	12"	(SLUICING NOZZLE)

241-AX-101

3,790,000 Liters
[1,000,000 Gallons]

TC=Thermocouple
Ref: WHC-SD-RE-TI-053, Rev. 8
WHC-SD-WM-TI-553, Rev. 0
H-2-73376, Rev. 4

TANK RISER LOCATION

Ref: H-2-44562, Rev. 4
Ref: H-2-69148, Rev. 1

241-AX-102		
NO.	DIA.	DESCRIPTION AND COMMENTS
1A	34"	(SLUICER) WC
1B	34"	(PUMP) WC
1C	12"	
3A	16"	OBSRV PORT, BM
5A	12"	(SALTWELL SCREEN) WC
5B	12"	(PUMP ACCESS) WC
6	4"	BG
7A	4"	FLANGE
7B	4"	TEMPERATURE
7C	4"	TEMPERATURE, BM
7D	4"	TEMPERATURE
8A	6"	PLUG
8B	6"	PLUG
8C	6"	PLUG - FLANGE WITH BALE
8D	6"	PLUG - FLANGE WITH BALE
8E	6"	PLUG
8F	6"	PLUG - FLANGE WITH BALE
8G	6"	PLUG - FLANGE WITH BALE
9A	6"	SMP
9B	6"	FIC
9C	6"	TEMPERATURE
9D	6"	LLR
9E	6"	BREATHING FILTER
9F	6"	FLANGE
9G	6"	SMP
10	4"	(PIT DRAIN) WC
11A	7.75"	STRUCTURAL TEMPERATURE - BG
11B	7.75"	STRUCTURAL TEMPERATURE - BG
11C	7.75"	STRUCTURAL TEMPERATURE - BG
12	4"	PIT DRAIN - BG
16A	4"	WC
16B	4"	TEMPERATURE
16C	4"	WC
14	42"	STEAM COIL
15	4"	BG
4	20"	VAPOR OUTLET - BG

241-AX-102

3,790,000 Liters
[1,000,000 Gallons]

TC=Thermocouple

Ref: WHC-SD-RE-TI-053, Rev. 8
WHC-SD-WM-TI-553, Rev. 0
H-2-73378, Rev. 2

TANK RISER LOCATION

Ref: H-2-44562, Rev. 4

Ref: H-2-69148, Rev. 1

241-AX-103		
NO.	DIA.	DESCRIPTION AND COMMENTS
1A	34"	(SLUICER)
1B	34"	(SLUICER)
3A	16"	FLANGE WITH LEAD/B-222 OBSRV PORT
4	20"	U.G. VENT LINE - BG
5A	12"	(PUMP MOUNT)
5B	12"	(PUMP MOUNT)
6	4"	TANK PRESSURE, BM
7A	4"	TEMPERATURE
7B	4"	TEMPERATURE
7C	4"	TEMPERATURE
7D	4"	TEMPERATURE
8A	6"	DRYWELL
8B	6"	PLUG
8C	6"	DRYWELL
8D	6"	FLANGE
8E	6"	FLANGE
8F	6"	FLANGE, BM
8G	6"	FLANGE
9A	6"	TEMPERATURE
9B	6"	TEMPERATURE
9C	6"	FIC
9D	6"	SMP
9E	6"	BREATHING FILTER
9F	6"	FLANGE
9G	6"	FLANGE
10	4"	(PIT DRAIN)
11A	7.75"	STRUCTURAL TEMPERATURE - BG
11B	7.75"	STRUCTURAL TEMPERATURE - BG
11C	7.75"	STRUCTURAL TEMPERATURE - BG
12	4"	DRAIN - BG
13A	4"	WC - TEMPERATURE
13B	4"	WC
13C	4"	TEMPERATURE - WC
14	42"	(SLUICER)
15	4"	BG

241-AX-103

3,790,000 Liters
[1,000,000 Gallons]

TC=Thermocouple
Ref: WHC-SD-RE-TI-053, Rev. 8
WHC-SD-WM-TI-553, Rev. 0
H-2-73380, Rev. 4

TANK RISER LOCATION

Ref: H-2-44562, Rev. 4
Ref: H-2-69148, Rev. 1

241-AX-104		
NO.	DIA.	DESCRIPTION AND COMMENTS
1A	34"	(SLUICER) WC
1B	34"	(SLUICER) WC
3A	14"	OBSV PORT, BM
4	20"	U.G. VENTLINE - BG
5A	12"	(PUMP MOUNT) WC
5B	12"	(PUMP MOUNT) WC
6	4"	BG
7A	4"	TEMPERATURE
7B	4"	TEMPERATURE
7C	4"	SMP, BM
7D	4"	SMP
8A	6"	DRYWELL
8B	6"	PLUG - FLANGE WITH BALE
8C	6"	DRYWELL
8D	6"	BG
8E	6"	DRYWELL
8F	6"	PLUG
8G	6"	PLUG - FLANGE WITH BALE
9A	6"	LIQUID LEVEL REEL
9B	6"	FIC
9C	6"	TEMPERATURE
9D	6"	BG
9E	6"	BREATHER FILTER
9F	6"	BG
9G	6"	SMP
10	4"	(PIT DRAIN) WC
11A	7.75"	STRUCTURAL TEMPERATURE - BG
11B	7.75"	STRUCTURAL TEMPERATURE - BG
11C	7.75"	STRUCTURAL TEMPERATURE - BG
12	4"	BRAIN - BG
13A	4"	WC
13B	4"	WC
13C	4"	WC
14	42"	(SLUICER) WC
15	4"	BG
16A	4"	BG
16B	4"	FLANGE
16C	4"	FLANGE

241-AX-104

3,790,000 Liters
[1,000,000 Gallons]

TANK RISER LOCATION

Ref: H-2-44562, Rev. 4
Ref: H-2-69148, Rev. 1

Waste Tank 101- AX		
A and AX Tank Sludge Heat Generation Rates		
SUMMARY OF SLUDGE ANALYSIS		
February 12, 1976		
Date Sampled: July 1975		
Component	Lab Value	Lab Unit
Radiological Analysis		
90 Sr Content	28.2	Ci/liter
137 Cs Content	0.45	Ci/liter

Waste Tank 101-AX			
COMPOSITION OF TANK 101-AX WASTE			
October 7, 1980			
SAMPLE # 5169			
	SUPERNATANT		SOLIDS
COMPONENT	MOLARITY	WEIGHT %	WEIGHT %
Physical Data			
SpG	1.395		
H ₂ O		42.46	
Chemical Analysis			
Al	1.87	11	10
OH	3.18	9.1	0
NO ₂	2.91	14.4	0
NO ₃	1.85	11.3	34
CO ₃	0.115	0.9	43
PO ₄	0.073	0.9	2
TOC	7.46 g/l	1.6	8

Waste Tank 101-AX						
Composition of 101-AX Waste						
November 11, 1980						
	Two feet below surface			Four feet below surface		
	Filtrate		Solids	Filtrate		SOLIDS
COMPONENT	MOLARITY	WEIGHT %	WEIGHT %	MOLARITY	WEIGHT %	WEIGHT %
Physical Data						
SpG	1.36			1.391		
H2O	44.66			43.4		
Chemical Analysis						
NaAlO2	2.23	13.41		2.06	12.13	
NaOH	3.69	10.84		3.67	10.55	
NaNO2	5.14	26.1	13	2.59	12.85	23
NaNO3	1.66	10.36	82	1.69	10.35	66
Na2CO3	0.07	0.53		0.108	0.82	7
Na3PO4	0.07	0.82		0.07	0.82	
TOC (g/L)	15	3.32		15	3.23	
Radiological Analysis						
137 Cs	0.660 Ci/L			0.656 Ci/L		
90 Sr	4.31E+ 03 uCi/L			4.45E+ 03 uCi/L		

Waste Tank-AX-102		
ANALYSIS OF 102-AX-SLUDGE "AS RECEIVED"		
September 25, 1974		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Vis-OTR: very soft, reddish brown; 9.31 Ci/l		
Wet Density	1.57	
Dry Density	0.9025	
%H ₂ O	42.5	
Chemical Analysis		
Si	1.26	M/L
Fe	2.54	M/L
Mg	0.044	M/L
Mn	0.217	M/L
Ca	0.199	M/L
Ba	0.011	M/L
Radiological Analysis		
Pu	6.71E-02	g/L
Sr 89+ 90	9.31E+ 06	uCi/L
Cs-137	4.78E+ 02	uCi/L
Co-60	1.31E+ 04	uCi/L
Sb-125	1.51E+ 05	uCi/L
Ce-144 Pr-144	2.38E+ 07	uCi/L
Eu-154	3.51E+ 05	uCi/L

Waste Tank 102-AX							
Analysis of Tank 102-AX Sludge							
July 20, 1977							
COMPONENT	LAB VALUE SAMPLE #1	LAB VALUE SAMPLE #2	LAB VALUE SAMPLE #3039	LAB VALUE SAMPLE #3040	LAB VALUE SAMPLE #4095	LAB VALUE SAMPLE #5403	Lab Unit
Radiological Analysis							
Pu	7.00E-02	7.20E-02	6.00E-02	1.90E-01	5.50E-02	7.90E-02	g/l
Sr 89 + 90	6.50E+ 06	1.50E+ 07	1.40E+ 07	2.20E+ 07	2.70E+ 07	1.50E+ 07	uCi/l
Cs137	1.60E+ 06	3.30E+ 05	5.50E+ 03	4.90E+ 05	4.80E+ 05	1.00E+ 06	uCi/l
Co 60	1.40E+ 05	nf	nf	nf	nf	nf	uCi/l
Sb125	9.30E+ 05	6.70E+ 05	4.80E+ 05	6.80E+ 05	3.60E+ 05	7.30E+ 07	uCi/l
Ce 144	1.30E+ 06	1.80E+ 05	9.00E+ 05	2.10E+ 06	nf	2.30E+ 06	uCi/l
Eu 155	5.40E+ 05	8.90E+ 05	4.60E+ 05	8.80E+ 05	nf	nf	uCi/l
Eu 154	nf	nf	nf	nf	nf	3.90E-01	uCi/l
U	na	1.70E-06	3.00E-04	8.10E-04	1.30E-02	1.00E-02	#/gal
Si	na	na	na	na	na	0.86M	
nf - not found							
na - not analyzed							

Waste Tank 102-AX					
ANALYSES OF FEED AND PRODUCT SLURRY - TANK 102-AX					
January 23, 1980					
Component	Feed Liquor		Product Liquor		Product Solid
	Molarity	Wt Percent	Molarity	Wt Percent	Wt Percent
Physical Data					
Water	--	84.4	--	53.62	-0-
SpG (g/ml)	1.113	--	1.404	--	-0-
Chemical Analysis					
NaAlO ₂	0.0371	0.27	0.215	1.26	-0-
NaOH	0.572	2.06	< 0.5*	< 1.42*	> 31.4*
NaNO ₂	0.443	2.75	1.98	9.73	3.5
NaNO ₃	0.865	6.61	4.12	24.94	11.2
Na ₂ CO ₃	0.490	4.67	0.95	7.17	40.9
Na ₃ PO ₄	0.100	1.47	0.0488	0.57	3.7
Fe ₂ O ₃	0.0060	0.09	0.0308	0.35	2.4
TOC (g/l)	16.1	1.45	68.5	4.88	-0-
Total	--	103.8	--	103.94	93.1
Comparison of feed and product liquor analyses, especially aluminum, show a concentration factor of about five. This is consistent with the 77 percent WVR. *Since it is unlikely that NaOH precipitated through concentration, the product liquor hydroxide analysis is undoubtedly low, while the product solid NaOH percentage is high.					

Waste Tank 102-AX				
COMPOSITION OF TANK 102-AX-WASTE LIQUOR SAMPLES				
February 22, 1980				
SAMPLE #: 7700			Sample #7701	
Component	Molarity	Wt. Percent	Molarity	Wt. Percent
Physical Data				
H2O		87.62		87.25
Sp. G. (g/ml)	1.088		1.071	
Chemical Analysis				
NaAlO2	0.070	0.53	0.147	1.13
NaOH	0.329	1.21	0.172	0.64
NaNO3	0.725	5.66	0.717	5.69
NaNO2	0.267	1.69	0.268	1.73
Na3PO4	0.0142	0.22	0.0138	0.21
Na2SO4	0.187	2.44	0.164	2.17
NaF	0.0074	0.03	0.0074	0.03
Na2CO3	0.490	4.77	0.52	5.15
TOC (g/l)	-	-	9.75	0.91
Total		104.17		104.91

Waste Tank 102-AX		
COMPOSITION OF 241-AX-102		
November 14, 1988		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Vis-OTR: Dark, coffee-brown liquid w/no indication of solids present		
pH	11.3	
Chemical Analysis		
NO3	3.7	M
NO2	1.4	M
CO3	0.98	M
PO4	< .056	M
NH4	0.028	M
Ag	< 0.004	M
Al	0.006	M
B	0.002	M
Ba	< 0.0001	M
Bi	< 0.0004	M
Ca	0.014	M
Ce	0.0009	M
Cd	< 0.0004	M
Co	< 0.0006	M
Cr	0.004	M
Cu	0.0006	M
Fe	0.033	M
K	0.002	M
La	0.0004	M
Li	< 0.002	M
Mg	0.0005	M
Mn	0.011	M
Mo	0.0004	M
Na	7.32	M
Nd	0.001	M
Ni	0.009	M
Pb	0.002	M
Pd	0.0006	M
P	0.023	M
Si	0.0009	M
Sn	< 0.001	M
Sr	< 0.0003	M
Ta	< 0.0003	M
Ti	0.00007	M
Zn	0.0013	M
Zr	0.0016	M
TOC	36.8	g/l
Radiological Analysis		
Am	1000	uCi/l
Pu	97	uCi/l
Cs 137	3.5E+ 05	uCi/l
Co 60	7.1E+ 02	uCi/l
Eu 154	3.5E+ 03	uCi/l
Eu 155	4.7E+ 03	uCi/l
Sr 90	1.7E+ 05	uCi/l

Waste Tank 103-AX			
ANALYSIS OF TANK SUPERNATANT LIQUID			
October 14, 1974			
COMPONENT	LAB VALUE	LAB UNIT	%
Physical Data			
Vis-OTR: High silicon content causes the PAS to gel after standing five to seven days.			
H ₂ O	81.2%		
Density	1.157		
Chemical Analysis			
NaAlO ₂	0.022	M	0.2%
NaNO ₂	1.36	M	8.1%
NaNO ₃	0.14	M	1.0%
NaOH	0.77	M	2.7%
Na ₂ SO ₄	0.19	M	2.4%
Na ₂ CO ₃	0.40	M	3.6%
Na ₃ PO ₄	0.013	M	0.2%
Si	2.78E-04	M	< 0.1%
Radiological Analysis			
Sr-89,90	4.66E+ 03	uCi/L	
Cs-137	2.16E+ 06	uCi/L	
Cs-134	3.58E+ 04	uCi/L	

Waste Tank 103-AX		
ANALYSIS OF SLUDGE "AS RECEIVED"		
November 12, 1974		
Sample Received: September 19, 1974		
COMPONENT	LAB VALUE	LAB UNIT
Physical Analysis		
Vis-OTR; The 103-AX sludge was dark brown in color and very soft.		
Chemical Analysis		
Si	0.283	moles/L
Fe	1.94	moles/L
Mn	0.298	moles/L
Mg	0.056	moles/L
Ca	0.240	moles/L
Ba	0.027	moles/L
Al	1.05	moles/L
Sr	0.034	moles/L
Radiological Analysis		
Pu	3.58E-02	g/L
Sr-89,90	2.24E+ 07	uCi/L
Sb-125	4.88E+ 05	uCi/L
Cs-134	7.72E+ 04	uCi/L
Cs-137	3.11E+ 06	uCi/L

Waste Tank 103-AX		
FEED AND PRODUCT COMPOSITIONS		
March 14, 1979		
Sample #7595		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Visible: Samples were clear, yellow liquids		
Chemical Analysis		
AlO2 (-)	0.621	<u>M</u>
OH (-)	0.856	<u>M</u>
NO2 (-)	1.04	<u>M</u>
NO3 (-)	1.98	<u>M</u>
CO3 (2-)	0.19	<u>M</u>
TOC	4.3	g/L

Waste Tank 103-AX					
TANK 103-AX ANALYSIS					
August 6, 1979					
COMPONENT	SAMPLE # S-1423	SAMPLE # S-1439	SAMPLE # S-1440	Average	LAB UNIT
Physical Data					
SpG	1.444	1.449	1.437	1.443	
H2O	47.02	48.70	48.91	48.21	%
Chemical Analysis					
Al (3+)	1.52	1.52	1.52	1.52	<u>M</u>
OH (-)	2.31	2.25	2.50	2.35	<u>M</u>
NO2 (-)	2.62	1.43	1.46	1.445	<u>M</u>
NO3 (-)	2.95	3.35	3.59	3.47	<u>M</u>
CO3 (2-)	0.31	0.25	0.27	0.26	<u>M</u>
TOC	12.3	15.0	14.8	14.03	g/l

Waste Tank 103-AX			
August 6, 1979			
9.61 g SAMPLE IN 20 mL H ₂ O			
COMPONENT	LAB VALUE	LAB UNIT	WEIGHT% DRY SOLIDS
Physical Data			
% H ₂ O	29.38		
Chemical Analysis			
TOC ^a	5.70	g/L	
Al (3+)	0.44	M	
OH (-)	0.66	M	
NO ₂ (-)	1.01	M	32.9
NO ₃ (-)	1.06	M	59.8
CO ₃ (2-)	0.05	M	3.7
PO ₄ (3-)	0.0	M	3.5
^a Total Organic Carbon			

Waste Tank 103-AX		
ANALYTICAL RESULTS		
Date Received: April 27, 1980		
Sample #T-92		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
VIS-OTR	Clear yellow; 800 mrad; No solids	
SpG	1.274	
H2O	60.45	wt%
Chemical Analysis		
Al	1.05	M
OH	2.31	M
NO3	2.02	M
NO2	1.43	M
PO4	4.30E-02	M
CO3	0.49	M
Radiological Analysis		
Sr-89,90	1.41E+ 04	uCi/L
Pu	2.18E-05	g/L
GEA 137-Cs	4.28E+ 05	uCi/L

Waste Tank 103-AX		
ANALYTICAL RESULTS		
Date Received: April 27, 1980		
Sample #T-93		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
VIS-OTR	Light green; 300 mrad/hr; No solids	
SpG	1.376	
H2O	53.44	wt%
Chemical Analysis		
Al	1.11	M
OH	2.47	M
NO3	2.58	M
NO2	1.67	M
PO4	4.26E-02	M
CO3	1.10	M
Radiological Analysis		
Sr-89,90	1.62E+ 04	uCi/L
Pu	3.66E-05	g/L
GEA 137-Cs	5.00E+ 05	uCi/L

Waste Tank 103-AX	
COMPOSITION OF TANK 103-AX WASTE	
September 24, 1980	
Sample #4516	
COMPONENT	WEIGHT %
Physical Data	
Vis-OTR: Crystallized	
Chemical Analysis	
Al	9.19
OH	7.24
NO2	15.06
NO3	21.08
CO3	6.94
TOC	2.80
PO4	---
H2O	46.39
TOTAL	108.69

Waste Tank 104-AX		
Analysis Of Tank 104-AX Sludge Sample		
July 10, 1974		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Densities	Wet = 1.609	
	Dry = 0.898	
Chemical Analysis		
H ₂ O	44.2	%
Fe ₂ O ₃	33.2	%
SiO ₂	2.9	%
Al ₂ O ₃	6.0	%
CuO	0.6	%
MgO	0.1	%
Radiological Analysis		
Sr 89 + 90	93.5	Ci/l
Co 60	0.15	Ci/l
Ru 106, Rh 106	7.83	Ci/l
Sb 125	2.37	Ci/l
Cs 137	2.02	Ci/l
Eu 154	0.51	Ci/l
Pu 239	0.14	g/l

Waste Tank 104-AX		
Analysis Of Tank 104-AX Sludge Sample		
October 14, 1974		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Vis-OTR: Dark brown; soft solid interspersed w/small chunks of hard material.		
Densities	Damp, as received = 1.61	
	Dry Bulk = 0.90	
Chemical Analysis		
H2O	44.2	%
Si	1.3	%
Si	0.722	moles/l
Fe	23.2	%
Fe	6.69	moles/l
Radiological Analysis		
Pu 239	0.143	g/l
Sr 89 + 90	93.5	c/l
Co 60	0.15	c/l
Ru 106, Rh 106	7.83	c/l
Sb 125	2.37	c/l
Cs 137	2.02	c/l
Eu 154	0.51	c/l

WASTE TANK 104-AX		
A AND AX TANK SLUDGE HEAT GENERATION RATES		
SUMMARY OF SLUDGE ANALYSES		
February 12, 1976		
Date sampled: May 1974		
COMPONENT	LAB VALUE	LAB UNIT
Radiological Analysis		
90. Sr	93.5	Ci/liter
137 Cs	2.02	Ci/liter

Waste Tank 104-AX		
Composition of 241-AX-104		
August 3, 1977		
Date Received: 1974		
Date Fused August 3, 1977		
Sample JS #8-AL #D-129		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Sample Vol.	1	ml
Dil. Vol.	462	ml
Chemical Analysis		
Fe	6.24	M
Al	4.76	M
Ni	NR	
Mn	NR	
Mg	NR	
Cr	0.092	M
Hg	NR	
Ca	0.67	M
Cd	0.11	M
Si	0.15	M
Ba	NR	
Bi	NR	
Na	NR	
NO3	21.60	M
PO4	0.160	M
SO4	NR	
NO2	NR	
Radiological Analysis		
Sr	116	Ci/l
U	5.33E-03	g/l
Pu	0.23	g/l
At	3.17E+ 12	d/m/ml
Cs	2.10	Ci/L

Waste Tank 104-AX		
Composition of 241-AX-104		
September 29, 1977		
Date Received September 15, 1977		
Date Fused September 29, 1977		
Sample #148-JS #22 & 24-AL #2302		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Vis-OTR: Damp, dark, malleable sludge		
Damp Bulk Density (as received)	1.8	g/ml
Sample Vol.	0.75	ml
Dil. Vol.	340	ml
H ₂ O	41	%
Chemical Analysis		
Fe	4.67	M
Al	1.21	M
Ni	NR	
Mn	0.091	M
Mg	0.159	M
Cr	0.063	M
Hg	NR	
Ca	0.653	M
Cd	NR	
Si	1.80	M
Ba	0.022	M
Bi	NR	
Na	3.020	M
NO ₃	NR	
PO ₄	NR	
SO ₄	0.125	M
NO ₂	NR	
Radiological Analysis		
Sr	105	Ci/l
Pu	0.276	g/l
At	8.19E+ 09	d/m/ml
Cs 137	1.94	Ci/L
Eu 155	0.78	Ci/L
Eu 154	0.26	Ci/L
Sb 125	0.72	Ci/L
Rh 106	0.073	Ci/l
Co 60	0.110	Ci/l
Comments: This sludge sample (0.75 ml) was H ₂ O- washed prior to fusion and analysis.		

Waste Tank 104-AX		
Composition of 241-AX-104		
October 3, 1977		
Date Received: September 15, 1977		
Date Fused: October 3, 1977		
Sample #148-JS #25-AI #2385		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Vis-OTR: Dark, malleable sludge		
Sample Vol.	0.7	ml
Dil.Vol.	265	ml
Chemical Analysis		
Fe	5.95	M
Al	3.72	M
Ni	0.26	M
Mn	0.078	M
Mg	0.183	M
Cr	0.059	M
Hg	1.44	M
Ca	0.63	M
Cd	0.015	M
Si	3.17	M
Ba	0.020	M
Bi	NR	
Na	2.96	M
NO3	< 1.14	M
PO4	0.110	M
SO4	< 1.14	M
NO2	NR	
Chromatographic method checks:		
SO4	0.125	M
Radiological Analysis		
Sr	69.7	Ci/l
U	4.25E-03	g/l
Pu	0.150	g/l
At	4.89E+ 07	d/m/ml
Cs	1.60	Ci/L
Eu 155	0.68	Ci/L
Sb 125	0.53	Ci/L
Comments: Second Fusion-Observed ppt.		

Waste Tank 104-AX		
Composition of 241-AX-104		
October 14, 1977		
Date Received: September 15, 1977		
Date Washed: October 14, 1977		
Sample #148-JS #29-AL #2984		
COMPONENT	LAB VALUE	LAB UNIT
Physical Data		
Vis-OTR: Dark, malleable sludge		
Chemical Analysis		
Fe	8.10E-02	M
Al	< 2.08E-02	M
Ni	< 2.64E-03	M
Mn	< 2.46E-03	M
Mg	4.42E-02	M
Cr	2.21E-03	M
Hg	7.64E-03	M
Ca	3.17E-02	M
Cd	1.24E-03	M
Si	3.24E-01	M
Ba	< 4.28E-03	M
Bi	3.25E-03	M
Na	4.59	M
NO3	2.90E-01	M
PO4	1.02E-02	
SO4	2.90E-01	
Radiological Analysis		
Sr	3.37E+ 04	uCi/l
U	4.13E-03	g/l
Pu	5.56E-03	g/l
At	4.57E+ 03	uCi/l
Cs	5.59E+ 03	uCi/l
Sb 125	3.80E+ 04	uCi/l
Comments: 1.5 ml ppt. from fusion of JS25 would not dissolve in 1000 ml H2O @ pH = 8.3. (Na Borate) Vol. reduced to 145 ml; ppt removed on very fast paper. This analysis is of the dissolved species, i.e., supernate.		

TCRC-5

103-AX

WHC-SD-WM-ER-309, Rev. 0

CH

Date: February 12, 1976

To: R. E. Felt

From: S. S. Koegler, 942-2214

Subject: A AND AX TANK SLUDGE HEAT GENERATION RATES

Please find attached a summary of the ^{90}Sr and ^{137}Cs analyses which have been made on A and AX Farm (and 106-C) sludges. A heat generation rate from these radionuclides is also tabulated for each tank. Note that the 103-A strontium analysis varied 25 percent between the deep and shallow samples. Also, the three duplicate sludge samples taken from Tank 105-A varied by as much as a factor of 3. For these reasons and the fact that sluicing may have water-leached a portion of the cesium and strontium, the above numbers correspond only approximately to the heat generation rates of the residual sludges.

SSK:vmk

Att.

cc w/att.: DG Harlow -
HP Shaw
RC Roal
RJ Thompson
RE Van der Cook

SUMMARY OF SLUDGE ANALYSIS

<u>TANK</u>	<u>DATE SAMPLED</u>	<u>⁹⁰Sr CONTENT (Ci/liter)</u>	<u>¹³⁷Cs CONTENT (Ci/liter)</u>	<u>HEAT RATE (Btu/Hr - gal)</u>
101-AX	July 1975	28.2	0.45	2.42
102-AX	Aug 1974	9.3	1.26	0.87
103-AX	Sept 1974	22.4	3.11	2.09
104-AX	May 1974	93.5	2.02	8.05
102-A	Sept 1972	49.8	1.71	4.33
103-A (Soft-Top)	Nov 1972	25.9	0.97	2.26
(Hard-Bottom)	Nov 1972	32.3	5.78	3.10
104-A*	July 1974	43.9	1.15	3.79
105-A**	Jan 1972	44.8	2.24	3.94
106-C	Oct 1974	18.8	0.36	1.55

* Material from 101-A, 103-A, and 106-A sluicing

** Average of three duplicate samples

Internal Letter

WHC-SD-WM-ER-309, Rev. 0

Date: . October 7, 1980

TO: (Name, Organization, Internal Address)

FROM: (Name, Organization, Internal Address, Phone)

D. E. Bowers and D. A. Reynolds
Plant Engineering
2750E/A100 and 2750E/A111/200 East

M. T. Jansky
Separations Process Development Unit
222-S/MO-037/200 West /
3-1571

Subject: . Composition of Waste from Tank 101AX, FINAL PRODUCT

A sample of Tank 101AX waste was received by the Separations Process Development Unit (SPDU) from Analytical Laboratories (AL). The sample, #5619, was a surface sample containing 50 percent settled solids. The waste was easily transferred to centrifuge cones after shaking the sample bottle. The solids were found to be primarily carbonate and nitrate solids. Temperature studies showed the solids redissolve at current tank temperature (67°C). Laboratory details are discussed below.

Two aliquots of Tank 101AX sample #5169 were transferred to centrifuge cones from the sample bottle. The waste was easily poured into the cones after shaking the sample bottle to mix the waste. The aliquots were centrifuged, resulting in 62 volume percent centrifuged solids, and 60 weight percent centrifuged solids (containing interstitial liquor). The solids contained two phases; an extremely thin layer of dark green "goo" on top of a more conglomerated mass of solids. The supernatant was decanted, and the solids and supernatant analyzed by AL. The results are shown in Table I.

A separate aliquot was warmed to 60°C. After 15 minutes, the solids had completely dissolved forming a creamy slurry. The viscosity of the slurry was 29 centipoise. The slurry was allowed to cool, and the following observations were noted: (a) at 50°C the solids were still pretty much dissolved and the viscosity was 34 centipoise, (b) at 40°C the aliquot became slightly thicker, with a viscosity of 91, (c) at 35°C, crystals were forming, with erratic viscometer readings (186 centipoise), (d) and at 30°C, the material had recrystallized to its original state with a viscosity greater than 380 centipoise. These results are tabulated in Table II.

The results show that the waste will redissolve if heated to 60°C. This is important because the current tank temperature is approximately 67°C.

Please call if you have any questions regarding this work.

M. T. Jansky

M. T. Jansky
Advanced Chemist

MTJ/naj

Attachments

Distribution:

J. S. Buckingham
H. J. Eding
L. A. Gale
D. L. Herting

T. A. Lane
T. B. Veneziano
D. G. Wilkins
File Code: W612

Process Aids: (8)
Letterbook
M. J. Schliebe

APPENDIX D

TABLE I

WHC-SD-WM-ER-309, Rev. 0

Composition of Tank 101AX Waste (WJ107)

<u>Component</u>	<u>Supernatant</u>		<u>Solids</u>
	<u>Molarity</u>	<u>Weight%</u>	<u>Weight %</u>
Al	1.87	11.0	10
OH	3.18	9.1	0
NO ₂	2.91	14.4	0
NO ₃	1.85	11.3	34
CO ₃	0.115	0.9	43
PO ₄	0.073	0.9	2
TOC	7.46 g/L	1.6	8
H ₂ O		42.46	
SpG	1.395		

SD-WM-PE-00
APPENDIX D

WHC-SD-WM-ER-309, Rev. 0

TABLE II

Viscosity of Tank 101AX Waste (#5169)

<u>Temperature(°C)</u>	<u>Viscosity</u>	<u>RPM</u>
60	>19	60
	29	30
50	>19	60
	34	30
40	>19	60
	>38	30
	91*	12
35	>19	60
	>38	30
	>96	12
	180	6
30	>19	60
	>38	30
	>96	12
	>191	6
	>383	3

*Spindle hanging up

Internal Letter

R

WHC-SD-WM-ER-309, Rev. 0

Date: . November 11, 1980

No: . 65453-80-331

TO: (Name, Organization, Internal Address)

- M. C. Teats
- Plant Engineering
- 2750E/A100/200 East

FROM: (Name, Organization, Internal Address, Phone)

- M. T. Jansky
- Separations Process Development Unit
- 222-S/MO-037/200 West
- 3-1571

Subject: . Tank 101AX Waste Characteristics

The deactivation of Tank 101AX requires a knowledge of the composition of the waste, as well as some idea of the viscosity of the waste. The Separations Process Development Unit (SPDU) found that solids present in the waste are primarily sodium nitrate, with sodium nitrite present as well. The waste compositions are shown in Table I. Additionally, viscosity versus temperature data are shown in Table II. Laboratory details are discussed below.

Two samples from Tank 101AX were received by SPDU. One was taken from two feet below the surface and the other was taken from four feet below the surface. Both samples contained greater than 60 volume percent solids at room temperature. Both waste samples were stirred, with the solids not mixing very well. The solids visually appeared to be sodium nitrate crystals. Aliquots of both samples were poured into disposable filters and filtered. The filtered solids comprised 20-25 weight percent of the slurry. The filtrates and solids were submitted to Analytical Laboratories (AL) for analyses. The results are shown in Table I. The thickness of the waste samples made it difficult to obtain an accurate specific gravity measurement. Therefore, a calculated value of 1.43 was used to determine radionuclide activity in the waste slurry. Values of 0.59 Ci/L ^{137}Cs and $5.2 \times 10^3 \mu\text{Ci/L } ^{90}\text{Sr}$ were calculated for the two foot sample. The same calculations for the four foot sample yielded 0.64 Ci/L ^{137}Cs and $6.3 \times 10^3 \mu\text{Ci/L } ^{90}\text{Sr}$.

Viscosity versus temperature data were obtained using a Brookfield cup and cone microviscometer. The data are shown in Table II. Some solids in both samples dissolved at 70°C, and continuously grew in as the temperature was lowered. At 35°C, for the four foot sample, approximately 10-20 volume percent liquor was visually observed. Both wastes were still pourable at room temperature.

The data indicate that at room temperature a significant volume of solids exist, primarily sodium nitrate. The viscosity of the waste begins to approach 100 centipoise at 50°C. Transfer of the waste may plug lines if the temperature drops below 50°C.

Rockwell
International

WHC-SD-WM-ER-309, Rev. 0

M. C. Teats
Page 2
November 11, 1980

Please call if you have any questions or comments regarding this work.

M. T. Jansky
Advanced Chemist

MTJ/naj

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L. A. Gale
D. L. Herting
T. A. Lane
T. B. Veneziano
D. G. Wilkins
File Code: WB612
Process Aids: (8)
Letterbook

TABLE I

Composition of 101AX Wa:

WHC-SD-WM-ER-309, Rev. 0

<u>Component</u>	Two Feet Below Surface			Four Feet Below Surface		
	Filtrate		Solids	Filtrate		Solids
	Molarity	Weight%	Weight%	Molarity	Weight%	Weight%
NaAlO ₂	2.23	13.41		2.06	12.13	
NaOH	3.69	10.84		3.67	10.55	
NaNO ₂	5.14	26.10	13	2.59	12.85	23
NaNO ₃	1.66	10.36	82	1.69	10.35	66
Na ₂ CO ₃	0.07	0.53		0.108	0.82	7
Na ₃ PO ₄	0.07	0.82		0.07	0.82	
TOC (g/L)	15	3.32		15	3.23	
¹³⁷ Cs	0.660 Ci/L			0.656 Ci/L		
⁹⁰ Sr	4.31x10 ³ μ Ci/L			4.45x10 ³ μ Ci/L		
H ₂ O		44.66			43.4	
SpG		1.360			1.391	

TABLE 11

Viscosity versus Temper

WHC-SD-WM-ER-309, Rev. 0

<u>Temperature (°C)</u>	<u>RPM</u>	<u>Viscosity (cps)</u>	
		<u>2 foot</u>	<u>4 foot</u>
70.5	60	16	
	30	17	
	12	20*	
70	60		14
	30		17*
	12		20*
60	60	>19	>19
	30	34	25
	12	40*	31
50	60	>19	>19
	30	>38	>38
	12	73	50
	6	92	61
	3	124*	88*
40	60	>19	>19
	30	>38	>38
	12	>96	78
	6	>190	89
	3	>380	*
	1.5	670	
35			Too Viscous

*Spindle hanging up, erratic readings

TCRL-3

WHC-SD-WM-ER-309, Rev. 0

Date: September 25, 1974

To: O. R. H. Rasmussen

From: *J E Horton*
J. E. HortonSubject: ANALYSES AND CHARACTERIZATION OF SLUDGE
SAMPLES RECEIVED FROM TANK 102-AX

A sample of sludge from 102-AX showed that it was a very soft material, and redish brown in color. The $^{89+90}\text{Sr}$ content of the 102-AX sludge was 9.31 Curies/liter. Particle size distribution showed that 99 weight percent of the sludge was between 10 and 50 μm . Purex Acid Sludge (PAS) was made from a 30 percent solids and 70 percent supernatant. It contained 80 percent of the $^{89+90}\text{Sr}$. The PAS gelled in two days due to high silica content.

The "as received" 102-AX sludge was analyzed by fusing 1.5 milliliters with KOH, and dissolving the melt with HCl and dilution with H_2O to a volume of 265 milliliters. Analyses, shown in Table I (attached), are per liter of "as received" sludge.

Particle size distribution of the 102-AX sludge was determined on a HIAC particle counter. Results are shown in Table II (attached).

The PAS was made up from a 30 volume percent sludge slurry. Ten milliliters of the 30 percent slurry was added to 1.5 milliliters of 12M HNO_3 . Severe foaming accompanied by the evolution of copious amounts of NO_x fumes occurred during acidification. The foaming was very stable. The 102-AX is comparable to the foaming in samples 104-A and 104-AX. Analyses of PAS solution are shown in Table III (attached).

Acidification did not dissolve all the sludge. The remaining sludge was treated with equal volumes of 50 percent NaOH, then acidified with 12M HNO_3 ; this removes additional strontium.

The remaining two milliliters of solids from the PAS and NaOH strikes were fused with KOH. The melt

O. R. H. Rasmussen
Page 2
September 25, 1974

was dissolved with con HCl, and diluted to a volume of 450 milliliters with H₂O. The amount of strontium in the PAS, removed by the caustic-acid treatment, and left on the undissolved solids are shown in Table IV (attached).

Please call me if you have any questions regarding this work.

JEH:jf

Att.: (2)

cc: w/att.

H Babad

JS Buckingham

WR Christensen

NL Harms

GJ Raab

RL Walser

JC Womack

Process Aids (7)

TABLE I

ANALYSIS OF 102-AX SLUDGE "AS RECEIVED"

Wet Density	1.57	
Dry Density	0.9025	
% H ₂ O		42.5
Si	1.26 moles/l	
Fe	2.54 moles/l	
Mg	0.044 moles/l	
Mn	0.217 moles/l	
Ca	0.199 moles/l	
Ba	0.011 moles/l	
Sr, <u>M</u>	0.057 moles/l	
Pu	6.71×10^{-2} g/l	
⁸⁹⁺⁹⁰ Sr	9.31×10^6 μ Ci/l	
¹³⁷ Cs	1.26×10^6 μ Ci/l	
⁶⁰ Co	1.31×10^4 μ Ci/l	
¹²⁵ Sb	1.51×10^5 μ Ci/l	
¹⁴⁴ Ce ¹⁴⁴ Pr	2.38×10^7 μ Ci/l	
¹⁵⁴ Eu	3.51×10^5 μ Ci/l	

←
sludge

TABLE II

PARTICLE SIZE DISTRIBUTION

<u>Particle Size μm</u>	<u>Average Dia., μm</u>	<u>Wt. Percent</u>
10	16.5	35.0
20	25.9	45.7
30	35.7	14.3
40	45.5	3.1
50	55.4	1.1
60	65.4	0.4
70	75.3	0.3
80	85.3	0.2
90	95.3	0.1

TABLE III

ANALYSIS OF 102-AX PAS

Si	0.121M
Fe	0.253M
Al	0.494M
Ca	$1.33 \times 10^{-2}M$
Sr	$1.50 \times 10^{-4}M$
H	1.56M
⁸⁹⁺⁹⁰ Sr	$1.61 \times 10^6 \mu\text{Ci/l}$
¹³⁷ Cs	$4.78 \times 10^2 \mu\text{Ci/l}$
⁶⁰ Co	16 $\mu\text{Ci/l}$
¹²⁵ Sb	$1.22 \times 10^2 \mu\text{Ci/l}$
¹⁴⁴ Ce ¹⁴⁴ Pr	$2.23 \times 10^3 \mu\text{Ci/l}$
¹⁵⁴ Eu	48.5 $\mu\text{Ci/l}$

104 AX		104A
0.222	0.3	0.112
0.153	0.148	0.075
0.245	0.754	0.439
5.72 x 10 ⁻²		1.045
0.3152	0.354	0.57
1.83 x 10 ⁻²		

TABLE IV

PERCENT STRONTIUM IN PAS AND ON SOLIDS

Material	Volume		⁸⁹⁺⁹⁰ Sr		Percent
	ml.	Vol%	$\mu\text{Ci/l}$	Total μCi	
Original Sludge	3	100	9.31×10^6	2.79×10^4	100
PAS (liquid)	14		1.61×10^6	2.25×10^4	81
(solid)	2	67			
Caustic-Acid (liquid)	4		4.68×10^5	1.87×10^3	7
	2	67			
Insol. Solid (fusion)	450		3.04×10^3	1.37×10^3	5

Internal Letter TRL-8

Rock

WHC-SD-WM-ER-309, Rev. 0

Date: July 20, 1977

TO: (Name Organization) Address,

J. W. Bailey

FROM (Name Organization) Address, Phone

J. L. Starr

Chemical Sciences

222-S Bldg., 200 West

2-2529

Subject: Analysis of Tank 102-AX Sludge

Tank 102-AX has been sluiced and now contains some residual sludge. Before tank may be used for storage of evaporator slurry waste, an estimate of heat output from the remaining sludge must be made. Analysis of radionuclides contained in the sludge has been conducted to facilitate making such an estimate.

A series of six samples have been received and analyzed since February of this year. With the single exception of the last sample (#5403), all samples were dark, reddish-brown, viscous, and sticky. Sample #5403 was a dark brown, dry, hard, solid. All analyses were, apparently, done on solids only, except for #4095. As received, sample #4095 contained 89 percent solids. Analysis was conducted on a portion of the sample containing only 35 percent solids.

Analytical results are presented in the attachment. It has been suggested that these data points might best be evaluated by assuming a log-normal distribution curve. Therefore, average values and standard deviations have been omitted.

If you have questions, please feel free to call me.

J. L. Starr
Chemist

JLS:jf

Att.

cc: w/att.
JS Buckingham
RG Geier
GW Grimes
JE Horton
DC Lini
OR Rasmussen
ME Weems

R-07044

H-38

	#1	#2	#3039	#3040	\$4095	#5403	
Pu	7.0×10^{-2}	7.2×10^{-2}	6.0×10^{-2}	1.9×10^{-1}	5.5×10^{-2}	7.9×10^{-2}	g/l
$^{89+90}\text{Sr}$	6.5×10^6	1.5×10^7	1.4×10^7	2.2×10^7	2.7×10^7	1.5×10^7	$\mu\text{Ci}/\text{l}$
^{137}Cs	1.6×10^6	3.3×10^5	5.5×10^3	4.9×10^5	4.8×10^5	1.0×10^6	$\mu\text{Ci}/\text{l}$
^{60}Co	1.4×10^5	nf	nf	nf	nf	nf	$\mu\text{Ci}/\text{l}$
^{125}Sb	9.3×10^5	6.7×10^5	4.8×10^5	6.8×10^5	3.6×10^5	7.3×10^7	$\mu\text{Ci}/\text{l}$
^{144}Ce	1.3×10^6	1.8×10^5	9.0×10^5	2.1×10^6	nf	2.3×10^6	$\mu\text{Ci}/\text{l}$
^{155}Eu	5.4×10^5	8.9×10^5	4.6×10^5	8.8×10^5	nf	nf	$\mu\text{Ci}/\text{l}$
^{154}Eu	nf	nf	nf	nf	nf	3.9×10^{-1}	$\mu\text{Ci}/\text{l}$
U	na	1.7×10^{-6}	3.0×10^{-4}	8.1×10^{-4}	1.3×10^{-2}	1.0×10^{-2}	#/gal
Si	na	na	na	na	na	0.86M	

nf - not found
na - not analyzed

Pick
one

Internal Letter TCRC-a

Rc

WHC-SD-WM-ER-309, Rev. 0

Date January 23, 1980

No. 6

TO: (Name, Organization, Internal Address)

R. B. Bendixsen
Tank Farm Process Control
2750-E, 200 East

FROM: (Name, Organization, Internal Address, Phone)

C. H. Delegard
Chemical Sciences Group
222-S, 200 West
2-1571

Subject: Hot Boildown of Tank 102-AX Waste Liquor

Ref: Letter, November 21, 1979, R. B. Bendixsen to H. J. Eding,
"Hot" Boildown of Complexed Waste in Tank 102-AX

In response to your referenced letter, a hot boildown of Tank 102-AX waste liquor was recently done. This B-Plant waste contained significant organic carbon and carbonate, and was colored brown due to the presence of iron.

Boiling temperature and pressure data were gathered as a function of waste volume reduction (WVR). These data are presented in Table I. The waste nucleated at about 77 percent WVR. The boildown was stopped there, producing, upon cooling, about 90 volume percent solids which centrifuged to about 55 volume percent solids. The rapid crystallization and sticky character of the waste solids were indicative of complexed waste. At 50 percent WVR, the waste liquor had a density of ~ 1.24 g/ml. At nucleation, the slurry's density was about 1.57 g/ml.

Chemical analyses of the feed and product slurry material are presented in Table II. Aside from the erroneous NaOH assay, the slurry solids are primarily sodium carbonate and sodium nitrate.

Please call me if you should have any questions regarding this work.

C. H. Delegard, Advanced Chemist
Waste Chemistry Unit

CHD:jkr

Attachment

Information: J. S. Buckingham
G. T. Dukelow
H. J. Eding
D. L. Herting
F. M. Jungfleisch
T. A. Lane
D. L. Merrick
R. D. Prosser
T. B. Veneziano
Process Aids (8)
File Code: KF55E

Table I

WHC-SD-WM-ER-309, Rev. 0

TEMPERATURE AND PRESSURE AT BOILING
VERSUS WVR FOR TANK 102-AX WASTE LIQUOR

Percent WVR	Boiling Point (°C) at		
	40 Torr	60 Torr	80 Torr
0	34.2	42.4	48.2
10	35.0	43.2	48.8
20	35.8	43.6	49.2
30	36.2	43.8	49.6
40	36.6	44.4	50.2
50	37.0	45.0	50.8
60	38.6	46.4	52.2
70	41.2	48.6	54.8
77	44.2	51.8	57.8

AX102.5

This
column
↓

Table II

ANALYSES OF FEED AND PRODUCT SLURRY - TANK 102-AX

Component	Feed Liquor		Product Liquor		Product Solid
	Molarity	Wt Percent	Molarity	Wt Percent	Wt Percent
NaAlO ₂	0.0371	0.27	0.215	1.26	-0-
NaOH	0.572	2.06	<0.5*	<1.42*	>31.4*
NaNO ₂	0.443	2.75	1.98	9.73	3.5
NaNO ₃	0.865	6.61	4.12	24.94	11.2
Na ₂ CO ₃	0.490	4.67	0.95	7.17	40.9
Na ₃ PO ₄	0.100	1.47	0.0488	0.57	3.7
Fe ₂ O ₃	0.0060	0.09	0.0308	0.35	2.4
TOC (g/l)	16.1	1.45	68.5	4.88	-0-
H ₂ O	--	84.4	--	53.62	-0-
Total	--	103.8	--	103.94	93.1
SpG (g/ml)	1.113	--	1.404	--	--

AX102.6

Comparison of feed and product liquor analyses, especially aluminum, show a concentration factor of about five. This is consistent with the 77 percent WVR. Since it is unlikely that NaOH precipitated through concentration, the product liquor hydroxide analysis is undoubtedly low, while the product solid NaOH percentage is high.

Internal Letter

F

WHC-SD-WM-ER-309, Rev. 0

Date February 22, 1980

No. WHC-SD-WM-ER-309

TO: Name Organization Internal Address
 R. B. Bendixsen
 Tank Farm Process Control
 2750E, 200 East

FROM: Name Organization Internal Address Page
 C. H. Delegard
 Waste Chemistry Unit
 222-S, 200 West
 2-1571

Subject . Hot Boildown of Tank 102-AX Liquor

- References: 1) Letter, February 4, 1980, R. B. Bendixsen to H. J. Eding, "Hot Boildown of Complexed Waste in Tank 102-AX"
- 2) Letter, January 23, 1980, C. H. Delegard to R. B. Bendixsen, "Hot Boildown of Tank 102-AX Waste Liquor"

In response to your referenced letter, a hot boildown of Tank 102-AX waste liquor was done. The boildown of a similar Tank 102-AX dilute complexed B-Plant waste was reported in a recent letter (Ref. 2). The purpose of the present study is to determine the nucleation and crystallization point of this complexed waste at 5°C (~40°F) as a function of waste volume reduction (WVR). This point would serve as the WVR limit for evaporator operations. Precipitation of complexed waste in the tanks is undesirable since the wastes' high viscosity precludes their retrieval for further processing. Five degrees Celsius is the estimated winter surface temperature of the tanked waste.

The routine boiling temperature and pressure data were gathered as a function of WVR. Note the flatness of this response as shown in Table I. Aliquots of the waste liquor were taken at 50, 60, 65 and 70 percent WVR and cooled to 5°C. No crystals were observed although the samples were slightly turbid. Viscosity data gathered for these aliquots are given in Table II.

The boildown was conducted at 40 Torr. Nucleation occurred during boildown, not during 5°C cooling, at 74 percent WVR. Typical of a complexed waste, crystallization was rapid producing ~90 volume percent settled solids at the boiling temperature. The waste's density was ~ 1.14 g/ml at 50 percent WVR and ~ 1.28 g/ml at nucleation (74 percent WVR).

R. B. Bendixsen
Page 2
February 22, 1980

The compositions of the two Tank 102-AX samples are given in Table III. The boildown was done on a 50/50 v/v composite of these samples. No analysis of the resultant slurry was done. Due to the high concentration of sulfate and carbonate in the feed and the limited solubilities of these salts, the solids are probably sodium sulfate dodecahydrate and sodium carbonate monohydrate.

Please call me should you have questions regarding this work.

C. H. Delegard
Advanced Chemist

CHD:met

Information:

D. E. Bowers
J. S. Buckingham
G. T. Dukelow
H. J. Eding
D. L. Herting
M. T. Jansky
F. M. Jungfleisch
D. L. Merrick
G. A. Olsen
R. D. Prosser
T. B. Veneziano
Process Aids (8)
File KF55E

TABLE I

TEMPERATURE AND PRESSURE AT BOILING
VERSUS WVR FOR TANK 102-AX WASTE LIQUOR

<u>Percent WVR</u>	<u>Boiling Point (°C)</u>		
	<u>40 Torr</u>	<u>60 Torr</u>	<u>80 Torr</u>
0	35.6	43.0	49.0
10	35.8	43.2	48.8
20	36.0	42.8	48.8
30	36.2	43.6	49.2
40	36.2	43.8	49.4
50	36.6	44.2	50.2
60	37.8	45.4	51.2
65	38.6	47.4	53.8
70	40.8	48.0	54.6
74	42.6	51.2	56.8

TABLE II

VISCOSITY VERSUS WVR FOR
TANK 102-AX WASTE LIQUOR

<u>Percent WVR</u>	<u>Viscosity (centipoise) at Spindle Speed</u>		
	<u>12 RPM</u>	<u>30 RPM</u>	<u>60 RPM</u>
50	4.60	4.29	4.22
60	6.95	6.61	6.61
65	19.74	19.28	>19.1
70	22.99	22.80	>19.1

TABLE III
COMPOSITION OF TANK 102-AX
WASTE LIQUOR SAMPLES

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Component	Sample # 7700		Sample # 7701	
	Molarity	Wt. Percent	Molarity	Wt. Percent
NaAlO ₂	0.070	0.53	0.147	1.13
NaOH	0.329	1.21	0.172	0.64
NaNO ₃	0.725	5.66	0.717	5.69
NaNO ₂	0.267	1.69	0.268	1.73
Na ₃ PO ₄	0.0142	0.22	0.0138	0.21
Na ₂ SO ₄	0.187	2.44	0.164	2.17
NaF	0.0074	0.03	0.0074	0.03
Na ₂ CO ₃	0.490	4.77	0.52	5.15
TOC (g/l)	-	-	9.75	0.91
H ₂ O		87.62		87.25
Total		104.17		104.91
Sp. G. (g/ml)	1.088		1.071

Westinghouse
Hanford Company

TCRC-11

WHC-SD-WM-ER-309, Rev. 0

From: Process Chemistry Laboratories
Phone: 3-1972 MO-037/200W T6-50
Date: November 14, 1988
Subject: ANALYSIS OF TANK 241-AX-102 SAMPLE

12712-PCL88-018

To: J. A. Eacker R1-51
cc: J. E. Bramson T1-30
D. R. Bratzel DRB T6-50
K. G. Carothers R1-51
A. J. DiLiberto R2-05
G. L. Dunford R1-51
RLW File/LB

NOV 18 1988

A. J. DiLiberto

241-AX-102 During August 1988, there were indications that the single-shell tank (SST) 241-SX-104 was no longer sound. As part of the response to these indications, a sample of the residual supernatant liquid in the tank was taken and shipped to 222S for analysis. This report summarizes the results of the analysis.

The sample was received as a dark, coffee-brown liquid with no indication of solids present. No sample preparation was needed, an aliquot of the solution was transferred to the Analytical Chemistry Services Laboratories (ACSL) for component analysis.

A representative composition for the material recovered from tank 241-AX-102 is shown in Table 1. The error range for these values is approximately $\pm 10\%$. Values prefaced with the less than symbol (<) were not quantifiable and the value reported is the analytical procedure limit of confirmation value.

The liquid recovered from tank 241-AX-102 is consistent with an expected composition for supernate from a salt cake waste tank. The major radionuclides present are cesium-137 and strontium-90. Based on available results, the material is complexed (>10 g/L TOC) and transuranic (>100 nCi/gm Pu + Am) waste.

R. L. Weiss
Chemist

cse

Attachment (1)

TABLE 1
COMPOSITION OF 241-AX-102 S/

WHC-SD-WM-ER-309, Rev. 0

<u>Component</u>	<u>Value</u>
pH	11.3
NO ₃	3.7 M
NO ₂	1.4 M
CO ₃	0.98 M
PO ₄	<0.056 M
NH ₄	0.028 M
TOC	36.8 g/l
Ag	<0.004 M
Al	0.006 M
B	0.002 M
Ba	<0.0001 M
Bi	<0.0004 M
Ca	0.014 M
Ce	0.0009 M
Cd	<0.0004 M
Co	<0.0006 M
Cr	0.004 M
Cu	0.0006 M
Fe	0.033 M
K	0.002 M
La	0.0004 M
Li	<0.002 M
Mg	0.0005 M
Mn	0.011 M
Mo	0.0004 M
Na	7.32 M
Nd	0.001 M
Ni	0.009 M
Pb	0.002 M
Pd	0.0006 M
P	0.023 M
Si	0.0009 M
Sn	<0.001 M
Sr	<0.0003 M
Ta	<0.0003 M
Ti	0.00007 M
Zn	0.0013 M
Zr	0.0016 M
Am	1000 μ Ci/l
Pu	97 μ Ci/l
Cs ¹³⁷	3.5×10^5 μ Ci/l
Co ⁶⁰	7.1×10^2 μ Ci/l
Eu ¹⁵⁴	3.5×10^3 μ Ci/l
Eu ¹⁵⁵	4.7×10^3 μ Ci/l
Sr ⁹⁰	1.7×10^5 μ Ci/l

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O. R. H. Rasmussen

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October 14, 1974

TABLE I

ANALYSIS OF TANK 104-AX SLUDGE SAMPLE

Densities

Damp, as received	1.61
Dry, bulk	0.90

Analysis

H ₂ O		44.2%
Si	0.722 moles/l	1.3%
Fe	6.69 moles/l	23.2%
²³⁹ Pu	0.143 g/l	
⁸⁹⁺⁹⁰ Sr	93.5 c/l	
⁶⁰ Co	0.15 c/l	
¹⁰⁶ Ru ¹⁰⁶ Rh	7.83 c/l	
¹²⁵ Sb	2.37 c/l	
¹³⁷ Cs	2.02 c/l	
¹⁵⁴ Eu	0.51 c/l	

Four batches of Purex Acid Sludge (PAS) were made by acidifying slurries of 104-AX sludge and 103-AX supernatant liquids. Supernatant liquid from 103-AX Tank was used as the slurry fluid as being representative of AX Farm supernatants. Analysis of the 103-AX supernatant is shown in Table II.

Atlantic Richfield Hanford Company

O. R. H. Rasmussen

Page 3

October 14, 1974

TABLE IIANALYSIS OF TANK 103-AX SUPERNATANT LIQUID

AX 10³.1

H ₂ O		81.2%
Density	1.157	
NaAlO ₂	0.022 <u>M</u>	0.2%
NaNO ₂	1.36 <u>M</u>	3.1%
NaNO ₃	0.14 <u>M</u>	1.0%
NaOH	0.77 <u>M</u>	2.7%
Na ₂ SO ₄	0.19 <u>M</u>	2.4%
Na ₂ CO ₃	0.40 <u>M</u>	3.6%
Na ₃ PO ₄	0.013 <u>M</u>	0.2%
Si	2.78×10^{-4} <u>M</u>	<0.1%
⁸⁹ + ⁹⁰ Sr	4.66×10^3 <u>uc/l</u>	
¹³⁷ Cs	2.16×10^6 <u>uc/l</u>	
¹³⁴ Cs	3.58×10^4 <u>uc/l</u>	

The high silicon content in the sludge caused the PAS to gel after standing five to seven days. Because of the gelling problem, not all analyses were run on the four PAS's. Analyses of the PAS are shown in Table III. Also shown in Table III are the volume percent slurries from which the PAS's were made.

Atlantic Richfield Hanford Company

O. R. H. Rasmussen
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 October 14, 1974

TABLE IIIANALYSIS OF PAS MADE FROM 104-AX SLUDGE

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Vol % Slurry	30	30	30	20
Si, $\frac{M}{M}$	-	0.277	0.300	0.110
Fe, $\frac{M}{M}$	-	0.153	0.198	
Al, $\frac{M}{M}$	-	0.245	0.754	
Ca, $\frac{M}{M}$	-	5.72×10^{-2}	6.50×10^{-3}	
Ba, $\frac{M}{M}$	$<8.55 \times 10^{-4}$		1.27×10^{-4}	
Mn, $\frac{M}{M}$	-	2.85×10^{-3}	5.40×10^{-3}	
H ⁺ , $\frac{M}{M}$	1.14	0.315	0.354	
89+90Sr, $\mu\text{c/l}$	2.07×10^7	1.83×10^7	1.93×10^7	9.43×10^5
137Cs, $\mu\text{c/l}$	1.64×10^6	1.15×10^5	1.01×10^5	8.88×10^5
134Cs, $\mu\text{c/l}$	-	3.56×10^4	2.50×10^4	2.06×10^4
60Co, $\mu\text{c/l}$	-	1.53×10^4	9.74×10^2	
125Sb, $\mu\text{c/l}$	-	2.52×10^3	1.49×10^3	
154Eu, $\mu\text{c/l}$	-	6.26×10^4	2.48×10^4	5.32×10^4

O. R. H. Rasmussen

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October 14, 1974

TABLE IV
LOCATION OF STRONTIUM DURING
PAS MAKE UP AND CAUSTIC-ACID TREATMENT

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1. Vol. Sludge, ml	3	3	3	2
2. Vol. PAS	7.0	8.5	7.5	7
3. PAS/Sludge	2.3	2.8	2.5	3.5
4. $^{89+90}\text{Sr}$ in PAS (as % in sludge)	48	56	52	36
5. Vol. Solids in PAS, ml	3	2.6	3	1
6. Vol. Liquid after caustic-acid treatment	6.8	4.6	5.1	4
7. $^{89+90}\text{Sr}$ in caustic-acid liquid (as % in sludge)	40	19	12	17
8. Vol. Solids following caustic-acid treatment	2.2	2.6	2.9	1
9. $^{89+90}\text{Sr}$ in solids following caustic acid treatment (as % in sludge)	3	22	18	23
10. Sr material balance, %	91	97	82	76

Atlantic Richfield Hanford Company

O. R. H. Rasmussen

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October 14, 1974

Only about 50 curi percent of the strontium in the 104-AX sludge dissolved when the sludge was acidified. Also acidification changed the characteristics of the sludge, causing it to become more flocculant but still not soluble in nitric acid. An additional 20 curi percent strontium was removed by treating the solids with 50 percent NaOH, then reacidifying with nitric acid (caustic-acid treatment). Caustic-acid treatment reduced the volume of solids somewhat. Approximately 20 curi percent strontium was retained on the remaining solids.

Table IV shows the volume of sludge actually used to make up the four PAS reported in Table III. Line 2 shows the actual volume of PAS generated when the sludge was acidified, and Line 3 shows the PAS to sludge ratios. Generally, the PAS to sludge ratio runs over 5 in AR Vault operation. Line 4 shows the curi percent strontium found in the PAS, based on the amount of strontium in the sludge. Line 5 shows the volume of solids left after acidification. Volume solids were determined by centrifuging the acidified slurry, after it was digested two hours between 60 and 70° C, at 1000 x G for 15 to 20 minutes.

After decanting off the liquid PAS, the solids, reported in Line 5, were mixed with an equal volume of 50 percent NaOH, then acidified with 12 M HNO_3 . The slurry was again measured. Line 6 shows the liquid volume, and Line 7 shows the strontium content as percent strontium in the sludge. Line 8 shows the column of solids remaining following the caustic-acid treatment. The solids were then fused with KOH and the melt dissolved with HCl . Line 9 shows the amount of strontium found on the solids as percent of strontium in the sludge. Line 10 shows the strontium material balance, that is, the summation of the percent strontium found in the PAS, caustic-acid treatment liquid, and final solids.

O. R. H. Rasmussen

Page 7

October 14, 1974

Considering the difficulties of doing this work in a hot cell, the material balances indicate that the data are valid. At this time, there is no explanation as to why we got such poor strontium dissolution in run 4, or why the caustic-acid treatment was more successful in removing strontium from the acid insoluble solids in run 1. The overall trend for the three runs seems to indicate about 50 percent of the strontium being dissolved by the first acid, an additional 20 percent being removed by the caustic-acid treatment, and 20 percent being held on the insoluble solids.

Other than observing that the PAS's made from the 104-AX sludge gelled in between five and seven days, no gellation studies were made.

Please call us if you have any questions regarding this work.

JSB:JEH:ms

cc: H Babad
NL Harms
GJ Raab
NC Rodewald
RL Walser
JC Womack
Process Aids - 7
File

Date: November 12, 1974
 To: O. R. H. Rasmussen
 From: J. E. Horton *J E Horton*
 Subject: ANALYSIS AND CHARACTERIZATION OF
 SLUDGE SAMPLE FROM TANK 103-AX

We received a sample of Tank 103-AX sludge on September 19, 1974. The 103-AX sludge was dark brown in color and very soft. The $^{89+90}\text{Sr}$ content of 103-AX sludge was 22.4 c/liter. Purex acid sludge (PAS) was made by acidifying a slurry of 30 percent solids and 70 percent supernatant. The resulting PAS contained 72 percent of the $^{89+90}\text{Sr}$ present in the sludge. Particle size distribution showed that 66 weight percent of the sludge was between 5 and 50 μm , 23 weight percent was between 55 and 100 μm , and 10 weight percent was greater than 100 μm . Details of the laboratory work are discussed below.

The 103-AX sludge "as received" was analyzed by fusing 2 milliliters of damp sludge with KOH, dissolving the melt with con. hydrochloric acid and diluting with H_2O to a volume of 255 milliliters. Analyses shown in Table I are per liter of as received sludge.

Particle size distribution of the 103-AX sludge was determined by a HIAC particle counter. Results are shown in Table II.

The PAS was made up from a 30 volume percent sludge slurry. Ten milliliters of the 30 percent slurry were added to 1.5 milliliters of 12M HNO_3 . Additional 12M HNO_3 was needed to reduce the pH < 0.3. Foaming during acidification was comparable to that observed with samples from Tanks 104-A and 104-AX. Analysis of the PAS is shown in Table III.

O. R. H. Rasmussen
Page 2
November 12, 1974

The 103-AX PAS, even though it had a high silicon content, showed no tendency to gel until after a period of 15 days. There was a slight gelation on the 17th day.

The undissolved solids from acidification were treated with an equal volume of 50 percent NaOH, then acidified with 12M HNO₃. This removed additional strontium.

The remaining 1.5 milliliters of solids from the caustic + acid strikes were fused with KOH. The melt was dissolved with con. hydrochloric acid and diluted to a volume of 250 milliliters with H₂O. The amount of strontium in the PAS, removed by the caustic-acid treatment and left on the undissolved solids, are shown in Table IV.

Please call me if you have any questions on this work.

JEH:ms

att. (2)

cc: H Babad
JS Buckingham
WR Christensen
NL Harms
GJ Raab
RL Walser
JC Womack
Process Aids (7)

AXi
 TABLE I
 AX 103.0

Analysis of 103-AX Sludge "As Received"

Si	0.283 moles/l	
Fe	1.94 moles/l	
Mn	0.298 moles/l	
Mg	0.056 moles/l	
Ca	0.240 moles/l	
Ba	0.027 moles/l	
Al	1.05 moles/l	
Sr	0.034 moles/l	
Pu	3.58×10^{-2} g/l	
89+90Sr	2.24×10^7 c/l	mc/l?
125Sb	4.88×10^5 c/l	
134Cs	7.72×10^4 c/l	
137Cs	3.11×10^6 c/l	

TABLE II
 AX 103.3

Particle Size Distribution

Particle Size μm	Average Dia., μm	Wt. Percent
5- 10	8.25	11.8
10- 15	12.98	0
15- 20	17.8	13.9
20- 25	22.8	8.5
25- 30	27.7	7.5
30- 35	32.7	6.5
35- 40	37.7	4.7
40- 45	42.7	2.0
45- 50	47.6	8.3
50- 55	52.6	3.1
55- 60	57.6	5.6
60- 65	62.6	3.3
65- 70	67.6	2.7
70- 75	72.6	2.4
75- 80	77.6	0.1
80- 90	85.3	5.2
90-100	95.3	4.1
100-110	105.2	3.2
110-120	115.2	2.4
120-130	125.2	4.7

March 14, 1979

K. G. Carothers
Waste Process Engineering
2750-E, 200 East
2-7811, Ext. 279

T. A. Lane
Chemical Sciences Group
222-S, 200 West
2-1571

Hot Boildown of Cross-Site Transfer Waste First Pass Product

- Ref: (a) Letter, December 21, 1978, G. E. Brown to K. G. Carothers,
Reconcentration of Cross-Site Transfer Material
- (b) Letter, January 3, 1979, K. G. Carothers to T. B. Veneziano,
Reconcentration of Cross-Site Transfer Material
- (c) Letter, January 18, 1979, G. E. Brown to K. G. Carothers,
Hot Boildown of Cross-Site Transfer Waste

The evaporator operating conditions for the reconcentration of the cross-site transfer material are detailed in references a, b, and c. The maximum recommended waste volume reduction (WVR) is 75 percent. The actual targeted WVR is 70 percent made in two passes. The first pass was to achieve a WVR of 48 percent. However, a WVR of only 35 percent was reached. A hot boildown using actual waste was run to verify the previous recommendations and operating parameters. Results of the boildown indicate the first pass material can be reduced another 58 volume percent, which corresponds to 72 percent total volume reduction. Experimental details are below.

Sample #7595 from Tank 103-AX was analyzed to verify the WVR. The composite feed analysis, a predicted 35 percent WVR composition, and sample #7595 are compared in Table I.

Boiling points as a function of volume reduction at 40 torr are compared in Table II, with values reported in reference c. Table III gives the boiling points at 40, 60, and 80 torr for 58, 61 and 65 percent WVR. The values obtained in this run confirm those previously obtained.

The slurry was allowed to settle overnight at 90° C. The slurry appeared to be 90 percent solids by volume; however, when the slurry was centrifuged, the solids were only 25 percent of the volume. Composition of the supernatant is shown Table I.

This run reinforces the conclusions stated in reference c. This waste may be concentrated a maximum of 75 percent. It

K. G. Carothers
Page 2
March 14, 1979

should not be classified as double-shell slurry feed, as it resembles other complexed waste slurries in behavior.

Thomas A Lane

T. A. Lane, Advanced Chemist
Waste Chemistry Unit

TAL:jkr

Attachement

Information: G. E. Brown
J. S. Buckingham
G. T. Dukelow
S. C. Estrada
D. G. Harlow
F. M. Jungfleisch *Fmy*
D. L. Merrick
G. A. Olsen
M. J. Smith
T. B. Venziano
R. A. Zinsli
File: KF55E

Table I

FEED AND PRODUCT COMPOSITIONS

AX 103.7

	101/102-A Composite Feed	103-AX #7595	Predicted 35 Percent WVR*
AlO ₂ ⁻	0.41 M	0.621 M	0.63
OH ⁻	0.56 M	0.856 M	0.86
NO ₂ ⁻	0.63 M	1.04 M	0.97
NO ₃ ⁻	1.09 M	1.98 M	1.68
CO ₃ ³⁻	0.10 M	0.19 M	0.15
TOC**	4.5 g/l	4.3 g/l	6.9 g/l

Table II

VOLUME REDUCTION AND TEMPERATURE

Comparison at 40 Torr

AX 103.8
Deleted

WVR* Percent First Pass Product	Temperature Degrees C	Overall WVR* Percent	Reference C Values	
			WVR*	Temperature Degrees C
10	38.6	42	40	35.0
20	39.2	48	50	39.4
30	40.2	55		
40	41.4	61	60	41.2
50	44.0	68		
53	44.8	69	70	45.0
55	45.6	71		
58	47.2	73		
61	49.4	75		
65	52.4	77	80	51.6

*Waste Volume Reduction

710RC-7

Internal Letter

103 AX

WHC-SD-WM-ER-309, Rev. 0

August 6, 1979

65120-79-124 J

TO

D. R. Jorgenson
Waste Processing Technology
2750-E, 200 East
2-7811, Ext. 229

~~THOMAS A. Lane~~
Chemical Sciences Group
222-S, MO-037, 200 West
2-1571

Subject: "Hot" Boildown of Tank 103-AX Material to HDRL

Several ways of handling the 103-AX waste have been proposed. One of these is to concentrate it to Hanford Defense Residual Liquor (HDRL). A "hot" boildown, using evaporator flowsheet conditions, was run to verify that the flowsheet could be used. A slight elevation of boiling temperature from flowsheet predictions was observed. At HDRL, the slurry was also 66 percent solids. Experimental details are below.

Three samples from Tank 103-AX were received and aliquots sent to Analytical Laboratory (AL) for analysis. See Table I for analyses. A standard batch boildown was run to the projected HDRL composition. A solids-liquid separation was made by centrifuging, and both portions analyzed. The results are in Table II. The feed, projected HDRL, and analyzed composition are also shown on the phase diagram, Figure 1. Temperature-pressure data taken at various waste volume reductions (WVR) is shown in Table III.

The "hot" boildown shows the 103-AX material can be concentrated to near HDRL using the standard flowsheet by adjusting the predicted flowsheet temperature upward 5° F.

Thomas A. Lane

T. A. Lane, Advanced Chemist
Waste Chemistry Unit

TAL:jkr

Attachment 4

Information: J. S. Buckingham
C. H. Delegard
S. C. Estrada
F. M. Jungfleisch
L. P. McRae
D. L. Merrick
Process Aids (8)
File Code: KF55E

Table I
TANK 103-AX ANALYSES

<u>Analysis</u>	<u>Sample Number</u>			<u>Average</u>
	<u>S-1423</u>	<u>S-1439</u>	<u>S-1440</u>	
Sp6	1.444	1.449	1.437	1.443
% H ₂ O	47.02	48.70	48.91	48.21
Al ³⁺	1.52	1.52	1.52	1.52
OH ⁻	2.31	2.25	2.50	2.35
NO ₂ ⁻	2.62	1.43	1.46	1.445
NO ₃ ⁻	2.95	3.35	3.59	3.47
CO ₃ ²⁻	0.31	0.25	0.27	0.26
TOC	12.3	15.0	14.8	14.03

*Total Organic Carbon.

Table II
AFTER BOILDOWN 30 PERCENT

<u>Liquid</u>	<u>Analysis</u>	<u>Weight Percent</u>
SpG	1.474	
% H ₂ O	40.32	
Al ³⁺	2.62 <u>M</u>	14.6.
OH ⁻	3.82 <u>M</u>	10.4.
NO ₂ ⁻	2.96 <u>M</u>	13.9
NO ₃ ⁻	2.56 <u>M</u>	14.8
CO ₃ ²⁻	0.114 <u>M</u>	0.8
TOC*	18.60 g/l	1.26
PO ₄ ³⁻	0.040 <u>M</u>	0.4

AX103.12

<u>Solids</u>	<u>Analysis</u>	9.61 g sample in 20 ml H ₂ O
% H ₂ O	29.38	<u>Weight Percent Dry Solids</u>
Al ³⁺	0.443 <u>M</u>	
OH ⁻	0.656 <u>M</u>	
NO ₂ ⁻	1.01 <u>M</u>	32.9
NO ₃ ⁻	1.06 <u>M</u>	59.8
CO ₃ ²⁻	0.052 <u>M</u>	3.7
PO ₄ ³⁻	0.023 <u>M</u>	3.5
TOC*	5.7 g/l	

*Total Organic Carbon.

Table III
TEMPERATURE-PRESSURE VERSUS WVR
Tank 103-AX

<u>Percent WVR</u>	<u>Pressure</u>		
	<u>40</u>	<u>60</u>	<u>75</u>
0	46.4° C/115.6° F	54.6° C/130.6° F	59.6° C/139.2°
20	53.6° C/128.0° F	60.8° C/141.8° F	66.6° C/151.2°
25			68.0° C/154.6°
30			71.0° C/159.8°

Figure 1

AX103.14

WHC-SD-WM-ER-309, Rev. 0

222-S Laboratory
200 W
2-2965 or 2-2435

Analytical Results

TANK SAMPLE NUMBER 103-11X 242-H BM

AL SERIAL NUMBER T-92

DATE RECEIVED 4/27/80

DILUTION FACTOR NONE

VIS-OTR CLEAR yellow 800 MEAD No SOL.

ANALYSIS	RESULTS	ANALYSIS	RESULTS
pH	<u>NR</u>	PO ₄	<u>4.50⁻²</u> M
SpG	<u>1.274</u>	CL	<u>NR</u> M
% H ₂ O	<u>60.45</u> wt %	F	<u>NR</u> M
RA	<u>NR</u>	SO ₄	<u>NR</u> M
Al	<u>1.05</u> M	CO ₃	<u>.490</u> M
OH	<u>2.31</u> M	TorgC	<u>NR</u> g/l C
NO ₃	<u>2.02</u> M	NA	<u>NR</u> M
NO ₂	<u>1.43</u> M		

Cooling Curve

TEMP C	% SOLIDS
50	<u>NR</u> %
40	_____ %
30	_____ %
20	_____ %
10	_____ %
5	_____ %
0	_____ %

Pm 147 NR uCi/l

Sr 89,90 1.41⁴ uCi/l

Pu 2.18x10⁻⁵ g/l

GEA

Cs-137 4.28x10⁵ uCi/l _____ uCi/l

Cs-134 _____ uCi/l _____ uCi/l

_____ uCi/l _____ uCi/l

NR = Not Requested ND = Not Detected

The dilution factor is included in the calculations.

AX103.15

22
2C

WHC-SD-WM-ER-309, Rev. 0

2-2965 or 2-2435

Analytical Results

TANK SAMPLE NUMBER 103-AX 242-ABM

AL SERIAL NUMBER T-93

DATE RECEIVED 4/27/80

DILUTION FACTOR None

VIS-OTR Light appears 300 m/hic v. 50

ANALYSIS

RESULTS

pH NR

SpG 1.376

% H₂O 53.44 wt %

GRA NR

1.11 M

OH 2.47 M

NO₃ 2.58 M

NO₂ 1.67 M

Pm 147 NR uCi/l

Sr 89,90 1.62⁴ uCi/l

Pu 3.66⁵ g/l

GEA

Cs-137 5.00x10⁵ uCi/l

Cs-134 _____ uCi/l

_____ uCi/l

ANALYSIS

RESULTS

PO₄ 4.26² M

CL NR M

F NR M

SO₄ NR M

CO₃ 1-10 M

TorgC NR g/l C

NA NR M

Cooling Curve

NR = Not Requested ND = Not Detected

The dilution factor is included in the calculations.

103-14

Internal Letter

Rc

WHC-SD-WM-ER-309, Rev. 0

Date: . September 24, 1980

No: . 65453-80-277

TO: (Name, Organization, Internal Address)
 . M. C. Teats
 . Plant Engineering
 . 2750E/A100/200 East

FROM: (Name, Organization, Internal Address, Phone)
 . M. T. Jansky
 . Separations Process Development Unit
 . 222-S/MO-037/200 West
 . 3-1571

Subject: . Composition of 103AX Waste

Ref: Letter, September 21, 1980, #65453-80-269, M. T. Jansky to
 M. C. Teats, "Viscosity and Appearance of Tank 103AX Waste"

Tank 103AX is scheduled for deactivation to meet Rockwell Hanford Operations (Rockwell) January 1, 1981 milestone. Earlier work by the Separations Process Development Unit (SPDU) determined the viscosity of the waste and noted its appearance (Reference). Since then, Plant Engineering has requested analyses of the waste to determine its composition. The data are shown in Table I.

The 103AX sample #4516 was much thicker since the referenced work. The waste had crystallized to such a point that it was impossible to obtain a measured volume for a specific gravity measurement.

Please call if you have any questions regarding this work.

M. T. Jansky
Advanced Chemist

MTJ/naj

Attachment

Distribution:

D. E. Bowers
L. C. Brown
J. S. Buckingham
H. J. Eding
L. A. Gale
D. L. Herting
T. A. Lane
D. A. Reynolds
T. B. Veneziano
D. G. Wilkins

File Code: KF55

Process Aids: (8)

Letterbook

TABLE I

Composition of Tank 103AX Waste Sample #4516

<u>Component</u>	<u>Weight%</u>
Al	9.19
OH	7.24
NO ₂	15.06
NO ₃	21.08
CO ₃	6.94
TOC	2.80
PO ₄	--
H ₂ O	<u>46.39</u>
TOTAL	108.69

9/24/80

Achievement Report

TANK FARM ASSISTANCE

104 AX Sludge Processing

Severe foaming accompanied by the evolution of copious amounts of NO_x fumes occurred when a slurry of 104 AX sludge and 103 AX supernatant liquid was acidified. The foaming could be controlled by slowly adding the slurry to the 12M HNO_3 acid and by maintaining the pH of the acidification step at less than pH 1.0.

Purex acidified sludge (PAS), which is B Plant feed solution, showed a tendency to gel even at silica concentrations as low as 0.1M. The concentration of $^{89+90}\text{Sr}$ in the sludge was found to be 93.5 Ci/l of damp sludge. Fifty two percent of the strontium in the sludge reported to the PAS. Caustic-acid treatment of the acid insoluble solids removed an additional 12 percent. The volume of the sludge was reduced only ten percent by acid dissolution, and caustic-acid treatment. Details of the laboratory work are discussed below.

DRAFT

WHC-SD-WM-ER-309, Rev. 0

ANALYSIS OF TANK 104 AX SLUDGE SAMPLE

AX 104.1

Densities

Wet = 1.609

Dry = 0.898

Analysis

H ₂ O	44.2%
Fe ₂ O ₃	33.2%
SiO ₂	2.9%
Al ₂ O ₃	6.0%
CuO	0.6%
MgO	0.1%
89+90Sr	93.5 Ci/l
60Co	0.15 Ci/l
106Ru ¹⁰⁶ Rh	7.83 Ci/l
125Sb	2.37 Ci/l
137Cs	2.02 Ci/l
154Eu	0.51 Ci/l
239Pu	0.14 g/l

Reference: Analysis for tank 108-S and fission product
heat in sludge samples:

111-S
102-SX Top
102-SX Bottom
104-SX Top
104-SX Bottom
107-S

are reported in J. S. Buckingham's Achievement Report of
July 8, 1974.

The 108-S bottom solids show free liquid at about
25 percent increase.

TCRL-2

Date: October 14, 1974

To: O. R. H. Rasmussen

From: J. E. Horton *J. E. Horton*
J. S. Buckingham *J. S. Buckingham*

Subject: CHARACTERIZATION AND ANALYSIS OF
TANK 104-AX SLUDGE

A sample of sludge from 104-AX was dark brown in color and appeared to be a soft solid interspersed with small chunks of a hard material. The concentration of $^{89+90}\text{Sr}$ in the sludge was 93.5 c/l of damp sludge. Severe foaming, accompanied by the evolution of copious amounts of NO_x occurred when a slurry of 104-AX sludge and 103-AX supernatant liquid was acidified. The foaming could be controlled by slowly adding the slurry to the acid. The acidified sludge (PAS) gelled in from five to seven days due to high silicon concentrations. An average of 48 percent of the strontium in the sludge reported to the PAS during acidification. Caustic-acid treatment of the acid insoluble solids removed an additional 22 percent of the strontium. Approximately 16 percent of the strontium remained on the undissolved solids. Details of the laboratory work are discussed below.

The "as received" sludge was analyzed by fusing 1 milliliter of sludge with KOH, dissolving the melt in HCl and diluting to 215 milliliters with water. The analysis of the sludge is shown in Table I.

O. R. H. Rasmussen
Page 2
October 14, 1974

TABLE I

ANALYSIS OF TANK 104-AX SLUDGE SAMPLE

Densities

Damp, as received	1.61
Dry, bulk	0.90

Analysis

H ₂ O		44.2%
Si	0.722 moles/l	1.3%
Fe	6.69 moles/l	23.2%
²³⁹ Pu	0.143 g/l	
⁸⁹⁺⁹⁰ Sr	93.5 c/l	
⁶⁰ Co	0.15 c/l	
¹⁰⁶ Ru ¹⁰⁶ Rh	7.83 c/l	
¹²⁵ Sb	2.37 c/l	
¹³⁷ Cs	2.02 c/l	
¹⁵⁴ Eu	0.51 c/l	

Four batches of Purex Acid Sludge (PAS) were made by acidifying slurries of 104-AX sludge and 103-AX supernatant liquids. Supernatant liquid from 103-AX Tank was used as the slurry fluid as being representative of AX Farm supernatants. Analysis of the 103-AX supernatant is shown in Table II.

O. R. H. Rasmussen
 Page 3
 October 14, 1974

TABLE IIANALYSIS OF TANK 103-AX SUPERNATANT LIQUID

H ₂ O		81.2%
Density	1.157	
NaAlO ₂	0.022 <u>M</u>	0.2%
NaNO ₂	1.36 <u>M</u>	8.1%
NaNO ₃	0.14 <u>M</u>	1.0%
NaOH	0.77 <u>M</u>	2.7%
Na ₂ SO ₄	0.19 <u>M</u>	2.4%
Na ₂ CO ₃	0.40 <u>M</u>	3.6%
Na ₃ PO ₄	0.013 <u>M</u>	0.2%
Si	2.78×10^{-4} <u>M</u>	<0.1%
⁸⁹⁺⁹⁰ Sr	4.66×10^3 <u>μc/l</u>	
¹³⁷ Cs	2.16×10^6 <u>μc/l</u>	
¹³⁴ Cs	3.58×10^4 <u>μc/l</u>	

The high silicon content in the sludge caused the PAS to gel after standing five to seven days. Because of the gelling problem, not all analyses were run on the four PAS's. Analyses of the PAS are shown in Table III. Also shown in Table III are the volume percent slurries from which the PAS's were made.

O. R. H. Rasmussen

Page 5

October 14, 1974

.....
TABLE IV

.....
LOCATION OF STRONTIUM DURING
PAS MAKE UP AND CAUSTIC-ACID TREATMENT

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1. Vol. Sludge, ml	3	3	3	2
2. Vol. PAS	7.0	8.5	7.5	7
3. PAS/Sludge	2.3	2.8	2.5	3.5
4. $^{89+90}\text{Sr}$ in PAS (as % in sludge)	48	56	52	36
5. Vol. Solids in PAS, ml	3	2.6	3	1
6. Vol. Liquid after caustic- acid treatment	6.8	4.6	5.1	4
7. $^{89+90}\text{Sr}$ in caustic-acid liquid (as % in sludge)	40	19	12	17
8. Vol. Solids following caustic- acid treatment	2.2	2.6	2.9	1
9. $^{89+90}\text{Sr}$ in solids following caustic acid treatment (as % in sludge)	3	22	18	23
10. Sr material balance, %	91	97	82	76

O. R. H. Rasmussen
Page 6
October 14, 1974

Only about 50 curi percent of the strontium in the 104-AX sludge dissolved when the sludge was acidified. Also acidification changed the characteristics of the sludge, causing it to become more flocculant but still not soluble in nitric acid. An additional 20 curi percent strontium was removed by treating the solids with 50 percent NaOH, then reacidifying with nitric acid (caustic-acid treatment). Caustic-acid treatment reduced the volume of solids somewhat. Approximately 20 curi percent strontium was retained on the remaining solids.

Table IV shows the volume of sludge actually used to make up the four PAS reported in Table III: Line 2 shows the actual volume of PAS generated when the sludge was acidified, and Line 3 shows the PAS to sludge ratios. Generally, the PAS to sludge ratio runs over 5 in AR Vault operation. Line 4 shows the curi percent strontium found in the PAS, based on the amount of strontium in the sludge. Line 5 shows the volume of solids left after acidification. Volume solids were determined by centrifuging the acidified slurry, after it was digested two hours between 60 and 70° C, at 1000 x G for 15 to 20 minutes.

After decanting off the liquid PAS, the solids, reported in Line 5, were mixed with an equal volume of 50 percent NaOH, then acidified with 12 M HNO_3 . The slurry was again measured. Line 6 shows the liquid volume, and Line 7 shows the strontium content as percent strontium in the sludge. Line 8 shows the column of solids remaining following the caustic-acid treatment. The solids were then fused with KOH and the melt dissolved with HCl. Line 9 shows the amount of strontium found on the solids as percent of strontium in the sludge. Line 10 shows the strontium material balance, that is, the summation of the percent strontium found in the PAS, caustic-acid treatment liquid, and final solids.

O. R. H. Rasmussen
Page 7
October 14, 1974

Considering the difficulties of doing this work in a hot cell, the material balances indicate that the data are valid. At this time, there is no explanation as to why we got such poor strontium dissolution in run 4, or why the caustic-acid treatment was more successful in removing strontium from the acid insoluble solids in run 1. The overall trend for the three runs seems to indicate about 50 percent of the strontium being dissolved by the first acid, an additional 20 percent being removed by the caustic-acid treatment, and 20 percent being held on the insoluble solids.

Other than observing that the PAS's made from the 104-AX sludge gelled in between five and seven days, no gellation studies were made.

Please call us if you have any questions regarding this work.

JSB:JEH:ms

cc: H Babad
NL Harms
GJ Raab
NC Rodewald
RL Walser
JC Womack
Process Aids - 7
File

TCRL-5

WHC-SD-WM-ER-309, Rev. 0

Date: February 12, 1976

To: R. E. Felt

From: S. S. Koegler, 942-2214

Subject: A AND AX TANK SLUDGE HEAT GENERATION RATES

Please find attached a summary of the ^{90}Sr and ^{137}Cs analyses which have been made on A and AX Farm (and 106-C) sludges. A heat generation rate from these radionuclides is also tabulated for each tank. Note that the 103-A strontium analysis varied 25 percent between the deep and shallow samples. Also, the three duplicate sludge samples taken from Tank 105-A varied by as much as a factor of 3. For these reasons and the fact that sluicing may have water-leached a portion of the cesium and strontium, the above numbers correspond only approximately to the heat generation rates of the residual sludges.

SSK:vmk

Att.

cc w/att.: DG Harlow
HP Shaw
RC Roal
RJ Thompson
RE Van der Cook

SUMMARY OF SLUDGE ANALYSIS

<u>TANK</u>	<u>DATE SAMPLED</u>	<u>⁹⁰Sr CONTENT (Ci/liter)</u>	<u>¹³⁷Cs CONTENT (Ci/liter)</u>	<u>HEAT RATE (Btu/Hr · gal)</u>
101-AX	July 1975	28.2	0.45	2.42
102-AX	Aug 1974	9.3	1.26	0.87
103-AX	Sept 1974	22.4	3.11	2.09
104-AX	May 1974	93.5	2.02	8.05
102-A	Sept 1972	49.8	1.71	4.33
103-A (Soft-Top)	Nov 1972	25.9	0.97	2.26
(Hard-Bottom)	Nov 1972	32.3	5.78	3.10
104-A*	July 1974	43.9	1.15	3.79
105-A**	Jan 1972	44.8	2.24	3.94
106-C	Oct 1974	18.8	0.86	1.65

* Material from 101-A, 103-A, and 106-A sluicing

** Average of three duplicate samples

Internal Letter

Date: November 2, 1977

No

TO: (Name, Organization, Internal Address)

FROM: (Name, Organization, Internal Address, Phone)

F. M. Jungfleisch

J. L. Starr

Subject: 104-AX SLUDGE ANALYSIS

Sludge sample No. 148 arrived September 15, 1977. Visual inspection revealed less than ten ml of damp, dark sludge. Though malleable, it tended to retain its shape; e.g., it did not flatten out when centrifuged at 1500 gravities for several hours.

On September 20, 1977, a portion of the sample was removed from the 1-A hot cell for determination of water content, bulk density, particle density, and particle size distribution.

On September 29, 1977, a portion was washed with 3.21 times its volume of water. The wash solution was divided into two aliquotes labeled JS20 and JS21, which were analyzed for selected species. The washed solids were then fused with KOH and dissolved. Labeled JS22 and JS24, aliquotes of this solution were subjected to comprehensive chemical analysis.

On October 3, 1977, a second portion of sample No. 148 was fused with KOH and dissolved with concentrated HCl. An aliquote of the resulting solution labeled JS25, was subjected to comprehensive chemical analyses. Dissolution of this sample was incomplete. The precipitate was collected and washed. That wash solution, labeled JS29, was brought to pH = 8.3 with sodium borate in an effort to dissolve any acid-insoluble species that might be present.

An aliquote of the wash was subjected to a battery of chemical analyses. The remaining precipitate was filtered and subjected to X-ray diffraction and elemental analysis. This qualitative analysis revealed the presence of several of the metals already known to be present such as Fe, Al, and K.

Analytical results are attached. Notice that the JS7 and JS8 samples were done on a three-year-old sample. They tend to support the higher JS25 result for Al as opposed to the lower value shown for JS22/24. I am unable, as yet, to explain the variety.

AX-104

F. M. Jungfleisch
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November 1, 1977

Data from JS29 indicates that only minute quantities of these particular species are being carried down with the post-fusion precipitate. Therefore, I think that the chemical composition of tank 104-AX is well represented by the JS22/24 and JS25 samples.

J. L. Starr
Chemical Sciences Group

JLS/mt

M. J. Smith/Manager, Chemical Sciences

cc:
J. W. Bailey ✓
J. S. Buckingham
M. J. Smith
File

Origin 104-AX JS # 7 Date Received 1974
Sample. Vol. 1 ml Dil. Vol. 346 ml Date Fused 8/3/77
AL # D-78 Cruc Ni D.F. 346

Requester:

Comments: Work by K. Patterson. Copious ppt post fusion with
KOH was centrifuged out. Analysis refers to supernate.

Sr	55.7 Ci/l	Fe	6.21M	Ca	0.268M
U	(3.40)10 ⁻³ g/l	Al	4.89M	Cd	0.0747M
Pu	(9.55)10 ⁻² g/l	Ni	NR	Si	NR
At	(3.08)10 ¹⁰ d/m/ml	Mn	NR	Ba	NR
Cs	1.17 Ci/l	Hg	NR	Bi	(6.84)10 ⁻³ M
		Cr	0.059M	Na	NR
		Hg	0.528M		

NO₃ <2.80M PO₄ 0.074M SO₄ <2.08M NO₂ NR

% H₂O = 40.9%

Origin 104-AX

JS # 8

Date Received 1974

Sample. Vol. 1 ml

Dil. Vol. 462 ml

Date Fused 8/3/77

AL # D-129

Cruc Al₂O₃

D.F. 462

Requester:

Comments: Work by K. Patterson

Sr 116 Ci/l
U (5.33)10⁻³ g/l
Pu 0.23 g/l
At (3.17)10¹² d/m/ml
Cs 2.10 Ci/l

Fe 6.24M
Al 4.76M
Ni NR
Mn NR
Mg NR
Cr 0.092M
Hg NR

Ca 0.67M
Cd 0.11M
Si 0.15M
Ba NR
Bi NR
Na NR

NO₃ 21.6MPO₄ 0.16MSO₄ NRNO₂ NR

Origin 104-AX #148 JS # 21 & 20 Date Received 9/15/77
 Sample. Vol. 4.8 Dil. Vol. 15.7 Washed
 Date ~~XXXX~~ 10/3/77
 AL # 2292 Cruc D.F. 3.27

Requester:

Comments: 4.8 ml solids washed with 15.7 ml H₂O. Data points are quantity leached from sample by washing; e.g. 0.337 moles of sodium were leached from one liter of sample sludge.

Sr (1.33)10⁻² Ci/l
 U NR
 Pu NR
 At NR
 Cs (8.57)10⁻³ Ci/l

Fe NR
 Al <0.013M
 Ni NR
 Mn NR
 Mg NR
 Cr NR
 Hg NR

Ca NR
 Cd NR
 Si NR
 Ba NR
 Bi NR
 Na 0.337M
 OH-15.6M

NO₃ 0.090M PO₄ NR SO₄ 0.010M NO₂ 0.083M

JS-20 = portion to S. Johnson, et al. (NO₃ & NO₂ & SO₄)

JS-21 = portion to AL

wash vol/sludge vol = 3.21:1

Origin 104-AX #148 JS # 22 & 24 Date Received 9/15/77
 Sample. Vol. 0.75 ml Dil. Vol. 340 ml Date Fused 9/29
 AL #2302 Cruc Zr D.F. 453

Requester:

Comments: Work by J. Starr. This sludge sample (0.75 ml) was
 H₂O⁻ washed prior to fusion and analysis. Noted
 post-fusion ppt. JS-24 = portion of JS-22 to S. Johnson.

Sr 105 Ci/l	Fe 4.67M	Ca 0.653M
U NR	Al 1.21M	Cd NR
Pu 0.276 g/l	Ni NR	Si 1.80M
At (8.19)10 ⁹ d/m/ml	Mn 0.091M	Ba 0.022M
¹³⁷ Cs 1.94 Ci/l	Mg 0.159M	Bi NR
¹⁵⁵ Eu 0.78 Ci/l	Cr 0.063M	Na 3.02M
¹⁵⁴ Eu 0.26 Ci/l	Hg NR	
¹²⁵ Sb 0.72 Ci/l	¹⁰⁶ Rh 0.073 Ci/l	⁶⁰ Co 0.11 Ci/l
NO ₃ NR	PO ₄ NR	SO ₄ 0.125M
		JS-24
		NO ₂ NR

Work by K. Patterson:

Damp Bulk Density (as received) = 1.8 g/ml
 Particle Density = 1.7 g/ml
 H₂O = 41%

Particle Size Distribution:

mass % of sample > n microns

100.10% > 20 μ
 98.63% > 25 μ
 98.38% > 30 μ
 98.02% > 35 μ
 96.85% > 40 μ
 96.42% > 45 μ
 94.61% > 50 μ
 85.86% > 60 μ
 61.54% > 70 μ
 50.38% > 80 μ
 26.29% > 90 μ
 14.16% > 100 μ
 3.44% > 125 μ

Origin 104-AX #148 JS # 25

Date Received 9/15/77

Sample. Vol. 0.7 ml Dil. Vol. 265 ml

Date Fused 10/3/77

AL # 2385

Cruc Zr

D.F. 379

Requester:

Comments: 2nd fusion. Observed ppt.

Sr	69.7 Ci/l	Fe	5.95M	Ca	0.63M
U	(4.25)10 ⁻³ g/l	Al	3.72M	Cd	0.015M
Pu	0.15 g/l	Ni	0.26M	Si	3.17M
At	(4.89)10 ⁷ d/m/ml	Mn	0.078M	Ba	0.020M
Cs	1.60 Ci/l	Mg	0.183M	Bi	NR
¹⁵⁵ Eu	0.68 Ci/l	Cr	0.059M	Na	2.96M
¹²⁵ Sb	0.53 Ci/l	Hg	1.44M		

NO₃ <1.14MPO₄ 0.11MSO₄ <1.14MNO₂ NR

Chromatographic method checks:

SO₄ 0.125M

Origin 104-AX #148

JS # 29

Date Received 9/15/77
Washed

Sample. Vol. 1.5

Dil. Vol. 14.5

Date ~~XXXX~~ 10/14/77

AL # 2984

Cruc

D.F. 96.7

Requester:

Comments: 1.5 ml ppt from fusion of JS25 would not dissolve in
1000 ml H₂O @ pH = 8.3. (Na Borate) Vol. reduced
to 145 ml; ppt removed on very fast paper. This anal. is
of the dissolved species, i.e., supernate.

Sr (3.37)⁴ $\mu\text{Ci}/\ell$
U 4.13⁻³ g/ ℓ
Pu 5.56⁻³ g/ ℓ
At 4.57³ $\mu\text{Ci}/\ell$
Cs 5.59³ $\mu\text{Ci}/\ell$
125Sb 3.80⁴ $\mu\text{Ci}/\ell$

Fe 8.1⁻² M
Al <2.08⁻² M
Ni <2.64⁻³ M
Mn <2.46⁻³ M
Mg 4.42⁻² M
Cr 2.21⁻³ M
Hg 7.64⁻³ M

Ca 3.17⁻² M
Cd 1.24⁻³ M
Si 0.324 M
Ba <4.28⁻³ M
Bi 3.25⁻³ M
Na 4.59 M

NO₃ 0.290MPO₄ 1.02⁻²SO₄ 0.290NO₂

The filtered solids were submitted for X-ray diffraction and elemental analysis by Gale Burch. Predominant species found were K, Fe, Si, Cr, and Al - not in order of abundance.

I conclude that this fusion did not go to completion. This may have been due to the fact that KOH did not completely cover the sample during fusion.

241-AX-101

Photo date: 8-18-87

241-AX-102

Photo date: 6-5-89

TANK 102-AX

MAY 14, 1977
2.8" LIQUID LEVEL
PHOTO SERIES #773736

102-AX
LL 2.8"
5-11-77
774081

102-AX
11 30"
4-25-77
773454

241-AX-103

Photo date: 8-13-87

TANK 103-AX

APRIL 19, 1977

3.25" LIQUID LEVEL

PHOTO SERIES #773264

241-AX-104

Photo date: 8-11-87

TK 104-AX:

10-3-77

6.2" LIQ. LEV.

← NORTH

Fouled P-200

Tai
Run
Men

short circuit

104-AX

241-AX-101 Cumulative Unknowns

Derived from LANL Waste Status and Transaction Record Summary V2.0b (Agnew 1994)

Derived from LANL Waste Status and Transaction Record Summary V2.0b (Agnew 1994)

Derived from LANL Waste Status and Transaction Record Summary V2.0b (Agnew 1994)

J-7

241-AX-104 Cumulative Unknowns

fold out

K-1

Tank	Year	Qtr	Meas. solids	Solids change	Predicted Layer	LayerT ype	Waste Volume (K Gal)
AX-101	1965	1		10		FP	263
	1966	1					
	1968	2		2		P	40
	1968	4		14		B	2738
	1968	4		7		PL	302
	1968	4	41	8			
	1969	1		1		B	294
	1969	1		2		PL	84
	1969	1	39	-5			
	1969	2		0		PL	3
	1969	2	25				
	1969	3	26				
	1969	4	30				
	1970	1	41				
	1970	2	69				
	1971	1	56				
	1972	4	58				
	1973	4	77				
	1974	4	69	30			
	1975	3					-8
	1975	3		0		SRR	6
	1975	3	61				
	1975	4					-16
	1975	4	45				
	1976	1					-37
	1976	1		7		SRR	140
	1976	1	8				
	1976	2					-4
	1976	2		3		SRR	56
	1976	2	4				
	1976	3	3	-76	3	SRR	
	1977	2	184				
	1977	3	578				
	1977	4	627				
	1980	1	600				
	1980	3		10	10	FP	
	1980	3	289				
	1980	4	525	522	512	A1sltck	
	1993	2	748	223	223	A2sltslry	

Derived from LANL Waste Status and Transaction Record Summary V2.0b (Agnew 1994)

Tank	Year	Qtr	Meas. solids	Solids change	Predicted Layer	LayerT ype	Waste Volume (K Gal)
AX-102	1968	4	14	14			
	1969	1	0	-14			
	1969	2		4		B	867
	1969	2		1		PL	43
	1969	2	17	12			
	1969	3		3		B	515
	1969	3		1		PL	35
	1969	3	19	-2			
	1969	4				B	
	1969	4	10				
	1970	1				B	
	1970	1	12				
	1970	2				B	
	1970	2	17				
	1970	3				B	
	1970	3	11				
	1970	4				B	
	1970	4	28				
	1971	1				B	
	1971	1	38	17		B	3425
	1971	1		2			
	1971	2	32	-6			
	1971	2		1		AR	15
	1971	3	38	5			
	1972	2	50				
	1972	3	63				
	1972	4	47				
	1973	1	50	12			
	1975	3		1		AR	19
	1975	4		-3			-3
	1975	4	47				
	1976	1		-25			-25
	1976	1	22				
	1976	2		-5			-5
	1976	2	17				
	1976	4	19	2			
	1977	1		-8			-8
	1977	1	11		5	B	
	1977	2	6		1	PL	

Derived from LANL Waste Status and Transaction Record Summary V2.0b (Agnew 1994)

Tank	Year	Qtr	Meas. solids	Solids change	Predicted Layer	LayerT ype	Waste Volume (K Gal)
AX-103	1966	2		125		IWW	3202
	1967	3	14				
	1968	2		0		BL	10
	1968	4		3		PL	152
	1968	4	77	-51			
	1969	1		0		B	11
	1969	1		1		PL	45
	1969	1	83	5			
	1969	2	76				
	1969	3	83				
	1970	1	80				
	1970	2	83				
	1970	4	69				
	1971	3	66				
	1972	4		0		B	3
	1972	4	69				
	1974	3	72				
	1974	4	88	5			
	1975	3		14		AR	342
	1975	4		2		AR	51
	1976	2					-18
	1976	2	70				
	1976	3					-53
	1976	3	17				
	1976	4	6				
	1977	1	11				
	1977	2	6	-98			
	1977	3	6		6	P2	-11
	1980	2	10	4	4	A1sltck	
	1980	3		8	8	IWW	198
	1980	4	121				
	1993	2	112		94	A1sltck	

Derived from LANL Waste Status and Transaction Record Summary V2.0b (Agnew 1994)

Tank	Year	Qtr	Meas. solids	Solids change	Predicted Layer	LayerT ype	Waste Volume (K Gal)
AX-104	1967	2		46		P	1184
	1967	4		31		IWW	785
	1968	2		0		B	12
	1968	2		1		P	18
	1968	2		2		PL	88
	1968	4	10				
	1969	1		0		B	37
	1969	1		1		PL	37
	1969	1	8				
	1969	2		0		PL	3
	1969	3	11				
	1969	4	27				
	1970	1	58				
	1970	2	48				
	1970	3	44				
	1970	4	52				
	1971	2	47				
	1972	4	55				
	1973	4	44				
	1974	4	47				
	1976	1	44	-37			
	1976	1		0		AR	9
	1976	3	47				
	1977	1	55				
	1977	2	22				
	1977	3	11				
	1977	4	3				
	1978	1	8				
	1978	2	3				
	1993	2	7	-37	7	P2	