PS ned file 9

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 31, 1995

Mr. Allyn Davis
US Environmental Protection Agency
First Interstate Bank Building
1445 Ross Avenue
Dallas, Texas 75202-2733

SUBJECT: Philips Semiconductors: RCRA Closure

Dear Mr. Davis:

We have been informed by Philips Semiconductors that it will not seek reissuance of its RCRA permit, EPA Identification No. NMD00709782. Philips is a manufacturer of computer chips located in north Albuquerque. It operates a 24-hour/day facility, but shuts down one week/year in late December. It plans to use this week to implement closure activities, which will not start before December 20, 1995. During closure, waste will be stored at another site within the Philips facility; this site will operate under 20 NMAC 4.1, Subpart III, 40 CFR 262.34.

The renewal date for the permit is April 1, 1996. Instead or renewal, Philips plans to operate under the less-than-90-day storage requirements of 20 NMAC 4.1, Subpart III, 40 CFR 262.34. The US Environmental Protection Agency was informed of this decision in a letter to Sherry Brown-Wilson, Esq. dated June 2, 1995.

Accordingly, Philips has submitted a closure plan modification to change the expiration date of the permit to allow earlier permit termination. This action is a Class 1† modification under 20 NMAC 4.1, Subpart IX, 40 CFR 270.42. At our request, Philips has also clarified closure implementation through the addition of a sampling and analysis plan and performance standards.

For your information and comment, copies of the following documents are enclosed:

Philips' RCRA Closure Plan Revision, dated October 1995. This revision is in "redline/strikeout" format; and

Philips' RCRA Closure Plan Revision Addendum - Sampling Plan, dated October 1995.

We would appreciate your comments on this action and on Philips' closure plan modifications by November 17, 1995 so that Philips can proceed with the appropriate public notice required for Class I† modifications in a timely manner.

Please contact Stephanie Kruse of my staff at 827-1561 if you have any questions or comments.

Sincerely,

Barbara Hoditschek

Barbara Hoditschek, Manager
RCRA Permitting Program

Enclosures

xc: Nancy Morlock, EPA
Melinda McKinley, Philips
Philips red file - 95
Reading file

RCRA CLOSURE PLAN REVISION ADDENDUM
(Revision of Permit Attachment F)
SAMPLING PLAN

Prepared for:

PHILIPS SEMICONDUCTORS
9201 Pan American Freeway, NE
Albuquerque, New Mexico 87113

EPA ID No.- NMD00709782

Prepared by:

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October 1995

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1.0 INTRODUCTION

This sampling plan describes the sampling criteria and procedures to be followed during closure of the RCRA Waste Storage Areas located at Philips Semiconductors (Philips-Albuquerque), 9201 Pan American Freeway NE, Albuquerque, New Mexico. This sampling plan is written as an Addendum to the RCRA Closure Plan Revision (Revision of Permit Attachment F) (Philips Semiconductors, October 1995). The Closure Plan outlines the work to be performed as part of closure activities. This sampling plan provides details concerning the actual sampling methods to be used in each permitted waste storage area of the facility.

2.0 WASTE STORAGE AREAS

The Philips-Albuquerque facility stores waste generated solely from its manufacturing operations. There are four specific areas where waste has been stored. These areas consist of two containerized waste storage areas, two 5,000 gallon waste acid tanks, and one 5,000 gallon waste solvent tank. The general layout for the Philips-Albuquerque Facility is shown on Figure 1. A brief description of each storage area and the criteria for sampling during closure are provided below.

2.1 Chemical Storage #2

Chemical Storage #2 is a taped-off area located in the southwest corner of the Systems Center, as shown in Figure 2. Chemical Storage #2 has been used for container storage of D004 and D009 hazardous wastes, which are arsenic- and mercury-containing wastes, respectively. This area held a maximum of 64 55-gallon drums. Because the drummed wastes which have been stored in this area are solids, there is no possibility that a release may have occurred through the coated concrete floor of this unit. Based upon this rationale, the area will be cleaned of any residue and decontaminated using a detergent/hot water mixture. A sample of the final rinse water will be collected from Chemical Storage #2 and sent to the analytical

laboratory for analysis arsenic and mercury. Table 1 provides a summary of the analytical parameters for each waste storage area. The analytical methods are presented in Table 2. The sampling method for collection of rinse water samples is described in Section 3.1, below.

2.2 *Flammable Storage #4*

Flammable Storage #4 is located in a room within the System Center and has been used for container storage of D001 and F003 hazardous waste. There were a maximum of 36 55-gallon drums stored in this area which contained liquid waste solvent II and solid waste contaminated with waste solvent II. Waste solvent II consists of a variety of proprietary vendor formulas of positive photoresists. Containment in Flammable Storage #4 includes a coated concrete floor that gently slopes to a floor drain in the middle of the room and drains into Tank #3. In accordance with the closure plan, Flammable Storage #4 will be cleaned of any residue and decontaminated using a detergent/hot water mixture. Samples of the final rinse water will be collected and sent to the analytical laboratory for analysis of ignitability, total organic carbon and target list volatile organic compounds. The analytical methods are presented in Table 1. The method for rinse water sample collection is provided in Section 3.1. Table 2 provides specifics concerning analytical methods, sample containers, preservatives and holding times. Table 3 is a list of the target list volatile organic compounds for the closure samples. This list was derived from the list of TCLP volatile organic compounds, as well as compounds generally identified with F003 wastes (40 CFR 261.31).

Three soil samples will be collected from beneath the concrete floor at the Flammable Storage Area #4. Sample locations will be at the low point in the room, adjacent to the floor drain; and one location beneath each of the primary drum storage areas in the room. Approximate sample locations are shown in Figure 2. Soil sampling methods are described in Section 3.2.2.

2.3 *Tank Storage Area*

There are three tanks located within the wastewater neutralization area of Philips-Albuquerque Facility. These tanks each have a 5,000 gallon capacity and are designated Tank #3, #4, and #5. The tanks are located as shown in Figure 2. All three tanks are located in a secondary containment area that consists of coated concrete. Tank #3 is a steel tank used for storage of waste solvent I. Waste solvent I consists of photolithographic cleaning waste which is categorized as F002, F003, and D001 wastes. Tank #4 is a FRP tank used for the storage of waste buffered oxide etch, which is classified as D002 waste and consists primarily of dilute hydrofluoric acid and ammonium fluoride. Tank #5 is a FRP tank used for storage of waste hydrofluoric acid (D002).

As described in the closure plan, the tanks will be cleaned and decontaminated. Samples will be collected of any sludges remaining in the tanks. Samples will be collected from the final rinse water after the tank enclosures have been washed. A description of those sampling methods is described below. Samples of the rinse water and sludge will be analyzed for pH, ignitability, and target list volatile organic compounds (VOC). Table 1 summarizes the analyses to be performed on the samples from the closure of the waste storage tanks. Table 2 provides information concerning analytical methods, sample containers, preservatives and holding times. Table 3 provides a list of specific analytes that could potentially be associated with the various wastes stored in the three tanks.

Four soil samples will be collected from existing soil sampling ports located in the waste tank storage area. A description of the sampling method is provided in Section 3.2.1. The soil samples will be analyzed for soil pH and the list of volatile organic parameters on Table 3.

0 SAMPLING METHODS

During closure, samples will be collected of rinse water and soils in each area, as appropriate. The sampling methods are described in this section.

3.1 Rinse Water Sampling

As described in the closure plan, the concrete containment areas associated with Chemical Storage #2, Flammable Waste Storage #4, and the Waste Storage Tanks will be cleaned and decontaminated. Samples of the final rinse water will be collected for laboratory analysis. These samples will be collected into the appropriate sample containers provided by the analytical laboratory and preserved as described on Table 2.

The sampling personnel will collect rinse water directly into the sample containers by submerging the containers into the rinse water at a low point in the floor or tank. In Chemical Storage #2 it may be necessary to collect the rinse water into a drum or other container prior to sampling. Care will be taken to ensure no loss of preservatives. Samples of volatile organic compounds will be collected into 40-ml VOA vials in such a manner that no air bubbles are retained in the container.

3.2 Soil Sampling

3.2.1 Waste Storage Tanks

At the waste storage tanks, soil samples will be collected beneath the concrete containment area. At the time the facility was constructed, sampling ports were installed along the perimeter of the tanks, although sampling has never been performed. These sampling ports consist of 4-inch inside diameter (ID) steel pipe, which are closed with a threaded cap at floor surface and are completed into soil at their base. Design information concerning these ports indicate that they vary in length from 8 to 17 feet. Soil samples will be collected

from four of the sampling ports, which are located at the four corners of the tank enclosure. The following general procedure will be followed for the soil sampling:

- Plastic sheeting will be placed upon the floor surrounding the sampling port to ensure that sampling equipment and supplies do not come in contact with the floor.

- The pipe will be uncapped and ambient organic vapor readings will be taken with a photoionization detector (PID).

- An oil-water interface probe will be used to monitor for fluids (including water or separate phase liquids) in the sampling ports.

- Although no fluids are anticipated, if fluids are present, a bottom-loading disposable polyethylene bailer will be used to collect a sample of the fluid, before any soil sampling is attempted.

- A clean, stainless steel sampling device will be lowered down the sampling port to collect a soil sample. This device will be operated by hand using either a split-spoon sampler, or an auger-type soil sampler. A sufficient volume of soil will be brought to the surface to fill two 8-ounce amber glass containers.

- Samples will be transferred rapidly from the sampling device to the sample containers with a clean latex glove, or with a decontaminated stainless steel sampling tool. The sample containers will be filled rapidly to limit any loss of volatile constituents.

- Samples will be handled as described in section 5.3.

3.2.2 *Flammable Storage Area #4*

After the concrete floor has been cleaned and decontaminated at Flammable Storage Area # 4, small sections of the concrete floor will be removed by coring, sawing or drilling to provide access for soil sampling. The following general procedure will be followed for soil sampling:

- Plastic sheeting will be placed around the hole in the concrete, so that sampling equipment can be kept clean.

- Soil samples will be collected from each location using a clean sampling device or a latex glove. The actual sampling method will be determined after the nature of the soil material is evaluated. The use of a hand-auger or split-spoon sampler may be necessary if the soil is compacted. A sufficient volume of soil will be brought to the surface to fill two 8-ounce amber glass containers.

- Each sampling location will be monitored for organic vapors with the PID.

- Samples will be transferred rapidly from the sampling device to the sample containers with a clean latex glove, or with a decontaminated stainless steel sampling tool. The sample containers will be filled rapidly to limit any loss of volatile constituents. Samples will be handled as described below.

- After sample collection, the concrete floor will be patched.

3.2.3 *Sampling Equipment Decontamination*

Decontamination stations will be set up using 5-gallon buckets filled with soapy-water, clear potable water, and distilled water. The soap used will be a phosphate free product, such as Alconox™. All sampling equipment will be decontaminated by the following procedure:

- Debris and soil will be cleaned from the device with a stiff brush;
- The sampling device will be washed in soapy-water using a brush, triple-rinsed in potable water, and given a final rinse in distilled waster; and
- The sampling device will be allowed to air-dry before storage in plastic sheeting.

4 QUALITY ASSURANCE/QUALITY CONTROL

4.1 Record-Keeping

All information concerning sampling activities will be recorded in a bound field-logbook using a ball-point pen. The type of information recorded includes the following:

- Time-table of work and other activities performed at the site;
- Samplers and other personnel at each sampling location;
- Visitors to the sampling area;
- Specific sampling methods used and any necessary deviations from the sampling plan;
- Description of soils collected including soil classification, moisture content, color, unusual odors, depth of sample interval, etc.
- Sample identification, number of sample containers filled, analytical parameters, preservative used, and name of laboratory.

4.2 Field QA Samples

Samples will be collected in the field to document data reproducibility, the effectiveness of the decontamination procedures, and the impacts of sample shipping. These samples will include the following:

Trip blanks-- Trip blanks are provided by the laboratory and travel with the sample bottles to the site and are placed in each cooler as sampling proceeds. Trip blanks are analyzed for volatile organic parameters, and monitor the presence of volatile constituents which may have crossed the sample container septum during sample shipping and storage. One trip blank will be used for each sample cooler.

Rinsate blanks-- Rinsate blanks consist of laboratory pure water poured over and through the sampling equipment after equipment decontamination. The rinsate blank provides data concerning the effectiveness of decontamination procedures. One rinsate blank will be collected during the soil sampling activities.

Duplicate Sample-- Duplicate samples are collected at the same time and in the same manner as the regular soil or water samples. They are used to demonstrate the reproducibility of the sample collection methods and to clarify sample matrix effects. One duplicate sample will be collected during the rinse water sampling.

Matrix Spike/Matrix Spike Duplicates-- These samples will be coordinated with specific laboratory requirements and are further described in Section 5.2.1.

4.3 *Chain-of-Custody*

All samples will be collected and shipped under appropriate chain-of-custody (COC). The COC procedures include completion of forms which document the samples collected and the chain of responsible parties. The form will include the project name and number, names of field sampling personnel, Project Manager, sample number, date and time sample was collected, sample location, whether it is a composite or grab sample, sample matrix, number of containers filled for each sample, and constituents to be analyzed. Additionally, the form will document the date, time, and signature of person(s) relinquishing and receiving custody of the samples. Custody tape is used to seal coolers or sample containers, and the samples are kept in view, or under "lock and key" until delivery to the laboratory. If it is necessary to store samples overnight, pending delivery to the laboratory, they will be stored in ERM's sample refrigerator which is located in a locked sample room. The samples will be hand-delivered to a local laboratory or shipped via Federal Express using COC procedures. Once the samples are received at the laboratory, the laboratory will maintain an internal COC that documents sample handling.

4.4 *Sample Handling*

As each sample is collected, the container is appropriately labeled and the pertinent information concerning the sample is entered in the logbook. Sample containers are wrapped in bubble wrap, placed inside a resealable plastic bag, and stored in an insulated cooler. Sufficient "blue ice" is kept in the cooler to maintain a temperature of 4 degrees centigrade inside the cooler.

4.5 *Equipment Calibration*

All monitoring and sampling equipment used at the site will be calibrated according to manufacturer's specifications. Calibration is normally performed first thing each morning and at mid-day.

4.6 *Health and Safety*

A Health and Safety Plan will be developed and will be oriented toward specific closure procedures. The Health and Safety Plan will be available on-site during work activities. Periodic Health and Safety meetings will be held at the site during regular work hours to review safety concerns.

5 *LABORATORY QA/QC AND REPORTING*

Analytical methods to be used for the Philips-Albuquerque RCRA closure will be documented in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd edition (USEPA, 1986/1992). The following section describes the QA/QC procedures used to control data analysis and reporting.

5.1 *Laboratory Selection*

The laboratory selected for the analyses of various sample matrices collected at the site must be capable of providing sufficiently accurate and precise analytical results for the types of samples analyzed. Laboratories for the analysis of samples collected for this project will be selected based upon the following: 1) experience analyzing environmental samples while providing accurate and precise analyses; 2) experience with analyses of similar matrix types; 3) experience with the specified analytical methodologies; 4) operation of a stringent internal quality assurance program; and 5) cost.

5.2 *Laboratory QA/QC Procedures*

To verify the precision and accuracy of all laboratory analyses, the laboratory will have a quality assurance/quality control program in effect at all times. The QA/QC procedures are designed to ensure that laboratory accuracy and precision are within established acceptance criteria, such that the analytical results can be considered valid and representative. The selected analytical laboratory will submit a quality assurance plan for review. The following sections detail laboratory actions to ensure quality control.

5.2.1 *Internal Laboratory Quality Control*

The laboratory QC effort will be equivalent to the EPA Level III program. Matrix spike and matrix spike duplicate samples and laboratory control samples will be analyzed, if specified in the analytical method, to determine if recoveries outside acceptance goals are attributable to sample matrix interferences or to laboratory analytical errors. The laboratory will provide

a copy of the Level III QC Data Package with each sample data group. The data packages will be reviewed, and a summary of the QC results will be provided with any reports.

5.2.2 *Sample Tracking*

Upon arrival at the laboratory facility, each sample will be assigned a unique identification number. This number will then be placed on all laboratory apparatus used for that sample during analysis. After the analysis has been completed, this number will also be used for retrieving raw data for any sample.

Records of all analyses will be stored on a hard disc and magnetic tape. In addition, copies of all analytical reports, including raw data, will be kept in storage, as required.

5.2.3 *Data Handling and Reporting*

The laboratory will have an established system for controlling the passage of data through the laboratory. A general outline of the data handling process is described below:

- As results are completed, information such as the name of the analyst who performed the work, his/her calculations for the sample, and all pertinent data that would allow recalculation of results at a later time will be noted on the results sheets or notebooks.

- After all analyses are completed, the data will be validated by a laboratory supervisor.

The laboratory will be responsible for recognizing anomalous results and taking action, so that a sample can be reanalyzed within holding times.

5.2.4 *Sample Analysis*

Blank and standard spike samples will be routinely analyzed along with the samples as part of the analytical laboratory's internal quality control program. This program will include both intra- and inter-laboratory samples. Also included in this program will be internal laboratory spike (ILS) samples, which are known performance samples introduced by the analyst. All samples with the exception of the ILS's will be assigned code numbers to prevent preferential treatment of samples. Analytical QC samples include the following, as appropriate:

<u>Analytical QC Samples</u>

- Method Blank/Reagent Blank
- Calibration Standards
- Check Standard/Surrogate
- Control
- Spikes
- Laboratory Duplicate Sample
- Quality Control Check Samples
- Matrix Spike/Matrix Spike Duplicates

5.2.5 *Documentation*

All QA/QC procedures followed in the laboratory will be documented through the use of logbooks and system audits. Logbooks will be provided for sample handling, instrument monitoring and calibration, preparation of standards, and receipt of all chemicals and supplies. All out-of-compliance occasions will be logged by the QA officer, with corrective actions described and resolution of the out-of-compliance occasion noted as to time, date, and effectiveness.

5.2.6 *Laboratory Standard Operating Procedures*

Laboratory Standard Operating Procedures (SOPs) will be in place for all phases of laboratory operations. The SOPs will be provided in the laboratory operating areas and followed by all laboratory personnel.

5.2.7 *Calibration Procedures*

All laboratory analytical equipment will be calibrated using standard solutions appropriate to the type of instrument and the method linear range. All calibrations will be performed in accordance with the prescribed procedures and frequencies stated in the selected analytical methods as defined by SOPs. Complete calibrations will be performed prior to analyses. Continuing calibration checks will be analyzed at method-prescribed frequencies. If the continuing calibration check does not meet acceptance criteria, the instrument will be re-calibrated and all affected samples will be re-analyzed. All calibration data will be recorded and maintained in the laboratory's project file.

5.3 *Data Reduction, Validation, and Reporting*

Reducing, validating, and reporting of the analytical data will be performed in accordance with the standard operating procedures for the corresponding analytical methods and in accordance with the laboratory's internal quality control program. The analytical laboratory will provide the initial data validation. This will include a review of the data package to ensure that:

- Sample preparation information is correct and complete;
- Analysis information is correct and complete;
- The appropriate SOPs have been followed;
- Analytical results are correct and complete;
- QC samples are within established control limits;
- Blanks are within appropriate QC limits;
- Special sample preparation and analytical requirements have been met; and
- Documentation is complete (all anomalies in the preparation and analysis have been documented; out-of-control forms, if required, are complete; holding times are documented).

The laboratory will also be required to submit a Level III quality assurance package The laboratory will provide the following hard copy information in each analytical data package submitted:

- COC form; cover sheet listing the samples included in the report and narrative comments describing problems encountered in analysis and identification of analyses not meeting quality control criteria, including holding times;

- Tabulated results of compounds identified and quantified, dilution factors, and the reporting limits for all analytes; and

- Analytical results for QC sample spikes, sample duplicates, initial and containing calibration, verifications of standards and blanks, standard procedural blanks, and laboratory control samples.

PERMIT ATTACHMENT F

PERMIT APPLICATION
SECTION I

CLOSURE PLAN, POST-CLOSURE PLAN, AND
FINANCIAL REQUIREMENTS

This plan identifies the steps required to close the RCRA waste storage facility located at Philips Semiconductors (Philips-Albuquerque), 9201 Pan American Freeway NE, Albuquerque, New Mexico.

This ~~section is submitted~~ **plan has been prepared** in accordance with the requirements of HWMR 206.D.2 **and is a modification of the approved closure plan for the facility. The plan is being modified to accommodate an earlier closure than originally anticipated in the RCRA Part B Permit.** ~~This plan identifies all steps that will be necessary to partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life.~~ A post-closure plan is not required because this is not a disposal facility and all wastes will be removed at closure.

Philips-Albuquerque will maintain an onsite copy of the approved closure plan and all revisions to the plan until the certification of closure completeness has been submitted and accepted by the Secretary of the New Mexico Environmental Department. Philips- Albuquerque ~~will notify~~ **has notified** the Secretary ~~at least 180 days prior to beginning final closure. The closure date for the entire facility will be AD 2050.~~ **in a letter dated June 15, 1995, of its intention to perform final closure of the waste storage areas beginning on December 23, 1995.** Upon completion of closure, ~~we will submit to the Environmental Department a certification by both~~ Philips-Albuquerque and **a New Mexico** ~~by~~ Professional Engineer **will submit certification** that the facility has been closed in accordance with the specifications in the approved closure plan.

I.1. Closure Plan:

I.1.a. Closure Performance Standard (HWMR 206.D.2.b.):

This Closure Plan is a controlled maintenance system designed to minimize or eliminate threats to human health and discharge of hazardous waste into the environment. The facility stores wastes generated solely from its manufacturing operations. **however, because of the coated concrete containment for these facilities, no such contamination is anticipated. The inspection logs for the storage facility show that the only material spilled at the site is photoresist, which is believed to be not a RCRA hazardous waste. Soil samples will be collected to confirm the indication that there has not been a release from the storage facility. A Sampling Plan has been developed as an Addendum to this document.** ~~If there is evidence of~~

~~any spills or leaks, samples will be taken and analyzed to determine the extend of contamination in the soil and, if necessary, in ground water.~~ Any contaminated soil will be excavated, removed, and disposed of at a proper disposal facility. **Based upon the results of soil samples collected, a determination will be made concerning potential impact to ground water. If soil sampling indicates that there may be an impact to groundwater, the groundwater will be remediated. The closure performance for each closure activity is listed in the following table.**

Area	Parameters	Performance Standard
Chemical Storage #2	**Arsenic** **Mercury**	**0.05 mg/l** **0.002 mg/l**
Flammable Storage #4	**Ignitability** **Volatile Organics**	**Non-ignitable** **RBC**
Acid Tanks	**pH**	**Greater than 5**
Solvent Tank	**Ignitability** **Volatile Organics**	**Non-ignitable** **RBC**

Note: RBC = Risk-based Concentration (see Sampling Plan Table 3)

~~Any contaminated ground water will be remediated.~~ The following sections discuss in detail efforts to be made at Philips-Albuquerque to satisfy the closure performance standard.

I.1.b. ~~Partial and~~ Final Closure Activities (HWMR 206.D.2.c.(a)):

~~At the time of this writing, no partial closures are planned. However, the clean-up procedures are outlined by area so that the appropriate sections of the final closure plan may be used for partial closure. In the event of a partial closure, the closure plan will be rewritten to reflect the change. At a maximum, we expect the operation to consist of storage of 100 drums and 3 x 5,000 gallon tanks during the life of the facility. The closure date for the entire facility is scheduled to be AD 2050.~~ **This closure will be a final closure of the hazardous waste storage areas at the facility. These areas consist of two containerized waste storage areas, two 5000-gallon waste acid tanks, and one 5000-gallon solvent waste tank. The maximum waste inventory from each of these is listed in Section I.1.c of this closure plan. The closure activities will involve removing the RCRA containers and cleaning the waste storage areas, and cleaning the storage tanks and tank vault. Although hazardous waste will be stored at the facility during the closure-activities, the storage tanks and piping will temporarily be taken off line for closure, and any hazardous waste generated during the closure period will be collected in drums. During closure cleaning activities, drummed flammable hazardous waste and arsenic and mercury waste will be stored under the 90-day generator regulations delineated in 40 CFR 262. The 90-**

amount of water will be used to wash and rinse the area, with no greater depth of water than 2 inches within the containment area.

I.1.f. Decontamination and Closure of Tank Storage:

Decontamination and closure of the tank storage area will occur in the following steps:

Step 1

~~After manufacturing shutdown,~~ the drain lines leading to the hazardous waste storage tanks will be rinsed copiously with water. The pH of the rinsate will be tested to be greater than 5 at the last clean-out trap. The two acid storage tanks will be rinsed with water and the rinsate removed by a commercial vendor or, where appropriate, pumped into waste water neutralization. The procedures will be repeated until the pH of the rinsate is greater than 5. **which will be the closure performance standard for those two tanks.**

Step 2

The solvent-containing tank will be rinsed ~~and filled~~ with ~~5,000 gallons of~~ water and pumped out for hazardous waste disposal. It will then be visually inspected for sludge. If there is sludge in the tank, a sample will be collected and analyzed for ~~ignitability and TCLP toxicity.~~ **waste characteristics to determine the appropriate disposal method.**

~~Sludge which is non-hazardous will be left alone.~~ Sludge ~~with hazardous characteristics~~ will be removed from the tanks by scraping ~~the tank bottom with long-handled shovels and squeegees~~ from outside the tank through the 24-inch manhole. The sludge will be collected in a 55-gallon drum and then stored with the other wastes generated during clean-up until the final waste pick-up. It is anticipated that less than one drum of waste sludge will be collected.

Many of the solvents stored in this tank have flash points below 100 degrees C and the residue of these solvents may result in a sludge that is ignitable. The solvent waste stream does not include any TCLP toxic material; however, as many solvents are used for cleaning purposes, it is possible that over the life of the tank insoluble TCLP toxic materials may be partitioned and concentrate as a sludge on the bottom of the tank. **Therefore, the risk-based concentrations of volatile organic compounds will be used as the closure performance standard for the rinsate and sludge.**

3.0 SAMPLING METHODS

During closure, samples will be collected of rinse water and soils in each area, as appropriate. The sampling methods are described in this section.

3.1 Rinse Water Sampling

As described in the closure plan, the concrete containment areas associated with Chemical Storage #2, Flammable Waste Storage #4, and the Waste Storage Tanks will be cleaned and decontaminated. Samples of the final rinse water will be collected for laboratory analysis. These samples will be collected into the appropriate sample containers provided by the analytical laboratory and preserved as described on Table 2.

The sampling personnel will collect rinse water directly into the sample containers by submerging the containers into the rinse water at a low point in the floor or tank. In Chemical Storage #2 it may be necessary to collect the rinse water into a drum or other container prior to sampling. Care will be taken to ensure no loss of preservatives. Samples of volatile organic compounds will be collected into 40-ml VOA vials in such a manner that no air bubbles are retained in the container.

3.2 Soil Sampling

3.2.1 Waste Storage Tanks

At the waste storage tanks, soil samples will be collected beneath the concrete containment area. At the time the facility was constructed, sampling ports were installed along the perimeter of the tanks, although sampling has never been performed. These sampling ports consist of 4-inch inside diameter (ID) steel pipe, which are closed with a threaded cap at floor surface and are completed into soil at their base. Design information concerning these ports indicate that they vary in length from 8 to 17 feet. Soil samples will be collected

TABLE 3 - VOLATILE ORGANIC PARAMETERS --
FLAMMABLE STORAGE AREA #4 AND TANK STORAGE AREA

Parameter	Rinsate Standard (µg/l)	Soil Standard (mg/kg)
Acetone	3,700	7,800
Benzene	0.36	22
n-Butyl alcohol	3,700	7,800
Carbon disulfide	21	7,800
Carbon Tetrachloride	0.16	4.9
Chlorobenzene	39	1,600
Chloroform	0.15	100
Cyclohexanone	30,000	390,000
1,1-Dichloroethylene	0.044	1.1
1,2-Dichloroethane	0.12	7
Ethyl acetate	33,000	70,000
Ethyl benzene	1,300	7,800
Ethyl ether	1,200	16,000
Isobutanol	1,800	23,000
Methanol	18,000	39,000
Methyl ethyl ketone	1,900	47,000
Methyl isobutyl ketone	2,900	6,300
Methylene chloride	4.1	85
Orthodichlorobenzene	270	7,000
Tetrachloroethylene	1.1	12
Toluene	750	16,000
1,1,1-Trichloroethane	1,300	7,000
1,1,2-Trichloro-1,2,2-Trifluoroethane	59,000	1,000,000
1,1,2-Trichloroethane	0.19	11
Trichloroethylene	1.6	58
Trichlorofluoromethane	1,300	23,000
Vinyl Chloride	0.019	0.34
Xylene	1,400	160,000