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Subject 305-B Storage Unit Part B Permit Application Page Changes (Rev 2)

Enclosed as attachment 1, is a copy of the 305-B Storage Unit Part B Permit Application page change package submitted to EPA and Ecology on November 2, 1992. The page change package was submitted in response to Ecology requests for editorial changes to revision 1 of Part B Permit Application. The text changes, issued in page replacements format, are editorial in nature and do not change the scope or content of the permit.

These page replacements will be revision 2 of the permit application. All pages of revision 1 not addressed by these page replacements will remain unchanged. Please replace pertinent parts of the permit application(s) with the appropriate pages of the page change package. All of Chapter 11 should be removed and replaced.

Attached for your information (Attachment 2) is a summary of the changes addressed by the page change package. If you need more copies, or have comments or questions, please contact me, on 376-3835. Please return any unused copies.

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Attachments

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Attachment 1

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4.0 PROCESS INFORMATION [D]

4.1 CONTAINERS [D-1]

The following sections describe the types of containers stored at the 305-B Storage Unit.

4.1.1 Containers With Free Liquids [D-1a]

Containers with free liquids are discussed below.

4.1.1.1 Description of Containers [D-1a(1)]. Most wastes stored at the 305-B Storage Unit are received in their original, as-procured containers. Containers of hazardous materials entering 305-B are inspected before being accepted for storage. Generating units are responsible for placing the materials in adequate containers. Repackaged materials must be placed in containers that are new and compatible with the materials to be stored.

Containers in poor condition or inadequate for storage are not accepted at the unit. If transport is by unit personnel, such containers are not accepted for transport. See Section 6.4.1 for inspection prior to transport performed by unit personnel. "Container in poor condition or inadequate for storage" means a container which is not intact or undamaged and which is not securely sealed to prevent leakage during storage, transport and ultimate offsite disposal. Examples of acceptable packagings include laboratory reagent bottles, DOT containers, spray cans, sealed ampules, paint cans, leaking containers which have been overpacked, etc. Unit operations personnel have the authority to determine whether a container is in poor condition or inadequate for storage, using the criteria of WAC 173-303-190 and professional judgement whether the packaging may leak during handling, storage and/or disposal.

As with all wastes, repackaged containers of dangerous waste are marked and/or labeled to describe the contents of the container and the major hazards of the waste, as required under WAC 173-303. Containers are also marked with a unique identifying number assigned by the unit's computerized waste tracking system.

All flammable liquid wastes are stored in compatible DOT-specified shipping containers and/or in Underwriter's Laboratory (UL)-listed and Factory Mutual (FM)-approved flammable storage cabinets. Solid chemicals are stored on shelving in specifically designated areas based on the DOT hazard classification.

All containers utilized for offsite transport of dangerous wastes at the unit are selected according to the container selection criteria found in WAC 173-303-190(1).

4.1.1.2 Container Management Practices [D-1a(2)]. Management practices and procedures for containers of dangerous waste are in place at the 305-B Storage Unit to assure the safe receipt, handling, preparation for transport, and transportation of wastes. These practices and procedures are summarized below.

<u>Inspection of Containers.</u> A system of daily, weekly, monthly, and yearly inspections is in place to ensure container integrity, check for proper storage

location, prevent capacity overrun, etc. These inspection procedures are detailed in Section 6.2.

Container Handling. All unit staff are instructed in proper container handling safeguards as part of their training (see Section 8.1.2 for further details). For example, employees are instructed to open all high-vapor-pressure liquids in the flammable liquid bulking module to avoid buildup of vapors in the unit. Containers are always kept closed except when adding or removing waste, in accordance with WAC 173-303-630(5)(a).

Containers are not opened, handled or stored in a manner which would cause the container to leak or rupture. Small containers (five gallons or less capacity) are stored on ventilated shelving or in approved flammable liquid storage lockers (if appropriate). Containers over five gallons capacity are stored on the floor of the appropriate storage cell, in cabinets, or stored in the appropriate containment area on the high bay floor under Section 4.3.2. Unnecessary handling not required for redistribution or preparation for transport and disposal by either labpacking or bulking (see below) is minimized. Drums are moved manually, by crane or chain hoist, or with an electric forklift. For manual movement, hand trucks specifically designed for drum handling are used. Crane and chain hoist operations are performed using a choker chain or drum hoist. When using the forklift, a drum hoist is used or the drums are carried on pallets. Drums are never carried on the forks or "speared" by slipping the forks under the chime.

When waste handling operations are conducted, a minimum of two persons are present in the unit.

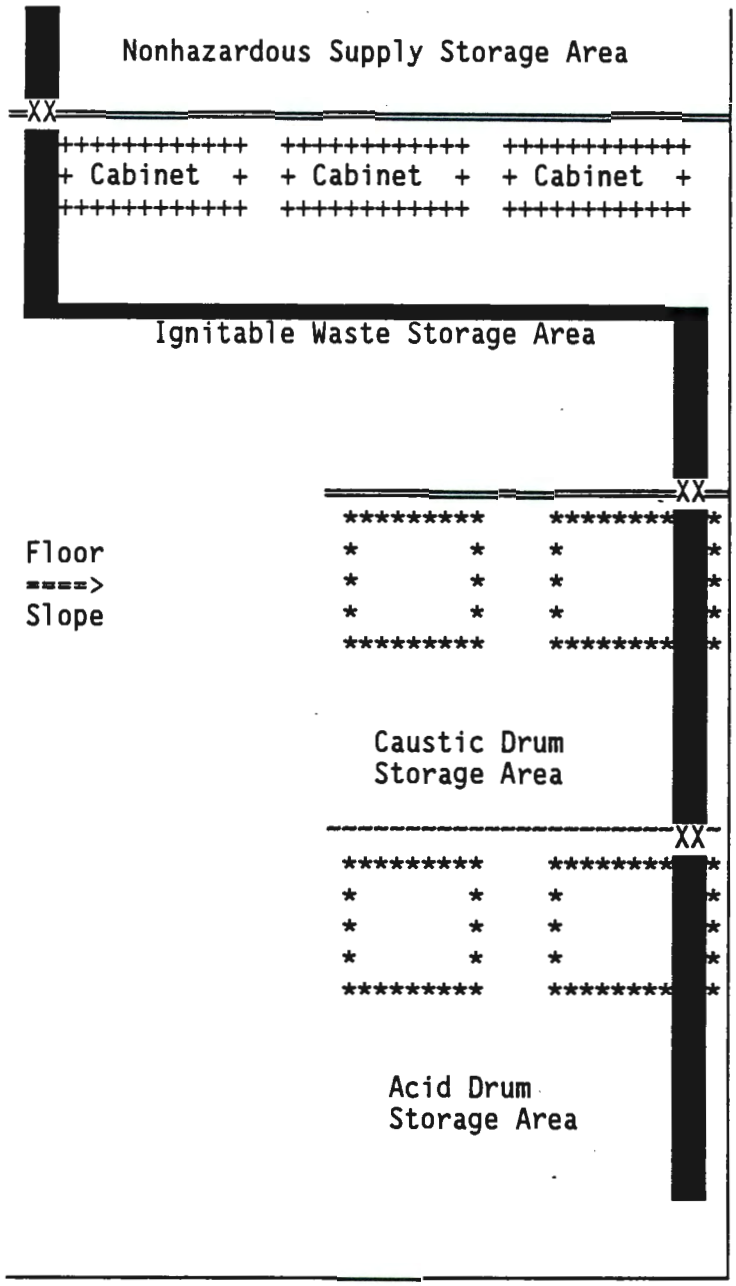
Lab Packing. One of the major functions of the 305-B Storage Unit is the preparation of lab packs for offsite recycling, treatment and/or disposal of small quantity lab wastes generated by DOE-RL/PNL activities.

Lab packs are prepared in compliance with WAC 173-303-161, 49 CFR 173.12, other applicable regulations, and permit conditions of the planned receiving facility (recycler, treatment facility, or disposal facility). Permit conditions affecting preparation of lab packs might include types of absorbent materials to be used (e.g., no vermiculite).

Lab packs are prepared in the storage cell containing the hazard class(es) to be placed in the lab pack. The elephant trunk ventilator system is used to minimize respirable dusts from the absorbent material being used (usually diatomaceous earth). Lab packs may also be prepared in the flammable liquid bulking module if appropriate; for instance, if compatible materials from more than one storage cell are being combined in a single lab pack drum. Lab packs may be prepared in the high bay storage area if storage of the completed lab pack is permitted there per Section 4.3.2.

Partial and completed lab packs are closed, labeled, and the contents list documented. Labpacks are stored in the cell from which the containers inside were drawn, or in the high bay if appropriate.

Unit personnel wear appropriate protective clothing while handling containers being placed in lab packs. At a minimum this includes coveralls, safety glasses or other protective eyewear, and chemical resistant gloves. More stringent



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LEGEND

| Building Wall (4" curb)
+ Large Drum Storage Cabinets
XX Sump Blockages (Epoxy/Concrete)
Secondary Containment Trench
* Palletized Drum Storage
‖ 3½" x 6" epoxy coated steel spill borders
— 4' x 10' L Stainless Steel Splash Wall

Figure 4-6. Segregated High Bay Drum Storage Areas.

4.1.1.6.7 Acid Waste Drum Storage Area. A section of the high bay has been dedicated to storage of drum quantities of acid waste prior to offsite shipment. The area is constructed similarly to the ignitable waste drum storage area (see above) and is also 10'x7' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident.

Sump containment capacity in this area is approximately 55 gallons and total containment capacity is approximately 255 gallons. Maximum storage in this area will be eight 55-gallon drums. A diagram of this area is included in Figure 4-6.

4.1.1.6.8 Caustic Waste Drum Storage Area. A third section of the high bay has been designated for storage of drum quantities of caustic waste prior to offsite shipment. The area is constructed similarly to the ignitable waste drum storage area (see above) and is approximately 10'x10' in size. Waste drums stored in this area are stored on pallets to prevent contact with spilled wastes in the event of an incident.

Sump containment capacity in this area is approximately 55 gallons and total containment capacity is approximately 335 gallons. Maximum storage in this area is eight 55-gallon drums. A diagram of this area is also included in Figure 4-6.

4.1.1.6.9 High Bay Storage Area. The high bay storage area, along with its partitioned areas mentioned above, is itself a secondary containment area for loading, unloading, and storage of dangerous wastes. The high bay floor is "crowned" in the center and sloped at ¼" per foot, with drainage to sumps on the east and west sides of the unit. Sump locations are indicated in Figure 4-7.

Due to space limitations in the individual cells, and for ease of mechanical handling, the high bay floor is typically used for storage of nonradioactive chemicals in drums. There is also capacity for six drums of ignitable waste storage inside of four flammable liquid drum storage cabintes located along the west side of the high bay (see Figure 4-7).

The high bay floor is also used to store labpacks and bulked waste containers prior to offsite shipment to licensed treatment, disposal, or recycling facilities. Generally, only ignitable wastes (oxidizers), toxic organic solvent mixtures (typically halogenated solvents), antifreeze mixtures, contaminated water which is toxic DW, nonliquid wastes, ORMs, or state-only dangerous waste materials are stored in the high bay storage area.

If wastes incompatible with the foregoing are stored in the high bay storage area, they are kept separated by at least ten feet of distance and stored in individual drip pans for segregation in case of simultaneous accidental spillage. Compatibility of the materials is determined prior to acceptance in accordance with Section 3.2.

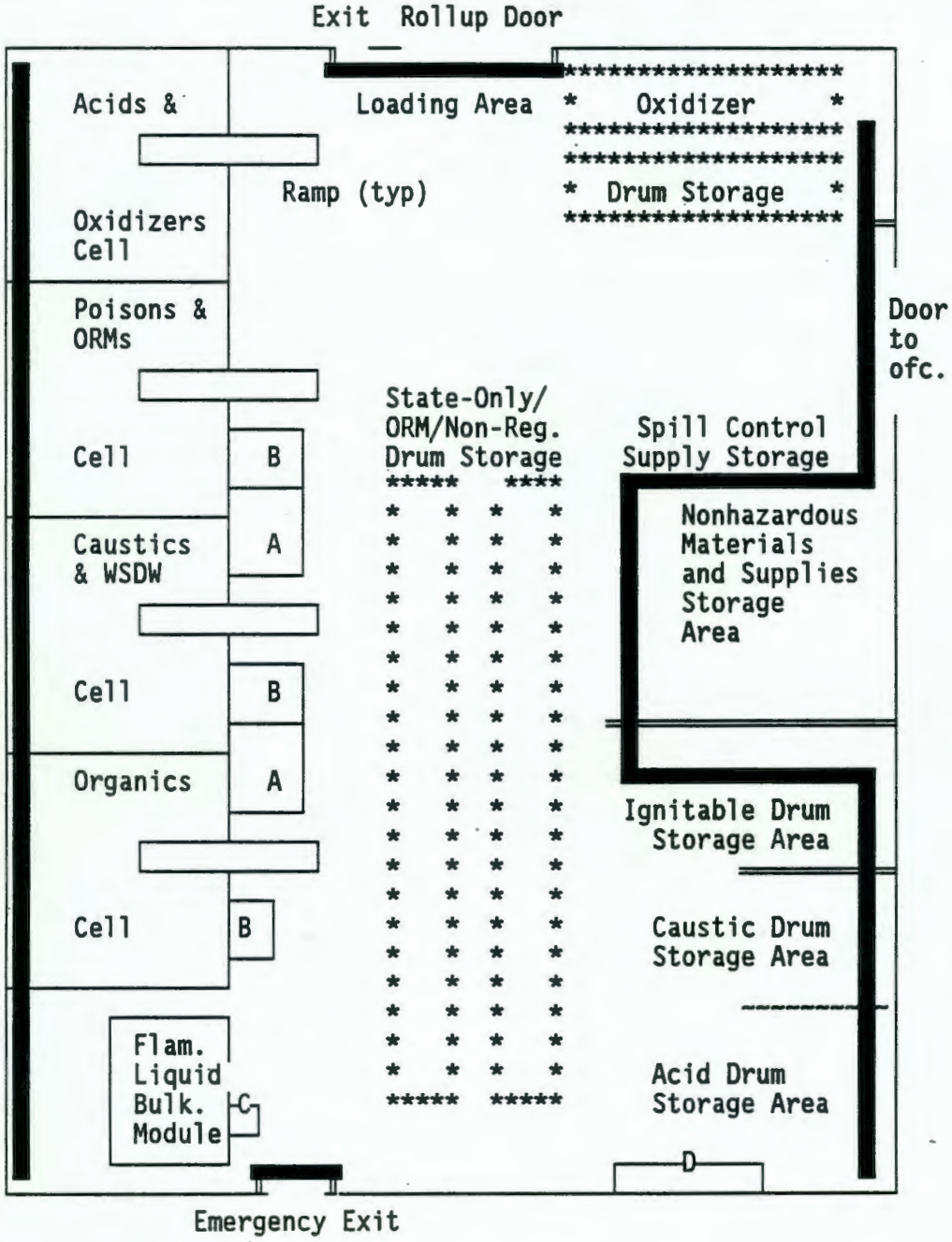

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Figure 4-7. High Bay Storage Area. (Page 1 of 2)

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LEGEND -- HIGH BAY STORAGE AREA DIAGRAM

*** Boundary of palletized drum storage areas

═══ 3½" x 6" angle iron sealed to floor as inflow control to trench (see construction detail, App. 4A, Plate 2)

--- 4'H x 10'L Stainless Steel Splash Wall

▇ Secondary containment trenches

A Large Drum Storage Cabinet (flammable labpack or bulked drum storage)

B Small Drum Storage Cabinet (flammable labpack or bulked drum storage)

C Small Storage Cabinet (asbestos)

D Material Handling Hood

Figure 4-7. High Bay Storage Area. (Page 2 of 2)

The 305-B unit does not maintain a 24-hour surveillance system. Entrances to the building are kept locked except when the building is in use to prevent unauthorized access. Normal working hours for the unit are 8:00 AM to 4:30 PM Monday through Friday except holidays. The Hanford Patrol maintains frequent drive-by surveillance of the 300 Area buildings, including 305-B, on a 24-hour basis to ensure that no unauthorized access to the area has occurred.

6.1.1.2 Barrier and Means to Control Entry [F-1a(2)(a), (2)(b)]. The entire 300 Area is surrounded by an 8-ft chain link fence topped with three strands of barbed wire. There is no separate fence surrounding the 305-B unit. All waste management activities, however, are conducted within the unit. The facility itself, therefore, provides a barrier completely surrounding the active waste management operations.

Entry to 305-B is first controlled at the Wisconsin Avenue Gate to the 300 Area and the north 300 Area gate. To be admitted by Hanford Patrol guards through the gates, all persons must have a valid DOE security badge or a temporary badge and be escorted by a person having an escort badge. Entry to the unit is then controlled through the use of locked entrances. The 305-B Storage Unit is kept locked at all times except when in use. Physical control of keys and records of key distributions are maintained by PNL Security. Distribution of keys to 305-B is subject to approval by the manager of the waste management organization, the building manager, and the facility operating supervisor, and a list of those personnel in possession of keys is kept in the Operating Record for 305-B. Personnel in possession of keys have been instructed to admit only persons having official business. All visitors to the unit must be escorted by waste management organization personnel.

6.1.1.3 Warning Signs [F-1a(3)]. The 305-B Storage Unit is posted with "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT" and "305-B CHEMICAL WASTE STORAGE BUILDING" signs near each entrance on all sides of the unit. The signs are clearly visible from the required distance of 25 ft.

6.1.2 Waiver [F-1b(1), (2)]

Waivers of the security procedures and equipment requirements for 305-B are not required and will not be requested.

6.2 INSPECTION SCHEDULE [F-2]

The purpose and intent of implementing inspection procedures at 305-B is to prevent malfunctions, deterioration, operator errors, and/or discharges which may cause or lead to the release of regulated waste to the environment or threats to human health. A system of daily, weekly, monthly, quarterly, and annual inspections involving various PNL departments and levels of management is implemented at 305-B.

6.2.1 General Inspection Requirements [F-2a]

The content and frequency of inspections performed at 305-B are described in this section. Also described is maintenance of inspection records.

6.2.1.1 Types of Problems [F-2a(1)]. Daily, weekly, monthly, quarterly, and annual inspections are performed at 305-B. The types of problems addressed by each of these inspections is described below.

Daily Inspections. The 305-B Storage Unit is inspected daily whenever waste packaging, transfer, shipping, or movement operations are being carried out. Daily inspections monitor container condition and integrity, the building waste containment system, and other building areas where wastes are handled. Specific inspection points include:

- Inspection of stored containers for leaks or damage
- Mislabeled or opened containers
- Improper storage (e.g., incompatible waste storage)
- Disorderliness or uncleanliness of storage unit
- Check for accumulation of wastes in containment systems

Results of these daily inspections are recorded in the daily operating logbook, which is part of the permanent 305-B Operating Record.

Weekly Inspections. Waste management organization personnel conduct weekly inspections of both safety and operating equipment in 305-B. Safety and emergency equipment are inspected for functionality and adequacy of supply. The weekly inspection is conducted by two personnel on the last workday of each week using the Weekly Inspection Checklist Form (Fig. 6-2) and Inspection Logbook. The Inspection Checklist and Inspection Logbook become a permanent part of the 305-B Operating Record.

Specific problems to be looked for with each of the items inspected are identified on the Inspection Checklist Form. The use of this form enhances inspection effectiveness by providing a consistent and detailed listing of areas of potential problems and those safeguards in place to prevent them. There is space provided on the form for the inventory summary, comments, required remedial actions (if any), as well as the date such actions are accomplished. The inspector is required to sign and date the inspection checklist after performing the inspection. In addition, a space is provided for the dated signature of the co-inspector. A copy of the completed inspection form with any assigned action items is distributed to the responsible operating personnel. All corrective actions required must be completed within one week of the inspection which found them deficient, unless there is documentation and reason for further delay. When corrective action has been completed, the responsible personnel date and initial the form.

10.0 WASTE MINIMIZATION PLAN

This chapter discusses the program to minimize the volume or quantity and toxicity of waste generated at the 305-B Storage Unit. The regulatory basis for, and objectives of, the waste minimization program are discussed. Waste generators are described and procedures for minimizing waste are discussed.

10.1 REGULATORY BASIS

The Hazardous and Solid Waste Amendments of 1984 to RCRA require that, whenever feasible, the generation of regulated hazardous waste be reduced or eliminated as expeditiously as possible. Section 3002(b) of RCRA requires certification of the following:

- The generator of the hazardous waste has in place a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable

- The proposed method of treatment, storage, and/or disposal is that practicable method currently available to the generator that minimizes the present and future threat to human health and the environment.

In addition, WAC 173-303-283(3)(h) requires each facility to prevent the use of processes that do not treat, detoxify, recycle, reclaim, and recover waste material to the extent economically feasible. This chapter provides the means to certify that a waste minimization program is in place for the 305-B Storage Unit.

10.2 THE 305-B STORAGE UNIT WASTE MINIMIZATION OBJECTIVES

The 305-B unit waste minimization program is tied to the overall waste minimization program for the Hanford Site. The 305-B waste minimization program includes all practices that reduce, avoid, or eliminate dangerous waste generation.

The 305-B waste minimization program objectives are to:

- Minimize the volume of dangerous waste generated.
- Recover laboratory chemicals for redistribution and/or for reuse if practicable.
- To the extent that dangerous waste is generated, select management options which recycle, reclaim or reuse the waste for a beneficial purpose to the maximum extent feasible.
- Segregate dangerous waste from nondangerous waste if practicable.

Annually, a certification as required by 40 CFR 264.73(b)(9) will be placed in the unit Operating Record stating that a waste minimization program is in place. In addition, a Hanford Site-wide biennial report is made to the EPA containing a description of efforts made to minimize waste and certification that a waste minimization program is in place. The report will include information on the 305-B unit's waste minimization program.

10.3 WASTE GENERATION CONTROL

As noted above, the 305-B unit is a storage unit receiving waste generated at other locations on the Hanford Site (principally the 300 Area) until the waste can be transported to a permitted offsite recycler or treatment, storage and/or disposal facility. The 305-B storage unit does not exercise direct control over the quantities or types of waste generated at Hanford. However, the 305-B unit does intercept certain laboratory chemicals delivered for disposal and makes them available for reuse or reclamation, thus reducing the amount of laboratory chemicals disposed as dangerous waste.

Very little hazardous waste is generated by unit operations. Most wastes are used protective clothing. Occasionally, spill cleanup residues may be generated.

Section 10.4 describes the methods used at the unit to eliminate or reduce the generation and/or offsite management of waste.

10.4 SPECIFIC WASTE MINIMIZATION PROCEDURES

The 305-B unit operates a program to intercept laboratory chemicals for reuse or reclamation. In some cases, laboratory chemicals delivered for disposal are in their original, unopened factory containers. In other cases, the containers have been opened and the contents partially consumed.

When unopened laboratory chemicals are delivered by generating units in their original factory containers, they are separately inventoried. This inventory is then provided to users of laboratory chemicals throughout PNL and at WHC in an effort to locate other users of the chemical. This inventory is published not less often than monthly. The unopened containers are retained for up to nine months before being consigned for offsite disposal.

Opened containers are also offered to other PNL users for use where use of non-certified reagents is acceptable. Examples of such use would be neutralization of bench acid spills, solvent cleaning of glassware stains, etc. Opened containers are not accumulated for purposes of reuse, however, as are unopened reagents. Potential users must contact 305-B staff about availability of opened containers.

Liquid laboratory chemicals in small containers which cannot be redistributed onsite are bulked, if practicable, in accordance with the procedures described in Section 4.1.1.2. This activity serves to reduce the number of containers which are shipped and ultimately disposed as dangerous waste, since containers which are "empty" as defined in WAC 173-303-160(2) are crushed and disposed as solid waste rather than being included in the dangerous waste quantity (as occurs with labpacks).

Waste generated at the 305-B unit, while minimal, is managed to ensure that the quantity and toxicity are minimized.

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11.0 CLOSURE AND POST-CLOSURE REQUIREMENTS [I]

This chapter is submitted in accordance with the requirements of WAC 173-303-806(4)(a)(xiii) to demonstrate that DOE-RL has developed a plan to ensure safe closure of the 305-B unit. In accordance with WAC 173-303-610, copies of the closure plan and all revisions will be maintained at 305-B until certification of closure completeness has been submitted and accepted by Ecology. A post-closure plan is not required because 305-B is not a disposal unit and all dangerous wastes and dangerous waste residues will be removed at the time of closure.

11.1 CLOSURE PLANS [I-1]

This plan presents the activities required for final closure of the 305-B Storage Unit at its maximum extent of operation. The wastes included are those regulated as dangerous waste and RMW. Partial closure will not be conducted. Closure activities are presented in sufficient detail such that the closure process is understandable and a closure schedule can be developed.

11.1.1 Closure Performance Standard [I-1a]

The 305-B Storage Unit will be closed in a manner that will minimize the need for further maintenance and eliminate post-closure release of dangerous/mixed wastes or dangerous/mixed waste constituents which could pose a risk to human health or the environment. This standard will be met by removal of all dangerous/mixed wastes and dangerous/mixed residues from the unit.

Closure activities will return the 305-B site to the appearance and use of surrounding land areas. After closure, the 305-B unit will be in a condition suitable for use to support research and development activities. This use is consistent with the surrounding land use.

If there is any evidence of spills or leaks from the unit into the environment, samples will be taken and analyzed to determine the extent of contamination in the soil, and if necessary, in groundwater. Evidence of spills or leaks will be obtained through sampling of unit structures accessible to the environment (e.g., floors) and through inspection of all barriers designed to prevent migration to the environment (e.g., sumps). If this sampling program indicates that contamination is present, the potential for migration of contamination to the environment will be evaluated. If potential migration appears likely, additional samples will be taken. In addition, if the inspections identify any potential contaminant migration routes (e.g., cracks in sumps), additional samples will be collected to determine whether migration has occurred.

Any contaminated soil will be excavated, removed, and disposed as dangerous or mixed waste (determination of dangerous or mixed waste status will be based on waste radioactivity). Soil will be decontaminated to the following levels, as required under WAC 173-303-610(2)(b):

- Background environmental levels for wastes which are listed under WAC 173-303-081 or WAC 173-303-082

- Background environmental levels for wastes which are characteristic dangerous wastes under WAC 173-303-090

- Designation limits for wastes which are designated under WAC 173-303-084, or WAC 173-303-101 through WAC 173-303-103.

Equipment and structural components will be decontaminated using the procedures described in Section 11.1.4. All residues resulting from decontamination will be sampled and analyzed, as described in Section 11.1.4.3, to determine whether they are dangerous wastes. All residues will be removed from the unit and transferred to a facility having the necessary permits. Residues containing listed wastes, having dangerous waste characteristics, or exceeding dangerous waste designation limits will be disposed as dangerous wastes.

11.1.2 Partial and Final Closure Activities [I-1b]

This plan identifies the steps necessary to perform final closure of the unit in order to meet the aforementioned closure performance standard (Section 11.1.1). Closure activities involve removal of dangerous and mixed wastes from the unit and decontamination of the unit. These activities can be implemented at any point during the active life of the unit. Partial closure of the unit will not be conducted. The entire 305-B Storage Unit will be in use at all times prior to closure. The entire unit, therefore, represents the maximum extent of the operation which will be unclosed during the unit's active life.

11.1.3 Maximum Waste Inventory [I-1c]

The 305-B Storage Unit is used to store a variety of different research-related wastes. The maximum inventory of wastes in storage at any time will be constrained by three factors:

- The total amount of dangerous/mixed waste in storage at 305-B at any time will not exceed the design capacity of 30,000 gal (it is typically 2,000 to 5,000 gal)

- The total amount of any particular dangerous/mixed waste in storage during any given year will not exceed the amounts given in the Part A permit application for 305-B (see Part A application)

- The total amount of dangerous/mixed waste by hazard class in storage at any one time will not exceed Uniform Building Code Class B Hazardous Material Quantity Restrictions (see Table 4-1).

Except on the relatively rare occasion when 85-gal overpacks are used, approximately 90% of all dangerous wastes shipped from the unit are contained in 55-gal drums, with the remaining 10% consisting of 30-gal and smaller containers.

11.1.4 Inventory Removal, Disposal or Decontamination of Equipment, Structures, and Soils [I-1d]

Steps for removing or decontaminating all dangerous/mixed waste containers, residues, and contaminated equipment are described below.

11.1.4.1 Inventory Removal. Closure activities will be initiated by removal of the dangerous/mixed waste inventory present at 305-B at the time of closure. Inventory removal procedures will be identical to the waste handling, packaging, and manifesting activities associated with normal operation of the unit. All dangerous wastes present will be placed into proper containers according to currently accepted waste handling procedures; mixed waste will be placed into containers and meet Hanford specifications outlined in WHC-EP-0063, Hanford Radioactive Solid Waste Packaging, Storage, and Disposal Requirements. To the extent possible, chemicals will be bulked into larger containers. If wastes are bulked, containers will be emptied in compliance with WAC 173-303-160 so that they are not dangerous wastes. Small quantity laboratory chemicals that cannot be bulked will be packaged into labpack containers in compliance with the requirements of WAC 173-303-161. All containers of dangerous/mixed waste will be manifested, and custody transferred to a dangerous waste transporter having a proper dangerous waste identification number. Wastes will be transported to a permitted dangerous waste facility for treatment or disposal.

11.1.4.2 Decontamination of Building Equipment and Structures. All equipment and structures in dangerous/mixed waste handling and storage areas will be decontaminated at the time of closure. Equipment and structures to be decontaminated include:

- Floors and walls of the four dangerous waste storage cells
- Floors, walls, and ceiling of high bay and flammable liquid bulking module areas
- Floors and walls of remainder of first floor except for offices, work area, and lavatories/change rooms
- Floors, walls, and ceiling of basement except equipment storage room
- Interior surfaces of all secondary containment trenches
- Fork lift and loading hoist
- Asphalt ramp outside north high bay door.

Prior to decontamination, sampling and analysis will be performed to determine decontamination requirements. In most cases, minimal decontamination consisting of washing or wiping will be performed unless the sampling and analysis indicates the presence of high levels of contamination. In order to determine whether such contamination exists, a systematic sampling approach designed to identify the presence of "hot spots" will be employed. Structures (i.e., floors, walls, ceilings) to be sampled prior to decontamination will be sampled on a regular grid with a spacing of 5 ft. This spacing provides an 80% probability of detecting a circular area of contamination having a radius of 2.5 ft or larger (Gilbert 1987, pp. 119-125). Biased sampling of areas more likely to have been contaminated by unit operations, such as cracks or seams in the concrete floor or any visible stains, will also be performed. If any areas of contamination are detected, more thorough decontamination procedures will be used in those areas.

Structural surfaces will be sampled by collecting wipe samples at each grid point. At each sample location, two samples will be collected within adjacent 1 ft square templates. One sample will be collected using a gauze pad wetted with dilute nitric acid for extraction of inorganic contaminants. The other sample will be collected with a gauze pad wetted with hexane for extraction of organic contaminants. The procedure for collecting wipe samples is given in Appendix 11A.

Decontamination of equipment and structures will take place as described below. The magnitude of each phase of the operation and estimated time for completion are included.

11.1.4.2.1 Decontamination of Basement. Once the RMW room has been completely emptied of stored waste, any visible residues present will be scraped, vacuumed and/or swept up until visibly clean. All residues thus obtained will be placed in open top drums and disposed of as appropriate. All waste materials generated during the decontamination process of the RMW room will be surveyed by radiation protection technologists (RPTs) to determine whether the wastes generated from decontamination should be handled as RMW. After the above process is completed, wipe samples will be collected at various points along the floors, walls, and ceiling of the basement.

Swab samples will be collected from the RMW room to test for dangerous waste contamination resulting from storage activities. Any dangerous waste contamination found during this testing will be presumed to have come from storage activities unless otherwise documented. Random and biased sampling locations will be selected using the procedures noted in Section 11.4.4. The swab samples will be analyzed to determine if the RMW storage area has been radioactively contaminated. Baseline smears will have been documented prior to introduction of RMW. Radioactivity has been selected as an indicator of contamination since it is present in the RMW and is easily detected. Once the results from the testing are known, a decision can be made as to the appropriate decontamination procedures.

If no contamination is found on the swab samples, decontamination procedures will consist of dusting, vacuuming, and wiping with soap and water. Vacuuming is performed using a commercial or industrial vacuum equipped with a high-efficiency particulate air (HEPA) filter. The vacuum cleaner bag containing captured particulates is disposed of as appropriate.

Dusting/wiping is done with a damp cloth or wipe (soaked with water or solvent) to remove dust from surfaces not practically treatable with a vacuum. The cloth or wipe is also disposed of as appropriate. Brushing or sweeping is used to clean up coarse debris.

Minimal time will be required for setup of the equipment. Labor requirements for the process should be moderate. Minimal time will also be required for packaging debris and dismantling and removing cleaning equipment. Little wastewater (only the contents of the buckets) will be generated by this procedure. However, if contamination is found on the swab samples, more sophisticated decontamination procedures must be implemented. The entire RMW storage room will be extensively treated via steam cleaning. The ceiling, all four walls, and the floor will be treated by applying steam from a hand-held wand to remove all residues from the

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surfaces. The contaminated wastewater generated by this activity will be contained by the designed spill controls already in place for waste storage areas. Pumps or vacuums will be used to empty the wastewater from the containment area into polyethylene-lined, closed top drums. These containers will be transported for proper management at an approved dangerous waste or RMW TSD facility.

Although this procedure will require more time than the dusting, vacuuming, and wiping procedures outlined above, time requirements are still considered to be minimal for the steam cleaning approach. Wastewaters generated by this procedure are not anticipated to exceed 100 gal.

Following completion of decontamination, sampling will be performed, as described in Section 11.1.4.4, to verify that decontamination is complete.

11.1.4.2.2 Decontamination of Waste Handling Equipment. All equipment will be decontaminated first by solvent washing followed by steam cleaning, or disposed of as dangerous waste at an approved disposal facility. The decision to dispose or decontaminate equipment will be made at the time of closure. Whichever option, in the opinion of the Building Supervisor, is most environmentally and economically feasible will be chosen. If the equipment is not considered to be substantially contaminated, the solvent washing may not be performed. In this case, the equipment will be cleaned by the steam cleaning technique only.

All equipment to be decontaminated will be placed in one of the fully contained storage cells and subjected to the solvent wash deemed most effective for the removal of the suspected contamination. The equipment is then subjected to a final washing and rinsing by a steam cleaning unit. All wastewaters will be collected in the storage cell sumps, pumped to polyethylene-lined closed top drums, and transported and disposed of as dangerous waste.

The time required for completion and wastewaters generated by these processes are largely dependent upon the amount of equipment which needs to be treated. However, at this time, minimal time and effort are anticipated. In addition, wastes to be generated are not anticipated to exceed 50 gal.

Following completion of decontamination, sampling will be performed, as described in Section 11.1.4.4, to verify that decontamination is complete.

11.1.4.2.3 Decontamination of Dangerous Waste Storage Cells. Any visible contamination present in the storage cells will be scraped and/or swept until visibly clean. All residues obtained from the scraping/sweeping exercise will be placed in open top drums and disposed of as dangerous waste. Each of the four storage cells will be steam cleaned and the generated wastewaters collected in each of the storage cell's individual sumps. The wastewaters will be pumped from the sumps to polyethylene-lined, closed top drums in preparation for disposal. No wastewaters will be mixed with scrapings, sweepings, or wastewaters from other storage cells. Each sump area will be re-rinsed with water. This water will similarly be pumped to containers for disposal.

The containerized wastewaters will be analyzed to determine if they are designated as dangerous waste under WAC 173-303-070. If designated as dangerous,

the wastewaters will be handled, transported, and disposed of as dangerous waste. If not dangerous waste, the wastewater will be managed appropriately.

Total decontamination of the storage cells should be completed in no more than 2 weeks. Each of the storage cells should have approximately 30 gal of wastewater generated during the cleaning and rinsing process; therefore, a total of 120 gal of wastewater will need to be analyzed and disposed.

Following completion of decontamination, sampling will be performed, as described in Section 11.1.4.4, to verify that decontamination is complete.

11.1.4.2.4 Decontamination of High Bay, Flammable Liquid Bulking Module and Other First Floor Areas. Wipe samples will be collected at various points along the floors, walls, and ceiling of the entire first floor, except for the office, supply/office area, lunch room, and rest room. The wipe samples will be analyzed to determine if these areas have been contaminated with dangerous waste constituents. Once the results from the testing are known, a decision can be made as to the appropriate decontamination procedures.

If no contamination is found on the wipe samples, decontamination procedures will consist of dusting, vacuuming, and wiping. Vacuuming is performed using a commercial or industrial vacuum equipped with a HEPA filter. The vacuum cleaner bag containing captured particulates is disposed of as appropriate.

Dusting/wiping is done with a damp cloth or wipe (soaked with water or solvent) to remove dust from surfaces not practically treatable with a vacuum. The cloth or wipe is also disposed of as appropriate. Brushing or sweeping is used to clean up coarse debris.

Minimal time will be required for setup of the equipment. Labor requirements for the process should be moderate. Minimal time will also be required for packaging debris and dismantling and removing cleaning equipment. Little wastewater (only the contents of the buckets) will be generated by this procedure.

On the other hand, if contamination is found on the wipe samples, more sophisticated decontamination procedures must be implemented. The affected areas will be extensively treated via steam cleaning. Such areas will be treated by applying steam with a hand-held wand to remove all residues from the surfaces. The contaminated wastewater generated by this activity will be contained by the designed spill controls already in place for the waste storage areas. Pumps will be used to empty the wastewater from the containment area into polyethylene-lined closed top drums. These containers will be transferred for proper treatment or disposal at an approved dangerous waste facility.

Although this procedure will require more time than the dusting, vacuuming, and wiping procedures outlined above, time requirements are still considered to be minimal for the steam cleaning approach. Wastewaters generated by this procedure are not anticipated to exceed 200 gal.

Following completion of decontamination, sampling will be performed, as described in Section 11.1.4.4, to verify that decontamination is complete.

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11.1.4.2.5 Decontamination of Sumps. All collection sumps located at 305-B, including those lining the storage cells on the west side of the unit, the sump along the east side inside wall, and those protecting the exits on the north and south ends, will be decontaminated by steam cleaning. Wastewaters collected in each sump from the implementation of the cleaning process will be pumped into polyethylene-lined, closed top drums and analyzed as to whether or not they are designated as dangerous waste under WAC 173-303-070. If designated, they will be disposed of as dangerous waste. If they are not dangerous waste, the wastewaters will be discharged to the 300 Area process sewer system. The steam cleaning of all the sumps should take minimal time and generate approximately 100 gal of wastewater.

Following completion of decontamination, sampling will be performed, as described in Section 11.1.4.4, to verify that decontamination is complete.

11.1.4.3 Management of Decontamination Wastes. Liquid decontamination wastes will be placed in drums and sampled to determine disposal requirements. Grab samples will be collected from drums using COLIWASA samplers. In order to properly designate the decontamination wastes under WAC 173-303-070, grab samples from each drum will be analyzed for the following:

- Corrosivity using the methods described in SW-846.
- Flash point using methods described in SW-846.
- Toxicity characteristic using the toxicity characteristic leaching procedure described in SW-846 (includes analysis for metals, volatile organics, and semivolatile organics including chlorinated pesticides)
- Total radioactivity using gross alpha, gross beta, and gamma scan.

The results of sample analysis will be used to determine how to dispose of liquid decontamination wastes. The results of volatile and semivolatile organic analysis of the liquid performed as part of the TCLP will be used to determine the presence of potential listed [WAC 173-303-081(1) and WAC 173-303-082(1)] dangerous waste constituents above background. (Background levels will be determined by analysis of the tap water used for makeup of the decontamination solutions.) Those liquid wastes with listed waste constituents above background will be designated as dangerous wastes. The results of the ignitability, corrosivity, and TCLP analyses will be used to determine if liquid wastes are characteristic dangerous wastes [WAC 173-303-090]. Organic and inorganic analytical results will also be used to determine if liquid wastes are dangerous waste mixtures [WAC 173-303-084]. These results will also be used to determine whether the wastes are LDR [WAC 173-303-140(4) and 40 CFR 268]. The results of the radiological analyses will be used to determine whether any of the liquid wastes are low-level liquid radioactive wastes or radioactive mixed wastes. Depending on designation, liquid decontamination wastes will be disposed of as follows:

- Dangerous--Shipped to a permitted dangerous waste TSD facility

- Radioactive Mixed--Shipped to a permitted radioactive mixed waste TSD facility

- Low-level Radioactive--Discharged to the 300 Area liquid radioactive waste system, or otherwise appropriately disposed

- Nonregulated--Discharged to the 300 Area process sewer system.

All non-liquid wastes generated during decontamination of dangerous waste storage areas and equipment (e.g., personnel protective clothing) will be collected in 55-gal open-head drums and managed as dangerous wastes. All non-liquid wastes generated during decontamination of RMW storage areas and equipment will be similarly collected and managed as RMW.

11.1.4.4 Methods For Sampling And Testing To Demonstrate Success Of Decontamination. A series of wipe samples will be collected at various points along floors, walls, ceilings, and equipment of areas at which decontamination activities were conducted. These samples will be analyzed and used to verify whether decontamination procedures were effective. To verify decontamination, a systematic sampling approach designed to identify the presence of "hot spots" will be employed. Samples will be collected on a regular grid with a spacing of 5 ft. This spacing provides an 80% probability of detecting a circular "hot spot" having a radius of 2.5 ft or larger (Gilbert 1987, pp. 119-125). Biased sampling of areas more likely to have been contaminated by unit operations, such as cracks or seams in the concrete floor or any visible stains, will also be performed. If any "hot spots" are detected, additional decontamination will be performed.

Decontaminated surfaces will be sampled by collecting wipe samples at each grid point. At each sample location, two samples will be collected within adjacent 1 ft square templates. One sample will be collected using a gauze pad wetted with dilute nitric acid for extraction of inorganic contaminants. The other sample will be collected with a gauze pad wetted with hexane for extraction of organic contaminants.

11.1.4.5 Closure of Containers [I-1d(1)]. At closure, all containers will be removed from the 305-B unit. All dangerous waste residue will be removed from the containment system components. Contaminated equipment, floors, walls, and loading areas will be decontaminated or removed. All decontamination equipment and rinsate will be containerized, tested, and properly disposed. Sampling and analysis will be conducted to ensure that no contamination remains around the storage area and containment system. Additional details for closure and decontamination are provided in Sections 11.1.4.1 through 11.1.4.3.

11.1.4.6 Closure of Tanks [I-1d(2)]. This section is not applicable to the 305-B Storage Unit because wastes are not stored or treated in tanks.

11.1.4.7 Closure of Waste Piles [I-1d(3)]. This section is not applicable to the 305-B Storage Unit because wastes are not stored in waste piles.

11.1.4.8 Closure of Surface Impoundments [I-1d(4)]. This section is not applicable to the 305-B Storage Unit because wastes are not placed in surface impoundments.

11.1.4.9 Closure of Incinerators [I-1d(5)]. This section is not applicable to the 305-B Storage Unit because wastes are not incinerated.

11.1.4.10 Closure of Land Treatment Facilities [I-1d(6)]. This section is not applicable to the 305-B Storage Unit because wastes are not treated in land treatment units.

11.1.5 Closure of Disposal Facilities [I-1e]

This section is not applicable to the 305-B Storage Unit because it will not be closed as a dangerous waste disposal unit.

11.1.6 Closure Schedule [I-1f]

Closure of 305-B is not expected to begin during the term of the Part B permit. When closure begins, the inventory of dangerous and radioactive mixed waste will be removed within 90 days from receipt of the final volume of wastes. All closure activities will be completed within 180 days of receipt of the final volume of waste. The Director of the Washington Department of Ecology will be notified by DOE-RL at least 45 days before the final closure activities are begun. Closure activities are summarized in Table 11-1. A detailed schedule of closure activities is provided in Figure 11-1.

11.1.7 Extension of Closure Time Frame [I-1g]

The inventory of dangerous and radioactive mixed wastes will be removed from the 305-B Storage Unit within 90 days of receipt of the last volume of waste. The closure activities described in this plan will be completed within 180 days of receipt of the final volume of waste. No extension to the time frame for initiation and completion of closure is currently expected to be necessary. Extensions to the time frames for closure would only be necessary if unexpected conditions were encountered during closure of the unit. If it becomes apparent that all wastes cannot be removed within 90 days, Ecology will be so notified at least 30 days prior to expiration of the 90 day period. This notification will demonstrate why more than 90 days is required for removal of the wastes and will demonstrate that steps have been taken to prevent threats to human health and the environment and that the unit is in compliance with applicable permit standards. If it becomes apparent that closure cannot be completed within 180 days after approval of this plan, Ecology will be so notified at least 30 days prior to expiration of the 180 day period. This notification will demonstrate why more than 180 days is required for closure and will demonstrate that steps have been taken to prevent threats to human health and the environment and that the unit is in compliance with applicable permit standards.

11.1.8 Amendments to Closure Plan

If changes are deemed necessary to the approved closure plan, DOE-RL will submit a written request to Ecology for authorizing a change to the approved plan. The written request will include a copy of the amended plan, in accordance with WAC 173-303-610(3)(b).

Table 11-1. Summary of Closure Activities.

Closure Activity Description	Expected Duration
Receipt of final volume of dangerous and/or mixed waste	N/A
Notify EPA and Ecology that closure will begin	N/A
Remove waste inventory -- package all dangerous and mixed wastes, manifest, and transfer to permitted facility for treatment and/or disposal	45 days
Obtain wipe samples from structural surfaces and equipment to identify areas of contamination and determine level of decontamination needed	10 days
Analyze wipe samples	25 days
Decontaminate structural surfaces and equipment using procedures based on results of wipe sampling	35 days
Obtain wipe samples to verify decontamination	25 days
Analyze verification samples	35 days
Analyze decontamination wastes to determine proper methods of treatment/disposal	25 days
Dispose of decontamination wastes based on results of waste analysis	20 days

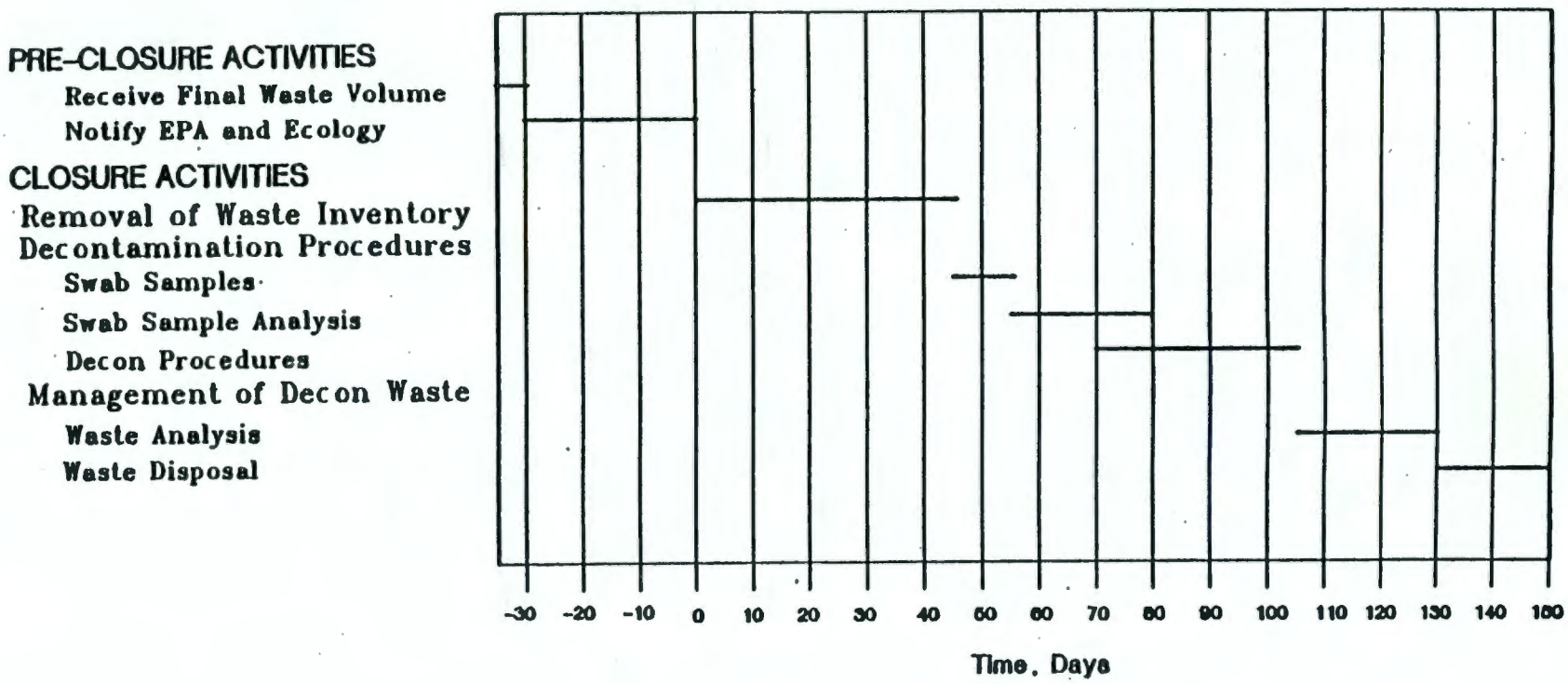

Figure 11-1. Detailed Schedule of Closure.

11.2 CERTIFICATION OF CLOSURE

Within 60 days of completion of the final closure activities described in this plan, a certification of closure will be submitted to Ecology. This certification will indicate that the 305-B Storage Unit has been closed as described in this plan and that the closure performance standards given in Section 11.1.1 have been met. The certification will be submitted by registered mail and will be signed by DOE-RL and an independent Professional Engineer registered in the State of Washington as described below.

The DOE-RL will self-certify with the following document or a document similar to it:

> I, (name), an authorized representative of the U.S. Department of Energy-Richland Field Office located at the Federal Building, 825 Jadwin Avenue, Richland, Washington, hereby state and certify that the 305-B Storage Unit at the 300 Area, to the best of my knowledge and belief, has been closed in accordance with the attached approved closure plan, and that the closure was completed on (date).
> (Signature and date)

The DOE-RL will engage an independent Professional Engineer registered in the State of Washington to inspect closure activities, to verify that closure activities are being conducted according to this plan, and to certify that closure has been performed in accordance with this plan.

The engineer will inspect 305-B at least weekly while closure activities are being performed. During these inspections the engineer will observe closure activities to determine whether they are being performed according to this plan. Inspections will include, but not be limited to:

- Inspection of dangerous and radioactive mixed waste containment structures and systems to determine whether releases of wastes to the environment have occurred

- Verification that the dangerous and radioactive mixed waste inventory has been removed within 90 days of receipt of the last waste shipment

- Inspection of manifests and Operating Record to verify that these wastes were disposed of in compliance with WAC 173-303

- Inspection of decontamination operations to verify that they are being performed using the procedures described in this plan

- Inspection of the Operating Record to verify that samples of liquid decontamination wastes were collected and analyzed using the procedures described in this plan

- Inspection of the Operating Record to verify that decontamination wastes were properly designated in compliance with WAC 173-303-070 and properly disposed.

Inspections by the engineer will be documented in a bound notebook. Notations will include the date and time of the inspection, the areas inspected, the activities inspected, applicable closure plan requirements inspected, status of observed activities with respect to plan requirements, corrective actions required, status of past corrective actions, and name and signature of inspector. This inspection notebook will be made available to Ecology upon request.

Upon completion of closure according to the plan, the DOE-RL will require the engineer to sign the following document or a document similar to it:

> I, (name), a certified Professional Engineer, hereby certify, to the best of my knowledge and belief, that I have made visual inspection(s) of the 305-B Storage Unit at the 300 Area and that closure of the aforementioned unit has been performed in accordance with the attached approved closure plan.
>
> (Signature, date, state Professional Engineer license number, business address, and phone number.)

11.3 POST-CLOSURE PLAN [I-2]

This section and subsequent subsections are not applicable because the 305-B Storage Unit is not to be closed as a dangerous waste disposal unit.

11.4 NOTICE IN DEED [I-3]

This section is not applicable because the 305-B Storage Unit is not to be closed as a dangerous waste disposal unit.

11.5 CLOSURE COST ESTIMATE [I-4]

It is DOE-RL's understanding that federal facilities are not required to comply with WAC 173-303-620. However, projections of anticipated costs for closure will be provided annually during closure activities.

11.6 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE [I-5]

In accordance with 40 CFR 264.140(c) and WAC 173-303, this section is not required for federal facilities. The Hanford Site is a federally-owned facility for which the federal government is an operator and this section is therefore not applicable to the 305-B Storage Unit.

11.7 POST-CLOSURE COST ESTIMATE [I-6]

A post-closure cost estimate is not required for the 305-B Storage Unit because it will not be closed as a dangerous waste disposal facility.

11.8 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE CARE [I-7]

Post-closure financial assurance is not required for the 305-B Storage Unit because it will not be closed as a dangerous waste disposal facility.

11.9 LIABILITY REQUIREMENTS [I-8]

In accordance with 40 CFR 264.140(c) and WAC 173-303, this section is not required for federal facilities. The Hanford Site is a federally-owned facility for which the federal government is an operator and this section is therefore not applicable to the 305-B Storage Unit.

Attachment 2

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Text Change Summary for

305-B Page Change Package

Page changes in the form of page replacements for revision 1 of the 305-B Storage Unit Dangerous Waste Part B Permit Application were submitted in response to two Ecology requests for editorial changes to the permit application. The page replacements are editorial in nature and do not change the scope or content of the permit. The page replacements will be revision 2 of the permit application.

The editorial changes to revision 1 are as follows:

Page 4-1, lines 23-25	These lines were reworded to clarify the language. As written in revision 1 the sentence did not make sense.
Page 4-13	Figure 4-6 was corrected to show the correct location of the acid drum and caustic drum storage areas.
Page 4-15 and 4-16	Symbols for the stainless steel splash wall were changed to correctly reflect its location and differentiate it from other symbols on Figure 4-7.
Pages 6-3 and 6-4	These pages were inadvertently left our of revision 1 of the permit application.
Page 10-2, lines 1-2	These lines were deleted. They were a repeat of the last two lines of page 10-1.
Page 11-2, lines 40-42	Language was changed to correctly reference table 4-1 instead of table 6-3.
Page 11-3, table 11-1	Table 11-1 contained an estimate of waste on hand at closure. The quantities shown conflicted with the Part A application, so the table was removed from the permit application and all chapter references to table 11-1 were changed to reference the 305-B part A application. Subsequent chapter tables were renumbered and all chapter language referencing the tables was changed to reflect the renumbering. (NOTE: The content page was revised and all chapter 11 pages were renumbered to reflect the table 11-1 removal.)
Page 11-7, lines 50-51	Language was changed by removing the word "manifest" to correctly reflect DOE-RL's position of manifesting waste on-site.
Page 11-8, lines 1-2	Language was changed by removing the word "manifest" to correctly reflect DOE-RL's position of manifesting waste on-site.

All pages of revision 1 not addressed by the above page changes will remain the same. Pages of the page change package that did not contain a change referenced above were included because the permit application was printed on both sides of the page.

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