

4.0 PROCESS INFORMATION

Bacchus has two distinct hazardous waste management systems - one for reactive wastes and one for chemical wastes. All hazardous waste management operations at the Bacchus facility are conducted or under the management of ATK Launch Systems, Inc. The collection and processing information required by these two systems are addressed separately in the following text.

4.1 WASTE CHARACTERIZATION

Wastes will be characterized to identify hazardous properties to ensure they are properly managed. Attachment 3 identifies the WAP that will be used to characterize and classify both reactive and chemical wastes.

4.1.1 Reactive Waste

The primary products produced at Bacchus are solid rocket motors cast with either Class 1.1 or Class 1.3 propellants. Class 1.1 propellants typically contain liquid explosives such as nitroglycerin (NG) and solid ingredients such as nitrocellulose, HMX, RDX, aluminum, and ammonium perchlorate. Class 1.3 propellants typically contain a non-explosive liquid binder and solid ingredients such as aluminum and ammonium perchlorate.

Reactive wastes produced from or as part of the manufacturing process include, but are not limited to the following: cured and uncured propellants, rocket motors, small initiating devices, propellant scrap, and explosive ingredients (HMX, aluminum, ammonium perchlorate, etc.). Liquid explosive wastes, typically containing NG, are diluted and absorbed in wood pulp. Reactive wastes can also include materials incidental to the manufacture of explosives such as rags, gloves, other personal protective equipment, plastics, rubber and paper that were contaminated with explosive materials during the manufacturing process.

Waste Class 1.1 and Class 1.3 materials are characteristic hazardous wastes for reactivity (D003). Nearly all of the reactive wastes generated at the facility are reactive due to the presence of propellants and explosives. Some reactive wastes, primarily from laboratory operations, may contain solvents and be listed wastes as defined by R315-261-31 of Utah Admin. Code. Wastewater treatment sludge generated from the processing of explosives is a K044 listed hazardous waste.

Class 1.1 explosive materials include powdered or granulated ingredients (nitrocellulose, HMX, RDX, aluminum, ammonium perchlorate and base grain); liquid explosives (NG, binder premix, and NG remover); nitrate ester propellants and ordnance items. Class 1.3 reactive wastes specifically contain composite propellant. Other categories of reactive waste, such as waste developmental propellant, K044 waste and laboratory waste can be a Class 1.1 or Class 1.3 explosive material depending on the chemical composition of the product at the point of generation.

NG remover is a chemical mixture added to NG to chemically break it down and make it less hazardous to handle if it has been spilled. Wastes containing NG remover are considered Class 1.1 reactive wastes for the potential presence of NG.

4.1.2 Chemical Waste

A variety of non-explosive characteristic and listed hazardous wastes are generated by operations at the Bacchus facility. Chemical wastes also include used oil, universal wastes, and non-RCRA wastes. All wastes generated at the facility are evaluated for hazardous waste properties. This evaluation includes generator knowledge, information obtained from the manufacturer's safety data sheets (SDSs) and laboratory analysis. The Waste Analysis Plan (Attachment 3) provides the procedures, techniques, and protocols that will be used to evaluate wastes generated at the Bacchus facility.

4.2 HAZARDOUS WASTE GENERATION AND COLLECTION

Waste generated at the Bacchus facility is from batch and continuous operations. These wastes are accumulated in accordance with R315-262 of the Utah Admin. Code. Waste accumulation stations are operated under either the 90-day rule or the satellite accumulation rule. Operators of manufacturing, maintenance or testing operations that produce wastes are instructed in the proper requirements for the disposal of these wastes.

4.2.1 Reactive Waste Generation and Collection

Bacchus uses a variety of containers for reactive waste. Standard containers used at Bacchus are described in this section. However, due to the nature of our operation, new types of containers may be required in the future, and cannot be described in this application. In lieu of describing all containers, the basic criteria for selecting and using containers have been provided. Bacchus will use the selection and use criteria in the DOD Contractor's Safety Manual for Ammunition and Explosives (DOD 4145.26-M) when selecting a container for explosive wastes. All containers for reactive waste that are currently used, or will be used in the future will meet the DOD 4145.26-M requirements.

Operating buildings generating reactive wastes use a variety of collection containers as described below:

Slum bags – Slum bags are antistatic plastic bags used to containerize reactive waste and line containers that accumulate reactive wastes. Slum bags are used to line slum pots and fiberboard drums.

SLIDs - Excess pure propellant is collected in cardboard/wood containers known as SLIDs, or "slum-in-a-drum", which typically can hold up to 500 pounds of waste propellant. A SLID allows a significant amount of excess propellant to be collected in one container, reducing handling requirements for large amounts of propellant waste. SLIDs are constructed from cardboard "Sona" tubes (used as forms for cement pillars) that are glued and sealed onto a pallet. A groove is routed into the pallet's surface to accept the form as shown in Figure 4-2.1. Excess pure propellant is placed in a SLID at the end of the manufacturing process. The open tops of the SLIDs are then covered with antistatic plastic and sealed with tape. SLIDs are also used at storage buildings to hold slum bags, and to contain certain wastes during burning.

Slum Pots - Contaminated materials generated during the manufacturing process (rags, gloves, personal protective wear, plastics, etc.) and smaller amounts of waste propellant are collected in aluminum containers that are commonly referred to as "slum pots." Slum pots are specifically designed for the collection, transportation, and temporary

storage of reactive waste within the operational boundaries of the Bacchus facility. Slum pots are constructed of seamless cold rolled aluminum that is 18 ³/₄ inches high by 18 ³/₄ inches in diameter and is ¼ inch thick or equivalent (see Figure 4-2.2). Each pot has two lifting handles and has a hard rubber lid and hard rubber bottom that cushion and resist any abrasion during transportation. Both the lid and bottom are non-sparking.

Slum pots are lined with slum bags that contain the waste. When the slum bag is full or at the end of the operating shift, the waste is sealed inside the slum bag with a plastic tie.

As liquid explosive wastes, typically containing NG, are generated they are diluted and absorbed in wood pulp to reduce their sensitivity. Liquid explosive wastes are accumulated in slum bags.

Fiberboard drums - Contaminated wastes that are too large for slum pots or are generated in large volumes are collected directly into commercially available 30-gallon fiberboard drums. These drums have a removable lid that can be sealed in place with a locking chime after the drum is filled. Drums selected for this application are approved by DOT for highway transportation of hazardous materials and can be used to ship these wastes off-site for treatment and disposal.

Pizza boxes – Dry ingredients that can detonate during treatment will be placed in large flat cardboard boxes, similar to a pizza box, that allow the material to be treated by open burning while minimizing the potential to detonate during treatment.

Tanks – Explosive contaminated wastewater is collected in wastewater tanks at the points of generation. When appropriate, propellant “chips” and other suspended solids are filtered out before the wastewater reaches the tank, and when the wastewater is pumped out of the tanks. The wastewater is pumped into tanker trucks where it is either: 1) delivered to a wastewater treatment plant where it is treated, if necessary, before being discharged to a local POTW; or 2) transported off-site for treatment and disposal. Filters containing “chips” and other suspended solids are accumulated in slum bags and treated and disposed of in accordance with the applicable hazardous waste management rules.

Other Containers - Large blocks of cured propellant are containerized by wrapping the waste in plastic and placing it on wood pallets. Ammunition cans are used to hold initiating and ordnance materials. Waste rocket motors are generally large enough to be their own container.

When a reactive waste container is full or at the end of an operating shift, it is closed or sealed as applicable for the container. The hazardous waste explosive tag shown in Figure 4-2.3 is filled out and attached to the container. Operators at the buildings that generated the waste enter pertinent information from the hazardous waste explosive tag into the electronic waste tracking system described in Section 4.3.1.

Most operating buildings that generate reactive waste have an explosive waste collection shed located approximately 50 feet from the operating building. The

collection sheds facilitate removal of propellant and explosive wastes from the operating buildings. The collection sheds are constructed of wood or corrugated metal and are secured to a six-inch concrete floor. The sheds are closed on three sides with the open front facing north (see Figure 4-2.4). The north aspect of the open front ensures that the wastes are not exposed to direct sun during temporary storage.

When managing reactive wastes, the operating buildings and temporary collection sheds are managed as satellite accumulation stations. There are three exceptions to the use of these temporary storage sheds that include: 1) cold weather restrictions where certain Class 1.1 materials remain inside operating buildings because of safety concerns with freezing; 2) large objects such as SLIDs where use of a dock at the operating building allows for more efficient and safe pick up of the waste; and 3) buildings which infrequently generate reactive waste.

Containerized explosive wastes are picked up from the collection sheds using a vehicle approved for the transport of explosive wastes. Extreme care is used when handling all explosive wastes. The wastes are transported to either a less than 90 day explosive storage building or a permitted explosive storage unit while the treatment preparations are being made. All less than 90-day storage buildings or permitted explosive storage units are located on NIROP and are described in the NIROP Part B permit. Explosive wastes are segregated by explosive classification. While in storage, slum bags containing similar types of explosive waste are often aggregated together in larger containers such as empty SLIDs to allow for storage that is more efficient. Note that liquid explosive wastes always remain in slum pots during storage.

4.2.2 Chemical Wastes

Site operations generate a wide variety of chemical wastes incidental to the manufacturing processes. These wastes include both listed and characteristic wastes in solid and liquid form. Used oil, universal wastes, and non-RCRA wastes are also generated and collected. Chemical wastes are accumulated and stored in a variety of containers, which are compatible with the waste and can be closed. All containers shipped off-site for disposal meet applicable DOT container requirements. There are three different types of chemical wastes that are managed at the Bacchus facility: (1) routinely generated waste, (2) non-routinely generated waste, and (3) small container waste.

Routinely generated wastes include but are not limited to paints, coatings, solvents, and contaminated solids. These wastes are generated and managed as less than 90-day containers. Non-routinely generated wastes are similar in nature to routinely generated items, but are generated infrequently and at low volumes. Routinely and non-routinely generated wastes are collected in a variety of containers. These wastes are managed in containers that are compatible with the waste.

Small container wastes, includes but are not limited to a wide variety of off-specification commercial chemical products. The sources for these wastes include shelf-life expired commercial chemical products, unused commercial chemical products, aerosol cans, laboratory chemicals, and/or unique chemicals that are not routinely received. These wastes are easily characterized using generator knowledge and shipped to an approved TSDF in a can-in-a-drum or the materials are lab packed.

Chemical wastes generated at the Bacchus operating buildings are transferred to HS-1 for storage prior to being shipped off-site to an approved TSDF for treatment and/or disposal.

4.3 WASTE TRACKING

Hazardous wastes generated or managed at the Bacchus facility are tracked. The waste tracking system manages information for both reactive and chemical waste. The tracking system is a combination of paper records and an electronic database.

4.3.1 Reactive Wastes

At the point of generation, the operator who packages the waste completes a Hazardous Waste Explosive tag (see Figure 4-2.3), which is attached to each waste container. Information on this tag is entered into an electronic waste tracking system to monitor cradle to grave waste handling practices. Information that is tracked includes

- Tag # - a unique number used to track the waste;
- Date – identifies the generation date;
- Building # - identifies where the waste was generated;
- Explosive category for each type of explosive generated on plant;
- Explosive and total weight of the container;
- Identify who prepared and approved the waste at the site of generation;
- Pick-up Date – date picked up from the waste generation site;
- Identify all storage locations and transfer dates prior to treatment;
- Identify the date the waste transferred to the Burning Grounds for treatment; and
- Identify pan # and burn station where treatment occurred.

The electronic tracking system maintains information on all containers of reactive waste in storage including the time in storage, and has the capability to track the total amount of wastes in storage at each storage location. It also tracks the total weight of waste placed on each burn pan and the total weight of waste burned on any given day.

For reactive wastes that are sent to an approved offsite treatment facility, the system maintains the following information: the manifest number, transporters, manifest ship date, and manifest return date. In some cases, a number of slum bags are consolidated into a large reusable container that meets DOT shipping requirements. The waste tracking system identifies which containers are aggregated into the larger shipping containers.

In the event the electronic tracking system is not operable, the information will be tracked using paper copies until the electronic system is operable. In the event this occurs, Bacchus will transfer all information to the electronic system within 72 hours of the system becoming operational again.

4.3.2 Chemical Waste Tracking For Routine and Non-Routine Generated Waste

The Bacchus facility maintains an electronic waste tracking system that is used to collect and manage the information for routinely and non-routinely generated waste that is generated at both the Plant 1 and NIROP operations.

Wastes being accumulated at any operating area within the Bacchus facility are labeled and managed in accordance with R315-262 of the Utah Admin. Code for either less than 90-day storage areas or satellite accumulation areas. The chemical waste tracking system maintains the following information that is collected to monitor the cradle to grave waste handling practices:

- Drum # -- A unique number assigned by Bacchus to each waste container;
- Waste Stream -- Bacchus' unique internal waste stream profile which includes all RCRA waste codes for the waste;
- Building # -- Building in which waste was generated;
- Manifest # -- Manifest number in which the waste was shipped under;
- Accumulation Date -- Date the container was given a number and delivered to a specific building;
- Pickup Date -- Date the container was received at HS-1;
- Quantity -- Weight of container ready for shipping;
- Status -- A code given to each container indicating whether it is in process or shipped to disposal facility;
- Storage -- Identifies storage locations;
- TSDF -- The facility where the material was delivered;
- Transporter -- The transporter used to transport the shipment;
- Ship Date -- Date the shipment left the facility;
- Return Date -- Date the fully signed manifest is received back at Bacchus;
- Notes -- A brief description of the shipments contents.

4.3.3 Chemical Waste Tracking for Small Containers Stored at HS-1

Small containers of waste (i.e. waste that is eventually disposed as a lab pack) are entered into the small container database and stored in the appropriate lab pack cabinet based on the DOT classification for the material. Small containers are accumulated until an adequate quantity has been amassed to fill a lab pack container. All lab pack containers are entered into the electronic tracking system as a non-routine generated waste. The following information is collected for each small containers of waste:

- Name - chemical or commercial name of the waste;
- Container # - database tracking number;
- Size - size of the container;
- Type - type of container (e.g. plastic, glass, metal, etc.);
- State - physical state of the waste;
- Date - date received; and
- DOT - Department of Transportation classification.

Any small container held in storage for longer than one year will be managed in accordance with Section 4.9.

4.4 HAZARDOUS WASTE STORAGE

Bacchus stores hazardous wastes prior to disposal. Reactive and chemical wastes are stored in designated facilities, and segregated according to compatibility requirements. HS-1 is the long term HWMU storage facility on Plant 1.

4.4.1 HS-1

Chemical wastes are managed at HS-1. Routinely generated wastes, non-routinely generated wastes, and small containers are all managed at this facility. HS-1 is primarily used for the storage/handling of solids and a limited amount of liquids. The facility functions as both a storage area for full containers, and a waste accumulation area where like wastes are combined into larger containers and small containers are assembled into lab packs.

HS-1 is used to store listed or characteristic waste. Figures 4-4.5 and 4-4.6 show the floor plans for Buildings 8562, 8567 and 8568, and a typical configuration for the buildings. Aisle space will be maintained at a 30-inch minimum, except in the small container storage cabinets. All containers will be tracked using the waste tracking system described in Sections 4.3.2 and 4.3.3.

Containers for routinely and non-routinely generated waste will be identified using the unique drum number issued by the electronic waste tracking system. They can also be identified with the labels used to ship the container to a TSD or with the label used while the container was being generated. All non-RCRA waste stored at HS-1 will be identified in and tracked by the electronic waste tracking system. The weight of non-RCRA wastes will count against the storage capacities for the HS-1 buildings. Small containers of waste stored in the lab pack cabinets will be managed using the electronic tracking system, but will not be individually labeled.

Chemical compatibility will be ensured by storing waste materials at HS-1 in accordance with the Segregation Table for Hazardous Materials in 49 CFR 177.848 or 49 CFR 173.12(e) for lab packs as applicable. Non-lab packed liquids identified in the table as prohibited or restricted will be isolated and stored in separate containments from other materials. Non-liquids identified in the table as prohibited or restricted will be separated from incompatible waste by at least 30-inches. The following additional rules will apply:

- Liquids with a pH less than 2 will not be stored in the same containment as liquids that are classified as Class 3 flammable liquids. However, liquids with a pH greater than 12.5 may be stored with flammable liquids.
- Small containers of waste will be stored in cabinets, and separated by DOT hazard class until they are lab packed according to the 49 CFR 173.12.
- Class 9 and non-regulated materials may be stored with any class of material.

Spill containment pallets are provided in buildings 8567 and 8568 to segregate incompatible wastes while in storage. If incompatible wastes are stored in the same containment area, the containers will be isolated from one another with a containment pallet. HS-1 is inspected daily when in use, and weekly when not in use to ensure container integrity and to correct any problems that might result from leaking containers. The inspection includes a visual inspection of the sump, and containment pallets where spilled liquids would accumulate. Refer to HS-1 inspection requirements in Attachment 5.0 "Procedures to Prevent Hazards."

All storage of regulated waste at HS-1 will occur in totally enclosed buildings. There is no concern regarding precipitation run-on or run-off.

4.5 DISPOSAL OF REACTIVE WASTE

Reactive wastes are managed differently based on the treatment method. The treatment options include, but are not limited to, open burning on-site at the NIROP Burning Grounds, open burning or detonation at the ATK Launch Systems Inc. facility near Promontory, Utah (Promontory), open burning or detonation at the Utah Test and Training Range (UTTR) located at Oasis, Utah or offsite treatment and disposal at another TSDF. The following sections provide more details on the collection, management and disposal of reactive wastes at the Bacchus facility.

4.5.1 Off-site Disposal of Reactive Waste

Propellant and explosive wastes amenable to public transport are currently shipped off-site to an approved hazardous waste treatment facility. Federal regulations impose strict requirements for the transportation of explosive materials on public highways. All explosive materials must be examined and approved by the DOT or an authorized military agency prior to shipment. Testing is often necessary to determine the hazardous nature of each explosive material and to verify the integrity of the packaging method selected for each waste. These federal requirements are followed whenever explosive wastes are shipped from the Bacchus facility to assure that they are shipped safely.

The primary off-site treatment facility for Bacchus is the Promontory facility located approximately 100 miles north of Bacchus. Promontory is located in a more remote area than the Bacchus facility and is an approved hazardous waste treatment facility, where reactive wastes can be burned or detonated.. All reactive wastes shipped to the Promontory facility will have DOT approved shipping methods. Production wastes that remain at Bacchus for open burning are difficult to ship because they are odd sized, generated in small quantities, have explosive safety hazards, or are a “forbidden explosive” as defined in R315-261-23 (8) of the Utah Admin. Code.

Some of the production wastes routinely shipped to Promontory includes:

- SLIDs containing pure Class 1.1 or Class 1.3 propellant are shipped with a plywood cover placed over the top of each SLID and banded in place.
- Class 1.3 contaminated wastes: Slum bags containing contaminated wastes (rags, gloves, wipes, etc.) are placed in lined, reusable plastic bins for shipment. Up to 350 pounds of waste can be aggregated in each bin. Each bin is closed and secured with plastic banding prior to shipment. Contaminated Class 1.3 wastes too large to fit in slum bags are shipped in individual, sealed 30-gallon fiberboard drums.
- Class 1.1 contaminated wastes: Slum bags containing contaminated wastes that do not contain significant amounts of solvents are placed in lined reusable plastic bins for shipment. Up to 350 pounds of waste can be aggregated in each bin. Each bin is closed and secure with plastic banding prior to shipment.

- Explosive contaminated packaging: Contaminated packaging, such as, the cloth and plastic bags that HMX and RDX products arrive in from the vendor. After being emptied, these contaminated bags are shipped to Promontory in sealed 30-gallon fiberboard drums for treatment.
- Waste HMX and RDX: HMX and/or RDX is wetted, with a minimum, of 15% by weight water and accumulated in plastic lined 30-gallon fiberboard drums. Additional packaging requirements for HMX or RDX are described later in this section.

Propellant and explosive wastes are also sent to UTTR (Utah Test and Training Range), located approximately 70 miles west of the Bacchus facility. UTTR is an approved hazardous waste treatment facility, permitted for open burning and open detonation of explosive wastes that are the property of the Federal government. Whenever possible, waste rocket motors and large sections of rocket motors that meet this requirement are sent to this facility for treatment. UTTR typically conducts operations in the spring, summer, and early fall. If necessary, materials are stored at Bacchus until UTTR is available for disposal.

The Bacchus facility is used as a staging point for obsolete rocket motors that are awaiting treatment at UTTR. The rocket motors are received by Bacchus as both products or hazardous wastes. Surplus rocket motors can be recalled by the owner prior to being treated and used for their intended purposes. Obsolete rocket motors are always shipped to UTTR as hazardous waste using a hazardous waste manifest. Shipments are on public highways or via a combination of rail and public highway. Bacchus follows all applicable State and Federal requirements whenever these wastes are shipped from the Bacchus Facility to insure that they are shipped safely.

HMX and RDX are supplied to the Bacchus facility by the Federal government. Waste HMX and RDX derived from the product supplied by the Federal government are the property of the Federal government and can be treated at UTTR by open detonation. These wastes can also be treated at Promontory by open burning, or at another approved TSD. In order for HMX and RDX to be transported over public highways, it must be wetted with a minimum of 15% by weight water. This is assured at the Bacchus Facility by adding 12 ounces of water for every 5 pounds of HMX or RDX. Waste HMX and RDX are accumulated in plastic lined 30-gallon fiberboard drums, which hold up to 300 pounds of wetted HMX or RDX per drum. The plastic liners for these drums are secured with plastic bag ties to assure retention of water. The fiberboard drums are always maintained in a closed condition unless Bacchus is adding waste to the container or verifying the water content inside the bag. Packing will conform to 49 CFR 172.101 Hazardous Material Table requirements for HMX.

The drums of waste HMX and RDX are accumulated until quantities permit efficient shipment. Waste HMX and RDX are stored on NIROP. Bacchus follows all applicable State and Federal requirements for the storage of these wastes while they are being stored on-site, and whenever these wastes are shipped from the Bacchus Facility to insure that they are shipped safely.

It should be noted that smaller quantities of HMX or RDX (usually 3-5 pounds) and HMX or RDX mixed with other ingredients during processing are not shipped to UTTR or Promontory. This waste is collected and burned at the NIROP burning grounds in small increments of 10 pounds or less. When generated, this waste HMX or RDX is stored at one of the permitted explosive storage units or in one of the less than 90-day explosive storage areas.

4.6 MANAGING CHEMICAL WASTE AT HS-1

Containers of chemical waste are accumulated and stored at HS-1. Activities performed at HS-1 include: (1) receiving containers, (2) consolidating waste, (3) managing small containers, (4) preparing lab packs, and (5) coordinating the shipment of waste to an offsite TSDF.

Chemical waste containers are delivered to HS-1 for storage. Full 55-gallon drums are typically delivered directly to the storage area in building 8567 or 8568. Upon arrival, all containers are inspected to ensure they are safe to store. The tracking system is updated and the container number is checked to ensure that it is visible and legible. Containers are then stored based on type of waste and compatibility restrictions. Occasionally partial containers are received and are moved into the handling area in building 8562 where the contents can be combined with other partial containers of the same waste. To facilitate combining partial containers, accumulation drums are located in building 8562.

Small containers include, but are not limited to, off-specification commercial chemical products and shelf life expired, and/or partial containers of commercial products used in the manufacturing areas such as paints, adhesives, coatings, curing agents, and laboratory reagents. These wastes are processed through the chemical handling area in building 8562 within 5 business days. Processing time is documented using form FOP-0061 (Figure 4-6.7). During accumulation and while being received at HS-1, small containers will be tracked using FOP-0061 regardless of RCRA classification. When processed at HS-1, small containers are inventoried and stored based on the DOT and RCRA classifications. Due to the variety of excess property regulations, which govern government supplied, and contractor-supplied materials, processing time may be documented using other sources as long as the material description and date received are provided.

Small containers are accumulated and managed in the storage cabinets until they are lab packed and shipped to an approved off-site TSDF. Small containers may also be transferred directly to accumulation drums referred to as “cans-in-a-drum” and stored until they are shipped to an approved off-site TSDF.

Wastes that are not commonly used are lab packed for off-site treatment and/or disposal. Wastes to be lab packed are placed in storage cabinets located in Building 8567 and Shed B based on their DOT classification. Small containers that require refrigeration are stored in the refrigerator located in building 8562. Identification and classification of small containers is done by using generator knowledge, the manufacturer’s information, or the SDS. When additional information is required to properly classify a container, it will be sampled and identified as ‘sampled’, ‘pending’ or similar marking until it can be properly classified. Small containers of chemicals are

stored in cabinets until an adequate volume is accumulated to lab pack and ship to an approved TSDF. The storage time for small containers may exceed one year.

Other activities conducted at HS-1 include preparing drums for shipment to approved TSDF. HS-1 also prepares and labels empty containers for delivery to the generating area.

4.7 OFF-SITE DISPOSAL

Prior to the shipment of any hazardous waste to an off-site TSDF, containers are marked and labeled and shipping papers are prepared in accordance with 49 CFR 172, and R315-262 Appendix and R315-264 Appendix I of the Utah Admin. Code. Only permitted treatment storage and disposal facilities are used.

4.8 RECEIVING HAZARDOUS WASTE FROM OFF-SITE

The Bacchus facility periodically receives hazardous waste from off-site locations. It is generally limited to waste generated at other ATK Launch Systems Inc. owned facilities. However, Bacchus does receive reactive hazardous waste including, but not limited to rocket motor segments that are not Bacchus generated hazardous waste for storage. All hazardous waste received from an off-site source will be managed at one of the permitted storage units.

All off-site generated hazardous waste will be reviewed and approved prior to being accepted using the following criteria:

- EPA hazardous waste number(s);
- Physical description;
- Chemical description;
- Source of the waste;
- Sampling frequency;
- Parameter for Analysis;
- Handling code;
- Tracking system number;
- DOT shipping description;
- Safe handling instructions;

Upon receipt, all off-site generated hazardous waste will be visually inspected to ensure that it meets the profile description and that the manifest is correct, and the containers are labeled, closed, in good condition and compatible with the waste. All discrepancies will be resolved with the generator before the waste is received. After the waste has been accepted, it will be managed using the tracking systems described in Section 4.3.

Purge water from Bacchus operated off-site ground water monitoring wells is exempt from the prior approval requirements of this section, but it will be managed in accordance with R315-262 of the Utah Admin. Code and tracked as described in Section 4.3.

4.9 STORING WASTES FOR LONGER THAN ONE YEAR

Under the conditions described below the following materials may be stored for longer than one year:

- Wastes designated for disposal at UTTR where disposal arrangements and/or approvals cannot be completed within one year.
- Rocket motors or motor sections that lack adequate approvals to ship off-site and/or lack sensitivity data to develop a disposal plan in less than one year.
- Small containers stored at HS-1 may also exceed one year when there is not adequate volume to fill a lab pack container or difficulty in arranging disposal at a TSDF.

Written notification will be provided to the Division of Waste Management and Radiation Control prior to exceeding waste in storage longer than one year.

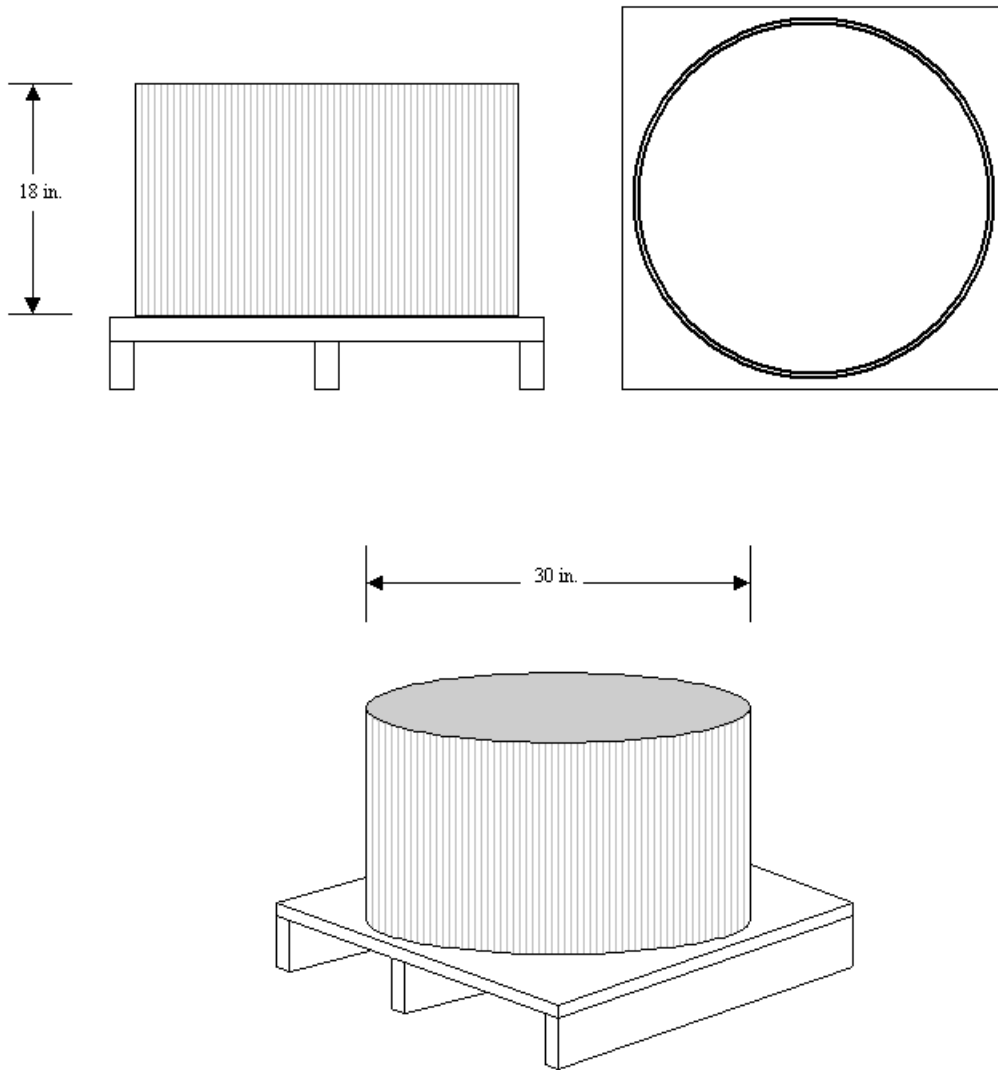
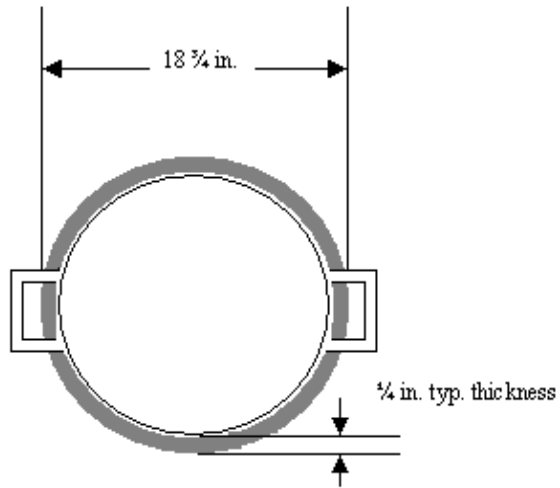
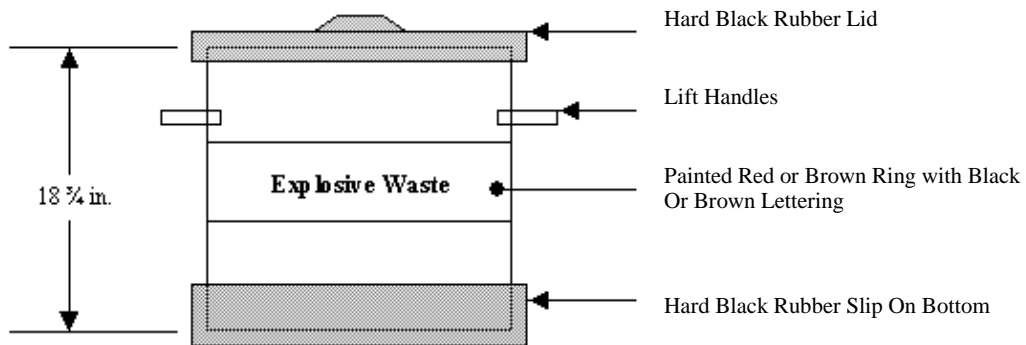


Figure 4-2.1
SLID (Not To Scale)



Top View (Lid Removed)



Front View

Construction

- Seamless Cold- Rolled Aluminum
- Welded Aluminum Handles
- Hard Rubber Lid and Bottom
- Painted Explosive Warning Band
Explosive Waste
HTPB Waste

Figure 4-2.2
SLUM POT (Not To Scale)

510869



**HAZARDOUS
WASTE EXPLOSIVE**

¹ DATE	² BLDG #
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³ **INGREDIENTS**

<input type="checkbox"/> AP	<input type="checkbox"/> HMX/RDX
<input type="checkbox"/> AL	<input type="checkbox"/> NC

⁴ **LIQUID EXPLOSIVES** (Temperature must remain >54° F if placed outside)

<input type="checkbox"/> NG SLUMS
<input type="checkbox"/> BINDER PREMIX SLUMS
<input type="checkbox"/> NG REMOVER

⁵ **PROPELLANTS**

<input type="checkbox"/> COMPOSITE
<input type="checkbox"/> ⁶ NITRATE ESTER (Temperature must remain >10° F if placed outside)
<input type="checkbox"/> ⁷ DEVELOPMENTAL

MISCELLANEOUS

<input type="checkbox"/> ORDNANCE	<input type="checkbox"/> BASE GRAIN
<input type="checkbox"/> ⁸ CONTAMINATED MATERIAL	
<input type="checkbox"/> ⁹ RED TAG ATTACHED	
<input type="checkbox"/> ¹⁰ KO44 WASTE	
<input type="checkbox"/> ¹¹ LABORATORY OR LIMITED KNOWLEDGE WASTE (SPECIFY) _____	
<input type="checkbox"/> ¹² OTHER (SPECIFY) _____	

¹³ EST. EXPLOSIVE WEIGHT _____

¹⁴ TOTAL WEIGHT _____

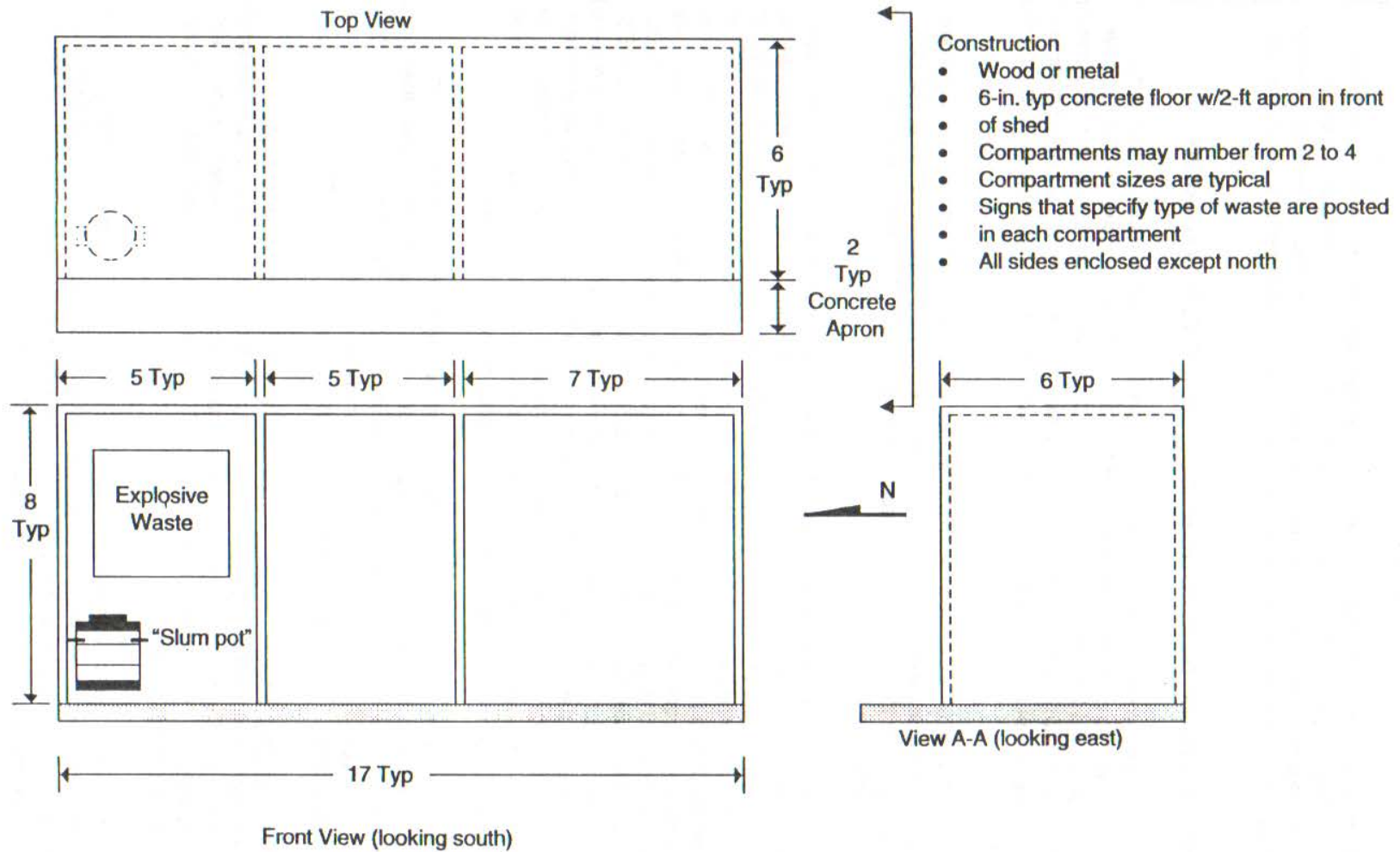
¹⁵ PREPARED BY	PAN
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¹⁶ APPROVED BY	POSITION
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FORM FOP-0139 (REV 4-06) 510869



**Figure 4-2.3
Hazardous Waste Explosive Tag**



(Not to scale)

4-2.4 Typical Explosive Waste Temporary Collection Shed

Bldg. 8567 - 89 drums (4,900 gal)

Bldg. 8562 - 22 drums (1,200 gal)

Total 111 drums (6,100 gal)

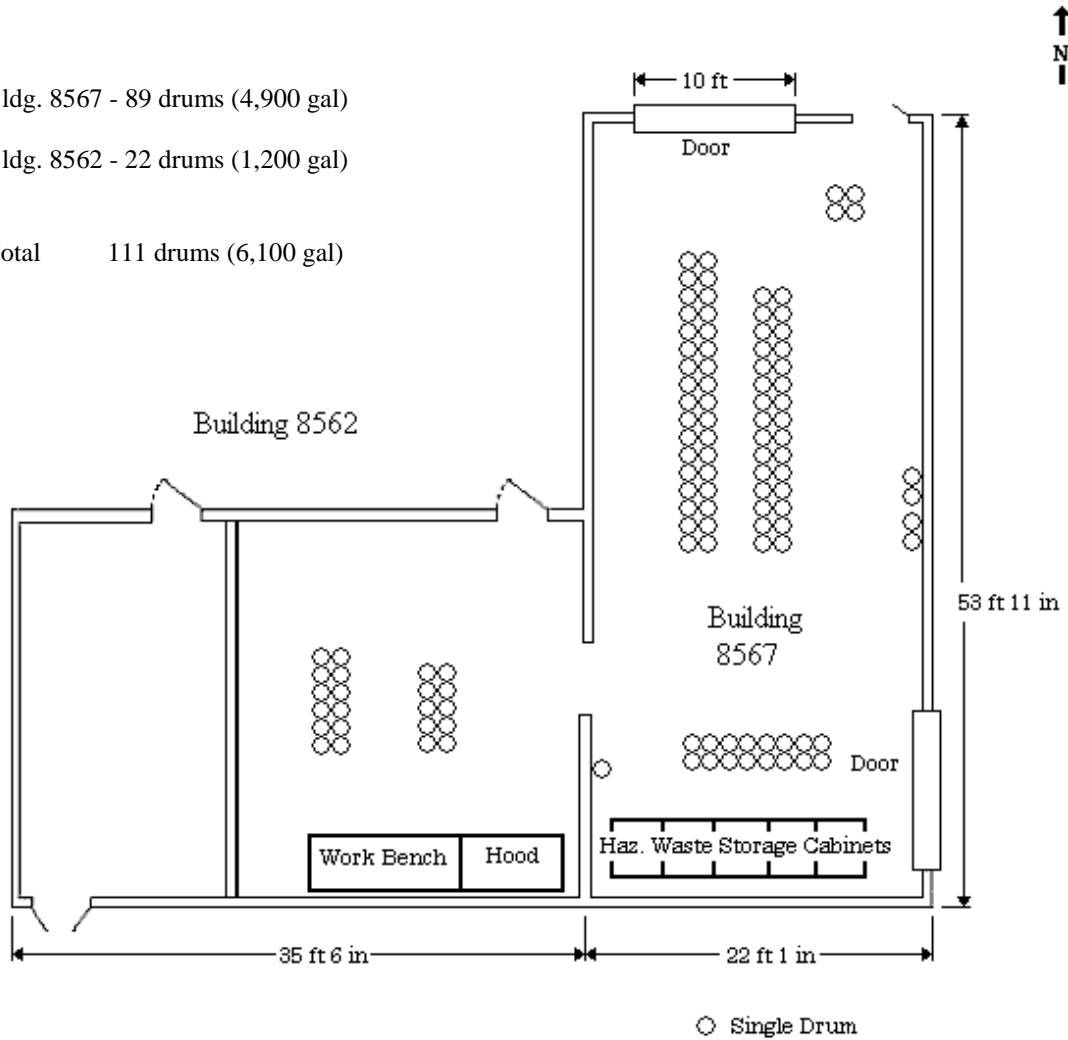
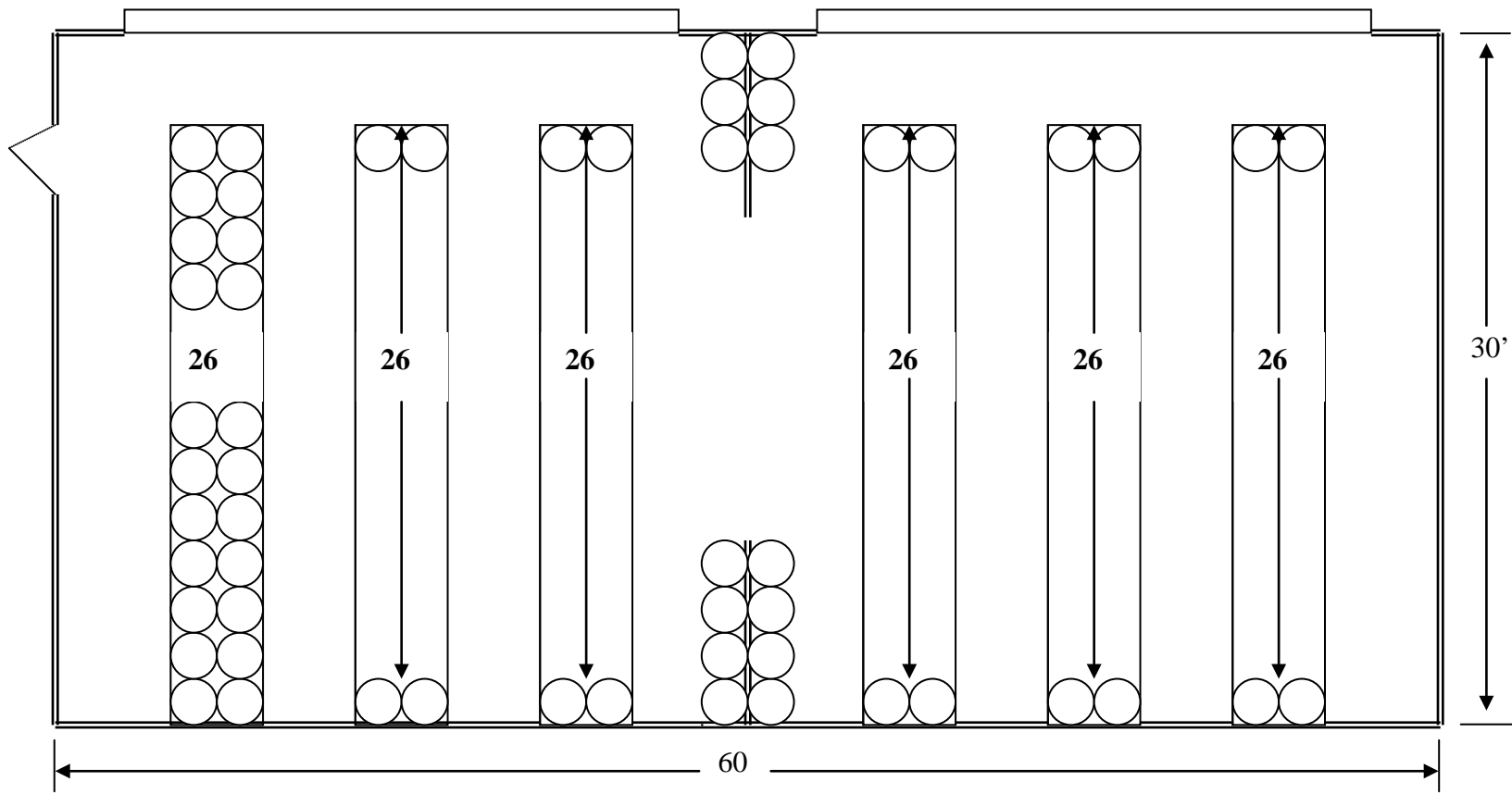


Figure 4-4.5
Bldg. 8562 and 8567 Drum Storage



170 drums = 9,350 gallons capacity (1 high on pallets)

Figure 4-4.6
Bldg 8568 Maximum Drum Storage

CHEMICAL WASTE INVENTORY FORM

DEPARTMENT NAME:	BLDG:	DATE:	PAGE	OF
PERSON TO CALL:		M/S:	EXT.:	
PREPARED BY:		M/S:	EXT.:	

ITEM NO.	QTY	MATERIAL DESCRIPTION	SOLID/ LIQUID	CONTAINER		HAZARDOUS WASTE (check if yes)	SPECIAL INSTRUCTIONS OR HAZARDS
				SIZE*	TYPE**		
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
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						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	

FORM FOP-0061 (REV 1-08)

* Container size should be entered by container capacity, not by waste weight or volume
 ** Enter a "P" for Plastic, "G" for Glass, or "M" for Metal
 NOTE: For additional information, call environmental operations, ext. 24456

RECEIVED _____
 DATE _____

**Figure 4-6.7
 Chemical Waste Inventory Form**