

**Redline / Strikeout Version**

**Part II**

**PART II**  
**APPLICATION FOR PERMIT**  
**TYPE I MUNICIPAL SOLID WASTE FACILITY**  
**MSW PERMIT NO. 2374**

**PESCADITO ENVIRONMENTAL**  
**RESOURCE CENTER**

**SOLID WASTE MANAGEMENT AND**  
**DISPOSAL FACILITY**  
**RANCHO VIEJO WASTE MANAGEMENT, LLC**  
**LAREDO, WEBB COUNTY, TEXAS**

Sections 1.1, 1.2, 2.1.4, 10.1—10.4, 11.1 –  
Signed by H.C. Clark, P.G., Ph.D. on Feb. 7,  
2012

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(FIRM) for the site, as prepared by the Federal Emergency Planning Agency (FEMA), indicates a significant portion of the site to be within Zone A, the 100-year floodplain. This floodplain is depicted in Figure 11, Part II. The FIRM can also be found in Attachment G of Part II. It is important to realize that the surface topography used to create the FIRM does not appear to include the existing dikes and surface impoundments at the site and in the watershed upslope from the site. An engineering study of the actual surface topography as it currently exists was subsequently performed along with an engineering analysis of drainage at the site and all watersheds above and immediately below the site. A series of drainage channels and detention structures was designed to remove portions of the proposed permit landfill area from the 100-year floodplain. Furthermore, a Conditional Letter of Map Revision (CLOMR) was submitted to FEMA requesting correction of the existing FIRM to take into account the proposed drainage and floodplain improvements. The CLOMR was approved by FEMA on November 21, 2014.

## 1.6 Threatened and Endangered Species

TRC has performed an initial assessment of threatened and endangered (T&E) species at the site, and subsequently conducted a more detailed biological evaluation. These studies will assure compliance with federal and state requirements for the protection of T&E species and their habitats. These studies have been submitted to the Texas Parks and Wildlife Department (TPWD) and the U.S. Fish and Wildlife Survey (USFWS), as discussed in Section 14.0. Subsequent to these studies, aci Consulting performed a Biological Assessment and received notice from the U.S. Fish and Wildlife Service that the proposed project had complied with section 7(a)(2) of the Endangered Species Act, and concurred that the project would have no effect on four of the species identified (ocelot, interior least tern, ashy dogweed and Johnston's frankenia) and would not adversely affect the jaguarundi due to its closest observation being 44 miles to the north and the proposed conservation measures that will benefit the species should they be in the vicinity of the project site. See Part II, Attachment A for a copy of the Biological Assessment and correspondence from the USFWS.

## 1.7 Land Use

Land use at and within one mile of the facility is exclusively devoted to cattle ranching and oil and gas exploration and production. This same land use extends generally for many miles in every direction. The only exceptions are an area of residential land use about four miles to the northwest and two transportation corridors. The residential land use is in the community of Ranchitos Las Lomas, which is located along Highway 59 and had a population of 334 in the 2000 census. The transportation corridors include U.S. Highway 59, which passes through Ranchitos Las Lomas four miles to the northwest, and the Kansas City Southern Railroad about two miles to the south of the facility, which will provide rail service to the site.

## 1.8 Oil and Gas Production

While some oil but mostly gas production has been prevalent in the area, very little has actually occurred on the proposed site of the facility. Several wells were attempted on or adjacent to the site, but have been sealed and abandoned. The width of the landfill [property](#) was selected to allow possible future development of gas reserves beneath the landfill by using directional drilling methods. Existing practices employed by energy companies in this area of Webb County were reviewed to identify the appropriate well spacing and horizontal departure allowances.

Recovery of landfill-generated gas is planned for the facility. At an appropriate time in the future, the owner or operator may apply to TCEQ for a registration to allow for recovery of landfill gas. The existing infrastructure of gathering pipelines, valves, and separators is expected to be useful to or at least compatible with the landfill gas recovery. The landfill gas will be processed on-site, to the degree necessary to make this gas marketable. Processing may include drying and/or removal of carbon dioxide or trace gases. The landfill gas will then be metered and pumped into the existing natural gas delivery system.

The oil and gas production at and around the site has resulted in a number of wells and pipelines being installed. Every production well has a certain useful or productive life, which ends when the oil or gas reserves it tapped is no longer recoverable. Some wells and pipelines in the site area are no longer active and have been abandoned in place, while others continue in service. Many of these pipelines exist within easements. The easement agreements allow the landowner (the Applicant for this permit) to reroute the pipelines as may become necessary in the future, as long as the replacement pipelines meet industry standards. Also, ownership of the easement and pipelines typically reverts to the landowner if the pipeline operator abandons the line. Similarly, ownership of abandoned wells reverts to the landowner. For these reasons, the proposed landfill is fully compatible with the existing oil and gas production. As the landfill grows in size over several decades in the future, the existing active oil and gas wells will transition into abandonment. New wells can be drilled if desired, because they can be located where they can access hydrocarbons beneath the landfill with directional drilling, and not interfere with the construction and operation of the landfill. [All pipelines at the site, whether in easements or not have been avoided by the development and will be protected as required by the regulations.](#)

**2.1.3 Management of Industrial and Special Wastes** – The facility will accept certain Class 1 non-hazardous, Class 2 and Class 3 industrial wastes, as well as many special wastes that are regulated as municipal solid waste (MSW). Only those Class 1 non-hazardous wastes that are allowed to be disposed into Type I MSW landfills in restricted locations will be accepted. The facility will also provide on-site solidification of certain types of industrial and municipal liquids and sludge to render these wastes suitable for landfill disposal. Grease and grit trap wastes will be accepted for solidification (and possible future processing) from commercial sources (restaurants, fast food facilities, car wash and vehicle maintenance facilities), industrial sources (food processing plants, manufacturing plants) and institutional sources (hospitals, schools, prisons). Class I Industrial Waste amounts will not exceed 20 percent of the total amount of all waste accepted for disposal, excluding the Class 1 waste amount. Special design considerations will be made in accordance with 30 TAC §330.173 to properly manage any Class I waste that is proposed to be accepted for disposal at the landfill. Special wastes will be accepted only to the extent that any given category or type of special waste can be properly managed by the facility and/or readily disposed into the landfill.

Class I Industrial Waste will be disposed only in landfill cells lined with the industrial waste default design composite liner. The upper component shall consist of a minimum 30-mil (0.75 mm) flexible membrane liner and the lower component shall consist of at least a three-foot layer of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec. Flexible membrane liner components consisting of high density polyethylene shall be at least 60-mil thick. The flexible membrane liner component shall be installed in direct and uniform contact with the compacted soil component. Class I Industrial Waste cells shall have a leachate-collection system designed and constructed to maintain less than a 30-cm depth of leachate over the liner.

**2.1.4 Soil and Groundwater** – The soils encountered during drilling and described in the literature are dominantly clays. While the bottom and sides of the landfill excavation could encounter thin, isolated sand/silt units with a Unified Soil Classification of “SM” or “SP,” these soil units do not appear to be sufficiently thick and laterally continuous to provide a significant pathway for waste migration. In addition, most of these units will not exhibit hydraulic conductivity greater than  $1 \times 10^{-5}$  cm/sec. However, any effect of the sand/silt units is minimized because the average annual evaporation exceeds average annual rainfall by more than 40 inches. The nearest “regional aquifer” is located approximately 1,000 feet below the site, according to regional cross-sections, the literature, geophysical log data obtained from the ranch water well located 1,575 feet from the facility, and geophysical log interpretations for gas wells in the site area. The ranch water well produces water from that depth. As a consequence of the prevailing soil



conditions, the aquifer is protected by many hundred feet of low-permeability, clay-rich soil. References include Baker, Barnes and Lonsdale in Section 10.0.

## 2.2 Sources and Characteristics of Waste

The proposed facility will be a comprehensive waste treatment and disposal facility that serves municipal and industrial customers by means of truck and rail transportation. Municipal solid wastes transported by truck are expected to originate in Webb and nearby counties. The use of tractor-trailers loaded at transfer stations could extend the service area to more distant areas of South Texas such as Corpus Christi and San Antonio. Grease trap and grit trap wastes solidified -at this facility are expected to be generated in the same service area. Industrial wastes are expected to be generated from this service area plus the industries in the Houston-Beaumont region. Wastes transported by rail can be economically shipped from greater distances, because the transportation cost per ton-mile is much less by rail than by truck. In regions of the country where the cost of landfill disposal is relatively high and landfills are some distance away and served by trucks, the cost of solid waste disposal by rail-hauling to this facility could be less. Thus, the service area for rail-hauled waste may essentially be unlimited.

Sources of non-industrial waste that are intended to be managed at the proposed facility include local governmental entities (cities, towns, waste management districts or authorities, and counties), state institutions, federal agencies that generate waste from disaster response, commercial solid waste collection companies, and similar generators of municipal solid waste. Wastes to be received other than industrial waste can be characterized as garbage, rubbish, ashes, street sweepings, incidental dead animals, and non-recyclable residuals following the removal of recyclables from source-separated recyclable materials. Solids resulting from the solidification (or future processing with prior TCECQ approval) of grease and grit trap wastes will also be disposed in the landfill.

A main line of the Kansas City Southern Railroad (KCS) passes within about two miles of the landfill facility and is accessible by all-weather roads on private property. Rail service to the site can be accomplished without having to transport waste over public roads. However, in the initial period of operation, waste may be transported in sealed, steel containers through the KCS intermodal shipping yard in Laredo.

KCS is an international railroad company with extensive track mileage and service in Mexico. The facility intends to provide waste disposal services to industrial generators in Mexico. Both the *maquiladora* industries along the U.S. border and other industries in Mexico will be served by the facility.

#### 4.0 FACILITY LAYOUT MAPS [330.61 (d)]

A Facility Layout Map and an Operations Area Layout Map are provided as Figures 3 and 4 of Part II. These maps provide:

The maximum outline of the landfill unit(s);

General locations of main facility access roadways;

General locations of buildings;

Explanatory notes;

Fencing and lockable gates will be provided along the facility boundary, as shown on Figure 4, Part II; and

Natural amenities and plans for screening the facility from public view.

Easements are shown on Figure 4, Sheets 1 to 4, in Part I. These easements will be protected in accordance with TCEQ rules, ~~until such time as they may be voided or relocated outside the waste fill area.~~

The site entrance road can be accessed from public access roads.

An initial Class I waste cell location is shown on Figure 4. Additional Class I waste cells may be designated and constructed throughout the landfill as future landfill cells are designed. All Class I waste cells will be designed, constructed, and operated in accordance with TCEQ rules.

Locations of monitoring wells are generally shown on the Monitoring System and Cell Layout Plan, Figure 5. In accordance with 30 TAC §330.403(a)(2), default spacing for groundwater monitoring wells is a maximum of 600 feet. Figure [III-F.1-1 in Part III](#) shows a [total of 14 wells located around the proposed landfill facility unit perimeter. An additional 2 wells are proposed to monitor the evaporation pond \(also shown on Figure III-F.1-1\).](#) ~~of approximately 28,000 feet. On this default spacing basis, 48 wells are proposed with a maximum spacing of 600 feet.~~

Locations of gas monitoring probes are generally shown on Figure 5. In accordance with 30 TAC §330.371(h)(2), permanent gas monitoring probes are required to monitor for subsurface migration of landfill gas. [Probes are typically placed at](#) ~~Although,~~ 1,000-foot spacing [and is typical,](#) ~~600-foot spacing is recommended along the southwest corner of the perimeter due to habitable structures within 3,000 feet.~~ This spacing can be accommodated at the location shown on Figure 5. [Additional information on spacing is shown on Figure III-G.1-1 in Part III.](#)

The proposed facility is completely isolated from all land use except cattle ranching and oil and gas production, and is provided with an effective separation distance of more than one-quarter mile on all three sides and 300 feet on the fourth side.

The proposed facility will operate under TPDES General Permit No. TXR050000. A signed certification to this effect is presented as Attachment H in Part II, and verification that the person who has signed that document is authorized to do so is contained in Section 7.0 of Part I. It will also operate in accordance with a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will be prepared as the actual design of the landfill and related facilities is completed and prior to any construction. ~~during the preparation of Parts III and IV of this permit application.~~ The SWPPP will be updated as necessary to reflect site modifications proposed by the operator subsequent to receiving a MSW permit.

The facility will comply with the requirements of the TPDES storm water permitting requirements by continuous operation and monitoring of its SWPPP throughout the active life of the facility. The SWPPP will be developed specifically for the proposed facilities and operations, and will include both ongoing inspection of storm water pollution prevention systems and practices, and periodic sampling and analysis of storm water discharges. Should the results of the SWPPP monitoring indicate a need for revisions, or should the facility and its operation change in the future, the SWPPP will be revised as needed. A Notice of Intent (NOI) to obtain coverage under TPDES General Permit No. TXR050000 (or its successor) will be submitted to TCEQ. Filing the NOI will initiate coverage of this facility under the General Permit and is one of the criteria for compliance with the TPDES and Section 402 of the CWA. Operation of the SWPPP is the other criteria for compliance with the TPDES requirements.

Surface water conditions near the site are very similar to those at the site. Due to the generally flat surface topography and low runoff, combined with the tight, cohesive surficial soils, natural drainage systems exhibit very little erosion. Relatively small artificial dams exist in the area to create “stock tanks” for livestock watering.

### 13.0 FLOODPLAINS AND WETLANDS STATEMENT [330.61 (m)]

Portions of the proposed facility are currently located within the 100-year floodplain, as indicated on the replication of the most current available floodplain map, or Flood Insurance Rate Map (FIRM), presented in Figure 11. An independent comprehensive storm water management system of dikes, drainage channels and detention ponds has been designed to remove areas of the site ~~proposed for the landfill, processing and storage areas and related development~~ from the 100-year floodplain. All the necessary hydrological and hydraulic engineering analysis and results to support the engineering design, along with an application for a Conditional Letter of Map Revision (CLOMR) were submitted to the Webb County Planning Department (WCPD) for review and were approved (see Attachment G). WCPD is the local agency responsible for floodplain management. With concurrence from the WCPD, the CLOMR application was submitted to the Federal Emergency Management Agency (FEMA) for review and approval. The CLOMR, approved on November 21, 2014, verifies that the proposed CLOMR system drainage plans will, in fact, remove areas of the site ~~proposed for the landfill, processing and storage areas and related development~~ from the 100-year floodplain. The design of the proposed landfill and related appurtenances to be provided in Part III of the Application will include a separate, comprehensive storm water management system of dikes, drainage channels and detention ponds for the portions of the site to be developed. No development within the FEMA designated 100-year floodplain are proposed at this time.

Any reduction of the permit boundary area, or waste footprint area will have no effect on the CLOMR application. The CLOMR, as submitted to FEMA, has not changed from that approved by the WCPD and will effectively remove ~~the areas~~ of the proposed ~~site landfill and buildings~~ from the 100-year floodplain once the improvements are complete.

~~Construction of the landfill will impact a named reservoir, Burrito Tank, and possibly several smaller stock tanks. All affected reservoirs are owned by the applicant or by its parent, Rancho Viejo Cattle Company, Ltd. In order to approximate effects of the tanks, storage and discharge relationships were developed and utilized for simulation of the pre-project conditions in the CLOMR analysis. Therefore, all existing features were included in the pre-project conditions analysis. It should be noted that, after reviewing the delineation of the FEMA floodplain with respect to the tanks, the tanks will likely not have any significant attenuation effect on the peak discharge. The 100-year flood is so broad in the vicinity of the tanks it appears there is sufficient area to carry the flows which will bypass the tanks' zones of impact.~~

The proposed landfill is located in an ideal location considering soil, groundwater, land use, and oil and gas activities (past, present, and future). No other location is equally

[Attachment J](#)

[Webb / Duval Pipeline Information](#)