

Original Application – June 1, 1987

Major Document Reorganization –August 26, 2009

**TYPE V MUNICIPAL SOLID WASTE FACILITY
TCEQ MSW PERMIT 2234A**

**ATTACHMENT SDP-3
FINAL CLOSURE PLAN**

for

LIQUID ENVIRONMENTAL SOLUTIONS OF TEXAS, LLC

**Houston Facility
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Houston, Texas 77013**

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RN100708841**

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1. Implementation of the Final Closure Plan

In accordance with 30 TAC 330.461 (a), Liquid Environmental Solutions of Texas, LLC (LES) shall submit, no later than 90 days prior to the initiation of closure activities, written notification to the executive director of the Texas Commission on Environmental Quality (TCEQ) of the intent to close the Facility and place this notice of intent in the operating record. LES shall also, no later than 90 days prior to the initiation of a final facility closure, provide a public notice in the newspaper(s) of largest circulation in the vicinity of the facility, for final facility closure. This notice shall provide the name, address, and physical location of the facility, the permit number, and the last date of intended receipt of waste. LES shall also make available an adequate number of copies of the approved final closure plan for public access and review.

In accordance with 30 TAC 330.461 (b), upon notification to the executive director, LES shall post a minimum of one sign at the main entrance and all other frequently used points of access for the facility notifying all persons who may utilize the facility or site of the date of closing for the Facility and the prohibition against further receipt of waste materials after the stated date. Further, suitable barriers shall be installed at all gates to adequately prevent the unauthorized dumping of solid waste at the closed facility.

In accordance with 30 TAC 330.461 (c), within ten days after completion of all final closure activities for the Facility, LES shall submit to the executive director for review and approval a certification, signed by an independent registered professional engineer, verifying that final closure has been completed in accordance with the approved final closure plan. The submission to the executive director shall include all applicable documentation necessary for certification of final closure. Once approved, this certification shall be placed in the operating record. Also within ten days after completion of all final closure activities, LES shall request a voluntary revocation of the facility permit.

In accordance with 30 TAC 330.459 (d), LES shall complete final closure activities for the Facility in accordance with the approved final closure plan within 180 days following the most recent acceptance of wastes unless otherwise approved in writing by the Executive Director. If required, a request to the Executive Director for an extension for the completion of final closure activities should include all applicable documentation necessary to demonstrate that final closure will, of necessity, take longer than 180 days and all steps have been taken and will continue to be taken to prevent threats to human health and the environment from the site.

2. Procedure for Closure of Facility by Operator

The Closure of the Facility would be conducted by the Operator in the following sequence:

- a. Process as much of the unprocessed waste through the existing corresponding processing system as practical.
- b. Remove sludge from tank bottoms and place in appropriate transport containers. Dispose of sludge at an authorized disposal or re-use facility.

- c. Empty grease and oil storage tanks. Transport the material to a TCEQ approved disposal or recycling facility.
- d. Using a power wash unit, decontaminate empty tanks, hard plumbed pipes, other wetted equipment (excluding the wastewater treatment process units), and process areas exhibiting exposure to wastes (e.g. stained concrete) with soap and water or equivalent. Decontaminate piping and equipment by circulating the cleaning solution through the piping and ancillary equipment. Rinse the tanks, loading and offloading areas, concrete pads, pumps and associated equipment, secondary containment system, etc. as necessary with water using the power wash unit until all soap and residuals are removed. Transfer wash down waters to the appropriate treatment system.
- e. Decontaminate and rinse the wastewater treatment process units using the same procedures specified in step (d) above. Collect wash down waters and any remaining wastes and transport the material to an authorized disposal or re-use facility.
- f. Terminate operations in the treatment systems.
- g. Collect a rinsate sample for all equipment and piping that is known or believed to have contacted wastes (e.g. tanks, pumps, processing equipment, and interconnecting piping). Analyze the rinsate sample or samples for, at a minimum, pH, RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and Total Petroleum Hydrocarbons (TPH) by method TX 1005 and TX 1006.
- h. Characterize and dispose or recycle remaining chemicals at the Facility.
- i. Observe the site for signs of possible releases. Assuming no releases are evident, collect a minimum of four surface soil samples from native material. Surface samples are assumed to be a minimum depth of 1 foot below current ground surface provided there are no visual impacts below this depth. At a minimum, samples shall be analyzed for pH, RCRA metals, and Total Petroleum Hydrocarbons by method TX 1005. Additionally, the sample with the highest result by the TX 1005 method shall be analyzed by TX 1006. Additional samples may need to be collected depending on evidence of past releases and additional analyses conducted depending on the nature of chemicals stored in the vicinity of the release. Subsurface samples may need to be collected depending on the presence of visual impacts and groundwater may need to be sampled if encountered. These decisions shall be made by a qualified professional engineer.
- j. Prepare Closure Report (Remedial Action Completion Report) for submission to the TCEQ. The Closure Report must be prepared or reviewed and sealed by a qualified professional engineer.

3. Procedure for Closure of Facility by an Independent Third Party

The Closure of the Facility would be conducted by an independent third party in the following sequence:

- a. Characterize the liquid in the tanks and processing equipment.
- b. Remove and transport liquids to an appropriate disposal or recycling facility.
- c. Characterize sludge from tank bottoms and equipment. Containerize sludge and transport to an authorized off-site waste disposal facility.
- d. Using a power wash unit, decontaminate empty tanks, hard plumbed pipes, other wetted equipment, and process areas exhibiting exposure to wastes (e.g. stained concrete) with soap and water or equivalent. Decontaminate piping and equipment by circulating the cleaning solution through the piping and ancillary equipment. Rinse the tanks, treatment equipment, loading and unloading area, concrete pads, pumps and associated equipment, secondary containment system, etc. as necessary using the power wash unit until all soap and residuals are removed. Characterize wash down waters and transfer to an appropriate transport container for disposal or recycling at an off-site facility.
- e. Collect a rinsate sample for all equipment and piping that is known or believed to have contacted wastes (e.g. tanks, pumps, processing equipment, and interconnecting piping). Analyze the rinsate sample or samples for, at a minimum, pH, RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and Total Petroleum Hydrocarbons (TPH) by method TX 1005 and TX 1006.
- f. Characterize and dispose or recycle remaining chemicals and equipment at the Facility.
- g. Observe the site for signs of possible releases. Assuming no releases are evident, collect a minimum of four surface soil samples from native material. Surface samples are assumed to be a minimum depth of 1 foot below current ground surface provided there are no visual impacts below this depth. At a minimum, samples shall be analyzed for pH, RCRA metals, and Total Petroleum Hydrocarbons by method TX 1005. Additionally, the sample with the highest result by the TX 1005 method shall be analyzed by TX 1006. Additional samples may need to be collected depending on evidence of past releases and additional analyses conducted depending on the nature of chemicals stored in the vicinity of the release. Subsurface samples may need to be collected depending on the presence of visual impacts and groundwater may need to be sampled if encountered. These decisions shall be made by a qualified professional engineer.
- h. Prepare Closure Report (Remedial Action Completion Report) for submission to the TCEQ. The Closure Report must be prepared or reviewed and sealed by a qualified professional engineer.

4. Basis for Closure Cost Estimate

To estimate closure costs for the facility, it was assumed that all tanks at the facility contain the full tank storage capacity of its designated waste at the time of closure and that closure is performed by an independent third party contractor in accordance with the procedures described in Section 3. The closure cost estimate provided in Appendix A covers labor associated with hauling and disposing of full volumes of on-site wastes and cleaning the site as described in this closure plan. Costs for sampling and analysis have also been included. Costs for project management under the supervision of an independent licensed professional engineer were estimated at 15% of the project cost. A 15% contingency cost was added to complete the total closure cost estimate.

LES is required to demonstrate adequate financial assurance for closure of the facility in accordance with 30 TAC 37 Subchapter R and, by reference, Subchapters A, B, C, and D.

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APPENDIX A

Quotations for Closure Services at LES Houston Facility