PERMIT NO. WQ0003523000
[*For TCEQ Office Use Only*:
EPA ID No. TXL 0050000]

This minor amendment replaces
TPDES Permit No. WQ0003523000
issued August 30, 2005.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

PERMIT TO DISPOSE WATER TREATMENT PLANT SLUDGE
under provisions of Chapter 26 of the Texas Water Code and under provision of Texas Health & Safety Code Ann. Chapter 361 (Vernon)

I. **Name of Permittee**: City of Houston

Address: Public Utilities Department
P.O. Box 1562
Houston, Texas 77251-1562

Type of Permit: Minor Amendment

II. **Nature of Business Producing Waste**: Public water treatment plant (SIC Code 4941).

III. **General Description and Location of Waste Treatment Facility**:

Description: The facility is located at the City of Houston Southeast Water Purification Plant and consists of a 22.98 acre water treatment plant sludge monofill. The facility is designed to handle approximately 100 cubic yards per day of water treatment plant sludge, with the estimated life of the facility being 25 years.

Location: The solid waste management facility is located at 3100 Genoa-Red Bluff Road in Harris County, Texas (See Attachment A).

The permittee is authorized dispose of wastes in accordance with the limitations, requirements, and other conditions set forth herein. This permit is granted subject to the rules of the Commission and other Orders of the Commission and laws of the State of Texas. Nothing in this permit exempts the permittee from compliance with applicable rules and regulations of the TCEQ. This permit is issued under the Texas Pollutant Discharge Elimination System (TPDES) program. The permittee must handle and dispose of sludge in accordance with all applicable state and federal regulations to protect public health and the environment. This permit does not authorize any invasion of personal rights nor any violation of federal, state or local laws or regulations.

This permit and the authorization contained herein shall expire at midnight, August 30, 2010.

Issued Date: NOV 01 2007

For the Commission

IV. **CONDITIONS OF THE PERMIT:** No discharge of pollutants to surface water in the State is authorized.

Character: Water treatment sludge from the Southeast Water Purification Plant.

Volume: No discharge is authorized by this permit. Note Special Provision No. 2.

Drainage Area: Located in the drainage area of Armand Bayou in Segment No. 1113 of the San Jacinto-Brazos Coastal Basin.

V. **SLUDGE USE AND DISPOSAL PROVISIONS:**

A. **General Operational Requirements:**

1. The site and monofill shall be managed and operated in accordance with the most recent and applicable rules adopted by the Commission relating to water treatment sludge monofills.

2. Prior to utilization of any facility component authorized by this permit, the permittee shall submit written certification that facility components have been constructed in accordance with the permit. This certification shall be prepared, signed and sealed by a Professional Engineer licensed in Texas.

3. All facility employees and other persons participating in the facility operations shall be qualified by training, education, and experience to perform their duties so as to achieve compliance with this permit. The permittee shall ensure that all personnel are trained, and if necessary, obtain Letters of Competency in municipal solid waste management commensurate with their levels and positions of responsibility. The permittee shall further ensure that all personnel are familiar with safety procedures, contingency plans, and the requirements of the Commission's rules and this permit.

B. **Standard Provisions:**

1. This permit is granted in accordance with the Texas Water Code and the rules and other Orders of the Commission and the laws of the State of Texas.

2. In the event the permittee discharges wastes which exceed the quantity authorized by this permit, the permittee shall give oral notice to the TCEQ Regional Office (MC Region 12) within 24 hours and written notice to the Executive Director in Austin in five working days.

3. Acceptance of this permit constitutes an acknowledgement and agreement that the permittee will comply with all the terms, provisions, conditions, limitations and restrictions embodied in this permit and with the rules and other Orders of the Commission and the laws of the State of Texas. Agreement is a condition precedent to the granting of this permit.

4. Prior to any transfer of this permit, Commission approval must be obtained. The Commission should be notified, in writing, of any change in control or ownership of the facility authorized by this permit. Such notification should be sent to the Municipal Permits Team (MC 148) of the Water Quality Division.

5. The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

6. The permittee is subject to the provisions of 30 TAC §305.125 and to pertinent changes of rules of the Commission.

C. Reporting Requirements:

The permittee shall keep records of all sludge disposal activities. Such records will include the following information:

1. Amount of sludge disposal (cubic yards) at the disposal site.

2. Date(s) of disposal.

The above records shall be maintained on a monthly basis and shall be reported to the Water Quality Division, Municipal Permits Team (MC 148) and the Regional Office (MC Region 12) by September 30th of each year. The permittee shall maintain the above records for five years, and they shall be made available to the TCEQ upon request.

D. Facility Design, Construction and Operation:

1. General Design and Construction

a. Facility design, construction, and operation must comply with this permit, the TCEQ rules, and be in accordance with the site development plan for the construction and the operation approved herein.

b. The entire waste management facility shall be designed, constructed, operated, and maintained to prevent the release and migration of any waste or contamination, and to prevent inundation of and/or discharge from the areas surrounding the facility containment system which will collect spills and incident precipitation in such a manner as to:

i. Preclude the release of any contaminated runoff, spills, or precipitation.
ii. Prevent washout of any waste by a 100-year storm.
iii. Prevent run-on into the disposal area.

c. All contaminated water shall be managed as specified in Special Provision No. 2.

d. Liners: All bottoms and sides of the mono-fill cells shall serve as barriers to waste and leachate movement. At a minimum, liners shall consists of the following:

i. In-situ or placed and compacted clay soils meeting the following requirements:

1. More than 30% passing a No. 200 mesh sieve.
2. Liquid limit greater than 30%
3. Plasticity index greater than 15
4. A minimum thickness of 3 feet
5. Permeability equal to or less than 1×10^{-7} cm/sec.

6. Soil compaction will be 95% standard proctor at optimum moisture content.

ii. Membrane lining with a minimum thickness of 20 mils, and a leachate collection system.

iii. Final Cover: At a minimum, final cover shall consist of two feet of soil/clay. The coefficient of permeability of the final cover shall not exceed that of the liner. The final cover shall be covered with a minimum of six inches of uncompacted top soil.

E. Closure Plans:

1. The permittee of an active sludge unit shall submit a written "Closure and Post Closure Plan" to the Municipal Permits Team (MC 148) of the Water Quality Division, for approval, at least 180 days prior to the date that the active sludge unit closes. After the plan has been approved by the Executive Director, it shall be reviewed every three years for compliance with applicable state and federal laws. The permittee shall be responsible for any corrections necessary to achieve compliance with applicable state and federal law. The Executive Director may reduce the post closure maintenance period for surface disposal sites if all wastes and waste residues have been removed during closure. The plan shall describe how the sludge unit will be closed, and shall include a discussion of how public access to the surface disposal site will be restricted for a minimum of three years after the last sludge unit in the surface disposal site closes.

2. The permittee shall also comply with the post-closure care maintenance requirements as discussed below for the duration of the post-closure period for these units or sites. For a minimum of the first three years after the completion of final closure, the permittee shall retain the right of entry to and maintain all rights-of-way of a closed surface disposal site in order to conduct periodic inspections of the closed site.

3. Following completion of the post-closure care maintenance period for each surface disposal site, the permittee shall submit to the executive director for review and approval a documented certification, signed by a Professional Engineer licensed in Texas, verifying that post-closure maintenance has been completed in accordance with the approved post-closure plan. The submittal to the executive director shall include all applicable documentation necessary for the certification of completion of post-closure care maintenance. Once approved, this certification shall be retained by the permittee.

F. Special Provisions:

1. The permittee is authorized to dispose of water treatment plant sludge from the City of Houston Southeast Water Purification Plant only. No hazardous, toxic, radioactive, regulated asbestos, or any industrial solid waste, will be accepted, stored, processed, or disposed of at this site.

2. Waste control facilities shall be provided to retain all process generated water produced by the facility for a 50-day period plus all rainfall and runoff which would enter the waste control facilities as a result of 9.5 inches or less of rainfall occurring during any 24-hour period. The waste control facilities shall be dewatered to provide the minimum freeboard to accommodate the rainfall and rainfall runoff resulting from a 25-year, 24-hour rainfall event within a 21-day period following such rainfall event, weather permitting.

Dewatering shall also occur when the process generated water or accumulated solids and rainfall runoff reduces such freeboard. Dewatering shall be by evaporation and/or irrigation to land with no runoff of irrigation water from any irrigation site into water in the State of Texas.

3. Equipment capable of dewatering the retention structures of waste within 21 days following a 25-year, 24-hour rainfall event shall be available for use at the site at all times.

4. Containment structures shall be isolated from stormwater run-on by berms or diversion terraces. The permittee shall not take any action which will divert rainfall runoff onto the property of adjacent landowners without the permission of such landowners.

5. All solid waste materials resulting from cleaning operations and the sludge deposited in waste control facilities and drainage ditches shall be disposed of so that no contamination of surface waters can occur. All waste shall be disposed of in a manner such that contamination of surface and ground waters is prevented and such that nuisance conditions (such as insect infestations or objectionable odors) are controlled. Any areas on which solid waste is stockpiled shall be isolated by dikes, terraces, and/or terrain to prevent the discharge of any contaminated runoff into waters in the State of Texas.

6. All necessary steps to protect groundwater from contamination by wastes from the confinement facility shall be taken.

7. Off-site discharge of irrigated water treatment plant sludge is prohibited. Irrigation practices shall be designed and managed so as to prevent ponding of effluent on the ground, prevent contamination of ground or surface waters and to prevent the occurrence of nuisance conditions. Tailwater control facilities shall be provided as required to prevent the release of applied wastes to waters in the State of Texas.

8. All facilities including ponds, pipes, ditches, pumps, and irrigation equipment shall be utilized and maintained as necessary in order to prevent any unauthorized discharge to waters in the State.

9. Any substantial increases in waste production and/or any decreases in water treatment sludge containment or disposal capabilities shall be reported to the Executive Director as they occur.

10. The permittee shall maintain a minimum of a 150-feet buffer zone from the solids disposal sites to any water wells, including wells that are off-site.

11. Water retention facilities shall be lined to control seepage in one of the following manners:

    a. In-situ or placed and compacted clay soils meeting the following requirements:

        i. More than 30% passing a No. 200 mesh sieve
        ii. Liquid limit greater than 30%
        iii. Plasticity index greater than 15
        iv. A minimum thickness of 12 inches
        v. Permeability equal to or less than 1×10^{-7} cm/sec.

vi. Soil compaction will be 95% standard proctor at optimum moisture content.

b. Membrane lining with a minimum thickness of 20 mils, and an underdrain leak detection system.

c. An alternate method of pond lining may be utilized with prior approval from the Executive Director. The permittee shall furnish certification by a Professional Engineer, licensed in the State of Texas, that the completed pond lining meets the appropriate criteria prior to utilization. The certification shall be sent to the Municipal Permits Team (MC 148) and Regional Office (MC Region 12) of the TCEQ.

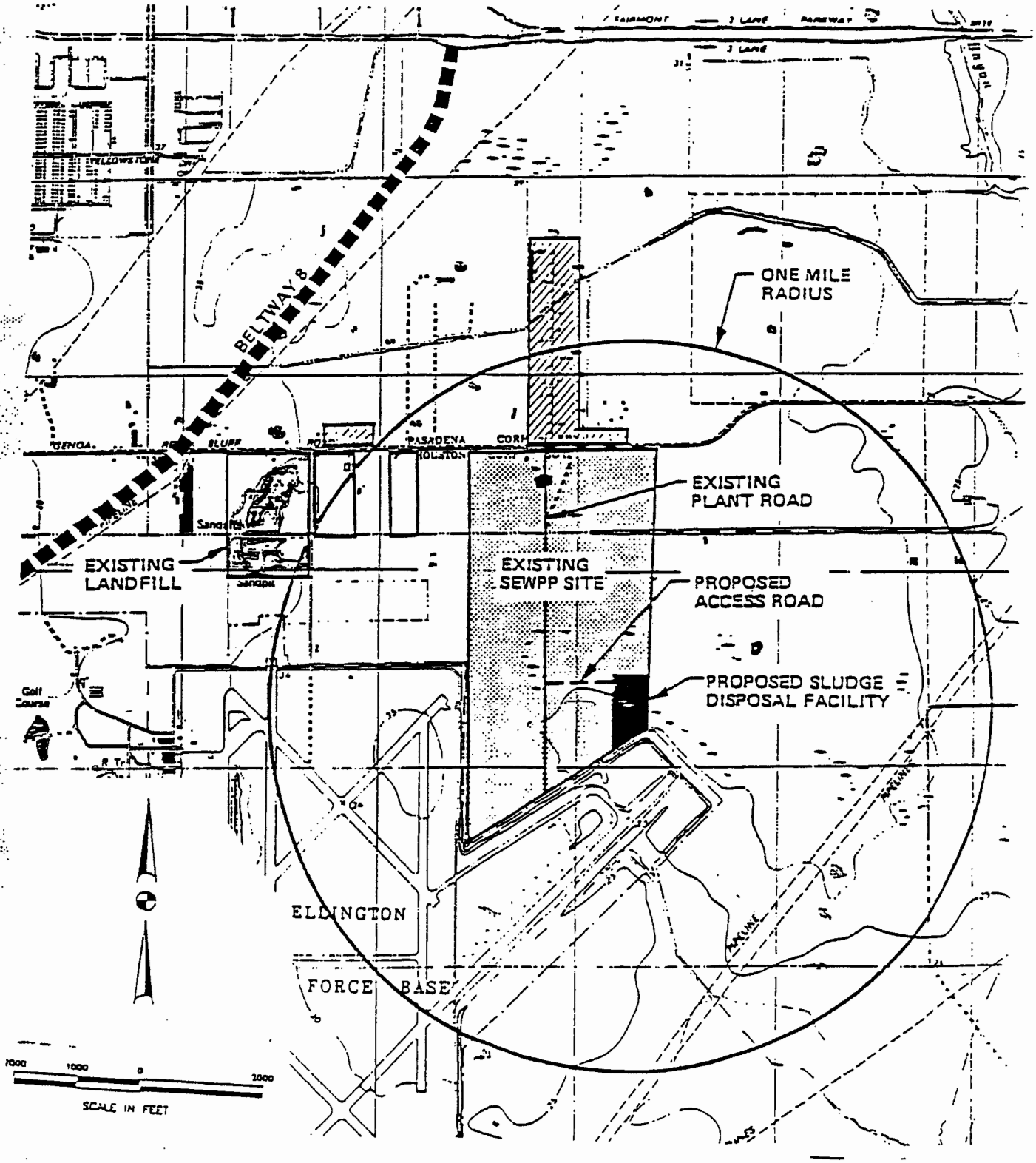
12. Disposal of sludge shall not cause or contribute to the taking of any endangered or threatened species of plant, fish or wildlife.

13. Disposal sludge shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species.

14. Sludge shall not be disposed under provisions of this section on land within a designated 100-year flood plain.

15. The permittee shall give 180 days prior notice to the Executive Director of any change planned in the disposal practice.

16. The permittee shall provide financial assurance for closure in accordance with the provisions of 30 TAC §330.66. The permittee shall comply with the most recent and applicable rules adopted by the Commission regarding financial assurance.

17. The sludge is to be accepted at this site at a rate averaging no more than 100 cubic yards per day over the total life of the site.

Attachment A