ADDENDUM H

CLOSURE PLAN
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This addendum describes the planned activities and performance standards for closing dangerous waste management units (DWMU) at the WRAP Operating Unit Group.

H.1 Closure Plan

The WRAP Operating Unit Group consists of the following dangerous waste management units:

- 2336W Building, including the process area, the NDE/NDA area, the shipping and receiving area, and Room 152.
- 2404WA Storage Building.
- 2404WB Storage Building.
- 2404WC Storage Building.

Closure of WRAP dangerous waste management units may proceed independently of one another. The closure approach will be closure by removal or decontamination (“clean close”) as required by WAC 173-303-630(10) and WAC 173-303-610(2) for container storage units. Consistent with the criteria that must be met to clean close a dangerous waste management unit, no waste will be closed in place and therefore no post closure activities will be necessary.

Records of the dangerous waste management units in the WRAP Operating Unit Group identify the materials stored, as well as records of any spills, releases, and related cleanups at WRAP dangerous waste management units. The permit conditions authorizing storage of containerized waste at WRAP DWMU help ensure that spills or releases will not occur. Should spills or releases occur, permit conditions ensure that they are cleaned up and documented in compliance with the final closure performance standards.

Dangerous waste management units at WRAP will be closed by removal or decontamination with respect to dangerous waste contamination that resulted from operations. If it is determined that closure by removal or decontamination is not possible, the closure plan will be modified in accordance with Permit Condition II.J.2 to address closure of the affected unit(s) as a landfill and post-closure activities including groundwater monitoring.

Uncontaminated or decontaminated structures and equipment will be left in place for future use, or disassembled, dismantled, and removed for disposal. Decisions regarding disposal or future use of equipment and structures will be made at the time of closure. Equipment and structures subject to requirements of this closure plan include those that have been used for the treatment and/or storage of dangerous or mixed waste, or which may reasonably be expected to be or have been contaminated by dangerous or mixed waste.

H.2 Closure Performance Standard

Closure by removal or decontamination requires the decontamination or removal and disposal of all dangerous waste, waste residues, contaminated equipment, soil or other material established in accordance with the removal or decontamination performance standards established in this closure plan pursuant to WAC 173-303-610(2). This and future closure plan revisions will document closure activities necessary to achieve compliance with these performance standards.

Closure by removal or decontamination, based on the requirements established in this closure plan pursuant to WAC 173-303-610(2), will eliminate the need for future maintenance and will be protective of human health and the environment by removing and reducing the chemical contamination at or resulting from operations of WRAP dangerous waste management units to levels that are below concern with respect to human health and the environment.

Clean closure of soils underlying the structures and soils surrounding the outdoor storage area will be accomplished by demonstrating that there are no pathways for dangerous waste to the underlying soils. Operating records will be checked to verify that cleanup of any spills within the WRAP dangerous waste
management units was performed, and that these cleanups satisfied the closure performance standards at the time of the cleanup.

Clean closure will be to standards specified in this closure plan pursuant to WAC 173-303-610(2)(b)(ii) for all structures, equipment, bases, liners, etc. Except for the asphalt surface located at the Outdoor Storage Area A, the performance standard for structures, equipment, bases, liners, etc, will be a clean debris surface in 40 CFR 268.45, Table 1, Footnote 3 incorporated by reference in WAC 173-303-140(2). For equipment, a closure performance standard of removal or disposal can be applied. For the asphalt surface area at the Outdoor Storage Area A, the closure performance standard will be removal of the asphalt surface, treatment as necessary, and disposal. Although not anticipated, any contaminated soils will be subject to numeric cleanup levels in WAC 173-303-610(2)(b)(i). If contaminated soils are encountered, or if it is not possible to demonstrate there are no pathways for dangerous wastes or constituents to underlying soils, this circumstance will be considered an unexpected event for closure requiring a modification to the plan pursuant to Permit Condition II.J.2.

Any previously designated dangerous/mixed waste or debris removed from WRAP permitted storage will be managed in accordance with this Permit. Newly or generated dangerous/mixed waste from decontamination or removal efforts will be designated in accordance with WAC 173-303-070 through 100 and managed accordingly.

**H.2.1 Closure Standards for Concrete Containment Structures**

This closure plan proposes ‘clean debris surface’ as the clean closure performance standard for equipment and concrete containment structures that will remain after closure. This approach is consistent with Ecology guidance (Publication #94-111, Ecology 2005) for achievement of clean closure. ‘Clean debris surface’ is defined as “the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area” [40 CFR 268.45 incorporated by reference by WAC 173-303-140(2)].” Adherence to this guidance ensures that all residues have been removed as required by WAC 173-303-610.

**H.2.2 Closure Standards for Underlying Soils**

**H.2.2.1 2336W, 2404WB, 2404 WA and 2404WC**

Clean closure of the soil under the 2336W, 2404WB, 2404WA and 2404WC structures will be accomplished by demonstrating that the coated concrete floors kept contamination from reaching the soil. The coated concrete floors provided secondary containment for the storage and treatment areas of the WRAP Operating Unit Group buildings. Unless inspections identify potential through-thickness cracks indicating containment failure and a subsequent potential for soil contamination from the WRAP dangerous waste management units operations, the soil will be considered clean closed. Should inspections identify such cracks, and there have been documented spills in the vicinity, potential soil contamination will be investigated. In this circumstance, a sampling and analysis plan for characterizing the nature and extent of soil contamination will be prepared following the completion of a data quality objectives process in accordance with EPA/600/R-96/055 (QA/G-4), Data Quality Objectives Process, as amended. The data quality objectives process will be initiated prior to closure on a schedule to ensure timely closure of WRAP dangerous waste management units. The sampling and analysis plan will be submitted to Ecology as part of a permit modification pursuant to Permit Condition II.J.2. This permit modification request will also establish constituents of concern, soil remediation requirements, soil closure performance standards, and associated sampling, analysis, and QA/QC requirements necessary to demonstrate compliance with closure performance standards. The sampling and analysis plan will be prepared consistent with EPA/240-B-01/003 (EPA/QA R-5), EPA Requirements for Quality Assurance Project Plans, as amended.
H.3 Closure Activities

H.3.1 General Closure Activities 2336W, 2404WB, 2404WA and 2404WC

The WRAP operating record will be reviewed to identify any previous spills and releases that occurred at WRAP Operating Unit Group. The review will also verify the cleanup of spills was performed and that these cleanups satisfied the closure performance standards at the time of the cleanup.

Attainment of a clean debris surface will be verified visually in accordance with the performance standard. When the performance standard is not met, decontamination of concrete will be accomplished using physical extraction methods from the alternative treatment standards for hazardous debris [40 CFR 268.45, Table 1, incorporated by reference by WAC 173-303-140]. Inspections to verify achievement of a clean debris surface will be performed and documented.

The concrete will be reexamined visually after decontamination. Areas that do not satisfy the clean debris closure performance standard will be reevaluated for more rigorous decontamination or removal, designation, and disposal. If this circumstance is encountered, it will be considered an unexpected event during closure, and this closure plan will be modified according to Permit Condition II.J.2.

Closure activities will include the following:

- Document review to determine spill history
- Inventory removal
- Visual inspection and survey
- Process equipment decontamination and/or removal
- Structure decontamination and/or removal
- Designation of wastes generated during closure
- Obtain independent registered professional engineer certification that closure activities were completed in accordance with the approved closure plan (to include any approved permit modifications).

Additional details for closure activities are provided below.

All waste inventories at the WRAP Operating Unit Group at the start of closure will be processed as part of closure. At completion of closure, no waste will remain at the WRAP Operating Unit Group. Residue remaining in process lines and equipment will be removed during decontamination as necessary to achieve a clean debris surface. All containers of waste will be removed from the storage structures and will be transferred to another permitted onsite Operating Unit Group or permitted offsite facility.

Equipment used in performing closure activities may be decontaminated as necessary to meet the closure performance standards for equipment in Section H.2. Equipment that is not or cannot be decontaminated, as well as materials used in performing closure activities, will be or disposed at an on-site Operating Unit Group, an off-site permitted facility, or another approved facility.

H.3.2 Visual Inspection and Survey and Clean Debris Surface Performance Standards

After all waste has been removed from WRAP dangerous waste management units, a visual inspection and survey will be performed to identify areas of potential contamination. The visual inspection will evaluate the equipment and structures, including interior walls, containment areas, grates, floors, and storage pads. For areas that do not satisfy the clean debris surface closure performance standards, field personnel will determine whether to remove and dispose or to decontaminate.

H.3.3 Process Equipment Decontamination and/or Removal

Equipment containing or contaminated with dangerous/mixed waste or waste residue will be managed by one of the following methods: (1) decontamination, (2) disposal as dangerous waste, or (3) disposal as mixed waste. The method to be used will be determined based on the specific piece of equipment, the level of contamination, the ease with which the equipment can be decontaminated, the waste designation performed in accordance with WAC 173-303-070 through -100, and the estimated quantity of waste to be disposed.
generated during decontamination. Final disposal will be determined using appropriate techniques available at the time of closure.

**H.3.4 Structure Decontamination and/or Removal**

Any structures, including interior walls, containment areas, including, sumps, grates and, floors but excluding the Outdoor Storage Area A, that contain or have contaminated dangerous/mixed waste or waste residue in excess of the clean debris surface performance standard will be decontaminated. The method of decontamination used will depend on the nature of the structure and the extent and type of contamination. Decontamination methods might include wiping, washing, brushing, or scrubbing, and rinsing with water or other appropriate media. Decontamination procedures will address minimization of decontamination waste, measures to contain and collect such waste. Decontamination waste will be designated in accordance with WAC 173-303-070 through -100 and managed appropriately.

**H.3.5 Designation of Waste Generated During Closure**

During closure, waste could be generated. Any waste generated during closure will be designated in accordance with WAC 173-303-070 through -100. Following designation as dangerous and/or mixed waste, the waste will be managed under the generator provisions of WAC 173-303-200, an on-site dangerous waste management unit at which closure has not yet begun, or an off-site permitted facility, or another approved facility.

In the unlikely event that contaminants are suspected to have penetrated the unit’s containment, sampling will be performed as necessary to determine the extent of contamination. If sampling is necessary to achieve clean closure, the closure plan will be amended in accordance with the permit modification process of II.J.2.

**H.3.6 Maximum Waste Inventory**

The WRAP Operating Unit Group provides storage capacity for both onsite- and offsite-generated waste before final disposal. An estimated maximum waste inventory is 5,033,800 liters. The volume within each container consists of waste and all necessary packing material.

**H.4 Schedule for Closure**

The actual year of closure is unknown but will be based on the availability of waste requiring processing, operational requirements, and the ability to maintain WRAP dangerous waste management units, among other considerations. Closure will be completed 180 days after the last shipment of waste is received at the corresponding DWMU [WAC 173-303-610(4)(b)]. Ecology will be notified by the Permittees on when closure is expected to begin. Notification of closure will be provided in accordance with Condition II.J.3.

The closure schedule will be based on the time required to perform applicable closure activities described in Section H.3. Closure activities are summarized in Table H.1. A detailed schedule of closure activities is provided in Table H.2. Modifications to the Closure Plan schedule will be done in accordance with WAC 173-303-830 Appendix I, D.1.b.

**H.5 Certification of Closure**

Within sixty days of completion of closure activities at each WRAP dangerous waste management unit according to this plan, the Permittees will submit to Ecology by registered mail a certification that the corresponding dangerous waste management units have been closed in accordance with the specifications in this plan. The certification will be signed by the Permittees and by an independent registered professional engineer.
Table H.1 Summary of WRAP DWMU Closure Activities

<table>
<thead>
<tr>
<th>Closure Activity Description</th>
<th>Expected Duration¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipt of final volume of dangerous waste</td>
<td>N/A</td>
</tr>
<tr>
<td>Notify Ecology that closure will begin</td>
<td>45² days</td>
</tr>
<tr>
<td>Remove waste inventory – package all dangerous waste, manifest, and transfer to permitted facility for further storage, treatment and/or disposal</td>
<td>90 days</td>
</tr>
<tr>
<td>Decontaminate structural surfaces and equipment.</td>
<td>45 days</td>
</tr>
<tr>
<td>Analyze decontamination waste to determine proper methods of treatment/disposal</td>
<td>25 days</td>
</tr>
<tr>
<td>Dispose of decontamination waste based on results of waste analysis</td>
<td>20 days</td>
</tr>
</tbody>
</table>

¹Time durations are consecutive and added together. ² Notification in accordance with Permit Condition II.J.

Table H.2 Detailed Schedule of Closure Action

<table>
<thead>
<tr>
<th>Action</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Closure Activities</td>
<td></td>
</tr>
<tr>
<td>Date of receipt of last volume of waste</td>
<td>Day 0</td>
</tr>
<tr>
<td>Closure Activities</td>
<td></td>
</tr>
<tr>
<td>Removal of Waste Inventory</td>
<td>Day 90</td>
</tr>
<tr>
<td>Removal of equipment and components</td>
<td>Day 95</td>
</tr>
<tr>
<td>Decontamination of Unit</td>
<td>Day 135</td>
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<tr>
<td>Management of Decontamination Waste</td>
<td></td>
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<tr>
<td>Waste Analysis</td>
<td>Day 160</td>
</tr>
<tr>
<td>Waste Disposal</td>
<td>Day 180</td>
</tr>
<tr>
<td>Other Activities</td>
<td></td>
</tr>
<tr>
<td>Certification of Closure to Ecology</td>
<td>Day 240</td>
</tr>
</tbody>
</table>

Part III, Operating Unit Group 7-H.5
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