

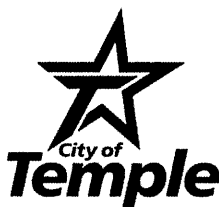
# SITE DEVELOPMENT PLAN

Temple Recycling & Disposal Facility

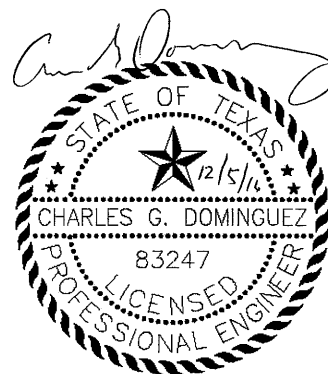
Temple, Bell County, Texas

TCEQ Permit MSW-692B

Owner/Site Operator/Permittee:



City of Temple  
201 N. Main  
Temple, Texas 76501



**GOLDER ASSOCIATES INC.**  
Professional Engineering Firm  
Registration Number F-2578

**INTENDED FOR PERMITTING  
PURPOSES ONLY**

Operator:



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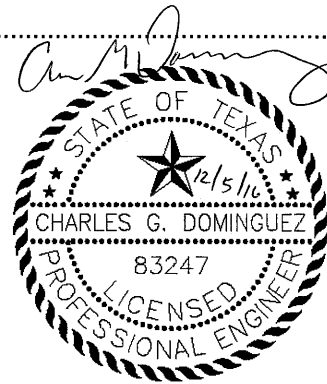
Project No. 1400336

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Attachment 3	Waste Management Unit Design
Attachment 4	Geology Report
Attachment 5	Groundwater Characterization and Monitoring
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Attachment 7	Closure Plan
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## **1.0 INTRODUCTION**

This Site Development Plan (SDP) has been developed in accordance with 30 TAC §330.63(a). This plan includes criteria used to design the Temple Recycling and Disposal Facility to safeguard 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 30 TAC §330.63.

### **1.1 Site Location and History**

The Temple Recycling and Disposal Facility is an existing 269-acre Type I municipal solid waste (MSW) facility owned by the City of Temple, Texas (City) and operated by Waste Management of Texas, Inc. (WMTX) under Permit No. MSW-692A.

The Temple Recycling and Disposal Facility site entrance is located at 706 Landfill Road, approximately 0.25 miles east of the intersection of Loop 363 and Little Flock Road in Temple, Bell County, Texas 76501.

The original municipal solid waste permit for the site, Permit No. MSW-692, comprising Tracts 1 (consisting of Tracts 1A and 1B), 2, and 3, was issued on September 24, 1979. The design, used for Tracts 1A and 1B, consisted of approximately 100-foot wide and 20-foot deep unlined trenches with vertical slopes. Once filled, the trenches were generally covered with several feet of soil and additional waste was placed above-grade. The aerial fill was reportedly capped with 2 feet of soil cover. Tracts 1A and 1B have been covered with TCEQ approved final cover. Correspondence regarding the final cover approval is included as part of the Part III, Attachment 7, Closure Plan.

One cell (referred to herein as the pre-Subtitle D cell) was developed in the southeast corner of Tract 3 and has a 3-foot thick compacted clay liner with no leachate collection layer. The remaining cells in Tract 3 were constructed with a composite liner system meeting Subtitle D requirements.

Permit No. MSW-692A, which expanded the permitted acreage from approximately 215 to 269 acres, was issued on April 7, 2001.

### **1.2 Proposed Expansion**

By way of this application, the City of Temple proposes to add 191 acres and remove 17 acres to the permitted area of the facility, for a total permitted area of 443 acres (proposed permit MSW-692B). In addition to increasing the overall acreage, the maximum elevation of the landfill will increase from 759 feet above mean sea level (ft-msl) to approximately 835 ft-msl, as shown in Part III, Attachment 3, Figure III-3-1, Final Contour Map.

### **1.3 Land Use and Zoning**

A land use analysis for the proposed expansion of the Temple Recycling and Disposal Facility was performed by RVI Planning, Inc. (RVI), of Austin, Texas. The results of the analysis are summarized in the following sections. A copy of the entire land use analysis report is included in Part II, Appendix IIB.

#### **1.3.1 Zoning**

The Temple Recycling and Disposal Facility is located in the eastern edge of the City of Temple in north central Bell County. The entire site is within the City limits. The City of Temple has zoning regulations that control land use within its city limits. The zoning regulations are codified as a *Unified Development Code (UDC)*. Pursuant to State law, the City's zoning regulations do not extend beyond the city limits into the City's extraterritorial jurisdiction (ETJ). Bell County, like most Texas counties, does not have land use zoning.

Enclosed as Part II, Appendix IIB is a City of Temple zoning map on which the site and a two-mile radius from the site have been added. The existing site and expansion area are zoned LI-CUP (Light Industrial-Conditional Use Permit) as shown on the map and identified in the legend. Adjacent lands to the south and west of the site are zoned LI. Per the UDC, the LI zoning district permits light industrial uses in which residential uses are not allowed except for boarding or rooming houses. In accordance with the UDC, the site includes a conditional use permit (CUP) for a landfill. The CUP for the expansion area was approved by City Council in June, 2016.

Adjacent land north of the site across Little Flock Road is zoned Agricultural (AG), which is a temporary classification until a permanent zoning district is established by the City.

Further details of the zoning conditions are included in the Land Use Analysis Report in Part II, Appendix IIB.

#### **1.3.2 Character of Surrounding Land Use**

The majority of the land within the 1-mile radius is undeveloped or agricultural. The eastern edge of urban development within the City of Temple coincides with the western edge of the 1-mile radius. Current land use includes the following:

- To the north, scattered residences and businesses, and a rural residential subdivision.
- To the east and southeast, predominantly undeveloped or agricultural with widely scattered residences.
- To the southwest, predominantly undeveloped or agricultural with a large industrial use and an electrical power plant.
- To the west, mostly undeveloped or agricultural, but also:

- Within ½ mile, the City's solid waste services center, public works service center, and wastewater treatment plant.
- Near and along the 1-mile radius, three suburban residential subdivisions, two public schools, and a large city park.

There are 294 single family residences within 1 mile of the permit boundary; 129 on individual lots and 165 within four subdivisions.

Seven industrial uses comprise 2.3 percent of the area within the 1-mile radius. The largest use is the Panda Temple Power Plant currently under construction on a 250-acre tract to the south at the 1-mile radius. The natural gas-fired electrical generation plant is scheduled to be completed by the end of 2015.

An electrical substation is located adjacent to the northwest corner of the site. Multiple high voltage electric lines radiate outward from the substation across the 1-mile radius area.

Several named creeks traverse the 1-mile radius area from northwest to southeast. They include Little Elm Creek and Williamson Creek just north of the site, and Knob Creek and Big Elm Creek Tributary No. 1 just south of the site.

#### **1.4 Adequacy of Access Roads and Highways**

A detailed road and traffic analysis was performed by HDR for the proposed expansion of the Temple Recycling and Disposal Facility. This study involved an analysis of the site access routes and collection of traffic counts on the roadways that serve the facility. The results of the analysis are summarized in the traffic study included in Part II, Appendix IIA-3.

Based on the information presented in the HDR study, there are no existing or future restrictions on the main access roadways within 1 mile of the site that would preclude safe and efficient operations for landfill vehicles and other traffic in the area.

Public access to the Temple Recycling and Disposal Facility will continue via the existing entrance on Little Flock Road. Access to the facility is provided by Loop 363 (H.K. Dogden Loop), Avenue H, and Little Flock Road.

There are no known weight restrictions on the access roadways in the vicinity of the site other than the maximum legal weight limit of 80,000 pounds. Part II, Appendix IIA-3, Transportation Study includes correspondence with TxDOT, Bell County, and the Temple ISD.

## 2.0 GENERAL FACILITY DESIGN

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

In order to prevent the entry of livestock, to protect the public from exposure to potential health and safety hazards, and to discourage unauthorized entry or uncontrolled disposal of solid waste or prohibited materials at the facility, a combination of chain-link fence and/or a minimum of three-strand barbed wire fence or a steel fence along boundaries will protect the site perimeter. The fence is slightly inside the permit boundary in the southwest corner of the site; there is no waste disposal or processing activities existing or proposed in the southwest corner. Fencing east of the site entrance is provided by an adjacent electrical facility. The land between the permit boundary and the fence line is owned by the electrical utility company; therefore, the existing fence east of the site entrance will provide proper access control. The perimeter fencing and entrance gate will be inspected once each month for integrity. Maintenance will be performed as needed to correct normal wear and tear. Site personnel or a contractor will perform repairs as applicable. If a total breach of the fencing is detected, a temporary or permanent repair will be made within 24 hours of detection. The Site Manager will notify the TCEQ regional office of the fencing breach within 24 hours of detection if a repair cannot be completed within 8 hours of detection.

Access to the Temple Recycling and Disposal Facility is provided via Loop 363 (H.K. Dogden Loop), Avenue H, and Little Flock Road. Vehicles entering the site from the north or south via Loop 363 currently exit at Little Flock Road and proceed east until turning right (south) into the site on Landfill Road. Vehicles entering the site from the west via Avenue H travel over Loop 363, where Avenue H becomes Little Flock Road, and turn right into the site on Landfill Road.

Loop 363 and Little Flock Road are two-lane asphalt-paved roadways. Avenue H is a four-lane asphalt-paved roadway, with a grass-lined medium. Avenue H becomes a two-lane roadway approximately 650 feet west of the Loop 363 overpass.

The entrance road to the facility is approximately 30-feet wide. Access control to the site is provided by a combination of fencing around the perimeter of the facility and a gated entrance. The entrance gate is designed to provide complete access restriction when the site is not open, yet allow adequate space for vehicles to enter when the facility is open.

Landfill users will be required to stop at the gatehouse and conduct appropriate business transactions prior to proceeding to the disposal area(s). Unauthorized vehicles will not be allowed to proceed past the gatehouse. At this point, the vehicles are screened for waste type, as necessary. If a load is identified or suspected of containing any prohibited waste, the prohibited waste procedures in Section 4.2 of Part IV, the Site Operating Plan, will be followed.

Within the facility, signs will be placed along the haul road and access road at appropriate locations to instruct users where disposal areas are and which roads are to be used. Signs with directional arrows and portable traffic barricades will help to direct traffic to designated disposal locations. Signs will be placed along the access route to the current disposal area or other designated disposal areas that may be established. Roads not being used for access to disposal may be blocked or otherwise marked for no access.

The weight (or volume) of all vehicles will be recorded upon entering the site. Records of such weights (or volumes) will be kept for a period of 3 years and made available to the TCEQ upon request.

## **2.2 Waste Movement—§330.63(b)(2)**

Part III, Attachment 1, Figure III-1-1, Waste Movement Flow Diagram, is a flow diagram that indicates the storage, processing, and disposal sequences for the various wastes received at the facility. Part III, Attachment 1, Figure III-1-2, Schematic View of Various Waste Disposal, Processing, and Storage Areas, provides a schematic view of the phases of collection, separation, processing, and disposal for the various wastes received at the facility.

The potential sources of odor at the facility have been identified and a plan has been developed to address these sources. The Odor Management Plan for the facility is included as Section 4.14.1 in Part IV, Site Operating Plan.

As shown on Part III, Attachment 1, Figure III-1-2, the facility has various storage and processing areas. These areas include:

- Citizen collection station
- Whole tire staging area
- Recyclable materials staging area
- Large item salvage and white goods staging area (only non-chlorinated fluorocarbon [non-CFC] containing white goods are accepted for disposal)
- Liquid waste stabilization (processing) area
- Leachate storage/evaporation ponds

A description of each of these areas, including a discussion of generalized construction details, follows.

### **2.2.1 Citizen Collection Station**

The City of Temple operates a citizen collection station located southwest of the Temple Recycling and Disposal Facility scale house. Citizens and other small loads are diverted to the separate citizen collection center. Construction details of the Citizen Collection Station are included in Part II, Appendix IIIH.

### **2.2.2 Whole Tire Staging Area**

The Temple Recycling and Disposal Facility does not accept whole tires for disposal. Whole tires removed from the active face area or received incidental to waste loads will be temporarily staged on-site until such time they can be processed. Quartered, shredded, or otherwise processed tires will be disposed of in the landfill or sent off-site for recycling. The whole tire staging area is currently located within undeveloped Tract 1C, Cell 1, as shown on Part III, Attachment 1, Figure III-1-2.

The facility will temporarily stage processed tires above ground in either controlled storage piles or in enclosed and lockable containers, pursuant to 30 TAC §328.54.

The whole tire staging area is located on open ground within the proposed waste footprint; no construction details of the staging area is required. The location of the whole tire staging area may be adjusted based on site operation conditions. The area will not be within 50 feet of the permit boundary or within any easement or right-of-way that crosses the site.

### **2.2.3 Recyclable Materials Staging Area**

Inert materials, such as brick, concrete, rubble, aggregate, and brush, are often received and stockpiled at the facility for use on access roads, staging areas, and drainage structures. The reusable inert materials will initially be stockpiled within currently undeveloped Tract 1C, Cell 1, as shown on Part III, Attachment 1, Figure III-1-2. The size of the stockpiles may vary depending on the amount of inert materials received at any given time. Since the brick, concrete, rubble, aggregate, and brush are inert, run-on and run-off from rainfall will not be controlled in a special manner. Also, since these materials will continuously be reused for site operations, there is no time limit on the storage of these materials.

Non-inert materials, such as reclaimed asphalt pavement and shingles, are also received and staged on-site. The staging area for the non-inert materials will be located above the existing lined areas and will be relocated as the active working face moves.

Shingles containing asbestos will be disposed as special wastes, as required in the Site Operating Plan.

The recyclable materials staging area is located on open ground within the proposed waste footprint; no construction details of the staging area is required. The location of the recyclable materials staging area may be adjusted based on site operation conditions. The area will not be within 50 feet of the permit boundary or within any easement or right-of-way that crosses the site.

### **2.2.4 Large Item Salvage/White Goods Staging Area**

Large items and white goods removed from the active face are typically staged on the ground near the active face. The large items and white goods are subsequently transferred into steel roll-off containers for



staging until transported to an off-site recycler. White goods containing CFCs are not accepted at the facility. The roll-off 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.

The large item staging area is located on open ground within the proposed waste footprint; no construction details of the staging area is required. The location of the large item staging area may be adjusted based on site operation conditions.

### **2.2.5 Liquid Waste Stabilization Area**

The facility is authorized to perform on-site liquid waste processing. Liquid wastes will be directed to the on-site liquid stabilization processing area prior to being disposed of in the landfill. The procedures followed to locate and stabilize liquid waste are described in Part IV, Site Operating Plan. The current liquid waste stabilization area is located as shown on Part III, Attachment 1, Figure III-1-2. The Liquid Waste Stabilization Area may be relocated periodically as needed during development and filling of the landfill.

Liquid waste stabilization is performed in steel frac tank(s) or containers that are situated within a lined waste disposal area. The size of the containers used for liquid stabilization may be adjusted based on site operation conditions.

### **2.2.6 Leachate Storage/Evaporation Ponds**

There are two existing leachate ponds that have been approved by the TCEQ:

- Pond A: A modular steel tank constructed of a reinforced steel frame with a geomembrane liner underlain by a clay layer is currently in use. For operating purposes, this tank is called Pond A. Pond A has a capacity of 270,000 gallons, excluding freeboard, and was authorized by a permit modification approved by TCEQ in early 2002.
- Pond B: On November 17, 2004, TCEQ approved a permit modification to the facility's Leachate and Contaminated Water Plan authorizing the construction of up to two additional in-ground ponds labeled Pond A and Pond B. Only one of these in-ground ponds has been constructed to date. For operating purposes, the pond constructed is called Pond B. In accordance with 30 TAC §330.207(b), Pond B was constructed with a two-foot thick clay liner overlain by 60-mil HDPE liner and one foot of freeboard for the 25-year, 24-hour rainfall event will be maintained.

Locations of the leachate ponds are shown on Part III, Attachment 1, Figure III-1-2. Construction and design details of these leachate ponds are provided in Part II, Appendix IIF.

## **2.3 Protection of Endangered Species—§330.63(b)(5)**

JBS Engineering & Environmental, LLC (JBS), performed a threatened and endangered species assessment at the facility. The assessment did not indicate the presence of listed species or critical habitat within the project area. JBS concluded that the proposed landfill expansion will not adversely affect

federally or state listed threatened, endangered, or candidate species, sensitive natural communities, and other features of concern within the project area.

In accordance with 30 TAC §330.61(n)(2), the US Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD) were contacted for locations and specific data relating to endangered and threatened species in Texas.

The USFWS indicated that they received correspondence from JBS; however, with the exception of Federal Emergency Management Agency (FEMA) projects, the USFWS no longer issues a letter of “no effect.” Rather, correspondence will be made only if the USFWS has issues relative to the proposed project. This correspondence was not received from USFWS.

The TPWD identified the Texas horned lizard (*Phrynosoma cornutum*) and the Little Bluestem-Indiangrass series that had been documented in the general vicinity of the proposed project. In addition, the TPWD requested that a habitat assessment be conducted for each of the species and, if identified, recommended pursuing the appropriate measures in accordance with federal and state law.

JBS conducted a field survey to determine if the environmental features necessary to support the species identified by the TPWD existed within the permit boundary. The field survey indicated that the proposed expansion does not represent critical habitat for the Texas horned lizard, and, while Little Bluestem and Indiangrass were observed near the site, they were not observed within the permit boundary.

### **3.0 FACILITY SURFACE WATER DRAINAGE DESIGN—§330.63(c)**

The facility was designed to comply with the requirements of 30 TAC §330.63(c), §330.303, §330.305, and §330.307, which are the regulations related to surface water drainage for MSW landfills. A Facility Surface Water Drainage Report was developed that includes: analyses of the pre-development and post-development conditions; design of the surface water management system, including perimeter channels, add-on berms, detention and sedimentation ponds, 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 Facility Surface Water Drainage Report is included as Attachment 2 to 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 30 TAC §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), 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 30 TAC §330.63(e), a Geology Report, included as Attachment 4 to the SDP, was prepared by a qualified groundwater scientist. This report summarizes available data related to regional and local geology and aquifers in the area of the site. 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 site area are suitable for the continued operations of a MSW disposal facility.

## 6.0 GROUNDWATER CHARACTERIZATION AND MONITORING—§330.63(f)

In accordance with 30 TAC §330.63(f), a Groundwater Characterization and Monitoring Report, included as Attachment 5 to the SDP, was prepared for the facility. This report includes a discussion, evaluations, and figures that provide the information required by 30 TAC §330.63(f) and §330.401 through §330.421. The Groundwater Characterization and Monitoring Report includes: 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. A Groundwater Sampling and Analysis Plan, is included as Appendix III-5B in Attachment 5.

## 7.0 LANDFILL GAS MANAGEMENT—§330.63(g)

In accordance with 30 TAC §330.63(g), a Landfill Gas Management Plan, included as Attachment 6 to this SDP, has been developed for the facility. Attachment 6 includes narrative, evaluations, and drawings that provide the information required by 30 TAC §330.63(g) and §330.371. The plan provides a site-specific approach for implementing landfill gas monitoring and control, including the requirements and procedures for: landfill gas monitoring using perimeter probes; combustible gas monitors in site structures; 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; 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.

## 8.0 CLOSURE—§330.63(h) & (j)

In accordance with 30 TAC §330.63(h), a Closure Plan, included as Attachment 7 of this SDP, has been developed for the facility. Attachment 7 includes narrative, evaluations, and drawings that provide the information required by 30 TAC §330.63(h), §330.457, §330.459, and §330.461. This plan includes a description of the steps that will be undertaken to close each filled disposal unit, a general schedule for final closure, a description of the final cover system, and the methods used to install the cover.

In accordance with 30 TAC §330.63(j) and §330.503, a closure cost estimate has been prepared for the facility. This estimated cost, presented in Attachment 9 of this SDP, 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 closure cost estimate, presented in Appendix III-9A, is based on closure of a 108-acre area.



## 9.0 POST-CLOSURE—§330.63(i) & (j)

In accordance with 30 TAC §330.63(i), a Post-Closure Plan, included as Attachment 8 of this SDP, was prepared for the facility. Attachment 8 presents the information required by 30 TAC §330.63(i), §330.463, and §330.465. 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.

In accordance with 30 TAC §330.63(i), §330.463(b)(3)(D), and §330.507, 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. The estimate accounts for the total cost of conducting post-closure care for the largest area that could possibly require post-closure care in the year to follow, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The breakdown of the post-closure cost estimate is presented in Appendix III-9B.