CHAPTER 5.0
POSTCLOSURE PLAN

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5.0 POSTCLOSURE PLAN

Postclosure requirements will be applicable to 1301-N and 1325-N. Because it is uncertain, whether postclosure requirements would involve modified closure requirements or landfill requirements, actions necessary to comply with both closure options are presented.

5.1 Modified Postclosure Institutional Controls and Periodic Assessments

Institutional controls under a modified closure option will consist of continued restrictions to access and use of groundwater and may consist of access controls to surface soils or deeper soils such as a fence. Institutional controls will be defined after remedial alternative selection. Inspections and maintenance of institutional controls and monitoring will be requirements of postclosure under a modified closure option.

5.1.1 Periodic Assessments

Periodic assessments shall include a compliance-monitoring plan in accordance with Permit Condition II.K.3.b and WAC 173-340-410. The compliance-monitoring plan will address the assessment requirements, which include protection and confirmation monitoring. This will include at least one assessment activity that is to take place after a period of five years from the completion of closure. The assessment activity will demonstrate whether the soils and groundwater have been maintained at or below the allowed concentrations for a modified closure as defined in Permit Condition II.K.3. The compliance plan will identify the nature and date of the assessment activities and will include a timetable for performance of these activities. This information will be contained in the CERCLA Operation and Maintenance Plan and its supporting documents.

Should the required assessment activities identify contamination above the allowable limits (i.e., landfill closure levels specified in Permit Condition II.K.4.), the unit must be further remediated or the postclosure plan must be modified to include activities to be undertaken at the unit to meet landfill closure and postclosure requirements. Should the required assessment activities demonstrate that contamination has diminished or remained the same, the Permittees may request that Ecology reduce or eliminate the assessment activities and/or institutional controls.

As allowed by WAC 173-340-410, such monitoring may be combined with other plans. It is the intention that protection and confirmation sampling of groundwater be achieved through implementation of the dangerous waste final status groundwater monitoring plan to be written prior to, and implemented upon, the effective date of the Permit modification adding 1301-N and 1325-N to the Permit (anticipated to occur in 1999).

In addition to groundwater monitoring, compliance monitoring for institutional controls will include routine visual inspections and evaluations. Visual inspections shall consist of examinations of soil cover surfaces for signs of deterioration and improper usage of the surface area (e.g., buildings, impervious surfaces such as concrete or asphalt). An evaluation of existing data from the groundwater monitoring system should also be performed, as well as any other activities that would help assess the integrity of the cover.

5.1.2 Inspections

Inspections of institutional controls and groundwater monitoring systems under a modified closure option will be required. Groundwater monitoring postclosure inspection requirements will be identical to those under a landfill closure option and are contained in Section 5.2. Because the exact nature of institutional controls that may be utilized at 1301-N and 1325-N depend upon the remedial alternative chosen, site conditions, further characterization efforts, and the success of remedial actions taken, a list of potential inspection items is contained in Table 5.5. Frequency of inspection of these potential items is also contained in this table. These inspections may be implemented in checklist form. Such a checklist could specify entering checklist performance and results in the appropriate inspection logbook.

5.1.2.1 Inspection Logbook

Inspectors will be trained in accordance with the postclosure personnel training plan contained in Section 5.4. The inspector will record any damage to the area and/or maintenance needs as well as the weather conditions at the time of inspection. Separate logbook entries will be signed and dated. Performance of any related inspection checklists will be documented in the logbook. Maintenance actions will be started and should be completed within 90 days. Logbook entries will document the correction of the problem or the status of corrective actions. Entries should also uniquely identify, where possible, work documents that actually performed the activities.

5.1.2.2 Security Control Devices

The 1301-N and 1325-N units are currently surrounded by a fence with locked gate access. If fences are removed to accommodate remedial activities, they will be replaced with an appropriate physical barrier, if required, in accordance with institutional controls defined after remedial alternative selection.

Table 5.1. Minimum Inspection Schedule for 1301 N and 1325 N

Item(s)	Inspection Frequency		
	Monthly	Quarterly	Annually
Security control devices			X
Erosion damage	X (until vegetative cover is established)	X (thereafter)	
Cover settlement and displacement		X	
Condition of vegetative cover	X (first 2-3 years)	X (thereafter)	
Well condition and purge water collection system		X	
Benchmark integrity			X

5.1.2.3 Erosion Damage and General Integrity

Should surface ground covers or other earthen barriers be utilized as part of the modified closure institutional controls for 1301-N and 1325-N, inspection of these systems for erosion control and general integrity will be performed. Inspection frequency will be quarterly and will be performed by physically walking over the site to check visually for wind and water erosion, subsidence, displacement, and general site integrity. Any site damage noted during inspections will be recorded in the field logbook and reported to the appropriate maintenance authority.

5.2 Landfill Postclosure Requirements

Should a landfill cover be required, an inspection and maintenance plan will be developed during remedial design for the 1301-N and 1325-N cover systems.

5.3 Groundwater Monitoring Postclosure Requirements

5.3.1 Postclosure Groundwater Monitoring

During the postclosure period, monitoring of groundwater will continue according to the existing groundwater-monitoring program (Borghese et. al., 1996). The detection-monitoring program in accordance with WAC 173-303-645(9) is scheduled for implementation when the 1301-N and 1325-N units are incorporated in the Permit.

5.3.2 Inspection, Maintenance, and Replacement of Wells

Each time a well is sampled, the wellhead and associated structures are inspected. Problems with the pump or with the sample (e.g., excessive turbidity) are also noted. Repairs are made according to approved contractor procedures. Subsurface inspection and maintenance is performed on a 3- to 5-year schedule, or as needed to repair problems identified during sampling.

If a monitoring well becomes unsuitable for use, the monitoring program will be reevaluated to determine if a new or existing well should be substituted.

5.4 Personnel Training During Postclosure

This section describes the training of personnel required to complete postclosure care requirements contained in this closure plan and the Permit. It is intended to supplement the training plan currently in place and identified in DOE/RL 96-39, Rev. 1A, Attachment A-4. A brief description of how training will be designed to meet job tasks is presented below.

5.4.1 Surveillance Personnel

The following outline provides potential information on classroom or on-the-job training that surveillance personnel will complete before conducting independent site surveillance at 1301-N and 1325-N during a postclosure period. Only those that are applicable to the selected closure option will be used:

- Site surface inspections (water and wind erosion, settlement and displacement, vegetative cover)
- Security inspections
- Location, integrity, and inspection of benchmarks, if appropriate
- Location, integrity, and inspection of groundwater wells
- Erosion damage
- Cover settlement and displacement
- Vegetative cover condition.

5.4.2 Groundwater Sampling and Analysis Task Leader and Sampling Personnel

After closure of 1301-N and 1325-N, the sampling and analysis task leader or delegate (samplers) will be responsible for:

- Monitoring and reporting on groundwater well security and maintenance
- Collecting groundwater level data
- Collecting, packaging, and shipping groundwater samples to field and offsite laboratories
- Sampling and monitoring equipment operation and maintenance
- Providing sample chain of custody to the laboratory.

The training of the sampling and analysis task leader and sampling personnel will receive either classroom instruction or on-the-job training. Sampling and analysis personnel will be trained to perform these functions in accordance with the *Hanford Analytical Services Quality Assurance Requirements Documents* (DOE-RL 1996d). A person successfully completing the required training courses will be qualified as a groundwater sampler and/or task leader. All personnel will undergo training and at least an annual review for required courses.

5.4.3 Additional Training Descriptions for Landfill Closure

Training descriptions for additional tasks associated with a landfill closure are as follows:

Site Cover Inspections – This on-the-job training program is established to ensure that the surveillance personnel know what to inspect after the closure of 1301-N and 1325-N. It will include how to inspect for obvious signs of erosion, proper drainage, settlement, and sedimentation. In addition, personnel will be informed as to what constitutes proper vegetation coverage.

Additional on-the-job or classroom training under a landfill closure option includes the following:

Site Security Inspections – Personnel will be instructed on how to inspect for obvious signs of a security breach. Signs may include cut fencing, unlocked gates, or cut chains.

Location, Integrity, and Inspection of Benchmarks – Personnel will be shown the location of benchmarks and report any obvious signs of destruction or deterioration.

5.5 Security

5.5.1 24-Hour Surveillance System

The 1301-N and 1325-N units are located within the 100 Area of the Hanford Site. The 100 Area will remain an area controlled by RL for the near future due to the decommissioning and deactivation of facilities associated with and including the 100-N Reactor. These areas will be under 24-hour surveillance by Hanford Patrol Protective Force personnel.

5.5.2 Barrier, Means to Control Entry, and Warning Signs

Roadways to the unit and site access will remain administratively restricted to use by authorized personnel only. Posted federal warning signs restrict access to the 100-N Area from the Columbia River. Further institutional and administrative measures controlling TSD unit site access may be initiated for the site commensurate with the future use of the property.

5.6 Postclosure Contact

The RL will be the official contact for the 1301-N and/or 1325-N units during the postclosure period at the following address:

Director, Office of Environmental Services*
U.S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

*or its equivalent should there be a future reorganization at DOE-RL

5.7 Certification of Postclosure

No later than 60 days after completion of the postclosure care period, RL will submit to Ecology a certification of completion of postclosure care. This certification, stating that postclosure care for the unit was performed in accordance with the approved closure plan, will be signed by RL and an independent registered professional engineer. The certification will be submitted by registered mail or an equivalent delivery service. Documentation supporting the independent registered professional engineer's certification will be supplied upon request of the regulatory authority.