

**FY2005-SPMA-S-0317**

**Calendar Year 2004 Land Disposal Restrictions Assessment:**

**241-A-702 Ventilation Building**

**and**

**Double-Shell Tank Farms**

**Conducted November 2004**

## EXECUTIVE SUMMARY

The Land Disposal Restrictions Assessment Program, as applied to tank farm facilities, addresses requirements identified in a March 2000 Director's Final Determination from the Washington State Department of Ecology<sup>1</sup> (Ecology). The program assesses the status of mixed waste storage at tank farm facilities against federal and state requirements.

The CH2M HILL Hanford Group, Inc. (CH2M HILL) calendar year 2004 commitment, as documented in Table 3.4 of DOE/RL-2004-07, *Calendar Year 2003 Hanford Site Mixed Waste Land Disposal Restrictions Report*, was to assess potential mixed waste storage issues at the 241-A-701 Ventilation Building in the 241-A single-shell tank farm. The facility number given in that table was in error, and should be 241-A-702. This report documents assessment of that facility, to meet the commitment to Ecology. Though not part of the commitment, this report also includes CH2M HILL's assessment of its double-shell tank (DST) farms.

Assessment of the 241-A-702 Ventilation Building focused on evaluation of whether the remaining facility equipment and system components were potential mixed waste. Assessment of the DST farms and the managing organization Waste Feed Operations (WFO) focused on (1) management of contaminated equipment, (2) DST integrity testing, and (3) implementation of interim status requirements. Current tank farm vapor concerns restrict farm access, allowing entry only by personnel who are properly trained and equipped (level B personal protective equipment), and medically monitored (baseline mercury monitoring) to perform higher priority tasks. This precluded tank farm entry by the assessors. Thus, this assessment did not include physical inspection of the facilities, except from tank farm perimeters.

## CONCLUSIONS

### 241-A-702 Ventilation Building

Through review of available documentation, and interviews of personnel familiar with the facility, the assessors conclude that the 241-A-702 Ventilation Building has only one remaining system component that is a potential mixed waste. That component is a seal pot that formerly received condensate from the in-line heater positioned immediately upstream of the high-efficiency particulate air (HEPA) filters; the seal pot may contain a sludge heel. Current facility management practice does not include periodic inspection to ensure that the seal pot is maintained in a status that meets the intent of mixed waste storage requirements.

The only other equipment or system component in the facility that could potentially have accumulated or concentrated contaminants such that it might be a potential mixed waste would be the 12 HEPA filters.

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<sup>1</sup> Ecology, 2000, "Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding the U. S. Department of Energy's (DOE) compliance with Land Disposal Restriction (LDR) requirements of Washington State's Hazardous Waste Management Act (HWMA) and the federal Resource Conservation and Recovery Act (RCRA), DOE's annual Land Disposal Restrictions Report, and HFFACO milestone M-26-01," (Letter to R. French, U.S. Department of Energy, Office of River Protection, and K. Klein, U.S. Department of Energy, Richland Operations Office, March 29, ) Washington State Department of Ecology, Olympia, Washington.

These filters and the adjacent ducting were removed and disposed in fiscal year 2003, as part of the facility deactivation process.

Also, as part of the facility deactivation process, the facility stack has been blanked, its floor drains have been plugged, and the ducting blanked.

#### Double-Shell Tank Farms

##### *Interim Status Requirements*

Significant improvements were noted in the implementation of the interim status requirements. Operator rounds procedures have been consolidated, eliminating many of the inconsistencies previously noted. Also, CH2M HILL is in the process of moving required inspections from the tickler system, and placing them in more appropriate implementing systems (e.g., operator rounds). Improvements were also noted in RPP-16922, *Environmental Specification Requirements*, which communicates compliance information to operating organizations; although some problems still exist, the document has support from both management and staff, and is the focus of continual improvement efforts.

##### *Double-Shell Tank Integrity Testing*

Because no scheduled deliverables related to DST integrity testing have been missed, this assessment produced no related findings or observations.

##### *Contaminated Equipment Management*

The contaminated equipment procedure has recently changed organizations; it now belongs to the Technical Waste Services organization. The assessors noted improvements in implementation, and the change in ownership is viewed as a step in the right direction. Still, improvements in the implementing procedure, worker knowledge of the requirements, and management support of the program are needed to achieve consistent, effective compliance.

## **FINDINGS AND OBSERVATIONS**

#### *Potential Mixed Waste Evaluation at 241-A-702*

Finding LDR-2004-PMW-F-01: The seal pot in the 241-A-702 Ventilation Building is potentially a mixed waste, due to the residual heel. As such, it must be maintained in a status that meets the intent of appropriate mixed waste storage requirements. Current practice does not include evaluation of the seal pot's status on any regular basis.

#### *Interim Status Requirements*

Observation LDR-2004-IS-O-01: Two programmatic surveillance/compliance inspections (SCIs) scheduled for 2004 are delinquent.

Observation LDR-2004-IS-O-02: A concern related to the inspection and maintenance of fire, safety, and emergency equipment in unmanned facilities was noted in a recent SCI of the 244-AR Facility. The SCI performer was not sure if there was a requirement to have this type of equipment available in unmanned facilities. An area for evaluation would be to review the policy and requirements listed in fire, safety, and emergency inspection and maintenance procedures to determine if unmanned facilities are addressed, and

to ensure checklists and other documents used have notes or policy statements on how to deal with unmanned facilities.

Observation LDR-2004-IS-O-03: A concern related to the inspection of the safety shower was noted in a recent SCI of the 204-AR Facility. The 204 AR Facility eyewash station was not being inspected monthly as required by RPP-16922. The safety shower should be maintained under the facility periodic maintenance program in accordance with TFC-ESHQ-S-STD-19, "Safety Shower and Eyewash Stations."

Observation 2004-LDR-IS-O-04: When ENRAF<sup>2</sup> data cannot be obtained electronically, operators collect DST tank-level data during their rounds. The datasheet used by the operators sometimes does not contain the previous day's reading. This makes it difficult for the operator to perform a preliminary evaluation for significant tank-level changes. Recommend consideration of process modification to ensure that readings from previous days are readily available and are always on the datasheet provided to the operators at the beginning of their rounds.

#### *Contaminated Equipment Management*

Finding LDR-2004-CE-F-01: Apparent procedural noncompliance. Assessors reviewed the Waste Feed Operations Contaminated Equipment Inventory list, and found two items that were noted to be "awaiting disposal." The inventory inspection was dated July 20, 2004. At the time of the November 2004 assessment, WFO had not yet notified Technical Waste Services that the items were awaiting disposal. This appears to be a noncompliance with TFC-OPS-WM-C-10, "Contaminated Equipment Management Practices," Section 4.1.4.a, which requires that Technical Waste Services be notified immediately and requested to initiate disposition within three working days.

Observation LDR-2004-CE-O-01: Suggest further evaluation by Technical Waste Services of possible noncompliance with waste management regulations. Information developed in the November 2004 assessment suggests that WFO stored waste contaminated equipment in the SY Farm for more than 90 days. The equipment is believed to be only radiologically contaminated; however, if it designates as mixed waste, this situation may constitute noncompliance with WAC 173-303-200, "Accumulating dangerous waste on-site."

Observation LDR-2004-CE-O-02: Assessment of the implementation of TFC-OPS-WM-C-10 identified the following issues associated with the procedure itself.

1. Current practice is to retain completed Usable Contaminated Equipment Justification Checklist (site form A-6003-885) in work packages only when the equipment in question is determined to be reusable contaminated equipment. If the evaluation proves negative, the form is thrown away leaving no documentation to show that the issue was ever addressed.
2. The procedure is sometimes difficult to follow in some sections and does not always provide sufficient guidance.
3. Terminology, especially with respect to categories of equipment and waste, may not always be consistent with terminology used by the U.S. Department of Energy and Ecology.

Observation LDR-2004-CE-O-03: TFC-OPS-WM-C-10 is not consistently, effectively implemented. Contributing factors may be (1) some planners do not appear to be familiar with the procedure, its intent,

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<sup>2</sup> Enraf is a trademark of Enraf Inc., a subsidiary of Enraf B.V., Delft, The Netherlands.

and its status as CH2M HILL's sole implementing procedure for the site's contaminated equipment management policy; or (2) cognizant staff is not sufficiently familiar with the procedure.

Observation LDR-2004-CE-O-04: TFC-OPS-WM-C-10 is not consistently, effectively implemented. One contributing factor may be that the procedure is not effectively integrated into all appropriate work processes and related administrative controls (procedures). At present, TFC-OPS-WM-C-10 is only called out in one place within TFC-OPS-MAINT-C-01, "Tank Farm Contractor Work Control." Assessors did not find the procedure called out in any other CH2M HILL guidance documents.

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**LIST OF TERMS**

CFR	<i>Code of Federal Regulations</i>
CH2M HILL	CH2M HILL Hanford Group, Inc.
CPR	cardiopulmonary resuscitation
DOE	U.S. Department of Energy
DST	double-shell tank
ECN	engineering change notice
Ecology	Washington State Department of Ecology
EDL	equipment deficiency list
HEPA	high-efficiency particulate air
HFFACO	<i>Hanford Federal Facility Agreement and Consent Order</i>
JCS	Job Control System
LDR	Land Disposal Restrictions
ORP	Office of River Protection
PER	problem evaluation requests
PM/S	preventive maintenance and surveillance
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RMIS	Record Management Information System
SACS	Surveillance Analysis Computer System [database]
SCBA	self-contained breathing apparatus
SCI	surveillance/compliance inspection
SST	single-shell tank
TSD	treatment, storage and disposal
TWS	Technical Waste Services
WAC	<i>Washington Administrative Code</i>
WFO	Waste Feed Operations

## 1.0 INTRODUCTION

The Land Disposal Restrictions (LDR) Assessment Program, as applied to tank farm facilities, addresses requirements identified in a March 2000 Director's Final Determination from the Washington State Department of Ecology<sup>1</sup> (Ecology). The program assesses the status of mixed waste storage at tank farm facilities against federal and state requirements.

The CH2M HILL Hanford Group, Inc. (CH2M HILL) calendar year 2004 assessment commitment, as documented in Table 3.4 of DOE/RL-2004-07, *Calendar Year 2003 Hanford Site Mixed Waste Land Disposal Restrictions Report*, is to evaluate potential mixed waste storage at the 241-A-701 Ventilation Building. Assessors determined that the building number cited was in error; this assessment addresses the 241-A-702 Ventilation Building. Though not part of the commitment, this report also includes assessment of the double-shell tank (DST) farms. As in previous assessments, CH2M HILL has substituted its surveillance/compliance inspections (SCIs) of the target facilities, conducted earlier in the year, for the facility walkdowns. The SCIs were conducted between July and October 2004. Assessment activities were conducted in November 2004. This year, vapor issues severely restricted access to the farms; environmental staff have not been allowed access for SCIs or assessment activities.

This assessment addresses the implementation of LDR requirements and *Resource Conservation and Recovery Act of 1976* (RCRA) treatment, storage and disposal (TSD) requirements at the 241-A-702 Ventilation Building and at the DST Farms.

## 2.0 ASSESSMENT PLAN AND METHODOLOGY

The assessment team (Attachment 1) assessed against pertinent federal and state requirements. The assessment plan is provided as Attachment 2. As CH2M HILL does not have an Ecology-approved LDR assessment procedure at this time, the assessment followed the format used by the U.S. Department of Energy (DOE) Office of River Protection (ORP) in its LDR assessments, including use of the ORP-generated assessment checklist (Attachment 3).

Vapor issues have greatly restricted access to the tank farms, such that physical inspection was limited to observations from farm perimeters. Assessment methodology consisted of:

- Review of facility SCI reports documenting field walkdowns conducted by CH2M HILL environmental staff between August and October 2004
- Work from a comprehensive checklist of waste storage requirements to guide interviews and the review of documents and records

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<sup>1</sup> Ecology, 2000, "Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding the U. S. Department of Energy's (DOE) compliance with Land Disposal Restriction (LDR) requirements of Washington State's Hazardous Waste Management Act (HWMA) and the federal Resource Conservation and Recovery Act (RCRA), DOE's annual Land Disposal Restrictions Report, and HFFACO milestone M-26-01," (Letter to R. French, U.S. Department of Energy, Office of River Protection, and K. Klein, U.S. Department of Energy, Richland Operations Office, March 29, ) Washington State Department of Ecology, Olympia, Washington.

- Report in general terms on areas of conformance found during the assessment
- Report specifically on each concern, finding or observation
- Review of plans, procedures, and performance records.

The interim status permit requirements incorporated by reference from Title 40, *Code of Federal Regulations*, Part 268.50, "Prohibitions on storage of restricted wastes," (40 CFR 268.50) are found in those parts of Title 40, CFR, Part 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," (40 CFR 265), which are referenced under the standards section in *Washington Administrative Code* (WAC) 173-303-400 (3), "Interim status facility standards." A subset of these requirements was selected based on their relevance to this assessment. Compliance with these requirements is assessed through plan, procedure, and performance record document reviews, personnel interviews, and facility walkdowns. Assessment activities are guided by general questions and checklist items (see Attachment 3). The relevant requirements in the regulations include:

1. General facility standards in 40 CFR 265, subpart B as expanded in WAC-173-303, "Dangerous Waste Regulations," including:
  - a. Waste analysis 265.13 (173-303-300)
  - b. Security 265.14 (173-303-310)
  - c. Inspections 265.15 (173-303-320)
  - d. Training 265.16 (173-303-330)
  - e. General for ignitable, reactive, and incompatible 265.17, (173-303-395)
2. Preparedness, prevention, emergency and contingency planning (WAC 173-303-340, -350, and -360)
3. Manifest recordkeeping and reporting (WAC 173-303-370)
4. Facility recordkeeping and reporting (WAC 173-303-380 and -390; 40 CFR 268.7)
5. Container management (WAC 173-303-630 (3) and (7); 40 CFR 265 subpart I)
6. Tank systems (40 CFR 265 subpart J).

### 3.0 RESULTS

#### 3.1 Potential Mixed Waste Evaluation of 241-A-702 Ventilation Building

The 241-A-702 Ventilation Building is located in the 241-A Tank Farm. Prior to being taken offline in calendar year 2000, it was used to ventilate the headspace of 14 tanks in A, AX, AY, and AZ Farms. Equipment and components of interest in the context of this assessment include ducting, an in-line heater and associated drain line and seal pot, six sets of paired high-efficiency particulate air (HEPA) filters, the

exhauster fans (two), the exhaust stack, system valves, and in-line monitoring equipment (e.g., pressure sensors and continuous air monitors).

Since the facility was taken offline, the stack has been blanked, the three floor drains sealed, the 12 HEPA filters, housings, and spacers removed, and the ducting blanked. HEPA filter removal was conducted per engineering change notice (ECN)-665407, under work package 2E-00-2252/M.

Based on discussions with personnel from the Waste Management and Engineering organizations, the assessors concluded that only one remaining system component might be considered a potential mixed waste, due to a potential sludge heel. That component is the seal pot that received condensate from the pre-HEPA in-line heater.

The facility is secure, in that it is inside the 241-A Tank Farm perimeter fence. However, based on discussions with shift office personnel, it appears that the 241-A-702 doors are not locked, and that the facility is not inspected on any regular basis to ensure environmentally protective conditions.

Finding LDR-2004-PMW-F-01: The seal pot in the 241-A-702 Ventilation Building is potentially a mixed waste, due to the potential for a sludge heel. As such, it should be maintained in a status that meets the intent of appropriate mixed waste storage requirements. Current practice does not include evaluation of the seal pot's status on any regular basis.

### **3.2 Walk-Through Inspections**

Recent introduction of more restrictive tank farm entry requirements, due to vapor exposure concerns, precluded access to tank farms for this assessment; therefore, physical inspection was limited to observation from tank farm perimeters. As with the 2003 LDR assessment, a review of recently conducted SCIs was substituted for walk-through inspections. Checklists used to conduct SCIs were revised in 2004 to more effectively support the LDR assessment process, and mirror the Interim Status Compliance Checklist developed by ORP for its LDR assessments. Facility SCIs used in this assessment are listed and discussed below. In addition to facility SCIs, the Environmental program now has programmatic SCIs that address non-facility-specific issues (e.g., training).

Observation LDR-2004-IS-O-01: Two programmatic SCIs scheduled for 2004 are delinquent and could not be referenced for this assessment.

The facility SCIs referenced for this assessment were:

- RPP-SCI-04-002 (A/AX/AY/AZ Farms)
- RPP-SCI-04-004A (242-A Evaporator)
- RPP-SCI-04-004B (244 AR Facility)
- RPP-SCI-04-004C (701A Misc. Facility)
- RPP-SCI-04-004D (204 AR Facility)
- RPP-SCI-04-007 (AN/AP/AW Farms)
- RPP-SCI-04-013 (616 Building <90 day Storage, etc.).

SCI-derived responses to checklist questions were as follows:

1. Is the entry to the active portion of the facility controlled? (40 CFR 265.14; WAC 173-303-310)

Each tank farm is surrounded by locked fences to control access. Fences and locked access points are sufficient to control access, and the administrative control procedures prevent access to the farms by the general public. Proper signs, barriers, and access control were found to be in place at the tank farms. The seven SCIs conducted in 2004 found no discrepancies for this requirement.

2. Is safety equipment easily accessible at the storage facility? (40 CFR 265.30-37, as expanded under WAC 173-303-340)

The SCI checklist has been revised since last year's LDR assessment and now includes this requirement. The seven SCIs conducted in 2004 found no discrepancies for this requirement. The requirement is also addressed through various methods including the tickler inspection systems, periodic maintenance procedures, and company assessments and inspections. See Section 3.3.4 of this report for any observations related to daily rounds. It was noted on one SCI that the 244-AR facility is unmanned; therefore, it could not be determined at the time of the SCI if safety equipment was needed or stored at the facility.

3. Is safety equipment in working condition at the storage facility? Is an emergency communication device or alarm device accessible to employees in the event of emergency? (40 CFR 265.30-37, as expanded under WAC 173-303-340)

The SCI checklist has been revised since last year's LDR assessment and now includes this requirement. Six SCIs conducted in 2004 found no discrepancies for this requirement. It was noted on one SCI that the 244-AR facility is unmanned; therefore, it could not be determined at the time of the SCI if safety equipment was needed or stored at the facility. The 204 AR Facility eyewash station was not being inspected monthly as required by RPP-16922, *Environmental Specification Requirements*. In addition, the safety shower should be maintained under the facility periodic maintenance program in accordance with TFC-ESHQ-S-STD-19, "Safety Shower and Eyewash Stations."

4. Are the containers used to store hazardous waste at the tank farms in good condition and not leaking, and are made of, or lined with, materials compatible with the waste stored in them? (40 CFR 265.171) Are inspections of storage areas conducted weekly? (40 CFR 265.174).

This requirement is addressed in the SCI checklist. The seven SCIs conducted in 2004 found no discrepancies for this requirement.

5. Has leak detection instrumentation been calibrated and is the instrumentation in good working order? (40 CFR 265.193 (b))

The SCI checklist has been revised since last year's LDR assessment and now includes this requirement. The seven SCIs conducted in 2004 found no discrepancies for this requirement.

6. Is contaminated, re-usable equipment properly stored and labeled indicating management by policy and not abandonment? (40 CFR 261.2 (b) (3); WAC-173-303-070)

The SCI program, as currently conducted, provides annual or semi-annual inspection of all tank farm facilities. The SCI checklist has been revised since the 2003 LDR assessment. It does not cover all issues addressed by the LDR assessment walk-throughs; however, more specific requirements have been added in an attempt to cover more through the SCI program versus having to complete a large annual

assessment of all tank farm facilities. Farm entry restrictions, imposed to address the vapor issues, have kept SCI performers out of the tank farms this year. SCI activities were conducted in non-vapor zones or outside the perimeter fence of the tank farms themselves. Revising the SCI checklist to include all LDR walk-through items appears to be an efficient, cost-effective way to improve compliance and reduce assessment costs. This approach assumes concurrence from Ecology to continue substituting SCI inspections for LDR assessment walk-throughs again this year and in the future.

Observation LDR-2004-IS-O-02: A concern related to the inspection and maintenance of fire, safety, and emergency equipment in unmanned facilities was noted in a recent SCI of the 244-AR Facility. The assessor was not sure if there was a requirement to have this type of equipment available in unmanned facilities. An area for evaluation would be to review the policy and requirements listed in fire, safety, and emergency inspection and maintenance procedures to determine if unmanned facilities are addressed, and to ensure checklists and other documents used have notes or policy statements on how to deal with unmanned facilities.

Observation LDR-2004-IS-O-03: A concern related to the inspection of the safety shower was noted in a recent SCI of the 204-AR Facility. The 204 AR Facility eyewash station was not being inspected monthly as required by RPP-16922. The safety shower should be maintained under the facility periodic maintenance program in accordance with TFC-ESHQ-S-STD-19.

### **3.3 Interim Status Requirements – Records Review**

Records were reviewed to assess compliance with interim status requirements in 40 CFR Part 265; Section 265.19 of subpart B; subparts F-R; subpart W; subparts AA, BB, CC, DD, EE; and Appendix VI as incorporated by reference into WAC 173-303-400. Summary lines of inquiry incorporating checklist items and assessment review notes are outlined below.

#### **3.3.1 Security and Hazards**

All tank farms are completely enclosed with fences; access points are locked when unmanned. Entry can be made only with a key issued from either of the two shift offices. Administrative controls ensure that only individuals with the proper training are granted access. The keys are controlled and issued through procedures.

RPP-16922 lists the periodic inspections (daily, weekly, monthly, and annual) conducted by non-environmental staff to ensure environmental compliance. These include daily inspection of entry points (gates and change trailers doors) for all farms, daily inspection of perimeter fences at single-shell tank (SST) farms, and DST farms. RPP-16922 also identifies the requirement to conduct daily inspections ensuring that farm access keys are returned and that key logs are properly maintained.

See Section 3.3.4 of this report for discussion of any discrepancies noted with these requirements, and any necessary corrective actions resulting from periodic inspections.

**3.3.2 Preparedness and Prevention**

Facilities must be designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of dangerous waste to air, soil, surface, or groundwater, which could threaten human health or environment. This assessment addressed emergency equipment.

The DST farms and A Farm, which houses 241-A-702, have a wide array of equipment available to support emergency response. Equipment includes fire extinguishers, spill kits, cardiopulmonary resuscitation (CPR) and first aid kits, emergency sirens (bullhorns), self-contained breathing apparatus (SCBA) units, emergency lighting, crash alarm telephones, fire alarms, emergency sirens, and two-way radios. Currently, the inspections to ensure this equipment is readily available and functional are addressed by either operator rounds or the tickler system. One exception is fire protection equipment, which is inspected and maintained by the Fluor Hanford Fire Department.

It is worth noting that CH2M HILL has a planned goal of removing regulation-driven inspections from the tickler system. The Environmental organization is apprized of this plan, and has been participating in the changes occurring to date, to ensure that required inspections are transitioned to other implementing documents.

Record review identified some issues with implementation of required inspections. These issues are discussed in detail in Section 3.3.4 of this report. Current farm access restrictions precluded field inspection as part of this assessment.

**3.3.3 Contingency Plan and Emergency Procedures**

This area was not directly assessed in this year's assessment. Instead, the assessors reviewed recent assessments; issues identified in a January 2004 independent assessment of Waste Feed Operations (WFO) are identified in Table 3-1.

**Table 3-1. Emergency Response Issues Identified in January 2004  
Waste Feed Operations Assessment.**

<p>Additional effort is required to improve the effectiveness of the EP Drill Program (WFO does not routinely drill with ambulance crews to ensure the two organizations are synchronized on this important operation, nor does WFO monitor the ambulance crew training to ensure their level of knowledge and performance at its facilities is acceptable. Also, WFO EP drills are graded as either pass or fail; grading criteria are not established in a governing procedure. As such, there is no guidance as to what constitutes a "fail.")</p>
<p>Review of System Health Reports found some opportunities for improvement. (Issue noted was lack of consistency in establishing and stating system health goals in the reports, and in documenting corrective actions in the reports.)</p>

Notes:

EP = emergency preparedness.

WFO = Waste Feed Operations.

In addition, seven findings and 17 observations are identified in FY-2004-CH2M-I-0131, "Independent Assessment of CH2M HILL Hanford Group, Inc., Response to Alarms and Abnormal Indications." Those considered of significance in this context are listed in Table 3-2.

With regard to corrective action, a new radio system is planned for calendar year 2005 and the Emergency Planning procedure is under revision.

CH2M HILL Environmental has generated an internal tracking mechanism to ensure its tracking of these corrective actions.

**Table 3-2. Emergency Response Issues Identified in June 2004 Assessment of Alarm Response.**

Documentation in the alarm status logs describe conditions using terms like "intermittent" and "unknown" that do not explain the reason for the alarm.
Actions taken during investigation of alarms and abnormal indications are not always being documented.
Deficiencies exist with radio system capabilities; radio battery life is affecting communication equipment reliability. <i>(Battery life was found to be extremely variable, with some newly charged batteries lasting only two hours.)</i>
Deficiencies exist with radio system use. At times, it was not possible to contact workers using the tank farms radio system. <i>(Personnel not always taking radios into the field; when they do, the radios are not always tuned to the shift office frequency.)</i>
Deficiencies exist with radio system use. The use of three-way communication was very limited. <i>(Three-way communication is a process used to ensure message is received and understood.)</i>
Drill program improvement is needed in the areas of plant upsets, subcontractor participation, and alarm response. <i>(There is substantial ongoing worker support of this proposed improvement.)</i>
The drill team <i>(team that assesses the drills)</i> was not critical and did not maintain expectations regarding communications. <i>(Expectations are not very high.)</i>
Tank farm personnel do not have a clear understanding of a nuisance alarm. With the exception of "expected alarm," the types of alarms are not clearly defined in the tank farm procedures base.
Some alarms are not deactivated when associated equipment is removed from service. As a result, inadvertent actuations of these alarms are a distraction to operators and personnel in the field <i>(and generate an atmosphere where all alarms might be viewed as suspect).</i>
Responsibility to report alarms to Operations may not be well understood. <i>(Personnel from some organizations indicated they did not think they had to report alarms).</i>
Plant problems and issues tend to be evaluated from documented safety analysis (DSA) perspective versus an authorization agreement perspective.
Grading criteria in the system engineering health reports is subjective and does not foster improvements of overall system health. <i>(For example, systems can be ranked "exceptional" even though they have numerous delinquent corrective and preventive maintenance packages, out-of-service components, and in one instance an open Significant problem evaluation request (PER). Clearly does not encourage improvement.)</i>
Systems engineers should take a more active role and provide input to the priorities to restore equipment not functioning as designed. <i>(Maintenance priorities are set by Operations; system operability is sometimes not a very high priority from the Operations perspective.)</i>
Several work packages for repairs of alarms and indications received the lowest priority, are out of date, and would require replanning in order to work today.

### 3.3.4 General Inspection Requirements

(WAC 173-303-320 and 40 CFR 265.15)

The general inspection requirements for DST and SST farms are listed in RPP-16922. These requirements are incorporated into either administrative or operation procedures for implementation in the field. Most daily general inspections are implemented and conducted through operator's rounds. The operator uses detailed checklists called round sheets to walk down and inspect specific equipment and tank farm configuration on a daily basis. The other inspection requirements are conducted through work packages or other inspection checklists either by operators or other organization personnel, such as the Fluor Hanford Fire Department on specific periodic frequencies listed in RPP-16922.

RPP-16922 was reviewed and found to address the inspection of monitoring equipment, safety and emergency equipment, and security devices, as well as operating and structural equipment that help prevent, detect, or respond to environmental or human health hazards. RPP-16922 includes the descriptions of the types of problems and inspector should look for, the frequency of inspections, and date and time of the inspection.

#### *Warning Signs*

Daily round sheets identify the following requirement: Warning signs to the effect "DANGER – HAZARDOUS MATERIALS UNAUTHORIZED PERSONNEL KEEP OUT" (or equivalent legend) need to be posted at all entrances to the tank farm. These signs need to be visible and legible from a distance of at least 25 feet.

RPP-16922 states that the signs must be visible from 50 feet and does not include the equivalent legend requirement. The WAC 173-303-200 and 173-303-310 requirement is "The department may also require that a sign be posted at each entrance to the accumulation area, bearing the legend, "danger — unauthorized personnel keep out," or an equivalent legend, written in English, and legible from a distance of twenty-five feet or more."

WAC 173-303-640 requires that "All tank systems holding dangerous waste must be marked with labels or signs to identify the waste contained in the tank. The label or sign must be legible at a distance of at least fifty feet, and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the tank system(s). (Note--If there already is a system in use that performs this function in accordance with local, state or federal regulations, then such system will be adequate.)" RPP-16922, Rev. 7, issued January 7, 2005, standardizes the "legibility" distance at 25 feet to comply with WAC 173-303-310; no new corrective action required.

The cathodic protection section of the RPP-16922 lists outdated periodic maintenance and inspection procedures. The cathodic protection issues discussed below were also identified and documented outside of this assessment process, and corrective actions are in process. Issues are documented here as a record of assessor observations; no new problem evaluation requests (PERs) will be generated as a result of this assessment.

RPP-16922, Section 5.2, "Cathodic Protection Systems Requiring Annual Polarization Testing," has a table titled "Cathodic Protection Requiring Annual Calibration" that lists the rectifier, location, and preventive maintenance and surveillance (PM/S) number. When PM/S numbers of interest were entered into the Job Control System (JCS) the following results were discovered:

- Data for PM/S Number ET-06275 for rectifier R1 indicated that the last work package (2E-96-00838) was July 23, 1996, and that there was no other work package scheduled. The data included the comment "Transferred to Evaporator. ET-06275 deleted from system on 8/1/96." Exactly the same data were provided for PM/S Number ET-06276 for rectifier R2.
- Data for PM/S Number ET-05617 for AN241-CATH-RECT-101 (rectifier R12) indicated that the work package was last active on July 20, 2004, and the work package was scheduled and ready to implement as of October 27, 2004. Exactly the same data were provided for PM/S Number ET-05618 for rectifier R13.
- Rectifier RB-220 has a note listed under the "Location" column for the table and the note states "(Abandoned I.A.W. Environmental Compliance Officer)." The maintenance procedure (5-CATH-221, "Inspection of Cathodic Protection System Rectifiers") does not reflect the same note as the rectifier is listed in RPP-16922, Section 4.2, "Field Preparation."

The RPP-16922 table listing rectifier annual testing PM/S needs to be evaluated and updated. The 242-A Evaporator rectifiers that were transferred to another contractor in 1996 and returned back to tank farms in May 2003 need to be researched and inspected as required under the requirements for the TSD unit. There may have been other rectifiers transferred to CH2M HILL for the 242-A Evaporator and 222-S TSD facilities that have either not been inspected, or the records are being stored by the last contractor responsible for operations; therefore, the JCS needs to be updated to reflect when the last inspections were conducted. Clarification needs to be made to the maintenance procedure 5-CATH-221 regarding the need to inspect rectifier RB-220.

During preparation of the assessment report, assessors learned that the subject rectifier testing has been conducted at the 222-S Facility. Verification occurred during preparation of PER 2004-5530.

#### *Safety and Emergency Equipment*

- RPP-16922 requires that fire extinguishers be marked and identified by a red/white striped box. However, inspection checklists and procedures do not list this requirement.
- TFC-ESHQ-FP-STD-07, "Portable Fire Extinguishers and Building Fire Barriers," (July 19, 2004) requires that "Portable fire extinguishers shall be conspicuously marked and identifiable." TFC-ESHQ-FP-STD-04, "Fire Protection System Testing, Inspection, and Maintenance," and RPP-16922 specific requirements for fire extinguisher inspection do not match. RPP-16922 needs to be evaluated and updated regarding the fire fighting equipment inspection requirements.

There is no procedure for the inspection of spill kits. RPP-16922 and related tickler system requirements do not match regarding what should be inspected and when inspections should be conducted. The inspection checklist lists 15 different locations while RPP-16922 lists only two. The inspection checklist lists unobstructed access and intact seals requirements. RPP-16922 includes those requirements, as well as requirements for an inventory list, an (incorrect) spill kit for hazardous material, and for identifying expired inspection ticklers. Guidance is needed to ensure that WFO facility spill kit and inspection requirements meet relevant WAC 173-303 dangerous waste requirements.

*Inspection Round Sheets*

Inspection round sheets and tickler indexes for DSTs were reviewed as part of this assessment. Equipment deficiency lists (EDLs) and PERs were also examined to assess whether reporting and tracking processes were being used as outlined in RPP-16922, Section 10.13.

The following East Routines 1 (ER1) Daily Rounds were reviewed in the record storage building:

- October 25, 2004, ER1 daily round sheets
- October 18, 2004, ER1 daily round sheets
- October 11, 2004, ER1 daily round sheets
- October 04, 2004, ER1 daily round sheets.

The following East Routines 1 (ER1) Weekly Rounds were reviewed in the record storage building:

- October 11, 2004, ER1 weekly round sheets
- October 04, 2004, ER1 weekly round sheets
- September 27, 2004, ER1 weekly round sheets
- September 20, 2004, ER1 weekly round sheets
- September 13, 2004, ER1 weekly round sheets.

The round sheet content requirements were revised following the 2003 LDR assessment, and the round sheets have improved in overall quality. The operators have improved redline/strike-out techniques, and have taken steps to improve status reporting. There were several observations made that could be used to improve the system. In a morning meeting and interview with the operator and shift manager, the importance of annotating the correct EDL with the correct tank and pieces of equipment was discussed. Informal pizza luncheons are used to remind workers of the importance of properly completed round sheets.

CH2M HILL has automated tank-level monitoring equipment on its DSTs. When the automated data gathering system is not functioning on a tank, operators collect that information in the field as part of their rounds. Operators use the Surveillance Analysis Computer System (SACS) database to generate a datasheet for collection of that data. That datasheet, as observed by the assessors, did not contain any previous tank level readings, making it difficult for the operator to determine during conduct of the rounds if there had been any significant change in tank level. The shift manager completes a review of this data daily, and would identify significant changes at that time. Tank-level information collected in this manner is typically not provided for input into the SACS database on a daily basis. Current practice, as described here, appears to comply with 40 CFR 265.195, which requires that data gathered from tank monitoring equipment be "inspected" on a daily basis "to ensure that the tank system is being operated to its design." However, it makes sense to provide readings from previous days to operators so they can perform a preliminary evaluation of tank-level change during conduct of rounds.

Observation 2004-LDR-IS-O-04: When ENRAF<sup>2</sup> data cannot be obtained electronically, operators collect DST tank-level data during their rounds. The datasheet used by the operator sometimes does not contain readings from previous days. This makes it difficult for the operator to perform a preliminary evaluation for significant tank-level changes. Recommend consideration of process modification to

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<sup>2</sup>Enraf is a trademark of Enraf Inc., a subsidiary of Enraf B.V., Delft, The Netherlands.

ensure that previous day's reading is readily available and is always on the datasheet provided to the operator at the beginning of their rounds.

Round sheets show occasional problems in referencing pertinent equipment deficiencies. For example, standard practice in preparing round sheets is to place a footnote indicator in sections that pertain to equipment currently listed on the EDL. The footnote indicator is typically a circled number. Then a footnote is written at the bottom of the page identifying the EDL listing. Reviewed round sheets contained instances where footnote indicators were used, but no footnotes were provided. There were also instances where apparently incorrect EDL numbers were referenced. However, these appear to be isolated occurrences, and are the result of personnel error not programmatic issues.

Operators sometimes use non-standard wording or marks when filling in round sheets. Reviewed round sheets sometimes had a checkmark or the letters "STBY" written in, where the checklist appeared to require an indication of equipment status as either "on" or "off." A recent example: October 25, 2004, ER1 daily round sheets, pages 121 and 123 of 135.

#### *Equipment Deficiency Lists*

Assessors reviewed EDLs for AZ Farm, AY Farm, and AN Farm, and the 702 AZ Ventilation Building. The lists identified 65 equipment deficiencies. Ten were identified as resolved, though the date of resolution was not listed. There remain three unresolved deficiencies dating from 2001; eight from 2002; and six from 2003. Fifty-seven equipment deficiencies identified in 2004 remain unresolved.

On the EDLs reviewed, each equipment deficiency that would be expected to require corrective action was tied to a PER and/or work package.

Assessors noted substantial improvements in the documentation and tracking of equipment deficiencies, when compared to the 2003 LDR assessment. Still, it is an area that requires ongoing line management support and clear communication of senior management expectations for success.

### **3.3.5 Operating Records**

CH2M HILL has made progress in producing, completing, and maintaining regulatory compliance operating records. HNF-1773, *Environmental Program Description for the Tank Farm Contractor*, Section 6.3, identifies two types of records required for environmental management activities. The two types were administrative and operating records. In addition, TFC-ESHQ-ENV\_RM-D-02, "Environmental Records" has been revised to list records that the tank farm contractor is required to maintain. The procedure is again being revised to identify operating records required to be retained by the 222-S TSD facility.

The assessment team found that operating records were being maintained by CH2M HILL in various locations. The following operating records were located during the assessment to assess compliance with WAC 173-303-380(1) "Operating records":

- Inspection records, round sheets, and tickler indexes for DST farms
- Corrective actions for discrepancies found in the tank farm complex, including shift logs, notification reports, occurrence reports, EDLs, and PERs

- Inspection records for safety and emergency equipment
- Operation records required to be maintained by operating procedures.

### **3.3.6 Tank Systems**

Assessment of this subject area focused specifically on DST integrity assessments.

#### *Tank Integrity Assessments*

Integrity assessments for DSTs are addressed under the *Hanford Federal Facility Agreement and Consent Order* (HFFACO) (Ecology et al. 1989) milestone M-48-00, which requires the assessment of the structural integrity of all 28 DSTs at Hanford by September 30, 2006. Currently, ultrasonic testing has been conducted on 24 of the 28 DSTs. The remaining four tanks are scheduled to be completed in fiscal year 2005.

HFFACO M-48-13 requires that results of ultrasonic testing in the final four DSTs (two in AP Farm and two in AN Farm) be submitted by September 30, 2005. Through a series of other HFFACO deliverables, results of ultrasonic testing of the other 24 DSTs have previously been submitted.

#### *Tank System Leak Detection*

The DST and leak detection systems are in the process of being tested via the implementation of RPP-17266, *Plan for Development of the DST Integrity Report*. This DST integrity report will be issued by March 2006.

### **3.3.7 Contaminated Equipment Management Practices**

Management of contaminated equipment, as reusable equipment, failed equipment, installed/inaccessible/in-use equipment, and waste equipment is a major concern. Efforts to improve contaminated equipment documentation and management are being pursued with revisions to TFC-OPS-WM-C-10 "Contaminated Equipment Management Practices," and through actions taken pursuant to the PER process. Program level and work package level documentation and staff interviews were used to assess the effectiveness of current contaminated equipment management practices.

#### *Hanford Tank Farm Work Package Documentation*

Operations and maintenance work are governed by TFC-OPS-MAINT-C-01, "Tank Farm Contractor Work Control." The planning process involves work initiators, planning managers, construction managers, field work supervisors, shift managers, facility managers, and others as needed. Documents generated during the work process form a "work package." Work packages are reviewed and approved by field work supervisors, engineers, schedulers, the Technical Waste Services (TWS) organization, and other authorities as needed.

In 2003, there were approximately 700 work packages generated. Using the Record Management Information System (RMIS), about 500 of these work packages were examined, and excerpts were obtained from eight that were selected based on their titles and staff recollection of contaminated equipment issues. Most of the work packages address minor activities that do not involve management of contaminated equipment.

### *Results*

TFC-OPS-WM-C-10 is to be used for management of contaminated equipment from the tank farms and other CH2M HILL facilities. In accordance with TFC-OPS-WM-C-10, the facility manager and TWS director have responsibility for proper handling and disposition of contaminated equipment.

Examination of the current contaminated equipment "inventory" list maintained by TWS yielded a list of 32 WFO contaminated equipment items. It was noted that this list included a subset of the information needed to complete site form A-6003-886, "Contaminated Equipment Inventory Form." "Usable Contaminated Equipment Justification Checklists," required by TFC-OPS-WM-C-10, were readily available for only two of the 32 items listed. In addition, assessors noted that the list identified two items as "awaiting disposal" on July 20, 2004.

TFC-OPS-WM-C-10 and related forms are not in widespread use at WFO. Reasons identified during this assessment include: (1) there have been few recent activities specifically involving management of contaminated equipment; (2) while usable contaminated equipment justification checklists may be in use, they are typically discarded if the equipment in question does not meet certain criteria; (3) implementation of TFC-OPS-WM-C-10 has been problematic, in part due to uncertainties regarding its applicability and its goals; and (4) the current contaminated equipment management mandate is not known by some planners in the WFO organization. None of the work packages examined had checklists or documents generated pursuant to TFC-OPS-WM-C-10 to document contaminated equipment management.

TFC-OPS-WM-C-01, "Waste Planning Checklist," is a central part of the work package documentation when waste is to be generated. The planner uses the Waste Planning Checklist to describe the work performed and the wastes to be generated. The waste disposition instructions in the Waste Planning Checklist must be completed by the TWS organization. Of the eight work packages that were examined in more detail, seven had Waste Planning Checklists.

Waste disposal records that would have been issued after the Waste Planning Checklist were not included in any of the work packages that were examined. Dangerous waste manifests, LDR notifications, and other disposal documents are generated and maintained by the TWS organization. Dangerous waste was generated for two of the work packages. Appropriate waste disposal documentation, including dangerous waste manifests, LDR notifications, and waste designation information were available and examined with assistance from TWS.

### *Conclusions*

Observations made during this assessment suggest practical difficulties in implementing TFC-OPS-WM-C-10. The process is initiated at the program level, but it is not clearly evident in the WFO work package documentation that was examined.

The limited contaminated equipment documentation found during the assessment may be the result of the process having been written for program-level implementation rather than field-level implementation. This possible disparity begs a larger question – whether implementation of contaminated equipment management at either the program level or the project level is the appropriate mechanism to create a complete inventory of contaminated equipment. In other words, contaminated equipment management may need to be implemented at the program level, at the project level, and in conjunction with other initiatives to fully inventory tank farm contaminated equipment and waste equipment.

The current program for managing WFO contaminated equipment may benefit from (1) revising TFC-OPS-WM-C-10 to be more simple and consistent with categories of equipment and waste as

recognized by DOE and Ecology; (2) integrating the process into the work planning process and its implementing documents; and (3) training cognizant staff.

TFC-OPS-WM-C-10, Section 3.2, "Disposition of Installed/Inaccessible/In-Use Equipment," should provide additional guidance for when such equipment is removed. It is recommended that the text be revised to the effect "When Installed/Inaccessible/In-Use Equipment is removed from pits or tanks it shall be managed as either contaminated equipment, failed equipment, or waste equipment in accordance with this document."

#### *Findings and Observations*

Finding LDR-2004-CE-F-01: Apparent procedural noncompliance. During a November 2004 assessment, assessors reviewed the Waste Feed Operations Contaminated Equipment Inventory list, and found two items that were noted to be "awaiting disposal." The inventory inspection was dated July 20, 2004. At the time of the November 2004 assessment, WFO had not yet notified TWS that the items were awaiting disposal. This appears to be a noncompliance with TFC-OPS-WM-C-10, Section 4.1.4.a, which requires that TWS be contacted immediately and requested to initiate disposition within three working days.

Observation LDR-2004-CE-O-01: Suggest further evaluation by TWS of possible noncompliance with waste management regulations. Information developed in a November 2004 assessment suggests that WFO stored waste contaminated equipment in the SY Farm for more than 90 days. If the equipment designates as mixed waste, this situation may constitute noncompliance with WAC 173-303-200.

Observation LDR-2004-CE-O-02: Assessment of the implementation of TFC-OPS-WM-C-10 identified the following issues associated with the procedure itself:

1. Current practice is to retain completed Usable Contaminated Equipment Justification Checklist (site form A-6003-885) in work packages only when the equipment in question is determined to be reusable contaminated equipment. If the evaluation proves negative, the form is thrown away leaving no documentation to show that the issue was ever addressed.
2. The procedure is sometimes difficult to follow in some sections and does not always provide sufficient guidance.
3. Terminology, especially with respect to categories of equipment and waste, may not always be consistent with terminology used by DOE and Ecology.

Observation LDR-2004-CE-O-03: TFC-OPS-WM-C-10 is not consistently, effectively implemented. Contributing factors may be (1) some planners do not appear to be familiar with the procedure, its intent, and its status as CH2M HILL's sole implementing procedure for the Site's contaminated equipment management policy; or (2) cognizant staff is not sufficiently familiar with the procedure.

Observation LDR-2004-CE-O-04: TFC-OPS-WM-C-10 is not consistently, effectively implemented. One contributing factor may be that the procedure is not effectively integrated into all appropriate work processes and related administrative controls (procedures and guidance). At present, TFC-OPS-WM-C-10 is only called out in one place within TFC-OPS-MAINT-C-01. Assessors did not find the procedure called out in any other CH2M HILL guidance documents.

#### **4.0 PERSONNEL CONTACTED**

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Mr. Jerry Borrowman, CH2M HILL  
Mr. Kenton Bricker, CH2M HILL  
Ms. Linda Chapman, CH2M HILL  
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Mr. Craig Upchurch, CH2M HILL  
Ms. Sheila Wells, CH2M HILL  
Mr. Ted Wooley, CH2M HILL  
Mr. John Huber, Los Alamos Technical Associates  
Mr. Dave Cole, Maintenance Concepts

#### **5.0 CONCLUSIONS**

##### **5.1 241-A-702 Ventilation Building**

The 241-A-702 Ventilation Building contains only one system component that is considered a potential mixed waste, due to a potential sludge heel. That component is a seal pot that formerly received condensate from the in-line, pre-HEPA heater. The seal pot is not currently managed in a manner consistent with mixed waste storage requirements.

Of note, the facility stack has been blanked, its floor drains have been plugged, its 12 HEPA filters have been removed and disposed, and the ducting has been blanked.

## 5.2 Double-Shell Tank Farms

### *Contaminated Equipment Management*

CH2M HILL has made moderate progress in its management of contaminated equipment. The contaminated equipment procedure has recently changed organizations; it now belongs to the TWS organization. More effective implementation has been noted, and the change in ownership is viewed as a step in the right direction. Still, improvements in implementation are necessary before top management can have a reasonable expectation of consistent, effective compliance. Worker knowledge of the requirements and line management support of the program do not yet appear adequate to give CH2M HILL an effective program.

### *Double-Shell Tank Integrity Testing*

No issues of note.

### *Interim Status Requirements*

Significant improvements have occurred since the 2003 LDR assessment. Operator rounds procedures have been consolidated, eliminating many of the inconsistencies previously noted. Also, CH2M HILL is in the process of moving required inspections from the tickler system, and placing them in more appropriate implementing systems (e.g., operator rounds). Improvements were also noted in RPP-16922, which communicates compliance information to operating organizations; although some problems still exist, the document has support from both management and staff, and is the focus of continual improvement efforts. Continued improvements in identifying and properly implementing inspection requirements will help to reduce risk, increase productivity, and increase staff availability.

## 6.0 REVIEWED DOCUMENTATION

### 6.1 Documents

“Calendar Year 2003 Land Disposal Restrictions Program and Compliance Assessment,” January 2004, CH2M HILL Hanford Group, Inc., Richland, Washington.

“Waste Management Functional Area Standards/Requirements Identification Document Phase 2 Assessment Report,” September 2004, CH2M HILL Hanford Group, Inc., Richland, Washington.

95-PCA-337, 1995, “Management of Contaminated Equipment at the Hanford Site,” (letter from J. E. Rasmussen to M. Gearheard, EPA, and M. Wilson, Ecology, June 9), U.S. Department of Energy, Richland Operations Office, Richland, Washington.

96-TEP-040, 1995, “Management of Contaminated Equipment at the Hanford Site,” (letter from J. E. Rasmussen to M. Wilson, Ecology, December 12), U.S. Department of Energy, Richland Operations Office, Richland, Washington.

A-02-EMD-TF-02, “Land Disposal Restrictions Program and Compliance Assessment of Tank Farms BX/BY Single-Shell Tanks,” September 2002, U.S. Department of Energy, Office of River Protection, Richland, Washington.

A-02-EMD-TF-03, "Land Disposal Restrictions Assessment of SY-Double Shell Tanks, and 244-S Double Contained Receiver Tank," December 2003, U.S. Department of Energy, Office of River Protection, Richland, Washington.

DOE/RL 90-39, 2003, *Hanford Facility Dangerous Waste Permit Application-Double Shell Tank System*, Rev. 0B, U.S. Department of Energy, Richland, Washington.

Double- Shell Tank Integrity Assessment Report Plan Task Status Sheets

ECN-650079, 2000, "Isolate 702-A & 4000-CFM Stacks," signed as "work completed" on March 4.

ECN-665407, 2003, "Remove 12 HEPA Filters and Housings at 702A Facility," signed as "work completed" on February 13.

ECN-667175, 2001, "Isolate 241-A-702 Floor Drains," signed as "work completed" on November 28.

Ecology, 2001, *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste*, Rev. 7, Permit 7890008967, Washington State Department of Ecology, Olympia, Washington.

ESQ-TANKFARM-007, "Documents, Records and Work Processes," June 2004, U.S. Department of Energy, Office of River Protection, Richland, Washington.

FY-2004-CH2M-I-0012, "Independent Assessment of CH2M HILL Hanford Group, Inc., Waste Feed Operations," January 2004, CH2M HILL Hanford Group, Inc., Richland, Washington.

FY-2004-CH2M-I-0131, "Independent Assessment of CH2M HILL Hanford Group, Inc., Response to Alarms and Abnormal Indications," June 2004, CH2M HILL Hanford Group, Inc., Richland, Washington.

RPP-16922, 2004, "*Environmental Specification Requirements*," Rev. 6, CH2M HILL Hanford Group, Inc., Richland, Washington.

RPP-17266, 2004, *Plan for Development of the DST Integrity Report*, Rev. 0, CH2M HILL Hanford Group, Inc., Richland, Washington. [includes "DST Assessment Report Task Status as of 10/20/04"]

TFC ESHQ RP\_MON C 15, Rev. A-2, "Radioactive Material Packaging and Labeling," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-BSM-TQ\_MGT-C-02, Rev. A-2, "Integrated Training Electronic Matrix (Item) Administration," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-ENV\_AP-P-01, Rev A-4, "Environmental Surveillance/Compliance Inspection," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-ENV\_RM-D-02, Rev. A-2, "Environmental Records," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-FP-STD-07, Rev. A-1, "Portable Fire Extinguishers and Building Fire Barriers," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-RP\_ADM-C-14, Rev. B-2, "Establishment and Management of Radioactive Material Areas," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-RP\_MON-C-14, Rev. C-6, "Contamination Area Controls," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-S-STD-19, Rev. A, "Safety Showers and Eyewash Stations," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-OPS-EP-P-04, Rev. A-2, "Administrative Facilities and Tank Farm Change Trailers Emergency Preparedness Surveillances," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-OPS-MAINT-C-01, Rev. F, "Tank Farm Contractor Work Control," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-OPS-OPER-C-08, Rev. B-5, "Shift Routines and Operating Practices," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-OPS-OPER-CD-30, Rev. B, "Tickler System," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-OPS-WM-C-10, Rev. A, "Contaminated Equipment Management Practices," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-PLN-07, Rev. A-2, "Dangerous Waste Training Plan," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-PLN-07, Rev. A-5, "Dangerous Waste Training Plan," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-PLN-33, Rev. A-2, "Waste Generating Plan," CH2M HILL Hanford Group, Inc., Richland, Washington.

WHC-SD-WM-PLN-116, 1996, *241-A-702 Ventilation System Deactivation Plan*, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

## 6.2 Site Forms

A-6002-848, "Waste Planning Checklist"

A-6003-885, "Usable Contaminated Equipment Justification Checklists"

A-6003-886, "Contaminated Equipment Inventory Form"

## 6.3 Drawings

H-2-62883, 1987, "*Arch. Struct. Sections & Details*, Rev. 3."

H-2-62888, 1987, "*241-A-702 Vent System Plan-Sections-Details Filter Building*, Rev. 9."

## **6.4 Records**

### **6.4.1 Completed Surveillance/Compliance Inspection Checklists**

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
241-A/AX/AY/AZ Farms, RPP-SCI-04-002, July 2004.

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
242-A Evaporator, RPP-SCI-04-004A, July 2004.

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
244-AR Facility, RPP-SCI-04-004B, July 2004.

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
701A Miscellaneous Facility, RPP-SCI-04-004C, July 2004.

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
204-AR Facility, RPP-SCI-04-004D, July 2004.

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
241-AN/AP/AW Tank Farms, RPP-SCI-04-007, September 2004.

“River Protection Project Environmental Surveillance/Compliance Inspection Checklist,”  
616 Facility, RPP-SCI-04-013, October 2004.

### **6.4.2 Completed Operator Rounds**

TF-OR-ER1-01-D, “East Routines (ER1) Daily Rounds,” release date October 7, 2004, date of  
inspection October 25, 2004.

TF-OR-ER1-01-D, “East Routines (ER1) Daily Rounds,” release date October 7, 2004, date of  
inspection October 18, 2004.

TF-OR-ER1-01-D, “East Routines (ER1) Daily Rounds,” release date October 7, 2004, date of  
inspection October 11, 2004.

TF-OR-ER1-01-D, “East Routines (ER1) Daily Rounds,” release date October 7, 2004, date of  
inspection October 04, 2004.

TF-OR-ER1-01-W, “East Routines (ER1) Weekly Rounds,” release date October 7, 2004, date of  
inspection October 11, 2004.

TF-OR-ER1-01-W, “East Routines (ER1) Weekly Rounds,” release date October 7, 2004, date of  
inspection October 04, 2004.

TF-OR-ER1-01-W, “East Routines (ER1) Weekly Rounds,” release date October 7, 2004, date of  
inspection September 27, 2004.

TF-OR-ER1-01-W, “East Routines (ER1) Weekly Rounds,” release date October 7, 2004, date of  
inspection September 20, 2004.

TF-OR-ER1-01-W, "East Routines (ER1) Weekly Rounds," release date October 7, 2004, date of inspection September 13, 2004.

#### **6.4.3 Equipment Deficiency Lists**

"AN Farm Equipment Deficiency List," date printed September 19, 2004.

"AY Farm Equipment Deficiency List," date printed September 25, 2004.

"AZ Farm Equipment Deficiency List," date printed September 25, 2004.

"702AZ Equipment Deficiency List," date printed September 25, 2004.

DOE/RL Letter, 01-EMD-041, 2001, "Complete Tank Integrity Assessment Activities for Hanford's DST System."

#### **6.4.4 Work Packages (partial listing)**

2E-00-02252/M

2E-99-01321/M

2E-03-00487-M

2E-03-00158-1

2E-03-00488-M

2E-03-0736-0

2E-03-01511-W

2E-03-00461-I

#### **6.4.5 Waste PIN Files**

FFS-03-090-05

CPO-03-035-11

DST-03-118-03

SST-03-133-01

SST-03-133-02

DST-03-134-02

SST-03-147-02

DST-03-006-01

DST-02-098-08

WFP-03-316-01

DST-03-006-01

**6.4.6 Completed Ticklers**

Tickler Number 335.1, Field Crew – Safety Equipment Inspections, October 01, 2004

Tickler Number 335.2, Field Crew – Safety Equipment Inspections, October 10, 2004

Tickler Number 336.1, Inspect Fire Extinguishers, October 01, 2004

Tickler Number 336.4, Spill Kit Monthly Page 4 of 4, October 01, 2004

Tickler Number 345, Permanently Mounted SCBA Unit Checks, October 25, 2004

Tickler Number 346.1, Monthly Checks of Emergency SCBA, October 01, 2004

Tickler Number 346.2, Monthly Checks of Emergency SCBA, October 01, 2004

## 7.0 REFERENCES

- 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, as amended.
- 40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.
- 5-CATH-221, Rev. F-1, "Inspection of Cathodic Protection System Rectifiers," CH2M HILL Hanford Group, Inc., Richland, Washington.
- DOE/RL-2004-07, 2004, "Calendar Year 2003 Hanford Site Mixed Waste Land Disposal Restrictions Report," Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Ecology, 2000, "Final Determination pursuant to the Hanford Federal Facility Agreement and Consent Order (HFFACO) regarding the U. S. Department of Energy's (DOE) compliance with Land Disposal Restriction (LDR) requirements of Washington State's Hazardous Waste Management Act (HWMA) and the federal Resource Conservation and Recovery Act (RCRA), DOE's annual Land Disposal Restrictions Report, and HFFACO milestone M-26-01," (Letter to R. French, U.S. Department of Energy, Office of River Protection, and K. Klein, U.S. Department of Energy, Richland Operations Office, March 29, ) Washington State Department of Ecology, Olympia, Washington.
- Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.
- HNF-1773, 2004 *Environmental Program Description for the Tank Farm Contractor*, Rev. 4, CH2M HILL Hanford Group, Inc., Richland, Washington.
- FY-2004-CH2M-I-0131, 2004, "Independent Assessment of CH2M HILL Hanford Group, Inc., Response to Alarms and Abnormal Indications," CH2M HILL Hanford Group, Inc., Richland, Washington.
- Resource Conservation and Recovery Act of 1976*, Public Law 94-580, 90 Stat. 2795, 42 USC 6901 et seq.
- RPP-16922, 2004, *Environmental Specification Requirements*, Rev. 6, CH2M HILL, Hanford Group, Inc., Richland, Washington.
- RPP-17266, 2004, *Plan for Development of the DST Integrity Report*, Rev. 0, CH2M HILL Hanford Group, Inc., Richland, Washington. [includes "DST Assessment Report Task Status as of 10/20/04]
- TFC-ESHQ-ENV\_RM-D-02, Rev. A-2, "Environmental Records," CH2M HILL Hanford Group, Inc., Richland, Washington.
- TFC-ESHQ-FP-STD-04, Rev. A-1, "Fire Protection System Testing, Inspection, and Maintenance," CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-FP-STD-07, Rev. A-1, "Portable Fire Extinguishers and Building Fire Barriers,"  
CH2M HILL Hanford Group, Inc., Richland, Washington.

TFC-ESHQ-S-STD-19, 2004, Rev. A, "Safety Shower and Eyewash Stations," CH2M HILL Hanford  
Group, Inc., Richland, Washington.

TFC-OPS-MAINT-C-01, Rev. F, "Tank Farm Contractor Work Control," CH2M HILL Hanford Group,  
Inc., Richland, Washington.

TFC-OPS-WM-C-01, Rev. A, "Waste Planning Checklist," CH2M HILL Hanford Group, Inc., Richland,  
Washington.

TFC-OPS-WM-C-10, Rev. A, "Contaminated Equipment Management Practices," CH2M HILL Hanford  
Group, Inc., Richland, Washington.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

## **Attachment 1. Assessor Biographies**

**John D. Doughty**  
**Environmental Scientist**

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Mr. Doughty has 19 years of environmental/engineering experience including facility assessments, facility environmental compliance, environmental monitoring, chemical management, facility closure, contaminant delineation and remediation, environmental permitting, and engineering studies. Twelve years of his experience have been at the Hanford Site. He is currently the assessment program coordinator for the CH2M HILL Environmental organization, and has served in that capacity since 2002.

Prior to his current position with CH2M HILL, Mr. Doughty was a senior consultant with Columbia Energy & Environmental Services and with Advanced Sciences, Inc. During his tenure, he provided environmental and engineering services on the Hanford Site for Waste Management, the Spent Nuclear Fuel Project, and Tank Farms. He also provided environmental and engineering support to commercial clients, including preparation of a Radionuclide Air Emissions License application for a small commercial laboratory, and delineation of subsurface contamination resulting from an unplanned release of low-level radioactive effluent from a research reactor.

Mr. Doughty also served as an environmental scientist with Prindle-Hinds Environmental, conducting environmental assessments of more than 75 commercial and industrial facilities, and delineating, characterizing, and remediating contamination in soils and groundwater.

**Peter L. Miller - PNNL**  
**Senior Research Scientist**

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Peter Miller, P.E., is a senior research scientist who joined Pacific Northwest National Laboratory (PNNL) in 1991. Prior to joining PNNL, Mr. Miller worked as an enforcement official in the U.S. Environmental Protection Agency Resource Conservation and Recovery Act (RCRA) program and as a project manager in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) CERCLA program. Since joining PNNL, he has worked as a manager and technical contributor for a broad range of U.S. Department of Energy, Department of Defense, and Department of Homeland Security projects. He holds a degree in chemical engineering from the University of Illinois at Urbana.

**Thomas J. McLaughlin - PNNL**  
**Project Manager**

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Mr. McLaughlin has 29 years of experience in managing, negotiating, and contributing to environmental, energy, and waste management projects at the Hanford Site. He is a recognized expert in permitting, hazardous/radioactive waste, technology development, environmental impact assessments, and project management. Currently, he is a Program Manager at Battelle, Pacific Northwest National Laboratory in Richland, Washington.

Mr. McLaughlin was the original Project Manager for the Hanford Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) program that led to the

nomination of the Hanford Site to the National Priorities List and a cleanup budget exceeding \$500M/year. He has been the project lead for investigations related to compliant management of hazardous and radioactive wastes in active and inactive facilities in the River Corridor Project. He has assisted with the certified submittal of more than 200 emission points under a sitewide Air Operating Permit. He was the project interface for the U.S. Department of Energy, Richland Operations Office's first "streamlined" Environmental Impact Statement related to Hanford solid waste.

Mr. McLaughlin has been the lead contributor and manager of a wide variety of energy research and development and Hanford Site waste management projects, including hazardous waste generation for all industries in the U.S. Environmental Protection Agency Region X, environmental impact assessment of tertiary oil and gas recovery, and numerous environmental impact assessments of newly proposed U.S. Department of Energy federal actions. He was Project Manager for Hanford's first permitted Resource Conservation and Recovery Act (RCRA) closure in the 1100 Area, which involved the solidification and cleanup of simulated high-level waste from the plutonium-uranium extraction (PUREX) process.

Mr. McLaughlin has extensive regulatory background, including serving as the Company Environmental Compliance Officer responsible for conformance with Clean Air Act, Clean Water Act, Toxic Substances Control Act, and RCRA permits and the compliant management of a wide variety of laboratory wastes, including high-level waste, low-level waste, RCRA hazardous, and radioactive and mixed wastes.

Mr. McLaughlin has been the primary or contributing author to numerous publications on subjects related to treatment and handling of Hanford Site waste.

### Michael J. Silvia, EnergX Project Manager, Operations and Environmental Management

Mr. Silvia has more than 20 years of experience, including 10 years of service in the U.S. Air Force, mostly in missile operations, training, and environmental management. Mr. Silvia joined EnergX in 1999. Mr. Silvia has been involved with the CH2M HILL since December 2000 when he was assigned as a team member for the Independent Performance Evaluation (IPE) assessment of the tank farm contractor. Since that time, he has assisted with corrective actions from the IPE assessment, worked for the environmental services organization on task for the Hanford Air Operating permit reports and certifications, management assessments, procedures, environmental impact statement, and facility transitions.

In his position as an assessor for Environmental Programs and qualified Team Lead with the Hanford Site Facility Evaluation Board, Mr. Silvia led the assessments for the Waste Management Project and Waste Encapsulation and Storage Facility under the Fluor Hanford contract. He was responsible for conducting assessments under the Environmental Programs area that includes environmental protection, waste management, and transportation and packaging. These three functional areas cover federal, state, local and U.S. Department of Energy requirements for ensuring facility compliance with Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, National Environmental Policy Act, Emergency Planning and Community Right-to-Know Act, Toxic Substance and Control Act and Department of Transportation regulations.

Mr. Silvia was part of the Integrated Safety Management System Validation Team for the Hanford Site infrastructure support organization, and assisted with U.S. Department of Energy Headquarters, Fluor Hanford Phase I and II, and the Plutonium Finishing Plant Integrated Safety Management Verification Assessments at the Hanford Site. Integrated Safety Management Verification Assessments address Environmental Protection, Chemical Management, and Work Planning. Mr. Silvia also assisted the Office of River Protection (Tank Waste Remediation System) Phase II and the Spent Nuclear Fuel Project Phase I and II Verification.

## **Attachment 2. Assessment Plan**

**FY2005-SPMA-S-0317**

Plan for Assessment # FY2005-SPMA-S-0317

## **ASSESSMENT PLAN**

**Calendar Year 2004 Land Disposal Restrictions Assessment**

**Assessment # FY2005-SPMA-S-0317**

**4th Quarter CY2004**

Approved: Signature on file 11/18/2004  
P.C. Miller, Manager Date  
Environmental Support & Assessment Program

## 1.0 INTRODUCTION

Between October 27 and December 4, 2004, CH2M HILL Hanford Group, Inc. (CH2M HILL) will assess its implementation of RCRA interim status TSD requirements and Land Disposal Restrictions (LDR) requirements. The assessment will address double shell tank (DST) facilities and programs, and potential mixed waste storage issues at the 241-A-701 Compressor Building.

This assessment is being conducted to comply with requirements in the Director's Final Determination, as documented in Chapter 3 of DOE/RL-2004-07, Rev. 0, "Calendar Year 2003 Hanford Site Mixed Waste Land Disposal Restrictions Report."

## 2.0 PURPOSE AND SCOPE

This assessment will evaluate implementation of RCRA interim status TSD requirements and LDR requirements, with a focus on verifying compliance for the DST system and Waste Feed Operations (WFO) activities. Facility 241-A-701 will be specifically addressed with respect to potential mixed waste storage issues. In addition, this assessment will address the status of corrective actions generated by the previous LDR assessment.

## 3.0 ASSESSMENT METHODOLOGY

This assessment will be conducted against pertinent Federal and State requirements. It will follow the format used in the previous LDR assessment, including use of the ORP-generated assessment checklist. Assessment methodology includes:

- Compliance inspection and evaluation of potential mixed waste storage issues at 241-A-701;
- Corrective action status review on last year's LDR assessment, PERs and other inspections completed between June 1, 2004 and October 1, 2004. (Primary areas of interest will be 1) contaminated equipment management, 2) response to identified equipment deficiencies, and 3) inclusion of required inspection activities in WFO round sheets);
- Evaluate implementation of, and adherence to, interim status requirements that address monitoring of waste tanks, focusing on DSTs and WFO activities. (The assessment will look at a selected subset of the requirements listed in Sections 20.3.2 and 20.3.2.1 of the Environmental Protection portion of the CH2M HILL S/RID.);
- Interviews and review of documents/records, following general lines of inquiry developed from ORP's comprehensive checklist of requirements;
- Report in general terms on areas of conformance/compliance found during the assessment; and
- Report specifically on each concern, finding or observation. (Determine whether any non-compliance is addressed by the TPA work plan, or has been self identified and entered into the corrective action management system.

During the period of onsite work, the team will hold daily meetings to review and discuss observations from the day's activities and identify areas requiring follow up.

## **FY2005-SPMA-S-0317**

### **Plan for Assessment # FY2005-SPMA-S-0317**

Additionally, the Team Leader will provide daily status briefings to CH2M HILL Environmental management on the team's activities, observations, and emerging issues. Potential issues and weaknesses will be verified and validated with the responsible manager(s) throughout the course of the assessment.

#### **4.0 ASSESSMENT TEAM**

The assessment team consists of:

- John Doughty, Lead, CH2M HILL Environmental Assessment Coordinator
- Mike Silvia, EnergX
- Tom McLaughlin, PNNL
- Pete Miller, PNNL

Individual biographies will be attached to the final report.

#### **5.0 ASSESSMENT SCHEDULE**

Field assessment activities are planned to commence on Wednesday, October 27, 2004, and be completed on Wednesday, November 10, 2004. The draft report is scheduled for submittal to management by December 1, 2004.

## **Attachment 3. Waste Storage Requirements Checklist**

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
<b>FEDERAL LAND DISPOSAL RESTRICTIONS</b>		
For each dangerous waste, is a determination made whether the waste has to be treated before it can be land disposed? Do WAC-173-303-140 standards apply? Does this determination include determining if the dangerous waste meets the treatment standards in 40 CFR 268.40, 268.45, or 268.49? How does CHG verify that the treatment standards have been met prior to disposal?	NA	
For dangerous wastes that DO NOT meet the treatment standards, is a one-time written notice sent to the receiving treatment or storage facility for each initial shipment of waste, and a copy of this notice placed in the record file? Does the notice include the applicable information required by the Generator Paperwork Requirements Table in 268.7(a)(4) in the 268.7(a)(2) column?	NA	
For dangerous wastes that DO meet the treatment standards at the original point of generation, is a one-time written notice sent to the receiving treatment, storage, or disposal facility for each initial shipment of waste, and a copy of this notice placed in the record file? Does the notice include the applicable information required by the Generator Paperwork Requirements Table in 268.7(a)(4) in the 268.7(a)(3) column and a certification statement? Are new notices sent when the waste changes? How does CHG verify that the treatment standards have been met prior to disposal?	NA	
For any dangerous wastes for which LDR exceptions exist, is a one-time written notice sent to the receiving land disposal facility for each initial shipment of waste, and a copy of this notice placed in the record file? Does the notice include the applicable information required by the Generator Paperwork Requirements Table in 268.7(a)(4) in the 268.7(a)(4) column?	NA	
If the waste or contaminated soil has been determined to be restricted based solely on knowledge of the waste, is all supporting data used to make this determination retained on-site? 268.7 (a)(6)	NA	

A3-2

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
If the waste or contaminated soil has been determined to be restricted based on testing the waste (or extract), is all supporting analysis data used to make this determination retained on-site? 268.7 (a)(6)	NA	
Are notices, certifications, analytical data, and other documentation produced pursuant to 268.7 being retained in record files for at least 3 years (longer if extended by the regulatory agency)? 268.7(a)(8). What programs, plans or procedures implement the generator record keeping requirements?	NA	
Are notices, certifications, analytical data, and other documentation produced pursuant to 268.7 being retained in record files for at least 3 years (longer if extended by the regulatory agency)? 268.7(a)(8). What programs, plans or procedures implement the generator record keeping requirements?	NA	
Where a dangerous waste has been designated by the dangerous waste lists (WAC 173-303-080) and the waste also exhibits a characteristic, has the generator determined the underlying hazardous constituents associated with the characteristic? (Note, this is not required where the listed waste treatment standard operates in lieu of the characteristic waste treatment standard, or for D001 nonwastewaters treated by CMBST, RORGS, OR POLYM of 40 CFR 268.42, Table 1.) 268.9(a)	NA	
Is hazardous debris being treated for each "contaminant subject to treatment" according to 268.45 (b) using the technologies identified in Table 1 of 268.42? Is debris that is contaminated with two more contaminants subject to treatment being treated for each contaminant using one or more treatment technologies identified in Table 1?	NA	
<b>General Waste Analyses</b>		
Are all solid wastes checked against the applicable designation procedures of WAC 173-303-070(3) and has a determination been made whether the wastes are DW or EHW? WAC 173-303-070(1)(a); 40 CFR 265.170(1)(a)	NA	

A3-3

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Are designation determinations based on test data, material or process knowledge, or a combination of these methods? Has designation been documented and can this information be provided? Is the documentation complete and adequate? WAC 173-303-070(3)(c)	NA	
Are records of test results, waste analyses, or other determinations made to designate wastes being maintained from at least five years from the date the waste was last transferred for on-site or off-site treatment, storage or disposal? WAC 173-303-210(3)	NA	
Has the owner or operator obtained a detailed chemical, physical, and/or biological analysis of a dangerous waste, before he stores, treats, or disposes of it? Does this analysis contain the information necessary to manage the waste in accordance with the requirements of this chapter 173-303 WAC? (The required analyses may include or consist of existing published or documented data on the dangerous waste, or on waste generated from similar processes, or data obtained by testing, if necessary)	NA	
Are analyses repeated as necessary to ensure they are accurate and current? WAC 173-303-300(1), (2), (3), and (4) (Analyses must be repeated when the owner or operator has reason to believe that the process generating the waste has significantly changed.)	NA	
Does the owner or operator have a waste analysis plan? Is the plan followed? Is the plan kept at the facility? Does the waste analysis plan describe the procedures to use to comply with the waste analysis requirements of WAC 173-303-300(1), (2), (3), and (4)?	NA	
<b>SECURITY</b>		
Is there either a 24-hour surveillance system which continuously monitors and controls entry on the active portions of the site or a natural or artificial barrier which completely surrounds the active portions of the facility? 40CFR 265.14(b) Per WAC 173-303-310 (2)(b)and(c)	Y	

A3-4

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Does each entrance have a sign, legible at a distance of 25 feet, which reads "Danger -- Unauthorized Personnel Keep Out", or words to similar effect? 40CFR 265.14(c) Per WAC 173-303-310 (2)(a)	Y	
<b>GENERAL INSPECTION REQUIREMENTS</b>		
Is the facility inspected for malfunctions and deterioration, operator error, and discharges which may cause releases of hazardous waste constituents to the environment, or a threat to human health and the environment? 40CFR 265.15(a) Per WAC 173-303-320 (1)	Y	
Is there a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices and operating equipment? 40CFR 265.15(b)(1) Per WAC 173-303-320 (2)	Y	
Does the inspection schedule identify the types of problems to look for? 40CFR 265.15(b)(3) Per WAC 173-303-320 (2)(b)	Y	
Does the inspection schedule identify the frequency of inspection for specific items? 40CFR 265.15(b)(4) Per WAC 173-303-320 (2)(c)	Y	
Are areas subject to spills, such as loading and unloading areas, inspected at least daily? 40CFR 265.15(b)(4) Per WAC 173-303-320 (2)(c)	Y	
Is a daily inspection log maintained at the facility? 40CFR 265.15(b)(2) Per WAC 173-303-320 (2)(d)	Y	
Are ALL daily inspection logs retained for at least five years? 40CFR 265.15(d) Per WAC 173-303-320 (2)(d)	Y	
Does the daily inspection log include the date and time of inspection? 40CFR 265.15(d) Per WAC 173-303-320 (2)(d)	Y	
Does the daily inspection log include the inspector's name? 40CFR 265.15(d) Per WAC 173-303-320 (2)(d)	Y	
Does the daily inspection log include the inspector's observations? 40CFR 265.15(d) Per WAC 173-303-320 (2)(d)	Y	

A3-5

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Does the daily inspection log include the date and nature of repairs or remedial actions? 40CFR 265.15(d) Per WAC 173-303-320 (2)(d)	Y	
Are repairs to dangerous waste storage areas made promptly when any deterioration or malfunction is discovered? 40CFR 265.15(c) Per WAC 173-303-320 (3)	Y	
Is reusable equipment being stored, surveyed, labeled and packaged to prevent releases of hazardous waste constituents to the environment, or a threat to human health and the environment?	NA	
Are inspections conducted at a frequency to identify problems in time to correct them before they harm human health or the environment? 40CFR 265.15(a) Per WAC 173-303-320 (1)	Y	
<b>PERSONNEL TRAINING</b>		
Do site personnel successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in compliance with applicable requirements? 40CFR 265.16(a)(1) Per WAC 173-303-330 (1)	NA	
Have ALL facility personnel who handle dangerous waste in any manner participated in an initial training course related to their management of dangerous waste within six months of beginning employment? 40CFR 265.16(b) Per WAC 173-303-330 (1)(c)(ii)	NA	
Has each employee participated in an annual review of his or her training? 40CFR 265.16(c) Per WAC 173-303-330 (1)(b)	NA	
Was the initial training and annual review directed by a person trained in dangerous waste management? 40CFR 265.16(a)(2)	NA	
Are records of each current employee's training maintained at the site? 40CFR 265.16(d)(4) Per WAC 173-303-330 (2)	NA	
Are records of former employee training maintained for at least three years after they leave? 40CFR 265.16(e) Per WAC 173-303-330 (3)	NA	

A3-6

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Are personnel assigned in dangerous waste management areas generally familiar with emergency equipment and systems, and emergency procedures including implementation of the site contingency plan? 40CFR 265.16(a)(3) Per WAC 173-303-330 (1)(d)	NA	
Are personnel assigned in dangerous waste management areas generally familiar with procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment? 40CFR 265.16(a)(3) Per WAC 173-303-330 (1)(d)(i)	NA	
Are personnel assigned in dangerous waste management areas generally familiar with key parameters for automatic waste feed cut-off systems? ) Per WAC 173-303-330 (1)(d)(ii)	NA	
Are personnel assigned in dangerous waste management areas generally familiar with communications or alarm systems? 40CFR 265.16(a)(3) Per WAC 173-303-330 (1)(d)(iii)	NA	
Are personnel assigned in dangerous waste management areas generally familiar with response to fires or explosions? 40CFR 265.16(a)(3) Per WAC 173-303-330 (1)(d)(iv)	NA	
Are personnel assigned in dangerous waste management areas generally familiar with response to ground-water contamination incidents? 40CFR 265.16(a)(3) Per WAC 173-303-330 (1)(d)(v)	NA	
Are personnel assigned in dangerous waste management areas generally familiar with shutdown of operations? 40CFR 265.16(a)(3) Per WAC 173-303-330 (1)(d)(vi)	NA	
Are documents containing the following information maintained on site: job title, written job description and name of employee for each position related to dangerous waste management? 40CFR 265.16(d)(2) Per WAC 173-303-330 (2)(a)	NA	
Are documents containing the following information maintained on site: written description of type and amount of training (including continual training) that will be given to person filling a position related to dangerous waste management? 40CFR 265.16(d)(3) Per WAC 173-303-330 (2)(b)	NA	

A3-7

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
<b>PREPAREDNESS AND PREVENTION</b>		*Topic was substantively addressed in recent Management Assessment. Those assessment results will be summarized in this LDR assessment.
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: internal communications or alarm system? Is such equipment present and available for use? Is the equipment maintained properly and periodically tested 40CFR 265.32(a) Per WAC 173-303-340 (1)(a)	*	
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: telephone or two-way radio to summon outside help? Is such equipment present and available for use? Is the equipment maintained properly and periodically tested 40CFR 265.32(b) Per WAC 173-303-340 (1)(b)	NA	
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: fire extinguishers and other fire control equipment? Is such equipment present and available for use? Is the equipment maintained properly and periodically tested 40CFR 265.32(c) Per WAC 173-303-340 (1)(c)	NA	
Does the facility maintain any of the following equipment to ensure safety from fire, explosion or unplanned releases of waste: water at adequate volume and pressure? Is the equipment maintained properly and periodically tested? 40CFR 265.32(d) Per WAC 173-303-340 (1)(d)	NA	
Is sufficient aisle space maintained for unobstructed movement of personnel, fire and other emergency or spill response equipment? 40CFR 265.35 Per WAC 173-303-340 (3)	NA	
Have arrangements been made, and documented, with applicable local and state emergency authorities (police, fire, hospitals, emergency response teams) to familiarize them with the Hanford site, dangerous waste handled there, and emergency procedures? 40CFR 265.37 Per WAC 173-303-340 (4)(a),(b),(c),(d)	NA	

A3-8

FY2005-SPMA-S-0317, Rev. 0

Y – This is a focus requirement and is addressed in the 2004 LDR Assessment.

N – This is not a focus requirement, and is not intended to be addressed in the 2004 LDR Assessment.

NA – This is not a focus requirement, but may be assessed as it relates to issues and focus requirements.

## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
<b>CONTINGENCY PLAN AND EMERGENCY PROCEDURES</b>		*Topic was substantively addressed in recent Management Assessment. Issues of interest will be identified in the CY2004 LDR assessment report.
Is there a contingency plan maintained on site which is designed to minimize hazards to health or the environment from fires, explosions or unplanned releases of dangerous waste? 40CFR 265.51(a) & 40CFR 265.53(a) Per WAC 173-303-350 (1) & (2)	*	
Does the contingency plan provide that it must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment? 40CFR 265.51(b) Per WAC 173-303-350 (1)	*	
Does the contingency plan describe the actions personnel must take in response to fires, explosions or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility? 40CFR 265.52(a) Per WAC 173-303-350 (3) (a)	*	
Does the contingency plan describe arrangements with local police, fire departments, hospitals and state and local emergency response teams?  40CFR 265.53(c) Per WAC 173-303-350 (3)(b)	*	
At all times, is an emergency coordinator on the premises or on call? 40CFR 265.55 Per WAC 173-303-360 (1)	*	
Does the contingency plan list ALL pieces of emergency equipment and their locations and capabilities? 40CFR 265.52(e) Per WAC 173-303-350 (3)(e)	*	
Does the contingency plan include an evacuation plan? 40CFR 265.52(f) Per WAC 173-303-350 (3)(f)	*	
Have copies of the contingency plan been sent to local police and fire departments, hospitals and state and local emergency response teams?  40CFR 265.53(b) Per WAC 173-303-350 (4)(b)	*	
Has the contingency plan been reviewed and amended if the plan failed in an emergency? 40CFR 265.54(b) Per WAC 173-303-350 (5)(b)	*	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Has the contingency plan been reviewed and amended if the facility(s) changed (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increased the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or changed the response necessary in an emergency? 40CFR 265.54(c) Per WAC 173-303-350 (5)(c)	*	
Has the contingency plan been reviewed and amended if the list of emergency coordinators changed? 40CFR 265.54(d) Per WAC 173-303-350 (5)(d)	*	
Has the contingency plan been reviewed and amended if the list of emergency equipment changed? 40CFR 265.54(e) Per WAC 173-303-350 (5)(e)	*	
Has the contingency plan been reviewed and amended if the applicable regulations have been revised? 40CFR 265.54(a) Per WAC 173-303-350 (5)(a)	*	
If the contingency plan has been revised, describe when and how plan was reviewed and amended.	*	
Has the facility had a dangerous waste emergency since the last assessment (i.e. spill, sudden release, leak, explosion, or ignition of any dangerous waste)?	*	
In the event of an emergency, is the available and applicable information recorded? 40CFR 265.56(j) Per WAC 173-303-360 (2)(k)	*	
In the event of an emergency, is the internal communications response action initiated? 40CFR 265.56(a)(1) 173-303-360 (2)(a)(i)	*	
In the event of an emergency, is the local agency alert response action initiated? 40CFR 265.56(a)(2) 173-303-360 (2)(a)(ii)	*	
In the event of a release, fire, or explosion, does the emergency coordinator immediately identify the character, exact source, amount, and area extent of any released materials? 40CFR 265.56(b) 173-303-360 (2)(b)	*	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
In the event of a release, fire, or explosion, does the emergency coordinator assess possible hazards to human health and the environment? 40CFR 265.56(c) 173-303-360 (2)(c)	*	
In the event of a release, fire or explosion which could threaten human health or the environment outside the facility, does the emergency coordinator report his/her findings appropriately? 40CFR 265.56(d) 173-303-360 (2)(d)	*	
In the event of an emergency, does the emergency coordinator take all reasonable measures to ensure that fires, explosions, and releases do not occur, recur, or spread? 40CFR 265.56(e) 173-303-360 (2)(f)	*	
In the event that the facility stops operations in response to a fire, explosion, or release, does the emergency coordinator monitor for leaks, pressure buildup, gas generation, or ruptures wherever appropriate? 40CFR 265.56(f) 173-303-360 (2)(g)	*	
Immediately after an emergency, does the emergency coordinator provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water? 40CFR 265.56(g) 173-303-360 (2)(h)	*	
In the event of an emergency, is the EPA and/or Ecology notified that the facility is in compliance with the requirements before operations are resumed? 40CFR 265.56(i) 173-303-360 (2)(j)	*	
In the event of an emergency, is the EPA and/or Ecology notified in writing within 15 days? 40CFR 265.56(j) 173-303-360 (2)(k)	*	
<b>OPERATING RECORD</b>		
Is a written operating record maintained at the site? 40CFR 265.73(a) Per WAC 173-303-380 (1)	Y	
Is a description and quantity of each hazardous waste received, the waste management methods, and the dates of waste management recorded in the operating record? 40CFR 265.73(b)(1) Per WAC 173-303-380 (1)(a)	Y	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Is the location of each dangerous waste within the facility and the quantity at each location recorded in the operating record? 40CFR 265.73(b)(2) Per WAC 173-303-380 (1)(b)	Y	
Are records and results of waste analyses recorded in the operating record? 40CFR 265.73(b)(3) Per WAC 173-303-380 (1)(c)	Y	
Are summary reports and details of all incidents that required the implementation of the contingency plan recorded in the operating record? 40CFR 265.73(b)(4) Per WAC 173-303-380 (1)(d)	Y	
Are inspection reports recorded in the operating record? 40CFR 265.73(b)(5) Per WAC 173-303-380 (1)(e)	Y	
Are required monitoring, testing, or analytical data recorded in the operating record? 40CFR 265.73(b)(6) Per WAC 173-303-380 (1)(f)	Y	
Are LDR notices, certifications, and/or demonstrations (if applicable) recorded in the operating record? 40CFR 265.73(b)(10) & (14) Per WAC 173-303-380 (1)(l)	Y	
Is the operating record made available to representatives of the EPA and/or Ecology upon their request? 40CFR 265.74(a) Per WAC 173-303-380 (3)(a)	Y	
<b>USE AND MANAGEMENT OF CONTAINERS</b>		*Topic was substantively addressed in several recent assessments, both internal and external. Issues of concern were documented in the corrective action system.
Are the containers in good condition (not leaking, bulging, rusting, damaged, or dented)? 40CFR 265.171, WAC 173-303-630 (2)	NA	
Is the container storage area inspected weekly? 40CFR 265.174, WAC 173-303-630(6)	NA	
Are results of weekly inspections for leaks and deterioration recorded? 40CFR 265.15(d), WAC 173-303-630(6)	NA	
Does the inspection record for leaks and deterioration include the date and time of inspection? 40CFR 265.15(d), WAC 173-303-630(6)	NA	
Does the inspection record for leaks and deterioration include the name of the inspector? 40CFR 265.15(d), WAC 173-303-630(6)	NA	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the GY04 Assessment	COMMENTS
Does the inspection record for leaks and deterioration include the observations made? 40CFR 265.15(d), WAC 173-303-630(6)	NA	
Does the inspection record for leaks and deterioration include the nature of remedial actions? 40CFR 265.15(d), WAC 173-303-630(6)	NA	
Are containers kept closed except when used? 40CFR 265.173(a), WAC 173-303-630(5)(a)	NA	
Is the container and/or its lining compatible with the waste? 40CFR 265.171, WAC 173-303-630 (4)	NA	
Is the container handled and stored properly so as not to be ruptured or caused to leak? 40CFR 265.173(b), WAC 173-303-630 (5)(b)	NA	
If a container is found to be leaking, is a procedure in place to transfer the dangerous waste from the leaking container or transfer the leaking drum to a recovery drum? 40CFR 265.56	NA	
Are the containers labeled to adequately identify the major risks associated with the contents? Are labels clearly readable and not obscured or otherwise removed? WAC 173-303-630(3)	NA	
Does the container storage area have a containment system capable of collecting and holding leaks and spills, plus if uncovered, capable of holding maximum precipitation? WAC 173-303-630(7)(a)	NA	
Is the base of the containment system free of cracks or gaps and sufficiently impervious to leaks, spills, and rainfall? WAC 173-303-630(7)(a)(i)	NA	
Is the base sloped to drain, or are the containers elevated or otherwise protected from accumulated liquids? WAC 173-303-630(7)(a)(i)	NA	
Is the containment system designed for positive drainage control? WAC 173-303-630(7)(a)(ii)	NA	
Does the containment system have sufficient capacity to contain 10% of the volume of all containers or the volume of the largest container, whichever is greater? WAC 173-303-630 (7)(a)(iii)	NA	
Is run-on into the containment system prevented? WAC 173-303-630 (7)(b)	NA	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
If EHW is managed, is it protected from the elements by a building or protective covering? WAC 173-303-630 (7)(d)	NA	
Are containers holding ignitable or reactive wastes located at least 15 feet from the Hanford facility boundary? 40CFR 265.176	NA	
Are containers holding ignitable or reactive wastes separated and protected from sources of ignition or reaction? 40CFR 265.17(a)	NA	
While ignitable and reactive waste are being handled, are smoking and open flames confined to specifically designated areas and are "No Smoking" signs conspicuously placed near the ignitable or reactive wastes? 40CFR 265.17(a), WAC 173-303-395(1)(a)	NA	
Are incompatible wastes and/or materials placed in the same container? 40CFR 265.177(a), 173-303-630(9)(a)	NA	
Are wastes placed in unwashed containers that previously held incompatible wastes and/or materials? 40CFR 265.177(b), WAC 173-303-630(9)(b)	NA	
Are containers that are stored nearby incompatible wastes or materials separated from the other wastes/materials by means of dike, berm, wall or other device? 40CFR 265.177(c), WAC 173-303-630(9)(c)	NA	
Are the containers arranged such that a separation of thirty-inches is maintained between the aisles of containers holding dangerous wastes? Are the rows of drums no more than two drums wide? WAC 173-303-630 (5)(c).	NA	
At least yearly the owner or operator must inspect those areas of his facility where ignitable or reactive waste are stored. The inspection must be performed in the presence of a professional who is familiar with the Uniform Fire Code or in the presence of the local, state or federal fire marshal. The inspection must include, date, time, name of inspector, observations, remedial actions taken. WAC 173-303-395(1)(d)	NA	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
<b>TANK SYSTEMS</b>		A reduced set of inquiries is proposed to focus on WFO and the double-shell tank (DST) system.
Is dangerous waste treated or stored in tanks? WAC 173-303-640 (1)(a)	N	
Does the tank system have a secondary containment system? 40CFR 265.193(a), WAC 173-303-640 (4)(a)(iv)	N	
Is the secondary containment system constructed of materials compatible with the waste to be stored? 40CFR 265.193(c)(1), WAC 173-303-640 (4)(c)(i)	N	
Does the secondary containment system have sufficient structural strength and thickness to prevent failure due to pressure gradients, climatic conditions and other factors? 40CFR 265.193(c)(1), WAC 173-303-640(4)(c)(i)	N	
Is the secondary containment system placed on a foundation or base capable of providing support? 40CFR 265.193(c)(2), WAC 173-303-640 (4)(b)(ii)	N	
Is the secondary containment system provided with a leak-detection system that will detect failure to either the primary or secondary containment structure or release of hazardous waste within 24 hours or earliest practical time? 40CFR 265.193(c)(3), WAC 173-303-640 (4)(b)(iii)	Y	
Is the secondary containment system sloped to drain and remove liquids? 40CFR 265.193(c)(4), WAC 173-303-640 (4)(b)(iv)	N	
Does the secondary containment system include an external tank liner? 40CFR 265.193(d)(1), WAC 173-303-640 (4)(d)	N	
Is the liner designed or operated to contain 100% of the capacity of the largest tank? 40CFR 265.193(e)(1)(i), WAC 173-303-640 (4)(d)(i)(A)	N	
Is the liner designed or operated to prevent run-on or infiltration of precipitation into secondary containment? 40CFR 265.193(e)(1)(ii), WAC 173-303-640 (4)(d)(i)(B)	N	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Is the liner free of cracks or gaps? 40CFR 265.193(e)(1)(iii), WAC 173-303-640 (4)(d)(i)(C)	N	
Is the liner designed and installed to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if released from the tanks? 40CFR 265.193(e)(1)(iv), WAC 173-303-640 (4)(d)(i)(D)	N	
Does the secondary containment system include a vault? WAC 173-303-640 (4)(d)	N	
Is the vault designed or operated to contain 100% of the capacity of the largest tank? 40CFR 265.193(e)(2)(i), WAC 173-303-640 (4)(d)(ii)(A)	N	
Is the vault designed or operated to prevent run-on or infiltration of precipitation into secondary containment? 40CFR 265.193(e)(2)(ii), WAC 173-303-640 (4)(d)(ii)(B)	N	
Is the vault constructed with chemical resistant water stops? 40CFR 265.193(e)(2)(iii), WAC 173-303-640 (4)(d)(ii)(C)	N	
Is the vault provided with an impermeable interior coating or lining that is compatible with the waste and will prevent migration of the waste into the concrete? 40CFR 265.193(e)(2)(iv), WAC 173-303-640 (4)(d)(ii)(D)	N	
Is the vault provided with a means to protect against the formation of the ignition of vapors within the vault? 40CFR 265.193(e)(2)(v), WAC 173-303-640 (4)(d)(ii)(E)	N	
Is the vault provided with an exterior moisture barrier or otherwise designed or operated to prevent the migration of moisture into the vault if the vault is subject hydraulic pressure? 40CFR 265.193(e)(2)(vi), WAC 173-303-640 (4)(d)(ii)(F)	N	
Does the secondary containment system include a double-walled tank? WAC 173-303-640 (4)(d)	N	
Is the double-walled tank designed as an integral structure so that any release from the inner liner is contained by outer shell? 40CFR 265.193(e)(3)(i), WAC 173-303-640 (4)(d)(iii)(A)	N	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
If the double-walled tank is constructed of metal, is it protected from both corrosion of the primary tank interior and the external surface of the outer shell? 40CFR 265.193(e)(3)(iii), WAC 173-303-640 (4)(d)(iii)(B)	N	
Is the double-walled tank provided with a leak detection system capable of detecting a release within 24 hours? 40CFR 265.193(e)(3)(iii), WAC 173-303-640 (4)(d)(iii)(C)	Y	
Does the secondary containment system include an equivalent device to external tank liners, vaults, or double-walled tanks, which is approved by EPA and/or Ecology? WAC 173-303-640 (4)(d)	N	
Has the owner or operator made a determination that the tank system is not leaking or is unfit for use? Does the owner or operator have on file at the facility a written assessment reviewed and certified by an IQRPE that attests to the tank systems integrity by 1/12/88 for tanks that do not meet the secondary containment requirements of WAC 173-303-640(4) and that cannot be entered for inspection? 40CFR 265.191(a), WAC 173-303-640(2)(a)	Y	
Has the assessment determined that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste stored to ensure that it will not collapse, rupture or fail? Does the assessment consider the elements listed in WAC 173-303-640(2)c -(i through v)?	N	
If the assessment reveals that the tank system is leaking or unfit for use was a proper response taken? 40CFR 265.193(5)(i)(4), WAC 173-303-640(7)	N	
Has the owner or operator developed a schedule for conducting integrity assessments over the life of the tank to ensure that the tank retains its structural integrity? Is the schedule based on the results of past integrity assessments, tank age, construction materials, waste characteristics, and other relevant factors? WAC 173-303-640(2)(e)	Y	
Is the tank system's ancillary equipment provided with full secondary containment (e.g. trench, jacketing, double-walled piping)? 40CFR 265.193(3)(f), WAC 173-303-640 (4)(f)	N	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
Are dangerous wastes and treatment reagents that could cause the tank system to rupture, corrode, or fail prevented from being placed in the tank? 40CFR 265.194 (a), WAC 173-303-640(5)	N	
Does the owner or operator use appropriate controls and practices to prevent spills and overflows from tanks and containment systems? WAC 173-303-640(5)(b)	N	
Are tank overfill prevention control equipment (e.g. level sensing devices, waste feed cutoffs, by-pass systems) inspected daily? 40CFR 265.195 (a)(1),	Y	
Are data gathered from monitoring equipment (e.g. pressure and temperature) inspected daily? 40CFR 265.195(a)(3), WAC 173-303-640(6)(b)(ii)	Y	
Are the above-ground portions of the tank inspected daily for corrosion or leaking? 40CFR 265.195 (a)(4), WAC 173-303-640(6)(b)(i)	Y	
Are the construction materials of, and the area immediately surrounding, discharge confinement structures (e.g. dikes) inspected daily for erosion or leaking? 40CFR 265.195 (a)(4), WAC 173-303-640-(6)(b)(iii)	N	
Are the results of inspections recorded in the operating record? 40CFR 265.195 (c), WAC 173-303-640(6)(d)	Y	
Does the owner or operator inspect cathodic protection systems to ensure that they are functioning properly? (Initially within 6 months after installation, and annually thereafter) WAC 173-303-640(6)(c)(i) and (ii)	Y	
NOTIFICATIONS: Are releases to the environment reported to the department within 24 hours of detection for any releases which cannot be immediately contained and cleaned-up or those greater than reportable quantities established in 40 CFR Part 302? WAC 173-303-640(7)(d)	Y	
CLOSURE and POST CLOSURE –640(8): Does the closure plan, closure activities, cost estimates for closure and financial responsibility for tank systems meet all the requirements specified in WAC 173-303-610 and 173-303-620? WAC 173-303-640(8)	N	

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## Waste Storage Requirements Checklist

ASSESSMENT QUESTIONS	Addressed in the CY04 Assessment	COMMENTS
If ignitable or reactive wastes are placed in tanks, are the wastes treated, rendered or mixed before or immediately after placement in the tank so that the mixture no longer meets the definition of ignitable or reactive, or is the waste protected from sources of ignition or reaction? WAC 173-303-640(9)(a)(i)	N	
Are the tanks properly marked with labels or signs, to identify the waste contained in the tank? Are signs or labels legible at a distance of at least 50 ft and do they bear a legend that warns employees, emergency response personnel, and the public of the major risks associated with the waste? WAC 173-303-640 (5) (d)	Y	

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