

August 2004

WA7890008967, Part V, Closure Unit 2
1301-N Liquid Waste Disposal Facility

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CHAPTER 5.0
POSTCLOSURE PLAN

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CHAPTER 5.0
POSTCLOSURE PLAN

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TABLE

Table 5.1. Minimum Inspection Schedule for 1301 N and 1325 N 5.6

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1 **5.0 POSTCLOSURE PLAN**

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

5 **5.1 Modified Postclosure Institutional Controls and Periodic Assessments**

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

10 **5.1.1 Periodic Assessments**

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

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

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

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

37 **5.1.2 Inspections**

38 Inspections of institutional controls and groundwater monitoring systems under a modified closure option
39 will be required. Groundwater monitoring postclosure inspection requirements will be identical to those
40 under a landfill closure option and are contained in Section 5.2. Because the exact nature of institutional
41 controls that may be utilized at 1301-N and 1325-N depend upon the remedial alternative chosen, site
42 conditions, further characterization efforts, and the success of remedial actions taken, a list of potential
43 inspection items is contained in Table 5.5. Frequency of inspection of these potential items is also
44 contained in this table. These inspections may be implemented in checklist form. Such a checklist could
45 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.

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

3 **5.4 Personnel Training During Postclosure**

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

8 **5.4.1 Surveillance Personnel**

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

- 12 • Site surface inspections (water and wind erosion, settlement and displacement, vegetative cover)
- 13 • Security inspections
- 14 • Location, integrity, and inspection of benchmarks, if appropriate
- 15 • Location, integrity, and inspection of groundwater wells
- 16 • Erosion damage
- 17 • Cover settlement and displacement
- 18 • Vegetative cover condition.

19 **5.4.2 Groundwater Sampling and Analysis Task Leader and Sampling Personnel**

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

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

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

33 **5.4.3 Additional Training Descriptions for Landfill Closure**

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

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

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

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

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

3 **5.5 Security**

4 **5.5.1 24-Hour Surveillance System**

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

9 **5.5.2 Barrier, Means to Control Entry, and Warning Signs**

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

14 **5.6 Postclosure Contact**

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

17 Director, Office of Environmental Services*

18 U.S. Department of Energy

19 Richland Operations Office

20 P.O. Box 550

21 Richland, Washington 99352

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

23 **5.7 Certification of Postclosure**

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