

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 1 OF 11

FACILITY _____
 EPA ID NUMBER _____ PATS NUMBER _____
 TYPE OF APPLICATION _____

SUBMITTAL DATE	REVIEWER
1. _____	_____
2. _____	_____
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PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
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I. SITE CHARACTERIZATION.

- A. Facility Description.
 - 1. Geographic location (map).
 - 2. Size of facility.
 - 3. Brief discussion or list of all units (Solid Waste Management Units and Regulated Units) which are or have been at the facility.
 - 4. Hydrogeology of immediate area (use GW Protection checklist).
 - 5. Short, descriptive history of the facility's past and present operations, status of closure, interim or corrective actions.
 - 6. Description of any previous hazardous waste and/or constituent releases at the facility.
 - 7. Where there is evidence of a release to groundwater, provide locations of potentially threatened drinking water wells.

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 2 OF 11

FACILITY _____
 EPA ID NUMBER _____ PATS NUMBER _____
 TYPE OF APPLICATION _____

PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
-------------------	-------------	-----------	-------------------------	----------

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| | B. Description of Unit(s) Requiring an Equivalency Demonstration. <ol style="list-style-type: none"> 1. Number of unit(s) attempting equivalency demonstration. 2. Unit type before and after closure (surface impoundment, etc.). 3. Unit size and physical description before and after closure and any modifications to the unit (installation of liner, replacement by tank, etc.) should also be discussed. 4. Period of operation/age of unit. 5. List of hazardous waste and/or constituents managed in the unit (EPA hazardous waste numbers and quantities). 6. Description of unit relationship with facility processes. 7. Description of any previous releases from the unit. 8. Liner and/or leachate collection systems, as applicable. | | | |
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II. DEMONSTRATION OF COMPLIANCE WITH CLEAN CLOSURE EQUIVALENCY REQUIREMENTS.

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|--|---|--|--|--|
| | A. Description of Closure Activity Conducted. <ol style="list-style-type: none"> 1. Summary of the removal and decontamination activities completed at the unit during closure. 2. Type of closure (specify if risk-based). 3. Quantity of waste removed (by waste type). 4. Quantity of leachates, sludge/residues, and contaminated soil removed. | | | |
|--|---|--|--|--|

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 3 OF 11

FACILITY _____
 EPA ID NUMBER _____ PATS NUMBER _____

TYPE OF APPLICATION _____

PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
-------------------	-------------	-----------	-------------------------	----------

5. Methods of removal for contaminated materials and wastes.
6. Quantity and types of wastes remaining if closure was risk-based.
7. Date of closure activities from start to finish.
8. Properly dated copies of certification of closure and state acceptance of such certification.

B. Sampling and Analytical Requirements.

1. General sampling information:
 - a. Sampling results for all media should be submitted for all 40 CFR Part 261 Appendix VIII constituents (for ground-water, 40 CFR Part 264 Appendix IX will suffice) and must include both relevant raw data and summarized tabular data. Some constituents may be excluded, at Agency discretion, based on knowledge of past activities at the unit. However, the most convincing means of demonstrating "clean closure" is by performing thorough Appendix VIII and/or Appendix IX analyses.
 - b. Sampling results for all media should include the following:
 - i. location and type of samples
 - ii. basis for selection of sampling locations (i.e., hot spots, grid, etc.)
 - iii. number of samples
 - iv. date of samples

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 4 OF 11

FACILITY _____
 EPA ID NUMBER _____ PATS NUMBER _____
 TYPE OF APPLICATION _____
 PAGE / P'GRAPH REVIEW ITEM REFERENCE COMPLETE? Y/N OR N/A COMMENTS

- v. results of sampling
- vi. date of analysis
- vii. an approved QAPP pursuant to Chapter 62-160, F.A.C., using EPA approved analytical methods used (such as those described in SW-846, EPA Test Methods for Evaluating Solid Waste, Third Edition, 11/86).
- c. The closure demonstrations submitted by facility owners and operators must document that the contaminants left in the subsoils will not impact any environmental media including groundwater, surface water, or the atmosphere in excess of DEP recommended limits or factors (Agency recommended limits or factors are those that have undergone peer review by DEP.) At the present time, these include water quality standards and criteria (Ambient Water Quality Criteria), health-based limits based on verified reference doses (RfDs) and Carcinogenic Potency Factors to be used to determine exposure at a given risk, or site-specific DEP-approved public health advisory. If no Agency recommended exposure limits exist for a hazardous constituent, then the owner or operator must either remove the

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 5 OF 11

FACILITY _____
 EPA ID NUMBER _____ PATS NUMBER _____
 TYPE OF APPLICATION _____
 PAGE / P'GRAPH REVIEW ITEM REFERENCE COMPLETE? Y/N OR N/A COMMENTS

- constituent sufficient down to background levels, submit data of sufficient quality for the Agency to determine the environmental and health effects of the constituent, or follow landfill closure and post-closure requirements. [The preceding text is contained in 52 FR 8706, March 19, 1987.]
- d. Where the hydrogeologic setting is such that the water table is located at significant depths from the surface or where groundwater monitoring is not feasible, DEP may allow substitution of soil data for groundwater data. The need for such substitution must be demonstrated clearly by the owner/operator. DEP will not accept the substitution as a means of avoiding compliance with the groundwater sampling and analysis requirements.
 - e. DEP must be notified 30 days in advance of any sampling.
2. Soil sampling.
- a. Soil sampling and analysis information provided should include:
 - i. types of soils testing (for example; soil core, composite, grab samples, etc.)
 - ii. number, location, and depth of samples.
 - iii. parameters for analysis

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 6 OF 11

FACILITY _____

EPA ID NUMBER _____ **PATS NUMBER** _____

TYPE OF APPLICATION _____

PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
---------------------------	--------------------	------------------	---------------------------------	-----------------

- iv. analytical techniques
- v. a sufficient number of soil cores to adequately characterize the vertical extent of migration of hazardous constituents in the unsaturated zone.
- b. Soil sampling requirements to demonstrate clean closure equivalency will proceed as follows:
 - i. the owner/operator should sample the soils at the unit and determine whether constituents in the list of Appendix VIII Part 261 are present, and if so, in what concentration
 - ii. additional sampling will be required for the constituents found during this initial Appendix VIII analysis. In addition to those constituents identified in the initial analysis, the owner/operator must sample and analyze for any waste-specific compounds which may have been present at the unit including those listed in 40 CFR Part 261 Appendix VII.
 - iii. any contaminants remaining in the soil must be compared to DEP recommended limits

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 7 OF 11

FACILITY _____
 EPA ID NUMBER _____ PATS NUMBER _____
 TYPE OF APPLICATION _____

PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
-------------------	-------------	-----------	-------------------------	----------

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| | <ul style="list-style-type: none"> iv. if the analytical results show contamination exceeding these standards, the owner/operator of the facility must submit a complete Part B permit application for post-closure. | | | |
| | <p>3. Groundwater Monitoring.</p> <ul style="list-style-type: none"> a. Statutory and Regulatory Requirements for Clean Closure Equivalency Demonstration. <ul style="list-style-type: none"> i. 52 <u>FR</u> 8705, March 19, 1987, states that the regulations pursuant to Section 3005(I) “require owners and operators to monitor and clean up the full range of 40 CFR Part 261 Appendix VIII constituents found in a waste.” Where groundwater is the media in question, EPA has concluded that 40 CFR Part 264 Appendix IX constituents will suffice for monitoring parameters. If, however, DEP believes that certain indicator parameters should be monitored as well, then such parameters may be added to the analysis. ii. Pursuant to the closure by removal standards, groundwater must not present a threat to human health or the environment to clarify “clean closure”. This includes, where necessary, removal of contaminated | | | |

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST
PAGE 8 OF 11

FACILITY _____
EPA ID NUMBER _____ **PATS NUMBER** _____
TYPE OF APPLICATION _____
PAGE / P'GRAPH **REVIEW ITEM** **REFERENCE** **COMPLETE? Y/N OR N/A** **COMMENTS**

subsoils because the Agency interprets the term "soil" broadly to include both unsaturated soils and soils containing groundwater. The discussion of this Agency's interpretation appears in 53 FR 9944, March 28, 1988.

iii. the facility's groundwater monitoring program is required to comply with applicable parts of Subpart F of 40 CFR Part 264 for any land disposal unit, according to 52 FR 45794, December 1, 1987, and 53 FR 8705, March 19, 1987. The extent of groundwater monitoring required may vary depending on the type of unit.

A. surface impoundments, per 40 CFR 264.228(b)(2),

B. waste piles, per 40 CFR 264.258(a) and 53 FR 9944, March 28, 1988, unless the waste pile meets the exemption requirement of 40 CFR 264.250(c),

C. land treatment units, per 40 CFR 264.280(e),

D. landfills, per 40 CFR 264.310(b)(3).

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST

PAGE 10 OF 11

FACILITY _____

EPA ID NUMBER _____

PATS NUMBER _____

TYPE OF APPLICATION _____

PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
-------------------	-------------	-----------	-------------------------	----------

- iv. the monitoring results should demonstrate that any contaminants left in the subsoils Note II.B.3.a.ii are not impacting the groundwater in excess of DEP recommended limits or factors (including water quality standards, health-based limits established from verified reference doses and Carcinogenic Potency Factors).
- v. if the final analytical results for groundwater exceed the limits and factors discussed in iv. above, the owner/operator of the facility must submit a complete Part B permit application for post-closure. Fate and transport calculations will not be accepted. [See 52 FR 8707, March 19, 1987.]

4. Surface Water Sampling (if applicable).
When performing potential surface water exposure analysis, consider Agency-established water quality standards and criteria. [See 52 FR 8707, March 19, 1987.]
Location and number of surface water samples will be determined on a case-by-case basis.
5. Air Emissions (if applicable).
Potential air exposure analysis should include emission calculations, available monitoring data, and safe inhalation levels. [See 52 FR 8707, March 19, 1987.]

CLEAN CLOSURE EQUIVALENCY REQUIREMENTS PERMIT APPLICATION REVIEW CHECKLIST
PAGE 11 OF 11

FACILITY _____

EPA ID NUMBER _____

PATS NUMBER _____

TYPE OF APPLICATION _____

PAGE / P'GRAPH	REVIEW ITEM	REFERENCE	COMPLETE? Y/N OR N/A	COMMENTS
-------------------	-------------	-----------	-------------------------	----------

III. QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS.

- A. Requirements for QA/QC Control Requirements.
 - 1. Methods to determine number of samples.
 - 2. Methods used to determine depth and location of samples.
 - 3. An approved QAPP in accordance with Chapter 62-160, F.A.C.