LANL TA50

Department of Energy
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

SEP 09 2004

SEP 2004

John Kieling, Manager
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Dear Mr. Kieling:

Subject: Transmittal of the U.S. Department of Energy-National Nuclear Security Administration (DOE-NNSA)/University of California (UC) Closure Certification Reports for Technical Area 50, Building 37 (TA-50-37)

The purpose of this letter is to transmit for your review three copies each of three DOE-NNSA/UC Closure Certification Reports for the hazardous waste management units located at Los Alamos National Laboratory (LANL), TA-50-37. The closure reports are as follows:

- Closure Certification Report- Technical Area 50, Building 37, Room 117 Container Storage Unit (LA-UR-04-5188)
- Closure Certification Report- Technical Area 50, Building 37, Interim Status Container Storage Unit, Rooms 115 and 118 (LA-UR-04-5182)
- Closure Certification Report- Technical Area 50, Building 37, Controlled Air Incinerator Exhaust Equipment (LA-UR-04-5472)

Activities associated with these closures were conducted in accordance with two approved amended closure plans and one interim status closure plan, including sample locations chosen during a site walk with Mr. Steve Jetter of the New Mexico Environment Department-Hazardous Waste Bureau (NMED-HWB). DOE-NNSA/UC request that these units be removed from the permit or closed under interim status.

If you have any comments or questions regarding these submittals, please contact either myself at (505) 667-5794 or Jack Ellvinger, UC, at (505) 667-0633.

Sincerely,

Gene Turner

Gene Turner
Environmental Permitting Manager

OFO:5GT-011

Enclosure

9017

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CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
Room 117 Container Storage Unit

Revision 0.0

LA-UR-04-5188
August 2004

Prepared For:
Risk Reduction and Environmental Stewardship Division,
Solid Waste Regulatory Compliance Group
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
Room 117, Container Storage Unit

Revision 0.0

LA-UR-04-5188
August 2004

Facility ID No.: NM0890010515

Facility Name: Los Alamos National Laboratory

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Legal Operators: U.S. Department of Energy
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LIST OF ACRONYMS/ABBREVIATIONS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CAI	Controlled Air Incinerator
CFR	Code of Federal Regulations
cm^2	square centimeters
COPC	contaminant of potential concern
CSU	container storage unit
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
ft	feet/foot
HHRA	human health risk assessment
HI	hazard index
LANL	Los Alamos National Laboratory
µg/dL	micrograms per deciliter
MSSL	Medium-Specific Screening Level
NIOSH	National Institute of Occupational Safety and Health
NMED	New Mexico Environment Department
PCB	polychlorinated biphenyl
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
STL	Severn Trent Laboratories, Inc.
SVOC	semi-volatile organic compounds
SW-846	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*

LIST OF ACRONYMS/ABBREVIATIONS (continued)

SWRC	Solid Waste Regulatory Compliance Group
TA	technical area
TA-50-37	Technical Area 50, Building 37
VOC	volatile organic compound
WTCIATWG	World Trade Center Indoor Air Taskforce Working Group

EXECUTIVE SUMMARY

This Closure Certification Report describes the closure activities implemented to clean close the permitted container storage unit (CSU) in Technical Area (TA) 50, Building 37, Room 117 at the Los Alamos National Laboratory. The closure activities were implemented in accordance with the procedures outlined in the following documents:

- *Hazardous Waste Facility Permit*, Amended Closure Plan Attachment E.5, NM0890010515, November 8, 1989, hereinafter referred to as the Closure Plan.
- Vigil-Holterman, Luciana, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* on February 3, 2003.
- Vozella, Joseph, Letter to Mr. Carl Will, *Request for Class I Resource Conservation and Recovery Act (RCRA) Permit Modification for Attachment E.5; Closure Plan for Technical Area 50, Building 37, Room 117 (TA-50-37-117)*, August 25, 2003.
- Martin, Sandra Y., Letter to Nanos, G. Pete and Erickson, Ralph, *Approval of Class I Permit Modification – Technical Area 50 Closure Plans: TA-50-114 Container Storage Unit, Permit Attachment E.3; TA-50-37, Room 117 Container Storage Unit, Permit Attachment E.5; TA-50-37, Controlled Air Incinerator Exhaust System, Permit Attachment E.4. Resource Conservation and Recovery Act (RCRA) Hazardous Waste Facility Permit Los Alamos National Laboratory, EPA ID# NM0890010515, HWB-LANL-02-014*, March 24, 2004.

The Room 117 CSU was decontaminated and sampled for total metals, semi-volatile organic compounds, and volatile organic compounds to verify clean closure in accordance with at least one of the following criteria:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.
2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Table ES-1 provides a summary of the constituents detected during verification sampling. Each constituent was compared to the results of blank/baseline samples and/or the U.S. Environmental Protection Agency Region 6.0 medium specific screening levels to demonstrate closure in accordance with criteria 2 or 3 as listed above. Those detected constituents that could not meet criteria 2 or 3 were used to identify locations for the collection of swipe samples. Swipe samples were collected because the analytical results from verification sampling (wash water samples) could not be related to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorption) to an occupational worker (to demonstrate closure in accordance with criterion 4). Table ES-2 provides a summary of the swipe sampling results. The swipe sampling results were also compared to blank/baseline sample results to identify those detections and subsequent locations that required further evaluation during risk assessment. Table ES-3 summarizes the results of the risk assessment.

Based upon the results of the risk assessment provided in Table ES-3 and the demonstration of closure summarized in Tables ES-1 and ES-2 the Room 117 CSU is clean closed in accordance with the Closure Plan.

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
Room 117 Container Storage Unit

1.0 INTRODUCTION

The information provided in this Closure Certification Report is submitted to describe the closure activities implemented to clean close the Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 container storage unit (CSU) at the Los Alamos National Laboratory (LANL). These closure activities will minimize the need for further maintenance, preclude the release of hazardous constituents to environmental media, and be protective of human heath in accordance with the closure performance standards specified in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC) (incorporating Code of Federal Regulations (CFR), Title 40 §264.111), revised October 1, 2003.

The closure activities described in this report were implemented in accordance with the procedures outlined in the following documents:

- *LANL Hazardous Waste Facility Permit*, Amended Closure Plan Attachment E.5, NM0890010515, November 8, 1989, hereinafter referred to as the Closure Plan (Appendix A).

- Vigil-Holterman, Luciana, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* on February 3, 2003 (Appendix B).

- Vozella, Joseph, Letter to Mr. Carl Will, *Request for Class I Resource Conservation and Recovery Act (RCRA) Permit Modification for Attachment E.5; Closure Plan for Technical Area 50, Building 37, Room 117 (TA-50-37-117)*, August 25, 2003 (Appendix B).

- Martin, Sandra Y., Letter to Nanos, G. Pete and Erickson, Ralph, *Approval of Class I Permit Modification – Technical Area 50 Closure Plans: TA-50-114 Container Storage Unit, Permit Attachment E.3; TA-50-37, Room 117 Container Storage Unit, Permit Attachment E.5; TA-50-37, Controlled Air Incinerator Exhaust System, Permit Attachment E.4. Resource Conservation and Recovery Act (RCRA) Hazardous Waste Facility Permit Los Alamos National Laboratory, EPA ID# NM0890010515, HWB-LANL-02-014*, March 24, 2004 (Appendix B).

1.1 Background

TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south (Figures 1-1 and 1-2). The TA-50-37, Room 117 CSU is located in a two-story building that contains offices, laboratories, two process bays, an egress bay, and a mechanical equipment area. The CSU consists of Room 117, a storage location, on the first floor of the building as indicated on Figure 1-3.

The CSU was used for mixed waste storage of 5-, 30-, 55-, 83-, and 85-gallon drums/containers; fiber/cardboard boxes; and equipment packaged in plastic bags in support of operations at the Controlled Air Incinerator (CAI) previously associated with the Treatment Development Facility at LANL and located in Room 112 at TA-50-37. This incinerator received a Toxic Substances Control Act incineration permit in 1984 and a Resource Conservation and Recovery Act operating permit for hazardous waste in 1989. In 1995, it was determined that waste incineration would not be performed at the CAI. In 1996, closure of the CAI was initiated in accordance with an approved New Mexico Environment Department (NMED) closure plan. The CAI closure was approved by NMED in 1998. However, the CSU was left in place for continued use by other projects. The maximum total inventory of waste previously stored at the Room 117 CSU is 3,630 gallons.

1.2 Purpose

The purpose of this Closure Certification Report is to document the implementation of closure activities for the Room 117 CSU as described in the Closure Plan. Additionally, this report presents the independent registered professional engineer's closure certification as required by 20.4.1.600 NMAC (incorporating 40 CFR §264.115), revised October 1, 2003.

2.0 PERFORMANCE OF CLOSURE AT THE TA-50-37, ROOM 117 CONTAINER STORAGE UNIT

The information provided in this section documents the implementation and completion of the closure activities for the Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 container storage unit (CSU). Closure was performed in accordance with the Closure Plan provided in Appendix A. The operating record, field logbook, analytical data, chain of custody documentation, and decontamination waste disposal records in support of the completed closure activities at the TA-50-37, Room 117 CSU will be maintained by the Los Alamos National Laboratory (LANL) Solid Waste Regulatory Compliance (SWRC) Group and the certifying engineer.

2.1 Description

The Room 117 CSU is located in a two-story building that contains offices, laboratories, two process bays, an egress bay, and a mechanical equipment area. Room 117 is located in the eastern portion of the building and measures 21-feet (ft) wide by 40-ft long. The CSU has a recessed containment located approximately 4-ft below the steel grate. The recessed floor is divided into two containment areas (large containment area and small containment area) which slope to independent sumps. The large containment area measures 21-ft wide by 30-ft long and small containment area measures 10-ft wide by 21-ft long. The sump in each containment area has a pump and piping that connects the sump to its own standpipe for removal of liquids.

Mr. Steve Jetter of the New Mexico Environment Department (NMED) Hazardous Waste Bureau and representatives from the LANL SWRC Group toured the TA-50-37, Room 117 CSU on January 21, 2003 to identify appropriate sample locations for closure. These sample locations are shown on Figures 2-1 and 2-2 as identified in a letter from Luciana Vigil-Holterman to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* on February 3, 2003 (Appendix B).

2.2 Pre-Closure Inspection

The Room 117 CSU was inspected by LANL and contract personnel prior to the commencement of closure activities. This inspection was conducted with the steel floor grating in place. Figures 2-3 through 2-5 provide photographs of the pre-closure inspection and show that dust and debris had accumulated in the recessed containment area of both the large and small containment areas. The photos also show debris in both of the recessed containment areas consisting of trash, paper, and Styrofoam. A layer of grime was observed to cover most of the surface of the recessed containment area including the sumps. The floors and walls of the CSU appeared to be in good condition exhibiting no visible cracks or gaps that would compromise containment.

Potential safety hazards were also identified during the pre-closure inspection. These included low-clearance/overhead hazards while working under the steel grating in the recessed containment, possible back strain when lifting 5-gallon buckets during the decontamination activities, and tripping or falling hazards while moving across wet surfaces and working above the recessed sumps when the grating covers were removed. The presence of a dead rat in the small containment area posed a concern for Hanta virus, whereby the entire containment area was treated with a disinfectant bleach solution, and contract personnel for LANL were dispatched to remove the rodent carcass. All potential hazards were addressed in accordance with Site-Specific Health and Safety Plan No. 03-12 and Addendum No. 1 for the CSU closure activities at TA-50-37 (Shaw Environmental, 2003 and 2004).

2.3 Closure Activities

Closure activities at the Room 117 CSU consisted of decontamination, verification sampling, and swipe sampling of the large and small containment area surfaces. The activities were commenced on September 9, 2003 and completed on April 15, 2004. The following sections provide a detailed description of the steps taken to decontaminate the CSU and collect the necessary samples to verify clean closure.

2.3.1 Decontamination

Decontamination of the TA-50-37, Room 117 CSU involved a three-step process: 1) removal of the steel grating to gain access to the recessed containment area; 2) removal of dust and debris

from the supports, walls, and floor of the containment area; and 3) sequential washing and scrubbing of the walls, floors, and sumps of the containment areas.

2.3.1.1 Steel Grating Removal

To facilitate decontamination, specific sections of the steel grating were removed to gain access to the recessed containment area. Three 2-ft wide by 10-ft long sections of steel grating above each containment area were removed (see Figure 2-6). The steel grating was removed using a forklift operated by KSL personnel supervised by facility management. The steel grating sections above the small containment area were removed and staged next to the opening (see Figure 2-7). Several sections of steel grating from above the large containment area were removed and placed in the southwest corner of Room 117 for temporary staging pending the completion of decontamination activities.

2.3.1.2 Dust and Debris Removal

Dust and debris removal from the containment areas was accomplished using brushes, dustpans, and a vacuum cleaner (see Figures 2-8 and 2-9). The dust and debris from the gravity supports were swept off into the containment where the dust/debris could be picked up using dustpans and transferred to plastic trash bags. After dusting the supports, the floor of each containment area was swept and vacuumed to remove any remaining dust and particles.

2.3.1.3 Washing and Scrubbing of Walls, Floors, and Sumps

Decontamination of the CSU surfaces was conducted using an Alconox and tap water solution (see Figures 2-10 and 2-11). Each containment area was decontaminated twice. During the first step, sponges were submerged into the solution, squeezed out, and then used to wipe down the walls and floors of each recessed containment area. During the second step, cheese-cloth was submerged into the solution, squeezed out, and then used to wipe down the same surfaces. To prevent cross-contamination, new Tyvek coveralls were donned between decontamination steps. The walls of each containment area were decontaminated to a minimum height of 4 ft above the containment area floor (to the height of the steel grating) and then the floors were wiped down. After the floor was decontaminated, the recessed sumps were washed and scrubbed from top to bottom using a mop head mounted to a telescoping/extension wand and wash water that accumulated in the bottom of the sumps was removed using a wet vacuum

(see Figures 2-12 and 2-13). Figures 2-14 and 2-15 provide photographs of the CSU floors after the decontamination was completed.

2.3.2 Verification Sampling

Verification of clean closure at the TA-50-37, Room 117 CSU was conducted using wash water sampling as described in Section E.5.5 of the Closure Plan. This included the wash/wipe down of discrete surface areas using a sponge wetted with a solution of Alconox and water. New Tyvek coveralls were used by verification personnel for each containment area and nitrile gloves were changed prior to each surface verification wash/wipe down and subsequent sample collection (see Figure 2-16). The following steps were followed for each discrete surface area:

1. A clean 5-gallon bucket containing approximately 2 gallons of water, Alconox, and a sponge was placed near the discrete surface area.
2. The sponge was submerged into the bucket and squeezed out.
3. The surface was wiped down using the sponge.
4. Steps 2 and 3 were repeated.
5. The wash water solution was sampled by pouring the water into the sample containers (see Figures 2-17 and 2-18).
6. The sample containers were labeled and placed in a cooler pending shipment to the laboratory for analysis.
7. Steps 1 - 6 were then repeated.

Verification sampling of the sumps in each containment area was accomplished by the same 7-step process with the exception of using a mop head mounted to a telescoping/extension wand to reach the bottom of these permitted confined spaces. Table 2-1 identifies the verification samples collected for closure of the TA-50-37, Room 117 CSU and includes the sample numbers, locations, descriptions, and requested analysis.

2.3.2.1 Baseline Samples

Three sets of baseline samples were collected for comparison and validity. The baseline samples were collected initially from the five-gallon buckets used to contain the wash water from which the verification samples were collected. The buckets were filled with approximately 2

gallons of water and allowed to sit overnight with a pair of nitrile gloves and a sponge submerged in the Alconox wash water solution. The next day the wash water baseline samples were collected, packaged in respective sample containers, and analyzed for same constituents as the verification samples to determine if the sampling equipment materials and/or the environment contributed any contaminants to the samples. Table 2-1 identifies the baseline samples collected in the Room 117 CSU.

2.3.2.2 Quality Assurance/Quality Control Samples

The requisite quality assurance/quality control (QA/QC) samples were prepared and/or collected in accordance with Section E.5.9 of the Closure Plan. Trip blanks were prepared for each of the sample shipping coolers, a field blank was collected for each day of verification sampling, and a field duplicate sample was collected for each sampling sequence based on 20 percent of the verification samples. Table 2-1 identifies the QA/QC samples collected in the Room 117 CSU.

2.3.2.3 Waste Characterization Samples

A sample of the used decontamination wash water solution was collected for waste characterization of the decontamination wastewater, personal protective equipment (PPE), sponges, cheesecloth, and other waste items generated during closure activities. Section 2.7 provides the waste characterization results including additional detail regarding waste management.

2.3.3 Swipe Sampling

Analytical results from the verification samples collected in September 2003 indicated that several of the CSU surfaces could not meet the criteria specified for clean closure (Section 2.5). The analytical data from these locations was not directly relatable to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorptions) to an occupational worker. The data was instead used to identify locations where subsequent swipe samples were collected. The swipe samples were collected from each location, on April 15, 2004. Figures 2-19 through 2-22 provide a photographic record of the swipe sampling. Table 2-2 identifies the swipe samples collected for closure of the TA-50-37, Room 117 CSU and includes the sample numbers, locations, descriptions, and requested analysis.

Swipe samples were collected using the *National Institute of Occupational Safety and Health Manual of Analytical Methods* (National Institute of Occupational Safety and Health [NIOSH], 1996) for collection of lead swipe samples. This method included wiping a 100 square centimeter (cm^2) area (identified using a template) at each discrete location with a swipe wetted with an appropriate collection media (Table 2-3) for the analytes to be sampled. The following steps were followed for each surface:

1. Don a clean pair of gloves.
2. Remove the swipe from its sample jar and/or packaging.
3. Fold the swipe into fourths.
4. Wipe the surface to be sampled with firm pressure using an overlapping "S" pattern to cover the entire surface area with horizontal strokes (approximately 100 cm^2).
5. Fold the swipe, exposed side in, and place into a clean hard-walled sample container.
6. Seal the container and label.
7. Repeat steps 2 - 6 for the other analytes to be sampled for at that location.
8. Discard gloves.

2.3.3.1 Baseline Samples

One set of baseline samples was collected to determine if the materials used during sampling and/or the local environment contributed any contaminants to the samples. The baseline samples were collected by handling the swipes wearing nitrile gloves and wiping the swipe on the sample collection equipment. The swipe was then packaged in a container and labeled for analysis. Table 2-2 lists the baseline samples collected during swipe sampling.

2.3.3.2 Quality Assurance/Quality Control Samples

The requisite QA/QC samples were prepared and/or collected in accordance with Section E.5.9 of the Closure Plan. Trip blanks were prepared for each of the sample shipping coolers, a field blank was collected for each day of swipe sampling, and a field duplicate sample was collected for each sampling sequence based on 20 percent of the swipe samples. Table 2-2 summarizes the QA/QC samples collected during swipe sampling.

2.4 Deviations from the Closure Plan

There were no closure plan modifications or amendments as described in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC) (incorporating 40 CFR §264.112(c)). However, there were some procedural refinements associated with decontamination of the CSU and the collection of samples. The following sections provide a detailed description of all deviations from the Closure Plan and procedures as submitted to the NMED in August 2003 (Appendix A and B).

2.4.1 Dust and Debris

The pre-closure inspection identified the presence of a significant amount of dust and debris located in the recessed containment area of the CSU containment areas. Based upon the operating record, it was assumed in the Closure Plan that the containment areas of the CSU were free of any solid or liquid material. Due to this assumption, the Closure Plan did not include procedures for the removal of dust and debris from the CSU during decontamination. Upon completion of the pre-closure inspection, the decontamination procedure was refined to include the use of brooms, brushes, dustpans, and a vacuum to remove all of the dust and debris from the CSU prior to decontamination. This was accomplished as described in Section 2.3.1. The material was characterized for waste disposal using the decontamination wash water results as described in Section 2.7.

2.4.2 Swipe Samples

Verification samples collected from the wash water in September 2003 were not sufficient to demonstrate clean closure in accordance with the criteria specified in the Closure Plan (Appendix A). In addition, the analytical data from these samples was not sufficient to support an alternative demonstration of closure using risk assessment. The Closure Plan did not specify procedures or methods for the collection of samples capable of providing data directly relatable to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorptions) to an occupational worker. So, the sampling procedures in the Closure Plan were refined to include the collection of swipe samples. Swipe samples were collected using the *National*

Institute of Occupational Safety and Health Manual of Analytical Methods (NIOSH, 1996) for collection of lead swipe samples.

2.4.3 Closure Demonstration Criteria

Section E.5.5 of the Closure Plan indicates that an alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The letter to NMED dated August 25, 2003 and provided in Appendix B, describes the implementation of an alternate demonstration of closure as follows.

- Detectable hazardous waste or hazardous waste constituent concentrations from container storage activities that do not significantly decrease after several wash downs will be allowed to remain if they pose an acceptable risk, as mutually agreed upon with the NMED.
- Analytical results will be compared to the U.S. Environmental Protection Agency (EPA) Region 6 Medium-Specific Screening Level (MSSL) for tap water. If the result is below the MSSL, closure will be considered complete.
- If residual contamination levels found in the exhaust equipment are above the MSSLs, an assessment will be conducted using an occupational risk based scenario.

To remain consistent between closure certification reports, an equivalent set of demonstration criteria was used as listed below:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.
2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined

Alternative demonstration of closure for this certification report was interpreted to be either comparison of detected levels to EPA Region 6 Human Health MSSL (criterion 3) or a human health risk assessment (criterion 4).

2.4.4 Performance of Risk Assessment

The Closure Plan did not specify procedures or methods for the performance of a human health risk assessment (HHRA) (criterion 4) using swipe sample results that exceeded baseline or QA/QC sample results. The HHRA was conducted for the maximum detected concentration of each contaminant using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the EPA Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risks to occupational workers from exposure to contaminated indoor surfaces. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The results of this risk assessment are summarized in Section 3.0 of this Closure Certification Report and detailed in Appendix C.

2.5 Analytical Data

2.5.1 Verification Sampling Results

The samples collected for verification were analyzed by Severn Trent Laboratories, Inc. (STL), in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) (EPA, 1986a). Table 2-4 provides a summary of the detected analytical results for the verification samples collected on September 9, 2003 in Room 117. Appendix D provides the applicable detection limit and uncertainties as required by Section E.5.10 of the Closure Plan.

Clean closure for the Room 117 CSU is demonstrated in accordance with at least one of the following criteria as shown in the logic diagram provided as Figure 2-23:

1. No detectable RCRA-regulated constituent residues from the management of authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health and the environment based in the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

As indicated in Table 2-4, verification samples from several of the surfaces at the TA-50-37, Room 117 CSU had detections of metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) contaminants. For the purpose of clean closure, it was assumed that these contaminants were the result of storage activities at the CSU.

To demonstrate clean closure for these surfaces in accordance with criterion two, each of the detected constituents was compared against the sample results from baseline samples and QA/QC samples. This comparison was used to eliminate constituents from additional sampling requirements by determining one of the following:

- **Baseline Samples** – Materials used to conduct the decontamination and verification sampling and/or environment contributed to the detected level of the constituent.

- **QA/QC Samples** – Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 2-5 provides a comparison of the detected constituents against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion 3. The proposed alternative demonstration of closure included comparison of the verification analytical data to the EPA Region 6 Human Health MSSLs for tap water. Constituents at detected levels below the MSSL met criterion 3. Surfaces with constituents detected above baseline, QA/QC and MSSLs underwent swipe sampling to allow for a risk based analysis in accordance with criterion 4.

2.5.2 Swipe Sampling Results

Swipe samples were analyzed by STL in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of SW-846 (EPA, 1986a). Table 2-6 provides a summary of the analytical results for the swipe samples that were collected on April 15, 2004. The results from swipe sampling are used to demonstrate clean closure in accordance with criteria 2 or 4 as specified in Section 2.5.1 and Figure 2-23.

As shown in Table 2-6, several of the CSU surfaces that were swipe sampled had analytical results that indicated detections for metal, VOC, and SVOCs contamination. To demonstrate clean closure for these surfaces in accordance with criterion 2, each of the detected constituents was compared against the sample results from the baseline sample and QA/QC samples. This comparison was used to eliminate constituents from the HHRA by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 2-7 provides a comparison of the detected constituents against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion 4. This demonstration includes the use of risk assessment modeling and is described in Section 3.0 of this report.

2.6 Statement of Quality Assurance/Quality Control Adequacy

QA/QC activities during the closure were conducted in accordance with Section E.5.9 of the Closure Plan. This included the collection of QA/QC samples to assess data quality and evaluate field sampling procedures and laboratory analyses. Appendix D provides the detection limits and uncertainty associated with all of the analytical data from the sampling activities in September 2003 and April 2004. A review of the sampling procedures, shipping procedures and analytical data has determined that the analytical data related to closure are of acceptable quality and should therefore be accepted as valid.

2.7 Waste Management

The decontamination and verification of the TA-50-37, Room 117 CSU were conducted with waste minimization goals in mind. The wash water solutions generated from decontamination were transferred to 55-gallon open-head steel drums and stored on a secondary containment pallet pending the results of verification analysis. The PPE, sweepings, scrapings, liner pieces, sponges, cheesecloth, and other trash generated during closure activities were packaged into 55-gallon plastic drum liners and stored in a metal storage container pending characterization based on the results of wastewater sampling.

The decontamination wash water solutions were transferred to a 55-gallon drum and stored on a secondary containment pallet pending the results of analysis. The PPE, sweepings, sponges, cheesecloth, and other trash generated during closure activities were packaged into 55-gallon plastic drum liners and stored in a metal storage container pending characterization based on the results of the waste wash water. Table 2-8 provides the analytical results for the samples collected from the wash water. Table 2-9 provides a list of the waste materials generated during closure and includes the estimated quantity, waste type, and final disposal destination.

3.0 RISK ASSESSMENT

Swipe sample results from the Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 container storage unit (CSU) indicated five locations/surfaces with detected residual contaminants above baseline and/or quality assurance data. These results are summarized in Table 3-1. A human health risk assessment (HHRA) was conducted for the maximum detected concentration of each contaminant using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the U.S. Environmental Protection Agency (EPA) Technical Review Workgroup for Lead (EPA, 2003).

The risk assessment included an evaluation of health risks to occupational workers from exposure to the contaminated indoor surfaces. The exposure assessment of an HHRA addresses how long human receptors will be exposed to chemicals in the environment, how much of the chemical they will be exposed to, and how they will be exposed. This information is expressed by factors such as ingestion rates and daily activity patterns to estimate a chemical dose, or chronic daily intake for an individual. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. Table 3-2 provides a summary of the risk assessment results and Appendix C provides a detailed description of the HHRA methodology, results, and conclusions. The potential for adverse health effects is estimated separately for carcinogens, non-carcinogens, and lead. The following sections summarize the risk assessment approach and results.

3.1 Non-carcinogenic Constituents

Unlike carcinogenic effects, non-carcinogenic health effects (e.g., developmental problems in children, kidney effects, neurological effects) are quantified assuming a threshold, or estimated level of exposure below which adverse effects are not expected to occur. Non-carcinogenic risk is quantified by comparing the actual, worst-case chemical dose received by occupational workers to a level that is not expected to cause adverse effects (or, reference levels). To be protective, the health reference levels are typically 100 to 10,000 times lower than levels of exposure observed to have no adverse effects in animal studies. The ratio of actual exposure to reference levels for individual chemicals is a hazard quotient (HQ). Because there is

potential for exposure to multiple chemicals via multiple exposure pathways, HQs are summed for all chemicals and exposure pathways to produce a hazard index (HI). HIs above unity indicate there is a potential for adverse health effects. The residual contaminants of potential concern (COPCs) in the Room 117 CSU evaluated quantitatively include:

- Ethylbenzene
- Hexane
- Xylenes
- Barium
- Chromium

The noncarcinogenic HI for the CSU is 15 due mainly to the volatile organic compounds (VOCs) xylenes and hexane (a tentatively identified compound). Although this HI exceeds the target HI of 1.0, the noncarcinogenic health risk was estimated assuming immediate vaporization of VOCs and maintenance of that concentration for 30 years. A more reasonable assumption is that VOCs vaporize over time. If the HI is adjusted by a factor of 365 days assuming vaporization over time, the resulting HI is 0.041, which is well below the target HI of 1.0.

3.2 Carcinogenic Constituents

For chemicals that cause cancer, the assumption in risk assessment is that there are no exposures that have “zero risk.” That is, a cancer-causing chemical may produce cancer in an exposed individual at any dose (there is no threshold). Human health risks for carcinogens are quantified as a unitless probability of developing an additional cancer as a result of exposure to COPCs. Because there is potential for exposure to multiple chemicals via multiple exposure pathways, risks are summed for all chemicals and exposure pathways to produce a cumulative risk. The COPC in the Room 117 CSU that was evaluated quantitatively for carcinogenic risk is chromium. The cumulative carcinogenic risk for the CSU is 5.0E-05 (or 5×10^{-5}), which is within the acceptable 10^{-6} to 10^{-4} (one in one million to one in ten thousand) range of risks specified by Code of Federal Regulations (CFR), Title 40 §300.430.

3.3 Lead

Most human health effects data for lead are based on blood lead concentrations. For this reason the lead detections in the recessed sump were evaluated separately. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model (EPA, 2003), which is an approach for assessing occupational health risks from lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures. The estimated concentration of lead in blood of a pregnant worker and the fetus are well below the goal of 10 micrograms per deciliter specified in EPA guidance (1986b, 2003) with 95 percent confidence. Based on this assessment, the potential risk to a future worker in the TA-50-37 Room 117 from exposure to lead on surfaces is below the applicable criteria specified in EPA guidance (EPA, 1986b).

4.0 CONCLUSIONS

Tables 4-1 and 4-2 provide the analytical results from the sampling of each surface associated with storage activities in the Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 container storage unit (CSU). Table 4-1 lists each constituent detected during verification sampling and compares the results to the baseline samples, quality assurance/quality control samples, and U.S. Environmental Protection Agency (EPA) Human Health Medium Specific Screening Levels to demonstrate closure in accordance with criteria 2 or 3. Those detected constituents that could not meet criteria 2 or 3 were used to identify locations for the collection of swipe samples. Swipe samples were collected because the analytical results from verification sampling (wash water samples) could not be related to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorption) to an occupational worker (to demonstrate closure in accordance with criterion 4). Table 4-2 provides a summary of the swipe sampling results. The swipe sampling results were also compared to blank/baseline sample results to identify those detections and subsequent locations that required further evaluation during risk assessment.

A human health risk assessment (HHRA), described in Section 3.0 of this report and further detailed in Appendix C, was performed for the contaminants of potential concern identified on the CSU surfaces by swipe sampling. This HHRA determined that the potential risk to future occupational site workers in Room 117 is below the applicable criteria specified in the EPA guidance (EPA, 1986a). Based upon the demonstration of closure provided in Tables 4-1 and 4-2 and the results of the HHRA, the TA-50-37, Room 117 CSU is clean closed in accordance with the Closure Plan.

5.0 CERTIFICATIONS

5.1 Certification of Accuracy

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

William S. Gibbs Date
Acting Associate Director, Operations
Los Alamos National Laboratory
Operator

_____ _____

Edwin L. Wilmot Date
Manager, Office of Los Alamos Site Operation
U.S. Department of Energy
Albuquerque Operations
Owner/Operator

CERTIFICATION
Los Alamos National Laboratory
Closure Certification Report for the
Technical Area 50, Building 37, Room 117 Container Storage Unit

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Beverly Ramsey Date Signed
Division Director
Risk Reduction and Environmental Stewardship Division
Los Alamos National Laboratory

_____ _____

Anthony R. Griggs Date Signed
Group Leader
Risk Reduction and Environmental Stewardship Division,
Solid Waste Regulatory Compliance Group
Los Alamos National Laboratory

CERTIFICATION
Los Alamos National Laboratory
Closure certification Report for the
Technical Area 50, Building 37, Room 117 Container Storage Unit

I certify under penalty of law that this document and attachments were reviewed and approved for consistency with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete as it applies to operations at Technical Area 50. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Dennis McLain Date Signed
Facility Manager
Facility and Waste Operations – Waste Facility Management
Radioactive Liquid Waste
Los Alamos National Laboratory

5.2 Independent Engineering Certification

This certification was prepared in accordance with the requirements of New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.600 NMAC), (incorporating Code of Federal Regulations, Title 40 §265.115), revised October 1, 2003, for an independent registered professional engineer's certification. These services have been performed with the care and skill ordinarily exercised by members of the profession practicing under similar conditions at the same time and in the same manner or in a similar locality. We make no other warranty either expressed or implied. The finding and certification are based on 1) reviewing the New Mexico Environment Department (NMED) approved closure plan dated March 24, 2004; 2) discussion with the Shaw Environmental, Inc. field engineer who was present during closure and sampling activities; 3) reviewing the analytical results.

With the signature and seal below, I certify that, except for the deviations presented in Section 2.4 of the attached Closure Certification Report, the closure of the **Technical Area 50, Building 37, Room 117 Container Storage Unit** was conducted in accordance with the closure plan submitted to the NMED in August 2003. The information presented in this report is, to the best of my knowledge and belief, true, accurate, and complete.

Respectfully,

Shaw Environmental, Inc.

James K. Barbour
New Mexico Registered Professional Engineer No.: 15550
Expires: 12/31/04

Date:

6.0 REFERENCES

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Vozella, Joseph, Letter to Mr. Carl Will, *Request for Class 1 Resource Conservation and Recovery Act (RCRA) Permit Modification for Attachment E.5; Closure Plan for Technical Area 50, Building 37 (TA-50-37)*, Los Alamos National Laboratory (LANL), August 25, 2003.

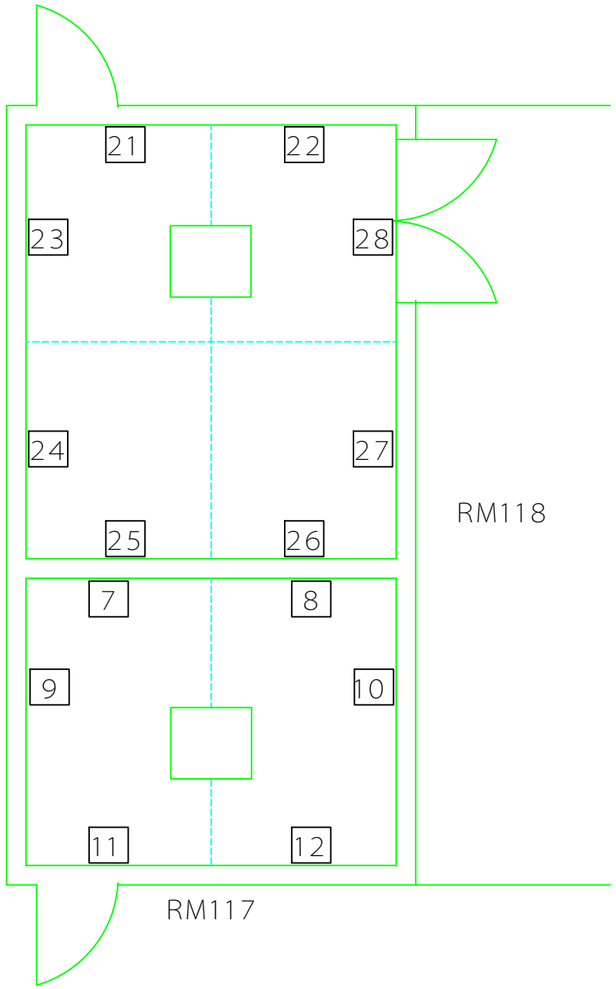
WTCIATWG, 2002, *World Trade Center Indoor Air Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks*, Peer Review Draft, September.

GENERAL NOTES:

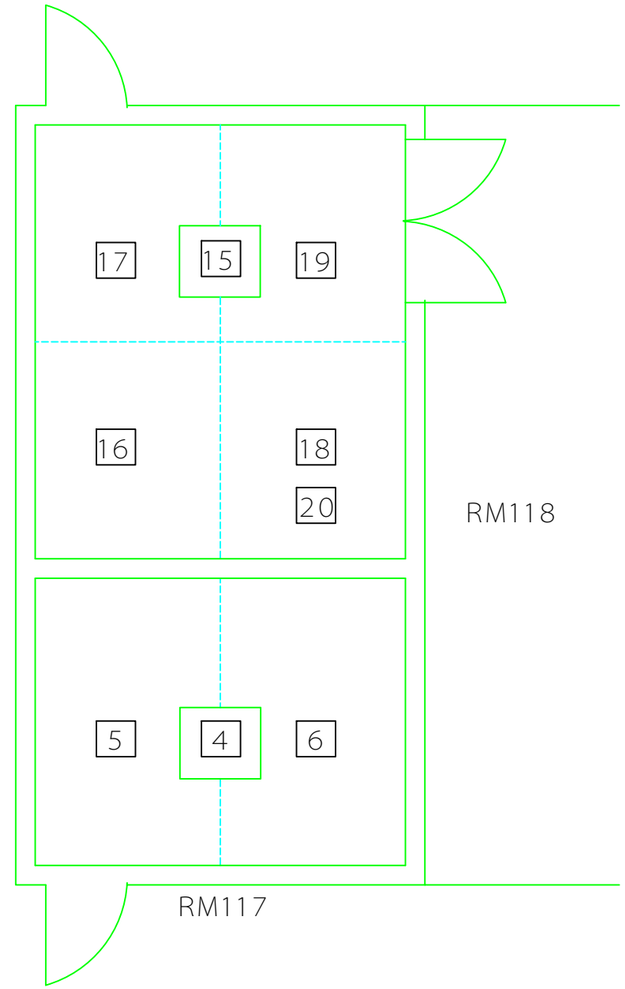
1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

VERIFICATION SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	VOC SUITE	SVOC SUITE
SMALL CONTAINMENT AREA				
4	RECESSED SUMP	X	X	X
5	FLOOR SOUTH HALF	X		
6	FLOOR NORTH HALF	X		
7	DIVIDING WALL EAST (SOUTH)	X		
8	DIVIDING WALL EAST (NORTH)	X		
9	SOUTH WALL	X		
10	NORTH WALL	X		
11	EAST WALL (SOUTH)	X		
12	EAST WALL (NORTH)	X		
LARGE CONTAINMENT AREA				
15	RECESSED SUMP	X	X	X
16	FLOOR (SOUTHEAST)	X		
17	FLOOR (SOUTHWEST)	X		
18	FLOOR (NORTHEAST)	X		
19	FLOOR (NORTHWEST)	X		
20	DUPLICATE (NORTHEAST FLOOR)	X		
21	WEST WALL (SOUTH)	X		
22	WEST WALL (NORTH)	X		
23	SOUTH WALL (WEST)	X		
24	SOUTH WALL (EAST)	X		
25	DIVIDING WALL WEST (SOUTH)	X		
26	DIVIDING WALL WEST (NORTH)	X		
27	NORTH WALL (EAST)	X		
28	NORTH WALL (EAST)	X		



WALL SAMPLES



FLOOR & SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

VERIFICATION SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	VOC SUITE	SVOC SUITE
SMALL CONTAINMENT AREA				
4	RECESSED SUMP	X	X	X
5	FLOOR SOUTH HALF	X		
6	FLOOR NORTH HALF	X		
7	DIVIDING WALL EAST (SOUTH)	X		
8	DIVIDING WALL EAST (NORTH)	X		
9	SOUTH WALL	X		
10	NORTH WALL	X		
11	EAST WALL (SOUTH)	X		
12	EAST WALL (NORTH)	X		
LARGE CONTAINMENT AREA				
15	RECESSED SUMP	X	X	X
16	FLOOR (SOUTHEAST)	X		
17	FLOOR (SOUTHWEST)	X		
18	FLOOR (NORTHEAST)	X		
19	FLOOR (NORTHWEST)	X		
20	DUPLICATE (NORTHEAST FLOOR)	X		
21	WEST WALL (SOUTH)	X		
22	WEST WALL (NORTH)	X		
23	SOUTH WALL (WEST)	X		
24	SOUTH WALL (EAST)	X		
25	DIVIDING WALL WEST (SOUTH)	X		
26	DIVIDING WALL WEST (NORTH)	X		
27	NORTH WALL (EAST)	X		
28	NORTH WALL (EAST)	X		

Figure 2-1
TA-50-37, ROOM 117, CONTAINER STORAGE UNIT VERIFICATION SAMPLING LOCATIONS

TA-50-37, ROOM 117, CONTAINER STORAGE UNIT VERIFICATION SAMPLING LOCATIONS

N NOT TO SCALE

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

Shaw™ Environmental & Infrastructure Inc.

LOS ALAMOS — LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS, NEW MEXICO 87545

LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT

TA-50-37, ROOM 117
VERIFICATION SAMPLING LOCATIONS

BLDG. 37 — TA-50

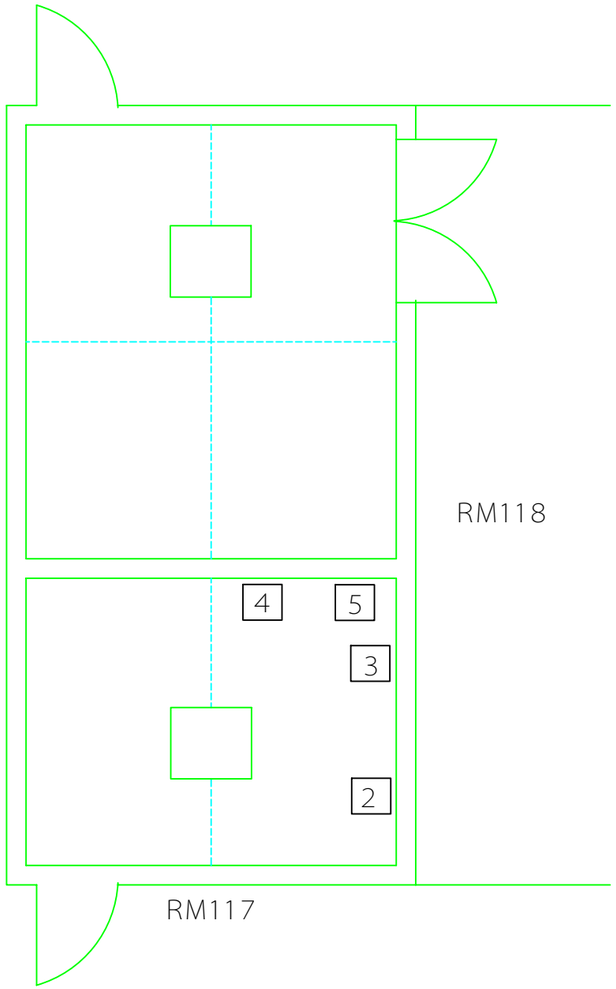
DESIGNED	J. GRIFFIN	6/11/04	CHECKED	R. ROMERO	6/11/04	APPROVED	R. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J. GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID 819592			DRAWING NO. FIGURE 2-19					

GENERAL NOTES:

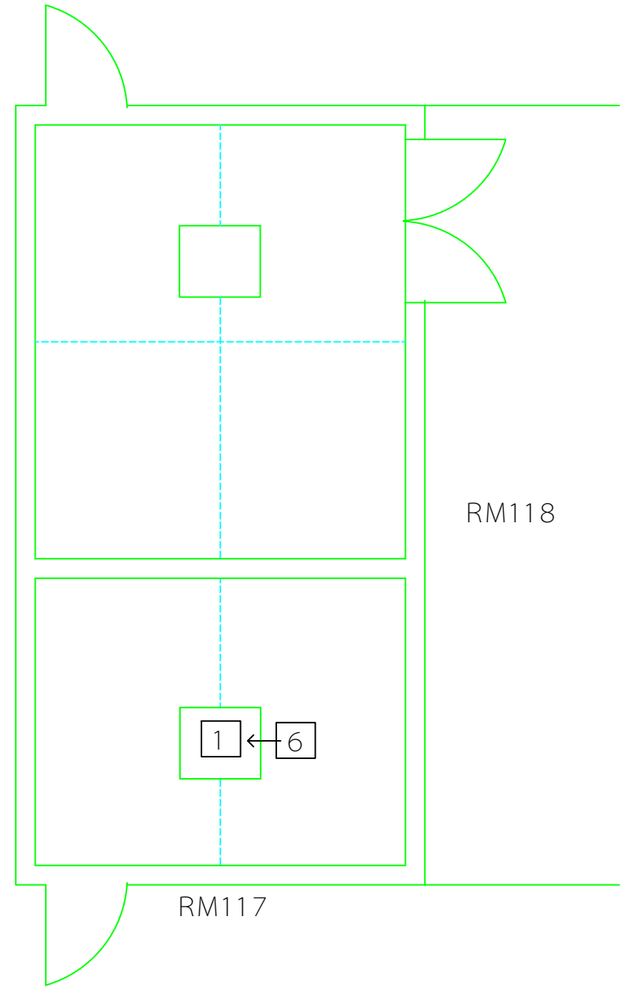
1. SEE THE TABLE BELOW FOR SAMPLE IDENTIGICATION NUMBERS AND LOCATIONS.

SWIPE SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
SMALL CONTAINMENT AREA			
1	RECESSED SUMP	117B - 01	TOTAL METALS
			SVOC
			VOC
2	NORTH WALL (EAST)	117B - 02	TOTAL METALS
3	NORTH WALL (WEST)	117B - 03	TOTAL METALS
4	DIVIDING WALL NORTH (SOUTH)	117B - 04	TOTAL METALS
5	DIVIDING WALL NORTH (NORTH)	117B - 05	TOTAL METALS
6	DUPLICATE (SUMP)	117B - 06	TOTAL METALS
			SVOC
			VOC



LOCATION OF WALL SAMPLES



LOCATION OF SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIGICATION NUMBERS AND LOCATIONS.

SWIPE SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
SMALL CONTAINMENT AREA			
1	RECESSED SUMP	117B - 01	TOTAL METALS
			SVOC
			VOC
2	NORTH WALL (EAST)	117B - 02	TOTAL METALS
3	NORTH WALL (WEST)	117B - 03	TOTAL METALS
4	DIVIDING WALL NORTH (SOUTH)	117B - 04	TOTAL METALS
5	DIVIDING WALL NORTH (NORTH)	117B - 05	TOTAL METALS
6	DUPLICATE (SUMP)	117B - 06	TOTAL METALS
			SVOC
			VOC

TA - 50 - 37, ROOM 117 CSU SWIPE SAMPLE LOCATIONS

N NOT TO SCALE

Figure 2 - 2
TA - 50 - 37, ROOM 117, CONTAINER STORAGE UNIT
SWIPE SAMPLE LOCATIONS

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

Shaw™ Environmental & Infrastructure, Inc.

LOS ALAMOS — LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS, NEW MEXICO 87545

LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT

TA - 50 - 37, ROOM 117 CSU
CLOSURE SWIPE SAMPLE LOCATIONS

BLDG. 37 — TA - 50

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	R. ROMERO	6/11/04	APPROVED	R. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J. GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID 819592			DRAWING NO. FIGURE 2 - 19					

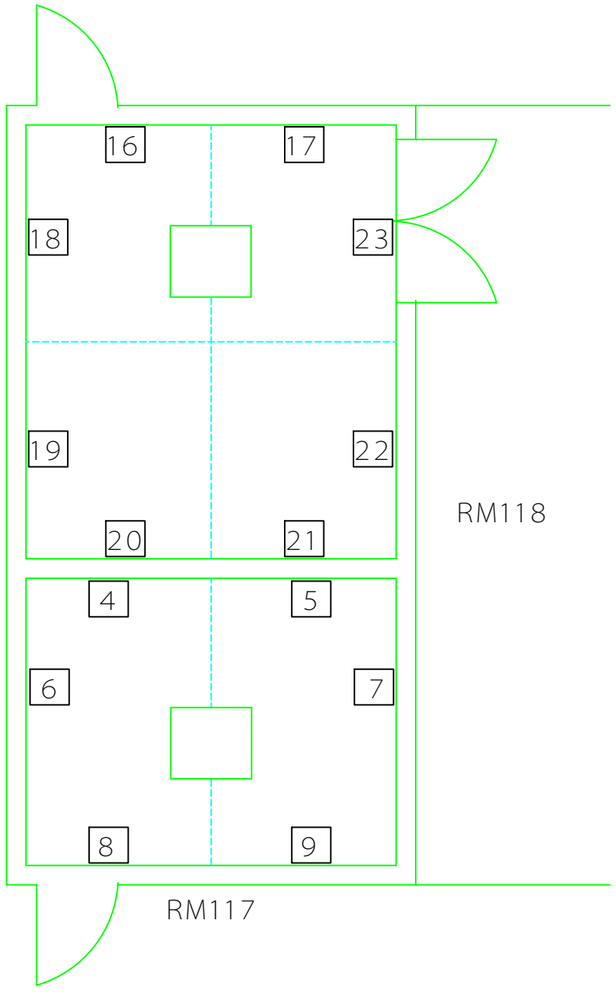
GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

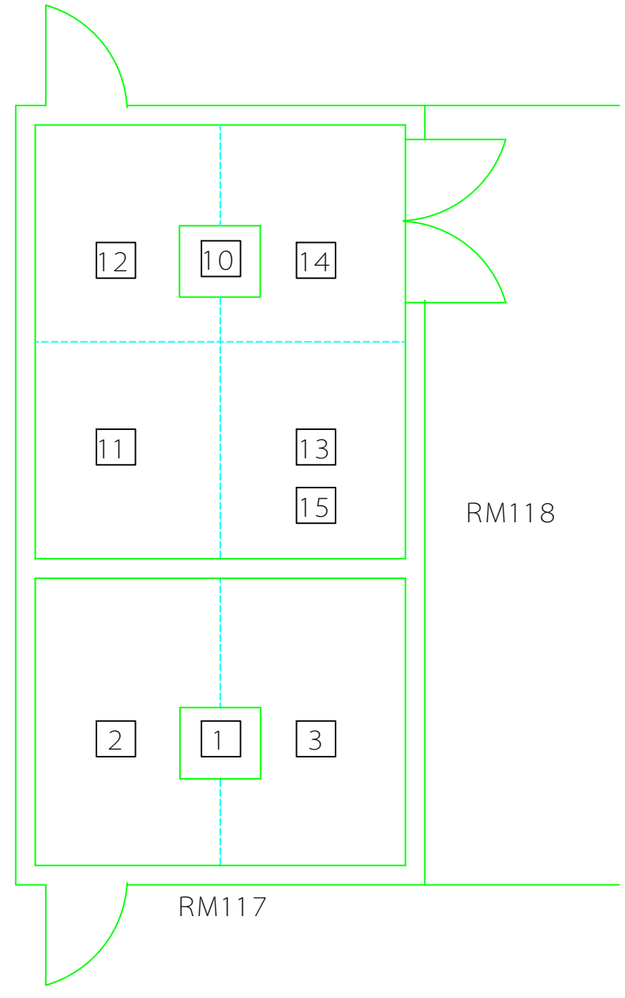
VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
SMALL CONTAINMENT AREA			
1	RECESSED SUMP	RM117 - 04	TOTAL METALS
			SVOC
			VOC
2	FLOOR SOUTH HALF	RM117 - 05	TOTAL METALS
3	FLOOR NORTH HALF	RM117 - 06	TOTAL METALS
4	DIVIDING WALL EAST (SOUTH)	RM117 - 07	TOTAL METALS
5	DIVIDING WALL EAST (NORTH)	RM117 - 08	TOTAL METALS
6	SOUTH WALL	RM117 - 09	TOTAL METALS
7	NORTH WALL	RM117 - 10	TOTAL METALS
8	EAST WALL (SOUTH)	RM117 - 11	TOTAL METALS
9	EAST WALL (NORTH)	RM117 - 12	TOTAL METALS
LARGE CONTAINMENT AREA			
10	RECESSED SUMP	RM117 - 15	TOTAL METALS
			SVOC
			VOC
11	FLOOR (SOUTHEAST)	RM117 - 16	TOTAL METALS
12	FLOOR (SOUTHWEST)	RM117 - 17	TOTAL METALS
13	FLOOR (NORTHEAST)	RM117 - 18	TOTAL METALS
14	FLOOR (NORTHWEST)	RM117 - 19	TOTAL METALS
15	DUPLICATE (NORTHEAST FLOOR)	RM117 - 20	TOTAL METALS
16	WEST WALL (SOUTH)	RM117 - 21	TOTAL METALS
17	WEST WALL (NORTH)	RM117 - 22	TOTAL METALS
18	SOUTH WALL (WEST)	RM117 - 23	TOTAL METALS
19	SOUTH WALL (EAST)	RM117 - 24	TOTAL METALS
20	DIVIDING WALL WEST (SOUTH)	RM117 - 25	TOTAL METALS
21	DIVIDING WALL WEST (NORTH)	RM117 - 26	TOTAL METALS
22	NORTH WALL (EAST)	RM117 - 27	TOTAL METALS
23	NORTH WALL (EAST)	RM117 - 28	TOTAL METALS

ES



LOCATION OF WALL SAMPLES



LOCATION OF FLOOR & SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
SMALL CONTAINMENT AREA			
1	RECESSED SUMP	RM117 - 04	TOTAL METALS
			SVOC
			VOC
2	FLOOR SOUTH HALF	RM117 - 05	TOTAL METALS
3	FLOOR NORTH HALF	RM117 - 06	TOTAL METALS
4	DIVIDING WALL EAST (SOUTH)	RM117 - 07	TOTAL METALS
5	DIVIDING WALL EAST (NORTH)	RM117 - 08	TOTAL METALS
6	SOUTH WALL	RM117 - 09	TOTAL METALS
7	NORTH WALL	RM117 - 10	TOTAL METALS
8	EAST WALL (SOUTH)	RM117 - 11	TOTAL METALS
9	EAST WALL (NORTH)	RM117 - 12	TOTAL METALS
LARGE CONTAINMENT AREA			
10	RECESSED SUMP	RM117 - 15	TOTAL METALS
			SVOC
			VOC
11	FLOOR (SOUTHEAST)	RM117 - 16	TOTAL METALS
12	FLOOR (SOUTHWEST)	RM117 - 17	TOTAL METALS
13	FLOOR (NORTHEAST)	RM117 - 18	TOTAL METALS
14	FLOOR (NORTHWEST)	RM117 - 19	TOTAL METALS
15	DUPLICATE (NORTHEAST FLOOR)	RM117 - 20	TOTAL METALS
16	WEST WALL (SOUTH)	RM117 - 21	TOTAL METALS
17	WEST WALL (NORTH)	RM117 - 22	TOTAL METALS
18	SOUTH WALL (WEST)	RM117 - 23	TOTAL METALS
19	SOUTH WALL (EAST)	RM117 - 24	TOTAL METALS
20	DIVIDING WALL WEST (SOUTH)	RM117 - 25	TOTAL METALS
21	DIVIDING WALL WEST (NORTH)	RM117 - 26	TOTAL METALS
22	NORTH WALL (EAST)	RM117 - 27	TOTAL METALS
23	NORTH WALL (EAST)	RM117 - 28	TOTAL METALS

Figure 2-1
TA-50-37, ROOM 117, CONTAINER STORAGE UNIT VERIFICATION SAMPLE LOCATIONS

TA-50-37, ROOM 117 CSU CLOSURE VERIFICATION SAMPLE LOCATIONS

N NOT TO SCALE

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

Shaw™ Environmental & Infrastructure, Inc.

LOS ALAMOS — LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS, NEW MEXICO 87545

LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT

TA-50-37, ROOM 117 CSU
CLOSURE VERIFICATION SAMPLE LOCATIONS

BLDG. 37 — TA-50

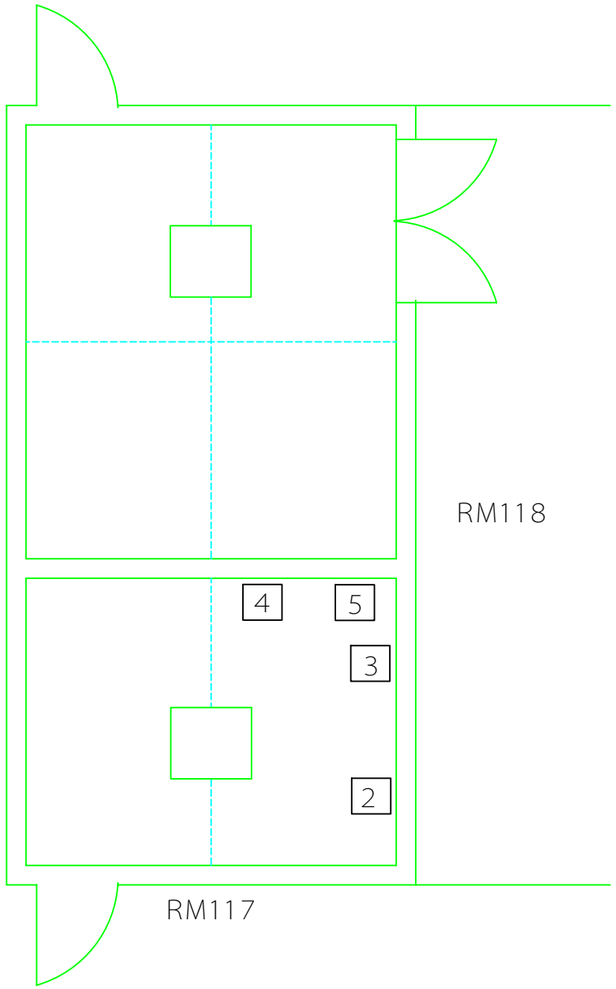
DESIGNED	J. GRIFFIN	6/11/04	CHECKED	R. ROMERO	6/11/04	APPROVED	R. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J. GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID 819592			DRAWING NO. FIGURE 2-19					

GENERAL NOTES:

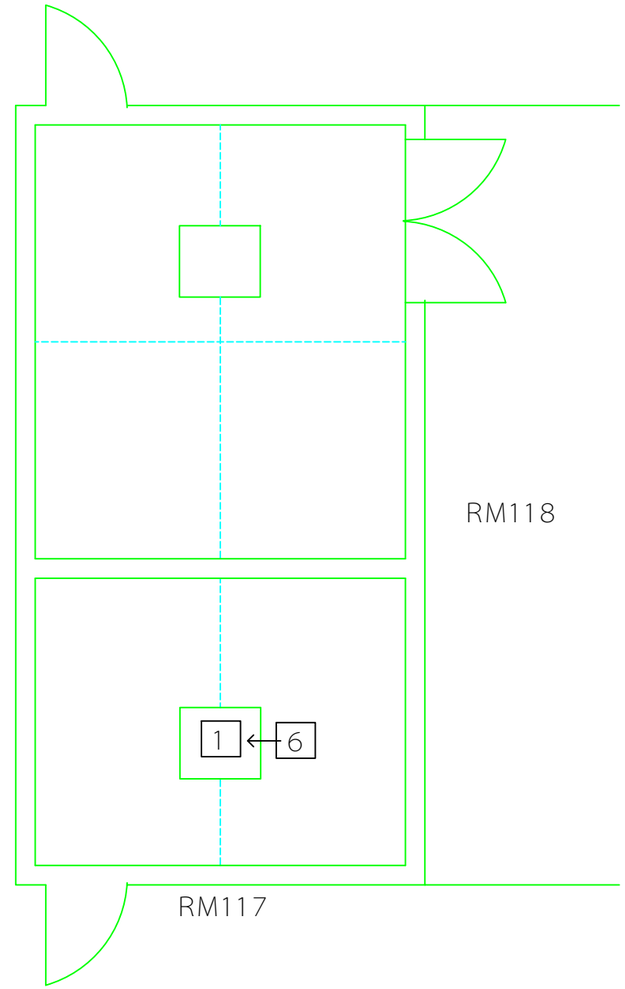
1. SEE THE TABLE BELOW FOR SAMPLE IDENTIGICATION NUMBERS AND LOCATIONS.

SWIPE SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	VOC SUITE	SVOC SUITE
SMALL CONTAINMENT AREA				
1	RECESSED SUMP	X	X	X
2	NORTH WALL (EAST)	X		
3	NORTH WALL (WEST)	X		
4	DIVIDING WALL NORTH (SOUTH)	X		
5	DIVIDING WALL NORTH (NORTH)	X		
6	DUPLICATE (SUMP)	X	X	X



WALL SAMPLES



SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIGICATION NUMBERS AND LOCATIONS.

SWIPE SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	VOC SUITE	SVOC SUITE
SMALL CONTAINMENT AREA				
1	RECESSED SUMP	X	X	X
2	NORTH WALL (EAST)	X		
3	NORTH WALL (WEST)	X		
4	DIVIDING WALL NORTH (SOUTH)	X		
5	DIVIDING WALL NORTH (NORTH)	X		
6	DUPLICATE (SUMP)	X	X	X

TA-50-37, ROOM 117, CONTAINER STORAGE UNIT SWIPE SAMPLING LOCATIONS

N NOT TO SCALE

Figure 2-2
TA-50-37, ROOM 117, CONTAINER STORAGE UNIT SWIPE SAMPLING LOCATIONS

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

Shaw™ Environmental & Infrastructure Inc.

LOS ALAMOS — LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS, NEW MEXICO 87545

LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT

TA-50-37, ROOM 117
SWIPE SAMPLING LOCATIONS

BLDG. 37 — TA-50

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	R. ROMERO	6/11/04	APPROVED	R. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J. GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID 819592			DRAWING NO. FIGURE 2-19				

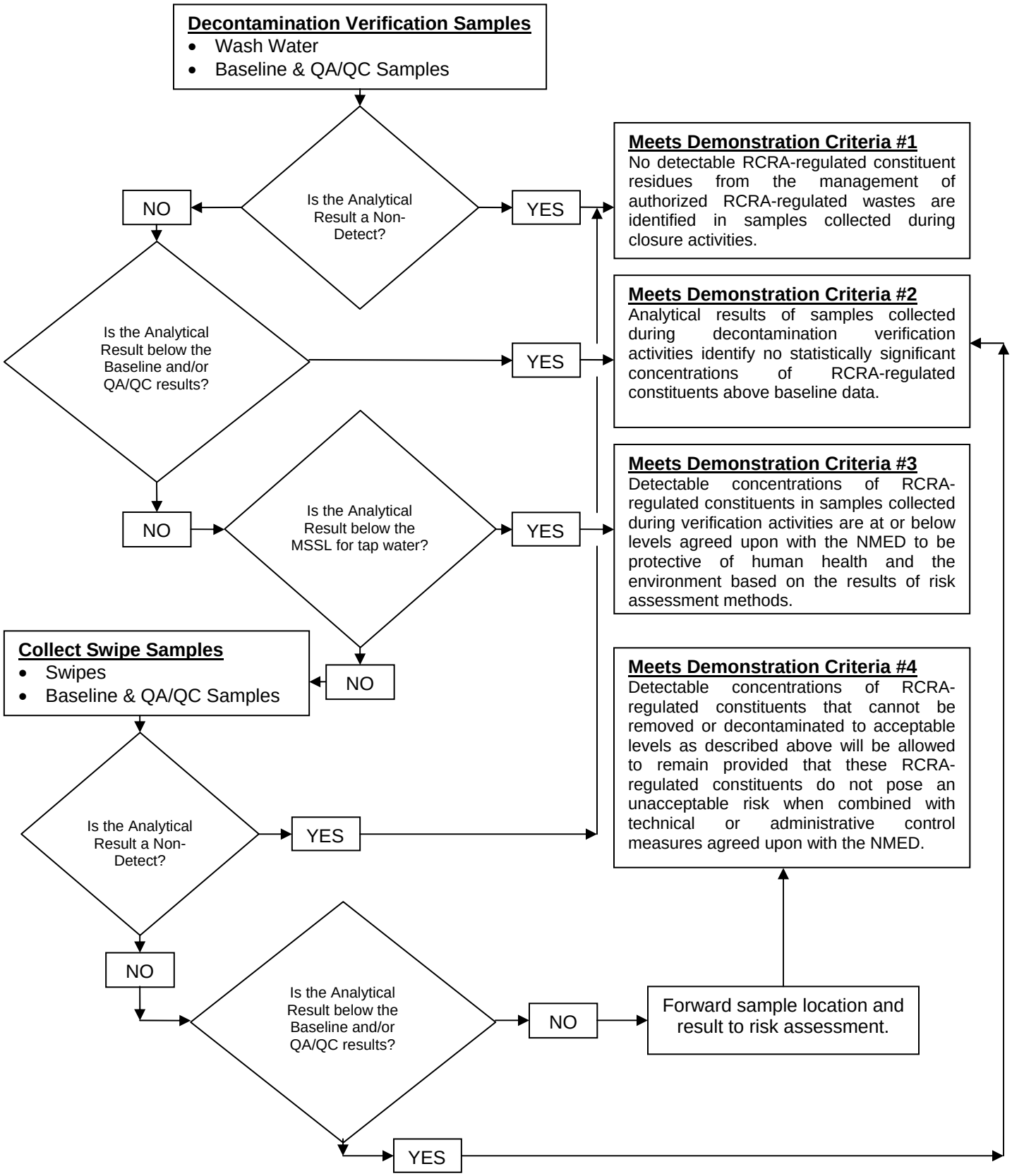


Figure 2-23
Logic Diagram for Demonstration of Closure

Figure 2-1
Photograph – Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 Container Storage Unit
(Photograph taken 3/19/98)

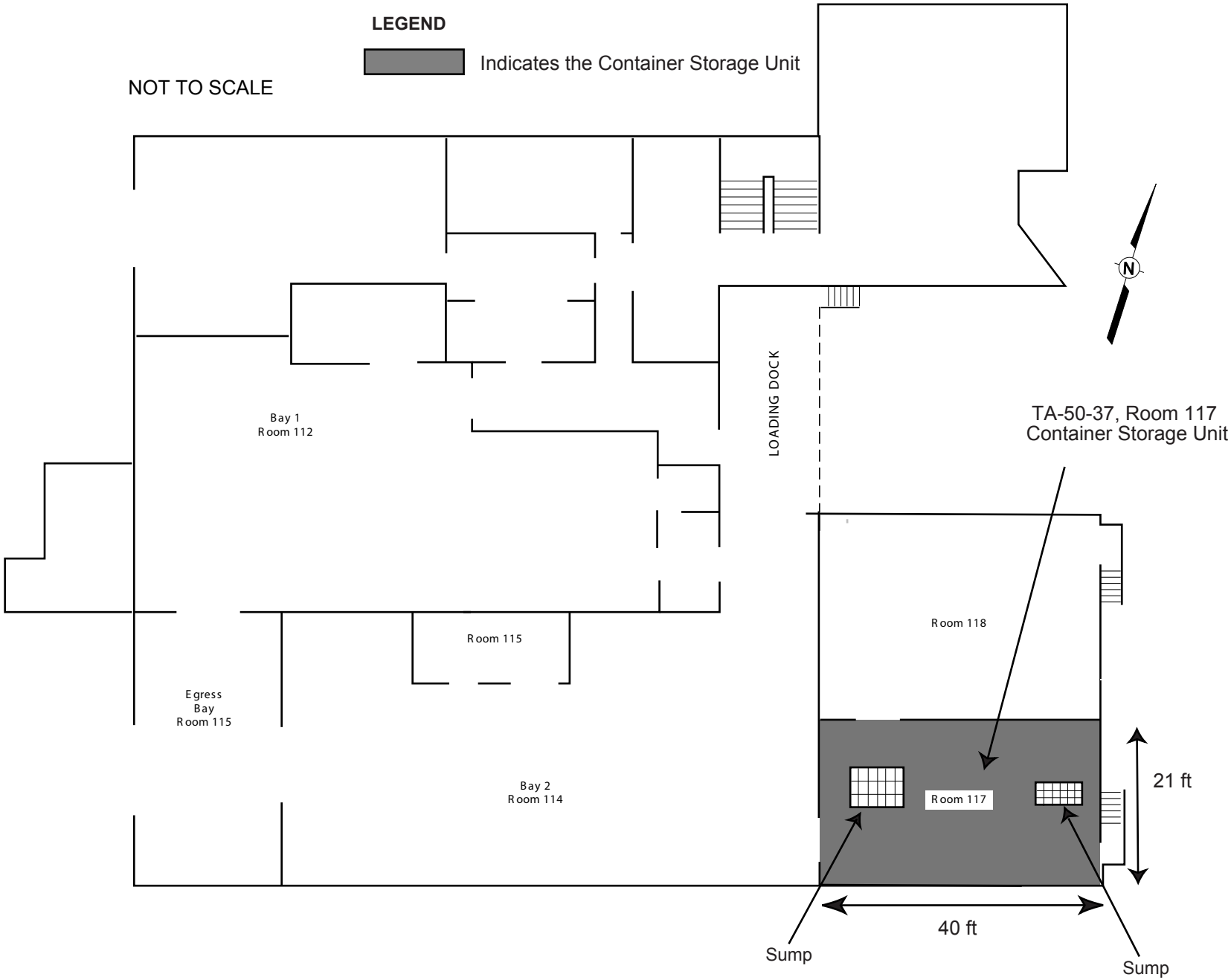


Figure 1-3
Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 Container Storage Unit

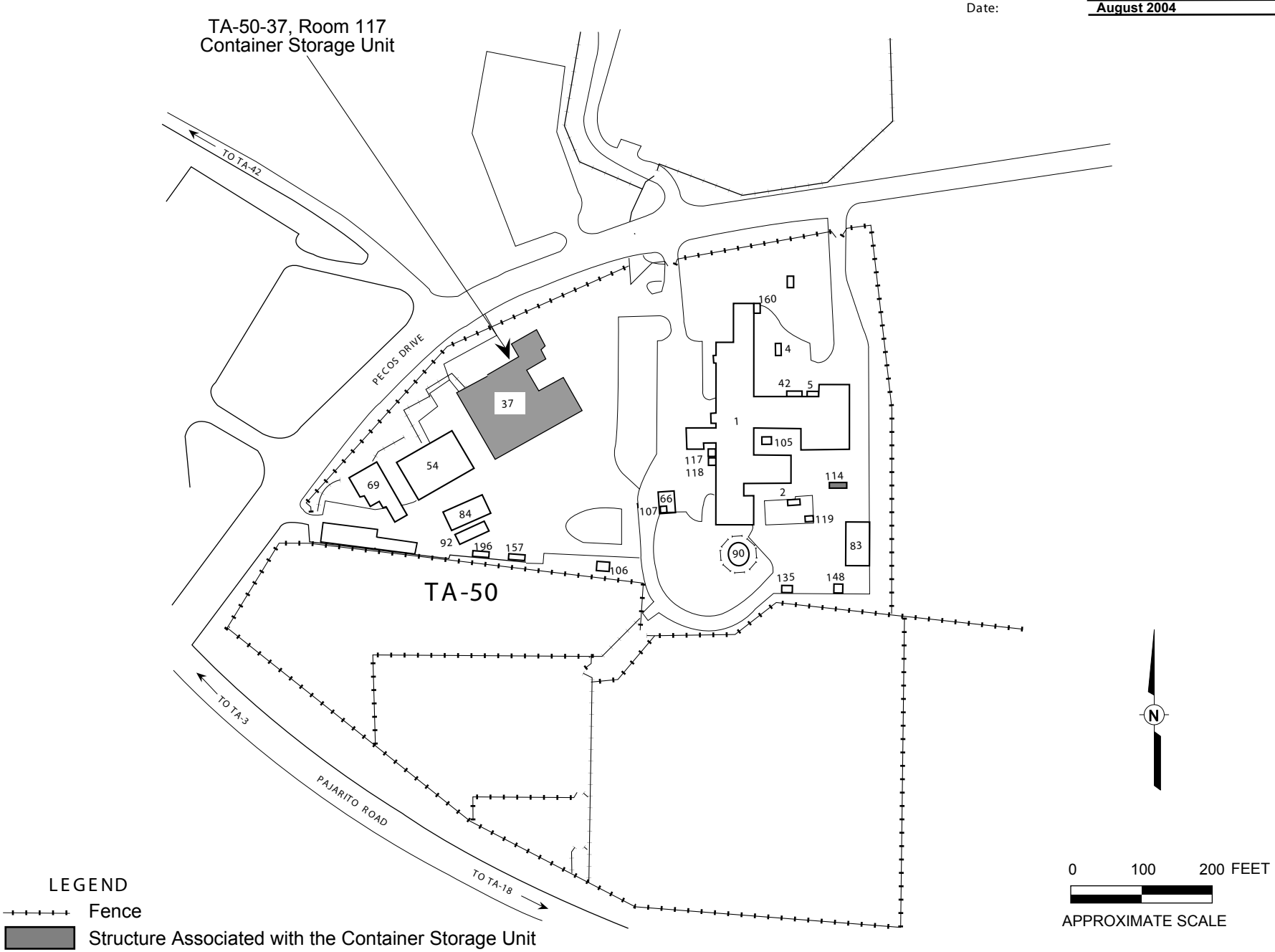
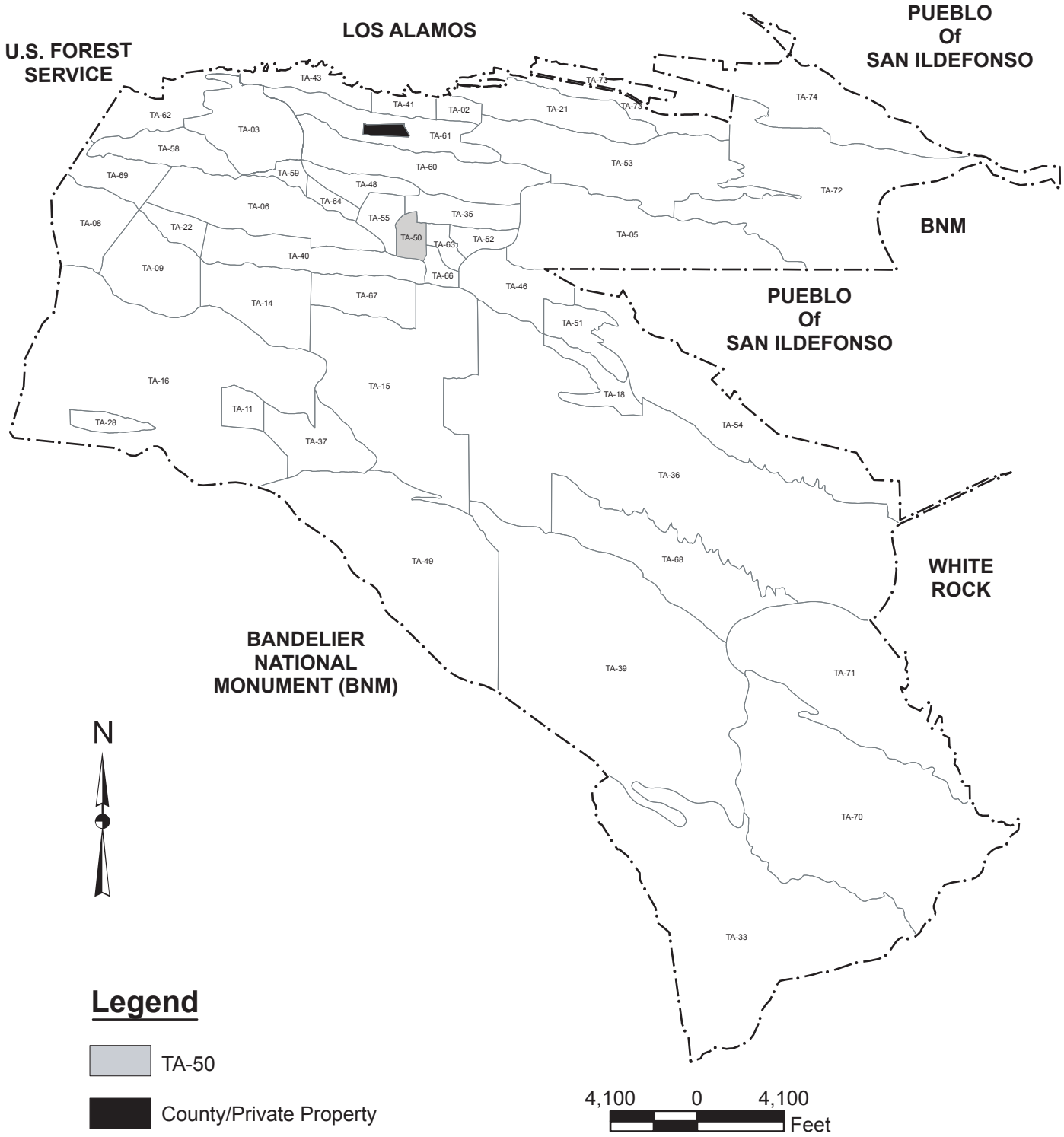


Figure 1-2
Location Map for Technical Area (TA) 50, Building 37 (TA-50-37)



State Plane Coordinate System New Mexico Central Zone North American Datum 1983 (ft)

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Figure 1-1
Location Map of Technical Area (TA) 50 at Los Alamos National Laboratory (LANL)

Figure 2-3
Pre-Closure Inspection – Condition of Recessed Sump
[Photograph Taken 9/09/03]

Figure 2-4
Pre-Closure Inspection – Grime, Dust, and Debris in Small Containment Area
[Photograph Taken 9/09/03]

Figure 2-5
Pre-Closure Inspection – Grime, Dust, and Debris in Large Containment Area
[Photograph Taken 9/09/03]

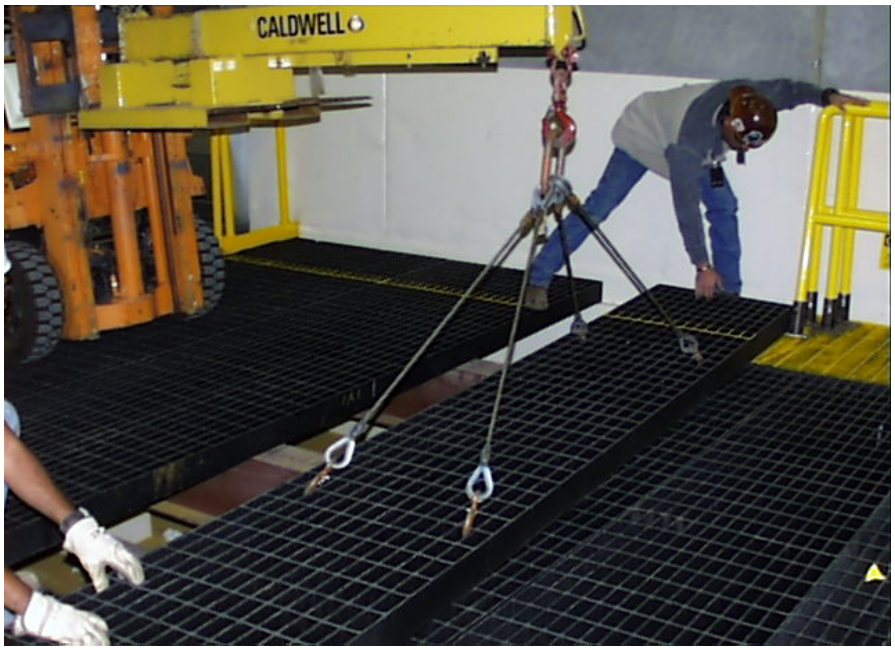

Figure 2-6
Decontamination – Steel Grating Removal Using a Forklift and Rigging
[Photograph Taken 9/09/03]

Figure 2-7
Decontamination – Access to small Containment Area and Staging of Steel Grating
[Photograph Taken 9/09/03]

Figure 2-8
Decontamination – Dust and Debris Removal Using Brushes, Brooms, and Dust Pans
[Photograph Taken 9/10/03]

Figure 2-9
Decontamination – Use of Vacuum to Remove Dust and Particles
[Photograph Taken 9/10/03]

Figure 2-10
Decontamination – Wash Down of Walls and Floor Using Sponges Submerged in an Alconox and Tap Water Solution
[Photograph Taken 9/09/03]

Figure 2-11
Decontamination – Second Wash Down Using Cheese Cloth Submerged in an Alconox and Tap Water Solution
[Photograph Taken 9/09/03]

Figure 2-12
Decontamination – Wash Down of Recessed Sump Using a Sponge Mop Head Mounted to a Telescoping/Extension Wand
[Photograph Taken 9/09/03]

Figure 2-13
Decontamination – Removal of Wash Water that Accumulated in Sumps Using a Wet Vacuum
[Photograph Taken 9/11/03]

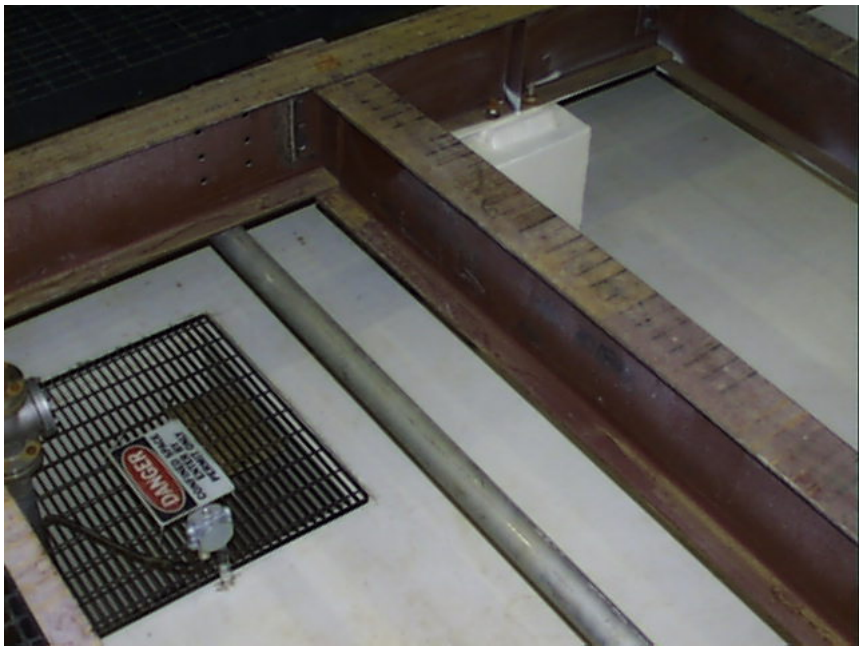

Figure 2-14
Decontamination - Appearance Large Containment Area After Decontamination Was Completed
[Photograph Taken 9/11/03]

Figure 2-15
Decontamination - Appearance of Small Containment Area After Decontamination Was Completed
[Photograph Taken 9/09/03]

Figure 2-16
Verification Sampling – Wipe Down of Surface in Large Containment Area
[Photograph Taken 9/10/03]

Figure 2-17
Verification Sampling – Collection of Volatile Organic Sample From Wash Water
[Photograph Taken 9/10/03]

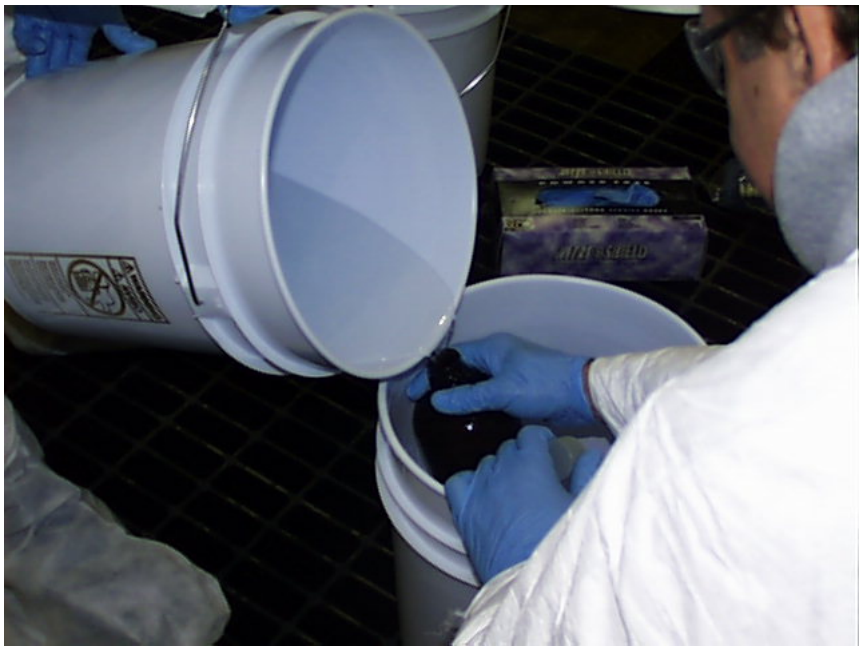

Figure 2-18
Verification Sampling – Collection of Semivolatile Organic Sample From Wash Water
[Photograph Taken 9/10/03]

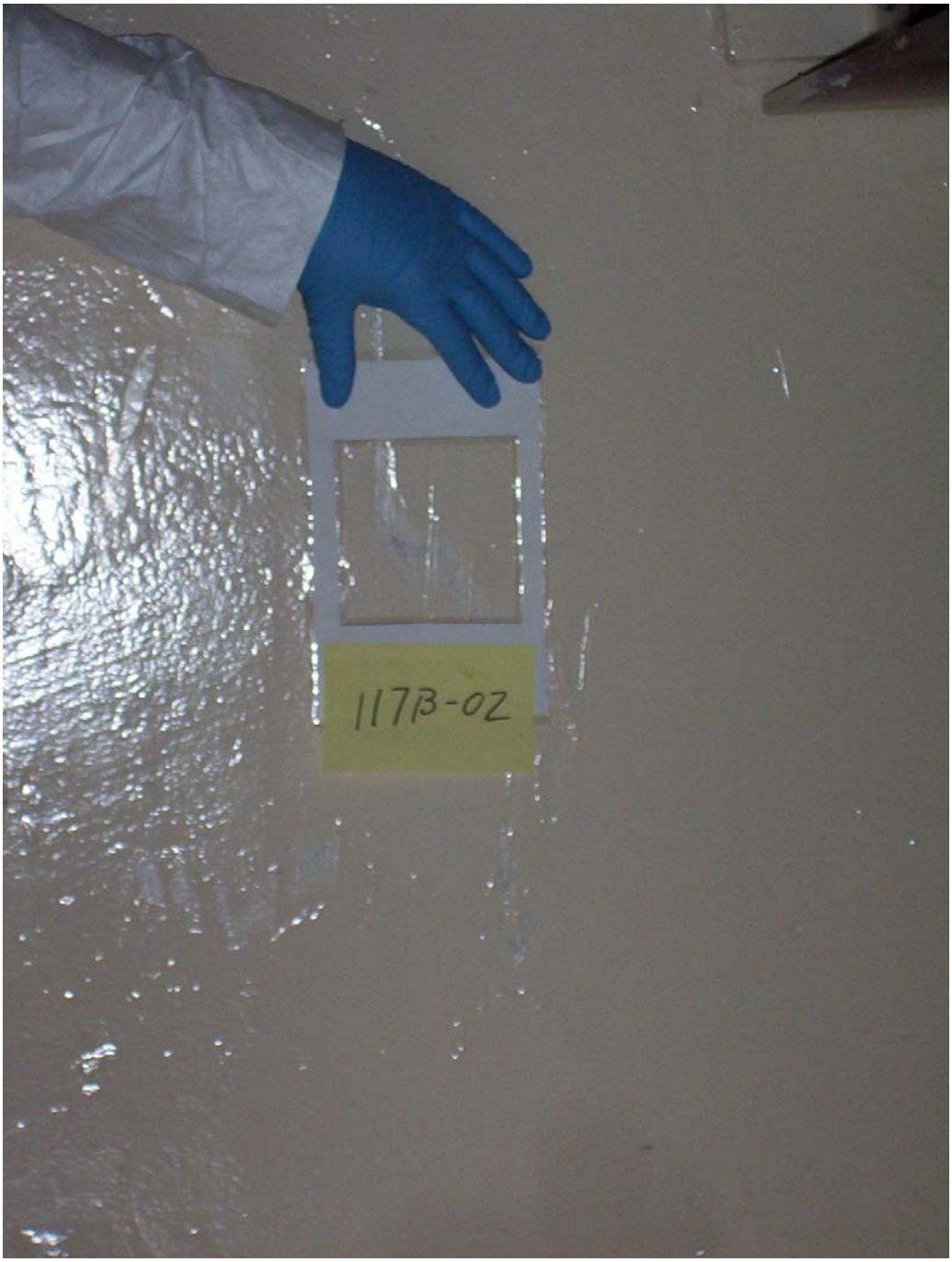

Figure 2-19
Swipe Sampling - RM117B-02
Collected from the Small Containment Area, North Wall (East Side)
[Photograph Taken 4/15/04]

Figure 2-20
Swipe Sampling - RM117B-04
Collected from the Small Containment Area, Dividing Wall, North End (South Side)
[Photograph Taken 4/15/04]

Figure 2-21
Swipe Sampling - RM117B-05
Collected from the Small Containment Area, Dividing Wall, North End (North Side)
[Photograph Taken 4/15/04]

Figure 2-22
Swipe Sampling – Collection of Baseline Samples
[Photograph Taken 4/15/04]

Table 3-1
Room 117 Swipe Sample Results Forwarded to Risk Assessment

Sample No.	Location	Analyte [a]	Result ($\mu g/100\ cm^2$)	Qualifier
117B-01	Recessed Sump	Barium	8.3	B
		Chromium	14.2	
		Ethylbenzene	0.66	J
		Hexane [b]	18	Q
		Lead	2.8	B
		Xylenes (total)	5.6	J
117B-02	Dividing Wall Northeast End	Barium	1.2	B
117B-04	North Wall Far Right	Barium	0.62	B
117B-05	North Wall Far Left	Barium	3.4	B
		Chromium	0.19	B
117B-06	Duplicate (Recessed Sump)	Barium	5.1	B
		Chromium	1.3	
		Ethylbenzene	0.47	J
		Hexane [b]	22	Q
		Lead	4	B
		Xylenes (total)	3.6	J

a. Duplicate analysis was conducted for some samples at different dilution factors.

b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

J (organic) = Estimated result. Result is less than reporting limit.

Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

$\mu g/100\ cm^2$ = micrograms per 100 square centimeters.

Table 3-2
Summary of Room 117 Risk Assessment Results

Constituent	Maximum Detected Concentration (µg/100cm^2)	Qualifier	Noncarcinogenic Hazard Quotient	Carcinogenic Risk
Barium	8.3	B	0.00012	NA
Chromium	14.2		NA	5E-05
Ethylbenzene	0.66	J	0.058	NA
Hexane [a]	22	Q	9.8	NA
Lead [b]	4	B	NA	NA
Xylenes (total)	5.6	J	4.9	NA
CUMULATIVE HAZARD INDEX AND RISK [c]			**15**	**5E-05**

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

b. Lead was evaluated separately. The estimated concentration of lead in blood of the worker and the fetus are below the goal of 10 micrograms per deciliter (µg/dL) specified in U.S. Environmental Protection Agency (EPA) guidance.

c. Assumes immediate vaporization of volatile organic chemicals (VOCs) and maintenance of that concentration for 30 years.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

J (organic) = Estimated result. Result is less than reporting limit.

Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters.

NA = not applicable.

Table 4-1
Demonstration of Closure for TA-50-37, Room 117 - Verification Samples

Sample No.	Location	Analyte[a]	Result (µg/L)	Qualifier	Comparison Results
RM117-04	Small Containment, Recessed Sump	Arsenic	1.8	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Bromodichloromethane	3.2	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Chromium	17.7	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Dibromochloromethane	1.3	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Bis (2-Ethylhexyl) phthalate	20	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Bis (2-Ethylhexyl) phthalate	17	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Chloroform	34		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Chloromethane	8.3	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-04	Small Containment, Recessed Sump	Acetone	12	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-04	Small Containment, Recessed Sump	Barium	85.2	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-04	Small Containment, Recessed Sump	Selenium	4.3	BJ	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of
RM117-04	Small Containment, Recessed Sump	Silver	0.68	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-04	**Small Containment, Recessed Sump**	**Butane, 2,3-dichloro-2methy**	**430**	**M**	**Sample location swipe sampled for risk assessment.**
RM117-04	**Small Containment, Recessed Sump**	**Carbon Tetrachloride**	**0.86**	**J**	**Sample location swipe sampled for risk assessment.**
RM117-04	**Small Containment, Recessed Sump**	**Lead**	**34.4**	**J**	**Sample location swipe sampled for risk assessment.**
RM117-04	**Small Containment, Recessed Sump**	**Methylene Chloride**	**7.3**		**Sample location swipe sampled for risk assessment.**
RM117-05	Small Containment, Floor South Half	Arsenic	2.7	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-05	Small Containment, Floor South Half	Chromium	25.4	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-05	Small Containment, Floor South Half	Selenium	2.6	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-05	Small Containment, Floor South Half	Barium	121	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-05	Small Containment, Floor South Half	Lead	9	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-05	Small Containment, Floor South Half	Mercury	0.13	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-06	Small Containment, Floor North Half	Arsenic	5.9	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline d
RM117-06	Small Containment, Floor North Half	Barium	111	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-06	Small Containment, Floor North Half	Chromium	33.6	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-06	Small Containment, Floor North Half	Lead	10.7	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-06	Small Containment, Floor North Half	Selenium	6	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-06	Small Containment, Floor North Half	Silver	0.59	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Arsenic	3.8	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Chromium	34.5	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Selenium	1.5	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Lead	2.2	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Barium	33.2	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Arsenic	6.2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Lead	3.5	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Barium	57.2	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Chromium	38.5	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-09	Small Containment South Wall	Arsenic	4.2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-09	Small Containment South Wall	Selenium	1.9	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-09	Small Containment South Wall	Lead	2.2	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-09	Small Containment South Wall	Barium	33.8	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-09	Small Containment South Wall	Chromium	33.3	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-10	Small Containment North Wall	Arsenic	5.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline d
RM117-10	Small Containment North Wall	Barium	63.8	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-10	Small Containment North Wall	Chromium	47.2	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-10	Small Containment North Wall	Selenium	5.1	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-10	**Small Containment North Wall**	**Lead**	**26.7**	**J**	**Sample location swipe sampled for risk assessment.**
RM117-11	Small Containment East Wall #1 (south end)	Arsenic	5.5	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-11	Small Containment East Wall #1 (south end)	Barium	50.2	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-11	Small Containment East Wall #1 (south end)	Chromium	35.7	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-11	Small Containment East Wall #1 (south end)	Lead	8.5	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-11	Small Containment East Wall #1 (south end)	Selenium	4	BJ	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-11	Small Containment East Wall #1 (south end)	Silver	0.47	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-12	Small Containment East Wall #2 (north end)	Arsenic	2.8	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-12	Small Containment East Wall #2 (north end)	Chromium	24.3	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-12	Small Containment East Wall #2 (north end)	Selenium	1.4	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-12	Small Containment East Wall #2 (north end)	Lead	2.6	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-12	Small Containment East Wall #2 (north end)	Barium	40.6	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-15	Large Containment, Recessed Sump	Arsenic	3.8	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-15	Large Containment, Recessed Sump	N-methyl-n-benzyltetradecana	52	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-15	Large Containment, Recessed Sump	Tetradecane, 1-chloro[a]	20	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-15	Large Containment, Recessed Sump	Bis (2-Ethylhexyl) phthalate	12	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-15	Large Containment, Recessed Sump	Diethyl phthalate	7.3	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-15	Large Containment, Recessed Sump	Methylene Chloride	3.6	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-15	Large Containment, Recessed Sump	Barium	59.8	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-15	Large Containment, Recessed Sump	Benzyl alcohol[a]	22	M	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-15	Large Containment, Recessed Sump	Chromium	30.8		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-15	Large Containment, Recessed Sump	Lead	8.9		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-15	Large Containment, Recessed Sump	Phenol	28		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-15	**Large Containment, Recessed Sump**	**Benzyl chloride[a]**	**45**	**M**	**This sample location was not subjected to swipe sampling for risk assessment because the detected constituents have questionab identities and are not RCRA regulated**
RM117-15	**Large Containment, Recessed Sump**	**1-Dodecanamine, n,n-dimeth**	**220**	**M**	**This sample location was not subjected to swipe sampling for risk assessment because the detected constituents have questionab identities and are not RCRA regulated**
RM117-16	Large Containment, Floor (southeast)	Arsenic	2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-16	Large Containment, Floor (southeast)	Lead	4.2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-16	Large Containment, Floor (southeast)	Barium	73.9	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-16	Large Containment, Floor (southeast)	Chromium	37.2		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-17	Large Containment, Floor (southwest)	Arsenic	2.9	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-17	Large Containment, Floor (southwest)	Chromium	19.5		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-17	Large Containment, Floor (southwest)	Lead	3.3	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-17	Large Containment, Floor (southwest)	Barium	73.5	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-18	Large Containment, Floor (northeast)	Barium	88.9	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-18	Large Containment, Floor (northeast)	Arsenic	5.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-18	Large Containment, Floor (northeast)	Chromium	26.6		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-18	Large Containment, Floor (northeast)	Selenium	1.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-18	Large Containment, Floor (northeast)	Lead	4.3	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-18	Large Containment, Floor (northeast)	Cadmium	0.3	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-18	Large Containment, Floor (northeast)	Silver	0.5	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-19	Large Containment, Floor (northwest)	Arsenic	3.9	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-19	Large Containment, Floor (northwest)	Barium	145	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-19	Large Containment, Floor (northwest)	Chromium	28.3		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-19	Large Containment, Floor (northwest)	Lead	6.3		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-20	Duplicate	Arsenic	2.9	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-20	Duplicate	Chromium	25.1		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-20	Duplicate	Lead	3	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-20	Duplicate	Barium	77.6	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-21	Large Containment, West Wall #1(south end)	Lead	2.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-21	Large Containment, West Wall #1(south end)	Barium	31.3	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-21	Large Containment, West Wall #1(south end)	Chromium	28.9		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-22	Large Containment, West Wall #2 (north end)	Arsenic	3.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-22	Large Containment, West Wall #2 (north end)	Chromium	21.4		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-22	Large Containment, West Wall #2 (north end)	Barium	28.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-22	Large Containment, West Wall #2 (north end)	Lead	2.7	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-23	Large Containment South Wall #2 (west end)	Arsenic	3	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-23	Large Containment South Wall #2 (west end)	Lead	2.9	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-23	Large Containment South Wall #2 (west end)	Barium	31.8	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-23	Large Containment South Wall #2 (west end)	Chromium	34.2		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-24	Large Containment South Wall #1 (east end)	Arsenic	2.2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-24	Large Containment South Wall #1 (east end)	Barium	29.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-24	Large Containment South Wall #1 (east end)	Chromium	33		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-25	Large Containment Dividing Wall West #1 (south end)	Arsenic	1.8	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-25	Large Containment Dividing Wall West #1 (south end)	Barium	28.6	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM117-25	Large Containment Dividing Wall West #1 (south end)	Chromium	28.2		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-26	Large Containment Dividing Wall West #2 (north end)	Barium	35.3	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-26	Large Containment Dividing Wall West #2 (north end)	Cadmium	3.7	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-26	Large Containment Dividing Wall West #2 (north end)	Chromium	37.2		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-26	Large Containment Dividing Wall West #2 (north end)	Lead	7.8		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth
RM117-26	Large Containment Dividing Wall West #2 (north end)	Selenium	6.3		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment meth

Table 11.1

Mechanical Isolation of Classes for "Ex de IIC, Group IIA" – Identification Samples

Sample No.	Laboratory Identification	Acetylene[1]	Sample Weight	Acceptance	Comments Regarding
1	Mr. Jones Electrical Co. Model 1		1	Yes	**Acceptable.** Acceptable, although weight is borderline. Sample was not tested. Sample was accepted based upon other samples of the same model.
2	Mr. Jones Electrical Co. Model 2		2	Yes	**Acceptable.** Acceptable, although weight is borderline. Sample was not tested. Sample was accepted based upon other samples of the same model.
3	Mr. Jones Electrical Co. Model 3		3	Yes	**Acceptable.** Acceptable, although weight is borderline. Sample was not tested. Sample was accepted based upon other samples of the same model.
4	Mr. Jones Electrical Co. Model 4		4	Yes	**Acceptable.** Acceptable, although weight is borderline. Sample was not tested. Sample was accepted based upon other samples of the same model.
5	Mr. Jones Electrical Co. Model 5		5	Yes	**Acceptable.** Acceptable, although weight is borderline. Sample was not tested. Sample was accepted based upon other samples of the same model.
6	Mr. Jones Electrical Co. Model 6	Acetylene	6	No	**Unacceptable.** Unacceptable, although weight is borderline. Sample was tested and failed. Sample was accepted based upon other samples of the same model.
7	Mr. Jones Electrical Co. Model 7	Acetylene	7	No	**Unacceptable.** Unacceptable, although weight is borderline. Sample was tested and failed. Sample was accepted based upon other samples of the same model.
8	Mr. Jones Electrical Co. Model 8	Acetylene	8	No	**Unacceptable.** Unacceptable, although weight is borderline. Sample was tested and failed. Sample was accepted based upon other samples of the same model.
9	Mr. Jones Electrical Co. Model 9	Acetylene	9	No	**Unacceptable.** Unacceptable, although weight is borderline. Sample was tested and failed. Sample was accepted based upon other samples of the same model.
10	Mr. Jones Electrical Co. Model 10	Acetylene	10	No	**Unacceptable.** Unacceptable, although weight is borderline. Sample was tested and failed. Sample was accepted based upon other samples of the same model.

1. Acetylene gas was used because it is a Group IIC gas and is an Group IIA gas.
2. Not necessary to test the sample, because it is an Group IIA gas.

Abbreviations and Notes

Acetylene – Acetylene gas (Group I – Group II C Gas Specifying Gas)

Comments – Additional information, if necessary. This column may be left blank unless it is important to keep one or more samples for future reference.

Comments – Additional information, if necessary. This column may be left blank unless it is important to keep one or more samples for future reference.

Sample No. – Sample number assigned by the laboratory.

Sample Weight – Weight of the sample in kilograms.

Yes – Sample was acceptable for the intended application.

No – Sample was not acceptable for the intended application.

Laboratory Identification – Manufacturer's name and model number or other identification.

Reference Publications

ANSI – American National Standards Institute

IEC – International Electrotechnical Commission

IEEE/A – Institute of Electrical and Electronics Engineers

IEEE/S – Standards Association of IEEE

Table 4-2
Demonstration of Closure for TA-50-37, Room 117 - Swipe Samples

Sample No.	Location	Analyte [a]	Result (µg/100 cm²)	Qualifier	Closure Demonstration Criteria
117B-01	Recessed Sump	4-Methyl-2-pentanone	0.95	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-01	Recessed Sump	Acetone	12	JB	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-01	Recessed Sump	Methylene Chloride	4	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-01	Recessed Sump	Tetrachloroethene	0.53	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-01	Recessed Sump	Trichloroethene	0.67	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-01	**Recessed Sump**	**Barium**	**8.3**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-01	**Recessed Sump**	**Chromium**	**14.2**		**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-01	**Recessed Sump**	**Ethylbenzene**	**0.66**	**J**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-01	**Recessed Sump**	**Hexane [b]**	**18**	**Q**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-01	**Recessed Sump**	**Lead**	**2.8**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-01	**Recessed Sump**	**Xylenes (total)**	**5.6**	**J**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-02	**Dividing Wall Northeast End**	**Barium**	**1.2**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-03	Dividing Wall Northwest End	Barium	0.49	B	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-04	**North Wall Far Right**	**Barium**	**0.62**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-05	**North Wall Far Left**	**Barium**	**3.4**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-05	**North Wall Far Left**	**Chromium**	**0.19**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-06	Duplicate	Acetone	8	JB	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-06	Duplicate	Methylene Chloride	4.3	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-06	Duplicate	Tetrachloroethene	0.56	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-06	Duplicate	Trichloroethene	0.89	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
117B-06	**Duplicate**	**Barium**	**5.1**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-06	**Duplicate**	**Chromium**	**1.3**		**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-06	**Duplicate**	**Ethylbenzene**	**0.47**	**J**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-06	**Duplicate**	**Hexane [b]**	**22**	**Q**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-06	**Duplicate**	**Lead**	**4**	**B**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**
117B-06	**Duplicate**	**Xylenes (total)**	**3.6**	**J**	**Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.**

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
D = Result was obtained from the analysis of a dilution.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/100 cm² = micrograms per 100 square centimeters.
NMED = New Mexico Environment Department.
RCRA = Resource Conservation and Recovery Act.

Table ES-1
Demonstration of Closure for Room 117 Using Verification Sample Results

Location	Analyte [a]	Result (µg/L)	Qualifier	Closure Demonstration Criteria [c]
Small Containment, Recessed Sump	Arsenic	1.8	B	
	Bis (2-Ethylhexyl) phthalate	20	B	
	Bis (2-Ethylhexyl) phthalate	17	B	
	Bromodichloromethane	3.2	J	2
	Chloroform	34		
	Chloromethane	8.3	J	
	Chromium	17.7	J	
	Dibromochloromethane	1.3	J	
	Acetone	12	J	
	Barium	85.2	B	3
	Selenium	4.3	BJ	
	Silver	0.68	B	
	Butane, 2,3-dichloro-2methyl- [b]	**430**	**M**	
	Carbon Tetrachloride	**0.86**	**J**	**Sample location swipe sampled for risk assessment of lead and VOCs.**
	Lead	**24.4**	**J**	
	Methylene Chloride	**7.3**		
Small Containment, Floor South Half	Arsenic	3.7	B	
	Chromium	25.4	J	2
	Selenium	2.6	BJ	
	Barium	121	B	
	Lead	9	J	3
	Mercury	0.13	B	
Small Containment, Floor North Half	Arsenic	5.9	B	2
	Barium	111	B	
	Chromium	33.6	J	
	Lead	10.7	J	
	Selenium	6	J	
	Silver	0.59	B	3
Small Containment, Dividing Wall East #1 (south end)	Arsenic	3.8	B	
	Chromium	24.5	J	
	Lead	2.2	BJ	
	Selenium	1.5	BJ	2
	Barium	33.2	B	3
Small Containment, Dividing Wall East #2 (north end)	Arsenic	6.2	B	
	Lead	3.5	BJ	2
	Barium	57.2	B	
	Chromium	38.5	J	3
Small Containment South Wall	Arsenic	4.2	B	
	Lead	2.2	BJ	
	Selenium	1.9	BJ	2
	Barium	33.8	B	
	Chromium	33.3	J	3
Small Containment North Wall	Arsenic	5.6	B	2
	Barium	63.8	B	
	Chromium	47.2	J	
	Selenium	5.1	J	3
	Lead	**26.7**	**J**	**Sample location swipe sampled for risk assessment of lead.**
Small Containment East Wall #1 (south end)	Arsenic	5.5	B	2
	Barium	50.2	B	
	Chromium	35.7	J	
	Lead	8.5	J	
	Selenium	4	BJ	
	Silver	0.47	B	3
Small Containment East Wall #2 (north end)	Arsenic	2.8	B	
	Chromium	24.3	J	2
	Lead	2.6	BJ	
	Selenium	1.4	BJ	
	Barium	40.6	B	3
Large Containment, Recessed Sump	Arsenic	3.8	B	
	Bis (2-Ethylhexyl) phthalate	12	B	
	Diethyl phthalate	7.3	J	
	Methylene Chloride	3.6	J	
	N-methyl-n-benzyltetradecanamI[b]	52	M	
	Tetradecane, 1-chloro- [b]	20	M	2
	Barium	59.8	B	
	Benzyl alcohol[b]	22	M	
	Chromium	30.8		
	Lead	8.9		
	Phenol	28		3
	1-Dodecanamine, n,n-dimethyl [b]	**230**	**M**	**This sample location was not subjected to swipe sampling for risk assessment because the detected constituents have questionable identities and concentrations.**
	Benzyl chloride [b]	**45**	**M**	
Large Containment, Floor (southeast)	Arsenic	2	B	
	Lead	4.2	B	2
	Barium	73.9	B	
	Chromium	37.2		3
Large Containment, Floor (southwest)	Arsenic	2.9	B	
	Chromium	19.5		
	Lead	3.3	B	2
	Barium	73.5	B	3
Large Containment, Floor (northeast)	Arsenic	5.6	B	
	Chromium	26.6		
	Lead	4.3	B	
	Selenium	1.6	B	2
	Barium	88.9	B	
	Cadmium	0.3	B	
	Silver	0.5	B	3
Large Containment, Floor (northwest)	Arsenic	3.9	B	2
	Barium	145	B	
	Chromium	28.3		
	Lead	6.3		3
Duplicate	Arsenic	2.9	B	
	Chromium	25.1		
	Lead	3	B	2
	Barium	77.6	B	3
Large Containment, West Wall #1(south end)	Lead	2.6	B	2
	Barium	31.3	B	
	Chromium	28.9		3
Large Containment, West Wall #2 (north end)	Arsenic	3.6	B	
	Barium	28.6	B	
	Chromium	21.4		
	Lead	2.7	B	2
Large Containment South Wall #2 (west end)	Arsenic	3	B	
	Lead	2.9	B	2
	Barium	31.8	B	
	Chromium	34.2		3
Large Containment South Wall #1 (east end)	Arsenic	2.2	B	
	Barium	29.6	B	2
	Chromium	33		3
Large Containment Dividing Wall West #3 (south end)	Arsenic	1.8	B	
	Barium	28.6	B	2
	Chromium	28.2		3
Large Containment Dividing Wall West #2 (north end)	Barium	35.3	B	
	Chromium	37.2		
	Lead	7.8		
	Selenium	6.3		
	Silver	2.5	B	3
	Arsenic	**9.6**	**B**	**This sample location was not accessible for swipe sampling. The east side of the dividing wall (north end) was sampled instead assuming that arsenic in the paint or spilled from above would also be detected there.**
	Cadmium	3.7	B	3
Large Containment North Wall #1 (east end)	Arsenic	2.7	B	
	Lead	4.7	B	2
	Barium	30.9	B	
	Chromium	38		3
Large Containment North Wall #2 (west end)	Barium	28.7	B	
	Chromium	17.4		2

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "pea on chromatograms, both the identity and concentration of which are highly uncertain.
c. The definition of the closure demonstration criteria is defined as follows:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/L = micrograms per liter.
VOC = volatile organic compounds.

Table ES-2
Demonstration of Closure for Room 117 Using Swipe Sample Results

Location	Analyte [a]	Result (µg/100 cm^2)	Qualifier	Closure Demonstration Criteria
Recessed Sump	4-Methyl-2-pentanone	0.95	J	2
	Acetone	12	JB	
	Methylene Chloride	4	J	
	Tetrachloroethene	0.53	J	
	Trichloroethene	0.67	J	
	Barium	**8.3**	**B**	**4**
	Chromium	**14.2**		
	Ethylbenzene	**0.66**	**J**	
	Hexane [b]	**18**	**Q**	
	Lead	**2.8**	**B**	
	Xylenes (total)	**5.6**	**J**	
Dividing Wall Northeast End	**Barium**	**1.2**	**B**	**4**
Dividing Wall Northwest End	Barium	0.49	B	2
North Wall Far Right	**Barium**	**0.62**	**B**	**4**
North Wall Far Left	**Barium**	**3.4**	**B**	**4**
	Chromium	**0.19**	**B**	
Duplicate (Recessed Sump)	Acetone	8	JB	2
	Methylene Chloride	4.3	J	
	Tetrachloroethene	0.56	J	
	Trichloroethene	0.89	J	
	Barium	**5.1**	**B**	**4**
	Chromium	**1.3**		
	Ethylbenzene	**0.47**	**J**	
	Hexane [b]	**22**	**Q**	
	Lead	**4**	**B**	
	Xylenes (total)	**3.6**	**J**	

a. Duplicate analysis was conducted for some samples at different dilution factors.

b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

c. The definition of the closure demonstration criteria is defined as follows:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J (organic) = Estimated result. Result is less than reporting limit.

Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters.

Table 2-9
Waste Materials and Disposition for the Room 117 Closure

Waste Material	Estimated Quantity	Type	Disposal Destination
PPE, Sponges, Buckets, cheesecloth, etc.	<1 cubic meter	Solid	TA-54
Decontamination Wash Water	<120 gallons	Liquid	RLWTF
Verification Wash Water	<55 gallons	Liquid	RLWTF

Definition of Acronyms

PPE = personal protective equipment.

RLWTF = Radioactive Liquid Waste Treatment Facility.

TA = technical area.

Table 2-4
Summary of Verification Sample Results for Room 117, September 2003

Sample No.	Location	Requested Analysis	Analyte [a]	Result (µg/L)	Qualifier
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	14	
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	14	
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	16	
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	17	
Method Blank	Method Blank, Samples 15-31	SVOC	Bis (2-Ethylhexyl) phthalate	10	
Method Blank	Method Blank, Samples 1-14	Total Metals	Cadmium	1.3	B
Method Blank	Method Blank, Samples 1-14	Total Metals	Chromium	1.9	B
Method Blank	Method Blank, Samples 1-14	Total Metals	Lead	1.8	B
Method Blank	Method Blank, Samples 1-14	Total Metals	Selenium	2.2	B
Method Blank	Method Blank, Samples 15-31	VOC	Acetone	4.1	J
Method Blank	Method Blank, Samples 15-31	VOC	Methylene Chloride	5.9	
RM117-01	Baseline #1	SVOC	4-Bromo-2-fluorobiphenyl [a]	18	M
RM117-01	Baseline #1	SVOC	Benzaldehyde [b]	32	M
RM117-01	Baseline #1	SVOC	Benzaldehyde [b]	42	M
RM117-01	Baseline #1	SVOC	Benzenemethanamine, n,n-dimeth[b]	73	M
RM117-01	Baseline #1	SVOC	Benzenemethanamine, n,n-dimeth[b]	77	M
RM117-01	Baseline #1	SVOC	Bis (2-Ethylhexyl) phthalate	10	B
RM117-01	Baseline #1	SVOC	Bis (2-Ethylhexyl) phthalate	2.7	JB
RM117-01	Baseline #1	SVOC	Diethyl phthalate	2.2	J
RM117-01	Baseline #1	SVOC	Methane, bromodichloro-[b]	26	M
RM117-01	Baseline #1	SVOC	Methane, bromodichloro-[b]	40	M
RM117-01	Baseline #1	SVOC	Methane, bromodichloro-[b]	80	M
RM117-01	Baseline #1	SVOC	Methane, tribromo-[b]	99	M
RM117-01	Baseline #1	SVOC	N, n-dimethyltetradecanamine[a]	1400	M
RM117-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami[a]	350	M
RM117-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami[a]	300	M
RM117-01	Baseline #1	SVOC	Tetradecane, 1-chloro- [b]	23	M
RM117-01	Baseline #1	Total Metals	Arsenic	6.3	B
RM117-01	Baseline #1	Total Metals	Barium	27.7	B
RM117-01	Baseline #1	Total Metals	Chromium	27.4	J
RM117-01	Baseline #1	Total Metals	Lead	3.8	BJ
RM117-01	Baseline #1	Total Metals	Selenium	3.9	BJ
RM117-01	Baseline #1	Total Metals	Silver	0.43	B
RM117-01	Baseline #1	VOC	Bromodichloromethane	30	
RM117-01	Baseline #1	VOC	Bromoform	190	
RM117-01	Baseline #1	VOC	Chloroform	24	
RM117-01	Baseline #1	VOC	Dibromochloromethane	130	
RM117-01	Baseline #1	VOC	Methylene Chloride	4.2	J
RM117-02	Baseline #2	SVOC	1-Propene, 1,2,3-trichloro-[b]	15	M
RM117-02	Baseline #2	SVOC	1-Propene, 1,2,3-trichloro-[b]	17	M
RM117-02	Baseline #2	SVOC	Bis (2-Ethylhexyl) phthalate	42	B
RM117-02	Baseline #2	SVOC	Bis (2-Ethylhexyl) phthalate	670	BD
RM117-02	Baseline #2	SVOC	Bis (2-Ethylhexyl) phthalate	580	BE
RM117-02	Baseline #2	SVOC	Diethyl phthalate	2.1	J
RM117-02	Baseline #2	SVOC	Dodecanal[b]	6.8	M
RM117-02	Baseline #2	SVOC	Ethane, 1,1,2,2,-tetrachloro-[b]	16	M
RM117-02	Baseline #2	Total Metals	Arsenic	1.6	B
RM117-02	Baseline #2	Total Metals	Barium	29.7	B
RM117-02	Baseline #2	Total Metals	Chromium	14.2	J
RM117-02	Baseline #2	Total Metals	Lead	4	BJ
RM117-02	Baseline #2	Total Metals	Selenium	3.7	BJ
RM117-02	Baseline #2	VOC	Acetone	8.2	J
RM117-02	Baseline #2	VOC	Bromodichloromethane	2.9	J
RM117-02	Baseline #2	VOC	Bromoform	0.82	J
RM117-02	Baseline #2	VOC	Chloroform	39	
RM117-02	Baseline #2	VOC	Chloromethane	9.7	J
RM117-02	Baseline #2	VOC	Dibromochloromethane	1.4	J
RM117-02	Baseline #2	VOC	Methylene Chloride	5.4	
RM117-03	Baseline #3	SVOC	1-Butene, 2-chloro-3-methyl- [a]	5.6	M
RM117-03	Baseline #3	SVOC	Bis (2-Ethylhexyl) phthalate	42	B
RM117-03	Baseline #3	SVOC	Bis (2-Ethylhexyl) phthalate	3	JB
RM117-03	Baseline #3	SVOC	butyl benzyl phthalate	2.4	J
RM117-03	Baseline #3	SVOC	Diethyl phthalate	51	
RM117-03	Baseline #3	SVOC	Di-n-butyl phthalate	4.6	J
RM117-03	Baseline #3	Total Metals	Arsenic	1.7	B
RM117-03	Baseline #3	Total Metals	Barium	29.8	B
RM117-03	Baseline #3	Total Metals	Chromium	13.8	J
RM117-03	Baseline #3	Total Metals	Lead	4.9	BJ
RM117-03	Baseline #3	Total Metals	Selenium	3.4	BJ
RM117-03	Baseline #3	VOC	Acetone	8.1	J
RM117-03	Baseline #3	VOC	Bromodichloromethane	2.4	J
RM117-03	Baseline #3	VOC	Bromoform	0.81	J
RM117-03	Baseline #3	VOC	Chloroform	32	
RM117-03	Baseline #3	VOC	Chloromethane	9.3	J
RM117-03	Baseline #3	VOC	Dibromochloromethane	1.6	J
RM117-03	Baseline #3	VOC	Methylene Chloride	5.6	
RM117-04	Small Containment, Recessed Sump	SVOC	Bis (2-Ethylhexyl) phthalate	17	B
RM117-04	Small Containment, Recessed Sump	SVOC	Bis (2-Ethylhexyl) phthalate	20	B
RM117-04	Small Containment, Recessed Sump	SVOC	Butane, 2,3-dichloro-2methyl-[a]	430	M
RM117-04	Small Containment, Recessed Sump	Total Metals	Arsenic	1.8	B
RM117-04	Small Containment, Recessed Sump	Total Metals	Barium	85.2	B
RM117-04	Small Containment, Recessed Sump	Total Metals	Chromium	17.7	J
RM117-04	Small Containment, Recessed Sump	Total Metals	Lead	24.4	J
RM117-04	Small Containment, Recessed Sump	Total Metals	Selenium	4.3	BJ
RM117-04	Small Containment, Recessed Sump	Total Metals	Silver	0.68	B
RM117-04	Small Containment, Recessed Sump	VOC	Acetone	12	J
RM117-04	Small Containment, Recessed Sump	VOC	Bromodichloromethane	3.2	J
RM117-04	Small Containment, Recessed Sump	VOC	Carbon Tetrachloride	0.86	J
RM117-04	Small Containment, Recessed Sump	VOC	Chloroform	34	
RM117-04	Small Containment, Recessed Sump	VOC	Chloromethane	8.3	J
RM117-04	Small Containment, Recessed Sump	VOC	Dibromochloromethane	1.3	J
RM117-04	Small Containment, Recessed Sump	VOC	Methylene Chloride	7.3	
RM117-05	Small Containment, Floor South Half	Total Metals	Arsenic	3.7	B
RM117-05	Small Containment, Floor South Half	Total Metals	Barium	121	B
RM117-05	Small Containment, Floor South Half	Total Metals	Chromium	25.4	J
RM117-05	Small Containment, Floor South Half	Total Metals	Lead	9	J
RM117-05	Small Containment, Floor South Half	Total Metals	Mercury	0.13	B
RM117-05	Small Containment, Floor South Half	Total Metals	Selenium	2.6	BJ
RM117-06	Small Containment, Floor North Half	Total Metals	Arsenic	5.9	B
RM117-06	Small Containment, Floor North Half	Total Metals	Barium	111	B
RM117-06	Small Containment, Floor North Half	Total Metals	Chromium	33.6	J
RM117-06	Small Containment, Floor North Half	Total Metals	Lead	10.7	J
RM117-06	Small Containment, Floor North Half	Total Metals	Selenium	6	J
RM117-06	Small Containment, Floor North Half	Total Metals	Silver	0.59	B
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Arsenic	3.8	B
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Barium	33.2	B
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Chromium	24.5	J
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Lead	2.2	BJ
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Selenium	1.5	BJ
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Arsenic	6.2	B
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Barium	57.2	B
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Chromium	38.5	J
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Lead	3.5	BJ
RM117-09	Small Containment South Wall	Total Metals	Arsenic	4.2	B
RM117-09	Small Containment South Wall	Total Metals	Barium	33.8	B
RM117-09	Small Containment South Wall	Total Metals	Chromium	33.3	J
RM117-09	Small Containment South Wall	Total Metals	Lead	2.2	BJ
RM117-09	Small Containment South Wall	Total Metals	Selenium	1.9	BJ
RM117-10	Small Containment North Wall	Total Metals	Arsenic	5.6	B
RM117-10	Small Containment North Wall	Total Metals	Barium	63.8	B
RM117-10	Small Containment North Wall	Total Metals	Chromium	47.2	J
RM117-10	Small Containment North Wall	Total Metals	Lead	26.7	J
RM117-10	Small Containment North Wall	Total Metals	Selenium	5.1	J
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Arsenic	5.5	B
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Barium	50.2	B
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Chromium	35.7	J
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Lead	8.5	J
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Selenium	4	BJ
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Silver	0.47	B
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Arsenic	2.8	B
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Barium	40.6	B
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Chromium	24.3	J
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Lead	2.6	BJ
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Selenium	1.4	BJ
RM117-13	Field Blank, Samples 1-14	VOC	Bromodichloromethane	0.48	J
RM117-13	Field Blank, Samples 1-14	VOC	Chloroform	0.71	J
RM117-13	Field Blank, Samples 1-14	VOC	Chloromethane	3.2	J
RM117-13	Field Blank, Samples 1-14	VOC	Dibromochloromethane	0.69	J
RM117-13	Field Blank, Samples 1-14	VOC	Methylene Chloride	4.8	J
RM117-14	Trip Blank, Samples 1-14	VOC	Acetone	5.3	J
RM117-14	Trip Blank, Samples 1-14	VOC	Methylene Chloride	5.1	
RM117-14	Trip Blank, Samples 1-14	VOC	Toluene	0.71	J
RM117-15	Large Containment, Recessed Sump	SVOC	1-Dodecanamine, n,n-dimethyl[a]	230	M
RM117-15	Large Containment, Recessed Sump	SVOC	Benzyl alcohol [a]	22	M
RM117-15	Large Containment, Recessed Sump	SVOC	Benzyl chloride [b]	45	M
RM117-15	Large Containment, Recessed Sump	SVOC	Bis (2-Ethylhexyl) phthalate	12	B
RM117-15	Large Containment, Recessed Sump	SVOC	Diethyl phthalate	7.3	J
RM117-15	Large Containment, Recessed Sump	SVOC	N-methyl-n-benzyltetradecanami[a]	52	M
RM117-15	Large Containment, Recessed Sump	SVOC	Phenol	28	
RM117-15	Large Containment, Recessed Sump	SVOC	Tetradecane, 1-chloro- [b]	20	M
RM117-15	Large Containment, Recessed Sump	Total Metals	Arsenic	3.8	B
RM117-15	Large Containment, Recessed Sump	Total Metals	Barium	59.8	B
RM117-15	Large Containment, Recessed Sump	Total Metals	Chromium	30.8	
RM117-15	Large Containment, Recessed Sump	Total Metals	Lead	8.9	
RM117-15	Large Containment, Recessed Sump	VOC	Methylene Chloride	3.6	J
RM117-16	Large Containment, Floor (southeast)	Total Metals	Arsenic	2	B
RM117-16	Large Containment, Floor (southeast)	Total Metals	Barium	73.9	B
RM117-16	Large Containment, Floor (southeast)	Total Metals	Chromium	37.2	
RM117-16	Large Containment, Floor (southeast)	Total Metals	Lead	4.2	B
RM117-17	Large Containment, Floor (southwest)	Total Metals	Arsenic	2.9	B
RM117-17	Large Containment, Floor (southwest)	Total Metals	Barium	73.5	B
RM117-17	Large Containment, Floor (southwest)	Total Metals	Chromium	19.5	
RM117-17	Large Containment, Floor (southwest)	Total Metals	Lead	3.3	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Arsenic	5.6	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Barium	88.9	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Cadmium	0.3	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Chromium	26.6	
RM117-18	Large Containment, Floor (northeast)	Total Metals	Lead	4.3	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Selenium	1.6	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Silver	0.5	B
RM117-19	Large Containment, Floor (northwest)	Total Metals	Arsenic	3.9	B
RM117-19	Large Containment, Floor (northwest)	Total Metals	Barium	145	B
RM117-19	Large Containment, Floor (northwest)	Total Metals	Chromium	28.3	
RM117-19	Large Containment, Floor (northwest)	Total Metals	Lead	6.3	
RM117-20	Duplicate	Total Metals	Arsenic	2.9	B
RM117-20	Duplicate	Total Metals	Barium	77.6	B
RM117-20	Duplicate	Total Metals	Chromium	25.1	
RM117-20	Duplicate	Total Metals	Lead	3	B
RM117-21	Large Containment, West Wall #1(south end)	Total Metals	Barium	31.3	B
RM117-21	Large Containment, West Wall #1(south end)	Total Metals	Chromium	28.9	
RM117-21	Large Containment, West Wall #1(south end)	Total Metals	Lead	2.6	B
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Arsenic	3.6	B
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Barium	28.6	B
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Chromium	21.4	
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Lead	2.7	B
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Arsenic	3	B
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Barium	31.8	B
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Chromium	34.2	
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Lead	2.9	B
RM117-24	Large Containment South Wall #1 (east end)	Total Metals	Arsenic	2.2	B
RM117-24	Large Containment South Wall #1 (east end)	Total Metals	Barium	29.6	B
RM117-24	Large Containment South Wall #1 (east end)	Total Metals	Chromium	33	
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals	Arsenic	1.8	B
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals	Barium	28.6	B
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals	Chromium	28.2	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Arsenic	9.6	B
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Barium	35.3	B
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Cadmium	3.7	B
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Chromium	37.2	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Lead	7.8	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Selenium	6.3	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Silver	2.5	B
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Arsenic	2.7	B
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Barium	30.9	B
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Chromium	38	
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Lead	4.7	B
RM117-28	Large Containment North Wall #2 (west end)	Total Metals	Barium	28.7	B
RM117-28	Large Containment North Wall #2 (west end)	Total Metals	Chromium	17.4	
RM117-29	Field Blank, Samples 15 -31	VOC	Bromoform	0.7	J
RM117-29	Field Blank, Samples 15 -31	VOC	Dibromochloromethane	0.81	J
RM117-29	Field Blank, Samples 15 -31	VOC	Methylene Chloride	4.2	J
RM117-30	Trip Blank, Samples 15-31	VOC	Acetone	5.7	J
RM117-30	Trip Blank, Samples 15-31	VOC	Chloromethane	2.3	J
RM117-30	Trip Blank, Samples 15-31	VOC	Methylene Chloride	4.2	J
RM117-31	Decontamination Water/Waste	SVOC	2-dodecanone [a]	6.1	M
RM117-31	Decontamination Water/Waste	SVOC	2-Undecanone [b]	8.3	M
RM117-31	Decontamination Water/Waste	SVOC	Benzaldehyde [b]	21	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl alcohol [a]	75	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl alcohol [a]	62	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl nitrile [b]	5.8	M
RM117-31	Decontamination Water/Waste	SVOC	Bis (2-Ethylhexyl) phthalate	12	B
RM117-31	Decontamination Water/Waste	SVOC	Cyclodecane [b]	34	M
RM117-31	Decontamination Water/Waste	SVOC	Cyclohexasiloxzne, dodecamethy[a]	22	M
RM117-31	Decontamination Water/Waste	SVOC	Diethyl phthalate	2.3	J
RM117-31	Decontamination Water/Waste	SVOC	Heptanal[a]	12	M
RM117-31	Decontamination Water/Waste	SVOC	Isophorone	7.4	J
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro-[b]	36	M
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro-[b]	38	M
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro-[b]	54	M
RM117-31	Decontamination Water/Waste	SVOC	Octanal [b]	19	M
RM117-31	Decontamination Water/Waste	SVOC	phthalic anhydride [b]	9.4	M
RM117-31	Decontamination Water/Waste	Total Metals	Arsenic	3.7	B
RM117-31	Decontamination Water/Waste	Total Metals	Barium	570	
RM117-31	Decontamination Water/Waste	Total Metals	Cadmium	1.8	B
RM117-31	Decontamination Water/Waste	Total Metals	Chromium	40.8	
RM117-31	Decontamination Water/Waste	Total Metals	Lead	93.6	
RM117-31	Decontamination Water/Waste	Total Metals	Mercury	0.27	
RM117-31	Decontamination Water/Waste	Total Metals	Silver	0.7	B
RM117-31	Decontamination Water/Waste	VOC	Acetone	33	J
RM117-31	Decontamination Water/Waste	VOC	Acetone	24	JB
RM117-31	Decontamination Water/Waste	VOC	Bromodichloromethane	230	
RM117-31	Decontamination Water/Waste	VOC	Bromodichloromethane	200	
RM117-31	Decontamination Water/Waste	VOC	Bromoform	55	
RM117-31	Decontamination Water/Waste	VOC	Bromoform	44	
RM117-31	Decontamination Water/Waste	VOC	Chloroform	580	
RM117-31	Decontamination Water/Waste	VOC	Chloroform	490	
RM117-31	Decontamination Water/Waste	VOC	Dibromochloromethane	140	
RM117-31	Decontamination Water/Waste	VOC	Dibromochloromethane	120	
RM117-31	Decontamination Water/Waste	VOC	Methylene Chloride	64	

a. Duplicate analysis was conducted for some samples at different dilution factors.

b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J (organic) = Estimated result. Result is less than reporting limit.

E = Estimated result. Result concentration exceeds the calibration range.

D = Result was obtained from the analysis of a dilution.

M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

µg/L = micrograms per liter.

SVOC = semivolatile organic compounds.

VOC = volatile organic compounds.

Table 2-5
Room 117 Verification Sample Results - Comparison to Baseline, QA/QC , and EPA Region 6 Human Health MSSLs

Sample No.	Location	Analyte[a]	Result (µg/L)	Qualifier	EPA Region 6 MSSLs	Comparison Results
RM117-03	Baseline #3	1-Butene, 2-chloro-3-methyl[b]	5.6	M	NA	NA
RM117-15	**Large Containment, Recessed Sump**	**1-Dodecanamine, n,n-dimet**	**230**	**M**	**NA**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to swipe**
RM117-02	Baseline #2	1-Propene, 1,2,3-trichloro[b]	17	M	NA	NA
RM117-02	Baseline #2	1-Propene, 1,2,3-trichloro[b]	15	M	NA	NA
RM117-01	Baseline #1	4-Bromo-2-fluorobiphenyl[b]	18	M	NA	NA
RM117-04	Small Containment, Recessed Sump	Acetone	12	J	33,000	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-02	Baseline #2	Acetone	8.2	J	33,000	NA
RM117-03	Baseline #3	Acetone	8.1	J	33,000	NA
RM117-30	Trip Blank, Samples 15-2	Acetone	5.7	J	33,000	NA
RM117-14	Trip Blank, Samples 1-1	Acetone	5.3	J	33,000	NA
Method Bla	Method Blank, Samples 1-1	Acetone	4.1	J	33,000	NA
RM117-26	**Large Containment Dividing Wall West #2 (north end)**	**Arsenic**	**9.6**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
RM117-01	Baseline #1	Arsenic	6.3	B	0.045	NA
RM117-08	Small Containment, Dividing Wall East #2 (north end	Arsenic	6.2	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-06	Small Containment, Floor North Half	Arsenic	5.9	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-10	Small Containment North Wall	Arsenic	5.6	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-18	Large Containment, Floor (northeast)	Arsenic	5.6	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-11	Small Containment East Wall #1 (south end	Arsenic	5.5	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-09	Small Containment South Wall	Arsenic	4.2	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-19	Large Containment, Floor (northwest	Arsenic	3.9	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-07	Small Containment, Dividing Wall East #1 (south end	Arsenic	3.8	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-15	Large Containment, Recessed Sump	Arsenic	3.8	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-05	Small Containment, Floor South Half	Arsenic	3.7	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-22	Large Containment, West Wall #2 (north end	Arsenic	3.6	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-23	Large Containment South Wall #2 (west end	Arsenic	3	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-17	Large Containment, Floor (southwest	Arsenic	2.9	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-20	Duplicate	Arsenic	2.9	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-12	Small Containment East Wall #2 (north end	Arsenic	2.8	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-27	Large Containment North Wall #1 (east end	Arsenic	2.7	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-24	Large Containment South Wall #1 (east end	Arsenic	2.2	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-16	Large Containment, Floor (southeast	Arsenic	2	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-04	Small Containment, Recessed Sump	Arsenic	1.8	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-25	Large Containment Dividing Wall West #1 (south end	Arsenic	1.8	B	0.045	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-03	Baseline #3	Arsenic	1.7	B	0.045	NA
RM117-02	Baseline #2	Arsenic	1.6	B	0.045	NA
RM117-19	Large Containment, Floor (northwest)	Barium	145	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below
RM117-05	Small Containment, Floor South Half	Barium	121	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-06	Small Containment, Floor North Half	Barium	111	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-18	Large Containment, Floor (northeast)	Barium	88.9	B	2600	The detected level is equal to or less than the detected level for the method bla
RM117-04	Small Containment, Recessed Sump	Barium	85.2	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-20	Duplicate	Barium	77.6	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-16	Large Containment, Floor (southeast	Barium	73.9	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-17	Large Containment, Floor (southwest	Barium	73.5	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-10	Small Containment North Wall	Barium	63.8	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-15	Large Containment, Recessed Sump	Barium	59.8	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-08	Small Containment, Dividing Wall East #2 (north end	Barium	57.2	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-11	Small Containment East Wall #1 (south end	Barium	50.2	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-12	Small Containment East Wall #2 (north end	Barium	40.6	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-26	Large Containment Dividing Wall West #2 (north end	Barium	35.3	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-09	Small Containment South Wall	Barium	33.8	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-07	Small Containment, Dividing Wall East #1 (south end	Barium	33.2	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-23	Large Containment South Wall #2 (west end	Barium	31.8	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-21	Large Containment, West Wall #1(south end	Barium	31.3	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-27	Large Containment North Wall #1 (east end	Barium	30.9	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-03	Baseline #3	Barium	29.8	B	2600	NA
RM117-02	Baseline #2	Barium	29.7	B	2600	NA
RM117-24	Large Containment South Wall #1 (east end	Barium	29.6	B	2600	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-28	Large Containment North Wall #2 (west end	Barium	28.7	B	2600	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-22	Large Containment, West Wall #2 (north end	Barium	28.6	B	2600	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-25	Large Containment Dividing Wall West #1 (south end	Barium	28.6	B	2600	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-01	Baseline #1	Barium	27.7	B	2600	NA
RM117-01	Baseline #1	Benzaldehyde[b]	42	M	3700	NA
RM117-01	Baseline #1	Benzaldehyde[b]	32	M	3700	NA
RM117-01	Baseline #1	Benzenemethanamine, n,n-di	77	M	NA	NA
RM117-01	Baseline #1	Benzenemethanamine, n,n-di	73	M	NA	NA
RM117-15	Large Containment, Recessed Sump	Benzyl alcohol[b]	22	M	11,000	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM117-15	**Large Containment, Recessed Sump**	**Benzyl chloride[b]**	**45**	**M**	**0.066**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
RM117-02	Baseline #2	Bis (2-Ethylhexyl) phthala	670	BD	4.8	NA
RM117-02	Baseline #2	Bis (2-Ethylhexyl) phthala	580	BE	4.8	NA
RM117-02	Baseline #2	Bis (2-Ethylhexyl) phthala	42	B	4.8	NA
RM117-03	Baseline #3	Bis (2-Ethylhexyl) phthala	42	B	4.8	NA
RM117-04	Small Containment, Recessed Sump	Bis (2-Ethylhexyl) phthalate	20	B	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 Samp
Method Bla	Method Blank, Samples 1-1	Bis (2-Ethylhexyl) phthala	17		4.8	NA
RM117-04	Small Containment, Recessed Sump	Bis (2-Ethylhexyl) phthalate	17	B	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 Samp
Method Bla	Method Blank, Samples 1-1	Bis (2-Ethylhexyl) phthala	16		4.8	NA
Method Bla	Method Blank, Samples 1-1	Bis (2-Ethylhexyl) phthala	14		4.8	NA
Method Bla	Method Blank, Samples 15-2	Bis (2-Ethylhexyl) phthala	14		4.8	NA
RM117-15	Large Containment, Recessed Sump	Bis (2-Ethylhexyl) phthalate	12	B	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 Samp
Method Bla	Method Blank, Samples 1-1	Bis (2-Ethylhexyl) phthala	10		4.8	NA
RM117-01	Baseline #1	Bis (2-Ethylhexyl) phthala	10	B	4.8	NA
RM117-03	Baseline #3	Bis (2-Ethylhexyl) phthala	3	JB	4.8	NA
RM117-01	Baseline #1	Bis (2-Ethylhexyl) phthala	2.7	JB	4.8	NA
RM117-01	Baseline #1	Bromodichloromethan	30		0.18	NA
RM117-04	Small Containment, Recessed Sump	Bromodichloromethane	3.2	J	0.18	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-02	Baseline #2	Bromodichloromethan	2.9	J	0.18	NA
RM117-03	Baseline #3	Bromodichloromethan	2.4	J	0.18	NA
RM117-13	Field Blank, Samples 1-1	Bromodichloromethan	0.48	J	0.18	NA
RM117-01	Baseline #1	Bromoform	190		8.5	NA
RM117-02	Baseline #2	Bromoform	0.82	J	8.5	NA
RM117-03	Baseline #3	Bromoform	0.81	J	8.5	NA
RM117-29	Field Blank, Samples 15-1	Bromoform	0.7	J	8.5	NA
RM117-04	**Small Containment, Recessed Sump**	**Butane, 2,3-dichloro-2methy**	**430**	**M**	**NA**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
RM117-03	Baseline #3	Butyl benzyl phthala	2.4	J	7,300	NA
RM117-26	Large Containment Dividing Wall West #2 (north end)	Cadmium	3.7	B	18	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
Method Bla	Method Blank, Samples 1-1	Cadmium	1.3	B	18	NA
RM117-18	Large Containment, Floor (northeast)	Cadmium	0.3	B	18	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM117-04	**Small Containment, Recessed Sump**	**Carbon Tetrachloride**	**0.86**	**J**	**0.17**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
RM117-02	Baseline #2	Chloroform	39		75	NA
RM117-04	Small Containment, Recessed Sump	Chloroform	34		75	The detected levels are equal to or less than the detected level in the Baseline #2 Samp
RM117-03	Baseline #3	Chloroform	32		75	NA
RM117-01	Baseline #1	Chloroform	24		75	NA
RM117-13	Field Blank, Samples 1-1	Chloroform	0.71	J	75	NA
RM117-02	Baseline #2	Chloromethan	9.7	J	1.5	NA
RM117-03	Baseline #3	Chloromethan	9.3	J	1.5	NA
RM117-04	Small Containment, Recessed Sump	Chloromethane	8.3	J	1.5	The detected levels are equal to or less than the detected level in the Baseline #2 Samp
RM117-13	Field Blank, Samples 1-1	Chloromethan	3.2	J	1.5	NA
RM117-30	Trip Blank, Samples 15-2	Chloromethan	2.3	J	1.5	NA
RM117-10	Small Containment North Wall	Chromium	47.2	J	110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-08	Small Containment, Dividing Wall East #2 (north end	Chromium	38.5	J	110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-27	Large Containment North Wall #1 (east end	Chromium	38		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-16	Large Containment, Floor (southeast	Chromium	37.2		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-26	Large Containment Dividing Wall West #2 (north end	Chromium	37.2		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-11	Small Containment East Wall #1 (south end	Chromium	35.7	J	110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-23	Large Containment South Wall #2 (west end	Chromium	34.2		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-06	Small Containment, Floor North Half	Chromium	33.6	J	110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-09	Small Containment South Wall	Chromium	33.3	J	110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-24	Large Containment South Wall #1 (east end	Chromium	33		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-15	Large Containment, Recessed Sump	Chromium	30.8		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-21	Large Containment, West Wall #1(south end	Chromium	28.9		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-19	Large Containment, Floor (northwest	Chromium	28.3		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-25	Large Containment Dividing Wall West #1 (south end	Chromium	28.2		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-01	Baseline #1	Chromium	27.4	J	110	NA
RM117-18	Large Containment, Floor (northeast)	Chromium	26.6		110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-05	Small Containment, Floor South Half	Chromium	25.4	J	110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-20	Duplicate	Chromium	25.1		110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-07	Small Containment, Dividing Wall East #1 (south end	Chromium	24.5	J	110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-12	Small Containment East Wall #2 (north end	Chromium	24.3	J	110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-22	Large Containment, West Wall #2 (north end	Chromium	21.4		110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-17	Large Containment, Floor (southwest	Chromium	19.5		110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-04	Small Containment, Recessed Sump	Chromium	17.7	J	110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-28	Large Containment North Wall #2 (west end	Chromium	17.4		110	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-02	Baseline #2	Chromium	14.2	J	110	NA
RM117-03	Baseline #3	Chromium	13.8	J	110	NA
Method Bla	Method Blank, Samples 1-1	Chromium	1.9	B	110	NA
RM117-01	Baseline #1	Dibromochloromethan	130		0.13	NA
RM117-03	Baseline #3	Dibromochloromethan	1.6	J	0.13	NA
RM117-02	Baseline #2	Dibromochloromethan	1.4	J	0.13	NA
RM117-04	Small Containment, Recessed Sump	Dibromochloromethane	1.3	J	0.13	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-29	Field Blank, Samples 15-1	Dibromochloromethan	0.81	J	0.13	NA
RM117-13	Field Blank, Samples 1-1	Dibromochloromethan	0.66	J	0.13	NA
RM117-03	Baseline #3	Diethyl phthalat	51		29,000	NA
RM117-15	Large Containment, Recessed Sump	Diethyl phthalate	7.3	J	29,000	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-01	Baseline #1	Diethyl phthalat	2.2	J	29,000	NA
RM117-02	Baseline #2	Diethyl phthalat	2.1	J	29,000	NA
RM117-03	Baseline #3	Di-n-butyl phthalat	4.6	J	3,700	NA
RM117-02	Baseline #2	Dodecanal[b]	6.8	M	NA	NA
RM117-02	Baseline #2	Ethane, 1,1,2,2-tetrachloro[b]	16	M	NA	NA
RM117-10	**Small Containment North Wall**	**Lead**	**26.7**	**J**	**15**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
RM117-04	**Small Containment, Recessed Sump**	**Lead**	**24.4**	**J**	**15**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
RM117-06	Small Containment, Floor North Half	Lead	10.7	J	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-05	Small Containment, Floor South Half	Lead	9	J	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-15	Large Containment, Recessed Sump	Lead	8.9		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-11	Small Containment East Wall #1 (south end	Lead	8.5	J	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-26	Large Containment Dividing Wall West #2 (north end	Lead	7.8		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-19	Large Containment, Floor (northwest	Lead	6.3		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-03	Baseline #3	Lead	4.9	BJ	15	NA
RM117-27	Large Containment North Wall #1 (east end	Lead	4.7	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-18	Large Containment, Floor (northeast)	Lead	4.3	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-16	Large Containment, Floor (southeast	Lead	4.2	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-02	Baseline #2	Lead	4	BJ	15	NA
RM117-01	Baseline #1	Lead	3.8	BJ	15	NA
RM117-08	Small Containment, Dividing Wall East #2 (north end	Lead	3.5	BJ	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-17	Large Containment, Floor (southwest	Lead	3.3	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-20	Duplicate	Lead	3	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-23	Large Containment South Wall #2 (west end	Lead	2.9	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-22	Large Containment, West Wall #2 (north end	Lead	2.7	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-12	Small Containment East Wall #2 (north end	Lead	2.6	BJ	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-21	Large Containment, West Wall #1(south end	Lead	2.6	B	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-07	Small Containment, Dividing Wall East #1 (south end	Lead	2.2	BJ	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
RM117-09	Small Containment South Wall	Lead	2.2	BJ	15	The detected levels are equal to or less than the detected level in the Baseline #3 Samp
Method Bla	Method Blank, Samples 1-1	Lead	1.8	B	15	NA
RM117-05	Small Containment, Floor South Half	Mercury	0.13	B	11	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-01	Baseline #1	Methane, bromodichloro[b]	80	M	0.18	NA
RM117-01	Baseline #1	Methane, bromodichloro[b]	40	M	0.18	NA
RM117-01	Baseline #1	Methane, bromodichloro[b]	26	M	0.18	NA
RM117-01	Baseline #1	Methane, tribromo[b]	99	M	8.5	NA
RM117-04	**Small Containment, Recessed Sump**	**Methylene Chloride**	**7.3**		**4.3**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be**
Method Bla	Method Blank, Samples 15-2	Methylene Chlorid	5.9		4.3	NA
RM117-03	Baseline #3	Methylene Chlorid	5.6		4.3	NA
RM117-02	Baseline #2	Methylene Chlorid	5.4		4.3	NA
RM117-14	Trip Blank, Samples 1-1	Methylene Chlorid	5.1		4.3	NA
RM117-13	Field Blank, Samples 1-1	Methylene Chlorid	4.8	J	4.3	NA
RM117-01	Baseline #1	Methylene Chlorid	4.2	J	4.3	NA
RM117-29	Field Blank, Samples 15-1	Methylene Chlorid	4.2	J	4.3	NA
RM117-30	Trip Blank, Samples 15-2	Methylene Chlorid	4.2	J	4.3	NA
RM117-15	Large Containment, Recessed Sump	Methylene Chloride	3.6	J	4.3	The detected levels are equal to or less than the detected level in the method bla
RM117-01	Baseline #1	N, n-dimethyltetradecanamin[b]	1400	M	NA	NA
RM117-01	Baseline #1	N-methyl-n-benzyltetradecan	250	M	NA	NA
RM117-01	Baseline #1	N-methyl-n-benzyltetradecan	300	M	NA	NA
RM117-15	Large Containment, Recessed Sump	N-methyl-n-benzyltetradecan	52	M	NA	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-15	Large Containment, Recessed Sump	Phenol	28		11,000	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-26	Large Containment Dividing Wall West #2 (north end	Selenium	6.3		180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-06	Small Containment, Floor North Half	Selenium	6	J	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-10	Small Containment North Wall	Selenium	5.1	J	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-04	Small Containment, Recessed Sump	Selenium	4.3	BJ	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-11	Small Containment East Wall #1 (south end	Selenium	4	BJ	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-01	Baseline #1	Selenium	3.9	BJ	180	NA
RM117-02	Baseline #2	Selenium	3.7	BJ	180	NA
RM117-03	Baseline #3	Selenium	3.4	BJ	180	NA
RM117-05	Small Containment, Floor South Half	Selenium	2.6	BJ	180	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
Method Bla	Method Blank, Samples 15-2	Selenium	2.2	B	180	NA
RM117-09	Small Containment South Wall	Selenium	1.9	BJ	180	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-18	Large Containment, Floor (northeast)	Selenium	1.6	B	180	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-07	Small Containment, Dividing Wall East #1 (south end	Selenium	1.5	BJ	180	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-12	Small Containment East Wall #2 (north end	Selenium	1.4	BJ	180	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-26	Large Containment Dividing Wall West #2 (north end	Silver	2.5	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-04	Small Containment, Recessed Sump	Silver	0.68	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-06	Small Containment, Floor North Half	Silver	0.59	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-18	Large Containment, Floor (northeast)	Silver	0.5	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-11	Small Containment East Wall #1 (south end	Silver	0.47	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is be
RM117-01	Baseline #1	Silver	0.43	B	180	NA
RM117-01	Baseline #1	Tetradecane, 1-chloro[b]	23	M	NA	NA
RM117-15	Large Containment, Recessed Sump	Tetradecane, 1-chloro[b]	20	M	NA	The detected levels are equal to or less than the detected level in the Baseline #1 Samp
RM117-14	Trip Blank, Samples 1-1	Toluene	0.71	J	720	NA

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
D = Result was obtained from the analysis of a dilution.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/L = micrograms per liter.
MSSL = Medium-Specific Screening Level.
NA = not applicable.
QA/QC = quality assurance/quality control.

Table 2-6
Summary of Swipe Sample Results for Room 117, April 2004

Sample No.	Location	Requested Analysis	Analyte [a]	Result (µg/100 cm^2)	Qualifier
117B-01	Recessed Sump	VOC	4-Methyl-2-pentanone	0.95	J
117B-01	Recessed Sump	VOC	Acetone	12	JB
117B-01	Recessed Sump	Total Metals	Barium	8.3	B
117B-01	Recessed Sump	Total Metals	Chromium	14.2	
117B-01	Recessed Sump	VOC	Ethylbenzene	0.66	J
117B-01	Recessed Sump	VOC	Hexane [b]	18	Q
117B-01	Recessed Sump	Total Metals	Lead	2.8	B
117B-01	Recessed Sump	VOC	Methylene Chloride	4	J
117B-01	Recessed Sump	VOC	Tetrachloroethene	0.53	J
117B-01	Recessed Sump	VOC	Trichloroethene	0.67	J
117B-01	Recessed Sump	VOC	Xylenes (total)	5.6	J
117B-02	Dividing Wall Northeast End	Total Metals	Barium	1.2	B
117B-03	Dividing Wall Northwest End	Total Metals	Barium	0.49	B
117B-04	North Wall Far Right	Total Metals	Barium	0.62	B
117B-05	North Wall Far Left	Total Metals	Barium	3.4	B
117B-05	North Wall Far Left	Total Metals	Chromium	0.19	B
117B-06	Duplicate	VOC	Acetone	8	JB
117B-06	Duplicate	Total Metals	Barium	5.1	B
117B-06	Duplicate	Total Metals	Chromium	1.3	
117B-06	Duplicate	VOC	Ethylbenzene	0.47	J
117B-06	Duplicate	VOC	Hexane [b]	22	Q
117B-06	Duplicate	Total Metals	Lead	4	B
117B-06	Duplicate	VOC	Methylene Chloride	4.3	J
117B-06	Duplicate	VOC	Tetrachloroethene	0.56	J
117B-06	Duplicate	VOC	Trichloroethene	0.89	J
117B-06	Duplicate	VOC	Xylenes (total)	3.6	J
117B-07	Baseline	SVOC	1-Butanamine, n-butyl- [b]	11	M
117B-07	Baseline	VOC	2-butanone	48	
117B-07	Baseline	SVOC	4-Cyanocylcohexene [b]	18	M
117B-07	Baseline	VOC	Acetone	18	JB
117B-07	Baseline	Total Metals	Barium	0.51	B
117B-07	Baseline	SVOC	Butylated hydroxytoluene [b]	7.5	M
117B-07	Baseline	VOC	Carbon disulfide	1.7	J
117B-07	Baseline	VOC	Ethyl acetate [b]	140	Q
117B-07	Baseline	VOC	Hexane [b]	9.2	Q
117B-07	Baseline	VOC	Methylene Chloride	5.8	
117B-07	Baseline	SVOC	Phenol, 2-(1-1-dimethylethyl) [b]	24	M
117B-07	Baseline	VOC	Trichloroethene	0.63	J
Method Blank	Method Blank	VOC	Acetone	4.4	J
Method Blank	Method Blank	VOC	Acetone	4.4	J
Method Blank	Method Blank	VOC	Carbon Tetrachloride	0.81	J
Method Blank	Method Blank	VOC	Methylene Chloride	3.2	J
Method Blank	Method Blank	SVOC	Octadeconoic Acid [b]	4.5	M
Method Blank	Method Blank	VOC	Trichloroethene	1	J
TB-01	Trip Blank	VOC	2-Butanone	86	
TB-01	Trip Blank	VOC	4-Methyl-2-Pentanone	1.9	J
TB-01	Trip Blank	VOC	Acetone	29	B
TB-01	Trip Blank	VOC	Carbon Disulfide	0.54	J
TB-01	Trip Blank	VOC	Chloromethane	0.58	J
TB-01	Trip Blank	VOC	Ethyl acetate [b]	230	Q
TB-01	Trip Blank	VOC	Methylene Chloride	7.9	
TB-01	Trip Blank	VOC	Tetrachloroethene	0.88	J
TB-01	Trip Blank	VOC	Trichloroethene	0.65	J
TB-02	Trip Blank	VOC	2-Butanone	84	
TB-02	Trip Blank	VOC	4-Methyl-2-Pentanone	1.9	J
TB-02	Trip Blank	VOC	Acetone	33	B
TB-02	Trip Blank	VOC	Carbon Disulfide	0.98	J
TB-02	Trip Blank	VOC	Ethyl acetate [b]	250	Q
TB-02	Trip Blank	VOC	Hexane [b]	12	Q
TB-02	Trip Blank	VOC	Methylene Chloride	8.4	
TB-02	Trip Blank	VOC	Tetrachloroethene	0.98	J
TB-02	Trip Blank	VOC	Trichloroethene	0.71	J
TB-03	Trip Blank	VOC	4-Methyl-2-Pentanone	1.7	J
TB-03	Trip Blank	VOC	Acetone	29	B
TB-03	Trip Blank	VOC	Carbon Disulfide	1	J
TB-03	Trip Blank	VOC	Ethyl acetate [b]	200	Q
TB-03	Trip Blank	VOC	Hexane [b]	11	Q
TB-03	Trip Blank	VOC	Methylene Chloride	8.4	
TB-03	Trip Blank	VOC	Tetrachloroethene	0.55	J
TB-03	Trip Blank	VOC	Trichloroethene	0.51	J
TB-04	Trip Blank	VOC	2-Butanone	82	
TB-04	Trip Blank	VOC	4-Methyl-2-Pentanone	1.6	J
TB-04	Trip Blank	VOC	Acetone	34	B
TB-04	Trip Blank	VOC	Carbon Disulfide	0.84	J
TB-04	Trip Blank	VOC	Chloromethane	0.6	J
TB-04	Trip Blank	VOC	Ethyl acetate [b]	220	Q
TB-04	Trip Blank	VOC	Methylene Chloride	8.4	
TB-04	Trip Blank	VOC	Tetrachloroethene	1.4	J
TB-04	Trip Blank	VOC	Trichloroethene	1.6	J

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qulifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
Q = Result was quantitated against the response factor of a calibration standard.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.

Table 2-7
Room 117 Swipe Sample Results - Comparison to Baseline and QA/QC Results

Sample No.	Location	Analyte [a]	Result (µg/100 cm²)	Qualifier	Comparison Results
117B-07	Baseline	1-Butanamine, n-butyl- [b]	11	M	NA
TB-01	Trip Blank	2-Butanone	86		NA
TB-02	Trip Blank	2-Butanone	84		NA
TB-04	Trip Blank	2-Butanone	82		NA
117B-07	Baseline	2-butanone	48		NA
117B-07	Baseline	4-Cyanocyclohexene [b]	18	M	NA
TB-01	Trip Blank	4-Methyl-2-Pentanone	1.9	J	NA
TB-02	Trip Blank	4-Methyl-2-Pentanone	1.9	J	NA
TB-03	Trip Blank	4-Methyl-2-Pentanone	1.7	J	NA
TB-04	Trip Blank	4-Methyl-2-Pentanone	1.6	J	NA
117B-01	Recessed Sump	4-Methyl-2-pentanone	0.95	J	The detected level is equal to or less than the detected level in the Trip Blank.
TB-04	Trip Blank	Acetone	34	B	NA
TB-02	Trip Blank	Acetone	33	B	NA
TB-01	Trip Blank	Acetone	29	B	NA
TB-03	Trip Blank	Acetone	29	B	NA
117B-07	Baseline	Acetone	18	JB	NA
117B-01	Recessed Sump	Acetone	12	JB	The detected level is equal to or less than the detected level in the Trip Blank.
117B-06	Duplicate	Acetone	8	JB	The detected level is equal to or less than the detected level in the Trip Blank.
Method Blank	Method Blank	Acetone	4.4	J	NA
Method Blank	Method Blank	Acetone	4.4	J	NA
117B-01	**Recessed Sump**	**Barium**	**8.3**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-06	**Duplicate**	**Barium**	**5.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-05	**North Wall Far Left**	**Barium**	**3.4**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-02	**Dividing Wall Northeast End**	**Barium**	**1.2**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-04	**North Wall Far Right**	**Barium**	**0.62**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-07	Baseline	Barium	0.51	B	NA
117B-03	Dividing Wall Northwest End	Barium	0.49	B	The detected level is equal to or less than the detected level in the Baseline Sample.
117B-07	Baseline	Butylated hydroxytoluene [b]	7.5	M	NA
117B-07	Baseline	Carbon disulfide	1.7	J	NA
TB-03	Trip Blank	Carbon Disulfide	1	J	NA
TB-02	Trip Blank	Carbon Disulfide	0.98	J	NA
TB-04	Trip Blank	Carbon Disulfide	0.84	J	NA
TB-01	Trip Blank	Carbon Disulfide	0.54	J	NA
Method Blank	Method Blank	Carbon Tetrachloride	0.81	J	NA
TB-04	Trip Blank	Chloromethane	0.6	J	NA
TB-01	Trip Blank	Chloromethane	0.58	J	NA
117B-01	**Recessed Sump**	**Chromium**	**14.2**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-06	**Duplicate**	**Chromium**	**1.3**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-05	**North Wall Far Left**	**Chromium**	**0.19**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
TB-02	Trip Blank	Ethyl acetate [b]	250	Q	NA
TB-01	Trip Blank	Ethyl acetate [b]	230	Q	NA
TB-04	Trip Blank	Ethyl acetate [b]	220	Q	NA
TB-03	Trip Blank	Ethyl acetate [b]	200	Q	NA
117B-07	Baseline	Ethyl acetate [b]	140	Q	NA
117B-01	**Recessed Sump**	**Ethylbenzene**	**0.66**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-06	**Duplicate**	**Ethylbenzene**	**0.47**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-06	**Duplicate**	**Hexane [b]**	**22**	**Q**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-01	**Recessed Sump**	**Hexane [b]**	**18**	**Q**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
TB-02	Trip Blank	Hexane [b]	12	Q	NA
TB-03	Trip Blank	Hexane [b]	11	Q	NA
117B-07	Baseline	Hexane [b]	9.2	Q	NA
117B-06	**Duplicate**	**Lead**	**4**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-01	**Recessed Sump**	**Lead**	**2.8**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
TB-02	Trip Blank	Methylene Chloride	8.4		NA
TB-03	Trip Blank	Methylene Chloride	8.4		NA
TB-04	Trip Blank	Methylene Chloride	8.4		NA
TB-01	Trip Blank	Methylene Chloride	7.9		NA
117B-07	Baseline	Methylene Chloride	5.8		NA
117B-06	Duplicate	Methylene Chloride	4.3	J	The detected level is equal to or less than the detected level in the Trip Blank.
117B-01	Recessed Sump	Methylene Chloride	4	J	The detected level is equal to or less than the detected level in the Trip Blank.
Method Blank	Method Blank	Methylene Chloride	3.2	J	NA
Method Blank	Method Blank	Octadeconoic Acid [b]	4.5	M	NA
117B-07	Baseline	Phenol, 2-(1-1-dimethylethyl) [b]	24	M	NA
TB-04	Trip Blank	Tetrachloroethene	1.4	J	NA
TB-02	Trip Blank	Tetrachloroethene	0.98	J	NA
TB-01	Trip Blank	Tetrachloroethene	0.88	J	NA
117B-06	Duplicate	Tetrachloroethene	0.56	J	The detected level is equal to or less than the detected level in the Trip Blank.
TB-03	Trip Blank	Tetrachloroethene	0.55	J	NA
117B-01	Recessed Sump	Tetrachloroethene	0.53	J	The detected level is equal to or less than the detected level in the Trip Blank.
TB-04	Trip Blank	Trichloroethene	1.6	J	NA
Method Blank	Method Blank	Trichloroethene	1	J	NA
117B-06	Duplicate	Trichloroethene	0.89	J	The detected level is equal to or less than the detected level in the Method Blank.
TB-02	Trip Blank	Trichloroethene	0.71	J	NA
117B-01	Recessed Sump	Trichloroethene	0.67	J	The detected level is equal to or less than the detected level in the Method Blank.
TB-01	Trip Blank	Trichloroethene	0.65	J	NA
117B-07	Baseline	Trichloroethene	0.63	J	NA
TB-03	Trip Blank	Trichloroethene	0.51	J	NA
117B-01	**Recessed Sump**	**Xylenes (total)**	**5.6**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**
117B-06	**Duplicate**	**Xylenes (total)**	**3.6**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.**

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
Q = Result was quantities against the response factor of a calibration standard.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/100 cm² = micrograms per 100 square centimeters.
N/A = not applicable.
QA/QC = quality assurance/quality control.

Table 2-8
Waste Characterization Sampling Results for Room 117

Sample No.	Location	Requested Analysis	Analyte [a]	Result (µg/L)	Qualifier
RM117-31	Decontamination Water/Waste	SVOC	2-Dodecanone	6.10	M
RM117-31	Decontamination Water/Waste	SVOC	2-Undecanone	8.30	M
RM117-31	Decontamination Water/Waste	SVOC	Benzaldehyde [b]	21.00	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl alcohol [b]	75.00	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl alcohol [b]	62.00	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl nitrile [b]	5.80	M
RM117-31	Decontamination Water/Waste	SVOC	Bis (2-Ethylhexyl) phthalate	12.00	B
RM117-31	Decontamination Water/Waste	SVOC	Cyclodecane [b]	34.00	M
RM117-31	Decontamination Water/Waste	SVOC	Cyclohexasiloxzne, dodecamethy [b]	22.00	M
RM117-31	Decontamination Water/Waste	SVOC	Diethyl phthalate	2.30	J
RM117-31	Decontamination Water/Waste	SVOC	Heptanal [b]	12.00	M
RM117-31	Decontamination Water/Waste	SVOC	Isophorone	7.40	J
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro- [b]	36.00	M
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro- [b]	38.00	M
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro- [b]	54.00	M
RM117-31	Decontamination Water/Waste	SVOC	Octanal [b]	19.00	M
RM117-31	Decontamination Water/Waste	SVOC	Phthalic anhydride [b]	9.40	M
RM117-31	Decontamination Water/Waste	Total Metals	Arsenic	3.70	B
RM117-31	Decontamination Water/Waste	Total Metals	Barium	570.00	
RM117-31	Decontamination Water/Waste	Total Metals	Cadmium	1.80	B
RM117-31	Decontamination Water/Waste	Total Metals	Chromium	40.80	
RM117-31	Decontamination Water/Waste	Total Metals	Lead	93.60	
RM117-31	Decontamination Water/Waste	Total Metals	Mercury	0.27	
RM117-31	Decontamination Water/Waste	Total Metals	Silver	0.70	B
RM117-31	Decontamination Water/Waste	VOC	Acetone	33.00	J
RM117-31	Decontamination Water/Waste	VOC	Acetone	24.00	JB
RM117-31	Decontamination Water/Waste	VOC	Bromodichloromethane	230.00	
RM117-31	Decontamination Water/Waste	VOC	Bromodichloromethane	200.00	
RM117-31	Decontamination Water/Waste	VOC	Bromoform	55.00	
RM117-31	Decontamination Water/Waste	VOC	Bromoform	44.00	
RM117-31	Decontamination Water/Waste	VOC	Chloroform	580.00	
RM117-31	Decontamination Water/Waste	VOC	Chloroform	490.00	
RM117-31	Decontamination Water/Waste	VOC	Dibromochloromethane	140.00	
RM117-31	Decontamination Water/Waste	VOC	Dibromochloromethane	120.00	
RM117-31	Decontamination Water/Waste	VOC	Methylene Chloride	64.00	

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

µg/L = micrograms per liter.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.

Table 2-3
Solvent Medium Used for Collection of Swipe Samples

Requested Analysis	Solvent Medium	Collection Medium
Total Metals	Deionized Water	Gauze Pad
SVOC	Methylene Chloride	Gauze Pad
VOC	Methyl Alcohol (Methanol)	Gauze Pad
PCB	Hexane	Cheese cloth

Definition of Acronyms

PCB = polychlorinated biphenyls.

SVOC = semi-volatile organic compounds.

VOC = volatile organic compounds.

MASTER - SWIPE SAMPLE RESULTS

Sample No.	LOCATION	Requested Analysis	Analyte[a]	Result (µg/100 cm^2)	Qualifier
117B-01	Recessed Sump	VOC	4-Methyl-2-pentanone	0.95	J
117B-01	Recessed Sump	VOC	Acetone	12	JB
117B-01	Recessed Sump	Total Metals	Barium	8.3	B
117B-01	Recessed Sump	Total Metals	Chromium	14.2	
117B-01	Recessed Sump	VOC	Ethylbenzene	0.66	J
117B-01	Recessed Sump	VOC	Hexane[b]	18	Q
117B-01	Recessed Sump	Total Metals	Lead	2.8	B
117B-01	Recessed Sump	VOC	Methylene Chloride	4	J
117B-01	Recessed Sump	VOC	Tetrachloroethene	0.53	J
117B-01	Recessed Sump	VOC	Trichloroethene	0.67	J
117B-01	Recessed Sump	VOC	Xylenes (total)	5.6	J
117B-02	Dividing Wall Northeast End	Total Metals	Barium	1.2	B
117B-03	Dividing Wall Northwest End	Total Metals	Barium	0.49	B
117B-04	North Wall Far Right	Total Metals	Barium	0.62	B
117B-05	North Wall Far Left	Total Metals	Barium	3.4	B
117B-05	North Wall Far Left	Total Metals	Chromium	0.19	B
117B-06	Duplicate	VOC	Acetone	8	JB
117B-06	Duplicate	Total Metals	Barium	5.1	B
117B-06	Duplicate	Total Metals	Chromium	1.3	
117B-06	Duplicate	VOC	Ethylbenzene	0.47	J
117B-06	Duplicate	VOC	Hexane[b]	22	Q
117B-06	Duplicate	Total Metals	Lead	4	B
117B-06	Duplicate	VOC	Methylene Chloride	4.3	J
117B-06	Duplicate	VOC	Tetrachloroethene	0.56	J
117B-06	Duplicate	VOC	Trichloroethene	0.89	J
117B-06	Duplicate	VOC	Xylenes (total)	3.6	J
117B-07	Baseline	SVOC	1-Butanamine, n-butyl-[b]	11	M
117B-07	Baseline	VOC	2-butanone	48	
117B-07	Baseline	SVOC	4-Cyanocylcohexene[b]	18	M
117B-07	Baseline	VOC	Acetone	18	JB
117B-07	Baseline	Total Metals	Barium	0.51	B
117B-07	Baseline	SVOC	Butylated hydroxytoluene[b]	7.5	M
117B-07	Baseline	VOC	Carbon disulfide	1.7	J
117B-07	Baseline	VOC	Ethyl acetate[b]	140	Q
117B-07	Baseline	VOC	Hexane[b]	9.2	Q
117B-07	Baseline	VOC	Methylene Chloride	5.8	
117B-07	Baseline	SVOC	Phenol, 2-(1-1-dimethylethyl)[b]	24	M
117B-07	Baseline	VOC	Trichloroethene	0.63	J
Method Blank	Method Blank	VOC	Acetone	4.4	J
Method Blank	Method Blank	VOC	Acetone	4.4	J
Method Blank	Method Blank	VOC	Carbon Tetrachloride	0.81	J
Method Blank	Method Blank	VOC	Methylene Chloride	3.2	J
Method Blank	Method Blank	SVOC	Octadeconoic Acid[b]	4.5	M
Method Blank	Method Blank	VOC	Trichloroethene	1	J
TB-01	Trip Blank	VOC	2-Butanone	86	
TB-01	Trip Blank	VOC	4-Methyl-2-Pentanone	1.9	J
TB-01	Trip Blank	VOC	Acetone	29	B
TB-01	Trip Blank	VOC	Carbon Disulfide	0.54	J
TB-01	Trip Blank	VOC	Chloromethane	0.58	J
TB-01	Trip Blank	VOC	Ethyl acetate[b]	230	Q
TB-01	Trip Blank	VOC	Methylene Chloride	7.9	
TB-01	Trip Blank	VOC	Tetrachloroethene	0.88	J
TB-01	Trip Blank	VOC	Trichloroethene	0.65	J
TB-02	Trip Blank	VOC	2-Butanone	84	
TB-02	Trip Blank	VOC	4-Methyl-2-Pentanone	1.9	J
TB-02	Trip Blank	VOC	Acetone	33	B
TB-02	Trip Blank	VOC	Carbon Disulfide	0.98	J
TB-02	Trip Blank	VOC	Ethyl acetate[b]	250	Q
TB-02	Trip Blank	VOC	Hexane[b]	12	Q
TB-02	Trip Blank	VOC	Methylene Chloride	8.4	
TB-02	Trip Blank	VOC	Tetrachloroethene	0.98	J
TB-02	Trip Blank	VOC	Trichloroethene	0.71	J
TB-03	Trip Blank	VOC	4-Methyl-2-Pentanone	1.7	J
TB-03	Trip Blank	VOC	Acetone	29	B
TB-03	Trip Blank	VOC	Carbon Disulfide	1	J
TB-03	Trip Blank	VOC	Ethyl acetate[b]	200	Q
TB-03	Trip Blank	VOC	Hexane[b]	11	Q
TB-03	Trip Blank	VOC	Methylene Chloride	8.4	
TB-03	Trip Blank	VOC	Tetrachloroethene	0.55	J
TB-03	Trip Blank	VOC	Trichloroethene	0.51	J
TB-04	Trip Blank	VOC	2-Butanone	82	
TB-04	Trip Blank	VOC	4-Methyl-2-Pentanone	1.6	J
TB-04	Trip Blank	VOC	Acetone	34	B
TB-04	Trip Blank	VOC	Carbon Disulfide	0.84	J
TB-04	Trip Blank	VOC	Chloromethane	0.6	J
TB-04	Trip Blank	VOC	Ethyl acetate[b]	220	Q
TB-04	Trip Blank	VOC	Methylene Chloride	8.4	
TB-04	Trip Blank	VOC	Tetrachloroethene	1.4	J
TB-04	Trip Blank	VOC	Trichloroethene	1.6	J

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively indentifed compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qulifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
Q = Result was quantitated against the response factor of a calibration standard.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

SVOC = semivolatile organic compounds
VOC = volatile organic compounds
µg/100 cm^2 = micrograms per liter

MASTER - VERIFCATION SAMPLE RESULTS (wash water)

Sample No.	Location	Requested Analysis	Analyte [a]	Result (µg/L)	Qualifier
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	14	
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	14	
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	16	
Method Blank	Method Blank, Samples 1-14	SVOC	Bis (2-Ethylhexyl) phthalate	17	
Method Blank	Method Blank, Samples 15-31	SVOC	Bis (2-Ethylhexyl) phthalate	10	
Method Blank	Method Blank, Samples 1-14	Total Metals	Cadmium	1.3	B
Method Blank	Method Blank, Samples 1-14	Total Metals	Chromium	1.9	B
Method Blank	Method Blank, Samples 1-14	Total Metals	Lead	1.8	B
Method Blank	Method Blank, Samples 1-14	Total Metals	Selenium	2.2	B
Method Blank	Method Blank, Samples 15-31	VOC	Acetone	4.1	J
Method Blank	Method Blank, Samples 15-31	VOC	Methylene Chloride	5.9	
RM117-01	Baseline #1	SVOC	4-Bromo-2-fluorobiphenyl [b]	18	M
RM117-01	Baseline #1	SVOC	Benzaldehyde [b]	32	M
RM117-01	Baseline #1	SVOC	Benzaldehyde [b]	42	M
RM117-01	Baseline #1	SVOC	Benzenemethanamine, n,n-dimeth [b]	73	M
RM117-01	Baseline #1	SVOC	Benzenemethanamine, n,n-dimeth [b]	77	M
RM117-01	Baseline #1	SVOC	Bis (2-Ethylhexyl) phthalate	10	B
RM117-01	Baseline #1	SVOC	Bis (2-Ethylhexyl) phthalate	2.7	JB
RM117-01	Baseline #1	SVOC	Diethyl phthalate	2.2	J
RM117-01	Baseline #1	SVOC	Methane, bromodichloro- [b]	26	M
RM117-01	Baseline #1	SVOC	Methane, bromodichloro- [b]	40	M
RM117-01	Baseline #1	SVOC	Methane, bromodichloro- [b]	80	M
RM117-01	Baseline #1	SVOC	Methane, tribromo- [b]	99	M
RM117-01	Baseline #1	SVOC	N, n-dimethyltetradecanamine [b]	1400	M
RM117-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami [b]	350	M
RM117-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami [b]	300	M
RM117-01	Baseline #1	SVOC	Tetradecane, 1-chloro- [b]	23	M
RM117-01	Baseline #1	Total Metals	Arsenic	6.3	B
RM117-01	Baseline #1	Total Metals	Barium	27.7	B
RM117-01	Baseline #1	Total Metals	Chromium	27.4	J
RM117-01	Baseline #1	Total Metals	Lead	3.8	BJ
RM117-01	Baseline #1	Total Metals	Selenium	3.9	BJ
RM117-01	Baseline #1	Total Metals	Silver	0.43	B
RM117-01	Baseline #1	VOC	Bromodichloromethane	30	
RM117-01	Baseline #1	VOC	Bromoform	190	
RM117-01	Baseline #1	VOC	Chloroform	24	
RM117-01	Baseline #1	VOC	Dibromochloromethane	130	
RM117-01	Baseline #1	VOC	Methylene Chloride	4.2	J
RM117-02	Baseline #2	SVOC	1-Propene, 1,2,3-trichloro- [b]	15	M
RM117-02	Baseline #2	SVOC	1-Propene, 1,2,3-trichloro- [b]	17	M
RM117-02	Baseline #2	SVOC	Bis (2-Ethylhexyl) phthalate	42	B
RM117-02	Baseline #2	SVOC	Bis (2-Ethylhexyl) phthalate	670	BD
RM117-02	Baseline #2	SVOC	Bis (2-Ethylhexyl) phthalate	580	BE
RM117-02	Baseline #2	SVOC	Diethyl phthalate	2.1	J
RM117-02	Baseline #2	SVOC	Dodecanal [b]	6.8	M
RM117-02	Baseline #2	SVOC	Ethane, 1,1,2,2,-tetrachloro- [b]	16	M
RM117-02	Baseline #2	Total Metals	Arsenic	1.6	B
RM117-02	Baseline #2	Total Metals	Barium	29.7	B
RM117-02	Baseline #2	Total Metals	Chromium	14.2	J
RM117-02	Baseline #2	Total Metals	Lead	4	BJ
RM117-02	Baseline #2	Total Metals	Selenium	3.7	BJ
RM117-02	Baseline #2	VOC	Acetone	8.2	J
RM117-02	Baseline #2	VOC	Bromodichloromethane	2.9	J
RM117-02	Baseline #2	VOC	Bromoform	0.82	J
RM117-02	Baseline #2	VOC	Chloroform	39	
RM117-02	Baseline #2	VOC	Chloromethane	9.7	J
RM117-02	Baseline #2	VOC	Dibromochloromethane	1.4	J
RM117-02	Baseline #2	VOC	Methylene Chloride	5.4	
RM117-03	Baseline #3	SVOC	1-Butene, 2-chloro-3-methyl- [b]	5.6	M
RM117-03	Baseline #3	SVOC	Bis (2-Ethylhexyl) phthalate	42	B
RM117-03	Baseline #3	SVOC	Bis (2-Ethylhexyl) phthalate	3	JB
RM117-03	Baseline #3	SVOC	butyl benzyl phthalate	2.4	J
RM117-03	Baseline #3	SVOC	Diethyl phthalate	51	
RM117-03	Baseline #3	SVOC	Di-nbutyl phthalate	4.6	J
RM117-03	Baseline #3	Total Metals	Arsenic	1.7	B
RM117-03	Baseline #3	Total Metals	Barium	29.8	B
RM117-03	Baseline #3	Total Metals	Chromium	13.8	J
RM117-03	Baseline #3	Total Metals	Lead	4.9	BJ
RM117-03	Baseline #3	Total Metals	Selenium	3.4	BJ
RM117-03	Baseline #3	VOC	Acetone	8.1	J
RM117-03	Baseline #3	VOC	Bromodichloromethane	2.4	J
RM117-03	Baseline #3	VOC	Bromoform	0.81	J
RM117-03	Baseline #3	VOC	Chloroform	32	
RM117-03	Baseline #3	VOC	Chloromethane	9.3	J
RM117-03	Baseline #3	VOC	Dibromochloromethane	1.6	J
RM117-03	Baseline #3	VOC	Methylene Chloride	5.6	
RM117-04	Small Containment, Recessed Sump	SVOC	Bis (2-Ethylhexyl) phthalate	17	B
RM117-04	Small Containment, Recessed Sump	SVOC	Bis (2-Ethylhexyl) phthalate	20	B
RM117-04	Small Containment, Recessed Sump	SVOC	Butane, 2,3-dichloro-2methyl- [b]	430	M
RM117-04	Small Containment, Recessed Sump	Total Metals	Arsenic	1.8	B
RM117-04	Small Containment, Recessed Sump	Total Metals	Barium	85.2	B
RM117-04	Small Containment, Recessed Sump	Total Metals	Chromium	17.7	J
RM117-04	Small Containment, Recessed Sump	Total Metals	Lead	24.4	J
RM117-04	Small Containment, Recessed Sump	Total Metals	Selenium	4.3	BJ
RM117-04	Small Containment, Recessed Sump	Total Metals	Silver	0.68	B
RM117-04	Small Containment, Recessed Sump	VOC	Acetone	12	J
RM117-04	Small Containment, Recessed Sump	VOC	Bromodichloromethane	3.2	J
RM117-04	Small Containment, Recessed Sump	VOC	Carbon Tetrachloride	0.86	J
RM117-04	Small Containment, Recessed Sump	VOC	Chloroform	34	
RM117-04	Small Containment, Recessed Sump	VOC	Chloromethane	8.3	J
RM117-04	Small Containment, Recessed Sump	VOC	Dibromochloromethane	1.3	J
RM117-04	Small Containment, Recessed Sump	VOC	Methylene Chloride	7.3	
RM117-05	Small Containment, Floor South Half	Total Metals	Arsenic	3.7	B
RM117-05	Small Containment, Floor South Half	Total Metals	Barium	121	B
RM117-05	Small Containment, Floor South Half	Total Metals	Chromium	25.4	J
RM117-05	Small Containment, Floor South Half	Total Metals	Lead	9	J
RM117-05	Small Containment, Floor South Half	Total Metals	Mercury	0.13	B
RM117-05	Small Containment, Floor South Half	Total Metals	Selenium	2.6	BJ
RM117-06	Small Containment, Floor North Half	Total Metals	Arsenic	5.9	B
RM117-06	Small Containment, Floor North Half	Total Metals	Barium	111	B
RM117-06	Small Containment, Floor North Half	Total Metals	Chromium	33.6	J
RM117-06	Small Containment, Floor North Half	Total Metals	Lead	10.7	J
RM117-06	Small Containment, Floor North Half	Total Metals	Selenium	6	J
RM117-06	Small Containment, Floor North Half	Total Metals	Silver	0.59	B
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Arsenic	3.8	B
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Barium	33.2	B
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Chromium	24.5	J
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Lead	2.2	BJ
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals	Selenium	1.5	BJ
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Arsenic	6.2	B
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Barium	57.2	B
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Chromium	38.5	J
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals	Lead	3.5	BJ
RM117-09	Small Containment South Wall	Total Metals	Arsenic	4.2	B
RM117-09	Small Containment South Wall	Total Metals	Barium	33.8	B
RM117-09	Small Containment South Wall	Total Metals	Chromium	33.3	J
RM117-09	Small Containment South Wall	Total Metals	Lead	2.2	BJ
RM117-09	Small Containment South Wall	Total Metals	Selenium	1.9	BJ
RM117-10	Small Containment North Wall	Total Metals	Arsenic	5.6	B
RM117-10	Small Containment North Wall	Total Metals	Barium	63.8	B
RM117-10	Small Containment North Wall	Total Metals	Chromium	47.2	J
RM117-10	Small Containment North Wall	Total Metals	Lead	26.7	J
RM117-10	Small Containment North Wall	Total Metals	Selenium	5.1	J
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Arsenic	5.5	B
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Barium	50.2	B
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Chromium	35.7	J
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Lead	8.5	J
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Selenium	4	BJ
RM117-11	Small Containment East Wall #1 (south end)	Total Metals	Silver	0.47	B
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Arsenic	2.8	B
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Barium	40.6	B
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Chromium	24.3	J
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Lead	2.6	BJ
RM117-12	Small Containment East Wall #2 (north end)	Total Metals	Selenium	1.4	BJ
RM117-13	Field Blank, Samples 1-14	VOC	Bromodichloromethane	0.48	J
RM117-13	Field Blank, Samples 1-14	VOC	Chloroform	0.71	J
RM117-13	Field Blank, Samples 1-14	VOC	Chloromethane	3.2	J
RM117-13	Field Blank, Samples 1-14	VOC	Dibromochloromethane	0.69	J
RM117-13	Field Blank, Samples 1-14	VOC	Methylene Chloride	4.8	J
RM117-14	Trip Blank, Samples 1-14	VOC	Acetone	5.3	J
RM117-14	Trip Blank, Samples 1-14	VOC	Methylene Chloride	5.1	
RM117-14	Trip Blank, Samples 1-14	VOC	Toluene	0.71	J
RM117-15	Large Containment, Recessed Sump	SVOC	1-Dodecanamine, n,n-dimethyl [b]	230	M
RM117-15	Large Containment, Recessed Sump	SVOC	Benzyl alcohol [b]	22	M
RM117-15	Large Containment, Recessed Sump	SVOC	Benzyl chloride [b]	45	M
RM117-15	Large Containment, Recessed Sump	SVOC	Bis (2-Ethylhexyl) phthalate	12	B
RM117-15	Large Containment, Recessed Sump	SVOC	Diethyl phthalate	7.3	J
RM117-15	Large Containment, Recessed Sump	SVOC	N-methyl-n-benzyltetradecanami [b]	52	M
RM117-15	Large Containment, Recessed Sump	SVOC	Phenol	28	
RM117-15	Large Containment, Recessed Sump	SVOC	Tetradecane, 1-chloro- [b]	20	M
RM117-15	Large Containment, Recessed Sump	Total Metals	Arsenic	3.8	B
RM117-15	Large Containment, Recessed Sump	Total Metals	Barium	59.8	B
RM117-15	Large Containment, Recessed Sump	Total Metals	Chromium	30.8	
RM117-15	Large Containment, Recessed Sump	Total Metals	Lead	8.9	
RM117-15	Large Containment, Recessed Sump	VOC	Methylene Chloride	3.6	J
RM117-16	Large Containment, Floor (southeast)	Total Metals	Arsenic	2	B
RM117-16	Large Containment, Floor (southeast)	Total Metals	Barium	73.9	B
RM117-16	Large Containment, Floor (southeast)	Total Metals	Chromium	37.2	
RM117-16	Large Containment, Floor (southeast)	Total Metals	Lead	4.2	B
RM117-17	Large Containment, Floor (southwest)	Total Metals	Arsenic	2.9	B
RM117-17	Large Containment, Floor (southwest)	Total Metals	Barium	73.5	B
RM117-17	Large Containment, Floor (southwest)	Total Metals	Chromium	19.5	
RM117-17	Large Containment, Floor (southwest)	Total Metals	Lead	3.3	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Arsenic	5.6	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Barium	88.9	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Cadmium	0.3	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Chromium	26.6	
RM117-18	Large Containment, Floor (northeast)	Total Metals	Lead	4.3	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Selenium	1.6	B
RM117-18	Large Containment, Floor (northeast)	Total Metals	Silver	0.5	B
RM117-19	Large Containment, Floor (northwest)	Total Metals	Arsenic	3.9	B
RM117-19	Large Containment, Floor (northwest)	Total Metals	Barium	145	B
RM117-19	Large Containment, Floor (northwest)	Total Metals	Chromium	28.3	
RM117-19	Large Containment, Floor (northwest)	Total Metals	Lead	6.3	
RM117-20	Duplicate	Total Metals	Arsenic	2.9	B
RM117-20	Duplicate	Total Metals	Barium	77.6	B
RM117-20	Duplicate	Total Metals	Chromium	25.1	
RM117-20	Duplicate	Total Metals	Lead	3	B
RM117-21	Large Containment, West Wall #1(south end)	Total Metals	Barium	31.3	B
RM117-21	Large Containment, West Wall #1(south end)	Total Metals	Chromium	28.9	
RM117-21	Large Containment, West Wall #1(south end)	Total Metals	Lead	2.6	B
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Arsenic	3.6	B
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Barium	28.6	B
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Chromium	21.4	
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals	Lead	2.7	B
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Arsenic	3	B
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Barium	31.8	B
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Chromium	34.2	
RM117-23	Large Containment South Wall #2 (west end)	Total Metals	Lead	2.9	B
RM117-24	Large Containment South Wall #1 (east end)	Total Metals	Arsenic	2.2	B
RM117-24	Large Containment South Wall #1 (east end)	Total Metals	Barium	29.6	B
RM117-24	Large Containment South Wall #1 (east end)	Total Metals	Chromium	33	
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals	Arsenic	1.8	B
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals	Barium	28.6	B
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals	Chromium	28.2	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Arsenic	9.6	B
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Barium	35.3	B
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Cadmium	3.7	B
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Chromium	37.2	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Lead	7.8	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Selenium	6.3	
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals	Silver	2.5	B
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Arsenic	2.7	B
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Barium	30.9	B
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Chromium	38	
RM117-27	Large Containment North Wall #1 (east end)	Total Metals	Lead	4.7	B
RM117-28	Large Containment North Wall #2 (west end)	Total Metals	Barium	28.7	B
RM117-28	Large Containment North Wall #2 (west end)	Total Metals	Chromium	17.4	
RM117-29	Field Blank, Samples 15 -31	VOC	Bromoform	0.7	J
RM117-29	Field Blank, Samples 15 -31	VOC	Dibromochloromethane	0.81	J
RM117-29	Field Blank, Samples 15 -31	VOC	Methylene Chloride	4.2	J
RM117-30	Trip Blank, Samples 15-31	VOC	Acetone	5.7	J
RM117-30	Trip Blank, Samples 15-31	VOC	Chloromethane	2.3	J
RM117-30	Trip Blank, Samples 15-31	VOC	Methylene Chloride	4.2	J
RM117-31	Decontamination Water/Waste	SVOC	2-dodecanone [b]	6.1	M
RM117-31	Decontamination Water/Waste	SVOC	2-Undecanone [b]	8.3	M
RM117-31	Decontamination Water/Waste	SVOC	Benzaldehyde [b]	21	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl alcohol [b]	75	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl alcohol [b]	62	M
RM117-31	Decontamination Water/Waste	SVOC	Benzyl nitrile [b]	5.8	M
RM117-31	Decontamination Water/Waste	SVOC	Bis (2-Ethylhexyl) phthalate	12	B
RM117-31	Decontamination Water/Waste	SVOC	Cyclodecane [b]	34	M
RM117-31	Decontamination Water/Waste	SVOC	Cyclohexasiloxzne, dodecamethy [b]	22	M
RM117-31	Decontamination Water/Waste	SVOC	Diethyl phthalate	2.3	J
RM117-31	Decontamination Water/Waste	SVOC	Heptanal [b]	12	M
RM117-31	Decontamination Water/Waste	SVOC	Isophorone	7.4	J
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro- [b]	36	M
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro- [b]	38	M
RM117-31	Decontamination Water/Waste	SVOC	Methane, bromodichloro- [b]	54	M
RM117-31	Decontamination Water/Waste	SVOC	Octanal [b]	19	M
RM117-31	Decontamination Water/Waste	SVOC	phthalic anhydride [b]	9.4	M
RM117-31	Decontamination Water/Waste	Total Metals	Arsenic	3.7	B
RM117-31	Decontamination Water/Waste	Total Metals	Barium	570	
RM117-31	Decontamination Water/Waste	Total Metals	Cadmium	1.8	B
RM117-31	Decontamination Water/Waste	Total Metals	Chromium	40.8	
RM117-31	Decontamination Water/Waste	Total Metals	Lead	93.6	
RM117-31	Decontamination Water/Waste	Total Metals	Mercury	0.27	
RM117-31	Decontamination Water/Waste	Total Metals	Silver	0.7	B
RM117-31	Decontamination Water/Waste	VOC	Acetone	33	J
RM117-31	Decontamination Water/Waste	VOC	Acetone	24	JB
RM117-31	Decontamination Water/Waste	VOC	Bromodichloromethane	230	
RM117-31	Decontamination Water/Waste	VOC	Bromodichloromethane	200	
RM117-31	Decontamination Water/Waste	VOC	Bromoform	55	
RM117-31	Decontamination Water/Waste	VOC	Bromoform	44	
RM117-31	Decontamination Water/Waste	VOC	Chloroform	580	
RM117-31	Decontamination Water/Waste	VOC	Chloroform	490	
RM117-31	Decontamination Water/Waste	VOC	Dibromochloromethane	140	
RM117-31	Decontamination Water/Waste	VOC	Dibromochloromethane	120	
RM117-31	Decontamination Water/Waste	VOC	Methylene Chloride	64	

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively indentifed compound (TIC), which is an additional chemical detected that is not on the target compound list.
TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
D = Result was obtained from the analysis of a dilution.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

SVOC = semivolatile organic compounds
VOC = volatile organic compounds
µg/L = micrograms per liter

Table 2-1
Verification Samples Collected from Room 117, September 2003

Sample No.	Location [a,b]	Requested Analysis [a,b]
RM117-01	Baseline #1	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM117-02	Baseline #2	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM117-03	Baseline #3	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM117-04	Small Containment, Recessed Sump	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM117-05	Small Containment, Floor South Half	Total Metals (SW846 Methods 6010B and 7471A)
RM117-06	Small Containment, Floor North Half	Total Metals (SW846 Methods 6010B and 7471A)
RM117-07	Small Containment, Dividing Wall East #1 (south end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-08	Small Containment, Dividing Wall East #2 (north end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-09	Small Containment South Wall	Total Metals (SW846 Methods 6010B and 7471A)
RM117-10	Small Containment North Wall	Total Metals (SW846 Methods 6010B and 7471A)
RM117-11	East Wall #1 (south end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-12	East Wall #2 (north end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-13	Field Blank, Samples 1-14	VOC (SW846 Method 8260B)
RM117-14	Trip Blank, Samples 1-14	VOC (SW846 Method 8260B)
RM117-15	Large Containment, Recessed Sump	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM117-16	Large Containment, Floor (southeast)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-17	Large Containment, Floor (southwest)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-18	Large Containment, Floor (northeast)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-19	Large Containment, Floor (northwest)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-20	Duplicate	Total Metals (SW846 Methods 6010B and 7471A)
RM117-21	Large Containment, West Wall #1(south end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-22	Large Containment, West Wall #2 (north end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-23	Large Containment South Wall #2 (west end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-24	Large Containment South Wall #1 (east end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-25	Large Containment Dividing Wall West #1 (south end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-26	Large Containment Dividing Wall West #2 (north end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-27	Large Containment North Wall #1 (east end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-28	Large Containment North Wall #2 (west end)	Total Metals (SW846 Methods 6010B and 7471A)
RM117-29	Field Blank, Samples 15 -31	VOC (SW846 Method 8260B)
RM117-30	Trip Blank, Samples 15-31	VOC (SW846 Method 8260B)
RM117-31	Decontamination Water/Waste	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)

a. Vozella, Joseph, Letter to Mr. Carl Will, Request for Class 1 *Resource Conservation and Recovery Act (RCRA) Permit Modification for Attachment E.5; Closure Plan for Tehcnical Area 50, Building 37, Room 117 (TA-50-37-117)*, August 25, 2003.

b. Luciana Vigil-Holterman, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* February 3, 2003.

Definition of Acronyms

SVOC = semivolatile organic compounds.

VOC = volatile organic compounds.

Table 2-2
Swipe Samples Collected from Room 117, April 2004

Sample No.	Location	Requested Analysis
117B-01	Recessed Sump	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
117B-02	Dividing Wall Northeast End	Total Metals (SW846 Methods 6010B and 7471A)
117B-03	Dividing Wall Northwest End	Total Metals (SW846 Methods 6010B and 7471A)
117B-04	North Wall Far Right	Total Metals (SW846 Methods 6010B and 7471A)
117B-05	North Wall Far Left	Total Metals (SW846 Methods 6010B and 7471A)
117B-06	Duplicate	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
117B-07	Baseline	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
TB-01	Trip Blank	VOC (SW846 Method 8260B)
TB-01	Trip Blank	VOC (SW846 Method 8260B)
TB-01	Trip Blank	VOC (SW846 Method 8260B)
TB-01	Trip Blank	VOC (SW846 Method 8260B)
RM118B-31 [a]	Field Blank	VOC (SW846 Method 8260B)

a. Results from this sample were not included in the analysis.

Definition of Acronyms

SVOC = semivolatile organic compounds.

VOC = volatile organic compounds.

Table ES-3

Summary of Room 117 Risk Assessment Results

Constituent	Maximum Detected Concentration ($\mu g/100cm^2$)	Qualifier	Noncarcinogenic Hazard Quotient	Carcinogenic Risk
Barium	8.3	B	0.00012	NA
Chromium	14.2		NA	5E-05
Ethylbenzene	0.66	J	0.058	NA
Hexane [a]	22	Q	9.8	NA
Lead [b]	4	B	NA	NA
Xylenes (total)	5.6	J	4.9	NA
CUMULATIVE HAZARD INDEX AND RISK [c]			**15**	**5E-05**

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

b. Lead was evaluated separately. The estimated concentration of lead in blood of the worker and the fetus are below the goal of 10 micrograms per deciliter specified in U.S. Environmental Protection Agency guidance.

c. Assumes immediate vaporization of volatile organic chemicals (VOCs) and maintenance of that concentration for 30 years.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

J (organic) = Estimated result. Result is less than reporting limit.

Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

$\mu g/100\ cm^2$ = micrograms per 100 square centimeters.

NA = not applicable.

APPENDIX A
Amended Closure Plan Attachment E.5,
LANL Hazardous Waste Facility Permit, NM0890010515, November 8, 1989

CLOSURE PLAN
PERMIT ATTACHMENT E.5
NM 0980010515-1

E.5 CHEMICAL WASTE INCINERATOR CONTAINER STORAGE AREA

Contained wastes to be incinerated are stored in Room 117 of Building 37, TA-50 (Figure E.5.1). The storage area has a concrete floor with a grated false floor sixteen inches above the concrete. The concrete is coated with Semstone (@). Liquid and solid contained compatible wastes are stored in the area. The waste containers are predominately 55-gallon drums and 330-gallon polyethylene containers, all meeting Department of Transportation (DOT) specifications. Solid wastes may be stored in boxes.

E.5.2 Estimate of Maximum Waste in Storage and Treatment

The maximum inventory of hazardous wastes stored at the TA-50 waste incinerator is estimated at 13 cubic meters (solid wastes plus 3630 gallons of liquids).

E.5.3 Description of Waste Handled

The Laboratory wastes are a mixture of liquid and solid hazardous wastes composed of various organic solvents and liquids as well as chemically contaminated paper, wood, and plastics. The liquids can contain either ignitable or listed wastes containing HWMR-5, Part II, Appendix VIII constituents. The incinerator is fed all HWMR-5, Part II, Appendix VIII constituents with an incinerability ranking equal to or better than carbon tetrachloride.

E.5.4 Closure Procedure

E.5.4.1 Partial Closure

Partial closure of this unit is not expected to occur.

E.5.4.2 Final Closure

Personnel involved in ~~decontaiminating~~decontaminating the storage area will wear protective equipment, including, acid/solvent resistant coveralls, head protection, neoprene coated gloves, and boots, Wrists and ankles are to be taped to protect against upward and inward splash. As a minimum protection, face shields will be worn. Full face respirators or other protective equipment will be used if specified by the Laboratory's Industrial Hygiene Group, ~~HSE~~HSR-5, following a field inspection.

All remaining wastes will be incinerated before closing the storage area. If for some reason it is not possible to incinerate all the waste on the site, the waste will be sent to a designated off site treatment or disposal facility.

Following removal of all ~~sotred~~stored waste, the floor and grate of Room 117 will be washed and rinsed with a warm Liquinox(@) and Alconox(@) solution in water. The wash water will be picked up and put into approved DOT containers using a drum pump, rags and/or mops, wringing the excess water into an approved DOT container. This water will be sampled to demonstrate decontamination and transferred to TA-54, Area L for sampling, analysis and off site disposal at a permitted facility.

The protective clothing and tools used during the wash down will be cleaned with detergent and water. The wash water will be collected and analyzed. If the wash water is not hazardous, the water will be discharged to the industrial waste water sewer. If the wash water contains hazardous constituents, it will be treated on site or ~~transpoted~~transported off site to a permitted facility. Mops and rags used for clean up will be placed in approved DOT containers for transport to TA-54, Area L, for sampling, analysis, storage and off site disposal at a permitted facility.

E.5.5 Decontamination Verification

Before the first wash down, two samples will be taken of the clean Liquinox(@) or Alconox(@) solution in water and analyzed for the constituents listed in Table E.5.2. One additional clean solution sample will be taken for each additional wash down event. These analytical results provide background data for decontamination verification.

Dirty wash down solutions will also be analyzed for the constituents listed in Table E.5.2. Analytical procedures will conform to methods found in SW 846. Equipment will be considered to be contaminated if the used wash solutions show a significant increase in the listed constituents over the clean wash solution.

Successful decontamination is defined as:

1. No detectable hazardous constituents in the final sample, or

2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused wash water or background sample.

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Director will evaluate the proposed alternative in accordance with the standards and guidance then in effect and, if approved, incorporate by permit modification the alternative into the closure plan.

E.5.6 Closure Schedule

Characterization of the final delivery of hazardous waste may require up to 30 days. An estimated 60 days will be required to schedule and process the final wastes received. The year of closure for the TA-50-37 container storage area is ~~2100~~2003. Closure will observe the schedule given in Table E.5.1.

E.5.7 Closure Certification

An independent registered professional engineer and the Permitee shall witness the closure and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility has been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered engineer, and the ~~orignial~~original copy submitted by the DOE to the Director of ~~NMEID~~NMED. One copy shall be maintained at the DOE office and one copy maintained by the ~~HSE-8~~ Risk Reduction and Environmental Stewardship Division's Solid Waste Regulatory Compliance ~~Section~~Group.

E.5.8 Sampling and Analytical Procedure

The following section defines procedures and methods for sampling, analysis and documentation applicable to closure plans. While the procedures and method are specific, any applicable procedure or method given in SW-846 may be used if conditions or experience shows the alternate method to be more appropriate. Disposable samplers may be used.

Sample containers appropriate for the requested analyses will be used for all samples. Sampling will be conducted in accordance with procedures given in Samplers and Sampling Procedures for Hazardous Waste Streams, EPA 600/2-80-018 and/or SW-846. Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. One sample for every ten samples will be either duplicated or split. The duplicated or split sample will be identified by a code so that its source is not available to the analytical laboratory, but analytical results can be compared to its twin.

E.5.8.1 Soil and Solid Residue Sampling

Under normal circumstances soil sampling will be inapplicable. If, however, a spill should occur outside the building, sufficient sampling and analysis will be required to ensure that hazardous constituents do not remain after closure. The sampling procedures outlined below are used to determine the amount of hazardous material deposited on a particular area of land, or to determine the leaching rate of the material, or determine the residue level on the soil. Adequate preparation ensures that proper sampling is accomplished.

Units emplaced over impervious surfaces, concrete or asphalt, need not be sampled for spill residues from past handling practices. Units emplaced over absorbent surfaces such as soil will have a minimum of three soil samples to a depth of six inches taken in the area of each access door. The samples will be separately analyzed for the parameters in Table E.5.2. If contamination is discovered, a three foot grid centered on the locus of contaminated points will be sited and samples taken and analyzed to determine the extent of contamination. Analyses for this investigation can be made for the constituent(s) found in the initial survey. All contaminated soils shall be removed.

Surface soil samples will be collected with a trowel or scoop. To sample below 3 in. (8cm), samples will be collected ~~wiht~~with a Veihmeyer soil sampler. Solid residues in drums will also be sampled with a core sampler or Veihmeyer sampler. Drums not able to be sampled will be assumed to be hazardous waste.

E.5.8.1.1 Cleaning of sampler

It is important to clean the samplers after each site is sampled. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The samplers will be washed with a warm Liquinox(@) ~~ot~~ or Alconox(@) solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and sir-dried or wiped dry. Prevention of cross contamination is of particular importance in these samples.

E.5.8.1.2 Sampling procedures

Trowel or Scoop

- Take small, equal portions of sample from the surface or near the surface of the material to be sampled.

- Combine the samples in a glass container.
- Cap the container, attach a label and seal, record in field log book, and complete the sample analysis request sheet and chain-of-custody record.

Veihmeyer Sampler

- Assemble the sampler by screwing in the tip and drive head on the sampling tube.
- Insert the tapered handle (drive guide) of the drive hammer through the drive head.
- Place the sampler in a perpendicular position on the material to be sampled.
- With the left hand holding the tube, drive the sampler into the material to the desired sampling depth by pounding the drive head with the drive hammer. Do not drive the tube further than the tip of the hammer's drive guide.
- Record the length of the tube that penetrated the material.
- Move the drive hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.
- Rotate the sampler handle (hammer) until it just clears the two ear-like protusions on the drive head and rotate about 90 degrees.
- Withdraw the sampler from the material by pulling the handle (hammer) upwards. When the sampler cannot be withdrawn by hand, as in deep soil sampling, use a pullerjack and grip.
- Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube. The sample should slip out easily.
- Store the core sample in a 1,000 or 2,000 ml (1 qt or 1/2 gal) sample container.
- Label the sample, affix the seals, record in the field log book, complete the sample analysis request sheet and chain-of-custody record, and deliver the samples to the laboratory for analysis.

E.5.8.2 Liquid Sampling

A Coliwasa sampler or similar device will be used to sample water solutions in order to determine background parameters before washing the area; it will also be used to sample the dirty wash water ~~used~~used in cleaning equipment. The recommended model of the Coliwasa is shown in Figure E.5.2, the main parts consisting of the sampling tube, the closure-locking mechanism, and the closure system. As an alternative to the Coliwasa, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of as hazardous waste after each sample is collected, thus eliminating the potential for cross contamination.

E.8.8.2.1 Cleaning of sampler

The sampler must be clean before use. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The used sampler must be washed with a warm detergent solution (Liquinox(@) or Alconox(@)), rinsed several times with tap water, rinsed with distilled water, drained of excess water, and sir-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the Coliwasa is a bottle brush that fits tightly inside the diameter of the tube. The brush is connected to a rod of sufficient length to reach the entire length of the sampler tube. Using the ramrod and fiber reinforced paper towels, the Coliwasa tube may be quickly cleaned. Improper cleaning of sample equipment will cause cross contamination of samples. Prevention of contamination is of particular importance in these samples. Clean samplers should be stored in polyethylene plastic tubes or bags in a clean an protected area.

E.5.8.2.2. Sampling procedures

- Assemble the Coliwasa sampler.
- Make sure that the Coliwasa sampler is clean.
- Check to make sure the sampler is functioning properly. Adjust the locking mechanism, if necessary, to make sure the neoprene rubber stopper provides a tight closure.
- Wear necessary protective clothing and gear and observe required sampling precautions.
- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
- Slowly lower the Coliwasa sampler into the liquid at a rate that permits the levels of the Liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a non-representative sample.
- When the sampler stopper hits the bottom of the liquid container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.
- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth with the other hand.
- Carefully discharge the sample into a glass container by slowly opening the sampler. This is done by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in the glass container.
- Cap the glass container, attach a label and seal, record in the field log book, and complete the sample analysis request sheet and chain-of-custody record.
- Unscrew the T-handle of the sampler and disengage the locking block. Clean the sampler on site or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning. Store used rags in ~~jplastic~~plastic bags for subsequent disposal.

E.5.8.3 Sample Handling and Documentation

Soil and liquid samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container must be sealed with a gummed paper seal attached to the container in such a way that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen. An example of a sample label is shown in Figure E.5.4.

The chain-of-custody form is necessary to trace sample possession from the time of collection and must accompany every sample. This record becomes especially ~~imprtant~~important when the sample is to be introduced as evidence in litigation. This is a two page record with the original accompanying ~~shipmemnt~~shipment and the "copy" retained by the Laboratory. An example of this form is shown in Figure E.5.5.

A separate closure sampling field log book will be kept and will contain all information pertinent to field surveys and sampling. The log book shall have bound and consecutively numbered pages in 8-I/1 by 11-inch format. Minimum entries include:

a. Purpose of sample (routine sampling, special sampling);

b. Location of sampling (coordinates referenced to staked field points, if soil sample);

c. Name and address of person making log entry;

d. Type of process producing waste;

e. Number and volume of sample;

f. Description of each sampling location, sampling methodology, equipment used, etc;

g. Date and time of sample collection;

h. Sample destination and transporter's name (name of laboratory, UPS, etc);

i. Map or photograph of the ~~smaplingsampling~~ site, if any;

j. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc);

k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc);

l. Collector's sample identification number(s); and

m. Signature of person responsible for the log entry.

Sampling situations vary widely. No general rule can be given as to the extent of information that must be entered in the log book. A good rule, however, is to record sufficient information so that someone can reconstruct the sampling situation with out relying on the collector's memory.

The sample shipment and chain-of-custody record is accompanied by a sample analysis request sheet. The request sheet has two parts: field and laboratory. The field portion of this form must be completely by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion is intended to be ~~completyed~~completed by the laboratory personnel when the sample is received.

E.5.9 Quality Assurance/Quality Control

The Permitee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to senior management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, assure that sample blanks are used and analyzed and review the analysis reports for accuracy and adequacy. A written QA/QC plan shall be prepared and ~~follwoed~~followed, with variations from the plan documented and explained. The designated in individual shall prepare a written statement for the final report commenting on the adequacy of the analysis showing decontamination.

E.5.10 Final Closure Report

Upon completion of the closure activities, the Permitee ~~shal~~shall submit a Final Closure Report to the Director. The report shall document the final closure and contain, at a minimum, the following:

A. The certification described in paragraph E.5.7.

B. Any variance from the approved activities and the reason for the variance.

C. A tabular summary of all sampling results, showing:

1. Sample identification,
2. Sampling location,
3. The datum reported,
4. Detection limit for each datum,
5. A measure of analytical precision (e.g. uncertainty, range, variance),
6. Identification of analytical procedure, and
7. Identification of analytical laboratory.

D. A QA/QC statement on the adequacy of the analyses and decontamination demonstration.

E. The location of the file of supporting documentation:

1. Field log books,
2. Laboratory sample analysis reports,

3. The QA/QC documentation, and

4. Chain of custody records.

F. Disposal location of all regulated and unregulated residues.

G. A certification of accuracy of the report.

TABLE E.5.1.
CLOSURE SCHEDULE

Activity	Maximum Time Required
Notify ~~EID~~ NMED of closure	-90 Days
Advertise for proposals	-90 Days
Receive proposals	-30 Days
Select contractor and award contract	-10 Days
Begin closure activities	Day 0
Internal wash down complete	Day 30
External wash down complete	Day 50
Unit disassembly as required	Day 80
Floor wash down	Day 100
Final clean up	Day 120
Decontamination verification	Day 150
Submit final report to ~~EID~~NMED	Day 180

NOTE: The schedule above indicates calendar days from the beginning by which activities will be completed. Some activities may be conducted simultaneously.

TABLE E.5.2.
ANALYTICAL PARAMETERS

Metals	Organics	Other
Arsenic	Halogenated volatile organics	Cyanides
Barium	Nonhalogenated volatile organics	Ignitability
Cadmium	Acid-extractable semivolatile organics	Reactivity
Selenium	Base-neutral extractable semivolatile organics	pH
Lead	Phenols	
Mercury	Organochlorine pesticides	
Beryllium	Chlorinated herbicides	
Chromium		
Silver		
Nickel		

NOTES: Analytical methods are taken from *Test Methods for Evaluating Solid Waste*, EPA SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

Metals may be analyzed for total content. Any metal whose total concentration exceeds the standard for Extraction Procedure Toxicity shall be analyzed by Extraction Procedure Toxicity procedures. Both data shall be reported in the final report.

TABLE E.5.3
SAMPLING SUMMARY

Material Sampled	Metals	Organics	Other
Washwater before use	X	X	X
Washwater after use	X	X	X
Protective clothing washwater		X	
Soil sampling[a]	X	X	X

NOTE: Analytical parameters are given in Table E.5.2.

[a]As required. See paragraph E.5.8.1.

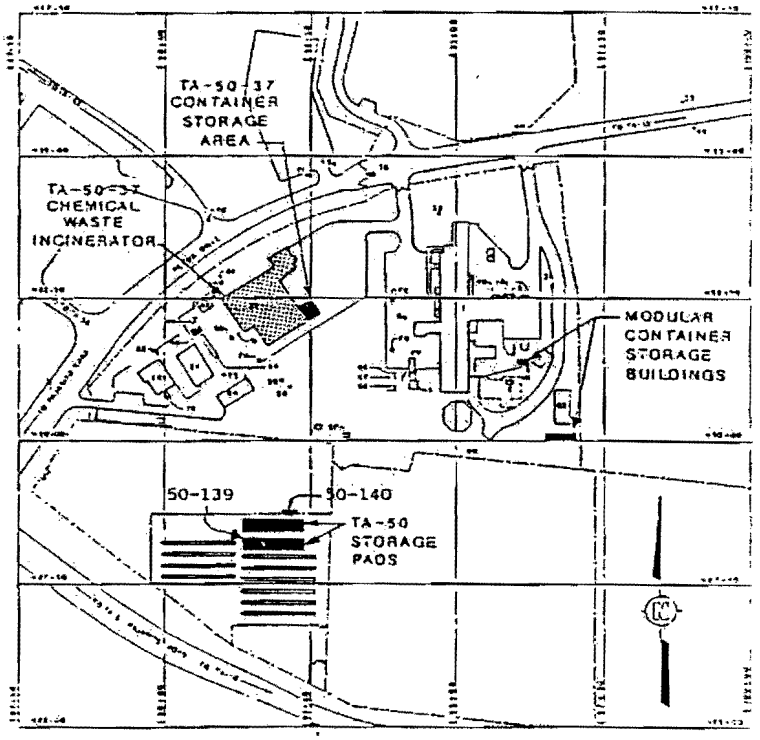

FIGURE E.5.1

LOCATIONS OF TA-50
CHEMICAL WASTE INCINERATOR
AND CONTAINER STORAGE
UNITS

PREPARED FOR

LOS ALAMOS
NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO

INTERNATIONAL
TECHNOLOGY
CORPORATION

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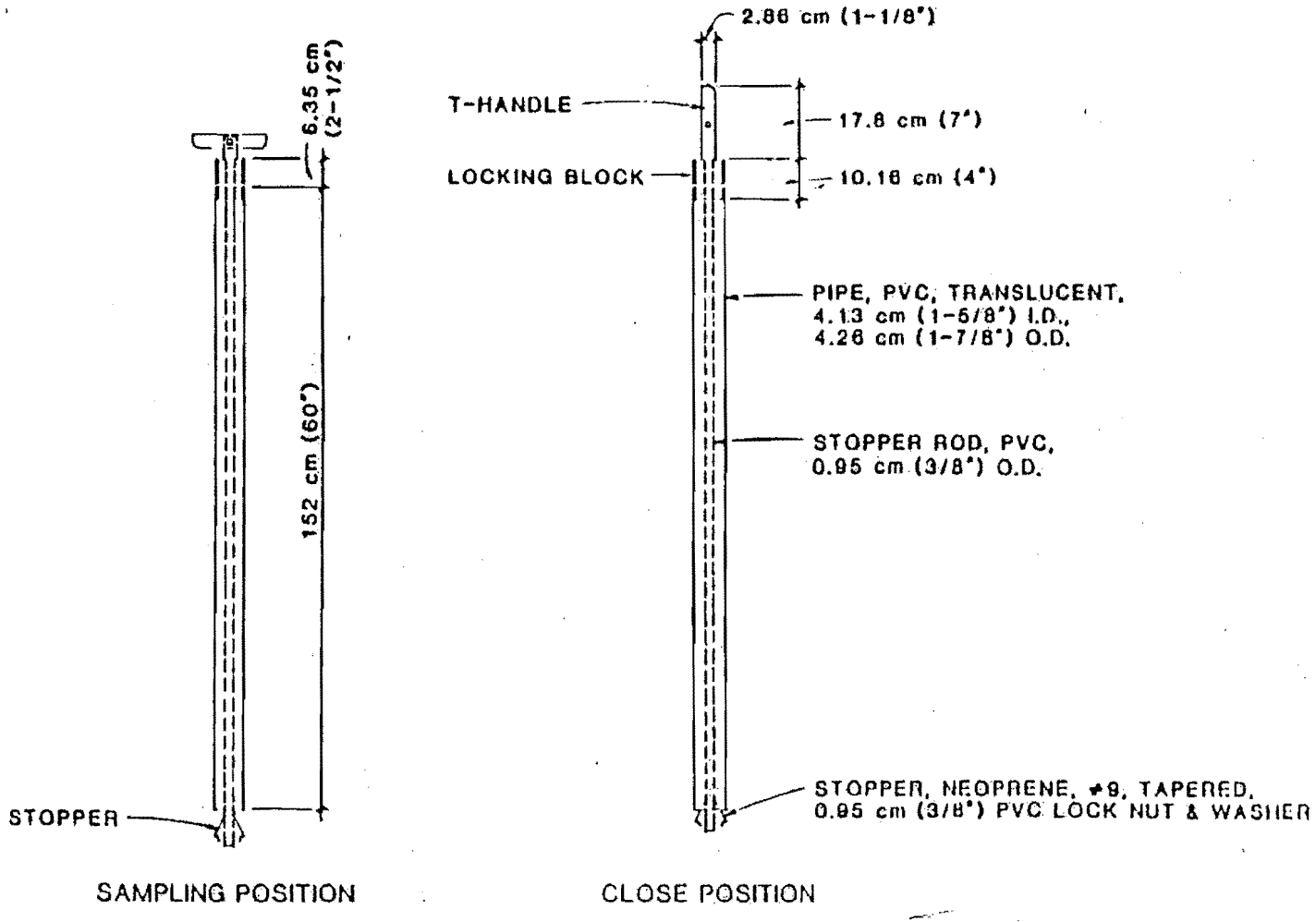

FIGURE E-51 COMPOSITE LIQUID WASTE SAMPLER (COLIWASA)

FIGURE E.3.4
EXAMPLE OF SAMPLE SEAL

OFFICIAL SAMPLE SEAL

Collected by _____ Collector's sample No. _____
(Signature)

Date Collected _____ Time Collected _____

Place Collected _____

_____

_____

FIGURE E.3.5
EXAMPLE OF SAMPLE LABEL
OFFICIAL SAMPLE LABEL

OFFICIAL SAMPLE LABEL

Collector _____ Collector's Sample No. _____

Place of Collection _____

_____

Date Sampled _____ Time Sampled _____

Field Information _____

_____

_____

FIGURE E.3.6
EXAMPLE CHAIN OF CUSTODY RECORD

Hazardous Materials
Collector's Sample No.

Location of Sampling: ☐ Producer ☐ Hauler
☐ Disposal Site ☐ Other: _____

Company's Name_____ Telephone (____)_____

Address_____
Number Street City State Zip

Collector's Name_____ Telephone (____)_____

Date Sampled_____ Time Sampled_____

Type of Process Producing Waste_____

Waste Type Code_____ Other_____

Field Information_____

Sample Allocation:

1. _____
(Name of Organization)

2. _____
(Name of Organization)

3. _____
(Name of Organization)

Chain of Possession:

1. _____ _____ _____
Signature Title Inclusive Dates

2. _____ _____ _____
Signature Title Inclusive Dates

3. _____ _____ _____

APPENDIX B
Letters of Agreement/Communication with the New Mexico Environment Department

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 24, 2004

G. Pete Nanos, Interim Director
Los Alamos National Laboratory
P.O. Box 1663, MS A100
Los Alamos, New Mexico 87545

Mr. Ralph Erickson, Area Manager
Office of Los Alamos Site Operations
Department of Energy
528 35th Street, MS A316
Los Alamos, New Mexico 87544

SUBJECT: APPROVAL OF CLASS I PERMIT MODIFICATION – TECHNICAL AREA 50
CLOSURE PLANS:
TA-50-114 CONTAINER STORAGE UNIT, PERMIT ATTACHMENT E.3;
TA-50-37, ROOM 117 CONTAINER STORAGE UNIT, PERMIT ATTACHMENT E.5;
TA-50-37, CONTROLLED AIR INCINERATOR EXHAUST SYSTEM, PERMIT ATTACHMENT E.4.
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
HAZARDOUS WASTE FACILITY PERMIT
LOS ALAMOS NATIONAL LABORATORY EPA ID# NM0890010515
HWB-LANL-02-014

Dear Mssrs. Nanos and Erickson:

The New Mexico Environment Department (NMED) has reviewed the above-referenced U.S. Department of Energy and University of California (Permittees) requests for a Class 1 permit modification to the Los Alamos National Laboratory (LANL) Hazardous Waste Permit. The modification requests are dated August 25, 2003.

NMED approves the requests as a Class 1 permit modification requiring prior agency approval, pursuant to 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.42, Appendix I.D.1.a, b, and d).

The modifications revise the above-referenced attachments to the LANL Permit to change maximum inventories, dates of closure, and decontamination procedures, as specified in the modification requests.

This approval is subject to the following two conditions:

1. In addition to the analytes specified in the modified Closure Plan, Permittees shall sample for polychlorinated biphenyls, dioxins, and furans at the TA-50-37 Controlled Air Incinerator ductwork at the locations specified in the modified Closure Plan; and

2. Permittees shall send notice of the permit modification to all persons on the LANL facility mailing list within 90 calendar days after the change is put into effect, in compliance with 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.42(a)(1)(ii)).

The New Mexico Hazardous Waste Management Fee Regulations, 20.4.2.201.6 NMAC, require assessment of fees for permit modifications. The fee assessment invoice will be sent to you under separate cover. Payment is due within 60 days from the date you receive the invoice.

If you need an extension to the 60-day period, you must submit an extension request to NMED at least 14 days before the end of the 60-day period. If you disagree with the assessed fee, you may file an administrative appeal under provisions of 20.4.2.302.1 NMAC.

If you transmit the fee electronically, you must also submit a letter to Cindy Abeyta, Hazardous Waste Bureau, indicating the invoice number, payment amount, date of payment, and the assessed activity.

If you have any questions or need additional information please contact John Kieling, at (505) 428-2535, or Steve Jetter, at (505) 841-9488.

Sincerely,

Sandra Y. Martin
Acting Chief
Hazardous Waste Bureau

SYM:sj

cc: J. Kieling, NMED HWB
C. Abeyta, NMED HWB
S. Jetter, NMED HWB
C. Will, NMED HWB
L. King, EPA 6PD-N
G. Turner, DOE LASO, MS A316
Jack Ellvinger, LANL RRES-SWRC
G. Bacigalupa, LANL RRES-SWRC

file: reading and LANL TA-50

Department of Energy
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

AUG 2 5 2003

Carl Will, RCRA Permits Management Program
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Dear Mr. Will:

Subject: Request for Class 1 Resource Conservation and Recovery Act (RCRA) Permit Modification for Attachment E.5; Closure Plan for Technical Area 50, Building 37, Room 117 (TA-50-37-117)

The objectives of this letter are to request a Class 1 RCRA Permit Modification to Attachment E.5 of the Department of Energy/University of California (DOE/UC) Hazardous Waste Facility Permit, to transmit the modified Attachment E.5, and to propose a method of alternative demonstration of decontamination as allowed by Section E.5.5 of Attachment E.5.

CLOSURE PLAN MODIFICATIONS

Modifications to Attachment E.5 were kept to a minimum. They incorporate a new year of closure, the correction of typing errors, and update the names for those that have changed since the closure plan was written. DOE/UC have identified these modifications to be a Class 1 permit modification pending the New Mexico Environment Department's (NMED) approval according to 20.4.1 NMAC incorporating 40 CFR 270.42. This section states that changes to the expected year of closure and changes to the procedures for decontamination are Class 1 permit modifications with prior approval from NMED.

PROPOSED CLOSURE PROCEDURE

DOE/UC request that sampling for nine of the parameters listed in Table E.5.2 not be conducted during the closure of TA-50-37-117. Those parameters are: Nickel, Beryllium, Phenols, Organochlorine pesticides, Chlorinated herbicides, Cyanides, Ignitability, Reactivity, and pH. It has been determined after a review of the unit's operating record that these parameters are not among the hazardous waste constituents of concern at this unit, and therefore not necessary for decontamination verification. It is our proposal that samples collected during the closure will be analyzed for RCRA toxic metals, volatile organic compounds, and semi-volatile organic compounds.

As allowed for in Section E.5.5, an alternative demonstration of decontamination may be necessary for the completion of the closure of TA-50-37-117. DOE/UC propose the following alternative demonstrations to complete closure:

- Detectable hazardous waste or hazardous waste constituent concentrations from container storage activities that do not significantly decrease after several wash downs will be allowed to remain if they pose an acceptable risk, as mutually agreed upon with the NMED.
- Analytical results will be compared to the United States Environmental Protection Agency's Region 6 Medium Specific Screening Levels (MSSL) for tap water. If the result is below the MSSL, closure will be considered complete.
- If residual contamination levels found are above the MSSL's, an assessment will be conducted using an occupational risk based scenario.

If you have any comments or questions regarding the information presented in this letter and/or in the enclosure, please contact either Gene Turner, DOE, at (505) 667-5794 or Jack Ellvinger, UC, at (505) 667-0633.

Sincerely,

Joseph C. Vozella
Assistant Manager
Office of Facility Operations

OFO:1GT-017

Enclosures

cc:
See Page 3

cc w/enclosure:
Laurie King, Chief (6PD-N)
New Mexico/Federal Facilities Section
Environmental Protection Agency
Region 6 1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
Steve Jetter
RCRA Permits Management Program
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

cc w/o enclosure:
Sandra Martin, Bureau Chief
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
John E. Kieling, Manager
RCRA Permits Management Program
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
J. Stetson, PWT, LASO
G. Turner, OFO, LASO
D. McLain, FWO-WFM, LANL, MS-J593
B. Ramsey, RRES-DO, LANL, MS-J591
A. Stanford, FWO-DO, LANL, MS-K492
D. Stavert, RRES-EP, LANL, MS-J591
E. Louderbough, LC-ESH, LANL, MS-A187
J. Ellvinger, RRES-SWRC, LANL, MS-K490
L. Vigil-Holterman, RRES-SWRC, LANL, MS-K490
R. Romero, RRES-SWRC, LANL, MS-K490

APPENDIX C
Technical Area 50, Building 37, Room 117 Container Storage Unit
Human Health Risk Assessment

Shaw Environmental & Infrastructure, Inc.

Shaw The Shaw Group Inc.™

335 Central Park Square
Los Alamos, NM 87544-4039
Phone: 505-661-5200
Fax: 505-661-5299

Memorandum

Date: 07/08/2004

To: Richard Romero, Los Alamos National Laboratory

CC: Jennifer Griffin, Shaw Environmental & Infrastructure, Inc.
Frank Eidson, Shaw Environmental & Infrastructure

From: Jennifer Sanders, Shaw Environmental & Infrastructure, Inc.

RE: Responses to Risk Assessment Comments on Closure Certification Report for Technical Area (TA)-50, Building 37, Room 117

Comments 1 – 24 pertain to the main document. Comments on the Appendix C Human Health Risk Assessment are as follows:

Comment 25: Appendix C, Page 10 HHRA Risk Assessment, Skin Surface Area; why is male hand skin surface area not used even though female hand skin surface area used as HHRA also includes fingers? Isn't it more likely that the occasional site worker at this site would be a male and HHRA of a male hand skin surface area would be more liberal?

Response: The skin surface area used is based on recommendations in Exhibit C-1 of the U.S. Environmental Protection Agency's (EPA's) *Supplemental Guidance for Dermal Risk Assessment* (EPA 2001). This Exhibit provides body part-specific adult surface area calculations and recommends a value of 817 square centimeters (cm^2) for an adult female. The surface area of adult male hands is listed as 990 cm^2. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model, which is an approach for assessing occupational health risks from lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures (EPA 2003). Although the use of a male hand skin surface area assumes that a greater surface area is potentially in contact with chemicals of potential concern, revising the adult skin surface area from 817 cm^2 to 990 cm^2 does not affect the cumulative carcinogenic risk and noncarcinogenic hazard index.

Comment 26: Appendix C, Page 19 HHRA Risk Assessment; Baseline Lead Concentration; again why was baseline based upon women aged 24 to 49?

Response: Please see response to comment 25. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who

experience nonresidential exposures (EPA 2003). Therefore, exposure parameters for women of childbearing age were used consistently for all dermal exposures based on the EPA adult lead model.

Comment 27: Appendix C, Page 25, Section C1.6; Is it valid to overestimate exposure parameters to offset uncertainties associated with final HHRA determinations?

Response: Although the use of central-tendency techniques in addition to reasonable maximum exposures provides a risk range for consideration in risk management decisions, it is not necessary to conduct assessments using these methods if the health risks are acceptable using maximum or near maximum values for each of the input parameters. EPA (1997) states that "bounding estimates" (e.g., upper-bound estimates) may be calculated using maximum or near maximum values if the purpose of the approach is, for example, to eliminate unimportant exposure pathways. In this case, the human health risks are shown to be acceptable using upper-bound exposure estimates. Therefore, central-tendency estimates are unnecessary.

Comment 28: Appendix C, Page 26, Section C1.7, first paragraph, second sentence; add Room 117 CSU **that** were evaluated etc.

Response: The text will be revised accordingly.

References:

EPA, 2001, Risk Assessment Guidance for Superfund, Vol. I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal risk Assessment), Interim, Appendix C, EPA/540/R/99/005, OSWER 9285.7-02EP, September.

EPA, 2003, Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil, Technical Review Workgroup for Lead, EPA-540-R-03-001, OSWER Directive: 9285.7-54, Final, January.

EPA, 1997, Exposure Factors Handbook: Update to Exposure Factors Handbook EPA/600/8-89/043 – My 1989. EPA/600/P-95/002Fa. Office of Research and Development, National Center for Environmental Assessment, Washington, DC. August.

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
Room 117 Container Storage Unit

Human Health Risk Assessment Methodology

Revision 0.0
August 2004

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LIST OF ACRONYMS/ABBREVIATIONS

ALM	Adult Lead Model
CDI	chronic daily intake
Cm^2	square centimeters
CFR	Code of Federal Regulations
COPC	Contaminant of potential concern
CSF	cancer slope factor
CSU	Container storage unit
dL	deciliter
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
GSD	Geometric Standard Deviation
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
IRIS	Integrated Risk Information System
kg	kilogram
µg	microgram
m^3	cubic meter
MDC	maximum detected concentration
mg	milligrams
OPP	Office of Pesticides Programs
RfC	reference concentration
RfD	reference dose
RME	reasonable maximum exposure
TA-50-37	Technical Area 50, Building 37
TIC	tentatively identified compound

URF	unit risk factor
VOC	volatile organic compound
WTCIATWG	World Trade Center Indoor Air Taskforce Working Group

APPENDIX C
HUMAN HEALTH RISK ASSESSMENT METHODOLOGY
Technical Area 50, Building 37
Room 117 Container Storage Unit

C1.0 INTRODUCTION

A human health risk assessment (HHRA) was conducted on Technical Area (TA) 50, Building 37 (TA-50-37), Room 117 container storage unit (CSU) using methods developed by the U.S. Environmental Protection Agency (EPA) (EPA, 1989), World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the EPA Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risk to occupational workers from exposure to contaminated indoor surfaces. The HHRA, in accordance with EPA guidance (EPA, 1989) involved data evaluation and identification of contaminants of potential concern (COPC), exposure assessment, toxicity assessment, and risk characterization. Because the risk assessment was conducted on an indoor environment, a background evaluation was not conducted as part of the COPC selection process.

C1.1 Data Evaluation and Identification of COPCs

Analytical data for TA-50-37, Room 117 CSU are presented in Table C1.1. Surface swipe samples were collected from TA-50-37, Room 117 CSU following decontamination activities. The results of the laboratory analyses are summarized in Table C1.2.

Data qualifiers assigned by Severn Trent Laboratories, Inc. were examined during the data review process. Qualifier codes are placed next to analytical results so that the reliability of the results can be assessed during the HHRA. The definitions of the qualifier codes that were assigned during laboratory validation include:

J = Estimated result. Result is less than reporting limit.

B = Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level;

Inorganics: Estimated result. Result is less than reporting limit.

Q = Result was quantitated against the response factor of a calibration standard.

Table C1.1
Analytical Data for TA-50-37, Room 117 Container Storage Unit

SAMPLE	HEXANE[a]	BARIUM	CHROMIUM	LEAD	2-BUTANONE	4-METHYL-2-PENTANONE	ACETONE	CARBON DISULFIDE	ETHYLBENZENE	METHYLENE CHLORIDE	TETRACHLORO ETHENE	TRICHLORO ETHENE	XYLENES (TOTAL)
Room 117B (µg/100 cm^2)**:**													
117B-01	***18 Q***	***8.3 B***	***14.2***	***2.8 B***	10 U	***0.95 J***	***12 J B***	2.5 U	***0.66 J***	***4 J***	***0.53***	***0.67 J***	***5.6 J***
117B-02		***1.2 B***	0.5 U	5 U									
117B-03		***0.49 B***	0.5 U	5 U									
117B-04		***0.62 B***	0.5 U	5 U									
117B-05		***3.4 B***	***0.19 B***	5 U									
117B-06	***22 Q***	***5.1 B***	***1.3***	***4 B***	10 U	10 U	***8 J B***	2.5 U	***0.47 J***	***4.3 J***	***0.56***	***0.89 J***	***3.6 J***
117B-07		***0.51 B***	0.5 U	5 U	***48***	10 U	***18 J B***	***1.7 J***	2.5 U	***5.8***	2.5 U	***0.63 J***	5 U
Number of Samples	7	7	7	7	3	3	3	3	3	3	3	3	3
Number of Detects	2	7	3	2	1	1	3	1	2	3	2	3	2
Frequency of Detection	29%	100%	43%	29%	33%	33%	100 %	33%	67%	100 %	67%	100 %	67%
Minimum Detect	18 Q	0.49 B	0.19 B	2.8 B	48	0.95 J	8 J	1.7 J	0.47 J	4.0 J	0.53	0.63 J	3.6 J
Maximum Detect	22 Q	8.3 B	14.2	4.0 B	48	0.95 J	18 J	1.7 J	0.66 J	5.8	0.56	0.89 J	5.6 J
Average	---	2.8	2.5	4.5	22.7	7.0	12.7	2.2	1.2	4.7	1.2	0.73	4.7
Standard Deviation	---	3.0	5.2	0.9	21.9	5.2	5.0	0.46	1.1	1.0	1.1	0.14	1.0

a. This chemical is a tentatively identified compound.

Definition of Qualifier

B = (Inorganics) Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J = Estimated result. Result is less than reporting limit.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

µg/100 cm2 = micrograms per 100 square centimeters
U = Chemical was not detected. Value shown is one-half the reporting limit.
--- = Summary statistics not calculated for tentatively identified compounds.

Table C1.2
Summary of Analytical Results for TA-50-37, Room 117 Container Storage Unit

CAS Number	Parameter	Minimum Concentration[a]		Maximum Concentration[b]		Units	Location of Maximum Concentration	Detection Frequency[c]	Range of Reporting Limits (min–max)	Background Value[d]	COPC?
Method 6010B – Metals											
7440-39-3	Barium	0.49	B	8.3	B	µg/100cm^2	117B-01	7/7	20 – 20	n/a	Yes
7440-47-3	Chromium	0.19	B	14.2		µg/100cm^2	117B-01	3/7	1.0 – 1.0	n/a	Yes
7439-92-1	Lead	2.8	B	4.0	B	µg/100cm^2	117B-06	2/7	10 – 10	n/a	Yes
Method 8260B – Volatile Organic Chemicals (VOCs)[f]											
78-93-3	2-Butanone	48		48		µg/100cm^2	117B-07	1/3	20 – 20	n/a	No[e]
108-10-1	4-Methyl-2-pentanone	0.95	J	0.95	J	µg/100cm^2	117B-01	1/3	20 – 20	n/a	No[e]
67-64-1	Acetone	8.0	JB	18	J B	µg/100cm^2	117B-07	3/3	20 – 20	n/a	No[e]
75-15-0	Carbon disulfide	1.7	J	1.7	J	µg/100cm^2	117B-07	1/3	5.0 – 5.0	n/a	No[e]
100-41-4	Ethylbenzene	0.47	J	0.66	J	µg/100cm^2	117B-01	2/3	5.0 – 5.0	n/a	Yes
75-09-2	Methylene chloride	4.0	J	5.8		µg/100cm^2	117B-07	3/3	5.0 – 5.0	n/a	No[e]
127-18-4	Tetrachloroethene	0.53		0.56		µg/100cm^2	117B-06	2/3	5.0 – 5.0	n/a	No[e]
79-01-6	Trichloroethene	0.63	J	0.89	J	µg/100cm^2	117B-06	3/3	5.0 – 5.0	n/a	No[e]
1330-20-7	Xylenes (total)	3.6	J	5.6	J	µg/100cm^2	117B-01	2/3	10 – 10	n/a	Yes

a. Minimum detected concentration.
b. Maximum detected concentration.
c. Number of detects/Number of samples (see Table C1.1).
d. Background comparison is not applicable for this risk assessment.
e. Chemical is not a COPC because all detected values are less than the highest concentration detected in the associated baseline, trip, or method blanks.
f. Hexane, a tentatively identified compound, was also detected at a maximum concentration of 22 µg/100 cm^2.

Definition of Qualifier

J = Estimated result. Result is less than reporting limit.
B = (organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.
B = (inorganics) Estimated result. Result is less than reporting limit.

Definition of Acronyms

COPC = Chemical of Potential Concern.
µg/100 cm^2 = micrograms per 100 square centimeters.
n/a = not applicable.
CAS = Chemical Abstract Service.

Laboratory control spike samples quantify accuracy (closeness of agreement between an observed value and an accepted reference value) in terms of percent recovery of the added spike. For swipe samples, laboratory control sample recoveries listed in Table C1.3 were outside control limits.

Table C1.3
Laboratory Control Sample Recoveries Outside of Control Limits

Parameter	LCS (LCSD) Percent Recovery	Recovery Limits	Potential Bias
4-Bromofluorobenzene[(a)]	99% (123%)	85-115%	High
4-Chloroaniline	38% (40%)	50-150%	Low
Acetone	57% (58%)	70-130%	Low
Acetone	67% (79%)	70-130%	Low
Arsenic	29% (28%)	78-124%	Low
Barium	44% (44%)	77-124%	Low
Cadmium	71% (67%)	82-118%	Low
Lead	55% (52%)	82-117%	Low
Selenium	75% (72%)	81-122%	Low
Silver	30% (30%)	76-140%	Low

a. Surrogate compound.

Definition of Acronyms
LCS = laboratory control spike.
LCSD = laboratory control spike duplicate.

All chemicals detected at least once in swipe samples were evaluated in the COPC identification stage of the HHRA. Detected concentrations in investigative samples were compared with detected concentrations in trip blanks, method blanks, and baseline samples. The final list of COPCs includes chemicals detected in investigative swipe samples at concentrations above the maximum detected blank or baseline concentration.

Table C1.2 summarizes detected chemicals and COPC selection for TA-50-37, Room 117 CSU. There were 12 chemicals detected in swipe samples from TA-50-37, Room 117 CSU. Of the 12 detected chemicals, four volatile organic compounds (VOC) were eliminated because the detected concentrations were below the maximum concentration detected in the associated blank or baseline samples (see Section 2.5.2). The final COPCs (including tentatively identified compounds [TICs]) evaluated for TA-50-37, Room 117 are barium, chromium, lead, ethylbenzene, xylenes (total), and hexane.

C1.2 Exposure Assessment

The purpose of the exposure assessment is to evaluate pathways for chemical exposure and to produce an estimate of the reasonable maximum exposure (RME), or the maximum exposure that is reasonably expected to occur at a site (EPA, 1989). The RME is expressed as a chronic daily intake (CDI), which is defined as the mass of a substance contacted per unit body weight per unit time, averaged over a long period of time and expressed in units of milligrams per unit body weight-day. The following steps were included as part of the exposure assessment for TA-50-37, Room 117 CSU:

1. Characterization of exposure setting and receptors.
2. Identification of exposure pathways.
3. Estimation of exposure point concentrations (EPC).
4. Estimation of CDI.

These steps are discussed in the following subsections.

C1.2.1 Characterization of Exposure Setting and Receptors

Future occupational workers were identified as the only potential receptors for TA-50-37 in the exposure assessment. The future use of Room 117 is expected to be office space, where no personal protective equipment will be used.

C1.2.2 Identification of Exposure Pathways

The assessment of exposure to chemicals on interior surfaces involves identification of complete exposure pathways. A complete exposure pathway is defined by:

- Source of contaminated media.
- Contaminant release mechanisms.
- Contaminant transport pathways.
- Intermediate or transport media.
- Exposure media.
- Receptors.
- Routes of exposure.

The following exposure pathways are considered complete for TA-50-37, Room 117:

- Ingestion of chemicals on indoor surfaces through hand-to-mouth contact.
- Dermal contact with indoor surfaces.
- Inhalation of VOC or chemicals suspended in dust.

C1.2.3 Estimation of Exposure Point Concentrations

For this HHRA, the maximum detected concentrations (MDC) of COPCs detected in swipe samples were used as the EPCs. For inhalation of VOCs, the MDC was manipulated with working area volume to estimate a worst case air concentration (Pannell, 2001). Table C1.4 provides the dimensions.

Table C1.4
Estimation of Air Concentration for Volatile Organic Chemicals Based on Swipe Sample Results and Room Dimensions

Room Dimensions (feet)	Room Dimensions (cm)	Room Surface Area (cm^2)	Room Volume (cm^3)	Room Volume (m^3)
L = 40 W = 21 H = 8	1,219 640 244	2.47E+06	1.90E+08	1.90E+02
CAS Number	**Parameter**	**Maximum Swipe Content (µg/100 cm^2)**	**Room Surface Content (µg)**	**Room Air Concentration (µg/m^3)**
100-41-4	Ethylbenzene	0.66	1.63E+04	8.56E+01
100-54-3	n-Hexane	22	5.43E+05	2.85E+03
1330-20-7	Xylenes (total)	5.6	1.38E+05	7.26E+02

Definition of Acronyms

CAS = Chemical Abstract Service.
cm = centimeters.
cm^2 = square centimeters.
m^3 = cubic meters.
µg/100 cm^2 = micrograms per 100 square centimeters.
µg/m^3 = Micrograms per cubic meter.
L = length.
W = width.
H = height.

C1.2.4 Estimation of Chronic Daily Intakes

The methodology used to evaluate oral and dermal exposure to chemicals deposited on indoor surfaces was developed by the WTCIATWG (WTCIATWG, 2002) and is based on EPA Office of Pesticides Programs (OPP) *Standard Operating Procedures (SOPs) for Residential Exposure Assessment* (EPA, 2001a). The evaluation of exposures to lead in this assessment is a modification of the California DTSC model (DTSC, 2000) that provides methodology for evaluating exposure to lead by the ingestion, inhalation, and dermal contact pathways.

Exposure factors (e.g., ingestion rates and exposure frequency and duration) are used to estimate CDI for each exposure pathway. The estimates of CDI are combined with toxicity information in the toxicity assessment of an HHRA to characterize the potential risk to human health.

CDIs were estimated by selecting values for exposure variables to provide the RME for an individual working at the site. Tables C1.5 through C1.9 present equations for calculating CDI for carcinogenic and noncaracinogenic chemicals for occupational workers from ingestion, dermal, and inhalation exposure to chemicals on indoor surfaces.

Table C1.5
Chronic Daily Intake for Ingestion of Chemicals on Indoor Surfaces

$$CDI\ (mg/kg-d) = \frac{EPC \times SA_h \times CF \times F_{s-s} \times F_{s-m} \times ED \times EF}{BW \times AT} \qquad Eq(1)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Skin Surface Area for Hands (SA_h), m^2/event =	0.0817	EPA, 2001b
Contact Frequency (CF), events/day =	2	Assumed
Fraction Surface-to-Skin Transfer (F_{s-s}), unitless =	0.05	WTCIATWG, 2002
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Fraction Skin-to-Mouth Transfer (F_{s-m}), unitless =	0.1	WTCIATWG, 2002
Adult Body Weight (BW), kilograms =	70	EPA 1997a; LANL, 2000
Averaging Time (AT), days		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms

c-s = Chemical-specific.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
Indoor Air Taskforce Working Group
mg = milligram.
m^2 = square meter.
WTCIATWG = World Trade Center

Table C1.6
Chronic Daily Intake for Dermal Contact with Chemicals on Indoor Surfaces

$$CDI\ (mg/kg-d) = \frac{EPC \times SA_h \times CF \times F_{s-s} \times ED \times EF \times ABS_d}{BW \times AT} \qquad Eq(2)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Skin Surface Area for Hands (SA_h), m^2/event =	0.0817	EPA, 2001b
Contact Frequency (CF), events/day =	2	Assumed
Fraction Surface-to-Skin Transfer (F_{s-s}), unitless =	0.05	WTCIATWG, 2002
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Dermal Absorption Factor (ABS_d), unitless =	c-s	EPA, 2001b
Adult Body Weight (BW), kilograms =	70	EPA, 1997a; LANL, 2000
Averaging Time (AT), days		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms

c-s = Chemical-specific.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
m^2 = Square meter.
mg = Milligram.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

Table C1.7
Chronic Daily Intake for Inhalation of Nonvolatile Chemicals on Indoor Surfaces, Noncarcinogens

$$CDI\ (mg/m^3) = \frac{EPC \times ED \times EF \times K}{AT_{nc}} \qquad Eq(3)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Dust Resuspension Factor (K), (m)$^{-1}$ =	1E-05	Linsley, 1978; Royal Society, 2002
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA, 1989; LANL, 2000

Definition of Acronyms

c-s = Chemical-specific.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
m = meter.
m^2 = square meter.
mg = milligram.

Table C1.8
Chronic Daily Intake for Inhalation of Nonvolatile Chemicals on Indoor Surfaces, Carcinogens

$$CDI\ (\mu g / m^3) = \frac{EPC \times ED \times EF \times K \times CvF}{AT_c} \qquad Eq(4)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Conversion Factor (CvF), µg/mg =	1E+03	---
Dust Resuspension Factor (K), $(m)^{-1}$ =	1E-05	Linsley, 1978; Royal Society, 2002
Averaging Time, carcinogens (AT_c), days =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms

c-s = Chemical-specific.
m^2 = square meter.
mg = milligram.
m = meter.
µg = microgram.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.

Table C1.9
Chronic Daily Intake for Inhalation of Volatile Chemicals on Indoor Surfaces

$$CDI\ (mg / kg - d) = \frac{EPC_a \times ED \times EF \times InhR}{BW \times AT} \qquad Eq(5)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration, Air (EPC_a), mg/m^3	c-s	---
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Adult Inhalation Rate, m^3/day	20	EPA, 1989
Adult Body Weight (BW), kilograms =	70	EPA, 1997a; LANL, 2000
Averaging Time (AT), days =		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms

c-s = Chemical-specific.
m^3 = cubic meters.
mg = milligram.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.

The guidance documents used to compile exposure factors primarily include *EPA Risk Assessment Guidance for Superfund, Part A* (EPA, 1989); E*PA Exposure Factors Handbook*

(EPA, 1997a)*; and Risk Assessment Guidance for Superfund, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance* (EPA, 2001b). Professional judgment and information from the WTCIATWG (WTCIATWG, 2002) were also used where EPA guidance was not available.

Body weight

The EPA default adult body weight of 70 kilograms (kg) was used, as the dose-response relationships on which the carcinogenic risk estimates are based assume a body weight of 70 kg (EPA, 1997a; LANL, 2000).

Averaging Time

The averaging time for carcinogens of 25,550 days, is averaged over a 70-year lifetime (EPA, 1989). For noncarcinogens, the averaging time is the exposure duration multiplied by 365 days (EPA, 1989; LANL, 2000).

Contact Frequency

Based on professional judgment, the contact frequency assumed for TA-50-37, Room 117 is 2 events per day to reflect work during the forenoon, washing during a lunch break, and work during the afternoon.

Dermal Absorption Factor

With the exception of arsenic and cadmium, EPA (EPA, 2001b) does not provide dermal absorption values for inorganics or VOCs. As recommended by EPA Region 6 (EPA, 2004), the dermal exposure pathway was not evaluated for chemicals lacking chemical-specific dermal absorption factors. None of the COPCs evaluated in this HHRA have chemical-specific dermal absorption factors recommended by EPA. Therefore, the dermal exposure pathway was not evaluated.

Skin Surface Area

The skin surface area used is based on recommendations in Exhibit C-1 of the EPA's Supplemental Guidance for Dermal Risk Assessment (EPA, 2001b). This Exhibit provides body part-specific adult surface area calculations and recommends a value of 817 square centimeters (cm^2) for an adult female. The surface area of adult male hands is listed as 990 cm^2. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model, which is an approach for assessing

occupational health risks from lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures (EPA 2003).

Exposure Duration

The default exposure duration of 30 years is the National upper bound time (90th percentile) at one residence (EPA, 1991; LANL, 2000). Because of the nature of the area, it is assumed that exposure duration in the work environment corresponds with residence time (LANL, 2000).

Exposure Frequency

The EPA-recommended exposure frequency for occupational workers is 250 days per year. This assumes five working days per week for 50 weeks per year (EPA, 1993; LANL, 2000).

Fraction Skin-to-Mouth Transfer

The value of 10 percent (or 0.1) used by the WTCIATWG (WTCIATWG, 2002) is based on studies by Michaud et al. (Michaud et. al.,1994), the EPA OPP guidelines, and Kim and Hawley (Kim and Hawley, 1985), where it was assumed that all of the residues deposited on the fingertips would be transferred to the mouth twice per day.

Fraction Surface-to-Skin Transfer

According to the evaluation by the WTCIATWG (WTCIATWG, 2002), this factor should vary depending on the type of surface, type of residual, hand condition, and force of contact. Literature values range from 5 percent for carpets (EPA, 1997b) to 50 percent for hard surfaces (Rodes et al., 2001). EPA OPP recommends a value of 10 percent. A value of 5 percent (or 0.05) (WTCIATWG, 2002) was used for this assessment.

Dust Resuspension Factor

The resuspension factor reported for resuspension of dust from soil during pedestrian or vehicular traffic was assumed (Linsley, 1978), which has been cited in the context of dust suspension from soil contaminated with depleted uranium (Royal Society, 2002).

C1.3 Toxicity Assessment

The purpose of the toxicity assessment is to "weigh available evidence regarding the potential for particular contaminants to cause adverse effects in exposed individuals and to provide, where possible, an estimate of the relationship between the extent of exposure to a contaminant and the increased likelihood and/or severity of adverse effects" (EPA, 1989). Most EPA cancer slope factors (CSF) and air unit risk factors (URF) are upper estimates of the probability of a response per unit intake of a chemical over a lifetime (EPA, 1989). CSFs and URFs are based on mathematical extrapolation from experimental animal data and epidemiological studies, when available. CSFs are expressed in units of risk per milligram (mg) of chemical per kg body weight-day $(mg/kg\text{-}day)^{-1}$. URFs are expressed in units of risk per microgram (µg) of chemical per cubic meter $(\mu g/m^3)^{-1}$. Carcinogens with EPA-derived CSFs and URFs are also given EPA weight-of-evidence classifications whereby potential carcinogens are grouped according to the likelihood that the chemical is a human carcinogen, depending on the quality and quantity of carcinogenic potency data the chemical. The weight-of-evidence classifications include:

Group A Human Carcinogen (sufficient evidence of carcinogenicity in humans).

Group B Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans).

Group C Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data).

Group D Not classifiable as to Human Carcinogenicity (inadequate or no evidence).

Group E Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

CSFs and URFs for use in the HHRA are presented in Table C1.10. Table C1.11 summarizes cancer weight of evidence classification for chemicals with carcinogenic effects.

The evaluation of noncarcinogens is based on the presumption of a threshold, where a specific dose must be received in order for an adverse effect to occur. The reference dose (RfD) and reference concentration (RfC) are estimates of a daily chemical intake per unit body weight that is likely to be without deleterious effects (EPA, 1989). EPA has developed chronic RfDs and RfCs to evaluate long-term exposures (7 years to a lifetime), and subchronic values to evaluate exposures of shorter duration (2 weeks to 7 years). Chronic RfDs and RfCs were used in this HHRA (Table C1.9).

Toxicity values are those used to develop the EPA Region 6 Human Health Medium-Specific Screening Values (EPA, 2004). Toxicity values were obtained by EPA Region 6 from the Integrated Risk Information System (IRIS), the EPA Health Effects Assessment Summary Tables (EPA, 1997c), or EPA's National Center for Environmental Assessment. Route-to-route extrapolations were used when there were no toxicity values available for a given route of exposure. That is, in accordance with EPA Region 6 guidance (EPA, 2004), oral CSFs and oral RfDs were used for both oral and inhaled exposures for organic chemicals lacking inhalation values. Oral RfDs and CSFs were converted to RfCs and URFs, respectively, based on a body weight of 70 kg and inhalation rate of 20 cubic meters per day (m^3/day) (EPA, 1997c). Because no chemical-specific dermal absorption factors are available (EPA, 2001b), the dermal exposure pathway was not quantitatively evaluated. Therefore, the adjustment of oral toxicity values to reflect an absorbed dose was not necessary.

Table C1.10
Toxicity Values for Human Health Risk Assessment

Parameter	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Air Unit Risk Factor[(a)] $(\mu g/m^3)^{-1}$	Oral Reference Dose (mg/kg-d)	Inhalation Reference Concentration[(b)] (mg/m^3)
Volatile Organic Chemicals (Method 8260B):				
Ethylbenzene	n/a	n/a	1.0E-01 i	1.0E-00 i
n-Hexane	n/a	n/a	1.1E+01 p	2.0E-01 i
Xylenes (total)	n/a	n/a	2.0E-01 i	1.0E-01 i
Metals (Method 6010B):				
Barium	n/a	n/a	7.0E-02 i	2.5E-01 r
Chromium (total)	n/a	1.2E-02 i	n/a	n/a
Lead	n/a	n/a	n/a	n/a

a. Air Unit Risk Factor (URF) is based on the Inhalation Cancer Slope Factor (CSF) provided in EPA Region VI Human Health Medium-Specific Screening Levels Table (EPA, 2004). The inhalation CSF was converted to a URF based on EPA guidance (1997a), assuming a body weight of 70 kilograms and inhalation rate of 20 cubic meters per day and using the following equation:

$$Risk\ per\ \mu g/m^3 = (Risk\ per\ mg/kg-d) \times \left(\frac{1}{70\ kg}\right) \times (20\ m^3/day) \times (10^{-3}\ mg/\mu g)$$

b. Reference Concentration is from EPA Region 6 Human Health Medium-Specific Screening Levels Table (EPA, 2004) when available. Otherwise, inhalation Reference Doses from EPA (EPA, 2004) were converted to reference concentrations based on EPA guidance (1997a) using the following equation:

$$RfC\ (mg/m^3) = RfD\ (mg/kg-d) \times \frac{1}{20\ m^3/day} \times 70\ kg$$

c. Toxicity values were taken from EPA Region VI Human Health Medium-Specific Screening Levels Table and are referenced as follows (EPA, 2004, accessed online):

I = Integrated Risk Information System (IRIS)
n = National Center for Environmental Assessment (NCEA)
h = Health Effects Assessment Summary Tables (HEAST)
o = Other EPA documents
p = Provisional Peer-Reviewed Toxicity Values (PPRTV) Database

Definition of Acronyms

mg/kg-d = milligrams per kilogram-day.
$\mu g/m^3$ = micrograms per cubic meter.
mg/m^3 = milligrams per cubic meter.
n/a = not available.

Table C1.11
Weight of Evidence Classifications for Carcinogens

Chemical of Potential Concern	Weight of Evidence Classification	Source
Chromium (trivalent)	D	IRIS
Chromium (hexavalent)	A (inhalation) D (other routes)	IRIS

Definition of Acronyms

A = Human Carcinogen (sufficient evidence of carcinogenicity in humans).
D = Not classifiable as to Human Carcinogenicity (inadequate or no evidence).
IRIS = Integrated Risk Information System (http://www.epa.gov/iris/).

C1.4 Risk Characterization

In the risk characterization stage of the HHRA, the toxicity and exposure assumptions are combined to produce a quantitative estimate of risk to human health. Risk is a unitless probability of an RME individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen (EPA, 1989). Hazard quotients (HQ) are ratios of CDIs to RfDs (or RfCs) and represent the potential for noncarcinogencic toxicity to occur in an individual. The overall potential for carcinogenic and noncarcinogenic effects is estimated by summing risks to produce a cumulative risk and summing HQs across chemicals and across exposure pathways to produce a hazard index (HI).

The linear low-dose cancer risk equation is as follows:

$$Risk_i = CDI \times CSF \ (or\ URF) \qquad Eq\ (6)$$

Cumulative cancer risks are subsequently estimated as:

$$Risk_T = \sum Risk_i \qquad Eq\ (7)$$

where,

$Risk_i$ = Risk estimate for chemical i.
$Risk_T$ = Total cancer risk.
CDI = Chronic daily intake (mg/kg-d or µg/m^3).
CSF = Cancer slope factor (mg/kg-d)$^{-1}$.
URF = Air unit risk factor (µg/m^3)$^{-1}$.

Calculation of the chemical-specific HQ is as follows:

$$Hazard\ Quotient = \frac{CDI}{RfD\,(or\ RfC)} \qquad Eq\,(8)$$

The chronic noncarcinogenic HI is estimated as:

$$Hazard\ Index = \frac{CDI_1}{RfD_1\,(or\ RfC_1)} + \frac{CDI_2}{RfD_2\,(or\ RfC_2)} + \Lambda\ \frac{CDI_i}{RfD_i\,(or\ RfC_i)} \qquad Eq\,(9)$$

where,

CDI_i = Chronic daily intake for chemical i.
RfD_i = Reference dose for chemical i (mg/kg-day).
RfC Reference concentration for chemical i (mg/m^3).

In accordance with Code of Federal Regulations (CFR), Title 40 §300.430, carcinogenic risk within the range of 10^{-4} (probability of 1 in 10,000 of an individual developing cancer) to 10^{-6} (probability of 1 in 1,000,000 of an individual developing cancer) is considered acceptable. Per EPA guidance, when the HI exceeds 1, there is a potential for adverse noncarcinogenic health effects (EPA, 1989). When the HI exceeds 1, and multiple chemicals contribute to the exceedance, the HI may be segregated on the basis of toxic effects and target organs (e.g., hepatic, renal, respiratory, cardiovascular, etc.). However, COPCs were not segregated by target organs for this HHRA.

The results of the noncarcinogenic and carcinogenic risk characterization for the TA-50-37, Room 117 CSU are presented in Tables C1.12 and C1.13, respectively.

Table C1.12
Risk Characterization for Noncarcinogens for TA-50-37, Building 117

Parameter	Room 117 EPC (mg/m^2)	Room 117 Air EPC (mg/m^3)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake (mg/kg-d)[a]	Oral Reference Dose (mg/kg-d)	Dermal Reference Dose (mg/kg-d)	Inhalation RfD or RfC (mg/kg-d)[a]	Hazard Quotient
Method 8260B - Volatile Organic Chemicals										
Ethylbenzene	6.6E-02	8.6E-02	0.0E+00	5.3E-07	0.0E+00	1.7E-02	1.0E-01	1.0E-01	2.9E-01	5.8E-02
n-Hexane[b]	2.2E+00	2.9E+00	0.0E+00	1.8E-05	0.0E+00	5.6E-01	1.1E+01	1.1E+01	5.7E-02	9.8E+00
Xylenes (total)	5.6E-01	7.3E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	2.0E-01	2.0E-01	2.9E-02	4.9E+00
Method 6010B - Metals										
Barium	8.3E-01	---	0.0E+00	6.6E-06	0.0E+00	5.7E-06	7.0E-02	4.9E-03	2.5E-01	1.2E-04
Chromium	1.4E+00	---	0.0E+00	1.1E-05	0.0E+00	9.7E-06	---	---	---	___
									HAZARD INDEX:	**1.5E+01**

a. For volatile chemicals, the RfD and CDI are expressed as mg/kg-d; for nonvolatile chemicals, the RfC and CDI are in units of mg/m^3. RfDs are converted to RfCs assuming a body weight of 70 kg and inhalation rate of 20 m^3/day (EPA, 1997a).
b. Chemical is a tentatively identified compound.

Definition of Acronyms

CDI = Chronic daily intake.
EPC = Exposure point concentration.
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
mg/m^3 = milligrams per cubic meter.
RfC = Reference concentration.
RfD = Reference dose.
--- = Not applicable or not available.

Table C1.13
Risk Characterization for Carcinogens, Building 117

Parameter	Room 117 EPC (mg/m^2)	Room 117 Air EPC (mg/m^3)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake (mg/kg-d)[a]	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Air CSF or URF $(mg/kg\text{-}d)^{-1}$[a]	Risk
Method 8260B - Volatile Organic Chemicals										
Ethylbenzene	6.6E-02	8.6E-02	0.0E+00	2.3E-07	0.0E+00	7.2E-03	---	---	---	---
n-Hexane[b]	2.2E+00	2.9E+00	0.0E+00	7.5E-06	0.0E+00	2.4E-01	---	---	---	---
Xylenes (total)	5.6E-01	7.3E-01	0.0E+00	1.9E-06	0.0E+00	6.1E-02	---	---	---	---
Method 6010B - Metals										
Barium	8.3E-01	n/a	0.0E+00	2.8E-06	0.0E+00	2.4E-03	---	---	---	---
Chromium	1.4E+00	n/a	0.0E+00	4.9E-06	0.0E+00	4.2E-03	---	---	1.2E-02	5.0E-05
									CARCINOGENIC RISK:	**5.0E-05**

a. For volatile chemicals, the CSF is expressed as $(mg/kg\text{-}d)^{-1}$ and the CDI as mg/kg-d; for nonvolatile chemicals, the URF is in units of $(\mu g/m^3)^{-1}$ and the CDI in units of $\mu g/m^3$. CSFs are converted to URFs assuming a body weight of 70 kg and inhalation rate of 20 m^3/day (EPA 1997a).
b. Chemical is a tentatively identified compound.

Definition of Acronyms

mg/kg-d = Milligrams per kilogram-day
mg/m^2 = Milligrams per square meter
ug/m^3 = Micrograms per cubic meter
EPC = Exposure point concentration
CSF = Cancer Slope Factor
URF = Unit Risk Factor
--- = Not applicable or not available.
n/a = Not applicable

The exposure pathways quantified for occupational workers were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The COPCs in the TA-50-37, Room 117 CSU were evaluated quantitatively for noncarcinogenic effects were ethylbenzene, hexane (a TIC), xylenes (total), and barium. The COPC in TA-50-37, Room 117 CSU evaluated quantitatively for carcinogenic risk is chromium. The noncarcinogenic HI for Room 117 is 15. This HI was calculated assuming immediate vaporization of VOCs and maintenance of that concentration for the entire 30 year exposure duration. As a result, a high level of uncertainty is associated with the HI for the inhalation exposure pathway. Because a more reasonable assumption is that VOCs vaporize over time, the inhalation HIs were adjusted by a factor of 365 days to produce an HI of 0.041.

None of the VOCs were evaluated for carcinogenic risk because URFs and CSFs are not available. The carcinogenic risk for Room 117 was 5.0E-05, which is within the acceptable 10^{-6} to 10^{-4} range of risks specified by 40 CFR §300.430.

C1.5 Evaluation of Lead

Because lead toxicity does not exhibit a threshold for noncarcinogenic health effects, risk assessment methods that are based on threshold values do not apply. Therefore, the EPA has developed the Adult Lead Model (ALM) to address worker exposures (EPA, 2003). The ALM estimates the lead concentration in the blood of a pregnant worker exposed by ingestion of soil and dust. However, the ALM does not address the inhalation and dermal absorption pathways, except as a default baseline blood concentration that also includes dietary lead contributions. Various other simulation models developed to evaluate blood lead concentration from exposures to lead have been reviewed and compared with the ALM (EPA, 2001c). Although none of the models reviewed address worker exposure to lead contamination on surfaces, the review found that the model developed by the California DTSC specifically addresses the ingestion, dermal contact, and inhalation exposure pathways and can provide simulation results consistent with the ALM.

The surface swipe model developed for this risk assessment to evaluate exposure to lead on surfaces as measured by swipe samples is a modification of the DTSC (DTSC, 2000) model. The model assumes that the concentration of lead in blood from exposure via separate pathways is additive, such that:

$$PbB_{adult} = PbB_{ing} + PbB_{derm} + PbB_{inh} \qquad Eq\,(10)$$

where,

PbB_{adult} =	Concentration of lead in blood of an adult worker, micrograms per deciliter (µg/dL).
PbB_{ing}, PbB_{derm}, PbB_{inh} =	Contributions to adult blood lead concentration from the ingestion, dermal contact and inhalation pathways, respectively, µg/dL.

The concentration of lead in blood of an adult worker is, therefore, estimated based on the following equation and parameters presented in Table C1.14:

$$PbB_{adult} = PbB_0 + \left\{ Pb_{sw} \times \frac{EF}{AT} \times \left[\left(SF_{ing} \times SA_h \times EV \times F_{s-s} \times F_{s-m} \right) + \left(SF_{derm} \times SA_{uex} \times EV \times F_{s-s} \times ABS_d \right) + \left(SF_{inh} \times K \times CF \right) \right] \right\} \quad Eq\,(11)$$

Concentration of Lead in Blood of Exposed Worker

The maximum lead concentration in Building 117 was measured on swipe samples that were assumed to be representative of the surface lead concentration in the room after remediation. The MDC in Building 117 is 0.04 µ/cm^2.

Baseline Lead Concentration

A default value of 2.2 µg/dL was used for PbB_0. The value represents the upper concentration of the 1.7-2.2 µg/dL range reported for women of ages 24 to 49 (EPA, 2003).

Fetal/Maternal Blood Lead Concentration Ratio

The EPA-recommended default value of 0.9 was used based on the relationship between umbilical cord and maternal blood lead concentrations (EPA, 2003).

Dermal Absorption Factor

The dermal absorption factor of 0.0006 is the value used by DTSC (DTSC, 2000) of 0.06%.

Geometric Standard Deviation of Adult Mean Blood Lead Concentration

The Geometric Standard Deviation (GSD) of the mean blood lead concentration in the adult population is the EPA-recommended value of 1.8 for a homogeneous population (EPA, 2003).

Exposure Frequency

The EPA-recommended exposure frequency for occupational workers is 250 days per year. This assumes five working days per week for 50 weeks per year (EPA, 1993).

Fraction Skin-to-Mouth Transfer

The value of 10 percent (or 0.1) used by the WTCIATWG (WTCIATWG, 2002) is based on studies by Michaud et al. (Michaud et. al., 1994), the EPA OPP guidelines, and Kim and Hawley (Kim and Hawley, 1985), where it was assumed that all of the residues deposited on the fingertips would be transferred to the mouth twice per day.

Fraction Surface-to-Skin Transfer

According to the evaluation by the WTCIATWG (WTCIATWG, 2002), this factor should vary depending on the type of surface, type of residual, hand condition, and force of contact. Literature values range from 5 percent for carpets (EPA, 1997b) to 50 percent for hard surfaces (Rodes et al., 2001). EPA OPP recommends a value of 10 percent. A value of 5 percent (or 0.05) (WTCIATWG, 2002) was used for this assessment.

Dust Resuspension Factor

The inhalation exposure pathway included the resuspension factor as developed to estimate resuspension of dust from soil surfaces by pedestrians or vehicular traffic (Linsley, 1978 and Royal Society, 2002).

Exposure Events per Day

Based on professional judgment, the number assumed for Room 117 is 2 events per day.

Averaging Time

The averaging time is the total period during which indoor surface contact may occur. The EPA-recommended value is 365 days per year for continuing long-term exposures (EPA, 2003).

Surface Area

Exposures by the dermal pathway were evaluated using the surface area of adult female hands (SA_h) and the face and upper extremities (SA_{uex}) of an adult female worker (EPA, 2001b).

The slope factors used in the calculations for ingestion (SF_{ing}; FDA, 1990; DTSC, 2000), dermal contact (SF_{derm}; DTSC, 2000) and inhalation exposures (SF_{inh}; EPA, 1986) are intake factors for the pathways indicated.

The goal for the 95th percentile of fetal blood lead concentration ($PbB_{fetal,0.95}$) is 10 µg/dL, as specified in EPA guidance (EPA, 1986 and 2003). The ALM describes the fetal blood lead concentration as:

$$PbB_{fetal} = PbB_{adult} \times R_{fetal\,/\,maternal} \qquad Eq\ (12)$$

where,

PbB_{fetal} = concentration of lead in the fetus, µg/dL.
$R_{fetal/maternal}$ = concentration ratio of lead in fetal blood to adult blood, dimensionless.

EPA guidance (EPA, 1986 and 2003) assumes that PbB_{adult} is lognormally distributed. The guidance requires remediation of lead concentrations such that PbB_{fetal} will not exceed 10 µg/dL with 95 percent confidence as follows:

$$PbB_{fetal,0.95} = PbB_{fetal} \times GSD^{1.645} \qquad Eq\ (13)$$

where,

$PbB_{fetal,0.95}$ = 95th percentile of fetal blood lead concentration, µg/dL.
GSD = Geometric standard deviation of adult blood lead concentration in the U. S. population.

The estimated concentration of lead in blood of the worker and the fetus are well below the goal of 10 µg/dL specified in EPA (EPA, 1986 and 2003) guidance with 95 percent confidence. This conclusion is confirmed by calculating the probability that the mean blood lead concentration of the fetus (PbB_{fetal}) exceeds 10 µg/dL based on the assumption that the adult blood lead concentration is lognormally distributed (EPA, 1986 and 2003). For a distribution with geometric

mean concentration (PbB_{fetal}) of 2.0 µg/dL and GSD 1.8, the probability that the mean concentration exceeds 10 µg/dL approximately 0.3% (Table C1.14). Based on this assessment, the potential risk to a future worker in the TA-50-37, Room 117 from exposure to lead on surfaces is below the applicable criteria specified in EPA guidance (EPA, 1986).

Table C1.14
Parameters Used to Estimate Blood Lead Concentration in Adult Female Worker

Exposure Parameter	Exposure Parameter Description	Units	Parameter	Reference
Pb_{sw}	Lead concentration on swipe/100[a]	µg/cm^2	0.04	Maximum Detected (Table C1.2)
$PbB_{fetal\ goal}$	Goal for the 95th percentile fetal blood lead concentration	µg/dL	10.0	EPA, 2003
PbB_o	Baseline blood concentration in absence of site exposure	µg/dL	2.2	EPA, 2003[b]
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	dimensionless	0.9	EPA, 2003
SF_{ing}	Ingestion Slope Factor	µg/dL per µg/day	0.04	FDA, 1990; DTSC, 2000
SF_{derm}	Dermal Slope Factor	µg/dL per µg/day	0.0001	DTSC, 2000
SF_{inh}	Inhalation Slope Factor	µg/dL per µg/m^3	1.64	EPA, 1986; DTSC, 2000
ABS_d	Dermal Absorption Factor	dimensionless	0.0006	DTSC, 2000
GSD	Geometric standard deviation of PbBadult	dimensionless	1.8	EPA, 2003
SA_h	Surface Area (hands, adult female)	cm^2/event	817	EPA, 2001b
SA_{uex}	Surface Area (upper extremities, adult female)	cm^2/event	2,220	EPA, 2001b
EV	Exposure Events per Day	events/day	2	Assumed
F_{s-s}	Fraction Transferred from Surface to Skin	dimensionless	0.05	WTCIATWG, 2002
F_{s-m}	Fraction Transferred from Skin to Mouth	dimensionless	0.1	WTCIATWG, 2002
K	Dust Resuspension Factor	cm^{-1}	1.0E-07	Linsley, 1978; Royal Society, 2002
CF	Conversion Factor	cm^3/m^3	1.0E+06	--
EF	Exposure Frequency	days/year	250	EPA, 1989; LANL 2000
AT	Averaging Time	days/year	365	EPA 2003
Surface Swipe Model Results[c]				
	$PbB_{adult} = PbB_0 + [(Pb_{sw}*(EF/AT)*((SF_{ing}*SA_h*EV*F_{s-s}*F_{s-m}) + (SF_{derm}*SA_{uex}*EV*F_{s-s}*ABS_d) + (SF_{inh}*K*CF)] =$			**2.2E+00**
	$PbB_{fetal} = PbB_{adult} * R_{fetal/maternal} =$			**2.0E+00**
	$PbB_{fetal,\ 0.95} = PbB_{fetal} * (GSD^{1.645}) =$			**5.2E+00**
	$P(PbB_{fetal} > PbB_{fetal,goal})$[d] (%) =			**0.30%**

a. Swipe concentrations are reported in units of µg/100cm^2.
b. Upper value of plausible range reported for U.S. women ages 20-49 years.
c. Equations based on Equations 1-3 in EPA (2003).
d. Probability that fetal PbB > $PbB_{fetal,goal}$, assuming lognormal distribution with mean concentration.

Definition of Acronyms

cm^{-1} = per centimeter.
cm^2 = square centimeters.

cm^3/m^3 = Cubic centimeters per cubic meter.
DTSC = Department of Toxic Substances Control.
EPA = U.S. Environmental Protection Agency.
FDA = U.S. Food and Drug Administration.
$\mu g/cm^2$ = micrograms per square centimeter.
µg/dL = micrograms per deciliter.
$\mu g/m^3$ = micrograms per cubic meter.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

C1.6 Uncertainty

The level of certainty associated with the conclusions of the HHRA depends upon the quality of data, the assumptions made in estimating exposure conditions, and the methods used to develop toxicity factors. Uncertainties in the HHRA process could result in an overestimation or underestimation of potential health risk.

EPCs used in the risk assessment were the MDCs. These concentrations likely overestimate the average exposure to COPCs in TA-50-37, Room 117. For VOCs, a worst-case vapor concentration estimated using working area volume (Pannell, 2001). Under this assumption, VOCs immediately volatilize and that concentration is maintained for the entire 30 year exposure duration. This assumption is highly conservative in that VOCs vaporize at different rates; no building ventilation is accounted for; and volatilization is continuous, whereas workers are only present at certain hours of the day. Therefore, the health risks due to the inhalation of VOCs exposure pathway are highly overestimated. In addition, the TIC, hexane, was carried forward to the HHRA (i.e., had detected concentrations above baseline and/or quality assurance/quality control results). The results and identity of TICs are highly uncertain (EPA, 1989) and may contribute to over- or underestimation of health risk.

Other exposure parameters were typically upper-bound estimates and likely result in an overestimate potential human health risk. For example, it was assumed that an industrial worker would be in contact with the MDC 250 days per year for 30 years. For example, the exposure duration of 30 years for an industrial worker is the 90th percentile value for time at one residence. Because of the nature of the area, it was assumed that exposure duration in the work environment corresponds with residence time (LANL, 2000). This assumption likely results in an overestimation of human health risk. As another example, the skin surface area for hands is the 50th percentile for female workers (EPA, 2001b). This includes the entire surface area of the hands rather than the palms only, which is the area of the hands that is most likely to contact surfaces. As a result, the surface area is likely an overestimate.

Although the use of central-tendency techniques (e.g., using a 95 percent upper confidence limit as the EPC or other 50th percentile values) in addition to the RME provides a risk range for consideration in risk management decisions, it is not necessary to conduct assessments using these methods if the health risks are acceptable using maximum or near maximum values for each of the input parameters. EPA (1997a) states that “bounding estimates” (e.g., upper-bound

estimates) may be calculated using maximum or near maximum values if the purpose of the approach is, for example, to eliminate unimportant exposure pathways." In this HHRA, the human health risks are shown to be acceptable using upper-bound exposure estimates and adjusting the risk and HI to assume volatilization of VOCs over time. Therefore, central-tendency estimates were not presented.

The methodology for toxicity assessment was developed by EPA to produce toxicity factors protective of human health. Health-protective approaches are used in developing toxicity factors to ensure dose-response or hazard potential are not underestimated. For example, uncertainty factors of 10 to 10,000 are used to estimate RfDs; humans are assumed to be more sensitive than the most sensitive laboratory species; carcinogens are considered not to have a threshold; and it is assumed that chemicals that are carcinogenic to laboratory animals also cause cancer in humans. Toxicity values for chronic exposure were used for the assumed exposure duration of 30 years. In cases where toxicity values were not available for a given route of exposure, route-to-route extrapolation was used, consistent with EPA Region 6 guidance (EPA, 2004). This may result in an over- or underestimation of risk depending on chemical-specific toxicological characteristics.

In some cases, risk estimates were not developed for chemicals lacking toxicity data or dermal absorption factors. This may potentially result in an underestimation of risk. EPA (2001b) states that there is too little data to extrapolate a reasonable default value for the dermal absorption fraction, and as an interim method, dermal exposure to chemicals lacking data should be treated qualitatively. Dermal absorption values were not available for any of the COPCs. In lieu of EPA-recommended, chemical-specific values, the remaining COPCs were not evaluated quantitatively for the dermal exposure pathway.

C1.7 Conclusions

The exposure pathways quantified for occupational workers were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The COPCs in TA-50-37, Room 117 CSU that were evaluated quantitatively for noncarcinogenic effects were ethylbenzene, hexane (a tentatively identified compound), xylenes (total), and barium. The COPC in Room 117 evaluated quantitatively for carcinogenic risk is chromium. The noncarcinogenic HI for Room 117 is 15. This HI was calculated assuming immediate vaporization of VOCs and maintenance of that concentration for the entire 30 year exposure duration. This assumption is highly conservative in that VOCs vaporize at different rates; no building ventilation is accounted for;

and volatilization is continuous, whereas workers are only present at certain hours of the day. Therefore, the noncarcinogenic HI due to the inhalation of VOCs exposure pathway, is highly overestimated. Using a more reasonable assumption is that VOCs vaporize over time, the inhalation HIs were adjusted by a factor of 365 days to produce an HI of 0.041.

Because toxicity values are not available, VOCs were not evaluated for carcinogenic risk. The carcinogenic risk for Room 117 was 5.0E-05 due to chromium. This risk is within the acceptable 10^{-6} to 10^{-4} range of risks specified by 40 CFR §300.430.

The estimated concentration of lead in blood of the worker and the fetus are well below the goal of 10 µg/dL specified in EPA guidance (EPA, 1986 and 2003) with 95 percent confidence. Based on this assessment, the potential risk to a future worker in the TA-50-37, Room 117 from exposure to lead on surfaces is below the applicable criteria specified in EPA guidance (EPA, 1986).

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Table C1.1: Analytical Results for TA-50-37, Room 117

SAMPLE	HEXANE[a]	BARIUM	CHROMIUM	LEAD	2-BUTANONE	4-METHYL-2-PENTANONE	ACETONE	CARBON DISULFIDE	ETHYLBENZENE	METHYLENE CHLORIDE	TETRACHLOROETHENE	TRICHLOROETHENE	XYLENES (TOTAL)
Room 117 (ug/100cm^2):													
117B-01	***18 Q***	***8.3 B***	***14.2***	***2.8 B***	10 U	***0.95 J***	***12 JB***	2.5 U	***0.66 J***	***4 J***	***0.53***	***0.67 J***	***5.6 J***
117B-02		***1.2 B***	0.5 U	5 U									
117B-03		***0.49 B***	0.5 U	5 U									
117B-04		***0.62 B***	0.5 U	5 U									
117B-05		***3.4 B***	***0.19 B***	5 U									
117B-06	***22 Q***	***5.1 B***	***1.3***	***4 B***	10 U	10 U	***8 JB***	2.5 U	***0.47 J***	***4.3 J***	***0.56***	***0.89 J***	***3.6 J***
117B-07		***0.51 B***	0.5 U	5 U	***48***	10 U	***18 JB***	***1.7 J***	2.5 U	***5.8***	2.5 U	***0.63 J***	5 U
Number of Samples	7	7	7	7	3	3	3	3	3	3	3	3	3
Number of Detects	2	7	3	2	1	1	3	1	2	3	2	3	2
Frequency of Detection	29%	100%	43%	29%	33%	33%	100%	33%	67%	100%	67%	100%	67%
Minimum Detect	18 Q	0.49 B	0.19 B	2.8 B	48	0.95 J	8 J	1.7 J	0.47 J	4.0 J	0.53	0.63 J	3.6 J
Maximum Detect	22 Q	8.3 B	14.2	4.0 B	48	0.95 J	18 J	1.7 J	0.66 J	5.8	0.56	0.89 J	5.6 J
Average	---	2.8	2.5	4.5	22.7	7.0	12.7	2.2	1.2	4.7	1.2	0.73	4.7
Standard Deviation	---	3.0	5.2	0.9	21.9	5.2	5.0	0.46	1.1	1.0	1.1	0.14	1.0

Notes:

J = Estimated result. Result is less than RL.

B = (Inorganics) Estimated result. Result is less than RL.

B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Chemical was not detected. Value shown is one-half the reporting limit.

Q = Result was quantitated agains the response factor of a calibration standard.

ug/100cm2 = Micrograms per 100 square centimeters

(a) Chemical is a tentatively identified compound (TIC).

Table C1.2 Chemicals of Potential Concern for Room 117

CAS Number	Parameter	Minimum Concentration[a]		Maximum Concentration[b]		Units	Location of Maximum Concentration	Detection Frequency[c]	Range of Reporting Limits (min-max)	Background Value[d]	COPC?
Method 6010B - Metals											
7440-39-3	Barium	0.49	B	8.3	B	ug/100cm^2	117B-01	7/7	20-20	n/a	Yes
7440-47-3	Chromium	0.19	B	14.2		ug/100cm^2	117B-01	3/7	1.0-1.0	n/a	Yes
7439-92-1	Lead	2.8	B	4.0	B	ug/100cm^2	117B-06	2/7	10-10	n/a	Yes
Method 8260B - Volatile Organic Chemicals (VOCs)[f]											
78-93-3	2-Butanone	48		48		ug/100cm^2	117B-07	1/3	20-20	n/a	No[e]
108-10-1	4-Methyl-2-pentanone	0.95	J	0.95	J	ug/100cm^2	117B-01	1/3	20-20	n/a	No[e]
67-64-1	Acetone	8.0	JB	18	JB	ug/100cm^2	117B-07	3/3	20-20	n/a	No[e]
75-15-0	Carbon disulfide	1.7	J	1.7	J	ug/100cm^2	117B-07	1/3	5.0-5.0	n/a	No[e]
100-41-4	Ethylbenzene	0.47	J	0.66	J	ug/100cm^2	117B-01	2/3	5.0-5.0	n/a	Yes
75-09-2	Methylene chloride	4.0	J	5.8		ug/100cm^2	117B-07	3/3	5.0-5.0	n/a	No[e]
127-18-4	Tetrachloroethene	0.53		0.56		ug/100cm^2	117B-06	2/3	5.0-5.0	n/a	No[e]
79-01-6	Trichloroethene	0.63	J	0.89	J	ug/100cm^2	117B-06	3/3	5.0-5.0	n/a	No[e]
1330-20-7	Xylenes (total)	3.6	J	5.6	J	ug/100cm^2	117B-01	2/3	10-10	n/a	Yes

Notes:
(a) Minimum detected concentration.
(b) Maximum detected concentration.
(c) Number of detects/Number of samples
(d) Background comparison is not applicable for this risk assessment
(e) Chemical is not a COPC because all detected results are below the maximum detected value in the associated baseline and/or quality assurance/quality control samples.
(f) Hexane, a tentatively identified compound, was also detected at a maximum concentration of 22 µg/100 cm^2.
CAS = Chemical Abstracts Service
COPC = Chemical of Potential Concern
µg/100cm^2 = Micrograms per 100 square centimeters
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level. (organics)
B = (Inorganics) Estimated result. Result is less than reporting limit.
Min = Minimum
Max = Maximum

Table C1.3 Estimation of Air Concentration for Volatile Organic Chemicals Based on Wipe Sample Results and Room Dimensions

Room Dimensions (L, W, H)		Room Surface Area	Room Volume	
(ft)	(cm)	(cm^2)	(cm^3)	(m^3)
40	1219	2.47E+06	1.90E+08	1.90E+02
21	640			
8	244			
CAS Number	**Parameter**	**Maximum Swipe Content (µg/100 cm^2)**	**Room Surface Content (µg)**	**Room Air Concentration (µg/m^3)**
100-41-4	Ethylbenzene	0.66	1.63E+04	8.56E+01
100-54-3	n-Hexane	22	5.43E+05	2.85E+03
1330-20-7	Xylenes (total)	5.6	1.38E+05	7.26E+02

Table C1.9 Toxicity Values for Human Health Risk Assessment

Analyte	Oral Cancer Slope Factor (CSFo) $(mg/kg\text{-}d)^{-1}$	Air Unit Risk Factor (URF) $(\mu g/m^3)^{-1}$	Oral Reference Dose (RfDo) mg/kg-d	Inhalation Reference Conc. (RfC) mg/m^3
Volatile Organic Chemicals (Method 8260B):				
Ethylbenzene	n/a	n/a	1.0E-01 i	1.0E+00 i
Xylenes (total)	n/a	n/a	2.0E-01 i	1.0E-01 i
n-Hexane	n/a	n/a	1.1E+01 p	2.0E-01 i
Metals (Method 6010B):				
Barium	n/a	n/a	7.0E-02 i	2.5E-01 r
Chromium	n/a	1.2E-02 i	n/a	n/a

Notes:
Toxicity values were taken from EPA Region 6 Human Health Medium-Specific Screening Levels Table and are referenced as follows (EPA 2004):
i= Integrated Risk Information System (IRIS)
p= Provisional Peer-Reviewed Toxicity Values (PPRTV) Database
r= Route-to-route extrapolation
n/a = Toxicity data for this chemical are not available.
mg/kg-d = Milligrams per kilogram-day
ug/m^3 = Micrograms per cubic meter
mg/m^3 = Milligrams per cubic meter

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Table C1.11 Noncarcinogenic Hazard Index for TA-50, Building 37, Room 117

Analyte	Room 117 EPC mg/m^2	Room 117 Air EPCa mg/m3	Dermal Absorption Factor (ABS_d) unitless	Chronic Daily Intake			Noncarcinogenic Toxicity Factors			Hazard Quotient unitless
				Ingestion CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI mg/kg-d[(a)]	Ingestion RfD mg/kg-d	Dermal RfD mg/kg-d	Inhalation RfD or RfC mg/kg-d[(a)]	
Volatile Organic Chemicals (Method 8260B):										
Ethylbenzene	6.6E-02	8.6E-02	0.0E+00	5.3E-07	0.0E+00	1.7E-02	1.0E-01	1.0E-01	2.9E-01	5.8E-02
n-Hexane	2.2E+00	2.9E+00	0.0E+00	1.8E-05	0.0E+00	5.6E-01	1.1E+01	1.1E+01	5.7E-02	9.8E+00
Xylenes (total)	5.6E-01	7.3E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	2.0E-01	2.0E-01	2.9E-02	4.9E+00
Metals (Method 6010B):										
Barium	8.3E-01	n/a	0.0E+00	6.6E-06	0.0E+00	5.7E-06	7.0E-02	4.9E-03	2.5E-01	1.2E-04
Chromium	1.4E+00	n/a	0.0E+00	1.1E-05	0.0E+00	9.7E-06	n/a	n/a	n/a	n/a
									HAZARD INDEX:	**1.5E+01**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor (F_{s-m}), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG 2002
Dust Resuspension Factor (K), 1/m =	1E-05	Linsley, 1978; Royal Society, 2002
Inhalation Rate (InhR), m^3/day	20	EPA 1989

Noncarcinogenic Chronic Daily Intake:

Ingestion:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times F_{s\text{-}m}}{BW \times AT_{nc}}$$

Dermal Contact:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times ABS_d}{BW \times AT_{nc}}$$

Inhalation (Volatiles):

$$CDI\ (mg/kg\text{-}d) = \frac{EPC_a \times EF \times ED \times InhR}{}$$

Table C1.11 Noncarcinogenic Hazard Index for TA-50, Building 37, Room 117

Analyte	Room 117 EPC mg/m^2	Room 117 Air EPCa mg/m3	Dermal Absorption Factor (ABS_d) unitless	Chronic Daily Intake			Noncarcinogenic Toxicity Factors			Hazard Quotient unitless
				Ingestion CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI mg/kg-d[(a)]	Ingestion RfD mg/kg-d	Dermal RfD mg/kg-d	Inhalation RfD or RfC mg/kg-d[(a)]	
Volatile Organic Chemicals (Method 8260B):										
Ethylbenzene	6.6E-02	8.6E-02	0.0E+00	5.3E-07	0.0E+00	1.7E-02	1.0E-01	1.0E-01	2.9E-01	1.6E-04
n-Hexane	2.2E+00	2.9E+00	0.0E+00	1.8E-05	0.0E+00	5.6E-01	1.1E+01	1.1E+01	5.7E-02	2.7E-02
Xylenes (total)	5.6E-01	7.3E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	2.0E-01	2.0E-01	2.9E-02	1.3E-02
Metals (Method 6010B):										
Barium	8.3E-01	n/a	0.0E+00	6.6E-06	0.0E+00	5.7E-06	7.0E-02	4.9E-03	2.5E-01	1.2E-04
Chromium	1.4E+00	n/a	0.0E+00	1.1E-05	0.0E+00	9.7E-06	n/a	n/a	n/a	n/a
									HAZARD INDEX:	**4.1E-02**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor (F_{s-m}), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG 2002
Dust Resuspension Factor (K), 1/m =	1E-05	Linsley, 1978; Royal Society, 2002
Inhalation Rate (InhR), m^3/day	20	EPA 1989

Noncarcinogenic Chronic Daily Intake:

Ingestion:

$$\text{CDI (mg/kg-d)} = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times F_{s-m}}{BW \times AT_{nc}}$$

Dermal Contact:

$$\text{CDI (mg/kg-d)} = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times ABS_d}{BW \times AT_{nc}}$$

Inhalation (Volatiles):

$$\text{CDI (mg/kg-d)} = \frac{EPC_a \times EF \times ED \times InhR}{}$$

Table C1.12 Cumulative Carcinogenic Risk for TA-50, Building 37, Room 117

Analyte	Room 117 EPC mg/m^2	Room 117 Air EPCa mg/m^3	Dermal Absorption Factor (ABS_d) unitless	Chronic Daily Intake: Ingestion CDI mg/kg-d	Chronic Daily Intake: Dermal CDI mg/kg-d	Chronic Daily Intake: Inhalation CDI mg/kg-d[(a)]	Carcinogenic Toxicity Factors: Ingestion CSF $(mg/kg\text{-}d)^{-1}$	Carcinogenic Toxicity Factors: Dermal CSF $(mg/kg\text{-}d)^{-1}$	Carcinogenic Toxicity Factors: Inhalation CSF or URF $(mg/kg\text{-}d)^{-1}$[(a)]	Cancer Risk unitless
Volatile Organic Chemicals (Method 8260B):										
Ethylbenzene	6.6E-02	8.6E-02	0.0E+00	2.3E-07	0.0E+00	7.2E-03	n/a	n/a	n/a	n/a
n-Hexane	2.2E+00	2.9E+00	0.0E+00	7.5E-06	0.0E+00	2.4E-01	n/a	n/a	n/a	n/a
Xylenes (total)	5.6E-01	7.3E-01	0.0E+00	1.9E-06	0.0E+00	6.1E-02	n/a	n/a	n/a	n/a
Metals (Method 6010B):										
Barium	8.3E-01	n/a	0.0E+00	2.8E-06	0.0E+00	2.4E-03	n/a	n/a	n/a	n/a
Chromium	1.4E+00	n/a	0.0E+00	4.9E-06	0.0E+00	4.2E-03	n/a	n/a	1.2E-02	5.0E-05
									CARCINOGENIC RISK:	**5.0E-05**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, carcinogens (AT_c), days =	25,550	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor ($F_{s\text{-}m}$), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor ($F_{s\text{-}s}$), unitless =	0.05	WTCIATWG 2002
Conversion Factor (CvF), ug/mg =	1E+03	---
Dust Resuspension Factor (K), 1/m =	1E-05	Linsley, 1978; Royal Society, 2002
Inhalation Rate, m^3/day	20	EPA 1989

(a) For volatile chemicals, the CSF is expressed as $(mg/kg\text{-}d)^{-1}$; for nonvolatile chemicals, the value is the URF in units of $(ug/m^3)^{-1}$

Carcinogenic Chronic Daily Intake:

Ingestion:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times F_{s\text{-}m}}{BW \times AT_c}$$

Dermal Contact:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times ABS_d}{BW \times AT_c}$$

Inhalation (Volatiles):

$$CDI\ (mg/kg\text{-}d) = \frac{EPCa \times EF \times ED \times InhR}{BW \times AT_c}$$

C1.13 Parameters Used to Estimate Blood Lead Concentration in Adult Worker

Exposure Parameter	Exposure Parameter Description	Units	Parameter	Reference
Pb_{sw}	Lead concentration on wipe[(a)]	ug/cm^2	0.04	Maximum Observed
$PbB_{fetal\ goal}$	Goal for the 95th percentile fetal blood lead concentration	ug/dL	10.0	EPA 2003
PbB_o	Baseline blood concentration in absence of site exposure	ug/dL	2.2	EPA 2003[(b)]
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	EPA 2003
SF_{ing}	Ingestion Slope Factor	ug/dL per ug/day	0.04	FDA 1990; DTSC 2000
SF_{derm}	Dermal Slope Factor	ug/dL per ug/day	0.0001	DTSC 2000
SF_{inh}	Inhalation Slope Factor	ug/dL per ug/m^3	1.64	EPA 1986; DTSC 2000
ABS_d	Dermal Absorption Factor	--	0.0006	DTSC 2000
GSD	Geometric standard deviation of PbBadult	--	1.8	EPA 2003
SA_h	Surface Area (hands, adult female)	cm^2	817	EPA 2001
SA_{uex}	Surface Area (upper extremities, adult female)	cm^2	2,220	EPA 2001
EV	Exposure Events per Day	day^{-1}	2	Assumed
F_{s-s}	Fraction Transferred from Surface to Skin	--	0.05	WTCIATWG 2002
F_{s-m}	Fraction Transferred from Skin to Mouth	--	0.1	WTCIATWG 2002
K	Dust Resuspension Factor	cm^{-1}	1.0E-07	Linsley 1978; Royal Society 2002
CF	Conversion Factor	cm^3/m^3	1.E+06	--
EF	Exposure Frequency	days/yr	250	EPA 1989
AT	Averaging Time	days/yr	365	EPA 2003
Surface Swipe Model Results[(c)]				
$PbBadult = PbB_0 + [(Pbsw*(EF/AT)*((SFing*SAh*EV*Fs\text{-}s*Fs\text{-}m) + (SFderm*SAuex*EV*Fs\text{-}s*ABSd) + (SFinh*K*CF)] =$				**2.2E+00**
$PbB_{fetal} = PbB_{adult} * R_{fetal/maternal} =$				**2.0E+00**
$PbB_{fetal,\ 0.95} = PbB_{fetal} * (GSD^{1.645}) =$				**5.2E+00**
$P(PbB_{fetal} > PbB_{(fetal,goal)}$[(d)] $(\%) =$				**0.30%**

Notes:

a Swipe concentrations are reported in units of $\mu g/100cm^2$

b Upper value of plausible range reported for U.S. women ages 20-49 years.

c Equations based on Equations 1-3 in USEPA (2003)

d Probability that fetal PbB > PbBfetal,goal, assuming lognormal distribution with mean concentration

APPENDIX D
Detection Limits and Uncertainties Associated with the Analytical Data

Table D-1
Range of Reporting Limits for Verification Samples (September 2003), TA-50-37, Room 117

Analytical Method	Analyte	Minimum RL (µg/L)	Maximum RL [a] (µg/L)	EPA Region 6 MSSL (µg/L)
Total Metals (Method 6010B)	Arsenic	***10***	***10***	0.045
	Barium	200	200	2,600
	Cadmium	5.0	5.0	18
	Chromium	10	10	110
	Lead	5.0	5.0	15
	Selenium	5.0	5.0	180
	Silver	10	10	180
Mercury (Method 7470A)	Mercury	0.2	0.2	11
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	25	840
	1,1,2,2-Tetrachloroethane	***5.0***	***25***	0.055
	1,1,2-Trichloroethane	***5.0***	***25***	0.2
	1,1-Dichloroethane	5.0	25	810
	1,1-Dichloroethene	5.0	25	340
	1,2-Dichloroethane	***5.0***	***25***	0.12
	1,2-Dichloroethene (total)	10	50	61
	1,2-Dichloropropane	***5.0***	***25***	0.16
	2-Butanone	20	100	7,100
	2-Hexanone	20	100	n/a
	4-Methyl-2-pentanone	20	100	2,000
	Acetone	20	100	33,000
	Benzene	***5.0***	***25***	0.35
	Bromodichloromethane	***5.0***	***25***	0.18
	Bromoform	5.0	25	8.5
	Bromomethane	***10***	***50***	8.7
	Carbon disulfide	5.0	25	1,000
	Carbon tetrachloride	***5.0***	***25***	0.17
	Chlorobenzene	5.0	25	110
	Chloroethane	***10***	***50***	3.9
	Chloroform	5.0	25	75
	Chloromethane	***10***	***50***	1.5
	cis-1,3-Dichloropropene	***5.0***	***25***	0.4
	Dibromochloromethane	***5.0***	***25***	0.13
	Ethylbenzene	5.0	25	1,300
	Methylene chloride	***5.0***	***25***	4.3
	Styrene	5.0	25	1,600
	Tetrachloroethene	***5.0***	***25***	0.1
	Toluene	5.0	25	720
	trans-1,3-Dichloropropene	***5.0***	***25***	0.4
	Trichloroethene	***5.0***	***25***	0.028
	Vinyl chloride	***5.0***	***25***	0.043
	Xylenes (total)	10	50	200
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	***10***	***100***	8.2
	1,2-Dichlorobenzene	10	100	61
	1,3-Dichlorobenzene	10	100	18
Semivolatile Organic Compounds (Method 8270C)	1,4-Dichlorobenzene	***10***	***100***	0.47
	2,2'-oxybis(1-Chloropropane)	10	100	n/a
	2,4,5-Trichlorophenol	10	100	3,700
	2,4,6-Trichlorophenol	***10***	***100***	6.1
	2,4-Dichlorophenol	10	100	110
	2,4-Dimethylphenol	10	100	730
	2,4-Dinitrophenol	50	500	73
	2,4-Dinitrotoluene	10	100	73
	2,6-Dinitrotoluene	10	100	37
	2-Chloronaphthalene	10	100	490
	2-Chlorophenol	10	100	30
	2-Methylnaphthalene	10	100	n/a
	2-Methylphenol	10	100	1,800
	2-Nitroaniline	***50***	***500***	1.1
	2-Nitrophenol	10	100	n/a
	3,3'-Dichlorobenzidine	***50***	***500***	0.15
	3-Nitroaniline	50	500	n/a
	4,6-Dinitro-2-methylphenol	50	500	n/a
	4-Bromophenyl phenyl ether	10	100	n/a
	4-Chloro-3-methylphenol	10	100	n/a
	4-Chloroaniline	10	100	150
	4-Chlorophenyl phenyl ether	10	100	n/a
	4-Methylphenol	20	200	180
	4-Nitroaniline	50	500	n/a
	4-Nitrophenol	50	500	290
	Acenaphthene	10	100	370
	Acenaphthylene	10	100	n/a
	Anthracene	10	100	1,800
	Benzo(a)anthracene	***10***	***100***	0.092
	Benzo(a)pyrene	***10***	***100***	0.0092
	Benzo(b)fluoranthene	***10***	***100***	0.092
	Benzo(g,h,i)perylene	10	100	n/a
	Benzo(k)fluoranthene	***10***	***100***	0.92
	Bis(2-chloroethoxy)methane	10	100	n/a
	Bis(2-chloroethyl)ether	***10***	***100***	0.0098
	Bis(2-ethylhexyl)phthalate	***10***	***100***	4.8
	Butyl benzyl phthalate	10	100	7,300
	Carbazole	***10***	***100***	3.4
	Chrysene	***10***	***100***	9.2
	Dibenz(a,h)anthracene	***10***	***100***	0.0092
	Dibenzofuran	10	100	12
	Diethyl phthalate	10	100	29,000
	Dimethyl phthalate	10	100	370,000
	Di-n-butyl phthalate	10	100	3,700
Semivolatile Organic Compounds (Method 8270C)	Di-n-octyl phthalate	10	100	1,500
	Fluoranthene	10	100	1,500
	Fluorene	10	100	240
	Hexachlorobenzene	***10***	***100***	0.042
	Hexachlorobutadiene	***10***	***100***	0.86
	Hexachlorocyclopentadiene	50	500	220
	Hexachloroethane	***10***	***100***	4.8
	Indeno(1,2,3-cd)pyrene	***10***	***100***	0.092
	Isophorone	10	100	71
	Naphthalene	***10***	***100***	6.2
	Nitrobenzene	***10***	***100***	3.4
	N-Nitrosodi-n-propylamine	***10***	***100***	0.0096
	N-nitrosodiphenylamine	10	100	14
	Pentachlorophenol	***50***	***500***	0.56
	Phenanthrene	10	100	n/a
	Phenol	10	100	11,000
	Pyrene	10	100	180

a. Results for diluted and undiluted samples were provided by the laboratory.

RL = Reporting limit. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^{0}) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/L = Micrograms per liter
MSSL = Medium Specific Screening Level
EPA = U.S. Environmental Protection Agency
n/a = Not available

Table D-2
Range of Reporting Limits for Swipe Samples (April 2004), TA-50-37, Room 117

Analytical Method	Analyte	Minimum RL (µg/100 cm^2)	Maximum RL (µg/100 cm^2)
Polychlorinated Biphenyls (Method 8082)	Aroclor 1016	1.0	1.0
	Aroclor 1221	1.0	1.0
	Aroclor 1232	1.0	1.0
	Aroclor 1242	1.0	1.0
	Aroclor 1248	1.0	1.0
	Aroclor 1254	1.0	1.0
	Aroclor 1260	1.0	1.0
	Aroclor 1262	1.0	1.0
	Aroclor 1268	1.0	1.0
Total Metals (Method 6010B)	Arsenic	30	30
	Barium	20	20
	Cadmium	0.5	0.5
	Chromium	1.0	1.0
	Lead	10	10
	Selenium	25	25
	Silver	1.0	1.0
Mercury (Method 7471A)	Mercury	0.02	0.02
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	5.0
	1,1,2,2-Tetrachloroethane	5.0	5.0
	1,1,2-Trichloroethane	5.0	5.0
	1,1-Dichloroethane	5.0	5.0
	1,1-Dichloroethene	5.0	5.0
	1,2-Dichloroethane	5.0	5.0
	1,2-Dichloroethene (Total)	10	10
	1,2-Dichloropropane	5.0	5.0
	2-Butanone	20	20
	2-Hexanone	20	20
	4-Methyl-2-Pentanone	20	20
	Acetone	20	20
	Benzene	5.0	5.0
	Bromodichloromethane	5.0	5.0
	Bromoform	5.0	5.0
	Bromomethane	10	10
	Carbon Disulfide	5.0	5.0
	Carbon Tetrachloride	5.0	5.0
	Chlorobenzene	5.0	5.0
	Chloroethane	10	10
	Chloroform	5.0	5.0
	Chloromethane	10	10
	Cis-1,3-Dichloropropene	5.0	5.0
	Dibromochloromethane	5.0	5.0
	Ethylbenzene	5.0	5.0
	Methylene Chloride	5.0	5.0
	Styrene	5.0	5.0
	Tetrachloroethene	5.0	5.0
	Toluene	5.0	5.0
Volatile Organic Compounds (Method 8260B)	Trans-1,3-Dichloropropene	5.0	5.0
	Trichloroethene	5.0	5.0
	Vinyl Chloride	5.0	5.0
	Xylenes (Total)	10	10
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	10	10
	1,2-Dichlorobenzene	10	10
	1,3-Dichlorobenzene	10	10
	1,4-Dichlorobenzene	10	10
	2,2'-Oxybis(1-Chloropropane)	10	10
	2,4,5-Trichlorophenol	10	10
	2,4,6-Trichlorophenol	10	10
	2,4-Dichlorophenol	10	10
	2,4-Dimethylphenol	10	10
	2,4-Dinitrophenol	50	50
	2,4-Dinitrotoluene	10	10
	2,6-Dinitrotoluene	10	10
	2-Chloronaphthalene	10	10
	2-Chlorophenol	10	10
	2-Methylnaphthalene	10	10
	2-Methylphenol	10	10
	2-Nitroaniline	50	50
	2-Nitrophenol	10	10
	3,3'-Dichlorobenzidine	50	50
	3-Nitroaniline	50	50
	4,6-Dinitro-2-Methylphenol	50	50
	4-Bromophenyl Phenyl Ether	10	10
	4-Chloro-3-Methylphenol	10	10
	4-Chloroaniline	10	10
	4-Chlorophenyl Phenyl Ether	10	10
	4-Methylphenol	20	20
	4-Nitroaniline	50	50
	4-Nitrophenol	50	50
	Acenaphthene	10	10
	Acenaphthylene	10	10
	Anthracene	10	10
	Benzo(A)Anthracene	10	10
	Benzo(A)Pyrene	10	10
	Benzo(B)Fluoranthene	10	10
	Benzo(G,H,I)Perylene	10	10
	Benzo(K)Fluoranthene	10	10
	Bis(2-Chloroethoxy)Methane	10	10
	Bis(2-Chloroethyl)Ether	10	10
	Bis(2-Ethylhexyl)Phthalate	10	10
	Butyl Benzyl Phthalate	10	10
	Carbazole	10	10
	Chrysene	10	10
Semivolatile Organic Compounds (Method 8270C)	Dibenzo(A,H)Anthracene	10	10
	Dibenzofuran	10	10
	Diethyl Phthalate	10	10
	Dimethyl Phthalate	10	10
	Di-N-Butyl Phthalate	10	10
	Di-N-Octyl Phthalate	10	10
	Fluoranthene	10	10
	Fluorene	10	10
	Hexachlorobenzene	10	10
	Hexachlorobutadiene	10	10
	Hexachlorocyclopentadiene	50	50
	Hexachloroethane	10	10
	Indeno(1,2,3-Cd)Pyrene	10	10
	Isophorone	10	10
	Naphthalene	10	10
	Nitrobenzene	10	10
	N-Nitrosodi-N-Propylamine	10	10
	N-Nitrosodiphenylamine	10	10
	Pentachlorophenol	50	50
	Phenanthrene	10	10
	Phenol	10	10
	Pyrene	10	10

RL = Reporting limit. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^n) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/100 cm^2 = Micrograms per 100 square centimeters

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37, Interim Status Container Storage Unit, Rooms 115 and 118

Revision 0.0

LA-UR-04-5182
August 2004

Prepared For:
Risk Reduction and Environmental Stewardship Division,
Solid Waste Regulatory Compliance Group
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37, Interim Status Container Storage Unit, Rooms 115 and 118

Revision 0.0

LA-UR-04-5182
August 2004

Facility ID No.:	**NM0890010515**
Facility Name:	**Los Alamos National Laboratory**
Legal Owner:	**U.S. Department of Energy**
Legal Operators:	**U.S. Department of Energy** **Los Alamos Area Office** **528 35th Street** **Los Alamos, New Mexico 87544** **University of California** **P.O. Box 1663** **Los Alamos, New Mexico 87544**
Contact Person:	**Edwin L. Wilmot** **Manager, Office of Los Alamos Site Operations** **U.S. Department of Energy** **Albuquerque Operations** **Owner/Operator**

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D	Detection Limits and Uncertainties Associated with the Analytical Data

LIST OF ACRONYMS/ABBREVIATIONS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CAI	Controlled Air Incinerator
CFR	Code of Federal Regulations
cm^2	square centimeters
COPC	contaminant of potential concern
CSU	container storage unit
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
ft	feet/foot
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
LANL	Los Alamos National Laboratory
MSSL	Medium-Specific Screening Levels
NIOSH	National Institute of Occupational Safety and Health
NMED	New Mexico Environment Department
PCB	polychlorinated biphenyl
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
SVOC	semi-volatile organic compound
SW-846	*"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"*
SWRC	Solid Waste Regulatory Compliance Group
TA	technical area
WTCIATWG	World Trade Center Indoor Air Taskforce Working Group

EXECUTIVE SUMMARY

This Closure Certification Report describes the activities implemented to clean-close the Technical Area (TA) 50, Building 37 (TA-50-37) Interim Status Container Storage Unit (CSU) at Los Alamos National Laboratory (LANL). Closure activities were implemented in accordance with the procedures outlined in the following documents:

- *Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1, Room 59 and TA-50-37*, LA-UR-03-5409 (LANL, 2003), hereinafter referred to as the Closure Plan.
- Vigil-Holterman, Luciana, Letter to Mr. Steve Jetter, Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA-50-37), Los Alamos National Laboratory (LANL), February 3, 2003.

The TA-50-37, Interim Status CSU in Rooms 115 and 118 was decontaminated and sampled for total metals, semi-volatile organic compounds, volatile organic compounds, and polychlorinated biphenyls (Room 115 only) to verify clean closure in accordance with at least one of the following criteria as specified in Section 3.4.2 of the Closure Plan:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.
2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Tables ES-1 and ES-2 provide a summary of the constituents detected during verification sampling of Rooms 115 and 118, respectively. Each constituent was compared to the results of blank/baseline samples and/or the U.S. Environmental Protection Agency Region 6.0 medium specific screening levels to demonstrate closure in accordance with criteria 2 or 3 as listed

above. Those detected constituents that could not meet criteria 2 or 3 were used to identify locations for the collection of swipe samples. Swipe samples were collected because the analytical results from verification sampling (wash water samples) could not be related to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorption) to an occupational worker (to demonstrate closure in accordance with criterion 4). Tables ES-3 and ES-4 provide a summary of the swipe sampling results. The swipe sampling results were also compared to blank/baseline sample results to identify those detections and subsequent locations that required further evaluation during risk assessment. Table ES-5 summarizes the results of the risk assessment.

Based upon the results of the risk assessment provided in Table ES-5 and the demonstration of closure summarized in Tables ES-1, ES-2, ES-3, and ES-4, the TA-50-37 Interim Status CSU in Rooms 115 and 118 is clean closed in accordance with the Closure Plan.

CLOSURE CERTIFICATION REPORT
Technical Area 50, Building 37, Container Storage Unit, Rooms 115 and 118

1.0 INTRODUCTION

The information provided in this Closure Certification Report is submitted to describe the closure activities implemented to clean-close the Technical Area (TA) 50, Building 37 (TA-50-37), Interim Status container storage unit (CSU) at the Los Alamos National Laboratory (LANL). These closure activities will minimize the need for further maintenance, preclude the release of hazardous constituents to environmental media, and be protective of human health in accordance with the closure performance standards specified in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC) (incorporating Code of Federal Regulations [CFR}, Title 40 §265.111), revised October 1, 2003.

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The closure activities described in this report were implemented in accordance with the procedures outlined in the following documents:

- *Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1, Room 59 and TA-50-37*, LA-UR-03-5409 (LANL, 2003), hereinafter referred to as the Closure Plan.
- Vigil-Holterman, Luciana, Letter to Mr. Steve Jetter, Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL), February 3, 2003.

The Closure Plan was submitted to the New Mexico Environment Department (NMED) in August 2003. This Closure Certification Report addresses only the closure activities implemented at TA-50-37, Rooms 115 and 118. A separate closure certification report will be submitted for TA-50-1, Room 59.

1.1 Background

TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south (Figures 1-1 and 1-2). The TA-50-37 Interim Status CSU is located in a two-story building that contains offices, laboratories, two process bays, an egress bay, and a mechanical equipment

area. The CSU consist of two storage locations in Rooms 115 and 118 on the first floor of the building as indicated on Figure 1-3.

The TA-50-37 CSUs were used for mixed waste storage of 5-, 30-, 55-, 83-, 85-, and 110-gallon drums/containers and standard waste boxes in support of the Waste Characterization, Reduction and Repackaging Facility at TA-50-69 and the Radioactive Material Research Operations and Demonstration Facility at TA-50-37. The maximum total inventory of solid waste in storage at any time in the CSUs has been estimated at 220 gallons for Room 115 and 5,500 gallons for Room 118.

Building TA-50-37 also housed the Controlled Air Incinerator (CAI) associated with the Treatment Development Facility at LANL. This incinerator received a Toxic Substances Control Act incineration permit in 1984 and a Resource Conservation and Recovery Act operating permit for hazardous waste in 1989 and was operational up to 1995. In 1996, closure of the CAI was initiated in accordance with an approved NMED closure plan.

1.2 Purpose

The purpose of this Closure Certification Report is to document the implementation of closure activities for the TA-50-37 CSU as described in the Closure Plan. Additionally, this report presents the independent registered professional engineer's closure certification as required by 20.4.1.600 NMAC, (incorporating 40 CFR §265.115), revised October 1, 2003.

2.0 PERFORMANCE OF CLOSURE AT TA-50-37, ROOM 115

The information provided in this section documents the implementation and completion of closure activities for Room 115. Closure was performed in accordance with procedures outlined in the *Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1, Room 59 and TA-50-37,* LA-UR-03-5409 (LANL, 2003), hereinafter referred to as the Closure Plan and provided in Appendix A. The operating record, field logbook, analytical data, chain of custody documentation, and decontamination waste disposal records in support of the completed closure activities at the TA-50-37 CSU will be maintained by the Los Alamos National Laboratory (LANL) Solid Waste Regulatory Compliance (SWRC) Group and the certifying engineer.

2.1 Description

Room 115 is located in the center of TA-50-37, measures 10-feet (ft) by 21-ft, and is internal to Room 114. The room is accessible from Room 112 through a dressing room on the North Side and through two doorways on the south wall. The doors that connect Room 115, 112, and 114 have a berm at the entrance. A stainless steel ventilation hood that had been used for opening and closing drums is present on the north wall of the room.

Mr. Steve Jetter, of the New Mexico Environment Department (NMED), Hazardous Waste Bureau, and representatives from LANL SWRC Group toured TA-50-37 on January 21, 2003 to identify appropriate sample locations for closure of Room 115. These sample locations are shown on Figures 2-1 and 2-2 as identified in a letter from Luciana Vigil-Holterman to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* on February 3, 2003 (Appendix B).

2.2 Pre-Closure Inspection

Room 115 was inspected by LANL and contract personnel prior to the commencement of closure activities. Figures 2-3 through 2-5 provide a photographic record of the pre-closure inspection. All equipment and waste debris were removed from the area prior to the inspection. The pre-closure inspection included examining the floor, walls, and equipment surfaces for cracks, cleanliness, and abnormal discoloration that might indicate historical spills or problems with containment of decontamination wash water. Figures 2-3, 2-4, and 2-5 show small nicks

and scuff marks at various locations along the floor of the room. These nicks and scuff marks are most likely the result of workers sliding or dropping heavy equipment or waste containers over the floor surfaces during daily operations. Because the nicks and scuff marks are small and widely distributed, the inspection team and observing engineer determined that that the defects would not compromise the integrity of the floor for decontamination.

Potential safety hazards were identified during the pre-closure inspection include; muscular strain from lifting 5-gallon buckets filled with solution during decontamination and verification activities; thermal exhaustion of workers wearing personal protective equipment (PPE) over an extended period of time; and tripping or falling on wet surfaces. It was noted that the proximity of electrical outlets to water posed an electrical shock hazard. Also noted was the fact that the TA-50-37 site is a HAZWOPER site. All potential hazards were addressed in accordance with Site-Specific Health and Safety Plan No. 03-12 and Addendum No. 1 for the CSU closure activities at TA-50-37 (Shaw Environmental, 2003 and 2004).

2.3 Closure Activities

Closure activities in Room 115 consisted of decontamination, verification sampling, and swipe sampling of the floor and walls to a height of 4 ft. The activities were commenced on September 8, 2003 and completed on April 15, 2004. The following sections provide a detailed description of the steps taken to decontaminate Room 115 and collect the necessary samples to verify clean closure as described in the Closure Plan.

2.3.1 Decontamination

Decontamination of Room 115 was carried out in accordance with Section 3.3.3 of the Closure Plan. Figures 2-6 through 2-10 provide a photographic record. Commencement of decontamination activities at Room 115 included the removal of dust and debris using brushes, brooms, and a dust pan. Additional cleaning was performed using a vacuum to remove fine particulate matter. After removal of the solid materials, all four walls and adjacent equipment were washed down using mops, sponges, cheesecloth, and/or other absorbent materials rinsed in a wash water solution of Alconox and tap water contained in a 5-gallon bucket. The mops and other absorbent materials were rinsed frequently to minimize reassociation of contaminants with the previously cleaned surfaces. The final surfaces decontaminated consisted of the entire floor and associated containment berms. Decontamination wash down of the room was

conducted twice to ensure removal of residual material, if any, resulting from storage activities. The wash water for each wash down was contained, collected, removed, and transferred to a 55-gallon drum for storage pending the results of analysis. Figures 2-9 and 2-10 show the appearance of Room 115 after decontamination was completed.

2.3.2 Verification Sample Collection

Verification of clean closure was conducted using wash water sampling as described in Section 3.4 of the Closure Plan. This included wash/wipe down of discrete surfaces with a sponge immersed in a solution of Alconox and tap water as shown on Figure 2-11. To prevent cross contamination of samples, gloves were changed prior to the collection of each surface verification wash down and subsequent sample collection. The following steps were followed for each surface:

1. A clean 5-gallon bucket containing approximately 2 gallons of water, Alconox, and a sponge was placed near the area.
2. The sponge was submerged into the bucket and squeezed out.
3. The surface was swiped down using the sponge.
4. Steps 2 and 3 were repeated.
5. The wash water solution was sampled by pouring the water into the sample containers.
6. The sample containers were labeled and placed in a cooler pending shipment to the laboratory for analysis.
7. Steps 1-6 were then repeated.

Table 2-1 identifies the verification samples collected for closure of Room 115 and includes the sample types, locations, descriptions, and requested analysis.

2.3.2.1 Baseline Samples

Three baseline (i.e., equipment blank) samples were collected to determine if the materials that were used during the closure and/or the environment contributed any contaminants to the samples. The baseline samples were collected from a five-gallon bucket of Alconox and tap water solution that was allowed to sit in Room 115 with a pair of gloves, sponge, cheesecloth, and a mop head overnight. Table 2-1 includes a list of all baseline samples collected and the requested analysis.

2.3.2.2 Quality Assurance/Quality Control Samples

The requisite quality assurance (QA)/quality control (QC) samples were prepared and/or collected in accordance with Table 10 of the Closure Plan. Trip blanks were prepared for each of the sample shipping coolers, a field blank was collected for each day of verification sampling, and a field duplicate sample was collected from the floor. Table 2-1 identifies the QA/QC samples collected.

2.3.2.3 Waste Characterization Samples

A sample of the used decontamination wash water solution was collected for waste characterization of the decontamination wash water, personal protective equipment (PPE), sponges, cheesecloth, and other waste items generated during closure activities. Section 2.7 provides additional details regarding waste management.

2.3.3 Swipe Sample Collection

Analytical results from the verification samples collected in September 2003 indicated that several of the CSU surfaces could not meet the criteria specified for clean closure (Section 2.5). The analytical data from these locations was not directly relatable to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorptions) to an occupational worker. The data was instead used to identify locations where subsequent swipe samples were collected. The swipe samples were collected from each location, on April 15, 2004. Figures 2-12 through 2-14 provide a photographic record of the swipe sampling. Table 2-2 identifies the swipe samples collected from Room 115 and includes the sample types, locations, descriptions, and requested analysis. Table 2-3 identifies the collection medium/solvent and materials used.

The samples were collected using the *National Institute of Occupation Safety and Health (NIOSH) Manual of Analytical Methods* (National Institute of Occupational Safety and Health) [NIOSH], 1996) for collection of lead swipe samples. This method included wiping a 100 square centimeters (cm^2) area (identified using a template) at each discrete location with a swipe wetted with an appropriate collection media for the analytes to be sampled. The following steps were followed for each surface:

1. Don a clean pair of gloves.

2. Remove the swipe from its sample jar and/or packaging.
3. Fold the swipe into fourths.
4. Wipe the surface to be sampled with firm pressure using an overlapping "S" pattern to cover the entire surface area with horizontal strokes (approximately 100 cm^2).
5. Fold the swipe, exposed side in, and place into a clean hard-walled sample container.
6. Seal the container and label.
7. Repeat steps 2 - 6 for the other analytes to be sampled for at that location.
8. Discard gloves.

2.3.3.1 Baseline Samples

The swipe samples included the collection of two sets of baseline samples to determine if the materials contributed any contaminants to the samples. The baseline samples were collected by handling the swipes wearing Nitril gloves and wiping the swipe on the sample collection equipment. The swipe was then packaged in a container and labeled for analysis. Table 2-2 lists the baseline samples collected during swipe sampling.

2.3.3.2 Waste Samples

There were no waste samples collected during swipe sampling.

2.3.3.3 Quality Assurance/Quality Control Samples

The requisite QA/QC samples were prepared and/or collected in accordance with Table 10 of the Closure Plan (Appendix A). Trip blanks were prepared for each of the sample shipping coolers and a field duplicate sample was collected from the floor. Table 2-2 identifies the QA/QC samples collected.

2.4 Deviations from the Closure Plan

There were no closure plan modifications or amendments as described in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC) (incorporating Code of Federal Regulations, Title 40 §265.112(c)), revised October 1, 2003, and Section 1.4 of the Closure Plan. However, there were some procedural refinements associated with decontamination and the collection of samples. The following sections provide a detailed description all deviations from the Closure Plan as it was submitted to the NMED in August 2003.

2.4.1 Dust and Debris

The pre-closure inspection identified a significant amount of loose dust and debris on the walls and floors of Room 115. Removal of these items was not identified in the Closure Plan. Upon completion of the pre-closure inspection, the decontamination procedure was refined to include the use of brooms, brushes, dustpans, and a vacuum to remove all of the dust and debris from the room prior to decontamination wash down. This was accomplished as described in Section 2.3.1. The material removed was characterized for waste disposal using the decontamination wash water results as described in Section 2.7.

2.4.2 Baseline Verification Samples

The collection of baseline samples is discussed in Section 3.4.1 of the Closure Plan. This section specifies that a baseline sample will be collected from the verification solution prior to its use for the verification wipe down. This seemed excessive given the number of discrete sample locations associated with the verification of clean closure. LANL and contract personnel determined that three baseline samples of unused verification wash water solution would be sufficient for comparison to all of the verification samples collected.

2.4.3 Swipe Samples

Verification samples collected from the wash water in September 2003 were not sufficient to demonstrate clean closure in accordance with the criteria specified in the Closure Plan (Appendix A). In addition, the analytical data from these samples was not sufficient to support an alternative demonstration of closure using risk assessment. The Closure Plan did not specify procedures or methods for the collection of samples capable of providing data directly relatable to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorptions) to an occupational worker. So, the sampling procedures in the Closure Plan were refined to include the collection of swipe samples. Swipe samples were collected using the *National Institute of Occupational Safety and Health Manual of Analytical Methods* (NIOSH, 1996) for collection of lead swipe samples.

2.4.4 Performance of Risk Assessment

The Closure Plan did not specify procedures or methods for the performance of a human health risk assessment (HHRA) (criterion 4) using swipe sample results that exceeded baseline or QA/QC sample results. The HHRA was conducted for the maximum detected concentration of

each contaminant using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the U.S. Environmental Protection Agency (EPA) Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risks to occupational workers from exposure to contaminated indoor surfaces. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The results of this risk assessment are summarized in Section 4.0 of this Closure Certification Report and detailed in Appendix C.

2.5 Analytical Data

2.5.1 Verification Sampling Results

The samples collected for verification were analyzed by Severn Trent Laboratories, Inc., in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, (*SW-846)* (EPA, 1986a). Table 2-4 provides a summary of the analytical results for the verification and QA/QC samples collected on September 8, 2003.

Clean closure of Room 115 is demonstrated in accordance with at least one of the following criteria as shown in the logic diagram provided as Figure 2-15 and specified in Section 3.4.2 of the Closure Plan:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health and the environment based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

As indicated in Table 2-4, several of the surfaces in Room 115 had analytical results that indicated the detection of metals, semi-volatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). For the purpose of clean closure, it was assumed that these contaminants were the result of storage activities at the TA-50-37 CSU.

To demonstrate clean closure for these surfaces in accordance with criterion 2, each of the detected constituents was compared against the analytical results from baseline samples and QA/QC samples. This comparison was used to eliminate areas from additional sampling requirements by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling and/or environment contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 2-5 provides a comparison of the detected constituents against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion 3. Section 3.5 of the Closure Plan describes the proposed alternative demonstrations of closure including comparison of the verification analytical data to the EPA Region 6 Human Health Medium Specific Screening Levels (MSSL) for drinking water. Constituents at detected levels below the MSSL met criterion 3. Surfaces with constituents detected above baseline, QA/QC, and MSSLs underwent swipe sampling to allow for a risk based analysis in accordance with criterion 4.

2.5.2 Swipe Sampling Results

Swipe samples were analyzed by Severn Trent Laboratories, Inc., in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of SW-846 (EPA, 1986a). Table 2-6 provides a summary of the analytical results for the swipe samples that were collected on April 15, 2004. The results from swipe sampling were used to demonstrate clean closure in accordance with criteria 2 or 4 as specified in Section 2.5.1 and Figure 2-15.

As indicated in Table 2-6, several of the surfaces had analytical results that indicated detections for metal, SVOC, and PCB contamination. To demonstrate clean closure for these surfaces in accordance with criterion 2, each of the detected constituents was compared against the sample results from baseline samples and QA/QC samples. This comparison was used to eliminate constituents from the HHRA by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling and/or the environment contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 2-7 provides a comparison of the detected constituents against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion 4. This demonstration includes the use of risk assessment modeling and is described in Section 4.0 of this report.

2.6 Statement of Quality Assurance/Quality Control Adequacy

QA/QC activities during the TA-50-37, Room 115 closure were conducted in accordance with Section 4.4.3 of the Closure Plan. This included the collection of QA/QC samples to assess data quality and evaluate field sampling procedures and laboratory analyses. Appendix D provides the detection limits and uncertainty associated with all of the analytical data from the sampling activities in September 2003 and April 2004. A review of the sampling procedures, shipping procedures and analytical data has determined that the analytical data related to closure are of acceptable quality and should therefore be accepted as valid

2.7 Waste Management

The decontamination and verification of Room 115 were conducted with waste minimization goals in mind. The wash water solutions generated from decontamination activites were transferred to a 55-gallon drum and stored on a secondary containment pallet pending the results of analysis. The PPE, sweepings, sponges, cheesecloth, and other sampling waste generated during closure activities were packaged into 55-gallon plastic drum liners and stored in a metal storage container pending characterization based on the results of the waste wash

water. Table 2-8 provides the analytical results for the samples collected from the wash water. Table 2-9 provides a list of the waste materials generated during closure and includes the estimated quantity, waste type, and final disposal destination.

3.0 PERFORMANCE OF CLOSURE AT TA-50-37, ROOM 118

The information provided in this section documents the implementation and completion of closure activities for the container storage unit (CSU) at Technical Area (TA) 50, Building 37 (TA-50-37), that includes Room 118. This Closure was performed in accordance with procedures outlined in the *Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1, Room 59 and TA-50-37*, LA-UR-03-5409 (LANL, 2003), hereinafter referred to as the Closure Plan and provided in Appendix A. The operating record, field logbook, analytical data, chain of custody documentation, and decontamination waste disposal records in support of the completed closure activities at the TA-50-37 CSUs will be maintained by the Los Alamos National Laboratory (LANL) Solid Waste Regulatory Compliance (SWRC) Group and the certifying engineer.

3.1 Description

Room 118 is located at the northeast end of TA-50-37 and measures 31-feet (ft) by 40-ft. The room is accessible through a roll-up door located on the west side, from double doors in Room 117 on the south wall and an exterior door on the east wall. Galvanized electrical conduit and junction boxes are attached to and run along the walls of the room at various locations. A large pipe and valve associated with the building fire suppression system are located at the southeast corner of the room with guardrails to prevent damage from forklifts. Room 118 has a recessed sump located underneath a steel plate and grate that is located in the center of the room.

Mr. Steve Jetter of the New Mexico Environment Department (NMED) Hazardous Waste Bureau and representatives from LANL SWRC Group toured TA-50-37 on January 21, 2003 to identify appropriate sample locations for closure of Room 118. These sample locations are shown on Figures 3-1 and 3-2 as identified in a letter from Luciana Vigil-Holterman to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* on February 3, 2003 (Appendix B).

3.2 Pre-Closure Inspection

Room 118 was inspected by LANL and contract personnel prior to the commencement of closure activities. Figures 3-3 through 3-5 provide a photographic record of the pre-closure inspection. All equipment and waste debris were removed from the area prior to the inspection, which included examining the floor, walls, and sump surfaces for cracks, cleanliness, and

abnormal discoloration that midnight indicate historical spills or problems with containment of decontamination wash water.

The pre-closure inspection found chipped paint and surface cracks on the concrete floor. There were several small rings with rust and/or black markings, possibly from drums or equipment that were formerly stored in the room. The potential for semi-volatile organic compound (SVOC) contamination was noted due to numerous black marks and equipment tracks possibly associated with forklift operations. A watermark on the concrete that went back to the fire water loop in the southeast corner of the room was noted. A roof leak in the middle of the room was also identified during the inspection. Some trash and debris as well as some equipment, including a desk and a spill kit, on the north side of the room were present during the inspection. The sump was bermed during the decontamination process to prevent wash water from collecting in the sump.

Potential safety hazards were identified during the pre-closure inspection include; muscular strain from lifting 5-gallon buckets filled with solution during decontamination and verification activities; thermal exhaustion of workers wearing personal protective equipment (PPE) over an extended period of time; and tripping or falling on wet surfaces. It was noted that the proximity of electrical outlets to water posed an electrical shock hazard. Also noted was the fact that the TA-50-37 site is a HAZWOPER site. All potential hazards were addressed in accordance with Site-Specific Health and Safety Plan No. 03-12 and Addendum No. 1 for the CSU closure activities at TA-50-37 (Shaw Environmental, 2003 and 2004).

3.3 Closure Activities

Closure activities in Room 118 consisted of decontaminatingverification sampling, and swipe sampling of the floor and walls to a height of 4 ft. The activities were commenced on September 15, 2003, and were completed on April 15, 2004. The following sections provide a detailed description of the steps taken to decontaminate the room and collect the necessary samples to verify clean closure as described in the Closure Plan.

3.3.1 Decontamination

Decontamination of Room 118 was carried out in accordance with Section 3.3.3 of the Closure Plan. Figures 3-3 through 3-17 provide a photographic record. Commencement of

decontamination activities at Room 118 included the removal of dust and debris using brushes, brooms, and a dust pan (Figures 3-6 and 3-7). Additional cleaning was performed using a vacuum to remove fine particulate matter. After removal of the solid materials, all four walls and adjacent equipment were washed down using mops, sponges, cheesecloth, and/or other absorbent materials to remove any potential hazardous constituents (Figures 3-8 through 3-10). The mops and other absorbent materials were rinsed frequently to minimize recontamination of contaminants with the previously cleaned surfaces. The final surfaces decontaminated consisted of the entire floor and associated containment berms. Decontamination wash down of the room was conducted twice to ensure removal of residual material, if any, resulting from storage activities. The wash water for each wash down was contained, collected, removed, and transferred to a 55-gallon drum for storage pending the results of analysis. Figure 3-11 shows the appearance of the Room 118 sump after decontamination was completed.

3.3.2 Verification Sample Collection

Verification of clean closure was conducted using wash water sampling as described in Section 3.4 of the Closure Plan. This included wash/wipe down of discrete surfaces with a sponge immersed with a solution of Alconox and tap water. To prevent cross contamination of the samples gloves were changed prior to the collection of each surface verification wash down and subsequent sample collection. The following steps were followed for each surface:

1. A clean 5-gallon bucket containing approximately 2 gallons of water, Alconox, and a sponge was placed near the area.
2. The sponge was submerged into the bucket and squeezed out.
3. The surface was wiped down using the sponge (Figure 3-12).
4. Steps 2 and 3 were repeated.
5. The wash water solution was sampled by pouring the water into the sample containers.
6. The sample containers were labeled and placed in a cooler pending shipment to the laboratory for analysis.
7. Steps 1-6 were then repeated.

Table 3-1 identifies the verification samples collected for closure of Room 118 and includes the sample types, locations, descriptions, and requested analysis.

3.3.2.1 Baseline Samples

Three baseline (i.e., equipment blank) samples were prepared to determine if the materials that were used during the closure and/or the environment contributed any contaminants to the samples. The baseline samples were collected from a five-gallon bucket that was allowed to sit within Room 118 with a pair of gloves, sponge, cheesecloth, and a mop head overnight. Table 3-1 provides a list of all baseline samples collected and the requested analyses.

3.3.2.2 Quality Assurance/Quality Control Samples

The requisite quality assurance (QA)/quality control (QC) samples were prepared and/or collected in accordance with Table 10 of the Closure Plan. Trip blanks were prepared for each of the sample shipping coolers and a field duplicate sample was collected from the floor. Table 3-1 identifies the QA/QC samples collected.

3.3.2.3 Waste Characterization Samples

A sample of the used decontamination wash water solution were collected for waste characterization of the decontamination wash water, personal protective equipment (PPE), sponges, cheesecloth, and other waste items generated during closure activities. Section 3.7 provides additional details regarding waste management.

3.3.3 Swipe Sample Collection

Analytical results from the verification samples collected in September 2003 indicated that several of the CSU surfaces could not meet the criteria specified for clean closure (Section 3.5). The analytical data from these locations was not directly relatable to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorptions) to an occupational worker. The data was instead used to identify locations where subsequent swipe samples were collected. The swipe samples were collected from each location, on April 15, 2004. Figures 3-13 through 3-15 provide a photographic record of the swipe sampling. Table 3-2 identifies the swipe samples collected from Room 118 and includes the sample types, locations, descriptions, and requested analysis. Table 3-3 identifies the collection medium/solvent and materials used.

The samples were collected using the *National Institute of Occupational Safety and Health Manual of Analytical Methods* (National Institute of Occupational Safety and Health [NIOSH], 1996) for collection of lead swipe samples. This method included wiping a 100 square

centimeters (cm^2) area (identified using a template) at each discrete location with a swipe wetted with an appropriate collection media for the analytes to be sampled. The following steps were followed for each surface:

1. Don a clean pair of gloves.
2. Remove the swipe from its sample jar and/or packaging.
3. Fold the swipe into fourths.
4. Wipe the surface to be sampled with firm pressure using an overlapping "S" pattern to cover the entire surface area with horizontal strokes (approximately 100 cm^2).
5. Fold the swipe, exposed side in, and place into a clean hard-walled sample container.
6. Seal the container and label.
7. Repeat steps 2 - 6 for the other analytes to be sampled for at that location.
8. Discard gloves.

3.3.3.1 Baseline Samples

The swipe samples included the collection of two sets of baseline samples to determine if the materials contributed any contaminants to the samples. The baseline samples were collected by handling the swipes wearing Nitril gloves and wiping the swipe on the sample collection equipment. The swipe was then packaged in a container and labeled for analysis. Table 3-2 lists the baseline samples collected during swipe sampling.

3.3.3.2 Waste Samples

There were no waste samples collected during swipe sampling.

3.3.3.3 Quality Assurance/Quality Control Sampling

The requisite quality QA/QC samples were prepared and/or collected in accordance with Table 10 of the Closure Plan (Figures 3-16 and 3-17). One trip blank was prepared for the coolers used to collect and ship the samples, a field blank was collected, and a field duplicate sample was collected from the floor. Table 3-2 identifies the QA/QC samples collected.

3.4 Deviations from the Closure Plan

There were no closure plan modifications or amendments as described in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC), (incorporating Code of

Federal Regulations, Title 40 §265.112(c)), revised October 1, 2003, and Section 1.4 of the Closure Plan. However, this closure plan did not address pre-cleaning procedures such as sweeping and vacuuming to prepare the surfaces for the decontamination and verification phase of this closure. It was presumed in the Closure Plan that all exposed surfaces within the room were essentially clean, and free of any loose solid debris or standing liquid. The following sections provide a detailed description of this deviation as it was submitted to the NMED in August 2003.

3.4.1 Dust and Debris

The pre-closure inspection identified a significant amount of loose dust and debris on the walls and floors of Room 118. Removal of these items was not identified in the closure plan. Upon completion of the pre-closure inspection, the decontamination procedure was refined to include the use of brooms, brushes, dustpans, and a vacuum to remove all of the dust and debris from the room prior to decontamination wash down. This was accomplished as described in Section 3.3.1. The material removed was characterized for waste disposed using the decontamination wash water results as described in Section 2.7.

3.4.2 Baseline Verification Samples

The collection of baseline samples is discussed in Section 3.4.1 of the Closure Plan. This section specifies that a baseline sample will be collected from the verification solution prior to its use for the verification wipe down. This seemed excessive given the number of discrete sample locations associated with the verification of clean closure. LANL and contract personnel determined that three baseline samples of unused verification wash water solution would be sufficient for comparison to all of the verification samples collected.

3.4.3 Swipe Samples

Verification samples collected from the wash water in September 2003 were not sufficient to demonstrate clean closure in accordance with the criteria specified in the Closure Plan (Appendix A). In addition, the analytical data from these samples was not sufficient to support an alternative demonstration of closure using risk assessment. The Closure Plan did not specify procedures or methods for the collection of samples capable of providing data directly relatable to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorptions) to an occupational worker. So, the sampling procedures in the Closure Plan were refined to include the collection of swipe samples. Swipe samples were collected using the *National*

Institute of Occupational Safety and Health Manual of Analytical Methods (NIOSH, 1996) for collection of lead swipe samples.

3.4.4 Risk-Based Analysis

The Closure Plan did not specify procedures or methods for the performance of a human health risk assessment (HHRA) (criterion 4) using swipe sample results that exceeded baseline or QA/QC sample results. The HHRA was conducted for the maximum detected concentration of each contaminant using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the U.S. Environmental Protection Agency (EPA) Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risks to occupational workers from exposure to contaminated indoor surfaces. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The results of this risk assessment are summarized in Section 4.0 of this Closure Certification Report and detailed in Appendix C.

3.5 Analytical Data

3.5.1 Verification Sampling Results

The samples collected for verification were analyzed by Severn Trent Laboratories, Inc., in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of *Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW-846)* (EPA, 1986b). Table 3-4 provides a summary of the analytical results for the verification, baseline, and QA/QC samples collected on September 16, 2003.

Clean closure of Room 118 is demonstrated in accordance with at least one of the following criteria as shown in the logic diagram provided as Figure 3-18 and specified in Section 3.4.2 of the Closure Plan:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health and the environment based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

As indicated in Table 3-4, several of the surfaces in Room 118 had analytical results that indicated the detection of metals and SVOC. For the purpose of clean closure, it was assumed that these contaminants were the result of storage activities at the TA-50-37 CSU.

To demonstrate clean closure for these surfaces in accordance with criterion 2, each of the detected constituents was compared against the analytical results from baseline samples and QA/QC samples. This comparison was used to eliminate areas from additional sampling requirements by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling or environment contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 3-5 provides a comparison of the detected constituents against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion 3. Section 3.5 of the Closure Plan describes the proposed alternative demonstrations of closure including comparison of the verification analytical data to the EPA Region 6 Human Health Medium Specific Screening Levels (MSSL) for drinking water. Surfaces with constituents detected at levels below the MSSL met criterion 3. Constituents at detected above baseline, QA/QC and MSSLs underwent swipe sampling to allow for a risk based analysis in accordance with criterion 4.

3.5.2 Swipe Sampling Results

Swipe samples were analyzed by Severn Trent Laboratories, Inc., in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of *SW-846* (EPA, 1986a). Table 3-6 provides a summary of the analytical results for the swipe

samples that were collected on April 15, 2004. The results fro swipe sampling were used to demonstrate clean closure in accordance with criteria 2 or 4 as specified in Section 3.5.1 and Figure 3-18. As indicated in Table 3-6, several of the surfaces had analytical results that indicated metals contamination. To demonstrate clean closure for these surfaces in accordance with criterion 2, each of the detected constituents was compared against the sample results from baseline samples and QA/QC samples. This comparison was used to eliminate constituents the HHRA by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 3-7 provides a comparison of the detected constituents against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion 4. This demonstration includes the use of risk assessment modeling and is described in Section 4.0 of this report.

3.6 Statement of Quality Assurance/Quality Control Adequacy

QA/QC activities during the TA-50-37, Room 118 closure were conducted in accordance with Section 4.4.3 of the Closure Plan. This included the collection of QA/QC samples to assess data quality and evaluate field sampling procedures and laboratory analyses. Appendix D provides the detection limits and uncertainty associated with all of the analytical data from the sampling activities in September 2003 and April 2004. A review of the sampling procedures, shipping procedures and analytical data has determined that the analytical data related to closure are of acceptable quality and should therefore be accepted as valid

3.7 Waste Management

The decontamination and verification of Room 118 was conducted with waste minimization goals in mind. The wash water solutions generated from decontamination activities were transferred to 55-gallon drums and stored on a secondary containment pallet pending the results of analysis. The PPE, sweepings, sponges, cheesecloth, and other sampling waste

generated during closure activities were packaged into 55-gallon plastic drum liners and stored in a metal storage container pending characterization based on the results of the waste wash water. Table 3-8 provides the analytical results for the samples collected from the wash water. Table 3-9 provides a list of the waste materials generated during closure and includes the estimated quantity, waste type, and final disposal destination.

4.0 RISK ASSESSMENT

A human health risk assessment (HHRA) was conducted using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the U.S. Environmental Protection Agency (EPA) Technical Review Workgroup for Lead (EPA, 2003). The HHRA, in accordance with EPA guidance (EPA, 1989) involved data evaluation and identification of contaminants of potential concern (COPC), exposure assessment, toxicity assessment, and risk characterization.

The HHRAs included an evaluation of health risks to occupational workers from exposure to the contaminated indoor surfaces of Rooms 115 and 118. The exposure assessment of an HHRA addresses how long human receptors will be exposed to chemicals in the environment, how much of the chemical they will be exposed to, and how they will be exposed. This information is expressed by factors such as ingestion rates and daily activity patterns to estimate a chemical dose, or chronic daily intake for an individual. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals in TA-50-37, Rooms 115 and 118 were ingestion, dermal, and inhalation exposure to chemicals on indoor surfaces. Exposure parameters for an adult female were used in order to quantify exposures consistently with the EPA adult lead model (EPA, 2003), which is an approach for assessing occupational health risks from lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures. The following sections describe the COPCs and results of the HHRAs for TA-50-37, Rooms 115 and 118. Details of the calculations are provided in Appendix C.

4.1 TA-50-37, Room 115

Swipe sample results from Room 115 indicated four locations/surfaces with detected residual contaminants above baseline and/or quality assurance data. These results are summarized in Table 4-1. The COPCs from these locations were evaluated quantitatively in the HHRA and include:

- 2-Methylphenol
- Bis(2-ethylhexyl)phthalate
- Butyl benzyl phthalate
- Di-n-butyl phthalate
- Hexachlorobenzene
- Phenanthrene
- Barium
- Chromium
- Aroclor 1260

The potential for adverse health effects is estimated separately for carcinogens and noncarcinogens as described in the following sections. Table 4-2 provides a summary of the HHRA results.

4.1.1 Noncarcinogenic Constituents

Unlike carcinogenic effects, noncancer health effects (e.g., developmental problems in children, kidney effects, neurological effects) are quantified assuming a threshold, or estimated level of exposure above which adverse effects are expected to occur. Noncarcinogenic risk is quantified by comparing the actual, worst-case chemical dose received by occupational workers to a level that is not expected to cause adverse effects (or, reference levels). To be protective, the health reference levels are typically 100 to 10,000 times lower than levels of exposure observed to have no adverse effects in animal studies. The ratio of actual exposure to reference levels for individual chemicals is a hazard quotient (HQ). The sum of HQs for all chemicals and exposure pathways is a hazard index (HI). HIs above unity indicate there is a potential for adverse health effects. The HI for Room 115 is 0.017. This is well below the target of 1.0

4.1.2 Carcinogenic Constituents

For chemicals that cause cancer, the assumption in risk assessment is that there are no exposures that have “zero risk.” That is, a cancer-causing chemical may produce cancer in an exposed individual at any dose (there is no threshold). Human health risks for carcinogens are quantified as a unitless probability of developing an additional cancer as a result of exposure to COPCs. Because there is potential for exposure to multiple chemicals via multiple exposure pathways, risks are summed for all chemicals and exposure pathways to produce a cumulative risk. The COPCs in Room 115 that were evaluated quantitatively for carcinogenic risk are bis(2-ethylhexyl)phthalate, hexachlorobenzene, chromium, and Aroclor 1260. The cumulative carcinogenic risk for Room 115 is 4.0E-05 (or 4×10^{-5}), which is within the acceptable 10^{-6} to

10^{-4} (one in one million to one in ten thousand) range of risks specified by 40 Code of Federal Regulations (CFR) 300.430.

4.2 TA-50-37, Room 118

Swipe sample results from TA-50-37, Room 118 indicated 29 locations with detected residual contaminants above baseline and/or quality assurance data. These results are summarized in Table 4-3. The COPCs from these locations were evaluated quantitatively in the HHRA and include:

- Barium
- Chromium
- Lead

The potential for adverse health effects is estimated separately for carcinogens, noncarcinogens, and lead as described in the following sections. Table 4-4 provides a summary of the HHRA results.

4.2.1 Noncarcinogenic Constituents

Unlike carcinogenic effects, noncancer health effects (e.g., developmental problems in children, kidney effects, neurological effects) are quantified assuming a threshold, or estimated level of exposure above which adverse effects are expected to occur. Noncarcinogenic risk is quantified by comparing the actual, worst-case chemical dose received by occupational workers to a level that is not expected to cause adverse effects (or, reference levels). To be protective, the health reference levels are typically 100 to 10,000 times lower than levels of exposure observed to have no adverse effects in animal studies. The ratio of actual exposure to reference levels for individual chemicals is an HQ. The sum of HQs for all chemicals and exposure pathways is an HI. HIs above unity indicate there is a potential for adverse health effects. The HI for Room 118 is 0.0015. This is well below the target of 1.0

4.2.2 Carcinogenic Constituents

For chemicals that cause cancer, the assumption in risk assessment is that there are no exposures that have “zero risk.” That is, a cancer-causing chemical may produce cancer in an exposed individual at any dose (there is no threshold). Human health risks for carcinogens are

quantified as a unitless probability of developing an additional cancer as a result of exposure to COPCs. Because there is potential for exposure to multiple chemicals via multiple exposure pathways, risks are summed for all chemicals and exposure pathways to produce a cumulative risk. The COPC in the Room 118 CSU that was evaluated quantitatively for carcinogenic risk is chromium. The cumulative carcinogenic risk for the CSU is 3.1E-05 (or 3×10^{-5}), which is within the acceptable 10^{-6} to 10^{-4} (one in one million to one in ten thousand) range of risks specified by Code of Federal Regulations (CFR), Title 40 §300.430.

4.2.3 Lead

Most human health effects data for lead are based on blood lead concentrations. For this reason the lead detections in Room 118 were evaluated separately. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model (EPA, 2003), which is an approach for assessing occupational health risks form lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures. The estimated concentration of lead in blood of a pregnant worker and the fetus are well below the goal of 1- micrograms per deciliter specified in EPA guidance (1986b, 2003) with 95 percent confidence. Based on this assessment, the potential risk to a future worker in the TA-50-37 Room 118 from exposure to lead on surfaces below the applicable criteria specified in EPA guidance (EPA, 1986b).

5.0 CONCLUSIONS

Tables 5-1, 5-2, 5-3 and 5-4 provide the analytical results from the sampling of each surface associated with storage activities in the Technical Area (TA) 50, Building 37 (TA-50-37), Interim Status container storage unit (CSU). Tables 5-1 and 5-2 lists the constituent detected in each room during verification sampling and compares the results to the baseline samples, quality assurance/quality control samples, and U.S. Environmental Protection Agency (EPA) Human Health Medium Specific Screening Levels to demonstrate closure in accordance with criteria 2 or 3. Those detected constituents that could not meet criteria 2 or 3 were used to identify locations for the collection of swipe samples. Swipe samples were collected because the analytical results from verification sampling (wash water samples) could not be related to a reasonable risk based scenario for exposure (i.e., inhalation, dermal absorption) to an occupational worker (to demonstrate closure in accordance with criterion 4). Tables 5-3 and 5-4 provide a summary of the swipe sampling results. The swipe sampling results were also compared to blank/baseline sample results to identify those detections and subsequent locations that required further evaluation during risk assessment.

A human health risk assessment (HHRA), described in Section 4.0 of this report and further detailed in Appendix C, was performed for the contaminants of potential concern identified on the CSU surfaces by swipe sampling. This HHRA determined that the potential risk to future occupational site workers in Rooms 115 and 118 is below the applicable criteria specified in the EPA guidance (EPA, 1986b). Based upon the demonstration of closure provided in Tables 5-1, 5-2, 5-3, and 5-4 and the results of the HHRA, the TA-50-37, Interim Status CSU is clean closed in accordance with the Closure Plan.

6.0 CERTIFICATIONS

6.1 Certification of Accuracy

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

William S. Gibbs Date
Acting Associate Director, Operations
Los Alamos National Laboratory
Operator

_____ _____

Edwin L. Wilmot Date
Manager, Office of Los Alamos Site Operation
U.S. Department of Energy
Albuquerque Operations
Owner/Operator

CERTIFICATION
Los Alamos National Laboratory
Closure Certification Report for TA-50-37, Rooms 115 and 118

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Beverly Ramsey Date Signed
Division Director
Risk Reduction and Environmental Stewardship Division
Los Alamos National Laboratory

_____ _____

Anthony R. Grieggs Date Signed
Group Leader
Risk Reduction and Environmental Stewardship Division,
Solid Waste Regulatory Compliance
Los Alamos National Laboratory

CERTIFICATION
Los Alamos National Laboratory
Closure Certification Report for TA-50-37, Rooms 115 and 118

I certify under penalty of law that this document and attachments were reviewed and approved for consistency with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete as it applies to operations at Technical Area 50. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Dennis McLain Date Signed
Facility Manager
Facility and Waste Operations – Waste Facility Management
Radioactive Liquid Waste
Los Alamos National Laboratory

6.2 Independent Engineering Certification – Technical Area 50, Building 37, Interim Status Container Storage Unit, Room 115

This certification was prepared in accordance with the requirements of New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.600) (incorporating 40 CFR §265.115), revised October 1, 2003, for an independent registered professional engineer's certification. These services have been performed with the care and skill ordinarily exercised by members of the profession practicing under similar conditions at the same time and in the same manner or in a similar locality. We make no other warranty either expressed or implied. The finding and certification are based on 1) reviewing the New Mexico Environmental Department-approved closure plan; 2) discussion with the Shaw Environmental, Inc. field engineer who was present during closure and sampling activities; 3) reviewing the analytical results.

With the signature and seal below, I certify that, except for the deviations presented in Section 2.4 of the attached closure certification report, the closure of the **TA-50-37 Interim Status Container Storage Unit, Room 115** was conducted in accordance with the closure plan submitted to the NMED in August 2003. The information presented in this report is, to the best of my knowledge and belief, true, accurate, and complete.

Respectfully,

Shaw Environmental, Inc.

James K. Barbour
New Mexico Registered Professional Engineer No.: 15550
Expires: 12/31/04

Date:

6.3 Independent Engineering Certification – Technical Area 50, Building 37, Interim Status Container Storage Unit, Room 118

This certification was prepared in accordance with the requirements of New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.600) (incorporating 40 CFR §265.115), revised October 1, 2003, for an independent registered professional engineer's certification. These services have been performed with the care and skill ordinarily exercised by members of the profession practicing under similar conditions at the same time and in the same manner or in a similar locality. We make no other warranty either expressed or implied. The finding and certification are based on 1) reviewing the New Mexico Environment Department approved closure plan; 2) discussion with the Shaw Environmental, Inc. field engineer who was present during closure and sampling activities; 3) reviewing the analytical results.

With the signature and seal below, I certify that, except for the deviations presented in Section 3.4 of the attached closure certification report, the closure of the **TA-50-37 Interim Status Container Storage Unit, Room 118** was conducted in accordance with the closure plan submitted to the NMED in August 2003. The information presented in this report is, to the best of my knowledge and belief, true, accurate, and complete.

Respectfully,

Shaw Environmental, Inc.

James K. Barbour
New Mexico Registered Professional Engineer No.: 15550
Expires: 12/31/04

Date:

7.0 REFERENCES

DTSC, 2000, Carlisle, J, et al., *Updated Version of the California EPA Lead Risk Assessment Spreadsheet Model for Predicting Blood Lead in Children and Adults*, Poster presentation on 20 March 2000 at the Annual Meeting of the Society of Toxicology in Philadelphia, Penn.

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Vigil-Holterman, Lucianna, letter to Mr. Steve Jetter, Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA-50-37), Los Alamos National Laboratory (LANL), February 3, 2003.

WTCIATWG, 2002, *World Trade Center Indoor Air Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks*, Peer Review Draft, September.

Table 3-2
Swipe Samples Collected During Closure of Room 118, April 2004

Sample No.	Location	Requested Analysis [c]
118B-01	Recessed Pump	Total Metals (SW846 Methods 6010B and 7471A)
118B-02	Floor #1	Total Metals (SW846 Methods 6010B and 7471A)
118B-03	Floor #2	Total Metals (SW846 Methods 6010B and 7471A)
118B-04	Floor #3	Total Metals (SW846 Methods 6010B and 7471A)
118B-05	Floor #4	Total Metals (SW846 Methods 6010B and 7471A)
118B-06	Floor #5	Total Metals (SW846 Methods 6010B and 7471A)
118B-07	Floor #6	Total Metals (SW846 Methods 6010B and 7471A)
118B-08	Floor #8	Total Metals (SW846 Methods 6010B and 7471A)
118B-09	Recessed Sump	Total Metals (SW846 Methods 6010B and 7471A)
118B-10	Floor #1	Total Metals (SW846 Methods 6010B and 7471A)
118B-11	Floor #2	Total Metals (SW846 Methods 6010B and 7471A)
118B-12	Floor #3	Total Metals (SW846 Methods 6010B and 7471A)
118B-13	Floor #4	Total Metals (SW846 Methods 6010B and 7471A)
118B-14	Floor #5	Total Metals (SW846 Methods 6010B and 7471A)
118B-15	Floor #6	Total Metals (SW846 Methods 6010B and 7471A)
118B-16	Floor #8	Total Metals (SW846 Methods 6010B and 7471A)
118B-17	West Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-18	South Wall (Rollup Door)	Total Metals (SW846 Methods 6010B and 7471A)
118B-19	North Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-20	East Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-21	West Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-22	South Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-23	North Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-24	East Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-25	West Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-26	South Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-27	North Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-28	East Wall	Total Metals (SW846 Methods 6010B and 7471A)
118B-29	Duplicate	Total Metals (SW846 Methods 6010B and 7471A)
118B-30	Baseline	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		VOC (SW846 Method 8260B)
		PCB (SW846 Method 8082)
118B-31	Field Blank	VOC (SW846 Method 8260B)

a. EPA, 1986b and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, *(SW-846)* Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

Definition of Acronyms

SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 3-3
Solvent Medium Used for Collection of Swipe Samples

Requested Analysis	Solvent Medium	Collection Medium
Total Metals	Deionized Water	Gauze Pad
SVOC	Methylene Chloride	Gauze Pad
VOC	Methyl Alcohol (Methanol)	Gauze Pad
PCB	Hexane	Cheese cloth

Definition of Acronyms

PCB = polychlorinated biphenyls
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 3-4
Summary of Verification Sample Results for Room 118, September 2003

Sample No.	Location	Requested Analysis	Analyte	Result (µg/L)	Qualifier
Method Blanks	Method Blank #2	SVOC	bis (2-Ethylhexyl) phthalate	16	
Method Blanks	Method Blank #1	SVOC	bis (2-Ethylhexyl) phthalate	17	
Method Blanks	Method Blank #1	VOC	Acetone	2.7	J
RM118-01	Baseline #1	SVOC	1-Dodecanamine, n,n-dimethyl-[a]	250	M
RM118-01	Baseline #1	SVOC	1-Propene, 1,2,3-trichloro-[a]	44	M
RM118-01	Baseline #1	SVOC	N,n-dimethyltetradecanamine[a]	480	M
RM118-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanamine[a]	79	M
RM118-01	Baseline #1	Total Metals	Arsenic	2	B
RM118-01	Baseline #1	Total Metals	Barium	26.1	B
RM118-01	Baseline #1	Total Metals	Chromium	26.6	
RM118-01	Baseline #1	Total Metals	Lead	3.3	B
RM118-01	Baseline #1	Total Metals	Silver	0.69	B
RM118-01	Baseline #1	VOC	Acetone	3.5	J
RM118-01	Baseline #1	VOC	Bromodichloromethane	0.61	J
RM118-01	Baseline #1	VOC	Dibromochloromethane	1.5	J
RM118-02	Baseline #2	Total Metals	Barium	24.8	B
RM118-02	Baseline #2	Total Metals	Chromium	6	B
RM118-03	Baseline #3	Total Metals	Barium	23.8	B
RM118-03	Baseline #3	Total Metals	Chromium	8.5	B
RM118-03	Baseline #3	Total Metals	Lead	2	B
RM118-03	Baseline #3	Total Metals	Silver	0.53	B
RM118-03	Baseline #3	VOC[b]	1,2,4 Trimethylbenzene[a]	11	Q
RM118-03	Baseline #3	VOC[b]	Acetone	6.9	J
RM118-03	Baseline #3	VOC[b]	Bromodichloromethane	0.78	J
RM118-03	Baseline #3	VOC[b]	Bromomethane	2.6	J
RM118-03	Baseline #3	VOC[b]	Chloroform	0.55	J
RM118-03	Baseline #3	VOC[b]	Chloroform	0.7	J
RM118-03	Baseline #3	VOC[b]	Methylene Chloride	2.7	J
RM118-03	Baseline #3	VOC[b]	Napthalene	83	Q
RM118-03	Baseline #3	VOC[b]	Oxime-,methoxyphenyl[a]	8.9	M
RM118-03	Baseline #3	VOC[b]	Oxime-,methoxyphenyl[a]	8.2	M
RM118-04	Trip Blank	VOC	Acetone	12	J
RM118-04	Trip Blank	VOC	Bromomethane	3.1	J
RM118-04	Trip Blank	VOC	Chloromethane	1.2	J
RM118-05	Trip Blank	VOC[b]	Acetone	6.2	J
RM118-05	Trip Blank	VOC[b]	Acetone	8.9	J
RM118-05	Trip Blank	VOC[b]	Bromomethane	1.7	J
RM118-06	Field Blank	VOC[b]	Acetone	3.2	JB
RM118-06	Field Blank	VOC[b]	Acetone	5.5	J
RM118-07	Recessed Sump	SVOC	1-Dodecanamine, n,n-dimethyl-[a]	200	M
RM118-07	Recessed Sump	SVOC	1-Propene, 1,2,3-trichloro-[a]	41	M
RM118-07	Recessed Sump	SVOC	N,n-dimethyltetradecanamine[a]	1500	M
RM118-07	Recessed Sump	Total Metals	Arsenic	3.4	B
RM118-07	Recessed Sump	Total Metals	Barium	63.5	B
RM118-07	Recessed Sump	Total Metals	Chromium	18.8	
RM118-07	Recessed Sump	Total Metals	Lead	4.5	B
RM118-07	Recessed Sump	Total Metals	Silver	0.65	B
RM118-07	Recessed Sump	VOC[b]	Acetone	6.6	J
RM118-07	Recessed Sump	VOC[b]	Acetone	7.1	J
RM118-07	Recessed Sump	VOC[b]	Bromoform	2.3	J
RM118-07	Recessed Sump	VOC[b]	Dibromochloromethane	0.77	J
RM118-07	Recessed Sump	VOC[b]	Dibromochloromethane	0.9	J
RM118-07	Recessed Sump	VOC[b]	Methylene Chloride	3.1	J
RM118-08	Floor #1	Total Metals	Arsenic	3.9	B
RM118-08	Floor #1	Total Metals	Barium	65	B
RM118-08	Floor #1	Total Metals	Chromium	25.8	
RM118-08	Floor #1	Total Metals	Lead	4.7	B
RM118-09	Floor #2	Total Metals	Arsenic	2.7	B
RM118-09	Floor #2	Total Metals	Barium	169	B
RM118-09	Floor #2	Total Metals	Chromium	26.4	
RM118-09	Floor #2	Total Metals	Lead	12.2	
RM118-10	Floor #3	Total Metals	Arsenic	3.3	B
RM118-10	Floor #3	Total Metals	Barium	135	B
RM118-10	Floor #3	Total Metals	Chromium	23.8	
RM118-10	Floor #3	Total Metals	Lead	4.6	B
RM118-10	Floor #3	Total Metals	Selenium	1.5	B
RM118-10	Floor #3	Total Metals	Silver	0.49	B
RM118-11	Floor #4	Total Metals	Barium	193	B
RM118-11	Floor #4	Total Metals	Chromium	23.6	
RM118-11	Floor #4	Total Metals	Lead	9.4	
RM118-11	Floor #4	Total Metals	Silver	0.54	B
RM118-12	Floor #5	Total Metals	Arsenic	2.7	B
RM118-12	Floor #5	Total Metals	Barium	108	B
RM118-12	Floor #5	Total Metals	Chromium	20.6	
RM118-12	Floor #5	Total Metals	Lead	4.4	B
RM118-13	Floor #6	Total Metals	Arsenic	2.7	B
RM118-13	Floor #6	Total Metals	Barium	110	B
RM118-13	Floor #6	Total Metals	Chromium	31.8	
RM118-13	Floor #6	Total Metals	Lead	6	
RM118-14	Floor #7	Total Metals	Barium	139	B
RM118-14	Floor #7	Total Metals	Chromium	27.6	
RM118-14	Floor #7	Total Metals	Lead	4.2	B
RM118-15	Floor #8	Total Metals	Arsenic	4.4	B
RM118-15	Floor #8	Total Metals	Barium	40.4	B
RM118-15	Floor #8	Total Metals	Chromium	26.1	
RM118-16	Duplicate	Total Metals	Arsenic	3.3	B
RM118-16	Duplicate	Total Metals	Barium	96.4	B
RM118-16	Duplicate	Total Metals	Chromium	19.3	
RM118-16	Duplicate	Total Metals	Lead	6.6	
RM118-17	West Wall #1 North	Total Metals	Arsenic	2.4	B
RM118-17	West Wall #1 North	Total Metals	Barium	32.9	B
RM118-17	West Wall #1 North	Total Metals	Chromium	18.3	
RM118-17	West Wall #1 North	Total Metals	Lead	3.1	B
RM118-18	West Wall #2 South	Total Metals	Arsenic	2.9	B
RM118-18	West Wall #2 South	Total Metals	Barium	53.7	B
RM118-18	West Wall #2 South	Total Metals	Chromium	24.4	
RM118-18	West Wall #2 South	Total Metals	Lead	2.7	B
RM118-18	West Wall #2 South	Total Metals	Selenium	2	B
RM118-18	West Wall #2 South	Total Metals	Silver	0.49	B
RM118-19	South Wall #1 East	Total Metals	Arsenic	2.3	B
RM118-19	South Wall #1 East	Total Metals	Barium	40.1	B
RM118-19	South Wall #1 East	Total Metals	Chromium	20.5	
RM118-19	South Wall #1 East	Total Metals	Lead	4.1	B
RM118-19	South Wall #1 East	Total Metals	Silver	0.55	B
RM118-20	South Wall #2 West	Total Metals	Arsenic	3.9	B
RM118-20	South Wall #2 West	Total Metals	Barium	52.8	B
RM118-20	South Wall #2 West	Total Metals	Chromium	26.7	
RM118-20	South Wall #2 West	Total Metals	Lead	3	B
RM118-20	South Wall #2 West	Total Metals	Silver	0.43	B
RM118-21	North Wall #1 East	Total Metals	Arsenic	4.9	B
RM118-21	North Wall #1 East	Total Metals	Barium	71.7	B
RM118-21	North Wall #1 East	Total Metals	Chromium	26.9	
RM118-21	North Wall #1 East	Total Metals	Lead	3.2	B
RM118-22	North Wall #2 West	Total Metals	Arsenic	2.4	B
RM118-22	North Wall #2 West	Total Metals	Barium	40.4	B
RM118-22	North Wall #2 West	Total Metals	Chromium	26.5	
RM118-22	North Wall #2 West	Total Metals	Lead	2.3	B
RM118-22	North Wall #2 West	Total Metals	Silver	0.45	B
RM118-23	East Wall #1 North	Total Metals	Arsenic	2.3	B
RM118-23	East Wall #1 North	Total Metals	Barium	38	B
RM118-23	East Wall #1 North	Total Metals	Chromium	31	
RM118-23	East Wall #1 North	Total Metals	Lead	2.2	B
RM118-24	East Wall #2 South	Total Metals	Arsenic	3.8	B
RM118-24	East Wall #2 South	Total Metals	Barium	38	B
RM118-24	East Wall #2 South	Total Metals	Chromium	18.4	
RM118-24	East Wall #2 South	Total Metals	Lead	2	B

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.
b. Sample was re-analyzed because surrogate recoveries were outside control limits. Results of both analyses are presented.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/L = micrograms per liter

Table 3-5
Room 118 Verification Sample Results - Comparison to Baseline, QA/QC , and EPA Region 6 MSSLs

Sample No.	Location	Analyte	Result (µg/L)	Qualifier	EPA Region 6 MSSLs (µg/L)	Comparison Results
RM118-03	Baseline #3	1,2,4 Trimethylbenzene[a]	11	Q	12	NA
RM118-01	Baseline #1	1-Dodecanamine, n,n-dimethyl-[a]	250	M	NA	NA
RM118-07	Recessed Sump	1-Dodecanamine, n,n-dimethyl-[a]	200	M	NA	The detected levels are equal to or less than the detected level in th Baseline #3 sample.
RM118-01	Baseline #1	1-Propene, 1,2,3-trichloro-[a]	44	M	NA	NA
RM118-07	Recessed Sump	1-Propene, 1,2,3-trichloro-[a]	41	M	NA	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-04	Trip Blank	Acetone	12	J	33,000	NA
RM118-05	Trip Blank	Acetone	8.9	J	33,000	NA
RM118-07	Recessed Sump	Acetone	7.1	J	33,000	The detected levels are equal to or less than the detected level in th Trip Blank.
RM118-03	Baseline #3	Acetone	6.9	J	33,000	NA
RM118-07	Recessed Sump	Acetone	6.6	J	33,000	The detected levels are equal to or less than the detected level in th Trip Blank.
RM118-05	Trip Blank	Acetone	6.2	J	33,000	NA
RM118-06	Field Blank	Acetone	5.5	J	33,000	NA
RM118-01	Baseline #1	Acetone	3.5	J	33,000	NA
RM118-06	Field Blank	Acetone	3.2	JB	33,000	NA
Method Blanks	Method Blank #1	Acetone	2.7	J	33,000	NA
RM118-21	**North Wall #1 East**	**Arsenic**	**4.9**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-15	**Floor #8**	**Arsenic**	**4.4**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-08	**Floor #1**	**Arsenic**	**3.9**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-20	**South Wall #2 West**	**Arsenic**	**3.9**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-24	**East Wall #2 South**	**Arsenic**	**3.8**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-07	**Recessed Sump**	**Arsenic**	**3.4**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-10	**Floor #3**	**Arsenic**	**3.3**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-16	**Duplicate**	**Arsenic**	**3.3**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-18	**West Wall #2 South**	**Arsenic**	**2.9**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-09	**Floor #2**	**Arsenic**	**2.7**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-12	**Floor #5**	**Arsenic**	**2.7**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-13	**Floor #6**	**Arsenic**	**2.7**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-17	**West Wall #1 North**	**Arsenic**	**2.4**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-22	**North Wall #2 West**	**Arsenic**	**2.4**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-19	**South Wall #1 East**	**Arsenic**	**2.3**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-23	**East Wall #1 North**	**Arsenic**	**2.3**	**B**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-01	Baseline #1	Arsenic	2	B	0.045	NA
RM118-11	Floor #4	Barium	193	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-09	Floor #2	Barium	169	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-14	Floor #7	Barium	139	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-10	Floor #3	Barium	135	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-13	Floor #6	Barium	110	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-12	Floor #5	Barium	108	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-16	Duplicate	Barium	96.4	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-21	North Wall #1 East	Barium	71.7	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-08	Floor #1	Barium	65	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-07	Recessed Sump	Barium	63.5	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-18	West Wall #2 South	Barium	53.7	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-20	South Wall #2 West	Barium	52.8	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-15	Floor #8	Barium	40.4	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-22	North Wall #2 West	Barium	40.4	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-19	South Wall #1 East	Barium	40.1	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-23	East Wall #1 North	Barium	38	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-24	East Wall #2 South	Barium	38	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-17	West Wall #1 North	Barium	32.9	B	2600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-01	Baseline #1	Barium	26.1	B	2600	NA
RM118-02	Baseline #2	Barium	24.8	B	2600	NA
RM118-03	Baseline #3	Barium	23.8	B	2600	NA
Method Blanks	Method Blank #1	bis (2-Ethylhexyl) phthalate	17		4.8	NA
Method Blanks	Method Blank #2	bis (2-Ethylhexyl) phthalate	16		4.8	NA
RM118-03	Baseline #3	Bromodichloromethane	0.78	J	0.18	NA
RM118-01	Baseline #1	Bromodichloromethane	0.61	J	0.18	NA
RM118-07	Recessed Sump	Bromoform	2.3	J	8.5	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-04	Trip Blank	Bromomethane	3.1	J	8.7	NA
RM118-03	Baseline #3	Bromomethane	2.6	J	8.7	NA
RM118-05	Trip Blank	Bromomethane	1.7	J	8.7	NA
RM118-03	Baseline #3	Chloroform	0.7	J	75	NA
RM118-03	Baseline #3	Chloroform	0.55	J	75	NA
RM118-04	Trip Blank	Chloromethane	1.2	J	1.5	NA
RM118-13	Floor #6	Chromium	31.8		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-23	East Wall #1 North	Chromium	31		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-14	Floor #7	Chromium	27.6		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-21	North Wall #1 East	Chromium	26.9		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-20	South Wall #2 West	Chromium	26.7		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-01	Baseline #1	Chromium	26.6		110	NA
RM118-22	North Wall #2 West	Chromium	26.5		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-09	Floor #2	Chromium	26.4		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-15	Floor #8	Chromium	26.1		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-08	Floor #1	Chromium	25.8		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-18	West Wall #2 South	Chromium	24.4		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-10	Floor #3	Chromium	23.8		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-11	Floor #4	Chromium	23.6		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-12	Floor #5	Chromium	20.6		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-19	South Wall #1 East	Chromium	20.5		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-16	Duplicate	Chromium	19.3		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-07	Recessed Sump	Chromium	18.8		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-24	East Wall #2 South	Chromium	18.4		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-17	West Wall #1 North	Chromium	18.3		110	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-03	Baseline #3	Chromium	8.5	B	110	NA
RM118-02	Baseline #2	Chromium	6	B	110	NA
RM118-01	Baseline #1	Dibromochloromethane	1.5	J	0.13	NA
RM118-07	**Recessed Sump**	**Dibromochloromethane**	**0.9**	**J**	**0.13**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-07	**Recessed Sump**	**Dibromochloromethane**	**0.77**	**J**	**0.13**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM118-09	Floor #2	Lead	12.2		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-11	Floor #4	Lead	9.4		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-16	Duplicate	Lead	6.6		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-13	Floor #6	Lead	6		15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-08	Floor #1	Lead	4.7	B	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-10	Floor #3	Lead	4.6	B	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-07	Recessed Sump	Lead	4.5	B	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-12	Floor #5	Lead	4.4	B	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-14	Floor #7	Lead	4.2	B	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-19	South Wall #1 East	Lead	4.1	B	15	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-01	Baseline #1	Lead	3.3	B	15	NA
RM118-21	North Wall #1 East	Lead	3.2	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-17	West Wall #1 North	Lead	3.1	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-20	South Wall #2 West	Lead	3	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-18	West Wall #2 South	Lead	2.7	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-22	North Wall #2 West	Lead	2.3	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-23	East Wall #1 North	Lead	2.2	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-03	Baseline #3	Lead	2	B	15	NA
RM118-24	East Wall #2 South	Lead	2	B	15	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-07	Recessed Sump	Methylene Chloride	3.1	J	4.3	The detected levels are equal to or less than the detected level in th Baseline #3 sample.
RM118-03	Baseline #3	Methylene Chloride	2.7	J	4.3	NA
RM118-07	**Recessed Sump**	**N,n-dimethyltetradecanamine [a]**	**1500**	**M**	**NA**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to swipe sampling.**
RM118-01	Baseline #1	N,n-dimethyltetradecanamine[a]	480	M	NA	NA
RM118-03	Baseline #3	Napthalene	83	Q	6.2	NA
RM118-01	Baseline #1	N-methyl-n-benzyltetradecanamine[a]	79	M	NA	NA
RM118-03	Baseline #3	Oxime-,methoxyphenyl[a]	8.9	M	NA	NA
RM118-03	Baseline #3	Oxime-,methoxyphenyl[a]	8.2	M	NA	NA
RM118-18	West Wall #2 South	Selenium	2	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-10	Floor #3	Selenium	1.5	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however, it is below the MSSL.
RM118-01	Baseline #1	Silver	0.69	B	180	NA
RM118-07	Recessed Sump	Silver	0.65	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-19	South Wall #1 East	Silver	0.55	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-11	Floor #4	Silver	0.54	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-03	Baseline #3	Silver	0.53	B	180	NA
RM118-10	Floor #3	Silver	0.49	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-18	West Wall #2 South	Silver	0.49	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-22	North Wall #2 West	Silver	0.45	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.
RM118-20	South Wall #2 West	Silver	0.43	B	180	The detected levels are equal to or less than the detected level in th Baseline #1 sample.

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.
b. Sample was re-analyzed because surrogate recoveries were outside control limits. Results of both analyses are presented.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/L = micrograms per liter

Table 3-6
Summary of Swipe Sample Results for Room 118, April 2004

Sample No.	Location	Requested Analysis	Analyte	Result (µg/100 cm^2)	Qualifier
118B-01	Recessed Pump	Total Metals	Barium	1.5	B
118B-02	Floor #1	Total Metals	Barium	2.6	B
118B-03	Floor #2	Total Metals	Barium	6.9	B
118B-03	Floor #2	Total Metals	Chromium	0.48	B
118B-03	Floor #2	Total Metals	Lead	1.7	B
118B-04	Floor #3	Total Metals	Barium	1.6	B
118B-05	Floor #4	Total Metals	Barium	3.2	B
118B-05	Floor #4	Total Metals	Chromium	0.72	B
118B-05	Floor #4	Total Metals	Lead	3.8	B
118B-06	Floor #5	Total Metals	Barium	2.2	B
118B-07	Floor #6	Total Metals	Barium	2.2	B
118B-07	Floor #6	Total Metals	Chromium	0.34	B
118B-08	Floor #8	Total Metals	Barium	2.3	B
118B-09	Recessed Sump	Total Metals	Barium	88.3	
118B-09	Recessed Sump	Total Metals	Chromium	8.7	
118B-09	Recessed Sump	Total Metals	Lead	1.2	B
118B-10	Floor #1	Total Metals	Barium	2.6	B
118B-11	Floor #2	Total Metals	Barium	4.1	B
118B-11	Floor #2	Total Metals	Chromium	0.16	B
118B-12	Floor #3	Total Metals	Barium	3.1	B
118B-12	Floor #3	Total Metals	Lead	5.1	B
118B-13	Floor #4	Total Metals	Barium	5.1	B
118B-13	Floor #4	Total Metals	Chromium	0.17	B
118B-14	Floor #5	Total Metals	Barium	7.8	B
118B-15	Floor #6	Total Metals	Barium	7.3	B
118B-16	Floor #8	Total Metals	Barium	5.4	B
118B-16	Floor #8	Total Metals	Chromium	0.2	B
118B-17	West Wall	Total Metals	Barium	2.6	B
118B-18	South Wall (Rollup Door)	Total Metals	Barium	1.4	B
118B-18	South Wall (Rollup Door)	Total Metals	Chromium	0.32	B
118B-19	North Wall	Total Metals	Barium	1.1	B
118B-20	East Wall	Total Metals	Barium	0.6	B
118B-21	West Wall	Total Metals	Barium	4.8	B
118B-22	South Wall	Total Metals	Barium	3.1	B
118B-23	North Wall	Total Metals	Barium	102	
118B-23	North Wall	Total Metals	Chromium	0.25	B
118B-23	North Wall	Total Metals	Lead	2.9	B
118B-24	East Wall	Total Metals	Barium	0.96	B
118B-25	West Wall	Total Metals	Barium	1.4	B
118B-26	South Wall	Total Metals	Barium	3.7	B
118B-27	North Wall	Total Metals	Barium	1.3	B
118B-28	East Wall	Total Metals	Barium	4.1	B
118B-29	Duplicate	Total Metals	Barium	38.2	
118B-29	Duplicate	Total Metals	Chromium	2.1	
118B-29	Duplicate	Total Metals	Lead	6.6	B
118B-30	Baseline	SVOC	1,4-Benzenediol, 2,5-bis 1,1-d [a]	42	M
118B-30	Baseline	SVOC	4-Cyanocyclohexene [a]	11	M
118B-30	Baseline	SVOC	Phenol, 2-(1,1-dimethylethyl)- [a]	17	M
118B-30	Baseline	Total Metals	Barium	0.42	B
118B-30	Baseline	VOC	2-Butanone	45	
118B-30	Baseline	VOC	Acetone	15	JB
118B-30	Baseline	VOC	Carbon disulfide	2.9	J
118B-30	Baseline	VOC	Carbon tetrachloride	0.76	JB
118B-30	Baseline	VOC	Ethyl acetate [a]	110	Q
118B-30	Baseline	VOC	Hexane [a]	17	Q
118B-30	Baseline	VOC	Methylene chloride	4.5	JB
118B-30	Baseline	VOC	Tetrachloroethene	0.65	J
118B-30	Baseline	VOC	Trichloroethene	1.7	JB
118B-31	Field Blank	VOC	2-Butanone	25	
118B-31	Field Blank	VOC	Acetone	16	JB
118B-31	Field Blank	VOC	Carbon disulfide	0.36	J
118B-31	Field Blank	VOC	Carbon tetrachloride	0.78	JB
118B-31	Field Blank	VOC	Hexane [a]	13	Q
118B-31	Field Blank	VOC	Methylene chloride	9.1	B
118B-31	Field Blank	VOC	Tetrachloroethene	0.56	J
118B-31	Field Blank	VOC	Trichloroethene	1.4	JB
Method Blank	Method Blank #1	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	SVOC	Octadecanoic acid [a]	4.5	M
Method Blank	Method Blank #2	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	VOC	Carbon tetrachloride	0.81	J
Method Blank	Method Blank #2	VOC	Methylene chloride	3.2	J
Method Blank	Method Blank #2	VOC	Trichloroethene	1	J

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/100 cm^2 = micrograms per 100 square centimeters

Table 3-7
Room 118 Swipe Sample Results - Comparison to Baseline and QA/QC Results

Sample No.	Location	Analyte	Result (µg/100 cm^2)	Qualifier	Comparison Results
118B-30	Baseline	1,4-Benzenediol, 2,5-bis 1,1-d[a]	42	M	NA
118B-30	Baseline	2-Butanone	45		NA
118B-31	Field Blank	2-Butanone	25		NA
118B-30	Baseline	4-Cyanocyclohexene[a]	11	M	NA
118B-31	Field Blank	Acetone	16	JB	NA
118B-30	Baseline	Acetone	15	JB	NA
Method Blank	Method Blank #1	Acetone	4.4	J	NA
Method Blank	Method Blank #2	Acetone	4.4	J	NA
118B-23	**North Wall**	**Barium**	**102**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-09	**Recessed Sump**	**Barium**	**88.3**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-29	**Duplicate**	**Barium**	**38.2**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-14	**Floor #5**	**Barium**	**7.8**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-15	**Floor #6**	**Barium**	**7.3**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-03	**Floor #2**	**Barium**	**6.9**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-16	**Floor #8**	**Barium**	**5.4**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-13	**Floor #4**	**Barium**	**5.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-21	**West Wall**	**Barium**	**4.8**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-11	**Floor #2**	**Barium**	**4.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-28	**East Wall**	**Barium**	**4.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-26	**South Wall**	**Barium**	**3.7**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-05	**Floor #4**	**Barium**	**3.2**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-12	**Floor #3**	**Barium**	**3.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-22	**South Wall**	**Barium**	**3.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-02	**Floor #1**	**Barium**	**2.6**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-10	**Floor #1**	**Barium**	**2.6**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-17	**West Wall**	**Barium**	**2.6**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-08	**Floor #8**	**Barium**	**2.3**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-06	**Floor #5**	**Barium**	**2.2**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-07	**Floor #6**	**Barium**	**2.2**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-04	**Floor #3**	**Barium**	**1.6**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-01	**Recessed Pump**	**Barium**	**1.5**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-18	**South Wall (Rollup Door)**	**Barium**	**1.4**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-25	**West Wall**	**Barium**	**1.4**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-27	**North Wall**	**Barium**	**1.3**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-19	**North Wall**	**Barium**	**1.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-24	**East Wall**	**Barium**	**0.96**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-20	**East Wall**	**Barium**	**0.6**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-30	Baseline	Barium	0.43	B	NA
118B-30	Baseline	Carbon disulfide	2.9	J	NA
118B-31	Field Blank	Carbon disulfide	0.36	J	NA
Method Blank	Method Blank #2	Carbon tetrachloride	0.73	J	NA
118B-31	Field Blank	Carbon tetrachloride	0.76	JB	NA
118B-30	Baseline	Carbon tetrachloride	0.76	JB	NA
118B-09	**Recessed Sump**	**Chromium**	**8.7**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-29	**Duplicate**	**Chromium**	**2.1**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-05	**Floor #4**	**Chromium**	**0.72**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-03	**Floor #2**	**Chromium**	**0.48**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-07	**Floor #6**	**Chromium**	**0.34**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-18	**South Wall (Rollup Door)**	**Chromium**	**0.32**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-23	**North Wall**	**Chromium**	**0.25**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-16	**Floor #8**	**Chromium**	**0.2**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-13	**Floor #4**	**Chromium**	**0.17**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-11	**Floor #2**	**Chromium**	**0.16**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-30	Baseline	Ethyl acetate*	110	Q	NA
118B-30	Baseline	Hexane*	17	Q	NA
118B-31	Field Blank	Hexane*	13	Q	NA
118B-29	**Duplicate**	**Lead**	**6.6**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-12	**Floor #3**	**Lead**	**5.1**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-05	**Floor #4**	**Lead**	**3.8**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-23	**North Wall**	**Lead**	**2.9**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-03	**Floor #2**	**Lead**	**1.7**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-09	**Recessed Sump**	**Lead**	**1.2**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample result will be forwarded to Risk Assessment.**
118B-31	Field Blank	Methylene chloride	9.1	B	NA
118B-30	Baseline	Methylene chloride	4.5	JB	NA
Method Blank	Method Blank #2	Methylene chloride	3.2	J	NA
Method Blank	Method Blank #2	Octadecanoic acid*	4.5	M	NA
118B-30	Baseline	Phenol, 2-(1,1-dimethylethyl)-*	17	M	NA
118B-30	Baseline	Tetrachloroethene	0.65	J	NA
118B-31	Field Blank	Tetrachloroethene	0.56	J	NA
118B-30	Baseline	Trichloroethene	1.4	JB	NA
118B-31	Field Blank	Trichloroethene	1.4	JB	NA
Method Blank	Method Blank #2	Trichloroethene	1	J	NA

[a] This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/100 cm^2 = micrograms per 100 square centimeters

Table 3-8
Room 118 Waste Characterization Sample Results

Sample No.	Location	Requested Analysis	Analyte	Result (µg/L)	Qualifier
RM118-25	Decontamination Water	SVOC [b]	1-Heptanol [a]	85	M
RM118-25	Decontamination Water	SVOC [b]	1-Propene, 1,2,3-trichloro-[a]	71	M
RM118-25	Decontamination Water	SVOC [b]	2-Dodecanone [a]	44	M
RM118-25	Decontamination Water	SVOC [b]	2-Undecanone [a]	52	M
RM118-25	Decontamination Water	SVOC [b]	bis (2-Ethylhexyl) phthalate	89	J
RM118-25	Decontamination Water	SVOC [b]	bis (2-Ethylhexyl) phthalate	120	B
RM118-25	Decontamination Water	SVOC [b]	Butylbenzylphthalate	30	J
RM118-25	Decontamination Water	SVOC [b]	Butylbenzylphthalate	38	J
RM118-25	Decontamination Water	SVOC [b]	Di-n-butyl phthalate	32	J
RM118-25	Decontamination Water	SVOC [b]	Di-n-butyl phthalate	38	J
RM118-25	Decontamination Water	SVOC [b]	Hexanal [a]	62	M
RM118-25	Decontamination Water	SVOC [b]	Octanal [a]	82	M
RM118-25	Decontamination Water	Total Metals	Arsenic	6.3	B
RM118-25	Decontamination Water	Total Metals	Barium	3510	
RM118-25	Decontamination Water	Total Metals	Cadmium	18.1	
RM118-25	Decontamination Water	Total Metals	Chromium	69.1	
RM118-25	Decontamination Water	Total Metals	Lead	302	
RM118-25	Decontamination Water	Total Metals	Mercury	0.66	
RM118-25	Decontamination Water	Total Metals	Selenium	3.1	B
RM118-25	Decontamination Water	Total Metals	Silver	2	B
RM118-25	Decontamination Water	VOC	Acetone	17	J
RM118-25	Decontamination Water	VOC	Chloroform	0.96	J
RM118-25	Decontamination Water	VOC	Decanal [a]	6.7	M
RM118-25	Decontamination Water	VOC	Methylene Chloride	2.8	J
RM118-25	Decontamination Water	VOC	Nonanal [a]	11	M
RM118-25	Decontamination Water	VOC	Octanal [a]	9.8	M
RM118-25	Decontamination Water	VOC	Xylenes (total)	2.3	J

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

b. Sample was re-analyzed because instrument lost sensitivity. Results of both analyses are presented.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/L = micrograms per liter

Table 3-9
Waste Materials and Disposition for Closure of Room 118

Waste Material	Estimated Quantity	Type	Disposal Destination
PPE, Sponges, Buckets, cheesecloth, etc.	<1 cubic meter	Solid	TA-54
Decontamination Wash Water	<110 gallons	Liquid	RLWTF
Verification Wash Water	<55 gallons	Liquid	RLWTF

PPE = personal protective equipment
RLWTF = Radioactive Liquid Waste Treatment Facility
TA = technical area

Table 4-4
Summary of Risk Assessment Results for Room 118

Analyte	Result (µg/100 cm^2)	Qualifier	Noncarcinogenic Hazard Quotient	Carcinogenic Risk
Barium	102		0.0015	NA
Chromium	8.7		NA	3E-05
Lead [a]	6.6	B	NA	NA
CUMULATIVE HAZARD INDEX AND RISK			**0.0015**	**3E-05**

a. Lead was evaluated separately. The estimated concentration of lead in blood of the worker and the fetus are below the goal of 10 µg/dL specified in EPA guidance.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

Definition of Acronyms

µg/100 cm^2 = micrograms per liter
NA = Not applicable

Table 4-3
Room 118 Swipe Sample Results Forwarded to Risk Assessment

Sample No.	Location	Analyte	Result (µg/100 cm^2)	Qualifier
118B-01	Recessed Pump	Barium	1.5	B
118B-02	Floor #1	Barium	2.6	B
118B-03	Floor #2	Barium	6.9	B
		Chromium	0.48	B
		Lead	1.7	B
118B-04	Floor #3	Barium	1.6	B
118B-05	Floor #4	Barium	3.2	B
		Chromium	0.72	B
		Lead	3.8	B
118B-06	Floor #5	Barium	2.2	B
118B-07	Floor #6	Barium	2.2	B
		Chromium	0.34	B
118B-08	Floor #8	Barium	2.3	B
118B-09	Recessed Sump	Barium	88.3	
		Chromium	8.7	
		Lead	1.2	B
118B-10	Floor #1	Barium	2.6	B
118B-11	Floor #2	Barium	4.1	B
		Chromium	0.16	B
118B-12	Floor #3	Barium	3.1	B
		Lead	5.1	B
118B-13	Floor #4	Barium	5.1	B
		Chromium	0.17	B
118B-14	Floor #5	Barium	7.8	B
118B-15	Floor #6	Barium	7.3	B
118B-16	Floor #8	Barium	5.4	B
		Chromium	0.2	B
118B-17	West Wall	Barium	2.6	B
118B-18	South Wall (Rollup Door)	Barium	1.4	B
		Chromium	0.32	B
118B-19	North Wall	Barium	1.1	B
118B-20	East Wall	Barium	0.6	B
118B-21	West Wall	Barium	4.8	B
118B-22	South Wall	Barium	3.1	B
118B-23	North Wall	Barium	102	
		Chromium	0.25	B
		Lead	2.9	B
118B-24	East Wall	Barium	0.96	B
118B-25	West Wall	Barium	1.4	B
118B-26	South Wall	Barium	3.7	B
118B-27	North Wall	Barium	1.3	B
118B-28	East Wall	Barium	4.1	B
118B-29	Duplicate	Barium	38.2	
		Chromium	2.1	
		Lead	6.6	B

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters

Table 5-2
Demonstration of Closure for Room 118 - Verification Samples

Sample No.	Location	Analyte	Result (µg/L)	Qualifier	Comparison Results
RM118-07	Recessed Sump	1-Dodecanamine, n,n-dimethyl- [a]	200	M	**Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.**
RM118-07	Recessed Sump	1-Propene, 1,2,3-trichloro- [a]	41	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-07	Recessed Sump	Acetone	7.1	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-07	Recessed Sump	Acetone	6.6	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-07	Recessed Sump	Chromium	18.8		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-07	Recessed Sump	Methylene Chloride	3.1	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-07	Recessed Sump	Silver	0.65	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-07	**Recessed Sump**	**Arsenic**	**3.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-07	**Recessed Sump**	**Dibromochloromethane**	**0.9**	**J**	**Sample location swipe sampled for risk assessment.**
RM118-07	**Recessed Sump**	**Dibromochloromethane**	**0.77**	**J**	**Sample location swipe sampled for risk assessment.**
RM118-07	Recessed Sump	Barium	63.5	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-07	Recessed Sump	Bromoform	2.3	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-07	Recessed Sump	Lead	4.5	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-07	**Recessed Sump**	**N,n-dimethyltetradecanamine [a]**	**1500**	**M**	**Sample location swipe sampled for risk assessment.**
RM118-08	Floor #1	Chromium	25.8		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-08	**Floor #1**	**Arsenic**	**3.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-08	Floor #1	Barium	65	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-08	Floor #1	Lead	4.7	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-09	Floor #2	Chromium	26.4		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-09	**Floor #2**	**Arsenic**	**2.7**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-09	Floor #2	Barium	169	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-09	Floor #2	Lead	12.2		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-10	Floor #3	Chromium	23.8		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-10	Floor #3	Silver	0.49	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-10	**Floor #3**	**Arsenic**	**3.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-10	Floor #3	Barium	135	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-10	Floor #3	Lead	4.6	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-10	Floor #3	Selenium	1.5	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-11	Floor #4	Chromium	23.6		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-11	Floor #4	Silver	0.54	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-11	Floor #4	Barium	193	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-11	Floor #4	Lead	9.4		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-12	Floor #5	Chromium	20.6		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-12	**Floor #5**	**Arsenic**	**2.7**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-12	Floor #5	Barium	108	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-12	Floor #5	Lead	4.4	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-13	**Floor #6**	**Arsenic**	**2.7**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-13	Floor #6	Barium	110	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-13	Floor #6	Chromium	31.8		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-13	Floor #6	Lead	6		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-14	Floor #7	Barium	139	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-14	Floor #7	Chromium	27.6		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-14	Floor #7	Lead	4.2	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-15	Floor #8	Chromium	26.1		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-15	**Floor #8**	**Arsenic**	**4.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-15	Floor #8	Barium	40.4	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-16	Duplicate	Chromium	19.3		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-16	**Duplicate**	**Arsenic**	**3.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-16	Duplicate	Barium	96.4	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-16	Duplicate	Lead	6.6		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-17	West Wall #1 North	Chromium	18.3		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-17	West Wall #1 North	Lead	3.1	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-17	**West Wall #1 North**	**Arsenic**	**2.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-17	West Wall #1 North	Barium	32.9	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-18	West Wall #2 South	Chromium	24.4		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-18	West Wall #2 South	Lead	2.7	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-18	West Wall #2 South	Silver	0.49	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-18	**West Wall #2 South**	**Arsenic**	**2.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-18	West Wall #2 South	Barium	53.7	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-18	West Wall #2 South	Selenium	2	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-19	South Wall #1 East	Chromium	20.5		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-19	South Wall #1 East	Silver	0.55	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-19	**South Wall #1 East**	**Arsenic**	**2.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-19	South Wall #1 East	Barium	40.1	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-19	South Wall #1 East	Lead	4.1	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-20	South Wall #2 West	Lead	3	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-20	South Wall #2 West	Silver	0.43	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-20	**South Wall #2 West**	**Arsenic**	**3.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-20	South Wall #2 West	Barium	52.8	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-20	South Wall #2 West	Chromium	26.7		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-21	North Wall #1 East	Lead	3.2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-21	**North Wall #1 East**	**Arsenic**	**4.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-21	North Wall #1 East	Barium	71.7	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-21	North Wall #1 East	Chromium	26.9		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-22	North Wall #2 West	Chromium	26.5		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-22	North Wall #2 West	Lead	2.3	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-22	North Wall #2 West	Silver	0.45	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-22	**North Wall #2 West**	**Arsenic**	**2.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-22	North Wall #2 West	Barium	40.4	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-23	East Wall #1 North	Lead	2.2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-23	**East Wall #1 North**	**Arsenic**	**2.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-23	East Wall #1 North	Barium	38	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-23	East Wall #1 North	Chromium	31		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM118-24	East Wall #2 South	Chromium	18.4		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-24	East Wall #2 South	Lead	2	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM118-24	**East Wall #2 South**	**Arsenic**	**3.8**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-24	East Wall #2 South	Barium	38	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/L = micrograms per liter

Table 3-1
Verification Samples Collected During Closure of Room 118, September 2003

Sample No.	Location [a, b]	Requested Analysis [c]
RM118-01	Baseline #1	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM118-02	Baseline #2	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM118-03	Baseline #3	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM118-04	Trip Blank	VOC (SW846 Method 8260B)
RM118-05	Trip Blank	VOC (SW846 Method 8260B)
RM118-06	Field Blank	VOC (SW846 Method 8260B)
RM118-07	Recessed Sump	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)
RM118-08	Floor #1	Total Metals (SW846 Methods 6010B and 7471A)
RM118-09	Floor #2	Total Metals (SW846 Methods 6010B and 7471A)
RM118-10	Floor #3	Total Metals (SW846 Methods 6010B and 7471A)
RM118-11	Floor #4	Total Metals (SW846 Methods 6010B and 7471A)
RM118-12	Floor #5	Total Metals (SW846 Methods 6010B and 7471A)
RM118-13	Floor #6	Total Metals (SW846 Methods 6010B and 7471A)
RM118-14	Floor #7	Total Metals (SW846 Methods 6010B and 7471A)
RM118-15	Floor #8	Total Metals (SW846 Methods 6010B and 7471A)
RM118-16	Duplicate	Total Metals (SW846 Methods 6010B and 7471A)
RM118-17	West Wall #1 North	Total Metals (SW846 Methods 6010B and 7471A)
RM118-18	West Wall #2 South	Total Metals (SW846 Methods 6010B and 7471A)
RM118-19	South Wall #1 East	Total Metals (SW846 Methods 6010B and 7471A)
RM118-20	South Wall #2 West	Total Metals (SW846 Methods 6010B and 7471A)
RM118-21	North Wall #1 East	Total Metals (SW846 Methods 6010B and 7471A)
RM118-22	North Wall #2 West	Total Metals (SW846 Methods 6010B and 7471A)
RM118-23	East Wall #1 North	Total Metals (SW846 Methods 6010B and 7471A)
RM118-24	East Wall #2 South	Total Metals (SW846 Methods 6010B and 7471A)
RM118-25	Decontamination Water	Total Metals (SW846 Methods 6010B and 7471A)
		VOC (SW846 Method 8260B)
		SVOC (SW846 Method 8270C)

a. *Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1*, Room 59 and TA-50-37, LA-UR-03-5409, July 2003.

b. Luciana Vigil-Holterman, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* February 3, 2003.

c. EPA, 1986b and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, *(SW-846)* Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

Definition of Acronyms

VOC = volatile organic compounds

SVOC = semivolatile organic compounds

Table ES-2
Demonstration of Closure for Room 118 - Verification Samples

Sample No.	Location	Analyte	Result (µg/L)	Qualifier	Comparison Results
RM118-07	Recessed Sump	1-Dodecanamine, n,n-dimethyl- [a]	200	M	2
RM118-07	Recessed Sump	1-Propene, 1,2,3-trichloro-[a]	41	M	2
RM118-07	Recessed Sump	Acetone	7.1	J	2
RM118-07	Recessed Sump	Acetone	6.6	J	2
RM118-07	Recessed Sump	Chromium	18.8		2
RM118-07	Recessed Sump	Methylene Chloride	3.1	J	2
RM118-07	Recessed Sump	Silver	0.65	B	2
RM118-07	**Recessed Sump**	**Arsenic**	**3.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-07	**Recessed Sump**	**Dibromochloromethane**	**0.9**	**J**	**Sample location swipe sampled for risk assessment.**
RM118-07	**Recessed Sump**	**Dibromochloromethane**	**0.77**	**J**	**Sample location swipe sampled for risk assessment.**
RM118-07	Recessed Sump	Barium	63.5	B	3
RM118-07	Recessed Sump	Bromoform	2.3	J	3
RM118-07	Recessed Sump	Lead	4.5	B	3
RM118-07	**Recessed Sump**	**N,n-dimethyltetradecanamine [a]**	**1500**	**M**	**Sample location swipe sampled for risk assessment.**
RM118-08	Floor #1	Chromium	25.8		2
RM118-08	**Floor #1**	**Arsenic**	**3.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-08	Floor #1	Barium	65	B	3
RM118-08	Floor #1	Lead	4.7	B	3
RM118-09	Floor #2	Chromium	26.4		2
RM118-09	**Floor #2**	**Arsenic**	**2.7**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-09	Floor #2	Barium	169	B	3
RM118-09	Floor #2	Lead	12.2		3
RM118-10	Floor #3	Chromium	23.8		2
RM118-10	Floor #3	Silver	0.49	B	2
RM118-10	**Floor #3**	**Arsenic**	**3.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-10	Floor #3	Barium	135	B	3
RM118-10	Floor #3	Lead	4.6	B	3
RM118-10	Floor #3	Selenium	1.5	B	3
RM118-11	Floor #4	Chromium	23.6		2
RM118-11	Floor #4	Silver	0.54	B	2
RM118-11	Floor #4	Barium	193	B	3
RM118-11	Floor #4	Lead	9.4		3
RM118-12	Floor #5	Chromium	20.6		2
RM118-12	**Floor #5**	**Arsenic**	**2.7**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-12	Floor #5	Barium	108	B	3
RM118-12	Floor #5	Lead	4.4	B	3
RM118-13	**Floor #6**	**Arsenic**	**2.7**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-13	Floor #6	Barium	110	B	3
RM118-13	Floor #6	Chromium	31.8		3
RM118-13	Floor #6	Lead	6		3
RM118-14	Floor #7	Barium	139	B	3
RM118-14	Floor #7	Chromium	27.6		3
RM118-14	Floor #7	Lead	4.2	B	3
RM118-15	Floor #8	Chromium	26.1		2
RM118-15	**Floor #8**	**Arsenic**	**4.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-15	Floor #8	Barium	40.4	B	3
RM118-16	Duplicate	Chromium	19.3		2
RM118-16	**Duplicate**	**Arsenic**	**3.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-16	Duplicate	Barium	96.4	B	3
RM118-16	Duplicate	Lead	6.6		3
RM118-17	West Wall #1 North	Chromium	18.3		2
RM118-17	West Wall #1 North	Lead	3.1	B	2
RM118-17	**West Wall #1 North**	**Arsenic**	**2.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-17	West Wall #1 North	Barium	32.9	B	3
RM118-18	West Wall #2 South	Chromium	24.4		2
RM118-18	West Wall #2 South	Lead	2.7	B	2
RM118-18	West Wall #2 South	Silver	0.49	B	2
RM118-18	**West Wall #2 South**	**Arsenic**	**2.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-18	West Wall #2 South	Barium	53.7	B	3
RM118-18	West Wall #2 South	Selenium	2	B	3
RM118-19	South Wall #1 East	Chromium	20.5		2
RM118-19	South Wall #1 East	Silver	0.55	B	2
RM118-19	**South Wall #1 East**	**Arsenic**	**2.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-19	South Wall #1 East	Barium	40.1	B	3
RM118-19	South Wall #1 East	Lead	4.1	B	3
RM118-20	South Wall #2 West	Lead	3	B	2
RM118-20	South Wall #2 West	Silver	0.43	B	2
RM118-20	**South Wall #2 West**	**Arsenic**	**3.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-20	South Wall #2 West	Barium	52.8	B	3
RM118-20	South Wall #2 West	Chromium	26.7		3
RM118-21	North Wall #1 East	Lead	3.2	B	2
RM118-21	**North Wall #1 East**	**Arsenic**	**4.9**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-21	North Wall #1 East	Barium	71.7	B	3
RM118-21	North Wall #1 East	Chromium	26.9		3
RM118-22	North Wall #2 West	Chromium	26.5		2
RM118-22	North Wall #2 West	Lead	2.3	B	2
RM118-22	North Wall #2 West	Silver	0.45	B	2
RM118-22	**North Wall #2 West**	**Arsenic**	**2.4**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-22	North Wall #2 West	Barium	40.4	B	3
RM118-23	East Wall #1 North	Lead	2.2	B	2
RM118-23	**East Wall #1 North**	**Arsenic**	**2.3**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-23	East Wall #1 North	Barium	38	B	3
RM118-23	East Wall #1 North	Chromium	31		3
RM118-24	East Wall #2 South	Chromium	18.4		2
RM118-24	East Wall #2 South	Lead	2	B	2
RM118-24	**East Wall #2 South**	**Arsenic**	**3.8**	**B**	**Sample location swipe sampled for risk assessment.**
RM118-24	East Wall #2 South	Barium	38	B	3

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.
b. The definition of the closure demonstration criteria is defined as follows

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/L = micrograms per liter

Table ES-4
Demonstration of Closure for Room 118 - Swipe Samples

Sample No.	Location	Analyte	Result (µg/100 cm^2)	Qualifier	Comparison Results [a]
118B-01	Recessed Pump	Barium	1.5	B	4
118B-02	Floor #1	Barium	2.6	B	4
118B-03	Floor #2	Barium	6.9	B	4
118B-03	Floor #2	Chromium	0.48	B	4
118B-03	Floor #2	Lead	1.7	B	4
118B-04	Floor #3	Barium	1.6	B	4
118B-05	Floor #4	Barium	3.2	B	4
118B-05	Floor #4	Chromium	0.72	B	4
118B-05	Floor #4	Lead	3.8	B	4
118B-06	Floor #5	Barium	2.2	B	4
118B-07	Floor #6	Barium	2.2	B	4
118B-07	Floor #6	Chromium	0.34	B	4
118B-08	Floor #8	Barium	2.3	B	4
118B-09	Recessed Sump	Barium	88.3		4
118B-09	Recessed Sump	Chromium	8.7		4
118B-09	Recessed Sump	Lead	1.2	B	4
118B-10	Floor #1	Barium	2.6	B	4
118B-11	Floor #2	Barium	4.1	B	4
118B-11	Floor #2	Chromium	0.16	B	4
118B-12	Floor #3	Barium	3.1	B	4
118B-12	Floor #3	Lead	5.1	B	4
118B-13	Floor #4	Barium	5.1	B	4
118B-13	Floor #4	Chromium	0.17	B	4
118B-14	Floor #5	Barium	7.8	B	4
118B-15	Floor #6	Barium	7.3	B	4
118B-16	Floor #8	Barium	5.4	B	4
118B-16	Floor #8	Chromium	0.2	B	4
118B-17	West Wall	Barium	2.6	B	4
118B-18	South Wall (Rollup Door)	Barium	1.4	B	4
118B-18	South Wall (Rollup Door)	Chromium	0.32	B	4
118B-19	North Wall	Barium	1.1	B	4
118B-20	East Wall	Barium	0.6	B	4
118B-21	West Wall	Barium	4.8	B	4
118B-22	South Wall	Barium	3.1	B	4
118B-23	North Wall	Barium	102		4
118B-23	North Wall	Chromium	0.25	B	4
118B-23	North Wall	Lead	2.9	B	4
118B-24	East Wall	Barium	0.96	B	4
118B-25	West Wall	Barium	1.4	B	4
118B-26	South Wall	Barium	3.7	B	4
118B-27	North Wall	Barium	1.3	B	4
118B-28	East Wall	Barium	4.1	B	4
118B-29	Duplicate	Barium	38.2		4
118B-29	Duplicate	Chromium	2.1		4
118B-29	Duplicate	Lead	6.6	B	4

a. The definition of the closure demonstration criteria is defined as follows:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters

MASTER - SWIPE SAMPLE RESULTS

SAMPLE_ID	LOCATION	Requested Analysis	PARAMETER	Result (µg/100 cm^2)	Qualifier
115B-01	Floor and 4-ft up walls (Middle)	PCB	Aroclor 1260	12	
115B-01	Floor and 4-ft up walls (Middle)	SVOC	2-Methylphenol	2.8	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	4-Cyanocyclohexene[a]	14	M
115B-01	Floor and 4-ft up walls (Middle)	SVOC	bis (2-Ethylhexyl) phthalate	5.7	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Di-n-butyl phthalate	5.2	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Erucylamide[a]	15	M
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Hexachlorobenzene	2.3	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Phenol, 2-(1-1-dimethylethyl)-[a]	27	M
115B-01	Floor and 4-ft up walls (Middle)	Total Metals	Barium	14.8	B
115B-01	Floor and 4-ft up walls (Middle)	Total Metals	Chromium	2.8	
115B-02	Floor and 4-ft up walls (West)	PCB	Aroclor 1260	6.0	
115B-02	Floor and 4-ft up walls (West)	SVOC	1-Butanamine, n-butyl-[a]	10	M
115B-02	Floor and 4-ft up walls (West)	SVOC	4-Cyanocyclohexene[a]	14	M
115B-02	Floor and 4-ft up walls (West)	SVOC	bis (2-Ethylhexyl) phthalate	12	
115B-02	Floor and 4-ft up walls (West)	SVOC	Butyl benzyl phthalate	3.1	J
115B-02	Floor and 4-ft up walls (West)	SVOC	Phenol, 2-(1-1-dimethylethyl)-[a]	25	M
115B-02	Floor and 4-ft up walls (West)	SVOC	Phenol, 4,4'-(1-methylethylidel)[a]	8.6	M
115B-02	Floor and 4-ft up walls (West)	Total Metals	Barium	1.7	B
115B-02	Floor and 4-ft up walls (West)	Total Metals	Chromium	0.3	B
115B-03	Floor and 4-ft up walls (East)	PCB	Aroclor 1260	1.9	
115B-03	Floor and 4-ft up walls (East)	SVOC	2-Methylphenol	5.1	J
115B-03	Floor and 4-ft up walls (East)	SVOC	4-Cyanocyclohexene[a]	16	M
115B-03	Floor and 4-ft up walls (East)	SVOC	bis (2-Ethylhexyl) phthalate	6.9	J
115B-03	Floor and 4-ft up walls (East)	SVOC	Di-n-butyl phthalate	3.5	J
115B-03	Floor and 4-ft up walls (East)	SVOC	Erucylamide[a]	7.8	M
115B-03	Floor and 4-ft up walls (East)	SVOC	Phenol, 2-(1-1-dimethylethyl)-[a]	26	M
115B-03	Floor and 4-ft up walls (East)	SVOC	Phenol, 4,4'-(1-methylethylidel)[a]	10	M
115B-03	Floor and 4-ft up walls (East)	Total Metals	Barium	2.6	B
115B-03	Floor and 4-ft up walls (East)	Total Metals	Chromium	2.4	
115B-04	Duplicate (East)	PCB	Aroclor 1260	11	
115B-04	Duplicate (East)	SVOC	1-Butanamine, n-butyl-[a]	7.5	M
115B-04	Duplicate (East)	SVOC	2-Methylphenol	3.8	J
115B-04	Duplicate (East)	SVOC	3-Penten-2-one, 4-methyl-[a]	16	M
115B-04	Duplicate (East)	SVOC	4-Cyanocyclohexene[a]	14	M
115B-04	Duplicate (East)	SVOC	Di-n-butyl phthalate	4.0	J
115B-04	Duplicate (East)	SVOC	Hexachlorobenzene	6.7	J
115B-04	Duplicate (East)	SVOC	Nonadecane[a]	8.2	M
115B-04	Duplicate (East)	SVOC	Phenanthrene	3.2	J
115B-04	Duplicate (East)	Total Metals	Barium	10.8	B
115B-04	Duplicate (East)	Total Metals	Chromium	0.18	B
115B-05	Baseline #1	SVOC	1-Butanamine, n-butyl-[a]	7.7	M
115B-05	Baseline #1	SVOC	4-Cyanocyclohexene[a]	14	M
115B-05	Baseline #1	SVOC	Di-n-butyl phthalate	2.6	J
115B-05	Baseline #1	SVOC	Ethanol, 2- (2-methoxyethoxy)-[a]	13	M
115B-05	Baseline #1	SVOC	Phenol, 2-(1-1-dimethylethyl)-[a]	16	M
115B-05	Baseline #1	Total Metals	Barium	0.35	B
115B-05	Baseline #1	VOC	2-Butanone	51	
115B-05	Baseline #1	VOC	4-Methyl-2-Pentanone	1.3	J
115B-05	Baseline #1	VOC	Acetone	17	JB
115B-05	Baseline #1	VOC	Carbon disulfide	2.4	J
115B-05	Baseline #1	VOC	Ethyl acetate[a]	120	Q
115B-05	Baseline #1	VOC	Methylene Chloride	6.1	
115B-05	Baseline #1	VOC	Tetrachloroethene	0.60	J
115B-05	Baseline #1	VOC	Trichloroethene	0.52	J
115B-06	Baseline #2	SVOC	4-Cyanocyclohexene[a]	13	M
115B-06	Baseline #2	SVOC	Di-n-butyl phthalate	2.5	J
115B-06	Baseline #2	SVOC	Phenol, 2-(1-1-dimethylethyl)-[a]	16	M
115B-06	Baseline #2	Total Metals	Barium	0.38	B
115B-06	Baseline #2	VOC	2-Butanone	44	
115B-06	Baseline #2	VOC	4-Methyl-2-Pentanone	1.1	J
115B-06	Baseline #2	VOC	Acetone	15	JB
115B-06	Baseline #2	VOC	Carbon disulfide	0.52	J
115B-06	Baseline #2	VOC	Chloromethane	0.64	J
115B-06	Baseline #2	VOC	Ethyl acetate[a]	120	Q
115B-06	Baseline #2	VOC	Hexane[a]	20	Q
115B-06	Baseline #2	VOC	Methylene Chloride	5.7	
115B-06	Baseline #2	VOC	Trichloroethene	1.1	J
Method Blank	Method Blank #2	SVOC	Octadecanoic acid[a]	4.5	M
Method Blank	Method Blank #1	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	VOC	Carbon tetrachloride	0.81	J
Method Blank	Method Blank #2	VOC	Methylene Chloride	3.2	J
Method Blank	Method Blank #2	VOC	Trichloroethene	1.0	J
TB-01	Trip Blank #1	VOC	2-Butanone	86	
TB-01	Trip Blank #1	VOC	4-Methyl-2-Pentanone	1.9	J
TB-01	Trip Blank #1	VOC	Acetone	29	B
TB-01	Trip Blank #1	VOC	Carbon disulfide	0.54	J
TB-01	Trip Blank #1	VOC	Chloromethane	0.58	J
TB-01	Trip Blank #1	VOC	Ethyl acetate[a]	230	Q
TB-01	Trip Blank #1	VOC	Methylene Chloride	7.9	
TB-01	Trip Blank #1	VOC	Tetrachloroethene	0.88	J
TB-01	Trip Blank #1	VOC	Trichloroethene	0.65	J
TB-02	Trip Blank #2	VOC	2-Butanone	84	
TB-02	Trip Blank #2	VOC	4-Methyl-2-Pentanone	1.9	J
TB-02	Trip Blank #2	VOC	Acetone	33	B
TB-02	Trip Blank #2	VOC	Carbon disulfide	0.98	J
TB-02	Trip Blank #2	VOC	Ethyl acetate[a]	250	Q
TB-02	Trip Blank #2	VOC	Hexane[a]	12	Q
TB-02	Trip Blank #2	VOC	Methylene Chloride	8.4	
TB-02	Trip Blank #2	VOC	Tetrachloroethene	0.98	J
TB-02	Trip Blank #2	VOC	Trichloroethene	0.71	J
TB-03	Trip Blank #3	VOC	4-Methyl-2-Pentanone	1.7	J
TB-03	Trip Blank #3	VOC	Acetone	29	B
TB-03	Trip Blank #3	VOC	Carbon disulfide	1.0	J
TB-03	Trip Blank #3	VOC	Ethyl acetate[a]	200	Q
TB-03	Trip Blank #3	VOC	Hexane[a]	11	Q
TB-03	Trip Blank #3	VOC	Methylene Chloride	8.4	
TB-03	Trip Blank #3	VOC	Tetrachloroethene	0.55	J
TB-03	Trip Blank #3	VOC	Trichloroethene	0.51	J
TB-04	Trip Blank #4	VOC	2-Butanone	82	
TB-04	Trip Blank #4	VOC	4-Methyl-2-Pentanone	1.6	J
TB-04	Trip Blank #4	VOC	Acetone	34	B
TB-04	Trip Blank #4	VOC	Carbon disulfide	0.84	J
TB-04	Trip Blank #4	VOC	Chloromethane	0.60	J
TB-04	Trip Blank #4	VOC	Ethyl acetate[a]	220	Q
TB-04	Trip Blank #4	VOC	Methylene Chloride	8.4	
TB-04	Trip Blank #4	VOC	Tetrachloroethene	1.4	J
TB-04	Trip Blank #4	VOC	Trichloroethene	1.6	J

a. This chemical is a tentatively identified compound.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/100 cm^2 = micrograms per 100 square centimeters

MASTER - VERIFICATION SAMPLE RESULTS (wash water)

Sample No.	Location	Requested Analysis	Analyte[a]	Result (µg/L)	Qualifier
Method Blank	Method Blank #1	SVOC	bis (2-Ethylhexyl) phthalate	10	
Method Blank	Method Blank #1	SVOC	Diethyl phthalate	3.1	J
Method Blank	Method Blank #1	VOC	Methylene chloride	3.1	J
Method Blank	Method Blank #2	SVOC	bis (2-Ethylhexyl) phthalate	62	
Method Blank	Method Blank #2	Total Metals	Arsenic	1.7	B
RM115-01	Baseline #1	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	1,700	M
RM115-01	Baseline #1	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M
RM115-01	Baseline #1	SVOC	Benzaldehyde [b]	80	M
RM115-01	Baseline #1	SVOC	Benzenemethanamine, n,n-dimeth [b]	120	M
RM115-01	Baseline #1	SVOC	Benzyl alcohol [b]	460	M
RM115-01	Baseline #1	SVOC	Benzyl chloride [b]	230	M
RM115-01	Baseline #1	SVOC	bis (2-Ethylhexyl) phthalate	19	B
RM115-01	Baseline #1	SVOC	Diethyl phthalate	2.4	JB
RM115-01	Baseline #1	SVOC	Di-n-butyl phthalate	2.2	J
RM115-01	Baseline #1	SVOC	Dodecane, 1-chloro- [b]	59	M
RM115-01	Baseline #1	SVOC	Methane, dibromochloro- [b]	48	M
RM115-01	Baseline #1	SVOC	Methane, dibromochloro- [b]	61	M
RM115-01	Baseline #1	SVOC	Methane, tribromo- [b]	96	M
RM115-01	Baseline #1	SVOC	Methane, tribromo- [b]	130	M
RM115-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami [b]	480	M
RM115-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami [b]	480	M
RM115-01	Baseline #1	SVOC	Tetradecane, 1-chloro- [b]	56	M
RM115-01	Baseline #1	Total Metals	Arsenic	7	BJ
RM115-01	Baseline #1	Total Metals	Barium	33	B
RM115-01	Baseline #1	Total Metals	Chromium	39.8	
RM115-01	Baseline #1	Total Metals	Lead	7.2	
RM115-01	Baseline #1	Total Metals	Selenium	2.6	B
RM115-01	Baseline #1	Total Metals	Silver	0.65	B
RM115-02	Baseline #2	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,600	M
RM115-02	Baseline #2	SVOC	Benzaldehyde [b]	93	M
RM115-02	Baseline #2	SVOC	bis (2-Ethylhexyl) phthalate	130	B
RM115-02	Baseline #2	SVOC	Diethyl phthalate	3.1	JB
RM115-02	Baseline #2	SVOC	Di-n-butyl phthalate	2.8	J
RM115-02	Baseline #2	SVOC	Dodecane, 1-chloro- [b]	77	M
RM115-02	Baseline #2	SVOC	Methane, tribromo- [b]	99	M
RM115-02	Baseline #2	SVOC	Tetradecane, 1-chloro- [b]	73	M
RM115-02	Baseline #2	Total Metals	Arsenic	7.2	BJ
RM115-02	Baseline #2	Total Metals	Barium	29.1	B
RM115-02	Baseline #2	Total Metals	Chromium	28.6	
RM115-02	Baseline #2	Total Metals	Lead	2.3	B
RM115-02	Baseline #2	Total Metals	Silver	0.67	B
RM115-03	Baseline #3	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	1,100	M
RM115-03	Baseline #3	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	4,400	M
RM115-03	Baseline #3	SVOC	2-Butene, 1-chloro-2-methyl- [b]	32	M
RM115-03	Baseline #3	SVOC	4-Bromo-2-fluorobiphenyl [b]	24	M
RM115-03	Baseline #3	SVOC	Benzaldehyde [b]	63	M
RM115-03	Baseline #3	SVOC	Benzyl alcohol [b]	720	M
RM115-03	Baseline #3	SVOC	Benzyl chloride [b]	970	M
RM115-03	Baseline #3	SVOC	bis (2-Ethylhexyl) phthalate	17	B
RM115-03	Baseline #3	SVOC	Diethyl phthalate	2.9	JB
RM115-03	Baseline #3	SVOC	Dodecane, 1-chloro- [b]	52	M
RM115-03	Baseline #3	SVOC	Methane, dibromochloro- [b]	49	M
RM115-03	Baseline #3	SVOC	Methane, dibromochloro- [b]	67	M
RM115-03	Baseline #3	SVOC	Methane, tribromo- [b]	190	M
RM115-03	Baseline #3	SVOC	N-methyl-n-benzyltetradecanami [b]	910	M
RM115-03	Baseline #3	SVOC	Tetradecane, 1-chloro- [b]	58	M
RM115-03	Baseline #3	Total Metals	Arsenic	7.2	BJ
RM115-03	Baseline #3	Total Metals	Barium	32.1	B
RM115-03	Baseline #3	Total Metals	Chromium	44.2	
RM115-03	Baseline #3	Total Metals	Lead	3.2	B
RM115-03	Baseline #3	Total Metals	Selenium	3.7	B
RM115-04	Field Blank	VOC	Acetone	4.9	J
RM115-04	Field Blank	VOC	Toluene	0.61	J
RM115-05	Floor and 4-ft up walls (West)	PCB	Aroclor 1260	2.9	
RM115-05	Floor and 4-ft up walls (West)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,700	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	3,900	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzaldehyde [b]	170	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzaldehyde [b]	62	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzyl alcohol [b]	510	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzyl chloride [b]	2,700	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	bis (2-Ethylhexyl) phthalate	18	B
RM115-05	Floor and 4-ft up walls (West)	SVOC	Di-n-butyl phthalate	3.2	J
RM115-05	Floor and 4-ft up walls (West)	SVOC	Dodecane, 1-chloro- [b]	71	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Methane, tribromo- [b]	64	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Methane, tribromo- [b]	45	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	N-methyl-n-benzyltetradecanami [b]	650	M
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Arsenic	7.9	BJ
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Barium	833	
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Cadmium	3.8	B
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Chromium	63.2	
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Lead	38.2	
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Silver	1.3	B
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	570	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	3,700	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4,5-Trichlorophenol	1,000	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4,6-Trichlorophenol	270	E
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4,6-Trichlorophenol	360	D
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4-Dichlorophenol	62	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4-Dichlorophenol	360	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4-Dichlorophenol	71	D
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2-Chlorophenol	20	J
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Acetophenone [b]	18	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Aroclor 1260	2	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Benzaldehyde [b]	19	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Benzyl chloride [b]	680	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	bis (2-Ethylhexyl) phthalate	10	B
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	N-methyl-n-benzyltetradecanami [b]	680	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Tetradecane, 1-chloro- [b]	19	M
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Arsenic	8	BJ
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Barium	227	
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Cadmium	2.9	B
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Chromium	42.4	
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Lead	216	
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Silver	0.95	B
RM115-07	Floor and 4-ft up walls (East)	PCB	Aroclor 1260	6.3	
RM115-07	Floor and 4-ft up walls (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	690	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	2,4,5-Trichlorophenol	2.8	J
RM115-07	Floor and 4-ft up walls (East)	SVOC	Benzaldehyde [b]	18	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Benzyl alcohol [b]	20	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Benzyl chloride [b]	1,600	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	bis (2-Ethylhexyl) phthalate	6.6	JB
RM115-07	Floor and 4-ft up walls (East)	SVOC	Di-n-butyl phthalate	2.8	J
RM115-07	Floor and 4-ft up walls (East)	SVOC	Dodecane, 1-chloro- [b]	33	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, dibromochloro- [b]	72	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, dibromochloro- [b]	66	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, tribromo- [b]	200	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, tribromo- [b]	250	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	450	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	460	M
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Arsenic	7.4	BJ
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Barium	146	B
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Cadmium	6.9	
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Chromium	37.6	
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Lead	112	
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Silver	0.42	B
RM115-08	Duplicate (East)	PCB	Aroclor 1260	2.2	
RM115-08	Duplicate (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	740	M
RM115-08	Duplicate (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	3,300	M
RM115-08	Duplicate (East)	SVOC	Acetonitrile, dibromo [b]	6.5	M
RM115-08	Duplicate (East)	SVOC	Benzaldehyde [b]	290	M
RM115-08	Duplicate (East)	SVOC	Benzaldehyde [b]	69	M
RM115-08	Duplicate (East)	SVOC	Benzene, (bromomethyl)- [b]	240	M
RM115-08	Duplicate (East)	SVOC	Benzyl alcohol [b]	32	M
RM115-08	Duplicate (East)	SVOC	Benzyl chloride [b]	2,600	M
RM115-08	Duplicate (East)	SVOC	bis (2-Ethylhexyl) phthalate	4.6	JB
RM115-08	Duplicate (East)	SVOC	Diethyl phthalate	2.4	JB
RM115-08	Duplicate (East)	SVOC	Di-n-butyl phthalate	2.5	J
RM115-08	Duplicate (East)	SVOC	Dodecane, 1-chloro- [b]	28	M
RM115-08	Duplicate (East)	SVOC	Dodecane, 1-chloro- [b]	43	M
RM115-08	Duplicate (East)	SVOC	Methane, dibromochloro- [b]	24	M
RM115-08	Duplicate (East)	SVOC	Methane, tribromo- [b]	88	M
RM115-08	Duplicate (East)	SVOC	Methane, tribromo- [b]	64	M
RM115-08	Duplicate (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	530	M
RM115-08	Duplicate (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	740	M
RM115-08	Duplicate (East)	SVOC	Tetradecane, 1-chloro- [b]	43	M
RM115-08	Duplicate (East)	Total Metals	Arsenic	6.8	BJ
RM115-08	Duplicate (East)	Total Metals	Barium	1,580	
RM115-08	Duplicate (East)	Total Metals	Cadmium	4	B
RM115-08	Duplicate (East)	Total Metals	Chromium	65.8	
RM115-08	Duplicate (East)	Total Metals	Lead	50.6	
RM115-08	Duplicate (East)	Total Metals	Silver	1.3	B
RM115-09	Decontamination water	PCB	Aroclor 1260	31	E
RM115-09	Decontamination water	PCB	Aroclor 1260	39	D
RM115-09	Decontamination water	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	1,200	M
RM115-09	Decontamination water	SVOC	2,4,5-Trichlorophenol	60	
RM115-09	Decontamination water	SVOC	2,4,6-Trichlorophenol	25	
RM115-09	Decontamination water	SVOC	2,4,6-Trichlorophenol	130	
RM115-09	Decontamination water	SVOC	2,4-Dichlorophenol	18	
RM115-09	Decontamination water	SVOC	2,4-Dichlorophenol	22	J
RM115-09	Decontamination water	SVOC	2-Methylphenol	25	
RM115-09	Decontamination water	SVOC	2-Methylphenol	33	J
RM115-09	Decontamination water	SVOC	Benzaldehyde [b]	8.2	M
RM115-09	Decontamination water	SVOC	Benzyl chloride [b]	410	M
RM115-09	Decontamination water	SVOC	Benzyl chloride [b]	89	M
RM115-09	Decontamination water	SVOC	bis (2-Ethylhexyl) phthalate	100	B
RM115-09	Decontamination water	SVOC	bis (2-Ethylhexyl) phthalate	120	B
RM115-09	Decontamination water	SVOC	Butyl benzyl phthalate	30	J
RM115-09	Decontamination water	SVOC	Diethyl phthalate	4.3	JB
RM115-09	Decontamination water	SVOC	Di-n-butyl phthalate	10	
RM115-09	Decontamination water	SVOC	Methane, bromodichloro- [b]	36	M
RM115-09	Decontamination water	SVOC	Methane, dibromochloro- [b]	63	M
RM115-09	Decontamination water	SVOC	Methane, dibromochloro- [b]	87	M
RM115-09	Decontamination water	SVOC	Methane, tribromo- [b]	44	M
RM115-09	Decontamination water	SVOC	Methane, tribromo- [b]	100	M
RM115-09	Decontamination water	SVOC	N,n-dimethyltetradecanamine [b]	51	M
RM115-09	Decontamination water	SVOC	Phenanthrene	3.9	J
RM115-09	Decontamination water	SVOC	Phthalic anhydride [b]	54	M
RM115-09	Decontamination water	SVOC	Phthalic anhydride [b]	96	M
RM115-09	Decontamination water	Total Metals	Arsenic	15.8	J
RM115-09	Decontamination water	Total Metals	Barium	6,240	
RM115-09	Decontamination water	Total Metals	Cadmium	48.6	
RM115-09	Decontamination water	Total Metals	Chromium	333	
RM115-09	Decontamination water	Total Metals	Lead	520	
RM115-09	Decontamination water	Total Metals	Mercury	0.38	
RM115-09	Decontamination water	Total Metals	Silver	4.6	B
RM115-11	Baseline #1	VOC	Bromodichloromethane	57	
RM115-11	Baseline #1	VOC	Bromoform	830	
RM115-11	Baseline #1	VOC	Chloroform	37	J
RM115-11	Baseline #1	VOC	Dibromochloromethane	460	
RM115-12	Baseline #2	VOC	Bromodichloromethane	15	
RM115-12	Baseline #2	VOC	Bromoform	200	
RM115-12	Baseline #2	VOC	Chloroform	10	
RM115-12	Baseline #2	VOC	Dibromochloromethane	42	
RM115-13	Baseline #3	VOC	Bromodichloromethane	38	
RM115-13	Baseline #3	VOC	Bromodichloromethane	39	
RM115-13	Baseline #3	VOC	Bromoform	260	E
RM115-13	Baseline #3	VOC	Bromoform	270	
RM115-13	Baseline #3	VOC	Chloroform	32	
RM115-13	Baseline #3	VOC	Chloroform	33	
RM115-13	Baseline #3	VOC	Dibromochloromethane	98	
RM115-13	Baseline #3	VOC	Dibromochloromethane	96	

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
E = Estimated result. Result concentration exceeds the calibration range.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
PCB = Polychlorinated biphenyl
µg/L = micrograms per liter

Table ES-1
Demonstration of Closure for Room 115 - Verification Samples

Sample No.	Location	Analyte [a]	Result (µg/L)	Qualifier	Demonstration Criteria [c]
RM115-05	Floor and 4-ft up walls (West)	1-Dodecanamine, n,n-dimethyl- [b]	3,900	M	2
RM115-05	Floor and 4-ft up walls (West)	1-Dodecanamine, n,n-dimethyl- [b]	2,700	M	2
RM115-05	Floor and 4-ft up walls (West)	Benzaldehyde [b]	62	M	2
RM115-05	Floor and 4-ft up walls (West)	Benzyl alcohol [b]	510	M	2
RM115-05	Floor and 4-ft up walls (West)	bis (2-Ethylhexyl) phthalate	18	B	2
RM115-05	Floor and 4-ft up walls (West)	Di-n-butyl phthalate	3.2	J	2
RM115-05	Floor and 4-ft up walls (West)	Dodecane, 1-chloro- [b]	71	M	2
RM115-05	Floor and 4-ft up walls (West)	Methane, tribromo- [b]	64	M	2
RM115-05	Floor and 4-ft up walls (West)	Methane, tribromo- [b]	45	M	2
RM115-05	Floor and 4-ft up walls (West)	N-methyl-n-benzyltetradecanami [b]	650	M	2
RM115-05	Floor and 4-ft up walls (West)	Barium	833		3
RM115-05	Floor and 4-ft up walls (West)	Benzaldehyde [b]	170	M	3
RM115-05	Floor and 4-ft up walls (West)	Cadmium	3.8	B	3
RM115-05	Floor and 4-ft up walls (West)	Chromium	63.2		3
RM115-05	Floor and 4-ft up walls (West)	Silver	1.3	B	3
RM115-05	**Floor and 4-ft up walls (West)**	**Aroclor 1260**	**2.9**		**Sample location swipe sampled for risk assessment.**
RM115-05	**Floor and 4-ft up walls (West)**	**Arsenic**	**7.9**	**BJ**	**Sample location swipe sampled for risk assessment.**
RM115-05	**Floor and 4-ft up walls (West)**	**Benzyl chloride [b]**	**2,700**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-05	**Floor and 4-ft up walls (West)**	**Lead**	**38.2**		**Sample location swipe sampled for risk assessment.**
RM115-06	Floor and 4-ft up walls (Middle)	1-Dodecanamine, n,n-dimethyl- [b]	3,700	M	2
RM115-06	Floor and 4-ft up walls (Middle)	1-Dodecanamine, n,n-dimethyl- [b]	570	M	2
RM115-06	Floor and 4-ft up walls (Middle)	Benzaldehyde [b]	19	M	2
RM115-06	Floor and 4-ft up walls (Middle)	Benzyl chloride [b]	680	M	2
RM115-06	Floor and 4-ft up walls (Middle)	bis (2-Ethylhexyl) phthalate	10	B	2
RM115-06	Floor and 4-ft up walls (Middle)	Chromium	42.4		2
RM115-06	Floor and 4-ft up walls (Middle)	N-methyl-n-benzyltetradecanami [b]	680	M	2
RM115-06	Floor and 4-ft up walls (Middle)	Tetradecane, 1-chloro- [b]	19	M	2
RM115-06	Floor and 4-ft up walls (Middle)	2,4,5-Trichlorophenol	1,000		3
RM115-06	Floor and 4-ft up walls (Middle)	2,4,6-Trichlorophenol	360	D	3
RM115-06	Floor and 4-ft up walls (Middle)	2,4,6-Trichlorophenol	270	E	3
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	360		3
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	71	D	3
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	62		3
RM115-06	Floor and 4-ft up walls (Middle)	2-Chlorophenol	20	J	3
RM115-06	Floor and 4-ft up walls (Middle)	Barium	227		3
RM115-06	Floor and 4-ft up walls (Middle)	Cadmium	2.9	B	3
RM115-06	Floor and 4-ft up walls (Middle)	Silver	0.95	B	3
RM115-06	**Floor and 4-ft up walls (Middle)**	**Lead**	**216**		**Sample location swipe sampled for risk assessment.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Aroclor 1260**	**2**		**Sample location swipe sampled for risk assessment.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Arsenic**	**8**	**BJ**	**Sample location swipe sampled for risk assessment.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Acetophenone [b]**	**18**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	Floor and 4-ft up walls (East)	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M	2
RM115-07	Floor and 4-ft up walls (East)	1-Dodecanamine, n,n-dimethyl- [b]	690	M	2
RM115-07	Floor and 4-ft up walls (East)	Benzaldehyde [b]	18	M	2
RM115-07	Floor and 4-ft up walls (East)	Benzyl alcohol [b]	20	M	2
RM115-07	Floor and 4-ft up walls (East)	bis (2-Ethylhexyl) phthalate	6.6	JB	2
RM115-07	Floor and 4-ft up walls (East)	Chromium	37.6		2
RM115-07	Floor and 4-ft up walls (East)	Di-n-butyl phthalate	2.8	J	2
RM115-07	Floor and 4-ft up walls (East)	Dodecane, 1-chloro- [b]	33	M	2
RM115-07	Floor and 4-ft up walls (East)	Methane, dibromochloro- [b]	66	M	2
RM115-07	Floor and 4-ft up walls (East)	N-methyl-n-benzyltetradecanami [b]	460	M	2
RM115-07	Floor and 4-ft up walls (East)	N-methyl-n-benzyltetradecanami [b]	450	M	2
RM115-07	Floor and 4-ft up walls (East)	Silver	0.42	B	2
RM115-07	Floor and 4-ft up walls (East)	2,4,5-Trichlorophenol	2.8	J	3
RM115-07	Floor and 4-ft up walls (East)	Barium	146	B	3
RM115-07	Floor and 4-ft up walls (East)	Cadmium	6.9		3
RM115-07	**Floor and 4-ft up walls (East)**	**Aroclor 1260**	**6.3**		**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Arsenic**	**7.4**	**BJ**	**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Benzyl chloride [b]**	**1,600**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Lead**	**112**		**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, dibromochloro- [b]**	**72**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, tribromo- [b]**	**250**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, tribromo- [b]**	**200**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	Duplicate (East)	1-Dodecanamine, n,n-dimethyl- [b]	3,300	M	2
RM115-08	Duplicate (East)	1-Dodecanamine, n,n-dimethyl- [b]	740	M	2
RM115-08	Duplicate (East)	Arsenic	6.8	BJ	2
RM115-08	Duplicate (East)	Benzaldehyde [b]	69	M	2
RM115-08	Duplicate (East)	Benzyl alcohol [b]	32	M	2
RM115-08	Duplicate (East)	bis (2-Ethylhexyl) phthalate	4.6	JB	2
RM115-08	Duplicate (East)	Diethyl phthalate	2.4	JB	2
RM115-08	Duplicate (East)	Di-n-butyl phthalate	2.5	J	2
RM115-08	Duplicate (East)	Dodecane, 1-chloro- [b]	43	M	2
RM115-08	Duplicate (East)	Dodecane, 1-chloro- [b]	28	M	2
RM115-08	Duplicate (East)	Methane, dibromochloro- [b]	24	M	2
RM115-08	Duplicate (East)	Methane, tribromo- [b]	88	M	2
RM115-08	Duplicate (East)	Methane, tribromo- [b]	64	M	2
RM115-08	Duplicate (East)	N-methyl-n-benzyltetradecanami [b]	740	M	2
RM115-08	Duplicate (East)	N-methyl-n-benzyltetradecanami [b]	530	M	2
RM115-08	Duplicate (East)	Tetradecane, 1-chloro- [b]	43	M	2
RM115-08	Duplicate (East)	Barium	1,580		3
RM115-08	Duplicate (East)	Benzaldehyde [b]	200	M	3
RM115-08	Duplicate (East)	Cadmium	4	B	3
RM115-08	Duplicate (East)	Chromium	65.8		3
RM115-08	Duplicate (East)	Silver	1.3	B	3
RM115-08	**Duplicate (East)**	**Acetonitrile, dibromo b**	**6.5**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	**Duplicate (East)**	**Aroclor 1260**	**2.2**		**Sample location swipe sampled for risk assessment.**
RM115-08	**Duplicate (East)**	**Benzene, (bromomethyl)- [b]**	**240**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	**Duplicate (East)**	**Benzyl chloride [b]**	**2,600**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	**Duplicate (East)**	**Lead**	**50.6**		**Sample location swipe sampled for risk assessment.**

a. Duplicate analysis was conducted for some samples at different dilution factors.

b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

c. The definition of the closure demonstration criteria is defined as follows:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
D = Result was obtained from the analysis of a dilution.
E = Estimated result. Result concentration exceeds the calibration range.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

µg/L = micrograms per liter
NMED = New Mexico Environment Department
RCRA = Resource Conservation and Recovery Act

Table ES-3
Demonstration of Closure for Room 115 - Swipe Samples

Sample No.	Location	Analyte [a]	Result (µg/100 cm^2)	Qualifier	Comparison Results [b]
115B-01	Floor and 4-ft up walls (Middle)	2-Methylphenol	2.8	J	4
115B-01	Floor and 4-ft up walls (Middle)	4-Cyanocyclohexene [a]	14	M	2
115B-01	Floor and 4-ft up walls (Middle)	Aroclor 1260	12		4
115B-01	Floor and 4-ft up walls (Middle)	Barium	14.6	B	4
115B-01	Floor and 4-ft up walls (Middle)	bis (2-Ethylhexyl) phthalate	5.7	J	4
115B-01	Floor and 4-ft up walls (Middle)	Chromium	2.8		4
115B-01	Floor and 4-ft up walls (Middle)	Di-n-butyl phthalate	5.2	J	4
115B-01	Floor and 4-ft up walls (Middle)	Erucylamide [a]	15	M	4
115B-01	Floor and 4-ft up walls (Middle)	Hexachlorobenzene	2.3	J	4
115B-01	Floor and 4-ft up walls (Middle)	Phenol, 2-(1-1-dimethylethyl)- [a]	27	M	4
115B-02	Floor and 4-ft up walls (West)	1-Butanamine, n-butyl- [a]	10	M	4
115B-02	Floor and 4-ft up walls (West)	4-Cyanocyclohexene [a]	14	M	2
115B-02	Floor and 4-ft up walls (West)	Aroclor 1260	6.0		4
115B-02	Floor and 4-ft up walls (West)	Barium	1.7	B	4
115B-02	Floor and 4-ft up walls (West)	bis (2-Ethylhexyl) phthalate	12		4
115B-02	Floor and 4-ft up walls (West)	Butyl benzyl phthalate	3.1	J	4
115B-02	Floor and 4-ft up walls (West)	Chromium	0.3	B	4
115B-02	Floor and 4-ft up walls (West)	Phenol, 2-(1-1-dimethylethyl)- [a]	25	M	4
115B-02	Floor and 4-ft up walls (West)	Phenol, 4,4'-(1-methylethylide) [a]	8.6	M	4
115B-03	Floor and 4-ft up walls (East)	2-Methylphenol	5.1	J	4
115B-03	Floor and 4-ft up walls (East)	4-Cyanocyclohexene [a]	16	M	4
115B-03	Floor and 4-ft up walls (East)	Aroclor 1260	1.9		4
115B-03	Floor and 4-ft up walls (East)	Barium	2.6	B	4
115B-03	Floor and 4-ft up walls (East)	bis (2-Ethylhexyl) phthalate	6.9	J	4
115B-03	Floor and 4-ft up walls (East)	Chromium	2.4		4
115B-03	Floor and 4-ft up walls (East)	Di-n-butyl phthalate	3.5	J	4
115B-03	Floor and 4-ft up walls (East)	Erucylamide [a]	7.8	M	4
115B-03	Floor and 4-ft up walls (East)	Phenol, 2-(1-1-dimethylethyl)- [a]	26	M	4
115B-03	Floor and 4-ft up walls (East)	Phenol, 4,4'-(1-methylethylide) [a]	10	M	4
115B-04	Duplicate (East)	1-Butanamine, n-butyl- [a]	7.5	M	2
115B-04	Duplicate (East)	2-Methylphenol	3.8	J	4
115B-04	Duplicate (East)	3-Penten-2-one, 4-methyl- [a]	16	M	4
115B-04	Duplicate (East)	4-Cyanocyclohexene [a]	14	M	2
115B-04	Duplicate (East)	Aroclor 1260	11		4
115B-04	Duplicate (East)	Barium	10.8	B	4
115B-04	Duplicate (East)	Chromium	0.18	B	4
115B-04	Duplicate (East)	Di-n-butyl phthalate	4.0	J	4
115B-04	Duplicate (East)	Hexachlorobenzene	6.7	J	4
115B-04	Duplicate (East)	Nonadecane [a]	8.2	M	4
115B-04	Duplicate (East)	Phenanthrene	3.2	J	4

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

b. The definition of the closure demonstration criteria is defined as follows:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J (organic) = Estimated result. Result is less than reporting limit.

M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters

Table ES-5
Summary of Risk Assessment Results for the TA-50-37 Interim Status Container Storage Unit

Constituent	Maximum Detected Concentration (µg/100cm^2)	Qualifier	Noncarcinogenic Hazard Quotient	Carcinogenic Risk
TA-50-37, Room 115				
Barium	14.6	B	0.00021	NA
Chromium	2.8		NA	1E-05
Aroclor 1260	12		NA	2E-05
1-Butanamine, n-butyl- [a, b]	10	M	NA	NA
2-Methylphenol	5.1	J	0.00018	NA
3-Penten-2-one, 4-methyl- [a, b]	16	M	NA	NA
4-Cyanocyclohexene [a, b]	16	M	NA	NA
bis (2-Ethylhexyl) phthalate	12		0.0011	1E-07
Butyl benzyl phthalate	3.1	J	0.000028	NA
Di-n-butyl phthalate	5.2	J	0.000093	NA
Erucylamide [a, b]	15	M	NA	NA
Hexachlorobenzene	6.7	J	0.015	8E-06
Nonadecane [a, b]	8.2	M	NA	NA
Phenanthrene	3.2	J	0.000022	NA
Phenol, 2-(1-1-dimethylethyl)- [a, b]	27	M	NA	NA
Phenol, 4,4'-(1-methylethylide) [a, b]	10	M	NA	NA
TA-50-37, Room 118				
Barium	102		0.0015	n/a
Chromium	8.7		n/a	3E-05
Lead [c]	6.6	B	n/a	n/a
ROOM 115, CUMULATIVE HAZARD INDEX AND RISK			**0.017**	**4E-05**
ROOM 118, CUMULATIVE HAZARD INDEX AND RISK:			**0.0015**	**3E-05**

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

b. Not evaluated because toxicity data are unavailable and both the identity and concentration are uncertain.

c. Lead was evaluated separately. The estimated concentration of lead in blood of the worker and the fetus are below the goal of 10 µg/dL specified in EPA guidance.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

J (organic) = Estimated result. Result is less than reporting limit.

Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

µg/100 cm^2 = micrograms per liter

µg/dL = micrograms per deciliter

EPA = U.S. Environmental Protection Agency

NA = Not applicable

Table 4-1
Room 115 Swipe Sample Results Forwarded to Risk Assessment

Sample No.	Location	Analyte	Result (µg/100 cm^2)	Qualifier
115B-01	Floor and 4-ft up walls (Middle)	2-Methylphenol	2.8	J
		Aroclor 1260	12	
		Barium	14.6	B
		bis (2-Ethylhexyl) phthalate	5.7	J
		Chromium	2.8	
		Di-n-butyl phthalate	5.2	J
		Erucylamide [a]	15	M
		Hexachlorobenzene	2.3	J
		Phenol, 2-(1-1-dimethylethyl)- [a]	27	M
115B-02	Floor and 4-ft up walls (West)	1-Butanamine, n-butyl- [a]	10	M
		Aroclor 1260	6.0	
		Barium	1.7	B
		bis (2-Ethylhexyl) phthalate	12	
		Butyl benzyl phthalate	3.1	J
		Chromium	0.3	B
		Phenol, 2-(1-1-dimethylethyl)- [a]	25	M
		Phenol, 4,4'-(1-methylethylide) [a]	8.6	M
115B-03	Floor and 4-ft up walls (East)	2-Methylphenol	5.1	J
		4-Cyanocyclohexene [a]	16	M
		Aroclor 1260	1.9	
		Barium	2.6	B
		bis (2-Ethylhexyl) phthalate	6.9	J
		Chromium	2.4	
		Di-n-butyl phthalate	3.5	J
		Erucylamide [a]	7.8	M
		Phenol, 2-(1-1-dimethylethyl)- [a]	26	M
		Phenol, 4,4'-(1-methylethylide) [a]	10	M
115B-04	Duplicate (East)	2-Methylphenol	3.8	J
		3-Penten-2-one, 4-methyl- [a]	16	M
		Aroclor 1260	11	
		Barium	10.8	B
		Chromium	0.18	B
		Di-n-butyl phthalate	4.0	J
		Hexachlorobenzene	6.7	J
		Nonadecane [a]	8.2	M
		Phenanthrene	3.2	J

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/100 cm^2 = micrograms per 100 square centimeters

Table 4-2
Summary of Risk Assessment Results for Room 115

Constituent	Maximum Detected Concentration (µg/100 cm^2)	Qualifier	Noncarcinogenic Hazard Quotient	Carcinogenic Risk
Total Metals (SW846 Methods 6010B and 7471A)				
Barium	14.6	B	0.00021	NA
Chromium	2.8		NA	1E-05
PCB (SW846 Method 8082)				
Aroclor 1260	12		NA	2E-05
SVOC (SW846 Method 8270C)				
1-Butanamine, n-butyl- [a, b]	10	M	NA	NA
2-Methylphenol	5.1	J	0.00018	NA
3-Penten-2-one, 4-methyl- [a, b]	16	M	NA	NA
4-Cyanocyclohexene [a, b]	16	M	NA	NA
bis (2-Ethylhexyl) phthalate	12		0.0011	1E-07
Butyl benzyl phthalate	3.1	J	0.000028	NA
Di-n-butyl phthalate	5.2	J	0.000093	NA
Erucylamide [a, b]	15	M	NA	NA
Hexachlorobenzene	6.7	J	0.015	8E-06
Nonadecane [a, b]	8.2	M	NA	NA
Phenanthrene	3.2	J	0.000022	NA
Phenol, 2-(1-1-dimethylethyl)- [a, b]	27	M	NA	NA
Phenol, 4,4'-(1-methylethylide) [a, b]	10	M	NA	NA
CUMULATIVE HAZARD INDEX AND RISK			**0.017**	**4E-05**

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

b. Not evaluated because toxicity data are unavailable and both the identity and concentration are uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
J (organic) = Estimated result. Result is less than reporting limit.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

µg/100 cm^2 = micrograms per liter
µg/dL = micrograms per deciliter
EPA = U.S. Environmental Protection Agency
NA = Not applicable

Table 5-1
Demonstration of Closure for Room 115 - Verification Samples

Sample No.	Location	Analyte[a]	Result (µg/L)	Qualifier	Demonstration Criteria
RM115-05	Floor and 4-ft up walls (West)	1-Dodecanamine, n,n-dimethyl-[a]	3,900	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	1-Dodecanamine, n,n-dimethyl-[a]	2,700	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	**Floor and 4-ft up walls (West)**	**Aroclor 1260**	**2.9**		**Sample location swipe sampled for risk assessment.**
RM115-05	**Floor and 4-ft up walls (West)**	**Arsenic**	**7.9**	**BJ**	**Sample location swipe sampled for risk assessment.**
RM115-05	Floor and 4-ft up walls (West)	Barium	833		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-05	Floor and 4-ft up walls (West)	Benzaldehyde[a]	170	M	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-05	Floor and 4-ft up walls (West)	Benzaldehyde[a]	62	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	Benzyl alcohol[b]	510	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	**Floor and 4-ft up walls (West)**	**Benzyl chloride[b]**	**2,700**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-05	Floor and 4-ft up walls (West)	bis (2-Ethylhexyl) phthalate	18	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	Cadmium	3.8	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-05	Floor and 4-ft up walls (West)	Chromium	63.2		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-05	Floor and 4-ft up walls (West)	Di-n-butyl phthalate	3.2	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	Dodecane, 1-chloro-[b]	71	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	**Floor and 4-ft up walls (West)**	**Lead**	**38.2**		**Sample location swipe sampled for risk assessment.**
RM115-05	Floor and 4-ft up walls (West)	Methane, tribromo-[b]	64	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	Methane, tribromo-[b]	45	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	N-methyl-n-benzyltetradecanami[a]	650	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-05	Floor and 4-ft up walls (West)	Silver	1.3	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	1-Dodecanamine, n,n-dimethyl-[a]	3,700	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	Floor and 4-ft up walls (Middle)	1-Dodecanamine, n,n-dimethyl-[a]	570	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	Floor and 4-ft up walls (Middle)	2,4,5-Trichlorophenol	1,000		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	2,4,6-Trichlorophenol	360	D	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	2,4,6-Trichlorophenol	270	E	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	360		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	71	D	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	62		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	2-Chlorophenol	20	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	**Floor and 4-ft up walls (Middle)**	**Acetophenone[b]**	**18**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to swipe sampling.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Aroclor 1260**	**2**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Arsenic**	**8**	**BJ**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-06	Floor and 4-ft up walls (Middle)	Barium	227		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	Benzaldehyde[a]	19	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	Floor and 4-ft up walls (Middle)	Benzyl chloride[a]	680	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	Floor and 4-ft up walls (Middle)	bis (2-Ethylhexyl) phthalate	10	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	Floor and 4-ft up walls (Middle)	Cadmium	2.9	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	Chromium	42.4		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	**Floor and 4-ft up walls (Middle)**	**Lead**	**216**		**Sample location swipe sampled for risk assessment.**
RM115-06	Floor and 4-ft up walls (Middle)	N-methyl-n-benzyltetradecanami[a]	680	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-06	Floor and 4-ft up walls (Middle)	Silver	0.95	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-06	Floor and 4-ft up walls (Middle)	Tetradecane, 1-chloro-[b]	19	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	1-Dodecanamine, n,n-dimethyl-[a]	2,400	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	1-Dodecanamine, n,n-dimethyl-[a]	690	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	2,4,5-Trichlorophenol	2.8	J	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-07	**Floor and 4-ft up walls (East)**	**Aroclor 1260**	**6.3**		**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Arsenic**	**7.4**	**BJ**	**Sample location swipe sampled for risk assessment.**
RM115-07	Floor and 4-ft up walls (East)	Barium	146	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-07	Floor and 4-ft up walls (East)	Benzaldehyde[a]	18	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	Benzyl alcohol[b]	20	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	**Floor and 4-ft up walls (East)**	**Benzyl chloride[b]**	**1,600**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	Floor and 4-ft up walls (East)	bis (2-Ethylhexyl) phthalate	6.6	JB	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	Cadmium	6.9		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-07	Floor and 4-ft up walls (East)	Chromium	37.6		**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	Di-n-butyl phthalate	2.8	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	Dodecane, 1-chloro-[b]	33	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	**Floor and 4-ft up walls (East)**	**Lead**	**112**		**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, dibromochloro-[a]**	**72**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	Floor and 4-ft up walls (East)	Methane, dibromochloro-[a]	66	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, tribromo-[a]**	**250**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, tribromo-[a]**	**200**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-07	Floor and 4-ft up walls (East)	N-methyl-n-benzyltetradecanami[a]	460	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	N-methyl-n-benzyltetradecanami[a]	450	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-07	Floor and 4-ft up walls (East)	Silver	0.42	B	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	1-Dodecanamine, n,n-dimethyl-[a]	3,300	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	1-Dodecanamine, n,n-dimethyl-[a]	740	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	**Duplicate (East)**	**Acetonitrile, dibromo[a]**	**6.5**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	**Duplicate (East)**	**Aroclor 1260**	**2.2**		**Sample location swipe sampled for risk assessment**
RM115-08	Duplicate (East)	Arsenic	6.8	BJ	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Barium	1,580		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-08	Duplicate (East)	Benzaldehyde[a]	290	M	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-08	Duplicate (East)	Benzaldehyde[a]	69	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	**Duplicate (East)**	**Benzene, (bromomethyl)-[a]**	**240**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	Duplicate (East)	Benzyl alcohol[b]	32	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	**Duplicate (East)**	**Benzyl chloride[b]**	**2,600**	**M**	**Sample location swipe sampled for risk assessment.**
RM115-08	Duplicate (East)	bis (2-Ethylhexyl) phthalate	4.6	JB	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Cadmium	4	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-08	Duplicate (East)	Chromium	65.8		**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-08	Duplicate (East)	Diethyl phthalate	2.4	JB	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Di-n-butyl phthalate	2.5	J	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Dodecane, 1-chloro-[b]	43	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Dodecane, 1-chloro-[b]	28	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	**Duplicate (East)**	**Lead**	**50.6**		**Sample location swipe sampled for risk assessment**
RM115-08	Duplicate (East)	Methane, dibromochloro-[a]	24	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Methane, tribromo-[b]	88	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Methane, tribromo-[b]	64	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	N-methyl-n-benzyltetradecanami[a]	740	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	N-methyl-n-benzyltetradecanami[a]	530	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
RM115-08	Duplicate (East)	Silver	1.3	B	**Criterion #3:** Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
RM115-08	Duplicate (East)	Tetradecane, 1-chloro-[b]	43	M	**Criterion #2:** Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
D = Result was obtained from the analysis of a dilution.
E = Estimated result. Result concentration exceeds the calibration range.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/L = micrograms per liter
NMED = New Mexico Environment Department
RCRA = Resource Conservation and Recovery Act

Table 5-3
Demonstration of Closure for Room 115 - Verification Samples

Sample No.	Location	Analyte [a]	Result (μg/100 cm^2)	Qualifier	Comparison Results
115B-01	Floor and 4-ft up walls (Middle)	2-Methylphenol	2.8	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	4-Cyanocyclohexene [a]	14	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
115B-01	Floor and 4-ft up walls (Middle)	Aroclor 1260	12		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	Barium	14.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	bis (2-Ethylhexyl) phthalate	5.7	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	Chromium	2.8		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	Di-n-butyl phthalate	5.2	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	Erucylamide [a]	15	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	Hexachlorobenzene	2.3	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-01	Floor and 4-ft up walls (Middle)	Phenol, 2-(1-1-dimethylethyl)- [a]	27	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	1-Butanamine, n-butyl- [a]	10	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	4-Cyanocyclohexene [a]	14	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
115B-02	Floor and 4-ft up walls (West)	Aroclor 1260	6.0		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	Barium	1.7	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	bis (2-Ethylhexyl) phthalate	12		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	Butyl benzyl phthalate	3.1	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	Chromium	0.3	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	Phenol, 2-(1-1-dimethylethyl)- [a]	25	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-02	Floor and 4-ft up walls (West)	Phenol, 4,4'-(1-methylethylide) [a]	8.6	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	2-Methylphenol	5.1	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	4-Cyanocyclohexene [a]	16	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Aroclor 1260	1.9		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Barium	2.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	bis (2-Ethylhexyl) phthalate	6.9	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Chromium	2.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Di-n-butyl phthalate	3.5	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Erucylamide [a]	7.8	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Phenol, 2-(1-1-dimethylethyl)- [a]	26	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-03	Floor and 4-ft up walls (East)	Phenol, 4,4'-(1-methylethylide) [a]	10	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	1-Butanamine, n-butyl- [a]	7.5	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
115B-04	Duplicate (East)	2-Methylphenol	3.8	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	3-Penten-2-one, 4-methyl- [a]	16	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	4-Cyanocyclohexene [a]	14	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
115B-04	Duplicate (East)	Aroclor 1260	11		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	Barium	10.8	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	Chromium	0.18	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	Di-n-butyl phthalate	4.0	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	Hexachlorobenzene	6.7	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	Nonadecane [a]	8.2	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
115B-04	Duplicate (East)	Phenanthrene	3.2	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
μg/100 cm^2 = micrograms per 100 square centimeters
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-9
Waste Materials and Disposition for Closure of Room 115

Waste Material	Estimated Quantity	Type	Disposal Destination
PPE, Sponges, Buckets, cheesecloth, etc.	<1 cubic meter	Solid	TA-54
Decontamination Wash Water	<55 gallons	Liquid	RLWTF
Verification Wash Water	<30 gallons	Liquid	RLWTF

PPE = personal protective equipment
RLWTF = Radioactive Liquid Waste Treatment Facility
TA = technical area

Table 2-8
Room 115 Waste Characterization Sample Results

Sample No.	Location	Requested Analysis	Analyte [a]	Result (ug/L)	Qualifier
RM115-09	Decontamination water	PCB	Aroclor 1260	39	D
RM115-09	Decontamination water	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	1,200	M
RM115-09	Decontamination water	SVOC	2,4,5-Trichlorophenol	60	
RM115-09	Decontamination water	SVOC	2,4,6-Trichlorophenol	25	
RM115-09	Decontamination water	SVOC	2,4,6-Trichlorophenol	130	
RM115-09	Decontamination water	SVOC	2,4-Dichlorophenol	18	
RM115-09	Decontamination water	SVOC	2,4-Dichlorophenol	22	J
RM115-09	Decontamination water	SVOC	2-Methylphenol	25	
RM115-09	Decontamination water	SVOC	2-Methylphenol	33	J
RM115-09	Decontamination water	SVOC	Benzaldehyde [b]	8.2	M
RM115-09	Decontamination water	SVOC	Benzyl chloride [b]	410	M
RM115-09	Decontamination water	SVOC	Benzyl chloride [b]	89	M
RM115-09	Decontamination water	SVOC	bis (2-Ethylhexyl) phthalate	100	B
RM115-09	Decontamination water	SVOC	bis (2-Ethylhexyl) phthalate	120	B
RM115-09	Decontamination water	SVOC	Butyl benzyl phthalate	30	J
RM115-09	Decontamination water	SVOC	Diethyl phthalate	4.3	JB
RM115-09	Decontamination water	SVOC	Di-n-butyl phthalate	10	
RM115-09	Decontamination water	SVOC	Methane, bromodichloro- [b]	36	M
RM115-09	Decontamination water	SVOC	Methane, dibromochloro- [b]	63	M
RM115-09	Decontamination water	SVOC	Methane, dibromochloro- [b]	87	M
RM115-09	Decontamination water	SVOC	Methane, tribromo- [b]	44	M
RM115-09	Decontamination water	SVOC	Methane, tribromo- [b]	100	M
RM115-09	Decontamination water	SVOC	N,n-dimethyltetradecanamine [b]	51	M
RM115-09	Decontamination water	SVOC	Phenanthrene	3.9	J
RM115-09	Decontamination water	SVOC	Phthalic anhydride [b]	54	M
RM115-09	Decontamination water	SVOC	Phthalic anhydride [b]	96	M
RM115-09	Decontamination water	Total Metals	Arsenic	15.8	J
RM115-09	Decontamination water	Total Metals	Barium	6,240	
RM115-09	Decontamination water	Total Metals	Cadmium	48.6	
RM115-09	Decontamination water	Total Metals	Chromium	333	
RM115-09	Decontamination water	Total Metals	Lead	520	
RM115-09	Decontamination water	Total Metals	Mercury	0.38	
RM115-09	Decontamination water	Total Metals	Silver	4.6	B

a. Duplicate analysis was conducted for some samples at different dilution factors.

b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J (organic) = Estimated result. Result is less than reporting limit.

M = Result was measured against internal standard assuming a response factor of 1.

D = Result was obtained from the analysis of a dilution.

Definition of Acronyms

µg/L = micrograms per liter

PCB = Polychlorinated biphenyl

SVOC = semivolatile organic compounds

Table 2-7
Room 115 Swipe Sample Results - Comparison to Baseline and QA/QC Results

Sample No.	Location	Analyte	Result ($\mu g/100\ cm^2$)	Qualifier	Comparison Results
115B-02	Floor and 4-ft up walls (West)	1-Butanamine, n-butyl-[a]	10	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-05	Baseline #1	1-Butanamine, n-butyl-[a]	7.7	M	NA
115B-04	Duplicate (East)	1-Butanamine, n-butyl-[a]	7.5	M	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
TB-01	Trip Blank #1	2-Butanone	86		NA
TB-02	Trip Blank #2	2-Butanone	84		NA
TB-04	Trip Blank #4	2-Butanone	82		NA
115B-05	Baseline #1	2-Butanone	51		NA
115B-06	Baseline #2	2-Butanone	44		NA
115B-03	Floor and 4-ft up walls (East)	2-Methylphenol	5.1	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-04	Duplicate (East)	2-Methylphenol	3.8	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	2-Methylphenol	2.8	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-04	Duplicate (East)	3-Penten-2-one, 4-methyl-[a]	16	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	4-Cyanocyclohexene[a]	16	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	4-Cyanocyclohexene[a]	14	M	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
115B-02	Floor and 4-ft up walls (West)	4-Cyanocyclohexene[a]	14	M	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
115B-04	Duplicate (East)	4-Cyanocyclohexene[a]	14	M	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
115B-05	Baseline #1	4-Cyanocyclohexene[a]	14	M	NA
115B-06	Baseline #2	4-Cyanocyclohexene[a]	13	M	NA
TB-01	Trip Blank #1	4-Methyl-2-Pentanone	1.9	J	NA
TB-02	Trip Blank #2	4-Methyl-2-Pentanone	1.9	J	NA
TB-03	Trip Blank #3	4-Methyl-2-Pentanone	1.7	J	NA
TB-04	Trip Blank #4	4-Methyl-2-Pentanone	1.6	J	NA
115B-05	Baseline #1	4-Methyl-2-Pentanone	1.3	J	NA
115B-06	Baseline #2	4-Methyl-2-Pentanone	1.1	J	NA
TB-04	Trip Blank #4	Acetone	34	B	NA
TB-02	Trip Blank #2	Acetone	33	B	NA
TB-01	Trip Blank #1	Acetone	29	B	NA
TB-03	Trip Blank #3	Acetone	29	B	NA
115B-05	Baseline #1	Acetone	17	JB	NA
115B-06	Baseline #2	Acetone	15	JB	NA
Method Blank	Method Blank #1	Acetone	4.4	J	NA
Method Blank	Method Blank #2	Acetone	4.4	J	NA
115B-01	Floor and 4-ft up walls (Middle)	Aroclor 1260	12		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-04	Duplicate (East)	Aroclor 1260	11		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-02	Floor and 4-ft up walls (West)	Aroclor 1260	6.0		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	Aroclor 1260	1.9		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	Barium	14.6	B	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-04	Duplicate (East)	Barium	10.8	B	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	Barium	2.6	B	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-02	Floor and 4-ft up walls (West)	Barium	1.7	B	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-06	Baseline #2	Barium	0.36	B	NA
115B-05	Baseline #1	Barium	0.35	B	NA
115B-02	Floor and 4-ft up walls (West)	bis (2-Ethylhexyl) phthalate	12		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	bis (2-Ethylhexyl) phthalate	6.9	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	bis (2-Ethylhexyl) phthalate	5.7	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-02	Floor and 4-ft up walls (West)	Butyl benzyl phthalate	3.1	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-05	Baseline #1	Carbon disulfide	2.4	J	NA
TB-03	Trip Blank #3	Carbon disulfide	1.0	J	NA
TB-02	Trip Blank #2	Carbon disulfide	0.98	J	NA
TB-04	Trip Blank #4	Carbon disulfide	0.84	J	NA
TB-01	Trip Blank #1	Carbon disulfide	0.54	J	NA
115B-06	Baseline #2	Carbon disulfide	0.52	J	NA
Method Blank	Method Blank #2	Carbon tetrachloride	0.81	J	NA
115B-06	Baseline #2	Chloromethane	0.64	J	NA
TB-04	Trip Blank #4	Chloromethane	0.60	J	NA
TB-01	Trip Blank #1	Chloromethane	0.58	J	NA
115B-01	Floor and 4-ft up walls (Middle)	Chromium	2.8		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	Chromium	2.4		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-02	Floor and 4-ft up walls (West)	Chromium	0.3	B	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-04	Duplicate (East)	Chromium	0.18	B	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	Di-n-butyl phthalate	5.2	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-04	Duplicate (East)	Di-n-butyl phthalate	4.0	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	Di-n-butyl phthalate	3.5	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-05	Baseline #1	Di-n-butyl phthalate	2.6	J	NA
115B-06	Baseline #2	Di-n-butyl phthalate	2.5	J	NA
115B-01	Floor and 4-ft up walls (Middle)	Erucylamide[a]	15	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	Erucylamide[a]	7.8	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-05	Baseline #1	Ethanol, 2- (2-methoxyethoxy)-[a]	13	M	NA
TB-02	Trip Blank #2	Ethyl acetate[a]	250	Q	NA
TB-01	Trip Blank #1	Ethyl acetate[a]	230	Q	NA
TB-04	Trip Blank #4	Ethyl acetate[a]	220	Q	NA
TB-03	Trip Blank #3	Ethyl acetate[a]	200	Q	NA
115B-05	Baseline #1	Ethyl acetate[a]	120	Q	NA
115B-06	Baseline #2	Ethyl acetate[a]	120	Q	NA
115B-04	Duplicate (East)	Hexachlorobenzene	6.7	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	Hexachlorobenzene	2.3	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-06	Baseline #2	Hexane[a]	20	Q	NA
TB-02	Trip Blank #2	Hexane[a]	12	Q	NA
TB-03	Trip Blank #3	Hexane[a]	11	Q	NA
TB-02	Trip Blank #2	Methylene Chloride	8.4		NA
TB-03	Trip Blank #3	Methylene Chloride	8.4		NA
TB-04	Trip Blank #4	Methylene Chloride	8.4		NA
TB-01	Trip Blank #1	Methylene Chloride	7.9		NA
115B-05	Baseline #1	Methylene Chloride	6.1		NA
115B-06	Baseline #2	Methylene Chloride	5.7		NA
Method Blank	Method Blank #2	Methylene Chloride	3.2	J	NA
115B-04	Duplicate (East)	Nonadecane[a]	8.2	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
Method Blank	Method Blank #2	Octadecanoic acid[a]	4.5	M	NA
115B-04	Duplicate (East)	Phenanthrene	3.2	J	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-01	Floor and 4-ft up walls (Middle)	Phenol, 2-(1-1-dimethylethyl)-[a]	27	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-03	Floor and 4-ft up walls (East)	Phenol, 2-(1-1-dimethylethyl)-[a]	26	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-02	Floor and 4-ft up walls (West)	Phenol, 2-(1-1-dimethylethyl)-[a]	25	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-05	Baseline #1	Phenol, 2-(1-1-dimethylethyl)-[a]	16	M	NA
115B-06	Baseline #2	Phenol, 2-(1-1-dimethylethyl)-[a]	16	M	NA
115B-03	Floor and 4-ft up walls (East)	Phenol, 4,4'-(1-methylethylide)[a]	10	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
115B-02	Floor and 4-ft up walls (West)	Phenol, 4,4'-(1-methylethylide)[a]	8.6	M	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. These sample results will be forwarded to Risk Assessment.
TB-04	Trip Blank #4	Tetrachloroethene	1.4	J	NA
TB-02	Trip Blank #2	Tetrachloroethene	0.98	J	NA
TB-01	Trip Blank #1	Tetrachloroethene	0.88	J	NA
115B-05	Baseline #1	Tetrachloroethene	0.60	J	NA
TB-03	Trip Blank #3	Tetrachloroethene	0.55	J	NA
TB-04	Trip Blank #4	Trichloroethene	1.6	J	NA
115B-06	Baseline #2	Trichloroethene	1.1	J	NA
Method Blank	Method Blank #2	Trichloroethene	1.0	J	NA
TB-02	Trip Blank #2	Trichloroethene	0.71	J	NA
TB-01	Trip Blank #1	Trichloroethene	0.65	J	NA
115B-05	Baseline #1	Trichloroethene	0.52	J	NA
TB-03	Trip Blank #3	Trichloroethene	0.51	J	NA

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
$\mu g/100\ cm^2$ = micrograms per 100 square centimeters
QA/QC = quality assurance/quality control
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-6
Summary of Swipe Sample Results for Room 115, April 2004

Sample No.	Location	Requested Analysis	Analyte	Result (µg/100 cm^2)	Qualifier
115B-01	Floor and 4-ft up walls (Middle)	PCB	Aroclor 1260	12	
115B-01	Floor and 4-ft up walls (Middle)	SVOC	2-Methylphenol	2.8	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	4-Cyanocyclohexene [a]	14	M
115B-01	Floor and 4-ft up walls (Middle)	SVOC	bis (2-Ethylhexyl) phthalate	5.7	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Di-n-butyl phthalate	5.2	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Erucylamide [a]	15	M
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Hexachlorobenzene	2.3	J
115B-01	Floor and 4-ft up walls (Middle)	SVOC	Phenol, 2-(1-1-dimethylethyl)- [a]	27	M
115B-01	Floor and 4-ft up walls (Middle)	Total Metals	Barium	14.6	B
115B-01	Floor and 4-ft up walls (Middle)	Total Metals	Chromium	2.8	
115B-02	Floor and 4-ft up walls (West)	PCB	Aroclor 1260	6.0	
115B-02	Floor and 4-ft up walls (West)	SVOC	1-Butanamine, n-butyl- [a]	10	M
115B-02	Floor and 4-ft up walls (West)	SVOC	4-Cyanocyclohexene [a]	14	M
115B-02	Floor and 4-ft up walls (West)	SVOC	bis (2-Ethylhexyl) phthalate	12	
115B-02	Floor and 4-ft up walls (West)	SVOC	Butyl benzyl phthalate	3.1	J
115B-02	Floor and 4-ft up walls (West)	SVOC	Phenol, 2-(1-1-dimethylethyl)- [a]	25	M
115B-02	Floor and 4-ft up walls (West)	SVOC	Phenol, 4,4'-(1-methylethylide) [a]	8.6	M
115B-02	Floor and 4-ft up walls (West)	Total Metals	Barium	1.7	B
115B-02	Floor and 4-ft up walls (West)	Total Metals	Chromium	0.3	B
115B-03	Floor and 4-ft up walls (East)	PCB	Aroclor 1260	1.9	
115B-03	Floor and 4-ft up walls (East)	SVOC	2-Methylphenol	5.1	J
115B-03	Floor and 4-ft up walls (East)	SVOC	4-Cyanocyclohexene [a]	16	M
115B-03	Floor and 4-ft up walls (East)	SVOC	bis (2-Ethylhexyl) phthalate	6.9	J
115B-03	Floor and 4-ft up walls (East)	SVOC	Di-n-butyl phthalate	3.5	J
115B-03	Floor and 4-ft up walls (East)	SVOC	Erucylamide [a]	7.8	M
115B-03	Floor and 4-ft up walls (East)	SVOC	Phenol, 2-(1-1-dimethylethyl)- [a]	26	M
115B-03	Floor and 4-ft up walls (East)	SVOC	Phenol, 4,4'-(1-methylethylide) [a]	10	M
115B-03	Floor and 4-ft up walls (East)	Total Metals	Barium	2.6	B
115B-03	Floor and 4-ft up walls (East)	Total Metals	Chromium	2.4	
115B-04	Duplicate (East)	PCB	Aroclor 1260	11	
115B-04	Duplicate (East)	SVOC	1-Butanamine, n-butyl- [a]	7.5	M
115B-04	Duplicate (East)	SVOC	2-Methylphenol	3.8	J
115B-04	Duplicate (East)	SVOC	3-Penten-2-one, 4-methyl- [a]	16	M
115B-04	Duplicate (East)	SVOC	4-Cyanocyclohexene [a]	14	M
115B-04	Duplicate (East)	SVOC	Di-n-butyl phthalate	4.0	J
115B-04	Duplicate (East)	SVOC	Hexachlorobenzene	6.7	J
115B-04	Duplicate (East)	SVOC	Nonadecane [a]	8.2	M
115B-04	Duplicate (East)	SVOC	Phenanthrene	3.2	J
115B-04	Duplicate (East)	Total Metals	Barium	10.8	B
115B-04	Duplicate (East)	Total Metals	Chromium	0.18	B
115B-05	Baseline #1	SVOC	1-Butanamine, n-butyl- [a]	7.7	M
115B-05	Baseline #1	SVOC	4-Cyanocyclohexene [a]	14	M
115B-05	Baseline #1	SVOC	Di-n-butyl phthalate	2.6	J
115B-05	Baseline #1	SVOC	Ethanol, 2- (2-methoxyethoxy)- [a]	13	M
115B-05	Baseline #1	SVOC	Phenol, 2-(1-1-dimethylethyl)- [a]	16	M
115B-05	Baseline #1	Total Metals	Barium	0.35	B
115B-05	Baseline #1	VOC	2-Butanone	51	
115B-05	Baseline #1	VOC	4-Methyl-2-Pentanone	1.3	J
115B-05	Baseline #1	VOC	Acetone	17	JB
115B-05	Baseline #1	VOC	Carbon disulfide	2.4	J
115B-05	Baseline #1	VOC	Ethyl acetate [a]	120	Q
115B-05	Baseline #1	VOC	Methylene Chloride	6.1	
115B-05	Baseline #1	VOC	Tetrachloroethene	0.60	J
115B-05	Baseline #1	VOC	Trichloroethene	0.52	J
115B-06	Baseline #2	SVOC	4-Cyanocyclohexene [a]	13	M
115B-06	Baseline #2	SVOC	Di-n-butyl phthalate	2.5	J
115B-06	Baseline #2	SVOC	Phenol, 2-(1-1-dimethylethyl)- [a]	16	M
115B-06	Baseline #2	Total Metals	Barium	0.36	B
115B-06	Baseline #2	VOC	2-Butanone	44	
115B-06	Baseline #2	VOC	4-Methyl-2-Pentanone	1.1	J
115B-06	Baseline #2	VOC	Acetone	15	JB
115B-06	Baseline #2	VOC	Carbon disulfide	0.52	J
115B-06	Baseline #2	VOC	Chloromethane	0.64	J
115B-06	Baseline #2	VOC	Ethyl acetate [a]	120	Q
115B-06	Baseline #2	VOC	Hexane [a]	20	Q
115B-06	Baseline #2	VOC	Methylene Chloride	5.7	
115B-06	Baseline #2	VOC	Trichloroethene	1.1	J
Method Blank	Method Blank #2	SVOC	Octadecanoic acid [a]	4.5	M
Method Blank	Method Blank #1	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	VOC	Carbon tetrachloride	0.81	J
Method Blank	Method Blank #2	VOC	Methylene Chloride	3.2	J
Method Blank	Method Blank #2	VOC	Trichloroethene	1.0	J
TB-01	Trip Blank #1	VOC	2-Butanone	86	
TB-01	Trip Blank #1	VOC	4-Methyl-2-Pentanone	1.9	J
TB-01	Trip Blank #1	VOC	Acetone	29	B
TB-01	Trip Blank #1	VOC	Carbon disulfide	0.54	J
TB-01	Trip Blank #1	VOC	Chloromethane	0.58	J
TB-01	Trip Blank #1	VOC	Ethyl acetate [a]	230	Q
TB-01	Trip Blank #1	VOC	Methylene Chloride	7.9	
TB-01	Trip Blank #1	VOC	Tetrachloroethene	0.88	J
TB-01	Trip Blank #1	VOC	Trichloroethene	0.65	J
TB-02	Trip Blank #2	VOC	2-Butanone	84	
TB-02	Trip Blank #2	VOC	4-Methyl-2-Pentanone	1.9	J
TB-02	Trip Blank #2	VOC	Acetone	33	B
TB-02	Trip Blank #2	VOC	Carbon disulfide	0.98	J
TB-02	Trip Blank #2	VOC	Ethyl acetate [a]	250	Q
TB-02	Trip Blank #2	VOC	Hexane [a]	12	Q
TB-02	Trip Blank #2	VOC	Methylene Chloride	8.4	
TB-02	Trip Blank #2	VOC	Tetrachloroethene	0.98	J
TB-02	Trip Blank #2	VOC	Trichloroethene	0.71	J
TB-03	Trip Blank #3	VOC	4-Methyl-2-Pentanone	1.7	J
TB-03	Trip Blank #3	VOC	Acetone	29	B
TB-03	Trip Blank #3	VOC	Carbon disulfide	1.0	J
TB-03	Trip Blank #3	VOC	Ethyl acetate [a]	200	Q
TB-03	Trip Blank #3	VOC	Hexane [a]	11	Q
TB-03	Trip Blank #3	VOC	Methylene Chloride	8.4	
TB-03	Trip Blank #3	VOC	Tetrachloroethene	0.55	J
TB-03	Trip Blank #3	VOC	Trichloroethene	0.51	J
TB-04	Trip Blank #4	VOC	2-Butanone	82	
TB-04	Trip Blank #4	VOC	4-Methyl-2-Pentanone	1.6	J
TB-04	Trip Blank #4	VOC	Acetone	34	B
TB-04	Trip Blank #4	VOC	Carbon disulfide	0.84	J
TB-04	Trip Blank #4	VOC	Chloromethane	0.60	J
TB-04	Trip Blank #4	VOC	Ethyl acetate [a]	220	Q
TB-04	Trip Blank #4	VOC	Methylene Chloride	8.4	
TB-04	Trip Blank #4	VOC	Tetrachloroethene	1.4	J
TB-04	Trip Blank #4	VOC	Trichloroethene	1.6	J

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

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B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
µg/100 cm^2 = micrograms per 100 square centimeters
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-5
Room 115 Verification Sample Results - Comparison to Baseline, QA/QC , and EPA Region 6 MSSLs

Sample No.	Location	Analyte [a]	Result (µg/L)	Qualifier	EPA Region 6 MSSLs (µg/L)	Comparison Results
RM115-03	Baseline #3	1-Dodecanamine, n,n-dimethyl- [b]	4,400	M	NA	NA
RM115-05	Floor and 4-ft up walls (West)	1-Dodecanamine, n,n-dimethyl- [b]	3,900	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-06	Floor and 4-ft up walls (Middle)	1-Dodecanamine, n,n-dimethyl- [b]	3,700	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-08	Duplicate (East)	1-Dodecanamine, n,n-dimethyl- [b]	3,300	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-05	Floor and 4-ft up walls (West)	1-Dodecanamine, n,n-dimethyl- [b]	2,700	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-02	Baseline #2	1-Dodecanamine, n,n-dimethyl- [b]	2,600	M	NA	NA
RM115-01	Baseline #1	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M	NA	NA
RM115-07	Floor and 4-ft up walls (East)	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-01	Baseline #1	1-Dodecanamine, n,n-dimethyl- [b]	1,700	M	NA	NA
RM115-03	Baseline #3	1-Dodecanamine, n,n-dimethyl- [b]	1,100	M	NA	NA
RM115-08	Duplicate (East)	1-Dodecanamine, n,n-dimethyl- [b]	740	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-07	Floor and 4-ft up walls (East)	1-Dodecanamine, n,n-dimethyl- [b]	690	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-06	Floor and 4-ft up walls (Middle)	1-Dodecanamine, n,n-dimethyl- [b]	570	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-06	Floor and 4-ft up walls (Middle)	2,4,5-Trichlorophenol	1,000		3,700	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-07	Floor and 4-ft up walls (East)	2,4,5-Trichlorophenol	2.8	J	3,700	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	2,4,6-Trichlorophenol	360	D	6.1	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	2,4,6-Trichlorophenol	270	E	6.1	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	360		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	71	D	110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	2,4-Dichlorophenol	62		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-03	Baseline #3	2-Butene, 1-chloro-2-methyl- [b]	32	M	NA	NA
RM115-06	Floor and 4-ft up walls (Middle)	2-Chlorophenol	20	J	30	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-03	Baseline #3	4-Bromo-2-fluorobiphenyl [b]	24	M	NA	NA
RM115-04	Field Blank	Acetone	4.9	J	NA	NA
RM115-08	**Duplicate (East)**	**Acetonitrile, dibromo [b]**	**6.5**	**M**	**NA**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to swipe sampling.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Acetophenone [b]**	**18**	**M**	**NA**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to swipe sampling.**
RM115-07	**Floor and 4-ft up walls (East)**	**Aroclor 1260**	**6.3**		**0.034**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-05	**Floor and 4-ft up walls (West)**	**Aroclor 1260**	**2.9**		**0.034**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-08	**Duplicate (East)**	**Aroclor 1260**	**2.2**		**0.034**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Aroclor 1260**	**2**		**0.034**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-06	**Floor and 4-ft up walls (Middle)**	**Arsenic**	**8**	**BJ**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-05	**Floor and 4-ft up walls (West)**	**Arsenic**	**7.9**	**BJ**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-07	**Floor and 4-ft up walls (East)**	**Arsenic**	**7.4**	**BJ**	**0.045**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-02	Baseline #2	Arsenic	7.2	BJ	0.045	NA
RM115-03	Baseline #3	Arsenic	7.2	BJ	0.045	NA
RM115-01	Baseline #1	Arsenic	7	BJ	0.045	NA
RM115-08	Duplicate (East)	Arsenic	6.8	BJ	0.045	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
Method Blank	Method Blank #2	Arsenic	1.7	B	0.045	NA
RM115-08	Duplicate (East)	Barium	1,580		2,600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-05	Floor and 4-ft up walls (West)	Barium	833		2,600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	Barium	227		2,600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-07	Floor and 4-ft up walls (East)	Barium	146	B	2,600	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-01	Baseline #1	Barium	33	B	2,600	NA
RM115-03	Baseline #3	Barium	32.1	B	2,600	NA
RM115-02	Baseline #2	Barium	29.1	B	2,600	NA
RM115-08	Duplicate (East)	Benzaldehyde [b]	290	M	3,700	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-05	Floor and 4-ft up walls (West)	Benzaldehyde [b]	170	M	3,700	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-02	Baseline #2	Benzaldehyde [b]	93	M	3,700	NA
RM115-01	Baseline #1	Benzaldehyde [b]	80	M	3,700	NA
RM115-08	Duplicate (East)	Benzaldehyde [b]	69	M	3,700	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-03	Baseline #3	Benzaldehyde [b]	63	M	3,700	NA
RM115-05	Floor and 4-ft up walls (West)	Benzaldehyde [b]	62	M	3,700	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-06	Floor and 4-ft up walls (Middle)	Benzaldehyde [b]	19	M	3,700	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-07	Floor and 4-ft up walls (East)	Benzaldehyde [b]	18	M	3,700	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-08	**Duplicate (East)**	**Benzene, (bromomethyl)- [b]**	**240**	**M**	**NA**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to swipe sampling.**
RM115-01	Baseline #1	Benzenemethanamine, n,n-dimeth [b]	120	M	NA	NA
RM115-03	Baseline #3	Benzyl alcohol [b]	720	M	11,000	NA
RM115-05	Floor and 4-ft up walls (West)	Benzyl alcohol [b]	510	M	11,000	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
RM115-01	Baseline #1	Benzyl alcohol [b]	460	M	11,000	NA
RM115-08	Duplicate (East)	Benzyl alcohol [b]	32	M	11,000	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
RM115-07	Floor and 4-ft up walls (East)	Benzyl alcohol [b]	20	M	11,000	The detected levels are equal to or less than the detected level in the Baseline #1 sample.
RM115-05	**Floor and 4-ft up walls (West)**	**Benzyl chloride [b]**	**2,700**	**M**	**0.066**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-08	**Duplicate (East)**	**Benzyl chloride [b]**	**2,600**	**M**	**0.066**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-07	**Floor and 4-ft up walls (East)**	**Benzyl chloride [b]**	**1,600**	**M**	**0.066**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-03	Baseline #3	Benzyl chloride [b]	970	M	0.066	NA
RM115-06	Floor and 4-ft up walls (Middle)	Benzyl chloride [b]	680	M	0.066	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-01	Baseline #1	Benzyl chloride [b]	230	M	0.066	NA
RM115-02	Baseline #2	bis (2-Ethylhexyl) phthalate	130	B	4.8	NA
Method Blank	Method Blank #2	bis (2-Ethylhexyl) phthalate	62		4.8	NA
RM115-01	Baseline #1	bis (2-Ethylhexyl) phthalate	19	B	4.8	NA
RM115-05	Floor and 4-ft up walls (West)	bis (2-Ethylhexyl) phthalate	18	B	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-03	Baseline #3	bis (2-Ethylhexyl) phthalate	17	B	4.8	NA
Method Blank	Method Blank #1	bis (2-Ethylhexyl) phthalate	10		4.8	NA
RM115-06	Floor and 4-ft up walls (Middle)	bis (2-Ethylhexyl) phthalate	10	B	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-07	Floor and 4-ft up walls (East)	bis (2-Ethylhexyl) phthalate	6.6	JB	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-08	Duplicate (East)	bis (2-Ethylhexyl) phthalate	4.6	JB	4.8	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-11	Baseline #1	Bromodichloromethane	57		0.18	NA
RM115-13	Baseline #3	Bromodichloromethane	39		0.18	NA
RM115-13	Baseline #3	Bromodichloromethane	38		0.18	NA
RM115-12	Baseline #2	Bromodichloromethane	15		0.18	NA
RM115-11	Baseline #1	Bromoform	830		8.5	NA
RM115-13	Baseline #3	Bromoform	270		8.5	NA
RM115-13	Baseline #3	Bromoform	260	E	8.5	NA
RM115-12	Baseline #2	Bromoform	200		8.5	NA
RM115-07	Floor and 4-ft up walls (East)	Cadmium	6.9		18	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-08	Duplicate (East)	Cadmium	4	B	18	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-05	Floor and 4-ft up walls (West)	Cadmium	3.8	B	18	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	Cadmium	2.9	B	18	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-11	Baseline #1	Chloroform	37	J	75	NA
RM115-13	Baseline #3	Chloroform	33		75	NA
RM115-13	Baseline #3	Chloroform	32		75	NA
RM115-12	Baseline #2	Chloroform	10		75	NA
RM115-08	Duplicate (East)	Chromium	65.8		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-05	Floor and 4-ft up walls (West)	Chromium	63.2		110	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-03	Baseline #3	Chromium	44.2		110	NA
RM115-06	Floor and 4-ft up walls (Middle)	Chromium	42.4		110	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-01	Baseline #1	Chromium	39.8		110	NA
RM115-07	Floor and 4-ft up walls (East)	Chromium	37.6		110	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-02	Baseline #2	Chromium	28.6		110	NA
RM115-11	Baseline #1	Dibromochloromethane	460		0.13	NA
RM115-13	Baseline #3	Dibromochloromethane	98		0.13	NA
RM115-13	Baseline #3	Dibromochloromethane	96		0.13	NA
RM115-12	Baseline #2	Dibromochloromethane	42		0.13	NA
Method Blank	Method Blank #1	Diethyl phthalate	3.1	J	29,000	NA
RM115-02	Baseline #2	Diethyl phthalate	3.1	JB	29,000	NA
RM115-03	Baseline #3	Diethyl phthalate	2.9	JB	29,000	NA
RM115-01	Baseline #1	Diethyl phthalate	2.4	JB	29,000	NA
RM115-08	Duplicate (East)	Diethyl phthalate	2.4	JB	29,000	The detected levels are equal to or less than the detected level in the method blank.
RM115-05	Floor and 4-ft up walls (West)	Di-n-butyl phthalate	3.2	J	3,700	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-02	Baseline #2	Di-n-butyl phthalate	2.8	J	3,700	NA
RM115-07	Floor and 4-ft up walls (East)	Di-n-butyl phthalate	2.8	J	3,700	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-08	Duplicate (East)	Di-n-butyl phthalate	2.5	J	3,700	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-01	Baseline #1	Di-n-butyl phthalate	2.2	J	3,700	NA
RM115-02	Baseline #2	Dodecane, 1-chloro- [b]	77	M	NA	NA
RM115-05	Floor and 4-ft up walls (West)	Dodecane, 1-chloro- [b]	71	M	NA	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-01	Baseline #1	Dodecane, 1-chloro- [b]	59	M	NA	NA
RM115-03	Baseline #3	Dodecane, 1-chloro- [b]	52	M	NA	NA
RM115-08	Duplicate (East)	Dodecane, 1-chloro- [b]	43	M	NA	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-07	Floor and 4-ft up walls (East)	Dodecane, 1-chloro- [b]	33	M	NA	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-08	Duplicate (East)	Dodecane, 1-chloro- [b]	28	M	NA	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-06	**Floor and 4-ft up walls (Middle)**	**Lead**	**216**		**15**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-07	**Floor and 4-ft up walls (East)**	**Lead**	**112**		**15**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-08	**Duplicate (East)**	**Lead**	**50.6**		**15**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-05	**Floor and 4-ft up walls (West)**	**Lead**	**38.2**		**15**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-01	Baseline #1	Lead	7.2		15	NA
RM115-03	Baseline #3	Lead	3.2	B	15	NA
RM115-02	Baseline #2	Lead	2.3	B	15	NA
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, dibromochloro- [b]**	**72**	**M**	**0.13**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-03	Baseline #3	Methane, dibromochloro- [b]	67	M	0.13	NA
RM115-07	Floor and 4-ft up walls (East)	Methane, dibromochloro- [b]	66	M	0.13	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-01	Baseline #1	Methane, dibromochloro- [b]	61	M	0.13	NA
RM115-03	Baseline #3	Methane, dibromochloro- [b]	49	M	0.13	NA
RM115-01	Baseline #1	Methane, dibromochloro- [b]	48	M	0.13	NA
RM115-08	Duplicate (East)	Methane, dibromochloro- [b]	24	M	0.13	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, tribromo- [b]**	**250**	**M**	**8.5**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-07	**Floor and 4-ft up walls (East)**	**Methane, tribromo- [b]**	**200**	**M**	**8.5**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample and is above the MSSL. This sample location must be forwarded to swipe sampling.**
RM115-03	Baseline #3	Methane, tribromo- [b]	190	M	8.5	NA
RM115-01	Baseline #1	Methane, tribromo- [b]	130	M	8.5	NA
RM115-02	Baseline #2	Methane, tribromo- [b]	99	M	8.5	NA
RM115-01	Baseline #1	Methane, tribromo- [b]	96	M	8.5	NA
RM115-08	Duplicate (East)	Methane, tribromo- [b]	88	M	8.5	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-05	Floor and 4-ft up walls (West)	Methane, tribromo- [b]	64	M	8.5	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-08	Duplicate (East)	Methane, tribromo- [b]	64	M	8.5	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-05	Floor and 4-ft up walls (West)	Methane, tribromo- [b]	45	M	8.5	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
Method Blank	Method Blank #1	Methylene chloride	3.1	J	4.3	NA
RM115-03	Baseline #3	N-methyl-n-benzyltetradecanami [b]	910	M	NA	NA
RM115-08	Duplicate (East)	N-methyl-n-benzyltetradecanami [b]	740	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-06	Floor and 4-ft up walls (Middle)	N-methyl-n-benzyltetradecanami [b]	680	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-05	Floor and 4-ft up walls (West)	N-methyl-n-benzyltetradecanami [b]	650	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-08	Duplicate (East)	N-methyl-n-benzyltetradecanami [b]	530	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-01	Baseline #1	N-methyl-n-benzyltetradecanami [b]	480	M	NA	NA
RM115-01	Baseline #1	N-methyl-n-benzyltetradecanami [b]	480	M	NA	NA
RM115-07	Floor and 4-ft up walls (East)	N-methyl-n-benzyltetradecanami [b]	460	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-07	Floor and 4-ft up walls (East)	N-methyl-n-benzyltetradecanami [b]	450	M	NA	The detected levels are equal to or less than the detected level in the Baseline #3 sample.
RM115-03	Baseline #3	Selenium	3.7	B	180	NA
RM115-01	Baseline #1	Selenium	2.6	B	180	NA
RM115-05	Floor and 4-ft up walls (West)	Silver	1.3	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-08	Duplicate (East)	Silver	1.3	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-06	Floor and 4-ft up walls (Middle)	Silver	0.95	B	180	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample, however it is below the MSSL
RM115-02	Baseline #2	Silver	0.67	B	180	NA
RM115-01	Baseline #1	Silver	0.65	B	180	NA
RM115-07	Floor and 4-ft up walls (East)	Silver	0.42	B	180	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-02	Baseline #2	Tetradecane, 1-chloro- [b]	73	M	NA	NA
RM115-03	Baseline #3	Tetradecane, 1-chloro- [b]	58	M	NA	NA
RM115-01	Baseline #1	Tetradecane, 1-chloro- [b]	56	M	NA	NA
RM115-08	Duplicate (East)	Tetradecane, 1-chloro- [b]	43	M	NA	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-06	Floor and 4-ft up walls (Middle)	Tetradecane, 1-chloro- [b]	19	M	NA	The detected levels are equal to or less than the detected level in the Baseline #2 sample.
RM115-04	Field Blank	Toluene	0.61	J	720	NA

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
D = Result was obtained from the analysis of a dilution.
E = Estimated result. Result concentration exceeds the calibration range.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/L = micrograms per liter
EPA = U.S. Environmental Protection Agency
MSSL = Medium Specific Screening Level
PCB = Polychlorinated biphenyl
QA/QC = quality assurance/quality control
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-2
Swipe Samples Collected During Closure of Room 115, April 2004

Sample No.	Location	Requested Analysis [a]
115B-01	Floor and 4-ft up walls (Middle)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
115B-02	Floor and 4-ft up walls (West)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
115B-03	Floor and 4-ft up walls (East)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
115B-04	Duplicate (East)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
115B-05	Baseline #1	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		VOC (SW846 Method 8260B)
		PCB (SW846 Method 8082)
115B-06	Baseline #2	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		VOC (SW846 Method 8260B)
		PCB (SW846 Method 8082)
TB-01	Trip Blank #1	VOC (SW846 Method 8260B)
TB-02	Trip Blank #2	VOC (SW846 Method 8260B)
TB-03	Trip Blank #3	VOC (SW846 Method 8260B)
TB-04	Trip Blank #4	VOC (SW846 Method 8260B)

a. EPA, 1986b and all approved updates, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* , *(SW-846)* Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

Definition of Acronyms

PCB = polychlorinated byphenyl
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-3
Solvent Medium Used for Collection of Swipe Samples

Requested Analysis	Solvent Medium	Collection Medium
Total Metals	Deionized Water	Gauze Pad
SVOC	Methylene Chloride	Gauze Pad
VOC	Methyl Alcohol (Methanol)	Gauze Pad
PCB	Hexane	Cheese cloth

Definition of Acronyms

PCB = polychlorinated biphenyls
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-4
Summary of Verification Sample Results for Room 115, September 2003

Sample No.	Location	Requested Analysis	Analyte [a]	Result (µg/L)	Qualifier
Method Blank	Method Blank #1	SVOC	bis (2-Ethylhexyl) phthalate	10	
Method Blank	Method Blank #1	SVOC	Diethyl phthalate	3.1	J
Method Blank	Method Blank #1	VOC	Methylene chloride	3.1	J
Method Blank	Method Blank #2	SVOC	bis (2-Ethylhexyl) phthalate	62	
Method Blank	Method Blank #2	Total Metals	Arsenic	1.7	B
RM115-01	Baseline #1	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	1,700	M
RM115-01	Baseline #1	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M
RM115-01	Baseline #1	SVOC	Benzaldehyde [b]	80	M
RM115-01	Baseline #1	SVOC	Benzenemethanamine, n,n-dimeth	120	M
RM115-01	Baseline #1	SVOC	Benzyl alcohol [b]	460	M
RM115-01	Baseline #1	SVOC	Benzyl chloride [b]	230	M
RM115-01	Baseline #1	SVOC	bis (2-Ethylhexyl) phthalate	19	B
RM115-01	Baseline #1	SVOC	Diethyl phthalate	2.4	JB
RM115-01	Baseline #1	SVOC	Di-n-butyl phthalate	2.2	J
RM115-01	Baseline #1	SVOC	Dodecane, 1-chloro- [b]	59	M
RM115-01	Baseline #1	SVOC	Methane, dibromochloro- [b]	48	M
RM115-01	Baseline #1	SVOC	Methane, dibromochloro- [b]	61	M
RM115-01	Baseline #1	SVOC	Methane, tribromo- [b]	96	M
RM115-01	Baseline #1	SVOC	Methane, tribromo- [b]	130	M
RM115-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami [b]	480	M
RM115-01	Baseline #1	SVOC	N-methyl-n-benzyltetradecanami [b]	480	M
RM115-01	Baseline #1	SVOC	Tetradecane, 1-chloro- [b]	56	M
RM115-01	Baseline #1	Total Metals	Arsenic	7	BJ
RM115-01	Baseline #1	Total Metals	Barium	33	B
RM115-01	Baseline #1	Total Metals	Chromium	39.8	
RM115-01	Baseline #1	Total Metals	Lead	7.2	
RM115-01	Baseline #1	Total Metals	Selenium	2.6	B
RM115-01	Baseline #1	Total Metals	Silver	0.65	B
RM115-02	Baseline #2	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,600	M
RM115-02	Baseline #2	SVOC	Benzaldehyde [b]	93	M
RM115-02	Baseline #2	SVOC	bis (2-Ethylhexyl) phthalate	130	B
RM115-02	Baseline #2	SVOC	Diethyl phthalate	3.1	JB
RM115-02	Baseline #2	SVOC	Di-n-butyl phthalate	2.8	J
RM115-02	Baseline #2	SVOC	Dodecane, 1-chloro- [b]	77	M
RM115-02	Baseline #2	SVOC	Methane, tribromo- [b]	99	M
RM115-02	Baseline #2	SVOC	Tetradecane, 1-chloro- [b]	73	M
RM115-02	Baseline #2	Total Metals	Arsenic	7.2	BJ
RM115-02	Baseline #2	Total Metals	Barium	29.1	B
RM115-02	Baseline #2	Total Metals	Chromium	28.6	
RM115-02	Baseline #2	Total Metals	Lead	2.3	B
RM115-02	Baseline #2	Total Metals	Silver	0.67	B
RM115-03	Baseline #3	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	1,100	M
RM115-03	Baseline #3	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	4,400	M
RM115-03	Baseline #3	SVOC	2-Butene, 1-chloro-2-methyl- [b]	32	M
RM115-03	Baseline #3	SVOC	4-Bromo-2-fluorobiphenyl [a]	24	M
RM115-03	Baseline #3	SVOC	Benzaldehyde [b]	63	M
RM115-03	Baseline #3	SVOC	Benzyl alcohol [b]	720	M
RM115-03	Baseline #3	SVOC	Benzyl chloride [b]	970	M
RM115-03	Baseline #3	SVOC	bis (2-Ethylhexyl) phthalate	17	B
RM115-03	Baseline #3	SVOC	Diethyl phthalate	2.9	JB
RM115-03	Baseline #3	SVOC	Dodecane, 1-chloro- [b]	52	M
RM115-03	Baseline #3	SVOC	Methane, dibromochloro- [b]	49	M
RM115-03	Baseline #3	SVOC	Methane, dibromochloro- [b]	67	M
RM115-03	Baseline #3	SVOC	Methane, tribromo- [b]	190	M
RM115-03	Baseline #3	SVOC	N-methyl-n-benzyltetradecanami [b]	910	M
RM115-03	Baseline #3	SVOC	Tetradecane, 1-chloro- [b]	58	M
RM115-03	Baseline #3	Total Metals	Arsenic	7.2	BJ
RM115-03	Baseline #3	Total Metals	Barium	32.1	B
RM115-03	Baseline #3	Total Metals	Chromium	44.2	
RM115-03	Baseline #3	Total Metals	Lead	3.2	B
RM115-03	Baseline #3	Total Metals	Selenium	3.7	B
RM115-04	Field Blank	VOC	Acetone	4.9	J
RM115-04	Field Blank	VOC	Toluene	0.61	J
RM115-05	Floor and 4-ft up walls (West)	PCB	Aroclor 1260	2.9	
RM115-05	Floor and 4-ft up walls (West)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,700	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	3,900	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzaldehyde [b]	170	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzaldehyde [b]	62	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzyl alcohol [b]	510	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Benzyl chloride [b]	2,700	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	bis (2-Ethylhexyl) phthalate	18	B
RM115-05	Floor and 4-ft up walls (West)	SVOC	Di-n-butyl phthalate	3.2	J
RM115-05	Floor and 4-ft up walls (West)	SVOC	Dodecane, 1-chloro- [b]	71	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Methane, tribromo- [b]	64	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	Methane, tribromo- [b]	45	M
RM115-05	Floor and 4-ft up walls (West)	SVOC	N-methyl-n-benzyltetradecanami [b]	650	M
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Arsenic	7.9	BJ
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Barium	833	
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Cadmium	3.8	B
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Chromium	63.2	
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Lead	38.2	
RM115-05	Floor and 4-ft up walls (West)	Total Metals	Silver	1.3	B
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	570	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	3,700	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4,5-Trichlorophenol	1,000	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4,6-Trichlorophenol	270	E
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4,6-Trichlorophenol	360	D
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4-Dichlorophenol	62	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4-Dichlorophenol	360	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2,4-Dichlorophenol	71	D
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	2-Chlorophenol	20	J
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Acetophenone [b]	18	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Aroclor 1260	2	
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Benzaldehyde [b]	19	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Benzyl chloride [b]	680	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	bis (2-Ethylhexyl) phthalate	10	B
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	N-methyl-n-benzyltetradecanami [b]	680	M
RM115-06	Floor and 4-ft up walls (Middle)	SVOC	Tetradecane, 1-chloro- [b]	19	M
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Arsenic	8	BJ
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Barium	227	
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Cadmium	2.9	B
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Chromium	42.4	
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Lead	216	
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals	Silver	0.95	B
RM115-07	Floor and 4-ft up walls (East)	PCB	Aroclor 1260	6.3	
RM115-07	Floor and 4-ft up walls (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	690	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	2,400	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	2,4,5-Trichlorophenol	2.8	J
RM115-07	Floor and 4-ft up walls (East)	SVOC	Benzaldehyde [b]	18	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Benzyl alcohol [b]	20	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Benzyl chloride [b]	1,600	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	bis (2-Ethylhexyl) phthalate	6.6	JB
RM115-07	Floor and 4-ft up walls (East)	SVOC	Di-n-butyl phthalate	2.8	J
RM115-07	Floor and 4-ft up walls (East)	SVOC	Dodecane, 1-chloro- [b]	33	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, dibromochloro- [b]	72	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, dibromochloro- [b]	66	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, tribromo- [b]	200	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	Methane, tribromo- [b]	250	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	450	M
RM115-07	Floor and 4-ft up walls (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	460	M
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Arsenic	7.4	BJ
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Barium	146	B
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Cadmium	6.9	
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Chromium	37.6	
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Lead	112	
RM115-07	Floor and 4-ft up walls (East)	Total Metals	Silver	0.42	B
RM115-08	Duplicate (East)	PCB	Aroclor 1260	2.2	
RM115-08	Duplicate (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	740	M
RM115-08	Duplicate (East)	SVOC	1-Dodecanamine, n,n-dimethyl- [b]	3,300	M
RM115-08	Duplicate (East)	SVOC	Acetonitrile, dibromo [b]	6.5	M
RM115-08	Duplicate (East)	SVOC	Benzaldehyde [b]	290	M
RM115-08	Duplicate (East)	SVOC	Benzaldehyde [b]	69	M
RM115-08	Duplicate (East)	SVOC	Benzene, (bromomethyl)- [b]	240	M
RM115-08	Duplicate (East)	SVOC	Benzyl alcohol [b]	32	M
RM115-08	Duplicate (East)	SVOC	Benzyl chloride [b]	2,600	M
RM115-08	Duplicate (East)	SVOC	bis (2-Ethylhexyl) phthalate	4.6	JB
RM115-08	Duplicate (East)	SVOC	Diethyl phthalate	2.4	JB
RM115-08	Duplicate (East)	SVOC	Di-n-butyl phthalate	2.5	J
RM115-08	Duplicate (East)	SVOC	Dodecane, 1-chloro- [b]	28	M
RM115-08	Duplicate (East)	SVOC	Dodecane, 1-chloro- [b]	43	M
RM115-08	Duplicate (East)	SVOC	Methane, dibromochloro- [b]	24	M
RM115-08	Duplicate (East)	SVOC	Methane, tribromo- [b]	88	M
RM115-08	Duplicate (East)	SVOC	Methane, tribromo- [b]	64	M
RM115-08	Duplicate (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	530	M
RM115-08	Duplicate (East)	SVOC	N-methyl-n-benzyltetradecanami [b]	740	M
RM115-08	Duplicate (East)	SVOC	Tetradecane, 1-chloro- [b]	43	M
RM115-08	Duplicate (East)	Total Metals	Arsenic	6.8	BJ
RM115-08	Duplicate (East)	Total Metals	Barium	1,580	
RM115-08	Duplicate (East)	Total Metals	Cadmium	4	B
RM115-08	Duplicate (East)	Total Metals	Chromium	55.8	
RM115-08	Duplicate (East)	Total Metals	Lead	56.6	
RM115-08	Duplicate (East)	Total Metals	Silver	1.3	B
RM115-11	Baseline #1	VOC	Bromodichloromethane	57	
RM115-11	Baseline #1	VOC	Bromoform	830	
RM115-11	Baseline #1	VOC	Chloroform	37	J
RM115-11	Baseline #1	VOC	Dibromochloromethane	460	
RM115-12	Baseline #2	VOC	Bromodichloromethane	15	
RM115-12	Baseline #2	VOC	Bromoform	200	
RM115-12	Baseline #2	VOC	Chloroform	10	
RM115-12	Baseline #2	VOC	Dibromochloromethane	42	
RM115-13	Baseline #3	VOC	Bromodichloromethane	38	
RM115-13	Baseline #3	VOC	Bromodichloromethane	39	
RM115-13	Baseline #3	VOC	Bromoform	260	E
RM115-13	Baseline #3	VOC	Bromoform	270	
RM115-13	Baseline #3	VOC	Chloroform	32	
RM115-13	Baseline #3	VOC	Chloroform	33	
RM115-13	Baseline #3	VOC	Dibromochloromethane	98	
RM115-13	Baseline #3	VOC	Dibromochloromethane	96	

a. Duplicate analysis was conducted for some samples at different dilution factors.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
D = Result was obtained fro the analysis of a dilution.
E = Estimated result. Result concentration exceeds the calibration range.
J (inorganic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/L = micrograms per liter
PCB = Polychlorinated biphenyl
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 2-1

Verification Samples Collected During Closure of Room 115, September 2003

Sample No.	Location [a,b]	Requested Analysis [c]
RM115-01	Baseline #1	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-02	Baseline #2	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-03	Baseline #3	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-04	Field Blank	VOC (SW846 Method 8260B)
RM115-05	Floor and 4-ft up walls (West)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-06	Floor and 4-ft up walls (Middle)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-07	Floor and 4-ft up walls (East)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-08	Duplicate (East)	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-09	Decontamination water	Total Metals (SW846 Methods 6010B and 7471A)
		SVOC (SW846 Method 8270C)
		PCB (SW846 Method 8082)
RM115-10	Trip Blank	VOC (SW846 Method 8260B)
RM115-11	Baseline #1	VOC (SW846 Method 8260B)
RM115-12	Baseline #2	VOC (SW846 Method 8260B)
RM115-13	Baseline #3	VOC (SW846 Method 8260B)

a. *Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1* , Room 59 and TA-50-37, LA-UR-03-5409, July 2003.

b. Luciana Vigil-Holterman, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* February 3, 2003.

c. *Methods* , *(SW-846)* Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

Definition of Acronyms

PCB = polychlorinated byphenyl
SVOC = semivolatile organic compounds
VOC = volatile organic compounds

Table 5-4
Room 118 Swipe Samples - Demonstration of Closure by Criteria

Sample No.	Location	Analyte	Result (µg/100 cm²)	Qualifier	Comparison Results
118B-01	Recessed Pump	Barium	1.5	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-02	Floor #1	Barium	2.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-03	Floor #2	Barium	6.9	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-03	Floor #2	Chromium	0.48	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-03	Floor #2	Lead	1.7	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-04	Floor #3	Barium	1.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-05	Floor #4	Barium	3.2	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-05	Floor #4	Chromium	0.72	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-05	Floor #4	Lead	3.8	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-06	Floor #5	Barium	2.2	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-07	Floor #6	Barium	2.2	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-07	Floor #6	Chromium	0.34	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-08	Floor #8	Barium	2.3	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-09	Recessed Sump	Barium	88.3		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-09	Recessed Sump	Chromium	8.7		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-09	Recessed Sump	Lead	1.2	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-10	Floor #1	Barium	2.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-11	Floor #2	Barium	4.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-11	Floor #2	Chromium	0.16	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-12	Floor #3	Barium	3.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-12	Floor #3	Lead	5.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-13	Floor #4	Barium	5.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-13	Floor #4	Chromium	0.17	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-14	Floor #5	Barium	7.8	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-15	Floor #6	Barium	7.3	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-16	Floor #8	Barium	5.4	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-16	Floor #8	Chromium	0.2	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-17	West Wall	Barium	2.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-18	South Wall (Rollup Door)	Barium	1.4	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-18	South Wall (Rollup Door)	Chromium	0.32	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-19	North Wall	Barium	1.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-20	East Wall	Barium	0.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-21	West Wall	Barium	4.8	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-22	South Wall	Barium	3.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-23	North Wall	Barium	102		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-23	North Wall	Chromium	0.25	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-23	North Wall	Lead	2.9	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-24	East Wall	Barium	0.96	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-25	West Wall	Barium	1.4	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-26	South Wall	Barium	3.7	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-27	North Wall	Barium	1.3	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-28	East Wall	Barium	4.1	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-29	Duplicate	Barium	38.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-29	Duplicate	Chromium	2.1		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
118B-29	Duplicate	Lead	6.6	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters

MASTER - VERIFICATION SAMPLE RESULTS (wash water)

SAMPLE_ID	LOCATION	Requested Analysis	Analyte	Result (µg/L)	Qualifier
Method Blanks	Method Blank #2	SVOC	bis (2-Ethylhexyl) phthalate	16	
Method Blanks	Method Blank #1	SVOC	bis (2-Ethylhexyl) phthalate	17	
Method Blanks	Method Blank #1	VOC	Acetone	2.7	J
RM118-01	Baseline #1	SVOC	1-Dodecanamine, n,n-dimethyl[a]	200	M
RM118-01	Baseline #1	SVOC	1-Propene, 1,2,3-trichloro[a]	44	M
RM118-01	Baseline #1	SVOC	N,n-dimethylhexadecanamine[a]	480	M
RM118-01	Baseline #1	SVOC	N-methyl-n-benzylhexadecanamine[a]	79	M
RM118-01	Baseline #1	Total Metals	Arsenic	2	B
RM118-01	Baseline #1	Total Metals	Barium	26.1	B
RM118-01	Baseline #1	Total Metals	Chromium	26.6	-
RM118-01	Baseline #1	Total Metals	Lead	3.3	B
RM118-01	Baseline #1	Total Metals	Silver	0.69	B
RM118-01	Baseline #1	VOC	Acetone	3.5	J
RM118-01	Baseline #1	VOC	Bromodichloromethane	0.61	J
RM118-01	Baseline #1	VOC	Dibromochloromethane	1.5	J
RM118-02	Baseline #2	Total Metals	Barium	44.6	B
RM118-02	Baseline #2	Total Metals	Chromium	7.8	B
RM118-02	Baseline #2	Total Metals	Zinc	23.8	B
RM118-03	Baseline #3	Total Metals	Chromium	8.5	B
RM118-03	Baseline #3	Total Metals	Lead	2.6	B
RM118-03	Baseline #3	Total Metals	Silver	0.53	B
RM118-03	Baseline #3	VOC[b]	1,2,4-Trimethylbenzene[a]	11	Q
RM118-03	Baseline #3	VOC[b]	Acetone	6.9	J
RM118-03	Baseline #3	VOC[b]	Bromodichloromethane	0.78	J
RM118-03	Baseline #3	VOC[b]	Bromomethane	2.6	J
RM118-03	Baseline #3	VOC[b]	Chloroform	0.55	J
RM118-03	Baseline #3	VOC[b]	Chloroform	0.7	J
RM118-03	Baseline #3	VOC[b]	Methylene Chloride	2.7	J
RM118-03	Baseline #3	VOC[b]	Naphthalene	83	Q
RM118-03	Baseline #3	VOC[b]	Cumene, methoxyphenyl[a]	8.9	M
RM118-03	Baseline #3	VOC[b]	Cumene, methoxyphenyl[a]	8.2	M
RM118-04	Trip Blank	VOC	Acetone	12	J
RM118-04	Trip Blank	VOC	Bromomethane	3.1	J
RM118-04	Trip Blank	VOC	Chloromethane	1.2	J
RM118-05	Trip Blank	VOC[c]	Acetone	6.2	J
RM118-05	Trip Blank	VOC[c]	Acetone	8.9	J
RM118-05	Trip Blank	VOC[c]	Bromomethane	1.7	J
RM118-06	Field Blank	VOC[c]	Acetone	3.2	JB
RM118-06	Field Blank	VOC[c]	Acetone	5.5	J
RM118-07	Recessed Sump	SVOC	1-Dodecanamine, n,n-dimethyl[a]	200	M
RM118-07	Recessed Sump	SVOC	1-Propene, 1,2,3-trichloro[a]	41	M
RM118-07	Recessed Sump	SVOC	N,n-dimethylhexadecanamine[a]	1000	M
RM118-07	Recessed Sump	Total Metals	Arsenic	3.4	B
RM118-07	Recessed Sump	Total Metals	Barium	63.5	B
RM118-07	Recessed Sump	Total Metals	Chromium	16.8	-
RM118-07	Recessed Sump	Total Metals	Lead	4.5	B
RM118-07	Recessed Sump	Total Metals	Silver	0.65	B
RM118-07	Recessed Sump	VOC[c]	Acetone	6.6	J
RM118-07	Recessed Sump	VOC[c]	Acetone	7.1	J
RM118-07	Recessed Sump	VOC[c]	Bromoform	2.3	J
RM118-07	Recessed Sump	VOC[c]	Dibromochloromethane	0.77	J
RM118-07	Recessed Sump	VOC[c]	Dibromochloromethane	0.9	J
RM118-07	Recessed Sump	VOC[c]	Methylene Chloride	3.1	J
RM118-08	Floor #1	Total Metals	Arsenic	3.9	B
RM118-08	Floor #1	Total Metals	Barium	65	B
RM118-08	Floor #1	Total Metals	Chromium	25.8	-
RM118-08	Floor #1	Total Metals	Lead	6.7	B
RM118-09	Floor #2	Total Metals	Arsenic	2.7	B
RM118-09	Floor #2	Total Metals	Barium	149	B
RM118-09	Floor #2	Total Metals	Chromium	26.4	-
RM118-09	Floor #2	Total Metals	Lead	12.2	-
RM118-10	Floor #3	Total Metals	Arsenic	3.3	B
RM118-10	Floor #3	Total Metals	Barium	135	B
RM118-10	Floor #3	Total Metals	Chromium	23.8	-
RM118-10	Floor #3	Total Metals	Lead	4.6	B
RM118-10	Floor #3	Total Metals	Selenium	1.5	B
RM118-10	Floor #3	Total Metals	Silver	0.49	B
RM118-11	Floor #4	Total Metals	Barium	193	B
RM118-11	Floor #4	Total Metals	Chromium	23.6	-
RM118-11	Floor #4	Total Metals	Lead	6.8	-
RM118-11	Floor #4	Total Metals	Silver	0.54	B
RM118-12	Floor #5	Total Metals	Arsenic	2.8	B
RM118-12	Floor #5	Total Metals	Barium	108	B
RM118-12	Floor #5	Total Metals	Chromium	30.6	-
RM118-12	Floor #5	Total Metals	Lead	4.4	B
RM118-13	Floor #6	Total Metals	Arsenic	2.7	B
RM118-13	Floor #6	Total Metals	Barium	110	B
RM118-13	Floor #6	Total Metals	Chromium	31.8	-
RM118-13	Floor #6	Total Metals	Lead	6	-
RM118-14	Floor #7	Total Metals	Barium	139	B
RM118-14	Floor #7	Total Metals	Chromium	27.6	-
RM118-14	Floor #7	Total Metals	Lead	4.2	B
RM118-15	Floor #8	Total Metals	Arsenic	4.4	B
RM118-15	Floor #8	Total Metals	Barium	40.4	B
RM118-15	Floor #8	Total Metals	Chromium	26.1	-
RM118-16	Duplicate	Total Metals	Arsenic	3.3	B
RM118-16	Duplicate	Total Metals	Barium	96.4	B
RM118-16	Duplicate	Total Metals	Chromium	19.3	-
RM118-16	Duplicate	Total Metals	Lead	5.6	-
RM118-17	West Wall #1 North	Total Metals	Arsenic	2.4	B
RM118-17	West Wall #1 North	Total Metals	Barium	32.9	B
RM118-17	West Wall #1 North	Total Metals	Chromium	18.3	-
RM118-17	West Wall #1 North	Total Metals	Lead	3.1	B
RM118-18	West Wall #2 South	Total Metals	Arsenic	2.9	B
RM118-18	West Wall #2 South	Total Metals	Barium	53.7	B
RM118-18	West Wall #2 South	Total Metals	Chromium	24.4	-
RM118-18	West Wall #2 South	Total Metals	Lead	4.2	B
RM118-18	West Wall #2 South	Total Metals	Selenium	2	B
RM118-18	West Wall #2 South	Total Metals	Silver	0.49	B
RM118-19	South Wall #1 East	Total Metals	Arsenic	2.3	B
RM118-19	South Wall #1 East	Total Metals	Barium	60.1	B
RM118-19	South Wall #1 East	Total Metals	Chromium	20.5	-
RM118-19	South Wall #1 East	Total Metals	Lead	4.1	B
RM118-19	South Wall #1 East	Total Metals	Silver	0.55	B
RM118-20	South Wall #2 West	Total Metals	Arsenic	3.9	B
RM118-20	South Wall #2 West	Total Metals	Barium	52.8	B
RM118-20	South Wall #2 West	Total Metals	Chromium	26.7	-
RM118-20	South Wall #2 West	Total Metals	Lead	3	B
RM118-20	South Wall #2 West	Total Metals	Silver	0.43	B
RM118-21	North Wall #1 East	Total Metals	Arsenic	4.9	B
RM118-21	North Wall #1 East	Total Metals	Barium	71.7	B
RM118-21	North Wall #1 East	Total Metals	Chromium	26.9	-
RM118-21	North Wall #1 East	Total Metals	Lead	3.2	B
RM118-22	North Wall #2 West	Total Metals	Arsenic	2.4	B
RM118-22	North Wall #2 West	Total Metals	Barium	40.4	B
RM118-22	North Wall #2 West	Total Metals	Chromium	26.5	-
RM118-22	North Wall #2 West	Total Metals	Lead	2.3	B
RM118-22	North Wall #2 West	Total Metals	Silver	0.45	B
RM118-23	East Wall #1 North	Total Metals	Arsenic	2.3	B
RM118-23	East Wall #1 North	Total Metals	Barium	38	B
RM118-23	East Wall #1 North	Total Metals	Chromium	31	-
RM118-23	East Wall #1 North	Total Metals	Lead	3.1	B
RM118-24	East Wall #2 South	Total Metals	Arsenic	3.8	B
RM118-24	East Wall #2 South	Total Metals	Barium	58	B
RM118-24	East Wall #2 South	Total Metals	Chromium	18.4	-
RM118-24	East Wall #2 South	Total Metals	Lead	2	B
RM118-25	Decontamination Water	SVOC[c]	1-Heptanol[a]	85	M
RM118-25	Decontamination Water	SVOC[c]	1-Propene, 1,2,3-trichloro[a]	71	M
RM118-25	Decontamination Water	SVOC[c]	2-Dodecanone[a]	44	M
RM118-25	Decontamination Water	SVOC[c]	1-Undecanone[a]	32	M
RM118-25	Decontamination Water	SVOC[c]	bis (2-Ethylhexyl) phthalate	69	J
RM118-25	Decontamination Water	SVOC[c]	bis (2-Ethylhexyl) phthalate	120	J
RM118-25	Decontamination Water	SVOC[c]	Butylbenzylphthalate	30	J
RM118-25	Decontamination Water	SVOC[c]	Butylbenzylphthalate	38	J
RM118-25	Decontamination Water	SVOC[c]	Di-n-butyl phthalate	32	J
RM118-25	Decontamination Water	SVOC[c]	Di-n-butyl phthalate	38	J
RM118-25	Decontamination Water	SVOC[c]	Nonanal[a]	62	M
RM118-25	Decontamination Water	SVOC[c]	Octanal[a]	92	M
RM118-25	Decontamination Water	Total Metals	Arsenic	6.3	B
RM118-25	Decontamination Water	Total Metals	Barium	3510	-
RM118-25	Decontamination Water	Total Metals	Cadmium	18.1	-
RM118-25	Decontamination Water	Total Metals	Chromium	68.1	-
RM118-25	Decontamination Water	Total Metals	Lead	302	-
RM118-25	Decontamination Water	Total Metals	Mercury	0.66	-
RM118-25	Decontamination Water	Total Metals	Selenium	3.1	B
RM118-25	Decontamination Water	Total Metals	Silver	2	B
RM118-25	Decontamination Water	VOC	Acetone	17	J
RM118-25	Decontamination Water	VOC	Chloroform	0.68	J
RM118-25	Decontamination Water	VOC	Decanal[a]	6.7	M
RM118-25	Decontamination Water	VOC	Methylene Chloride	2.8	J
RM118-25	Decontamination Water	VOC	Nonanal[a]	11	M
RM118-25	Decontamination Water	VOC	Octanal[a]	8.8	M
RM118-25	Decontamination Water	VOC	Xylenes (total)	2.3	J

a. This chemical is a tentatively identified compound.
b. Sample was re-analyzed because surrogate recoveries were outside control limits. Results of both analyses are presented.
c. Sample was re-analyzed because instrument lost sensitivity. Results of both analyses are presented.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/L = micrograms per liter

MASTER - SWIPE SAMPLE RESULTS

SAMPLE_ID	LOCATION	Requested Analysis	PARAMETER	Result (µg/100 cm^2)	Qualifier
118B-01	Recessed Pump	Total Metals	Barium	1.5	B
118B-02	Floor #1	Total Metals	Barium	2.6	B
118B-03	Floor #2	Total Metals	Barium	6.9	B
118B-03	Floor #2	Total Metals	Chromium	0.48	B
118B-03	Floor #2	Total Metals	Lead	1.7	B
118B-04	Floor #3	Total Metals	Barium	1.6	B
118B-05	Floor #4	Total Metals	Barium	3.2	B
118B-05	Floor #4	Total Metals	Chromium	0.72	B
118B-05	Floor #4	Total Metals	Lead	3.8	B
118B-06	Floor #5	Total Metals	Barium	2.2	B
118B-07	Floor #6	Total Metals	Barium	2.2	B
118B-07	Floor #6	Total Metals	Chromium	0.34	B
118B-08	Floor #8	Total Metals	Barium	2.3	B
118B-09	Recessed Sump	Total Metals	Barium	88.3	
118B-09	Recessed Sump	Total Metals	Chromium	8.7	
118B-09	Recessed Sump	Total Metals	Lead	1.2	B
118B-10	Floor #1	Total Metals	Barium	2.6	B
118B-11	Floor #2	Total Metals	Barium	4.1	B
118B-11	Floor #2	Total Metals	Chromium	0.16	B
118B-12	Floor #3	Total Metals	Barium	3.1	B
118B-12	Floor #3	Total Metals	Lead	5.1	B
118B-13	Floor #4	Total Metals	Barium	5.1	B
118B-13	Floor #4	Total Metals	Chromium	0.17	B
118B-14	Floor #5	Total Metals	Barium	7.8	B
118B-15	Floor #6	Total Metals	Barium	7.3	B
118B-16	Floor #8	Total Metals	Barium	5.4	B
118B-16	Floor #8	Total Metals	Chromium	0.2	B
118B-17	West Wall	Total Metals	Barium	2.6	B
118B-18	South Wall (Rollup Door)	Total Metals	Barium	1.4	B
118B-18	South Wall (Rollup Door)	Total Metals	Chromium	0.32	B
118B-19	North Wall	Total Metals	Barium	1.1	B
118B-20	East Wall	Total Metals	Barium	0.6	B
118B-21	West Wall	Total Metals	Barium	4.8	B
118B-22	South Wall	Total Metals	Barium	3.1	B
118B-23	North Wall	Total Metals	Barium	102	
118B-23	North Wall	Total Metals	Chromium	0.25	B
118B-23	North Wall	Total Metals	Lead	2.9	B
118B-24	East Wall	Total Metals	Barium	0.96	B
118B-25	West Wall	Total Metals	Barium	1.4	B
118B-26	South Wall	Total Metals	Barium	3.7	B
118B-27	North Wall	Total Metals	Barium	1.3	B
118B-28	East Wall	Total Metals	Barium	4.1	B
118B-29	Duplicate	Total Metals	Barium	38.2	
118B-29	Duplicate	Total Metals	Chromium	2.1	
118B-29	Duplicate	Total Metals	Lead	6.6	B
118B-30	Baseline	SVOC	1,4-Benzenediol, 2,5-bis 1,1-d [a]	42	M
118B-30	Baseline	SVOC	4-Cyanocyclohexene [a]	11	M
118B-30	Baseline	SVOC	Phenol, 2-(1,1-dimethylethyl)- [a]	17	M
118B-30	Baseline	Total Metals	Barium	0.42	B
118B-30	Baseline	VOC	2-Butanone	45	
118B-30	Baseline	VOC	Acetone	15	JB
118B-30	Baseline	VOC	Carbon disulfide	2.9	J
118B-30	Baseline	VOC	Carbon tetrachloride	0.76	JB
118B-30	Baseline	VOC	Ethyl acetate [a]	110	Q
118B-30	Baseline	VOC	Hexane [a]	17	Q
118B-30	Baseline	VOC	Methylene chloride	4.5	JB
118B-30	Baseline	VOC	Tetrachloroethene	0.65	J
118B-30	Baseline	VOC	Trichloroethene	1.7	JB
118B-31	Field Blank	VOC	2-Butanone	25	
118B-31	Field Blank	VOC	Acetone	16	JB
118B-31	Field Blank	VOC	Carbon disulfide	0.36	J
118B-31	Field Blank	VOC	Carbon tetrachloride	0.78	JB
118B-31	Field Blank	VOC	Hexane [a]	13	Q
118B-31	Field Blank	VOC	Methylene chloride	9.1	B
118B-31	Field Blank	VOC	Tetrachloroethene	0.56	J
118B-31	Field Blank	VOC	Trichloroethene	1.4	JB
Method Blank	Method Blank #1	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	SVOC	Octadecanoic acid [a]	4.5	M
Method Blank	Method Blank #2	VOC	Acetone	4.4	J
Method Blank	Method Blank #2	VOC	Carbon tetrachloride	0.81	J
Method Blank	Method Blank #2	VOC	Methylene chloride	3.2	J
Method Blank	Method Blank #2	VOC	Trichloroethene	1	J

a. This chemical is a tentatively identified compound.

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

VOC = volatile organic compounds
SVOC = semivolatile organic compounds
µg/100 cm^2 = micrograms per 100 square centimeters

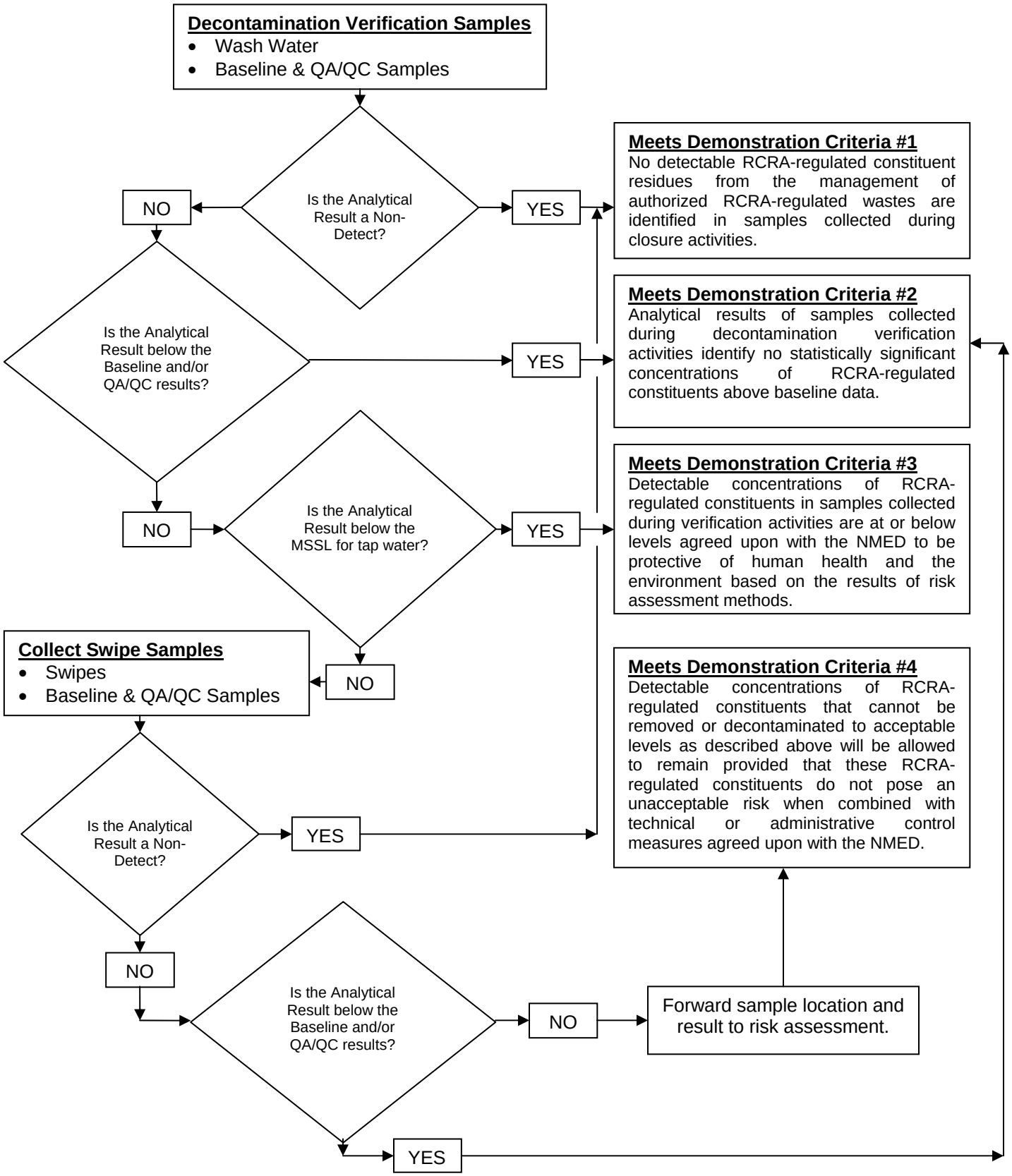

Figure 2-15
Logic Diagram for Demonstration of Closure

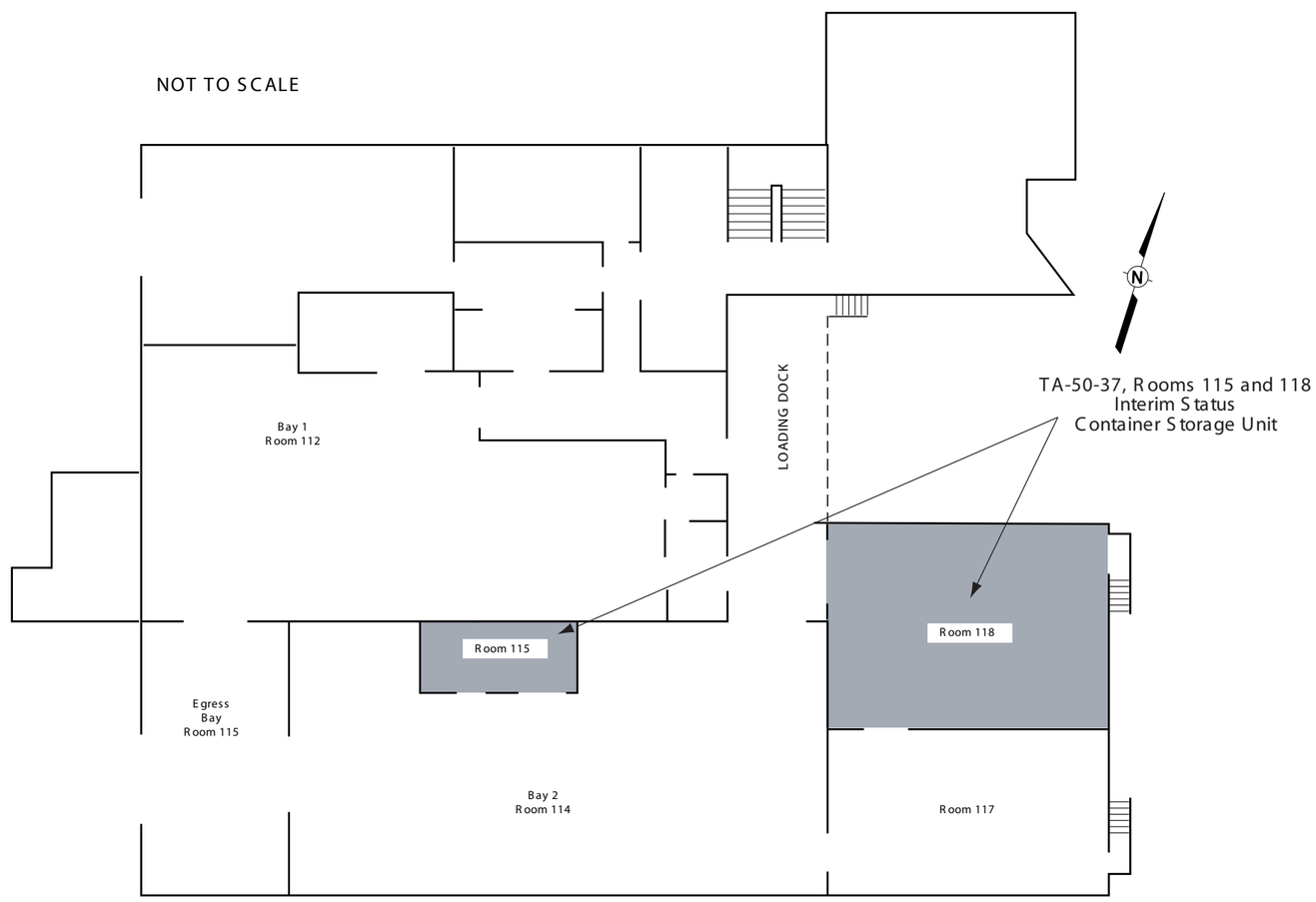

Figure 1-3
Technical Area (TA) 50, Building 37, First Floor Plan

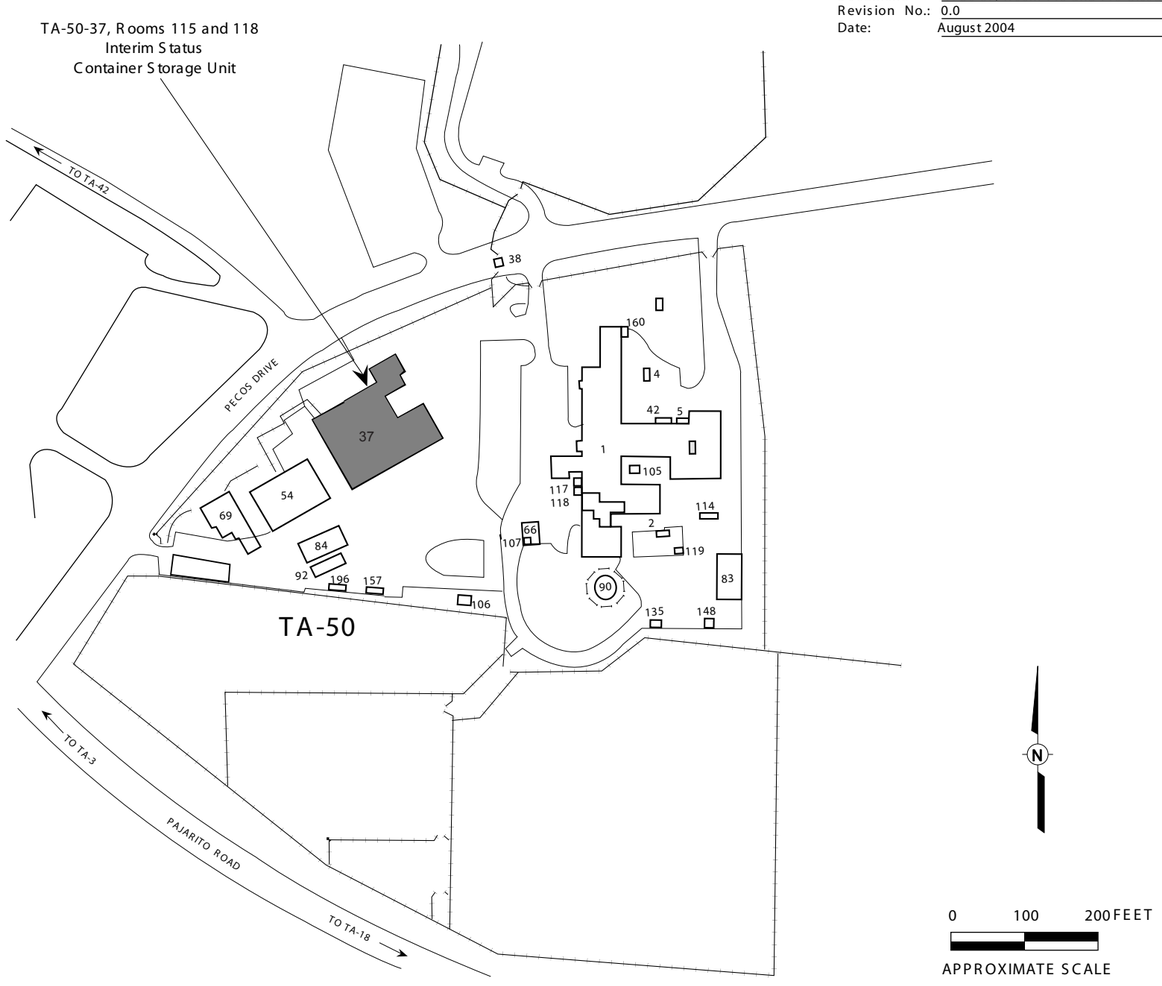

Figure 1-2
Technical Area (TA) 50 Site Location Map

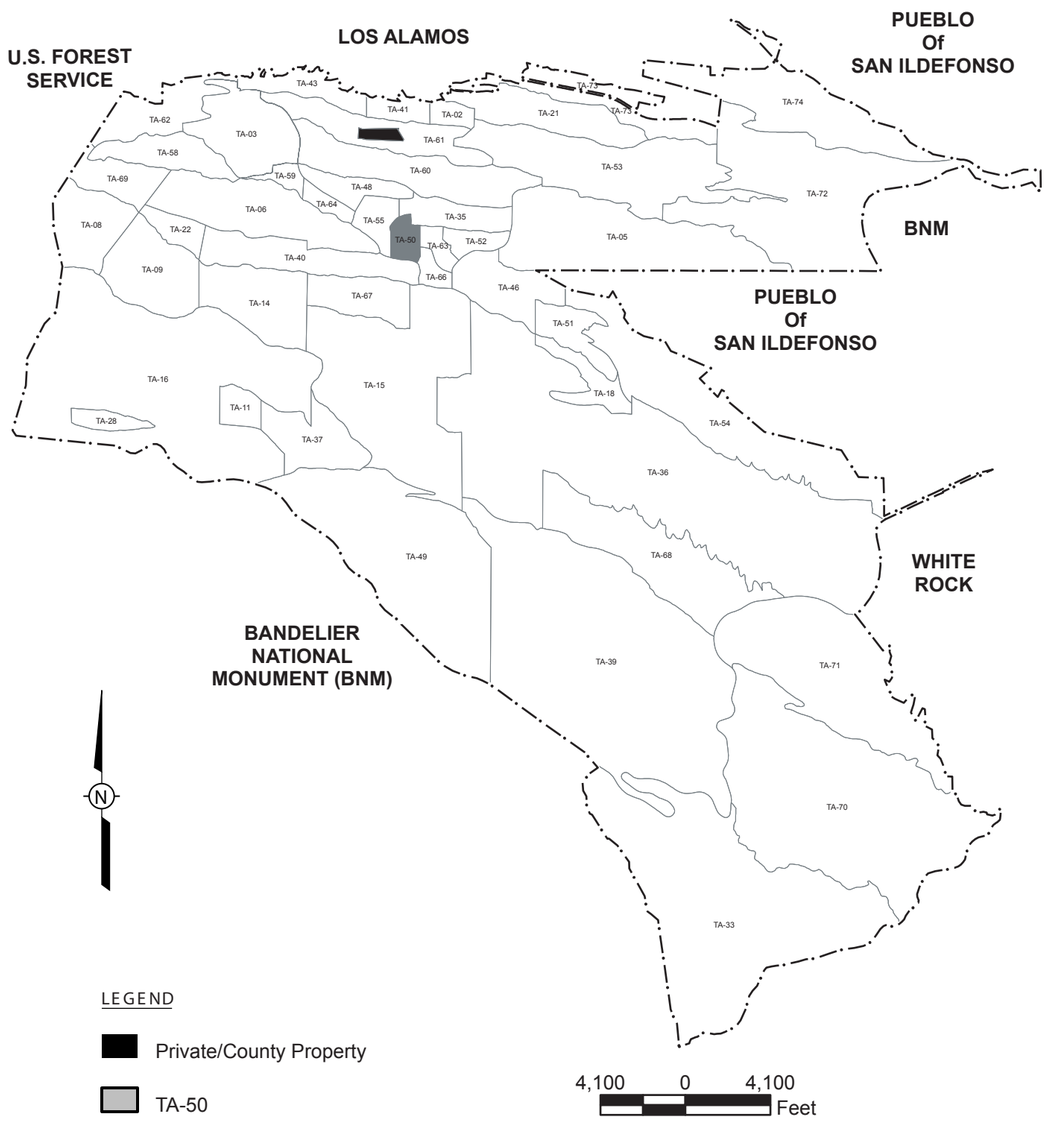

Figure 1-1
Location Map of Technical Area (TA) 50 at Los Alamos National Laboratory (LANL)

State Plane Coordinate System New Mexico Central Zone North American Datum 1983 (ft)

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Figure 3-3
Pre-closure Inspection - Room 118 Floor
[Photograph Taken 9/08/03]

Figure 3-4
Pre-closure Inspection - Room 118
Floor with Chipped Paint and Cracks
[Photograph Taken 9/08/03]

Figure 3-5
Pre-closure Inspection - Room 118 Recessed Sump
[Photograph Taken 9/08/03]

Figure 3-6
Decontamination – Sweeping to Remove Dust and Debris
[Photograph Taken 9/8/03]

Figure 3-7
Decontamination - Vacuuming to Remove Dust and Particulate
[Photograph Taken 9/08/03]

Figure 3-8
Decontamination – Adjacent Equipment
[Photograph Taken 9/08/03]

Figure 3-9
Decontamination - Floor with the Alconox Solution and Wet Mop
[Photograph Taken 9/08/03]

Figure 3-10
Decontamination - Surfaces Around the Perimeter of the Recessed Sump
[Photograph Taken 9/08/03]

Figure 3-11
Decontamination – Appearance of Recessed Sump When Complete
[Photograph Taken 9/08/03]

Figure 3-12
Verification Sampling - Room 118 Floor
[Photograph Taken 4/15/04]

Figure 3-13
Swipe Sampling - Biased Toward Yellow Paint
[Photograph Taken 4/15/04]

Figure 3-14
Swipe Sampling - Biased Toward Floor Stain Near Sump
[Photograph Taken 4/15/04]

Figure 3-15
Swipe Sampling - Management and Documentation
[Photograph Taken 9/08/03]

Figure 3-16
Swipe Sampling - QA/QC Field Blanks
[Photograph Taken 9/08/03]

Figure 3-17
Swipe Sampling – Baseline
[Photograph Taken 9/08/03]

Figure 2-3
Pre-closure Inspection – West End Room 115
[Photograph Taken 9/08/03]

Figure 2-4
Pre-closure Inspection – Decommissioned Ventilation Hood in the East End of Room 115
[Photograph Taken 9/08/03]

Figure 2-5
Pre-closure Inspection – Stains and Damaged Paint on the Floor of Room 115
[Photograph Taken 9/08/03]

Figure 2-6
Decontamination – Removal of Dust and Debris
[Photograph Taken 9/8/03]

Figure 2-7
Decontamination – First Wash Down of Walls and Floors of Room 115
[Photograph Taken 9/08/03]

Figure 2-8
Decontamination – Second Wash Down of Walls and Floor Using Cheese Cloth
[Photograph Taken 9/08/03]

Figure 2-9
Decontamination – Appearance of Walls When Complete
[Photograph Taken 9/08/03]

Figure 2-10
Decontamination – Appearance of Floor When Complete
[Photograph Taken 9/08/03]

Figure 2-11
Verification – Collection of Samples
[Photograph Taken 9/08/03]

Figure 2-12
Swipe Samples – Collection of Baseline Samples
[Photograph Taken 4/15/04]

Figure 2-13
Swipe Sampling – Collection of Sample from Template on Floor
[Photograph Taken 4/15/04]

Figure 2-14
Swipe Sampling – Collection of Sample from Apparent Drum Stain
[Photograph Taken 4/15/04]

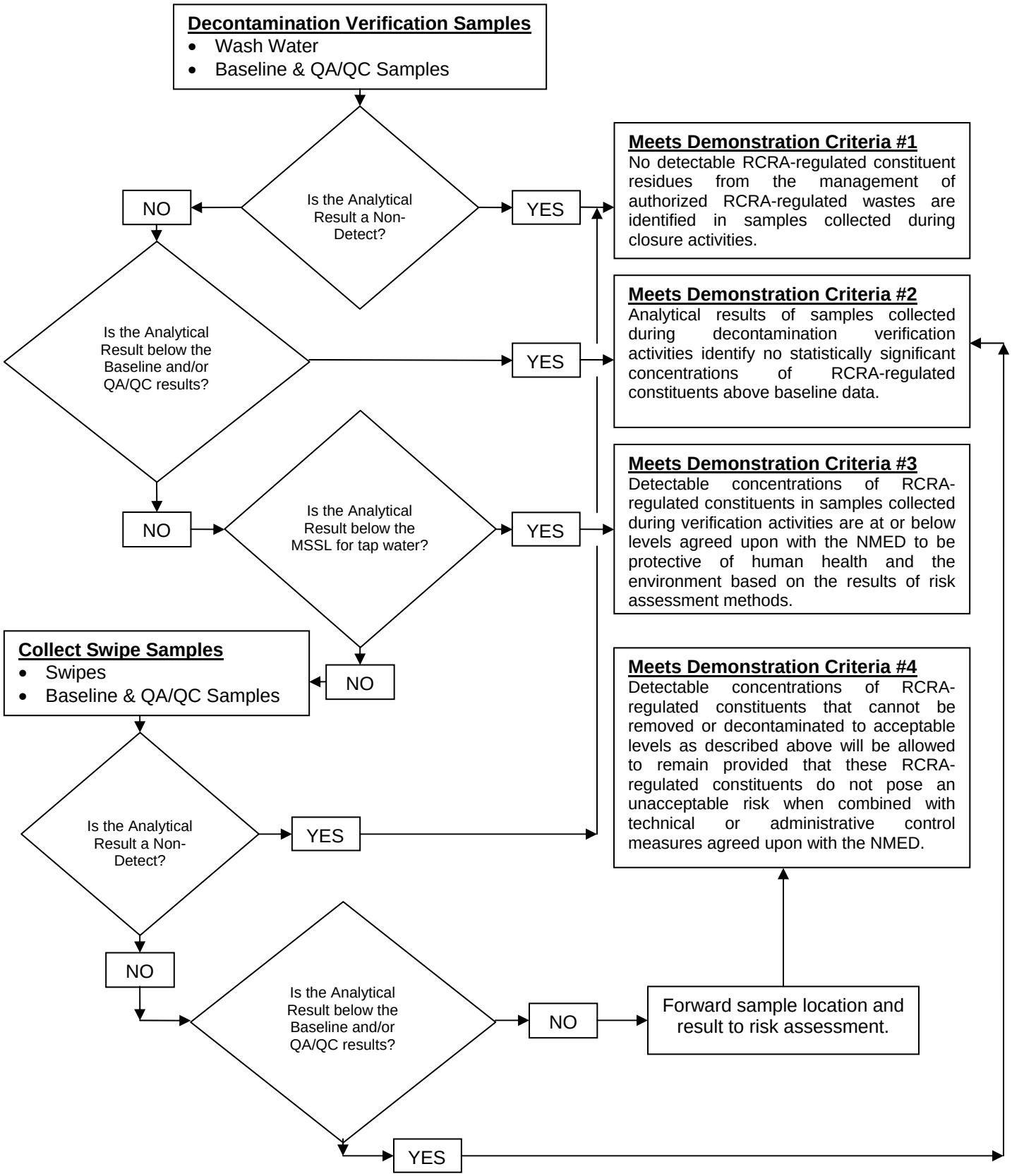
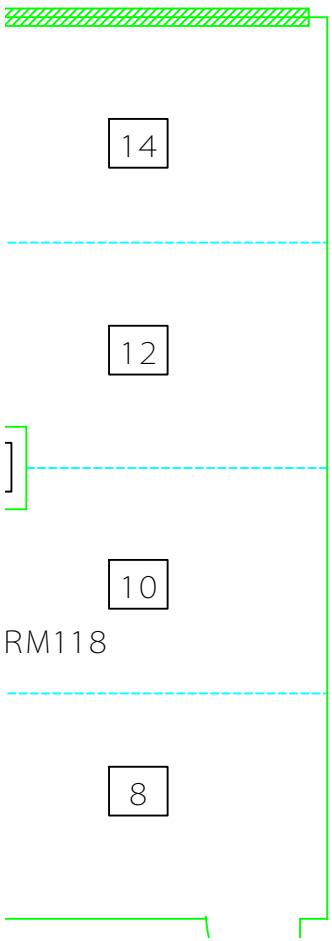
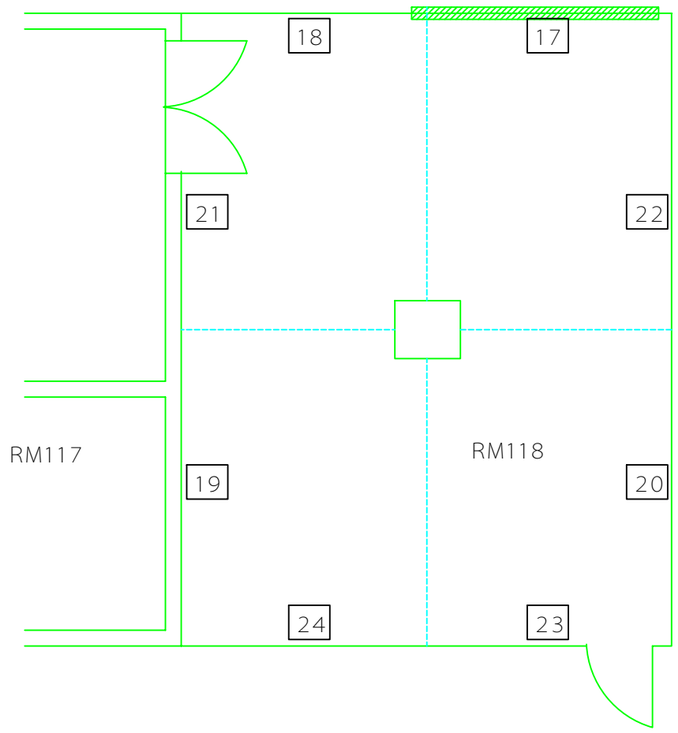


Figure 3-18
Logic Diagram for Demonstration of Closure

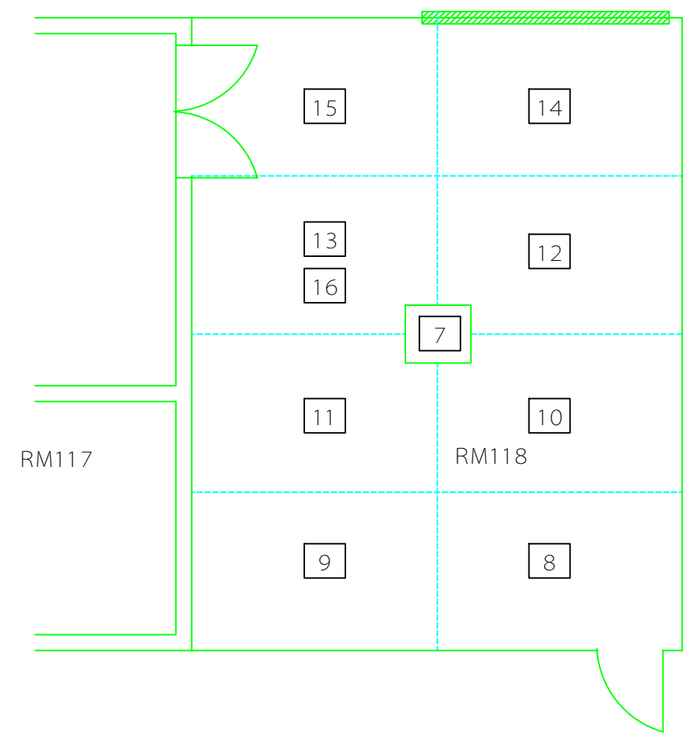


VERIFICATION SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	VOC SUITE	SVOC SUITE
RM118 - 07	RECESSED SUMP	X	X	X
RM118 - 08	FLOOR (FAR NORTHEAST)	X		
RM118 - 09	FLOOR (FAR SOUTHEAST)	X		
RM118 - 10	FLOOR (CENTRAL NORTHEAST)	X		
RM118 - 11	FLOOR (CENTRAL SOUTHEAST)	X		
RM118 - 12	FLOOR (CENTRAL NORTHWEST)	X		
RM118 - 13	FLOOR (CENTRAL SOUTHWEST)	X		
RM118 - 14	FLOOR (FAR NORTHWEST)	X		
RM118 - 15	FLOOR (FAR SOUTHWEST)	X		
RM118 - 16	DUPLICATE (CENTRAL SOUTHEAST)	X		
RM118 - 17	WEST WALL (NORTH)	X		
RM118 - 18	WEST WALL (SOUTH)	X		
RM118 - 19	SOUTH WALL (EAST)	X		
RM118 - 20	NORTH WALL (EAST)	X		
RM118 - 21	SOUTH WALL (WEST)	X		
RM118 - 22	NORTH WALL (WEST)	X		
RM118 - 23	EAST WALL (NORTH)	X		
RM118 - 24	EAST WALL (SOUTH)	X		



WALL SAMPLES



FLOOR & SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBER AND LOCATIONS.

VERIFICATION SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	VOC SUITE	SVOC SUITE
RM118 - 07	RECESSED SUMP	X	X	X
RM118 - 08	FLOOR (FAR NORTHEAST)	X		
RM118 - 09	FLOOR (FAR SOUTHEAST)	X		
RM118 - 10	FLOOR (CENTRAL NORTHEAST)	X		
RM118 - 11	FLOOR (CENTRAL SOUTHEAST)	X		
RM118 - 12	FLOOR (CENTRAL NORTHWEST)	X		
RM118 - 13	FLOOR (CENTRAL SOUTHWEST)	X		
RM118 - 14	FLOOR (FAR NORTHWEST)	X		
RM118 - 15	FLOOR (FAR SOUTHWEST)	X		
RM118 - 16	DUPLICATE (CENTRAL SOUTHEAST)	X		
RM118 - 17	WEST WALL (NORTH)	X		
RM118 - 18	WEST WALL (SOUTH)	X		
RM118 - 19	SOUTH WALL (EAST)	X		
RM118 - 20	NORTH WALL (EAST)	X		
RM118 - 21	SOUTH WALL (WEST)	X		
RM118 - 22	NORTH WALL (WEST)	X		
RM118 - 23	EAST WALL (NORTH)	X		
RM118 - 24	EAST WALL (SOUTH)	X		

Figure 3-1
TA-50-37, ROOM 118,
SAMPLING LOCATIONS

TA-50-37, ROOM 118 SAMPLING LOCATIONS
NOT TO SCALE
N

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

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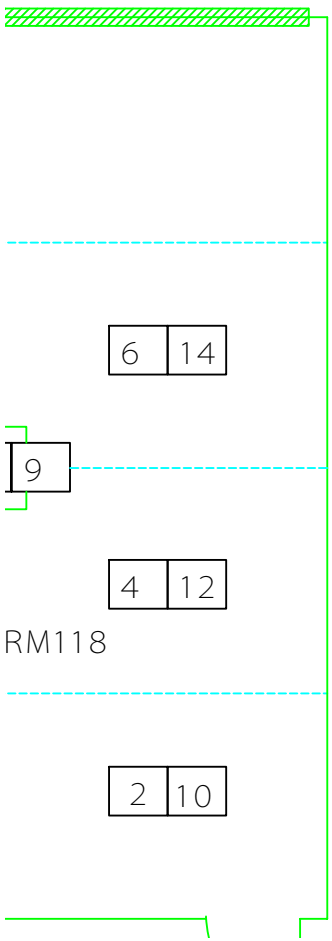
LOS ALAMOS, NEW MEXICO 87545

LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT
TA-50-37, ROOM 118
SAMPLING LOCATIONS

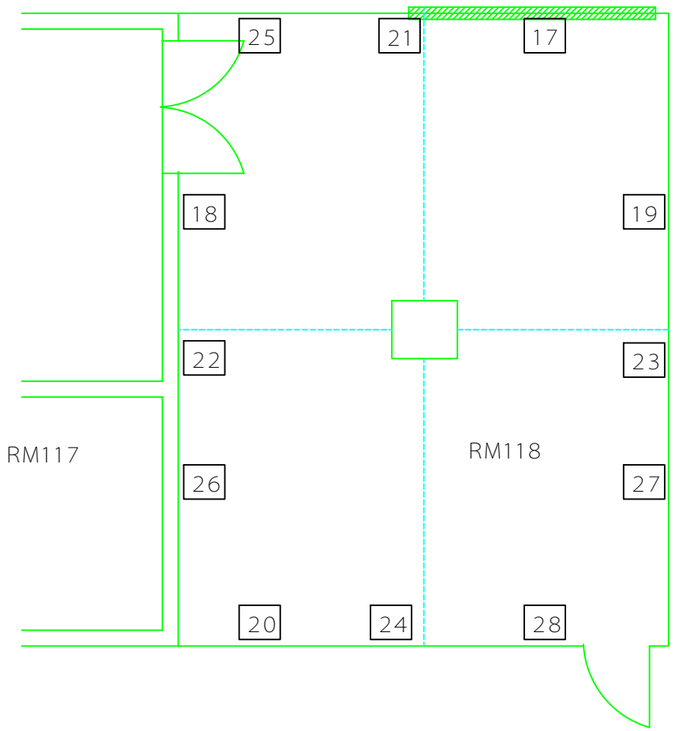
BLDG. 37 TA-50

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	B. ROMERO	6/11/04	APPROVED	B. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J.GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID	819592		DRAWING NO.	FIGURE 3-1				

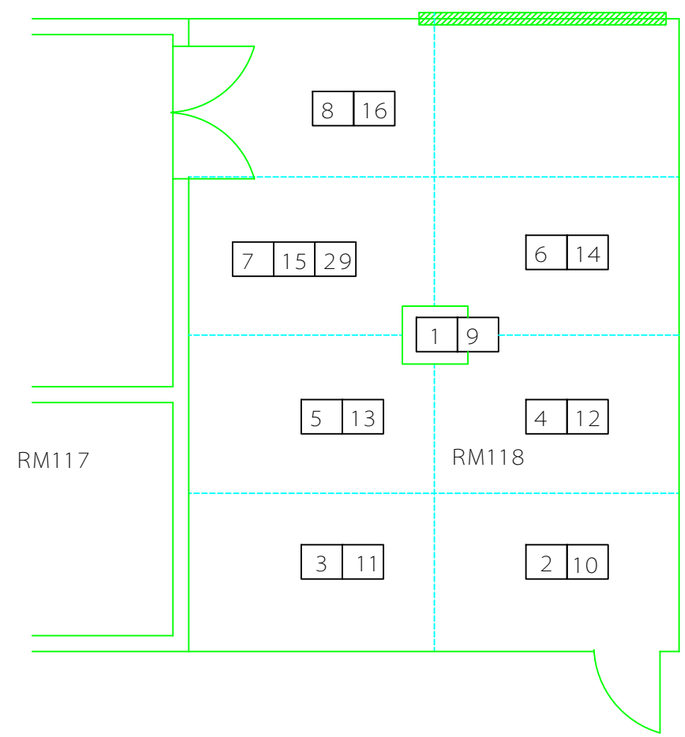


VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
1	RECESSED SUMP	118B - 01	TOTAL METALS
2	FLOOR (FAR NORTHEAST)	118B - 02	TOTAL METALS
3	FLOOR (FAR SOUTHEAST)	118B - 03	TOTAL METALS
4	FLOOR (CENTRAL NORTHEAST)	118B - 04	TOTAL METALS
5	FLOOR (CENTRAL SOUTHEAST)	118B - 05	TOTAL METALS
6	FLOOR (CENTRAL NORTHWEST)	118B - 06	TOTAL METALS
7	FLOOR (CENTRAL SOUTHWEST)	118B - 07	TOTAL METALS
8	FLOOR (FAR SOUTHWEST)	118B - 08	TOTAL METALS
9	RECESSED SUMP	118B - 09	TOTAL METALS
10	FLOOR (FAR NORTHEAST)	118B - 10	TOTAL METALS
11	FLOOR (FAR SOUTHEAST)	118B - 11	TOTAL METALS
12	FLOOR (CENTRAL NORTHEAST)	118B - 12	TOTAL METALS
13	FLOOR (CENTRAL SOUTHEAST)	118B - 13	TOTAL METALS
14	FLOOR (CENTRAL NORTHWEST)	118B - 14	TOTAL METALS
15	FLOOR (CENTRAL SOUTHWEST)	118B - 15	TOTAL METALS
16	FLOOR (FAR SOUTHWEST)	118B - 16	TOTAL METALS
17	WEST WALL	118B - 17	TOTAL METALS
18	SOUTH WALL	118B - 18	TOTAL METALS
19	NORTH WALL	118B - 19	TOTAL METALS
20	EAST WALL	118B - 20	TOTAL METALS
21	WEST WALL	118B - 21	TOTAL METALS
22	SOUTH WALL	118B - 22	TOTAL METALS
23	NORTH WALL	118B - 23	TOTAL METALS
24	EAST WALL	118B - 24	TOTAL METALS
25	WEST WALL	118B - 25	TOTAL METALS
26	SOUTH WALL	118B - 26	TOTAL METALS
27	NORTH WALL	118B - 27	TOTAL METALS
28	EAST WALL	118B - 28	TOTAL METALS
29	DUPLICATE	118B - 29	TOTAL METALS



LOCATION OF WALL SAMPLES



LOCATION OF FLOOR & SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBER AND LOCATIONS.

VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
1	RECESSED SUMP	118B - 01	TOTAL METALS
2	FLOOR (FAR NORTHEAST)	118B - 02	TOTAL METALS
3	FLOOR (FAR SOUTHEAST)	118B - 03	TOTAL METALS
4	FLOOR (CENTRAL NORTHEAST)	118B - 04	TOTAL METALS
5	FLOOR (CENTRAL SOUTHEAST)	118B - 05	TOTAL METALS
6	FLOOR (CENTRAL NORTHWEST)	118B - 06	TOTAL METALS
7	FLOOR (CENTRAL SOUTHWEST)	118B - 07	TOTAL METALS
8	FLOOR (FAR SOUTHWEST)	118B - 08	TOTAL METALS
9	RECESSED SUMP	118B - 09	TOTAL METALS
10	FLOOR (FAR NORTHEAST)	118B - 10	TOTAL METALS
11	FLOOR (FAR SOUTHEAST)	118B - 11	TOTAL METALS
12	FLOOR (CENTRAL NORTHEAST)	118B - 12	TOTAL METALS
13	FLOOR (CENTRAL SOUTHEAST)	118B - 13	TOTAL METALS
14	FLOOR (CENTRAL NORTHWEST)	118B - 14	TOTAL METALS
15	FLOOR (CENTRAL SOUTHWEST)	118B - 15	TOTAL METALS
16	FLOOR (FAR SOUTHWEST)	118B - 16	TOTAL METALS
17	WEST WALL	118B - 17	TOTAL METALS
18	SOUTH WALL	118B - 18	TOTAL METALS
19	NORTH WALL	118B - 19	TOTAL METALS
20	EAST WALL	118B - 20	TOTAL METALS
21	WEST WALL	118B - 21	TOTAL METALS
22	SOUTH WALL	118B - 22	TOTAL METALS
23	NORTH WALL	118B - 23	TOTAL METALS
24	EAST WALL	118B - 24	TOTAL METALS
25	WEST WALL	118B - 25	TOTAL METALS
26	SOUTH WALL	118B - 26	TOTAL METALS
27	NORTH WALL	118B - 27	TOTAL METALS
28	EAST WALL	118B - 28	TOTAL METALS
29	DUPLICATE	118B - 29	TOTAL METALS

Figure 3 - 2
TA - 50 - 37, ROOM 118,
SWIPE SAMPLE LOCATIONS

TA - 50 - 37, ROOM 118 CLOSURE SWIPE SAMPLE LOCATIONS
NOT TO SCALE
N

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

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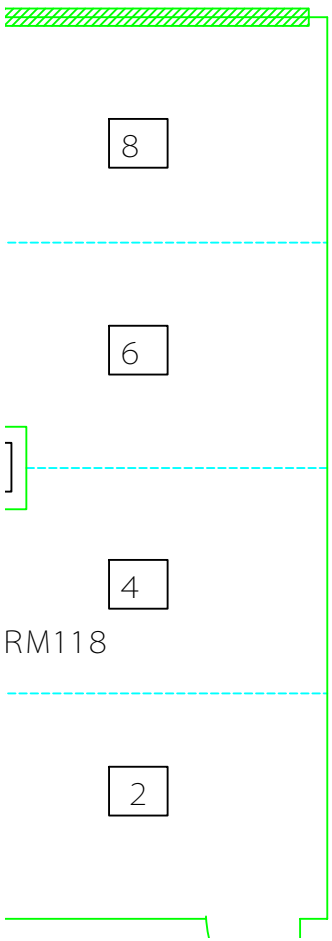
LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT
TA - 50 - 37, ROOM 118
CLOSURE SWIPE SAMPLE LOCATIONS

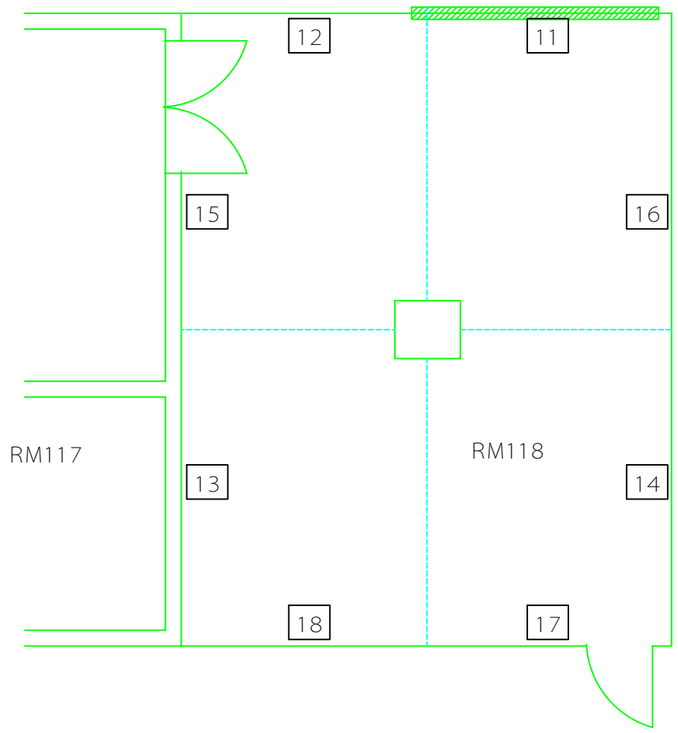
BLDG. 37 — TA - 50

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	B. ROMERO	6/11/04	APPROVED	B. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J.GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID 819592			DRAWING NO. FIGURE 3 - 1					

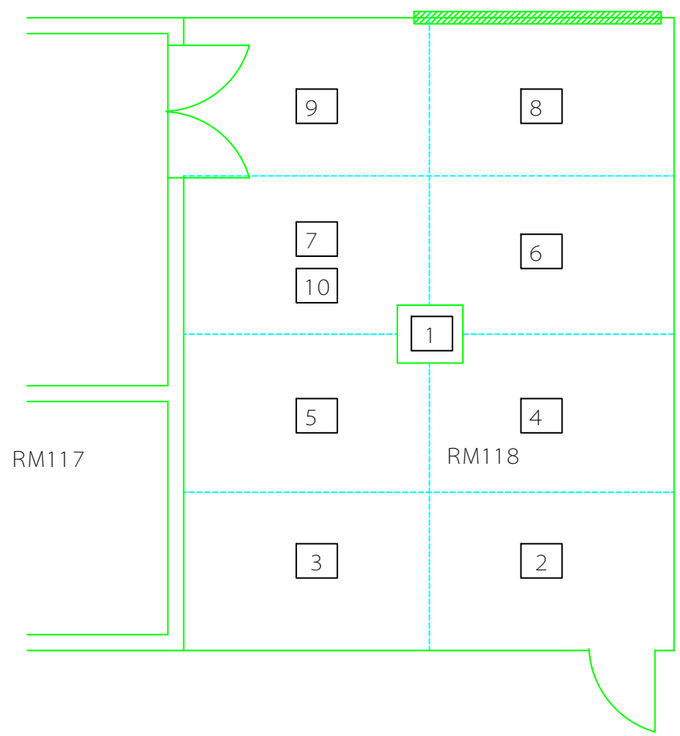


VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
1	RECESSED SUMP	RM118 - 07	TOTAL METALS
			SVOC
			VOC
2	FLOOR (FAR NORTHEAST)	RM118 - 08	TOTAL METALS
3	FLOOR (FAR SOUTHEAST)	RM118 - 09	TOTAL METALS
4	FLOOR (CENTRAL NORTHEAST)	RM118 - 10	TOTAL METALS
5	FLOOR (CENTRAL SOUTHEAST)	RM118 - 11	TOTAL METALS
6	FLOOR (CENTRAL NORTHWEST)	RM118 - 12	TOTAL METALS
7	FLOOR (CENTRAL SOUTHWEST)	RM118 - 13	TOTAL METALS
8	FLOOR (FAR NORTHWEST)	RM118 - 14	TOTAL METALS
9	FLOOR (FAR SOUTHWEST)	RM118 - 15	TOTAL METALS
10	DUPLICATE (CENTRAL SOUTHEAST)	RM118 - 16	TOTAL METALS
11	WEST WALL (NORTH)	RM118 - 17	TOTAL METALS
12	WEST WALL (SOUTH)	RM118 - 18	TOTAL METALS
13	SOUTH WALL (EAST)	RM118 - 19	TOTAL METALS
14	NORTH WALL (EAST)	RM118 - 20	TOTAL METALS
15	SOUTH WALL (WEST)	RM118 - 21	TOTAL METALS
16	NORTH WALL (WEST)	RM118 - 22	TOTAL METALS
17	EAST WALL (NORTH)	RM118 - 23	TOTAL METALS
18	EAST WALL (SOUTH)	RM118 - 24	TOTAL METALS



LOCATION OF WALL SAMPLES



LOCATION OF FLOOR & SUMP SAMPLES

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBER AND LOCATIONS.

VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
1	RECESSED SUMP	RM118 - 07	TOTAL METALS
			SVOC
			VOC
2	FLOOR (FAR NORTHEAST)	RM118 - 08	TOTAL METALS
3	FLOOR (FAR SOUTHEAST)	RM118 - 09	TOTAL METALS
4	FLOOR (CENTRAL NORTHEAST)	RM118 - 10	TOTAL METALS
5	FLOOR (CENTRAL SOUTHEAST)	RM118 - 11	TOTAL METALS
6	FLOOR (CENTRAL NORTHWEST)	RM118 - 12	TOTAL METALS
7	FLOOR (CENTRAL SOUTHWEST)	RM118 - 13	TOTAL METALS
8	FLOOR (FAR NORTHWEST)	RM118 - 14	TOTAL METALS
9	FLOOR (FAR SOUTHWEST)	RM118 - 15	TOTAL METALS
10	DUPLICATE (CENTRAL SOUTHEAST)	RM118 - 16	TOTAL METALS
11	WEST WALL (NORTH)	RM118 - 17	TOTAL METALS
12	WEST WALL (SOUTH)	RM118 - 18	TOTAL METALS
13	SOUTH WALL (EAST)	RM118 - 19	TOTAL METALS
14	NORTH WALL (EAST)	RM118 - 20	TOTAL METALS
15	SOUTH WALL (WEST)	RM118 - 21	TOTAL METALS
16	NORTH WALL (WEST)	RM118 - 22	TOTAL METALS
17	EAST WALL (NORTH)	RM118 - 23	TOTAL METALS
18	EAST WALL (SOUTH)	RM118 - 24	TOTAL METALS

Figure 3-1
TA-50-37, ROOM 118,
VERIFICATION SAMPLE LOCATIONS

TA-50-37, ROOM 118 CLOSURE VERIFICATION SAMPLE LOCATIONS
N
NOT TO SCALE

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

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LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT
TA-50-37, ROOM 118
CLOSURE VERIFICATION SAMPLE LOCATIONS

BLDG. 37 — TA-50

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	B. ROMERO	6/11/04	APPROVED	B. ROMERO 6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J.GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1
PROJECT ID	819592		DRAWING NO.	FIGURE 3-1			REVISION NO. 1

SWIPE SAMPLES:

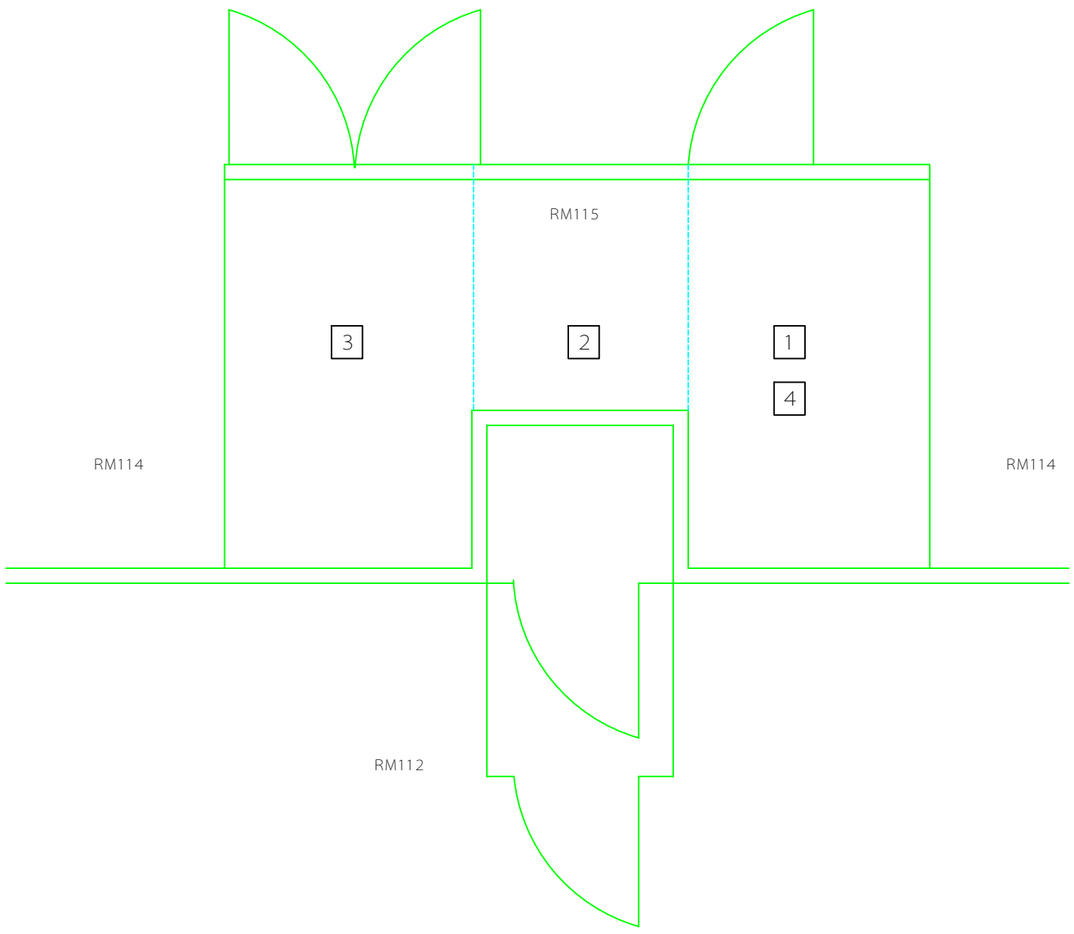
NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
1	FLOOR & 4 FT UP WALLS (WEST)	115B-01	TOTAL METALS
			SVOC
			PCB
2	FLOOR & 4 FT UP WALLS (MIDDLE)	115B-02	TOTAL METALS
			SVOC
			PCB
3	FLOOR & 4 FT UP WALLS (EAST)	115B-03	TOTAL METALS
			SVOC
			PCB
4	DUPLICATE (WEST)	115B-04	TOTAL METALS
			SVOC
			PCB

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

SWIPE SAMPLES:

NUMBER	SAMPLE LOCATION	SAMPLE NO.	REQUESTED ANALYSIS
1	FLOOR & 4 FT UP WALLS (WEST)	115B-01	TOTAL METALS
			SVOC
			PCB
2	FLOOR & 4 FT UP WALLS (MIDDLE)	115B-02	TOTAL METALS
			SVOC
			PCB
3	FLOOR & 4 FT UP WALLS (EAST)	115B-03	TOTAL METALS
			SVOC
			PCB
4	DUPLICATE (WEST)	115B-04	TOTAL METALS
			SVOC
			PCB



TA-50-37, ROOM 115 CLOSURE SWIPE SAMPLE LOCATIONS
NOT TO SCALE

N

Figure 2-2
TA-50-37, ROOM 115
SWIPE SAMPLE LOCATIONS

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

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LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT
TA-50-37, ROOM 115
CLOSURE SWIPE SAMPLE LOCATIONS

BLDG. 37 — TA-54

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	B. ROMERO	6/11/04	APPROVED	B. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J. GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID	819592		DRAWING NO.	FIGURE 2-1				

VERIFICATION SAMPLES:

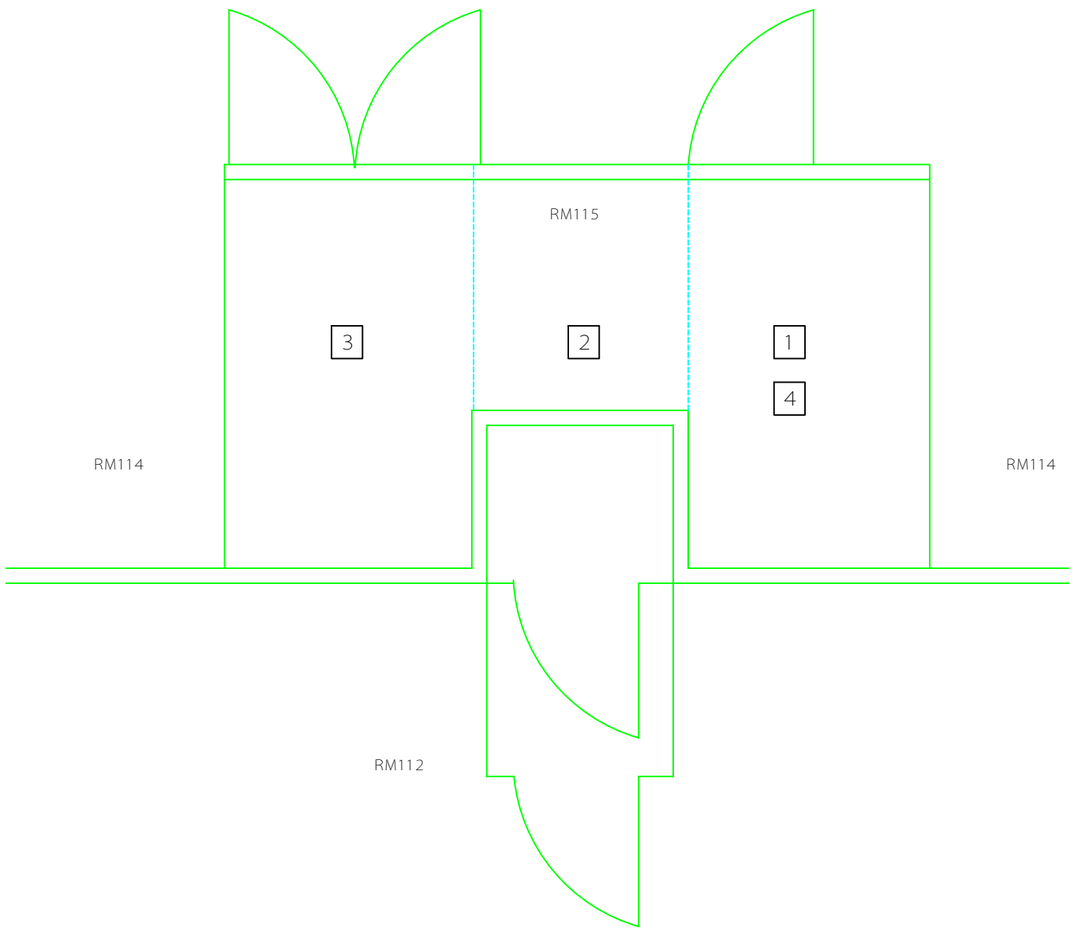
NUMBER	SAMPLE LOCATION	NUMBER	REQUESTED ANALYSIS
1	FLOOR & 4 FT UP WALLS (WEST)	RM115 - 05	TOTAL METALS
			SVOC
			VOC
2	FLOOR & 4 FT UP WALLS (MIDDLE)	RM115 - 06	TOTAL METALS
			SVOC
			VOC
3	FLOOR & 4 FT UP WALLS (EAST)	RM115 - 07	TOTAL METALS
			SVOC
			VOC
4	DUPLICATE (WEST)	RM115 - 08	TOTAL METALS
			SVOC
			VOC

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

VERIFICATION SAMPLES:

NUMBER	SAMPLE LOCATION	NUMBER	REQUESTED ANALYSIS
1	FLOOR & 4 FT UP WALLS (WEST)	RM115 - 05	TOTAL METALS
			SVOC
			VOC
2	FLOOR & 4 FT UP WALLS (MIDDLE)	RM115 - 06	TOTAL METALS
			SVOC
			VOC
3	FLOOR & 4 FT UP WALLS (EAST)	RM115 - 07	TOTAL METALS
			SVOC
			VOC
4	DUPLICATE (WEST)	RM115 - 08	TOTAL METALS
			SVOC
			VOC



TA-50-37, ROOM 115 CLOSURE VERIFICATION SAMPLE LOCATIONS

NOT TO SCALE

N

Figure 2-1
TA-50-37, ROOM 115
VERIFICATION SAMPLE LOCATIONS

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

Shaw™ Environmental & Infrastructure, Inc.

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LOS ALAMOS, NEW MEXICO 87545

LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT

TA-50-37, ROOM 115
CLOSURE VERIFICATION SAMPLE LOCATIONS

BLDG. 37 TA-54

DESIGNED	J. GRIFFIN	6/11/04	CHECKED	B. ROMERO	6/11/04	APPROVED	B. ROMERO	6/11/04
DRAWN	A. MARTINEZ	6/11/04	SUBMITTED	J. GRIFFIN	6/11/04	SHEET NO. M1	1 OF 1	REVISION NO. 1
PROJECT ID	819592		DRAWING NO.	FIGURE 2-1				

VERIFICATION SAMPLES:

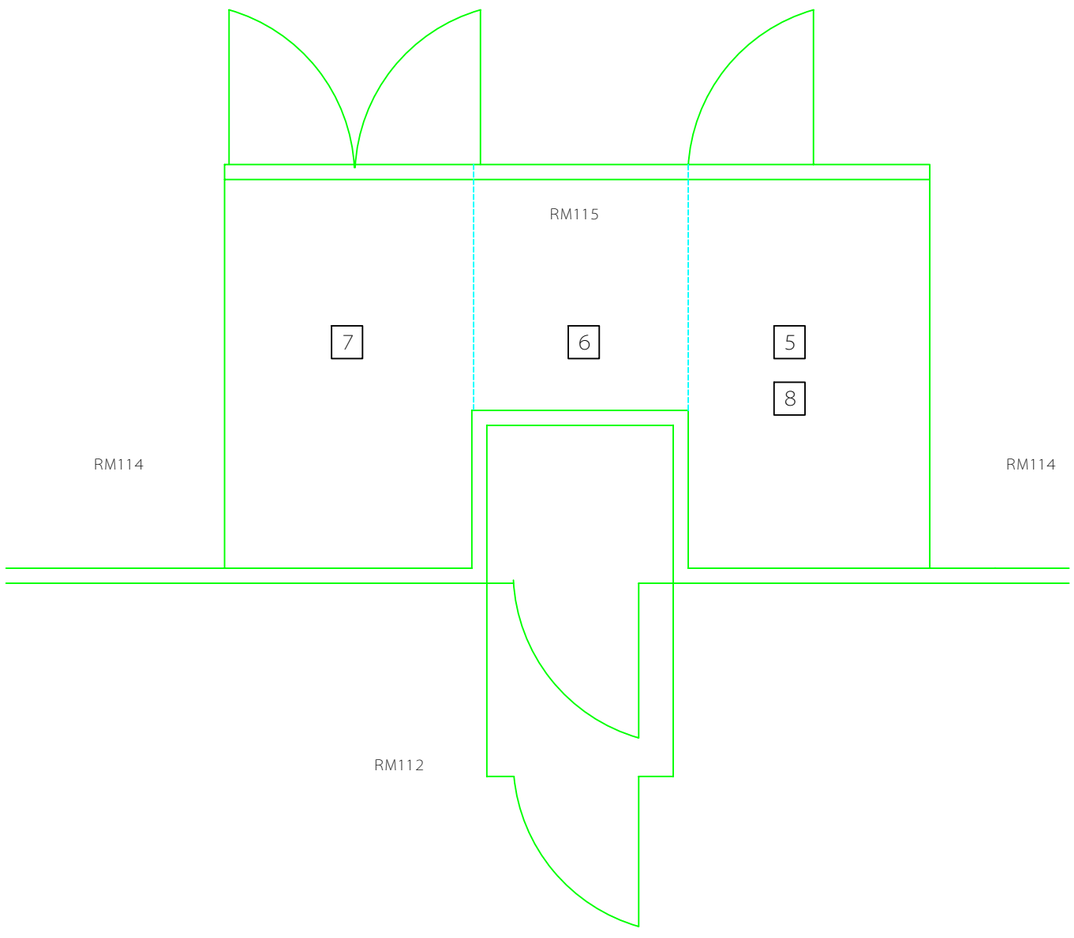
SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	SVOC SUITE	PCB
RM115 - 05	FLOOR & 4 FT UP WALLS (WEST)	X	X	X
RM115 - 06	FLOOR & 4 FT UP WALLS (MIDDLE)	X	X	X
RM115 - 07	FLOOR & 4 FT UP WALLS (EAST)	X	X	X
RM115 - 08	DUPLICATE (WEST)	X	X	X

GENERAL NOTES:

1. SEE THE TABLE BELOW FOR SAMPLE IDENTIFICATION NUMBERS AND LOCATIONS.

VERIFICATION SAMPLES:

SAMPLE NUMBER	SAMPLE LOCATION	RCRA METALS	SVOC SUITE	PCB
RM115 - 05	FLOOR & 4 FT UP WALLS (WEST)	X	X	X
RM115 - 06	FLOOR & 4 FT UP WALLS (MIDDLE)	X	X	X
RM115 - 07	FLOOR & 4 FT UP WALLS (EAST)	X	X	X
RM115 - 08	DUPLICATE (WEST)	X	X	X



TA - 50 - 37, ROOM 115 SAMPLING LOCATIONS
NOT TO SCALE

N

Figure 2 - 1
TA - 50 - 37, ROOM 115
SAMPLING LOCATIONS

NO.	DATE	DWN	DES	CHKD	APP	REVISIONS

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LOS ALAMOS NATIONAL LABORATORY
CLOSURE CERTIFICATION REPORT

TA - 50 - 37, ROOM 115 SAMPLING LOCATIONS

BLDG. 37 — TA - 54

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PROJECT ID	819592		DRAWING NO.	FIGURE 2 - 1				

APPENDIX A

***Los Alamos National Laboratory Technical Area 50 Closure Plan for Interim Status Container Storage Units TA-50-1, Room 59 and TA-50-37*, LA-UR-03-5409**

LA-UR-03-5409
July 2003

Los Alamos National Laboratory
Technical Area 50

Closure Plan for
Interim Status Container Storage Units
TA-50-1, Room 59 and TA-50-37

Revision 1.0

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Los Alamos National Laboratory
Technical Area 50

Closure Plan for
Interim Status Container Storage Units

TA-50-1, Room 59 and TA-50-37

Revision 1.0
LA-UR-03-5409

Facility ID No.:	NM0890010515
Facility Name:	Los Alamos National Laboratory
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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1.600 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI
°C	degrees Celsius
CAI	Controlled Air Incinerator
CFR	Code of Federal Regulations
CSU	container storage unit
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ft	feet/foot
HSR-1	Health, Safety, and Radiation Protection Division, Health Physics Operations Group
HSR-5	Health, Safety, and Radiation Protection Division, Industrial Hygiene and Safety Group
LANL	Los Alamos National Laboratory
LASO	Los Alamos Site Office
MSSL	Medium Specific Screening Level
NMED	New Mexico Environment Department
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RLWTF	Radioactive Liquid Waste Treatment Facility
RRES	Risk Reduction and Environmental Stewardship Division
SUP-3	Supply Chain Management Division, Materials Management Group

LIST OF ABBREVIATIONS/ACRONYMS (continued)

SW-846	EPA, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.
SWRC	Solid Waste Regulatory Compliance Group
TA	technical area
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

CLOSURE PLAN FOR INTERIM STATUS CONTAINER STORAGE UNITS TA-50-1, ROOM 59; AND TA-50-37

The information provided in this closure plan is submitted to address the applicable interim status closure requirements specified in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart VI (20.4.1.600 NMAC), Part 265, Subparts G and I, revised June 14, 2000 [6-14-00]. This closure plan describes the activities necessary to perform Resource Conservation and Recovery Act Closure for the Technical Area (TA) 50, Building 1 (TA-50-1), Room 59 and TA-50-37 interim status container storage units (CSUs) at the Los Alamos National Laboratory (LANL). Closure activities will include removal of any remaining waste; decontamination or removal of contaminated equipment and surfaces; and verification that all residues have been removed. In the event that closure by removal and decontamination of a CSU cannot be met, the closure plan will be modified to include alternative decontamination demonstrations or alternative closure requirements, as necessary. Closure activities will minimize the need for further maintenance, preclude the release of hazardous constituents to environmental media, and be protective of human health in accordance with the closure performance standards specified in 20.4.1.600 NMAC § 265.111 [6-14-00].

Although this closure plan is written in the future tense, decontamination and verification activities at the TA-50-1, Room 59 CSU were conducted from September 20, 2002 to September 23, 2002 in accordance with 20.4.1.500 NMAC § 264.112(e) [6-14-00] and the "Los Alamos National Laboratory Technical Area 50 Closure Plan for Container Storage Units TA-50-1, Room 59; TA-50-37; and TA-50-114," LA-UR-02-4729, submitted to the New Mexico Environment Department (NMED) in July 2002. Per the NMED's request, the original closure plan was withdrawn in a letter dated June 17, 2003. This closure plan revises the interim status closure plans for TA-50-1 and TA-50-37 written in 1992 and is intended to replace LA-UR-02-4729. It is organized as follows:

- Section 1.0 – General closure information.
- Section 2.0 – Description of the CSUs to be closed.
- Section 3.0 – Closure procedures.
- Section 4.0 – Sampling and analysis plan.
- Section 5.0 – Waste management.
- Section 6.0 – References.

Until closure is complete and has been certified in accordance with 20.4.1.600 NMAC § 265.115 [6-14-00], as discussed in Section 1.6, a copy of the approved closure plan and any approved revisions will be on file with the Risk Reduction and environmental Stewardship Division (RRES) Solid Waste Regulatory Compliance Group (SWRC) and at the U.S. Department of Energy (DOE) Los Alamos Site Office (LASO).

1.0 GENERAL CLOSURE INFORMATION

1.1 Closure Performance Standard [20.4.1.600 NMAC § 265.111]

The CSUs addressed in this closure plan will be closed to meet the following performance standards:

- Minimize the need for further maintenance,
- Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, or surface waters, or to the atmosphere, and
- Comply with the closure requirements of 20.4.1.600 NMAC § 265, Subpart G [6-14-00], including, but not limited to the requirements of 20.4.1 NMAC §§ 265.178, 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.601 through 265.603, and 265.1102.

This will be accomplished by removal of waste from each CSU and decontamination, if necessary, of all surfaces and equipment that may have come into contact with the wastes. Decontamination activities will ensure the removal of hazardous waste residues to established cleanup levels.

1.2 Partial and Final Closure Activities [20.4.1.600 NMAC § 265.112(d)]

This closure plan has been written for partial closure rather than final closure of the entire LANL facility. Partial closure will consist of closing the CSUs located at TA-50-1, Room 59; and TA-50-37 while leaving the other regulated hazardous/mixed waste units at LANL in service. Partial closure (hereinafter referred to as closure) will be deemed complete when closure has been verified; all surfaces and equipment have been decontaminated, or otherwise properly disposed, if necessary; closure certification has been submitted to the NMED; and the NMED has approved the closure. Final closure will occur when the remaining hazardous/mixed waste management units at LANL are closed.

1.3 Closure Schedule [20.4.1.600 NMAC §§ 265.112(b) (6), 265.112(e), and 265.113]

Written notification will be provided to the NMED 45 days before the start of closure activities for the CSUs addressed in this closure plan. However, pursuant to 20.4.1.600 NMAC § 265.112(e) [6-14-00], removing hazardous wastes and decontaminating or dismantling equipment in accordance with an approved closure plan may be conducted at any time before or after notification of closure. Closure activities will begin according to the requirements of 20.4.1.600 NMAC § 265.112(d) (2) [6-14-00]. Treatment, removal, or disposal of hazardous wastes will begin in accordance with the approved closure plan, as required by 20.4.1.600 NMAC § 265.113(a) [6-14-00], within 90 days after final receipt of waste at each CSU. This timeframe will be met as long as facilities are available for treatment, storage, or disposal of these wastes. In the event that closure activities cannot begin within 90 days, LANL will notify the Secretary of the NMED in accordance with the extension requirements in 20.4.1.600 NMAC § 265.113(a) [6-14-00]. Closure activities and reporting requirements will be completed within 180 days of the receipt of the final volume of waste at each CSU. Closure will be conducted in accordance with the schedule presented in Table 1 of this closure plan.

Table 1
Closure Schedule

Activity	Maximum Time Required
Submit Closure Plan.	-90 Days
Notify the NMED of intent to close.	-45 Days
Final receipt of waste.	Day 0
Removal of waste.	Day 5
Decontaminate surfaces and equipment.	Day 10
Sample excess used decontamination water for disposal.	Day 10
Perform verification sampling.	Day 20
Evaluate analytical data from verification sampling.	Day 50
Perform additional decontamination, if necessary.	Day 55
Perform additional verification sampling, if necessary.	Day 60
Evaluate additional analytical data.	Day 75
Perform final clean up and disposal (i.e., removal of decontaminated equipment and decontamination waste).	Day 140
Prepare closure report.	Day 150
Certify closure.	Day 175
Submit final report to NMED.	Day 180

[a] The schedule above indicates calendar days from the beginning by which activities will be completed. Some activities may be conducted simultaneously and/or may not require the maximum time listed. Extensions to this schedule may be requested, as needed.

NMED = New Mexico Environment Department

In the event that closure cannot proceed according to schedule, LANL will notify the Secretary of the NMED in accordance with extension request requirements in 20.4.1.600 NMAC § 265.113(b) [6-14-00]. In addition, the demonstrations in 20.4.1.600 NMAC §§ 265.113(a)(1) and (b)(1) [6-14-00], will be made in accordance with 20.4.1.600 NMAC § 265.113(c) [6-14-00].

1.4 Amendment of the Closure Plan [20.4.1.600 NMAC § 265.112(c)]

In accordance with 20.4.1.600 NMAC § 265.112(c) [6-14-00], LANL will submit a written change to the approved closure plan whenever:

- There are changes in operating plans or facility design that affect the closure plan.
- There is a change in the expected date of closure.
- Unexpected events occur during closure that requires modification of the approved closure plan.
- The owner or operator requests the Secretary of the NMED to apply alternative requirements to a regulated unit under 20.4.1.600 NMAC §§ 265.90(f) and/or 265.110(c).

The written notification or request will include a copy of the amended closure plan for approval by the NMED.

LANL will submit a written request for a permit modification with a copy of the amended closure plan at least 60 days prior to the proposed change in unit design or operation or no later than 60 days after an occurrence of an unexpected event that affects the closure plan. If the unexpected event occurs during closure, the permit modification will be requested within 30 days of the occurrence. The Secretary of the NMED may request a modification of the closure plan under the conditions presented in the bulleted items above. LANL will submit the modified plan in accordance with the request within 60 days of notification or within 30 days of notification if a change in facility condition occurs during the closure process.

1.5 Closure Cost Estimate, Financial Assurance, and Liability Requirements [20.4.1.600 NMAC § 265.140(c)]

In accordance with 20.4.1.600 NMAC § 265.140(c) [6-14-00], LANL, as a federal facility, is exempt from the requirements of 20.4.1.600 NMAC Subpart H [6-14-00], to provide a cost estimate, financial assurance mechanisms, and liability insurance for closure actions.

1.6 Closure Certification [20.4.1.600 NMAC § 265.115]

Within 60 days after completion of closure activities at the CSUs or final closure of the facility, LANL will submit to the Secretary of the NMED, via certified mail, a certification that the CSUs have been closed in accordance with the approved closure plan. The certification will be signed by the appropriate DOE and LANL officials and by an independent, registered professional engineer in accordance with 20.4.1.600 NMAC § 265.115 [6-14-00]. Documentation supporting the independent, registered engineer's certification will be furnished to the Secretary of the NMED upon request, as specified in 20.4.1.600 NMAC § 265.115 [6-14-00]. Both DOE/LASO and SWRC will maintain a copy of the certification and supporting documentation.

1.7 Security

Because of the ongoing nature of operations at TA-50, site security will be maintained by the DOE or another authorized federal agency for as long as necessary to prohibit public access. The security fence at TA-50 will be maintained to ensure that public access is prevented.

1.8 Closure Report

Upon completion of the closure activities, a closure report will be prepared and submitted to the Secretary of the NMED. The report will document the closure and contain the following:

- A copy of the certification described in Section 1.6 of this closure plan.
- A general summary of closure activities.
- Any significant variance from the approved activities and the reason for the variance.
- A summary of all sampling results, showing:
  - Sample identification.
  - Sampling location.
  - Datum reported.
  - Detection limit for each datum.
  - A measure of analytical precision (e.g., uncertainty, range, variance).

- Identification of analytical procedure.
- Identification of analytical laboratory.

- A quality assurance (QA)/ quality control (QC) statement on analytical data validation and decontamination verification.

- The location of the file of supporting documentation, including:
  - Field logbooks.
  - Laboratory sample analysis reports.
  - QA/QC documentation.
  - Chain-of-custody forms.

- Storage or disposal location of regulated hazardous/mixed waste resulting from closure activities.

- A certification of accuracy of the report.

2.0 DESCRIPTION OF UNITS

TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the finger mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south. Figure 1 shows the location of TA-50 at LANL. Figure 2 provides the location of each CSU to be closed. The following sections provide detailed descriptions of the interim status units to be closed.

2.1 TA-50-1, Room 59

The TA-50-1, Room 59 CSU is located at the northeast end of the Radioactive Liquid Waste Treatment Facility (RLWTF). The room is constructed of pre-engineered steel framing and insulated metal roofing and siding. The CSU was used for mixed waste storage of 30- and 55-gallon drums in support of operations at the RLWTF. The CSU consists of a 10 foot (ft) wide by 19-ft long area in the northwest corner of the room as indicated on Figure 3. A photograph of the CSU is provided as Figure 4.

2.2 TA-50-37

The TA-50-37 CSU is located in a two-story building that contains offices, laboratories, two process bays, an egress bay, and a mechanical equipment area. The CSU consists of two storage locations in Rooms 115 and 118 on the first floor of the building as indicated on Figure 5. Room 115 is in the west central portion of the building and measures 10-ft wide by 21-ft long. Room 118 is located in the eastern portion of the building and measures 31-ft wide by 40-ft long. Photographs of the CSU

are provided as Figures 6 and 7, respectively. The TA-50-37 CSU was intended for hazardous and mixed waste storage of 5-, 30-, 55-, 83-, 85-, and 110-gallon drums/containers and standard waste boxes in support of the Waste Characterization, Reduction and Repackaging Facility (WCRRF) at TA-50-69 and at TA-50-37.

TA-50-37 previously housed the Controlled Air Incinerator (CAI) associated with the Treatment Development Facility at LANL. This incinerator received a Toxic Substances Control Act incineration permit in 1984 and a Resource Conservation and Recovery Act operating permit for hazardous waste in 1989. In 1995, it was determined that waste incineration would not be performed at the CAI. In 1996, closure of the CAI was initiated in accordance with an approved NMED closure plan.

2.3 Estimate of Maximum Waste in Inventory

The maximum total inventory of waste in storage at any time in the CSUs is estimated as follows:

- TA-50-1, Room 59 – 1,485 gallons.
- TA-50-37, Room 115 – 220 gallons.
- TA-50-37, Room 118 – 5,500 gallons.

2.4 Description of Stored Waste

The CSUs addressed in this closure plan, were used to store waste generated from various research activities, material processing and recovery operations, and decontaminating and decommissioning operations conducted at various TAs throughout LANL. The following sections provide information regarding the waste types stored at the CSUs, as determined by the operating record and historical knowledge.

2.4.1 TA-50-1, Room 59

The TA-50-1, Room 59 CSU stored containers of mixed waste with potential residual free liquids. The majority of the waste stored in the CSU consisted of solid mixed waste generated by cementation operations in Room 60 of the RLWTF. Additional types of waste included items associated with decontamination and process operations at the TA-50-1 RLWTF. Table 2 provides a list of applicable compounds and associated U.S. Environmental Protection Agency (EPA) Hazardous Waste Numbers based on the operating record of the unit.

Table 2
Hazardous Waste Constituents Stored at the TA-50-1, Room 59[a] Container Storage Unit

Category	EPA Hazardous Waste Numbers	Specific Constituents
RCRA Metals	D004, D005, D006, D007, D008, D009, D010, and D011	Arsenic, Barium Hydroxide, Cadmium, Chromium, Lead, Mercury, Selenium, Silver
VOC	F003	Acetone
SVOC	Not Applicable	N-Nitrosodimethylamine, Diethylphthalate, Di-n-Butylphthalate, Bis-2-Ethylhexlphthalate

[a] Based on the TRUCON Code (LA111/211) assigned to the cement drums generated in Room 60 of the RLWTF.

EPA = U.S. Environmental Protection Agency
RCRA = Resource Conservation and Recovery Act
RLTWF = Radioactive Liquid Waste Treatment Facility
SVOC = semi-volatile organic compounds
VOC = volatile organic compounds

2.4.2 TA-50-37

The TA-50-37 CSU stored containers of mixed waste with potential residual free liquids. The CSU was used as a staging area for waste in support of waste characterization, segregation, and decontamination activities associated with operations of the WCRRF prior to long term storage at TA-54 and/or shipment to the Waste Isolation Pilot Plant for disposal. Due to the proximity of the CSU to the former CAI, LANL will close the unit conservatively and verify that constituents associated with the operations of the CAI did not contaminate the surfaces of the CSU. Table 3 provides a list of potential hazardous waste constituents and applicable EPA Hazardous Waste Numbers found during closure of the CAI as discussed in "Los Alamos National Laboratory Controlled-Air Incinerator Resource Conservation and Recovery Act Closure Report and Certification" (Benchmark, 1998).

Table 3
Hazardous Waste Constituents Associated with the Controlled Air Incinerator at the TA-50-37 Container Storage Unit

Category	EPA Hazardous Waste Numbers	Constituents/Comments
RCRA Metals	D004, D005, D006, D007, D008, and D009	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury
VOC	F002, F003, U165	Acetone, Methylene Chloride, Naphthalene, Trans-1,2-Dichloroethene
SVOC	Not Applicable	Bis (2-ethyl hexyl phthalate)
PCB[b]	Not Applicable	The CAI treated a small amount of PCBs and organic compounds (Benchmark, 1998). Swipe sampling results conducted during closure of the CAI indicated the presence of PCBs.

[a] Based on swipe sampling results conducted during closure of the CAI (Benchmark, 1998).
[b] PCBs contamination, if any, will be removed in accordance with applicable TSCA regulations.

CAI = Controlled Air Incinerator
EPA = U.S. Environmental Protection Agency
PCB = polychlorinated biphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = semi-volatile organic compounds
TSCA = Toxic Substances Control Act
VOC = volatile organic compounds

3.0 CLOSURE PROCEDURES

3.1 Removal of Waste

Prior to initiation of closure activities, all waste will be removed from the CSUs and transported for storage/disposal. The containers will be removed using forklifts and/or manually handled with dollies depending on the size and weight of the container. Each container will be placed onto a flatbed truck or trailer for transport and will be accompanied by the appropriate shipping papers during transport. Containers will be transported to an approved LANL on-site CSU or permitted off-site treatment, storage, or disposal facility.

3.2 Preliminary Closure Procedures

3.2.1 Safety Precautions

Job hazards associated with closure activities will be identified, controls developed, and workers briefed before closure activities are conducted, in accordance with LANL safety procedures. Personnel involved in closure activities will wear appropriate personal protective equipment (PPE), specified by the Health Physics Operations Group (HSR-1) and the Industrial Hygiene and Safety Group (HSR-5), and will follow good hygiene practices to protect themselves from exposure to hazardous and/or mixed waste. The level of PPE that will be required will depend upon the levels of radiological and/or chemical contamination detected, if any. If HSR-1 and HSR-5 surveys indicate no detectable contamination levels, minimum PPE requirements will consist of coveralls, steel-toed shoes, and safety glasses or face shields. If an overhead danger is present, hard hats will be worn. All workers involved in closure activities will be required to have appropriate training including Hazardous Waste Operations and Emergency Response Training for general site workers (24 hour and refresher) and TA-50 site-specific training for the RLWTF and TA-50-37, as appropriate. Personnel may also be required to have Radiation Worker, Level II training based on the radiological survey conducted at TA-50-1, Room 59 prior to the commencement of closure. Contaminated PPE will either be decontaminated or managed in compliance with appropriate waste management regulations.

3.2.2 Structural Assessment

Preventive maintenance inspections are conducted weekly at each of the TA-50 CSUs while waste is in storage. If any defects, deterioration, damage, or hazards affecting containment have developed, appropriate remedial actions (including sampling, repairs, maintenance, or replacement) are completed immediately. Prior to beginning any decontamination activities at the CSUs, the base or secondary containment of each CSU will be inspected for any cracks or conditions that could potentially lead to loss of decontamination water and/or verification wash water during closure. If a crack or gap is present, a swipe sample or a representative sample of the media (i.e., concrete, metal) will be taken to determine the presence of contamination. The sample will be analyzed for the hazardous contaminates identified in Tables 2 or 3 of this closure plan. If contamination is present, the surface flaw will be decontaminated prior to repairing the crack/gap. Complete or partial removal (e.g., scrabbling) of the material may be performed until contamination is no longer detected. If partial removal is successful in eliminating the contamination, it will be assumed that the remaining material, including underlying soil, is clean.

3.2.3 Waste Management

Used wash water will be collected, transferred to containers, sampled, and analyzed for the hazardous constituents listed in Tables 2 and 3, as appropriate. The results of this analysis will determine if the used wash water should be managed as hazardous or non-hazardous wastewater. The wastewater, PPE, and any other waste generated as a result of closure will be managed as discussed in Section 5.0.

3.3 Decontamination Procedures

To the extent possible, all contaminated surfaces and equipment (if present) will be decontaminated. Surfaces and equipment that cannot be decontaminated will be containerized and managed in compliance with applicable regulations. All sampling conducted during closure and decontamination will be done in accordance with QA/QC procedures defined by "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (*SW-846*) (EPA, 1986). Closure will be conducted in accordance with the schedule presented in Table 1. Monitoring for contamination will occur throughout closure activities, as appropriate.

3.3.1 Equipment Located in the CSUs

The TA-50 CSUs have a variety of equipment that must be removed, decontaminated, and/or

disposed of prior to decontamination of the main surfaces associated with each unit. This includes all portable equipment such as pallets, drum dollies, and carts that are used to manage waste at the CSUs. This equipment will be decontaminated, characterized, and/or disposed of based upon the level of contamination and future use. The used wash water will be collected, transferred to a container, and sampled to determine an appropriate location for disposal. The samples will be analyzed for the constituents identified in Tables 2 and 3, as appropriate.

3.3.2 TA-50-1, Room 59 Decontamination

Decontamination of the TA-50-1, Room 59 CSU will be conducted using mops, cloths, and/or other absorbent materials to remove any potential hazardous constituents. These materials will be rinsed in a wash water solution (e.g., Alconox, water) and used to wipe down the walls and floor. The TA-50-1, Room 59 CSU has two walls, a roll up door, and is open to the rest of Room 59 on the east side. Prior to the commencement of closure, plastic will be hung from the ceiling on the east side of the CSU to prevent cross contamination to operations conducted in the remaining portions of the room.

The containers stored in the CSU were not stacked beyond the height of a 55-gallon drum and were not opened within the unit and there is no record of any spills. For these reasons, decontamination will begin with the wash down of the walls to a height of 4-ft (i.e., the height of a 55-gallon drum). After the walls have been decontaminated, the floor will be wiped down. The CSU does not have recess areas (i.e., sumps) so used wash water will be contained, collected, removed, and transferred to an appropriate container for analysis.

When decontamination of the CSU is complete, verification will be conducted as indicated in Section 3.4. If analysis from the verification indicate that hazardous constituents are present, wash cycles and analyses will continue as described above until the walls and floor have been decontaminated or the decision is made to proceed with an alternate demonstration of decontamination as described in Section 3.5.

3.3.3 TA-50-37 Decontamination

Decontamination will be conducted using mops, cloths, and/or other absorbent materials to remove any potential hazardous constituents. These materials will be rinsed in a wash water solution (e.g., Alconox, water) and used to wipe down the walls and floor.

Decontamination of Room 115 will begin with the wash down of all four walls to a height of approximately 4-ft. After the walls have been decontaminated, the floor and containment berms located in the room will be wiped down. Room 115 does not have any recessed areas (i.e., sumps) so excess used wash water will be contained, collected, removed, and transferred to an appropriate container for analysis.

Decontamination of Room 118 will begin with the wash down of all four walls to a height of approximately 4-ft. Room 118 has a recessed sump located underneath a steel plate welded to a grate that is located in the center of the room. The sump has a pump and piping connected to a standpipe for removal of liquids. The sump will be bermed during the decontamination process to prevent wash water from collecting in the sump. When the walls and floor of the CSU have been decontaminated the sump will be wiped down and the used wash water contained, collected, removed, and transferred to an appropriate container for analysis.

When decontamination of the CSU storage locations is complete, verification will be conducted as indicated in Section 3.4. If analysis from the verification indicates that hazardous constituents are present, wash cycles and analyses will continue as described above until the walls and floor have been decontaminated or the decision is made to proceed with an alternate demonstration of decontamination as described in Section 3.5.

3.3.4 Equipment Used During Closure

Reusable protective clothing, tools, and equipment used during decontamination activities at the CSUs will be cleaned with a wash water solution. Residue, disposable equipment and reusable equipment that cannot be decontaminated will be containerized and managed as waste in accordance with LANL waste management procedures, depending on the regulated constituents present.

3.4 Verification of Decontamination

3.4.1 Methodology

LANL proposes analysis of verification solution samples for decontamination verification at the TA-50 CSUs addressed in this plan, utilizing the following methodology:

1. Minimize dilution of potential hazardous constituents by limiting the verification solution to an amount that is sufficient to wipe down the surface to be verified and collect the required number of samples.

2. Limit the sampling area to a specific discrete location (e.g., a wall or portion thereof depending on the size of the unit).

3. Verify decontamination by comparing the discrete sample results to a baseline sample result obtained from the verification solution prior to its use for the verification wipe down.

4. If the result is at or below that of the baseline, the decontamination is verified for the discrete area sampled.

5. If the result is above the baseline, repeat the decontamination and verification of the discrete location in accordance with Sections 3.3 and 3.4 of this closure plan.

This proposed method minimizes dilution and establishes criteria by which successful decontamination can be verified. Analytical procedures will conform to methods found in the most current version of *SW-846* (EPA, 1986).

3.4.2 Decontamination Demonstration Criteria

Successful decontamination will meet a minimum of one of the following four criteria:

- No detectable hazardous waste or hazardous waste constituents from container storage activities are identified in the verification solution sample.

- Detectable hazardous waste or hazardous waste constituents from container storage activities in the final verification solution sample are removed to statistically significant levels based on baseline concentrations in the clean verification solution.

- Detectable hazardous waste or hazardous waste constituents from container storage activities in the final sample are at or below levels agreed upon with the NMED.

- Detectable hazardous waste or hazardous waste constituent concentrations from container storage activities do not significantly decrease after several wash downs. In such an event, hazardous constituents that pose an acceptable risk will be allowed to remain, as mutually agreed upon with the NMED.

3.4.3 Verification Procedure

Verification of clean closure at the TA-50-1, Room 59; and TA-50-37 CSUs will be accomplished using verification solution sampling of the discrete surfaces specified in Table 4.

Table 4
Discrete Locations and Approximate Areas for Verification Sampling

Location	Sample Description	Approximate Area (ft^2)
TA-50-1, Room 59	North Wall	40
	West Wall	76
	South Wall	40
	Floor (north half)	95
	Floor (south half)	95
TA-50-37, Room 115[a]	West Section (3 walls and floor)	153
	Middle Section (2 walls and floor)	153
	East Section (3 walls and floor)	153
TA-50-37, Room 118[a]	West Wall #1	62
	West Wall #2	62
	South Wall #1	80
	South Wall #2	80
	East Wall #1	62
	East Wall #2	62
	North Wall #1	80
	North Wall #2	80
	Floor #1 (quadrant 1)	155
	Floor #2 (quadrant 1)	155
	Floor #3 (quadrant 2)	155
	Floor #4 (quadrant 2)	155
	Floor #5 (quadrant 3)	155
	Floor #6 (quadrant 3)	155
	Floor #7 (quadrant 4)	155
	Floor #8 (quadrant 4)	155
	Sump (4' x 4' x 4')	64

[a] Per letter to Steve Jetter, "Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA-50-37), Los Alamos National Laboratory (LANL)," Hazardous Waste Bureau, New Mexico Environment Department, February 3, 2003.

ft^2 = square feet

For each surface, a new container will be prepared containing water and Alconox. A mop, cloth, and/or other absorbent material will be submerged into the container and squeezed out prior to wiping down the discrete CSU surface to be verified. This process will be repeated until the entire discrete surface has been wiped down. Then the verification solution will be sampled for analysis according to Section 4.0 of this closure plan.

3.5 Alternative Demonstration of Closure

An alternate demonstration of decontamination may be justified at the TA-50 CSUs addressed in this plan, if decontamination methods described in Section 3.3 are not feasible. LANL proposes the following alternate demonstrations:

- Comparison of the verification analytical results to the EPA Region 6 Medium Specific Screening Levels (MSSL) for tap water. If the result is below the MSSL decontamination at the CSU will be considered complete.
- Assessment of residual (i.e., above the MSSL) contamination levels using an occupational risk based scenario.

4.0 SAMPLING AND ANALYSIS PLAN [20.4.1 NMAC § 265.112(b) (4)]

The following sections describe procedures and methods for sampling, analysis, and documentation applicable to closure activities. Sampling will be conducted in accordance with procedures given in *SW-846* (EPA, 1986) or other approved procedures or methods.

4.1 Sampling Strategy/Approach

Sampling activities will be conducted to verify that the decontamination efforts described in Section 3.3 were effective at removing hazardous constituents, if any, from the surfaces of the CSU. Samples will be collected according to the methods and procedures provided in this section from discrete locations and analyzed for the appropriate hazardous constituents identified in Table 2 of this closure plan. Prior to the commencement of verification sampling, three baseline samples will be collected from the verification solution. These results from these samples will be used to determine if the equipment used for closure to determine if these materials contribute any contaminants to the samples.

For each surface, a new container will be prepared containing water and Alconox. A mop, cloth, and/or other absorbent material will be submerged into the container and squeezed out prior to wiping down the discrete CSU surface to be verified. To minimize dilution of the samples, the solution used for the wipe down will be limited to a quantity sufficient to collect the appropriate number of samples. Verification sampling for this CSU will be conducted first for the walls and then the secondary containment/floor of each cell to prevent cross contamination of the samples and allow for the identification of hot spots. Tables 5 and 6 identify the sample locations, types, and required analysis applicable to the closure of each CSU.

Table 5
Sample Types, Locations, and Required Analysis for the TA-50-1, Room 59 Container Storage Unit

Sample Type	Description	Location	Required Analysis
Baseline #1	Sample collected from a container of verification solution prior to use. There are three samples collected for statistical comparison	Not Applicable	RCRA Metals, VOC, and SVOC
Baseline #2		Not Applicable	RCRA Metals, VOC, and SVOC
Baseline #3		Not Applicable	RCRA Metals, VOC, and SVOC
Verification	Sample collected from a verification solution container after the solution has been used to wash down the discrete surface. There is at least one sample per analyte collected for each discrete location	North wall	RCRA Metals, VOC, and SVOC
		West wall	RCRA Metals, VOC, and SVOC
		South wall	RCRA Metals, VOC, and SVOC
		Floor #1 (North)	RCRA Metals, VOC, and SVOC
		Floor #2 (South)	RCRA Metals, VOC, and SVOC
Waste Sample	Sampled collected form the decontamination wash water.	NA	RCRA Metals, VOC, and SVOC

RCRA = Resource Conservation and Recovery Act
VOC = volatile organic compound
SVOC = semi-volatile organic compound

Table 6
Sample Types, Locations, and Required Analysis for the TA-50-37 Container Storage Unit

Container Storage Location	Sample Type	Description	Sample Description	Required Analysis
Room 115	Baseline #1	Sample collected from a container of verification solution prior to use. There are three samples collected for statistical comparison	NA	RCRA Metals, SVOC, and PCB
	Baseline #2		NA	RCRA Metals, SVOC, and PCB
	Baseline #3		NA	RCRA Metals, SVOC, and PCB
	Verification	Sample collected from a verification solution container after the solution has been used to wash down the discrete surface. There is at least one sample per analyte collected for each discrete location	Floor and 4 ft up walls #1 (West)	RCRA Metals, SVOC, and PCB
			Floor and 4 ft up walls #2 (Middle)	RCRA Metals, SVOC, and PCB
			Floor and 4 ft up walls #3 (East)	RCRA Metals, SVOC, and PCB
	Waste Sample	Sampled collected form the decontamination wash water.	Decontamination Solution	RCRA Metals, SVOC, and PCB

Table 6 (continued)
Sample Types, Locations, and Required Analysis for the TA-50-37 Container Storage Unit

Container Storage Location	Sample Type	Description	Sample Description	Required Analysis
Room 118	Baseline #1	Sample collected from a container of verification solution prior to use.	NA	RCRA Metals, VOC, and SVOC
	Baseline #2		NA	RCRA Metals, VOC, and SVOC
	Baseline #3	There are three samples collected for statistical comparison	NA	RCRA Metals, VOC, and SVOC
	Verification	Sample collected from a verification solution container after the solution has been used to wash down the discrete surface.	West Wall #1	RCRA Metals
			West Wall #2	RCRA Metals
			South Wall #1	RCRA Metals
			South Wall #2	RCRA Metals
			East Wall #1	RCRA Metals
		There is at least one sample per analyte collected for each discrete location	East Wall #2	RCRA Metals
			North Wall #1	RCRA Metals
			North Wall #2	RCRA Metals
			Floor #1 (quadrant 1)	RCRA Metals
			Floor #2 (quadrant 1)	RCRA Metals
			Floor #3 (quadrant 2)	RCRA Metals
			Floor #4 (quadrant 2)	RCRA Metals
			Floor #5 (quadrant 3)	RCRA Metals
			Floor #6 (quadrant 3)	RCRA Metals
			Floor #7 (quadrant 4)	RCRA Metals
			Floor #8 (quadrant 4)	RCRA Metals
			Sump (4 ft x 4 ft x 4 ft)	RCRA Metals, VOC, and SVOC
	Waste Sample	Sampled collected form the decontamination wash water.	NA	RCRA Metals, VOC, and SVOC

[a] Per letter to Steve Jetter, "Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA-50-37), Los Alamos National Laboratory (LANL)," Hazardous Waste Bureau, New Mexico Environment Department, February 3, 2003.

ft = foot/feet
NA = not applicable
PCB = polychlorinated byphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = semi-volatile organic compound
VOC = volatile organic compound

The floor plate covering the sump in TA-50-37, Room 118, will be decontaminated during the floor and sump decontamination process. Results from the rinse water samples taken from the floor and sump decontamination will be used to determine if the floor plate decontamination was effective. If the analysis of the decontamination wash water requires that it be managed as a hazardous waste, the floor plate will also be managed as hazardous waste. Otherwise, the floor plate will be managed as non-hazardous waste or reused.

When the verification sampling is complete, the waste wash water solution generated during decontamination will be sampled for characterization.

4.2 Sample Collection Procedure

4.2.1 Soil and Sediment Sampling

The CSUs identified in this closure plan are located inside buildings or structures provided with secondary containment and run-on protection. These features were effective at preventing the migration of waste to the environment. In addition, the operating records indicate that there are no recorded spills of liquids at any of the CSUs to be closed. Therefore, soil sampling is not applicable.

4.2.2 Liquid Sampling

Sampling of the clean/used wash water solution will be performed in accordance with Risk Reduction and Environmental Stewardship Division, Remediation Group standard operating procedure ER-SOP-6.13, "Surface Water Sampling" (LANL, 2001).

4.2.3 Cleaning of Samplers

Disposable sampling equipment will be used for each of the CSU closures. This equipment may be presumed clean if still in a factory-sealed wrapper.

4.3 Sample Management Procedures

Samples will be collected and transported using documented chain-of-custody and sample management procedures to ensure the integrity of the sample and provide an accurate and defensible written record of the possession and handling of a sample from the time of collection, through laboratory analysis. An approved laboratory will provide coolers, containers, preservative, labels, chain-of-custody forms, analysis request forms, and custody seals prior to sampling. The following provides a description of chain-of-custody; sample documentation; sample handling, preservation, and storage; and sample transportation requirements that will be followed during the sampling activities associated with the closure.

4.3.1 Chain-of-Custody

Sample chain-of-custody forms will be maintained by sampling personnel until the samples are relinquished to the analytical laboratory. The sample collector will be responsible for the integrity of the samples collected until properly transferred to another person. The EPA considers a sample to be in a person's custody if it is:

- In a person's physical possession,
- In view of the person in possession, or
- Secured by that person in a restricted access area to prevent tampering.

The sample collector will document all pertinent sample collection data. Individuals relinquishing or receiving custody of the samples will sign, date, and note the time on the analysis request/chain-of-custody form. A chain-of-custody form shall accompany the sample containers or coolers, including transport to the analytical laboratory.

4.3.2 Sample Documentation

Sampling personnel will complete and maintain records to document sampling and analysis activities. Sample documentation will include, at a minimum, sample identification numbers, sample container labels and custody seals, chain-of-custody forms, analysis request forms, sample logbooks detailing sample collection activities, and shipping forms (if necessary).

4.3.2.1 Sample Labels and Custody Seals

A sample label, completed in blue or black ink, will be affixed to each sample container. The sample label will include, at a minimum the following information:

- A unique sample identification number.
- Name of the sample collector.
- Date and time of collection.
- Type of preservatives used, if any.
- Location from which the sample was collected.

A custody seal will be placed on each sample container to ensure detection of unauthorized tampering with the samples. These labels must be initialed, dated, and affixed, by the sample collector, to the container in such a manner that it is necessary to break the seal to open the container.

4.3.2.2 Chain-of-Custody Form

A chain-of-custody form must accompany all samples from collection through laboratory analysis. The completed original chain-of-custody form will be returned by the laboratory and will become a part of the permanent record documenting the sampling effort. One chain-of-custody form may be used to document all of the samples collected from a single sampling event.

4.3.2.3 Analysis Request Form

An analysis request form will accompany all samples to the analytical laboratory. The completed original analysis request form will be returned by the laboratory and will become a part of the permanent record documenting the sampling effort. A separate analysis request form must be completed for each sample from a given sampling event.

4.3.2.4 Sample Logbook

All pertinent information on the sampling effort must be recorded in a logbook. The sample logbook will include, at a minimum, the following information:

- The sample location.
- Suspected waste composition.
- Sample identification number.
- Volume/mass of waste taken.
- Purpose of sampling.
- Description of sample point and sampling methodology.
- Date and time of collection.
- Name of the sample collector.
- Sample destination and how it will be transported.
- Observations.
- Signatures of personnel responsible for the observations.

4.3.3 Sample Handling, Preservation, and Storage

Samples will be collected and containerized in appropriate pre-cleaned sample containers. Table 7 presents the requirements specified in *SW-846* (EPA, 1986), for sample containers, preservation techniques, and holding times. Samples that require cooling to 4 degrees Celsius (°C) will be placed in a cooler with ice or ice gel or in a refrigerator immediately upon collection.

Table 7
Recommended Sample Containers, Preservation Techniques, and Holding Times

Analyte Class and Sample Type	Container Type and Materials	Preservation	Holding Time
Metals			
TCLP Metals: Arsenic Barium Cadmium Chromium Lead	2 - 500 mL Wide Mouth High-Density Polyethylene or Glass with Teflon Liner	Cool to 4°C	180 Days

Table 7 (continued)
Recommended Sample Containers, Preservation Techniques, and Holding Times

Analyte Class and Sample Type	Container Type and Materials	Preservation	Holding Time
Metals (continued)			
TCLP/Total Mercury	2 - 500-mL Wide Mouth High-Density Polyethylene or Glass with Teflon Liner	Cool to 4°C	28 Days
VOCs			
Target Compound VOCs	40 mL Amber Glass Vials with Teflon-Lined Septa	HCl to pH<2 Cool to 4 °C	14 days
SVOCs			
Target Compound SVOCs	1 L Amber Glass with Teflon-Lined Lid	Cool to 4 °C	Seven days from field collection to preparative extraction. 40 days from preparative extraction to determinative analysis.

[a] Smaller sample containers may be required due to health and safety concerns associated with potential radiation exposure, transportation requirements, and waste management considerations.
[b] Information obtained from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, U.S. Environmental Protection Agency, 1986 and all approved updates.

°C = degrees Celsius
HCl = hydrochloric acid
L = Liter
mL = milliliter
SVOC = semi-volatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOC = volatile organic compounds

4.3.4 Packaging and Transportation of Samples

All packaging and transportation activities will meet safety expectations, QA requirements, DOE Orders, and relevant local, state, and federal laws (including 10 Code of Federal Regulations [CFR] and 49 CFR). The LANL Laboratory Implementation Requirement 405-10-01.1, "Packaging and Transportation" (LANL, 1999) establishes requirements that will be implemented for packaging design, testing, acquisition, acceptance, use, maintenance, and decommissioning and for on-site, intra-site, and off-site shipment preparation and transportation of general commodities, hazardous materials, substances, wastes, and defense programs materials. Samples that require cooling to 4 °C will be transported in a cooler with ice or ice gel.

Off-site transportation of samples will occur via private, contract, or common motor carrier, air carrier, or freight. All off-site transportation will be processed through the Materials Management

Group (SUP-3) shipping office unless the shipper is specifically authorized, through formal documentation by SUP-3, to independently tender shipments to common motor or air carriers.

4.4 ANALYTICAL REQUIREMENTS

4.4.1 Proposed Analytical Methods

Each sample will be analyzed for the constituents identified in Table 2 as appropriate. Target detection limits, proposed analytical methods, and instrumentation for metals and organic analyses are presented in Tables 8 and 9, respectively.

Table 8
Target Detection Limits, Proposed Analytical Methods, and Instrumentation for Metals Analysis

Analyte	EPA SW-846 Analytical Method	Test Methods Instrumentation	Target Detection Limit (ug/L)	Rationale
Arsenic	7060A[c], 7061A	ICP, GFAA	10	Determine the TC concentration.
Barium	7080A[d], 7081[c]	ICP, FLAA, GFAA	200	
Cadmium	7130[d], 7131A[c]	ICP, FLAA, GFAA	2	
Chromium	7190[d], 7191[c]	ICP, FLAA, GFAA	10	
Lead	7420[d], 7421[c]	ICP, FLAA, GFAA	5	
Selenium	7740[e], 7741A	ICP, FLAA, GFAA	5	
Silver	7760A[d], 7761[c]	ICP, FLAA, GFAA	10	
Mercury	7471A[e], 7470A	CVAA	0.2	

[a] U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.
[b] Detection limits listed are for clean water. Actual detection limits may be higher depending on sample composition and matrix type.
[c] Method being integrated into Method 7010, per the May 1998 SW-846 Draft Update IVA.
[d] Method being integrated into Method 7000B, per the May 1998 SW-846 Draft Update IVA.
[e] Method being revised to 7471B per the May 1998 SW-846 Draft Update IVA.

CVAA = cold-vapor atomic absorption spectroscopy
FLAA = flame atomic absorption spectroscopy
GFAA = graphite furnace atomic absorption spectroscopy
ICP = inductively coupled plasma emission spectroscopy
ug/L = micrograms per liter

Table 9
Target Detection Limits, Proposed Analytical Methods, and Instrumentation for Organic Analysis

Analyte	EPA SW-846 Analytical Method	Test Methods Instrumentation	Target Detection Limit (ug/L)	Rationale
Target compound list VOCs plus 10 TICs	8260B	GC/MS	10 mg/L water	Determine the VOCs in the samples.
Target compound list SVOCs plus 20 TICs	8270C[c]	GC/MS	10 mg/L water	Determine the SVOCs in the samples.

[a] U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846.
[b] Detection limits expressed as practical quantitation limits.
[c] Method being revised per the May 1998 SW-846 Draft Update IVA.

GC/MS = gas chromatography/mass spectrometry
mg/L = milligrams per liter
SVOC = semi-volatile organic compounds
TIC = tentatively identified compounds
VOC = volatile organic compounds

4.4.2 Analytical Laboratory Requirements

The analytical laboratory will perform the detailed qualitative and quantitative chemical analyses specified in Tables 8 and 9. This analytical laboratory will include at a minimum:

- A documented comprehensive QA/QC program.
- Technical analytical expertise.
- A document control/records management plan.
- The capability to perform data reduction, validation, and reporting.

The selection of the analytical testing methods identified in Tables 8 and 9 was based on the following considerations:

- The physical form of the waste.
- Constituents of interest.
- Required detection limits (e.g., regulatory thresholds).
- Information requirements (e.g., waste classification).

4.4.3 Quality Assurance/Quality Control

Field sampling procedures and laboratory analyses will be evaluated through the use of QA/QC samples to assess the overall quality of the data produced. QC samples are used to evaluate precision, accuracy, and potential sample contamination, associated with the sampling and analysis

process, are described in the following sections for field and laboratory activities. The recommended frequency of collection or analysis, and acceptance criteria also are presented, along with information on calculations necessary to evaluate the QC results.

4.4.3.1 Field Quality Control

The types of field QC samples that will be collected include trip blanks, field blanks, and field duplicates, as appropriate. For each CSU sampled during decontamination verification, at least one field duplicate will be collected. Table 10 presents a summary of QC sample types, analysis, frequency, and acceptance criteria. QC samples will be given a unique sample identification number and submitted to the analytical laboratory as blind samples. QC samples will be identified on the applicable forms so that the results can be applied to the associated sample.

Table 10
Recommended Quality Control Samples, Frequency, and Acceptance Criteria

QC Sample Type	Applicable Analysis	Frequency	Acceptance Criteria
Trip Blank	VOC	One set per shipping cooler containing samples to be analyzed for VOCs.	Not Applicable
Field Blank	VOC	One sample daily per analysis.	Not Applicable
Field Duplicate	RCRA Metals, VOC, SVOC	1 for each sampling sequence.	Relative percent difference less than or equal to 20 percent

[a] For VOC and SVOC analysis, if blank shows detectable levels of any common laboratory contaminant (e.g., methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.

QC = quality control
RCRA = Resource Conservation and Recovery Act
SVOC = semi-volatile organic compound
VOC = volatile organic compound

4.4.3.2 Analytical Laboratory Quality Control Samples

QA/QC considerations are an integral part of analytical laboratory operations. Laboratory QA is undertaken to ensure that analytical methods generate data that are technically sound, statistically valid, and can be documented. Individual QC procedures are the tools employed to measure the degree to which these QA objectives are met.

4.4.4 Data Reduction, Verification, Validation, and Reporting

Analytical data generated as a result of the activities described in this closure plan will be verified

and validated. Data reduction will involve the conversion of raw data to reportable units; transfer of data between recording media; and computation of summary statistics, standard errors, confidence intervals, and statistical tests.

4.4.5 Data Reporting Requirements

Analytical results will include all pertinent information about the condition and appearance of the sample-as-received. At a minimum, analytical reports will include:

- A summary of analytical results for each sample.
- Results from QC samples such as blanks, spikes, and calibrations.
- Reference to standard methods or a detailed description of analytical procedures.
- Raw data printouts for comparison with summaries.

The laboratory will describe the sample preparation procedure used in the analysis in sufficient detail so that the data user can understand how the sample was manipulated during analysis.

5.0 WASTE MANAGEMENT

All sample collection activities will be conducted with waste minimization goals in mind. All waste material generated will be controlled, handled, characterized, and disposed in accordance with LANL waste management procedures. The operational record for each of the units discussed in this plan indicates that there have not been any spills, which would cause contamination of the surfaces and equipment with hazardous constituents. For this reason, it is anticipated that the waste generated during decontamination and verification of closure will be non-regulated waste with respect to both hazardous and radiological constituents. However, should contamination be present, the closure has the potential to generate several different types of waste materials. Table 11 provides a list of the full spectrum of waste materials that could be generated during closure and potential disposal options.

Table 11
Potential Waste Materials, Waste Types, and Disposal Options

Container Storage Unit	Potential Waste Materials	Waste Types	Disposal Options
TA-50-1, Room 59	PPE Decontamination wash water Verification wash water	Non-regulated liquid and solid waste Low-level liquid and solid waste	RLWTF – RLW SWCS – non-regulated waste TA-54 – solid LLW

Table 11 (continued)
Potential Waste Materials, Waste Types, and Disposal Options

Container Storage Unit	Potential Waste Materials	Waste Type(s)	Disposal Options
TA-50-37	PPE Decontamination wash water Verification wash water	Non-regulated liquid and solid waste Low-level liquid and solid	RLWTF – RLW SWCS – non-regulated waste TA-54 – solid LLW

LLW = low-level waste
PPE = personal protective equipment
RLW = radioactive liquid waste
RLWTF = Radioactive Liquid Waste Treatment Facility
SWCS = Sanitary Waste Collection System
TA = technical area

6.0 REFERENCES

EPA, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *(SW-846)* Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

LANL 1999, "Packaging and Transportation," Laboratory Implementation Requirement 405-10-01.1, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2001, "Surface Water Sampling," ER-SOP-6.13, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2002, "Los Alamos National Laboratory Technical Area 50 Closure Plan for Container Storage Units TA-50-1, Room 59; TA-50-37; and TA-50-114," LA-UR-02-4729, Los Alamos National Laboratory, Los Alamos, New Mexico.

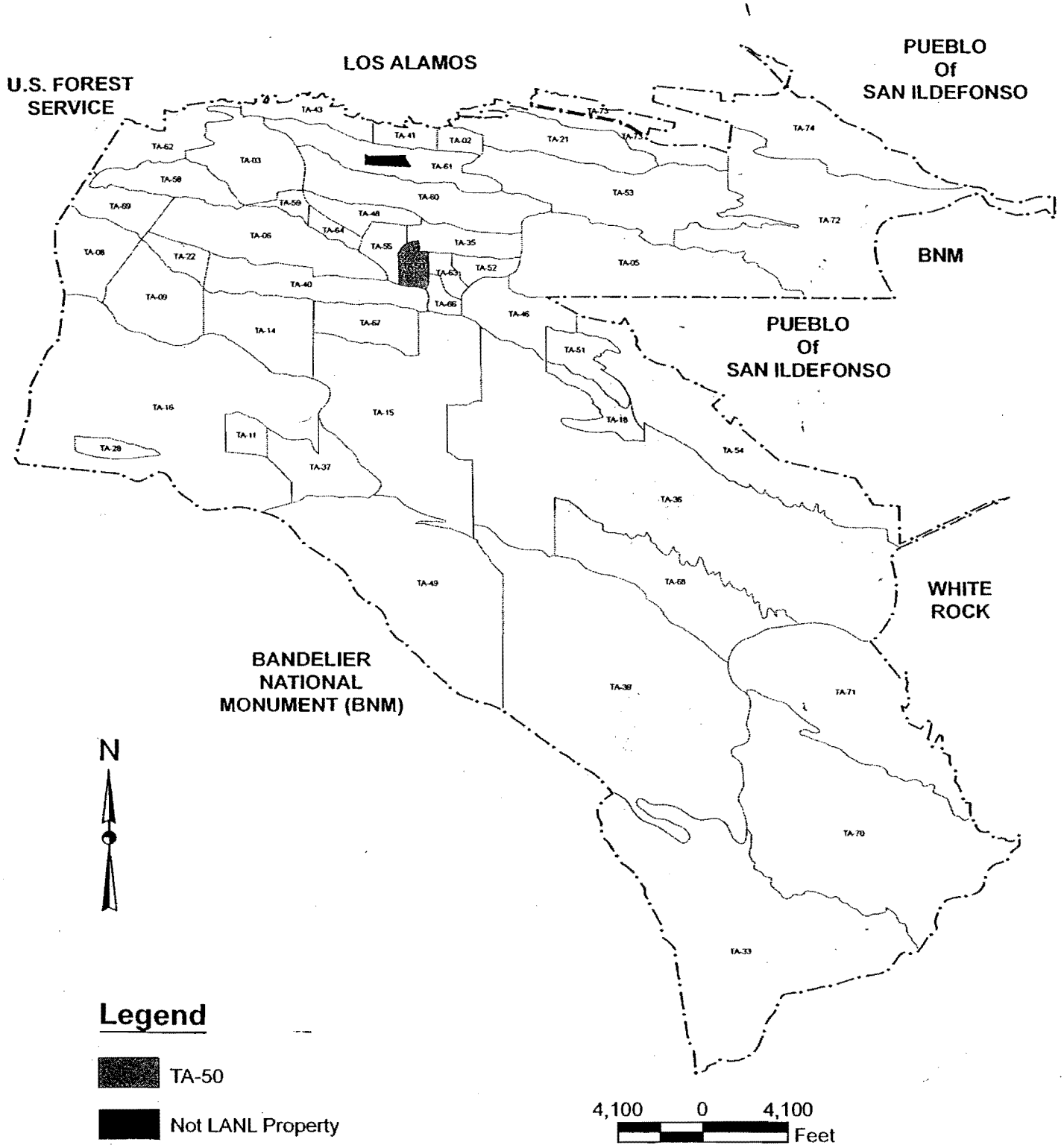

Figure 1
Location Map of Technical Area (TA) 50 at Los Alamos National Laboratory (LANL)

State Plane Coordinate System New Mexico Central Zone North American Datum 1983 (ft)

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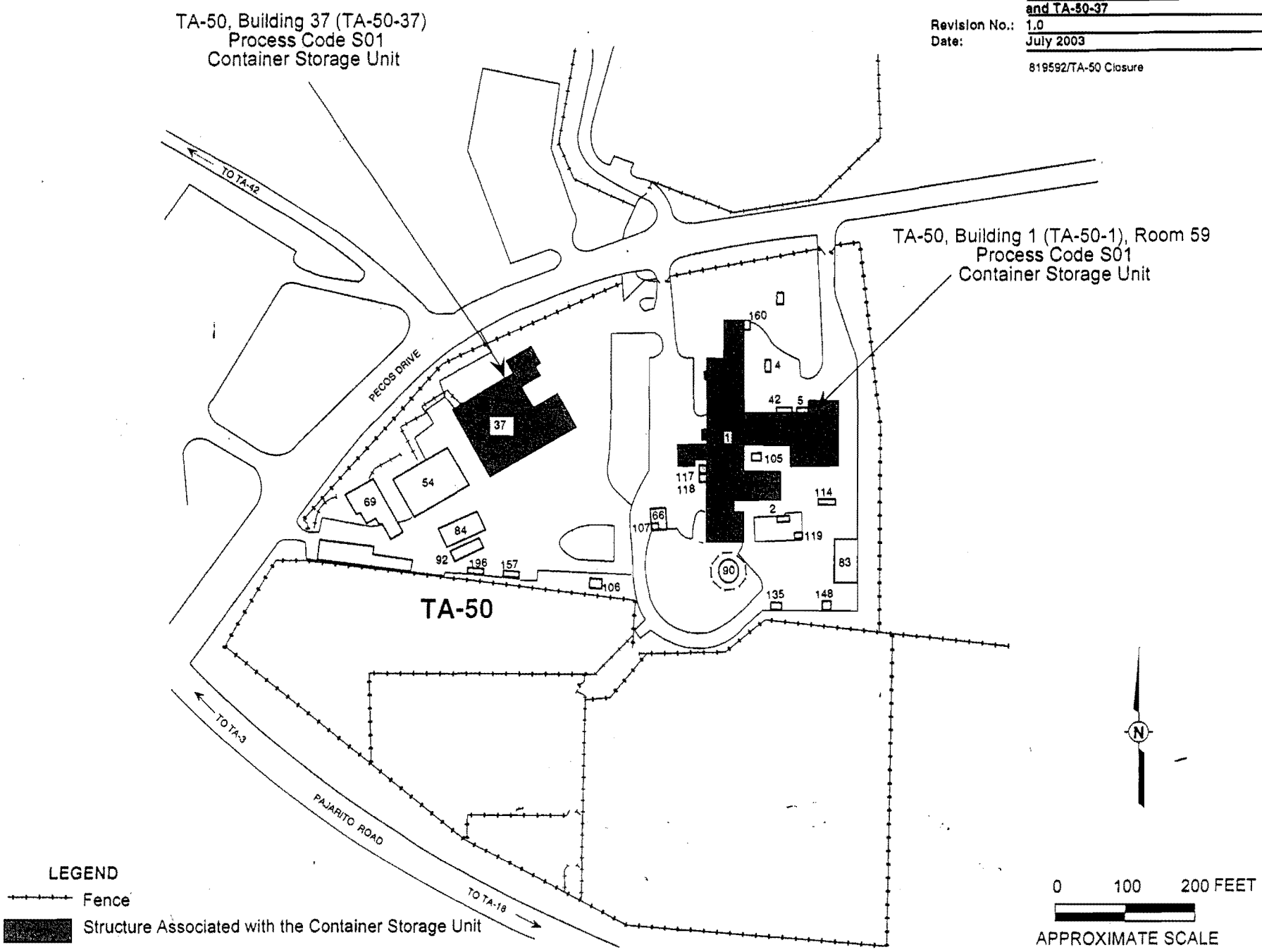
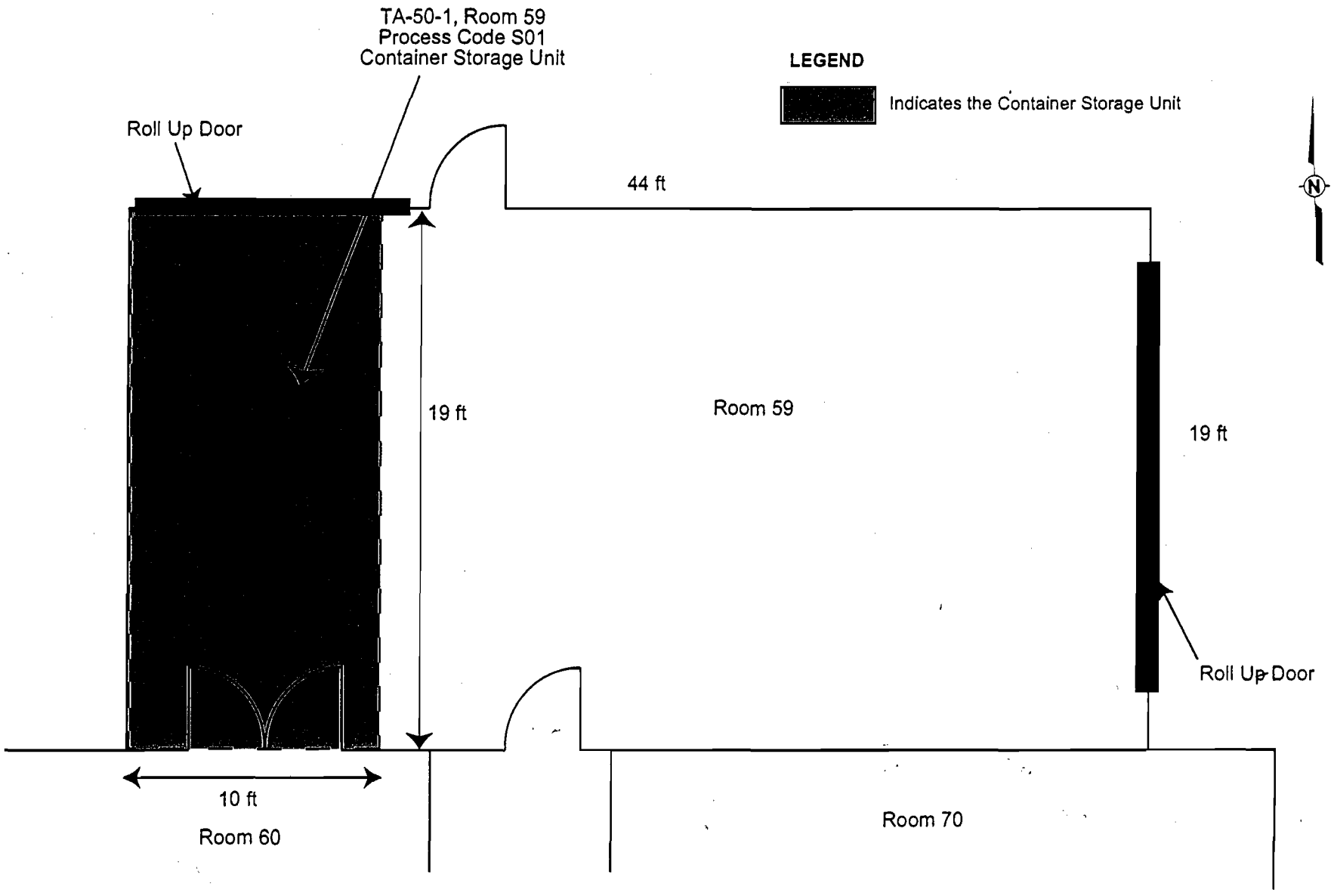


Figure 2

Location Map for Technical Area 50 Container Storage Units To be Closed



NOT TO SCALE

Figure 3

Technical Area (TA) 50, Building 1 (TA-50-1), Room 59 Container Storage Unit

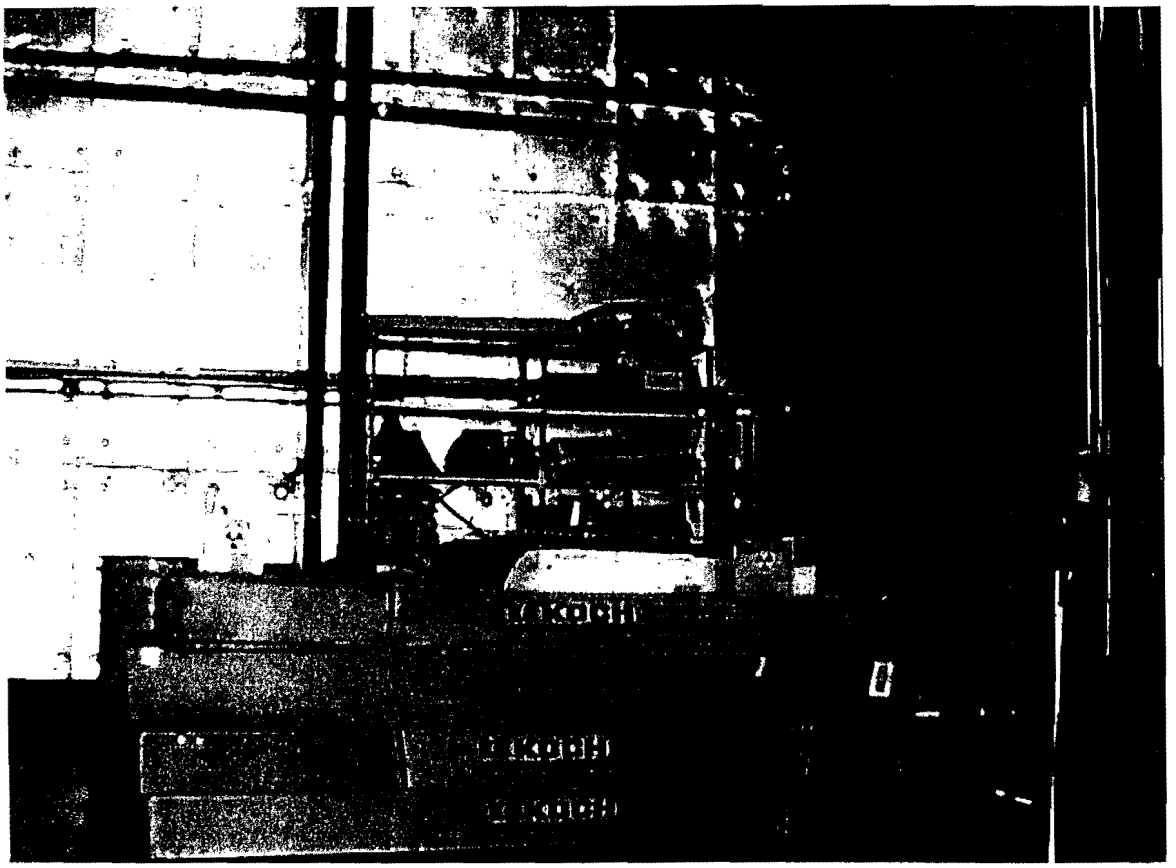


Figure 4
Photograph – Technical Area (TA) 50, Building 1 (TA-50-1), Room 59 Container Storage Unit
(Photograph taken 10/30/01)

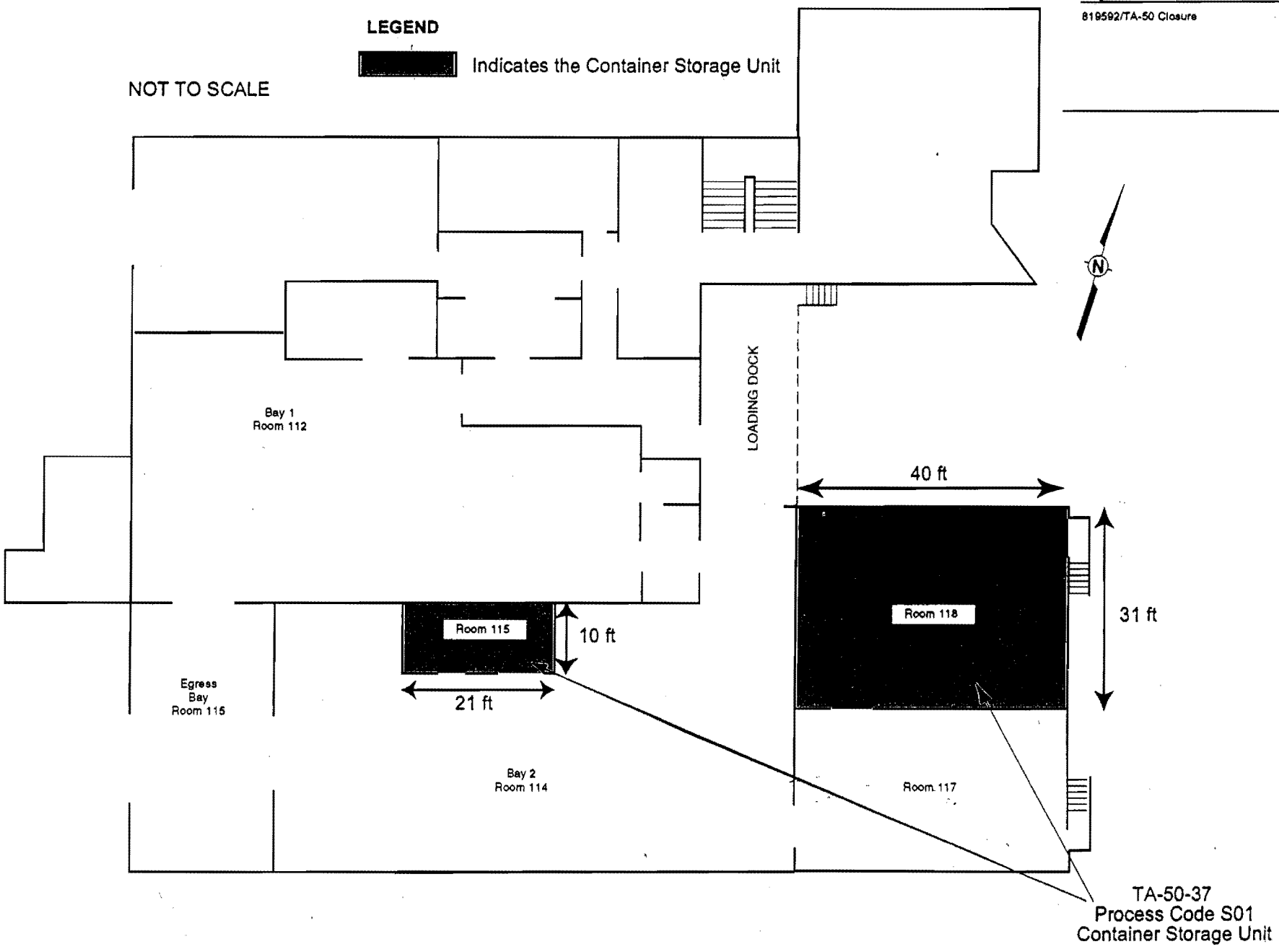


Figure 5
Technical Area (TA) 50, Building 37 (TA-50-37) Container Storage Unit

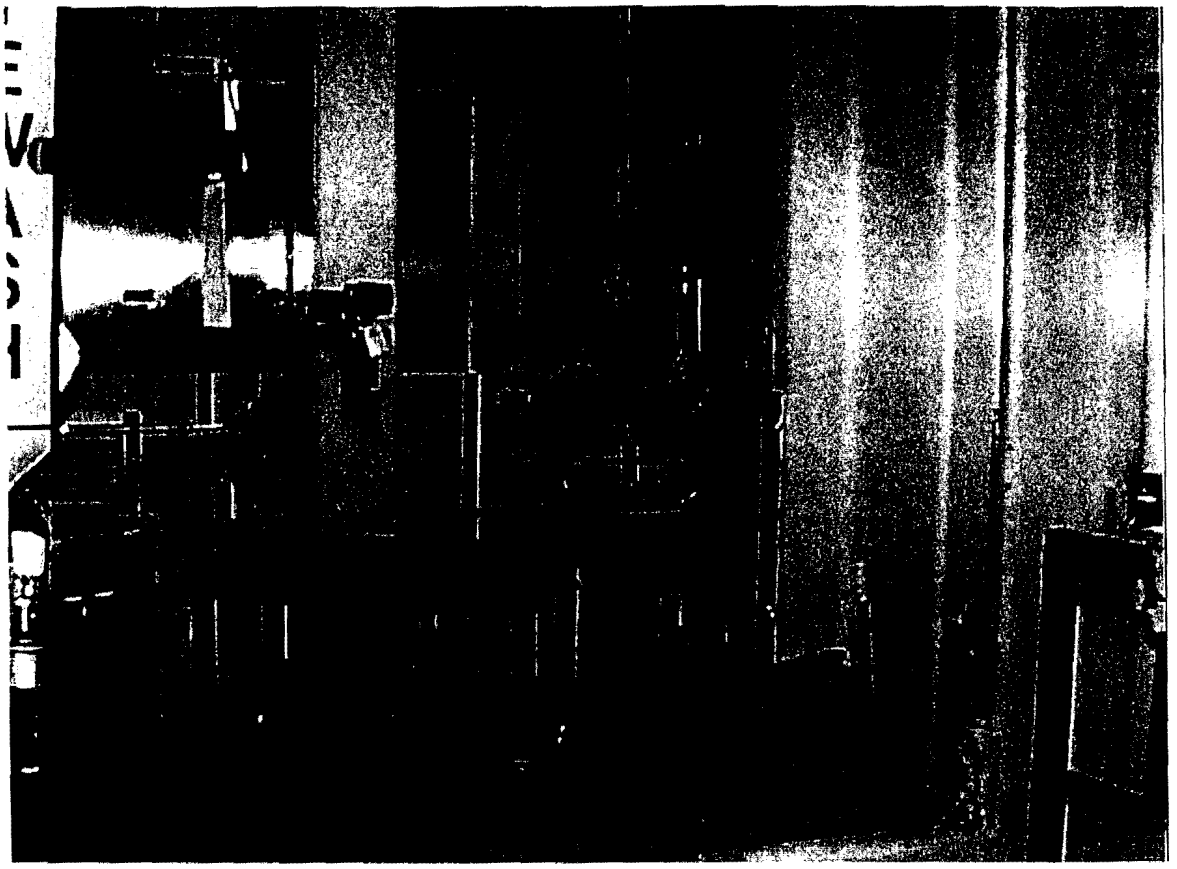


Figure 6
Photograph – Technical Area (TA) 50, Building 37 (TA-50-37), Room 115 Container Storage Unit
(Photograph taken 10/30/01)

APPENDIX B
Letters of Agreement/Communication with the New Mexico Environment Department

Job #: 819592.23.05
File Category: M

Los Alamos
NATIONAL LABORATORY

Solid Waste Regulatory Compliance
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666/Fax (505) 667-5224

Date: February 3, 2003
Refer To: SWRC:03-005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Jetter
Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Dear Mr. Jetter:

SUBJECT: Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA -50-37), Los Alamos National Laboratory (LANL)

The purpose of this letter is to confirm our agreement on the terms for the Resource Conservation and Recovery Act (RCRA) closure of T A-50-37. These were discussed during a meeting and tour between you and three members of LANL's Solid Waste Regulatory Compliance Group (RRES-SWRC), Loren Abercrombie, Jack Ellvinger, and Jeff Carmichael, on January 21,2003.

A closure plan *(Los Alamos National Laboratory Technical Area 50 Closure Plan for Container Storage Units, TA-50-1, Room* 59, *TA-50-37, and TA-50-114,* LA-UR-02-4729), was submitted July 2002 for the Container Storage Unit (CSU) in TA-50-37. This closure plan consists of Rooms 115, 117, and 118; as well as an associated exhaust stack, ducts, plenum, fans, and a high efficiency particulate air (HEPA) filter bank. Approval for storage of hazardous waste in the room housing the HEP A filter bank (Room 112) was requested originally, however this location was never permitted. LANL requests that this room be removed from consideration for inclusion in the RCRA Hazardous Waste Facility Permit.

During the walk-through of T A-50-37, sampling locations and number of samples were agreed upon in Rooms 115, 117, and 118, in addition to the exhaust system located at TA-50-37. Enclosed is a description of the sampling locations and number of samples that will be taken at T A-50-37. Twenty-two samples will be taken in Room 117 and seventeen samples will be taken in Room 118. Five locations have been identified for possible samples within the exhaust system. All of these locations will be sampled, provided the locations can be reached with sampling equipment.

Samples from within Rooms 117 and 118 will be analyzed for RCRA metals, with the exception of the sumps. These will be analyzed for the full suite of required analysis. All samples taken from the exhaust system will be analyzed for the constituents located in Table 3 of the closure plan referenced above. These constituents were chosen due to the units past management history and association with the Controlled Air Incinerator (CAI). The CAI was certified as closed in 1998; however, the exhaust

system was left in place for use by other projects. No samples will be taken in Room 115 because it was decontaminated during the closure of the CAI and no waste has been stored there since that time.

If you have any comments or questions regarding the information presented in this letter and/or in the enclosure, please contact me at 505-665-3435.

Sincerely,

Luciana Vigil-Holterman
Solid Waste Regulatory Compliance Group
LVH/vc

Enc. a/s.

Cy: w/enc.

Mr. Carl Will
Permits Management Program
Hazardous Waste Bureau
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Santa Fe, New Mexico 87505-6303

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Hazardous Waste Bureau
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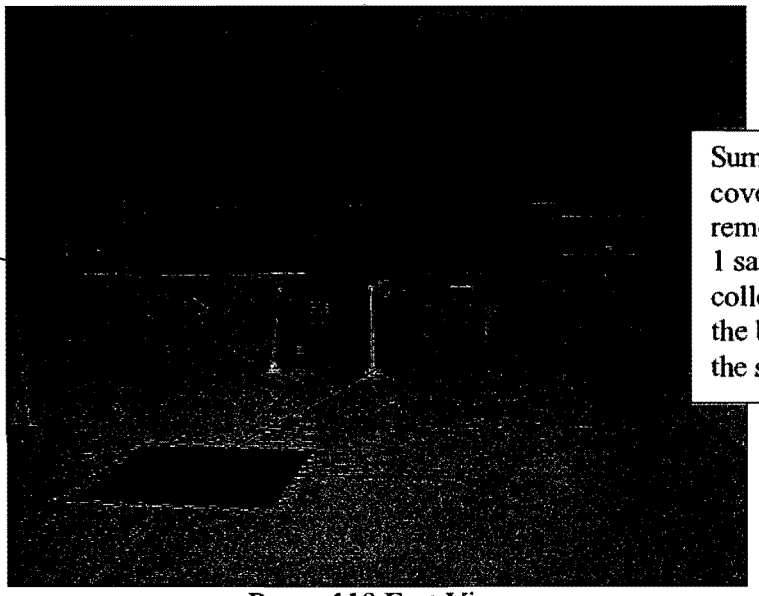
John E. Kieling
Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

G. Turner, DOE/OLASO, A316
B. Ramsey, LANL, RRES-DO, J591
E. Louderbough, LANL, LC-ESH, A187
L. Abercrombie, LANL, RRES-SWRC, K558
J. Ellvinger, LANL, RRES-SWRC, K490 G.
Bacigalupa, LANL, RRES-SWRC, K490 J.
Carmichael, LANL, RRES-SWRC, E501
SWRC File
IM-5, A150

ENCLOSURE

TA-50-37
CONTAINER STORAGE UNIT (CSU) AND EXHAUST SYSTEM SAMPLING LOCATIONS

Decon and sample the painted area only



Sump plate cover will be removed and 1 sample collected at the bottom of the sump

Room 118 East View

Room 115:

Room 115 was decontaminated during the closure of the Controlled Air Incinerator (CAI) in 1996-1997. Being that no waste has been placed in storage since the room was decontaminated, it was agreed that this room could be closed using the data in the CAI closure documentation.

2 floor samples
[illegible]
3/11/03

Decontamination Sampling of
Resource Conservation and Recovery Act (RCRA)
Permitted and Interim Status Container Storage Unit (CSU)

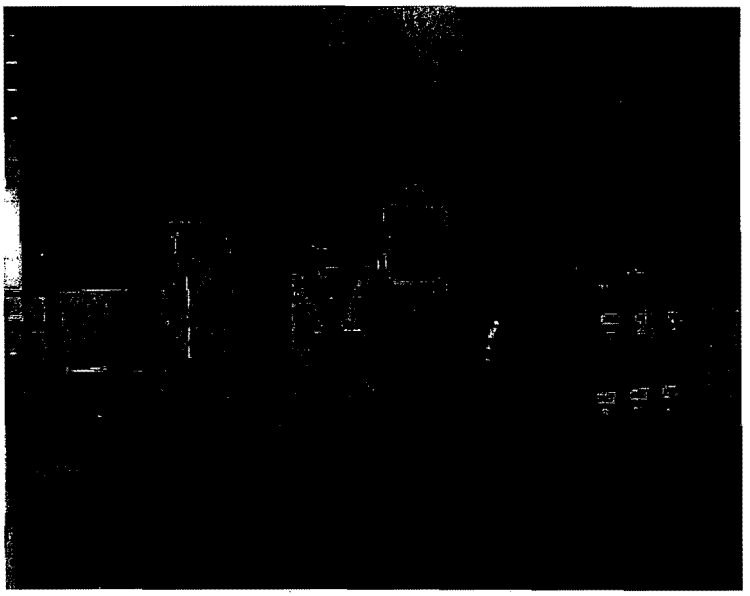
Room 117:

Room 117 is located on the Southeast corner of building TA-50-37. This room was designed and constructed to store liquid wastes. The room has a grated floor and two separate sumps. A common wall divides the sumps. As agreed, the decontamination will consist of the floor below the grate up to the grated floor level.

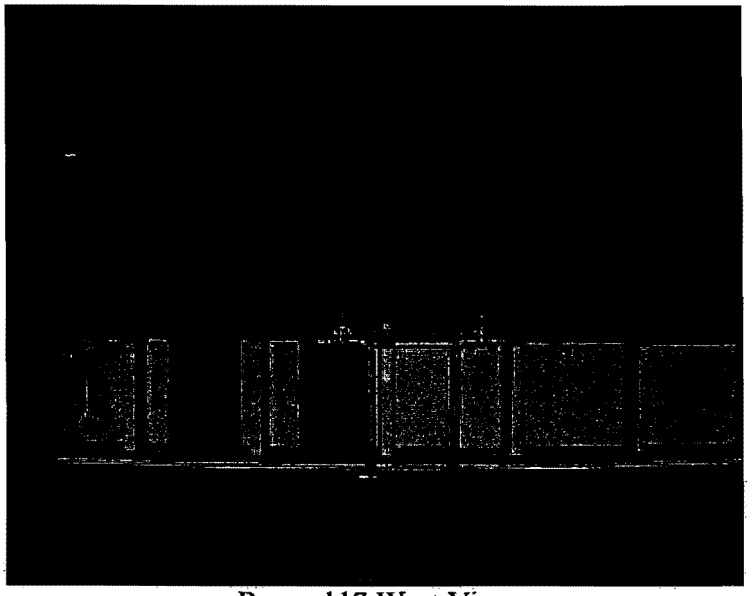
Each collection sump area will be sampled as follows:

1) The floor will be divided into six sections and each floor section will require a sample,
2) the common wall dividing the sump areas will have two samples on each side of the wall,
3) the east and west wall will have two samples collected from each wall,
4) the north and south wall in each sump area will have one sample collected from each wall, and
5) the collection sump pump area in each section will be sampled.

There will be a total of twenty-two (22) samples collected in room 117 to verify the room is clean and no hazardous constituents are present.



Room 117 Southeast View



Room 117 West View

Note: Access to the area below the grating is listed as a confined space. A confined space permit will be required prior to accessing the area below the grating.

Room 118:

Room 118 is located on the Northeast corner of TA-50-37. The room has a concrete floor with a collection sump located in the center of the room. As agreed, this room will be divided into equal quadrants. The room will require the following sampling:

1) the floor is divided into four quadrants by the means of expansion joints, two samples will be collected from each floor quadrant (total of eight samples for the floor),

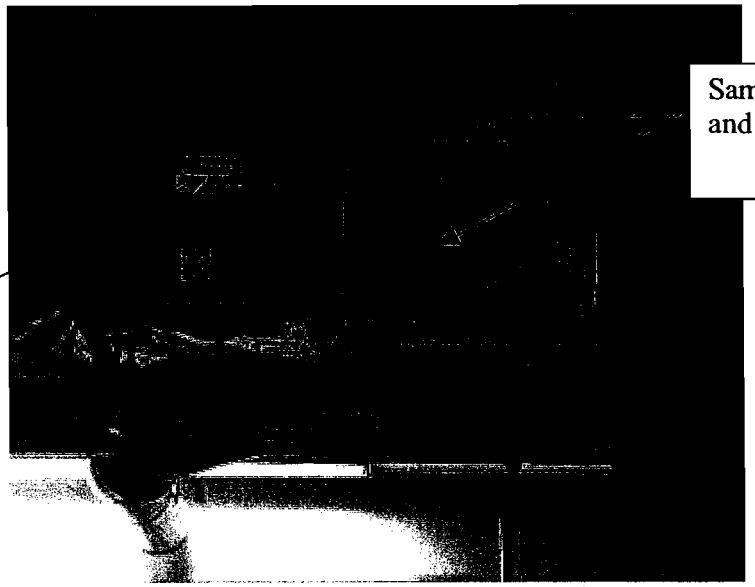
2) each painted area of the wall will require two samples for a total of 8 wall samples, and

3) the collection sump will have one sample collected.

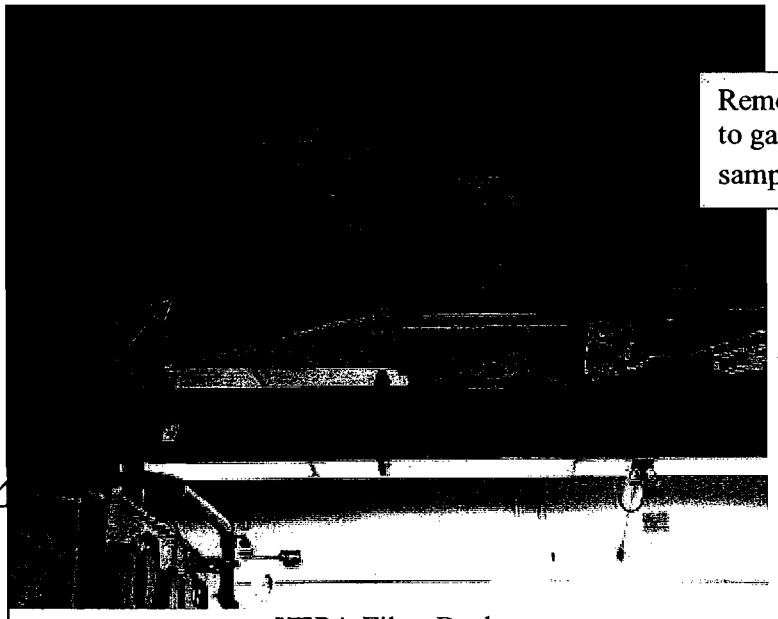
The total of seventeen (17) samples will be collected to verify that no hazardous constituents are present.

Exhaust System Including Stack

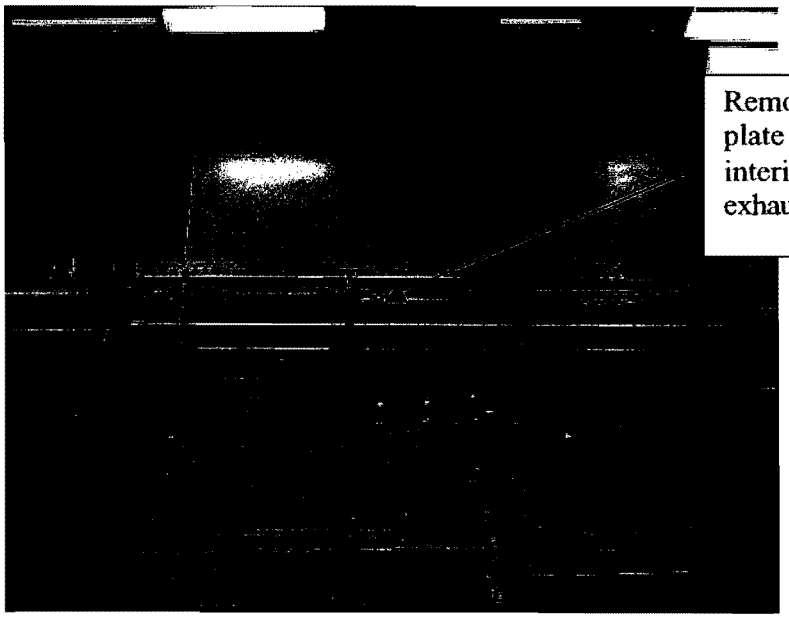
Five location points were identified as possible sampling locations. The location points are as follows:



High Efficiency Particulate Air (HEPA) Filter bank
Sample Location #1

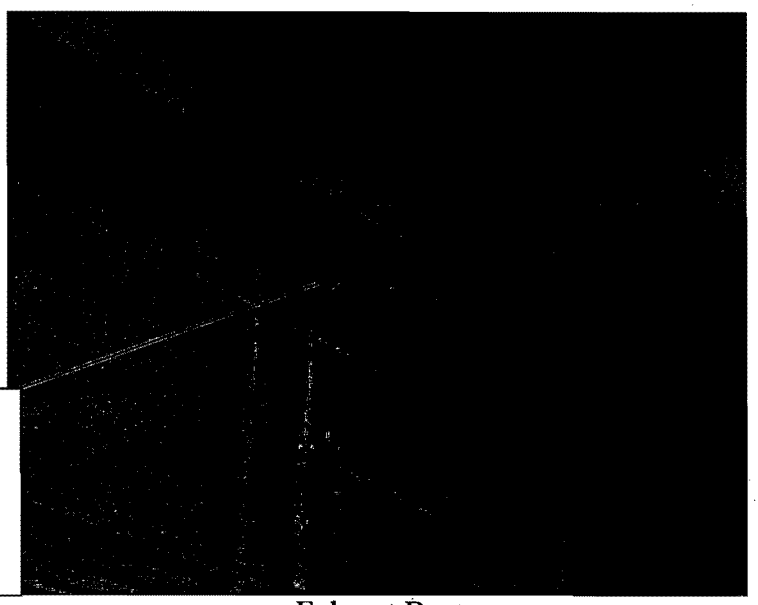


HEPA Filter Bank
Sample Location #2



Remove cover plate and sample interior section of exhaust duct.

Exhaust Duct
Sample Location #3



Remove valve and sample in and around opening of pipe nipple.

Exhaust Duct
Sample Location #4

Exhaust system ductwork enters transition piece at this location

Access to Sample Location #5 is through the access door. Sample location will be the transition and exhaust duct.

Bag House and HEPA Filter
Sample Location #5

Note: All sampling locations require accessing the internal surfaces of the ductwork. Prior to any sampling Radiological Work Permit (RWP) will be required. Access to the bag house will require a confined space permit.

APPENDIX C
Technical Area 50, Building 37, Interim Status Container Storage Unit, Rooms 115 and 118 Human Health Risk Assessment

Shaw Environmental & Infrastructure, Inc.

Shaw The Shaw Group Inc.™

335 Central Park Square
Los Alamos, NM 87544-4039
Phone: 505-661-5200
Fax: 505-661-5299

Memorandum

Date: 07/13/2004

To: Jennifer Griffin, Shaw Environmental & Infrastructure, Inc.

CC: Frank Eidson, Shaw Environmental & Infrastructure

From: Jennifer Sanders, Shaw Environmental & Infrastructure, Inc.

RE: Draft Responses to Comments from Richard Romero on Closure Certification Report for Technical Area (TA)-50, Building 37, Rooms 115 & 118

Comments 1 – 18 address other sections of the report. Only those comments related to the human health risk assessment are presented below.

Comment 19: Page C-11; why was adult female hand used in the HHRA; is this standard?

Response: The skin surface area used is based on recommendations in Exhibit C-1 of the U.S. Environmental Protection Agency's (EPA's) *Supplemental Guidance for Dermal Risk Assessment* (EPA 2001). This Exhibit provides body part-specific adult surface area calculations and recommends a value of 817 square centimeters (cm^2) for an adult female. The surface area of adult male hands is listed as 990 cm^2. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model, which is an approach for assessing occupational health risks from lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures (EPA 2003). Although the use of a male hand skin surface area assumes that a greater surface area is potentially in contact with chemicals of potential concern, revising the adult skin surface area from 817 cm^2 to 990 cm^2 does not affect the cumulative carcinogenic risk and noncarcinogenic hazard index.

Comment 20: Page C-13, Third paragraph, second sentence; change that is likely to be without to **that is likely without**.

Response: The text will be revised accordingly.

Comment 21: Page C-16; Is it acceptable to perform an HHRA without segregating COPCs by target organs for this closure?

Response: According to EPA (1989), segregation of hazard indices by effect and mechanism of action can be complex and time consuming and is unnecessary if the hazard index for a site is

less than one. The hazard indices for Rooms 115 and 118 are 0.017 and 0.0015, respectively. Therefore, segregating hazard indices by effect and mechanism of action is not warranted.

Comment 22: Page C-21; first paragraph; How could an exposure pathway for dermal exposure be performed if toxicity data and/or dermal absorption factors were not available for the respective COPCs identified? Is this really acceptable and recommended by EPA Region 6?

Response: Chemicals were not quantitatively evaluated for dermal exposure if toxicity data or dermal absorption factors were not available. To assess dermal exposures in accordance with Chapter 4 of EPA *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, (Part E, Supplemental Guidance for Dermal Risk Assessment)* (EPA, 2001), oral toxicity values for organic chemicals were not adjusted to reflect and absorbed dose. That is, the absorbed dose was assumed to equal the administered dose (i.e., unadjusted oral toxicity values were used to assess risks from dermal exposure) unless chemical-specific gastrointestinal absorption values provided in EPA guidance (EPA, 2001) were available. EPA (2001) states:

> In practice, an adjustment in oral toxicity factor (to account for "absorbed dose" in the dermal exposure pathway) is recommended when the following conditions are met: (1) the toxicity value derived from the critical study is based on an administered dose (e.g., delivery in diet or by gavage) in its study design; (2) a scientifically defensible database demonstrates that the gastrointestinal (GI) absorption of the chemical in question from a medium (e.g., water, feed) similar to the one employed in the critical study, is significantly less than 100% (e.g., <50%). . . If these conditions are not met, a default value of complete (i.e., 100%) oral absorption may be assumed, thereby eliminating the need for oral toxicity value adjustment.

EPA (2001) does not provide dermal absorption values (dermal absorption fraction exposure parameter) for volatile organic compounds nor inorganic classes of compounds. The rationale for this is that in the considered exposure scenarios, volatile organic compounds would tend to be volatilized and should be accounted for via inhalation routes. For inorganic chemicals, EPA (2001) states,

> There is too little data to extrapolate a reasonable default value. . . as an interim method, dermal exposure to other compounds should be treated qualitatively in the uncertainty section or quantitatively using default values after presenting the relevant studies to the regional risk assessors so that absorption factors can be agreed upon on a site-specific basis before the start of the risk assessment.

Dermal absorption factors and toxicity values were available for the following COPCs in Rooms 115 and 118: bis(2-ethylhexyl)phthalate; hexachlorobenzene; Aroclor 1260. In lieu of chemical-specific information, the remaining COPCs were not evaluated quantitatively for the dermal exposure pathway.

Comment 23: Page C-22, Concentration of Lead in Blood of Exposed Worker; Change **Building** 118 to **Room 118**.

Response: The text will be revised accordingly.

Comment 24: Page C-22, Concentration of Lead in Blood of Exposed Worker; Should MDC for Room 115 be included in this section as well?

Response: The text will be revised to include the MDC for Room 115.

Comment 25: Page C-22, Baseline Lead Concentration; Again why was female ages 24 to 49 used in HHRA as opposed to male model? Is this standard?

Response: Please see response to comment 19. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures (EPA 2003). Therefore, exposure parameters for women of childbearing age were used consistently for all dermal exposures based on the EPA adult lead model.

Comment 26: Page C-26; Table C1.16, Title; Add **Female** before Adult to read: **Adult Female Worker**?

Response: The table will be revised accordingly.

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37, Interim Status Container Storage Unit, Rooms 115 and 118

Human Health Risk Assessment Methodology

Revision 0.0
August 2004

Prepared For:
Risk Reduction and Environmental Stewardship Division,
Solid Waste Regulatory Compliance Group
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Prepared By:

Shaw Environmental, Inc.
335 Central Park Square
Los Alamos, NM 87544

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C1.6	Chronic Daily Intake for Dermal Contact with Chemicals on Indoor Surfaces
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C1.13	Risk Characterization for Noncarcinogens, Building 115
C1.14	Risk Characterization for Carcinogens, Building 115
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C1.16	Risk Characterization for Carcinogens, Building 118
C1.17	Parameters Used to Estimate Blood Lead Concentration in Adult Female Worker

LIST OF ACRONYMS/ABBREVIATIONS

µg/dL	micrograms per deciliter
ALM	adult lead model
CDI	chronic daily intake
CFR	Code of Federal Regulations
cm^2	square centimeters
COPC	contaminants of potential concern
CSF	cancer slope factor
dL	deciliter
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
IRIS	Integrated Risk Information System
kg	kilograms
m^3	cubic meter
MDC	maximum detected concentration
mg	milligrams
mg/kg-d	Milligram per kilogram-day
OPP	Office of Pesticides Programs
RfC	reference concentration

LIST OF ACRONYMS/ABBREVIATIONS (continued)

RfD	reference dose
RME	reasonable maximum exposure
SVOC	semivolatile organic compounds
TA	technical area
TA-50-37	Technical Area 50, Building 37
TIC	tentatively identified compound
URF	unit risk factor
VOC	volatile organic compound
WTCIATWG	World Trade Center Indoor Air Taskforce Working Group

APPENDIX C
HUMAN HEALTH RISK ASSESSMENT METHODOLOGY
Technical Area 50, Building 37
Rooms 115 and 118 Container Storage Unit

C1.0 INTRODUCTION

A human health risk assessment (HHRA) was conducted on Technical Area (TA) 50, Building 37 (TA-50-37), Rooms 115 and 118 using methods developed by the U.S. Environmental Protection Agency (EPA) (EPA, 1989), World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the EPA Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risk to occupational workers from exposure to contaminated indoor surfaces. The HHRA, in accordance with EPA guidance (EPA, 1989) involved data evaluation and identification of contaminants of potential concern (COPC), exposure assessment, toxicity assessment, and risk characterization. Because the risk assessment was conducted on an indoor environment, a background evaluation was not conducted as part of the COPC selection process.

C1.1 Data Evaluation and Identification of COPCs

Analytical data from swipe sampling in Rooms 115 and 118 are presented in Table C1.1. Surface swipe samples were collected from Rooms 115 and 118 following decontamination activities. The results of the laboratory analyses for Room 115 and 118 are summarized in Tables C1.2 and C1.3, respectively.

Data qualifiers assigned by Severn Trent Laboratories, Inc. were examined during the data review process. Qualifier codes are placed next to analytical results so that the reliability of the results can be assessed during the HHRA. The definitions of the qualifier codes that were assigned during laboratory validation include:

J = Estimated result. Result is less than reporting limit.

B = Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level;
Inorganics: Estimated result. Result is less than reporting limit.

Table C1.1
Analytical Data from Swipe Sampling in TA-50-37, Rooms 115 and 118

SAMPLE	BARIUM	CHROMIUM	LEAD	AROCLOR 1260	2-BUTANONE	4-METHYL-2-PENTANONE	ACETONE	CARBON DISULFIDE	CARBON TETRA-CHLORIDE	CHLORO-METHANE	METHYLENE CHLORIDE	TETRACHLORO-ETHENE	TRICHLORO-ETHENE	2-METHYL-PHENOL	BIS(2-ETHYLHEXYL) PHTHALATE	BUTYL BENZYL PHTHALATE	DI-N-BUTYL PHTHALATE	HEXACHLORO-BENZENE	PHENANTHRENE
Room 115 (µg/100cm²)																			
115B-01	***14.6 B***	***2.8***	5 U	***12***										***2.8 J***	***5.7 J***	5 U	***5.2 J***	***2.3 J***	5 U
115B-02	***1.7 B***	***0.3 B***	5 U	***6***										5 U	***12***	***3.1 J***	5 U	5 U	5 U
115B-03	***2.6 B***	***2.4***	5 U	***1.9***										***5.1 J***	***6.9 J***	5 U	***3.5 J***	5 U	5 U
115B-04	***10.8 B***	***0.18 B***	5 U	***11***										***3.8 J***	5 U	5 U	***4 J***	***6.7 J***	***3.2 J***
115B-05	***0.35 B***	0.5 U	5 U	0.5 U	***51***	***1.3 J***	***17 JB***	***2.4 J***	2.5 U	5 U	***6.1***	***0.6 J***	***0.52 J***	5 U	5 U	5 U	***2.6 J***	5 U	5 U
115B-06	***0.36 B***	0.5 U	5 U	0.5 U	***44***	***1.1 J***	***15 JB***	***0.52 J***	2.5 U	***0.64 J***	***5.7***	2.5 U	***1.1 J***	5 U	5 U	5 U	***2.5 J***	5 U	5 U
Number of Samples	6	6	6	6	2	2	2	2	2	2	2	2	2	6	6	6	6	6	6
Number of Detects	6	4	0	4	2	2	2	2	0	1	2	1	2	3	3	1	5	2	1
Frequency of Detection	100%	67%	0%	67%	100%	100%	100%	100%	0%	50%	100%	50%	100%	50%	50%	17%	83%	33%	17%
Minimum Detect	0.35 B	0.18 B	---	1.9	44	1.1 J	15 JB	0.52 J	---	0.64 J	5.7	0.6 J	0.52 J	2.8 J	5.7 J	3.1 J	2.5 J	2.3 J	3.2 J
Maximum Detect	14.6 B	2.8	---	12	51	1.3 J	17 JB	2.4	---	0.64 J	6.1	0.6 J	1.1 J	5.1 J	12 J	3.1 J	5.2 J	6.7 J	3.2 J
Average	5.1	1.11	---	5.3	47.5	1.2	16	1.5	---	2.8	5.9	1.6	0.81	4.5	6.6	4.7	3.8	4.8	4.7
Standard Deviation	6.1	1.16	---	5.2	4.9	0.14	1.4	1.3	---	3.1	0.28	1.3	0.410	0.95	2.7	0.78	1.2	1.4	0.73
Room 118 (µg/100cm²)																			
118B-01	***1.5 B***	0.5 U	5 U																
118B-02	***2.6 B***	0.5 U	5 U																
118B-03	***6.9 B***	***0.48 B***	***1.7 B***																
118B-04	***1.6 B***	0.5 U	5 U																
118B-05	***3.2 B***	***0.72 B***	***3.8 B***																
118B-06	***2.2 B***	0.5 U	5 U																
118B-07	***2.2 B***	***0.34 B***	5 U																
118B-08	***2.3 B***	0.5 U	5 U																
118B-09	***88.3***	***8.7***	***1.2 B***																
118B-10	***2.6 B***	0.5 U	5 U																
118B-11	***4.1 B***	***0.16 B***	5 U																
118B-12	***3.1 B***	0.5 U	***5.1 B***																
118B-13	***5.1 B***	***0.17 B***	5 U																
118B-14	***7.8 B***	0.5 U	5 U																
118B-15	***7.3 B***	0.5 U	5 U																
118B-16	***5.4 B***	***0.20 B***	5 U																
118B-17	***2.6 B***	0.5 U	5 U																
118B-18	***1.4 B***	***0.32 B***	5 U																
118B-19	***1.1 B***	0.5 U	5 U																
118B-20	***0.6 B***	0.5 U	5 U																
118B-21	***4.8 B***	0.5 U	5 U																
118B-22	***3.1 B***	0.5 U	5 U																
118B-23	***102***	***0.25 B***	***2.9 B***																
118B-24	***0.96 B***	0.5 U	5 U																
118B-25	***1.4 B***	0.5 U	5 U																
118B-26	***3.7 B***	0.5 U	5 U																
118B-27	***1.3 B***	0.5 U	5 U																
118B-28	***4.1 B***	0.5 U	5 U																
118B-29	***38.2***	***2.1***	***6.6 B***																
118B-30	***0.42 B***	0.5 U	5 U	0.5 U	***45***	10 U	***15 JB***	***2.9 J***	***0.76 JB***	5 U	***4.5 JB***	***0.65 J***	***1.7 JB***	5 U	5 U	5 U	5 U	5 U	5 U
118B-31					***25***	10 U	***16 JB***	***0.36 J***	***0.78 JB***	5 U	***9.1 B***	***0.56 J***	***1.4 JB***						
Number of Samples	30	30	30	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1
Number of Detects	30	10	6	0	2	0	2	2	2	0	2	2	2	0	0	0	0	0	0
Frequency of Detection	100%	33%	20%	0%	100%	0%	100%	100%	100%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%
Minimum Detect	0.42 B	0.16 B	1.2 B	---	25	---	15 JB	0.36 J	0.76 JB	---	4.5 JB	0.56 J	1.4 JB	---	---	---	---	---	---
Maximum Detect	102	8.7	6.6 B	---	45	---	16 JB	2.9 J	0.78 JB	---	9.1	0.65 J	1.7 JB	---	---	---	---	---	---
Average	10.4	0.78	4.7	---	35.0	---	15.5	1.6	0.77	---	6.8	0.61	1.6	---	---	---	---	---	---
Standard Deviation	24.1	1.5	1.0	---	14.1	---	0.71	1.8	0.01	---	3.3	0.06	0.21	---	---	---	---	---	---

Definition of Qualifiers
U = Chemical was not detected. Value shown is one-half the reporting limit.
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level; (Inorganics) Estimated result. Result is less than reporting limit.

Definition of Acronyms
µg/100cm² = micrograms per 100 square centimeters.

Table C1.2
Summary of Analytical Results from Swipe Sampling in TA-50-37, Room 115

CAS Number	Parameter[a]	Minimum Concentration[b]		Maximum Concentration[c]		Units	Location of Maximum Concentration	Detection Frequency[d]	Range of Reporting Limits (min–max)	Background Value[e]	COPC?
Method 6010B - Metals											
7440-39-3	Barium	0.35	B	14.6	B	µg/100cm^2	115B-01	6/6	20 – 20	n/a	Yes
7440-47-3	Chromium	0.18	B	2.8		µg/100cm^2	115B-03	4/6	1.0 – 1.0	n/a	Yes
Method 8082 – Polychlorinated Biphenyls (PCB)											
11096-82-5	Arolcor 1260	1.9		12		µg/100cm^2	115B-01	4/6	1.0 – 1.0	n/a	Yes
Method 8260B – Volatile Organic Chemicals (VOC)											
78-93-3	2-Butanone	44		51		µg/100cm^2	115B-05	2/2	20 – 20	n/a	No[f]
108-10-1	4-Methyl-2-pentanone	1.1	J	1.3	J	µg/100cm^2	115B-05	2/2	20 – 20	n/a	No[f]
67-64-1	Acetone	15	JB	17	JB	µg/100cm^2	115B-05	2/2	20 – 20	n/a	No[f]
75-15-0	Carbon disulfide	0.52	J	2.4		µg/100cm^2	115B-05	2/2	5.0 – 5.0	n/a	No[f]
74-87-3	Chloromethane	0.64	J	0.64	J	µg/100cm^2	115B-06	1/2	10 – 10	n/a	No[f]
75-09-2	Methylene chloride	5.7		6.1		µg/100cm^2	115B-05	2/2	5.0 – 5.0	n/a	No[f]
127-18-4	Tetrachloroethene	0.6	J	0.6	J	µg/100cm^2	115B-05	1/2	5.0 – 5.0	n/a	No[f]
79-01-6	Trichloroethene	0.52	J	1.1	J	µg/100cm^2	115B-06	2/2	5.0 – 5.0	n/a	No[f]
Method 8270C – Semivolatile Organic Chemicals (SVOC)											
95-48-7	2-Methylphenol	2.8	J	5.1	J	µg/100cm^2	115B-03	3/6	10 – 10	n/a	Yes
117-81-7	Bis(2-ethylhexyl)phthalate	5.7	J	12	J	µg/100cm^2	115B-02	3/6	10 – 10	n/a	Yes
85-68-7	Butyl benzyl phthalate	3.1	J	3.1	J	µg/100cm^2	115B-02	1/6	10 – 10	n/a	Yes
84-74-2	Di-n-butyl phthalate	2.5	J	5.2	J	µg/100cm^2	115B-01	5/6	10 – 10	n/a	Yes
118-74-1	Hexachlorobenzene	2.3	J	6.7	J	µg/100cm^2	115B-04	2/6	10 – 10	n/a	Yes
85-01-8	Phenanthrene	3.2	J	3.2	J	µg/100cm^2	115B-04	1/6	10 – 10	n/a	Yes

a The following tentatively identified compounds (TIC) were also detected but were not evaluated in this risk assessment due to a lack of toxicity data. In addition, both the identity and concentration of these TICs is highly uncertain (EPA 1989): 1-butanamine, n-butyl; 3-penten-2-one, 4-methyl; 4-cyanocyclohexene; erucylamide; nonadecane; phenol, 2-(1,1-dimethylethyl)-; phenol, 4,4'-(1-methylethylide).
b Minimum detected concentration.
c Maximum detected concentration.
d Number of detects/Number of samples (see Table C1.2).
e Background comparison is not applicable for this risk assessment.
f Chemical is not a COPC because all detected values are less than the highest concentration detected in the associated equipment, trip, or method blanks.

Definition of Qualifiers
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.
B = (Inorganics) Estimated result. Result is less than reporting limit.

Table C1.2 (continued)
Summary of Analytical Results from Swipe Sampling in TA-50-37, Room 115

Definition of Acronyms
CAS = Chemical Abstract Service.
COPC = Chemical of Potential Concern.
µg/100cm^2 = micrograms per 100 square centimeters.
max = maximum.
min = minimum.
n/a = Not applicable.

Table C1.3
Summary of Analytical Results from Swipe Sampling in TA-50-37, Room 118

CAS Number	Parameter	Minimum Concentration[a]		Maximum Concentration[b]		Units	Location of Maximum Concentration	Detection Frequency[c]	Range of Reporting Limits (min–max)	Background Value[d]	COPC?
Method 6010B - Metals											
7440-39-3	Barium	0.42	B	102		µg/100cm^2	118B-23	30/30	20 – 20	n/a	Yes
7440-47-3	Chromium	0.16	B	8.7		µg/100cm^2	118B-09	10/30	1.0 – 1.0	n/a	Yes
7439-92-1	Lead	1.2	B	6.6	B	µg/100cm^2	118B-29	6/30	10 – 10	n/a	Yes
Method 8260B – Volatile Organic Chemicals (VOC)											
78-93-3	2-Butanone	25		45		µg/100cm^2	118B-30	2/2	20 – 20	n/a	No[e]
67-64-1	Acetone	15	JB	16	JB	µg/100cm^2	118B-31	2/2	20 – 20	n/a	No[e]
75-15-0	Carbon disulfide	0.36	J	2.9	J	µg/100cm^2	118B-30	2/2	5.0 – 5.0	n/a	No[e]
56-23-5	Carbon tetrachloride	0.76	JB	0.78	JB	µg/100cm^2	118B-31	2/2	5.0 – 5.0	n/a	No[e]
75-09-2	Methylene chloride	4.5	JB	9.1		µg/100cm^2	118B-31	2/2	5.0 – 5.0	n/a	No[e]
127-18-4	Tetrachloroethene	0.56	J	0.65	J	µg/100cm^2	118B-30	2/2	5.0 – 5.0	n/a	No[e]
79-01-6	Trichloroethene	1.4	JB	1.7	JB	µg/100cm^2	118B-30	2/2	5.0 – 5.0	n/a	No[e]

a Minimum detected concentration.
b Maximum detected concentration.
c Number of detects/Number of samples (see Table C1.2).
d Background comparison is not applicable for this risk assessment.
e Chemical is not a COPC because all detected values are less than the highest concentration detected in the associated equipment, trip, or method blanks.

Definition of Qualifiers
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.
B = (Inorganics) Estimated result. Result is less than reporting limit.

Definition of Acronyms
CAS = Chemical Abstract Service.
COPC = Chemical of Potential Concern.
µg/100cm^2 = Micrograms per 100 square centimeters.
n/a = Not applicable.

Laboratory control spike samples quantify accuracy (closeness of agreement between an observed value and an accepted reference value) in terms of percent recovery of the added spike. For swipe samples, the following laboratory control sample recoveries in Table C1.4 were outside control limits.

Table C1.4
Laboratory Control Sample Recoveries Outside Control Limits

Parameter	LCS (LCSD) Percent Recovery	Recovery Limits	Potential Bias
4-Bromofluorobenzene[a]	99% (123%)	85-115%	High
4-Chloroaniline	38% (40%)	50-150%	Low
Acetone	57% (58%)	70-130%	Low
Acetone	67% (79%)	70-130%	Low
Arsenic	29% (28%)	78-124%	Low
Barium	44% (44%)	77-124%	Low
Cadmium	71% (67%)	82-118%	Low
Lead	55% (52%)	82-117%	Low
Selenium	75% (72%)	81-122%	Low
Silver	30% (30%)	76-140%	Low

a Surrogate compound.

Definition of Acronyms
LCS = Laboratory control spike.
LCSD = Laboratory control spike duplicate.

All chemicals detected at least once in swipe samples were evaluated in the COPC identification stage of the HHRA. Detected concentrations in investigative samples were compared with detected concentrations in trip blanks, method blanks, and baseline samples. The final list of COPCs includes chemicals detected in investigative swipe samples at concentrations above the maximum detected blank or baseline concentration (Sections 2.5.2 and 3.5.2).

Tables C1.2 and C1.3 summarize detected chemicals and COPC selection for Rooms 115 and 118, respectively. There were 17 chemicals detected in swipe samples from Room 115 and ten chemicals detected in swipe samples from Room 118. Of the 17 detected chemicals in Room 115, eight VOCs were eliminated because the detected concentrations were below the maximum concentration detected in the associated blank or baseline samples (see Section 2.5.2). Of the ten chemicals detected in swipe samples from Room 118, seven were eliminated because the detected concentrations were below the maximum concentration detected in the associated blank or baseline samples (see Section 3.5.2).

Several tentatively identified compounds (TIC) detected in Room 115 swipe samples were carried forward to the HHRA (i.e., had detected concentrations above baseline and/or quality assurance/quality control results). However, these chemicals do not have toxicity data and were not quantitatively evaluated in the HHRA. The results and identity of TICs are highly uncertain (EPA, 1989). The TICs detected in Room 115 include: 1-butanamine, n-butyl; 3-penten-2-one, 4-methyl; 4-cyanocyclohexene; erucylamide; nonadecane; phenol, 2-(1,1-dimethylethyl)-; and phenol, 4,4'-(1-methylethylide).

The final COPCs evaluated in Rooms 115 and 118 are as follows:

Room 115

- Barium
- Chromium
- Aroclor 1260
- 2-Methylphenol
- Bis(2-ethylhexyl)phthalate
- Butyl benzyl phthalate
- Di-n-butyl phthalate
- Hexachlorobenzene
- Phenanthrene

Room 118

- Barium
- Chromium
- Lead

C1.2 Exposure Assessment

The purpose of the exposure assessment is to evaluate pathways for chemical exposure and to produce an estimate of the reasonable maximum exposure (RME), or the maximum exposure that is reasonably expected to occur at a site (EPA, 1989). The RME is expressed as a chronic daily intake (CDI), which is defined as the mass of a substance contacted per unit body weight per unit time, averaged over a long period of time and expressed in units of milligrams per unit body weight-day. The following steps were included as part of the exposure assessment for Rooms 115 and 118:

(1) Characterization of exposure setting and receptors.
(2) Identification of exposure pathways.

(3) Estimation of exposure point concentrations (EPC).

(4) Estimation of CDI.

These steps are discussed in the following subsections.

C1.2.1 Characterization of Exposure Setting and Receptors

Future occupational workers were identified as the only potential receptors for TA-50-37 in the exposure assessment. The future use of Rooms 115 and 118 is expected to be office space, where no personal protective equipment will be used.

C1.2.2 Identification of Exposure Pathways

The assessment of exposure to chemicals on interior surfaces involves identification of complete exposure pathways. A complete exposure pathway is defined by:

- Source of contaminated media.
- Contaminant release mechanisms.
- Contaminant transport pathways.
- Intermediate or transport media.
- Exposure media.
- Receptors.
- Routes of exposure.

The following exposure pathways are considered complete for TA-50-37, Rooms 115 and 118:

- Ingestion of chemicals on indoor surfaces through hand-to-mouth contact.
- Dermal contact with indoor surfaces.
- Inhalation of chemicals suspended in dust. Because no volatile organic compounds (VOC) were identified as COPCs, inhalation of vapors is not included in the inhalation pathway assessment.

C1.2.3 Estimation of Exposure Point Concentrations

For this HHRA, the maximum detected concentrations (MDC) of COPCs were used as the EPCs.

C1.2.4 Estimation of Chronic Daily Intakes

The methodology used to evaluate oral and dermal exposure to chemicals deposited on surfaces was developed by the WTCIATWG (WTCIATWG, 2002) and is based on EPA Office of Pesticides Programs (OPP) *Standard Operating Procedures (SOPs) for Residential Exposure Assessment* (EPA, 2001a). The evaluation of exposures to lead in this assessment is a modification of the California DTSC model (DTSC, 2000) that provides methodology for evaluating exposure to lead by the ingestion, inhalation, and dermal contact exposure pathways.

Exposure factors (e.g., ingestion rates and exposure frequency and duration) are used to estimate CDI for each exposure pathway. The estimates of CDI are combined with toxicity information in the toxicity assessment of an HHRA to characterize the potential risk to human health.

CDIs were estimated by selecting values for exposure variables to provide the RME for an individual working at the site. Tables C1.5 through C1.8 present equations for calculating CDI for carcinogenic and noncarcinogenic chemicals for occupational workers from ingestion, dermal, and inhalation exposure to chemicals on indoor surfaces.

Table C1.5
Chronic Daily Intake for Ingestion of Chemicals on Indoor Surfaces

$$CDI\ (mg/kg-d) = \frac{EPC \times SA_h \times CF \times F_{s-s} \times F_{s-m} \times ED \times EF}{BW \times AT} \qquad Eq(1)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Skin Surface Area for Hands (SA_h), m^2/event =	0.0817	EPA, 2001b
Contact Frequency (CF), events/day =	2	Assumed
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG, 2002
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Skin-to-Mouth Transfer Factor (F_{s-m}), unitless =	0.1	WTCIATWG, 2002
Adult Body Weight (BW), kilograms =	70	EPA, 1997a; LANL, 2000
Averaging Time (AT), days		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms
c-s = chemical-specific.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
m^2 = square meter.
mg = milligram.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

Table C1.6
Chronic Daily Intake for Dermal Contact with Chemicals on Indoor Surfaces

$$CDI\ (mg/kg-d) = \frac{EPC \times SA_h \times CF \times F_{s-s} \times ED \times EF \times ABS_d}{BW \times AT} \qquad Eq(2)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Skin Surface Area for Hands (SA_h), m^2/event =	0.0817	EPA, 2001b
Contact Frequency (CF), events/day =	2	Assumed
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG, 2002
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Dermal Absorption Factor (ABS_d), unitless =	c-s	EPA, 2001b
Adult Body Weight (BW), kilograms =	70	EPA, 1997a; LANL, 2000
Averaging Time (AT), days		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms
c-s = chemical-specific.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
m^2 = square meter.
mg = milligram.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

Table C1.7
Chronic Daily Intake for Inhalation of Nonvolatile Chemicals on Indoor Surfaces, Noncarcinogens

$$CDI\ (mg/m^3) = \frac{EPC \times ED \times EF \times K}{AT_{nc}} \qquad Eq(3)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Dust Resuspension Factor (K), (m)$^{-1}$ =	1E-05	Linsley, 1978; Royal Society, 2002
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA, 1989; LANL, 2000

Definition of Acronyms
cm = centimeter.
c-s = chemical-specific.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
m = meter.
m^2 = square meter.
mg = milligram.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

Table C1.8
Chronic Daily Intake for Inhalation of Nonvolatile Chemicals on Indoor Surfaces, Carcinogens

$$CDI\ (\mu g/m^3) = \frac{EPC \times ED \times EF \times K \times CvF}{AT_c} \qquad Eq(4)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Conversion Factor (CvF), µg/mg =	1E+03	---
Dust Resuspension Factor (K), (m)$^{-1}$ =	1E-05	Linsley, 1978; Royal Society, 2002
Averaging Time, carcinogens (AT_c), days =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms
c-s = chemical-specific.
cm = centimeter.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
m = meter.
m^2 = square meter.
µg = microgram.
mg = milligram.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

The guidance documents used to compile exposure factors primarily include EPA Risk Assessment Guidance for Superfund, Part A (EPA, 1989); EPA Exposure Factors Handbook (EPA, 1997a); and *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Interim* (EPA, 2001b). Professional judgment and information from the WTCIATWG (WTCIATWG, 2002) were also used where EPA guidance was not available.

Body weight

The EPA default adult body weight of 70 kilograms (kg) was used, as the dose-response relationships on which the carcinogenic risk estimates are based assume a body weight of 70 kg (EPA, 1997a; LANL, 2000).

Averaging Time

The averaging time for carcinogens of 25,550 days, is averaged over a 70-year lifetime (EPA, 1989). For noncarcinogens, the averaging time is the exposure duration multiplied by 365 days (EPA, 1989).

Contact Frequency

Based on professional judgment, the contact frequency assumed for Rooms 115 and 118 is 2 events per day to reflect work during the forenoon, washing during a lunch break, and work during the afternoon.

Dermal Absorption Factor

With the exception of arsenic and cadmium, EPA (EPA, 2001b) does not provide dermal absorption values for inorganics or VOCs. As recommended by EPA Region 6 (EPA, 2004), the dermal exposure pathway was not evaluated for chemicals lacking chemical-specific dermal absorption factors. EPA (EPA, 2001b) recommends the value of 0.1 for dermal absorption of semivolatile organic compounds (SVOC). In addition, Table C1.9 presents EPA-recommended (EPA, 2001b) chemical-specific dermal absorption factors that were used in this risk assessment.

Table C1.9
Chemical-Specific Dermal Absorption Factors Recommended by EPA

Chemical	Dermal Absorption Factor (EPA, 2001b)
SVOCs	0.1
Polycyclic aromatic hydrocarbons	0.13
Polychlorinated biphenyls	0.14

Definition of Acronyms
EPA = U.S. Environmental Protection Agency
SVOC = semivolatile organic compound

Skin Surface Area

The skin surface area used is based on recommendations in Exhibit C-1 of the EPA's Supplemental Guidance for Dermal Risk Assessment (EPA, 2001b). This Exhibit provides body part-specific adult surface area calculations and recommends a value of 817 square centimeters (cm^2) for an adult female. The surface area of adult male hands is listed as 990 cm^2. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model, which is an approach for assessing occupational health risks from lead intake in women of child-bearing age. An adult female is used in EPA lead model, which is developed to be protective of receptors most sensitive to lead exposure (i.e., fetuses carried by women who experience nonresidential exposures) (EPA, 2003).

Exposure Duration

The default exposure duration of 30 years is the National upper bound time (90th percentile) at one residence (EPA, 1991; LANL, 2000). Because of the nature of the area, it is assumed that exposure duration in the work environment corresponds with residence time (LANL, 2000).

Exposure Frequency

The EPA-recommended exposure frequency for occupational workers is 250 days per year. This assumes five working days per week for 50 weeks per year (EPA, 1993; LANL, 2000).

Fraction Skin-to-Mouth Transfer

The value of 10 percent (or 0.1) used by the WTCIATWG (WTCIATWG, 2002) is based on studies by Michaud et al. (Michaud et al., 1994), the EPA OPP guidelines, and Kim and Hawley (Kim, Hawley, 1985), where it was assumed that all of the residues deposited on the fingertips would be transferred to the mouth twice per day.

Fraction Surface-to-Skin Transfer

According to the evaluation by the WTCIATWG (WTCIATWG, 2002), this factor should vary depending on the type of surface, type of residual, hand condition, and force of contact. Literature values range from 5 percent for carpets (EPA, 1997b) to 50 percent for hard surfaces (Rodes et al., 2001). EPA OPP recommends a value of 10 percent. A value of 5 percent (or 0.05) (WTCIATWG, 2002) was used for this assessment.

Dust Resuspension Factor

The resuspension factor reported for resuspension of dust from soil during pedestrian or vehicular traffic was assumed (Linsley, 1978), which has been cited in the context of dust suspension from soil contaminated with depleted uranium (Royal Society, 2002).

C1.3 Toxicity Assessment

The purpose of the toxicity assessment is to "weigh available evidence regarding the potential for particular contaminants to cause adverse effects in exposed individuals and to provide, where possible, an estimate of the relationship between the extent of exposure to a contaminant and the increased likelihood and/or severity of adverse effects" (EPA, 1989). Most EPA cancer slope factors (CSF) and air unit risk factors (URF) are upper estimates of the probability of a response per unit intake of a chemical over a lifetime (EPA, 1989). CSFs and URFs are based on mathematical extrapolation from experimental animal data and epidemiological studies, when available. CSFs are expressed in units of risk per milligram (mg) of chemical per kg body weight-day $(mg/kg\text{-}d)^{-1}$. URFs are expressed in units of risk per microgram (µg) of chemical per cubic meter $(\mu g/m^3)^{-1}$. Carcinogens with EPA-derived CSFs and URFs are also given EPA weight-of-evidence classifications (listed below) whereby potential carcinogens are grouped according to the likelihood that the chemical is a human carcinogen, depending on the quality and quantity of carcinogenic potency data for a given chemical. The weight-of-evidence classifications include:

Group A Human Carcinogen (sufficient evidence of carcinogenicity in humans).

Group B Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans).

Group C Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data).

Group D Not classifiable as to Human Carcinogenicity (inadequate or no evidence).

Group E Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

CSFs and URFs for use in the HHRA are presented in Table C1.10. Table C1.11 summarizes cancer weight of evidence classification for chemicals with carcinogenic effects.

The evaluation of noncarcinogens is based on the presumption of a threshold, where a specific dose must be received in order for an adverse effect to occur. The reference dose (RfD) and reference concentration (RfC) are estimates of a daily chemical intake per unit body weight that are likely to be without deleterious effects (EPA, 1989). EPA has developed chronic RfDs and RfCs to evaluate long-term exposures (7 years to a lifetime), and subchronic values to evaluate exposures of shorter duration (2 weeks to 7 years). Chronic RfDs and RfCs were used in this HHRA (Table C1.10).

Toxicity values are those used to develop the EPA Region 6 Human Health Medium-Specific Screening Values (EPA, 2004). Toxicity values were obtained by EPA Region 6 from the Integrated Risk Information System (IRIS), the EPA Health Effects Assessment Summary Tables (HEAST) (EPA, 1997b), or EPA's National Center for Environmental Assessment (NCEA). Route-to-route extrapolations were used when there were no toxicity values available for a given route of exposure. That is, in accordance with EPA Region 6 (EPA, 2004) guidance, oral CSFs and oral RfDs were used for both oral and inhaled exposures for organic chemicals lacking inhalation values. Oral RfDs and CSFs were converted to RfCs and URFs, respectively, based on a body weight of 70 kg and inhalation rate of 20 cubic meters per day (m^3/day) (EPA, 1997b). For dermal exposure, oral toxicity values for organic chemicals were not adjusted to reflect an absorbed dose in accordance with EPA *Risk Assessment Guidance for Superfund,*

Volume I: Human Health Evaluation Manual, (Part E, Supplemental Guidance for Dermal Risk Assessment) (EPA, 2001b). That is, the absorbed dose was assumed to equal the administered dose. However, when available, oral toxicity values for inorganic chemicals were adjusted using the chemical-specific gastrointestinal absorption values provided in EPA guidance (EPA, 2001b). These values are shown in Table C1.12.

Oral toxicity factors were adjusted when appropriate using the following equations from EPA guidance (EPA, 2001b):

$$CSF_{abs} = \frac{CSF_o}{ABS_{GI}} \qquad Eq\ (5)$$

and

$$RfD_{abs} = RfD_o \times ABS_{GI} \qquad Eq\ (6)$$

where,

CSF_{abs} = Absorbed Cancer Slope Factor, $(mg/kg\text{-}d)^{-1}$
CSF_o = Oral Cancer Slope Factor, $(mg/kg\text{-}d)^{-1}$
ABS_{GI} = Fraction of contaminant absorbed in the gastrointestinal tract, unitless
RfD_{abs} = Absorbed Reference Dose, mg/kg-d
RfD_o = Oral Reference Dose, mg/kg-d

Table C1.10
Toxicity Values for Human Health Risk Assessment

Parameter	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$		Air Unit Risk Factor[a] $(\mu g/m^3)^{-1}$		Oral Reference Dose (mg/kg-d)		Inhalation Reference Concentration[b] (mg/m^3)	
SVOCs (Method 8270C):								
2-Methylphenol	n/a		n/a		5.0E-02	e	1.8E-01	r
Bis(2-ethylhexyl)phthalate	1.4E-02	i	4.0E-06	r	2.0E-02	i	7.0E-02	r
Butyl benzyl phthalate	n/a		n/a		2.0E-01	i	7.0E-01	r
Di-n-butyl phthalate	n/a		n/a		1.0E-01	i	3.5E-01	r
Hexachlorobenzene	1.6E+00	i	4.6E-04	i	8.0E-04	i	2.8E-03	r
Phenanthrene[c]	n/a		n/a		3.0E-01	i	1.1E-00	r
Metals (Method 6010B):								
Barium	n/a		n/a		7.0E-02	i	2.5E-01	r
Chromium	n/a		1.2E-02	i	n/a		n/a	
Polychlorinated Biphenyls (Method 8082):								
Arolcor 1260	2.0E+00	i	5.7E-04	i	n/a		n/a	

a Air Unit Risk Factor (URF) is based on the Inhalation Cancer Slope Factor (CSF) provided in EPA Region 6 Human Health Medium-Specific Screening Levels Table (EPA, 2004). The inhalation CSF was converted to a URF based on EPA guidance (1997a), assuming a body weight of 70 kilograms and inhalation rate of 20 cubic meters per day and using the following equation:

$$Risk\ per\ \mu g / m^3 = (Risk\ per\ mg / kg - d) \times \left(\frac{1}{70\ kg}\right) \times (20\ m^3 / day) \times (10^{-3}\ mg / \mu g)$$

b Reference Concentration is from EPA Region 6 Human Health Medium-Specific Screening Levels Table (EPA, 2004) when available. Otherwise, inhalation Reference Doses from EPA (2004) were converted to reference concentrations based on EPA guidance (1997a) using the following equation:

$$RfC\ (mg / m^3) = RfD\ (mg / kg - d) \times \frac{1}{20\ m^3 / day} \times 70\ kg$$

c Anthracene is used as a surrogate.
Toxicity values were taken from EPA Region 6 Human Health Medium-Specific Screening Levels Table and are referenced as follows (EPA 2004, accessed online):

Definition of Acronyms
e = From EPA Region 6 (2004), withdrawn value.
i= Integrated Risk Information System (IRIS).
mg/kg-d = milligrams per kilogram-day.
µg/m^3 = micrograms per cubic meter.
mg/m^3 = milligrams per cubic meter.
n/a = Not available.
r= Route-to-route extrapolation.

Table C1.11
Weight of Evidence Classifications for Carcinogens

Chemical of Potential Concern	Weight of Evidence Classification	Source
Bis(2-ethylhexyl)phthalate	B2	IRIS
Hexachlorobenzene	B2	IRIS
Chromium (trivalent)	D	IRIS
Chromium (hexavalent)	A (inhalation) D (other routes)	IRIS
Aroclor 1260	B2	IRIS[a]

a IRIS toxicological profile is for polychlorinated biphenyls.

Definition of Acronyms
A = Human Carcinogen (sufficient evidence of carcinogenicity in humans).
B2 = sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans).
D = Not classifiable as to Human Carcinogenicity (inadequate or no evidence).
IRIS = Integrated Risk Information System (http://www.epa.gov/iris/).

Table C1.12
Gastrointestinal Absorption Factors for Adjustment of Oral Toxicity Values

Chemical	Gastrointestinal Absorption Factor (EPA, 2001b)
Barium	0.07
Chromium (III)	0.013

Definition of Acronyms
EPA = U.S. Environmental Protection Agency.

C1.4 Risk Characterization

In the risk characterization stage of the HHRA, the toxicity and exposure assumptions are combined to produce a quantitative estimate of risk to human health. Risk is a unitless probability of an RME individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen (EPA, 1989). Hazard quotients (HQ) are ratios of CDIs to RfDs (or RfCs) and represent the potential for noncarcinogencic toxicity to occur in an individual. The overall potential for carcinogenic and noncarcinogenic effects is estimated by summing risks to produce a cumulative risk estimate and summing HQs across chemicals and across exposure pathways to produce a hazard index (HI).

The linear low-dose cancer risk equation is as follows:

$$Risk_i = CDI \times CSF \ (or\ URF) \qquad Eq\ (7)$$

Cumulative cancer risks are subsequently estimated as:

$$Risk_T = \sum Risk_i \qquad Eq\ (8)$$

where,

$Risk_i$ = Risk estimate for chemical i
$Risk_T$ = Total cancer risk
CDI = Chronic daily intake (mg/kg-d or µg/m^3)
CSF = Cancer slope factor (mg/kg-d)$^{-1}$
URF = Air unit risk factor (µg/m^3)$^{-1}$

Calculation of the chemical-specific HQ is as follows:

$$Hazard\ Quotient = \frac{CDI}{RfD\,(or\ RfC)} \qquad Eq\,(9)$$

The chronic noncarcinogenic HI is estimated as:

$$Hazard\ Index = \frac{CDI_1}{RfD_1\,(or\ RfC_1)} + \frac{CDI_2}{RfD_2\,(or\ RfC_2)} + \Lambda\ \frac{CDI_i}{RfD_i\,(or\ RfC_i)} \qquad Eq\,(10)$$

where,

CDI_i = Chronic daily intake for chemical i
RfD_i = Reference dose for chemical i (mg/kg-d)
RfC_i = Reference concentration for chemical i (mg/m^3)

In accordance with Title 40 Code of Federal Regulations (40 CFR) 300.430, carcinogenic risk within the range of 10^{-4} (probability of 1 in 10,000 of an individual developing an additional cancer) to 10^{-6} (probability of 1 in 1,000,000 of an individual developing an additional cancer) is considered acceptable. Per EPA guidance, when the HI exceeds 1, there is a potential for adverse noncarcinogenic health effects (EPA, 1989). When the HI exceeds 1, and multiple chemicals contribute to the exceedance, the HI may be segregated on the basis of toxic effects and target organs (e.g., hepatic, renal, respiratory, cardiovascular, etc.). However, COPCs were not segregated by target organs for this HHRA.

The results of the noncarcinogenic and carcinogenic risk characterization for Building 115 are presented in Tables C1.13 and C1.14, respectively. Results of the noncarcinogenic and carcinogenic risk characterization for Building 118 are presented in Tables C1.15 and C1.16, respectively.

Table C1.13
Risk Characterization for Noncarcinogens, Building 115

Parameter	Room 115 EPC (mg/m^2)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake (mg/m^3)	Oral Reference Dose (mg/kg-d)	Dermal Reference Dose (mg/kg-d)	Inhalation Reference Concentration (mg/m^3)	Hazard Quotient
Method 8270C - Semivolatile Organic Chemicals									
2-Methylphenol	5.1E-01	1.0E-01	4.1E-06	4.1E-06	3.5E-06	5.0E-02	5.0E-02	1.8E-01	1.8E-04
Bis(2-ethylhexyl)phthalate	1.2E+00	1.0E-01	9.6E-06	9.6E-06	8.2E-06	2.0E-02	2.0E-02	7.0E-02	1.1E-03
Butyl benzyl phthalate	3.1E-01	1.0E-01	2.5E-06	2.5E-06	2.1E-06	2.0E-01	2.0E-01	7.0E-01	2.8E-05
Di-n-butyl phthalate	5.2E-01	1.0E-01	4.2E-06	4.2E-06	3.6E-06	1.0E-01	1.0E-01	3.5E-01	9.3E-05
Hexachlorobenzene	6.7E-01	1.0E-01	5.4E-06	5.4E-06	4.6E-06	8.0E-04	8.0E-04	2.8E-03	1.5E-02
Phenanthrene[a]	3.2E-01	1.3E-01	2.6E-06	3.3E-06	2.2E-06	3.0E-01	3.0E-01	1.1E+00	2.2E-05
Method 6010B - Metals									
Barium	1.5E+00	0.0E+00	1.2E-05	0.0E+00	1.0E-05	7.0E-02	4.9E-03	2.5E-01	2.1E-04
Chromium	2.8E-01	0.0E+00	2.2E-06	0.0E+00	1.9E-06	---	---	---	---
Method 8082 - Polychlorinated Biphenyls									
Arolcor 1260	1.2E+00	1.4E-01	9.6E-06	1.3E-05	8.2E-06	---	---	---	---
								HAZARD INDEX:	**1.7E-02**

a Anthracene is used as a surrogate.

Definition of Acronyms
EPC = Exposure point concentration.
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
mg/m^3 = milligrams per cubic meter.
--- = Not evaluated because toxicity data and/or dermal absorption factors are not available for this chemical.

Table C1.14
Risk Characterization for Carcinogens, Building 115

Parameter	Room 115 EPC (mg/m^2)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake ($\mu g/m^3$)	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Air Unit Risk Factor $(\mu g/m^3)^{-1}$	Risk
Method 8270C - Semivolatile Organic Chemicals									
2-Methylphenol	5.1E-01	1.0E-01	1.7E-06	1.7E-06	1.5E-03	---	---	---	---
Bis(2-ethylhexyl)phthalate	1.2E+00	1.0E-01	4.1E-06	4.1E-06	3.5E-03	1.4E-02	1.4E-02	4.0E-06	1.3E-07
Butyl benzyl phthalate	3.1E-01	1.0E-01	1.1E-06	1.1E-06	9.1E-04	---	---	---	---
Di-n-butyl phthalate	5.2E-01	1.0E-01	1.8E-06	1.8E-06	1.5E-03	---	---	---	---
Hexachlorobenzene	6.7E-01	1.0E-01	2.3E-06	2.3E-06	2.0E-03	1.6E+00	1.6E+00	4.6E-04	8.3E-06
Phenanthrene[a]	3.2E-01	1.3E-01	1.1E-06	1.4E-06	9.4E-04	---	---	---	---
Method 6010B - Metals									
Barium	1.5E+00	0.0E+00	5.0E-06	0.0E+00	4.3E-03	---	---	---	---
Chromium	2.8E-01	0.0E+00	9.6E-07	0.0E+00	8.2E-04	---	---	1.2E-02	9.9E-06
Method 8082 - Polychlorinated Biphenyls									
Arolcor 1260	1.2E+00	1.4E-01	4.1E-06	5.8E-06	3.5E-03	2.0E+00	2.0E+00	5.7E-04	2.2E-05
								CARCINOGENIC RISK:	**4.0E-05**

a Anthracene is used as a surrogate.

Definition of Acronyms
EPC = Exposure point concentration.
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
$\mu g/m^3$ = micrograms per cubic meter.
--- = Not evaluated because toxicity data and/or dermal absorption factors are not available for this chemical.

Table C1.15
Risk Characterization for Noncarcinogens, Building 118

Parameter	Room 118 EPC (mg/m^2)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake (mg/m^3)	Oral Reference Dose (mg/kg-d)	Dermal Reference Dose (mg/kg-d)	Inhalation Reference Concentration (mg/m^3)	Hazard Quotient
Method 6010B - Metals									
Barium	1.02+01	0.0E+00	8.2E-05	0.0E+00	7.0E-05	7.0E-02	4.9E-03	2.5E-01	1.5E-03
Chromium	8.7E-01	0.0E+00	7.0E-06	0.0E+00	6.0E-06	---	---	---	---
								HAZARD INDEX:	**1.5E-03**

Definition of Acronyms
EPC = Exposure point concentration.
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
mg/m^3 = milligrams per cubic meter.
--- = Not evaluated because toxicity data and/or dermal absorption factors are not available for this chemical.

Table C1.16
Risk Characterization for Carcinogens, Building 118

Parameter	Room 118 EPC (mg/m^2)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake ($\mu g/m^3$)	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Air Unit Risk Factor $(\mu g/m^3)^{-1}$	Risk
Method 6010B - Metals									
Barium	1.02E+01	0.0E+00	3.5E-05	0.0E+00	3.0E-02	---	---	---	---
Chromium	8.7E-01	0.0E+00	3.0E-06	0.0E+00	2.6E-03	---	---	1.2E-02	3.1E-05
								CARCINOGENIC RISK:	**3.1E-05**

Definition of Acronyms
EPC = Exposure point concentration.
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
$\mu g/m^3$ = micrograms per cubic meter.
--- = Not evaluated because toxicity data and/or dermal absorption factors are not available for this chemical.

The exposure pathways quantified for occupational workers were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The COPCs in Room 115 evaluated quantitatively for noncarcinogenic effects were 2-methylphenol, bis(2-ethylhexyl)phthalate, butyl benzyl phthalate, di-n-butylphthalate, hexachlorobenzene, phenanthrene, and barium. The COPC in Room 118 evaluated quantitatively for non-cancer effects was barium. The noncarcinogenic HIs for Rooms 115 and 118 are 0.017 and 0.0015, respectively. These RME HIs are each well below 1.0.

The COPCs in Room 115 evaluated quantitatively for carcinogenic risk were bis(2-ethylhexyl)phthalate, hexachlorobenzene, chromium, and Aroclor 1260. The COPC in Room 118 evaluated quantitatively for carcinogenic risk was chromium. The carcinogenic risks for Rooms 115 and 118 are 4.0E-05 and 3.1E-05, respectively. These RME risks are within the acceptable 10^{-6} to 10^{-4} range of risks specified by 40 CFR 300.430.

C1.5 Evaluation of Lead

Because lead toxicity does not exhibit a threshold for noncarcinogenic health effects, risk assessment methods that are based on threshold values do not apply. Therefore, the EPA has developed the Adult Lead Model (ALM) to address worker exposures (EPA, 2003). The ALM estimates the lead concentration in the blood of a pregnant worker exposed by ingestion of soil and dust. However, the ALM does not address the inhalation and dermal absorption pathways, except as a default baseline blood concentration that also includes dietary lead contributions. Various other simulation models developed to evaluate blood lead concentration from exposures to lead have been reviewed and compared with the ALM (EPA, 2001c). Although none of the models reviewed address worker exposure to lead contamination on surfaces, the review found that the model developed by the California DTSC specifically addresses the ingestion, dermal contact, and inhalation exposure pathways and can provide simulation results consistent with the ALM.

The surface swipe model developed for this risk assessment to evaluate exposure to lead on surfaces as measured by swipe samples, is a modification of the DTSC (DTSC, 2000) model. The model assumes that the concentration of lead in blood from exposure via separate pathways is additive, such that:

$$PbB_{adult} = PbB_{ing} + PbB_{derm} + PbB_{inh} \qquad Eq\,(11)$$

where,

PbB_{adult} =	Concentration of lead in blood of an adult worker, micrograms per deciliter (µg/dL).
PbB_{ing}, PbB_{derm}, PbB_{inh} =	Contributions to adult blood lead concentration from the ingestion, dermal contact and inhalation pathways, respectively, µg/dL.

The concentration of lead in blood of an adult worker is, therefore, estimated based on the following equation and parameters presented in Table C1.17:

$$PbB_{adult} = PbB_0 + \left\{ Pb_{sw} \times \frac{EF}{AT} \times \left[\left(SF_{ing} \times SA_h \times EV \times F_{s-s} \times F_{s-m} \right) + \left(SF_{derm} \times SA_{uex} \times EV \times F_{s-s} \times ABS_d \right) + \left(SF_{inh} \times K \times CF \right) \right] \right\} \quad Eq\,(12)$$

Concentration of Lead in Blood of Exposed Worker

The maximum lead concentration in Building 118 was measured on swipe samples that were assumed to be representative of the surface lead concentration in the rooms after remediation. The MDC in Building 118 is 0.066 micrograms per square centimeter (µg/cm^2).

Baseline Lead Concentration

A default value of 2.2 micrograms per deciliter (µg/dL) was used for PbB_0. The value represents the upper concentration of the 1.7-2.2 µg/dL range reported for women of ages 24 to 49 (EPA, 2003).

Fetal/Maternal Blood Lead Concentration Ratio

The EPA-recommended default value of 0.9 was used based on the relationship between umbilical cord and maternal blood lead concentrations (EPA, 2003).

Dermal Absorption Factor

The dermal absorption factor of 0.0006 is the value used by DTSC (DTSC, 2000) of 0.06%.

Geometric Standard Deviation of Adult Mean Blood Lead Concentration

The geometric standard deviation of the mean blood lead concentration in the adult population is the EPA-recommended value of 1.8 for a homogeneous population (EPA, 2003).

Exposure Frequency

The EPA-recommended exposure frequency for occupational workers is 250 days per year. This assumes five working days per week for 50 weeks per year (EPA, 1993).

Fraction Skin-to-Mouth Transfer

The value of 10 percent (or 0.1) used by the WTCIATWG (WTCIATWG, 2002) is based on studies by Michaud et al. (Michaud et al., 1994), the EPA OPP guidelines, and Kim and Hawley (Kim, Hawley, 1985), where it was assumed that all of the residues deposited on the fingertips would be transferred to the mouth twice per day.

Fraction Surface-to-Skin Transfer

According to the evaluation by the WTCIATWG (WTCIATWG, 2002), this factor should vary depending on the type of surface, type of residual, hand condition, and force of contact. Literature values range from 5 percent for carpets (EPA, 1997c) to 50 percent for hard surfaces (Rodes et al., 2001). EPA OPP recommends a value of 10 percent. A value of 5 percent (or 0.05), (WTCIATWG 2002) was used for this assessment.

Dust Resuspension Factor

The inhalation exposure pathway included the resuspension factor (K) as developed to estimate resuspension of dust from soil surfaces by pedestrians or vehicular traffic (Linsley, 1978; Royal Society, 2002).

Exposure Events per Day

Based on professional judgment, the number assumed for Rooms 115 and 118 is 2 events per day.

Averaging Time

The averaging time is the total period during which indoor surface contact may occur. The EPA-recommended value is 365 days per year for continuing long-term exposures (EPA, 2003).

Surface Area

Exposures by the dermal pathway were evaluated using the surface area of adult female hands (SA_h) and the face and upper extremities (SA_{uex}) of an adult female worker (EPA, 2001b).

The slope factors used in the calculations for ingestion (SF_{ing}; FDA, 1990; DTSC, 2000), dermal contact (SF_{derm}; DTSC, 2000) and inhalation exposures (SF_{inh}; EPA, 1986) are intake factors for the pathways indicated.

The goal for the 95th percentile of fetal blood lead concentration ($PbB_{fetal,0.95}$) is 10 µg/dL, as specified in EPA guidance (EPA, 1986 and 2003). The ALM describes the fetal blood lead concentration as:

$$PbB_{fetal} = PbB_{adult} \times R_{fetal/maternal} \qquad Eq\ (13)$$

where,

PbB_{fetal} = concentration of lead in the fetus, µg/dL.
$R_{fetal/maternal}$ = concentration ratio of lead in fetal blood to adult blood, dimensionless.

EPA guidance (EPA, 1986 and 2003) assumes that PbB_{adult} is lognormally distributed. The guidance requires remediation of lead concentrations such that PbB_{fetal} will not exceed 10 µg/dL with 95 percent confidence as follows:

$$PbB_{fetal,0.95} = PbB_{fetal} \times GSD^{1.645} \qquad Eq\ (14)$$

where,

$PbB_{fetal,0.95}$ = 95th percentile of fetal blood lead concentration, µg/dL.
GSD = Geometric standard deviation of adult blood lead concentration in the U. S. population.

The estimated concentration of lead in blood of the worker and the fetus are well below the goal of 10 µg/dL specified in EPA (EPA, 1986 and 2003) guidance with 95 percent confidence. This conclusion is confirmed by calculating the probability that the mean blood lead concentration of the fetus (PbB_{fetal}) exceeds 10 µg/dL based on the assumption that the adult blood lead concentration is lognormally distributed (EPA, 1986 and 2003). For a distribution with geometric

mean concentration (PbB_{fetal}) and geometric standard deviation 1.8, the probability that the mean concentration exceeds 10 µg/dL approximately 0.3% (Table C1.17). Based on this assessment, the potential risk to a future worker in the TA-50-37, Room 118 from exposure to lead on surfaces is below the applicable criteria specified in EPA guidance (EPA, 1986).

Table C1.17
Parameters Used to Estimate Blood Lead Concentration in Adult Female Worker

Exposure Parameter	Exposure Parameter Description	Units	Parameter	Reference
Pb_{sw}	Lead concentration on swipe/100[a]	µg/cm^2	0.066	Maximum Detected (Table C1.3)
$PbB_{fetal\ goal}$	Goal for the 95th percentile fetal blood lead concentration	µg/dL	10.0	EPA, 1986; EPA 2003
PbB_o	Baseline blood concentration in absence of site exposure	µg/dL	2.2	EPA, 2003[b]
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	dimensionless	0.9	EPA, 2003
SF_{ing}	Ingestion Slope Factor	µg/dL per µg/day	0.04	FDA, 1990; DTSC, 2000
SF_{derm}	Dermal Slope Factor	µg/dL per µg/day	0.0001	DTSC, 2000
SF_{inh}	Inhalation Slope Factor	µg/dL per µg/m^3	1.64	EPA, 1986; DTSC, 2000
ABS_d	Dermal Absorption Factor	dimensionless	0.0006	DTSC, 2000
GSD	Geometric standard deviation of PbBadult	dimensionless	1.8	EPA, 2003
SA_h	Surface Area (hands, adult female)	cm^2/event	817	EPA, 2001b
SA_{uex}	Surface Area (upper extremities, adult female)	cm^2/event	2,220	EPA, 2001b
EV	Exposure Events per Day	events/day	2	Assumed
F_{s-s}	Fraction Transferred from Surface to Skin	dimensionless	0.05	WTCIATWG, 2002
F_{s-m}	Fraction Transferred from Skin to Mouth	dimensionless	0.1	WTCIATWG, 2002
K	Dust Resuspension Factor	cm^{-1}	1.0E-07	Linsley, 1978; Royal Society, 2002
CF	Conversion Factor	cm^3/m^3	1.0E+06	--
EF	Exposure Frequency	days/year	250	EPA, 1989; LANL, 2000
AT	Averaging Time	days/year	365	EPA, 2003
Surface Swipe Model Results[(c)]				
	$PbB_{adult} = PbB_0 + [(Pb_{sw}*(EF/AT)*((SF_{ing}*SA_h*EV*F_{s-s}*F_{s-m}) + (SF_{derm}*SA_{uex}*EV*F_{s-s}*ABS_d) + (SF_{inh}*K*CF)] =$			**2.2E+00**
	$PbB_{fetal} = PbB_{adult} * R_{fetal/maternal} =$			**2.0E+00**
	$PbB_{fetal,\ 0.95} = PbB_{fetal} * (GSD^{1.645}) =$			**5.3E+00**
	$P(PbB_{fetal} > PbB_{fetal,goal})$[(d)] (%) =			**0.31%**

Table C1.17 (continued)

Parameters used to Estimate Blood Lead Concentration in Adult Female Worker

Definition of Qualifiers

a Swipe concentrations are reported in units of µg/100cm^2.
b Upper value of plausible range reported for U.S. women ages 20-49 years.
c Equations based on Equations 1-3 in EPA (2003).
d Probability that fetal PbB > $PbB_{fetal,goal}$, assuming lognormal distribution with mean concentration.

Definition of Acronyms

cm^2 = square centimeters.
cm^3/m^3 = cubic centimeters per cubic meter.
cm^{-1} = per centimeter.
DTSC = Department of Toxic Substances Control.
EPA = U.S. Environmental Protection Agency.
LANL = Los Alamos National Laboratory.
µg/dL = micrograms per deciliter.
µg/cm^2 = micrograms per square centimeter.
µg/m^3 = micrograms per cubic meter.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.

C1.6 Uncertainty

The level of certainty associated with the conclusions of the HHRA depends upon the quality of data, the assumptions made in estimating exposure conditions, and the methods used to develop toxicity factors. Uncertainties in the HHRA process could result in an overestimation or underestimation of potential health risk.

EPCs used in the risk assessment were the MDCs. These concentrations likely overestimate the average exposure to COPCs in the rooms. That is, it was assumed that an industrial worker would be in contact with the maximum detected concentration 250 days per year for 30 years. Although the use of central-tendency techniques (e.g., using a 95 percent upper confidence limit as the EPC or other 50th percentile values) in addition to the RME provides a risk range for consideration in risk management decisions, it is not necessary to conduct assessments using these methods if the health risks are acceptable using maximum or near maximum values for each of the input parameters. EPA (1997a) states that "bounding estimates" (e.g., upper-bound estimates) may be calculated using maximum or near maximum values if the purpose of the approach is, for example, to eliminate unimportant exposure pathways." In this HHRA, the human health risks are shown to be acceptable using upper-bound exposure estimates. Therefore, central-tendency estimates were not presented.

All complete exposure pathways were evaluated for Rooms 115 and 118. As previously mentioned, the exposure parameters were typically upper-bound estimates. For example, the exposure duration of 30 years for an industrial worker is the 90th percentile value for time at one residence. Because of the nature of the area, it was assumed that exposure duration in the work environment corresponds with residence time (LANL, 2000). This assumption likely results in an overestimation of human health risk. As another example, the skin surface area for hands is the 50th percentile for female workers (EPA, 2001b). This includes the entire surface area of the hands rather than the palms only, which is the area of the hands that is most likely to contact surfaces. Therefore, the surface area is likely an overestimate.

The methodology for toxicity assessment was developed by EPA to produce toxicity factors protective of human health. Health-protective approaches are used in developing toxicity factors to ensure dose-response or hazard potential are not underestimated. For example,

uncertainty factors of 10 to 10,000 are used to estimate RfDs; humans are assumed to be more sensitive than the most sensitive laboratory species; carcinogens are considered not to have a threshold; and it is assumed that chemicals that are carcinogenic to laboratory animals also cause cancer in humans. Toxicity values for chronic exposure were used for the assumed exposure duration of 30 years. In cases where toxicity values were not available for the inhalation route of exposure, route-to-route extrapolation was used, consistent with EPA Region 6 guidance (EPA, 2004). This may result in an over- or underestimation of risk depending on chemical-specific toxicological characteristics.

In some cases, risk estimates were not developed for chemicals lacking toxicity data or dermal absorption factors. This may potentially result in an underestimation of risk. EPA (2001b) states that there is too little data to extrapolate a reasonable default value for the dermal absorption fraction, and as an interim method, dermal exposure to chemicals lacking data should be treated qualitatively. Dermal absorption values were available for bis(2-ethylhexyl)phthalate, hexachlorobenzene, and Aroclor 1260, which were evaluated quantitatively. In lieu of EPA-recommended, chemical-specific values, the remaining COPCs were not evaluated quantitatively for the dermal exposure pathway.

C1.7 Conclusions

The exposure pathways quantified for occupational workers were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The COPCs in Room 115 evaluated quantitatively for noncarcinogenic effects were 2-methylphenol, bis(2-ethylhexyl)phthalate, butyl benzyl phthalate, di-n-butylphthalate, hexachlorobenzene, phenanthrene, and barium. The COPC in Room 118 evaluated quantitatively for non-cancer effects was barium. The noncarcinogenic HIs for Rooms 115 and 118 are 0.017 and 0.0015, respectively. These RME HIs are each well below 1.0.

The COPCs in Room 115 evaluated quantitatively for carcinogenic risk were bis(2-ethylhexyl)phthalate, hexachlorobenzene, chromium, and Aroclor 1260. The COPC in Room 118 evaluated quantitatively for carcinogenic risk was chromium. The carcinogenic risks for Rooms 115 and 118 are 4.0E-05 and 3.1E-05, respectively. These RME risks are within the acceptable 10^{-6} to 10^{-4} range of risks specified by 40 CFR 300.430.

The estimated concentration of lead in blood of the worker (2.2 µg/dL) and the 95th percentile fetus (5.3 µg/dL) are well below the goal of 10 µg/dL specified in EPA (EPA, 1986 and 2003) guidance with 95 percent confidence. Based on this assessment, the potential risk to a future worker in the TA-50-37, Room 118 from exposure to lead on surfaces is below the applicable criteria specified in EPA guidance (EPA, 1986).

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Table C1.1: Analytical Results for Wipe Samples in Rooms 115 and 118, TA-50-37

SAMPLE	BARIUM	CHROMIUM	LEAD	AROCLOR 1260	2-BUTANONE	4-METHYL-2-PENTANONE	ACETONE	CARBON DISULFIDE	CARBON TETRACHLORIDE	CHLOROMETHANE	ETHYLBENZENE	METHYLENE CHLORIDE	TETRACHLORO-ETHENE	TRICHLORO-ETHENE	XYLENES (TOTAL)	2-METHYLPHENOL	BIS(2-ETHYLHEXYL) PHTHALATE	BUTYL BENZYL PHTHALATE	DI-N-BUTYL PHTHALATE	HEXACHLORO-BENZENE	PHENANTHRENE
Room 115B:																					
115B-01	14.6 B	2.8	5 U	12												2.8 J	5.7 J	5 U	5.2 J	2.3 J	5 U
115B-02	1.7 B	0.3 B	5 U	6												5 U	12	3.1 J	5 U	5 U	5 U
115B-03	2.6 B	2.4	5 U	1.9												5.1 J	6.9 J	5 U	3.5 J	5 U	5 U
115B-04	10.8 B	0.18 B	5 U	11												3.8 J	5 U	5 U	4 J	6.7 J	3.2 J
115B-05	0.35 B	0.5 U	5 U	0.5 U	51	1.3 J	17 JB	2.4 J	2.5 U	5 U	2.5 U	6.1	0.6 J	0.52 J	5 U	5 U	5 U	5 U	2.6 J	5 U	5 U
115B-06	0.36 B	0.5 U	5 U	0.5 U	44	1.1 J	15 JB	0.52 J	2.5 U	0.64 J	2.5 U	5.7	2.5 U	1.1 J	5 U	5 U	5 U	5 U	2.5 J	5 U	5 U
Number of Samples	6	6	6	6	2	2	2	2	2	2	2	2	2	2	2	6	6	6	6	6	6
Number of Detects	6	4	0	4	2	2	2	2	0	1	0	2	1	2	0	3	3	1	5	2	1
Frequency of Detection	100%	67%	0%	67%	100%	100%	100%	100%	0%	50%	0%	100%	50%	100%	0%	50%	50%	17%	83%	33%	17%
Minimum Detect	0.35 B	0.18 B	---	1.9	44	1.1 J	15 JB	0.52 J	---	0.64 J	---	5.7	0.6 J	0.52 J	---	2.8 J	5.7 J	3.1 J	2.5 J	2.3 J	3.2 J
Maximum Detect	14.6 B	2.8	---	12	51	1.3 J	17 JB	2.4	---	0.64 J	---	6.1	0.6 J	1.1 J	---	5.1 J	12 J	3.1 J	5.2 J	6.7 J	3.2 J
Average	5.1	1.113	---	5.3	47.5	1.2	16	1.5	---	2.8	---	5.9	1.6	0.81	---	4.5	6.6	4.7	3.8	4.8	4.7
Standard Deviation	6.1	1.16	---	5.2	4.9	0.14	1.4	1.3	---	3.1	---	0.28	1.3	0.41	---	0.95	2.7	0.78	1.2	1.4	0.73
Room 118B:																					
118B-01	1.5 B	0.5 U	5 U																		
118B-02	2.6 B	0.5 U	5 U																		
118B-03	6.9 B	0.48 B	1.7 B																		
118B-04	1.6 B	0.5 U	5 U																		
118B-05	3.2 B	0.72 B	3.8 B																		
118B-06	2.2 B	0.5 U	5 U																		
118B-07	2.2 B	0.34 B	5 U																		
118B-08	2.3 B	0.5 U	5 U																		
118B-09	88.3	8.7	1.2 B																		
118B-10	2.6 B	0.5 U	5 U																		
118B-11	4.1 B	0.16 B	5 U																		
118B-12	3.1 B	0.5 U	5.1 B																		
118B-13	5.1 B	0.17 B	5 U																		
118B-14	7.8 B	0.5 U	5 U																		
118B-15	7.3 B	0.5 U	5 U																		
118B-16	5.4 B	0.20 B	5 U																		
118B-17	2.6 B	0.5 U	5 U																		
118B-18	1.4 B	0.32 B	5 U																		
118B-19	1.1 B	0.5 U	5 U																		
118B-20	0.6 B	0.5 U	5 U																		
118B-21	4.8 B	0.5 U	5 U																		
118B-22	3.1 B	0.5 U	5 U																		
118B-23	102	0.25 B	2.9 B																		
118B-24	0.96 B	0.5 U	5 U																		
118B-25	1.4 B	0.5 U	5 U																		
118B-26	3.7 B	0.5 U	5 U																		
118B-27	1.3 B	0.5 U	5 U																		
118B-28	4.1 B	0.5 U	5 U																		
118B-29	38.2	2.1	6.6 B																		
118B-30	0.42 B	0.5 U	5 U	0.5 U	45	10 U	15 JB	2.9 J	0.76 JB	5 U	2.5 U	4.5 JB	0.65 J	1.7 JB	5 U	5 U	5 U	5 U	5 U	5 U	5 U
118B-31					25	10 U	16 JB	0.36 J	0.78 JB	5 U	2.5 U	9.1 B	0.56 J	1.4 JB	5 U						
Number of Samples	30	30	30	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1
Number of Detects	30	10	6	0	2	0	2	2	2	0	0	2	2	2	0	0	0	0	0	0	0
Frequency of Detection	100%	33%	20%	0%	100%	0%	100%	100%	100%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%
Minimum Detect	0.42 B	0.16 B	1.2 B	---	25	---	15 JB	0.36 J	0.76 JB	---	---	4.5 JB	0.56 J	1.4 JB	---	---	---	---	---	---	---
Maximum Detect	102	8.7	6.6 B	---	45	---	16 JB	2.9 J	0.78 JB	---	---	9.1	0.65 J	1.7 JB	---	---	---	---	---	---	---
Average	10.4	0.78	4.7	---	35.0	---	15.5	1.6	0.77	---	---	6.8	0.61	1.6	---	---	---	---	---	---	---
Standard Deviation	24.1	1.5	1.0	---	14.1	---	0.71	1.8	0.01	---	---	3.3	0.06	0.21	---	---	---	---	---	---	---

Notes:

Nondetects are shown as one-half the reporting limit.

One-half the RL was used as a proxy value to calculate the mean and standard deviation.

J = Estimated result. Result is less than RL.

B = Estimated result. Result is less than RL.

U = Nondetect

RL = Reporting limit

--- = Not applicable

Table C1.2 Chemicals of Potential Concern for Room 115, TA-50, Building 37

CAS Number	Parameter	Minimum Concentration[(a)]		Maximum Concentration[(b)]		Units	Location of Maximum Concentration	Detection Frequency[(c)]	Range of Reporting Limits (min-max)	Background Value[(d)]	COPC?
Method 6010B - Metals											
7440-39-3	Barium	0.35	B	14.6	B	ug/100cm^2	115B-01	6/6	20-20	n/a	Yes
7440-47-3	Chromium	0.18	B	2.8		ug/100cm^2	115B-01	4/6	1.0-1.0	n/a	Yes
Method 8082 - Polychlorinated Biphenyls (PCBs)											
11096-82-5	Arolcor 1260	1.9		12		ug/100cm^2	115B-01	4/6	1.0-1.0	n/a	Yes
Method 8260B - Volatile Organic Chemicals (VOCs)											
78-93-3	2-Butanone	44		51		ug/100cm^2	115B-05	2/2	20-20	n/a	No[(e)]
108-10-1	4-Methyl-2-pentanone	1.1	J	1.3	J	ug/100cm^2	115B-05	2/2	20-20	n/a	No[(e)]
67-64-1	Acetone	15	JB	17	JB	ug/100cm^2	115B-05	2/2	20-20	n/a	No[(e)]
75-15-0	Carbon disulfide	0.52	J	2.4		ug/100cm^2	115B-05	2/2	5.0-5.0	n/a	No[(e)]
74-87-3	Chloromethane	0.64	J	0.64	J	ug/100cm^2	115B-06	1/2	10-10	n/a	No[(e)]
75-09-2	Methylene chloride	5.7		6.1		ug/100cm^2	115B-05	2/2	5.0-5.0	n/a	No[(e)]
127-18-4	Tetrachloroethene	0.6	J	0.6	J	ug/100cm^2	115B-05	1/2	5.0-5.0	n/a	No[(e)]
79-01-6	Trichloroethene	0.52	J	1.1	J	ug/100cm^2	115B-06	2/2	5.0-5.0	n/a	No[(e)]
Method 8270C - Semivolatile Organic Chemicals (SVOCs)											
95-48-7	2-Methylphenol	2.8	J	5.1	J	ug/100cm^2	115B-03	3/6	10-10	n/a	Yes
117-81-7	Bis(2-ethylhexyl)phthalate	5.7	J	12	J	ug/100cm^2	115B-02	3/6	10-10	n/a	Yes
85-68-7	Butyl benzyl phthalate	3.1	J	3.1	J	ug/100cm^2	115B-02	1/6	10-10	n/a	Yes
84-74-2	Di-n-butyl phthalate	2.5	J	5.2	J	ug/100cm^2	115B-01	5/6	10-10	n/a	Yes
118-74-1	Hexachlorobenzene	2.3	J	6.7	J	ug/100cm^2	115B-04	2/6	10-10	n/a	Yes
85-01-8	Phenanthrene	3.2	J	3.2	J	ug/100cm^2	115B-04	1/6	10-10	n/a	Yes

Notes:
(a) Minimum detected concentration.
(b) Maximum detected concentration.
(c) Number of detects/Number of samples
(d) Background comparison is not applicable for this risk assessment
(e) Chemical is not a COPC because all detected values are less than the highest concentration detected in the associated equipment, trip, or method blanks.
CAS = Chemical Abstracts Service
COPC = Chemical of Potential Concern
ug/100cm^2 = Micrograms per 100 square centimeters
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level. (organics)
B = (Inorganics) Estimated result. Result is less than reporting limit.
n/a = Not applicable
Min = Minimum
Max = Maximum

Table C1.3 Chemicals of Potential Concern for Room 118, TA-50, Building 37

CAS Number	Parameter	Minimum Concentration[a]		Maximum Concentration[b]		Units	Location of Maximum Concentration	Detection Frequency[c]	Range of Reporting Limits (min-max)	Background Value[d]	COPC?
Method 6010B - Metals											
7440-39-3	Barium	0.42	B	102		ug/100cm^2	118B-23	30/30	20-20	n/a	Yes
7440-47-3	Chromium	0.16	B	8.7		ug/100cm^2	118B-09	10/30	1.0-1.0	n/a	Yes
7439-92-1	Lead	1.2	B	6.6	B	ug/100cm^2	118B-29	6/30	10-10	n/a	Yes
Method 8260B - Volatile Organic Chemicals (VOCs)											
78-93-3	2-Butanone	25		45		ug/100cm^2	118B-30	2/2	20-20	n/a	No[e]
67-64-1	Acetone	15	JB	16	JB	ug/100cm^2	118B-31	2/2	20-20	n/a	No[e]
75-15-0	Carbon disulfide	0.36	J	2.9	J	ug/100cm^2	118B-30	2/2	5.0-5.0	n/a	No[e]
56-23-5	Carbon tetrachloride	0.76	JB	0.78	JB	ug/100cm^2	118B-31	2/2	5.0-5.0	n/a	No[e]
75-09-2	Methylene chloride	4.5	JB	9.1		ug/100cm^2	118B-31	2/2	5.0-5.0	n/a	No[e]
127-18-4	Tetrachloroethene	0.56	J	0.65	J	ug/100cm^2	118B-30	2/2	5.0-5.0	n/a	No[e]
79-01-6	Trichloroethene	1.4	JB	1.7	JB	ug/100cm^2	118B-30	2/2	5.0-5.0	n/a	No[e]

Notes:
(a) Minimum detected concentration.
(b) Maximum detected concentration.
(c) Number of detects/Number of samples
(d) Background comparison is not applicable for this risk assessment
(e) Chemical is not a COPC because all detected values are less than the highest concentration detected in the associated equipment, trip, or method blanks.
CAS = Chemical Abstracts Service
COPC = Chemical of Potential Concern
ug/100cm^2 = Micrograms per 100 square centimeters
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level. (organics)
B = (Inorganics) Estimated result. Result is less than reporting limit.
n/a = Not applicable
Min = Minimum
Max = Maximum

Table C1.9 Toxicity Values for Human Health Risk Assessment

Analyte	Oral Cancer Slope Factor (CSFo) $(mg/kg\text{-}d)^{-1}$		Air Unit Risk Factor (URF) $(\mu g/m^3)^{-1}$		Oral Reference Dose (RfDo) mg/kg-d		Inhalation Reference Conc. (RfC) mg/m^3	
Semivolatile Organic Chemicals (Method 8270C):								
2-Methylphenol	n/a		n/a		5.0E-02	x	1.8E-01	r
Bis(2-ethylhexyl)phthalate	1.4E-02	i	4.0E-06	r	2.0E-02	i	7.0E-02	r
Butyl benzyl phthalate	n/a		n/a		2.0E-01	i	7.0E-01	r
Di-n-butyl phthalate	n/a		n/a		1.0E-01	i	3.5E-01	r
Hexachlorobenzene	1.6E+00	i	4.6E-04	i	8.0E-04	i	2.8E-03	r
Phenanthrene[(a)]	n/a		n/a		3.0E-01	i	1.1E+00	r
Metals (Method 6010B):								
Barium	n/a		n/a		7.0E-02	i	2.5E-01	r
Chromium	n/a		1.2E-02	i	n/a		n/a	
Polychlorinated Biphenyls (Method 8082):								
Arolcor 1260	2.0E+00	i	5.7E-04	i	n/a		n/a	

Notes:
[(a)] Anthracene is used as a surrogate
Toxicity values were taken from EPA Region 6 Human Health Medium-Specific Screening Levels Table and are referenced as follows (EPA 2004):
i= Integrated Risk Information System (IRIS)
x= Withdrawn
r= Route-to-route extrapolation
n/a = Toxicity data for this chemical are not available.
mg/kg-d = Milligrams per kilogram-day
ug/m^3 = Micrograms per cubic meter
mg/m^3 = Milligrams per cubic meter

References:
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Table C1.12 Cumulative Noncarcinogenic Hazard Index for TA-50, Building 37, Room 115

Analyte	Room 115 EPC mg/m^2	Dermal Absorption Factor (ABS_d) unitless	Chronic Daily Intake			Noncarcinogenic Toxicity Factors			Hazard Quotient unitless
			Ingestion CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI mg/m^3	Ingestion RfD mg/kg-d	Dermal RfD mg/kg-d	Inhalation RfC mg/m^3	
Semivolatile Organic Chemicals (Method 8270C):									
2-Methylphenol	5.1E-01	1.0E-01	4.1E-06	4.1E-06	3.5E-06	5.0E-02	5.0E-02	1.8E-01	1.8E-04
Bis(2-ethylhexyl)phthalate	1.2E+00	1.0E-01	9.6E-06	9.6E-06	8.2E-06	2.0E-02	2.0E-02	7.0E-02	1.1E-03
Butyl benzyl phthalate	3.1E-01	1.0E-01	2.5E-06	2.5E-06	2.1E-06	2.0E-01	2.0E-01	7.0E-01	2.8E-05
Di-n-butyl phthalate	5.2E-01	1.0E-01	4.2E-06	4.2E-06	3.6E-06	1.0E-01	1.0E-01	3.5E-01	9.3E-05
Hexachlorobenzene	6.7E-01	1.0E-01	5.4E-06	5.4E-06	4.6E-06	8.0E-04	8.0E-04	2.8E-03	1.5E-02
Phenanthrene[(a)]	3.2E-01	1.3E-01	2.6E-06	3.3E-06	2.2E-06	3.0E-01	3.0E-01	1.1E+00	2.2E-05
Metals (Method 6010B):									
Barium	1.5E+00	0.0E+00	1.2E-05	0.0E+00	1.0E-05	7.0E-02	4.9E-03	2.5E-01	2.1E-04
Chromium	2.8E-01	0.0E+00	2.2E-06	0.0E+00	1.9E-06	n/a	n/a	n/a	n/a
Polychlorinated Biphenyls (Method 8082):									
Arolcor 1260	1.2E+00	1.4E-01	9.6E-06	1.3E-05	8.2E-06	n/a	n/a	n/a	n/a
								HAZARD INDEX:	**1.7E-02**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1991; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor (F_{s-m}), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG 2002
Conversion Factor 1 (CvF_1), cm/m =	1E+02	---
Dust Resuspension Factor (K), 1/cm =	1E-07	Linsley, 1978; Royal Society, 2002

Noncarcinogenic Chronic Daily Intake:

Ingestion:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times F_{s-m}}{BW \times AT_{nc}}$$

Dermal Contact:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times ABS_d}{BW \times AT_{nc}}$$

Inhalation:

$$CDI\ (mg/m^3) = \frac{EPC \times EF \times ED \times K \times CvF_1}{AT_{nc}}$$

Table C.13 Cumulative Carcinogenic Risk for TA-50, Building 37, Room 115

Analyte	Room 115 EPC mg/m^2	Dermal Absorption Factor (ABS_d) unitless	Chronic Daily Intake			Carcinogenic Toxicity Factors			Cancer Risk unitless
			Ingestion CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI ug/m^3	Ingestion CSF $(mg/kg\text{-}d)^{-1}$	Dermal CSF $(mg/kg\text{-}d)^{-1}$	Inhalation URF $(\mu g/m^3)^{-1}$	
Semivolatile Organic Chemicals (Method 8270C):									
2-Methylphenol	5.1E-01	1.0E-01	1.7E-06	1.7E-06	1.5E-03	n/a	n/a	n/a	n/a
Bis(2-ethylhexyl)phthalate	1.2E+00	1.0E-01	4.1E-06	4.1E-06	3.5E-03	1.4E-02	1.4E-02	4.0E-06	1.3E-07
Butyl benzyl phthalate	3.1E-01	1.0E-01	1.1E-06	1.1E-06	9.1E-04	n/a	n/a	n/a	n/a
Di-n-butyl phthalate	5.2E-01	1.0E-01	1.8E-06	1.8E-06	1.5E-03	n/a	n/a	n/a	n/a
Hexachlorobenzene	6.7E-01	1.0E-01	2.3E-06	2.3E-06	2.0E-03	1.6E+00	1.6E+00	4.6E-04	8.3E-06
Phenanthrene[(a)]	3.2E-01	1.3E-01	1.1E-06	1.4E-06	9.4E-04	n/a	n/a	n/a	n/a
Metals (Method 6010B):									
Barium	1.5E+00	0.0E+00	5.0E-06	0.0E+00	4.3E-03	n/a	n/a	n/a	n/a
Chromium	2.8E-01	0.0E+00	9.6E-07	0.0E+00	8.2E-04	n/a	n/a	1.2E-02	9.9E-06
Polychlorinated Biphenyls (Method 8082):									
Arolcor 1260	1.2E+00	1.4E-01	4.1E-06	5.8E-06	3.5E-03	2.0E+00	2.0E+00	5.7E-04	2.2E-05
								CARCINOGENIC RISK:	**4.0E-05**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, carcinogens (AT_c), days =	25,550	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor ($F_{s\text{-}m}$), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor ($F_{s\text{-}s}$), unitless =	0.05	WTCIATWG 2002
Conversion Factor 1 (CvF_1), cm/m =	1E+02	---
Conversion Factor 2 (CvF_2), ug/mg =	1E+03	---
Dust Resuspension Factor (K), 1/cm =	1E-07	Linsley, 1978; Royal Society, 2002

Carcinogenic Chronic Daily Intake:

Ingestion:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times F_{s\text{-}m}}{BW \times AT_c}$$

Dermal Contact:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times ABS_d}{BW \times AT_c}$$

Inhalation:

$$CDI\ (ug/m^3) \frac{EPC \times K \times EF \times ED \times CvF_1 \times CvF_2}{AT_c}$$

Table C.14 Noncarcinogenic Hazard Index for TA-50, Building 37, Room 118

Analyte	Room 118 EPC mg/m^2	Dermal Absorption Factor (ABSd) unitless	Chronic Daily Intake			Noncarcinogenic Toxicity Factors			Hazard Quotient unitless
			Ingestion CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI mg/m^3	Ingestion RfD mg/kg-d	Dermal RfD mg/kg-d	Inhalation RfC mg/m^3	
Metals (Method 6010B):									
Barium	1.02E+01	0.0E+00	8.2E-05	0.0E+00	7.0E-05	7.0E-02	4.9E-03	2.5E-01	1.5E-03
Chromium	8.70E-01	0.0E+00	7.0E-06	0.0E+00	6.0E-06	n/a	n/a	n/a	n/a
								HAZARD INDEX:	**1.5E-03**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1991; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Fraction Skin-to-Mouth Transfer (F_{s-m}), unitless =	0.1	WTCIATWG 2002
Fraction Surface-to-Skin Transfer (F_{s-s}), unitless =	0.05	WTCIATWG 2002
Conversion Factor 1 (CvF_1), cm/m =	1E+02	---
Dust Resuspension Factor (K), 1/cm =	1E-07	Linsley, 1978; Royal Society, 2002

Noncarcinogenic Chronic Daily Intake:

Ingestion:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times F_{s-m}}{BW \times AT_{nc}}$$

Dermal Contact:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times ABS_d}{BW \times AT_{nc}}$$

Inhalation:

$$CDI\ (mg/m^3) = \frac{EPC \times EF \times ED \times K \times CvF_1}{AT_{nc}}$$

Table C1.15 Cumulative Carcinogenic Risk for TA-50, Building 37, Room 118

Analyte	Room 118 EPC mg/m^2	Dermal Absorption Factor (ABSd) unitless	Chronic Daily Intake			Carcinogenic Toxicity Factors			Cancer Risk unitless
			Oral CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI ug/m^3	Oral CSF $(mg/kg\text{-}d)^{-1}$	Dermal CSF $(mg/kg\text{-}d)^{-1}$	Inhalation URF $(\mu g/m^3)^{-1}$	
Metals (Method 6010B):									
Barium	1.0E+01	0.0E+00	3.5E-05	0.0E+00	3.0E-02	n/a	n/a	n/a	n/a
Chromium	8.7E-01	0.0E+00	3.0E-06	0.0E+00	2.6E-03	n/a	n/a	1.2E-02	3.1E-05
								CARCINOGENIC RISK:	**3.1E-05**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, carcinogens (AT_c), days =	25,550	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Fraction Skin-to-Mouth Transfer ($F_{s\text{-}m}$), unitless =	0.1	WTCIATWG 2002
Fraction Surface-to-Skin Transfer ($F_{s\text{-}s}$), unitless =	0.05	WTCIATWG 2002
Conversion Factor 1 (CvF_1), cm/m =	1E+02	---
Conversion Factor 2 (CvF_2), ug/mg =	1E+03	---
Dust Resuspension Factor (K), 1/cm =	1E-07	Linsley, 1978; Royal Society, 2002

Carcinogenic Chronic Daily Intake:

Ingestion:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times F_{s\text{-}m}}{BW \times AT_c}$$

Dermal Contact:

$$CDI\ (mg/kg\text{-}d) = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times ABS_d}{BW \times AT_c}$$

Inhalation:

$$CDI\ (ug/m^3) \frac{EPC \times K \times EF \times ED \times CvF_1 \times CvF_2}{AT_c}$$

Table C1.16 Risks Associated with Adult Exposures to Lead on Indoor Surfaces, TA-50-37, Room 118

Exposure Parameter	Exposure Parameter Description	Units	Parameter	Reference
Pb_{sw}	Lead concentration on wipe[(a)]	ug/cm^2	0.066	Maximum Observed
$PbB_{fetal\ goal}$	Goal for the 95th percentile fetal blood lead concentration	ug/dL	10.0	EPA 2003
PbB_o	Baseline blood concentration in absence of site exposure	ug/dL	2.2	EPA 2003[(b)]
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	EPA 2003
SF_{ing}	Ingestion Slope Factor	ug/dL per ug/day	0.04	FDA 1990; DTSC 2000
SF_{derm}	Dermal Slope Factor	ug/dL per ug/day	0.0001	DTSC 2000
SF_{inh}	Inhalation Slope Factor	ug/dL per ug/m^3	1.64	EPA 1986; DTSC 2000
ABS_d	Dermal Absorption Factor	--	0.0006	DTSC 2000
GSD	Geometric standard deviation of PbBadult	--	1.8	EPA 2003
SA_h	Surface Area (hands, adult female)	cm^2/event	817	EPA 2001
SA_{uex}	Surface Area (upper extremities, adult female)	cm^2/event	2,220	EPA 2001
EV	Exposure Events per Day	events/day	2	Assumed
F_{s-s}	Fraction Transferred from Surface to Skin	--	0.05	WTCIATWG 2002
F_{s-m}	Fraction Transferred from Skin to Mouth	--	0.1	WTCIATWG 2002
K	Dust Resuspension Factor	cm^{-1}	1.0E-07	Linsley 1978; Royal Society 2002
CF	Conversion Factor	cm^3/m^3	1.E+06	--
EF	Exposure Frequency	days/yr	250	EPA 1989
AT	Averaging Time	days/yr	365	EPA 2003
Surface Swipe Model Results[(c)]				
PbBadult = PbB_0 + [(Pbsw*(EF/AT)*((SFing*SAh*EV*Fs-s*Fs-m) + (SFderm*SAuex*EV*Fs-s*ABSd) + (SFinh*K*CF)] =				**2.2E+00**
$PbB_{fetal} = PbB_{adult} * R_{fetal/maternal}$ =				**2.0E+00**
$PbB_{fetal,\ 0.95} = PbB_{fetal} * (GSD^{1.645})$ =				**5.3E+00**
$P(PbB_{fetal} > PbB_{(fetal,goal)}$[(d)] (%) =				**0.31%**

Notes:

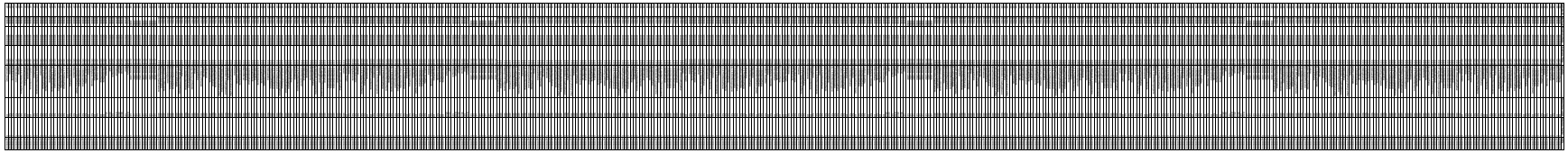
a Wipe concentrations are reported in units of $\mu g/100cm^2$

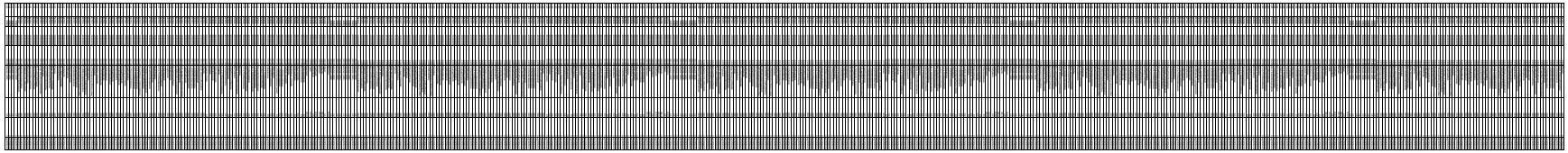
b Upper value of plausible range reported for U.S. women ages 20-49 years.

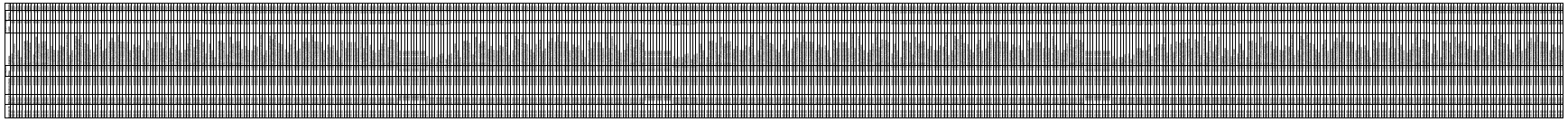
c Equations based on Equations 1-3 in EPA (2003)

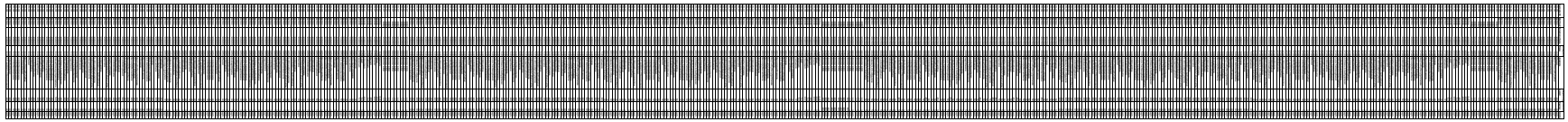
d Probability that fetal PbB > $PbB_{fetal,goal}$, assuming lognormal distribution with mean concentration

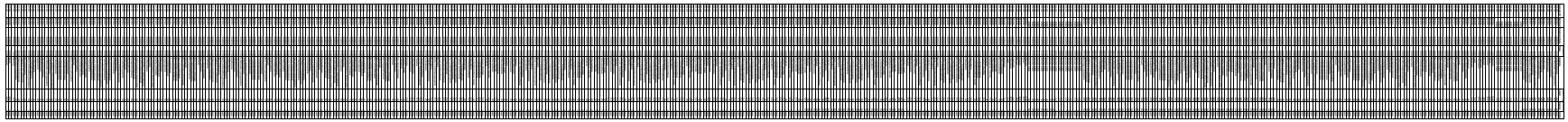
SAMPLE_ID	SAMPLE_N	LOT_NO	SAMP_DAT	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	ONDETECT	LAB_CODE	UNITS	METHOD	METHOD_	MATRIX	DILFACTO
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	86	20			UG/100CM	8260B	SW846	WIPE	1
TB-02	002	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	84	20			UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	82	20			UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.9	20		J	UG/100CM	8260B	SW846	WIPE	1
TB-02	002	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.9	20		J	UG/100CM	8260B	SW846	WIPE	1
TB-03	003	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.7	20		J	UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.6	20		J	UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	29	20		B	UG/100CM	8260B	SW846	WIPE	1
TB-02	002	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	33	20		B	UG/100CM	8260B	SW846	WIPE	1
TB-03	003	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	29	20		B	UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	34	20		B	UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.54	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-02	002	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.98	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-03	003	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	1.0	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.84	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	0.58	10		J	UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	0.60	10		J	UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	7.9	5.0			UG/100CM	8260B	SW846	WIPE	1
TB-02	002	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM	8260B	SW846	WIPE	1
TB-03	003	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.88	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-02	002	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.98	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-03	003	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.55	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	1.4	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-01	001	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.65	5.0		J	UG/100CM	8260B	SW846	WIPE	1
TB-04	004	F4D17019	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	1.6	5.0		J	UG/100CM	8260B	SW846	WIPE	1
F4D28000	335	F4D170193				04/28/04	MB	67-64-1	ACETONE	4.4	20		J	UG/100CM	8260B	SW846	WIPE	1

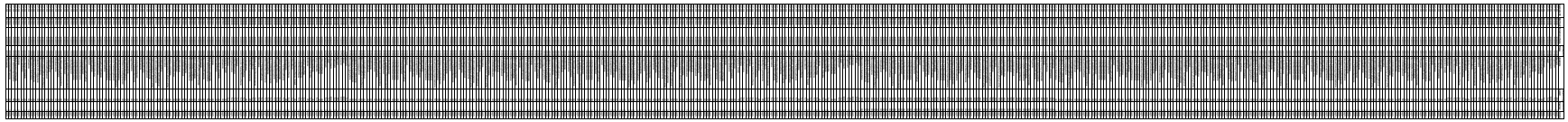


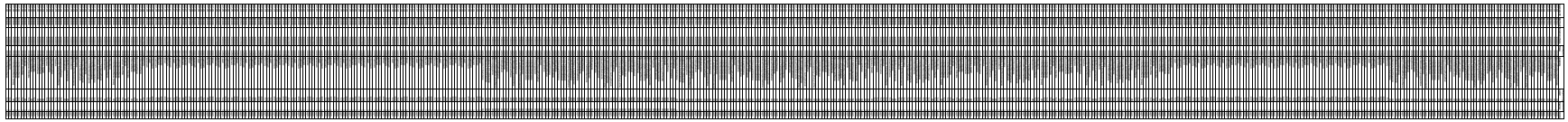


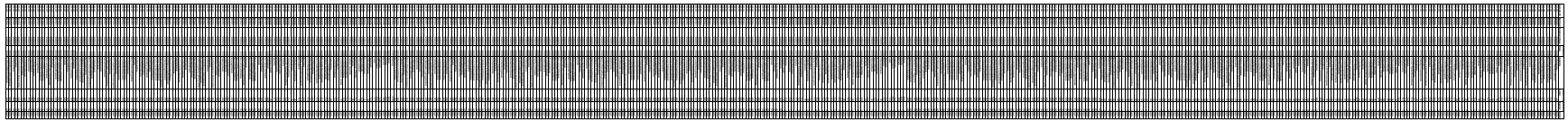


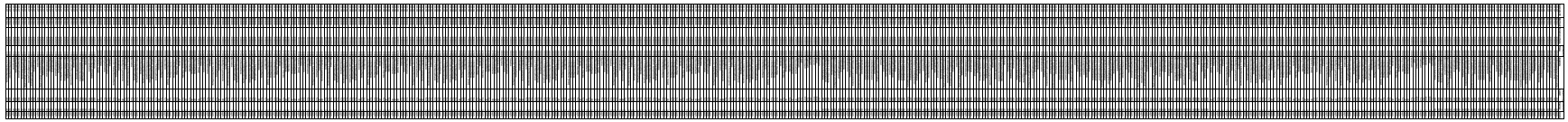


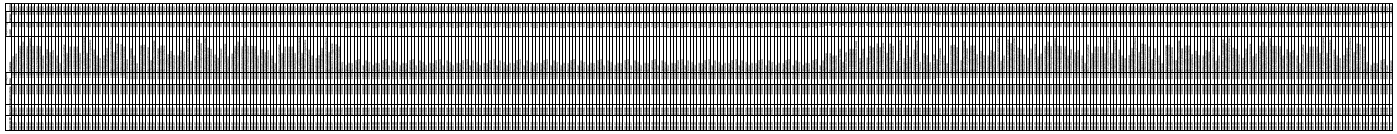


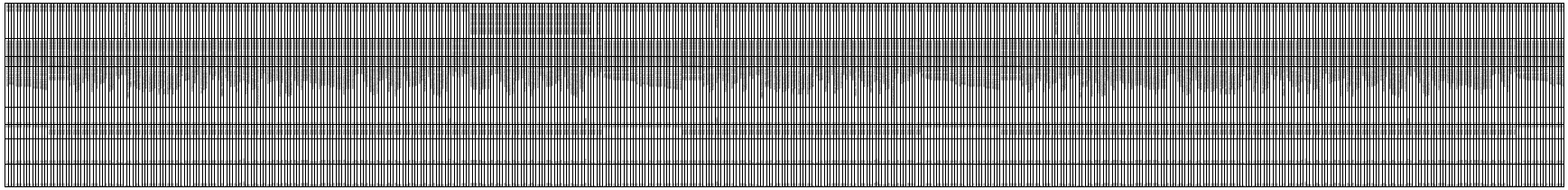


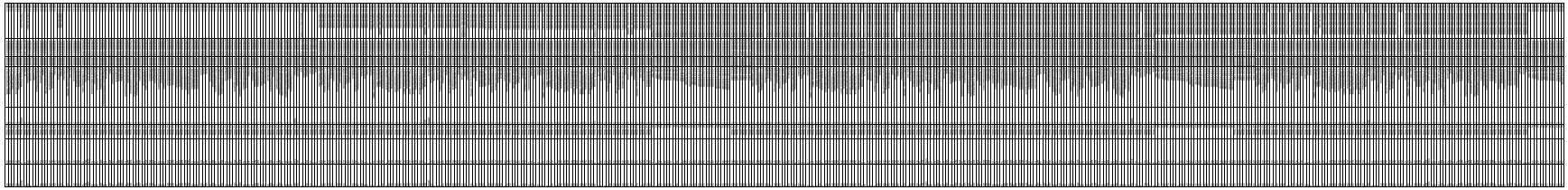












APPENDIX D
Detection Limits and Uncertainty Associated with Analytical Data

Table D-1
Range of Reporting Limits for Verification Samples (September 2003), TA-50-37, Room 115

Analytical Method	Analyte	Minimum RL (µg/L)	Maximum RL [a] (µg/L)	EPA Region 6 MSSL (µg/L)
Polychlorinated biphenyls (Method 8082)	Aroclor 1016	***1.0***	***100***	0.96
	Aroclor 1221	***1.0***	***100***	0.034
	Aroclor 1232	***1.0***	***100***	0.034
	Aroclor 1242	***1.0***	***100***	0.034
	Aroclor 1248	***1.0***	***100***	0.034
	Aroclor 1254	***1.0***	***100***	0.034
	Aroclor 1260	***1.0***	***100***	0.034
	Aroclor 1262	***1.0***	***100***	0.034
	Aroclor 1268	***1.0***	***100***	0.034
Total Metals (Method 6010B)	Arsenic	***10***	***10***	0.045
	Barium	200	200	2,600
	Cadmium	5.0	5.0	18
	Chromium	10	10	110
	Lead	5.0	5.0	15
	Selenium	5.0	5.0	180
	Silver	10	10	180
Mercury (Method 7470A)	Mercury	0.2	0.2	11
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	50	840
	1,1,2,2-Tetrachloroethane	***5.0***	***50***	0.055
	1,1,2-Trichloroethane	***5.0***	***50***	0.2
	1,1-Dichloroethane	5.0	50	810
	1,1-Dichloroethene	5.0	50	340
	1,2-Dichloroethane	***5.0***	***50***	0.12
	1,2-Dichloroethene (total)	10	100	61
	1,2-Dichloropropane	***5.0***	***50***	0.16
	2-Butanone	20	200	7,100
	2-Hexanone	20	200	n/a
	4-Methyl-2-pentanone	20	200	2,000
	Acetone	20	200	33,000
	Benzene	***5.0***	***50***	0.35
	Bromodichloromethane	***5.0***	***50***	0.18
	Bromoform	5.0	50	8.5
	Bromomethane	***10***	***100***	8.7
	Carbon disulfide	5.0	50	1,000
	Carbon tetrachloride	***5.0***	***50***	0.17
	Chlorobenzene	5.0	50	110
	Chloroethane	***10***	***100***	3.9
	Chloroform	5.0	50	75
	Chloromethane	***10***	***100***	1.5
	cis-1,3-Dichloropropene	***5.0***	***50***	0.4
	Dibromochloromethane	***5.0***	***50***	0.13
	Ethylbenzene	5.0	50	1,300
	Methylene chloride	***5.0***	***50***	4.3
	Styrene	5.0	50	1,600
Volatile Organic Compounds (Method 8260B)	Tetrachloroethene	***5.0***	***50***	0.1
	Toluene	5.0	50	720
	trans-1,3-Dichloropropene	***5.0***	***50***	0.4
	Trichloroethene	***5.0***	***50***	0.028
	Vinyl chloride	***5.0***	***50***	0.043
	Xylenes (total)	10	100	200
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	***10***	***100***	8.2
	1,2-Dichlorobenzene	10	100	61
	1,3-Dichlorobenzene	10	100	18
	1,4-Dichlorobenzene	***10***	***100***	0.47
	2,2'-oxybis(1-Chloropropane)	10	100	n/a
	2,4,5-Trichlorophenol	10	100	3,700
	2,4,6-Trichlorophenol	***10***	***100***	6.1
	2,4-Dichlorophenol	10	100	110
	2,4-Dimethylphenol	10	100	730
	2,4-Dinitrophenol	50	500	73
	2,4-Dinitrotoluene	10	100	73
	2,6-Dinitrotoluene	10	100	37
	2-Chloronaphthalene	10	100	490
	2-Chlorophenol	10	100	30
	2-Methylnaphthalene	10	100	n/a
	2-Methylphenol	10	100	1,800
	2-Nitroaniline	***50***	***500***	1.1
	2-Nitrophenol	10	100	n/a
	3,3'-Dichlorobenzidine	***50***	***500***	0.15
	3-Nitroaniline	50	500	n/a
	4,6-Dinitro-2-methylphenol	50	500	n/a
	4-Bromophenyl phenyl ether	10	100	n/a
	4-Chloro-3-methylphenol	10	100	n/a
	4-Chloroaniline	10	100	150
	4-Chlorophenyl phenyl ether	10	100	n/a
	4-Methylphenol	20	200	180
	4-Nitroaniline	50	500	n/a
	4-Nitrophenol	50	500	290
	Acenaphthene	10	100	370
	Acenaphthylene	10	100	n/a
	Anthracene	10	100	1,800
	Benzo(a)anthracene	***10***	***100***	0.092
	Benzo(a)pyrene	***10***	***100***	0.0092
	Benzo(b)fluoranthene	***10***	***100***	0.092
	Benzo(g,h,i)perylene	10	100	n/a
	Benzo(k)fluoranthene	***10***	***100***	0.92
	Bis(2-chloroethoxy)methane	10	100	n/a
	Bis(2-chloroethyl)ether	***10***	***100***	0.0098
Semivolatile Organic Compounds (Method 8270C)	Bis(2-ethylhexyl)phthalate	***10***	***100***	4.8
	Butyl benzyl phthalate	10	100	7,300
	Carbazole	***10***	***100***	3.4
	Chrysene	***10***	***100***	9.2
	Dibenz(a,h)anthracene	***10***	***100***	0.0092
	Dibenzofuran	10	100	12
	Diethyl phthalate	10	100	29,000
	Dimethyl phthalate	10	100	370,000
	Di-n-butyl phthalate	10	100	3,700
	Di-n-octyl phthalate	10	100	1,500
	Fluoranthene	10	100	1,500
	Fluorene	10	100	240
	Hexachlorobenzene	***10***	***100***	0.042
	Hexachlorobutadiene	***10***	***100***	0.86
	Hexachlorocyclopentadiene	50	500	220
	Hexachloroethane	***10***	***100***	4.8
	Indeno(1,2,3-cd)pyrene	***10***	***100***	0.092
	Isophorone	10	100	71
	Naphthalene	***10***	***100***	6.2
	Nitrobenzene	***10***	***100***	3.4
	N-Nitrosodi-n-propylamine	***10***	***100***	0.0096
	N-nitrosodiphenylamine	10	100	14
	Pentachlorophenol	***50***	***500***	0.56
	Phenanthrene	10	100	n/a
	Phenol	10	100	11,000
	Pyrene	10	100	180

a. Results for diluted and undiluted samples were provided by the laboratory.

RL = Reporting limit. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^n) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/L = Micrograms per liter
MSSL = Medium Specific Screening Level
EPA = U.S. Environmental Protection Agency
n/a = Not available

Table D-2
Range of Reporting Limits for Swipe Samples (April 2004), TA-50-37, Room 115

Analytical Method	Analyte	Minimum RL (µg/100 cm^2)	Maximum RL (µg/100 cm^2)
Polychlorinated biphenyls (Method 8082)	Aroclor 1016	1.0	1.0
	Aroclor 1221	1.0	1.0
	Aroclor 1232	1.0	1.0
	Aroclor 1242	1.0	1.0
	Aroclor 1248	1.0	1.0
	Aroclor 1254	1.0	1.0
	Aroclor 1260	1.0	1.0
	Aroclor 1262	1.0	1.0
	Aroclor 1268	1.0	1.0
Total Metals (Method 6010B)	Arsenic	30	30
	Barium	20	20
	Cadmium	0.5	0.5
	Chromium	1.0	1.0
	Lead	10	10
	Selenium	25	25
	Silver	1.0	1.0
Mercury (Method 7471A)	Mercury	0.02	0.02
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	5.0
	1,1,2,2-Tetrachloroethane	5.0	5.0
	1,1,2-Trichloroethane	5.0	5.0
	1,1-Dichloroethane	5.0	5.0
	1,1-Dichloroethene	5.0	5.0
	1,2-Dichloroethane	5.0	5.0
	1,2-Dichloroethene (Total)	10	10
	1,2-Dichloropropane	5.0	5.0
	2-Butanone	20	20
	2-Hexanone	20	20
	4-Methyl-2-pentanone	20	20
	Acetone	20	20
	Benzene	5.0	5.0
	Bromodichloromethane	5.0	5.0
	Bromoform	5.0	5.0
	Bromomethane	10	10
	Carbon disulfide	5.0	5.0
	Carbon tetrachloride	5.0	5.0
	Chlorobenzene	5.0	5.0
	Chloroethane	10	10
	Chloroform	5.0	5.0
	Chloromethane	10	10
	cis-1,3-Dichloropropene	5.0	5.0
	Dibromochloromethane	5.0	5.0
	Ethylbenzene	5.0	5.0
	Methylene chloride	5.0	5.0
	Styrene	5.0	5.0
	Tetrachloroethene	5.0	5.0
	Toluene	5.0	5.0
	trans-1,3-Dichloropropene	5.0	5.0
Volatile Organic Compounds (Method 8260B)	Trichloroethene	5.0	5.0
	Vinyl chloride	5.0	5.0
	Xylenes (Total)	10	10
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	10	10
	1,2-Dichlorobenzene	10	10
	1,3-Dichlorobenzene	10	10
	1,4-Dichlorobenzene	10	10
	2,2'-Oxybis(1-chloropropane)	10	10
	2,4,5-Trichlorophenol	10	10
	2,4,6-Trichlorophenol	10	10
	2,4-Dichlorophenol	10	10
	2,4-Dimethylphenol	10	10
	2,4-Dinitrophenol	50	50
	2,4-Dinitrotoluene	10	10
	2,6-Dinitrotoluene	10	10
	2-Chloronaphthalene	10	10
	2-Chlorophenol	10	10
	2-Methylnaphthalene	10	10
	2-Methylphenol	10	10
	2-Nitroaniline	50	50
	2-Nitrophenol	10	10
	3,3'-Dichlorobenzidine	50	50
	3-Nitroaniline	50	50
	4,6-Dinitro-2-methylphenol	50	50
	4-Bromophenyl phenyl ether	10	10
	4-Chloro-3-methylphenol	10	10
	4-Chloroaniline	10	10
	4-Chlorophenyl phenyl ether	10	10
	4-Methylphenol	20	20
	4-Nitroaniline	50	50
	4-Nitrophenol	50	50
	Acenaphthene	10	10
	Acenaphthylene	10	10
	Anthracene	10	10
	Benzo(a)anthracene	10	10
	Benzo(a)pyrene	10	10
	Benzo(b)fluoranthene	10	10
	Benzo(g,h,i)perylene	10	10
	Benzo(k)fluoranthene	10	10
	Bis(2-chloroethoxy)methane	10	10
	Bis(2-chloroethyl)ether	10	10
	Bis(2-ethylhexyl)phthalate	10	10
	Butyl benzyl phthalate	10	10
	Carbazole	10	10
	Chrysene	10	10
	Dibenzo(a,h)anthracene	10	10
	Dibenzofuran	10	10
Semivolatile Organic Compounds (Method 8270C)	Diethyl phthalate	10	10
	Dimethyl phthalate	10	10
	Di-n-butyl phthalate	10	10
	Di-n-octyl phthalate	10	10
	Fluoranthene	10	10
	Fluorene	10	10
	Hexachlorobenzene	10	10
	Hexachlorobutadiene	10	10
	Hexachlorocyclopentadiene	50	50
	Hexachloroethane	10	10
	Indeno(1,2,3-cd)pyrene	10	10
	Isophorone	10	10
	Naphthalene	10	10
	Nitrobenzene	10	10
	N-Nitrosodi-n-propylamine	10	10
	N-Nitrosodiphenylamine	10	10
	Pentachlorophenol	50	50
	Phenanthrene	10	10
	Phenol	10	10
	Pyrene	10	10

RL = Reporting limit. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^n) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/100 cm^2 = Micrograms per 100 square centimeters

SAMPLE_ID	SAMPLE_NO	LOT_NO	SAMPDATE	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	VQ	LAB_CODE	UNITS	METHOD	METHOD_REF	MATRIX	DILFACTOR
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	3.2	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1

SAMPLE_ID	SAMPLE_NO	LOT_NO	SAMP_DATE	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	NONDETECTS	LAB_CODE	UNITS	METHOD	METHOD_REF	MATRIX	DILFACTOR
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	8.3	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	14.2	1.0			UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	2.8	10.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	4.0	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	67-64-1	ACETONE	12	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.67	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	0.95	20		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	0.53	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	0.66	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	5.6	10		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	1.2	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.49	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.62	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	3.4	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.19	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	5.1	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.3	1.0			UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	4.0	10.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	4.3	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	67-64-1	ACETONE	8.0	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.89	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	0.56	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	0.47	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	3.6	10		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.51	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	5.8	5.0			UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	67-64-1	ACETONE	18	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	1.7	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	48	20			UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.63	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1

SAMPLE_ID	SAMPLE_NO	LOT_NO	SAMP_DATE	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	NONDETECTS	LAB_CODE	UNITS	METHOD	METHOD_	MATRIX
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	79-01-6	TRICHLOROETHENE	1.7	5.0		JB	UG/100CM^2	8260B	SW846	WIPE
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	79-01-6	TRICHLOROETHENE	1.4	5.0		JB	UG/100CM^2	8260B	SW846	WIPE

SAMPLE_ID	SAMPLE_NO	LOT_NO	SAMP_DATE	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	NONDETEC	LAB_CODE	UNITS	METHOD	METHOD_	MATRIX	DILFACTOR
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	0.58	10		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	7.9	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	29	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.54	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTA	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	86	20			UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.65	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.9	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.88	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHAN	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	33	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.98	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTA	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	84	20			UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.71	5.0	ND	J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.9	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.98	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHAN	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	29	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	1.0	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTA	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.51	5.0	ND	J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.7	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.55	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHAN	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	0.60	10		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	34	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.84	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTA	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	82	20			UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	1.6	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.6	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	1.4	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHAN	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-09-2	METHYLENE CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	67-64-1	ACETONE	4.4	20		J	UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-15-0	CARBON DISULFIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	540-59-0	1,2-DICHLOROETHENE (TOTA	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	79-01-6	TRICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	10061-02-6	TRANS-1,3-DICHLOROPROPE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	127-18-4	TETRACHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	79-34-5	1,1,2,2-TETRACHLOROETHAN	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	108-60-1	2,2'-OXYBIS(1-CHLOROPROP/	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	621-64-7	N-NITROSODI-N-PROPYLAMII	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	111-91-1	BIS(2-CHLOROETHOXY)METH	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	59-50-7	4-CHLORO-3-METHYLPHENO	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	77-47-4	HEXACHLOROCYCLOPENTAI	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	7005-72-3	4-CHLOROPHENYL PHENYL E	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	534-52-1	4,6-DINITRO-2-METHYLPHEN(	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	101-55-3	4-BROMOPHENYL PHENYL E'	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	84-74-2	DI-N-BUTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	117-81-7	BIS(2-ETHYLHEXYL)PHTHALA	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11096-82-5	AROCLOR 1260	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1

SAMPLE_ID	SAMPLE_NO	LOT_NO	SAMP_DATE	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	NONDETECT	LAB_CODE	UNITS	METHOD	METHOD_	MATRIX	DILFAC
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	8.0			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	230			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	8.2			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	110-54-3	HEXANE	12			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	250			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	6.5			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	110-54-3	HEXANE	11			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	200			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	7.7			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	220			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	15			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	26			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.6			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	6.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	4.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	8.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	4.5			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	7.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	27			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	66			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	11			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	58			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	8.4			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	35			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	120			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	94			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	5.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	7.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.8			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC	112-84-5	ERUCYLAMIDE	15			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	17			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.9			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	25			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	60			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.6			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	52			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	33			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	110			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	6.3			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	75			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	80-05-7	PHENOL, 4,4'-(1-METHYLETHYLIDE	8.6			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.3			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	4.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	18			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.4			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	26			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	67			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	72			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	35			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	120			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	110			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	80-05-7	PHENOL, 4,4'-(1-METHYLETHYLIDE	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	112-84-5	ERUCYLAMIDE	7.8			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	24			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	15			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC	141-79-7	3-PENTEN-2-ONE, 4-METHYL-	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	7.5			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.4			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.3			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.8			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	4.9			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	24			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	60			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		NONADECANE	8.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	51			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	31			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.9			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	110			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	78			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	7.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	5.9			M	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA TIC	141-78-6	ETHYL ACETATE	120			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	18			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	140			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	111-77-3	ETHANOL, 2-(2-METHOXYETHOXY)-	13			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	7.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	50			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	37			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	25			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	93			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	62			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	5.7			M	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	8.9			M	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	20			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC	141-78-6	ETHYL ACETATE	120			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	5.6			M	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA TIC		UNKNOWN	7.2			M	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA TIC		UNKNOWN ORGANIC ACID	5.8			M	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	18			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	22			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	9.2			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA TIC	141-78-6	ETHYL ACETATE	140			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	16			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	19			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	140			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	10			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	11			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	18			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.0			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	128-37-0	BUTYLATED HYDROXYTOLUENE	7.5			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	24			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	70			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	28			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	5.3			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	25			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	37			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	130			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	41			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN	5.7			M	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN	5.1			M	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN	8.0			M	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC	110-54-3	HEXANE	17			Q	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC	141-78-6	ETHYL ACETATE	110			Q	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN	5.1			M	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN ALKANE	12			M	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	17			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	18			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	11			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN AMINE	8.7			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	11			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	17			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	52			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	44			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC	79-74-3	1,4-BENZENEDIOL, 2,5-BIS(1,1-D	42			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	27			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	100			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	82			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.8			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA TIC	110-54-3	HEXANE	13			Q	UG/100CM^2	8260B	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	5.3			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	17			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN ALDOL CONDENSATE	110			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	9.4			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC	57-11-4	OCTADECANOIC ACID	4.5			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	27			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	5.4			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	6.7			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	8.5			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	9.2			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	140			M	UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193					MB TIC		UNKNOWN	11			M	UG/100CM^2	8270C	SW846	WIPE	1

SAMPLE_ID	SAMPLE_NO	LOT_NO	SAMPDATE	SAMPTIME	RECDATE	ANALDATE	ALIQUOT	CASRN	PARAMETER	RESULT	RL	VQ	LAB_CODE	UNITS	METHOD	METHOD_RE	MATRIX	DILFACTOR
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	14.6	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	2.8	1.0			UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	12	1.0			UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	2.8	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	2.3	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	5.2	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	5.7	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	1.7	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.3	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	6.0	1.0			UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	3.1	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	12	10			UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	2.6	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	2.4	1.0			UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	1.9	1.0			UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	5.1	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	3.5	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	6.9	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	10.8	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.18	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	11	1.0			UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	3.8	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	6.7	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	3.2	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	4.0	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.35	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	6.1	5.0			UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	67-64-1	ACETONE	17	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	2.4	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	51	20			UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.52	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	1.3	20		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	0.60	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	2.6	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.36	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	0.64	10		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	5.7	5.0			UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	67-64-1	ACETONE	15	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	0.52	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	44	20			UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	1.1	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	1.1	20		J	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1

115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	2.5	10		J	UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	8.3	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	14.2	1.0			UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	2.8	10.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	4.0	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	67-64-1	ACETONE	12	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.67	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	0.95	20		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	0.53	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	0.66	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	5.6	10		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	1.2	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-02	012	F4D170193	04/15/04	2:09 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.49	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-03	013	F4D170193	04/15/04	2:10 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.62	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-04	014	F4D170193	04/15/04	2:21 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	3.4	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.19	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-05	015	F4D170193	04/15/04	2:22 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	5.1	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.3	1.0			UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	4.0	10.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	4.3	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	67-64-1	ACETONE	8.0	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.89	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	0.56	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	0.47	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	3.6	10		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	0.51	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11096-82-5	AROCLOR 1260	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-09-2	METHYLENE CHLORIDE	5.8	5.0			UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	67-64-1	ACETONE	18	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-15-0	CARBON DISULFIDE	1.7	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	78-93-3	2-BUTANONE	48	20			UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	79-01-6	TRICHLOROETHENE	0.63	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	127-18-4	TETRACHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	1.5	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-01	018	F4D170193	04/15/04	11:24 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	2.6	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-02	019	F4D170193	04/15/04	11:15 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	6.9	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.48	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	1.7	10.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-03	020	F4D170193	04/15/04	11:11 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	1.6	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-04	021	F4D170193	04/15/04	11:01 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	3.2	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.72	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	3.8	10.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-05	022	F4D170193	04/15/04	11:06 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	2.2	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-06	023	F4D170193	04/15/04	10:58 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	2.2	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	0.34	1.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-07	024	F4D170193	04/15/04	10:52 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	2.3	20.0		B	UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7440-47-3	CHROMIUM	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7439-92-1	LEAD	10.0	10.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/21/04	SA	7782-49-2	SELENIUM	25.0	25.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-08	025	F4D170193	04/15/04	10:46 AM	04/17/04	04/20/04	SA	7439-97-6	MERCURY	0.020	0.020	ND		UG/100CM^2	7471A	SW846	WIPE	1
118B-09	026	F4D170193	04/15/04	11:28 AM	04/17/04	04/21/04	SA	7440-22-4	SILVER	1.0	1.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-09	026	F4D170193	04/15/04	11:28 AM	04/17/04	04/21/04	SA	7440-38-2	ARSENIC	30.0	30.0	ND		UG/100CM^2	6010B	SW846	WIPE	1
118B-09	026	F4D170193	04/15/04	11:28 AM	04/17/04	04/21/04	SA	7440-39-3	BARIUM	88.3	20.0			UG/100CM^2	6010B	SW846	WIPE	1
118B-09	026	F4D170193	04/15/04	11:28 AM	04/17/04	04/21/04	SA	7440-43-9	CADMIUM	0.50	0.50	ND		UG/100CM^2	6010B	SW846	WIPE	1
[illegible]																		

118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/27/04	SA	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/27/04	SA	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-09-2	METHYLENE CHLORIDE	4.5	5.0		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	67-64-1	ACETONE	15	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-15-0	CARBON DISULFIDE	2.9	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	78-93-3	2-BUTANONE	45	20			UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	56-23-5	CARBON TETRACHLORIDE	0.76	5.0		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	79-01-6	TRICHLOROETHENE	1.7	5.0		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	127-18-4	TETRACHLOROETHENE	0.65	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	84-74-2	DI-N-BUTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	05/03/04	SA	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-09-2	METHYLENE CHLORIDE	9.1	5.0		B	UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	67-64-1	ACETONE	16	20		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-15-0	CARBON DISULFIDE	0.36	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	78-93-3	2-BUTANONE	25	20			UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	56-23-5	CARBON TETRACHLORIDE	0.78	5.0		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	79-01-6	TRICHLOROETHENE	1.4	5.0		JB	UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	127-18-4	TETRACHLOROETHENE	0.56	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
118B-31	048	F4D170193	04/15/04	12:12 PM	04/17/04	04/29/04	SA	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	0.58	10		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	7.9	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	29	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.54	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	86	20			UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.65	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.9	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.88	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	33	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.98	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	84	20			UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.71	5.0	ND	J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.9	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.98	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	29	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	1.0	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	0.51	5.0	ND	J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.7	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	0.55	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-87-3	CHLOROMETHANE	0.60	10		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-09-2	METHYLENE CHLORIDE	8.4	5.0			UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-64-1	ACETONE	34	20		B	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-15-0	CARBON DISULFIDE	0.84	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-93-3	2-BUTANONE	82	20			UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-01-6	TRICHLOROETHENE	1.6	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-10-1	4-METHYL-2-PENTANONE	1.6	20		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	127-18-4	TETRACHLOROETHENE	1.4	5.0		J	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	74-87-3	CHLOROMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	74-83-9	BROMOMETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-01-4	VINYL CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-00-3	CHLOROETHANE	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-09-2	METHYLENE CHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	67-64-1	ACETONE	4.4	20		J	UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-15-0	CARBON DISULFIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-35-4	1,1-DICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-34-3	1,1-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	540-59-0	1,2-DICHLOROETHENE (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	67-66-3	CHLOROFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	107-06-2	1,2-DICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	78-93-3	2-BUTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	71-55-6	1,1,1-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	56-23-5	CARBON TETRACHLORIDE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-27-4	BROMODICHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	78-87-5	1,2-DICHLOROPROPANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	10061-01-5	CIS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	79-01-6	TRICHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	124-48-1	DIBROMOCHLOROMETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	79-00-5	1,1,2-TRICHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	71-43-2	BENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	75-25-2	BROMOFORM	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	108-10-1	4-METHYL-2-PENTANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	591-78-6	2-HEXANONE	20	20	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	127-18-4	TETRACHLOROETHENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	79-34-5	1,1,2,2-TETRACHLOROETHANE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	108-88-3	TOLUENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	108-90-7	CHLOROBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	100-41-4	ETHYLBENZENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	100-42-5	STYRENE	5.0	5.0	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D280000	335	F4D170193				04/28/04	MB	1330-20-7	XYLENES (TOTAL)	10	10	ND		UG/100CM^2	8260B	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	108-95-2	PHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	111-44-4	BIS(2-CHLOROETHYL)ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-57-8	2-CHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	541-73-1	1,3-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	106-46-7	1,4-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-50-1	1,2-DICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-48-7	2-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	108-60-1	2,2'-OXYBIS(1-CHLOROPROPANE)	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	106-44-5	4-METHYLPHENOL	20	20	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	621-64-7	N-NITROSODI-N-PROPYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	67-72-1	HEXACHLOROETHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	98-95-3	NITROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	78-59-1	ISOPHORONE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	88-75-5	2-NITROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	105-67-9	2,4-DIMETHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	120-83-2	2,4-DICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	120-82-1	1,2,4-TRICHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-20-3	NAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	106-47-8	4-CHLOROANILINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	87-68-3	HEXACHLOROBUTADIENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	59-50-7	4-CHLORO-3-METHYLPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-57-6	2-METHYLNAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	77-47-4	HEXACHLOROCYCLOPENTADIENE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	88-06-2	2,4,6-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	95-95-4	2,4,5-TRICHLOROPHENOL	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-58-7	2-CHLORONAPHTHALENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	88-74-4	2-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	131-11-3	DIMETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	208-96-8	ACENAPHTHYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	606-20-2	2,6-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	99-09-2	3-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	83-32-9	ACENAPHTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	51-28-5	2,4-DINITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	100-02-7	4-NITROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	132-64-9	DIBENZOFURAN	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	121-14-2	2,4-DINITROTOLUENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	84-66-2	DIETHYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	86-73-7	FLUORENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	100-01-6	4-NITROANILINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	86-30-6	N-NITROSODIPHENYLAMINE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	101-55-3	4-BROMOPHENYL PHENYL ETHER	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	118-74-1	HEXACHLOROBENZENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	87-86-5	PENTACHLOROPHENOL	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	85-01-8	PHENANTHRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	120-12-7	ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	86-74-8	CARBAZOLE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	84-74-2	DI-N-BUTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	206-44-0	FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	129-00-0	PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	85-68-7	BUTYL BENZYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	56-55-3	BENZO(A)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	91-94-1	3,3'-DICHLOROBENZIDINE	50	50	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	218-01-9	CHRYSENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	117-84-0	DI-N-OCTYL PHTHALATE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	205-99-2	BENZO(B)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	207-08-9	BENZO(K)FLUORANTHENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	50-32-8	BENZO(A)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	193-39-5	INDENO(1,2,3-CD)PYRENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	191-24-2	BENZO(G,H,I)PERYLENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	562	F4D170193				05/03/04	MB	53-70-3	DIBENZO(A,H)ANTHRACENE	10	10	ND		UG/100CM^2	8270C	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	12674-11-2	AROCLOR 1016	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11104-28-2	AROCLOR 1221	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11141-16-5	AROCLOR 1232	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	53469-21-9	AROCLOR 1242	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	12672-29-6	AROCLOR 1248	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11097-69-1	AROCLOR 1254	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11096-82-5	AROCLOR 1260	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	37324-23-5	AROCLOR 1262	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
F4D230000	559	F4D170193				04/27/04	MB	11100-14-4	AROCLOR 1268	1.0	1.0	ND		UG/100CM^2	8082	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	8.0			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-01	001	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	230			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	8.2			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	110-54-3	HEXANE	12			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-02	002	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	250			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	6.5			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	110-54-3	HEXANE	11			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-03	003	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	200			Q	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC		UNKNOWN	7.7			M	UG/100CM^2	8260B	SW846	WIPE	1
TB-04	004	F4D170193	04/15/04	3:37 PM	04/17/04	04/28/04	TB TIC	141-78-6	ETHYL ACETATE	220			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	15			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	26			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.6			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	6.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	4.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	8.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	4.5			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	7.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	27			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	66			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	11			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	58			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	8.4			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	35			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	120			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	94			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	5.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	7.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.8			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-01	005	F4D170193	04/15/04	9:59 AM	04/17/04	05/03/04	SA TIC	112-84-5	ERUCYLAMIDE	15			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	17			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.9			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	25			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	60			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.6			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	52			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	33			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	110			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	6.3			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	75			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC	80-05-7	PHENOL, 4,4'-(1-METHYLETHYLIDE	8.6			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-02	006	F4D170193	04/15/04	9:56 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.3			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	4.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	18			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.4			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	26			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	67			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	72			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	35			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	120			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	110			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	80-05-7	PHENOL, 4,4'-(1-METHYLETHYLIDE	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC	112-84-5	ERUCYLAMIDE	7.8			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-03	007	F4D170193	04/15/04	9:45 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	24			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	15			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC	141-79-7	3-PENTEN-2-ONE, 4-METHYL-	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	130			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	10			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	7.5			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.4			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	8.3			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	9.8			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	4.9			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	24			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	60			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		NONADECANE	8.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	51			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	6.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	31			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.9			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	110			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	78			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	4.2			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	7.0			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-04	008	F4D170193	04/15/04	10:07 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	5.9			M	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	04/28/04	SA TIC	141-78-6	ETHYL ACETATE	120			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	18			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	22			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	140			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	111-77-3	ETHANOL, 2-(2-METHOXYETHOXY)-	13			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	7.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	14			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	16			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	50			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	37			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	25			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	93			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.1			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	62			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.7			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-05	009	F4D170193	04/15/04	9:11 AM	04/17/04	05/03/04	SA TIC		UNKNOWN	12			M	UG/100CM^2	8270C	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	5.7			M	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	8.9			M	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	20			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC	141-78-6	ETHYL ACETATE	120			Q	UG/100CM^2	8260B	SW846	WIPE	1
115B-06	010	F4D170193	04/15/04	9:13 AM	04/17/04	04/28/04	SA TIC		UNKNOWN	5.6			M	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA TIC		UNKNOWN	7.2			M	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA TIC		UNKNOWN ORGANIC ACID	5.8			M	UG/100CM^2	8260B	SW846	WIPE	1
117B-01	011	F4D170193	04/15/04	2:36 PM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	18			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-06	016	F4D170193	04/15/04	2:39 PM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	22			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA TIC	110-54-3	HEXANE	9.2			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	04/28/04	SA TIC	141-78-6	ETHYL ACETATE	140			Q	UG/100CM^2	8260B	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	16			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	19			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ALDOL CONDENSATE	140			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	10			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	111-92-2	1-BUTANAMINE, N-BUTYL-	11			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	100-45-8	4-CYANOCYCLOHEXENE	18			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	5.0			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	128-37-0	BUTYLATED HYDROXYTOLUENE	7.5			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC	5806-73-5	PHENOL, 2-(1,1-DIMETHYLETHYL)-	24			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	70			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	28			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ALKANE	5.3			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	25			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	37			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN	130			M	UG/100CM^2	8270C	SW846	WIPE	1
117B-07	017	F4D170193	04/15/04	3:14 PM	04/17/04	05/03/04	SA TIC		UNKNOWN ORGANIC ACID	41			M	UG/100CM^2	8270C	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN	5.7			M	UG/100CM^2	8260B	SW846	WIPE	1
118B-30	047	F4D170193	04/15/04	12:07 PM	04/17/04	04/29/04	SA TIC		UNKNOWN	5.1			M	UG/100CM^2	8260B	SW846	WIPE	1

01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	5.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	75-7-0.0	1.1.0000000000000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	5.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700	1100-700-0	1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1
01/08/10	007	0300-0100-01	00/00/01	00:00:00	00/00/00	00/00/01	5a-700		1000001000	0.0		00	1341000000*7	000000	000000	00000	1

This file contains FINAL wipe sample analytical results from TA-50-37, Rooms 115, 117, and 118
Worksheets in this file contain the following information:

MASTER_DB: contains all wipe sample analytical results for rooms 115, 117, and 118 (Bldg 37); sampled 4/15/04 and received by Severn Trent Laboratiories on 4/17/04 in addition to trip blank results, method blank results, and TICs
115B_ALL DATA: contains only analytical results from room 115
117B_ALL DATA: contains only analytical results from room 117
118B_ALL DATA: contains only analytical results from room 118
TRIP&METHOD BLANKS: contains analyticla results for trip and method blanks

Data were manually entered from hardcopy by J. Sanders on 5/10/04 and 5/11/04 and are considered FINAL
Data contained in this file are manually entered and have undergone a QC review for data entry errors.
See project file for check print sheets.
For method blank data, the Sample ID is the MB Lot Sample Number
Qualifier definitions are as follows:
J = Estimated result. Result is less than RL.
B = Estimated result. Result is less than RL. (inorganics)
B = Method blank contamination. The associated method blank contains the target analyte at a reportable level. (c
Q = Result was quantitated against the response factor of a calibration standard.
M = Result was measured against nearest internal standard assuming a response factor of 1.

organics)

Table D-3
Range of Reporting Limits for Verification Samples (September 2003), TA-50-37, Room 118

Analytical Method	Analyte	Minimum RL (µg/L)	Maximum RL (µg/L)	EPA Region 6 MSSL (µg/L)
Total Metals (Method 6010B)	Arsenic	***10***	***10***	0.045
	Barium	200	200	2,600
	Cadmium	5.0	5.0	18
	Chromium	10	10	110
	Lead	5.0	5.0	15
	Selenium	5.0	5.0	180
	Silver	10	10	180
Mercury (Method 7470A)	Mercury	0.2	0.2	11
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	5.0	840
	1,1,2,2-Tetrachloroethane	***5.0***	***5.0***	0.055
	1,1,2-Trichloroethane	***5.0***	***5.0***	0.2
	1,1-Dichloroethane	5.0	5.0	810
	1,1-Dichloroethene	5.0	5.0	340
	1,2-Dichloroethane	***5.0***	***5.0***	0.12
	1,2-Dichloroethene (total)	10	10	61
	1,2-Dichloropropane	***5.0***	***5.0***	0.16
	2-Butanone	20	20	7,100
	2-Hexanone	20	20	n/a
	4-Methyl-2-pentanone	20	20	2,000
	Acetone	20	20	33,000
	Benzene	***5.0***	***5.0***	0.35
	Bromodichloromethane	***5.0***	***5.0***	0.18
	Bromoform	5.0	5.0	8.5
	Bromomethane	***10***	***10***	8.7
	Carbon disulfide	5.0	5.0	1,000
	Carbon tetrachloride	***5.0***	***5.0***	0.17
	Chlorobenzene	5.0	5.0	110
	Chloroethane	***10***	***10***	3.9
	Chloroform	5.0	5.0	75
	Chloromethane	***10***	***10***	1.5
	cis-1,3-Dichloropropene	***5.0***	***5.0***	0.4
	Dibromochloromethane	***5.0***	***5.0***	0.13
	Ethylbenzene	5.0	5.0	1,300
	Methylene chloride	***5.0***	***5.0***	4.3
	Styrene	5.0	5.0	1,600
	Tetrachloroethene	***5.0***	***5.0***	0.1
	Toluene	5.0	5.0	720
	trans-1,3-Dichloropropene	***5.0***	***5.0***	0.4
	Trichloroethene	***5.0***	***5.0***	0.028
	Vinyl chloride	***5.0***	***5.0***	0.043
	Xylenes (total)	10	10	200
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	***100***	***100***	8.2
	1,2-Dichlorobenzene	***100***	***100***	61
	1,3-Dichlorobenzene	***100***	***100***	18
	1,4-Dichlorobenzene	***100***	***100***	0.47
	2,2'-oxybis(1-Chloropropane)	100	100	n/a
	2,4,5-Trichlorophenol	100	100	3,700
	2,4,6-Trichlorophenol	***100***	***100***	6.1
	2,4-Dichlorophenol	100	100	110
	2,4-Dimethylphenol	100	100	730
	2,4-Dinitrophenol	***500***	***500***	73
	2,4-Dinitrotoluene	***100***	***100***	73
	2,6-Dinitrotoluene	***100***	***100***	37
	2-Chloronaphthalene	100	100	490
	2-Chlorophenol	***100***	***100***	30
	2-Methylnaphthalene	100	100	n/a
	2-Methylphenol	100	100	1,800
	2-Nitroaniline	***500***	***500***	1.1
	2-Nitrophenol	100	100	n/a
	3,3'-Dichlorobenzidine	***500***	***500***	0.15
	3-Nitroaniline	500	500	n/a
	4,6-Dinitro-2-methylphenol	500	500	n/a
	4-Bromophenyl phenyl ether	100	100	n/a
	4-Chloro-3-methylphenol	100	100	n/a
	4-Chloroaniline	100	100	150
	4-Chlorophenyl phenyl ether	100	100	n/a
	4-Methylphenol	***200***	***200***	180
	4-Nitroaniline	500	500	n/a
	4-Nitrophenol	***500***	***500***	290
	Acenaphthene	100	100	370
	Acenaphthylene	100	100	n/a
	Anthracene	100	100	1,800
	Benzo(a)anthracene	***100***	***100***	0.092
	Benzo(a)pyrene	***100***	***100***	0.0092
	Benzo(b)fluoranthene	***100***	***100***	0.092
	Benzo(g,h,i)perylene	100	100	n/a
	Benzo(k)fluoranthene	***100***	***100***	0.92
	Bis(2-chloroethoxy)methane	100	100	n/a
	Bis(2-chloroethyl)ether	***100***	***100***	0.0098
	Bis(2-ethylhexyl)phthalate	***100***	***100***	4.8
	Butyl benzyl phthalate	100	100	7,300
	Carbazole	***100***	***100***	3.4
	Chrysene	***100***	***100***	9.2
	Dibenz(a,h)anthracene	***100***	***100***	0.0092
	Dibenzofuran	***100***	***100***	12
	Diethyl phthalate	100	100	29,000
Semivolatile Organic Compounds (Method 8270C)	Dimethyl phthalate	100	100	370,000
	Di-n-butyl phthalate	100	100	3,700
	Di-n-octyl phthalate	100	100	1,500
	Fluoranthene	100	100	1,500
	Fluorene	100	100	240
	Hexachlorobenzene	***100***	***100***	0.042
	Hexachlorobutadiene	***100***	***100***	0.86
	Hexachlorocyclopentadiene	***500***	***500***	220
	Hexachloroethane	***100***	***100***	4.8
	Indeno(1,2,3-cd)pyrene	***100***	***100***	0.092
	Isophorone	***100***	***100***	71
	Naphthalene	***100***	***100***	6.2
	Nitrobenzene	***100***	***100***	3.4
	N-Nitrosodi-n-propylamine	***100***	***100***	0.0096
	N-nitrosodiphenylamine	***100***	***100***	14
	Pentachlorophenol	***500***	***500***	0.56
	Phenanthrene	100	100	n/a
	Phenol	100	100	11,000
	Pyrene	100	100	180

RL = Reporting limit. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^{n}) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/L = Micrograms per liter
MSSL = Medium Specific Screening Level
EPA = U.S. Environmental Protection Agency
n/a = Not available

Table D-4
Range of Reporting Limits for Swipe Samples (April 2004), TA-50-27, Room 118

Analyte	Analytical Method	Minimum RL (µg/100 cm^2)	Maximum RL (µg/100 cm^2)
Total Metals (Method 6010B)	Arsenic	30	30
	Barium	20	20
	Cadmium	0.5	0.5
	Chromium	1.0	1.0
	Lead	10	10
	Selenium	25	25
	Silver	1.0	1.0
Mercury (Method 7471A)	Mercury	0.02	0.02
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	5.0
	1,1,2,2-Tetrachloroethane	5.0	5.0
	1,1,2-Trichloroethane	5.0	5.0
	1,1-Dichloroethane	5.0	5.0
	1,1-Dichloroethene	5.0	5.0
	1,2-Dichloroethane	5.0	5.0
	1,2-Dichloroethene (Total)	10	10
	1,2-Dichloropropane	5.0	5.0
	2-Butanone	20	20
	2-Hexanone	20	20
	4-Methyl-2-pentanone	20	20
	Acetone	20	20
	Benzene	5.0	5.0
	Bromodichloromethane	5.0	5.0
	Bromoform	5.0	5.0
	Bromomethane	10	10
	Carbon disulfide	5.0	5.0
	Carbon tetrachloride	5.0	5.0
	Chlorobenzene	5.0	5.0
	Chloroethane	10	10
	Chloroform	5.0	5.0
	Chloromethane	10	10
	cis-1,3-Dichloropropene	5.0	5.0
	Dibromochloromethane	5.0	5.0
	Ethylbenzene	5.0	5.0
	Methylene chloride	5.0	5.0
	Styrene	5.0	5.0
	Tetrachloroethene	5.0	5.0
	Toluene	5.0	5.0
	trans-1,3-Dichloropropene	5.0	5.0
	Trichloroethene	5.0	5.0
	Vinyl chloride	5.0	5.0
	Xylenes (Total)	10	10
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	10	10
	1,2-Dichlorobenzene	10	10
	1,3-Dichlorobenzene	10	10
Semivolatile Organic Compounds (Method 8270C)	1,4-Dichlorobenzene	10	10
	2,2'-Oxybis(1-chloropropane)	10	10
	2,4,5-Trichlorophenol	10	10
	2,4,6-Trichlorophenol	10	10
	2,4-Dichlorophenol	10	10
	2,4-Dimethylphenol	10	10
	2,4-Dinitrophenol	50	50
	2,4-Dinitrotoluene	10	10
	2,6-Dinitrotoluene	10	10
	2-Chloronaphthalene	10	10
	2-Chlorophenol	10	10
	2-Methylnaphthalene	10	10
	2-Methylphenol	10	10
	2-Nitroaniline	50	50
	2-Nitrophenol	10	10
	3,3'-Dichlorobenzidine	50	50
	3-Nitroaniline	50	50
	4,6-Dinitro-2-methylphenol	50	50
	4-Bromophenyl phenyl ether	10	10
	4-Chloro-3-methylphenol	10	10
	4-Chloroaniline	10	10
	4-Chlorophenyl phenyl ether	10	10
	4-Methylphenol	20	20
	4-Nitroaniline	50	50
	4-Nitrophenol	50	50
	Acenaphthene	10	10
	Acenaphthylene	10	10
	Anthracene	10	10
	Benzo(a)anthracene	10	10
	Benzo(a)pyrene	10	10
	Benzo(b)fluoranthene	10	10
	Benzo(g,h,i)perylene	10	10
	Benzo(k)fluoranthene	10	10
	Bis(2-chloroethoxy)methane	10	10
	Bis(2-chloroethyl)ether	10	10
	Bis(2-ethylhexyl)phthalate	10	10
	Butyl benzyl phthalate	10	10
	Carbazole	10	10
	Chrysene	10	10
	Dibenzo(a,h)anthracene	10	10
	Dibenzofuran	10	10
	Diethyl phthalate	10	10
	Dimethyl phthalate	10	10
	Di-n-butyl phthalate	10	10
Semivolatile Organic Compounds (Method 8270C)	Di-n-octyl phthalate	10	10
	Fluoranthene	10	10
	Fluorene	10	10
	Hexachlorobenzene	10	10
	Hexachlorobutadiene	10	10
	Hexachlorocyclopentadiene	50	50
	Hexachloroethane	10	10
	Indeno(1,2,3-cd)pyrene	10	10
	Isophorone	10	10
	Naphthalene	10	10
	Nitrobenzene	10	10
	N-Nitrosodi-n-propylamine	10	10
	N-Nitrosodiphenylamine	10	10
	Pentachlorophenol	50	50
	Phenanthrene	10	10
	Phenol	10	10
	Pyrene	10	10

RL = Reporting limit. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^0) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/100 cm^2 = Micrograms per 100 square centimeters

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
Controlled Air Incinerator (CAI) Exhaust Equipment

Revision 0.0

LA-UR-04-5472
August 2004

Facility ID No.: NM0890010515

Facility Name: Los Alamos National Laboratory

Legal Owner: U.S. Department of Energy

Legal Operators: U.S. Department of Energy
Los Alamos Area Office
528 35th Street
Los Alamos, New Mexico 87544

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LIST OF ACRONYMS/ABBREVIATIONS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CAI	Controlled Air Incinerator
CFR	Code of Federal Regulations
cm^2	square centimeters
COPC	chemicals of potential concern
CSU	container storage unit
DOE	U.S. Department of Energy
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
ft	feet or foot
HEPA	high efficiency particulate air
HHRA	human health risk assessment
HI	Hazard index
HQ	Hazard quotient
LANL	Los Alamos National Laboratory
MSSL	Medium Specific Screening Level
NMED	New Mexico Environment Department
NIOSH	National Institute of Occupational Safety and Health
PCB	Polychlorinated biphenyl
PPE	personal protective equipment
QA	quality assurance
QC	quality control
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act

LIST OF ACRONYMS/ABBREVIATIONS (continued)

SVOC	semivolatile organic compounds
SW-846	*"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"*
SWRC	Risk Reduction and Environmental Stewardship Division - Solid Waste Regulatory Compliance Group
TA	technical area
VOC	volatile organic compounds
WTCIATWG	World Trade Center Indoor Air Taskforce Working Group

EXECUTIVE SUMMARY

This Closure Certification Report describes the closure activities implemented to clean close the Technical Area (TA) 50, Building 37 (TA-50-37) Controlled Air Incinerator (CAI) Exhaust Equipment at the Los Alamos National Laboratory (LANL). The closure activities were implemented in accordance with the procedures outlined in the following documents:

- Vigil-Holterman, Luciana, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA-50-37),* Los Alamos National Laboratory (LANL), February 3, 2003.
- Vozella, Joseph, Letter to Mr. Carl Will, *Closure Procedure for the Exhaust System at Technical Area 50, Building 37 (TA-50-37) Los Alamos National Laboratory (LANL)*, August 25, 2003.
- *LANL Hazardous Waste Facility Permit*, Attachment E.4, NM0890010515, November 8, 1989, hereinafter referred to as the Closure Plan.

The TA-50-37 CAI Exhaust Equipment was sampled for total metals, semivolatile organic compounds, volatile organic compounds, polychlorinated biphenyls, and dioxin/furans to demonstrate clean closure in accordance with at least one of the following criteria:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.
2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.
4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Table ES-1 and ES-2 provides a summary of the constituents detected during verification sampling of the CAI Exhaust Equipment. Each constituent was compared to the results of blank/baseline samples to demonstrate closure in accordance with criterion 2 as listed above. Those detected constituents that could not meet criterion 2 were used to identify locations that required further evaluation during risk assessment. Table ES-2 summarizes the results of the risk assessment.

Based upon the results of the risk assessment provided in Table ES-2 and the demonstration closure summarized in Table ES-1 and ES-2, this Closure Certification Report concludes that the TA-50-37 CAI Exhaust Equipment is clean closed in accordance with the Closure Plan.

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
Controlled Air Incinerator (CAI) Exhaust Equipment

1.0 INTRODUCTION

The information provided in this Closure Certification Report is submitted to describe the closure activities implemented to clean close the Technical Area (TA) 50, Building 37 (TA-50-37) Controlled Air Incinerator (CAI) Exhaust Equipment at the Los Alamos National Laboratory (LANL). These closure activities will minimize the need for further maintenance, preclude the release of hazardous constituents to environmental media, and be protective of human health in accordance with the closure performance standards specified in New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1.500 NMAC), (incorporating Code of Federal Regulations [CFR], Title 40 §264.111), revised October 1, 2003.

The closure activities described in this report were implemented in accordance with the procedures outlined in the following documents:

- Vigil-Holterman, Luciana, Letter to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA-50-37),* Los Alamos National Laboratory (LANL), February 3, 2003.
- Vozella, Joseph, Letter to Mr. Carl Will, *Closure Procedure for the Exhaust System at Technical Area 50, Building 37 (TA-50-37) Los Alamos National Laboratory (LANL)*, August 25, 2003.
- *LANL Hazardous Waste Facility Permit*, Attachment E.4, NM0890010515, November 8, 1989, hereinafter referred to as the Closure Plan.

1.1 Background

TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south (Figures 1-1 and 1-2). TA-50-37 previously housed the CAI associated with the Treatment Development Facility at LANL. This incinerator received a Toxic Substances Control Act incineration permit in 1984, and a Resource Conservation and Recovery Act (RCRA) operating permit for hazardous waste in 1989. In 1995, it was determined that waste incineration would not be performed at the CAI. In 1996, closure of the CAI was initiated in accordance with an

approved New Mexico Environment Department (NMED) closure plan. The closure plan for the CAI is located in Attachment E.4 of the LANL Hazardous Waste Facility Permit, approved on November 8, 1989. This closure plan was amended July 1, 1996 prior to the commencement of closure proceedings for the CAI. Section E.4.3.2 of the closure plan states that components of the CAI may be reused or disposed of as waste after closure. The U.S. Department of Energy/University of California will utilize the remaining components of the CAI Exhaust Equipment for non-RCRA activities after completion of closure. The RCRA closure of the equipment will follow the approved CAI closure plan in accordance with 20.4.1.6 NMAC, incorporating 40 CFR §264.112 (e), revised October 1, 2003, which states:

> *"Nothing in this section shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure."*

The CAI Closure Certification Report was submitted April 22, 1998 and approved by the NMED. The closure left the exhaust stack, ducts, high efficiency particulate air (HEPA) filter bank, plenum, and fans in place for continued use by other projects. Table 1-1 provides a list of hazardous waste constituents and applicable U.S. Environmental Protection Agency Hazardous Waste Numbers found during closure of the CAI as discussed in *Los Alamos National Laboratory Controlled-Air Incinerator Resource Conservation and Recovery Act Closure Certification Report and Certification* (Benchmark, 1998).

The CAI Closure Certification Report, Section 1.3.3, states that during characterization, three exhaust stack samples were collected. The sample collected from the top portion of the exhaust stack indicated an arsenic level of 0.34 parts per billion. No other hazardous waste constituents were detected. Section 1.3.3 also indicates that the HEPA filters were disposed of and plenums decontaminated in accordance with the CAI closure plan.

1.2 Purpose

The purpose of this Closure Certification Report is to document the implementation of closure activities for the CAI Exhaust Equipment. Additionally, this report presents the independent registered professional engineer's closure certification as required by 20.4.1.600 NMAC, (incorporating 40 CFR §264.115), revised October 1, 2003.

2.0 PERFORMANCE OF CLOSURE

The information provided in this section documents the implementation and completion of the closure activities for the Controlled Air Incinerator (CAI) Exhaust Equipment located at Technical Area (TA) 50. Closure was performed in accordance with *LANL Hazardous Waste Facility Permit*, Attachment E.4, NM0890010515, November 8, 1989, hereinafter referred to as the Closure Plan and provided in Appendix A. The operating record, field logbook, analytical data, chain of custody documentation, and decontamination waste disposal records in support of the completed closure activities at the CAI Exhaust Equipment will be maintained by the Los Alamos National Laboratory (LANL) Solid Waste Regulatory Compliance (SWRC) Group and the certifying engineer.

2.1 Description

The CAI Exhaust Equipment is located at TA-50-37 and includes the exhaust stack, ducts, high efficiency particulate air (HEPA) filter bank in Room 112, plenum (bag house), and fans (Figure 2-1). The CAI Exhaust Equipment was left in place after closure of the CAI due to the continued use of Rooms 115, 117, and 118 as hazardous and mixed waste container storage areas. These areas are no longer in use and are being closed simultaneously with the CAI Exhaust Equipment.

Mr. Steve Jetter of the New Mexico Environment Department (NMED) Hazardous Waste Bureau and representatives from the LANL SWRC group toured TA-50-37 on January 21, 2003 to identify appropriate sample locations for closure of the CAI Exhaust Equipment. These sample locations are shown on Figures 2-1, 2-2 and 2-3 as identified in a letter from Luciana Vigil-Holterman to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL),* on February 3, 2003 (Appendix B).

2.2 Pre-Closure Inspection

The CAI Exhaust Equipment was inspected by LANL and contract personnel prior to the commencement of closure activities. This inspection identified each sample location and hazards associated with access. The sample locations were found to be located inside confined spaces marked as radiological control areas (RCA). The presence of radiological contamination

inside the ductwork prevented a detailed inspection of the interior surfaces associated with the locations in the Room 112 HEPA filter bank and plenum/bag house.

Potential safety hazards were identified during the pre-closure inspection include; thermal exhaustion of workers wearing personal protective equipment (PPE) that includes a respirator; falls from a height greater than 6 feet (ft) due to the use of a scaffold or man-lift to access sample locations (Figure 2-4); access to non-permit required confined spaces associated with ducting, HEPA filter banks, and bag house; and access to ducting that is marked as a RCA requiring a Radiological Work Plan. All potential hazards were addressed in accordance with Site-Specific Health and Safety Plan No. 03-12 and Addendum No. 1 for the CSU closure activities at TA-50-37 (Shaw Environmental, 2003 and 2004).

2.3 Closure Activities

Closure activities for the CAI Exhaust Equipment consisted of swipe sampling the interior surfaces of the ducting, HEPA filter banks, ventilation valve, and plenum/bag house. The activities commenced on September 18, 2003 and were completed on April 16, 2004. The following sections provide a detailed description of the steps taken to collect the necessary samples to verify clean closure.

2.3.1 Sample Event #1, September 2003

Verification of clean closure for the CAI Exhaust Equipment was conducted using swipe samples in accordance with the *NIOSH Manual of Analytical Methods* (National Institute of Occupational Safety and Health [NIOSH], 1996) for surface wipe samples used to detect lead and its compounds. This method included wipe down of the discrete surface to be sampled using a wipe saturated with an appropriate collection media for the analytes to be sampled for. The following steps were followed for each surface:

1. Don a clean pair of gloves.
2. Remove the swipe from its sample jar and/or packaging.
3. Fold the swipe into fourths.
4. Wipe the surface to be sampled with firm pressure using an overlapping “S” pattern to cover the entire surface area with horizontal strokes (approximately 100 square centimeters [cm^2]).
5. Fold the swipe, exposed side in, and place into a clean hard-walled sample container.
6. Seal the container and label.
7. Repeat steps 2 - 6 for all analytes to be sampled for at that location.

8. Discard gloves.

Table 2-1 provides a list of all of the samples collected in September 2003 for the CAI Exhaust Equipment and includes the sample types, locations, descriptions, and requested analysis. Sample Event #1 included collection of samples from five discrete locations in the CAI Exhaust Equipment. Each of these locations presented unique accessibility complications including heights in excess of 10 ft, confined spaces, RCAs, and potential airborne radiological contamination. To overcome these obstacles, the closure and sampling teams worked together to provide the following solutions:

- Room 112 Valve & Instrumentation Port – Located approximately 25 ft high and posted as an RCA. Used a hydraulic man-lift and extension ladder to gain access. Opening an active RCA ducting system required the use of respirators and Level C PPE (Figure 2-5).
- Bag House – Located in a confined space and posted as an RCA. Avoided the confined space by not entering. This required using extension poles to collect the samples. Opening an active RCA ducting system required the use of respirators and Level C PPE (Figures 2-6, 2-7, and 2-8).
- Room 112 HEPA Filter Bank Left Transition and Straight Pipe – Located approximately 15 ft high, in a confined space, and posted RCA. Used scaffolding to gain access. Avoided confined space by not entering. Used the gasket glovebag to remove the HEPA filter for access. The glovebag was punctured so that an extension pole could be used to access the straight section of pipe and transition. Opening an active RCA ducting system required the use of respirators and Level C PPE (Figure 2-9).

The right side of the HEPA filter bank at the transition and elbow in Room 112 (Figure 2-2) was located approximately 15 ft high, in a confined space, and posted as an RCA. During Sample Event #1 these locations were found to be inaccessible due to a missing bag-out bag for the HEPA filter. This required that the workers stop work in order to maintain radiological hazard containment; new hazards identified required evaluation per LANL policies and associated work authorization documents to be revised as well as the continuing need to maintain any radiological exposure to the worker as low as reasonably achievable, a U.S. Department of Energy requirement.

2.3.1.1 Baseline Samples

Three baseline samples were collected to determine if the materials used during sampling and/or the environment contributed any contaminants to the samples. The baseline samples were collected by handling the swipes wearing nitrile gloves and/or wiping the swipe on the

sample collection equipment. The swipe was then packaged in a container and labeled for analysis. Table 2-1 includes a list of all baseline samples collected during Sample Event #1.

2.3.1.2 Quality Assurance/Quality Control Samples

The requisite quality assurance (QA)/quality control (QC) samples were prepared and/or collected in accordance with Section E.4.9 of the Closure Plan (Appendix A). Trip blanks were prepared for each of the sample shipping coolers and a field duplicate set of samples was collected from the bag house. A field blank was also prepared and exposed to the site during sampling. Table 2-1 identifies the QA/QC samples collected during Sample Event #1.

2.3.2 Sample Event #2, April 2004

Swipe sampling was continued at the CAI Exhaust Equipment in April 2004. This included collection of swipes from the HEPA filter bank right side transition and elbow, and the outside bag house horizontal and vertical transitions. This sample event also added a swipe for dioxin/furans. The swipes were collected in accordance with the *NIOSH Manual of Analytical Methods* (NIOSH, 1996) as described in Section 2.3.1 of this report. Table 2-2 provides a list of all of the samples collected during Sample Event #2. Each of these locations presented unique accessibility problems including heights in excess of 10 ft, confined spaces, RCAs, and airborne radiological contamination. To overcome these problems the closure and sampling teams worked together to provide the following solutions:

- Room 112 HEPA Filter Bank Right Transition and Elbow – Located approximately 15 ft high, in a confined space, and posted RCA. Used scaffolding to gain access (Figure 2-10). Avoided confined space by not entering. Used the gasket glovebag to remove the HEPA filter for access. The glovebag was punctured so that an extension pole could be used to access the straight section of pipe and transition. Opening an active RCA ducting system required the use of respirators and Level C PPE (Figures 2-11 through 2-14).

- Bag House – Located in a confined space and posted as an RCA. Avoided the confined space by not entering. This required using extension poles to collect the samples. Opening an active RCA ducting system required the use of respirators and Level C PPE (Figures 2-11 through 2-14).

2.3.2.1 Baseline Samples

Two baseline samples were collected to determine if the materials used during sampling and/or the environment contributed any contaminants to the samples. The baseline samples were collected by handling the swipes wearing nitrile gloves and/or wiping the swipe on the sample

collection equipment. The swipe was then packaged in a hard walled container and labeled for analysis. Table 2-2 provides a list of the baseline samples collected during Sample Event #2.

2.3.2.2 Quality Assurance/Quality Control Samples

The requisite QA/QC samples were prepared and/or collected in accordance with Section E.4.9 of the Closure Plan (Appendix A). Trip blanks were prepared for each of the sample shipping coolers and a field duplicate set of samples was collected from the bag house. A field blank was also prepared and exposed to the site during sampling. Table 2-2 identifies the QA/QC samples collected during Sample Event #2.

2.4 Deviations from the Closure Plan

There were no closure plan modifications or amendments as described in 20.4.1.500 NMAC (incorporating 40 CFR §264.112[c]), revised October 1, 2003. However, there were several procedural refinements associated with the collection of samples. The following sections provide a detailed description of all deviations from the Closure Plan and procedures as submitted to the NMED in August 2003.

2.4.1 Swipe Samples

Section E.4.8.5 of the Closure Plan, provided in Appendix A, describes the methodology required for the collection of swipe samples during the CAI closure. It required the use of a 100 cm^2 template to delineate the area of sampling, used of a gauze pad/glass wool saturated with a solvent medium (e.g., deionized water, hexane, methyl alcohol, methylene chloride, or acetone), and storage of the swipe media in sealed glass vials pending analysis. The actual collection of the samples was conducted with the following deviations from the closure plan:

1. Samples were collected using the *NIOSH Manual of Analytical Methods* (NIOSH, 1996) for collection of lead swipe samples.

2. The sample locations identified during the walk down described in Section 1.0 were located in areas of limited access due to the presence of confined spaces and RCAs. This limited the ability to place a 100 cm^2 template down on the location. The sites were accessed using extension wands and the sample technician estimated the area to be consistent between samples.

3. Gauze pads and cheese cloth were used to collect the samples using the solvents indicated in Table 2-3.

4. As required in the March 24, 2004 approval letter, analysis for dioxins and furans was added to those samples collected during Sample Event #2.

2.4.2 Baseline and QA/QC Samples

Section E.4.8.2 and Table E.4.8 of the Closure Plan describe the QA/QC samples to be collected during closure. These samples included trip blanks, duplicates, or split samples, field blanks, and equipment rinsate blanks. The actual collection of QA/QC samples during Sample Events #1 and #2 was conducted with the following deviations from the closure plan:

1. No equipment rinsate blanks were collected because equipment was not reused between sampling events.

2. Two baseline samples were collected to determine if the sampling equipment was contributing any contaminants to the analysis.

2.4.3 Closure Demonstration Criteria

Section E.4.5 of the Closure Plan provides the following description for the implementation of an alternate demonstration of closure.

- Detectable hazardous waste or hazardous waste constituent concentrations from container storage activities that do not significantly decrease after several wash downs will be allowed to remain if they pose an acceptable risk, as mutually agreed upon with the NMED.

- Analytical results will be compared to the U.S. Environmental Protection Agency (EPA) Region 6 Medium Specific Screening Levels (MSSL) for tap water. If the result is below the MSSL, closure will be considered complete.

- If residual contamination levels found in the Exhaust Equipment are above the MSSLs, an assessment will be conducted using an occupational risk based scenario.

The actual demonstration of closure was conducted without additional decontamination and using the results of swipe samples instead of wash water samples. These results could not be analyzed using a comparable MSSL and were forwarded directly to risk assessment in accordance with the logic diagram provided in Figure 2-15.

2.4.4 Performance of Risk Assessment

Section E.4.5 of the Closure Plan provides that If residual contamination levels are found in the Exhaust Equipment above the MSSLs, a human health risk assessment (HHRA) will be conducted using an occupational exposure scenario. The Closure Plan did not specify procedures or methods for the performance of a HHRA (criterion 4) using swipe sample results

that exceeded baseline or QA/QC sample results. The HHRA was conducted for the maximum detected concentration of each contaminant using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the EPA Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risks to occupational workers from exposure to contaminated indoor surfaces. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals were ingestion, inhalation, and dermal exposure to chemicals on indoor surfaces. The results of this risk assessment are summarized in Section 3.0 of this Closure Certification Report and detailed in Appendix C.

2.5 Analytical Data and Supporting Documentation

2.5.1 Sample Event #1, September 2003

The samples collected during Sample Event #1 were analyzed by Severn Trent Laboratories, Inc., in St. Louis, Missouri, which operates under a QA Plan and implements QC procedures that meet the requirements of *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) (EPA, 1986a). Table 2-4 provides a summary of the analytical results for the verification and QA/QC samples collected during Sample Event #1 on September 18, 2003.

Clean closure for the TA-50-37 Exhaust Equipment will be demonstrated in accordance with at least one of the following criteria as shown on the logic diagram provided as Figure 2-15:

1. No detectable RCRA-regulated constituent residues from the management of authorized RCRA-regulated wastes are identified in samples collected during closure activities.

2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.

3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

As indicated in Table 2-4, several of the Exhaust Equipment surfaces had analytical results that indicated the detection of metals, semivolatile organic compounds (SVOC), volatile organic compounds (VOC), and polychlorinated biphenyls (PCB).

To demonstrate clean closure for these surfaces in accordance with criterion two, each of the detected constituents was compared against the analytical results from baseline samples and QA/QC samples. This comparison was used to eliminate areas from additional sampling requirements by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 2-5 provides a comparison of the detected constituents from Sample Event #1 against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion four. This demonstration including the use of risk assessment modeling is described in Section 3.0 of this report.

2.5.2 Sample Event #2, April 2004

The samples collected during Sample Event #2 were analyzed by Assaigai Analytical Laboratories, Inc., in Albuquerque, New Mexico, which operates under a QA Plan and implements QC procedures that meet the requirements of SW-846 (EPA, 1986a). Table 2-6 provides a summary of the analytical results for the verification and QA/QC samples collected during Sample Event #2 on April 16, 2004.

These samples were used to demonstrate clean closure in accordance with the demonstration criteria described in Section 2.5.1. As indicated in Table 2-6, several of the surfaces had analytical results that indicated metals, SVOCs, VOCs, PCBs, and dioxin/furan contamination.

To demonstrate clean closure for these surfaces in accordance with criterion two, each of the detected constituents was compared against the sample results from baseline samples and

QA/QC samples. This comparison was used to eliminate constituents from additional sampling requirements by determining one of the following:

- **Baseline Samples** - Materials used to conduct the decontamination and verification sampling contributed to the detected level of the constituent.
- **QA/QC Samples** - Environmental or laboratory conditions contributed to the detected level of the constituent.

Table 2-7 provides a comparison of the detected constituents from Sample Event #2 against the baseline and QA/QC sample results. The constituents that were not eliminated due to the baseline or QA/QC sample results were then considered for an alternative demonstration of closure in accordance with criterion number four. This demonstration including the use of risk assessment modeling is described in Section 3.0 of this report.

2.6 Statement of Quality Assurance/Quality Control Adequacy

QA/QC activities during the closure were conducted in accordance with Section E.4.10 of the Closure Plan. This included the collection of QA/QC samples to assess data quality and evaluate field sampling procedures and laboratory analyses. Appendix D provides the detection limits and uncertainty associated with all of the analytical data from the sampling activities in September 2003 and April 2004. A review of the sampling procedures, shipping procedures and analytical data has determined that the analytical data related to closure are of acceptable quality and should therefore be accepted as valid.

2.7 Waste Management

The verification of clean closure for the CAI Exhaust Equipment was conducted with waste minimization goals in mind. The PPE, gloves, cheesecloth, tape and other trash generated during closure activities were packaged into a 55-gallon plastic drum liner pending characterization based on the results of the swipe samples collected. All waste generated from the closure activities was stored in a less than 90-day storage area pending analysis.

3.0 RISK ASSESSMENT

A human health risk assessment (HHRA) was conducted using methods developed by the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the U.S. Environmental Protection Agency (EPA) Technical Review Workgroup for Lead (EPA, 2003). The HHRA, in accordance with EPA guidance (EPA, 1989a) involved data evaluation and identification of chemicals of potential concern (COPC), exposure assessment, toxicity assessment, and risk characterization. This section is a summary of the HHRA findings. Analytes that were forwarded for risk assessment are presented in Table 3-1 and 3-2. The detailed calculations are presented in Appendix C.

COPCs were determined based on the demonstration criteria for clean closure. The COPCs in the Controlled Air Incinerator (CAI) Exhaust Equipment evaluated quantitatively in the HHRA include:

- 1,2,4-Trimethylbenzene
- 4-Methyl-2-pentanone
- Acetone
- Barium
- Bis(2-ethylhexyl)phthalate
- Bromomethane
- Cadmium
- Chloroform
- Chromium
- Di-n-octylphthalate
- Dioxins/Furans
- Ethylbenzene
- Mercury
- Methylene chloride
- Propylene glycol
- Tetrachloroethene
- Toluene
- Xylenes

The exposure assessment of an HHRA addresses how long human receptors will be exposed to chemicals in the environment, how much of the chemical they will be exposed to, and how they will be exposed. This information is expressed by factors such as ingestion rates and daily activity patterns to estimate a chemical dose, or chronic daily intake for an individual. The exposure pathways used to estimate an occupational worker's chronic daily intake of chemicals from the CAI Exhaust Equipment at Technical Area (TA) 50, Building 37 (TA-50-37) were ingestion and dermal exposure to chemicals on indoor surfaces during routine maintenance of the exhaust system. It was conservatively assumed in the HHRA that maintenance staff may potentially contact chemicals in the CAI Exhaust Equipment during routine maintenance;

however, it is likely that employees will be required to wear personal protective equipment (PPE) while they are exposed to this contaminated equipment. Because the CAI Exhaust Equipment vents air outside, the inhalation exposure pathway was considered incomplete for workers inside the building and was not evaluated. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model (EPA, 2003), which is an approach for assessing occupational health risks from lead intake in women of childbearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures. The potential for adverse health effects is estimated separately for carcinogens and noncarcinogens as described in the following sections.

3.1 Noncarcinogenic Constituents

Unlike carcinogenic effects, noncarcinogenic health effects (e.g., developmental problems in children, kidney effects, neurological effects) are quantified assuming a threshold, or estimated level of exposure below which adverse effects are not expected to occur. Noncarcinogenic risk is quantified by comparing the actual, worst-case chemical dose received by occupational workers to a level that is not expected to cause adverse effects (or, reference levels). To be protective, health reference levels are typically 100 to 10,000 times lower than levels of exposure observed to have no adverse effects in animal studies. The ratio of actual exposure to reference levels for individual chemicals is a hazard quotient (HQ). The sum of HQs for all chemicals and exposure pathways is a hazard index (HI). HIs above unity indicate there is a potential for adverse health effects. The HI for the CAI Exhaust Equipment is 0.091. This is well below the target of 1.0.

3.2 Carcinogenic Constituents

For chemicals that cause cancer, the assumption in risk assessment is that there are no exposures that have “zero risk.” That is, a cancer-causing chemical may produce cancer in an exposed individual at any dose (there is no threshold). Human health risks for carcinogens are quantified as a unitless probability. The carcinogenic risk for the CAI Exhaust Equipment is 1.0E-05 (or, 10^{-5}), which means that a maximally-exposed individual has a one in 100,000 risk of developing and additional cancer as a result of a lifetime of exposure to COPCs. This cancer risk for the CAI Exhaust Equipment is within the acceptable 10^{-6} to 10^{-4} range of risks specified by EPA in Code of Federal Regulations (CFR), Title 40, §300.430.

3.3 Lead

Since most human health effects data for lead are based on blood lead concentration rather than a chemical dose, this COPC was evaluated separately in the HHRA using a model developed by the California DTSC (DTSC, 2000), which specifically addresses the ingestion, dermal contact, and inhalation exposure pathways and provides simulation results consistent with the EPA Adult Lead Model (EPA, 2003). These lead models are developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures. Using this approach, the estimated concentrations of lead in blood of the worker and the fetus are well below the goal of 10 micrograms per deciliter specified in EPA (EPA, 1986b and 2003) guidance with 95 percent confidence. Based on this assessment, the potential risk to a future occupational worker at the CAI Exhaust Equipment area from ingestion and dermal exposure to lead on surfaces is below the applicable criteria specified in EPA (EPA, 1986b) guidance.

4.0 CONCLUSIONS

Table 4-1 provides the analytical results from the sampling of each surface associated with the closure of the Technical Area (TA) 50, Building 37 Controlled Air Incinerator (CAI) Exhaust Equipment. The swipe sampling results were compared to blank/baseline sample results to identify those detections and subsequent location that required further evaluation during risk assessment. A human health risk assessment (HHRA), described in Section 3.0 of this report and further detailed in Appendix C, was performed for the contaminants of potential concern identified on the surfaces by swipe sampling. This HHRA determined that the potential risk to future occupational site workers is below the applicable criteria specified in the U.S. Environmental Protection Agency (EPA) guidance (EPA, 1986b). Based upon the demonstration of closure provided in Table 4-1 and the results of the HHRA, the TA-50-37, CAI Exhaust Equipment is clean closed in accordance with the Closure Plan.

5.0 CERTIFICATIONS

5.1 Certification of Accuracy

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Beverly A. Ramsey Date Signed
Division Director
Risk Reduction and Environmental Stewardship Division
Los Alamos National Laboratory

_____ _____

Edwin L. Wilmot Date Signed
Manager, Office of Los Alamos Site Operation
U.S. Department of Energy
Albuquerque Operations
Owner/Operator

CERTIFICATION
Los Alamos National Laboratory
Technical Area 50, Building 37
Closure Certification Report for the CAI Exhaust Equipment

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Beverly A. Ramsey Date Signed
Division Director
Risk Reduction and Environmental Stewardship Division
Los Alamos National Laboratory

_____ _____

Anthony Grieggs Date Signed
Group Leader
Risk Reduction and Environmental Stewardship Division -
Solid Waste Regulatory Compliance
Los Alamos National Laboratory

CERTIFICATION
Los Alamos National Laboratory
Technical Area 50, Building 37
Closure Certification Report for the CAI Exhaust Equipment

I certify under penalty of law that this document and attachments were reviewed and approved for consistency with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete as it applies to operations at Technical Area 50. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Dennis McLain Date Signed
Facility Manager
Facility and Waste Operations – Waste Facility Management
Management/Radioactive Liquid Waste
Los Alamos National Laboratory

CERTIFICATION
Los Alamos National Laboratory
Technical Area 50, Building 37
Closure Certification Report for the CAI Exhaust Equipment

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for reviewing, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Stephen L. Yarbro
Division Director
Nuclear Materials Technology Division
Los Alamos National Laboratory

Date Signed

Ronald Wieneke
Group Leader
Nuclear Materials Technology Division -
Waste Management Environmental Compliance
Los Alamos National Laboratory

Date Signed

5.2 Independent Engineering Certification

This certification was prepared in accordance with the requirements of 20.4.1.600 NMAC (incorporating 40 CFR §264.115), revised October 1, 2003, for an independent registered professional engineer's certification. These services have been performed with the care and skill ordinarily exercised by members of the profession practicing under similar conditions at the same time and in the same manner or in a similar locality. We make no other warranty either expressed or implied. The finding and certification are based on 1) reviewing the closure plan submitted in September 2003 and approved by the NMED on March 24, 2004; 2) discussion with the Shaw Environmental, Inc. field engineer who was present during closure and sampling activities; 3) reviewing the analytical results.

With the signature and seal below, I certify that, except for the deviations presented in Section 2.4 of the attached closure certification report, the closure of the **TA-50-37, Controlled Air Incinerator Exhaust Equipment** was conducted in accordance with the closure plan submitted to the NMED in September 2003 and approved on March 24, 2004. The information presented in this report is, to the best of my knowledge and belief, true, accurate, and complete.

Respectfully,

Shaw Environmental, Inc.

P. Scott den Baars
New Mexico Registered Professional Engineer No.: 10653
Expires: 12/31/05

Date:

6.0 REFERENCES

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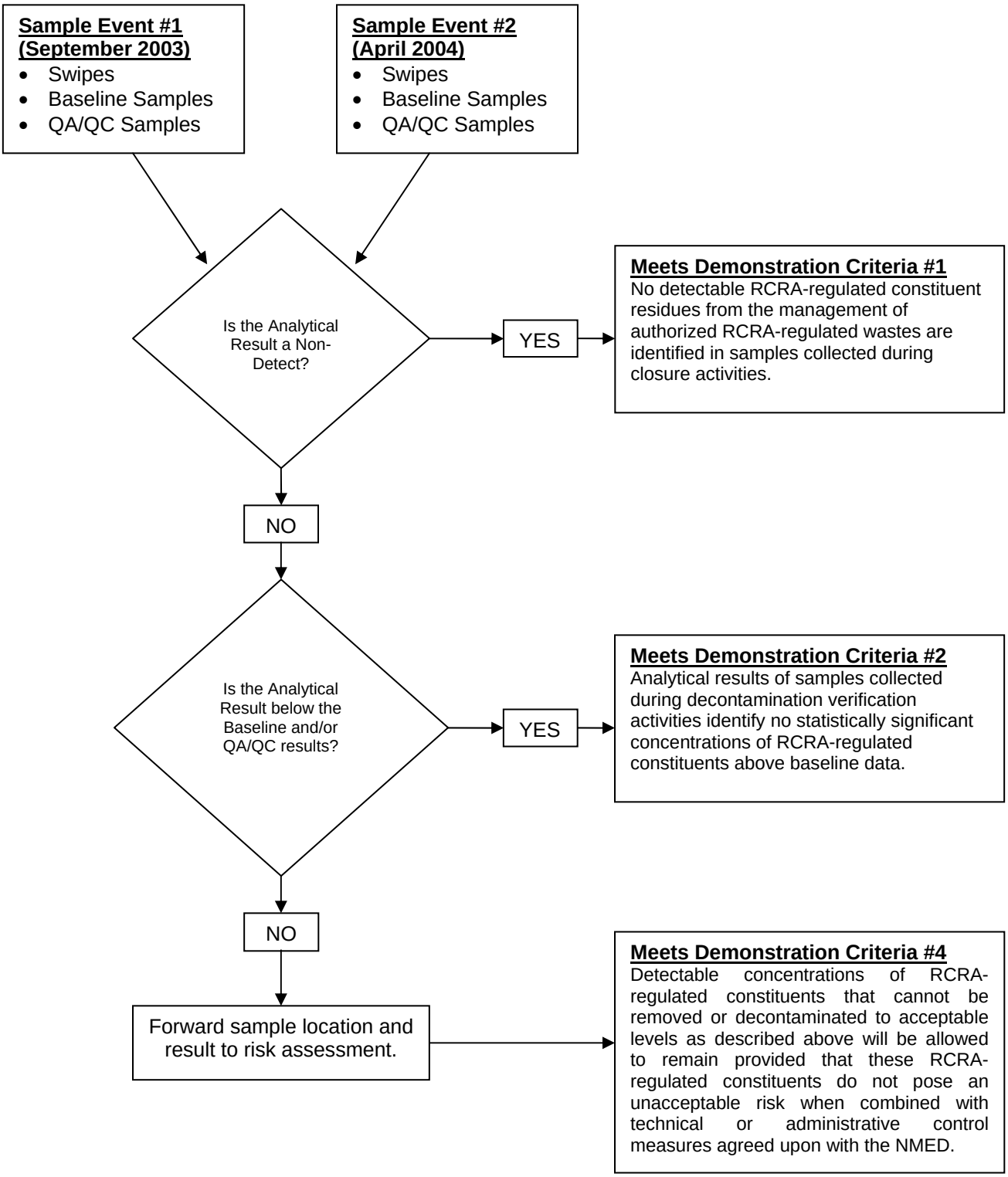

Figure 2-15
Logic Diagram for Demonstration of Closure

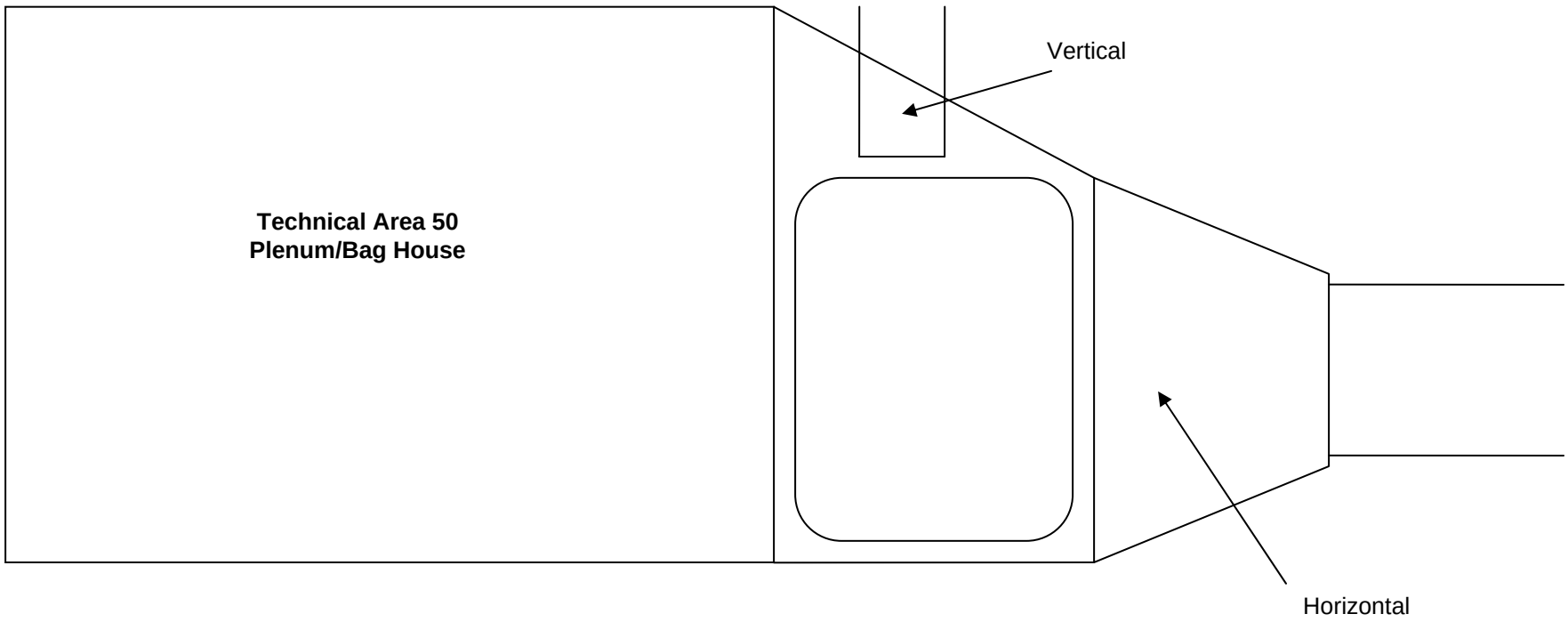

Figure 2-3
Controlled Air Incinerator Sample Location for Plenum/Bag House

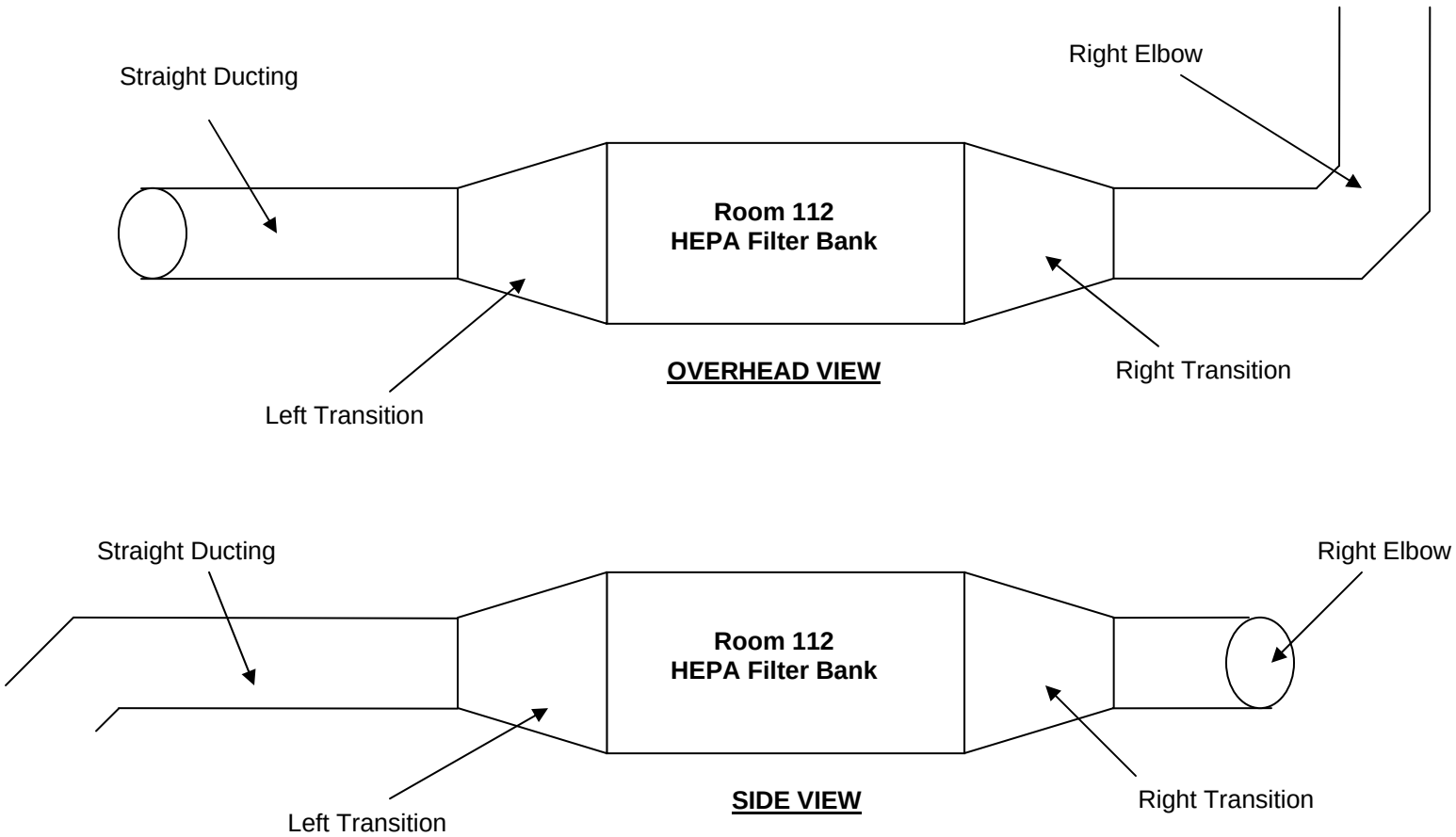

Figure 2-2
Controlled Air Incinerator Sample Locations for Room 112 High Efficiency Particulate Air (HEPA) Filter Bank

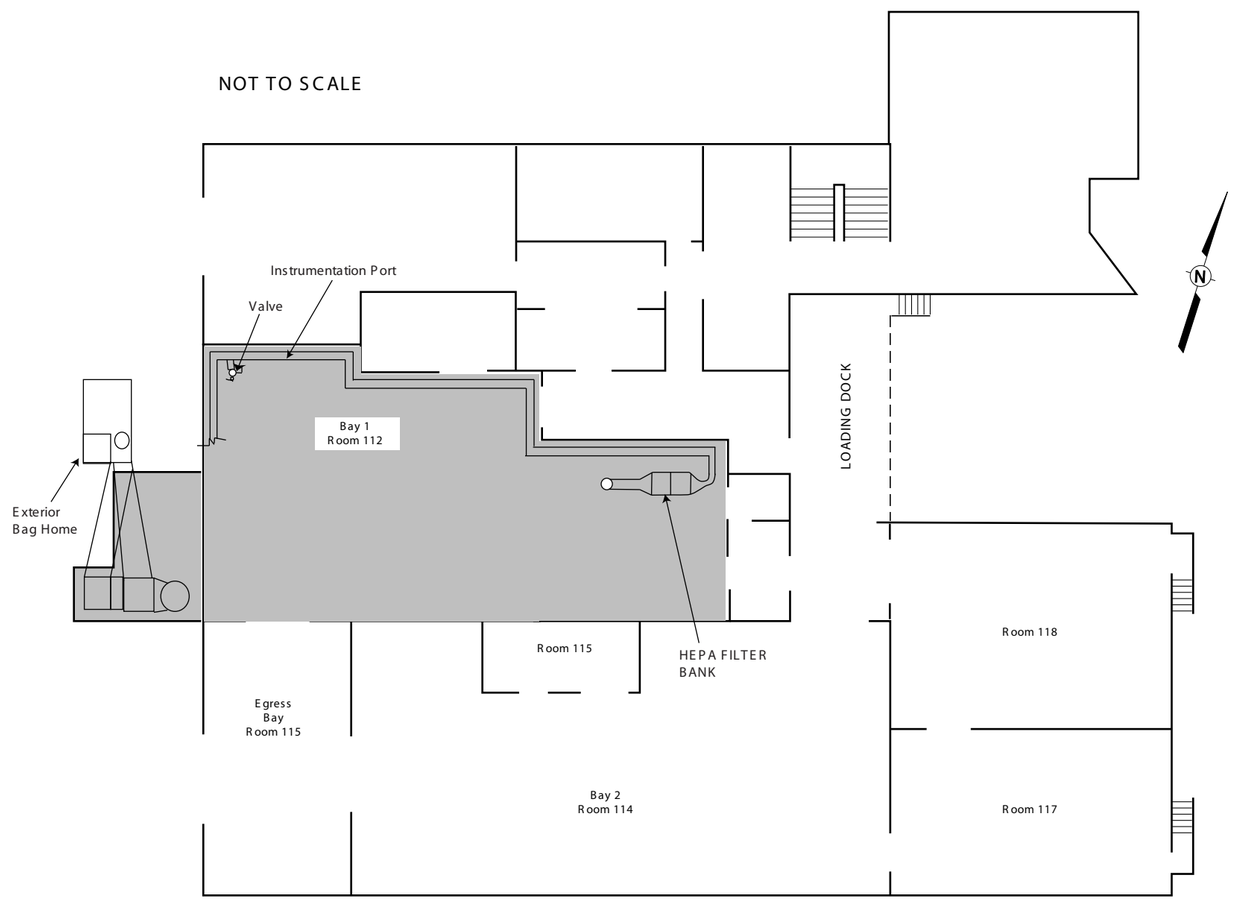

Figure 2-1
Technical Area (TA) 50, Building 37, First Floor Plan

Document: TA-50-37, Exhaust EQ Report
Revision No.: 0.0
Date: August 2004

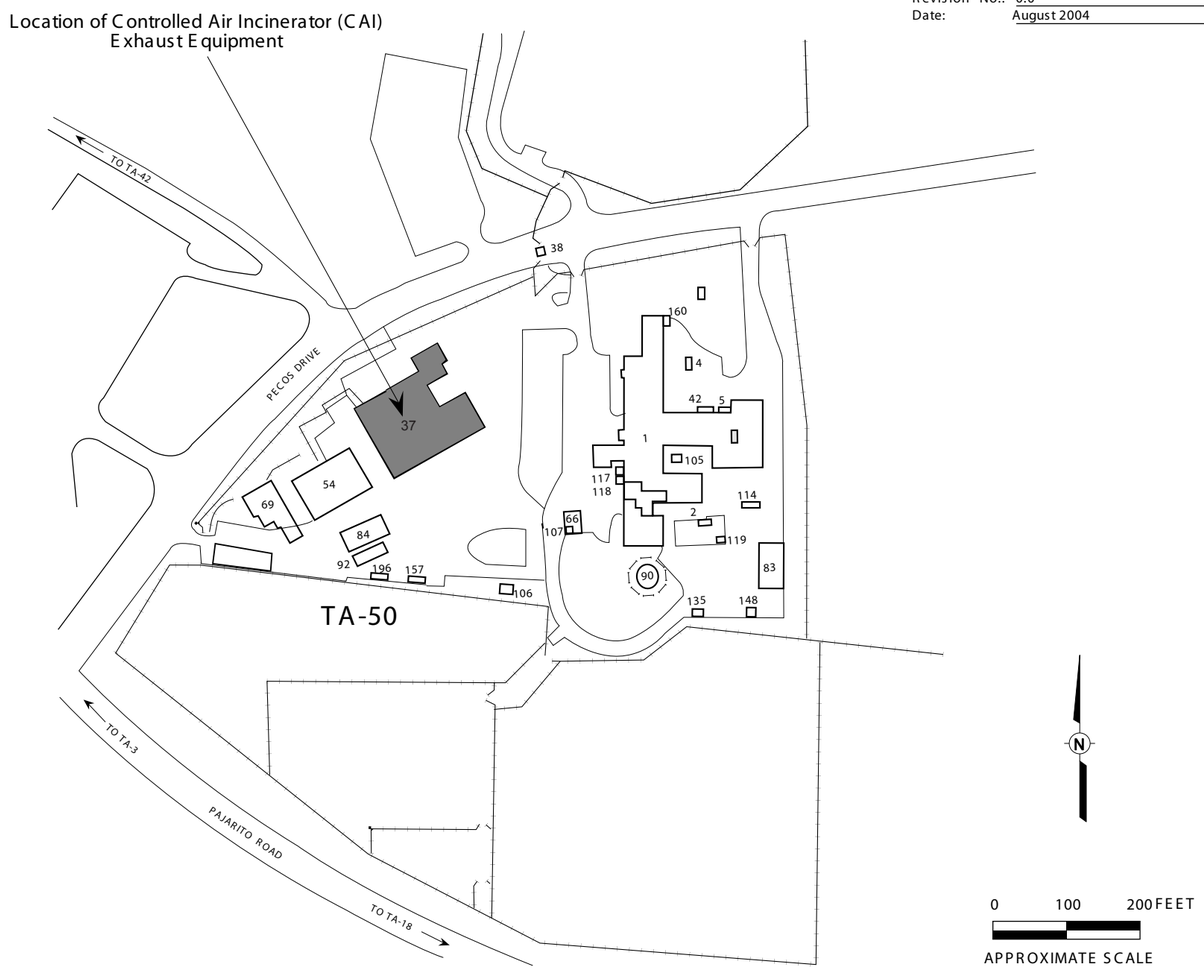

Figure 1-2
Technical Area (TA) 50 Site Location Map

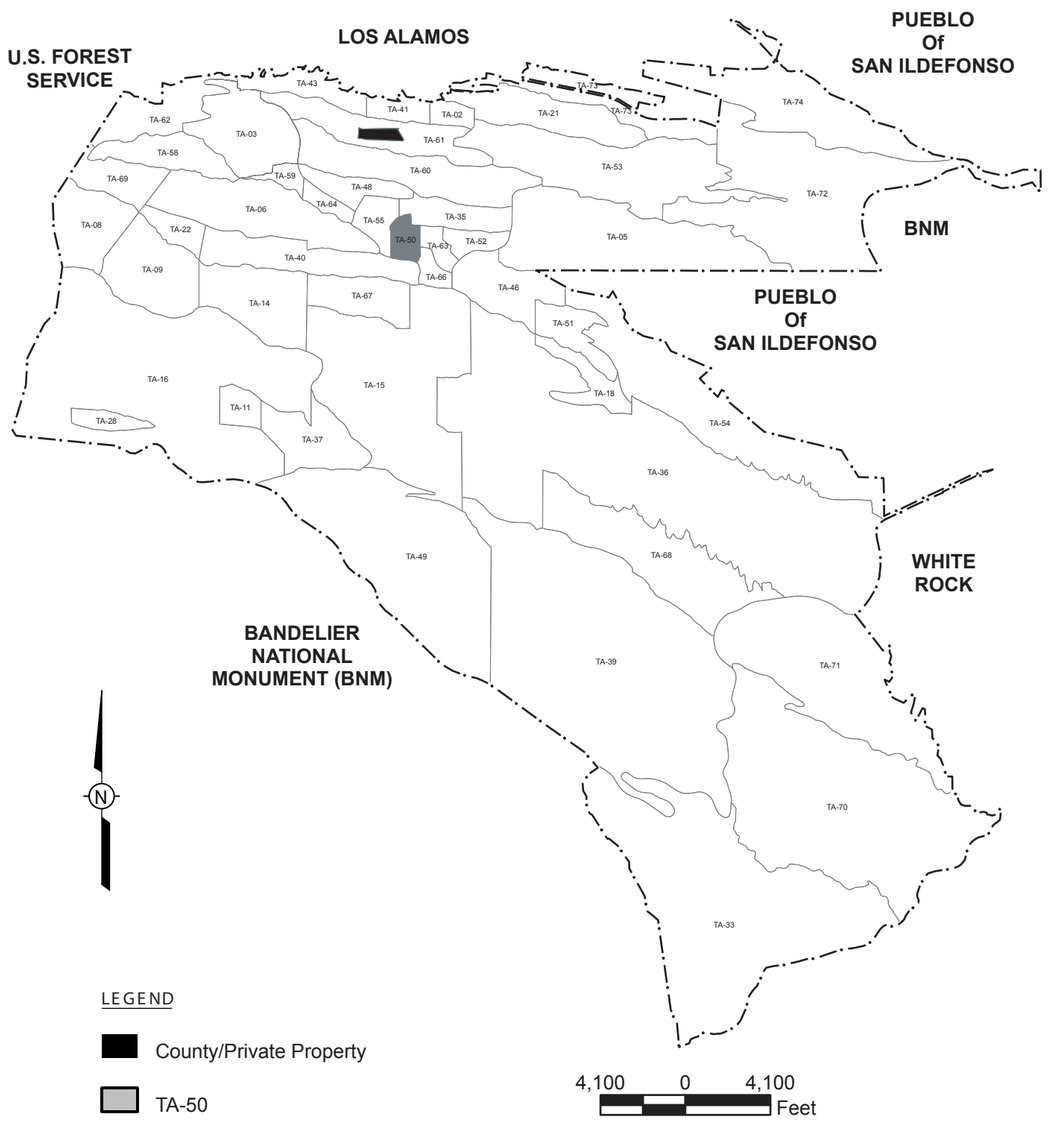

Figure 1-1
Location Map of Technical Area (TA) 50 at Los Alamos National Laboratory (LANL)

State Plane Coordinate System New Mexico Central Zone North American Datum 1983 (ft)

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Figure 2-4
Sampling Event #1, September 2003 - Preparation for Sampling of Ductwork in Room 112

Figure 2-5
Sampling Event #1, September 2003 - Swipe Sampling at Room 112 Ventilation Valve

Figure 2-6
Sampling Event #1, September 2003 – Plenum/Bag House Preparation for Sampling

Figure 2-7
Sampling Event #1, September 2003 – Monitoring of Swipe Sample at Plenum/Bag House

Figure 2-8
Sampling Event #1, September 2003 – Radiation Control Technician (RCT) Monitoring of Swipe Sample at Plenum/Bag House

Figure 2-9
Sampling Event #1, September 2003 – Swipe Sample of Room 112 HEPA Bank Left Side

Figure 2-10
Sampling Event #2, April 2004 – Preparation of Scaffolding for High Efficiency Particulate Air (HEPA) Bank Sampling

Figure 2-11
Sampling Event #2, April 2004 – Radiation Control Technician (RCT) Monitoring of Plenum/Bag House Opening

Figure 2-12
Sampling Event #2, April 2004 – Swipe Sampling of Plenum/Bag House - VERTICAL

Figure 2-13
Sampling Event #2, April 2004 – Removal of Swipe from Collection Equipment

Figure 2-14
Sampling Event #2, April 2004 – Swipe Sample of Plenum/Bag House - HORIZONTAL

APPENDIX A
Closure Plan

AMENDED
CLOSURE PLAN

ATTACHMENT E.4
DISMANTLEMENT REVISION

AMENDED CLOSURE PLAN
PERMIT ATTACHMENT E.4.
DISMANTLEMENT REVISION
NM 0890010515-1

E.4 Chemical Waste Incinerator

The chemical waste incinerator [Controlled Air Incinerator (CAI)] is located in Building 37 at Technical Area 50 (Figure E.4.1) of the Los Alamos National Laboratory (LANL). The original CAI was installed in 1977 and first operated in 1978. The CAI and associated systems were originally research and development (R&D) tools used to prove the viability of incineration as a treatment method for TRU waste. R&D testing ceased in 1987, so that modifications (upgrades) to the system, identified during the initial phase of operation, could be performed. RCRA trial burns were conducted just prior to the cessation of R&D activities. Between 1978 and 1987 a total of 36 campaigns had been completed at the CAI.

LANL received its Hazardous Waste Facility Permit on November 8, 1989 and activities after that date have been in accordance with its permit. Hazardous wastes currently in storage at LANL pursuant to LANL's Hazardous Waste Facility Permit are being managed through shipment off site for treatment and disposal.

The CAI is rated at a nominal 45 kilograms per hour waste feed throughput. The CAI is currently authorized to incinerate Toxic Substance Control Act (TSCA) regulated waste and permitted to incinerate Resource Conservation and Recovery Act (RCRA) regulated waste.

The incinerator was upgraded prior to permit issuance in November 1989 to add liquid waste tanks, solid waste feed preparation lines, a gravity ash removal system, a high-efficiency off-gas cleanup system, and backup utility systems. The combustion chamber was modified to permit effective incineration of waste in solid, liquid, slurry, or gaseous form. Particular attention continues to be given to engineering for proper containment of radioactivity.

CAI system modifications and upgrades since permit issuance were intended to replace equipment due to normal wear or to upgrade existing equipment for routine operations. Upgrades focused on increased component life, increased corrosion resistance, and improved electronics. Modifications for these changes to the CAI were submitted on June 1995 to NMED for its review and approval.

A review of the feed summary data for the CAI indicates that between May 1978 and March 1987, a total of 36 campaigns had been

completed. The feed summary data indicate that the CAI was not used to burn listed wastes. Characteristic waste was included in Run 23. Run 23, March 1987 included ignitable (D001) waste scintillation fluids absorbed by corn cob fractions. The scintillation fluids meet the definition of characteristic as defined at 40 CFR 261 Subpart C *Identification of Characteristic Waste*. The CAI campaigns included equipment checks, treatability studies, efficiency studies, incineration of PCB contaminated materials under TSCA, a RCRA trial burn, and burns of transuranic (TRU) wastes. Eight of the 36 CAI campaigns involved radioactive components. A comprehensive feed summary is provided in Appendix 1.

This closure plan is limited to CAI components to demonstrate closure. This closure plan does not include the building utilities, the building structure, or the waste storage areas located within TA-50, Building 37. Closure activities will be conducted concurrent with the dismantlement and removal of the CAI from the site. During RCRA and TSCA closure, CAI components (i.e., combustion chambers, exhaust ducts, quenching tower, absorption tower, high efficiency particulate air [HEPA] filters, carbon bed adsorber, exhaust stack, ash removal system, liquid waste feed system, and gloveboxes) will be sampled and surveyed to identify the presence of radiological and hazardous contamination. Decontamination activities will be conducted to support reuse and reclamation to the extent practicable. Materials that cannot be reused or reclaimed and wastes generated from decontamination will be characterized using sample results and waste analysis. The refractory used in the incinerator contains chromium, a characteristic hazardous waste for toxicity. The incinerator refractory, if disposed, will be sampled and managed in accordance with the results of sampling and survey analysis. If the waste is determined to contain hazardous constituents it will be disposed of in a RCRA permitted treatment, storage, or disposal facility (TSDF).

E.4.1 Estimate of Maximum Waste in Storage and Treatment

No hazardous wastes are currently in storage for treatment at the CAI. Therefore, the CAI will have no inventory of hazardous waste at the time of closure.

E.4.2 Description of Waste Handled

The CAI and the exhaust gas treatment systems are capable of combusting a variety of wastes, including RCRA-regulated hazardous waste, mixed waste, TSCA-regulated PCB waste, low-level radioactive waste, and TRU waste. The hazardous and mixed waste feeds initially intended for treatment at the CAI included a mixture of

liquid and solid hazardous wastes composed of various organic solvents and liquids, as well as chemically-contaminated paper, wood, and plastics. As stated earlier in this plan, these hazardous waste streams are being treated at off-site commercial facilities. Mixed wastes are planned to be treated on-site in other units or at other alternative commercial and internal facilities with capacity to treat and dispose of mixed wastes. The CAI was permitted to burn all HWMR-5, Part II, Appendix VIII constituents with an incinerability ranking equal to or better than carbon tetrachloride (for the CAI, the incinerability ranking is based on organics with a heat capacity greater than carbon tetrachloride).

A review of feed summary data indicates that the CAI was not used to burn any RCRA-regulated wastes that contain HWMR-5, Part II, Appendix VIII constituents. However, as stated previously, Run 23 contained waste scintillation fluids that meet the definition of characteristic waste. Appendix 1 summarizes the feed summary data, the run date, feed description, and basis for regulatory status of the feed material.

E.4.3 Closure Procedure

LANL will conduct RCRA closure of the CAI based on the documentation that no RCRA-regulated listed wastes were treated in the unit and that the ignitable characteristics of Run 23 were treated through incineration as specified at 40 CFR Part 268 Appendix VI. To ensure that closure of the CAI is protective of both human health and the environment, LANL will conduct sampling of the CAI, as described in Section E.4.4 of this closure plan, to verify that no HWMR-5, Part II, Appendix VIII hazardous constituents are present.

Radiological surveys will also be conducted to ensure that the requirements of U.S. Department of Energy (DOE) Orders 5400.5 "Radiation Protection of the Public and the Environment" and 5820.2A "Radioactive Waste Management" are met. TSCA closure activities of the CAI will be conducted concurrent with dismantlement, removal, and RCRA closure.

E.4.3.1 Partial Closure

Partial RCRA closure of the CAI is not being pursued. The CAI is to be closed as a RCRA unit including, but not limited to, the combustion chambers, all waste feed, exhaust, filter, and residue management components.

E.4.3.2 Final Closure

This section describes closure of the CAI. At the beginning of closure, the CAI will be surveyed for radioactive contamination to determine radiological boundaries and personal protective equipment (PPE) requirements. Once radiological boundaries are established, swipe samples will be taken and analyzed to verify the absence of hazardous constituent contamination. Verification will consist of sampling the principal CAI components throughout the system that have been in contact with material feeds, residues, or secondary wastes. If RCRA hazardous contamination is found, components amenable to decontamination will be cleaned with detergent solution and/or steam cleaning. The spent cleaning solution will be collected and analyzed for hazardous constituents. If no constituents are detected statistically above background, these components will be deemed decontaminated and can then be reused or disposed of as waste. If components are not amenable to decontamination, they will be managed as newly generated hazardous, toxic, or mixed waste, as indicated through waste analysis, in accordance with Laboratory procedure. All radioactive components will be decontaminated to the extent practicable and disposed of according to appropriate DOE Orders. Sampling procedures are described below in Section E.4.8 of this closure plan. Samples will be analyzed for the hazardous constituents listed in Table E.4-2.

Analytical results will be used to verify the absence of hazardous constituents in the CAI components or qualify the regulatory status of CAI waste. These analytical results along with the documentation of CAI closure activities will be used to validate

E.4.3.3 Amendment of the Closure Plan

If it is necessary to amend this closure plan, LANL will submit a written notification of, or request for, a permit modification describing any change in operation or unit design that could affect the closure plan. The written notification or request will include a copy of the amended closure plan for approval by the NMED. LANL will submit a written notification of, or a request for, a permit modification to authorize a change in the approved plan if either of the following occur:

1. There are changes in operating plans, unit design, or waste types treated that affect the closure plan

2. Unexpected events occur during closure that require modification of the approved closure plan

LANL will submit a written request for a permit modification with a copy of the amended closure plan no later than 60 days after an

occurrence of an unexpected event that affects the closure plan. If the unexpected event occurs during closure, the permit modification will be requested within 30 days of the occurrence. If the Secretary of the NMED requests a modification of the closure plan during closure, a closure plan modified in accordance with the request will be submitted within 30 days of notification.

E.4.4 Verification of No Contamination

Sampling for verification will be based on a biased sampling plan. Sample locations will be determined using engineering judgement and knowledge of the CAI system layout and past operation to obtain samples from principal treatment components with the highest likelihood for contamination (Figure E.4-5). Additionally, a minimum of one sample will be collected from an area with a low probability of contamination as a check on the biased sampling location data. This should provide a conservative data base from which a determination that RCRA constituents are absent can be made.

Multiple samples from selected locations will be acquired to provide adequate statistical data control. The samples to be collected from each location, as well as the specific location and sampling method, will be specified in the QA/QC plan. Initial sampling locations are listed below:

- Solid Waste feed — Sampling of the solid waste feed glovebox
- Liquid waste feed — Sampling of the liquid waste feed tanks
- Quenching tower — Sampling of the quenching tower
- Adsorption tower — Sampling of the adsorption tower
- HEPA filters — Sampling of the outlet from the HEPA filter back
- Activated carbon adsorber — Sampling of the inside housing of the activated adsorber
- Exhaust stack — Sampling of the inside of the exhaust stack

- Ash Removal System Sampling of the gravity ash dropout hopper

- Combustion Chamber Sampling of the combustion chamber

The constituents listed in Table E.4-2 include regulated constituents which were expected to be treated in the unit. A scan for volatile and semivolatile organics will be performed to ensure that solvents commonly used at LANL have not contaminated the unit. Two field blanks will be prepared and analyzed for the constituents listed in Table E.4-2. Analytical results from field blanks and control samples of the solid waste feed glovebox will provide background data for verification of the absence of contamination. The glovebox was chosen as a control location because the component has never been used for managing wastes. Analytical procedures will conform to U.S. EPA SW-846 methods. CAI components will be considered to be contaminated if verification samples show a statistically significant increase in the listed constituents over the field blank and control samples.

LANL will carefully review all operational and sampling analytical data to provide for a determination of whether there has been a release external to the incinerator. If a release has occurred, the appropriate decontamination and verification sampling will be done by LANL. Such sampling would include the structures within the building, building floors, etc., plus environmental media (e.g. soils) if it should be so indicated. All sampling and analysis plans, which are not addressed procedurally in this Closure Plan, are subject to the approval of NMED.

Absence of hazardous contamination will be verified if:

1. No hazardous constituents are detected in samples from the CAI locations, or

2. Hazardous constituents detected in samples from the CAI locations are equal to or less than, at the 0.01 confidence level, their concentration in the unused wash water field blank or background sample.

E.4.5 Verification of Decontamination

Sampling will be used to verify the success of decontamination activities used during CAI closure. Before decontaminating a CAI component, two samples will be taken of the clean wash solution and analyzed for the constituents listed in Table E.4-2 of this attachment. These analytical results will provide background data for decontamination verification.

Dirty wash-down solutions will be analyzed for the constituents listed in Table E.4-2. Analytical procedures will conform to the methods found in SW-846. Components will be considered contaminated if the dirty wash solutions show a significant increase in the listed constituents over the clean wash solution.

Successful decontamination for each component is defined as one of the following:

1. No detectable hazardous constituents in the final sample.

2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused wash water or background sample.

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Secretary will evaluate the proposed alternative in accordance with the standards and guidance in effect and, if approved, incorporate, by permit modification, the alternative into the closure plan.

E.4.6 Closure Schedule

Closure activities will be conducted in accordance with an approved closure plan. The year of closure for the CAI is estimated to be 1996. The closure schedule is provided in Table E.4-1. Federal Acquisition Regulations require competitive procurement in obtaining contract support for this type of effort, therefore contracts will be secured before closure begins. The closure activities described in this plan are estimated to take 250 days.

In the event that closure or closure activities cannot be completed at the CAI within 250 days of notification of closure to the New Mexico Environment Department (NMED), LANL will notify the Secretary of the NMED in accordance with extension requirements.

E.4.7 Closure Certification

An independent registered professional engineer and the Permittee or his representative shall witness the closure and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility has been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered professional engineer, and the original copy submitted by the DOE to the Secretary of NMED. One copy shall be maintained at the DOE office and one copy maintained by LANL.

E.4.8 Sampling and Analytical Procedures

This section describes the procedures and methods used for sampling and analysis. While the procedures and methods are specific, any applicable procedure or method given in the current update of *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) may be used if conditions or experience shows the alternate method to be more appropriate. All analytical procedures actually used will be annotated in the final closure report.

Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. Sample containers appropriate for the requested analyses will be used for all samples. Requirements for sample containers, preservation, and holding times are summarized in Tables E.4-3 and E.4-4. Disposable sampling equipment may be used.

Personal protective clothing and respirator protection will be worn at all times as identified by LANL's Industrial Hygiene and Safety Group and in the approved Radiological Work Permit. Sampling activities will be conducted in a manner to ensure that worker exposure levels are maintained as low as reasonably achievable (ALARA).

E.4.8.1 Analytical Procedures

All sample analyses will be conducted using methods prescribed in the current update of SW-846, including those for quality assurance/quality control (QA/QC). Target detection limits, analytical methods, and instrumentation for metals, organics, and miscellaneous analyses are listed in Tables E.4-5, E.4-6, and E.4-7.

E.4.8.2 Field and Laboratory Quality Assurance Quality Control

QC activities will include collection of the following samples: trip blanks, duplicate or split samples, field blanks, and equipment rinsate blanks. QC samples are described in this section and summarized in Table E.4-8. QC samples will be analyzed for the same parameters as the verification samples (Table E.4-1). QC samples will be assigned unique identification numbers (similar to verification sample numbers) that do not indicate to the laboratory that the samples are for QA/QC purposes.

A trip blank will be prepared whenever samples are collected for volatile organic compounds analysis. The trip blank is a sample container filled with organic-free deionized water. The filled container is taken to the sampling site in the cooler or sample

carrier, remains unopened, and is shipped to the analytical laboratory along with the samples. One trip blank will be included per cooler or sample carrier.

One sample for every ten samples will be either duplicated or split. The duplicated or split sample will be identified by a code so that its source is not available to the analytical laboratory, but analytical results can be compared to its twin.

Blank samples collected will include field blanks and equipment rinsate blanks. A field blank is a sample collected to assess the ambient conditions at the sampling site. The field blank for verification of no contamination is a swipe prepared in the laboratory that will be opened to the ambient conditions of the site, removed with sampling tongs, and replaced into the sampling container. A field blank for decontamination verification is a sample of organic-free deionized water, poured into a sample container under normal sampling conditions. Frequency of blank samples will be 1 in 20 samples. If fewer than 20 samples are collected, at least one blank sample will be collected. An equipment rinsate blank is collected to assess the cleanliness of the sampling equipment. The sampling equipment is cleaned according to the procedures described below in Section E.4.8.3, then organic-free deionized water is poured over the decontaminated equipment's sampling surface and collected in a sample container.

Instrument calibration and maintenance are field activities subject to QC procedures. Field equipment requiring calibration will be calibrated and maintained using the manufacturer's instructions and appropriate standard operating procedures.

LANL will ensure that the on-site or contract analytical laboratory operates under a quality assurance program plan (QAPP) which meets the requirements in the current update of SW-846. QC procedures in the analytical laboratory are guided by their QAPP. In order to assess the quality of the analytical data, the analytical laboratory is required to run QC samples to establish accuracy and precision. Laboratory QC procedures are summarized in Table E.4-9.

E.4.8.3 Cleaning of Sampling Equipment

To prevent cross-contamination of samples, sampling equipment will be cleaned prior to each use with a warm soap solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped. A disposable sampler may be presumed clean if still in a factory sealed wrapper.

E.4.8.4 Refractory Sampling

All collectable treatment residues have been removed from the CAI and therefore the only sampling of solids will be of the refractory lining in the combustion chamber. The refractory lining is a porous material that is imbedded with ash and is not amenable for removal using incinerator operating procedures. A representative sample of the refractory material will be obtained as follows:

1. Use a clean brush to scrub small, equal portions of material from the surface of the refractory lining at several locations along the bottom of the chamber.

2. Combine the material in the container until the gram volume of sample required for the analysis is obtained.

3. Cap the sample container and attach a label and seal.

4. Record sampling information in the field log book as described in Section E.4.8.

5. Complete the sample analysis request form and chain-of-custody record.

E.4.8.5 Swipe Sampling

Swipe samples will be taken to identify hazardous constituent contamination on CAI components. Samples will be collected by swiping areas of components identified in Section E.4.4 that have the greatest likelihood for contamination (e.g., stains, seams, basins). Swipe samples will be conducted as follows:

1. Use a standardized template [10 centimeters (cm) x 10 cm] to delineate the area of sampling.

2. Use a gauze pad or glass wool of known size and weight, saturated with the appropriate solvent (e.g., organic-free deionized water, hexane, acetone) for the swiping medium. The gauze, or glass wool, will be prepared in the laboratory with the analyte designation noted on the label prior to entry to the field.

3. Store the swiping medium in sealed glass vials until it is used for the swipe test.

4. Perform the swipe very quickly after air exposure to avoid losing the solvent medium.

5. Place swipes into sample containers immediately upon completion of the swipe.

6. Close, label, and seal the sample container to ensure the integrity of the sample.

7. Record sampling information in the field log book as described in Section E.4.9.

8. Complete a LANL sample analysis request form and a chain-of-custody record for each sample.

E.4.8.6 Liquid Sampling

To determine whether CAI components have been successfully decontaminated, wash water used in the decontamination process will be sampled to identify the presence or absence of contamination. Waste water generated from such decontamination activities will be managed in accordance with applicable regulations. Wash water solutions will be sampled before use to determine background parameters; dirty wash water used in cleaning components will also be sampled in order to identify any hazardous constituent contamination. Samples will be collected by spraying wash solution onto areas of the components identified in Section E.4.8 that have the greatest likelihood for contamination (e.g., bends, horizontal surfaces, seams, basins). Brushes may be used to help dislodge particulate and laminated residues from the surfaces of the sampling area. Washed areas will be rinsed and all waters collected using vacuum or manual pumps. The volume of wash water collected will be recorded in the log book. Wash waters will be transferred to sampling containers using glass tubes to obtain representative samples as follows:

1. Spray wash solution onto areas of the sampling location that have the greatest likelihood for contamination (e.g., bends, horizontal surfaces, seams, basins, etc.).

2. If areas of slag, ash, or lacquer remain after spraying, use a sampling brush to dislodge the material.

3. Use vacuum or pump to collect washwaters from the sampling location. Use caution not to allow washwaters to migrate from the sampling area.

4. Ensure that sampling equipment is present (glass tube with stopper, sample container, laboratory wipe, pen, etc.). Ensure that the stopper provides a tight closure.

5. Slowly lower the glass tube into the liquid at a rate that permits the levels of the liquid inside and outside the glass tube to be about the same. If the level of the liquid in the glass tube is lower than that outside the glass tube, the sampling rate is too fast and will result in a nonrepresentative sample.

6. When the glass tube hits the bottom of the liquid container, push the stopper in to close the glass tube.

7. Slowly withdraw the glass tube from the container with one hand while wiping the glass tube with a disposable cloth with the other hand.

8. Carefully discharge the sample into a sample container by slowly opening the glass tube. This is done by slowly pulling the stopper from the glass tube while the lower end of the sampler is positioned in the sample container.

9. Cap the sample container and attach a label and seal.

10. Record sampling information in the field log book as described in Section E.4.9.

11. Complete the sample analysis request form and chain-of-custody record.

E.4.9 Sample Handling and Documentation

Samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container will be sealed with a gummed paper seal attached to the container in such a way that the seal will be broken in order to open the container. The seal and sample label will be completed with a waterproof pen. An example of a sample seal is shown in Figure E.4.2.

The sample label is necessary to prevent misidentification of samples and shall include, if applicable, the sample location number referenced to CAI components. The site information will include information necessary to identify the area sampled within the component specified (e.g., sump basin of the quenching tower). An example of a sample label is shown in Figure E.4.3.

The chain-of-custody record is necessary to trace sample possession from the time of collection and will accompany every sample. This

chain-of-custody record consists of two pages with the original accompanying the shipment and the copy retained by LANL. An example of this form is shown in Figure E.4.4.

A separate closure sampling log book will be kept and will contain all information pertinent to closure surveys and sampling. The log book shall have bound and consecutively numbered pages in an 8-1/2 by 11-inch format.

Minimum entries shall include:

a. Purpose of sample (closure sampling)

b. Location of sampling (component name and location)

c. Name and address of person making log entry

d. Type of sampling process

e. Number and volume of sample

f. Description of each sampling location, sampling methodology, equipment used, etc.

g. Date and time of sample collection

h. Sample destination and transporter's name (name of laboratory, United Parcel Service, etc.)

i. Diagram or photograph of the sampling location, if any

j. Field observations (radiological status, break in utility service, etc.)

k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc)

l. Collector's sample identification number(s)

m. Signature of person responsible for the log entry

Sampling situations vary widely. No specific rule can be given as to the extent of information that will be entered in the log book. Sufficient information will be recorded so that the sampling situation can be reconstructed without relying on the collector's memory.

The sample shipment and chain-of-custody record is accompanied by a sample analysis request form. The sample analysis request form

has two portions: field and laboratory. The field portion of this form will be completed by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion will be completed by the laboratory personnel when the sample is received.

E.4.10 Quality Assurance/Quality Control

The Permittee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to LANL management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, ensure that sample blanks are obtained, and review the analytical reports for accuracy and adequacy. A written QA/QC plan in accordance with SW-846 guidance shall be prepared and followed, with variations from the QA/QC plan documented and explained. The designated individual shall prepare a written statement for the final closure report commenting on the adequacy of the analysis verifying closure.

E.4.11 Final Closure Report

Upon completion of the closure activities, the Permittee shall submit a final closure report certified by a New Mexico independent reegistered professional engineer to the Secretary of NMED. The report shall document the final closure and contain, at a minimum, the following:

a. The certification described in paragraph E.4.6

b. Any variance from the approved activities and the reason for the variance

c. A tabular summary of all sampling results (including QC sample results), showing:

   1. Sample identification
   2. Sampling location
   3. The datum reported
   4. Detection limit for each datum
   5. A measure of analytical precision (e.g. uncertainty, range, variance)
   6. Identification of analytical procedure
   7. Identification of analytical laboratory

d. A QA/QC statement on the adequacy of the analyses and the decontamination determination

e. The location of the file of supporting documentation:

1. Log books
2. Laboratory sample analysis reports
3. The QA/QC documentation
4. Chain of custody records

f. Disposal location of all regulated and nonregulated residues

g. A certification of accuracy of the report

TABLE E.4-1

Closure Schedule
Controlled Air Incinerator[a]

Activity	Maximum Time Required[b]
Preclosure Let contract request for proposals	-70
Receive proposals	-40
Select contractor and award contract	-10
Closure Begin closure activities	Day 0
Survey CAI external components, associated external subsystems, for radiological contamination	Day 30
Obtain samples for RCRA hazardous waste constituents and submit for analysis	Day 75
Receive sample analysis	Day 105
Obtain additional samples (if necessary)	Day 135
Receive sample analysis (if necessary)	Day 180
Obtain certification of closure	Day 240
Submit final closure report to NMED	Day 250

[a]Assumes RCRA closure; no incineration of RCRA hazardous wastes or hazardous constituents; and sample
and analysis of the CAI and associated external subsystems.
[b]The schedule above indicated calendar days from the beginning of closure by which activities will be completed.
Some activities may be conducted simultaneously.

TABLE E.4-2

Analytical Parameters for CAI

Concentration of Metals	Organics	Other
Arsenic Barium Beryllium Cadmium Chromium Lead Mercury Nickel Selenium Silver Thallium	Halogenated volatile organics Nonhalogenated volatile organics Acid-extractable semivolatile organics Base-neutral extractable semivolatile organics	Cyanides Ignitability Corrosivity/pH

Metals will be analyzed for total content.

Any metal whose total concentration nears, equals, or exceeds the standard for the Toxicity Characteristic Leaching Procedure (TCLP) will be analyzed using TCLP methods. All data will be provided in the final closure report.

Analytical methods will follow those provided in "Test Methods for Evaluating Solid Waste," U.S. Environmental Protection Agency (EPA) SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

TABLE E.4-3

Sample Containers, Preservation, and Holding Times for Liquid Samples

Analyte Group	Container	Preservative	Holding Time
Target compound volatile organics	2 x 40 ml G[e] septa vials	HCl[b], Cool 4°C	14 days from field collection to determinative analysis
Target compound semivolatile organics	2 x 1 liter AG[a] (teflon lined caps)	Cool 4°C[1]	7 days from field collection to preparative extraction 40 days from preparative extraction to determinative analysis
Target analyte metals (except mercury)	1 liter P[c] or G[e]	HNO_3[d] to pH < 2	180 days from field collection to determinative analysis
Mercury	1 liter P[c] or G[e]	HNO_3 to pH < 2 Cool 4°C	28 days from field collection to determinative analysis
Cyanides	P[c] or G[e]	NaOH[f] to pH ≥ 12 Cool 4°C[2,3]	14 days from field collection to sample preparation
Corrosivity/pH	1 liter P[c] or G[e]	N/A	As soon as possible for pH
Ignitability	1 liter P[c] or G[e]	N/A	

[a]AG = Amber glass
[b]HCl = Hydrochloric acid (if no residual chlorine is present, adjust the pH < 2 with HCl, H_2SO_4 or $NaHSO_4$, if residual chlorine is present, add sodium thiosulfate [4 drops of 10 percent solution]).
[c]P = Polyethylene
[d]HNO_3 = Nitric acid
[e]G = Glass
[f]NaOH = Sodium hydroxide, 50 percent

[1]If residual chlorine is present, add 3 ml of 10 percent sodium thiosulfate per gallon.
[2]Determination of presence of oxidizing agents and treatment thereof to be performed as per SW-846 Method 9010A.
[3]Detergents and surfactants, if a problem, can be extracted as described in SW-846 Method 9010A.

Source: SW-846, Update I and Update II

TABLE E.4-4

Sample Containers, Preservation, and Holding Times for Refractory Samples

Analyte Group	Container	Preservative	Holding Time
Target compound volatile organics	8 oz WM[a]-G[b] Septum-sealed	Cool 4°C	14 days from field collection to determinative analysis or TCLP extraction 14 days from TCLP extraction to determinative analysis
Target compound semivolatile organics	2 x 120 ml WM[a]-G[b] Teflon-lined cap	Cool 4°C	14 days from field collection to TCLP extraction 7 days from field collection or TCLP extraction to preparative extraction 40 days from preparative extraction to determinative analysis
Target analyte metals (except mercury)	8 oz WM[a]-G[b] or P[c]	Cool 4°C HNO_3[d]	180 days from field collection to determinative analysis or TCLP extraction 180 days from TCLP extraction to determinative analysis
Mercury	1 liter P[c] or WM[a]-G[b]	HNO_3[d] to pH < 2	28 days from field collection to determinative analysis or TCLP extraction 28 days from TCLP extraction to determinative analysis
Cyanides	G[b] or P[c]	Cool 4°C[1]	14 days from field collection to sample preparation

[a]WM = Wide-mouth
[b]G = Glass
[c]P = Polyethylene
[d]HNO_3 = Nitric acid - Preservative not added until after TCLP extraction. Preservative added to the extract.

[1]Solid may be extracted prior to analysis by SW-846 Method 9013.

Source: SW-846, Update I and Update II

TABLE E.4-5

Target Detection Limits, Analytical Methods, and Instrumentation for Metals Analysis

Analyte	Target Detection[a] Limit (μg/L)	EPA SW-846 Analytical Method	Instrumentation[b]
Arsenic	10	6010A, 7060A	ICP, GFAA
Barium	200	6010A, 7080A, 7081	ICP, FLAA, GFAA
Beryllium	5	6010A, 7090, 7091	ICP, FLAA, GFAA
Cadmium	2	6010A, 7030, 7131A	ICP, FLAA, GFAA
Chromium	10	6010A, 7190, 7191	ICP, FLAA, GFAA
Lead	5	6010A, 7420, 7421	ICP, FLAA, GFAA
Mercury	0.2	7470A	CVAA
Nickel	40	6010A, 7520	ICP, FLAA
Selenium	5	6010A, 7740	ICP, GFAA
Silver	10	6010A, 7760A, 7761	ICP, FLAA, GFAA
Thallium	10	6010A, 7840, 7841	ICP, FLAA, GFAA

[a]Detection limits listed are for drinking water. Actual detection limits may be higher depending on sample composition and matrix type.
[b]ICP - Inductively Coupled Plasma Emission Spectroscopy
GFAA - Graphite Furnace Atomic Absorption Spectroscopy
FLAA - Flame Atomic Absorption Spectroscopy
CVAA - Cold Vapor Atomic Absorption Spectroscopy

TABLE E.4-6

Target Detection Limits[a], Analytical Methods, and Instrumentation for Organics Analysis

Analyte (Group)	Regulatory Limits	EPA SW-846 Analytical Method	Instrumentation[b]
Target Compound List Volatiles + 10 Tentatively Identified Compounds (TICs)	10 µg/L water 10-120 µg/kg solids	8240B, or 8260A	GC/MS
Target Compound List Semivolatiles + 20 TICs	10 µg/L water 330-50,000 µg/kg solids	8250A, or 8270B	GC/MS

[a]Detection limits expressed as practical quantitation limits.
[b]GC/MS = Gas chromatography/mass spectrometry

NOTE: µg/L and mg/L used for liquid samples and TCLP extracts.
µg/kg and mg/kg used for residues.
Use the most appropriate for the magnitude of the number.

TABLE E.4-7

Analytical References
for Miscellaneous Methods

Analyte/Property	EPA SW-846 Analytical Method
Cyanides	9010A
Corrosivity/pH	9040B or 9045C and 1110
Ignitability	1020A or 1010
TCLP[1]	1311

[1]Toxicity Characterization Leaching Procedure is to be utilized for the analysis of refractory samples.

TABLE E.4-8

Summary of Field Quality Control Samples

QC Sample Type	QC Sample Matrix	Applicable Analysis	Frequency	Purpose	Acceptance Criteria	Corrective[a] Action
Trip Blank	Water	Volatiles	One set (2) per shipping cooler containing samples	Monitor possible sample contamination in field	-[b]	Advisory—no action required
Field Blank	Water	Volatiles, Semivolatiles, Metals	One sample per sampling event (can prepare and hold pending sample results)	Monitor field sample contamination/ air contamination	-[b]	Advisory—no action required
Field Duplicate	Refractory/ Water	Volatiles, Semivolatiles, Metals, TCLP	One for every 20 samples or 5 percent minimum	Documents precision of sampling process	Analytical method criteria, if applicable	Advisory—no action required
Equipment Rinsate Blank	Wash water	Volatiles, Semivolatiles, Metals	One sample per day (can prepare and hold pending sample results)	Monitor decontaminatio n effectiveness and sample cross contamination	-[b]	Advisory—no action required

5/23 - never did this b/c never leased sampling equipment

[a]EPA Functional Guidelines for Data Validation may apply.
[b]For volatiles and semivolatiles analysis, if blank shows detectable levels of any common laboratory contaminant (methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.
Source: SW-846, Update I and Update II

TABLE E.4-9a

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Volatile Organics

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8240B or 8260A	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours of analysis time or every batch	Per method	Repeat until acceptance criteria satisfied
	Initial calibration: instrument sensitivity and linearity of response	Five concentration levels; after any instrument performance failure; check prior to sample analysis	Meet SPCCs[a] and CCCs[b] criteria per method	Repeat calibration
	Continuing calibration	Every 12 hours of analysis time or every batch	Meet SPCCs and CCCs criteria per method	Determine problem, correct and reanalyze a continuing calibration or recalibrate.
	Internal standards	Added to all calibration standards, field samples, QC[c] samples, and blanks	Extracted ion current profile (EICP)[d]; Δ -50% to +100% Retention time shifts < 0.50 minutes[e]	Correct malfunction; reanalyze sample per method criteria
	Method blank	Every 12 hours of analysis time or every batch	< 5 times quantitation limit for methylene chloride, acetone, 2-butanone; all other compounds ≤ quantitation limit	Determine source of contamination and document corrective action; reanalyze samples
	Matrix spike and matrix spike duplicate	Each analytical batch	Per method	Prepare and analyze QC reference standard per method

TABLE E.4-9a

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Volatile Organics
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8240B or 8260A (Continued)	System monitoring compounds (surrogate compounds)	Every calibration standard, method blank, QC sample, field sample, matrix spike, matrix spike duplicate	Per method and matrix	Check instrument and calculations; reanalyze per method criteria

[a]SPCC - System performance check compounds
[b]CCC - Calibration check compounds
[c]QC - Quality control
[d]EICP - Extracted ion current profile
[e]This criteria applies to the internal standards but is only evaluated for the continuing calibration check.

SOURCE: SW-846, Update I and Update II

TABLE E.4-9b

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Semivolatile Organics

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8250A or 8270B	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours of analysis time or every batch	Per method	Repeat until acceptance criteria satisfied
	Initial calibration: instrument sensitivity and linearity of response	Five concentration levels; after any performance failure; check prior to sample analysis	Meet criteria for SPCCs[a] and CCCs[b] per method	Repeat calibration
	Continuing calibration	Every 12 hours of analysis time or every batch	Meet criteria for SPCCs and CCCs per method	Determine problem, correct and analyze another continuing calibration, or repeat calibration
	Internal standards	Added to all calibration standards, field samples, QC[c] samples, and blanks	EICP[d] Δ -50% to +100% Retention time shifts < 0.50 minutes[e]	Correct malfunction: reanalyze sample per method criteria
	Method blank	Each batch of samples of similar matrix and concentration level, or each extraction batch	< 5 times quantitation limit for phthalate esters; all other compounds ≤ quantitation limit	Determine source of contamination; document corrective action; reextract and reanalyze samples
	Matrix spike and matrix spike duplicate	Each analytical batch	Per method	Prepare and analyze QC reference standard per method

TABLE E.4-9b

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Semivolatile Organics
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8250A or 8270B (Continued)	System monitoring compounds (surrogate compounds)	Each field sample, blank, QC sample, and calibration standard	Matrix specific per method limits	Check instrument and calculations; reextract and reanalyze per method criteria

[a]SPCC = System performance check compounds
[b]CCC = Calibration check compounds
[c]QC = Quality control
[d]EICP = Extracted ion current profile
[e]This criteria applies to the internal standards but is only evaluated for the continuing calibration check.

SOURCE: SW-846, Update I and Update II

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TABLE E.4-9c
Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals Except Mercury

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
6010A	Initial Calibration	Daily (3 standards)		
	Calibration Verification	Daily after initial calibration	± 5% of initial	Recalibrate
	Continuing Calibration	Every 10 samples and end of the analytical run	± 10% of expected value	Recalibrate
	Calibration Blank	Every 10 samples, at end of analytical run, and at initial calibration	± 3 SD of mean blank values	Repeat, average result, or recalibrate
	Reagent Blank (also called preparation blank)	One per preparation sample batch	< CRQL[a]	Redigest and reanalyze
	Instrument Check Standard	Every 10 samples	± 10% of expected value	Fluid problem, reanalyze previous samples
	Interference Check Standard	Beginning and end of analytical run	± 20% of true value	Correct problem
	Serial Dilution	One per field batch per matrix	± 10% of original determination	Flag data
	Replicates/Duplicates	One per analytical run	Per method or contract requirements	Flag data
	Matrix Spike	Per method and contract requirements	± 25% of known value	Flag data

TABLE E.4-9c

Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals Except Mercury
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
6010A (Continued)	Spiked replicate	Per method or contract requirements	± 20% of actual value	Flag data

*CRQL = Contract required quantitation limit

SOURCE: SW-846, Update I and Update II

TABLE E.4-9d

Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
All 7000 and 7000A Methods	Initial Calibration	Daily (3 standards)		
	Calibration Verification	Daily after initial calibration	± 10% of true value	Recalibrate
	Continuing Calibration	Every 10 Samples	± 20% or true value	Recalibrate and reanalyze samples
	Calibration Blanks	Every 10 samples, at end of analytical run, and initial calibration	± 3 SD of mean blank values	Repeat, average, recalibrate if necessary
	Reagent Blank (also called preparation blank)	One per preparation sample batch	< CRQL[a]	Redigest and reanalyze
	Laboratory Control Sample (LCS)	One per analytical batch	± 20% of true value	Correct problem, redigest, and reanalyze all samples from last LCS
	Interference Check Standard	One per analytical batch	± 10% difference between undiluted and 5X diluted per method	Per method
	Matrix Spike	Every analytical batch	Per method	Flag data
	Serial Dilution	One per field batch per matrix	± 10% of original determination	Flag data

TABLE E.4-9d

Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
All 7000 and 7000A Methods (Continued)	Matrix Spike Duplicate	Every analytical batch	RPD[b] < 20%	Flag data
	Method of Standard Additions	When needed for problem matrices	Per method	Per method

[a]CRQL - Contract required quantitation limit
[b]RPD - Relative percent difference

SOURCE: SW-846, Update I and Update II

TABLE E.4-9e

Summary of Laboratory Quality Control Procedures
by Analytical Method

TCLP

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
1311	Extraction fluid blank	Every 20 extractions conducted in an extraction vessel	Per analytical method	Per analytical method
	Matrix	Each analytical batch	Per analytical method	Per analytical method

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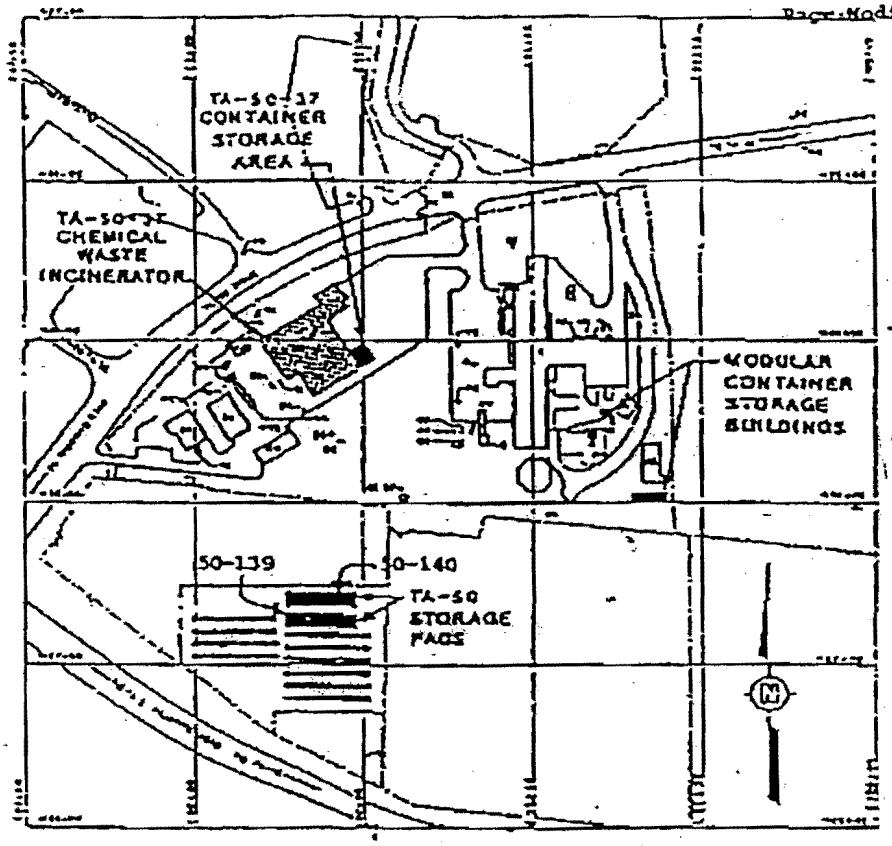

FIGURE 4

LOCATIONS OF TA-50
CHEMICAL WASTE INCINERATOR
AND CONTAINER STORAGE
UNITS

PREPARED FOR

LOS ALAMOS
NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO

INTERNATIONAL
TECHNOLOGY
CORPORATION

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FIGURE E.4-1

Locations of TA-50 Chemical Waste Incinerator
and Container Storage Units

OFFICIAL SAMPLE SEAL

Collected by _____ Collector's Sample No. _____
(Signature)

Date Collected _____ Time Collected _____

Place Collected _____

FIGURE E.4-2

Example of Sample Seal

OFFICIAL SAMPLE LABEL

Collected _____ Collector's Sample No. _____

Place of Collection _____

Date Sampled _____ Time Sampled _____

FIGURE E.4-3

Example of Sample Label

Hazardous Materials
Collector's Sample No._____

Location of Sampling: ____Producer ____Hauler
____Disposal Site
____Other:_____

_____

Company's Name_____ Telephone(__)_____

Address_____
number street city state zip

Collector's Name_____ Telephone(__)_____

Date Sampled_____ Time Sampled_____hours

Type of Process Producing Waste_____

Waste Type Code_____ Other_____

F i e l d
Information_____

_____

_____

Sample Allocation:

1. _____
name of organization

2. _____
name of organization

3. _____
name of organization

Chain of Possession

1. _____ _____ _____
signature title inclusive dates

2. _____ _____ _____
signature title inclusive dates

FIGURE E.4-4

Chain of Custody Record

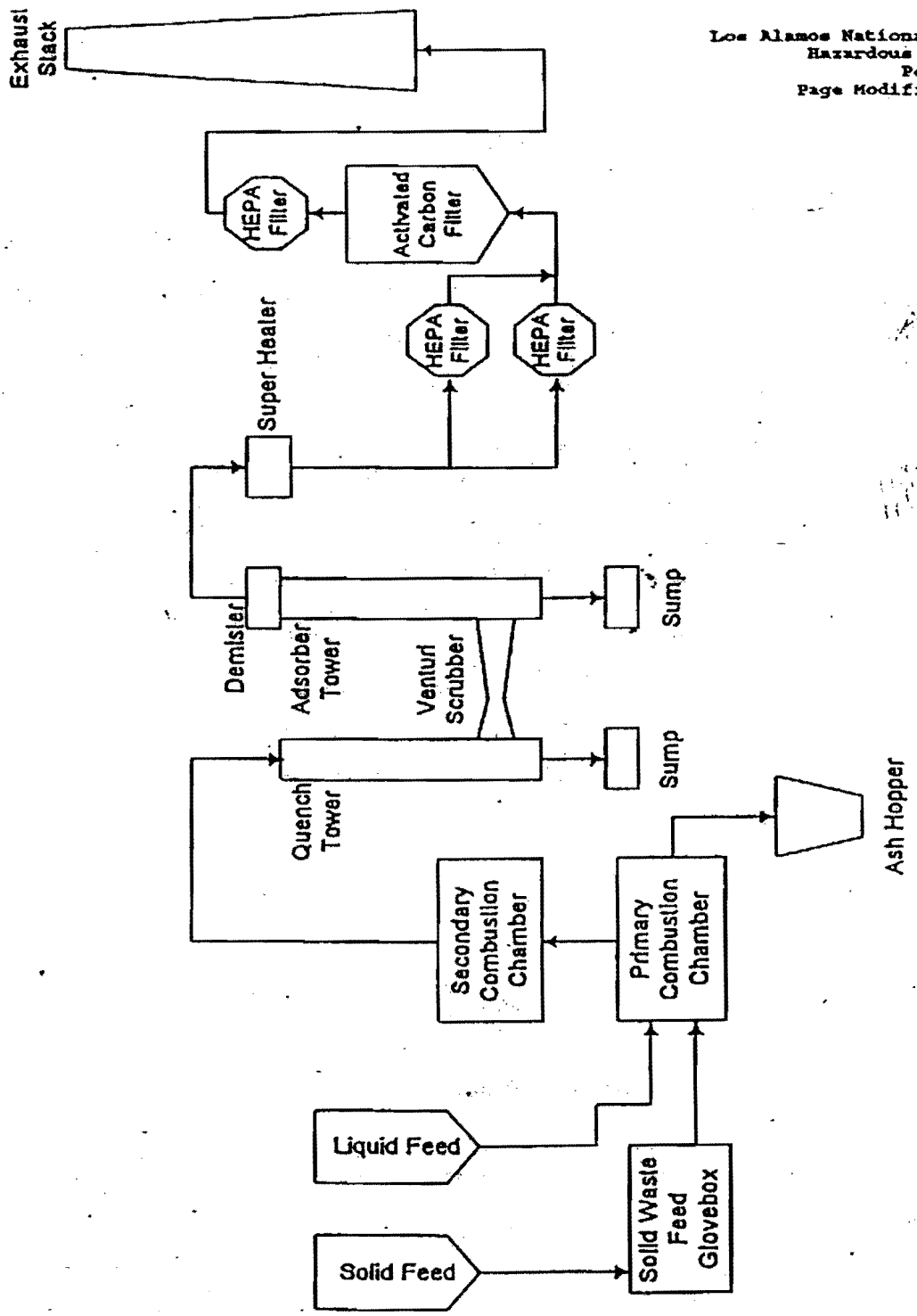

Figure E.4-5
Principal Treatment Components
of the Controlled Air Incinerator

APPENDIX B
Letters of Agreement/Communication with the New Mexico Environment Department

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 24, 2004

G. Pete Nanos, Interim Director
Los Alamos National Laboratory
P.O. Box 1663, MS A100
Los Alamos, New Mexico 87545

Mr. Ralph Erickson, Area Manager
Office of Los Alamos Site Operations
Department of Energy
528 35th Street, MS A316
Los Alamos, New Mexico 87544

SUBJECT: APPROVAL OF CLASS I PERMIT MODIFICATION – TECHNICAL AREA 50
CLOSURE PLANS:
TA-50-114 CONTAINER STORAGE UNIT, PERMIT ATTACHMENT E.3;
TA-50-37, ROOM 117 CONTAINER STORAGE UNIT, PERMIT ATTACHMENT E.5;
TA-50-37, CONTROLLED AIR INCINERATOR EXHAUST SYSTEM, PERMIT ATTACHMENT E.4.
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
HAZARDOUS WASTE FACILITY PERMIT
LOS ALAMOS NATIONAL LABORATORY EPA ID# NM0890010515
HWB-LANL-02-014

Dear Mssrs. Nanos and Erickson:

The New Mexico Environment Department (NMED) has reviewed the above-referenced U.S. Department of Energy and University of California (Permittees) requests for a Class 1 permit modification to the Los Alamos National Laboratory (LANL) Hazardous Waste Permit. The modification requests are dated August 25, 2003.

NMED approves the requests as a Class 1 permit modification requiring prior agency approval, pursuant to 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.42, Appendix I.D.1.a, b, and d).

The modifications revise the above-referenced attachments to the LANL Permit to change maximum inventories, dates of closure, and decontamination procedures, as specified in the modification requests.

This approval is subject to the following two conditions:

1. In addition to the analytes specified in the modified Closure Plan, Permittees shall sample for polychlorinated biphenyls, dioxins, and furans at the TA-50-37 Controlled Air Incinerator ductwork at the locations specified in the modified Closure Plan; and

2. Permittees shall send notice of the permit modification to all persons on the LANL facility mailing list within 90 calendar days after the change is put into effect, in compliance with 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.42(a)(1)(ii)).

The New Mexico Hazardous Waste Management Fee Regulations, 20.4.2.201.6 NMAC, require assessment of fees for permit modifications. The fee assessment invoice will be sent to you under separate cover. Payment is due within 60 days from the date you receive the invoice.

If you need an extension to the 60-day period, you must submit an extension request to NMED at least 14 days before the end of the 60-day period. If you disagree with the assessed fee, you may file an administrative appeal under provisions of 20.4.2.302.1 NMAC.

If you transmit the fee electronically, you must also submit a letter to Cindy Abeyta, Hazardous Waste Bureau, indicating the invoice number, payment amount, date of payment, and the assessed activity.

If you have any questions or need additional information please contact John Kieling, at (505) 428-2535, or Steve Jetter, at (505) 841-9488.

Sincerely,

Sandra Y. Martin
Acting Chief
Hazardous Waste Bureau

SYM:sj

cc: J. Kieling, NMED HWB
C. Abeyta, NMED HWB
S. Jetter, NMED HWB
C. Will, NMED HWB
L. King, EPA 6PD-N
G. Turner, DOE LASO, MS A316
Jack Ellvinger, LANL RRES-SWRC
G. Bacigalupa, LANL RRES-SWRC

file: reading and LANL TA-50

Department of Energy
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

AUG 2 5 2003

Carl Will, RCRA Permits Management Program
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Dear Mr. Will:

Subject: Closure Procedure for the Exhaust System at Technical Area 50, Building 37 (TA-50-37) Los Alamos National Laboratory (LANL)

The purpose of this letter is to outline the closure procedure for the Resource Conservation and Recovery Act (RCRA) closure of the exhaust stack system located at TA-50-37. This exhaust equipment consists of an exhaust stack, ductwork, plenum, fans, and a high efficiency particulate air (HEPA) filter bank that were originally part of the Controlled Air Incinerator (CAI) at TA-50-37 and were addressed in its closure plan. The CAI was certified closed in 1998; however, the exhaust equipment was left intact, with the New Mexico Environment Department's (NMED) approval, for use in the Radioactive Materials Research, Operations, and Demonstration (RAMROD) Facility. The RAMROD Facility was proposed as a Hazardous Waste Facility Permit Modification in December 1996 and withdrawn February 1998.

CAI CLOSURE PLAN

The Closure Plan for the CAI is located in Attachment E.4 of the Hazardous Waste Facility Permit, approved on November 8, 1989 and was amended July 1, 1996 prior to the commencement of the closure proceedings at the CAI (Enclosure 1). Section E.4.3.2 of the closure plan states that components of the CAI may be "reused or disposed of as waste" after closure. The U.S. Department of Energy/University of California (DOE/UC) will utilize the exhaust equipment for non-RCRA activities after closure. RCRA closure will follow the approved CAI closure plan in accordance with 40 CFR 264.112(e) which states:

"Nothing in this section shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure."

CAI CLOSURE CERTIFICATION REPORT

The CAI Closure Certification Report was submitted April 22, 1998. Section 1.3.3 states that during characterization, three exhaust stack samples were collected. One of these samples, the one collected from the top portion of the exhaust stack, indicated an arsenic level of 0.34 parts per billion (ppb). No other hazardous waste constituents were detected. Section 1.3.3 also indicates that the HEPA filters and plenums were decontaminated and disposed of in accordance with the CAI Closure Plan.

CLOSURE PROCEDURES

Given the information, this letter presents DOE/UC's intent to close the exhaust equipment A-50-37 in accordance with the original CAI Closure Plan as follows:

1. Sampling locations were identified in compliance with Section E.4.4 of the CAI Closure Plan during a walk-through of TA-50-37 on January 21, 2003. The site walk consisted of Mr. Steve Jetter and three members of LANL's Solid Waste Regulatory Compliance Group (RRES-SWRC); Loren Abercrombie, Jack Ellvinger, and Jeff Carmichael. The sample locations determined to be appropriate are identified in Enclosure 2. They include five discrete locations; two from the HEPA filtration bank, two from the exhaust ductwork, and one where the exhaust ductwork enters the bag house. All of these locations will be sampled, provided the locations can be reached with sampling equipment.
2. Swipe samples will be collected from the locations described above and analyzed for the constituents listed in Table E.4-2 of the CAI Closure Plan. The constituents included in Table E.2-4 were chosen for the reasons described in Section E.4.4.
3. An alternate demonstration of closure as described in Section E.4.5 of the CAI Closure Plan may include one of the following:
   - Detectable hazardous waste or hazardous waste constituent concentrations from container storage activities that do not significantly decrease after several wash downs will be allowed to remain if they pose an acceptable risk, as mutually agreed upon with the NMED.
   - Analytical results will be compared to the United States Environmental Protection Agency's Region 6 Medium Specific Screening Levels (MSSL) for tap water. If the result is below the MSSL, closure will be considered complete.
   - If residual contamination levels found in the exhaust equipment are above the MSSLs, an assessment will be conducted using an occupational risk based scenario.

If you have any comments or questions regarding the information presented in this letter and/or in the enclosures, please contact either Gene Turner, DOE, at (505) 667-5794 or Jack Ellvinger, UC, at (505) 667-0633.

Sincerely,

Joseph C. Vozella
Assistant Manager
Office of Facility Operations

OFO:1GT-019

Enclosure

cc:
See Page 3

cc w/enclosure:
Laurie King, Chief (6PD-N)
New Mexico/Federal Facilities Section
Environmental Protection Agency
Region 6 1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
Steve Jetter
RCRA Permits Management Program
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

cc w/o enclosure:
Sandra Martin, Bureau Chief
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
John E. Kieling, Manager
RCRA Permits Management Program
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
J. Stetson, PWT, LASO
G. Turner, OFO, LASO
D. McLain, FWO-WFM, LANL, MS-J593
B. Ramsey, RRES-DO, LANL, MS-J591
A. Stanford, FWO-DO, LANL, MS-K492
D. Stavert, RRES-EP, LANL, MS-J591
E. Louderbough, LC-ESH, LANL, MS-A187
R. Lechel, FWO-WFM, LANL, MS-J593
J. Ellvinger, RRES-SWRC, LANL, MS-K490
L. Vigil-Holterman, RRES-SWRC, LANL, MS-K490
R. Romero, RRES-SWRC, LANL, MS-K490

ENCLOSURE 1

CAI AMENDED CLOSURE PLAN

AMENDED
CLOSURE PLAN

ATTACHMENT E.4
DISMANTLEMENT REVISION

AMENDED CLOSURE PLAN
PERMIT ATTACHMENT E.4.
DISMANTLEMENT REVISION
NM 0890010515-1

E.4 Chemical Waste Incinerator

The chemical waste incinerator [Controlled Air Incinerator (CAI)] is located in Building 37 at Technical Area 50 (Figure E.4.1) of the Los Alamos National Laboratory (LANL). The original CAI was installed in 1977 and first operated in 1978. The CAI and associated systems were originally research and development (R&D) tools used to prove the viability of incineration as a treatment method for TRU waste. R&D testing ceased in 1987 so that modifications (upgrades) to the system, identified during the initial phase of operation, could be performed. RCRA trial burns were conducted just prior to the cessation of R&D activities. Between 1978 and 1987 a total of 36 campaigns had been completed at the CAI.

LANL received its Hazardous Waste Facility Permit on November 8, 1989 and activities after that date have been in accordance with its permit. Hazardous wastes currently in storage at LANL pursuant to LANL's Hazardous Waste Facility Permit are being managed through shipment off site for treatment and disposal.

The CAI is rated at a nominal 45 kilograms per hour waste feed throughput. The CAI is currently authorized to incinerate Toxic Substance Control Act (TSCA) regulated waste and permitted to incinerate Resource Conservation and Recovery Act (RCRA) regulated waste.

The incinerator was upgraded prior to permit issuance in November 1989 to add liquid waste tanks, solid waste feed preparation lines, a gravity ash removal system, a high-efficiency off-gas cleanup system, and backup utility systems. The combustion chamber was modified to permit effective incineration of waste in solid, liquid, slurry, or gaseous form. Particular attention continues to be given to engineering for proper containment of radioactivity.

CAI system modifications and upgrades since permit issuance were intended to replace equipment due to normal wear or to upgrade existing equipment for routine operations. Upgrades focused on increased component life, increased corrosion resistance, and improved electronics. Modifications for these changes to the CAI were submitted on June 1995 to NMED for its review and approval.

A review of the feed summary data for the CAI indicates that between May 1978 and March 1987, a total of 36 campaigns had been

completed. The feed summary data indicate that the CAI was not used to burn listed wastes. Characteristic waste was included in Run 23. Run 23, March 1987 included ignitable (D001) waste scintillation fluids absorbed by corn cob fractions. The scintillation fluids meet the definition of characteristic as defined at 40 CFR 261 Subpart C *Identification of Characteristic Waste*. The CAI campaigns included equipment checks, treatability studies, efficiency studies, incineration of PCB contaminated materials under TSCA, a RCRA trial burn, and burns of transuranic (TRU) wastes. Eight of the 36 CAI campaigns involved radioactive components. A comprehensive feed summary is provided in Appendix 1.

This closure plan is limited to CAI components to demonstrate closure. This closure plan does not include the building utilities, the building structure, or the waste storage areas located within TA-50, Building 37. Closure activities will be conducted concurrent with the dismantlement and removal of the CAI from the site. During RCRA and TSCA closure, CAI components (i.e., combustion chambers, exhaust ducts, quenching tower, absorption tower, high efficiency particulate air [HEPA] filters, carbon bed adsorber, exhaust stack, ash removal system, liquid waste feed system, and gloveboxes) will be sampled and surveyed to identify the presence of radiological and hazardous contamination. Decontamination activities will be conducted to support reuse and reclamation to the extent practicable. Materials that cannot be reused or reclaimed and wastes generated from decontamination will be characterized using sample results and waste analysis. The refractory used in the incinerator contains chromium, a characteristic hazardous waste for toxicity. The incinerator refractory, if disposed, will be sampled and managed in accordance with the results of sampling and survey analysis. If the waste is determined to contain hazardous constituents it will be disposed of in a RCRA permitted treatment, storage, or disposal facility (TSDF).

E.4.1 Estimate of Maximum Waste in Storage and Treatment

No hazardous wastes are currently in storage for treatment at the CAI. Therefore, the CAI will have no inventory of hazardous waste at the time of closure.

E.4.2 Description of Waste Handled

The CAI and the exhaust gas treatment systems are capable of combusting a variety of wastes, including RCRA-regulated hazardous waste, mixed waste, TSCA-regulated PCB waste, low-level radioactive waste, and TRU waste. The hazardous and mixed waste feeds initially intended for treatment at the CAI included a mixture of

liquid and solid hazardous wastes composed of various organic solvents and liquids, as well as chemically-contaminated paper, wood, and plastics. As stated earlier in this plan, these hazardous waste streams are being treated at off-site commercial facilities. Mixed wastes are planned to be treated on-site in other units or at other alternative commercial and internal facilities with capacity to treat and dispose of mixed wastes. The CAI was permitted to burn all HWMR-5, Part II, Appendix VIII constituents with an incinerability ranking equal to or better than carbon tetrachloride (for the CAI, the incinerability ranking is based on organics with a heat capacity greater than carbon tetrachloride).

A review of feed summary data indicates that the CAI was not used to burn any RCRA-regulated wastes that contain HWMR-5, Part II, Appendix VIII constituents. However, as stated previously, Run 23 contained waste scintillation fluids that meet the definition of characteristic waste. Appendix 1 summarizes the feed summary data, the run date, feed description, and basis for regulatory status of the feed material.

E.4.3 Closure Procedure

LANL will conduct RCRA closure of the CAI based on the documentation that no RCRA-regulated listed wastes were treated in the unit and that the ignitable characteristics of Run 23 were treated through incineration as specified at 40 CFR Part 268 Appendix VI. To ensure that closure of the CAI is protective of both human health and the environment, LANL will conduct sampling of the CAI, as described in Section E.4.4 of this closure plan, to verify that no HWMR-5, Part II, Appendix VIII hazardous constituents are present.

Radiological surveys will also be conducted to ensure that the requirements of U.S. Department of Energy (DOE) Orders 5400.5 "Radiation Protection of the Public and the Environment" and 5820.2A "Radioactive Waste Management" are met. TSCA closure activities of the CAI will be conducted concurrent with dismantlement, removal, and RCRA closure.

E.4.3.1 Partial Closure

Partial RCRA closure of the CAI is not being pursued. The CAI is to be closed as a RCRA unit including, but not limited to, the combustion chambers, all waste feed, exhaust, filter, and residue management components.

E.4.3.2 Final Closure

This section describes closure of the CAI. At the beginning of closure, the CAI will be surveyed for radioactive contamination to determine radiological boundaries and personal protective equipment (PPE) requirements. Once radiological boundaries are established, swipe samples will be taken and analyzed to verify the absence of hazardous constituent contamination. Verification will consist of sampling the principal CAI components throughout the system that have been in contact with material feeds, residues, or secondary wastes. If RCRA hazardous contamination is found, components amenable to decontamination will be cleaned with detergent solution and/or steam cleaning. The spent cleaning solution will be collected and analyzed for hazardous constituents. If no constituents are detected statistically above background, these components will be deemed decontaminated and can then be reused or disposed of as waste. If components are not amenable to decontamination, they will be managed as newly generated hazardous, toxic, or mixed waste, as indicated through waste analysis, in accordance with Laboratory procedure. All radioactive components will be decontaminated to the extent practicable and disposed of according to appropriate DOE Orders. Sampling procedures are described below in Section E.4.8 of this closure plan. Samples will be analyzed for the hazardous constituents listed in Table E.4-2.

Analytical results will be used to verify the absence of hazardous constituents in the CAI components or qualify the regulatory status of CAI waste. These analytical results along with the documentation of CAI closure activities will be used to validate

E.4.3.3 Amendment of the Closure Plan

If it is necessary to amend this closure plan, LANL will submit a written notification of, or request for, a permit modification describing any change in operation or unit design that could affect the closure plan. The written notification or request will include a copy of the amended closure plan for approval by the NMED. LANL will submit a written notification of, or a request for, a permit modification to authorize a change in the approved plan if either of the following occur:

1. There are changes in operating plans, unit design, or waste types treated that affect the closure plan

2. Unexpected events occur during closure that require modification of the approved closure plan

LANL will submit a written request for a permit modification with a copy of the amended closure plan no later than 60 days after an

occurrence of an unexpected event that affects the closure plan. If the unexpected event occurs during closure, the permit modification will be requested within 30 days of the occurrence. If the Secretary of the NMED requests a modification of the closure plan during closure, a closure plan modified in accordance with the request will be submitted within 30 days of notification.

E.4.4 Verification of No Contamination

Sampling for verification will be based on a biased sampling plan. Sample locations will be determined using engineering judgement and knowledge of the CAI system layout and past operation to obtain samples from principal treatment components with the highest likelihood for contamination (Figure E.4-5). Additionally, a minimum of one sample will be collected from an area with a low probability of contamination as a check on the biased sampling location data. This should provide a conservative data base from which a determination that RCRA constituents are absent can be made.

Multiple samples from selected locations will be acquired to provide adequate statistical data control. The samples to be collected from each location, as well as the specific location and sampling method, will be specified in the QA/QC plan. Initial sampling locations are listed below:

- Solid Waste feed — Sampling of the solid waste feed glovebox
- Liquid waste feed — Sampling of the liquid waste feed tanks
- Quenching tower — Sampling of the quenching tower
- Adsorption tower — Sampling of the adsorption tower
- HEPA filters — Sampling of the outlet from the HEPA filter back
- Activated carbon adsorber — Sampling of the inside housing of the activated adsorber
- Exhaust stack — Sampling of the inside of the exhaust stack

- Ash Removal System Sampling of the gravity ash dropout hopper

- Combustion Chamber Sampling of the combustion chamber

The constituents listed in Table E.4-2 include regulated constituents which were expected to be treated in the unit. A scan for volatile and semivolatile organics will be performed to ensure that solvents commonly used at LANL have not contaminated the unit. Two field blanks will be prepared and analyzed for the constituents listed in Table E.4-2. Analytical results from field blanks and control samples of the solid waste feed glovebox will provide background data for verification of the absence of contamination. The glovebox was chosen as a control location because the component has never been used for managing wastes. Analytical procedures will conform to U.S. EPA SW-846 methods. CAI components will be considered to be contaminated if verification samples show a statistically significant increase in the listed constituents over the field blank and control samples.

LANL will carefully review all operational and sampling analytical data to provide for a determination of whether there has been a release external to the incinerator. If a release has occurred, the appropriate decontamination and verification sampling will be done by LANL. Such sampling would include the structures within the building, building floors, etc., plus environmental media (e.g. soils) if it should be so indicated. All sampling and analysis plans, which are not addressed procedurally in this Closure Plan, are subject to the approval of NMED.

Absence of hazardous contamination will be verified if:

1. No hazardous constituents are detected in samples from the CAI locations, or

2. Hazardous constituents detected in samples from the CAI locations are equal to or less than, at the 0.01 confidence level, their concentration in the unused wash water field blank or background sample.

E.4.5 Verification of Decontamination

Sampling will be used to verify the success of decontamination activities used during CAI closure. Before decontaminating a CAI component, two samples will be taken of the clean wash solution and analyzed for the constituents listed in Table E.4-2 of this attachment. These analytical results will provide background data for decontamination verification.

Dirty wash-down solutions will be analyzed for the constituents listed in Table E.4-2. Analytical procedures will conform to the methods found in SW-846. Components will be considered contaminated if the dirty wash solutions show a significant increase in the listed constituents over the clean wash solution.

Successful decontamination for each component is defined as one of the following:

1. No detectable hazardous constituents in the final sample.

2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused wash water or background sample.

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Secretary will evaluate the proposed alternative in accordance with the standards and guidance in effect and, if approved, incorporate, by permit modification, the alternative into the closure plan.

E.4.6 Closure Schedule

Closure activities will be conducted in accordance with an approved closure plan. The year of closure for the CAI is estimated to be 1996. The closure schedule is provided in Table E.4-1. Federal Acquisition Regulations require competitive procurement in obtaining contract support for this type of effort, therefore contracts will be secured before closure begins. The closure activities described in this plan are estimated to take 250 days.

In the event that closure or closure activities cannot be completed at the CAI within 250 days of notification of closure to the New Mexico Environment Department (NMED), LANL will notify the Secretary of the NMED in accordance with extension requirements.

E.4.7 Closure Certification

An independent registered professional engineer and the Permittee or his representative shall witness the closure and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility has been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered professional engineer, and the original copy submitted by the DOE to the Secretary of NMED. One copy shall be maintained at the DOE office and one copy maintained by LANL.

E.4.8 Sampling and Analytical Procedures

This section describes the procedures and methods used for sampling and analysis. While the procedures and methods are specific, any applicable procedure or method given in the current update of *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) may be used if conditions or experience shows the alternate method to be more appropriate. All analytical procedures actually used will be annotated in the final closure report.

Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. Sample containers appropriate for the requested analyses will be used for all samples. Requirements for sample containers, preservation, and holding times are summarized in Tables E.4-3 and E.4-4. Disposable sampling equipment may be used.

Personal protective clothing and respirator protection will be worn at all times as identified by LANL's Industrial Hygiene and Safety Group and in the approved Radiological Work Permit. Sampling activities will be conducted in a manner to ensure that worker exposure levels are maintained as low as reasonably achievable (ALARA).

E.4.8.1 Analytical Procedures

All sample analyses will be conducted using methods prescribed in the current update of SW-846, including those for quality assurance/quality control (QA/QC). Target detection limits, analytical methods, and instrumentation for metals, organics, and miscellaneous analyses are listed in Tables E.4-5, E.4-6, and E.4-7.

E.4.8.2 Field and Laboratory Quality Assurance Quality Control

QC activities will include collection of the following samples: trip blanks, duplicate or split samples, field blanks, and equipment rinsate blanks. QC samples are described in this section and summarized in Table E.4-8. QC samples will be analyzed for the same parameters as the verification samples (Table E.4-1). QC samples will be assigned unique identification numbers (similar to verification sample numbers) that do not indicate to the laboratory that the samples are for QA/QC purposes.

A trip blank will be prepared whenever samples are collected for volatile organic compounds analysis. The trip blank is a sample container filled with organic-free deionized water. The filled container is taken to the sampling site in the cooler or sample

carrier, remains unopened, and is shipped to the analytical laboratory along with the samples. One trip blank will be included per cooler or sample carrier.

One sample for every ten samples will be either duplicated or split. The duplicated or split sample will be identified by a code so that its source is not available to the analytical laboratory, but analytical results can be compared to its twin.

Blank samples collected will include field blanks and equipment rinsate blanks. A field blank is a sample collected to assess the ambient conditions at the sampling site. The field blank for verification of no contamination is a swipe prepared in the laboratory that will be opened to the ambient conditions of the site, removed with sampling tongs, and replaced into the sampling container. A field blank for decontamination verification is a sample of organic-free deionized water, poured into a sample container under normal sampling conditions. Frequency of blank samples will be 1 in 20 samples. If fewer than 20 samples are collected, at least one blank sample will be collected. An equipment rinsate blank is collected to assess the cleanliness of the sampling equipment. The sampling equipment is cleaned according to the procedures described below in Section E.4.8.3, then organic-free deionized water is poured over the decontaminated equipment's sampling surface and collected in a sample container.

Instrument calibration and maintenance are field activities subject to QC procedures. Field equipment requiring calibration will be calibrated and maintained using the manufacturer's instructions and appropriate standard operating procedures.

LANL will ensure that the on-site or contract analytical laboratory operates under a quality assurance program plan (QAPP) which meets the requirements in the current update of SW-846. QC procedures in the analytical laboratory are guided by their QAPP. In order to assess the quality of the analytical data, the analytical laboratory is required to run QC samples to establish accuracy and precision. Laboratory QC procedures are summarized in Table E.4-9.

E.4.8.3 Cleaning of Sampling Equipment

To prevent cross-contamination of samples, sampling equipment will be cleaned prior to each use with a warm soap solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped. A disposable sampler may be presumed clean if still in a factory sealed wrapper.

E.4.8.4 Refractory Sampling

All collectable treatment residues have been removed from the CAI and therefore the only sampling of solids will be of the refractory lining in the combustion chamber. The refractory lining is a porous material that is imbedded with ash and is not amenable for removal using incinerator operating procedures. A representative sample of the refractory material will be obtained as follows:

1. Use a clean brush to scrub small, equal portions of material from the surface of the refractory lining at several locations along the bottom of the chamber.

2. Combine the material in the container until the gram volume of sample required for the analysis is obtained.

3. Cap the sample container and attach a label and seal.

4. Record sampling information in the field log book as described in Section E.4.8.

5. Complete the sample analysis request form and chain-of-custody record.

E.4.8.5 Swipe Sampling

Swipe samples will be taken to identify hazardous constituent contamination on CAI components. Samples will be collected by swiping areas of components identified in Section E.4.4 that have the greatest likelihood for contamination (e.g., stains, seams, basins). Swipe samples will be conducted as follows:

1. Use a standardized template [10 centimeters (cm) x 10 cm] to delineate the area of sampling.

2. Use a gauze pad or glass wool of known size and weight, saturated with the appropriate solvent (e.g., organic-free deionized water, hexane, acetone) for the swiping medium. The gauze, or glass wool, will be prepared in the laboratory with the analyte designation noted on the label prior to entry to the field.

3. Store the swiping medium in sealed glass vials until it is used for the swipe test.

4. Perform the swipe very quickly after air exposure to avoid losing the solvent medium.

5. Place swipes into sample containers immediately upon completion of the swipe.

6. Close, label, and seal the sample container to ensure the integrity of the sample.

7. Record sampling information in the field log book as described in Section E.4.9.

8. Complete a LANL sample analysis request form and a chain-of-custody record for each sample.

E.4.8.6 Liquid Sampling

To determine whether CAI components have been successfully decontaminated, wash water used in the decontamination process will be sampled to identify the presence or absence of contamination. Waste water generated from such decontamination activities will be managed in accordance with applicable regulations. Wash water solutions will be sampled before use to determine background parameters; dirty wash water used in cleaning components will also be sampled in order to identify any hazardous constituent contamination. Samples will be collected by spraying wash solution onto areas of the components identified in Section E.4.8 that have the greatest likelihood for contamination (e.g., bends, horizontal surfaces, seams, basins). Brushes may be used to help dislodge particulate and laminated residues from the surfaces of the sampling area. Washed areas will be rinsed and all waters collected using vacuum or manual pumps. The volume of wash water collected will be recorded in the log book. Wash waters will be transferred to sampling containers using glass tubes to obtain representative samples as follows:

1. Spray wash solution onto areas of the sampling location that have the greatest likelihood for contamination (e.g., bends, horizontal surfaces, seams, basins, etc.).

2. If areas of slag, ash, or lacquer remain after spraying, use a sampling brush to dislodge the material.

3. Use vacuum or pump to collect washwaters from the sampling location. Use caution not to allow washwaters to migrate from the sampling area.

4. Ensure that sampling equipment is present (glass tube with stopper, sample container, laboratory wipe, pen, etc.). Ensure that the stopper provides a tight closure.

5. Slowly lower the glass tube into the liquid at a rate that permits the levels of the liquid inside and outside the glass tube to be about the same. If the level of the liquid in the glass tube is lower than that outside the glass tube, the sampling rate is too fast and will result in a nonrepresentative sample.

6. When the glass tube hits the bottom of the liquid container, push the stopper in to close the glass tube.

7. Slowly withdraw the glass tube from the container with one hand while wiping the glass tube with a disposable cloth with the other hand.

8. Carefully discharge the sample into a sample container by slowly opening the glass tube. This is done by slowly pulling the stopper from the glass tube while the lower end of the sampler is positioned in the sample container.

9. Cap the sample container and attach a label and seal.

10. Record sampling information in the field log book as described in Section E.4.9.

11. Complete the sample analysis request form and chain-of-custody record.

E.4.9 Sample Handling and Documentation

Samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container will be sealed with a gummed paper seal attached to the container in such a way that the seal will be broken in order to open the container. The seal and sample label will be completed with a waterproof pen. An example of a sample seal is shown in Figure E.4.2.

The sample label is necessary to prevent misidentification of samples and shall include, if applicable, the sample location number referenced to CAI components. The site information will include information necessary to identify the area sampled within the component specified (e.g., sump basin of the quenching tower). An example of a sample label is shown in Figure E.4.3.

The chain-of-custody record is necessary to trace sample possession from the time of collection and will accompany every sample. This

chain-of-custody record consists of two pages with the original accompanying the shipment and the copy retained by LANL. An example of this form is shown in Figure E.4.4.

A separate closure sampling log book will be kept and will contain all information pertinent to closure surveys and sampling. The log book shall have bound and consecutively numbered pages in an 8-1/2 by 11-inch format.

Minimum entries shall include:

a. Purpose of sample (closure sampling)

b. Location of sampling (component name and location)

c. Name and address of person making log entry

d. Type of sampling process

e. Number and volume of sample

f. Description of each sampling location, sampling methodology, equipment used, etc.

g. Date and time of sample collection

h. Sample destination and transporter's name (name of laboratory, United Parcel Service, etc.)

i. Diagram or photograph of the sampling location, if any

j. Field observations (radiological status, break in utility service, etc.)

k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc)

l. Collector's sample identification number(s)

m. Signature of person responsible for the log entry

Sampling situations vary widely. No specific rule can be given as to the extent of information that will be entered in the log book. Sufficient information will be recorded so that the sampling situation can be reconstructed without relying on the collector's memory.

The sample shipment and chain-of-custody record is accompanied by a sample analysis request form. The sample analysis request form

has two portions: field and laboratory. The field portion of this form will be completed by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion will be completed by the laboratory personnel when the sample is received.

E.4.10 Quality Assurance/Quality Control

The Permittee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to LANL management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, ensure that sample blanks are obtained, and review the analytical reports for accuracy and adequacy. A written QA/QC plan in accordance with SW-846 guidance shall be prepared and followed, with variations from the QA/QC plan documented and explained. The designated individual shall prepare a written statement for the final closure report commenting on the adequacy of the analysis verifying closure.

E.4.11 Final Closure Report

Upon completion of the closure activities, the Permittee shall submit a final closure report certified by a New Mexico independent reegistered professional engineer to the Secretary of NMED. The report shall document the final closure and contain, at a minimum, the following:

a. The certification described in paragraph E.4.6

b. Any variance from the approved activities and the reason for the variance

c. A tabular summary of all sampling results (including QC sample results), showing:

   1. Sample identification
   2. Sampling location
   3. The datum reported
   4. Detection limit for each datum
   5. A measure of analytical precision (e.g. uncertainty, range, variance)
   6. Identification of analytical procedure
   7. Identification of analytical laboratory

d. A QA/QC statement on the adequacy of the analyses and the decontamination determination

e. The location of the file of supporting documentation:

1. Log books
2. Laboratory sample analysis reports
3. The QA/QC documentation
4. Chain of custody records

f. Disposal location of all regulated and nonregulated residues

g. A certification of accuracy of the report

TABLE E.4-1

Closure Schedule
Controlled Air Incinerator[a]

Activity	Maximum Time Required[b]
Preclosure Let contract request for proposals	-70
Receive proposals	-40
Select contractor and award contract	-10
Closure Begin closure activities	Day 0
Survey CAI external components, associated external subsystems, for radiological contamination	Day 30
Obtain samples for RCRA hazardous waste constituents and submit for analysis	Day 75
Receive sample analysis	Day 105
Obtain additional samples (if necessary)	Day 135
Receive sample analysis (if necessary)	Day 180
Obtain certification of closure	Day 240
Submit final closure report to NMED	Day 250

[a]Assumes RCRA closure; no incineration of RCRA hazardous wastes or hazardous constituents; and sample
and analysis of the CAI and associated external subsystems.
[b]The schedule above indicated calendar days from the beginning of closure by which activities will be completed.
Some activities may be conducted simultaneously.

TABLE E.4-2

Analytical Parameters for CAI

Concentration of Metals	Organics	Other
Arsenic Barium Beryllium Cadmium Chromium Lead Mercury Nickel Selenium Silver Thallium	Halogenated volatile organics Nonhalogenated volatile organics Acid-extractable semivolatile organics Base-neutral extractable semivolatile organics	Cyanides Ignitability Corrosivity/pH

Metals will be analyzed for total content.

Any metal whose total concentration nears, equals, or exceeds the standard for the Toxicity Characteristic Leaching Procedure (TCLP) will be analyzed using TCLP methods. All data will be provided in the final closure report.

Analytical methods will follow those provided in "Test Methods for Evaluating Solid Waste," U.S. Environmental Protection Agency (EPA) SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

TABLE E.4-3

Sample Containers, Preservation, and Holding Times for Liquid Samples

Analyte Group	Container	Preservative	Holding Time
Target compound volatile organics	2 x 40 ml G[a] septa vials	HCl[b], Cool 4°C	14 days from field collection to determinative analysis
Target compound semivolatile organics	2 x 1 liter AG[a] (teflon lined caps)	Cool 4°C[1]	7 days from field collection to preparative extraction 40 days from preparative extraction to determinative analysis
Target analyte metals (except mercury)	1 liter P[c] or G[a]	HNO_3[d] to pH < 2	180 days from field collection to determinative analysis
Mercury	1 liter P[c] or G[a]	HNO_3 to pH < 2 Cool 4°C	28 days from field collection to determinative analysis
Cyanides	P[c] or G[a]	NaOH[f] to pH ≥ 12 Cool 4°C[2,3]	14 days from field collection to sample preparation
Corrosivity/pH	1 liter P[c] or G[a]	N/A	As soon as possible for pH
Ignitability	1 liter P[c] or G[a]	N/A	

[a]AG - Amber glass
[b]HCl - Hydrochloric acid (if no residual chlorine is present, adjust the pH < 2 with HCl, H_2SO_4 or $NaHSO_4$, if residual chlorine is present, add sodium thiosulfate [4 drops of 10 percent solution]).
[c]P - Polyethylene
[d]HNO_3 - Nitric acid
[e]G - Glass
[f]NaOH - Sodium hydroxide, 50 percent

[1]If residual chlorine is present, add 3 ml of 10 percent sodium thiosulfate per gallon.
[2]Determination of presence of oxidizing agents and treatment thereof to be performed as per SW-846 Method 9010A.
[3]Detergents and surfactants, if a problem, can be extracted as described in SW-846 Method 9010A.

Source: SW-846, Update I and Update II

TABLE E.4-4

Sample Containers, Preservation, and Holding Times for Refractory Samples

Analyte Group	Container	Preservative	Holding Time
Target compound volatile organics	8 oz WM[a]-G[b] Septum-sealed	Cool 4°C	14 days from field collection to determinative analysis or TCLP extraction 14 days from TCLP extraction to determinative analysis
Target compound semivolatile organics	2 x 120 ml WM[a]-G[b] Teflon-lined cap	Cool 4°C	14 days from field collection to TCLP extraction 7 days from field collection or TCLP extraction to preparative extraction 40 days from preparative extraction to determinative analysis
Target analyte metals (except mercury)	8 oz WM[a]-G[b] or P[c]	Cool 4°C HNO_3[d]	180 days from field collection to determinative analysis or TCLP extraction 180 days from TCLP extraction to determinative analysis
Mercury	1 liter P[c] or WM[a]-G[b]	HNO_3[d] to pH < 2	28 days from field collection to determinative analysis or TCLP extraction 28 days from TCLP extraction to determinative analysis
Cyanides	G[b] or P[c]	Cool 4°C[1]	14 days from field collection to sample preparation

[a]WM = Wide-mouth
[b]G = Glass
[c]P = Polyethylene
[d]HNO_3 = Nitric acid - Preservative not added until after TCLP extraction. Preservative added to the extract.

[1]Solid may be extracted prior to analysis by SW-846 Method 9013.

Source: SW-846, Update I and Update II

TABLE E.4-5

Target Detection Limits, Analytical Methods, and Instrumentation for Metals Analysis

Analyte	Target Detection[a] Limit (µg/L)	EPA SW-846 Analytical Method	Instrumentation[b]
Arsenic	10	6010A, 7060A	ICP, GFAA
Barium	200	6010A, 7080A, 7081	ICP, FLAA, GFAA
Beryllium	5	6010A, 7090, 7091	ICP, FLAA, GFAA
Cadmium	2	6010A, 7030, 7131A	ICP, FLAA, GFAA
Chromium	10	6010A, 7190, 7191	ICP, FLAA, GFAA
Lead	5	6010A, 7420, 7421	ICP, FLAA, GFAA
Mercury	0.2	7470A	CVAA
Nickel	40	6010A, 7520	ICP, FLAA
Selenium	5	6010A, 7740	ICP, GFAA
Silver	10	6010A, 7760A, 7761	ICP, FLAA, GFAA
Thallium	10	6010A, 7840, 7841	ICP, FLAA, GFAA

[a]Detection limits listed are for drinking water. Actual detection limits may be higher depending on sample composition and matrix type.
[b]ICP - Inductively Coupled Plasma Emission Spectroscopy
GFAA - Graphite Furnace Atomic Absorption Spectroscopy
FLAA - Flame Atomic Absorption Spectroscopy
CVAA - Cold Vapor Atomic Absorption Spectroscopy

TABLE E.4-6

Target Detection Limits[a], Analytical Methods, and Instrumentation for Organics Analysis

Analyte (Group)	Regulatory Limits	EPA SW-846 Analytical Method	Instrumentation[b]
Target Compound List Volatiles + 10 Tentatively Identified Compounds (TICs)	10 µg/L water 10-120 µg/kg solids	8240B, or 8260A	GC/MS
Target Compound List Semivolatiles + 20 TICs	10 µg/L water 330-50,000 µg/kg solids	8250A, or 8270B	GC/MS

[a]Detection limits expressed as practical quantitation limits.
[b]GC/MS = Gas chromatography/mass spectrometry

NOTE: µg/L and mg/L used for liquid samples and TCLP extracts.
µg/kg and mg/kg used for residues.
Use the most appropriate for the magnitude of the number.

TABLE E.4-7

Analytical References
for Miscellaneous Methods

Analyte/Property	EPA SW-846 Analytical Method
Cyanides	9010A
Corrosivity/pH	9040B or 9045C and 1110
Ignitability	1020A or 1010
TCLP[1]	1311

[1]Toxicity Characterization Leaching Procedure is to be utilized for the analysis of refractory samples.

TABLE E.4-8

Summary of Field Quality Control Samples

QC Sample Type	QC Sample Matrix	Applicable Analysis	Frequency	Purpose	Acceptance Criteria	Corrective[a] Action
Trip Blank	Water	Volatiles	One set (2) per shipping cooler containing samples	Monitor possible sample contamination in field	-[b]	Advisory-no action required
Field Blank	Water	Volatiles, Semivolatiles, Metals	One sample per sampling event (can prepare and hold pending sample results)	Monitor field sample contamination/ air contamination	-[b]	Advisory-no action required
Field Duplicate	Refractory/ Water	Volatiles, Semivolatiles, Metals, TCLP	One for every 20 samples or 5 percent minimum	Documents precision of sampling process	Analytical method criteria, if applicable	Advisory-no action required
Equipment Rinsate Blank	Wash water	Volatiles, Semivolatiles, Metals	One sample per day (can prepare and hold pending sample results)	Monitor decontaminatio n effectiveness and sample cross contamination	-[b]	Advisory-no action required

5/23 - never did this b/c never leased sampling equipment

[a]EPA Functional Guidelines for Data Validation may apply.
[b]For volatiles and semivolatiles analysis, if blank shows detectable levels of any common laboratory contaminant (methylene chloride, acetone, 2-butanone, toluene, and/or any phthalate ester), sample must exhibit that contaminant at a level 10 times the quantitation limit to be considered detectable. For all other contaminants, sample must exhibit the contaminant at a level 5 times the quantitation level to be considered detectable.
Source: SW-846, Update I and Update II

TABLE E.4-9a

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Volatile Organics

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8240B or 8260A	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours of analysis time or every batch	Per method	Repeat until acceptance criteria satisfied
	Initial calibration: instrument sensitivity and linearity of response	Five concentration levels; after any instrument performance failure; check prior to sample analysis	Meet SPCCs[a] and CCCs[b] criteria per method	Repeat calibration
	Continuing calibration	Every 12 hours of analysis time or every batch	Meet SPCCs and CCCs criteria per method	Determine problem, correct and reanalyze a continuing calibration or recalibrate.
	Internal standards	Added to all calibration standards, field samples, QC samples, and blanks	Extracted ion current profile (EICP)[a]; Δ - 50% to +100% Retention time shifts < 0.50 minutes[a]	Correct malfunction; reanalyze sample per method criteria
	Method blank	Every 12 hours of analysis time or every batch	< 5 times quantitation limit for methylene chloride, acetone, 2-butanone; all other compounds ≤ quantitation limit	Determine source of contamination and document corrective action; reanalyze samples
	Matrix spike and matrix spike duplicate	Each analytical batch	Per method	Prepare and analyze QC reference standard per method

TABLE E.4-9a

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Volatile Organics
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8240B or 8260A (Continued)	System monitoring compounds (surrogate compounds)	Every calibration standard, method blank, QC sample, field sample, matrix spike, matrix spike duplicate	Per method and matrix	Check instrument and calculations; reanalyze per method criteria

[a]SPCC - System performance check compounds
[b]CCC - Calibration check compounds
[c]QC - Quality control
[d]EICP - Extracted ion current profile
[e]This criteria applies to the internal standards but is only evaluated for the continuing calibration check.

SOURCE: SW-846, Update I and Update II

TABLE E.4-9b

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Semivolatile Organics

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8250A or 8270B	Instrument performance: mass calibration/ion abundance pattern	Every 12 hours of analysis time or every batch	Per method	Repeat until acceptance criteria satisfied
	Initial calibration: instrument sensitivity and linearity of response	Five concentration levels; after any performance failure; check prior to sample analysis	Meet criteria for SPCCs[a] and CCCs[b] per method	Repeat calibration
	Continuing calibration	Every 12 hours of analysis time or every batch	Meet criteria for SPCCs and CCCs per method	Determine problem, correct and analyze another continuing calibration, or repeat calibration
	Internal standards	Added to all calibration standards, field samples, QC[c] samples, and blanks	BICP[d] Δ -50% to +100% Retention time shifts < 0.50 minutes[e]	Correct malfunction: reanalyze sample per method criteria
	Method blank	Each batch of samples of similar matrix and concentration level, or each extraction batch	< 5 times quantitation limit for phthalate esters; all other compounds ≤ quantitation limit	Determine source of contamination; document corrective action; reextract and reanalyze samples
	Matrix spike and matrix spike duplicate	Each analytical batch	Per method	Prepare and analyze QC reference standard per method

TABLE E.4-9b

Summary of Laboratory Quality Control Procedures
by Analytical Method

Target Compound Semivolatile Organics
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
8250A or 8270B (Continued)	System monitoring compounds (surrogate compounds)	Each field sample, blank, QC sample, and calibration standard	Matrix specific per method limits	Check instrument and calculations; reextract and reanalyze per method criteria

[a]SPCC = System performance check compounds
[b]CCC = Calibration check compounds
[c]QC = Quality control
[d]EICP = Extracted ion current profile
[e]This criteria applies to the internal standards but is only evaluated for the continuing calibration check.

SOURCE: SW-846, Update I and Update II

TABLE E.4-9c
Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals Except Mercury

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
6010A	Initial Calibration	Daily (3 standards)		
	Calibration Verification	Daily after initial calibration	± 5% of initial	Recalibrate
	Continuing Calibration	Every 10 samples and end of the analytical run	± 10% of expected value	Recalibrate
	Calibration Blank	Every 10 samples, at end of analytical run, and at initial calibration	± 3 SD of mean blank values	Repeat, average result, or recalibrate
	Reagent Blank (also called preparation blank)	One per preparation sample batch	< CRQL[a]	Redigest and reanalyze
	Instrument Check Standard	Every 10 samples	± 10% of expected value	Fluid problem, reanalyze previous samples
	Interference Check Standard	Beginning and end of analytical run	± 20% of true value	Correct problem
	Serial Dilution	One per field batch per matrix	± 10% of original determination	Flag data
	Replicates/Duplicates	One per analytical run	Per method or contract requirements	Flag data
	Matrix Spike	Per method and contract requirements	± 25% of known value	Flag data

TABLE E.4-9c

Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals Except Mercury
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
6010A (Continued)	Spiked replicate	Per method or contract requirements	± 20% of actual value	Flag data

*CRQL = Contract required quantitation limit

SOURCE: SW-846, Update I and Update II

Los Alamos National Laboratory
Hazardous Waste Permit
Permittee Copy
Page Modified June 1996

TABLE E.4-9d

Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
All 7000 and 7000A Methods	Initial Calibration	Daily (3 standards)		
	Calibration Verification	Daily after initial calibration	± 10% of true value	Recalibrate
	Continuing Calibration	Every 10 Samples	± 20% or true value	Recalibrate and reanalyze samples
	Calibration Blanks	Every 10 samples, at end of analytical run, and initial calibration	± 3 SD of mean blank values	Repeat, average, recalibrate if necessary
	Reagent Blank (also called preparation blank)	One per preparation sample batch	< CRQL[a]	Redigest and reanalyze
	Laboratory Control Sample (LCS)	One per analytical batch	± 20% of true value	Correct problem, redigest, and reanalyze all samples from last LCS
	Interference Check Standard	One per analytical batch	± 10% difference between undiluted and 5X diluted per method	Per method
	Matrix Spike	Every analytical batch	Per method	Flag data
	Serial Dilution	One per field batch per matrix	± 10% of original determination	Flag data

TABLE E.4-9d

Summary of Laboratory Quality Control Procedures
by Analytical Method

Metals
(Continued)

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
All 7000 and 7000A Methods (Continued)	Matrix Spike Duplicate	Every analytical batch	RPD[b] < 20%	Flag data
	Method of Standard Additions	When needed for problem matrices	Per method	Per method

[a]CRQL = Contract required quantitation limit
[b]RPD = Relative percent difference

SOURCE: SW-846, Update I and Update II

TABLE E.4-9e

Summary of Laboratory Quality Control Procedures
by Analytical Method

TCLP

EPA SW-846 Analytical Method	Quality Control Check	Frequency	Acceptance Criteria	Corrective Action
1311	Extraction fluid blank	Every 20 extractions conducted in an extraction vessel	Per analytical method	Per analytical method
	Matrix	Each analytical batch	Per analytical method	Per analytical method

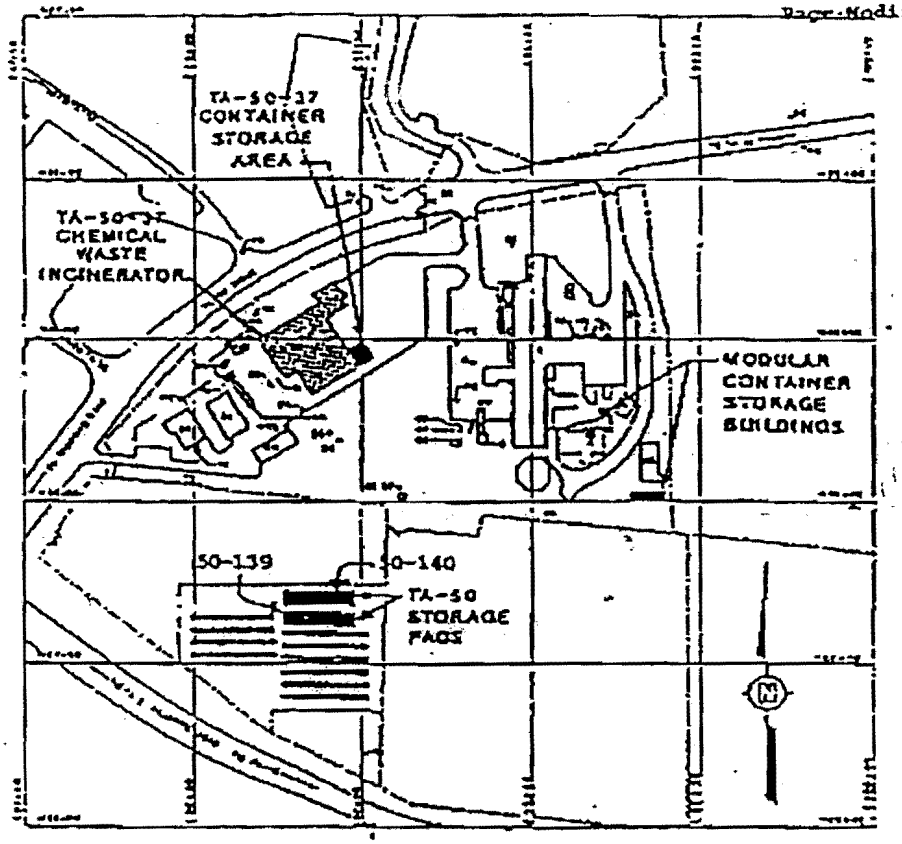

FIGURE 4

LOCATIONS OF TA-50
CHEMICAL WASTE INCINERATOR
AND CONTAINER STORAGE
UNITS

PREPARED FOR

LOS ALAMOS
NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO

INTERNATIONAL TECHNOLOGY CORPORATION

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FIGURE E.4-1

Locations of TA-50 Chemical Waste Incinerator
and Container Storage Units

OFFICIAL SAMPLE SEAL

Collected by_____ Collector's Sample No._____
(Signature)

Date Collected_____ Time Collected_____

Place Collected_____

FIGURE E.4-2

Example of Sample Seal

OFFICIAL SAMPLE LABEL

Collected_____ Collector's Sample No._____

Place of Collection_____

Date Sampled_____ Time Sampled_____

FIGURE E.4-3

Example of Sample Label

Hazardous Materials
Collector's Sample No._____

Location of Sampling: ____Producer ____Hauler
____Disposal Site
____Other:_____

_____

Company's Name_____ Telephone(__)_____

Address_____
number street city state zip

Collector's Name_____ Telephone(__)_____

Date Sampled_____ Time Sampled_____hours

Type of Process Producing Waste_____

Waste Type Code_____ Other_____

F i e l d
Information_____

_____

_____

Sample Allocation:

1. _____
name of organization

2. _____
name of organization

3. _____
name of organization

Chain of Possession

1. _____ _____ _____
signature title inclusive dates

2. _____ _____ _____
signature title inclusive dates

FIGURE E.4-4

Chain of Custody Record

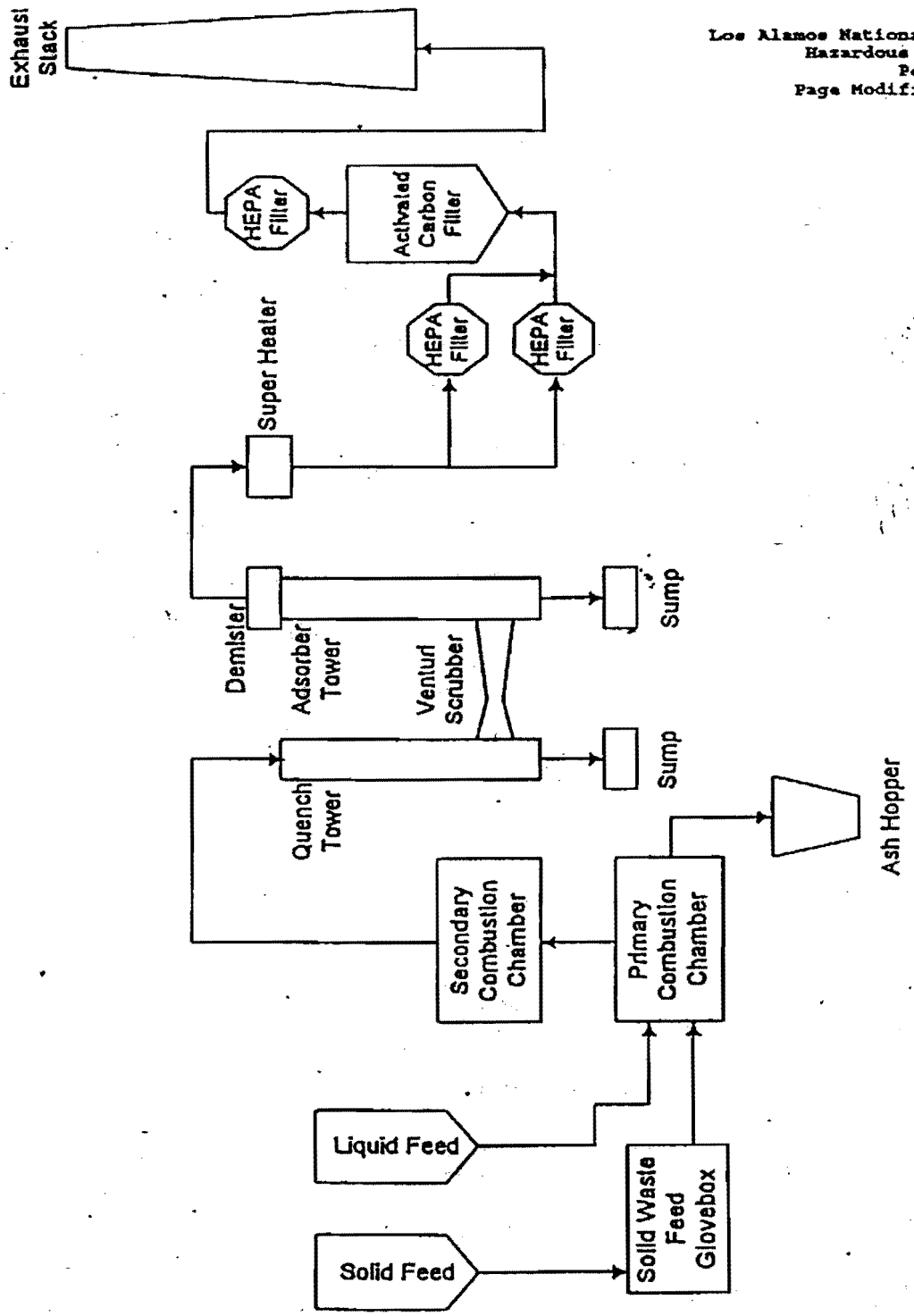


Figure E.4-5
Principal Treatment Components
of the Controlled Air Incinerator

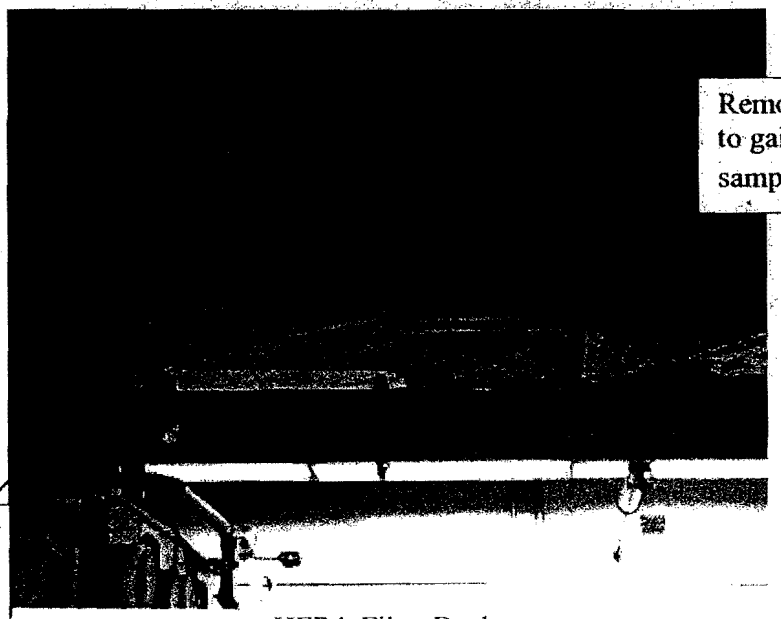
ENCLOSURE 2

EXHAUST SYSTEM SAMPLING LOCATIONS

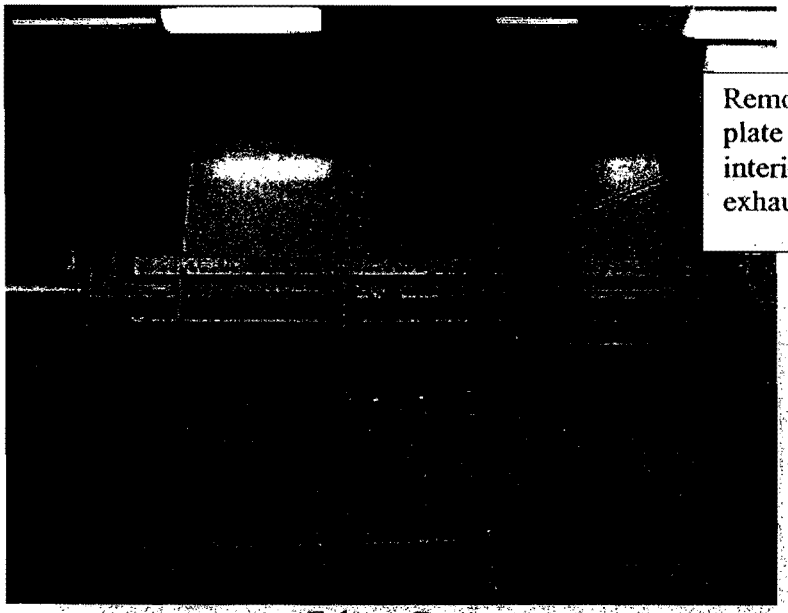
Sampling Locations
Exhaust System (Including Stack)

Five locations have been identified for possible samples within the exhaust system. All of these locations will be sampled, provided the locations can be reached with sampling equipment. The location points are as follows:

High Efficiency Particulate Air (HEPA) Filter bank
Sample Location #1



HEPA Filter Bank
Sample Location #2



Remove cover plate and sample interior section of exhaust duct.

Exhaust Duct
Sample Location #3

Remove valve and sample in and around opening of pipe nipple.

Exhaust Duct
Sample Location #4

Exhaust system ductwork enters transition piece at this location

Access to Sample Location #5 is through the access door. Sample location will be the transition and exhaust duct.

Bag House and HEPA Filter
Sample Location #5

Note: All sampling locations require accessing the internal surfaces of the ductwork. Prior to any sampling Radiological Work Permit (RWP) will be required. Access to the bag house will require a confined space permit.

Job #: 819592.23.05
File Category: M

Los Alamos
NATIONAL LABORATORY

Solid Waste Regulatory Compliance
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666/Fax (505) 667-5224

Date: February 3, 2003
Refer To: SWRC:03-005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Steve Jetter
Permits Management Program
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Dear Mr. Jetter:

SUBJECT: Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37 (TA -50-37), Los Alamos National Laboratory (LANL)

The purpose of this letter is to confirm our agreement on the terms for the Resource Conservation and Recovery Act (RCRA) closure of T A-50-37. These were discussed during a meeting and tour between you and three members of LANL's Solid Waste Regulatory Compliance Group (RRES-SWRC), Loren Abercrombie, Jack Ellvinger, and Jeff Carmichael, on January 21,2003.

A closure plan *(Los Alamos National Laboratory Technical Area 50 Closure Plan for Container Storage Units, TA-50-1, Room* 59, *TA-50-37, and TA-50-114,* LA-UR-02-4729), was submitted July 2002 for the Container Storage Unit (CSU) in TA-50-37. This closure plan consists of Rooms 115, 117, and 118; as well as an associated exhaust stack, ducts, plenum, fans, and a high efficiency particulate air (HEPA) filter bank. Approval for storage of hazardous waste in the room housing the HEP A filter bank (Room 112) was requested originally, however this location was never permitted. LANL requests that this room be removed from consideration for inclusion in the RCRA Hazardous Waste Facility Permit.

During the walk-through of T A-50-37, sampling locations and number of samples were agreed upon in Rooms 115, 117, and 118, in addition to the exhaust system located at TA-50-37. Enclosed is a description of the sampling locations and number of samples that will be taken at T A-50-37. Twenty-two samples will be taken in Room 117 and seventeen samples will be taken in Room 118. Five locations have been identified for possible samples within the exhaust system. All of these locations will be sampled, provided the locations can be reached with sampling equipment.

Samples from within Rooms 117 and 118 will be analyzed for RCRA metals, with the exception of the sumps. These will be analyzed for the full suite of required analysis. All samples taken from the exhaust system will be analyzed for the constituents located in Table 3 of the closure plan referenced above. These constituents were chosen due to the units past management history and association with the Controlled Air Incinerator (CAI). The CAI was certified as closed in 1998; however, the exhaust

system was left in place for use by other projects. No samples will be taken in Room 115 because it was decontaminated during the closure of the CAI and no waste has been stored there since that time.

If you have any comments or questions regarding the information presented in this letter and/or in the enclosure, please contact me at 505-665-3435.

Sincerely,

Luciana Vigil-Holterman

Luciana Vigil-Holterman
Solid Waste Regulatory Compliance Group
LVH/vc

Enc. a/s.

Cy: w/enc.

Mr. Carl Will
Permits Management Program
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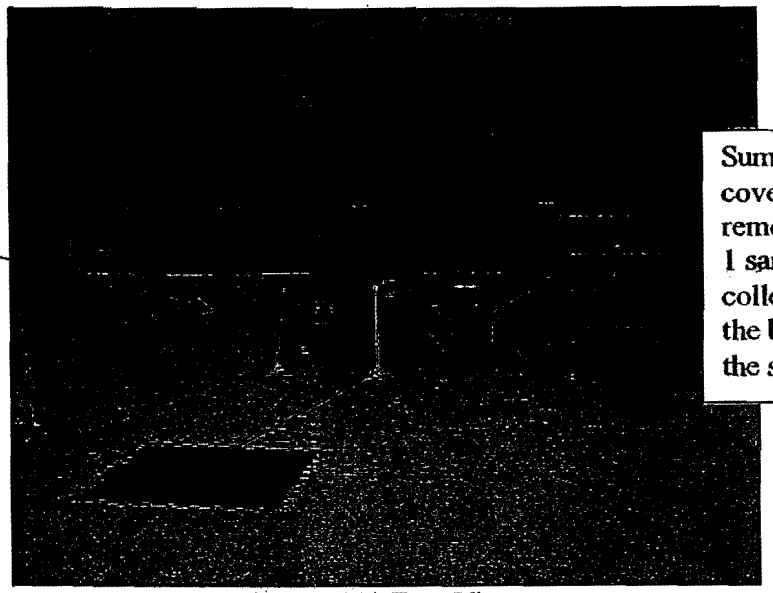
B. Ramsey, LANL, RRES-DO, J591
E. Louderbough, LANL, LC-ESH, A187
L. Abercrombie, LANL, RRES-SWRC, K558
J. Ellvinger, LANL, RRES-SWRC, K490 G.
Bacigalupa, LANL, RRES-SWRC, K490 J.
Carmichael, LANL, RRES-SWRC, E501
SWRC File
IM-5, A150

ENCLOSURE

TA-50-37
CONTAINER STORAGE UNIT (CSU) AND EXHAUST SYSTEM SAMPLING LOCATIONS

Decon and sample the painted area only



Sump plate cover will be removed and 1 sample collected at the bottom of the sump

Room 118 East View

Room 115:

Room 115 was decontaminated during the closure of the Controlled Air Incinerator (CAI) in 1996-1997. Being that no waste has been placed in storage since the room was decontaminated, it was agreed that this room could be closed using the data in the CAI closure documentation.

2 floor samples [illegible] 3/11/03

Decontamination Sampling of
Resource Conservation and Recovery Act (RCRA)
Permitted and Interim Status Container Storage Unit (CSU)

Room 117:

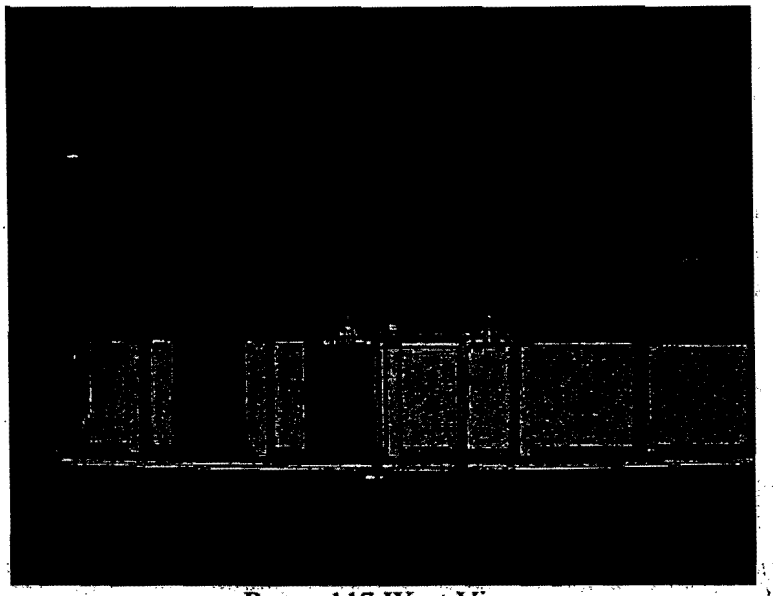
Room 117 is located on the Southeast corner of building TA-50-37. This room was designed and constructed to store liquid wastes. The room has a grated floor and two separate sumps. A common wall divides the sumps. As agreed, the decontamination will consist of the floor below the grate up to the grated floor level.

Each collection sump area will be sampled as follows:

1) The floor will be divided into six sections and each floor section will require a sample,
2) the common wall dividing the sump areas will have two samples on each side of the wall,
3) the east and west wall will have two samples collected from each wall,
4) the north and south wall in each sump area will have one sample collected from each wall, and
5) the collection sump pump area in each section will be sampled.

There will be a total of twenty-two (22) samples collected in room 117 to verify the room is clean and no hazardous constituents are present.

Room 117 Southeast View



Room 117 West View

Note: Access to the area below the grating is listed as a confined space. A confined space permit will be required prior to accessing the area below the grating.

Room 118:

Room 118 is located on the Northeast corner of TA-50-37. The room has a concrete floor with a collection sump located in the center of the room. As agreed, this room will be divided into equal quadrants. The room will require the following sampling:

1) the floor is divided into four quadrants by the means of expansion joints, two samples will be collected from each floor quadrant (total of eight samples for the floor),

2) each painted area of the wall will require two samples for a total of 8 wall samples, and

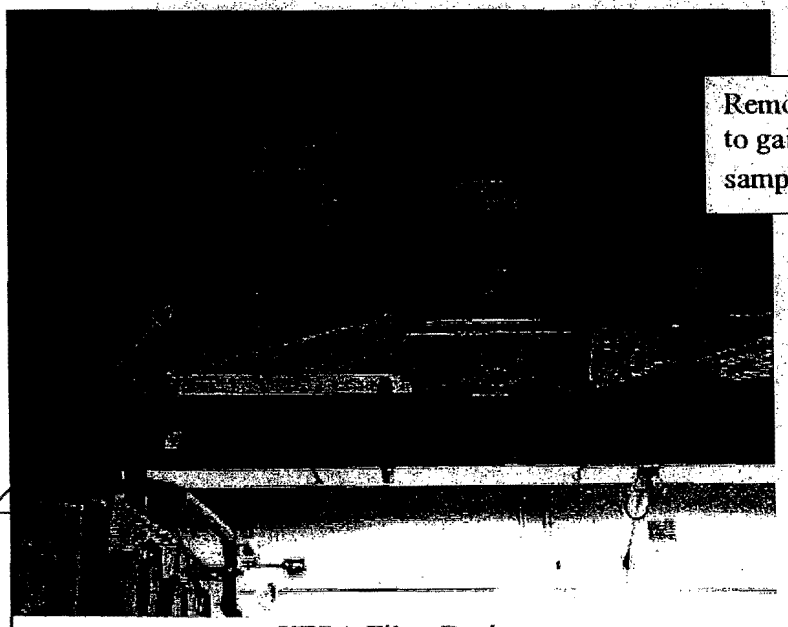
3) the collection sump will have one sample collected.

The total of seventeen (17) samples will be collected to verify that no hazardous constituents are present.

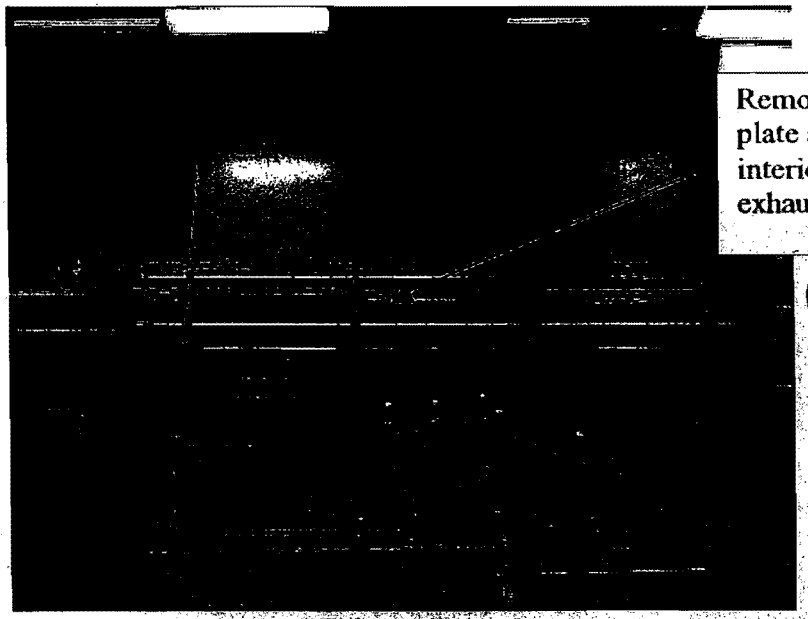
Exhaust System Including Stack

Five location points were identified as possible sampling locations. The location points are as follows:

High Efficiency Particulate Air (HEPA) Filter bank
Sample Location #1



HEPA Filter Bank
Sample Location #2



Remove cover plate and sample interior section of exhaust duct.

1

Exhaust Duct
Sample Location #3

1

Remove valve and sample in and around opening of pipe nipple.

Exhaust Duct
Sample Location #4

Exhaust system ductwork enters transition piece at this location

Access to Sample Location #5 is through the access door. Sample location will be the transition and exhaust duct.

Bag House and HEPA Filter
Sample Location #5

Note: All sampling locations require accessing the internal surfaces of the ductwork. Prior to any sampling Radiological Work Permit (RWP) will be required. Access to the bag house will require a ıfined space permit.

APPENDIX C
Technical Area 50, Building 37, CAI Exhaust Equipment Human Health Risk Assessment

CLOSURE CERTIFICATION REPORT

Technical Area 50, Building 37
CAI Exhaust Equipment

Human Health Risk Assessment Methodology

Revision 0.0
August 2004

Prepared For:
Risk Reduction and Environmental Stewardship Division,
Solid Waste Regulatory Compliance Group
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Prepared By:
Shaw Environmental, Inc.
335 Central Park Square
Los Alamos, NM 87544

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LIST OF ACRONYMS/ABBREVIATIONS

µg/dL	micrograms per deciliter
ALM	Adult lead model
CDI	Chronic daily intake
CFR	Code of Federal Regulations
cm^2	square centimeters
COPC	Chemical of potential concern
c-s	chemical specific
CSF	Cancer slope factor
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
FDA	U.S. Food and Drug Administration
GSD	geometric standard deviation
HEAST	Health Effects Assessment Summary Tables
HHRA	Human health risk assessment
HI	hazard index
HQ	hazard quotient
HpCDD	heptachlorodibenzo-p-dioxin
HpCDF	heptachlorodibenzofuran
IRIS	Integrated Risk Information System
kg	kilograms
m^2	square meters
m^3	cubic meters
MDC	Maximum detected concentration
mg	milligrams
mg/kg-d	milligram per kilogram-day
OCDD	octachlorodibenzo-p-dioxin

LIST OF ACRONYMS/ABBREVIATIONS (continued)

OCDF	octachlorodibenzofuran
OPP	Office of Pesticides Programs
PPE	personal protective equipment
Pb_{fetal}	fetal blood lead concentration
RfD	feference dose
RME	reasonable maximum exposure
SA_h	surface area of hands
SA_{uex}	surface area of upper extremities
TA	Technical Area
TA-50-37	Technical Area 50, Building 37
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TEF	toxicity equivalency factor
TEQ	toxicity equivalence
TIC	tentatively identified compound
WTCIATWG	World Trade Center Indoor Air Taskforce Working Group

HUMAN HEALTH RISK ASSESSMENT METHODOLOGY
Technical Area 50, Building 37
CAI Exhaust Equipment

C1.0 INTRODUCTION

A human health risk assessment (HHRA) was conducted on Technical Area (TA) 50, Building 37 (TA-50-37), Controlled Air Incinerator (CAI) Exhaust Equipment using methods developed by the U.S. Environmental Protection Agency (EPA) (EPA, 1989), the World Trade Center Indoor Air Taskforce Working Group (WTCIATWG) (WTCIATWG, 2002), the California Department of Toxic Substances Control (DTSC) (DTSC, 2000), and the EPA Technical Review Workgroup for Lead (EPA, 2003). The assessment included an evaluation of health risk to occupational workers from ingestion and dermal exposure to contaminated exhaust equipment during routine maintenance. The HHRA, in accordance with EPA (EPA, 1989) guidance involved data evaluation and identification of chemicals of potential concern (COPC), exposure assessment, toxicity assessment, and risk characterization. Because the risk assessment was conducted on an indoor environment, a background evaluation was not conducted as part of the COPC selection process.

C1.1 Data Evaluation and Identification of COPCs

Surface swipe samples were collected from the exhaust system in two rounds of sampling. Round 1 was completed in September 2003 and Round 2 in April 2004. Analytical data from both sampling events are presented in Table C1-1. In addition, a summary of the analytical results is presented in Table C1-2. Results from both sampling rounds were combined for this HHRA.

Data qualifiers assigned by the analytical laboratory and laboratory control spike samples were examined during the data review process. Qualifier codes are placed next to analytical results so that the reliability of the results can be assessed during the HHRA. The definitions of the qualifier codes that were assigned during laboratory validation include:

J = Estimated result. Result is less than reporting limit.

B = Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level;
Inorganics: Estimated result. Result is less than reporting limit.

E = Estimated result. Exceeds calibration range.

M = Result was measured against nearest internal standard assuming a response factor of 1.

S = Subcontracted.

Table C1-1
Analytical Data for TA-50-37, CAI Exhaust Equipment

SAMPLE	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	1,2,3,4,6,7,8,9-OCDD[a]	1,2,3,4,5,7,8,9-OCDF[a]	1,2,3,4,6,7,8-HpCDD[a]	1,2,3,4,6,7,8-HpCDF[a]	1,2,4-TRIMETHYL-BENZENE	2-BUTANONE	4-METHYL-2-PENTANONE	ACETONE	BROMO-METHANE	CHLOROFORM	CHLORO-METHANE	ETHYL-BENZENE	METHYLENE CHLORIDE	TETRACHLORO-ETHENE	TOLUENE	XYLENES (TOTAL)[b]	BIS(2-ETHYLHEXYL) PHTHALATE	DI-N-OCTYL PHTHALATE
E-01	1.9 B	0.25 U	1.4	5 U	0.01 U						10 U	10 U	570 E	5 U	2.5 U	5 U	2.5 U	1,100 E	1.0 J	0.91 J	5 U	59 JB	50 U
E-02	0.65 B	0.25 U	0.5 U	5 U	0.01 U						10 U	10 U	1,100 E	5 U	2.5 U	5 U	2.5 U	1,800 E	1.4 J	0.62 J	5 U	38 JB	50 U
E-03	0.64 B	0.25 U	1.2	5 U	0.01 U						10 U	10 U	4,200 E	5 U	2.5 U	5 U	2.5 U	3,100 E	0.99 J	0.88 J	5 U	130 B	50 U
E-04	0.73 B	0.25 U	0.5 U	5 U							10 U	10 U	2,200 E	5 U	2.5 U	5 U	2.5 U	2,400 E	0.68 J	0.9 J	5 U	120 B	240
E-07	0.95 B	0.25 U	0.6 B	5 U	0.034						10 U	8.7 J	1,500 E	5 U	0.26 J	5 U	4.5 J	2,000 E	1.8 J	1.6 J	39	390 B	66 J
E-08	0.79 B	0.25 U	3.2	5 U	0.087						10 U	4.2 J	1,100 E	5 U	0.33 J	5 U	1.8 J	2,000 E	0.86 J	1.1 J	13	250 B	68 J
EXB-01	6.3	0.27	67.6	2.2	0.01 U	27.6 SJ1	2.2 SU	15.2 SJ	5 SJ	0.6	3.9	0.75 U	24	6.2	0.15 U	0.8	0.15 U	62	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-02	2.2	0.1 U	8.9	1 U	0.01 U	24.6 SJ	1.9 SU	8.6 SJ	0.80 SU	0.15 U	3.5	0.75 U	70	4.4	0.15 U	0.15 U	0.15 U	110	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-03	1.1	0.1 U	8.3	1 U	0.01 U	38.1 SJ	2.6 SU	2.3 SU	1.2 SU	0.15 U	4.1	0.75 U	6.1	2.8	0.15 U	0.15 U	0.15 U	120	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-04	1.1	0.1 U	8.5	1 U	0.01 U	3.6 SU	2.5 SU	2.2 SU	1.1 SU	0.15 U	3.6	0.75 U	1.5 U	0.75 U	0.15 U	0.15 U	0.15 U	47	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-05	3.4	0.1 U	6.7	4.1	0.01 U	23.6 SJ	2.7 SU	2.2 SU	1.1 SU	0.15 U	4.3	0.75 U	50	2.7	0.15 U	0.15 U	0.15 U	100	0.15 U	0.15 U	2.0	50 U	50 U
EXB-06	2.7	0.1 U	4.4	3.5	0.01 U	17.4 SJ	1.6 SU	1.4 SU	0.70 SU	0.15 U	4.1	0.75 U	7.4	2.5	0.15 U	0.15 U	0.15 U	41	0.15 U	0.15 U	3.3	50 U	50 U
EXB-11	3.9	0.1 U	6.4	5.8	0.01 U	42.6 SJ	10.5 SJ	11.5 SJ	3 SJ	0.15 U	4.0	0.75 U	9.2	0.75 U	0.15 U	6.4	0.15 U	190	0.15 U	0.15 U	3.6	50 U	50 U
Number of Samples	13	13	13	13	12	7	7	7	7	7	13	13	13	13	13	13	13	13	13	13	13	13	13
Number of Detects	13	1	11	4	2	6	1	3	2	1	7	2	12	5	2	2	2	13	6	6	5	6	3
Frequency of Detection	100%	8%	85%	31%	17%	86%	14%	43%	29%	14%	54%	15%	92%	38%	15%	15%	15%	100%	46%	46%	38%	46%	23%
Minimum Detect	0.64 B	0.27	0.60 B	2.2	0.034	17.4 SJ	10.5 SJ	8.6 SJ	3 SJ	0.6	3.5	4.2 J	6.1	2.5	0.26 J	0.8	1.8 J	41	0.68 J	0.62 J	2.0	38 JB	66 J
Maximum Detect	6.3	0.27	67.6	5.8	0.087	42.6 SJ	10.5 SJ	15.2 SJ	5 SJ	0.6	4.3	8.7 J	4,200 E	6.2	0.33 J	6.4	4.5 J	3,100 E	1.8 J	1.6 J	39	390 B	240
Average	2.0	0.18	9.1	3.7	0.018	25.4	3.4	6.2	1.8	0.21	6.7	7.6	834	3.9	0.9	2.9	1.3	1,005	0.60	0.54	6.3	103	67
Standard Deviation	1.7	0.08	17.9	1.8	0.023	12.9	3.1	5.6	1.6	0.17	3.2	8.9	1,240	1.8	1.1	2.6	1.5	1,109	0.57	0.49	10.4	104	52

Units are µg/100 cm^2 unless otherwise noted.

a. Results reported in picograms per 100 square centimeters.
b. Round 2 samples were analyzed for both o-xylene and m/p-xylenes and Round 1 samples were analyzed for total xylenes. The detected results for o-xylene and m/p-xylenes were summed to estimate total xylenes. Round 2 detection limits ranged from 0.3 µg/100 cm^2 (o-xylene) to 0.6 µg/100 cm^2 (m/p-xylenes). One-half the maximum detection limit is shown for these samples.

Definition of Qualifiers
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.
B = (Inorganics) Estimated result. Result is less than reporting limit.
E = Estimated result. Exceeds calibration range.
S = Subcontracted.
U = Chemical was not detected. Value shown is one-half the reporting limit (qualifier not assigned by laboratory).

Definition of Abbreviations/Acronyms
µg/100 cm^2 = micrograms per 100 square centimeters.

Table C1-2
Summary of Analytical Results for CAI Exhaust Equipment, TA-50-37

CAS Number	Parameter[a]	Minimum Concentration[b]		Maximum Concentration[c]		Units	Location of Maximum Concentration	Detection Frequency[d]	Range of Reporting Limits[e] (min-max)	Background Value[f]	COPC?
Method 3050A/6010B – Metals											
7440-39-3	Barium	0.64	B	6.3		µg/100cm^2	EXB-01	13/13	0.5 – 20	NA	Yes
7440-43-9	Cadmium	0.27		0.27		µg/100cm^2	EXB-01	1/13	0.2 – 0.5	NA	Yes
7440-47-3	Chromium	0.60	B	67.6		µg/100cm^2	EXB-01	11/13	1.0 – 1.0	NA	Yes
7439-92-1	Lead	2.2		5.8		µg/100cm^2	EXB-11	4/13	2.0 – 10	NA	Yes
7439-97-6	Mercury	0.034		0.087		µg/100cm^2	E-08	2/12	0.02 – 0.02	NA	Yes
Method 8290 – Dioxins/Furans											
---	1,2,3,4,6,7,8,9-OCDD	17.4	SJ	42.6	SJ	pg/100cm^2	EXB-11	6/7	7.2 – 8.3	NA	Yes
---	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	10.5	SJ	pg/100cm^2	EXB-11	1/7	3.2 – 5.8	NA	Yes
---	1,2,3,4,6,7,8-HpCDD	8.6	SJ	15.2	SJ	pg/100cm^2	EXB-01	3/7	2.7 – 4.8	NA	Yes
---	1,2,3,4,6,7,8-HpCDF	3.0	SJ	5.0	SJ	pg/100cm^2	EXB-01	2/7	1.4 – 3.0	NA	Yes
Method 8260B – Volatile Organic Chemicals (VOCs)											
95-63-6	1,2,4-Trimethylbenzene	0.60		0.60		µg/100cm^2	EXB-01	1/7	0.3 – 0.3	NA	Yes
78-93-3	2-Butanone	3.5		4.3		µg/100cm^2	EXB-05	7/13	1.5 – 20	NA	No[g]
108-10-1	4-Methyl-2-pentanone	4.2	J	8.7	J	µg/100cm^2	E-07	2/13	1.5 – 20	NA	Yes
67-64-1	Acetone	6.1		4,200	E	µg/100cm^2	E-03	12/13	3.0 – 20	NA	Yes
74-83-9	Bromomethane	2.5		6.2		µg/100cm^2	EXB-01	5/13	1.5 – 10	NA	Yes
67-66-3	Chloroform	0.26	J	0.33	J	µg/100cm^2	E-08	2/13	0.3 – 5.0	NA	Yes
74-87-3	Chloromethane	0.80		6.4		µg/100cm^2	EXB-11	2/13	0.3 – 10	NA	No[(g)]
100-41-4	Ethylbenzene	1.8	J	4.5	J	µg/100cm^2	E-07	2/13	0.3 – 5.0	NA	Yes
75-09-2	Methylene chloride	41		3,100	E	µg/100cm^2	E-03	13/13	3.0 – 5.0	NA	Yes
127-18-4	Tetrachloroethene	0.68	J	1.8	J	µg/100cm^2	E-07	6/13	0.3 – 5.0	NA	Yes
108-88-3	Toluene	0.62	J	1.6	J	µg/100cm^2	E-07	6/13	0.3 – 5.0	NA	Yes
1330-20-7	Xylenes	2.0[h]		39		µg/100cm^2	E-07	5/13	0.3 – 10	NA	Yes
Method 8270C – Semivolatile Organic Chemicals (SVOCs)											
117-81-7	Bis(2-ethylhexyl)phthalate	38	JB	390	B	µg/100cm^2	E-07	6/13	100 - 100	NA	Yes
117-84-0	Di-n-octylphthalate	66	J	240		µg/100cm^2	E-04	6/13	100 - 100	NA	Yes
57-55-6	Propylene glycol[i]	200	M	200	M	µg/100cm^2	E-07	1/13	NA	NA	Yes

a. The following tentatively identified compounds (TIC) were also detected but were not evaluated in this risk assessment due to a lack of toxicity data. In addition, both the identity and concentration of these TICs is highly uncertain (EPA, 1989): 1,4-Benzenediol, 2,5-bis (1,1-d; 2-mercaptobenzothiazole; 4-cyanocyclohexene; 5-cholestene-3-ol, 24-methyl; 9-octadecenamide; cyclopentane, methyl; beta-sitosterol.

Table C1-2 (continued)
Summary of Analytical Results for CAI Exhaust Equipment, TA-50-37

b. Minimum detected concentration.
c. Maximum detected concentration.
d. Number of detects/Number of samples
e. Range includes detection limits, as reported by Assaigai Analytical Laboratories, Inc. and reporting limits as reported by Severn Trent Laboratories, Inc.
f. Background comparison is not applicable for this risk assessment.
g. Chemical is not a COPC because all detected results are below the maximum detected value in the associated baseline and/or quality assurance/quality control samples.
h. Sum of ortho-xylene and meta/para-xylenes.
i. Chemical is a tentatively identified compound.

Definition of Qualifiers
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level.
B = (Inorganics) Estimated result. Result is less than reporting limit.
E = Estimated result. Exceeds calibration range.
S = Subcontracted.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Abbreviations/Acronyms
NA = not applicable.
CAS = Chemical Abstract Service.
µg/100 cm^2 = micrograms per 100 square centimeters.
pg/100 cm^2 = picograms per 100 square centimeters.
COPC = Chemical of Potential Concern.

Laboratory control spike samples quantify accuracy (closeness of agreement between an observed value and an accepted reference value) in terms of percent recovery of the added spike. Table C1-3 presents laboratory control sample recoveries outside of the control limits during Sampling Event #1:

Table C1-3
Laboratory Control Sample Recoveries Outside of Control Limits, Sampling Event #1

Parameter	LCS (LCSD) Percent Recovery	Recovery Limits	Potential Bias
Chloromethane	36% (103%)	70-130%	Low
Bromomethane	67% (102%)	70-130%	Low
Vinyl chloride	53% (110%)	70-130%	Low
Acetone	66% (68%)	70-130%	Low
4-Methyl-2-pentanone	51% (46%)	70-130%	Low
2-Hexanone	74% (66%)	70-130%	Low

Table C.1-4 presents laboratory control sample recoveries outside of the control limits during Sampling Event #2:

Table C1-4
Laboratory Control Sample Recoveries Outside of Control Limits, Sampling Event #2

Parameter	LCS (LCSD) Percent Recovery	Recovery Limits	Potential Bias
Di-n-octylphthalate	135% (138%)	76-124%	High

All chemicals detected at least once in swipe samples were evaluated in the COPC identification stage of the HHRA. Detected concentrations in investigative samples were compared with detected concentrations in trip blanks, method blanks, and baseline results. The final list of COPCs includes chemicals detected in investigative swipe samples at concentrations above the maximum detected blank or baseline concentration (see Section 2.5).

Table C1-2 summarizes detected chemicals and COPC selection for the exhaust equipment. There were 23 chemicals detected in swipe samples from the exhaust equipment and one tentatively identified compound (TIC) with toxicity data. All of the detected chemicals were retained as COPCs with the exception of 2-butanone and chloromethane, which were detected at levels below those in the corresponding baseline or blank samples, and TICs lacking toxicity values (1,4-benzenediol, 2,5-bis[1,1-d; 2-mercaptobenzothiazole; 4-cyanocyclohexene; 5-

cholestene-3-ol, 24-methyl; 9-octadecenamide; cyclopentane, methyl; beta-sitosterol). The final COPCs evaluated for the exhaust equipment (including TICs with toxicity data) are as follows:

- Barium
- Cadmium
- Chromium
- Lead
- Mercury
- 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (OCDD)
- 1,2,3,4,6,7,8,9-octachlorodibenzofuran (OCDF)
- 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin (HpCDD)
- 1,2,3,4,6,7,8-heptachlorodibenzofuran (HpCDF)
- 1,2,4-Trimethylbenzene
- 4-Methyl-2-pentanone
- Acetone
- Bromomethane
- Chloroform
- Ethylbenzene
- Methylene chloride
- Tetrachloroethene
- Toluene
- Xylenes
- Bis(2-ethylhexyl)phthalate
- Di-n-octylphthalate
- Propylene glycol

C1.2 Exposure Assessment

The purpose of the exposure assessment is to evaluate pathways for chemical exposure and to produce an estimate of the reasonable maximum exposure (RME), or the maximum exposure that is reasonably expected to occur at a site (EPA, 1989). The RME is expressed as a chronic daily intake (CDI) for an individual, which is defined as the mass of a substance contacted per unit body weight per unit time, averaged over a long period of time and expressed in units if milligrams per unit body weight-day. The following steps were included as part of the exposure assessment for the exhaust equipment:

(1) Characterization of exposure setting and receptors.
(2) Identification of exposure pathways.
(3) Estimation of exposure point concentrations (EPC).
(4) Estimation of CDI.

These steps are discussed in the following subsections.

C1.2.1 Characterization of Exposure Setting and Receptors

Future occupational workers were identified as the only potential receptors for TA-50-37 in the exposure assessment. The expected future working conditions involve routine maintenance activities for the exhaust system.

C1.2.2 Identification of Exposure Pathways

The assessment of exposure to chemicals on interior surfaces involves identification of complete exposure pathways. A complete exposure pathway is defined by:

- Source of contaminated media.
- Contaminant release mechanisms.
- Contaminant transport pathways.
- Intermediate or transport media.
- Exposure media.
- Receptors.
- Routes of exposure.

The following exposure pathways are considered complete for TA-50-37, exhaust equipment:

- Ingestion of chemicals on indoor surfaces through hand-to-mouth contact.
- Dermal contact with accessible indoor surfaces.

Because chemical (and potentially, radiological) hazards are present in the exhaust equipment, as demonstrated by the analytical data, employees conducting maintenance must use the types of personal protective equipment (PPE) that will protect them from exposure. It was conservatively assumed in the HHRA that that maintenance staff may potentially contact chemicals in the exhaust equipment during routine maintenance; however, it is likely that employees will be required to wear PPE while they are exposed to this contaminated equipment. Because the exhaust vents air outdoors, the indoor inhalation exposure pathway is considered incomplete and was not evaluated.

C1.2.3 Estimation of Exposure Point Concentrations

For this HHRA, the maximum detected concentrations (MDC) of COPCs were used as the EPCs. For dioxins/furans, a 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxicity equivalence (TEQ) was estimated based on toxicity equivalency factors (TEF) provided by EPA (EPA, 2000). TEFs are presented in Table C1-5. The TEQs are estimated using the Equation 1 below for k congeners (EPA, 2000):

$$TEQ = \sum_{n=1}^{k} C_n \times TEF_n \qquad Eq\ (1)$$

where,

TEQ = TCDD toxicity equivalence.
C_n = concentration of the individual congener in the mixture.
TEF_n = toxicity equivalency factor.

Table C1-5
Toxicity Equivalency Factors for Dioxins, Furans, and Dioxin-Like Polychlorinated Biphenyl Congeners

Parameter	Toxicity Equivalency Factor, Humans
Dioxins	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.0
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0.01
Octachlorodibenzo-p-dioxin (OCDD)	0.0001
Furans	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.01
Octachlorodibenzofuran (OCDF)	0.0001

Source: U.S. Environmental Protection Agency (EPA). 200. *Exposure and Human Health Risk Assessment of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and Related Compounds. Part II: Health Assessment for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and Related Compounds.* Chapter 9: Toxicity Equivalence Factors (TEF) for Dioxin and Related Compounds. External Review Draft. NCEA-1-0836. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. May. (EPA, 2000)

TEQs were calculated using detected levels of dioxin and furan congeners only.

C1.2.4 Estimation of Chronic Daily Intakes

The methodology used to evaluate the ingestion and dermal exposure to chemicals deposited on accessible surfaces is based on methods developed by the WTCIATWG (WTCIATWG, 2002) and EPA Office of Pesticides Programs (OPP) Standard Operating Procedures (SOPs) for Residential Exposure Assessment (EPA, 2001a).

Exposure factors (e.g., ingestion rates and exposure frequency and duration) are used to estimate CDI for each complete exposure pathway. The estimates of CDI are combined with toxicity information in the toxicity assessment of an HHRA to characterize the potential risk to human health.

CDIs were estimated by selecting values for exposure variables to provide the RME for an individual working at the site. Tables C1-6 and C1-7 present equations for calculating CDIs for carcinogenic and noncarcinogenic chemicals for occupational workers from ingestion and dermal exposure to chemicals on the exhaust equipment.

Table C1-6
Chronic Daily Intake for Ingestion of Chemicals on Indoor Surfaces

$$CDI\ (mg/kg-d) = \frac{EPC \times SA_h \times CF \times F_{s-s} \times F_{s-m} \times ED \times EF}{BW \times AT} \qquad Eq(2)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Skin Surface Area for Hands (SA_h), m^2/event =	0.0817	EPA, 2001b
Contact Frequency (CF), events/day =	2	Assumed
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG, 2002
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Skin-to-Mouth Transfer Factor (F_{s-m}), unitless =	0.1	WTCIATWG, 2002
Adult Body Weight (BW), kilograms =	70	EPA, 1997a; LANL, 2000
Averaging Time (AT), days		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms
c-s = chemical-specific.
m^2 = square meter.
mg = milligram.
EPA = U.S. Environmental Protection Agency.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.
LANL = Los Alamos National Laboratory.

Table C1-7
Chronic Daily Intake for Dermal Contact with Chemicals on Indoor Surfaces

$$CDI\ (mg/kg-d) = \frac{EPC \times SA_h \times CF \times F_{s-s} \times ED \times EF \times ABS_d}{BW \times AT} \qquad Eq(3)$$

Exposure Parameter	Value	Reference
Exposure Point Concentration (EPC), mg/m^2	c-s	---
Skin Surface Area for Hands (SA_h), m^2/event =	0.0817	EPA, 2001b
Contact Frequency (CF), events/day =	2	Assumed
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG, 2002
Exposure Duration (ED), years =	30	EPA, 1989; LANL, 2000
Exposure Frequency (EF), days/year =	250	EPA, 1989; LANL, 2000
Dermal Absorption Factor (ABS_d), unitless =	c-s	EPA, 2001b
Adult Body Weight (BW), kilograms =	70	EPA, 1997a; LANL, 2000
Averaging Time (AT), days		
Noncarcinogens =	10,950	EPA, 1989; LANL, 2000
Carcinogens =	25,550	EPA, 1989; LANL, 2000

Definition of Acronyms
c-s = chemical-specific.
m^2 = square meter.
mg = milligram.
EPA = U.S. Environmental Protection Agency.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.
LANL = Los Alamos National Laboratory.

The guidance documents used to compile exposure factors primarily include EPA Risk Assessment Guidance for Superfund, Part A (EPA, 1989); EPA Exposure Factors Handbook (EPA, 1997a); and Risk Assessment Guidance for Superfund, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance (EPA, 2001b). Professional judgment and information from the WTCIATWG (WTCIATWG, 2002) were also used where EPA guidance was not available.

Body weight

The EPA default adult body weight of 70 kilograms (kg) was used, as the dose-response relationships on which the carcinogenic risk estimates are based assume a body weight of 70 kg (EPA, 1997a; Los Alamos National Laboratory [LANL], 2000).

Averaging Time

The averaging time for carcinogens of 25,550 days, is averaged over a 70-year lifetime (EPA, 1989). For noncarcinogens, the averaging time is the exposure duration multiplied by 365 days (EPA, 1989).

Contact Frequency

Based on professional judgment, the contact frequency assumed is 2 events per day to reflect work during the forenoon, washing during a lunch break, and work during the afternoon.

Dermal Absorption Factor

With the exception of arsenic and cadmium, EPA (EPA, 2001b) does not provide dermal absorption values for inorganics or volatile organic chemicals. As recommended by EPA Region 6 (EPA, 2004), the dermal exposure pathway was not evaluated for chemicals lacking chemical-specific dermal absorption factors. EPA recommends the value of 0.1 for dermal absorption of semivolatile organic chemicals (EPA, 2001b). In addition, Table C1-8 presents EPA-recommended chemical-specific dermal absorption factors that were used in the risk assessment (EPA, 2001b).

Table C1-8
Chemical-Specific Dermal Absorption Factors Recommended by EPA

Chemical	Dermal Absorption Factor[a]
Semivolatile Organic Chemicals	0.1
Cadmium	0.001
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.03

a. U.S. Environmental Protection Agency (EPA). 2001b. Risk Assessment Guidance for Superfund, Vol. I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal risk Assessment), Interim, Appendix C, EPA/540/R/99/005, OSWER 9285.7-02EP, September. (EPA, 2001b)

Skin Surface Area

The skin surface area used is based on recommendations in Exhibit C-1 of the EPA's Supplemental Guidance for Dermal Risk Assessment (EPA, 2001b). This Exhibit provides body part-specific adult surface area calculations and recommends a value of 817 square centimeters (cm^2) for an adult female. The surface area of adult male hands is listed as 990 cm^2. Exposure parameters for an adult female were used in order to assess all dermal exposures consistently with the EPA adult lead model (ALM), which is an approach for assessing occupational health risks from lead intake in women of child-bearing age. The EPA lead model is developed to be protective of receptors most sensitive to lead exposure, which are fetuses carried by women who experience nonresidential exposures (EPA, 2003).

Exposure Duration

The default exposure duration of 30 years is the National upper bound time (90th percentile) at one residence (EPA, 1991; LANL, 2000). Because of the nature of the area, it is assumed that exposure duration in the work environment corresponds with residence time (LANL 2000).

Exposure Frequency

The EPA-recommended exposure frequency for occupational workers is 250 days per year. This assumes five working days per week for 50 weeks per year (EPA, 1993; LANL, 2000).

Fraction Skin-to-Mouth Transfer

The value of 10 percent (or 0.1) used by the WTCIATWG (WTCIATWG, 2002) is based on studies by Michaud et al. (Michaud et. al., 1994), the EPA OPP guidelines, and Kim and Hawley (Kim and Hawley, 1985), where it was assumed that all of the residues deposited on the fingertips would be transferred to the mouth twice per day.

Fraction Surface-to-Skin Transfer

According to the evaluation by the WTCIATWG (WTCIATWG, 2002), this factor should vary depending on the type of surface, type of residual, hand condition, and force of contact. Literature values range from 5 percent for carpets (EPA, 1997b) to 50 percent for hard surfaces (Rodes et al., 2001). EPA OPP recommends a value of 10 percent. A value of 5 percent (or 0.05) (WTCIATWG, 2002) was used for this assessment.

C1.3 Toxicity Assessment

The purpose of the toxicity assessment is to “weigh available evidence regarding the potential for particular contaminants to cause adverse effects in exposed individuals and to provide, where possible, an estimate of the relationship between the extent of exposure to a contaminant and the increased likelihood and/or severity of adverse effects” (EPA, 1989). Most EPA cancer slope factors (CSF) are upper estimates of the probability of a response per unit intake of a chemical over a lifetime (EPA, 1989). CSFs are based on mathematical extrapolation from experimental animal data and epidemiological studies, when available. Carcinogens with EPA-derived CSFs are also given EPA weight-of-evidence classifications whereby potential carcinogens are grouped according to the likelihood that the chemical is a human carcinogen,

depending on the quality and quantity of carcinogenic potency data for the chemical. The weight-of-evidence classifications include:

- Group A: Human Carcinogen (sufficient evidence of carcinogenicity in humans).
- Group B: Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans).
- Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data).
- Group D: Not classifiable as to Human Carcinogenicity (inadequate or no evidence).
- Group E: Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

CSFs for use in the HHRA are presented in Table C1-9. Table C1-10 summarizes cancer weight of evidence classification for chemicals with carcinogenic effects.

The evaluation of noncarcinogens is based on the presumption of a threshold, where a specific dose must be received in order for an adverse effect to occur. The reference dose (RfD) is an estimate of a daily chemical intake per unit body weight that is likely to be without deleterious effects (EPA, 1989). EPA has developed chronic RfDs to evaluate long-term exposures (7 years to a lifetime), and subchronic values to evaluate exposures of shorter duration (2 weeks to 7 years). Chronic RfDs were used in this HHRA (Table C1-9).

Toxicity values are those used to develop the EPA Region 6 Human Health Medium-Specific Screening Values (EPA, 2004). Toxicity values were obtained by EPA Region 6 from the Integrated Risk Information System (IRIS), the EPA Health Effects Assessment Summary Tables (HEAST) (EPA, 1997c), or EPA's National Center for Environmental Assessment (NCEA). For dermal exposures, oral toxicity values for organic chemicals were not adjusted to reflect an absorbed dose in accordance with EPA *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, (Part E, Supplemental Guidance for Dermal Risk Assessment)* (EPA, 2001b). That is, the absorbed dose was assumed to equal the administered dose. However, oral toxicity values for inorganic chemicals were adjusted using the chemical-specific gastrointestinal absorption values provided in EPA guidance (EPS, 2001b). These values are shown in Table C1-11.

Oral toxicity factors were adjusted when appropriate using the following equations from EPA guidance (EPA, 2001b):

$$CSF_{abs} = \frac{CSF_o}{ABS_{GI}} \qquad Eq\ (4)$$

and

$$RfD_{abs} = RfD_o \times ABS_{GI} \qquad Eq\ (5)$$

where,

CSF_{abs} = Absorbed Cancer Slope Factor, $(mg/kg\text{-}d)^{-1}$.
CSF_o = Oral Cancer Slope Factor, $(mg/kg\text{-}d)^{-1}$.
ABS_{GI} = Fraction of contaminant absorbed in the gastrointestinal tract, unitless.
RfD_{abs} = Absorbed Reference Dose, mg/kg-d.
RfD_o = Oral Reference Dose, mg/kg-d.

Table C1-9
Toxicity Values for Human Health Risk Assessment

Parameter	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$		Oral Reference Dose (mg/kg-d)	
Volatile Organic Chemicals (Method 8260B):				
1,2,4-Trimethylbenzene	NA		5.0E-02	p
4-Methyl-2-pentanone	NA		8.0E-02	h
Acetone	NA		9.0E-01	i
Ethylbenzene	NA		1.0E-01	i
Bromomethane	NA		1.4E-03	i
Chloroform	NA		1.0E-02	i
Methylene chloride	7.5E-03	i	6.0E-02	i
Tetrachloroethene	5.4E-01	o	1.0E-02	i
Toluene	NA		2.0E-01	i
Xylenes (total)	NA		2.0E-01	i
Semivolatile Organic Chemicals (Method 8270C):				
Bis(2-ethylhexyl)phthalate	1.4E-02	i	2.0E-02	i
Di-n-octylphthalate	NA		4.0E-02	p
Propylene glycol	NA		5.0E-01	p
Metals (Method 6010B):				
Barium	NA		7.0E-02	i
Cadmium	NA		5.0E-04	i
Chromium (total)	NA		NA	
Lead	NA		NA	
Mercury	NA		NA	
Dioxins/Furans (Method 8290):				
2,3,7,8-TCDD	1.5E+05	h	NA	

Table C1-9 (continued)
Toxicity Values for Human Health Risk Assessment

Toxicity values were taken from EPA Region 6 Human Health Medium-Specific Screening Levels Table and are referenced as follows (EPA, 2004):
i= Integrated Risk Information System (IRIS)
h= Health Effects Assessment Summary Tables (HEAST)
o= Other EPA documents
p= Provisional Peer-Reviewed Toxicity Values (PPRTV) Database

Definition of Acronyms
NA = Not available.
mg/kg-d = milligrams per kilogram-day.
TCDD = 2,3,7,8-Tetrachlorodibenzo-p-dioxin.

Table C1-10
Weight of Evidence Classifications for Carcinogens

Chemical of Potential Concern	Weight of Evidence Classification	Source
Methylene chloride	B2	IRIS
Tetrachloroethene	n/c	IRIS
Bis(2-ethylhexyl)phthalate	B2	IRIS
2,3,7,8-TCDD	B2	HEAST

Definition of Acronyms
B2 = Sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans.
n/c = Not currently classified.
IRIS = Integrated Risk Information System (http://www.epa.gov/iris/).
HEAST = Health Effects Assessment Summary Tables (EPA, 1997c).

Table C1-11
Gastrointestinal Absorption Factors for Adjustment of Oral Toxicity Values

Chemical	Gastrointestinal Absorption Factor[a]
Barium	0.07
Chromium (III)	0.013

a. U.S. Environmental Protection Agency (EPA). 2001b. Risk Assessment Guidance for Superfund, Vol. I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal risk Assessment), Interim, Appendix C, EPA/540/R/99/005, OSWER 9285.7-02EP, September. (EPA, 2001b)

C1.4 Risk Characterization

In the risk characterization stage of the HHRA, the toxicity and exposure assumptions are combined to produce a quantitative estimate of risk to human health. Risk is a unitless probability of an RME individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen (EPA, 1989). Hazard quotients (HQs) are ratios of CDIs to RfDs and represent the potential for noncarcinogencic toxicity to occur in an individual. The overall potential for carcinogenic and noncarcinogenic effects is estimated by summing risks to produce a cumulative risk and summing HQs across chemicals and across exposure pathways to produce a hazard index (HI).

The linear low-dose cancer risk equation is as follows:

$$Risk_i = CDI \times CSF \qquad Eq\ (6)$$

Cumulative cancer risks are subsequently estimated as:

$$Risk_T = \sum Risk_i \qquad Eq\ (7)$$

where,

$Risk_i$ = Risk estimate for chemical i.

$Risk_T$ = Total cancer risk.

CDI = Chronic daily intake (mg/kg-d or µg/m^3)

CSF = Cancer slope factor (mg/kg-d)$^{-1}$.

Calculation of the chemical-specific HQ is as follows:

$$Hazard\ Quotient = \frac{CDI}{RfD} \qquad Eq\,(8)$$

The chronic noncarcinogenic HI is estimated as:

$$Hazard\ Index = \frac{CDI_1}{RfD_1} + \frac{CDI_2}{RfD_2} + \Lambda\ \frac{CDI_i}{RfD_i} \qquad Eq\,(9)$$

where,

CDI_i = Chronic daily intake for chemical i.

RfD_i = Reference dose for chemical i (mg/kg-d).

In accordance with 40 Code of Federal Regulations (CFR) 300.430, carcinogenic risk within the range of 10^{-4} (probability of 1 in 10,000 of an individual developing an additional cancer) to 10^{-6} (probability of 1 in 1,000,000 of an individual developing an additional cancer) is considered acceptable. Per EPA guidance, when the HI exceeds 1, there is a potential for adverse noncarcinogenic health effects (EPA, 1989). When the HI exceeds 1, and multiple chemicals

contribute to the exceedance, the HI may be segregated on the basis of toxic effects and target organs (e.g., hepatic, renal, respiratory, cardiovascular, etc.). However, COPCs were not segregated by target organs for this HHRA.

The results of the noncarcinogenic and carcinogenic risk characterization for the exhaust equipment in Building 37 are presented in Tables C1-12 and C1-13, respectively.

Table C1-12
Risk Characterization for Noncarcinogens, CAI Exhaust Equipment

Parameter	Exhaust EPC (mg/m^2)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake (mg/m^3)	Oral Reference Dose (mg/kg-d)	Dermal Reference Dose (mg/kg-d)	Inhalation Reference Concentration (mg/m^3)	Hazard Quotient
Method 8270C - Semivolatile Organic Chemicals									
Bis(2-ethylhexyl)phthalate	3.9E+01	1.0E-01	3.1E-04	3.1E-04	---	2.0E-02	2.0E-02	---	3.1E-02
Di-n-octylphthalate	2.4E+01	1.0E-01	1.9E-04	1.9E-04	---	4.0E-02	4.0E-02	---	9.6E-03
Propylene glycol[a]	2.0E+01	1.0E-01	1.6E-04	1.6E-04	---	5.0E-01	5.0E-01	---	6.4E-04
Method 8260B - Volatile Organic Chemicals									
1,2,4-Trimethylbenzene	6.0E-02	0.0E+00	4.8E-07	0.0E+00	---	5.0E-02	5.0E-02	---	9.6E-06
4-Methyl-2-pentanone	8.7E-01	0.0E+00	7.0E-06	0.0E+00	---	8.0E-02	8.0E-02	---	8.7E-05
Acetone	4.2E+02	0.0E+00	3.4E-03	0.0E+00	---	9.0E-01	9.0E-01	---	3.7E-03
Bromomethane	6.2E-01	0.0E+00	5.0E-06	0.0E+00	---	1.4E-03	1.4E-03	---	3.5E-03
Chloroform	3.3E-02	0.0E+00	2.6E-07	0.0E+00	---	1.0E-02	1.0E-02	---	2.6E-05
Ethylbenzene	4.5E-01	0.0E+00	3.6E-06	0.0E+00	---	1.0E-01	1.0E-01	---	3.6E-05
Methylene chloride	3.1E+02	0.0E+00	2.5E-03	0.0E+00	---	6.0E-02	6.0E-02	---	4.1E-02
Tetrachloroethene	1.8E-01	0.0E+00	1.4E-06	0.0E+00	---	1.0E-02	1.0E-02	---	1.4E-04
Toluene	1.6E-01	0.0E+00	1.3E-06	0.0E+00	---	2.0E-01	2.0E-01	---	6.4E-06
Xylenes	3.9E+00	0.0E+00	3.1E-05	0.0E+00	---	2.0E-01	2.0E-01	---	1.6E-04
Method 3050A/6010B – Metals									
Barium	6.3E-01	0.0E+00	5.0E-06	0.0E+00	---	7.0E-02	4.9E-03	---	7.2E-05
Cadmium	2.7E-02	1.0E-03	2.2E-07	2.2E-09	---	5.0E-04	5.0E-04	---	4.4E-04
Chromium	6.8E+00	0.0E+00	5.4E-05	0.0E+00	---	---	---	---	---
Mercury	8.7E-03	0.0E+00	7.0E-08	0.0E+00	---	---	---	---	---
Method 8290 - Dioxins/Furans									
TEQ	2.1E-08	3.0E-02	1.7E-13	5.0E-14	---	---	---	---	---
								HAZARD INDEX:	**9.1E-02**

a. Chemical is a tentatively identified compound.

Definition of Acronyms
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
mg/m^3 = milligrams per cubic meter.
EPC = exposure point concentration.
--- = not applicable or not available.
TEQ = toxicity equivalence.

Table C1-13
Risk Characterization for Carcinogens, CAI Exhaust Equipment

Parameter	Exhaust Equipment EPC (mg/m^2)	Dermal Absorption Factor (unitless)	Oral Chronic Daily Intake (mg/kg-d)	Dermal Chronic Daily Intake (mg/kg-d)	Inhalation Chronic Daily Intake ($\mu g/m^3$)	Oral Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}d)^{-1}$	Air Unit Risk Factor $(\mu g/m^3)^{-1}$	Risk
Method 8270C - Semivolatile Organic Chemicals									
Bis(2-ethylhexyl)phthalate	3.9E+01	1.0E-01	1.1E-04	1.1E-04	---	1.4E-02	1.4E-02	---	3.1E-06
Di-n-octylphthalate	2.4E+01	1.0E-01	6.9E-05	6.9E-05	---	---	---	---	---
Propylene glycol[a]	2.0E+01	1.0E-01	5.7E-05	5.7E-05	---	---	---	---	---
Method 8260B - Volatile Organic Chemicals									
1,2,4-Trimethylbenzene	6.0E-02	0.0E+00	1.7E-07	0.0E+00	---	---	---	---	---
4-Methyl-2-pentanone	8.7E-01	0.0E+00	2.5E-06	0.0E+00	---	---	---	---	---
Acetone	4.2E+02	0.0E+00	1.2E-03	0.0E+00	---	---	---	---	---
Bromomethane	6.2E-01	0.0E+00	1.8E-06	0.0E+00	---	---	---	---	---
Chloroform	3.3E-02	0.0E+00	9.4E-08	0.0E+00	---	---	---	---	---
Ethylbenzene	4.5E-01	0.0E+00	1.3E-06	0.0E+00	---	---	---	---	---
Methylene chloride	3.1E+02	0.0E+00	8.9E-04	0.0E+00	---	7.5E-03	7.5E-03	---	6.6E-06
Tetrachloroethene	1.8E-01	0.0E+00	5.1E-07	0.0E+00	---	5.4E-01	5.4E-01	---	2.8E-07
Toluene	1.6E-01	0.0E+00	4.6E-07	0.0E+00	---	---	---	---	---
Xylenes	3.9E+00	0.0E+00	1.1E-05	0.0E+00	---	---	---	---	---
Method 3050A/6010B - Metals									
Barium	6.3E-01	0.0E+00	1.8E-06	0.0E+00	---	---	---	---	---
Cadmium	2.7E-02	1.0E-03	7.7E-08	7.7E-10	---	---	---	---	---
Chromium	6.8E+00	0.0E+00	1.9E-05	0.0E+00	---	---	---	---	---
Mercury	8.7E-03	0.0E+00	2.5E-08	0.0E+00	---	---	---	---	---
Method 8290 - Dioxins/Furans									
TEQ	2.1E-08	3.0E-02	5.9E-14	1.8E-14	---	1.5E+05	1.5E+05	---	1.2E-08
								CARCINOGENIC RISK:	**1.0E-05**

a. Chemical is a tentatively identified compound.

Definition of Acronyms
mg/kg-d = milligrams per kilogram-day.
mg/m^2 = milligrams per square meter.
$\mu g/m^3$ = micrograms per cubic meter.
EPC = exposure point concentration.
--- = not applicable or not available.
TEQ = toxicity equivalence.

The exposure pathways quantified for occupational workers were ingestion and dermal exposure to chemicals on indoor surfaces of exhaust equipment during routine maintenance. The COPCs in the exhaust equipment evaluated quantitatively for noncarcinogenic effects were bis(2-ethylhexyl)phthalate, di-n-octylphthalate, 1,2,4-trimethylbenzene, 4-methyl-2-pentanone, acetone, bromomethane, chloroform, ethylbenzene, propylene glycol (a TIC), methylene chloride, tetrachloroethene, toluene, xylenes, barium, and cadmium. The COPCs in the Building 37 exhaust equipment evaluated quantitatively for carcinogenic risk were bis(2-ethylhexyl)phthalate, methylene chloride, tetrachloroethene, and dioxins/furans (as TEQ). The noncarcinogenic HI for the exhaust equipment was 0.091. This RME HI is well below the target of 1.0. The carcinogenic risk for the exhaust equipment was 1.0E-05, which is within the acceptable 10^{-6} to 10^{-4} range of risks specified by 40 CFR 300.430.

C1.5 Evaluation of Lead

Because lead toxicity does not exhibit a threshold for noncarcinogenic health effects, risk assessment methods that are based on threshold values do not apply. Therefore, the EPA has developed the ALM to address worker exposures (EPA, 2003). The ALM estimates the lead concentration in the blood of a pregnant worker exposed by ingestion of soil and dust. However, the ALM does not address the inhalation and dermal absorption pathways, except as a default baseline blood concentration that also includes dietary lead contributions. Various other simulation models developed to evaluate blood lead concentration from exposures to lead have been reviewed and compared with the ALM (EPA, 2001c). Although none of the models reviewed address worker exposure to lead contamination on surfaces, the review found that the model developed by the California DTSC specifically addresses the ingestion, dermal contact, and inhalation exposure pathways and can provide simulation results consistent with the ALM.

The surface swipe model developed for this risk assessment to evaluate exposure to lead on surfaces as measured by swipe samples is a modification of the DTSC model (DTSC, 2000). The model assumes that the concentration of lead in blood from exposure via separate pathways is additive, such that:

$$PbB_{adult} = PbB_{ing} + PbB_{derm} + PbB_{inh} \qquad Eq(10)$$

where,

PbB_{adult} =	Concentration of lead in blood of an adult worker, micrograms per deciliter (µg/dL).
PbB_{ing}, PbB_{derm}, PbB_{inh} =	Contributions to adult blood lead concentration from the ingestion, dermal contact and inhalation pathways, respectively, µg/dL.

However, the inhalation exposure pathway was considered incomplete for assessment of the exhaust equipment. Therefore, only the ingestion and dermal exposure pathways were evaluated. The concentration of lead in blood of an adult worker is, therefore, estimated based on the following equation and parameters presented in Table C1-14:

$$PbB_{adult} = PbB_0 + \left\{ Pb_{sw} \times \frac{EF}{AT} \times \left[\left(SF_{ing} \times SA_h \times EV \times F_{s-s} \times F_{s-m} \right) + \left(SF_{derm} \times SA_{uex} \times EV \times F_{s-s} \times ABS_d \right) \right] \right\} \quad Eq\,(11)$$

Concentration of Lead in Blood of Exposed Worker

The maximum lead concentration in the exhaust equipment was measured on swipe samples that were assumed to be representative of the surface lead concentration. The MDC is 0.058 micrograms per square centimeter (µg/cm^2).

Baseline Lead Concentration

A default value of 2.2 micrograms per deciliter (µg/dL) was used for PbB_0. The value represents the upper concentration of the 1.7-2.2 µg/dL range reported for women of ages 24 to 49 (EPA 2003).

Fetal/Maternal Blood Lead Concentration Ratio

The EPA-recommended default value of 0.9 was used based on the relationship between umbilical cord and maternal blood lead concentrations (EPA, 2003).

Dermal Absorption Factor

The dermal absorption factor of 0.0006 is the value used by DTSC of 0.06% (DTSC, 2000).

Geometric Standard Deviation of Adult Mean Blood Lead Concentration

The geometric standard deviation (GSD) of the mean blood lead concentration in the adult population is the EPA-recommended value of 1.8 for a homogeneous population (EPA, 2003).

Exposure Frequency

The EPA-recommended exposure frequency for occupational workers is 250 days per year. This assumes five working days per week for 50 weeks per year (EPA, 1993).

Fraction Skin-to-Mouth Transfer

The value of 10 percent (or 0.1) used by the WTCIATWG (WTCIATWG, 2002) is based on studies by Michaud et al. (Michaud et al., 1994), the EPA OPP guidelines, and Kim and Hawley (Kim and Hawley, 1985), where it was assumed that all of the residues deposited on the fingertips would be transferred to the mouth twice per day.

Fraction Surface-to-Skin Transfer

According to the evaluation by the WTCIATWG, this factor should vary depending on the type of surface, type of residual, hand condition, and force of contact (WTCIATWG, 2002). Literature values range from 5 percent for carpets (EPA, 1997b) to 50 percent for hard surfaces (Rodes et al., 2001). EPA OPP recommends a value of 10 percent. A value of 5 percent (or 0.05) (WTCIATWG, 2002) was used for this assessment.

Exposure Events per Day

Based on professional judgment, the number assumed is 2 events per day.

Averaging Time

The averaging time is the total period during which indoor surface contact may occur. The EPA-recommended value is 365 days per year for continuing long-term exposures (EPA, 2003).

Surface Area

Exposures by the dermal pathway were evaluated using the surface area of adult female hands (SA_h) and the face and upper extremities (SA_{uex}) of an adult female worker (EPA, 2001b).

The slope factors used in the calculations for ingestion (SF_{ing}; U.S. Food and Drug Administration [FDA], 1990; DTSC, 2000) and dermal contact (SF_{derm}; DTSC, 2000) are intake factors for the pathways indicated.

The goal for the 95th percentile of fetal blood lead concentration ($PbB_{fetal,0.95}$) is 10 µg/dL, as specified in EPA guidance (EPA, 1986 and 2003). The ALM describes the fetal blood lead concentration as:

$$PbB_{fetal} = PbB_{adult} \times R_{fetal/maternal} \qquad Eq\ (12)$$

where,

PbB_{fetal} = concentration of lead in the fetus, µg/dL.
$R_{fetal/maternal}$ = concentration ratio of lead in fetal blood to adult blood, dimensionless.

EPA guidance (EPA, 1986 and 2003) assumes that PbB_{adult} is lognormally distributed. The guidance requires remediation of lead concentrations such that PbB_{fetal} will not exceed 10 µg/dL with 95 percent confidence as follows:

$$PbB_{fetal,0.95} = PbB_{fetal} \times GSD^{1.645} \qquad Eq\ (13)$$

where,

$PbB_{fetal,0.95}$ = 95th percentile of fetal blood lead concentration, µg/dL.
GSD = Geometric standard deviation of adult blood lead concentration in the U. S. population.

The estimated concentration of lead in blood of the worker and the fetus are well below the goal of 10 µg/dL specified in EPA (EPA, 1986 and 2003) guidance with 95 percent confidence (Table C-14). This conclusion is confirmed by calculating the probability that the mean blood lead concentration of the fetus (PbB_{fetal}) exceeds 10 µg/dL based on the assumption that the adult blood lead concentration is lognormally distributed (EPA, 1986 and 2003). For a distribution with geometric mean concentration (PbB_{fetal}) and geometric standard deviation 1.8, the probability that the mean concentration exceeds 10 µg/dL approximately 0.3% (Table C1-14). Based on this assessment, the potential risk to a future worker in the TA-50-37, exhaust

equipment from ingestion and dermal exposure to lead on surfaces is below the applicable criteria specified in EPA (EPA, 1986) guidance.

Table C1-14
Parameters used to Estimate Blood Lead Concentration in Adult Female Worker

Exposure Parameter	Exposure Parameter Description	Units	Parameter	Reference
Pb_{sw}	Lead concentration on swipe/100[a]	$\mu g/cm^2$	0.058	Maximum Detected (Table C1-2)
$PbB_{fetal\ goal}$	Goal for the 95th percentile fetal blood lead concentration	µg/dL	10.0	EPA, 2003
PbB_o	Baseline blood concentration in absence of site exposure	µg/dL	2.2	EPA, 2003[b]
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	dimensionless	0.9	EPA, 2003
SF_{ing}	Ingestion Slope Factor	µg/dL per µg/day	0.04	FDA, 1990; DTSC, 2000
SF_{derm}	Dermal Slope Factor	µg/dL per µg/day	0.0001	DTSC, 2000
ABS_d	Dermal Absorption Factor	dimensionless	0.0006	DTSC, 2000
GSD	Geometric standard deviation of PbBadult	dimensionless	1.8	EPA, 2003
SA_h	Surface Area (hands, adult female)	cm^2/event	817	EPA, 2001b
SA_{uex}	Surface Area (upper extremities, adult female)	cm^2/event	2,220	EPA, 2001b
EV	Exposure Events per Day	events/day	2	Assumed
F_{s-s}	Fraction Transferred from Surface to Skin	dimensionless	0.05	WTCIATWG, 2002
F_{s-m}	Fraction Transferred from Skin to Mouth	dimensionless	0.1	WTCIATWG, 2002
CF	Conversion Factor	cm^3/m^3	1.0E+06	--
EF	Exposure Frequency	days/year	250	EPA, 1989; LANL 2000
AT	Averaging Time	days/year	365	EPA 2003
Surface Swipe Model Result[c]				
	$PbB_{adult} = PbB_0 + [(Pb_{sw}*(EF/AT)*((SF_{ing}*SA_h*EV*F_{s-s}*F_{s-m}) + (SF_{derm}*SA_{uex}*EV*F_{s-s}*ABS_d)] =$			**2.2E+00**
	$PbB_{fetal} = PbB_{adult} * R_{fetal/maternal} =$			**2.0E+00**
	$PbB_{fetal,\ 0.95} = PbB_{fetal} * (GSD^{1.645}) =$			**5.2E+00**
	$P(PbB_{fetal} > PbB_{fetal,goal})$[d] (%) =			**0.30%**

a. Swipe concentrations are reported in units of $\mu g/100cm^2$.
b. Upper value of plausible range reported for U.S. women ages 20-49 years.
c. Equations based on Equations 1-3 in EPA (EPA, 2003).
d. Probability that fetal PbB > $PbB_{fetal,goal}$, assuming lognormal distribution with mean concentration.

Definition of Acronyms
EPA = U.S. Environmental Protection Agency.
FDA = U.S. Food and Drug Administration.
DTSC = Department of Toxic Substances Control.
WTCIATWG = World Trade Center Indoor Air Taskforce Working Group.
µg/dL = micrograms per deciliter.
$\mu g/cm^2$ = micrograms per square centimeter.

Table C1-14 (continued)
Parameters used to Estimate Blood Lead Concentration in Adult Female Worker

$\mu g/m^3$ = micrograms per cubic meter.
cm^2 = square centimeters.
cm^3/m^3 = cubic centimeters per cubic meter.
cm^{-1} = per centimeter.

C1.6 Uncertainty

EPCs used in the risk assessment were the MDCs. These concentrations likely overestimate the average exposure to COPCs in the exhaust equipment. That is, it was assumed that an industrial worker would be in contact with the maximum detected concentration 250 days per year for 30 years. Although the use of central-tendency techniques (e.g., using a 95 percent upper confidence limit as the EPC) in addition to the RME provides a risk range for consideration in risk management decisions, it is not necessary to conduct assessments using these methods if the health risks are acceptable using maximum or near maximum values for each of the input parameters. EPA states that "bounding estimates" (e.g., upper-bound estimates) may be calculated using maximum or near maximum values if the purpose of the approach is, for example, to eliminate unimportant exposure pathways" (EPA, 1997a). In this HHRA, the human health risks are shown to be acceptable using upper-bound exposure estimates. Therefore, central-tendency estimates were not presented.

Several TICs were carried forward to the HHRA (i.e., had detected concentrations above baseline and/or QA/QC results). However, with the exception of propylene glycol, these chemicals do not have toxicity data and were not quantitatively evaluated in the HHRA. The results and identity of TICs are highly uncertain (EPA, 1989). Because TICs were not quantitatively evaluated (with the exception of propylene glycol), the potential human health risk may be underestimated. The TICs detected include: 1,4-benzenediol, 2,5-bis(1,1-d; 2-mercaptobenzothiazole; 4-cyanocyclohexene; 5-cholestene-3-ol, 24-methyl; 9-octadecenamide; cyclopentane, methyl; beta-sitosterol; and propylene glycol.

All complete exposure pathways were evaluated for the exhaust equipment. Because chemical (and potentially, radiological) hazards are present in the exhaust equipment, as demonstrated by the analytical data, employees conducting maintenance must use the types of PPE that will protect them from exposure. It was conservatively assumed in the HHRA that that maintenance staff may potentially contact chemicals in the exhaust equipment during routine maintenance; however, it is likely that employees will be required to wear PPE while they are exposed to this contaminated equipment. Because the exhaust vents air outdoors, the indoor inhalation exposure pathway is considered incomplete and was not evaluated. The exposure parameters used to evaluate the ingestion and dermal exposure pathways were typically upper-bound estimates. For example, the exposure duration of 30 years for an industrial worker is the 90th

percentile value for time at one residence. Because of the nature of the area, it was assumed that exposure duration in the work environment corresponds with residence time (LANL, 2000). This assumption likely results in an overestimation of human health risk. As another example, the skin surface area for hands is the 50th percentile for female workers (EPA, 2001b). This includes the entire surface area of the hands rather than the palms only, which is the area of the hands that is most likely to contact surfaces. Therefore, the surface area is likely an overestimate.

The methodology for toxicity assessment was developed by EPA to produce toxicity factors protective of human health. Health-protective approaches are used in developing toxicity factors to ensure dose-response or hazard potential are not underestimated. For example, uncertainty factors of 10 to 10,000 are used to estimate RfDs; humans are assumed to be more sensitive than the most sensitive laboratory species; carcinogens are considered not to have a threshold; and it is assumed that chemicals that are carcinogenic to laboratory animals also cause cancer in humans. Toxicity values for chronic exposure were used for the assumed exposure duration of 30 years. In cases where toxicity values were not available for a given route of exposure, route-to-route extrapolation was used, consistent with EPA Region 6 guidance (EPA, 2004). This may result in an over- or underestimation of risk depending on chemical-specific toxicological characteristics. In some cases, risk estimates were not developed for chemicals lacking toxicity data. For example, elemental mercury was not evaluated because oral and dermal toxicity factors are currently unavailable. This may result in an underestimation of potential health risk.

C1.7 Conclusions

The exposure pathways quantified for occupational workers were ingestion and dermal exposure to chemicals on indoor surfaces of exhaust equipment during routine maintenance. The COPCs in the exhaust equipment evaluated quantitatively for noncarcinogenic effects were bis(2-ethylhexyl)phthalate, di-n-octylphthalate, 1,2,4-trimethylbenzene, 4-methyl-2-pentanone, acetone, bromomethane, chloroform, ethylbenzene, propylene glycol (a TIC), methylene chloride, tetrachloroethene, toluene, xylenes, barium, and cadmium. The COPCs in the Building 37 exhaust equipment evaluated quantitatively for carcinogenic risk were bis(2-ethylhexyl)phthalate, methylene chloride, tetrachloroethene, and dioxins/furans (as TEQs). The noncarcinogenic HI for the exhaust equipment was 0.091. This RME HI is well below the target

of 1.0. The carcinogenic risk for the exhaust equipment was 1.0E-05, which is within the acceptable 10^{-6} to 10^{-4} range of risks specified by 40 CFR 300.430.

The estimated concentration of lead in blood of the worker and the fetus are well below the goal of 10 µg/dL specified in EPA (EPA, 1986 and 2003) guidance with 95 percent confidence. Based on this assessment, the potential risk to a future worker in the TA-50-37, exhaust equipment from ingestion and dermal exposure to lead on surfaces is below the applicable criteria specified in EPA (EPA, 1986) guidance.

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Table C1.1: Analytical Results for Wipe Samples in Exhaust Equipment

SAMPLE	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	1,2,3,4,6,7,8,9-OCDD[a]	1,2,3,4,6,7,8,9-OCDF[a]	1,2,3,4,6,7,8-HpCDD[a]	1,2,3,4,6,7,8-HpCDF[a]	1,2,4-TRIMETHYL-BENZENE	2-BUTANONE	4-METHYL-2-PENTANONE	ACETONE	BROMOMETHANE	CHLOROFORM	CHLORO-METHANE	ETHYLBENZENE	METHYLENE CHLORIDE	TETRACHLORO-ETHENE	TOLUENE	XYLENES (TOTAL)[b]	BIS(2-ETHYLHEXYL) PHTHALATE
E-01	1.9 B	0.25 U	1.4	5 U	0.01 U						10 U	10 U	570 E	5 U	2.5 U	5 U	2.5 U	1,100 E	1.0 J	0.91 J	5 U	59 JB
E-02	0.65 B	0.25 U	0.5 U	5 U	0.01 U						10 U	10 U	1,100 E	5 U	2.5 U	5 U	2.5 U	1,800 E	1.4 J	0.62 J	5 U	38 JB
E-03	0.64 B	0.25 U	1.2	5 U	0.01 U						10 U	10 U	4,200 E	5 U	2.5 U	5 U	2.5 U	3,100 E	0.99 J	0.88 J	5 U	130 B
E-04	0.73 B	0.25 U	0.5 U	5 U							10 U	10 U	2,200 E	5 U	2.5 U	5 U	2.5 U	2,400 E	0.68 J	0.9 J	5 U	120 B
E-07	0.95 B	0.25 U	0.6 B	5 U	0.034						10 U	8.7 J	1,500 E	5 U	0.26 J	5 U	4.5 J	2,000 E	1.8 J	1.6 J	39	390 B
E-08	0.79 B	0.25 U	3.2	5 U	0.087						10 U	4.2 J	1,100 E	5 U	0.33 J	5 U	1.8 J	2,000 E	0.86 J	1.1 J	13	250 B
EXB-01	6.3	0.27	67.6	2.2	0.01 U	27.6 SJ1	2.2 SU	15.2 SJ	5 SJ	0.6	3.9	0.75 U	24	6.2	0.15 U	0.8	0.15 U	62	0.15 U	0.15 U	0.3 U	50 U
EXB-02	2.2	0.1 U	8.9	1 U	0.01 U	24.6 SJ	1.9 SU	8.6 SJ	0.80 SU	0.15 U	3.5	0.75 U	70	4.4	0.15 U	0.15 U	0.15 U	110	0.15 U	0.15 U	0.3 U	50 U
EXB-03	1.1	0.1 U	8.3	1 U	0.01 U	38.1 SJ	2.6 SU	2.3 SU	1.2 SU	0.15 U	4.1	0.75 U	6.1	2.8	0.15 U	0.15 U	0.15 U	120	0.15 U	0.15 U	0.3 U	50 U
EXB-04	1.1	0.1 U	8.5	1 U	0.01 U	3.6 SU	2.5 SU	2.2 SU	1.1 SU	0.15 U	3.6	0.75 U	1.5 U	0.75 U	0.15 U	0.15 U	0.15 U	47	0.15 U	0.15 U	0.3 U	50 U
EXB-05	3.4	0.1 U	6.7	4.1	0.01 U	23.6 SJ	2.7 SU	2.2 SU	1.1 SU	0.15 U	4.3	0.75 U	50	2.7	0.15 U	0.15 U	0.15 U	100	0.15 U	0.15 U	2.0	50 U
EXB-06	2.7	0.1 U	4.4	3.5	0.01 U	17.4 SJ	1.6 SU	1.4 SU	0.70 SU	0.15 U	4.1	0.75 U	7.4	2.5	0.15 U	0.15 U	0.15 U	41	0.15 U	0.15 U	3.3	50 U
EXB-11	3.9	0.1 U	6.4	5.8	0.01 U	42.6 SJ	10.5 SJ	11.5 SJ	3 SJ	0.15 U	4.0	0.75 U	9.2	0.75 U	0.15 U	6.4	0.15 U	190	0.15 U	0.15 U	3.6	50 U
Number of Samples	13	13	13	13	12	7	7	7	7	7	13	13	13	13	13	13	13	13	13	13	13	13
Number of Detects	13	1	11	4	2	6	1	3	2	1	7	2	12	5	2	2	2	13	6	6	5	6
Frequency of Detection	100%	8%	85%	31%	17%	86%	14%	43%	29%	14%	54%	15%	92%	38%	15%	15%	15%	100%	46%	46%	38%	46%
Minimum Detect	0.64 B	0.27	0.60 B	2.2	0.034	17.4 SJ	10.5 SJ	8.6 SJ	3 SJ	0.6	3.5	4.2 J	6.1	2.5	0.26 J	0.8	1.8 J	41	0.68 J	0.62 J	2.0	38 JB
Maximum Detect	6.3	0.27	67.6	5.8	0.087	42.6 SJ	10.5 SJ	15.2 SJ	5 SJ	0.6	4.3	8.7 J	4,200 E	6.2	0.33 J	6.4	4.5 J	3,100 E	1.8 J	1.6 J	39	390 B
Average	2.0	0.18	9.1	3.7	0.018	25.4	3.4	6.2	1.8	0.21	6.7	4.5	834	3.9	0.9	2.9	1.3	1,005	0.60	0.54	6.3	103
Standard Deviation	1.7	0.08	17.9	1.8	0.023	12.9	3.1	5.6	1.6	0.17	3.2	4.4	1,240	1.8	1.1	2.6	1.5	1,109	0.57	0.49	10.4	104

Units are ug/100 cm^2 and detections of tentatively identified compounds are not included.

(a) Results reported in picograms per 100 square centimeters.

(b) Round 2 samples were analyzed for o-Xylene and m/p-Xylenes, the detects for which were summed to estimate total xylenes.
Round 2 detection limits ranged from 0.3 ug/100 cm^2 (o-xylene) to 0.6 ug/100cm^2 (m/p-xylenes). One-half the maximum detection limit is shown.

Table C1.2 Chemicals of Potential Concern for Exhaust

CAS Number	Parameter[a]	Minimum Concentration[b]		Maximum Concentration[c]		Units	Location of Maximum Concentration	Detection Frequency[d]	Range of Reporting Limits[e] (min-max)	Background Value[f]	COPC?
Method 3050A/6010B											
7440-39-3	Barium	0.64	B	6.3		ug/100cm^2	EXB-01	13/13	0.5-20	n/a	Yes
7440-43-9	Cadmium	0.27		0.27		ug/100cm^2	EXB-01	1/13	0.2-0.5	n/a	Yes
7440-47-3	Chromium	0.60	B	67.6		ug/100cm^2	EXB-01	11/13	1.0-1.0	n/a	Yes
7439-92-1	Lead	2.2		5.8		ug/100cm^2	EXB-11	4/13	2.0-10	n/a	Yes
7439-97-6	Mercury	0.034		0.087		ug/100cm^2	E-08	2/12	0.02-0.02	n/a	Yes
Method 8290											
---	1,2,3,4,6,7,8,9-OCDD	17.4	SJ	42.6	SJ	pg/100cm^2	EXB-11	6/7	7.2-8.3	n/a	Yes
---	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	10.5	SJ	pg/100cm^2	EXB-11	1/7	3.2-5.8	n/a	Yes
---	1,2,3,4,6,7,8-HpCDD	8.6	SJ	15.2	SJ	pg/100cm^2	EXB-01	3/7	2.7-4.8	n/a	Yes
---	1,2,3,4,6,7,8-HpCDF	3.0	SJ	5.0	SJ	pg/100cm^2	EXB-01	2/7	1.4-3.0	n/a	Yes
Method 8260B											
95-63-6	1,2,4-Trimethylbenzene	0.60		0.60		ug/100cm^2	EXB-01	1/7	0.3-0.3	n/a	Yes
78-93-3	2-Butanone	3.5		4.3		ug/100cm^2	EXB-05	7/13	1.5-20	n/a	No[g]
108-10-1	4-Methyl-2-pentanone	4.2	J	8.7	J	ug/100cm^2	E-07	2/13	1.5-20	n/a	Yes
67-64-1	Acetone	6.1		4,200	E	ug/100cm^2	E-03	12/13	3.0-20	n/a	Yes
74-83-9	Bromomethane	2.5		6.2		ug/100cm^2	EXB-01	5/13	1.5-10	n/a	Yes
67-66-3	Chloroform	0.26	J	0.33	J	ug/100cm^2	E-08	2/13	0.3-5.0	n/a	Yes
74-87-3	Chloromethane	0.8		6.4		ug/100cm^2	EXB-11	2/13	0.3-10	n/a	No[g]
100-41-4	Ethylbenzene	1.8	J	4.5	J	ug/100cm^2	E-07	2/13	0.3-5.0	n/a	Yes
75-09-2	Methylene chloride	41		3,100	E	ug/100cm^2	E-03	13/13	3.0-5.0	n/a	Yes
127-18-4	Tetrachloroethene	0.68	J	1.8	J	ug/100cm^2	E-07	6/13	0.3-5.0	n/a	Yes
108-88-3	Toluene	0.62	J	1.6	J	ug/100cm^2	E-07	6/13	0.3-5.0	n/a	Yes
1330-20-7	Xylenes	2.0[h]		39		ug/100cm^2	E-07	5/13	0.3-10	n/a	Yes
Method 8270C											
117-81-7	Bis(2-ethylhexyl)phthalate	38	JB	390	B	ug/100cm^2	E-07	6/13	100-100	n/a	Yes
117-84-0	Di-n-octylphthalate	66	J	240		ug/100cm^2	E-04	6/13	100-100	n/a	Yes
57-55-6	Propylene glycol[i]	200	M	200	M	ug/100cm^2	E-07	1/13	n/a	n/a	Yes

Notes:
(a) The following tentatively identified compounds (TICs) were also detected but were not evaluated in this risk assessment due to a lack of toxicity data. In addition, both the identity and concentration of these TICs is highly uncertain (EPA, 1989): 1,4-Benzenediol, 2,5-bis (1,1-d; 2-mercaptobenzothiazole; 4-cyanocyclohexene; 5-cholestene-3-ol, 24-methyl; 9-octadecenamide; cyclopentane, methyl; beta-sitosterol.
(b) Minimum detected concentration.
(c) Maximum detected concentration.
(d) Number of detects/Number of samples
(e) Range includes detection limits, as reported by Assaigai Analytical Laboratories, Inc. and reporting limits as reported by Severn Trent Laboratories, Inc.
(f) Background comparison is not applicable for this risk assessment.
(g) Chemical is not a COPC because all detected results are below the maximum detected value in the associated baseline and/or quality assurance/quality control samples.
(h) Sum of o-xylene and m/p-xylenes.
(i) Chemical is a tentatively identified compound.
CAS = Chemical Abstracts Service
COPC = Chemical of Potential Concern
µg/100cm^2 = Micrograms per 100 square centimeters
J = Estimated result. Result is less than reporting limit.
B = (Organics) Method blank contamination. The associated method blank contains the target analyte at a reportable level. (organics)
B = (Inorganics) Estimated result. Result is less than reporting limit.
E = Estimated result. Exceeds calibration range.
S = Subcontracted
M = Result was measured against nearest internal standard assuming a response factor of 1.

Toxicity Equivalencies for Dioxins/Furans

CAS Number	Parameter[(a)]	Maximum Concentration[(c)]		Units	Toxicity Equivalency Factor	Cn * TEF ($pg/100cm^2$)	Cn*TEF (mg/m^2)
Method 8290							
---	1,2,3,4,6,7,8,9-OCDD	42.6	SJ	$pg/100cm^2$	0.0001	0.0043	4.3E-10
---	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	$pg/100cm^2$	0.0001	0.0011	1.1E-10
---	1,2,3,4,6,7,8-HpCDD	15.2	SJ	$pg/100cm^2$	0.01	0.1520	1.5E-08
---	1,2,3,4,6,7,8-HpCDF	5.0	SJ	$pg/100cm^2$	0.01	0.0500	5.0E-09
						TEF =	2.1E-08

Notes:
pg/100cm2 = Picograms per 100 square centimeters
TEF = Toxicity Equivalency Factor
Cn = Congener Concentration
mg/m^2 = Milligrams per square meter
S =
J = Estimated result. Result is less than reporting limit.
CAS = Chemical Abstracts Service

References:
EPA 2000. Exposure and Human Health Risk Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and Related Compounds. Part II: Health Assessment for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and Related Compounds, Chapter 9: Toxicity Equivalence Factors (TEFs) for Dioxin and Related Compounds. Draft Final. EPA/600/P-00/001Ae. National Center for Environmental Assessment, Office of Researchand Development, Washington, DC. Online at www.epa.gov/ncea/pdfs/dioxin/

Table C1.7 Toxicity Values for Human Health Risk Assessment

Analyte	Oral Cancer Slope Factor (CSFo) $(mg/kg\text{-}d)^{-1}$		Air Unit Risk Factor (URF) $(\mu g/m^3)^{-1}$		Oral Reference Dose (RfDo) mg/kg-d		Inhalation Reference Conc. (RfC) mg/m^3	
Volatile Organic Chemicals (Method 8260B):								
4-Methyl-2-pentanone	n/a		n/a		8.0E-02	h	3.0E+00	i
1,2,4-Trimethylbenzene	n/a		n/a		5.0E-02	p	6.0E-03	p
Acetone	n/a		n/a		9.0E-01	i	n/a	
Ethylbenzene	n/a		n/a		1.0E-01	i	1.0E+00	i
Bromomethane	n/a		n/a		1.4E-03	i	5.0E-03	i
Chloroform	n/a		2.3E-05	i	1.0E-02	i	4.5E-02	p
Methylene chloride	7.5E-03	i	4.7E-07	i	6.0E-02	i	3.0E+00	h
Tetrachloroethene	5.4E-01	o	5.9E-06	o	1.0E-02	i	4.0E-01	n
Toluene	n/a		n/a		2.0E-01	i	3.9E-01	h
Xylenes (total)	n/a		n/a		2.0E-01	i	1.0E-01	i
Semivolatile Organic Chemicals (Method 8270C):								
Bis(2-ethylhexyl)phthalate	1.4E-02	i	4.0E-06	r	2.0E-02	i	7.0E-02	r
Di-n-octylphthalate	n/a		n/a		4.0E-02	p	1.4E-01	r
Propylene glycol	n/a		n/a		5.0E-01	p	3.0E-03	p
Metals (Method 6010B):								
Barium	n/a		n/a		7.0E-02	i	2.5E-01	r
Cadmium	n/a		1.8E-03	i	5.0E-04	i	2.0E-04	x
Chromium (total)	n/a		1.2E-02	i	n/a		n/a	
Mercury	n/a		n/a		n/a		3.0E-04	i
Dioxins/Furans (Method 8290):								
2,3,7,8-TCDD	1.5E+05	h	4.3E+01	h	n/a		n/a	

Notes:
[(a)] Anthracene is used as a surrogate
Toxicity values were taken from EPA Region 6 Human Health Medium-Specific Screening Levels Table and are referenced as follows (EPA 2004):
i= Integrated Risk Information System (IRIS)
p= Provisional Peer-Reviewed Toxicity Values (PPRTV) Database
n= National Center for Environmental Assessment (NCEA)
h= Health Effects Assessment Summary Tables (HEAST)
x= Withdrawn
o= Other EPA documents
r= Route-to-route extrapolation
n/a = Toxicity data for this chemical are not available.
mg/kg-d = Milligrams per kilogram-day
ug/m^3 = Micrograms per cubic meter
mg/m^3 = Milligrams per cubic meter

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C1.10 Noncarcinogenic Hazard Index for TA-50, Building 37, Exhaust Equipment

Analyte	Exhaust EPC mg/m^2	Dermal Absorption Factor (ABS_d) unitless	Chronic Daily Intake			Noncarcinogenic Toxicity Factors			
			Ingestion CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI mg/m^3	Ingestion RfD mg/kg-d	Dermal RfD mg/kg-d	Inhalation RfC mg/m^3	Hazard Quotient unitless
Semivolatile Organic Chemicals (Method 8270C):									
Bis(2-ethylhexyl)phthalate	3.9E+01	1.0E-01	3.1E-04	3.1E-04	n/a	2.0E-02	2.0E-02	n/a	3.1E-02
Di-n-octylphthalate	2.4E+01	1.0E-01	1.9E-04	1.9E-04	n/a	4.0E-02	4.0E-02	n/a	9.6E-03
Propylene glycol[(a)]	2.0E+01	1.0E-01	1.6E-04	1.6E-04	n/a	5.0E-01	5.0E-01	n/a	6.4E-04
Volatile Organic Chemicals (Method 8260B):									
1,2,4-Trimethylbenzene	6.0E-02	0.0E+00	4.8E-07	0.0E+00	n/a	5.0E-02	5.0E-02	n/a	9.6E-06
4-Methyl-2-pentanone	8.7E-01	0.0E+00	7.0E-06	0.0E+00	n/a	8.0E-02	8.0E-02	n/a	8.7E-05
Acetone	4.2E+02	0.0E+00	3.4E-03	0.0E+00	n/a	9.0E-01	9.0E-01	n/a	3.7E-03
Bromomethane	6.2E-01	0.0E+00	5.0E-06	0.0E+00	n/a	1.4E-03	1.4E-03	n/a	3.5E-03
Chloroform	3.3E-02	0.0E+00	2.6E-07	0.0E+00	n/a	1.0E-02	1.0E-02	n/a	2.6E-05
Ethylbenzene	4.5E-01	0.0E+00	3.6E-06	0.0E+00	n/a	1.0E-01	1.0E-01	n/a	3.6E-05
Methylene chloride	3.1E+02	0.0E+00	2.5E-03	0.0E+00	n/a	6.0E-02	6.0E-02	n/a	4.1E-02
Tetrachloroethene	1.8E-01	0.0E+00	1.4E-06	0.0E+00	n/a	1.0E-02	1.0E-02	n/a	1.4E-04
Toluene	1.6E-01	0.0E+00	1.3E-06	0.0E+00	n/a	2.0E-01	2.0E-01	n/a	6.4E-06
Xylenes	3.9E+00	0.0E+00	3.1E-05	0.0E+00	n/a	2.0E-01	2.0E-01	n/a	1.6E-04
Metals (Method 3050A/6010B):									
Barium	6.3E-01	0.0E+00	5.0E-06	0.0E+00	n/a	7.0E-02	4.9E-03	n/a	7.2E-05
Cadmium	2.7E-02	1.0E-03	2.2E-07	2.2E-09	n/a	5.0E-04	5.0E-04	n/a	4.4E-04
Chromium	6.8E+00	0.0E+00	5.4E-05	0.0E+00	n/a	n/a	n/a	n/a	n/a
Mercury	8.7E-03	0.0E+00	7.0E-08	0.0E+00	n/a	n/a	n/a	n/a	n/a
Dioxins/Furans (Method 8290):									
TEQ	2.1E-08	3.0E-02	1.7E-13	5.0E-14	n/a	n/a	n/a	n/a	n/a
								HAZARD INDEX:	**9.1E-02**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, noncarcinogens (AT_{nc}), days =	10,950	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	30	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor (F_{s-m}), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor (F_{s-s}), unitless =	0.05	WTCIATWG 2002

Noncarcinogenic Chronic Daily Intake:

Ingestion:

$$\text{CDI (mg/kg-d)} = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times F_{s-m}}{BW \times AT_{nc}}$$

Dermal Contact:

$$\text{CDI (mg/kg-d)} = \frac{EPC \times SA \times CF \times F_{s-s} \times EF \times ED \times ABS_d}{BW \times AT_{nc}}$$

Table C1.11 Cumulative Carcinogenic Risk for TA-50, Building 37, Exhaust Equipment

Analyte	Exhaust EPC mg/m^2	Dermal Absorption Factor (ABSd) unitless	Chronic Daily Intake			Carcinogenic Toxicity Factors			
			Oral CDI mg/kg-d	Dermal CDI mg/kg-d	Inhalation CDI mg/m^3	Oral CSF $(mg/kg\text{-}d)^{-1}$	Dermal CSF $(mg/kg\text{-}d)^{-1}$	Inhalation URF $(\mu g/m^3)^{-1}$	Cancer Risk unitless
Semivolatile Organic Chemicals (Method 8270C):									
Bis(2-ethylhexyl)phthalate	3.9E+01	1.0E-01	1.1E-04	1.1E-04	n/a	1.4E-02	1.4E-02	n/a	3.1E-06
Di-n-octylphthalate	2.4E+01	1.0E-01	6.9E-05	6.9E-05	n/a	n/a	n/a	n/a	n/a
Propylene glycol[(a)]	2.0E+01	1.0E-01	5.7E-05	5.7E-05	n/a	n/a	n/a	n/a	n/a
Volatile Organic Chemicals (Method 8260B):									
1,2,4-Trimethylbenzene	6.0E-02	0.0E+00	1.7E-07	0.0E+00	n/a	n/a	n/a	n/a	n/a
4-Methyl-2-pentanone	8.7E-01	0.0E+00	2.5E-06	0.0E+00	n/a	n/a	n/a	n/a	n/a
Acetone	4.2E+02	0.0E+00	1.2E-03	0.0E+00	n/a	n/a	n/a	n/a	n/a
Bromomethane	6.2E-01	0.0E+00	1.8E-06	0.0E+00	n/a	n/a	n/a	n/a	n/a
Chloroform	3.3E-02	0.0E+00	9.4E-08	0.0E+00	n/a	n/a	n/a	n/a	n/a
Ethylbenzene	4.5E-01	0.0E+00	1.3E-06	0.0E+00	n/a	n/a	n/a	n/a	n/a
Methylene chloride	3.1E+02	0.0E+00	8.9E-04	0.0E+00	n/a	7.5E-03	7.5E-03	n/a	6.6E-06
Tetrachloroethene	1.8E-01	0.0E+00	5.1E-07	0.0E+00	n/a	5.4E-01	5.4E-01	n/a	2.8E-07
Toluene	1.6E-01	0.0E+00	4.6E-07	0.0E+00	n/a	n/a	n/a	n/a	n/a
Xylenes	3.9E+00	0.0E+00	1.1E-05	0.0E+00	n/a	n/a	n/a	n/a	n/a
Metals (Method 3050A/6010B):									
Barium	6.3E-01	0.0E+00	1.8E-06	0.0E+00	n/a	n/a	n/a	n/a	n/a
Cadmium	2.7E-02	1.0E-03	7.7E-08	7.7E-10	n/a	n/a	n/a	n/a	n/a
Chromium	6.8E+00	0.0E+00	1.9E-05	0.0E+00	n/a	n/a	n/a	n/a	n/a
Mercury	8.7E-03	0.0E+00	2.5E-08	0.0E+00	n/a	n/a	n/a	n/a	n/a
Dioxins/Furans (Method 8290):									
TEQ	2.1E-08	3.0E-02	5.9E-14	1.8E-14	n/a	1.5E+05	1.5E+05	n/a	1.2E-08
								CARCINOGENIC RISK:	**1.0E-05**

Notes:

Adult Body Weight (BW), kg =	70	EPA 1997a; LANL 2000
Averaging Time, carcinogens (AT_c), days =	25,550	EPA 1989; LANL 2000
Contact Frequency (CF), events/day =	2	Assumed
Exposed Skin Surface Area (SA), m^2/event =	0.0817	EPA 2001b
Exposure Duration (ED), years =	25	EPA 1989; LANL 2000
Exposure Frequency (EF), days/yr =	250	EPA 1989; LANL 2000
Skin-to-Mouth Transfer Factor ($F_{s\text{-}m}$), unitless =	0.1	WTCIATWG 2002
Surface-to-Skin Transfer Factor ($F_{s\text{-}s}$), unitless =	0.05	WTCIATWG 2002

(a) Chemical is a tentatively identified compound (TIC).

Carcinogenic Chronic Daily Intake:

Ingestion:

$$\text{CDI (mg/kg-d)} = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times F_{s\text{-}m}}{BW \times AT_c}$$

Dermal Contact:

$$\text{CDI (mg/kg-d)} = \frac{EPC \times SA \times CF \times F_{s\text{-}s} \times EF \times ED \times ABS_d}{BW \times AT_c}$$

Table C1.12 Risks Associated with Adult Exposures to Lead on Indoor Surfaces, TA-50-37, Exhaust Equipment

Exposure Parameter	Exposure Parameter Description	Units	Parameter	Reference
Pb_{sw}	Lead concentration on wipe[a]	ug/cm^2	0.058	Maximum Observed
$PbB_{fetal\ goal}$	Goal for the 95th percentile fetal blood lead concentration	ug/dL	10.0	EPA 2003
PbB_o	Baseline blood concentration in absence of site exposure	ug/dL	2.2	EPA 2003[b]
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	EPA 2003
SF_{ing}	Ingestion Slope Factor	ug/dL per ug/day	0.04	FDA 1990; DTSC 2000
SF_{derm}	Dermal Slope Factor	ug/dL per ug/day	0.0001	DTSC 2000
ABS_d	Dermal Absorption Factor	--	0.0006	DTSC 2000
GSD	Geometric standard deviation of PbBadult	--	1.8	EPA 2003
SA_h	Surface Area (hands, adult female)	cm^2/event	817	EPA 2001
SA_{uex}	Surface Area (upper extremities, adult female)	cm^2/event	2,220	EPA 2001
EV	Exposure Events per Day	events/day	2	Assumed
F_{s-s}	Fraction Transferred from Surface to Skin	--	0.05	WTCIATWG 2002
F_{s-m}	Fraction Transferred from Skin to Mouth	--	0.1	WTCIATWG 2002
CF	Conversion Factor	cm^3/m^3	1.E+06	--
EF	Exposure Frequency	days/yr	250	EPA 1989
AT	Averaging Time	days/yr	365	EPA 2003
Surface Swipe Model Results [c]				
	PbBadult = PbB_0 + [(Pbsw*(EF/AT)*((SFing*SAh*EV*Fs-s*Fs-m) + (SFderm*SAuex*EV*Fs-s*ABSd)] =			**2.2E+00**
	$PbB_{fetal} = PbB_{adult} * R_{fetal/maternal}$ =			**2.0E+00**
	$PbB_{fetal,\ 0.95} = PbB_{fetal} * (GSD^{1.645})$ =			**5.2E+00**
	$P(PbB_{fetal} > PbB_{(fetal,goal)}$ [d] (%) =			**0.30%**

Notes:

a Swipe concentrations are reported in units of $\mu g/100cm^2$

b Upper value of plausible range reported for U.S. women ages 20-49 years.

c Equations based on Equations 1-3 in USEPA (2003)

d Probability that fetal PbB > PbBfetal,goal, assuming lognormal distribution with mean concentration

APPENDIX D
Detection Limits and Uncertainties Associated with the Analytical Data

Table D-1
Range of Reporting Limits for Sampling Event #1 (September 2003), TA-50-37, Exhaust Equipment

Analytical Method	Analyte	Minimum RL[a] (µg/L)	Maximum RL[a] (µg/L)
Polychlorinated biphenyls (Method 8082)	Aroclor 1016	1.0	1.0
	Aroclor 1221	1.0	1.0
	Aroclor 1232	1.0	1.0
	Aroclor 1242	1.0	1.0
	Aroclor 1248	1.0	1.0
	Aroclor 1254	1.0	1.0
	Aroclor 1260	1.0	1.0
	Aroclor 1262	1.0	1.0
	Aroclor 1268	1.0	1.0
Total Metals (Method 6010B)	Arsenic	30	30
	Barium	20	20
	Cadmium	0.5	0.5
	Chromium	1.0	1.0
	Lead	10	10
	Selenium	25	25
	Silver	1.0	1.0
Mercury (Method 7471A)	Mercury	0.02	0.02
Volatile Organic Compounds (Method 8260B)	1,1,1-Trichloroethane	5.0	5.0
	1,1,2,2-Tetrachloroethane	5.0	5.0
	1,1,2-Trichloroethane	5.0	5.0
	1,1-Dichloroethane	5.0	5.0
	1,1-Dichloroethene	5.0	5.0
	1,2-Dichloroethane	5.0	5.0
	1,2-Dichloroethene (total)	10	10
	1,2-Dichloropropane	5.0	5.0
	2-Butanone	20	20
	2-Hexanone	20	20
	4-Methyl-2-pentanone	20	20
	Acetone	20	20
	Benzene	5.0	5.0
	Bromodichloromethane	5.0	5.0
	Bromoform	5.0	5.0
	Bromomethane	10	10
	Carbon disulfide	5.0	5.0
	Carbon tetrachloride	5.0	5.0
	Chlorobenzene	5.0	5.0
	Chloroethane	10	10
	Chloroform	5.0	5.0
	Chloromethane	10	10
	cis-1,3-Dichloropropene	5.0	5.0
	Dibromochloromethane	5.0	5.0
	Ethylbenzene	5.0	5.0
	Methylene chloride	5.0	5.0
	Styrene	5.0	5.0
	Tetrachloroethene	5.0	5.0
Volatile Organic Compounds (Method 8260B)	Toluene	5.0	5.0
	trans-1,3-Dichloropropene	5.0	5.0
	Trichloroethene	5.0	5.0
	Vinyl chloride	5.0	5.0
Semivolatile Organic Compounds (Method 8270C)	Xylenes (total)	10	10
	1,2,4-Trichlorobenzene	100	100
	1,2-Dichlorobenzene	100	100
	1,3-Dichlorobenzene	100	100
	1,4-Dichlorobenzene	100	100
	2,2'-oxybis(1-Chloropropane)	100	100
	2,4,5-Trichlorophenol	100	100
	2,4,6-Trichlorophenol	100	100
	2,4-Dichlorophenol	100	100
	2,4-Dinitrophenol	500	500
	2,4-Dinitrotoluene	100	100
	2,6-Dinitrotoluene	100	100
	2-Chloronaphthalene	100	100
	2-Chlorophenol	100	100
	2-Methylnaphthalene	100	100
	2-Methylphenol	100	100
	2-Nitroaniline	500	500
	2-Nitrophenol	100	100
	3,3'-Dichlorobenzidine	500	500
	3-Nitroaniline	500	500
	4,6-Dinitro-2-methylphenol	500	500
	4-Bromophenyl phenyl ether	100	100
	4-Chloro-3-methylphenol	100	100
	4-Chloroaniline	100	100
	4-Chlorophenyl phenyl ether	100	100
	4-Methylphenol	200	200
	4-Nitroaniline	500	500
	4-Nitrophenol	500	500
	Acenaphthene	100	100
	Acenaphthylene	100	100
	Anthracene	100	100
	Benzo(a)anthracene	100	100
	Benzo(a)pyrene	100	100
	Benzo(b)fluoranthene	100	100
	Benzo(g,h,i)perylene	100	100
	Benzo(k)fluoranthene	100	100
	bis(2-Chloroethyl)ether	100	100
	bis(2-Ethylhexyl)phthalate	100	100
	Butyl benzyl phthalate	100	100
	Carbazole	100	100
	Chrysene	100	100
Semivolatile Organic Compounds (Method 8270C)	Dibenzo(a,h)anthracene	100	100
	Dibenzofuran	100	100
	Diethyl phthalate	100	100
	Dimethyl phthalate	100	100
	Di-n-butyl phthalate	100	100
	Di-n-octyl phthalate	100	100
	Fluoranthene	100	100
	Fluorene	100	100
	Hexachlorobenzene	100	100
	Hexachlorobutadiene	100	100
	Hexachlorocyclopentadiene	500	500
	Hexachloroethane	100	100
	Indeno(1,2,3-cd)pyrene	100	100
	Isophorone	100	100
	Naphthalene	100	100
	Nitrobenzene	100	100
	N-Nitrosodi-n-propylamine	100	100
	N-Nitrosodiphenylamine	100	100
	Pehenanthrene	100	100
	Pentachlorophenol	500	500
	Phenol	100	100
	Pyrene	100	100

a. This value is the lowest concentration that can be reliably achieved and is generally 5 to 10 times the method detection limit (MDL), which is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. The RLs presented here were nominally chosen (rounded to the whole number nearest to [1, 2, or 5] x 10^0) within SW846 guidelines (EPA 1986b) to simplify data reporting.

µg/L = micrograms per liter.
RL = reporting limit.

Table D-2
Range of Reporting Limits for Sampling Event #2 (April 2004), TA-50-37, Exhaust Equipment

Analytical Method	Analyte	Minimum RL ($\mu g/100\ cm^2$) [a]	Maximum RL ($\mu g/100\ cm^2$) [a]
Dioxins/Furans (Method 8290)	1,2,3,4,6,7,8,9-OCDD	6.2	8.3
	1,2,3,4,6,7,8,9-OCDF	3.2	5.8
	1,2,3,4,6,7,8-HpCDD	2.7	4.8
	1,2,3,4,6,7,8-HpCDF	1.4	3.0
	1,2,3,4,7,8,9-HpCDF	1.6	3.0
	1,2,3,4,7,8-HxCDD	1.6	3.1
	1,2,3,4,7,8-HxCDF	1.0	1.8
	1,2,3,6,7,8-HxCDD	1.4	2.7
	1,2,3,6,7,8-HxCDF	1.0	1.8
	1,2,3,7,8,9-HxCDD	1.5	3.0
	1,2,3,7,8,9-HxCDF	1.2	2.2
	1,2,3,7,8-PeCDD	1.7	3.4
	1,2,3,7,8-PeCDF	1.0	1.9
	2,3,4,6,7,8-HxCDF	1.1	1.9
	2,3,4,7,8-PeCDF	1.2	2.3
	2,3,7,8-TCDD	2.3	3.7
	2,3,7,8-TCDF	1.8	4.2
	Total HpCDD	2.7	4.8
	Total HpCDF	1.5	7.1
	Total HxCDD	1.5	2.9
	Total HxCDF	1.0	1.9
	Total PeCDD	1.7	3.4
	Total PeCDF	1.0	1.9
	Total TCDD	2.3	3.7
	Total TCDF	1.8	4.2
Polychlorinated Biphenyls (Method 8082)	Aroclor 1016	0.5	0.5
	Aroclor 1221	0.5	0.5
	Aroclor 1232	0.5	0.5
	Aroclor 1242	0.5	0.5
	Aroclor 1248	0.5	0.5
	Aroclor 1254	0.5	0.5
	Aroclor 1260	0.5	0.5
Total Metals (Method 6010B)	Arsenic	3.0	3.0
	Barium	0.5	0.5
	Cadmium	0.2	0.2
	Chromium	1.0	1.0
	Lead	2.0	2.0
	Selenium	2.5	2.5
Silver (Method 7760A)	Silver	5.0	5.0
Mercury (Method 7471B)	Mercury	100	100
Semivolatile Organic Compounds (Method 8270C)	1,2,4-Trichlorobenzene	10	10
	1,2-Dichlorobenzene	10	10
	1,3-Dichlorobenzene	10	10
	1,4-Dichlorobenzene	10	10
	1-Methylnaphthalene	10	10
Semivolatile Organic Compounds (Method 8270C)	2,3,4,6-Tetrachlorophenol	500	500
	2,4,5-Trichlorophenol	100	100
	2,4,6-Trichlorophenol	100	100
	2,4-Dichlorophenol	100	100
	2,4-Dimethylphenol	10	10
	2,4-Dinitrophenol	125	125
	2,4-Dinitrotoluene	100	100
	2,6-Dinitrotoluene	100	100
	2-Chloronaphthalene	10	10
	2-Chlorophenol	10	10
	2-Methylnaphthalene	10	10
	2-Methylphenol	10	10
	2-Nitroaniline	100	100
	2-Nitrophenol	100	100
	3,3-Dichlorobenzidine	100	100
	3+4 Methylphenol	10	10
	3-Nitroaniline	100	100
	4,6-Dinitro-2-methylphenol	100	100
	4-Bromophenyl-phenylether	10	10
	4-Chloro-3-methylphenol	100	100
	4-Chloroaniline	100	100
	4-Chlorophenyl-phenylether	10	10
	4-Nitroaniline	100	100
	4-Nitrophenol	200	200
	Acenaphthene	10	10
	Acenaphthylene	10	10
	Aniline	100	100
	Anthracene	10	10
	Azobenzene&1,2-Diphenylhydrazine	10	10
	Benzo (a) anthracene	10	10
	Benzo(a)pyrene	10	10
	Benzo(b & k)fluoranthene	10	10
	Benzo(g,h,i)perylene	100	100
	Benzoic acid	1,000	1,000
	Benzyl alcohol	500	500
	bis (2-Chloroethyl) ether	10	10
	bis(2-Chloroethoxy)methane	10	10
	bis(2-Chloroisopropyl)ether	10	10
	bis(2-Ethylhexyl)phthalate	100	100
	Butylbenzylphthalate	10	10
	Chrysene	10	10
	Dibenz(a,h)anthracene	100	100
	Dibenzofuran	10	10
Semivolatile Organic Compounds (Method 8270C)	Diethylphthalate	10	10
	Dimethylphthalate	10	10
	di-n-Butylphthalate	100	100
	di-n-Octylphthalate	100	100
	Fluoranthene	10	10
	Fluorene	10	10
	Hexachlorobenzene	10	10
	Hexachlorobutadiene	10	10
	Hexachlorocyclopentadiene	500	500
	Hexachloroethane	10	10
	Indeno(1,2,3-cd)pyrene	100	100
	Isophorone	10	10
	Naphthalene	10	10
	Nitrobenzene	10	10
	n-Nitroso-dimethyl-amine	100	100
	n-Nitroso-di-n-propylamine	10	10
	n-Nitrosodiphenylamine	10	10
	Pentachlorophenol	100	100
	Phenanthrene	10	10
	Phenol	100	100
	Pyrene	10	10
	Pyridine	100	100
Volatile Organic Compounds (Method 8260B)	1,1 Dichloroethane	0.6	0.6
	1,1 Dichloroethene	0.6	0.6
	1,1,1 Trichloroethane	0.6	0.6
	1,1,1,2 Tetrachloroethane	0.6	0.6
	1,1,2 Trichloroethane	0.6	0.6
	1,1,2,2 Tetrachloroethane	0.6	0.6
	1,2 Dibromoethane (EDB)	0.6	0.6
	1,2 Dichlorobenzene	0.6	0.6
	1,2 Dichloroethane (EDC)	0.6	0.6
	1,2 Dichloropropane	0.6	0.6
	1,2,3 Trichloropropane	0.6	0.6
	1,2,4-Trimethylbenzene	0.6	0.6
	1,3 Dichlorobenzene	0.6	0.6
	1,3,5-Trimethylbenzene	0.6	0.6
	1,4 Dichloro-2-butene	6.0	6.0
	1,4 Dichlorobenzene	0.6	0.6
	2-Butanone (MEK)	3.0	3.0
	2-Hexanone (MBK)	3.0	3.0
	4-Methyl-2-pentanone (MIBK)	3.0	3.0
	Acetone	6.0	6.0
	Acrolein	12	12
Volatile Organic Compounds (Method 8260B)	Acrylonitrile	12	12
	Benzene	0.6	0.6
	Bromochloromethane	12	12
	Bromodichloromethane	0.6	0.6
	Bromoform	0.6	0.6
	Bromomethane	3.0	3.0
	Carbon disulfide	3.0	3.0
	Carbon tetrachloride	0.6	0.6
	Chlorobenzene	0.6	0.6
	Chlorodibromomethane	0.6	0.6
	Chloroethane	3.0	3.0
	Chloroform	0.6	0.6
	Chloromethane	0.6	3,000
	cis-1,2 dichloroethene	0.6	0.6
	cis-1,3 Dichloropropene	0.6	0.6
	Dibromomethane	0.6	0.6
	Ethyl methacrylate	3.0	3.0
	Ethylbenzene	0.6	0.6
	Freon 113	3.0	3.0
	Freon 12	6.0	30,000
	Methyl t-butyl ether (MTBE)	0.6	0.6
	Methylene chloride	6.0	30,000
	Naphthalene	3.0	3.0
	o-Xylene	0.6	0.6
	p/m-Xylenes	1.2	1.2
	Styrene	0.6	0.6
	t-1,2 Dichloroethene	0.6	0.6
	t-1,3 Dichloropropene	0.6	0.6
	Tetrachloroethene (PCE)	0.6	0.6
	Toluene	0.6	0.6
	Trichloroethene	0.6	0.6
	Trichlorofluoromethane	3.0	3.0
	Vinyl acetate	3.0	3.0
	Vinyl chloride	3.0	3.0

a. Reporting limits (RLs) are 3 to 5 times the method detection limit (the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the value is above zero) and are sample-specific (i.e., reporting limit multiplied by the dilution factor). Treating results as nondetect at the RL sets the acceptable rate of false negatives at <1 percent. RLs for Dioxins/Furans are in units if picograms per 100 square centimeters.

$\mu g/100\ cm^2$ = micrograms per 100 square centimeters.

Table 1: Analytical Results for Wipe Samples in Exhaust Equipment

SAMPLE	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	1,2,3,4,6,7,8,9-OCDD[b]	1,2,3,4,5,7,8,9-OCDF[b]	1,2,3,4,6,7,8-HpCDD[b]	1,2,3,4,6,7,8-HpCDF[b]	1,2,4-TRIMETHYL-BENZENE	2-BUTANONE	ACETONE	BROMOMETHANE	CHLOROFORM	CHLORO-METHANE	ETHYLBENZENE	METHYLENE CHLORIDE	TETRACHLORO-ETHENE	TOLUENE	XYLENES (TOTAL)[b]	BIS(2-ETHYLHEXYL) PHTHALATE	DI-N-OCTYL PHTHALATE
E-01	1.9	0.25 U	1.4	5 U	0.01 U						10 U	570 E	5 U	2.5 U	5 U	2.5 U	1,100 E	1.0 J	0.91 J	5 U	59 JB	50 U
E-02	0.65	0.25 U	0.5 U	5 U	0.01 U						10 U	1,100 E	5 U	2.5 U	5 U	2.5 U	1,800 E	1.4 J	0.62 J	5 U	38 JB	50 U
E-03	0.64	0.25 U	1.2	5 U	0.01 U						10 U	4,200 E	5 U	2.5 U	5 U	2.5 U	3,100 E	0.99 J	0.88 J	5 U	130 B	50 U
E-04	0.73	0.25 U	0.5 U	5 U							10 U	2,200 E	5 U	2.5 U	5 U	2.5 U	2,400 E	0.68 J	0.9 J	5 U	120 B	240
E-07	0.95	0.25 U	0.6 B	5 U	0.034						10 U	1,500 E	5 U	0.26 J	5 U	4.5 J	2,000 E	1.8 J	1.6 J	39	390 B	66 J
E-08	0.79	0.25 U	3.2	5 U	0.087						10 U	1,100 E	5 U	0.33 J	5 U	1.8 J	2,000 E	0.86 J	1.1 J	13	250 B	68 J
EXB-01	6.3	0.27	67.6	2.2	0.01 U	27.6 SJ1	2.2 SU	15.2 SJ	5 SJ	0.6	3.9	24	6.2	0.15 U	0.8	0.15 U	62	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-02	2.2	0.1 U	8.9	1 U	0.01 U	24.6 SJ	1.9 SU	8.6 SJ	0.80 SU	0.15 U	3.5	70	4.4	0.15 U	0.15 U	0.15 U	110	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-03	1.1	0.1 U	8.3	1 U	0.01 U	38.1 SJ	2.6 SU	2.3 SU	1.2 SU	0.15 U	4.1	6.1	2.8	0.15 U	0.15 U	0.15 U	120	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-04	1.1	0.1 U	8.5	1 U	0.01 U	3.6 SU	2.5 SU	2.2 SU	1.1 SU	0.15 U	3.6	1.5 U	0.75 U	0.15 U	0.15 U	0.15 U	47	0.15 U	0.15 U	0.3 U	50 U	50 U
EXB-05	3.4	0.1 U	6.7	4.1	0.01 U	23.6 SJ	2.7 SU	2.2 SU	1.1 SU	0.15 U	4.3	50	2.7	0.15 U	0.15 U	0.15 U	100	0.15 U	0.15 U	2.0	50 U	50 U
EXB-06	2.7	0.1 U	4.4	3.5	0.01 U	17.4 SJ	1.6 SU	1.4 SU	0.70 SU	0.15 U	4.1	7.4	2.5	0.15 U	0.15 U	0.15 U	41	0.15 U	0.15 U	3.3	50 U	50 U
EXB-11	3.9	0.1 U	6.4	5.8	0.01 U	42.6 SJ	10.5 SJ	11.5 SJ	3 SJ	0.15 U	4.0	9.2	0.75 U	0.15 U	6.4	0.15 U	190	0.15 U	0.15 U	3.6	50 U	50 U
Number of Samples	13	13	13	13	12	7	7	7	7	7	13	13	13	13	13	13	13	13	13	13	13	13
Number of Detects	13	1	11	4	2	6	1	3	2	1	7	12	5	2	2	2	13	6	6	5	6	6
Frequency of Detection	100%	8%	85%	31%	17%	86%	14%	43%	29%	14%	54%	92%	38%	15%	15%	15%	100%	46%	46%	38%	46%	46%
Minimum Detect	0.64	0.27	0.60 B	2.2	0.034	17.4 SJ	10.5 SJ	8.6 SJ	3 SJ	0.6	3.5	6.1	2.5	0.26 J	0.8	1.8 J	41	0.68 J	0.62 J	2.0	38 JB	66 J
Maximum Detect	6.3	0.27	67.6	5.8	0.087	42.6 SJ	10.5 SJ	15.2 SJ	5 SJ	0.6	4.3	4,200 E	6.2	0.33 J	6.4	4.5 J	3,100 E	1.8 J	1.6 J	39	390 B	240
Average	2.0	0.18	9.1	3.7	0.018	25.4	3.4	6.2	1.8	0.21	6.7	834	3.9	0.9	2.9	1.3	1,005	0.60	0.54	6.3	103	67
Standard Deviation	1.7	0.08	17.9	1.8	0.023	12.9	3.1	5.6	1.6	0.17	3.2	1,240	1.8	1.1	2.6	1.5	1,109	0.57	0.49	10.4	104	52

Units are ug/100 cm2

(a) Results reported in picograms per 100 square centimeters.

(b) Round 2 samples were analyzed for o-Xylene and m/p-Xylenes, the detects for which were summed to estimate total xylenes.

Round 2 reporting limits ranged from 0.3 ug/100 cm2 (o-xylene) to 0.6 ug/100cm2 (m/p-xylenes). One-half the maximum reporting limit is shown.

Sample ID	Date Sampled	Analyte	CAS	Dilution Fa	Result	Result Units	Report Detecti	Result Qualifier		
EXB-01	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	27.6	pg	8.3	SJ1	Min DL	7.2
EXB-02	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	24.6	pg	8.3	SJ	Max DL	8.3
EXB-03	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	38.1	pg	8.3	SJ		
EXB-04	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	ND	pg	7.2	S		
EXB-05	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	23.6	pg	8.3	SJ		
EXB-06	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	17.4	pg	8.3	SJ		
EXB-11	4/16/2004	1,2,3,4,6,7,8,9-OCDD		1	42.6	pg	8.3	SJ		
EXB-01	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	ND	pg	4.4	S	Min DL	3.2
EXB-02	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	ND	pg	3.7	S	Max DL	5.8
EXB-03	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	ND	pg	5.1	S		
EXB-04	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	ND	pg	5	S		
EXB-05	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	ND	pg	5.4	S		
EXB-06	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	ND	pg	3.2	S		
EXB-11	4/16/2004	1,2,3,4,6,7,8,9-OCDF		1	10.5	pg	5.8	SJ		
EXB-01	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	15.2	pg	4.8	SJ	Min DL	2.7
EXB-02	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	8.6	pg	4.8	SJ	Max DL	4.8
EXB-03	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	ND	pg	4.5	S		
EXB-04	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	ND	pg	4.4	S		
EXB-05	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	ND	pg	4.3	S		
EXB-06	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	ND	pg	2.7	S		
EXB-11	4/16/2004	1,2,3,4,6,7,8-HpCDD		1	11.5	pg	4.8	SJ		
EXB-01	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	5	pg	2.4	SJ	Min DL	1.4
EXB-02	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	ND	pg	1.6	S	Max DL	3
EXB-03	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	ND	pg	2.3	S		
EXB-04	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	ND	pg	2.2	S		
EXB-05	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	ND	pg	2.1	S		
EXB-06	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	ND	pg	1.4	S		
EXB-11	4/16/2004	1,2,3,4,6,7,8-HpCDF		1	3	pg	3	SJ		
EXB-01	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	0.6	ug / Wipe	0.3		Min DL	0.3
EXB-02	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	ND	ug / Wipe	0.3		Max DL	0.3
EXB-03	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	ND	ug / Wipe	0.3			
EXB-04	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	ND	ug / Wipe	0.3			
EXB-05	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	ND	ug / Wipe	0.3			
EXB-06	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	ND	ug / Wipe	0.3			
EXB-11	4/16/2004	1,2,4-Trimethylbenzene	95-63-6	2	ND	ug / Wipe	0.3			
E-01	9/18/2003	Acetone	67-64-1	1	570	ug / Wipe	20	E	Min DL	3
E-02	9/18/2003	Acetone	67-64-1	1	1100	ug / Wipe	20	E	Max DL	20
E-03	9/18/2003	Acetone	67-64-1	1	4200	ug / Wipe	20	E		
E-04	9/18/2003	Acetone	67-64-1	1	2200	ug / Wipe	20	E		
E-07	9/18/2003	Acetone	67-64-1	1	1500	ug / Wipe	20	E		
E-08	9/18/2003	Acetone	67-64-1	1	1100	ug / Wipe	20	E		
EXB-01	4/16/2004	Acetone	67-64-1	2	24	ug / Wipe	3			
EXB-02	4/16/2004	Acetone	67-64-1	2	70	ug / Wipe	3			
EXB-03	4/16/2004	Acetone	67-64-1	2	6.1	ug / Wipe	3			
EXB-04	4/16/2004	Acetone	67-64-1	2	ND	ug / Wipe	3			
EXB-05	4/16/2004	Acetone	67-64-1	2	50	ug / Wipe	3			
EXB-06	4/16/2004	Acetone	67-64-1	2	7.4	ug / Wipe	3			
EXB-11	4/16/2004	Acetone	67-64-1	2	9.2	ug / Wipe	3			
E-01	9/18/2003	Barium	7440-39-3	1	1.9	ug / Wipe	20	B	Min DL	0.5
E-02	9/18/2003	Barium	7440-39-3	1	0.65	ug / Wipe	20	B	Max DL	20
E-03	9/18/2003	Barium	7440-39-3	1	0.64	ug / Wipe	20	B		
E-04	9/18/2003	Barium	7440-39-3	1	0.73	ug / Wipe	20	B		
E-07	9/18/2003	Barium	7440-39-3	1	0.95	ug / Wipe	20	B		
E-08	9/18/2003	Barium	7440-39-3	1	0.79	ug / Wipe	20	B		
EXB-01	4/16/2004	Barium	7440-39-3	1	6.3	ug / Wipe	0.5			
EXB-02	4/16/2004	Barium	7440-39-3	1	2.2	ug / Wipe	0.5			
EXB-03	4/16/2004	Barium	7440-39-3	1	1.1	ug / Wipe	0.5			
EXB-04	4/16/2004	Barium	7440-39-3	1	1.1	ug / Wipe	0.5			
EXB-05	4/16/2004	Barium	7440-39-3	1	3.4	ug / Wipe	0.5			
EXB-06	4/16/2004	Barium	7440-39-3	1	2.7	ug / Wipe	0.5			
EXB-11	4/16/2004	Barium	7440-39-3	1	3.9	ug / Wipe	0.5			
E-01	9/18/2003	bis(2-Ethylhexyl)phthalate	117-81-7	1	59	ug / Wipe	100	JB	Min DL	100
E-02	9/18/2003	bis(2-Ethylhexyl)phthalate	117-81-7	1	38	ug / Wipe	100	JB	Max DL	100
E-03	9/18/2003	bis(2-Ethylhexyl)phthalate	117-81-7	1	130	ug / Wipe	100	B		
E-04	9/18/2003	bis(2-Ethylhexyl)phthalate	117-81-7	1	120	ug / Wipe	100	B		
E-07	9/18/2003	bis(2-Ethylhexyl)phthalate	117-81-7	1	390	ug / Wipe	100	B		
E-08	9/18/2003	bis(2-Ethylhexyl)phthalate	117-81-7	1	250	ug / Wipe	100	B		
EXB-01	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
EXB-02	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
EXB-03	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
EXB-04	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
EXB-05	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
EXB-06	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
EXB-11	4/16/2004	bis(2-Ethylhexyl)phthalate	117-81-7	1	ND	ug / Wipe	100			
E-01	9/18/2003	Bromomethane	74-83-9	1	ND	ug / Wipe	10		Min DL	1.5
E-02	9/18/2003	Bromomethane	74-83-9	1	ND	ug / Wipe	10		Max DL	10
E-03	9/18/2003	Bromomethane	74-83-9	1	ND	ug / Wipe	10			
E-04	9/18/2003	Bromomethane	74-83-9	1	ND	ug / Wipe	10			
E-07	9/18/2003	Bromomethane	74-83-9	1	ND	ug / Wipe	10			
E-08	9/18/2003	Bromomethane	74-83-9	1	ND	ug / Wipe	10			
EXB-01	4/16/2004	Bromomethane	74-83-9	2	6.2	ug / Wipe	1.5			
EXB-02	4/16/2004	Bromomethane	74-83-9	2	4.4	ug / Wipe	1.5			
EXB-03	4/16/2004	Bromomethane	74-83-9	2	2.8	ug / Wipe	1.5			
EXB-04	4/16/2004	Bromomethane	74-83-9	2	ND	ug / Wipe	1.5			
EXB-05	4/16/2004	Bromomethane	74-83-9	2	2.7	ug / Wipe	1.5			
EXB-06	4/16/2004	Bromomethane	74-83-9	2	2.5	ug / Wipe	1.5			
EXB-11	4/16/2004	Bromomethane	74-83-9	2	ND	ug / Wipe	1.5			
E-01	9/18/2003	Cadmium	7440-43-9	1	ND	ug / Wipe	0.5		Min DL	0.2
E-02	9/18/2003	Cadmium	7440-43-9	1	ND	ug / Wipe	0.5		Max DL	0.5
E-03	9/18/2003	Cadmium	7440-43-9	1	ND	ug / Wipe	0.5			
E-04	9/18/2003	Cadmium	7440-43-9	1	ND	ug / Wipe	0.5			
E-07	9/18/2003	Cadmium	7440-43-9	1	ND	ug / Wipe	0.5			
E-08	9/18/2003	Cadmium	7440-43-9	1	ND	ug / Wipe	0.5			
EXB-01	4/16/2004	Cadmium	7440-43-9	1	0.27	ug / Wipe	0.2			
EXB-02	4/16/2004	Cadmium	7440-43-9	1	ND	ug / Wipe	0.2			
EXB-03	4/16/2004	Cadmium	7440-43-9	1	ND	ug / Wipe	0.2			
EXB-04	4/16/2004	Cadmium	7440-43-9	1	ND	ug / Wipe	0.2			
EXB-05	4/16/2004	Cadmium	7440-43-9	1	ND	ug / Wipe	0.2			
EXB-06	4/16/2004	Cadmium	7440-43-9	1	ND	ug / Wipe	0.2			
EXB-11	4/16/2004	Cadmium	7440-43-9	1	ND	ug / Wipe	0.2			
E-01	9/18/2003	Chloroform	67-66-3	1	ND	ug / Wipe	5		Min DL	0.3
E-02	9/18/2003	Chloroform	67-66-3	1	ND	ug / Wipe	5		Max DL	5
E-03	9/18/2003	Chloroform	67-66-3	1	ND	ug / Wipe	5			
E-04	9/18/2003	Chloroform	67-66-3	1	ND	ug / Wipe	5			
E-07	9/18/2003	Chloroform	67-66-3	1	0.26	ug / Wipe	5	J		
E-08	9/18/2003	Chloroform	67-66-3	1	0.33	ug / Wipe	5	J		
EXB-01	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
EXB-02	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
EXB-03	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
EXB-04	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
EXB-05	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
EXB-06	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
EXB-11	4/16/2004	Chloroform	67-66-3	2	ND	ug / Wipe	0.3			
E-01	9/18/2003	Chloromethane	74-87-3	1	ND	ug / Wipe	10		Min DL	0.3
E-02	9/18/2003	Chloromethane	74-87-3	1	ND	ug / Wipe	10		Max DL	10
E-03	9/18/2003	Chloromethane	74-87-3	1	ND	ug / Wipe	10			
E-04	9/18/2003	Chloromethane	74-87-3	1	ND	ug / Wipe	10			
E-07	9/18/2003	Chloromethane	74-87-3	1	ND	ug / Wipe	10			
E-08	9/18/2003	Chloromethane	74-87-3	1	ND	ug / Wipe	10			
EXB-01	4/16/2004	Chloromethane	74-87-3	2	0.8	ug / Wipe	0.3			
EXB-02	4/16/2004	Chloromethane	74-87-3	2	ND	ug / Wipe	0.3			
EXB-03	4/16/2004	Chloromethane	74-87-3	2	ND	ug / Wipe	0.3			
EXB-04	4/16/2004	Chloromethane	74-87-3	2	ND	ug / Wipe	0.3			
EXB-05	4/16/2004	Chloromethane	74-87-3	2	ND	ug / Wipe	0.3			
EXB-06	4/16/2004	Chloromethane	74-87-3	2	ND	ug / Wipe	0.3			
EXB-11	4/16/2004	Chloromethane	74-87-3	2	6.4	ug / Wipe	0.3			
E-01	9/18/2003	Chromium	7440-47-3	1	1.4	ug / Wipe	1		Min DL	1
E-02	9/18/2003	Chromium	7440-47-3	1	ND	ug / Wipe	1		Max DL	1
E-03	9/18/2003	Chromium	7440-47-3	1	1.2	ug / Wipe	1			
E-04	9/18/2003	Chromium	7440-47-3	1	ND	ug / Wipe	1			
E-07	9/18/2003	Chromium	7440-47-3	1	0.6	ug / Wipe	1	B		
E-08	9/18/2003	Chromium	7440-47-3	1	3.2	ug / Wipe	1			
EXB-01	4/16/2004	Chromium	7440-47-3	1	67.6	ug / Wipe	1			
EXB-02	4/16/2004	Chromium	7440-47-3	1	8.9	ug / Wipe	1			
EXB-03	4/16/2004	Chromium	7440-47-3	1	8.3	ug / Wipe	1			
EXB-04	4/16/2004	Chromium	7440-47-3	1	8.5	ug / Wipe	1			
EXB-05	4/16/2004	Chromium	7440-47-3	1	6.7	ug / Wipe	1			
EXB-06	4/16/2004	Chromium	7440-47-3	1	4.4	ug / Wipe	1			
EXB-11	4/16/2004	Chromium	7440-47-3	1	6.4	ug / Wipe	1			
E-01	9/18/2003	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100		Min DL	100
E-02	9/18/2003	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100		Max DL	100
E-03	9/18/2003	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
E-04	9/18/2003	di-n-Octylphthalate	117-84-0	1	240	ug / Wipe	100			
E-07	9/18/2003	di-n-Octylphthalate	117-84-0	1	66	ug / Wipe	100	J		
E-08	9/18/2003	di-n-Octylphthalate	117-84-0	1	68	ug / Wipe	100	J		
EXB-01	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
EXB-02	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
EXB-03	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
EXB-04	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
EXB-05	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
EXB-06	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
EXB-11	4/16/2004	di-n-Octylphthalate	117-84-0	1	ND	ug / Wipe	100			
E-01	9/18/2003	Ethylbenzene	100-41-4	1	ND	ug / Wipe	5		Min DL	0.3
E-02	9/18/2003	Ethylbenzene	100-41-4	1	ND	ug / Wipe	5		Max DL	5
E-03	9/18/2003	Ethylbenzene	100-41-4	1	ND	ug / Wipe	5			
E-04	9/18/2003	Ethylbenzene	100-41-4	1	ND	ug / Wipe	5			
E-07	9/18/2003	Ethylbenzene	100-41-4	1	4.5	ug / Wipe	5	J		
E-08	9/18/2003	Ethylbenzene	100-41-4	1	1.8	ug / Wipe	5	J		
EXB-01	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
EXB-02	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
EXB-03	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
EXB-04	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
EXB-05	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
EXB-06	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
EXB-11	4/16/2004	Ethylbenzene	100-41-4	2	ND	ug / Wipe	0.3			
E-01	9/18/2003	Lead	7439-92-1	1	ND	ug / Wipe	10		Min DL	2
E-02	9/18/2003	Lead	7439-92-1	1	ND	ug / Wipe	10		Max DL	10
E-03	9/18/2003	Lead	7439-92-1	1	ND	ug / Wipe	10			
E-04	9/18/2003	Lead	7439-92-1	1	ND	ug / Wipe	10			
E-07	9/18/2003	Lead	7439-92-1	1	ND	ug / Wipe	10			
E-08	9/18/2003	Lead	7439-92-1	1	ND	ug / Wipe	10			
EXB-01	4/16/2004	Lead	7439-92-1	1	2.2	ug / Wipe	2			
EXB-02	4/16/2004	Lead	7439-92-1	1	ND	ug / Wipe	2			
EXB-03	4/16/2004	Lead	7439-92-1	1	ND	ug / Wipe	2			
EXB-04	4/16/2004	Lead	7439-92-1	1	ND	ug / Wipe	2			
EXB-05	4/16/2004	Lead	7439-92-1	1	4.1	ug / Wipe	2			
EXB-06	4/16/2004	Lead	7439-92-1	1	3.5	ug / Wipe	2			
EXB-11	4/16/2004	Lead	7439-92-1	1	5.8	ug / Wipe	2			
E-01	9/18/2003	Mercury	7439-97-6	1	ND	ug / Wipe	0.02		Min DL	0.02
E-02	9/18/2003	Mercury	7439-97-6	1	ND	ug / Wipe	0.02		Max DL	0.02
E-03	9/18/2003	Mercury	7439-97-6	1	ND	ug / Wipe	0.02			
E-07	9/18/2003	Mercury	7439-97-6	1	0.034	ug / Wipe	0.02			
E-08	9/18/2003	Mercury	7439-97-6	1	0.087	ug / Wipe	0.02			
EXB-01	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
EXB-02	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
EXB-03	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
EXB-04	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
EXB-05	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
EXB-06	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
EXB-11	4/16/2004	Mercury	7439-97-6	5000	ND	ug / Wipe	0.02			
E-01	9/18/2003	Methylene chloride	75-09-2	1	1100	ug / Wipe	5	E	Min DL	3
E-02	9/18/2003	Methylene chloride	75-09-2	1	1800	ug / Wipe	5	E	Max DL	5
E-03	9/18/2003	Methylene chloride	75-09-2	1	3100	ug / Wipe	5	E		
E-04	9/18/2003	Methylene chloride	75-09-2	1	2400	ug / Wipe	5	E		
E-07	9/18/2003	Methylene chloride	75-09-2	1	2000	ug / Wipe	5	E		
E-08	9/18/2003	Methylene chloride	75-09-2	1	2000	ug / Wipe	5	E		
EXB-01	4/16/2004	Methylene chloride	75-09-2	2	62	ug / Wipe	3			
EXB-02	4/16/2004	Methylene chloride	75-09-2	2	110	ug / Wipe	3			
EXB-03	4/16/2004	Methylene chloride	75-09-2	2	120	ug / Wipe	3			
EXB-04	4/16/2004	Methylene chloride	75-09-2	2	47	ug / Wipe	3			
EXB-05	4/16/2004	Methylene chloride	75-09-2	2	100	ug / Wipe	3			
EXB-06	4/16/2004	Methylene chloride	75-09-2	2	41	ug / Wipe	3			
EXB-11	4/16/2004	Methylene chloride	75-09-2	2	190	ug / Wipe	3			
EXB-05	4/16/2004	o-Xylene	95-47-6	2	0.7	ug / Wipe	0.3			
EXB-06	4/16/2004	o-Xylene	95-47-6	2	1.2	ug / Wipe	0.3			
EXB-11	4/16/2004	o-Xylene	95-47-6	2	1.4	ug / Wipe	0.3			
EXB-01	4/16/2004	o-Xylene	95-47-6	2	ND	ug / Wipe	0.3			
EXB-02	4/16/2004	o-Xylene	95-47-6	2	ND	ug / Wipe	0.3			
EXB-03	4/16/2004	o-Xylene	95-47-6	2	ND	ug / Wipe	0.3			
EXB-04	4/16/2004	o-Xylene	95-47-6	2	ND	ug / Wipe	0.3			
EXB-05	4/16/2004	p/m-Xylenes	108-38-3/1	2	1.3	ug / Wipe	0.6			
EXB-06	4/16/2004	p/m-Xylenes	108-38-3/1	2	2.1	ug / Wipe	0.6			
EXB-11	4/16/2004	p/m-Xylenes	108-38-3/1	2	2.2	ug / Wipe	0.6			
EXB-01	4/16/2004	p/m-Xylenes	108-38-3/1	2	ND	ug / Wipe	0.6			
EXB-02	4/16/2004	p/m-Xylenes	108-38-3/1	2	ND	ug / Wipe	0.6			
EXB-03	4/16/2004	p/m-Xylenes	108-38-3/1	2	ND	ug / Wipe	0.6			
EXB-04	4/16/2004	p/m-Xylenes	108-38-3/1	2	ND	ug / Wipe	0.6			
EXB-05	4/16/2004	Sum o and m/p xylenes			2.0					
EXB-06	4/16/2004	Sum o and m/p xylenes			3.3					
EXB-11	4/16/2004	Sum o and m/p xylenes			3.6					
EXB-01	4/16/2004	Sum o and m/p xylenes			ND					
EXB-02	4/16/2004	Sum o and m/p xylenes			ND					
EXB-03	4/16/2004	Sum o and m/p xylenes			ND					
EXB-04	4/16/2004	Sum o and m/p xylenes			ND					
E-01	9/18/2003	Xylenes (total)		1	ND	ug / Wipe	10			
E-02	9/18/2003	Xylenes (total)		1	ND	ug / Wipe	10			
E-03	9/18/2003	Xylenes (total)		1	ND	ug / Wipe	10			
E-04	9/18/2003	Xylenes (total)		1	ND	ug / Wipe	10			
E-07	9/18/2003	Xylenes (total)		1	39	ug / Wipe	10			
E-08	9/18/2003	Xylenes (total)		1	13	ug / Wipe	10			
EXB-01	4/16/2004	Sum o and m/p xylenes			ND	ug / Wipe	0.3-0.6			
EXB-02	4/16/2004	Sum o and m/p xylenes			ND	ug / Wipe	0.3-0.6			
EXB-03	4/16/2004	Sum o and m/p xylenes			ND	ug / Wipe	0.3-0.6			
EXB-04	4/16/2004	Sum o and m/p xylenes			ND	ug / Wipe	0.3-0.6			
EXB-05	4/16/2004	Sum o and m/p xylenes			2.0	ug / Wipe	0.3-0.6			
EXB-06	4/16/2004	Sum o and m/p xylenes			3.3	ug / Wipe	0.3-0.6			
EXB-11	4/16/2004	Sum o and m/p xylenes			3.6	ug / Wipe	0.3-0.6			
E-01	9/18/2003	Toluene	108-88-3	1	0.91	ug / Wipe	5	J	Min DL	0.3
E-02	9/18/2003	Toluene	108-88-3	1	0.62	ug / Wipe	5	J	Max DL	5
E-03	9/18/2003	Toluene	108-88-3	1	0.88	ug / Wipe	5	J		
E-04	9/18/2003	Toluene	108-88-3	1	0.9	ug / Wipe	5	J		
E-07	9/18/2003	Toluene	108-88-3	1	1.6	ug / Wipe	5	J		
E-08	9/18/2003	Toluene	108-88-3	1	1.1	ug / Wipe	5	J		
EXB-01	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
EXB-02	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
EXB-03	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
EXB-04	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
EXB-05	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
EXB-06	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
EXB-11	4/16/2004	Toluene	108-88-3	2	ND	ug / Wipe	0.3			
E-01	9/18/2003	Tetrachloroethene (PCE)	127-18-4	1	1.0	ug / Wipe	5	J	Min DL	0.3
E-02	9/18/2003	Tetrachloroethene (PCE)	127-18-4	1	1.4	ug / Wipe	5	J	Max DL	5
E-03	9/18/2003	Tetrachloroethene (PCE)	127-18-4	1	0.99	ug / Wipe	5	J		
E-04	9/18/2003	Tetrachloroethene (PCE)	127-18-4	1	0.68	ug / Wipe	5	J		
E-07	9/18/2003	Tetrachloroethene (PCE)	127-18-4	1	1.8	ug / Wipe	5	J		
E-08	9/18/2003	Tetrachloroethene (PCE)	127-18-4	1	0.86	ug / Wipe	5	J		
EXB-01	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
EXB-02	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
EXB-03	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
EXB-04	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
EXB-05	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
EXB-06	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
EXB-11	4/16/04	Tetrachloroethene (PCE)	127-18-4	2	ND	ug / Wipe	0.3			
E-01	9/18/2003	2-Butanone (MEK)	78-93-3	1	ND	ug / Wipe	20		Min DL	1.5
E-02	9/18/2003	2-Butanone (MEK)	78-93-3	1	ND	ug / Wipe	20		Max DL	20
E-03	9/18/2003	2-Butanone (MEK)	78-93-3	1	ND	ug / Wipe	20			
E-04	9/18/2003	2-Butanone (MEK)	78-93-3	1	ND	ug / Wipe	20			
E-07	9/18/2003	2-Butanone (MEK)	78-93-3	1	ND	ug / Wipe	20			
E-08	9/18/2003	2-Butanone (MEK)	78-93-3	1	ND	ug / Wipe	20			
EXB-01	4/16/04	2-Butanone (MEK)	78-93-3	2	3.9	ug / Wipe	1.5			
EXB-02	4/16/04	2-Butanone (MEK)	78-93-3	2	3.5	ug / Wipe	1.5			
EXB-03	4/16/04	2-Butanone (MEK)	78-93-3	2	4.1	ug / Wipe	1.5			
EXB-04	4/16/04	2-Butanone (MEK)	78-93-3	2	3.6	ug / Wipe	1.5			
EXB-05	4/16/04	2-Butanone (MEK)	78-93-3	2	4.3	ug / Wipe	1.5			
EXB-06	4/16/04	2-Butanone (MEK)	78-93-3	2	4.1	ug / Wipe	1.5			
EXB-11	4/16/04	2-Butanone (MEK)	78-93-3	2	4	ug / Wipe	1.5			

Table ES-1
Demonstration of Closure for the CAI Exhaust Equipment

Location	Analyte	Result [a] (µg/100 cm²)	Qualifier	Closure Demonstration Criteria [b]
Bag House - Vertical	1, 4 - Benzenediol, 2,5-bis(1,1-d [3]	630	M	4
	2-Mercaptobenzothiazole [3]	220	M	4
	4-Cyanocyclohexene [3]	340	M	4
	4-Methyl-2-pentanone	4.2	J	4
	5-Cholestene-3-ol, 24-methyl- [3]	220	M	2
	Acetone	1,100	E	2
	Barium	0.79	B	4
	bis(2-Ethylhexyl) phthalate	250	B	4
	Chloroform	0.33	J	4
	Chromium	3.2		4
	Di-n-octyl phthalate	68	J	4
	Ethyl benzene	1.8	J	4
	Hexane [4]	12	Q	2
	Mercury	0.087		4
	Methylene Chloride	2,000	E	4
	Tetrachloroethene	0.86	J	2
	Toluene	1.1	J	4
	Xylenes (total)	13		4
Bag House Transition - Horizontal	1, 4 - Benzenediol, 2,5-bis(1,1-d [3]	340	M	4
	1,2,3,4,6,7,8,9-OCDD	17.4	SJ	4
	1,2,3,4,6,7,8,9-OCDD	23.6	SJ	4
	1,2,3,4,6,7,8,9-OCDD	42.6	SJ	4
	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	4
	1,2,3,4,6,7,8-HpCDD	11.5	SJ	4
	1,2,3,4,6,7,8-HpCDF	3	SJ	4
	2-Butanone (MEK)	4		2
	2-Butanone (MEK)	4.1		2
	2-Butanone (MEK)	4.3		2
	2-Mercaptobenzothiazole [3]	160	M	4
	4-Methyl-2-pentanone	8.7	J	4
	Acetone	7.4		2
	Acetone	9.2		2
	Acetone	50		4
	Acetone	1,500	E	2
	Barium	0.95	B	4
	Barium	2.7		4
	Barium	3.4		4
	Barium	3.9		4
	Beta-sitosterol [3]	2,200	M	4
	bis(2-Ethylhexyl) phthalate	390	B	4
	Bromomethane	2.5		2
	Bromomethane	2.7		2
	Chloroform	0.26	J	4
	Chloromethane	6.4		2
	Chromium	0.60	B	4
	Chromium	4.4		4
	Chromium	6.4		4
	Chromium	6.7		4
	Di-n-octyl phthalate	66	J	4
Bag House Transition - Horizontal	Ethyl benzene	4.5	J	4
	Hexane [4]	39	Q	2
	Lead	3.5		4
	Lead	4.1		4
	Lead	5.8		4
	Mercury	0.034		4
	Methylene chloride	41		2
	Methylene chloride	100		2
	Methylene chloride	190		2
	Methylene Chloride	2,000	E	4
	o-Xylene	0.7		4
	o-Xylene	1.2		4
	o-Xylene	1.4		4
	p/m-Xylenes	1.3		4
	p/m-Xylenes	2.1		4
	p/m-Xylenes	2.2		4
	Propylene glycol [3]	200	M	4
	Tetrachloroethene	1.8	J	4
	Toluene	1.6	J	4
	Total HpCDD	18.1	S	4
	Total HpCDF	7.1	S	4
	Total TEQ [c]	5.1	S	2
	Total TEQ [c]	5.3	S	2
	Total TEQ [c]	8.4	S	4
	Xylenes (total)	39		4
Bag House Transition - Vertical	1,2,3,4,6,7,8,9-OCDD	38.1	SJ	4
	2-Butanone (MEK)	3.6		2
	2-Butanone (MEK)	4.1		2
	Acetone	6.1		2
	Barium	1.1		4
	Barium	1.1		4
	Bromomethane	2.8		4
	Chromium	8.3		4
	Chromium	8.5		4
	Methylene chloride	47		2
	Methylene chloride	120		2
	Total TEQ [c]	8.5	S	4
	Total TEQ [c]	8.7	S	4
Room 112 HEPA Bank - Left Straight Pipe	1, 4 - Benzenediol, 2,5-bis(1,1-d [3]	580	M	4
	Acetone	4,200	E	4
	Barium	0.64	B	4
	Beta-sitosterol [3]	1,800	M	4
	bis(2-Ethylhexyl) phthalate	130	B	4
	Chromium	1.2		4
	Hexane [4]	140	Q	2
	Methylene Chloride	3,100	E	4
Room 112 HEPA Bank - Left Straight Pipe	Tetrachloroethene	0.99	J	4
	Toluene	0.88	J	4
Room 112 HEPA Bank - Left Transition	1, 4 - Benzenediol, 2,5-bis(1,1-d [3]	700	M	4
	9-Octadecenamide, (Z)- [3]	600	M	4
	Acetone	2,200	E	2
	Barium	0.73	B	4
	Beta-sitosterol [3]	2,400	M	4
	Bis(2-Ethylhexyl) phthalate	120	B	4
	Cyclopentane, methyl- [3]	8.2	M	4
	Di-n-octyl phthalate	240		4
	Hexane [4]	300	Q	2
	Methylene Chloride	2,400	E	4
	Tetrachloroethene	0.68	J	2
	Toluene	0.90	J	4
Room 112 HEPA Bank - Right elbow	1,2,3,4,6,7,8,9-OCDD	24.6	SJ	4
	1,2,3,4,6,7,8-HpCDD	8.6	SJ	4
	2-Butanone (MEK)	3.5		2
	Acetone	70		4
	Barium	2.2		4
	Bromomethane	4.4		4
	Chromium	8.9		4
	Methylene chloride	110		2
	Total HpCDD	16.5	S1	4
	Total TEQ [c]	5.8	S	2
Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8,9-OCDD	27.6	SJ1	4
	1,2,3,4,6,7,8-HpCDD	15.2	SJ	4
	1,2,3,4,6,7,8-HpCDF	5	SJ	4
	1,2,4-Trimethylbenzene	0.6		4
	2-Butanone (MEK)	3.9		2
	Acetone	24		4
	Barium	6.3		4
	Bromomethane	6.2		4
	Cadmium	0.27		4
	Chloromethane	0.8		2
	Chromium	67.6		4
	Lead	2.2		4
	Methylene chloride	62		2
	Total HpCDD	23.9	S	4
	Total HpCDF	5	S	4
	Total TEQ [c]	7.5	S	2
Room 112 Instrumentation Port	1, 4 - Benzenediol, 2,5-bis(1,1-d [3]	350	M	4
	2-Mercaptobenzothiazole [3]	110	M	4
	5-Cholestene-3-ol, 24-methyl- [3]	140	M	2
	Acetone	1,100	E	2
	Barium	0.65	B	4
	Beta-sitosterol [3]	2,300	M	4
	bis(2-Ethylhexyl) phthalate	38	JB	4
Room 112 Instrumentation Port	Hexane [4]	54	Q	2
	Methylene Chloride	1,800	E	2
	Tetrachloroethene	1.4	J	4
	Toluene	0.62	J	2
Room 112 Valve	1, 4 - Benzenediol, 2,5-bis(1,1-d [3]	190	M	4
	5-Cholestene-3-ol, 24-methyl- [3]	240	M	4
	Acetone	570	E	2
	Barium	1.9	B	4
	Beta-sitosterol [3]	2,100	M	4
	bis(2-Ethylhexyl) phthalate	59	JB	4
	Cholesterol [3]	140	M	2
	Chromium	1.4		4
	Hexane [4]	28	Q	2
	Methylene Chloride	1,100	E	2
	Tetrachloroethene	1.0	J	4
	Toluene	0.91	J	4

a. Analytical results for dioxin/furan are reported in units of picograms per 100 square centimeters.
b. The definition of the closure demonstration criteria is defined as follows:

1. No detectable Resource Conservation and Recovery Act (RCRA)-regulated constituent residues from the management of stored, authorized RCRA-regulated wastes are identified in samples collected during closure activities.
2. Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline data.
3. Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the New Mexico Environment Department (NMED) to be protective of human health based on the results of risk assessment methods.

4. Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

c. Total toxicity equivalence (TEQ) is a calculated value based on methods provided in U.S. Environmental Protection Agency guidance (1989b).

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.

B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.
S = Subcontracted (Eno River Labs, LLC).
J = Estimated value - below calibration range.
1 = This value is an estimated maximum possible concentration.

Definition of Acronyms
HEPA = high efficiency particulate air.
µg/100 cm² = micrograms per 100 square centimeters.
MEK = methyl ethyl ketone.
OCDD = octachlorodibenzo-p-dioxin.
OCDF = octachlorodibenzofuran.
HpCDD = heptachlorodibenzo-p-dioxin.
HpCDF = heptachlorodibenzofuran.
TEQ = toxicity equivalence.

Table ES-2
Summary of Risk Assessment Results

Constituent [a]	Maximum Detected Concentration (µg/100 cm^2)	Qualifier	Noncarcinogenic Hazard Quotient	Carcinogenic Risk
Semivolatile Organic Chemicals (Method 8270C):				
Bis(2-ethylhexyl)phthalate	390	B	0.031	3E-06
Di-n-octylphthalate	240		0.0096	NA
Propylene glycol [b]	200	M	0.00064	NA
Volatile Organic Chemicals (Method 8260B):				
1,2,4-Trimethylbenzene	0.60		0.000010	NA
4-Methyl-2-pentanone	8.7	J	0.000087	NA
Acetone	4,200	E	0.0037	NA
Bromomethane	6.2		0.0035	NA
Chloroform	0.33	J	0.000026	NA
Ethyl benzene	4.5	J	0.000036	NA
Methylene chloride	3,100	E	0.041	7E-06
Tetrachloroethene	1.8	J	0.00014	3E-07
Toluene	1.6	J	0.0000064	NA
Xylenes	39		0.00016	NA
Metals (Method 3050A/6010B):				
Barium	6.3		0.000072	NA
Cadmium	0.27		0.00044	NA
Chromium	67.6		NA	NA
Lead [c]	5.8		NA	NA
Mercury	0.087		NA	NA
Dioxins/Furans (Method 8290):				
TEQ [d]	0.21		NA	1E-08
CUMULATIVE HAZARD INDEX AND RISK:			**0.09**	**1E-05**

a. 1,4-benzenediol, 2,5-bis(1,1-d; 2-mercaptobenzothiazole; 4-cyano-cyclohexene; 5-cholestene-3-ol, 24-methyl; 9-octadecenamide, (z)-; beta-sisterol; cyclopentane, methyl- are tentatively identified compounds (TIC) that were carried forward into the risk assessment but were not quantitatively evaluated due to a lack of toxicity data.

b. This chemical is a TIC, which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

c. Lead was evaluated separately. The estimated concentration of lead in blood of the worker and the fetus are below the goal of 10 micrograms per deciliter specified in U.S. Environmental Protection Agency (EPA) guidance.

d. Maximum detected concentration in units of picograms per 100 square centimeters. The toxicity equivalence (TEQ) was calculated using maximum detected values and TEQ factors from EPA guidance.

Definition of Qualifiers

B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms

µg/100 cm^2 = micrograms per 100 square centimeters.
µg/dL = micrograms per deciliter.
EPA = U.S. Environmental Protection Agency.
NA = Not applicable (i.e., toxicity data unavailable or incomplete exposure pathway).
TEQ = toxicity equivalence.

Table 1-1
Hazardous Waste Constituents Associated with the Controlled Air Incinerator at TA-50-37 [a]

Category	EPA Hazardous Waste Numbers	Constituents/Comments
Toxic Metals	D004, D005, D006, D007, D008, and D009	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury
Volatile Organic Compounds	F002, F003, U165	Acetone, Methylene Chloride, Naphthalene, trans-1,2-Dichloroethene,
Semivolatile Organic Compounds	NA	bis (2-Ethylhexyl) phthalate
Polychlorinated Biphenyls	NA	The CAI was used to treat a small amount of PCBs and organic compounds (Benchmark, 1998). Swipe sampling results conducted during closure of the CAI indicated the presence of PCBs.

a. Based on swipe sampling results conducted during closure of the CAI (Benchmark, 1998).

Definition of Acronyms
CAI = Controlled Air Incinerator.
EPA = U.S. Environmental Protection Agency.
NA = not applicable.
PCB = polychlorinated biphenyl.

Table 2-1
Swipes Collected During Sample Event #1
at the TA-50-37 Exhaust Equipment, September 2003

Sample No.	Location/Type [a]	Analytes
E-01	Room 112 Valve	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-02	Room 112 Instrumentation Port	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-03	Room 112 HEPA Bank - Left Straight Pipe	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-04	Room 112 HEPA Bank - Left Transition	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-05	Room 112 HEPA Bank - Right Elbow	Not collected.
E-06	Room 112 HEPA Bank - Right Transition	Not collected.
E-07	Bag House Transition – Horizontal	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-08	Bag House – Vertical	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-09	Baseline #1	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-10	Baseline #2	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-11	Baseline #3	Total Metals (SW846 Methods 6010B and 7471A), SVOC (SW846 Method 8270C), VOC (SW846 Method 8260B), PCB (SW846 Method 8082)
E-13	Field Blank	VOC (SW846 Method 8260B)

a. Luciana Vigil-Holterman to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL)* , on February 3, 2003.

Definition of Acronyms

HEPA = high efficiency particulate air.
PCB = polychlorinated biphenyls.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.

Table 2-2
Swipes Collected During Sample Event #2
at the TA-50-37 Exhaust Equipment, April 2004

Sample No.	Location/Type [a]	Analytes
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-02	Room 112 HEPA Bank - Right elbow	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-03	Bag House Transition – Vertical	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-04	Bag House Transition – Vertical	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-05	Bag House Transition – Horizontal	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-06	Bag House Transition – Horizontal	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-07	Baseline – Inside	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-08	Baseline – Outside	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)
EXB-09	Field Blank	VOC (SW846 Method 8260B)
EXB-10	Trip Blank	VOC (SW846 Method 8260B)
EXB-11	Bag House Transition - Horizontal	Total Metals (SW846 Methods 3050A/6010B, 3050B/7760A, and 7471B), SVOC (SW846 Method 3550A/8270C), VOC (SW846 Method 8260B), PCB (Modified SW846 Method 3580A/8082), Dioxin/Furan (SW846 Method 8290)

a. Luciana Vigil-Holterman to Mr. Steve Jetter, *Confirmation of Agreement on Closure Procedure for Technical Area 50, Building 37, (TA-50-37), Los Alamos National Laboratory (LANL)*, on February 3, 2003.

Definition of Acronyms

HEPA = high efficiency particulate air.
PCB = polychlorinated biphenyls.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.

Table 2-3
Solvent Medium Used for Collection of Swipe Samples

Requested Analysis	Solvent Medium	Collection Medium
Total Metals	Deionized Water	Gauze Pad
SVOC	Methylene Chloride	Gauze Pad
VOC	Methyl Alcohol (Methanol)	Gauze Pad
PCB	Hexane	Cheese cloth
Dioxin/Furan	Acetone	Gauze Pad

Definition of Acronyms

PCB = polychlorinated biphenyls.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.

Table 2-4
Summary of Sample Results for Sampling Event #1 at the TA-50-37 Exhaust Equipment, September 2003

Sample No.	Location	Requested Analysis	Analyte	Result (µg/100 cm^2)	Qualifier
E-01	Room 112 Valve	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	190	M
E-01	Room 112 Valve	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	240	M
E-01	Room 112 Valve	SVOC	Beta-sitosterol [a]	2,100	M
E-01	Room 112 Valve	SVOC	bis(2-Ethylhexyl) phthalate	59	JB
E-01	Room 112 Valve	SVOC	Cholesterol [a]	140	M
E-01	Room 112 Valve	Total Metals	Barium	1.9	B
E-01	Room 112 Valve	Total Metals	Chromium	1.4	
E-01	Room 112 Valve	VOC	Acetone	570	E
E-01	Room 112 Valve	VOC	Hexane [a]	28	Q
E-01	Room 112 Valve	VOC	Methylene Chloride	1,100	E
E-01	Room 112 Valve	VOC	Tetrachloroethene	1.0	J
E-01	Room 112 Valve	VOC	Toluene	0.91	J
E-02	Room 112 Instrumentation Port	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	350	M
E-02	Room 112 Instrumentation Port	SVOC	2-Mercaptobenzothiazole [a]	110	M
E-02	Room 112 Instrumentation Port	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	140	M
E-02	Room 112 Instrumentation Port	SVOC	Beta-sitosterol [a]	2,300	M
E-02	Room 112 Instrumentation Port	SVOC	bis(2-Ethylhexyl) phthalate	38	JB
E-02	Room 112 Instrumentation Port	Total Metals	Barium	0.65	B
E-02	Room 112 Instrumentation Port	VOC	Acetone	1,100	E
E-02	Room 112 Instrumentation Port	VOC	Hexane [a]	54	Q
E-02	Room 112 Instrumentation Port	VOC	Methylene Chloride	1,800	E
E-02	Room 112 Instrumentation Port	VOC	Tetrachloroethene	1.4	J
E-02	Room 112 Instrumentation Port	VOC	Toluene	0.62	J
E-03	Room 112 HEPA Bank - Left Straight Pipe	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	580	M
E-03	Room 112 HEPA Bank - Left Straight Pipe	SVOC	Beta-sitosterol [a]	1,800	M
E-03	Room 112 HEPA Bank - Left Straight Pipe	SVOC	bis(2-Ethylhexyl) phthalate	130	B
E-03	Room 112 HEPA Bank - Left Straight Pipe	Total Metals	Barium	0.64	B
E-03	Room 112 HEPA Bank - Left Straight Pipe	Total Metals	Chromium	1.2	
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Acetone	4,200	E
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Hexane [a]	140	Q
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Methylene Chloride	3,100	E
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Tetrachloroethene	0.99	J
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Toluene	0.88	J
E-04	Room 112 HEPA Bank - Left Transition	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	700	M
E-04	Room 112 HEPA Bank - Left Transition	SVOC	9-Octadecenamide, (z)- [a]	600	M
E-04	Room 112 HEPA Bank - Left Transition	SVOC	Beta-sitosterol [a]	2,400	M
E-04	Room 112 HEPA Bank - Left Transition	SVOC	bis(2-Ethylhexyl) phthalate	120	B
E-04	Room 112 HEPA Bank - Left Transition	SVOC	Di-n-octyl phthalate	240	
E-04	Room 112 HEPA Bank - Left Transition	Total Metals	Barium	0.73	B
E-04	Room 112 HEPA Bank - Left Transition	VOC	Acetone	2,200	E
E-04	Room 112 HEPA Bank - Left Transition	VOC	Cyclopentane, methyl- [a]	8.2	M
E-04	Room 112 HEPA Bank - Left Transition	VOC	Hexane [a]	300	Q
E-04	Room 112 HEPA Bank - Left Transition	VOC	Methylene Chloride	2,400	E
E-04	Room 112 HEPA Bank - Left Transition	VOC	Tetrachloroethene	0.68	J
E-04	Room 112 HEPA Bank - Left Transition	VOC	Toluene	0.90	J
E-05	Room 112 HEPA Bank - Right Elbow	NA	NOT COLLECTED	NA	
E-06	Room 112 HEPA Bank - Right Transition	NA	NOT COLLECTED	NA	
E-07	Bag House Transition - Horizontal	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	340	M
E-07	Bag House Transition - Horizontal	SVOC	2-Mercaptobenzothiazole [a]	160	M
E-07	Bag House Transition - Horizontal	SVOC	Beta-sitosterol [a]	2,200	M
E-07	Bag House Transition - Horizontal	SVOC	bis(2-Ethylhexyl) phthalate	390	B
E-07	Bag House Transition - Horizontal	SVOC	Di-n-octyl phthalate	66	J
E-07	Bag House Transition - Horizontal	SVOC	Propylene glycol [a]	200	M
E-07	Bag House Transition - Horizontal	Total Metals	Barium	0.95	B
E-07	Bag House Transition - Horizontal	Total Metals	Chromium	0.60	B
E-07	Bag House Transition - Horizontal	Total Metals	Mercury	0.034	
E-07	Bag House Transition - Horizontal	VOC	4-Methyl-2-pentanone	8.7	J
E-07	Bag House Transition - Horizontal	VOC	Acetone	1,500	E
E-07	Bag House Transition - Horizontal	VOC	Chloroform	0.26	J
E-07	Bag House Transition - Horizontal	VOC	Ethyl benzene	4.5	J
E-07	Bag House Transition - Horizontal	VOC	Hexane [a]	39	Q
E-07	Bag House Transition - Horizontal	VOC	Methylene Chloride	2,000	E
E-07	Bag House Transition - Horizontal	VOC	Tetrachloroethene	1.8	J
E-07	Bag House Transition - Horizontal	VOC	Toluene	1.6	J
E-07	Bag House Transition - Horizontal	VOC	Xylenes (total)	39	
E-08	Bag House - Vertical	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	630	M
E-08	Bag House - Vertical	SVOC	2-Mercaptobenzothiazole [a]	220	M
E-08	Bag House - Vertical	SVOC	4-Cyanocyclohexene [a]	340	M
E-08	Bag House - Vertical	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	220	M
E-08	Bag House - Vertical	SVOC	bis(2-Ethylhexyl) phthalate	250	B
E-08	Bag House - Vertical	SVOC	Di-n-octyl phthalate	68	J
E-08	Bag House - Vertical	Total Metals	Barium	0.79	B
E-08	Bag House - Vertical	Total Metals	Chromium	3.2	
E-08	Bag House - Vertical	Total Metals	Mercury	0.087	
E-08	Bag House - Vertical	VOC	4-Methyl-2-pentanone	4.2	J
E-08	Bag House - Vertical	VOC	Acetone	1,100	E
E-08	Bag House - Vertical	VOC	Chloroform	0.33	J
E-08	Bag House - Vertical	VOC	Ethyl benzene	1.8	J
E-08	Bag House - Vertical	VOC	Hexane [a]	12	Q
E-08	Bag House - Vertical	VOC	Methylene Chloride	2,000	E
E-08	Bag House - Vertical	VOC	Tetrachloroethene	0.86	J
E-08	Bag House - Vertical	VOC	Toluene	1.1	J
E-08	Bag House - Vertical	VOC	Xylenes (total)	13	
E-09	Baseline #1	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	230	M
E-09	Baseline #1	SVOC	bis(2-Ethylhexyl) phthalate	23	JB
E-09	Baseline #1	SVOC	Cholesterol [a]	160	M
E-09	Baseline #1	Total Metals	Barium	0.61	B
E-09	Baseline #1	VOC	Acetone	2,500	E
E-09	Baseline #1	VOC	Cyclopentane, methyl- [a]	5.9	M
E-09	Baseline #1	VOC	Hexane [a]	360	Q
E-09	Baseline #1	VOC	Methylene Chloride	1,800	E
E-09	Baseline #1	VOC	Tetrachloroethene	0.80	J
E-09	Baseline #1	VOC	Toluene	0.64	J
E-10	Baseline #2	SVOC	bis(2-Ethylhexyl) phthalate	27	JB
E-10	Baseline #2	SVOC	Campesterol [a]	230	M
E-10	Baseline #2	SVOC	Stigmasterol, 22,23-dihydro- [a]	2,300	M
E-10	Baseline #2	Total Metals	Barium	0.53	B
E-10	Baseline #2	Total Metals	Mercury	0.024	
E-10	Baseline #2	VOC	Acetone	1,500	E
E-10	Baseline #2	VOC	Hexane [a]	280	Q
E-10	Baseline #2	VOC	Methylene Chloride	1,900	E
E-10	Baseline #2	VOC	Tetrachloroethene	0.87	J
E-11	Baseline #3	SVOC	bis(2-Ethylhexyl) phthalate	30	JB
E-11	Baseline #3	Total Metals	Barium	0.53	B
E-11	Baseline #3	VOC	Acetone	530	E
E-11	Baseline #3	VOC	Cyclopentane, methyl- [a]	5.3	M
E-11	Baseline #3	VOC	Hexane [a]	320	Q
E-11	Baseline #3	VOC	Methylene Chloride	1,200	E
E-11	Baseline #3	VOC	Tetrachloroethene	0.79	J
E-12	Field Blank #1	VOC	Acetone	1,600	E
E-12	Field Blank #1	VOC	Hexane [a]	85	Q
E-12	Field Blank #1	VOC	Methylene Chloride	770	E
E-13	Field Blank	NA	NOT COLLECTED	NA	
Method Blank	Method Blank	SVOC	bis(2-Ethylhexyl) phthalate	22	J

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard

Definition of Acronyms
µg/100 cm^2 = micrograms per 100 square centimeters.
NA = not applicable.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.

Table 2-5
Sample Event #1, September 2003 - Comparison to Baseline and Quality Assurance/Quality Control Results

Sample No.	Location	Analyte	Result (µg/100 cm²)	Qualifier	Comparison Results
E-04	**Room 112 HEPA Bank - Left Transition**	**1, 4 - Benzenediol, 2,5-bis(1,1-d [a]**	**700**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**1, 4 - Benzenediol, 2,5-bis(1,1-d [a]**	**630**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**1, 4 - Benzenediol, 2,5-bis(1,1-d [a]**	**580**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-02	**Room 112 Instrumentation Port**	**1, 4 - Benzenediol, 2,5-bis(1,1-d [a]**	**350**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**1, 4 - Benzenediol, 2,5-bis(1,1-d [a]**	**340**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**1, 4 - Benzenediol, 2,5-bis(1,1-d [a]**	**190**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**2-Mercaptobenzothiazole [a]**	**220**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**2-Mercaptobenzothiazole [a]**	**160**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-02	**Room 112 Instrumentation Port**	**2-Mercaptobenzothiazole [a]**	**110**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**4-Cyanocyclohexene [a]**	**340**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**4-Methyl-2-pentanone**	**8.7**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**4-Methyl-2-pentanone**	**4.2**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**5-Cholestene-3-ol, 24-methyl- [a]**	**240**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	5-Cholestene-3-ol, 24-methyl- [a]	230	M	NA
E-08	Bag House - Vertical	5-Cholestene-3-ol, 24-methyl- [a]	220	M	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-02	Room 112 Instrumentation Port	5-Cholestene-3-ol, 24-methyl- [a]	140	M	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-04	**Room 112 HEPA Bank - Left Transition**	**9-Octadecenamide, (z)- [a]**	**600**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Acetone**	**4,200**	**E**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	Acetone	2,500	E	NA
E-04	Room 112 HEPA Bank - Left Transition	Acetone	2,200	E	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-12	Field Blank #1	Acetone	1,600	E	NA
E-07	Bag House Transition - Horizontal	Acetone	1,500	E	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-10	Baseline #2	Acetone	1,500	E	NA
E-02	Room 112 Instrumentation Port	Acetone	1,100	E	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-08	Bag House - Vertical	Acetone	1,100	E	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-01	Room 112 Valve	Acetone	570	E	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-11	Baseline #3	Acetone	530	E	NA
E-01	**Room 112 Valve**	**Barium**	**1.9**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Barium**	**0.95**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**Barium**	**0.79**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-04	**Room 112 HEPA Bank - Left Transition**	**Barium**	**0.73**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-02	**Room 112 Instrumentation Port**	**Barium**	**0.65**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Barium**	**0.64**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	Barium	0.61	B	NA
E-10	Baseline #2	Barium	0.53	B	NA
E-11	Baseline #3	Barium	0.53	B	NA
E-04	**Room 112 HEPA Bank - Left Transition**	**Beta-sitosterol [a]**	**2,400**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-02	**Room 112 Instrumentation Port**	**Beta-sitosterol [a]**	**2,300**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Beta-sitosterol [a]**	**2,200**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**Beta-sitosterol [a]**	**2,100**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Beta-sitosterol [a]**	**1,800**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**bis(2-Ethylhexyl) phthalate**	**390**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**bis(2-Ethylhexyl) phthalate**	**250**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**bis(2-Ethylhexyl) phthalate**	**130**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-04	**Room 112 HEPA Bank - Left Transition**	**bis(2-Ethylhexyl) phthalate**	**120**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**bis(2-Ethylhexyl) phthalate**	**59**	**JB**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-02	**Room 112 Instrumentation Port**	**bis(2-Ethylhexyl) phthalate**	**38**	**JB**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-11	Baseline #3	bis(2-Ethylhexyl) phthalate	30	JB	NA
E-10	Baseline #2	bis(2-Ethylhexyl) phthalate	27	JB	NA
E-09	Baseline #1	bis(2-Ethylhexyl) phthalate	23	JB	NA
Method Blank	Method Blank	bis(2-Ethylhexyl) phthalate	22	J	NA
E-10	Baseline #2	Campesterol [a]	230	M	NA
E-08	**Bag House - Vertical**	**Chloroform**	**0.33**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Chloroform**	**0.26**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	Cholesterol [a]	160	M	NA
E-01	Room 112 Valve	Cholesterol [a]	140	M	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-08	**Bag House - Vertical**	**Chromium**	**3.2**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**Chromium**	**1.4**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Chromium**	**1.2**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Chromium**	**0.60**	**B**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-04	**Room 112 HEPA Bank - Left Transition**	**Cyclopentane, methyl- [a]**	**8.2**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	Cyclopentane, methyl- [a]	5.9	M	NA
E-11	Baseline #3	Cyclopentane, methyl- [a]	5.3	M	NA
E-04	**Room 112 HEPA Bank - Left Transition**	**Di-n-octyl phthalate**	**240**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**Di-n-octyl phthalate**	**68**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Di-n-octyl phthalate**	**66**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Ethyl benzene**	**4.5**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**Ethyl benzene**	**1.8**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	Hexane [a]	360	Q	NA
E-11	Baseline #3	Hexane [a]	320	Q	NA
E-04	Room 112 HEPA Bank - Left Transition	Hexane [a]	300	Q	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-10	Baseline #2	Hexane [a]	280	Q	NA
E-03	Room 112 HEPA Bank - Left Straight Pipe	Hexane [a]	140	Q	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-12	Field Blank #1	Hexane [a]	85	Q	NA
E-02	Room 112 Instrumentation Port	Hexane [a]	54	Q	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-07	Bag House Transition - Horizontal	Hexane [a]	39	Q	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-01	Room 112 Valve	Hexane [a]	28	Q	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-08	Bag House - Vertical	Hexane [a]	12	Q	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-08	**Bag House - Vertical**	**Mercury**	**0.087**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Mercury**	**0.034**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-10	Baseline #2	Mercury	0.024		NA
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Methylene Chloride**	**3,100**	**E**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-04	**Room 112 HEPA Bank - Left Transition**	**Methylene Chloride**	**2,400**	**E**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-07	**Bag House Transition - Horizontal**	**Methylene Chloride**	**2,000**	**E**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**Methylene Chloride**	**2,000**	**E**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-10	Baseline #2	Methylene Chloride	1,900	E	NA
E-02	Room 112 Instrumentation Port	Methylene Chloride	1,800	E	The detected levels are equal to or less than the detected level in the Baseline #2 Sample.
E-09	Baseline #1	Methylene Chloride	1,800	E	NA
E-11	Baseline #3	Methylene Chloride	1,200	E	NA
E-01	Room 112 Valve	Methylene Chloride	1,100	E	The detected levels are equal to or less than the detected level in the Baseline #2 Sample.
E-12	Field Blank #1	Methylene Chloride	770	E	NA
E-01	Room 112 Valve	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-02	Room 112 Instrumentation Port	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-03	Room 112 HEPA Bank - Left Straight Pipe	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-04	Room 112 HEPA Bank - Left Transition	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-07	Bag House Transition - Horizontal	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-08	Bag House - Vertical	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-09	Baseline #1	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-10	Baseline #2	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-11	Baseline #3	*No PCBs detected*	ND		No chemicals were detected above the detection limit.
E-05	Room 112 HEPA Bank - Right Elbow	NOT COLLECTED	NA		NA
E-06	Room 112 HEPA Bank - Right Transition	NOT COLLECTED	NA		NA
E-13	Field Blank	NOT COLLECTED	NA		NA
E-07	**Bag House Transition - Horizontal**	**Propylene glycol [a]**	**200**	**M**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-10	Baseline #2	Stigmasterol, 22,23-dihydro- [a]	2,300	M	NA
E-07	**Bag House Transition - Horizontal**	**Tetrachloroethene**	**1.8**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-02	**Room 112 Instrumentation Port**	**Tetrachloroethene**	**1.4**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**Tetrachloroethene**	**1.0**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Tetrachloroethene**	**0.99**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-10	Baseline #2	Tetrachloroethene	0.87	J	NA
E-08	Bag House - Vertical	Tetrachloroethene	0.86	J	The detected levels are equal to or less than the detected level in the Baseline #2 Sample.
E-09	Baseline #1	Tetrachloroethene	0.80	J	NA
E-11	Baseline #3	Tetrachloroethene	0.79	J	NA
E-04	Room 112 HEPA Bank - Left Transition	Tetrachloroethene	0.68	J	The detected levels are equal to or less than the detected level in the Baseline #2 Sample.
E-07	**Bag House Transition - Horizontal**	**Toluene**	**1.6**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**Toluene**	**1.1**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-01	**Room 112 Valve**	**Toluene**	**0.91**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-04	**Room 112 HEPA Bank - Left Transition**	**Toluene**	**0.90**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-03	**Room 112 HEPA Bank - Left Straight Pipe**	**Toluene**	**0.88**	**J**	**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-09	Baseline #1	Toluene	0.64	J	NA
E-02	Room 112 Instrumentation Port	Toluene	0.62	J	The detected levels are equal to or less than the detected level in the Baseline #1 Sample.
E-07	**Bag House Transition - Horizontal**	**Xylenes (total)**	**39**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**
E-08	**Bag House - Vertical**	**Xylenes (total)**	**13**		**The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.**

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms
µg/100 cm² = micrograms per 100 square centimeters.
HEPA = high efficiency particulate air.
NA = not applicable.
ND = not detected.
QA/QC = quality assurance/quality control.

Table 2-6
Summary of Sample Results for Sampling Event #2 at the TA-50-37 Exhaust Equipment, April 2004

Sample No.	Location	Requested Analysis	Analyte	Result [a] (µg/100 cm²)	Qualifier
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	27.6	SJ1
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	1,2,3,4,6,7,8-HpCDD	15.2	SJ
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	1,2,3,4,6,7,8-HpCDF	5	SJ
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	Total HpCDD	23.9	S
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	Total HpCDF	5	S
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	Total TEQ [b]	7.5	S
EXB-01	Room 112 HEPA Bank - Right transition	SVOC	No SVOC detected	ND	
EXB-01	Room 112 HEPA Bank - Right transition	PCB	No PCBs detected	ND	
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Barium	6.3	
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Cadmium	0.27	
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Chromium	67.6	
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Lead	2.2	
EXB-01	Room 112 HEPA Bank - Right transition	VOC	1,2,4-Trimethylbenzene	0.6	
EXB-01	Room 112 HEPA Bank - Right transition	VOC	2-Butanone (MEK)	3.9	
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Acetone	24	
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Bromomethane	6.2	
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Chloromethane	0.8	
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Methylene chloride	62	
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	24.6	SJ
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	1,2,3,4,6,7,8-HpCDD	8.6	SJ
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	Total HpCDD	16.5	SJ
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	Total TEQ [b]	5.8	S
EXB-02	Room 112 HEPA Bank - Right elbow	SVOC	No SVOC detected	ND	
EXB-02	Room 112 HEPA Bank - Right elbow	PCB	No PCBs detected	ND	
EXB-02	Room 112 HEPA Bank - Right elbow	Total Metals	Barium	2.2	
EXB-02	Room 112 HEPA Bank - Right elbow	Total Metals	Chromium	8.9	
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	2-Butanone (MEK)	3.5	
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	Acetone	70	
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	Bromomethane	4.4	
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	Methylene chloride	130	
EXB-03	Bag House Transition - Vertical	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	38.1	SJ
EXB-03	Bag House Transition - Vertical	Dioxin/Furan	Total TEQ [b]	8.7	S
EXB-03	Bag House Transition - Vertical	SVOC	No SVOC detected	ND	
EXB-03	Bag House Transition - Vertical	PCB	No PCBs detected	ND	
EXB-03	Bag House Transition - Vertical	Total Metals	Barium	1.1	
EXB-03	Bag House Transition - Vertical	Total Metals	Chromium	8.3	
EXB-03	Bag House Transition - Vertical	VOC	2-Butanone (MEK)	4.1	
EXB-03	Bag House Transition - Vertical	VOC	Acetone	6.1	
EXB-03	Bag House Transition - Vertical	VOC	Bromomethane	2.8	
EXB-03	Bag House Transition - Vertical	VOC	Methylene chloride	130	
EXB-04	Bag House Transition - Vertical	Dioxin/Furan	Total TEQ [b]	8.5	S
EXB-04	Bag House Transition - Vertical	SVOC	No SVOC detected	ND	
EXB-04	Bag House Transition - Vertical	PCB	No PCBs detected	ND	
EXB-04	Bag House Transition - Vertical	Total Metals	Barium	1.1	
EXB-04	Bag House Transition - Vertical	Total Metals	Chromium	8.5	
EXB-04	Bag House Transition - Vertical	VOC	2-Butanone (MEK)	3.6	
EXB-04	Bag House Transition - Vertical	VOC	Methylene chloride	47	
EXB-05	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	23.6	SJ
EXB-05	Bag House Transition - Horizontal	Dioxin/Furan	Total TEQ [b]	8.4	S
EXB-05	Bag House Transition - Horizontal	SVOC	No SVOC detected	ND	
EXB-05	Bag House Transition - Horizontal	PCB	No PCBs detected	ND	
EXB-05	Bag House Transition - Horizontal	Total Metals	Barium	3.4	
EXB-05	Bag House Transition - Horizontal	Total Metals	Chromium	6.7	
EXB-05	Bag House Transition - Horizontal	Total Metals	Lead	4.1	
EXB-05	Bag House Transition - Horizontal	VOC	2-Butanone (MEK)	4.3	
EXB-05	Bag House Transition - Horizontal	VOC	Acetone	50	
EXB-05	Bag House Transition - Horizontal	VOC	Bromomethane	2.7	
EXB-05	Bag House Transition - Horizontal	VOC	Methylene chloride	100	
EXB-05	Bag House Transition - Horizontal	VOC	o-Xylene	0.7	
EXB-05	Bag House Transition - Horizontal	VOC	p/m-Xylenes	1.3	
EXB-06	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	17.4	SJ
EXB-06	Bag House Transition - Horizontal	Dioxin/Furan	Total TEQ [b]	5.3	S
EXB-06	Bag House Transition - Horizontal	SVOC	No SVOC detected	ND	
EXB-06	Bag House Transition - Horizontal	PCB	No PCBs detected	ND	
EXB-06	Bag House Transition - Horizontal	Total Metals	Barium	2.7	
EXB-06	Bag House Transition - Horizontal	Total Metals	Chromium	4.4	
EXB-06	Bag House Transition - Horizontal	Total Metals	Lead	3.5	
EXB-06	Bag House Transition - Horizontal	VOC	2-Butanone (MEK)	4.1	
EXB-06	Bag House Transition - Horizontal	VOC	Acetone	7.4	
EXB-06	Bag House Transition - Horizontal	VOC	Bromomethane	2.5	
EXB-06	Bag House Transition - Horizontal	VOC	Methylene chloride	41	
EXB-06	Bag House Transition - Horizontal	VOC	o-Xylene	1.2	
EXB-06	Bag House Transition - Horizontal	VOC	p/m-Xylenes	2.1	
EXB-07	Baseline - Inside	Dioxin/Furan	Total TEQ [b]	8.4	S
EXB-07	Baseline - Inside	SVOC	No SVOC detected	ND	
EXB-07	Baseline - Inside	PCB	No PCBs detected	ND	
EXB-07	Baseline - Inside	Total Metals	Barium	0.6	
EXB-07	Baseline - Inside	Total Metals	Chromium	1.2	
EXB-07	Baseline - Inside	VOC	Acetone	12	
EXB-07	Baseline - Inside	VOC	Bromomethane	2.8	
EXB-07	Baseline - Inside	VOC	Chloromethane	1.4	
EXB-07	Baseline - Inside	VOC	Methylene chloride	1800	
EXB-08	Baseline - Outside	Dioxin/Furan	Total TEQ [b]	6.9	S
EXB-08	Baseline - Outside	SVOC	No SVOC detected	ND	
EXB-08	Baseline - Outside	PCB	No PCBs detected	ND	
EXB-08	Baseline - Outside	Total Metals	Chromium	1.2	
EXB-08	Baseline - Outside	VOC	Acetone	24	
EXB-08	Baseline - Outside	VOC	Chloromethane	0.8	
EXB-08	Baseline - Outside	VOC	Methylene chloride	690	
EXB-09	Field Blank	VOC	2-Butanone (MEK)	4.4	
EXB-09	Field Blank	VOC	Methylene chloride	37	
EXB-09	Field Blank	VOC	o-Xylene	0.7	
EXB-09	Field Blank	VOC	p/m-Xylenes	1.2	
EXB-10	Trip Blank	VOC	1,1-Dichloroethane	20	2
EXB-10	Trip Blank	VOC	2-Butanone (MEK)	4.1	2
EXB-10	Trip Blank	VOC	Bromochloromethane	80	2
EXB-10	Trip Blank	VOC	Chloroform	2	2
EXB-10	Trip Blank	VOC	Chloromethane	20000	2
EXB-10	Trip Blank	VOC	Methylene chloride	1000000	2
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	42.6	SJ
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDF	10.5	SJ
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8-HpCDD	11.5	SJ
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8-HpCDF	3	SJ
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	Total HpCDD	18.1	S
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	Total HpCDF	7.1	S
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	Total TEQ [b]	5.1	S
EXB-11	Bag House Transition - Horizontal	SVOC	No SVOC detected	ND	
EXB-11	Bag House Transition - Horizontal	PCB	No PCBs detected	ND	
EXB-11	Bag House Transition - Horizontal	Total Metals	Barium	3.9	
EXB-11	Bag House Transition - Horizontal	Total Metals	Chromium	6.4	
EXB-11	Bag House Transition - Horizontal	Total Metals	Lead	5.8	
EXB-11	Bag House Transition - Horizontal	VOC	2-Butanone (MEK)	4	
EXB-11	Bag House Transition - Horizontal	VOC	Acetone	9.2	
EXB-11	Bag House Transition - Horizontal	VOC	Chloromethane	6.4	
EXB-11	Bag House Transition - Horizontal	VOC	Methylene chloride	190	
EXB-11	Bag House Transition - Horizontal	VOC	o-Xylene	1.4	
EXB-11	Bag House Transition - Horizontal	VOC	p/m-Xylenes	2.2	

a. Analytical results for dioxin/furan are reported in units of picograms per 100 square centimeters.
b. Total toxicity equivalence (TEQ) is a calculated value based on methods provided in U.S. Environmental Protection Agency guidance (EPA, 1989b).

Definition of Qualifiers
S = Subcontracted (Eno River Labs, LLC).
J = Estimated value - below calibration range.
1 = This value is an estimated maximum possible concentration.
2 = Sample swipe received at Assaigai Labs preserved with methylene chloride.

Definition of Acronyms
µg/100 cm² = micrograms per 100 square centimeters.
MEK = methyl ethyl ketone
ND = not detected.
PCB = polychlorinated biphenyl.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.
OCDD = octachlorodibenzo-p-dioxin.
OCDF = octachlorodibenzofuran.
HpCDD = heptachlorodibenzo-p-dioxin.
HpCDF = heptachlorodibenzofuran.
TEQ = toxicity equivalence.

Table 2-7
Sample Event #2, April 2004 - Comparison to Baseline and Quality Assurance/Quality Control Results

Sample No.	Location	Analyte	Result [a] ($\mu g/100\ cm^2$)	Qualifier	Comparison Results
EXB-10	Trip Blank	1,1 Dichloroethene	20	2	NA
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	42.6	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-03	Bag House Transition - Vertical	1,2,3,4,6,7,8,9-OCDD	38.1	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8,9-OCDD	27.6	SJ1	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-02	Room 112 HEPA Bank - Right elbow	1,2,3,4,6,7,8,9-OCDD	24.6	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	23.6	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-06	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	17.4	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8-HpCDD	15.2	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8-HpCDD	11.5	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-02	Room 112 HEPA Bank - Right elbow	1,2,3,4,6,7,8-HpCDD	8.6	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8-HpCDF	5	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8-HpCDF	3	SJ	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,4-Trimethylbenzene	0.6		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-09	Field Blank	2-Butanone (MEK)	4.4		NA
EXB-05	Bag House Transition - Horizontal	2-Butanone (MEK)	4.3		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-03	Bag House Transition - Vertical	2-Butanone (MEK)	4.1		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-06	Bag House Transition - Horizontal	2-Butanone (MEK)	4.1		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-10	Trip Blank	2-Butanone (MEK)	4.1	2	NA
EXB-11	Bag House Transition - Horizontal	2-Butanone (MEK)	4		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-01	Room 112 HEPA Bank - Right transition	2-Butanone (MEK)	3.9		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-04	Bag House Transition - Vertical	2-Butanone (MEK)	3.6		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-02	Room 112 HEPA Bank - Right elbow	2-Butanone (MEK)	3.5		The detected levels are equal to or less than the detected level in the Field Blank.
EXB-02	Room 112 HEPA Bank - Right elbow	Acetone	70		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	Acetone	50		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	Acetone	24		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-08	Baseline - Outside	Acetone	24		NA
EXB-07	Baseline - Inside	Acetone	12		NA
EXB-11	Bag House Transition - Horizontal	Acetone	9.2		The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-06	Bag House Transition - Horizontal	Acetone	7.4		The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-03	Bag House Transition - Vertical	Acetone	6.1		The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-01	Room 112 HEPA Bank - Right transition	Barium	6.3		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	Barium	3.9		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	Barium	3.4		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-06	Bag House Transition - Horizontal	Barium	2.7		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-02	Room 112 HEPA Bank - Right elbow	Barium	2.2		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-03	Bag House Transition - Vertical	Barium	1.1		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-04	Bag House Transition - Vertical	Barium	1.1		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-07	Baseline - Inside	Barium	0.6		NA
EXB-10	Trip Blank	Bromochloromethane	80	2	NA
EXB-01	Room 112 HEPA Bank - Right transition	Bromomethane	6.2		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-02	Room 112 HEPA Bank - Right elbow	Bromomethane	4.4		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-03	Bag House Transition - Vertical	Bromomethane	2.8		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-07	Baseline - Inside	Bromomethane	2.8		NA
EXB-05	Bag House Transition - Horizontal	Bromomethane	2.7		The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-06	Bag House Transition - Horizontal	Bromomethane	2.5		The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-01	Room 112 HEPA Bank - Right transition	Cadmium	0.27		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-10	Trip Blank	Chloroform	2	2	NA
EXB-10	Trip Blank	Chloromethane	20,000	2	NA
EXB-11	Bag House Transition - Horizontal	Chloromethane	6.4		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-07	Baseline - Inside	Chloromethane	1.4		NA
EXB-01	Room 112 HEPA Bank - Right transition	Chloromethane	0.8		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-08	Baseline - Outside	Chloromethane	0.8		NA
EXB-01	Room 112 HEPA Bank - Right transition	Chromium	67.6		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-02	Room 112 HEPA Bank - Right elbow	Chromium	8.9		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-04	Bag House Transition - Vertical	Chromium	8.5		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-03	Bag House Transition - Vertical	Chromium	8.3		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	Chromium	6.7		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	Chromium	6.4		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-06	Bag House Transition - Horizontal	Chromium	4.4		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-07	Baseline - Inside	Chromium	1.2		NA
EXB-08	Baseline - Outside	Chromium	1.2		NA
EXB-11	Bag House Transition - Horizontal	Lead	5.8		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	Lead	4.1		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-06	Bag House Transition - Horizontal	Lead	3.5		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	Lead	2.2		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-10	Trip Blank	Methylene chloride	1,000,000	2	NA
EXB-07	Baseline - Inside	Methylene chloride	1,800		NA
EXB-08	Baseline - Outside	Methylene chloride	690		NA
EXB-11	Bag House Transition - Horizontal	Methylene chloride	190		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-03	Bag House Transition - Vertical	Methylene chloride	120		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-02	Room 112 HEPA Bank - Right elbow	Methylene chloride	110		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-05	Bag House Transition - Horizontal	Methylene chloride	100		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-01	Room 112 HEPA Bank - Right transition	Methylene chloride	62		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-04	Bag House Transition - Vertical	Methylene chloride	47		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-06	Bag House Transition - Horizontal	Methylene chloride	41		The detected levels are equal to or less than the detected level in the Trip Blank.
EXB-09	Field Blank	Methylene chloride	37		NA
EXB-11	Bag House Transition - Horizontal	o-Xylene	1.4		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-06	Bag House Transition - Horizontal	o-Xylene	1.2		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	o-Xylene	0.7		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-09	Field Blank	o-Xylene	0.7		NA
EXB-11	Bag House Transition - Horizontal	p/m-Xylenes	2.2		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-06	Bag House Transition - Horizontal	p/m-Xylenes	2.1		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	p/m-Xylenes	1.3		The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-09	Field Blank	p/m-Xylenes	1.2		NA
EXB-01	Room 112 HEPA Bank - Right transition	Total HpCDD	23.9	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	Total HpCDD	18.1	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-02	Room 112 HEPA Bank - Right elbow	Total HpCDD	16.5	S1	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-11	Bag House Transition - Horizontal	Total HpCDF	7.1	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-01	Room 112 HEPA Bank - Right transition	Total HpCDF	5	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-03	Bag House Transition - Vertical	Total TEQ [b]	8.7	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-04	Bag House Transition - Vertical	Total TEQ [b]	8.5	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-05	Bag House Transition - Horizontal	Total TEQ [b]	8.4	S	The detected level cannot be ruled out due to a detected level in a baseline or QA/QC sample. This sample location must be forwarded to risk assessment.
EXB-07	Baseline - Inside	Total TEQ [b]	8.4	S	NA
EXB-01	Room 112 HEPA Bank - Right transition	Total TEQ [b]	7.5	S	The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-08	Baseline - Outside	Total TEQ [b]	6.9	S	NA
EXB-02	Room 112 HEPA Bank - Right elbow	Total TEQ [b]	5.8	S	The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-06	Bag House Transition - Horizontal	Total TEQ [b]	5.3	S	The detected levels are equal to or less than the detected level in the Baseline Samples.
EXB-11	Bag House Transition - Horizontal	Total TEQ [b]	5.1	S	The detected levels are equal to or less than the detected level in the Baseline Samples.

a. Analytical results for dioxin/furan are reported in units of picograms per 100 square centimeters.
b. Total toxicity equivalence (TEQ) is a calculated value based on methods provided in U.S. Environmental Protection Agency (EPA) guidance (EPA, 1989b).

Definition of Qualifiers
S = Subcontracted (Eno River Labs, LLC).
J = Estimated value - below calibration range.
1 = This value is an estimated maximum possible concentration.
2 = Sample swipe received at Assaigai Labs preserved with methylene chloride.

Definition of Acronyms
$\mu g/100\ cm^2$ = micrograms per 100 square centimeters.
MEK = methyl ethyl ketone.
NA = not applicable.
ND = not detected.
PCB = polychlorinated biphenyl.
QA/QC = quality assurance/quality control.
SVOC = semivolatile organic compounds.
VOC = volatile organic compounds.
OCDD = octachlorodibenzo-p-dioxin.
OCDF = octachlorodibenzofuran.
HpCDD = heptachlorodibenzo-p-dioxin.
HpCDF = heptachlorodibenzofuran.
TEQ = toxicity equivalence.

Table 3-1
Sample Event #1, September 2003 - Swipe Sample Results Forwarded to Risk Assessment

Sample No.	Location	Analyte [a]	Result (µg/100 cm^2)	Qualifier
E-01	Room 112 Valve	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	190	M
		5-Cholestene-3-ol, 24-methyl- [a]	240	M
		Barium	1.9	B
		Beta-sitosterol [a]	2,100	M
		bis(2-Ethylhexyl) phthalate	59	JB
		Chromium	1.4	
		Tetrachloroethene	1.0	J
		Toluene	0.91	J
E-02	Room 112 Instrumentation Port	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	350	M
		2-Mercaptobenzothiazole [a]	110	M
		Barium	0.65	B
		Beta-sitosterol [a]	2,300	M
		bis(2-Ethylhexyl) phthalate	38	JB
		Tetrachloroethene	1.4	J
E-03	Room 112 HEPA Bank - Left Straight Pipe	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	580	M
		Acetone	4,200	E
		Barium	0.64	B
		Beta-sitosterol [a]	1,800	M
		bis(2-Ethylhexyl) phthalate	130	B
		Chromium	1.2	
		Methylene Chloride	3,100	E
		Tetrachloroethene	0.99	J
		Toluene	0.88	J
E-04	Room 112 HEPA Bank - Left Transition	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	700	M
		9-Octadecenamide, (z)- [a]	600	M
		Barium	0.73	B
		Beta-sitosterol [a]	2,400	M
		bis(2-Ethylhexyl) phthalate	120	B
		Cyclopentane, methyl- [a]	8.2	M
		Di-n-octyl phthalate	240	
		Methylene Chloride	2,400	E
		Toluene	0.90	J
E-07	Bag House Transition - Horizontal	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	340	M
		2-Mercaptobenzothiazole [a]	160	M
		4-Methyl-2-pentanone	8.7	J
		Barium	0.95	B
		Beta-sitosterol [a]	2,200	M
		bis(2-Ethylhexyl) phthalate	390	B
		Chloroform	0.26	J
		Chromium	0.60	B
		Di-n-octyl phthalate	66	J
		Ethyl benzene	4.5	J
		Mercury	0.034	
		Methylene Chloride	2,000	E
E-07	Bag House Transition - Horizontal	Propylene glycol [a]	200	M
		Tetrachloroethene	1.8	J
		Toluene	1.6	J
		Xylenes (total)	39	
E-08	Bag House - Vertical	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	630	M
		2-Mercaptobenzothiazole [a]	220	M
		4-Cyanocyclohexene [a]	340	M
		4-Methyl-2-pentanone	4.2	J
		Barium	0.79	B
		bis(2-Ethylhexyl) phthalate	250	B
		Chloroform	0.33	J
		Chromium	3.2	
		Di-n-octyl phthalate	68	J
		Ethyl benzene	1.8	J
		Mercury	0.087	
		Methylene Chloride	2,000	E
		Toluene	1.1	J
		Xylenes (total)	13	

a. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.

Definition of Qualifiers
B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.

Definition of Acronyms
µg/100 cm^2 = micrograms per 100 square centimeters.
HEPA = high efficiency particulate air.

Table 3-2
Sample Event #2, April 2004 - Swipe Sample Results Forwarded to Risk Assessment

Sample No.	Location	Analyte	Result [a] (µg/100 cm^2)	Qualifier
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8,9-OCDD	27.6	SJ1
		1,2,3,4,6,7,8-HpCDD	15.2	SJ
		1,2,3,4,6,7,8-HpCDF	5	SJ
		1,2,4-Trimethylbenzene	0.6	
		Acetone	24	
		Barium	6.3	
		Bromomethane	6.2	
		Cadmium	0.27	
		Chromium	67.6	
		Lead	2.2	
		Total HpCDD	23.9	S
		Total HpCDF	5	S
EXB-02	Room 112 HEPA Bank - Right elbow	1,2,3,4,6,7,8,9-OCDD	24.6	SJ
		1,2,3,4,6,7,8-HpCDD	8.6	SJ
		Acetone	70	
		Barium	2.2	
		Bromomethane	4.4	
		Chromium	8.9	
		Total HpCDD	16.5	S1
EXB-03	Bag House Transition - Vertical	1,2,3,4,6,7,8,9-OCDD	38.1	SJ
		Barium	1.1	
		Bromomethane	2.8	
		Chromium	8.3	
		Total TEQ [b]	8.7	S
EXB-04	Bag House Transition - Vertical	Barium	1.1	
		Chromium	8.5	
		Total TEQ [b]	8.5	S
EXB-05	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	23.6	SJ
		Acetone	50	
		Barium	3.4	
		Chromium	6.7	
		Lead	4.1	
		o-Xylene	0.7	
		p/m-Xylenes	1.3	
		Total TEQ [b]	8.4	S
EXB-06	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	17.4	SJ
		Barium	2.7	
		Chromium	4.4	
		Lead	3.5	
		o-Xylene	1.2	
		p/m-Xylenes	2.1	
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	42.6	SJ
		1,2,3,4,6,7,8,9-OCDF	10.5	SJ
		1,2,3,4,6,7,8-HpCDD	11.5	SJ
		1,2,3,4,6,7,8-HpCDF	3	SJ
EXB-11	Bag House Transition - Horizontal	Barium	3.9	
		Chromium	6.4	
		Lead	5.8	
		o-Xylene	1.4	
		p/m-Xylenes	2.2	
		Total HpCDD	18.1	S
		Total HpCDF	7.1	S

a. Analytical results for dioxin/furan are reported in units of picograms per 100 square centimeters.
b. Total toxicity equivalence (TEQ) is a calculated value based on methods provided in U.S. Environmental Protection Agency (EPA) guidance (EPA, 1989b).

Definition of Qualifiers
S = Subcontracted (Eno River Labs, LLC).
J = Estimated value - below calibration range.
1 = This value is an estimated maximum possible concentration.

Definition of Acronyms
µg/100 cm^2 = micrograms per 100 square centimeters.
HEPA = high efficiency particulate air.
HpCDD = heptachlorodibenzo-p-dioxin.
HpCDF = heptachlorodibenzofuran.
OCDD = octachlorodibenzo-p-dioxin.
OCDF = octachlorodibenzofuran.
TEQ = toxicity equivalence.

Table 4-1
Demonstration of Closure by Criteria

Sample No	Location	Analyte	Result[a] (µg/100 cm^2)	Qualifier	Comparison Results
E-01	Room 112 Valve	1, 4 - Benzenediol, 2,5-bis(1,	190	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	5-Cholestene-3-ol, 24-methyl	240	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	Acetone	570	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-01	Room 112 Valve	Barium	1.9	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	Beta-sitosterol[a]	2,100	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	bis(2-Ethylhexyl) phthalate	59	JB	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	Cholesterol[a]	140	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-01	Room 112 Valve	Chromium	1.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	Hexane[a]	28	Q	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-01	Room 112 Valve	Methylene Chloride	1,100	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-01	Room 112 Valve	Tetrachloroethene	1.0	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-01	Room 112 Valve	Toluene	0.91	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	1, 4 - Benzenediol, 2,5-bis(1,	350	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	2-Mercaptobenzothiazole[a]	110	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	5-Cholestene-3-ol, 24-methyl	140	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-02	Room 112 Instrumentation Port	Acetone	1,100	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-02	Room 112 Instrumentation Port	Barium	0.65	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	Beta-sitosterol[a]	2,300	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	bis(2-Ethylhexyl) phthalate	38	JB	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	Hexane[a]	54	Q	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-02	Room 112 Instrumentation Port	Methylene Chloride	1,800	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-02	Room 112 Instrumentation Port	Tetrachloroethene	1.4	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-02	Room 112 Instrumentation Port	Toluene	0.62	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-03	Room 112 HEPA Bank - Left Straight Pipe	1, 4 - Benzenediol, 2,5-bis(1,	580	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Acetone	4,200	E	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Barium	0.64	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Beta-sitosterol[a]	1,800	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	bis(2-Ethylhexyl) phthalate	130	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Chromium	1.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank Left Straight Pipe	Hexane[a]	140	Q	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Methylene Chloride	2,100	E	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Tetrachloroethene	0.99	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-03	Room 112 HEPA Bank - Left Straight Pipe	Toluene	0.88	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank - Left Transition	1, 4 - Benzenediol, 2,5-bis(1,	700	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank - Left Transition	9-Octadecenamide, (z)-[a]	600	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank Left Transition	Acetone	2,200	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-04	Room 112 HEPA Bank - Left Transition	Barium	0.73	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank - Left Transition	Beta-sitosterol[a]	2,400	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank - Left Transition	bis(2-Ethylhexyl) phthalate	120	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank - Left Transition	Cyclopentane, methyl[a]	8.2	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank - Left Transition	Di-n-octyl phthalate	240		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank Left Transition	Hexane[a]	300	Q	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-04	Room 112 HEPA Bank - Left Transition	Methylene Chloride	2,400	E	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-04	Room 112 HEPA Bank Left Transition	Tetrachloroethene	0.68	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-04	Room 112 HEPA Bank - Left Transition	Toluene	0.90	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	1, 4 - Benzenediol, 2,5-bis(1,	340	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	2-Mercaptobenzothiazole[a]	160	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	4-Methyl-2-pentanone	8.7	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Acetone	1,500	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-07	Bag House Transition - Horizontal	Barium	0.95	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Beta-sitosterol[a]	2,200	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	bis(2-Ethylhexyl) phthalate	390	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Chloroform	0.26	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Chromium	0.60	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Di-n-octyl phthalate	66	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Ethyl benzene	4.5	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Hexane[a]	39	Q	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-07	Bag House Transition - Horizontal	Mercury	0.024		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Methylene Chloride	2,000	E	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Propylene glycol[a]	200	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Tetrachloroethene	1.8	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Toluene	1.6	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-07	Bag House Transition - Horizontal	Xylenes (total)	39		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	1, 4 - Benzenediol, 2,5-bis(1,	630	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	2-Mercaptobenzothiazole[a]	220	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	4-Cyanocyclohexane[a]	340	M	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	4-Methyl-2-pentanone	4.2	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	5-Cholestene-3-ol, 24-methyl	220	M	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-08	Bag House - Vertical	Acetone	1,100	E	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-08	Bag House - Vertical	Barium	0.79	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	bis(2-Ethylhexyl) phthalate	250	B	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Chloroform	0.33	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Chromium	3.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Di-n-octyl phthalate	68	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Table 4-1
Demonstration of Closure by Criteria

Sample No	Location	Analyte	Result[a] (µg/100 cm²)	Qualifier	Comparison Results
E-08	Bag House - Vertical	Ethyl benzene	1.8	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Hexane[b]	12	Q	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-08	Bag House - Vertical	Mercury	0.087		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Methylene Chloride	2,000	E	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Tetrachloroethene	0.86	J	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
E-08	Bag House - Vertical	Toluene	1.1	J	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
E-08	Bag House - Vertical	Xylenes (total)	13		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8,9-OCDD	27.6	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8-HpCDD	15.2	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,3,4,6,7,8-HpCDF	5	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	1,2,4-Trimethylbenzene	0.6		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	2-Butanone (MEK)	3.9		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-01	Room 112 HEPA Bank - Right transition	Acetone	24		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Barium	6.3		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Bromomethane	6.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Cadmium	0.27		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Chloromethane	0.8		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-01	Room 112 HEPA Bank - Right transition	Chromium	67.6		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Lead	2.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Methylene chloride	62		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-01	Room 112 HEPA Bank - Right transition	Total HpCDD	23.9	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Total HpCDF	5	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-01	Room 112 HEPA Bank - Right transition	Total TEQ[c]	7.5	S	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-02	Room 112 HEPA Bank - Right elbow	1,2,3,4,6,7,8,9-OCDD	24.6	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	1,2,3,4,6,7,8-HpCDD	8.6	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	2-Butanone (MEK)	3.5		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-02	Room 112 HEPA Bank - Right elbow	Acetone	70		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	Barium	2.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	Bromomethane	4.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	Chromium	8.9		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	Methylene chloride	110		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-02	Room 112 HEPA Bank - Right elbow	Total HpCDD	16.5	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-02	Room 112 HEPA Bank - Right elbow	Total TEQ[c]	5.8	S	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-03	Bag House Transition - Vertical	1,2,3,4,6,7,8,9-OCDD	38.1	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-03	Bag House Transition - Vertical	2-Butanone (MEK)	4.1		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-03	Bag House Transition - Vertical	Acetone	6.1		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-03	Bag House Transition - Vertical	Barium	1.1		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-03	Bag House Transition - Vertical	Bromomethane	2.8		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-03	Bag House Transition - Vertical	Chromium	8.3		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-03	Bag House Transition - Vertical	Methylene chloride	120		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-03	Bag House Transition - Vertical	Total TEQ[c]	8.7	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-04	Bag House Transition - Vertical	2-Butanone (MEK)	3.6		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-04	Bag House Transition - Vertical	Barium	1.1		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-04	Bag House Transition - Vertical	Chromium	8.5		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-04	Bag House Transition - Vertical	Methylene chloride	47		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-04	Bag House Transition - Vertical	Total TEQ[c]	8.5	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	23.6	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	2-Butanone (MEK)	4.3		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-05	Bag House Transition - Horizontal	Acetone	50		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	Barium	3.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	Bromomethane	2.7		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-05	Bag House Transition - Horizontal	Chromium	6.7		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	Lead	4.1		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	Methylene chloride	100		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-05	Bag House Transition - Horizontal	o-Xylene	0.7		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	p/m-Xylenes	1.3		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-05	Bag House Transition - Horizontal	Total TEQ[c]	8.4	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	17.4	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	2-Butanone (MEK)	4.1		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-06	Bag House Transition - Horizontal	Acetone	7.4		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-06	Bag House Transition - Horizontal	Barium	2.7		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	Bromomethane	2.5		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-06	Bag House Transition - Horizontal	Chromium	4.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	Lead	3.5		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	Methylene chloride	41		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-06	Bag House Transition - Horizontal	o-Xylene	1.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	p/m-Xylenes	2.1		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-06	Bag House Transition - Horizontal	Total TEQ[c]	5.3	S	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDD	42.6	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8-HpCDD	11.5	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	1,2,3,4,6,7,8-HpCDF	3	SJ	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	2-Butanone (MEK)	4		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-11	Bag House Transition - Horizontal	Acetone	9.2		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-11	Bag House Transition - Horizontal	Barium	3.9		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	Chloromethane	6.4		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-11	Bag House Transition - Horizontal	Chromium	6.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.

Table 4-1
Demonstration of Closure by Criteria

Sample No	Location	Analyte	Result[a] (µg/100 cm²)	Qualifier	Comparison Results
EXB-11	Bag House Transition - Horizontal	Lead	5.8		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	Methylene chloride	190		Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.
EXB-11	Bag House Transition - Horizontal	o-Xylene	1.4		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	p/m-Xylenes	2.2		Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	Total HpCDD	18.1	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	Total HpCDF	7.1	S	Criterion #4: Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels as described above will be allowed to remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED.
EXB-11	Bag House Transition - Horizontal	Total TEQ[c]	5.1	S	Criterion #2: Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline or QA/QC data.

a. Analytical results for dioxin/furan are reported in units of picograms per 100 square centimeters.
b. This chemical is a tentatively identified compound (TIC), which is an additional chemical detected that is not on the target compound list. TICs are identified as "peaks" on chromatograms, both the identity and concentration of which are highly uncertain.
c. Total toxicity equivalence (TEQ) is a calculated value based on methods provided in U.S. Environmental Protection Agency (EPA) guidance (EPA, 1989b).

Definition of Qualifiers

B (inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.
S = Subcontracted (Eno River Labs, LLC).
J = Estimated value - below calibration range.
1 = This value is an estimated maximum possible concentration.

Definition of Acronyms

µg/100 cm² = micrograms per 100 square centimeters.
HEPA = high efficiency particulate air.
HpCDD = heptachlorodibenzo-p-dioxin.
HpCDF = heptachlorodibenzofuran.
MEK = methyl ethyl ketone.
NMED = New Mexico Environment Department.
OCDD = octachlorodibenzo-p-dioxin.
OCDF = octachlorodibenzofuran.
QA/QC = quality assurance/quality control.
RCRA = Resource Conservation and Recovery Act.
TEQ = toxicity equivalence.

MASTER - ROUND 1 SWIPE SAMPLE RESULTS

Sample No.	Location	Requested Analysis	Analyte	Result (µg/100 cm²)	Qualifier	Dil Factor
E-01	Room 112 Valve	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	190	M	1
E-01	Room 112 Valve	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	240	M	1
E-01	Room 112 Valve	SVOC	Beta-sitosterol [a]	2,100	M	1
E-01	Room 112 Valve	SVOC	bis(2-Ethylhexyl) phthalate	59	JB	1
E-01	Room 112 Valve	SVOC	Cholesterol [a]	140	M	1
E-01	Room 112 Valve	PCB	*No PCBs detected*	ND		
E-01	Room 112 Valve	Total Metals	Barium	1.9	B	1
E-01	Room 112 Valve	Total Metals	Chromium	1.4		1
E-01	Room 112 Valve	VOC	Acetone	570	E	1
E-01	Room 112 Valve	VOC	Hexane [a]	28	Q	1
E-01	Room 112 Valve	VOC	Methylene Chloride	1,100	E	1
E-01	Room 112 Valve	VOC	Tetrachloroethene	1.0	J	1
E-01	Room 112 Valve	VOC	Toluene	0.91	J	1
E-02	Room 112 Instrumentation Port	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	350	M	1
E-02	Room 112 Instrumentation Port	SVOC	2-Mercaptobenzothiazole [a]	110	M	1
E-02	Room 112 Instrumentation Port	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	140	M	1
E-02	Room 112 Instrumentation Port	SVOC	Beta-sitosterol [a]	2,300	M	1
E-02	Room 112 Instrumentation Port	SVOC	bis(2-Ethylhexyl) phthalate	38	JB	1
E-02	Room 112 Instrumentation Port	PCB	*No PCBs detected*	ND		
E-02	Room 112 Instrumentation Port	Total Metals	Barium	0.65	B	1
E-02	Room 112 Instrumentation Port	VOC	Acetone	1,100	E	1
E-02	Room 112 Instrumentation Port	VOC	Hexane [a]	54	Q	1
E-02	Room 112 Instrumentation Port	VOC	Methylene Chloride	1,800	E	1
E-02	Room 112 Instrumentation Port	VOC	Tetrachloroethene	1.4	J	1
E-02	Room 112 Instrumentation Port	VOC	Toluene	0.62	J	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	580	M	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	SVOC	Beta-sitosterol [a]	1,800	M	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	SVOC	bis(2-Ethylhexyl) phthalate	130	B	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	PCB	*No PCBs detected*	ND		
E-03	Room 112 HEPA Bank - Left Straight Pipe	Total Metals	Barium	0.64	B	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	Total Metals	Chromium	1.2		1
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Acetone	4,200	E	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Hexane [a]	140	Q	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Methylene Chloride	3,100	E	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Tetrachloroethene	0.99	J	1
E-03	Room 112 HEPA Bank - Left Straight Pipe	VOC	Toluene	0.88	J	1
E-04	Room 112 HEPA Bank - Left Transition	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	700	M	1
E-04	Room 112 HEPA Bank - Left Transition	SVOC	9-Octadecenamide, (z)- [a]	600	M	1
E-04	Room 112 HEPA Bank - Left Transition	SVOC	Beta-sitosterol [a]	2,400	M	1
E-04	Room 112 HEPA Bank - Left Transition	SVOC	bis(2-Ethylhexyl) phthalate	120	B	1
E-04	Room 112 HEPA Bank - Left Transition	SVOC	Di-n-octyl phthalate	240		1
E-04	Room 112 HEPA Bank - Left Transition	PCB	*No PCBs detected*	ND		
E-04	Room 112 HEPA Bank - Left Transition	Total Metals	Barium	0.73	B	1
E-04	Room 112 HEPA Bank - Left Transition	VOC	Acetone	2,200	E	1
E-04	Room 112 HEPA Bank - Left Transition	VOC	Cyclopentane, methyl- [a]	8.2	M	1
E-04	Room 112 HEPA Bank - Left Transition	VOC	Hexane [a]	300	Q	1
E-04	Room 112 HEPA Bank - Left Transition	VOC	Methylene Chloride	2,400	E	1
E-04	Room 112 HEPA Bank - Left Transition	VOC	Tetrachloroethene	0.68	J	1
E-04	Room 112 HEPA Bank - Left Transition	VOC	Toluene	0.90	J	1
E-05	Room 112 HEPA Bank - Right Elbow	NA	NOT COLLECTED	NA		1
E-06	Room 112 HEPA Bank - Right Transition	NA	NOT COLLECTED	NA		1
E-07	Bag House Transition - Horizontal	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	340	M	1
E-07	Bag House Transition - Horizontal	SVOC	2-Mercaptobenzothiazole [a]	160	M	1
E-07	Bag House Transition - Horizontal	SVOC	Beta-sitosterol [a]	2,200	M	1
E-07	Bag House Transition - Horizontal	SVOC	bis(2-Ethylhexyl) phthalate	390	B	1
E-07	Bag House Transition - Horizontal	SVOC	Di-n-octyl phthalate	66	J	1
E-07	Bag House Transition - Horizontal	SVOC	Propylene glycol [a]	200	M	1
E-07	Bag House Transition - Horizontal	PCB	*No PCBs detected*	ND		
E-07	Bag House Transition - Horizontal	Total Metals	Barium	0.95	B	1
E-07	Bag House Transition - Horizontal	Total Metals	Chromium	0.60	B	1
E-07	Bag House Transition - Horizontal	Total Metals	Mercury	0.034		1
E-07	Bag House Transition - Horizontal	VOC	4-Methyl-2-pentanone	8.7	J	1
E-07	Bag House Transition - Horizontal	VOC	Acetone	1,500	E	1
E-07	Bag House Transition - Horizontal	VOC	Chloroform	0.26	J	1
E-07	Bag House Transition - Horizontal	VOC	Ethylbenzene	4.5	J	1
E-07	Bag House Transition - Horizontal	VOC	Hexane [a]	39	Q	1
E-07	Bag House Transition - Horizontal	VOC	Methylene Chloride	2,000	E	1
E-07	Bag House Transition - Horizontal	VOC	Tetrachloroethene	1.8	J	1
E-07	Bag House Transition - Horizontal	VOC	Toluene	1.6	J	1
E-07	Bag House Transition - Horizontal	VOC	Xylenes (total)	39		1
E-08	Bag House - Vertical	SVOC	1, 4 - Benzenediol, 2,5-bis(1,1-d [a]	630	M	1
E-08	Bag House - Vertical	SVOC	2-Mercaptobenzothiazole [a]	220	M	1
E-08	Bag House - Vertical	SVOC	4-Cyanocyclohexene [a]	340	M	1
E-08	Bag House - Vertical	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	220	M	1
E-08	Bag House - Vertical	SVOC	bis(2-Ethylhexyl) phthalate	250	B	1
E-08	Bag House - Vertical	SVOC	Di-n-octyl phthalate	68	J	1
E-08	Bag House - Vertical	PCB	*No PCBs detected*	ND		
E-08	Bag House - Vertical	Total Metals	Barium	0.79	B	1
E-08	Bag House - Vertical	Total Metals	Chromium	3.2		1
E-08	Bag House - Vertical	Total Metals	Mercury	0.087		1
E-08	Bag House - Vertical	VOC	4-Methyl-2-pentanone	4.2	J	1
E-08	Bag House - Vertical	VOC	Acetone	1,100	E	1
E-08	Bag House - Vertical	VOC	Chloroform	0.33	J	1
E-08	Bag House - Vertical	VOC	Ethylbenzene	1.8	J	1
E-08	Bag House - Vertical	VOC	Hexane [a]	12	Q	1
E-08	Bag House - Vertical	VOC	Methylene Chloride	2,000	E	1
E-08	Bag House - Vertical	VOC	Tetrachloroethene	0.86	J	1
E-08	Bag House - Vertical	VOC	Toluene	1.1	J	1
E-08	Bag House - Vertical	VOC	Xylenes (total)	13		1
E-09	Baseline #1	SVOC	5-Cholestene-3-ol, 24-methyl- [a]	230	M	1
E-09	Baseline #1	SVOC	bis(2-Ethylhexyl) phthalate	23	JB	1
E-09	Baseline #1	SVOC	Cholesterol [a]	160	M	1
E-09	Baseline #1	PCB	*No PCBs detected*	ND		
E-09	Baseline #1	Total Metals	Barium	0.61	B	1
E-09	Baseline #1	VOC	Acetone	2,500	E	1
E-09	Baseline #1	VOC	Cyclopentane, methyl- [a]	5.9	M	1
E-09	Baseline #1	VOC	Hexane [a]	360	Q	1
E-09	Baseline #1	VOC	Methylene Chloride	1,800	E	1
E-09	Baseline #1	VOC	Tetrachloroethene	0.80	J	1
E-09	Baseline #1	VOC	Toluene	0.64	J	1
E-10	Baseline #2	SVOC	bis(2-Ethylhexyl) phthalate	27	JB	1
E-10	Baseline #2	SVOC	Campesterol [a]	230	M	1
E-10	Baseline #2	SVOC	Stigmasterol, 22,23-dihydro- [a]	2,300	M	1
E-10	Baseline #2	PCB	*No PCBs detected*	ND		
E-10	Baseline #2	Total Metals	Barium	0.53	B	1
E-10	Baseline #2	Total Metals	Mercury	0.024		1
E-10	Baseline #2	VOC	Acetone	1,500	E	1
E-10	Baseline #2	VOC	Hexane [a]	280	Q	1
E-10	Baseline #2	VOC	Methylene Chloride	1,900	E	1
E-10	Baseline #2	VOC	Tetrachloroethene	0.87	J	1
E-11	Baseline #3	SVOC	bis(2-Ethylhexyl) phthalate	30	JB	1
E-11	Baseline #3	PCB	*No PCBs detected*	ND		
E-11	Baseline #3	Total Metals	Barium	0.53	B	1
E-11	Baseline #3	VOC	Acetone	530	E	1
E-11	Baseline #3	VOC	Cyclopentane, methyl- [a]	5.3	M	1
E-11	Baseline #3	VOC	Hexane [a]	320	Q	1
E-11	Baseline #3	VOC	Methylene Chloride	1,200	E	1
E-11	Baseline #3	VOC	Tetrachloroethene	0.79	J	1
E-12	Field Blank #1	VOC	Acetone	1,600	E	1
E-12	Field Blank #1	VOC	Hexane [a]	85	Q	1
E-12	Field Blank #1	VOC	Methylene Chloride	770	E	1
E-13	Field Blank	NA	NOT COLLECTED	NA		1
Method Blank	Method Blank	SVOC	bis(2-Ethylhexyl) phthalate	22	J	1

This chemical is a tentatively indentified compound.

Definition of Qualifiers

B (Inorganic) = Estimated result. Result is less than reporting limit.
B (organic) = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J (organic) = Estimated result. Result is less than reporting limit.
E = Estimated result. Result concentration exceeds the calibration range.
M = Result was measured against internal standard assuming a response factor of 1.
Q = Result was quantitated against the response factor of a calibration standard.

Definition of Acronyms

µg/100 cm² = micrograms per 100 square centimeters
NA = Not applicable
ND = Not detected
PCB = Polychlorinated biphenyl
SVOC = semi-volatile organic compounds
VOC = volatile organic compounds

MASTER - ROUND 2 SWIPE SAMPLE RESULTS

SAMPLE_ID	LOCATION	Requested Analysis	Analyte	Result[a] (µg/100 cm²)	Qualifier	Dil Factor
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	27.6	SJ1	1
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	1,2,3,4,6,7,8-HpCDD	15.2	SJ	1
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	1,2,3,4,6,7,8-HpCDF	5	SJ	1
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	Total HpCDD	23.9	S	1
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	Total HpCDF	5	S	1
EXB-01	Room 112 HEPA Bank - Right transition	Dioxin/Furan	Total TEQ [b]	7.5	S	1
EXB-01	Room 112 HEPA Bank - Right transition	SVOC	*No SVOC detected*	ND		
EXB-01	Room 112 HEPA Bank - Right transition	PCB	*No PCBs detected*	ND		
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Barium	6.3		1
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Cadmium	0.27		1
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Chromium	67.6		1
EXB-01	Room 112 HEPA Bank - Right transition	Total Metals	Lead	2.2		1
EXB-01	Room 112 HEPA Bank - Right transition	VOC	1,2,4-Trimethylbenzene	0.6		2
EXB-01	Room 112 HEPA Bank - Right transition	VOC	2-Butanone (MEK)	3.9		2
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Acetone	24		2
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Bromomethane	6.2		2
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Chloromethane	0.8		2
EXB-01	Room 112 HEPA Bank - Right transition	VOC	Methylene chloride	62		2
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	24.6	SJ	1
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	1,2,3,4,6,7,8-HpCDD	8.6	SJ	1
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	Total HpCDD	16.5	S1	1
EXB-02	Room 112 HEPA Bank - Right elbow	Dioxin/Furan	Total TEQ [b]	5.8	S	1
EXB-02	Room 112 HEPA Bank - Right elbow	SVOC	*No SVOC detected*	ND		
EXB-02	Room 112 HEPA Bank - Right elbow	PCB	*No PCBs detected*	ND		
EXB-02	Room 112 HEPA Bank - Right elbow	Total Metals	Barium	2.2		1
EXB-02	Room 112 HEPA Bank - Right elbow	Total Metals	Chromium	8.9		1
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	2-Butanone (MEK)	3.5		2
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	Acetone	70		2
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	Bromomethane	4.4		2
EXB-02	Room 112 HEPA Bank - Right elbow	VOC	Methylene chloride	110		2
EXB-03	Bag House Transition - Vertical	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	38.1	SJ	1
EXB-03	Bag House Transition - Vertical	Dioxin/Furan	Total TEQ [b]	8.7	S	1
EXB-03	Bag House Transition - Vertical	SVOC	*No SVOC detected*	ND		
EXB-03	Bag House Transition - Vertical	PCB	*No PCBs detected*	ND		
EXB-03	Bag House Transition - Vertical	Total Metals	Barium	1.1		1
EXB-03	Bag House Transition - Vertical	Total Metals	Chromium	8.3		1
EXB-03	Bag House Transition - Vertical	VOC	2-Butanone (MEK)	4.1		2
EXB-03	Bag House Transition - Vertical	VOC	Acetone	6.1		2
EXB-03	Bag House Transition - Vertical	VOC	Bromomethane	2.8		2
EXB-03	Bag House Transition - Vertical	VOC	Methylene chloride	1.80		2
EXB-04	Bag House Transition - Vertical	Dioxin/Furan	Total TEQ [b]	8.5	S	1
EXB-04	Bag House Transition - Vertical	SVOC	*No SVOC detected*	ND		
EXB-04	Bag House Transition - Vertical	PCB	*No PCBs detected*	ND		
EXB-04	Bag House Transition - Vertical	Total Metals	Barium	1.1		1
EXB-04	Bag House Transition - Vertical	Total Metals	Chromium	8.5		1
EXB-04	Bag House Transition - Vertical	VOC	2-Butanone (MEK)	3.6		2
EXB-04	Bag House Transition - Vertical	VOC	Methylene chloride	47		2
EXB-05	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	23.6	SJ	1
EXB-05	Bag House Transition - Horizontal	Dioxin/Furan	Total TEQ [b]	8.4	S	1
EXB-05	Bag House Transition - Horizontal	SVOC	*No SVOC detected*	ND		
EXB-05	Bag House Transition - Horizontal	PCB	*No PCBs detected*	ND		
EXB-05	Bag House Transition - Horizontal	Total Metals	Barium	3.4		1
EXB-05	Bag House Transition - Horizontal	Total Metals	Chromium	6.7		1
EXB-05	Bag House Transition - Horizontal	Total Metals	Lead	4.1		1
EXB-05	Bag House Transition - Horizontal	VOC	2-Butanone (MEK)	4.3		2
EXB-05	Bag House Transition - Horizontal	VOC	Acetone	50		2
EXB-05	Bag House Transition - Horizontal	VOC	Bromomethane	2.7		2
EXB-05	Bag House Transition - Horizontal	VOC	Methylene chloride	100		2
EXB-05	Bag House Transition - Horizontal	VOC	o-Xylene	0.7		2
EXB-05	Bag House Transition - Horizontal	VOC	p/m-Xylenes	1.3		2
EXB-06	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	17.4	SJ	1
EXB-06	Bag House Transition - Horizontal	Dioxin/Furan	Total TEQ [b]	5.3	S	1
EXB-06	Bag House Transition - Horizontal	SVOC	*No SVOC detected*	ND		
EXB-06	Bag House Transition - Horizontal	PCB	*No PCBs detected*	ND		
EXB-06	Bag House Transition - Horizontal	Total Metals	Barium	2.7		1
EXB-06	Bag House Transition - Horizontal	Total Metals	Chromium	4.4		1
EXB-06	Bag House Transition - Horizontal	Total Metals	Lead	3.5		1
EXB-06	Bag House Transition - Horizontal	VOC	2-Butanone (MEK)	4.1		2
EXB-06	Bag House Transition - Horizontal	VOC	Acetone	7.4		2
EXB-06	Bag House Transition - Horizontal	VOC	Bromomethane	2.5		2
EXB-06	Bag House Transition - Horizontal	VOC	Methylene chloride	41		2
EXB-06	Bag House Transition - Horizontal	VOC	o-Xylene	1.2		2
EXB-06	Bag House Transition - Horizontal	VOC	p/m-Xylenes	2.1		2
EXB-07	Baseline - Inside	Dioxin/Furan	Total TEQ [b]	8.4	S	1
EXB-07	Baseline - Inside	SVOC	*No SVOC detected*	ND		
EXB-07	Baseline - Inside	PCB	*No PCBs detected*	ND		
EXB-07	Baseline - Inside	Total Metals	Barium	0.6		1
EXB-07	Baseline - Inside	Total Metals	Chromium	1.2		1
EXB-07	Baseline - Inside	VOC	Acetone	12		2
EXB-07	Baseline - Inside	VOC	Bromomethane	2.8		2
EXB-07	Baseline - Inside	VOC	Chloromethane	1.4		2
EXB-07	Baseline - Inside	VOC	Methylene chloride	1800		100
EXB-08	Baseline - Outside	Dioxin/Furan	Total TEQ [b]	6.9	S	1
EXB-08	Baseline - Outside	SVOC	*No SVOC detected*	ND		
EXB-08	Baseline - Outside	PCB	*No PCBs detected*	ND		
EXB-08	Baseline - Outside	Total Metals	Chromium	1.2		1
EXB-08	Baseline - Outside	VOC	Acetone	24		2
EXB-08	Baseline - Outside	VOC	Chloromethane	0.8		2
EXB-08	Baseline - Outside	VOC	Methylene chloride	690		20
EXB-09	Field Blank	VOC	2-Butanone (MEK)	4.4		2
EXB-09	Field Blank	VOC	Methylene chloride	37		2
EXB-09	Field Blank	VOC	o-Xylene	0.7		2
EXB-09	Field Blank	VOC	p/m-Xylenes	1.2		2
EXB-10	Trip Blank	VOC	1,1 Dichloroethene	20	2	2
EXB-10	Trip Blank	VOC	2-Butanone (MEK)	4.1	2	2
EXB-10	Trip Blank	VOC	Bromochloromethane	80	2	2
EXB-10	Trip Blank	VOC	Chloroform	2	2	2
EXB-10	Trip Blank	VOC	Chloromethane	20000	2	10000
EXB-10	Trip Blank	VOC	Methylene chloride	1000000	2	10000
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDD	42.6	SJ	1
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8,9-OCDF	10.5	SJ	1
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8-HpCDD	11.5	SJ	1
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	1,2,3,4,6,7,8-HpCDF	3	SJ	1
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	Total HpCDD	18.1	S	1
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	Total HpCDF	7.1	S	1
EXB-11	Bag House Transition - Horizontal	Dioxin/Furan	Total TEQ [b]	5.1	S	1
EXB-11	Bag House Transition - Horizontal	SVOC	*No SVOC detected*	ND		
EXB-11	Bag House Transition - Horizontal	PCB	*No PCBs detected*	ND		
EXB-11	Bag House Transition - Horizontal	Total Metals	Barium	3.9		1
EXB-11	Bag House Transition - Horizontal	Total Metals	Chromium	6.4		1
EXB-11	Bag House Transition - Horizontal	Total Metals	Lead	5.8		1
EXB-11	Bag House Transition - Horizontal	VOC	2-Butanone (MEK)	4		2
EXB-11	Bag House Transition - Horizontal	VOC	Acetone	9.2		2
EXB-11	Bag House Transition - Horizontal	VOC	Chloromethane	6.4		2
EXB-11	Bag House Transition - Horizontal	VOC	Methylene chloride	190		2
EXB-11	Bag House Transition - Horizontal	VOC	o-Xylene	1.4		2
EXB-11	Bag House Transition - Horizontal	VOC	p/m-Xylenes	2.2		2

a. Analytical results for dioxin/furan are reported in units of picograms per 100 square centimeters.
b. Total toxicity equivalence (TEQ) is a calculated value based on methods provided in U.S. Environmental Protection Agency guidance (1989b).

Definition of Qualifiers

S = Subcontracted (Eno River Labs, LLC)
J = Estimated value - below calibration range
1 = This value is an estimated maximum possible concentration
2 = Sample swipe received at Assaigai Labs preserved with methylene chloride

Definition of Acronyms

µg/100 cm² = micrograms per 100 square centimeters
MEK = Methyl ethyl ketone
ND = Not detected
PCB = Polychlorinated biphenyl
SVOC = semivolatile organic compounds
VOC = volatile organic compounds
OCDD = Octachlorodibenzo-p-dioxin
OCDF = Octachlorodibenzofuran
HpCDD = Heptachlorodibenzo-p-dioxin
HpCDF = Heptachlorodibenzofuran
TEQ = Toxicity equivalence