



**CITY OF ARLINGTON LANDFILL
MWS PERMIT NO. 358B
TARRANT COUNTY, TEXAS**

PERMIT AMENDMENT APPLICATION

VOLUME II OF VI

**PART III – SITE DEVELOPMENT PLAN
PART III, ATTACHMENT 1 – FACILITY DESIGN
PART III, ATTACHMENT 2 – FACILITY SURFACE WATER
MANAGEMENT REPORT**

Prepared for:

**City of Arlington, Texas
and
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Submitted March 2012

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TARRANT COUNTY – MSW PERMIT NO. 358B**

PART III

SITE DEVELOPMENT PLAN

Prepared for:



City of Arlington, Texas

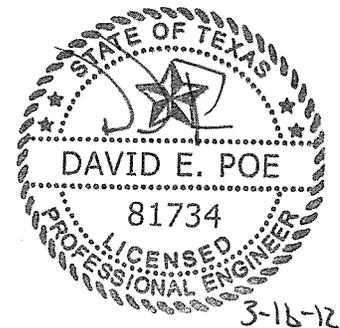
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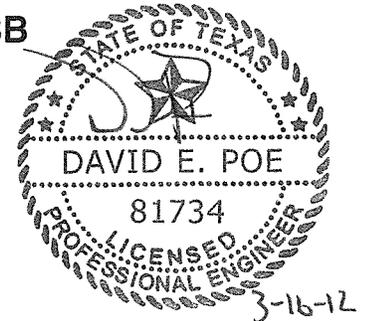


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PART III

SITE DEVELOPMENT PLAN

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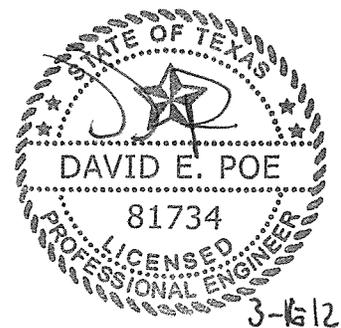
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ATTACHMENTS

- 1 General Facility Design
- 2 Facility Surface Water Management Report
- 3 Waste Management Unit Design Report
- 4 Geology Report
- 5 Groundwater Characterization and Monitoring Report
- 6 Landfill Gas Management Plan
- 7 Closure Plan
- 8 Post-Closure Plan
- 9 Closure and Post-Closure Cost Estimates



1.0 INTRODUCTION

This Site Development Plan (SDP) has been developed in accordance with Title 30 of the Texas Administrative Code (30 TAC), Chapter 330, paragraph 330.63(a). This SDP presents the criteria used to design the City of Arlington Landfill (Facility) in order to provide for safeguarding of the health, welfare, and physical property of the people and the environment through the consideration of geology, soil conditions, drainage, land use, zoning, adequacy of access roads and highways, and other considerations as dictated by the additional requirements of §330.63. Regulatory citations noted within this plan refer to corresponding sections of 30 TAC.

1.1 Site Location and History

The City of Arlington Landfill is a Type I MSW management facility located west of Farm to Market (FM) 157 (North Collins Street), and south of Mosier Valley Road in the City of Arlington, Tarrant County, Texas. The Facility property is bounded by the former roadbed of FM 157 to the east, Mosier Valley Road and the Trinity Railway Express (TRE) railroad line to the north, undeveloped property to the west, and the West Fork Trinity River to the south.

The City of Arlington Landfill currently is comprised of two discrete disposal areas, the East Disposal Area (EDA) and West Disposal Area (WDA), which are separated by Hurricane Creek. The EDA, located east of Hurricane Creek, will be expanded vertically above currently permitted grades as part of the permit amendment. The WDA, located west of Hurricane Creek, was closed in 2000, and will be reactivated and vertically expanded as part of the permit amendment. Additionally, currently undeveloped property west and south of the existing WDA will be developed for landfilling as part of the permit amendment. The combined vertical and lateral expansion of the WDA is referred to as the Expanded West Disposal Area (EWDA).

Two areas of historic filling are located within the Facility boundary, both being located between the southern boundary of the permitted waste disposal units (WDA and EDA), and the West Fork Trinity River. The historic fill area south of the EDA will not be disturbed for this permit amendment. The historic fill area south of the WDA will be removed during construction of flood control and wetlands mitigation detention basins at the EWDA. Excavation spoils will be segregated into soils and waste; the waste will be placed within the lined areas of the landfill, and the soil will be used as cover or for other on-site earth construction.

The general location of the Facility is shown on Figure I/II-1.

The City of Arlington (City) entered into a long-term contract with Republic Waste Services of Texas, Ltd. (Republic) for the operation of the Facility. Consistent with this contract, the City will maintain ownership of the Facility and continue to be the permit holder. Republic was designated by the City as the operator in a letter to TCEQ, April 11, 2005, when Republic assumed operating responsibility for the Facility. Therefore, transmittals to TCEQ, as they

relate to the City of Arlington Landfill will be jointly submitted by the City (as the owner) and Republic (as the operator).

Additionally, Republic subcontracts with Big City Crushed Concrete, the operator of a concrete crushing and recycling facility; subcontracts with Living Earth Technologies Company, the operator of a compost brush and wood waste recycling facility; and operates a Convenience Center with dedicated areas for recycling of white goods, used electronics, tires, metal, mixed recyclables, cardboard, and lawnmowers. Finally, a Type IX landfill gas to energy recovery plant is operated by Renovar Arlington, Ltd. at the Facility with landfill gas collected from the EDA and WDA. The Type IX facility is authorized under TCEQ Registration No. 48012. The gas currently is pressurized, moisture-conditioned, and then transported by pipeline under low pressure to the City of Fort Worth wastewater treatment plant located approximately 1.4 miles southwest of the Facility property.

Waste fill activities in the WDA started in 1978, and continued until waste disposal activities were transitioned to the EDA in 2000. The WDA was closed in 2000.

1.2 Proposed Amendment

By way of this amendment, the City proposes to expand the Facility to include vertical expansion of the EDA and both vertical and lateral expansion of the WDA.

1.3 Land Use and Zoning §330.63(a)

A land use analysis was performed for the Facility by John Worrall Consulting, LLC. A copy of the analysis is included as Parts I/II, Appendix I/II.B-8, and summarized in Parts I/II, Section 4.0 of this amendment.

1.3.1 Zoning

The Facility property is zoned Industrial Manufacturing (IM) and Agriculture (A). Additional information regarding zoning is provided in Section 2 of the land use analysis presented in Part I/II, Appendix I/II.B-8 of this amendment.

1.3.2 Character of Surrounding Land Use

Existing uses of the Facility and the surrounding area are described in the land use analysis presented in Parts I/II, Appendix I/II.B-8 of this amendment.

1.4 Adequacy of Access Roads and Highways §330.63(a)

A traffic study was prepared for the Facility by DeShazo Group. A copy of the evaluation is included as Part I/II, Appendix I/II.B-9 of this amendment. This study involved an analysis of the site access routes and collection of traffic counts on the roadways which serve the Facility. The study demonstrates the adequacy of the roads and highways serving the Facility.

1.4.1 Site Access

Public access to the Facility is through the existing entrance facility, located adjacent to the intersection of Mosier Valley Road and FM 157 (North Collins Street).

No major roadway construction or widening projects are currently planned for these access roadways. Routine maintenance of FM 157 and Mosier Valley Road should be adequate to keep these roadways in good condition over the life of the Facility.

2.0 GENERAL FACILITY DESIGN §330.63(b)

2.1 Facility Access and Control §330.63(b)(1)

Public access to the Facility is limited to one entrance at the intersection of Alan Saxe Boulevard and Mosier Valley Road, approximately 350 feet west of the intersection of Mosier Valley Road and FM 157. The primary exit is located at the Facility entrance. An alternate exit, located at the southeast corner of the EDA, allows traffic to exit the Facility at an unnamed City-owned roadway (former FM 157 roadbed) and continue onto Bluelake Boulevard, prior to entering FM 157. Facility personnel control access and monitor vehicles entering and exiting the Facility during operating hours.

A chain link fence surrounds the closed WDA and the EDA, except at Hurricane Creek, which forms a natural barrier to access. Lockable gates are located at the Facility entrance and southern exit. All gates are locked during non-operational hours. Locations of the scale house and office buildings, gates, fences, and interior access roads are shown on Attachment 1, Figure 1-2.

Prior to expanding landfilling operations to the western portions of the EWDA, fencing will be installed along the north and west landfill boundaries, thereby preventing uncontrolled public access to the Facility.

2.2 Waste Movement §330.63(b)(2)

A flow diagram that indicates the storage, processing, and disposal sequences for the various wastes received at the Facility is presented on Attachment 1, Figure 1-1. a schematic view of the various phases of collection, separation, processing, and disposal for the various wastes received at the Facility is shown on Attachment 1, Figures 1-2 and 1-3.

As shown on Figure 1-2, the Facility has various storage and processing areas. These areas include:

- Convenience center
- Large-item salvage/white goods/staging area
- Yard waste mulching and recycling area

Additionally, a concrete recycling facility is operated at the Facility by Big City Concrete, under contract to Republic.

Electronics-Recycling Staging Area

Used electronics are stored on site and recycled by a vendor under contract to the Facility. The stored electronics materials are not conducive to odors, fly breeding, or the harborage of other vectors, however, they will not be allowed to become a nuisance or public health hazard.

Whole Tire Staging Area

Whole tires that are removed from the active face area or received at the gatehouse are temporarily staged on-site until such time they are removed by an approved tire recycler or processed prior to disposal into the landfill. Per §328.54(c), whole tires will be temporarily stored above ground in a controlled storage pile or in enclosed and lockable containers, pursuant to §328.61. The Facility will not store tires or tire pieces in excess of 500 used or scrap tires (or weight equivalent tire pieces or any combination thereof) on the ground (in storage piles or in roll-off containers), or 2,000 used or scrap tires (or weight equivalent tire pieces or any combination thereof) in enclosed and lockable containers without prior written approval from TCEQ.

An on-the-ground storage pile, roll-off containers, and box trailers may be used for tire storage. Roll-off containers may be used in addition to, or in place of, an on-the-ground storage pile. Roll-offs used for tire storage will typically be 40-yard containers measuring approximately 22-feet long by 8-feet wide by 8-feet tall. If a roll-off container is used, it will be lockable and enclosed (e.g., with one or more secured tarps) to prevent rainfall from accumulating inside the container. Box trailers used for tire storage will typically measure approximately 53-feet long, 10-feet wide, and 10-feet tall. The box trailers are totally enclosed and lockable.

The tire stockpile or containers will be staged in a portion of the Facility dedicated to tires only. The area will have a foundation of gravel or similar all-weather material to ensure a firm foundation and easy access. Additionally, an all-weather road (gravel or similar all-weather material) will provide access from the site entrance to the tire storage area.

Tires stored in a stockpile or in containers will be removed from the site every 180 days, or less if the containers are filled in less than 180 days. Stored tires are not conducive to odors, fly breeding, or the harborage of other vectors, however, they will not be allowed to become a nuisance or public health hazard. Tire storage will be conducted in a manner that will not adversely affect Facility operations or otherwise endanger human health or the environment.

Reusable Materials Staging Area

Inert materials such as brick, concrete, asphalt, etc. are often received and staged at the Facility for use as roadbase materials for Facility access roads and staging areas. These materials will be stockpiled on the ground in areas accessible to landfill operations equipment and the location

of waste placement. The size of the stockpiles may vary depending on the amount of inert materials received at any given time. Since these materials are inert and not waste, run-off from rain falling on the stockpiles is not treated as contaminated water, though measures will be implemented to ensure that excess sediment is not washed from the stockpiles into the Facility's stormwater management system. Since these materials will continuously be re-used for site operations, there is no time limit on the storage of these materials.

Large-Item Salvage/White Goods/Staging Area

Large items and white goods received at the Facility or removed from the active face are staged on the ground near the active face and typically over lined landfill cells. At least ten feet of waste/cover material will be maintained above the top of the protective cover soil composite of the lining system beneath a staging area for large items and white goods. Any rainfall run-on or run-off from this area will be contained within the active area and handled as contaminated water as discussed in Part IV, the Site Operating Plan. The large items and white goods are subsequently transferred into steel roll-off containers for staging until transported to an off-site recycler. The containers will be removed from the site when completely full or otherwise every 180 days or less to ensure that these materials do not create a nuisance.

2.3 Protection of Endangered Species §330.63(b)(5)

KBA EnviroScience, Ltd. performed an evaluation of threatened and endangered species for the permit amendment. A copy of the appendix titled Threatened or Endangered Species Information (KBA EnviroScience, Ltd., dated January 2010) is included in Appendix I/II.B-13.

In summary, the report confirms that the Facility expansion will not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species.



3.0 FACILITY SURFACE WATER DRAINAGE DESIGN §330.63(c)

The Facility was designed to comply with the requirements of §330.63(c), 330.303, 330.305, and 330.307 which are the regulations related to surface water drainage for municipal solid waste landfills. A Facility Surface Water Management Report was developed that includes: analyses of the pre-development and post-development conditions; design of the surface water management system, including perimeter channels, sideslope diversion berms, detention and sedimentation basins, and other appurtenances; an erosion and sedimentation control plan (including best management practices); an evaluation of the 100-year floodplain; and a maintenance and restoration plan. The drainage report is included in Attachment 2 of this SDP. The analyses contained in this report demonstrate that existing drainage patterns will not be adversely altered as a result of the proposed landfill development.



4.0 WASTE MANAGEMENT UNIT DESIGN §330.63(d)(4)

In accordance with §330.63(d)(4), a Waste Management Unit Design Report was prepared specifically to address the requirements for landfill units. The report, included in Attachment 3 of this SDP, includes provisions for all-weather operations and access, the proposed landfill method, minimum and maximum design elevations, solid waste acceptance rates, site life, cross-sections and design details, and a liner quality control plan. In addition to these items as required by §330.63(d)(4), additional information regarding the geotechnical analyses, the liner design, and leachate management have also been included in the Waste Management Unit Design Report.



5.0 GEOLOGY AND SOILS §330.63(e)

In accordance with §330.63(e), a geology report was prepared by a qualified geologist for the Facility. This report summarizes available data related to regional and local geology and aquifers in the area of the Facility. Based on a review of this data, and on the results of geotechnical investigations conducted at the site, the geology, hydrogeology, and soil conditions in the Facility area are suitable for the continued operations of a MSW disposal facility. The geology report is included as Attachment 4 in this SDP.



6.0 GROUNDWATER CHARACTERIZATION AND MONITORING §330.63(f)

In accordance with §330.63(f) and Chapter 330, Subchapter J, a Groundwater Characterization and Monitoring Report, which includes a groundwater sampling and analysis plan, was prepared for the Facility. This report provides information on the most likely pathways for pollutant migration beneath the Facility; data on the quality of the site groundwater; a design of the proposed groundwater monitoring system; and requirements for groundwater sampling and analysis. The Groundwater Characterization and Monitoring Report is included as Attachment 5 to this SDP. The Groundwater Sampling and Analysis Plan is found in Appendix 5-B to Attachment 5.



7.0 LANDFILL GAS MANAGEMENT §330.63(g)

In accordance with §330.63(g) and Chapter 330, Subchapter I, a Landfill Gas (LFG) Management Plan has been developed for the Facility to provide a site-specific approach for implementing landfill gas monitoring and control. This plan includes the requirements and procedures for landfill gas monitoring using perimeter probes; combustible gas monitors in site structures; utility trench vents; control of landfill gas using gas wells installed in the waste mass that convey landfill gas through a piping system to a landfill gas flare or beneficial use facility; recordkeeping and reporting; and a contingency plan to be implemented in the event that concentrations of methane in excess of the regulatory limits are measured at the site permit boundary or in on-site structures. The LFG Management Plan is included at Attachment 6 of this SDP.

8.0 CLOSURE §330.63(h) & (j)

In accordance with §330.63(h) and Chapter 330, Subchapter K, a Closure Plan has been developed for the Facility. This plan includes a description of the steps that will be undertaken to close the various phases of the Facility, a description of the final cover system, and the methods used to install the cover. The Closure Plan is included in Attachment 7 of this SDP.

In accordance with §330.63(j) and Chapter 330, Subchapter L, a closure cost estimate has been prepared for the Facility. This estimated cost was developed in accordance with the Closure Plan, and is based on the cost of hiring a third party to close the Facility at the point in the Facility's operating life when the extent and manner of its operation would make closure the most expensive. The breakdown of the cost estimate is presented in Attachment 9 of this SDP.



9.0 POST-CLOSURE §330.63(i) & (j)

In accordance with §330.63(i) and Chapter 330, Subchapter K, a Post-Closure Plan was prepared for the Facility. Post-closure care maintenance will begin at the Facility immediately upon the date of final closure as approved by the executive director of the TCEQ. The Post-Closure Plan incorporates monitoring and maintenance activities specific to groundwater monitoring, leachate management, and gas management that will be performed throughout the post-closure period. The Post-Closure Plan is included in Attachment 8 of this SDP.

In accordance with §330.63(i) and Chapter 330, Subchapter K, a post-closure cost estimate has been prepared for the Facility. The cost estimate is based on the cost of hiring a third party to conduct post-closure care activities for the Facility in accordance with the Post-Closure Plan, as required by §330.463(b)(3)(D) and §330.507. The breakdown of the cost estimate is presented in Attachment 9 of this SDP.