State Office of Administrative Hearings

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

2008 SEP -2 PM 4: 36

CHIEF CLERKS OFFICE

Cathleen Parsley
Chief Administrative Law Judge

September 2, 2008

Les Trobman, General Counsel
Texas Commission on Environmental Quality
PO Box 13087
Austin Texas 78711-3087

Re: SOAH Docket No. 582-04-0975; TCEQ Docket No. 2003-0729-MSW; In Re: Application by Regional Land Management Services, LTD., for a New Type I Municipal Solid Waste Landfill (MSW Permit No. 2286

Dear Mr. Trobman:

The above-referenced matter will be considered by the Texas Commission on Environmental Quality on a date and time to be determined by the Chief Clerk's Office in Room 201S of Building E, 12118 N. Interstate 35, Austin, Texas.

Enclosed are copies of the Proposal for Decision and Order that have been recommended to the Commission for approval. Any party may file exceptions or briefs by filing the original documents with the Chief Clerk of the Texas Commission on Environmental Quality no later than **September 22, 2008**. Any replies to exceptions or briefs must be filed in the same manner no later than **October 2, 2008**.

This matter has been designated **TCEQ Docket No. 2003-0729-MSW; SOAH Docket No. 582-04-0975**. All documents to be filed must clearly reference these assigned docket numbers. Copies of all exceptions, briefs and replies must be served promptly on the State Office of Administrative Hearings and all parties. Certification of service to the above parties and an **original and eleven copies** shall be furnished to the Chief Clerk of the Commission. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

Carol S. Birch for
Carol Wood
Administrative Law Judge

Carol S. Birch
Carol S. Birch
Administrative Law Judge

/nl
Enclosures
cc: Mailing List

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AGENCY: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)

STYLE/CASE: APPLICATION OF REGIONAL LAND MANAGEMENT SERVICES, LTD. FOR A NEW TYPE I MUNICIPAL SOLID WASTE LANDFILL (MSW PERMIT NO. 2286)

SOAH DOCKET NUMBER: 582-04-0975
TCEQ DOCKET NUMBER: 2003-0729-MSW

ADMINISTRATIVE COURT

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cc: Docket Clerk, State Office of Administrative Hearings
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SOAH DOCKET NO. 582-04-0975
TCEQ DOCKET NO. 2003-0729-MSW

APPLICATION BY REGIONAL LAND MANAGEMENT SERVICES, LTD., FOR A NEW TYPE I MUNICIPAL SOLID WASTE LANDFILL (MSW PERMIT NO. 2286)	§ § § § § §	**BEFORE THE STATE OFFICE** **OF** **ADMINISTRATIVE HEARINGS**

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APPLICATION BY REGIONAL LAND MANAGEMENT SERVICES, LTD., FOR A NEW TYPE I MUNICIPAL SOLID WASTE LANDFILL (MSW PERMIT NO. 2286)	§ § § § § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

PROPOSAL FOR DECISION

I. INTRODUCTION

Regional Land Management Services, Ltd. (Applicant or Regional) has applied to the Texas Commission on Environmental Quality (Commission or TCEQ) for a Type I municipal solid waste (MSW) landfill permit authorizing the disposal of municipal solid waste, construction-demolition waste, and special waste. The proposed facility will be located south of State Highway 359, approximately 11 miles east of Loop 20 in Webb County, Texas. The Administrative Law Judges recommend the Commission find that Applicant met its burden of proof on each of the issues referred for hearing to the State Office of Administrative Hearings (SOAH).

II. PROCEDURAL HISTORY

On July 3, 2000, Regional filed an application seeking from the Commission a permit to construct and operate the Ponderosa Regional Landfill. On July 2, 2002, the Commission's Executive Director (ED) declared the application technically complete and, on July 17, 2002, the ED issued a proposed draft permit. On September 23, 2003, the Commission issued an Interim Order referring the matter to SOAH for a contested case hearing on the following issues:

- Is the proposed facility compatible with area land uses?
- Is the proposed groundwater monitoring adequate?
- Are the proposed surface water controls adequate?

- Does the application meet TCEQ site selection criteria with regard to unstable areas, faults, wetlands, and floodplains?
- Is the proposed landfill compatible with the Regional Solid Waste Plan?
- Does Applicant's compliance history at any other facilities operated by Applicant warrant permit denial or require special conditions?
- Is the proposed Site Operating Plan (SOP) adequate?
- Is the information submitted on geology and hydrology for the site adequate?
- Are the designs for the landfill liner, sidewalls, leachate collection systems, and storm water controls adequate?
- Did Applicant adequately evaluate endangered or threatened species at the site?
- Does Applicant propose adequate financial assurance?
- Did the application present adequate transportation information?
- Is the proposed buffer zone and screening adequate?
- Should the permit term be for the life of the facility?
- Does the application adequately evaluate the soils and geotechnical conditions at he proposed landfill?
- Does the application adequately address drainage?

On January 21, 2004, a preliminary hearing was conducted in Laredo, Texas, by Deborah Ingraham, a former SOAH Judge. The following were designated as parties to the proceeding: Applicant (represented by Brent Ryan, attorney); the Commission's Public Interest Counsel (PIC)(now represented by Garrett Arthur, attorney); Webb County (now represented by James Allison and Eric Magee, attorneys); and Protestants Manuel and Karen Gonzales, Bette and Antonio Flores, Olga and Agustin Alvarado, Mayme and Joe Schwarz, Mary Louise and Guillermo Cavazos, and Highway 359 Landowners Coalition (all represented by Richard Lowerre, Eric Allmon, and Marisa Perales, attorneys).[1] In accordance with 30 TEX. ADMIN. CODE (TAC) § 80.108, the ED elected not to participate in the proceeding.

On May 3, 2004, the proceeding was abated until the Commission completed its

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[1] Protestants Manuel and Karen Gonzales, Bette and Antonio Flores, Olga and Agustin Alvarado, Mayme and Joe Schwarz, and Mary Louise Cavazos later withdrew as parties and joined the Highway 359 Landowners Coalition (Coalition).

rulemaking project for Chapter 330, Subchapter F. New rules for Site Operating Plans (SOPs) for MSW landfills were adopted by the Commission on November 10, 2004, and became effective December 2, 2004.[2]

On March 1, 2005, upon Protestants' request, SOAH Judge Bill Newchurch, acting in place of Judge Ingraham, asked that the following question be certified to the Commission: whether a pending application for a new MSW permit was subject to the Commission's new rules governing SOP requirements. On April 13, 2005, the Commission considered the certified question and, on April 19, 2005, the Commission issued an Interim Order that allowed Applicant to request that the new SOP rules apply to its pending application. On July 7, 2005, and October 27, 2005, Applicant submitted to TCEQ revisions to the proposed facility's SOP.

On April 19, 2006, Applicant advised all parties it intended to prepare revisions to its application, including revisions to its surface water management plan, based on the Commission's decision to deny the application of Tan Terra Environmental Services, Inc., for a permit to operate a Type I MSW facility.[3] On May 15, 2006, SOAH Judges Tommy Broyles and Carol Birch to whom the case had been reassigned, abated the proceeding. On September 22, 2006, the Judges denied the Coalition's motion to remand the proceeding to the ED. On October 23, 2006, Applicant submitted to the ED amendments to the application and, in November 2006, the ED issued a revised draft permit.

On January 30, 2007, SOAH Judges Carol Birch and Carol Wood, to whom the case had been reassigned, lifted the abatement and granted the Coalition's motion to brief the issue of whether additional notice of application was necessary. On March 5, 2007, Rosetta Resources Operating L.P. (Rosetta), also represented by Richard Lowerre, Eric Allmon, and Marisa Perales, attorneys, filed a motion requesting to be admitted as a party to the proceeding. On

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[2] The rules in effect at the time the application was submitted are the rules that apply to this case, except where noted.

[3] TCEQ Docket No. 2004-0743-MSW; Order denying the permit issued on April 20, 2006.

March 10, 2007, the Judges denied the Coalition's motion for new notice of application and granted Rosetta's motion for party status.

On June 28, 2007, the Coalition and Rosetta filed a motion to disqualify Applicant's counsel. On July 16, 2007, Applicant filed a motion for sanctions against Rosetta and the Coalition. After rulings by the Judges, the parties withdrew their respective motions on July 20, 2007.

The hearing on the merits was held in Austin, Texas, on July 24–27, 2007; July 30–31, 2007; and August 1–2, 2007. The parties submitted closing arguments, and the record closed on September 20, 2007.

On October 30, 2007, the Judges requested that Applicant submit additional briefing regarding the issue of endangered or threatened species, in response to the arguments raised for the first time by Rosetta and the Coalition in their reply briefs. The Judges further required Applicant to respond to questions posed by the Judges concerning the Regional Solid Waste Management Plan.

After filing its response brief, Applicant on November 15, 2007, filed a motion to reopen the record to admit additional exhibits regarding its application and the South Texas Development Council's Regional Solid Waste Management Plan. On November 19, 2007, Rosetta filed a motion to reopen the record to provide additional evidence concerning seven new drilling permits for gas wells on the proposed landfill site that had been issued to Rosetta by the Texas Railroad Commission on November 16, 2007. On December 14, 2007, the Judges granted Applicant's motion to admit additional exhibits and Rosetta's motion to provide additional evidence regarding the new drilling permits for wells on the proposed site.

The reconvened hearing regarding the additional evidence was held on March 3–5, and 13, 2008. Following the conclusion of the reconvened hearing, Applicant and Rosetta entered

into an Accommodation Agreement on April 15, 2008. On June 26, 2008, Rosetta withdrew its protest but retained its party status. The record closed on July 3, 2008, after submission of the parties' final arguments and issuance by the Judges of Order No. 26 regarding treatment of confidential materials.

III. TECHNICAL SUMMARY[4]

The proposed Ponderosa Regional Landfill will be a new Type I MSW landfill facility, located in Webb County, Texas, and serving Webb County and the surrounding South Texas Region in accordance with the South Texas Development Council (STDC) Regional Solid Waste Management Plan. The total permitted facility is proposed to be approximately 499 acres, with about 347 acres for waste disposal. The proposed facility will provide a permitted disposal capacity of 88,271,000 cubic yards, including waste and daily cover. The final elevation of the waste fill and final cover will be approximately 700 feet above mean sea level (msl) or about 170 feet above ground level, and the lowest elevation of waste placement will be approximately 457 feet msl. The estimated life of the proposed facility is 94 years.

This facility will accept municipal solid waste, defined in Commission Rule 330.2 as "solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities, including garbage, putrescible wastes, rubbish, ashes, brush, street cleanings, dead animals, abandoned automobiles, and all other solid waste other than industrial solid waste." In accordance with Commission Rule 330.136(b) and (c), special wastes may be accepted; and, in accordance with Commission Rule 330.137(j) and (k), Class 2 and Class 3 industrial solid waste may be accepted at this proposed facility. The proposed Ponderosa Regional Landfill will not accept polychlorinated biphenyl (PCB) wastes, regulated hazardous wastes, and Class I industrial solid wastes requiring ED approval; untreated special wastes from health-care related facilities, and other wastes prohibited by TCEQ regulations.

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[4] Ex. A-13.

A final cover system designed to meet the requirements of Commission Rule 330.253 will be placed on the above-grade waste to limit the infiltration of rainfall and prevent washout of solid waste. The final cover system consists of the following components (listed in order from top to bottom):

- a 24-inch erosion layer;
- geocomposite on slopes greater than 5 percent;
- a flexible membrane liner;
- an 18-inch soil infiltration layer.

The bottom and sides of the waste-fill area will be lined with a liner system designed to meet the requirements of Commission Rule 330.200. The liner system consists of the following components (listed in order from top to bottom of the liner system):

- 24 inches of protective cover or 12 inches of protective cover with the use of a granular drainage layer;
- a Geonet drainage layer with filter fabric;
- a 60-milliliter (ml) HDPE geomembrane;
- 24 inches of compacted soil.

The liner system will incorporate a leachate collection system (LCS) designed to meet the requirements of Commission Rules 330.56(o) and 330.201. The LCS will consist of a drainage layer, collection trenches, pipes, sumps, pumps, and risers. Leachate will be pumped from the collection sumps to a tanker truck or recirculated to active areas of the landfill. Evaporation ponds or other on-site storage and treatment facilities may be proposed in the future but are not part of this permit application.

Storm water that comes in contact with solid waste will be considered contaminated water, and contaminated storm water at the working face will be contained by run-on and run-off berms. In accordance with Commission Rule 330.56(o)(2), leachate and gas condensate may be disposed of in the proposed landfill. Contaminated surface water and groundwater may not be placed in or on the landfill. Untreated contaminated water may not be discharged from the site.

Landfill gas migration will be monitored around the perimeter of the proposed facility utilizing permanent landfill gas monitoring probes. The minimum frequency of gas monitoring will be quarterly, in accordance with Commission Rule 330.56(n)(2)(B).

IV. ISSUES

Although the Coalition asserts that Applicant has failed to meet its burden of proof on any of the 16 referred issues, the Protestants concerns were primarily focused on fewer than half. The referred issues are grouped for discussion purposes as "major" issues and "other" issues.

As mentioned previously, the hearing was reconvened to take additional evidence regarding possible oil and gas development on the landfill footprint, which has the potential to affect issues of land use compatibility, the SOP, and drainage. Because of the uniqueness of this situation, it is discussed in a separate section.

A. Major Issues

1. Whether the proposed facility is compatible with area land uses.

The Judges recommend the Commission find that the proposed Ponderosa Regional Landfill is compatible with area land uses.

a. Applicable Law

The Texas Health and Safety Code and the Commission's rules require consideration of land-use issues in permit application cases.[5] Of primary concern is that the use of land for a landfill site not adversely affect human health or the environment.[6] Inquiries relevant to an evaluation of the impact of a proposed site on the surrounding area include:

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[5] TEX. HEALTH & SAFETY CODE §§ 361.069 and 361.089; 30 TAC § 330.53.

[6] 30 TAC § 330.53(a)(8).

- existing zoning at the site and in the vicinity;
- character of surrounding land uses within one mile of the proposed landfill site;
- growth trends of the nearest community with directions of major development;
- proximity to residences and other uses; and
- known wells within 500 feet of the site.

b. Background

According to the Land Use Report[7] submitted with the application, the proposed landfill site is located in rural Webb County on the south side of State Highway 359, approximately 3.6 miles east of the City of Laredo municipal limits. The site is approximately 10 miles east of the existing landfill owned by the City.

Zoning. The proposed site is not zoned and there are no zoning requirements that apply to the property. Although it is within Laredo's extraterritorial jurisdiction, the site does not require a special permit from the City nor approval as a non-conforming use. Webb County has development regulations, but none that apply to the site.[8]

There are three easements on the proposed site. One of the easements is for a telephone line and another relates to an electric line. These utility lines and related easements will be relocated outside the proposed landfill footprint in the buffer zone prior to development of the landfill. The third easement is a private road easement located just inside the eastern line of the proposed permit boundary. This easement is fenced along both sides and its continued use by the owner of the property immediately south of the site will not interfere with operation of the landfill facility, nor will operation of the facility interfere with the use of the road easement.[9]

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[7] Ex. A-4.

[8] Ex. A-4 at 2.

[9] Ex. A-92 at 4; Ex. A-105, sec. 3.1.5; Exs. A-94 and 110.

Characteristics of surrounding land uses. The predominant land use within one mile of the permit boundary is characterized as "open," and includes range land, widely scattered oil and gas operations, and recreational lands. Open land comprises approximately 4,420 acres, nearly 99 percent of the 4,483 total acres within one mile of the proposed site. The open land is primarily thick brush land, interspersed with dirt roads or clearings, and areas plowed to increase livestock grazing capacity, and much of it is used for hunting.[10]

Growth trends. Webb County had a 60 percent growth rate in the 13-year period between 1990 and 2003. The growth has developed in several directions, including along Highway 359 east of Laredo in the general direction of the proposed landfill site. Much of the growth in this vicinity consists of "colonias," which are unincorporated communities typically without infrastructure such as running water, storm drainage systems, sewers and paved streets.[11] They are usually developed as illegal subdivisions, *i.e.,* lots are sold without satisfying county subdivision requirements, and without commitments or plans for utility services.[12]

In 1995, the City of Laredo entered into a contract with Webb County to bring water and sewer utilities to the illegal developments on the outskirts of Laredo. In conjunction with that agreement, a new water line was built to serve the colonias along Highway 359 east of Laredo. This new line ties onto a water line near the existing Laredo landfill and extends east about 6.5 miles, ending approximately 2.5 miles west of the proposed site.[13]

The new water line was sized large enough to meet the existing needs in the colonias along Highway 359, and to provide excess capacity for future growth in the area along the line. The excess capacity in the water line is capable of serving the equivalent of an additional 2,252 single family residences. The excess capacity has been reserved for tracts adjacent to Highway

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[10] Ex. A-4 at 3.

[11] *Id.* at 4.

[12] *Id.*

[13] *Id.*

359 where the water line runs. The easternmost tract for which excess capacity has been reserved and for which water service will be provided from the new water line is on the north side of Highway 359, 2.5 miles west of the proposed landfill site.[14]

Proximity to residences. There are three occasional residences (hunting camps or weekend homes) and three full-time residences within one mile of the proposed landfill boundary. One full-time residence is just inside the one-mile radius to the west of the permit boundary, on the north side of Highway 359. The other two are located approximately 5/8 of a mile east of the site, and they are houses provided by Protestant Guillermo Cavazos to his employees. Mr. Cavazos, a resident of Laredo, has a weekend house at the same location as the employee housing. The other two occasional-use residences are located to the east and southeast of the proposed permit boundary. The nearest occasional residence is approximately 140 feet southeast of the permit boundary (310 feet from the limit of fill within which waste disposal operations will occur). The nearest full time residence is approximately 2,500 feet east of the permit boundary, or 2,750 feet east of the proposed waste disposal operations.[15]

No retail or other businesses are located within one mile of the permit boundary, and only two uses are classified as commercial. A very large steel tower that provides a platform for communications antennas is located approximately 1,000 feet west of the permit boundary, on the south side of Highway 359. The only other commercial use within the one-mile radius is a waste storage and injection well disposal operation. It consists of approximately six large steel tanks used for waste storage, an injection well, and a portable building. This operation is located approximately 3,600 feet east of the site on the Cavazos property, just south of Highway 359 and less than one quarter mile from the residences on the property. This is classified as a commercial land use because Mr. Cavazos derives income from the operation based on the volume of material disposed of via the injection well.[16]

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[14] Ex. A-4 at 13.

[15] Ex. A-4 at 3-4.

[16] Ex. A-4 at 3.

Within one mile of the site there are no schools, no day care centers, no churches, no cemeteries, no historic sites, no archaeologically significant sites, and no sites of exceptional aesthetic quality.[17]

Known wells. The only well within 500 feet of the proposed landfill is a natural gas well located within the property boundaries of the site. There is only one water well located within one mile of the site. It is located approximately 2,800 feet east of the proposed permit boundary.[18]

c. Applicant's Position

Applicant maintains that the proposed landfill is compatible with area land uses in all respects. John Worrall, who prepared the Land Use Report and testified as Applicant's expert witness regarding land use issues, is a land planning consultant with 30 years' experience that includes land use analyses for at least 21 solid waste and reclamation projects throughout Texas. In his opinion, from a land use standpoint the proposed site is a very good one. According to Mr. Worrall, the area surrounding the landfill site has less development and population density than any other Texas landfill with which he is familiar.[19] Mr. Worrall also opined that there is a low probability of significant additional development in the foreseeable future in the general vicinity of the site, whether the proposed landfill is developed or not. The proposed site is also located in reasonable proximity of and with good highway access to the metropolitan area of Laredo, which will need adequate solid waste disposal capacity in the future, which the proposed landfill can provide.[20]

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[17] *Id.* at 5.

[18] Ex. A-105, sec. 3.1.6.

[19] Allocating two acres per residential use results in 12 acres being used residentially—less than 0.3% of the land area within one mile.

[20] Ex. A-1 at 4.

Applicant argues that determining growth trends to the east of Laredo toward the proposed site is relatively straightforward. Based on Mr. Worrall's testimony that the state has enacted increasingly stringent regulations to prevent the development of more colonias, and that Laredo has no plans for water service east of the end of the new water line, Applicant contends that future growth east of Laredo along Highway 359 will necessarily be limited to a finite number of residences built no closer than 2.5 miles west of the site.

d. PIC's and Protestants' Positions

All of the Protestants and PIC argue that the application should be denied because Applicant has failed to demonstrate that the proposed site is compatible with area land uses. However, other than potential oil and gas development, the only significant dispute regarding land use compatibility relates to growth trends. The Protestants and PIC question whether the landfill is compatible with Laredo's future growth trends east along Highway 359.

Webb County argues that it has experienced considerable growth in the past two decades and Applicant has ignored evidence of likely continued growth in the area. The County points out that, between 1990 and 2000, the population in the area increased by approximately 31 percent compared to the national growth rate of about 13 percent for the same period.[21] Additionally, the Texas State Data Center has estimated the 2006 Webb County population at 231,643, which is nearly a 20 percent increase since the 2000 U.S. Census.[22]

The County contends that the application and its land use report limit the discussions concerning growth along Highway 359 to the area along the new water line.[23] By limiting its discussion, the County argues, Applicant has failed to take into consideration the continued projected growth for Webb County, other sources of water for such new growth, and the availability of groundwater that could potentially contribute to additional rural growth near the

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[21] Ex. Webb-14 at 5.
[22] *Id.* at 5.
[23] *Id.* at 13-15; Ex. A-4 at 4.

proposed landfill site. Therefore, the County urges, Applicant has failed to demonstrate that the proposed landfill site is compatible with area land uses.

Both PIC and the Coalition, point out that between 1990 and 2003, Laredo was the third fastest growing metropolitan area in Texas, and that all of Laredo's eastern growth is along Highway 359. PIC and the Coalition agree with Applicant that legal development will necessarily stop 2.5 miles west of the landfill's permit boundary because that is the eastern extent of the planned water service. However, PIC and the Coalition argue, Applicant's analysis fails to take into account the illegal growth of the colonias that are continuing to expand east along the Highway 359 corridor.

PIC and the Coalition contend that, although Applicant's expert testified about new stringent state regulations against illegal development, there is no evidence that Laredo or Webb County have adopted any initiatives to enforce the regulations. Without specific enforcement initiatives in place, PIC and the Coalition argue that it is unlikely that the lack of water service would constrain the building of colonias east of the new waterline since, by definition, such developments lack water service. They maintain that the colonias will continue to grow eastward toward the proposed site and will likely encroach upon the landfill area.

The PIC and the Coalition assert that the continued growth of the colonias eastward toward and around the landfill in its expected 94-year lifespan will likely result in a condition that is adverse to the health and safety of the inhabitants of those colonias, contrary to the requirements of the Commission's rules.

e. Analysis

After reviewing the evidence, the Judges conclude that, although growth is occurring around Laredo in the general vicinity of the proposed landfill site, such growth should not compel a denial of the application on land use compatibility grounds.

Although Protestants and PIC fault Applicant for not considering growth patterns in the vicinity of the proposed site, there is little evidence to support their claims. Growth in and around the nearest city, Laredo, is robust, but the evidence does not demonstrate that the landfill site is in the path of significant growth. Rather, the evidence strongly suggests that there is limited projected development in the immediate vicinity of the site. There are no plans by Laredo to provide any municipal services beyond the end of the new water line that ends 2.5 miles west of the site, which should be a significant limiting factor on development in the area. The Judges agree with Applicant that growth along the Highway 359 corridor will likely be curtailed for the foreseeable future.

The Judges give little credence to the speculative proposition that illegal development will continue to occur and ultimately encroach upon the proposed permit boundary. Despite such assertions, the evidence regarding continued growth of the colonias was vague and unpersuasive. Mr. Cavazos, an interested party, merely stated that such developments began in the 1970s and have grown within the last ten years.[24] Rhonda Tiffin, the Webb County Planning Director, testified that significant growth is occurring *within* the pre-existing colonias, primarily by the construction of multiple dwellings per tract, which is typical of the County's colonias. However, Ms. Tiffin did not say that the colonias were expanding outward in the direction of the landfill site, nor did she say that new colonias were being built. It is important to note that her testimony also suggests that Laredo has begun annexing the colonias because the City's regulations prohibit it from extending water service outside the city limits for residential use.[25]

The Judges also disagree with the rather puzzling argument that Regional's application should be denied because Laredo and the County might not enforce the regulations adopted to curtail the growth of illegal communities. Stated another way, PIC and the Coalition apparently suggest that because Webb County – a protestant in this case – might fail to do what it is obligated to do, the permit should be denied. An applicant's ability to obtain a permit should not

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[24] Ex. P-1 at 3.

[25] Ex. Webb-14 at 4-5.

be contingent on whether a local government enforces its own regulations; the possibility of illegal activity should not be a bar to the Applicant's legitimate use of the land. Furthermore, there is no evidence that the regulations will not be enforced. The fact that the City is annexing colonias and extending water lines is some evidence that the problem of illegal growth is not being ignored.

The Judges do not find that residential growth is so entrenched or planned in the vicinity of the landfill site as to indicate significant, negative effects. Rather, the evidence demonstrates that most of the current land use within this area remains open land. Given these factors, the Judges do not believe that projected growth trends render the proposed landfill an incompatible use.

2. Whether Commission rules require Applicant to have a groundwater monitoring system.

The Judges recommend the Commission find that, pursuant to Commission rules, Applicant is not required to have a groundwater monitoring system because no potential exists for migration of hazardous contaminants from Applicant's landfill unit to the uppermost aquifer during the active life and the closure and post-closure care periods of the unit. However, the Judges recommend that the Commission include in the permit a special provision regarding the installation of a groundwater monitoring system and implementation of a groundwater sampling and analysis plan as proposed by Applicant.

a. Uppermost Aquifer

The Judges recommend the Commission find that the Laredo aquifer is the uppermost aquifer beneath the proposed landfill site.

(1) Applicable Law

Commission rule §330.2 defines the following terms:

(6) Aquifer - - A geological formation, group of formations, or portion of a formation capable of yielding *significant quantities* of groundwater to wells or springs. (Emphasis added.)

(109) Qualified groundwater scientist - A licensed geoscientist or licensed engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training in groundwater hydrology and related fields as may be demonstrated by state regulation, professional certifications, or completion of accredited university programs that enable the individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action.

(158) Uppermost aquifer - - The geologic formation nearest the natural ground surface that is an aquifer; includes lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

In pertinent part, Commission rule § 330.230 of Subchapter I entitled "Groundwater Monitoring and Corrective Action," reads as follows:

(b) Groundwater monitoring requirements under §§ 330.231 - 330.235 of this title (relating to Groundwater Monitoring and Corrective Action) may be suspended by the [ED] for an [municipal solid waste landfill (MSWLF)] unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from that MSWLF unit to the uppermost aquifer as defined in § 330.2 of this title. . . during the active life and the closure and post-closure care period of the unit. This demonstration shall be certified by a qualified groundwater scientist and approved by the [ED], and shall be based upon:

(1) site-specific field-collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport; and

(2) contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and the environment.

Commission rule § 330.231, "Groundwater Monitoring Systems," reads in pertinent part as follows:

> (a) A groundwater monitoring system shall be installed that consists of a sufficient number of monitoring wells, installed at appropriate locations and depths, to yield representative groundwater samples from the uppermost aquifer as defined in § 330.2 of this title. . . .

(2) Background

According to the Groundwater Characterization Report (Report)[26] that Applicant submitted to TCEQ as Attachment 5 in its application, the "regional geology of the Webb County - Laredo area consists of unconsolidated colluvial and alluvial sediments, primarily clay and silt, underlain by Tertiary age sedimentary bedrock of the Jackson, Claiborne, and Wilcox Groups."[27] The Report states that the regional hydrogeologic setting is composed of Tertiary deposits of the Claiborne and Wilcox Groups, while the aquifer system in the area is divided into two aquifers and two confining units that are, from deepest to shallowest: the Carrizo-Wilcox aquifer, the Bigford - El Pico Clay confining unit, the Laredo aquifer (the Laredo), and the Yegua confining unit (the Yegua).[28] (*See* Attachment A, Figure III-4.11.)

Protestants, however, point out that the Texas Water Development Board (TWDB) has declared the Yegua Formation and the Jackson Group to be an aquifer – the Yegua-Jackson aquifer.[29] They also note that the United States Geological Survey (USGS) has designated the Yegua formation in Webb County as an aquifer.[30]

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[26] Ex. A-78.

[27] *Id.* at III-A5-2.

[28] *Id.* at III-A5-5.

[29] *See* Ex. A-233 at 38 and 42.

[30] *See* Ex. P-2E at 7-8.

(3) Applicant's Position

Applicant asserts that, pursuant to Commission rules, groundwater monitoring is not required or necessary at the site because no potential exists for migration of hazardous constituents from the MSWLF unit to the uppermost aquifer. That is, Applicant argues that Vicent Barlock, an engineer and hydrogeologist, supervised an extensive hydrogeologic investigation that showed that the Laredo Formation at a depth of about 400 to 500 feet below the surface is the uppermost aquifer beneath the site. Applicant contends that Mr. Barlock's resulting Report, based upon the factors set forth in Commission rule § 330.230(b), demonstrates that no potential exists for migration of hazardous constituents from the MSWLF unit to the Laredo.

Applicant argues that the site-specific data developed during Mr. Barlock's extensive geologic, geotechnical, and hydrogeologic investigations of the landfill site and the materials in the Yegua clearly show that the Yegua is not an aquifer at the site. Mr. Barlock testified that the following data informed his opinion that the Yegua is not the uppermost aquifer:

- Six of the original seven borings drilled in the Yegua at the site in 1997 were dry when drilled.
- Thirty of the 39 borings installed in the Yegua at the site in 1999 were dry.
- The analytical results from geotechnical laboratory testing performed on core material taken from the borings drilled in the Yegua at the site were unequivocal in their results of hydraulic conductivity values being extremely low, along with the moisture content value in the rock being very low. This test data showed there is a very low or insignificant potential for the Yegua beneath the site to produce water.
- The Yegua at the site did not yield enough water to perform pump tests into the formation.
- Packer tests were conducted in 24 zones at different depths and boring locations across the site, including in fractured zones. In 23 of the tested zones (the test equipment failed during one test), water could not be forced under pressure into the tested zones. This shows that the permeability (hydraulic conductivity) of the formation at the site is very low, confirming an insignificant potential for the Yegua beneath the site to produce water.

- As the 24 piezometers were installed and developed across the site, the recharge rates to the piezometers were very slow.
- Ten slug tests were run at various locations across the site to determine in-situ permeabilities for the Yegua. Slug tests are very useful in tight formations like the Yegua where it may be impractical to perform pumping tests. Results of the slug tests were consistent with the geotechnical laboratory analyses and confirmed that hydraulic conductivity values for the Yegua were very low, again confirming an insignificant potential for the Yegua beneath the site to produce water.[31]

From this data, Mr. Barlock concluded that the productivity of the Yegua at the site is very low, an almost negligible flow.[32]

Relying on the testimony of Wesley McCoy, TCEQ senior geologist, Applicant asserts that Commission rules regarding the "uppermost aquifer" apply to formations yielding "significant quantities" of water to wells or springs. Mr. McCoy stated that the site-specific information presented in Regional's application indicates the water-bearing zones in the Yegua at the landfill location do not yield a significant amount of water to wells and thus do not meet the definition of an aquifer. He further testified that, although he relies on both regional information and site-specific data, he looks at the site-specific information included in an application to get "an idea of exactly what zones are functioning as an aquifer at the site-specific location." And, even though TWDB's minor aquifer map at Page 41 in Exhibit A-233 shows the presence of the Yegua-Jackson formation in that part of Webb County where the proposed landfill is to be located, Mr. McCoy stated he would rely more on the site-specific data in identifying the uppermost aquifer beneath the landfill site that is, in his opinion, the Laredo.[33]

Applicant asserts that the spotty nature of the Yegua to produce water is also confirmed by TWDB and USGS publications. The TWDB recognizes there are locations where the Yegua-

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[31] Tr. v. 7 at 1230-1238, 1247-1249, 1251-1267; Exs. A-75, A-76, A-284.

[32] Tr. v. 8 at 1364.

[33] Ex. A-229 at 19-20.

Jackson Formation is present but little or no water can be obtained from it: "Although the occurrence, quality, and quantity of water from this aquifer are erratic, domestic and livestock supplies are available from shallow wells over most of its extent."[34] Additionally, Applicant notes that when USGS did its 2004 study entitled "Hydrogeology of Webb County, Texas" (USGS study), USGS was unable to locate a single well completed in the Yegua for which specific capacity (pumping rate) data were available.[35] Furthermore, Applicant argues that, even though the Yegua is present at or very near the surface of approximately 700 square miles in Webb County, no more than 15 wells are completed in that formation in the entire county.[36]

(4) Coalition's and Webb County's Position

The Coalition points out that Applicant's assertion that it is not required to have a groundwater monitoring system is premised on Applicant's assumption that the Laredo, not the Yegua, is the uppermost aquifer beneath the site. However, the Coalition and Webb County argue that the Yegua is the uppermost aquifer and, because the landfill will be excavated into the Yegua, Applicant is required to have a groundwater monitoring system. The County contends that the presence of groundwater beneath the proposed site, the usability of that groundwater, and the potential for migration of hazardous constituents to the groundwater demonstrate that a groundwater monitoring system is required.

The Coalition argues that "a determination of whether a formation is an aquifer is not a question to be determined by adopting tunnel vision to consider only the qualities of the formation at the site." Rather, it asserts the Yegua is the uppermost aquifer because it is a *formation* capable of producing significant quantities of groundwater. Citing the USGS study, the Coalition and the County contend that the Yegua-Jackson aquifer in Webb County receives

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[34] Ex. A-233, sec. 5.3.1.1 at 38.

[35] Ex. P-2E at 8.

[36] TWDB database. *See* Applicant's Reply Brief, fn #2, p. 7, for further discussion and clarification.

approximately 36,900 acre-feet of recharge annually.[37] They also cite the TWDB report entitled "Water for Texas – 2002" (TWDB report) as support for their argument that the Yegua-Jackson aquifer has over 1,400 producing water wells throughout the state and ranks in the upper half of annual water use for minor aquifers.[38] The Coalition further argues that, even if the capacity of the Yegua to produce water at the site is more limited that elsewhere in the aquifer, water may move within an aquifer from areas of low productivity to areas of high productivity.[39] Additionally, the County and the Coalition note that the proposed site is located over an outcrop of the Yegua[40] and, citing a TWDB report entitled "Aquifers of Texas," they assert that outcrop areas of an aquifer require special protection:

> The surface extent, or outcrop, of each aquifer is the area in which the host formations are exposed at the land surface. This area corresponds to the principle recharge zone for the aquifers. Groundwater encountered within this area is normally under unconfined, water-table conditions and is most susceptible to contamination.[41]

The Coalition thus alleges that, *regardless of the Yegua's ability at the site to produce groundwater*, the water quality at the site requires protection because water entering the ground at the site is the source of water throughout much of the remainder of the aquifer.

Furthermore, the Coalition claims that Applicant's site-specific information fails to demonstrate that the Yegua is not an aquifer at the proposed site. Citing the testimony of its expert witness, hydrologist George Rice, who stated that groundwater was found in all 24 piezometers installed at the site,[42] the Coalition argues that every boring completed in the Yegua

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[37] Ex. P-2E at 7.

[38] Ex. A-233 at 38.

[39] Tr. v. 6 at 1079.

[40] Ex. A-237.

[41] Ex. A-85 at 1.

[42] Ex. P-2 at 6-7.

at the site developed water. It also asserts the return of the water levels in each boring to a static water level confirms that the Yegua at the site is under water-table conditions.[43]

The County contends that, contrary to Applicant's conclusions, the site-specific data actually demonstrate that all borings contained numerous fractured areas and many contained areas described as "crushed" zones.[44] Furthermore, the County argues that Applicant conducted hydraulic conductivity from only seven samples; none of the samples were larger than 2.45 inches in length; and all of the tested samples were from claystone layers, none from the sandstone.[45] Webb County alleges that "even this inadequate testing" demonstrated that waste may migrate to the area's groundwater.

The Coalition asserts that Applicant's primary basis for concluding that the Yegua is not an aquifer at the site is its conclusion regarding the speed of water flow within the Yegua at the site. The Coalition argues that information on the speed of water movement in a formation is of limited relevance in determining whether the formation is an aquifer. It also contends that slow water movement does not necessarily demonstrate that a formation is not an aquifer.

The Coalition asserts, however, that, to the degree speed of water flow within the Yegua is relevant, Applicant overestimated speed. It alleges that Applicant during each slug test chose to use only the last 10 percent of data (late-time range) that was gathered after water levels in the piezometers had returned to their pre-test levels. Relying on Mr. Rice's testimony, the Coalition argues this choice ensured that Applicant obtained the lowest possible hydraulic conductivity conclusions.[46] It alleges that Mr. Rice's calculation of hydraulic conductivity using data within the 30 percent to 20 percent range (early- or mid-time range) revealed a much higher hydraulic

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[43] *See* Exs. A-56 through A-60.

[44] Ex. A-69.

[45] Exs. A-35 and A-72; *See* Barlock's testimony, Tr. v. 3 at 494 - 501.

[46] Ex. P-2 at 11.

conductivity, including values as high as 24 times the values calculated by Applicant.[47] The Coalition notes that Applicant's data for hydraulic conductivity was based on its assumption that primary porosity controlled the movement of water within the formation.[48] Yet the Coalition contends that, in a formation as fractured as the Yegua, fractures can serve as pathways that enhance the speed of water flow;[49] therefore, ignoring the impact of fractures on conductivity can lead to an underestimation of the flow rates.

The Coalition argues that, because the Yegua is the uppermost aquifer, Applicant was required to demonstrate by both fate and transport modeling and an analysis of the site-specific geology that a contaminant from the landfill would not reach the Yegua. The Coalition contends the evidence shows that contaminants from the landfill immediately enter the Yegua aquifer once a leak occurs[50] and, because contaminants can potentially migrate to the Yegua, Applicant does not qualify for the exemption to groundwater monitoring provided in Section 330.230 of Commission rules. Both the Coalition and Webb County assert that, because Applicant failed to provide a groundwater monitoring plan meeting Commission rule requirements, the Commission should deny Applicant's application for a permit.

(5) PIC's Position

PIC argues that Applicant's permit application should be denied for Applicant's failure both to identify the Yegua as the uppermost aquifer underlying the landfill site and to include in its application a groundwater monitoring plan to monitor the Yegua for groundwater contamination. PIC points out that in 2002 the TWDB designated the Yegua Formation and the

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[47] *Id.* at 12-13.

[48] Ex. A-30 at III-A4-40.

[49] Ex. P-2 at 7.

[50] *See* Exs. P-4 and P-5; Tr. v.3 at 473.

Jackson Group a minor aquifer. PIC contends the Yegua is a shallow aquifer directly below the site and the landfill will be excavated into it.

PIC points out Mr. McCoy testified that a formation yielding over 15 gallons per minute (gpm) of groundwater was a "significant" quantity.[51] Contrary to Applicant's argument that the Yegua does not yield significant quantities of groundwater and thus is not the uppermost aquifer, PIC contends otherwise. PIC notes that Guillermo Cavazos owns property near the proposed landfill site. PIC states that Mr. Cavazos testified he completed a well into the Yegua, and it yields enough water for livestock and three homes on the property.[52] PIC also points out that Mr. Rice testified the Yegua underneath the site could probably produce 15 gpm of groundwater.[53] PIC asserts the above sources prove that the Yegua is capable of producing "significant quantities" of groundwater; thus the Yegua is the uppermost aquifer beneath the site. For this reason, PIC contends Applicant was required by Commission rules to include in its application a groundwater plan to monitor the Yegua for groundwater contamination.

(6) Judges' Analysis

The Judges concur with Applicant's argument that groundwater monitoring is not required or necessary at the proposed landfill site because no potential exists for migration of hazardous constituents from the landfill to the uppermost aquifer beneath the site, which the evidence establishes is the Laredo, not the Yegua.

Commission rules set out above define "aquifer" as a geological formation capable of yielding significant quantities of groundwater to wells or springs. TCEQ senior geologist Mr. McCoy stated that Applicant's site-specific information indicated that the water-bearing

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[51] Tr. v. 4 at 548.

[52] Ex. P-1 at 3; Tr. v. 5 at 899.

[53] Tr. v. 5 at 750-751.

zones in the Yegua beneath the site do not yield a significant amount of water to wells and thus fail to meet the Commission's definition of an aquifer. Yet Protestants contend the Yegua is the uppermost aquifer and rely on two aspects of Mr. Rice's testimony in support of their contention: (1) his calculation of hydraulic conductivity values for the Yegua using slug test data from the 20 percent to 30 percent normalized head range (mid- to early-time range), and (2) his Cooper-Jacob Method calculations that formed the basis for his opinion regarding the quantity of water that could be produced from a well completed in the Yegua beneath the site. Applicant, however, persuasively demonstrated that neither of these methods should be used in evaluating the Yegua.

Mr. Rice used the 20 percent to 30 percent normalized head range data because he had seen the method described in a book by James J. Butler entitled *The Design, Performance and Analysis of Slug Tests*.[54] However, Applicant's expert, Mr. Barlock stated it was inappropriate to use normalized head range data to determine hydraulic conductivity for all slug test data generated in the investigation of the Yegua at the proposed site. Instead, Mr. Barlock testified, the consistent use of normalized head range data is only appropriate for sites that are more homogeneous in nature, do not have such a drastic heterogeneity, and have much more consistent flow regimes than this site. Also, Mr. Barlock conferred with Mr. Butler, the author who described the method, and Mr. Butler confirmed Mr. Barlock's opinion regarding the inappropriateness of using normalized head range data to determine hydraulic conductivity at the proposed site.[55]

Additionally, Applicant convincingly demonstrated that Mr. Rice's calculations using the Cooper-Jacob Method were incorrectly performed. Mr. Rice testified that, according to his calculations, he reasonably expected a well completed in the Yegua at the proposed site capable

[54] Ex. P-2 at 11-12; Ex. P-2B sec. 4.0-4.03 at 3-6 and References at 12.

[55] Tr. v. 7 at 1275-1281.

of producing 1,000 gallons per day (gpd) of groundwater.[56] He later stated the Yegua beneath the site could probably produce 15 gpm of fresh to slightly saline water usable for drinking or stock watering purposes.[57] However, Mr. Barlock testified that Mr. Rice incorrectly used the Cooper-Jacob Method equation:

> A. [Barlock] The Cooper-Jacob method equation derives transmissivity and storativity, and for using that particular equation, that data has to come from a pump test and, in particular, a constant rate pump test.
> . . . there has been no pump test performed at the site.
>
> Q. [Ryan] So is the pumping rate actually an input parameter into that equation rather than the result of using the equation?
>
> A. Yes. It assumes a pump rate unless you have pump test data.
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> * * *
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> Q. So what information is the Cooper-Jacob method . . . equation intended to provide in terms of the results of applying the equation?
>
> What do you get if you run an analysis using the Cooper-Jacob equation? What does it predict?
>
> A. It will give you transmissivity and storativity as well as drawdown. You can calculate your drawdown.
>
> Q. But it won't calculate the amount of water that can be produced by pumping a geologic formation?
>
> A. That's correct.[58]

Mr. Barlock further testified that the pumping rate of 1,000 gpd that Mr. Rice claims to have calculated using the Cooper-Jacob Method equation is nothing but an assumption — one that cannot be made for the site because, "You don't have water to pump, so you can't derive a Q

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[56] Ex. P-2 at 15; Ex. P-2B, sec. 7.0, "Aquifer yield analysis," at 8.

[57] Tr. v. 5 at 750-751.

[58] Tr. v. 7 at 1297-1298.

[pumping rate]...we proved during packer tests and other tests there's no water there to pump, and if we did pump, it would go dry."[59] Mr. Rice's calculations and his opinions of groundwater production rates for a hypothetical Yegua well at the site are the basis for the PIC's and the protesting parties' assertions that the Yegua is the uppermost aquifer at the site. Mr. Barlock, however, effectively demonstrated that those calculations were incorrect, thus discrediting Mr. Rice's opinion that the Yegua beneath the site is an aquifer.

The Judges were persuaded by Mr. Barlock's opinions. They found his testimony to be quite credible and it demonstrated his extensive knowledge and expertise in geology and hydrogeology. Mr. Barlock has over 21 years' experience in the environmental and geological consulting fields. While Mr. Rice has a master's degree in hydrology, Mr. Barlock has a master's degree in geology and is a licensed professional geologist in several states, including Texas. Currently, he is the director of hydrogeologic services for Pelorus Environmental and Biotechnology Corporation, and he has been a research geologist for the USGS's North American Mineral Resource Assessment Program.[60]

Mr. Barlock testified that the following site-specific information led him to conclude that the productivity of the Yegua at the site is almost negligible: the majority of the borings drilled in the Yegua at the site were dry; geotechnical laboratory testing performed on core material taken from those borings showed extremely low hydraulic conductivity and low moisture content; the Yegua at the site did not yield enough water to perform pump tests into the formation; water could not be forced under pressure into the tested zones when packer tests were conducted at different depths and boring locations across the site; recharge rates to the 24 piezometers were very slow; and results of slug tests run at various locations across the site confirmed that hydraulic conductivity values for the Yegua were very low. Based on all the data

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[59] Tr. v. 8 at 1342 and 1345.

[60] Ex. A-29.

generated from the investigations of the Yegua at the site, Mr. Barlock determined that the Yegua is not the uppermost aquifer at the landfill site.[61]

Likewise, following his technical review of the application, Mr. McCoy concluded that the information in the geology report (Ex. A-30) satisfies Commission rules for what must be included in such a report and concurred that the uppermost aquifer beneath the proposed site is the Laredo, not the Yegua.[62] Additionally, the USGS study and TWDB's report, "Water for Texas – 2002," confirm the spotty nature of the Yegua and Mr. Barlock's and Mr. McCoy's conclusion that the Laredo is the uppermost aquifer beneath the landfill site. For these reasons, the Judges recommend the Commission find that, pursuant to Commission rules, Applicant is not required to have a groundwater monitoring system because no potential exists for migration of hazardous contaminants from Applicant's landfill unit to the uppermost aquifer during the active life and the closure and post-closure care period of the unit.

b. Groundwater Monitoring System

The Judges recommend the Commission include in the permit a special provision regarding the installation of a groundwater monitoring system and implementation of a groundwater sampling and analysis plan.

(1) Background

Because of the other parties' concerns about the lack of groundwater monitoring at the facility and because Applicant "is committed to building and operating a facility that meets or exceeds all applicable requirements and expectations for environmental protection," Applicant asked its consulting hydrogeologist, Mr. Barlock, to design a groundwater monitoring system

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[61] Tr. v. 7 at 1230-1231.

[62] Ex. A-229 at 8-10, 20, and 42.

and to prepare a groundwater sampling and analysis plan to monitor groundwater in the water-bearing zones in the Yegua Formation found near the surface at the proposed site.[63] Applicant has requested that the following special provision be included in the proposed permit as Item E in Section X:

> The permittee shall install the groundwater monitoring system and implement the Groundwater Sampling and Analysis Plan described and shown in Exhibit A-287, TCEQ Docket No. 2003-0729-MSW.

(2) Applicant's Position

Applicant argues its groundwater sampling and analysis plan was designed in accordance with Commission rules and provides a suitable program for the monitoring of groundwater in the Yegua at the site. Applicant notes that its proposed groundwater monitoring system consists of eight background wells and 40 detection monitoring wells located along a "point of compliance," with the detection monitoring wells spaced slightly less than 600 feet apart.[64] Also, Applicant contends that data from soil borings, piezometers, and the geologic cross-sections for the site were specifically evaluated for each monitoring well location in developing the design of the groundwater monitoring system, including the depths and intervals at which the wells would be screened.[65] Moreover, Applicant asserts that the monitor well design is based on site-specific information regarding the shallow and deep water bearing zones at the site.[66]

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[63] Ex. A-287.

[64] *See* Ex. A-176.

[65] Tr. v. 8 at 1387-1395.

[66] Tr. v. 7 at 1290-1291.

(3) The Coalition's and Webb County's Position

The Coalition and Webb County argue that Applicant's groundwater monitoring system does not satisfy Commission rules that require Applicant to submit substantial information in its application to support a groundwater monitoring system. They contend that certain portions of the system must be included in Attachment 4 in the application and must be prepared by a qualified groundwater scientist; however, they argue, Applicant failed to do this. Because Applicant did not include that information in Attachment 4, the Coalition asserts that the ED's staff was not given an opportunity to evaluate this part of the application to determine if Applicant's groundwater monitoring system fulfills Commission requirements. The Coalition and Webb County also complain they had no chance to conduct discovery of the proposed groundwater monitoring plan set out in Exhibit A-287 or to adjudicate the appropriateness of the plan.

(4) PIC's Position

PIC contends Applicant's groundwater monitoring plan (Exhibit A-287) appears on its face to be compliant with Commission requirements. However, PIC further argues that neither the ED's staff nor the Protestants' experts have had an opportunity to review the plan. Because of these questions regarding the effectiveness of Applicant's proposed groundwater monitoring plan, PIC asserts that Applicant has failed to meet its burden of showing that it is monitoring the uppermost aquifer.

(5) Judges' Analysis

Because no potential exists for migration of hazardous contaminants from Applicant's landfill unit to the uppermost aquifer, Applicant is not required to have a groundwater monitoring system. Despite not being compelled to have a groundwater monitoring system,

Applicant, however, wishes to install such a system and to implement a groundwater sampling and analysis plan.

Applicant has requested that the permit include the special provision set out above, which implements the groundwater sampling and analysis plan described in Exhibit A-287. However, because the ED's staff has not had an opportunity to review Exhibit A-287, the Judges decline to recommend that the Commission adopt Applicant's requested special provision. Instead, the Judges suggest the Commission include the following permit provision:

The permittee shall install a groundwater monitoring system and implement a groundwater sampling and analysis plan.

3. Whether Applicant adequately addressed drainage and whether the stormwater controls are adequate.

The Judges recommend the Commission find that Applicant adequately addressed drainage and that stormwater controls are adequate.

a. Background

The project site of the proposed Ponderosa Regional Landfill is located in the Lobo Creek watershed of the Rio Grande River watershed.[67] The topography of the site and the surrounding area is dominated by gently sloping valleys. Natural ground elevations on the site range from 519 feet msl to a high of 562 feet msl. Surface slopes range from 0.006 ft./ft. to 0.5 ft./ft.[68]

The site is divided by a ridge line that traverses it from a high on the west property line to the east property line. This ridge line is generally located 800 feet to 1,700 feet south of Highway 359. The areas north of the ridge line drain to the north to three separate culverts under

[67] Ex. A-116 at III-A6-6.

[68] *Id.* at III-A6-1.

Highway 359 and continue north to Lobo Creek. Areas south of the ridge line drain to the south and southeast, exiting the site at three low areas. These flows converge approximately 4,000 feet southeast of the site and continue southeast to Lobo Creek.[69]

Two off-site drainage basins contribute run-off to the western boundary of the site. Nearly 510 acres contribute run-off to Discharge Point H and about 273 acres contribute run-off to Discharge Point G. Natural run-off is discharged at six point-source locations and eight sheet-flow locations around the permit boundary. Approximately 38 acres contribute run-off to Discharge Point A; 19 acres contribute run-off to Discharge Point B; 198 acres contribute run-off to Discharge Point C; 103 acres contribute run-off to Discharge Point D; drainage areas E, F, G, and H contribute 853 acres to Discharge Point E; and 19 acres contribute run-off to Discharge Point I. Almost 11 acres contribute run-off to Sheet Flow Discharge Area "a"; 20 acres contribute run-off to Sheet Flow Discharge Area "b"; 4.1 acres contribute run-off to Sheet Flow Discharge Area "c"; 7.6. acres contribute run-off to Sheet Flow Discharge Area "d"; 10.3 acres contribute run-off to Sheet Flow Discharge Area "e"; 1.8 acres contribute run-off to Sheet Flow Discharge Area "f"; 2.2 acres contribute run-off to Sheet Flow Discharge Area "g"; and 6.4 acres contribute run-off to Sheet Flow Discharge Area "h." Sheet flow discharge represents typically shallow and unconcentrated flows.[70] (*See* Attachment, a portion of . Ex. A-127, for location of referenced drainage points.)

In order to preserve the natural drainage patterns and to prevent significant drainage impacts, Applicant intends to maintain the six discharge points from the pre-developed condition. The top of the finished landfill will be gently sloped, typically five percent. Drainage terraces, situated near the shoulder of the closed landfill, are proposed to provide the first level of control, slowing and directing the discharge to final cover drainage channels. Nine final cover drainage channels are proposed to be located on the side slopes of the landfill. Side slopes are typically 33 percent, with drainage terraces on 40-foot maximum vertical spacing. The design of

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[69] *Id.*

[70] *Id.* at III-A6-6.

the terraces is intended to intercept side-slope drainage and to convey it into the final cover drainage channels.[71]

Perimeter drainage channels are proposed to be located at the base of the landfill slopes. The perimeter drainage channels will collect side-slope drainage from below the lowest terrace, from the final cover drainage channels, and from the perimeter access road. These channels will completely surround the landfill and discharge into one of five detention ponds. Discharge from Ponds A, B, and C will discharge into existing swales along Highway 359 and Discharge Points I, B, and A, respectively. Pond D will discharge into an existing swale at Discharge Point C. Pond E will discharge into an existing swale at Discharge Point D.[72]

b. Applicable Law

Commission Rule 330.55(b)(5) regarding drainage calculations in the subsection entitled "Site Development Plan," reads, in pertinent part, as follows:

> (5) Drainage calculations are as follows.
>
> (A) Calculations for areas of 200 acres or less shall follow the rational method and shall utilize appropriate surface run-off coefficients. . .
>
> (B) Calculations for discharges from areas greater than 200 acres shall be computed by using. . . the HEC-1 and HEC-2 computer programs. . . or an equivalent or better method approved by the [ED].
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> * * *
>
> (D) Sample calculations shall be provided to verify that natural drainage patterns will not be significantly altered. . . .

[71] *Id.* at III-A6-1 and III-A6-2.

[72] *Id.* at III-A6-2.

c. Applicant's Position

Applicant asserts that development of the Ponderosa Regional Landfill will not result in significant alteration of natural drainage patterns, considered on the basis of either on-site or off-site drainage. The goal of its drainage management plan is to minimize the impact of stormwater run-off on the natural drainage patterns of the landfill site. Applicant points out that its plan for management of drainage of uncontaminated surface water (stormwater), described above, includes intercepting all stormwater run-off from the completed landfill at its perimeter and channeling the run-off to the same six discharge points and drainage features that exist in the site's natural or pre-development condition.

Applicant argues that its landfill design, with its drainage terraces, perimeter channels, and detention ponds, creates a longer, more complicated path for stormwater than occurs in the existing natural condition, and the resulting detention minimizes the impacts of the landfill's development.[73] Additionally, Applicant contends that, after the landfill is constructed, sheet flow will continue to occur from areas along the east and southeast sides of the site, similar to the sheet flow that occurs there in the existing condition.[74] Regional also claims that the existing receiving channels will not be overtopped or suffer erosion losses above permissible levels as a result of the landfill's development.[75]

Regional notes that two hydrologic methodologies were used in the design of the stormwater facilities: for drainage areas of 200 acres or less, the Rational Method was used; for drainage areas greater than 200 acres, the HEC-1 computer program was utilized. Regional states that all on-site channels, drainage terraces, final cover drainage channels, and culverts had

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[73] *Id.* at III-A6-11.

[74] Applicant defines sheet flow as uncontaminated surface water flow that originates in areas between the perimeter of the landfill improvements and the permit boundary and flows off the site in a shallow manner, not channelized in a drainageway. Tr. v. 2 at 269.

[75] Ex. A-116 at III-A6-11.

maximum drainage areas less than 200 acres and thus were designed with the Rational Method; however, the HEC-1 computer program was used to model the discharge.[76]

After the facility is constructed (post-development condition), Applicant asserts that, following a 25-year, 24-hour storm event, the peak flow rates from each of the existing Discharge Points A, B, C, D, and I will decrease from or, in the case of Discharge Point B, stay the same as the peak flow rates at those locations in the existing or natural condition. Regarding the peak flow rates from existing Discharge Point E (along the southeast side of the site) following a 25-year, 24-hour storm event, Applicant contends those peak flow rates will increase by 20 cubic feet per second (cfs); that is, from 1138 cfs to 1158 cfs, or approximately 1.8 percent, over the peak flow rates at those locations in the natural condition. Regional argues the total of peak flow rates from the other existing discharge points and sheet flow areas along the southeast side of the site (that is, from Discharge Points C and D and Sheet Flow Areas c through h) will decrease by 74 cfs.[77]

Applicant argues that water discharged from Discharge Points C, D, and E and water flowing from Sheet Flow Areas c through h, after crossing areas without land uses that would be sensitive to minor changes in peak flow rates, will be commingled in a drainageway a short distance from the site boundary. Thus, asserts Applicant, the changes in peak flow rates from the southeast side of the landfill site following a 25-year, 24-hour storm event will not result in a significant alteration of natural drainage patterns.[78]

Applicant further claims that, after the landfill facility is constructed, the volume of water leaving the site from the existing discharge points and sheet flow areas following a 25-year, 24-hour storm event will increase from approximately 431.5 acre feet to about 478.5 acre-feet, an increase of approximately 47.5 acre feet, or 11 percent, over the volumes leaving the site in the

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[76] *Id.* at III-A6-7.

[77] *See* Ex. A-116 at III-A6-10 through 11; Ex. A-109.

[78] Tr. v. 2 at 267-279.

existing natural condition. Regional points out that most of that increase will occur at Discharge Points A, B, and I, which discharge to the north and east from the northern part of the landfill site.[79] However, Regional argues, the projected increase of approximately 11 percent in run-off volume from the facility is within the ED's "rule of thumb" of around a 10-percent change used to determine whether a project will significantly alter the natural drainage patterns.[80]

Regional also asserts that, with regard to the additional run-off volumes projected to occur at Discharge Points A, B, and I, the additional volume will be released at a rate that will not significantly impact the downstream receiving water body, that is, Lobo Creek, because peak flow rates at Discharge Points A and I will decrease; the peak flow rate at Discharge Point B will remain the same; and Regional is proposing to use stormwater detention ponds.[81] Furthermore, Applicant contends the increases in run-off volumes at Discharge Points A, B, and I that are projected to result from the development of the Ponderosa Regional Landfill will neither significantly alter natural drainage patterns, increase flooding depth or width in the receiving channels, nor increase flow velocities in the receiving channels.[82]

Applicant points out that its consulting engineer and hydrologist, James Roy Murray, performed analyses of both the Northern Drainage (areas that drain to Lobo Creek near the Highway 359 bridge over the creek) and the Southern Drainage (areas that discharge to the south and southeast of the site). Regional asserts Mr. Murray's Northern Drainage analyses show that water surface elevations (flood levels) will not be significantly altered by development of the Ponderosa Regional Landfill.; indeed, the change in water surface elevations in Lobo Creek resulting from development of the landfill will be so small that it cannot be measured. Applicant contends that HEC-1 computer analyses of the water surface elevations in the natural and post-development conditions after a 25-year, 24-hour rainfall event demonstrate that development of

[79] Ex. A-116 at III-A6-10 through11.

[80] Tr. v. 4 at 560-562.

[81] Tr. v. 7 at.1137-1138.

[82] *Id.* at 1135-1136, 1219-1221.

the landfill will increase water surface elevations in Lobo Creek by only one-eighth of an inch.[83] Also, Applicant claims that Mr. Murray's analyses of the Southern Drainage prove that the peak flow rates (the issue of concern for receiving channels) either stay the same or decrease and development of the landfill will not result in a significant alteration of natural drainage patterns.[84]

d. Webb County's, the Coalition's, and PIC's Position

Webb County, the Coalition, and the PIC argue Regional failed to sufficiently address surface water drainage and failed to include the information and analyses required by Commission rules to determine whether the natural drainage patterns will be significantly altered by the development of the Ponderosa Regional Landfill.

For the Northern Drainage Area, Webb County and the Coalition (Protestants) assert the following: (1) Applicant failed to accurately calculate the peak flow rates for the areas that drain to Discharge Points A, B, and I because Applicant used the HEC-1 computer program rather than the Rational Method in calculating those peak flow rates; (2) the evidence shows an increase both in the run-off volume exiting the proposed landfill site and in flooding in Lobo Creek; and (3) Applicant failed to analyze both the ability of the culverts and ditches along and under Highway 359 to handle the increase volume of run-off and the impact this increased amount of run-off will have on the flood-prone areas near the landfill site.

For the Southern Drainage Area, Protestants argue the following: Applicant (1) failed to use the Rational Method in calculating the peak flow rates for the four Discharge Study Points, each of which are under 200 acres; (2) provided insufficient data concerning the peak flow rates because Applicant only used the HEC-1 computer program; (3) provided insufficient data and analyses demonstrating that the natural drainage patterns will not be significantly altered; and (4)

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[83] Tr. v. 11 at 1943-1956; Ex. A-313 at 5-7; and Ex. A-315.

[84] Tr. v. 11 at 1938-1944 and 1956-1957; Ex. A-313 at 7-8; Exs. A-315 and A-316.

failed to show there will not be flooding in Lobo Creek and its tributaries that ultimately will increase the risk of flooding to Highway 359 and adjacent properties.

In particular, Protestants argue that Applicant failed to sufficiently address the effects of the significant increase in run-off volume leaving the landfill site along Highway 359. They point out that Larry Dunbar, an environmental engineer and Webb County's expert witness, testified in the initial hearing that Applicant provided no off-site analysis to show how the discharges from Discharge Points A, B, and I may combine and impact flooding off-site.[85] Although Applicant included evidence concerning drainage to the North (the Northern Drainage Analyses) during the reconvened hearing, Protestants contend the information provided by Mr. Murray, Applicant's witness, still failed to meet TCEQ requirements.

Protestants contend that, with the development of the landfill, the total amount of acreage draining to the three discharge points along Highway 359 to the North (Discharge Points A, B, and I) will significantly increase and, they assert, "it is scientifically undisputed that the peak flows at these discharge points increase." Relying on Mr. Dunbar's testimony, Protestants contend that each of the areas draining to Discharge Points A, B, and I is, individually, less than 200 acres and, collectively, those areas are less than 200 acres.[86] However, because Mr. Murray used only the HEC-1 computer program for Discharge Points A, B, and I rather than the Rational Method, Protestants argue he failed to accurately calculate the peak flow rates.

Protestants assert the run-off volume leaving Discharge Points A, B, and I will increase by 264 percent with the landfill's final developed condition; and, they contend, Applicant did not satisfactorily analyze the effects of this increased volume of run-off.

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[85] Tr. v. 12 at 2105.

[86] Tr. v. 12 at 2108.

Protestants also note that the area near the proposed landfill site and along Highway 359 has flooded in the recent past.[87] They further argue that the off-site areas that will be impacted by the increased run-off volume are within the 100-year floodplain.[88]

Protestants, therefore, assert that Applicant failed to demonstrate that the proposed landfill will not significantly alter drainage patterns as required by Commission rules.

e. Judges' Analysis

The Judges recommend the Commission find that Applicant adequately addressed drainage and the proposed stormwater controls are sufficient.

The Judges point out the evidence demonstrates that, after the landfill is constructed and following a 25-year, 24-hour storm event, the peak flow rates from each of the existing Discharge Points A, B, C, D, and I will decrease from or, in the case of Discharge Point B, stay the same as the peak flow rates at those locations in the existing or natural condition. Furthermore, the evidence shows that the changes in peak flow rates from the southeast side of the landfill site following a 25-year, 24-hour storm event will not result in a significant alteration of natural drainage patterns. That is, the evidence proves the following: (1) the peak flow rates from existing Discharge Point E (along the southeast side of the site) will increase by 20 cfs—from 1138 cfs to 1158 cfs, or approximately 1.8 percent, over the peak flow rates at those locations in the natural condition; and (2) the total of peak flow rates from the other existing discharge points and sheet flow areas along the southeast side of the site (from Discharge Points C and D and Sheet Flow Areas c through h) will decrease by 74 cfs following a 25-year, 24-hour storm event.[89]

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[87] *See* Exs. P-1B through P-1D, photographs provided by Guillermo Cavazos who testified he has "observed the flow of water to the north of the proposed site, along Highway 359, after rainfall events." Ex. P-1 at 6.

[88] *See* Ex. A-313, Figure 5.

[89] *See* Ex. A-116 at III-A6-10 through 11; Ex. A-109.

With regard to the additional run-off volumes projected to occur at Discharge Points A, B, and I, the Judges note the evidence demonstrates that the additional volume will be released at a rate that will not significantly impact the downstream receiving water body, that is, Lobo Creek, because peak flow rates at Discharge Points A and I will decrease; the peak flow rate at Discharge Point B will remain the same; and Applicant is proposing to use stormwater detention ponds.[90] Additionally, the evidence shows that the increases in run-off volumes at Discharge Points A, B, and I that are projected to result from the development of the landfill will neither significantly alter natural drainage patterns, increase flooding depth or width in the receiving channels, nor increase flow velocities in the receiving channels.[91]

Relying on the testimony of Mr. Dunbar, Webb County's expert witness, Protestants argue Applicant should have used the Rational Method, not the HEC-1 computer program, to evaluate drainage related to the site and the proposed landfill. Protestants contend the following: (1) each of the areas draining to Discharge Points A, B, and I is, individually, less than 200 acres and, collectively, those areas are less than 200 acres; (2) Commission Rule 330.55(b)(5)(A) requires the Rational Method be used in drainage calculations for areas of 200 acres or less; therefore, (3) Mr. Murray failed to accurately calculate the peak flow rates because he used the HEC-1 computer program rather than the Rational Method.

However, the Judges concur with Applicant's assertion that the opinions of Mr. Dunbar are based on an incorrect application of Commission rules and an inappropriate use of hydrologic modeling techniques. TCEQ's "Guidelines for Preparing a Surface Water Drainage Report for a Municipal Solid Waste Facility" (August 2006) [TCEQ Guidelines] reads, in pertinent part, as follows:

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[90] Tr. v. 7 at.1137-1138.

[91] *Id.* at 1135-1136, 1219-1221.

7.1 RATIONAL METHOD VERSUS COMPUTER MODELS

> Because of the lack of volume run-off determination and hydrograph development, the Rational Method is recognized a being limited in providing information that is required to show that there is no significant change to natural drainage patterns. To compensate for the limitations of the Rational Method, the owner/operator must determine the run-off volume by using one of the methods from the NRCS *Technical Release 55* (TR-55). . .
>
> The Rational Method is needed for small drainage areas of less than 200 acres (note that the 200-acre standard applies to **the total area** of the watershed(s) above and **including the proposed landfill permit boundary**).
>
> For areas larger than 200 acres, you can demonstrate that there is no significant alteration to natural drainage patterns using the HEC computer programs developed through the Hydrologic Engineering Center of the United States Army Corps of Engineers.[92]

Section 7.1 of the TCEQ Guidelines clearly states that the 200-acre standard applies to the total area of the watershed(s) above and including the proposed landfill permit boundary. Mr. Murray testified that the total area of the watersheds above and including the proposed Ponderosa Regional Landfill permit boundary is 1,293.4 acres.[93] The Judges, therefore, agree with Applicant's argument that, for the proposed landfill, the use of the Rational Method in drainage area hydrologic analyses is inappropriate and inconsistent with TCEQ requirements.

Protestants also support the actions of Mr. Dunbar in changing certain input values, in particular the CN (Curve Number) values, in the HEC-1 computer analyses that Mr. Murray performed, changes that resulted in higher peak flow rates. Rather than performing his own drainage analyses for the site and the proposed landfill, however, Mr. Dunbar changed one input

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[92] Ex. A-317 at 8-9 (emphasis added.). *See also* Ex. A-317A at 9-10.

[93] Tr. v. 12 at 2048-2049.

parameter, the CN value, in the HEC-1 computer modeling performed by Mr. Murray and then re-ran those analyses.[94]

Mr. Murray stated he used a CN value of 69 for both the undeveloped natural condition areas on the proposed landfill site and the off-site areas in order to model the run-off from those areas. When Mr. Dunbar re-ran Mr. Murray's analyses, he changed Mr. Murray's CN value of 69 to the CN values of 60 and 55. Mr. Dunbar testified he did so because the Rational Method "is recognized as the preferred and more accurate method for calculating peak flows for areas under 200 acres," and he was trying to calibrate or modify Mr. Murray's HEC-1 analysis so it would produce a peak discharge that would more closely reflect the Rational Method results.[95] The Judges concur with Applicant's assertion that, not only are the CN values Mr. Dunbar used not suitable for the site, he offered no credible scientific basis—other than an attempt to produce a peak discharge that would reflect the Rational Method—as a rationale for using those CN values.

On the other hand, when Mr. Murray was asked how he determined that he should use the CN value of 69 in his HEC-1 computer analyses, he stated he did the following: (1) performed a field investigation of the site to review the vegetation, topography, and soil conditions at the site; (2) looked at county soils maps for the site; and (3) used the Soil Conservation Service's guidelines on CN values to select the CN value based on all the information gathered.[96] The Judges are persuaded by Mr. Murray's testimony and convinced that he, rather than Mr. Dunbar, used a CN value appropriate for the site.

As compared to Mr. Dunbar, the Judges found Mr. Murray to be the more credible and trustworthy witness. Mr. Murray, a professional engineer licensed in Texas, has over 21 years' experience in civil and environmental permitting, design, and construction, including municipal

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[94] Tr. v. 12 at 2124-2126.

[95] *Id.* at 2124-2125; 2132; and 2067-2969.

[96] *Id.* at 2135-2136. *See also* Tr. v. 12 at 2137-2158 and Exs. A-318 through A-322.

solid waste landfills and associated systems. He has extensive experience in landfill design, operation, and construction and has served as the project engineer for several landfill facilities in Texas.[97] Mr. Dunbar, on the other hand, although holding degrees in civil and environmental engineering, is not a professional engineer. Rather, Mr. Dunbar is an attorney who has practiced law as a partner in a law firm from 1994 to the present and, from 1989 to 1993, as an associate. Although Mr. Dunbar has been a private consultant for Water Resources and Environmental Engineering since 1988, apparently the last time he worked full-time as an engineer was in 1988.[98]

Protestants, relying on Mr. Dunbar's testimony, also argue that water surface elevations (flood levels) in Lobo Creek could increase significantly as a result of the development of the landfill and increased run-off volumes from the Northern Drainage area. However, as Applicant pointed out, Mr. Dunbar performed no analysis that could serve as the basis for his opinion.[99] Mr. Murray, on the other hand, analyzed the Northern Drainage and demonstrated that the change in water surface elevations in Lobo Creek resulting from development of the landfill will be so small that it almost cannot be measured. That is, Mr. Murray's HEC-1 computer analyses of the water surface elevations in the natural and post-development conditions after a 25-year, 24-hour rainfall event showed that development of the landfill will increase flood levels in Lobo Creek by only one-eighth of an inch.[100]

Protestants also argue the evidence reveals an increase in the run-off volume exiting the proposed landfill site. The Judges, however, disagree with Protestants' assertion that the increase in run-off volume demonstrates that the proposed landfill development will significantly alter the natural drainage patterns at the site.

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[97] Ex. A-93.

[98] Ex. Webb-4.

[99] *See* Tr. v. 5 at 719-721.

[100] Tr. v. 11 at 1943-1956; Ex. A-313 at 5-7; and Ex. A-315.

The evidence shows that, after the landfill facility is constructed, the volume of water leaving the site from the existing discharge points and sheet flow areas following a 25-year, 24-hour storm event will increase from approximately 431.5 acre-feet to about 478.5 acre-feet, which is an increase of approximately 47.5 acre feet, or 11 percent, over the volumes leaving the site in the existing natural condition.[101] The Judges note, however, that this projected increase of 11 percent in run-off volume, most of which will occur at Discharge Points A, B, and I, is within the ED's rule of thumb of "somewhere around" a 10-percent change that Karen Cleveland, a TCEQ permit engineer who is responsible for reviewing MSW applications, testified is used to determine whether a project will significantly alter the natural drainage patterns.[102] Also, Mr. Murray's detailed analyses of the Southern Drainage demonstrated that the peak flow rates will either stay the same or decrease.[103]

Additionally, Protestants assert the increased run-off volume exiting the proposed landfill site may have an impact on the flood-prone areas near the landfill site; however, Applicant provided no analysis of that potential impact. Protestants contend the areas near the site and along Highway 359 have flooded in the recent past and these off-site areas are within the 100-year floodplain. The Judges note, however, that Ms. Cleveland testified Applicant is not required to conduct a specific analysis of potential impacts on floodplain areas because the proposed landfill facility is not located in the 100-year floodplain,[104] and the discharge volume and peak flow rates are relatively the same, both pre- and post-development.[105]

For the above reasons, the Judges recommend the Commission find that Applicant adequately addressed drainage and the stormwater controls are adequate.

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[101] Ex. A-116 at III-A6-10 through 11.

[102] Tr. v. 4 at 569.

[103] *See* Exs. A-313, A-315, and A-316.

[104] *See* discussion regarding floodplains in the following section entitled "Other Issues."

[105] Tr. v. 4 at 568-569.

4. Whether the proposed Ponderosa Regional Landfill is compatible with the Regional Solid Waste Management Plan.

The Judges recommend the Commission find that the proposed landfill is compatible with the South Texas "Regional Solid Waste Management Plan Amendment 2002–2022."

a. Background

The South Texas "Regional Solid Waste Management Plan 1990–2010," dated September 1994, was prepared by the South Texas Development Council (STDC) and covers Jim Hogg, Starr, Webb, and Zapata Counties. Sometime in 2001, STDC passed a resolution against the construction of the Ponderosa Regional Landfill.[106] However, on January 8, 2004, STDC adopted Volume I of the "Regional Solid Waste Management Plan Amendment 2002–2022" (amended regional plan), which was approved by the Commission on May 31, 2007.[107] On September 6, 2007, the ED approved Volume II, which provides the details for implementing the amended regional plan. Development of the amended regional plan was guided by STDC's Solid Waste Advisory Committee (SWAC).[108]

Volume II of the amended regional plan includes the following findings:

- Long-range disposal capacity in the region is not expected to be sufficient to meet needs, and adding more disposal capacity is the number one priority identified by SWAC.[109]
- The combined disposal capacity of the six landfills currently located in the region is projected to reach capacity by 2018. Adding additional disposal capacity for the region is critical for meeting solid waste management needs for the long term.[110]

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[106] Tr. v. 1 at 53-54.

[107] Ex. A-288.

[108] Ex. A-289.

[109] Ex. A-289 at 41.

[110] *Id.* at 35.

- The permit for the new Ponderosa Regional Landfill is currently pending, and it represents the only current permitting effort to add additional disposal capacity in the region.[111]

- The long-term solution to the region's MSW disposal needs is best met through regional landfills, and any future expansions of current landfills or development of new landfills should conform to this approach.[112]

In a letter dated November 15, 2007, STDC notified TCEQ that Regional's application had been reviewed by SWAC. STDC noted SWAC had determined that Regional's application was in conformance with the amended regional plan and the proposed facility was compatible with land uses in the vicinity.[113]

b. PIC's, Coalition's, and Webb County's Position

At the conclusion of the initial evidentiary hearing, PIC, the Coalition, and Webb County argued Regional had failed to demonstrate compliance with the Regional Solid Waste Management Plan. They asserted that, because STDC in 2001 had passed an unfavorable resolution against construction of the Ponderosa Regional Landfill and the Commission and ED had not completed their approval of both Volumes I and II of the amended regional plan, Applicant had failed to meet its burden of proof. However, after the Judges admitted Exhibits A-288 through A-290, which are evidence of the Commission's and the ED's approval of the amended regional plan and SWAC's determination that Regional's application is in conformance with the amended regional plan, the parties presented no further argument regarding this issue.

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[111] *Id.* at 21.

[112] *Id.* at 42.

[113] Ex. A-290.

c. Judges' Analysis

Because STDC has determined that Regional's application for the Ponderosa Regional Landfill is in conformance with the amended regional plan, the Judges recommend the Commission find that Applicant's proposed landfill is compatible with the Regional Solid Waste Management Plan.

5. Whether Applicant adequately evaluated endangered or threatened species at the site.

The Judges recommend the Commission find that Applicant adequately evaluated endangered and threatened species at the site.

a. Applicable Law

Commission Rule 330.53(b)(13)(B)[114] reads as follows:

The impact of a solid waste disposal facility upon endangered or threatened species shall be considered. The facility and the operation of the facility shall 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.

"Endangered or threatened species" is defined in Commission Rule 330.2[115] as follows:

> Any species listed as such pursuant to the Federal Endangered Species Act, § 4, 16 United States Code (USC) 1536, as amended or pursuant to the Texas Endangered Species Act.

b. Applicant's Position

Applicant asserts that Commission Rule 330.53(b)(13)(B) does not apply to Texas state-

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[114] West 2000.

[115] *Id.*

listed threatened species because, by definition, TCEQ's endangered and threatened species rules are applicable only to species listed either as endangered or threatened under the Federal and Endangered Species Act or as endangered under the Texas Endangered Species Act.[116] Applicant points out that it contacted the United States Fish and Wildlife Service and the Texas Parks and Wildlife Department (TPWD) for locations and specific data relating to endangered and threatened species. Furthermore, Applicant notes that Horizon Environmental Services, Inc. (Horizon), performed a biological assessment for the proposed landfill site and carried out additional field studies regarding threatened or endangered species at the site. Applicant points out that, although Horizon found no designated critical habitat situated on or near the proposed landfill site, it determined that only the following four state-listed threatened species may use the site and potentially may be impacted by the landfill: the indigo snake, the reticulate collared lizard, the Texas tortoise, and the Texas horned lizard.[117] Because the four state-listed threatened species determined by Horizon to be potentially affected by the proposed landfill are not listed under the Texas Endangered Species Act, Applicant argues Commission Rule 330.53(b)(13)(B) does not apply to those state-listed species.

Although Applicant asserts Commission Rule 330.53(b)(13)(B) does not apply to the four listed species, Applicant notes it has prepared and will implement a Potentially Affected Species Management Plan (Plan), which Regional argues has been both recommended and accepted by TPWD for protection of those species at the site.[118] Regional points out that its Plan includes surveys for the species before and during operation of the landfill and that, if any individuals of a species of concern are found, they will be relocated by a biologist with a State Scientific Collection Permit to a conservation area, the P1 Ranch located approximately five miles from the landfill site, to prevent potential effects.[119] Applicant thus contends that, because of the lack of designated critical habitat on or near the proposed landfill site; the intense land management

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[116] TEX. PARKS & WILD. CODE ch. 68.

[117] Ex. A-197 at 9-11.

[118] *See* Ex. A-197 at 9-14.

[119] *Id.* at 13; Tr. v. 1 at 73.

practices that have occurred previously on the site; and Applicant's Plan, the Ponderosa Regional Landfill will have negligible impacts upon migratory birds and state and federally listed species and their habitats.[120]

c. Coalition's Position

The Coalition argues that Regional has failed to comply with Commission rules regarding the protection of endangered and threatened species at the site. The Coalition contends Applicant failed to set forth specific measures to ensure the safe handling and transportation of endangered and threatened species to the off-site area and also that Applicant's proposed Plan provides no specific information regarding the off-site conservation area.

d. Judges' Analysis

Contrary to the Coalition's argument, the Judges recommend the Commission find that Applicant has adequately evaluated endangered and threatened species at the site. Horizon conducted a biological assessment for the proposed landfill site and found no designated critical habitat situated on or near the proposed landfill site. Horizon also determined that only four Texas state-listed threatened species may use the site and potentially could be affected by the landfill. The Judges concur with Applicant's argument that Commission Rule 330.53(b)(13)(B) does not apply to Texas state-listed threatened species because, by definition, TCEQ's endangered and threatened species rules are applicable only to species listed either as endangered or threatened under the Federal and Endangered Species Act or as endangered under the Texas Endangered Species Act. However, despite Commission Rule 330.53(b)(13)(B) not applying to the four state-listed species that potentially may be impacted by the landfill, Applicant has prepared and will implement a species management plan that has been both recommended and accepted by TPWD for protection of those potentially affected species at the Ponderosa Regional Landfill site.

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[120] Ex. A-197 at 15.

B. Other Issues

Even though the Coalition argues Applicant failed to meet its burden of proof on any issue referred to SOAH by the Commission, no controverting evidence and little or no argument was presented by either the Coalition, Webb County, or the PIC regarding the following issues. Therefore, the Judges recommend the Commission find as follows:

1. **The application meets TCEQ site selection criteria with regard to unstable areas, faults, and wetlands.**

2. **The proposed buffer zone and screening are adequate.**

3. **The information submitted on geology for the site is adequate.**

4. **The proposed Site Operating Plan is adequate.**

5. **The application adequately evaluates the soils and geotechnical conditions at the proposed landfill.**

6. **The designs for the landfill liner, sidewalls, and leachate collection systems are adequate.**

7. **The permit term should be for the life of the facility.**

8. **Applicant has no compliance history at any other facilities operated by it that would provide a basis for permit denial or require any special condition.**

9. **Applicant proposes adequate financial assurance.** Although Webb County asserts that Applicant cannot provide adequate financial assurance, no financial assurance requirement is applicable to the proposed Ponderosa Regional Landfill. Pursuant to Commission rules, financial assurance for a new facility does not have to be submitted to TCEQ until 60 days prior to the initial receipt of waste.[121] Applicant has submitted a final closure plan,[122] a post-closure plan,[123] and cost estimates for closure and post-closure care of the landfill.[124] The Judges,

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[121] *See* 30 TAC § 330.285.

[122] Ex. A-265.

[123] Ex. A-266.

therefore, recommend the Commission find that Applicant has proposed adequate financial assurance.

10. The application meets TCEQ site selection criteria with regard to floodplains. Commission Rule 330.56(f)(4)(B) requires an applicant to identify whether the proposed landfill site is located within a 100-year floodplain. Webb County contends Applicant failed to provide sufficient data to demonstrate that the proposed landfill site is not within the 100-year floodplain. The Judges disagree.

According to Applicant's expert witness James Roy Murray, a civil engineer who participated in the preparation of the application, Exhibit A-161 is a copy of the current Federal Emergency Management Agency (FEMA) flood map, and it indicates the entire proposed permit boundary for the Ponderosa Regional Landfill is located outside the areas shown as the 100-year floodplain.[125] Mr. Murray also pointed out that Exhibit A-162 is a copy of a preliminary FEMA flood insurance rate map that was expected to be finalized as the most current FEMA flood map, and Exhibit A-163 is a portion of the preliminary FEMA flood map with the proposed landfill's permit boundary added. Mr. Murray testified that, as shown on the preliminary FEMA flood map (Exhibit A-163), no portion of the proposed landfill's permit boundary is located within the 100-year floodplain.[126] The Judges thus recommend the Commission find that Regional's application meets TCEQ site selection criteria with regard to floodplains.

11. Applicant presented adequate transportation information. Mr. Murray testified that State Highway 359, which will provide access to the landfill site, is a well-constructed highway with adequate travel lanes and shoulders.[127] In addition, the traffic impact analysis set forth in Exhibit A-95 indicates that the landfill will have a minimal impact on the surrounding area roadways and neighborhoods. Texas Department of Transportation (TxDOT)

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[124] Ex. A-267.

[125] Ex. A-92 at 13.

[126] *Id.*

[127] *Id.* at 14.

data presented in the traffic impact analysis demonstrate that Highway 359 currently has adequate capacity for projected traffic, including landfill traffic, for the expected life of the site. The traffic impact analysis thus concludes that Highway 359 will be insignificantly impacted by the anticipated landfill operations.[128] Webb County argues that Applicant's information fails to adequately take into consideration the City of Laredo's growth trends and is supported by TxDOT data that is over 10 years old. The Judges, however, find that TxDOT data adequately considers the City's growth trends, TxDOT data and the traffic impact analysis are sufficiently reliable, and Mr. Murray's testimony concerning Highway 359 is credible.

12. Transcription Costs. Applicant has paid transcription and reporting costs totaling $19, 964.60. Applicant is not seeking reimbursement from any other party.

C. Issues Related to the Potential for Oil and Gas Development

1. Applicable Law

The potential for oil and gas development on the proposed landfill site, to the extent it is relevant, relates to three issues: compatibility of land use, the site development plan, and drainage. However, there are few Commission rules that deal with the potential for oil and gas development on a proposed landfill site, and none seems to require consideration of such issues as part of a landfill permitting process. The only rule concerning oil and gas wells that is specifically applicable to a permit application is Commission Rule 330.53(b)(8)(E), which relates to the compatibility of land use and requires an applicant to identify known, or *existing*, wells within 500 feet of the proposed permit boundary.

TCEQ has entered into a Memorandum of Understanding (MOU) with the Texas Railroad Commission (RRC), the state agency that regulates oil and gas exploration and production in Texas. The MOU clarifies the division of jurisdiction between the agencies, and

[128] Ex. A-95 at I/II-8 through I/II-9.

provides a mechanism for ensuring the integrity of a well proposed to be drilled through an *existing* landfill:

> Drilling in Landfills. The TCEQ will notify the...RRC and the landfill owner at the time a drilling application is submitted if an operator proposes to drill a well through a landfill regulated by the TCEQ. The RRC and the TCEQ will cooperate and coordinate with one another in advising the appropriate parties of measures necessary to reduce the potential for the landfill contents to cause groundwater contamination as a result of landfill disturbance associated with drilling operations.[129]

While it clearly recognizes the possibility that a landfill and oil and gas activities can co-exist on the same site, the rule does not establish any requirement or standard that must be met as part of the landfill permitting process.

Commission rules also provide that "producing crude oil or natural gas wells that do not affect or hamper landfill operations may be operated within the facility boundary, if identified in the permit for the facility or in a written notification to the executive director."[130] However, this rule relates to operational standards once a landfill permit has been issued.

2. Background

Rosetta owns a 2,000 acre oil and gas lease (the Gill Lease) that encompasses the entire landfill site.[131] Rosetta acquired the lease from Calpine Natural Gas in 2005. Rosetta currently operates the Gill #15, a gas well located on the landfill site. The well was drilled in 2001 by Calpine's predecessor in interest, after Applicant filed its initial application for the landfill permit.

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[129] *See,* RRC rule at 16 TAC § 3.30(5), adopted by reference at 30 TAC § 7.117.

[130] 30 TAC § 330.131(b).

[131] Tr. v. 9 at 1428.

Compatibility of land use issues generally relate to the area immediately surrounding the proposed landfill site. In this case, however, there was a substantial amount of evidence presented regarding the possibility of future oil and gas production on the site. At the time Regional's application was complete, there was one producing gas well on the landfill footprint, and it was still operating at time of hearing. The existence of the well was noted as a factor relevant to land use compatibility and taken into account in the application. No one argued that the proposed landfill and the existing well were incompatible uses.

Rosetta intervened in this matter because of concern that its mineral interest would be adversely affected if the property was developed as a landfill site. John McKnight, Rosetta's production manager for its southern division, testified at the initial hearing that Rosetta has general plans to increase the density of wells in the area, and on the landfill footprint specifically. Each well drilled will require approximately two acres for the drilling location, plus an access road to the location. If the well is productive, the road will be necessary for the life of the well.[132] Both the drilling process and operations associated with production will require 24-hour, seven-days-a-week access to the well sites.[133]

According to Mr. McKnight, Rosetta had plans to drill at least two new wells within the proposed landfill permit boundaries, but its evaluations were incomplete at the time of the initial hearing. Rosetta later identified seven locations on the proposed landfill site for possible future gas wells for which it had obtained drilling permits in November 2007 from RRC

Based on these newly obtained drilling permits, Rosetta, joined by the other Protestants, asked that the record be reopened for this information to be considered. To ensure a complete record in this matter, the Judges reconvened the hearing and ordered Rosetta to come forward with specific evidence regarding its intentions to drill any or all of the permitted wells and the potential effect of such wells on the landfill permit.

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[132] Ex. RR-1 at 7.

[133] Ex. P-8.

At the reconvened hearing, Rosetta presented testimony from four employees regarding its internal evaluation and approval process for drilling new wells. Each was asked his opinion of the likelihood that additional wells will be drilled on the landfill site. The evidence shows that only one additional well location (the Gill #21) has been through Rosetta's evaluation process.[134] While any opinion regarding actions Rosetta may take in the future is necessarily speculative, each employee testified that he believes a well will be drilled at the Gill #21 location. Whether wells will be drilled at any of the other potential well locations will depend on evaluations of those locations following, and based on information acquired during, the drilling of a well at the Gill #21 location.[135] At the time of the reopened hearing, Rosetta expressed its intent to drill a well at the Gill #21 location beginning in mid-April, 2008.[136] That date later changed to sometime after September 1, 2008.[137] Rosetta has no schedule for drilling any other wells on the site.[138]

Even if additional wells are drilled at some point in the future, it is also not known whether any of them will be producing wells (as opposed to dry holes) that will continue in operation after drilling. Val Neshyba, a Rosetta geologist, testified that, in his opinion, maybe half of the wells drilled would be successful.[139] If a well is drilled on the site and if that well is completed as a producing well, it would be expected to operate as a producing well for 8 to 15 years, according to Rosetta's chief geologist, Chuck Richardson. Mr. Richardson estimated the average life of a producing well in the Lobo formation (the formation into which Rosetta would drill wells on the site) at 12 years.[140] This is the same estimate made by Applicant's petroleum

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[134] Tr. v. 10 at 1453.

[135] *Id.* at 1545.

[136] *Id.* at 1618.

[137] Ex. A-323.

[138] Tr. v. 10 at 1601.

[139] *Id.* at 1704-1705.

[140] *Id.* at 1761-1762.

geologist, John McBeath, based on his review and analysis of other wells in the area of Webb County near the landfill site.[141]

Following the reconvened hearing, Applicant and Rosetta entered into an accommodation agreement (Agreement) that provides a blueprint for the joint use of the property in the event Rosetta drills any or all of the proposed wells.[142] The Agreement identifies and limits potential drilling locations to those for which Rosetta had obtained permits from RRC. Pursuant to the Agreement, Rosetta must locate any mineral wells drilled on the landfill site only within the areas of proposed landfill cell nos. 1, 3, 5, 6, 15, 19, and/or 20 (the designated cell areas).[143] Each potential well site has been allocated two acres to support the well during drilling and production phases, in conformance with Mr. McKnight's testimony about necessary acreage.

Under the terms of the Agreement, Applicant will send a notice of inquiry to Rosetta by January 1, 2009, asking about Rosetta's intentions to drill one or more wells in the designated cell areas. If Rosetta has an existing well in a designated cell area by the time of that notice, or if Rosetta notifies Applicant within six months after receipt of the notice that it intends to drill in one or more of the designated cell areas, then Applicant will not (unless Rosetta consents) construct landfill cells or other permanent improvements in those cell areas for 15 years.

Any mineral well that is producing 15 years after landfill operations commence may continue operating as long as it is a producing well. After the initial 15-year period, no new wells can be drilled on the site; only replacement wells to take the place of a well that ceases production for mechanical or other reasons not related to depletion of minerals will be allowed. Any replacement well must be located within the designated two-acre well site around the original well.[144]

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[141] Ex. A-211 at 5; Ex. A-219.

[142] Ex. A-323, dated April 15, 2008.

[143] Ex. A-323.

[144] Ex.A-323.

As a result of the Agreement, Rosetta withdrew its protest to Regional's application for a landfill permit on the site, in effect acknowledging the compatibility of the proposed landfill and Rosetta's oil and gas activities on the site.

For the reconvened hearing, J. Roy Murray, Applicant's consulting engineer and hydrologist, prepared an analysis of the possible scenarios with regard to Rosetta's proposed well locations.[145] The exhibit is essentially a flow chart that outlines the possible outcomes for each well that Rosetta might drill on the site. (*See* Attachment C.)

In addition to his drainage analysis comparing natural and landfill conditions, Mr. Murray also analyzed the effects that potential wells might have on drainage, both on and off the site. Applying the same computer model used for his original analysis, Mr. Murray compared drainage analyses for four different conditions: the natural condition, the natural condition with wells, the landfill condition, and the landfill condition with wells. Because the Judges have previously concluded that development of the landfill itself will not significantly alter drainage patterns, the most significant comparison for this discussion is between the natural condition with wells and the landfill condition with wells. If we assume, for purposes of this evaluation, that one or more wells will be drilled whether or not the landfill is built, then it is necessary to compare the conditions with wells.

3. Applicant's Position

Applicant argues that Commission Rule 330.53(b)(8)(E) applies only to *known* wells, not to possible future wells such as those Rosetta may or may not drill. Therefore, Applicant argues, questions of whether and when Rosetta may drill additional wells on the site are irrelevant to the Commission's decision in this matter and should not be considered. It is not possible to determine at this point if additional wells will be drilled on the site, or if any such well will be completed as a producing well.

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[145] Ex. A-307.

Applicant contends that the Commission's rules regarding the permitting of a municipal solid waste landfill facility do not require or even provide for consideration of such possible contingencies. According to Applicant, the rules contain various provisions related to oil and gas wells and municipal solid waste landfills, but none of those provisions requires determinations to be made about possible future wells in the context of the permitting of the proposed Ponderosa Regional Landfill.

In any event, Applicant argues, even if such speculative issues should be considered, the Agreement between the parties satisfies any requirement that might exist. Speculation regarding possible future wells on the site is not necessary in order for this case to be decided. Applicant contends the Agreement includes provisions that will allow development of the landfill to occur in a manner that is consistent with the permit application, the proposed permit, and Commission rules while, at the same time, allowing for possible future development of minerals on the site in a manner that does not affect or hamper landfill operations. Under the Agreement, Rosetta's activities on the site will be consistent with the scenarios evaluated by Applicant for the reconvened hearing.

Applicant also argues that, although Rosetta employees testified there are plans to drill on the landfill site, what the evidence actually shows is that Rosetta *may* drill one or more additional wells on the site, but when and with what results is unknown. According to Applicant, what is known is that Rosetta has agreed that any well it drills must be located within the area of the site proposed for one of seven designated landfill cell areas and within 300 feet of one of the seven possible future well locations for which Rosetta sought RRC drilling permits in November 2007; that any well drilled by Rosetta must be drilled within 15 years after the commencement of landfill construction (the only exception to this is that a new well can be drilled to replace a well that ceases production because of mechanical or other problems with the well); and that any well that is producing at the end of the 15-year time period can continue operating until it ceases production.[146]

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[146] Ex. A-323.

Applicant points out that landfill waste filling operations could be conducted in cell areas other than 1, 3, 5, 6, 15, 19, and/or 20 for approximately 30 years.[147] If additional wells are drilled on the site and, if any of those wells is still a producing well after waste filling has occurred in the unaffected cell areas, Applicant can conduct additional waste filling operations in any portion of the designated cell areas other than the two-acre well-site areas and access corridors to them.[148] According to Mr. Murray, this would allow an additional 30 years of landfill operations, even if producing wells were present in each of the listed cell areas.[149] Such reconfiguration could be either permanent (in which case the landfill would be filled in accordance with the reconfiguration, then closed) or temporary (in which case the entirety of the designated cell areas would be filled to the currently proposed final contours after mineral wells cease production).[150]

Applicant contends that resequencing and/or reconfiguration of the landfill to avoid areas of existing or future mineral exploration or production would not impact off-site drainage or increase landfill disposal capacity.[151] Under Commission Rules 305.70, authorization for any necessary resequencing of the landfill's development, *i.e.*, changing the order of development of the proposed landfill cell areas to delay development in certain cell areas, could be obtained, if necessary, by way of a modification to the landfill permit. Under the same rule, authorization for reconfiguration of the landfill to avoid areas of existing or future mineral exploration or production and allow for continued landfill development in unaffected portions of the designated cell areas also could be obtained by way of a future modification to the permit.[152] Applicant points out that resequencing and/or reconfiguration of the landfill to avoid areas of existing or future mineral exploration or production is addressed in its permit application (specifically in the

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[147] Tr. v. 10 at 1858-1860; Ex. A-310.

[148] Ex. A-323.

[149] Tr. v. 10 at 1862; Ex. A-311.

[150] *Id.* at 1839-1847 and 1860-1863; Ex. A-307.

[151] *Id.* at 1880-1881.

[152] *Id.* at 1872-1877; Exs. A-307, A-310, and A-312.

Site Development Plan, at Section 2.11 of Attachment 6, the Groundwater and Surface Water Protection Plan and Drainage Plan), which also discusses obtaining authorization for such changes that do not impact off-site drainage or increase landfill disposal capacity by way of future permit modifications.[153]

Applicant contends that, if it becomes necessary to change the order of development of the proposed landfill cells to avoid all or parts of certain designated cell areas, it would seek TCEQ authorization to do so by way of a request for a permit modification or amendment. Neither Applicant nor anyone else knows at this point if or when it may seek future permit modifications or amendments, or what the specific changes sought in any request may be. It is simply not possible, or necessary, at this point to know what, if any, changes Applicant may seek (by way of permit modification or amendment) to a permit that may be issued by the Commission as a result of this proceeding.

Applicant argues that the evidence presented by Rosetta and Webb County regarding the potential effects of possible wells on the development of, and the surface water management plan for, the landfill was generally not material to any issue that must be decided in connection with Regional's permit application and much of it was not even credible. Applicant points out that Rosetta offered testimony from witnesses, including Larry Dunbar and John McKnight, that the drilling or operation of a well at one or more of the possible future well locations would interfere with, hamper, or affect development and operation of the proposed landfill and/or the management of surface water at the landfill.[154] Applicant contends that such evidence could only be relevant and material to the consideration of a producing well pursuant to Commission Rule 330.131. However, Applicant argues, such rule is an operating rule for a municipal solid waste landfill facility like the proposed landfill, not a provision that applies to the permitting of such a facility. Therefore, Applicant argues, it would not be necessary, or even appropriate, in this

[153] Ex. A-116; Tr. v. 10 at 1882-1883.

[154] Tr. v. 10 at 1797-17984; 1799, and 1809-1810; Tr. v. 9 at 1508 and 1618.

permitting proceeding to make findings regarding the effects that may result from wells that may or may not be drilled.

With respect to drainage issues, Applicant argues that the analyses performed by Mr. Murray demonstrate that the surface water management system proposed for the landfill will function adequately either with or without the presence of wells at the potential well locations; that the surface water management system that is proposed for the landfill will have adequate capacity either with or without the presence of wells at the possible future well locations; and that development of the landfill either with or without wells will not result in significant alteration of natural drainage patterns, considered on the basis of either on-site or off-site drainage.[155]

4. Webb County's, PIC's, and the Coalition's Positions

Relying on Mr. Dunbar's testimony, Webb County is again critical of Applicant's overall drainage analysis and argues that Applicant failed to demonstrate that the proposed landfill will not significantly alter drainage patterns, with or without wells. The County did not specifically address drainage issues related to the potential for oil and gas development. Because these arguments were addressed previously, they are not repeated here.

PIC appears to have taken no position on these issue, but points out that the record contains several instances where witnesses for both Applicant and Rosetta indicate that the landfill could be developed in a way that would accommodate the needs of both parties. PIC acknowledges, however, that the Agreement between those parties will not necessarily address the concerns of the remaining Protestants. In addition, PIC points out that drilling additional wells on the landfill site might necessitate a permit modification or amendment.

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[155] Tr. v. 11 at 1956-1955; Ex. A-313 at 8.

The Coalition maintains that Applicant has failed to satisfy its burden of proving that operation of the proposed landfill is compatible with exploration, construction, and operation of gas wells on the site. The Coalition states that an applicant must ensure that its application acknowledges and addresses the ongoing land uses on the proposed landfill site, and argues that Regional did not provide the ED with sufficient information by which to evaluate the site-specific conditions that may be affected by the proposed landfill.

The Coalition also argues that ongoing construction and operation of wells on the proposed site is all but inevitable. The Coalition criticizes Applicant for not evaluating gas production activities taking place near the site of the proposed landfill when evaluating the compatibility of land uses, and it claims Applicant provided no evidence or information regarding the growth patterns of gas production activities in the area.

According to the Coalition, drilling any of the proposed wells will necessitate a change in the landfill design. Therefore, the Coalition argues, the application does not reflect the actual conditions at the landfill site and does not address how those conditions will continue to evolve as a result of Rosetta's plan to drill wells on the site. The Coalition faults Applicant for not taking into account Rosetta's intent to drill when the application was filed, and also points out that Applicant's expert on drainage agreed that construction and operation of gas wells can affect the operation of a landfill.

The Coalition argues that Applicant's initial surface water management plan was already inadequate. Now, the Coalition asserts, "with the knowledge that Rosetta will drill at least one gas well, and as many as seven, in the near future, it appears that Applicant's entire surface water management plan lacks sufficient information and analysis, and relies on too many unsettled assumptions to provide a dependable and unambiguous depiction of surface water management at the proposed site."[156] In other words, the Coalition argues, the surface water management plan fails to comply with Commission rules and it fails to provide sufficient, accurate information

[156] *See*, Coalition's Reply to Closing Arguments at 1-2

from which the Commission can determine whether Applicant will adequately control surface water and prevent adverse impacts to other property.

The Coalition also claims denial of due process because it will be deprived of its right to question whether a revised surface water management plan will affect adjacent property.

5. Judges' Analysis

The Judges agree with Applicant that the proposed landfill and the potential for oil and gas development on the site are compatible uses.

When entering into the MOU, TCEQ and RRC clearly recognized the possibility that a landfill and oil and gas development can co-exist on the same site, although no specifics as to how that could or should be accomplished are set out in any rule. However, in this case, Applicant has provided the specifics, in part, by the terms of the Agreement with Rosetta, and also through the specific scenarios laid out by Mr. Murray.

The Agreement establishes the compatibility of land uses, and it resolves much of the speculation about when and where wells can be drilled, if, in fact, any are ever drilled. Although the evidence indicates that Rosetta is likely to drill at least one well, it is not "all but inevitable," as the Coalition claims. Mr. McKnight acknowledged that Rosetta applied for the seven drilling permits before its normal evaluation and approval process was completed because of the possibility of the landfill permit being approved. [157]

Applicant also presented ample evidence that the mineral owner's interest in the landfill site can be accommodated without hampering or significantly affecting landfill operations. Although drilling on the site has the potential to affect the sequencing of disposal cells, it will not

[157] Tr. v. 9 at 1452.

affect the day-to-day landfill operations. Even Rosetta's expert, Mr. Dunbar, conceded that oil and gas development is not necessarily an incompatible use, even without an agreement.

It remains unclear whether any wells will ever be drilled but, if they are, the possible scenarios in connection with each such well are limited. Applicant's expert, Mr. Murray, systematically explained the various scenarios that could occur in connection with oil and gas production on the site. In each case, he laid out a method whereby potential events could be addressed if and when they arise. The Agreement further constrains possible scenarios by specifically limiting potential locations, and it minimizes the impact any wells might have on landfill operations. Even under the worst case scenario, the landfill can be temporarily or permanently reconfigured, pursuant to a permit modification, to allow for concurrent oil and gas development and continuation of the landfill operations.

The landfill is proposed to be developed with 23 similarly-sized waste disposal cells and to operate for approximately 94 years.[158] Because the average life of wells in the vicinity is 12 years, production from any well drilled within the next 15 years should cease within the first 30 years of landfill operations. Of the 23 disposal cells, seven could possibly be affected for some period of time. This means at most, 14 acres out of the total 347 acres for waste disposal could be affected. Furthermore, any such cell will not be eliminated; rather, its use will be delayed. It is also important to note that the active face of a landfill typically occupies no more than an acre or two.[159]

The Coalition's argument that drilling any of the wells will necessitate a change in the landfill design is not persuasive. The argument is premised on an inaccurate characterization of the evidence. Relying on Mr. Dunbar, the Coalition claims, it is "certain…that if any or all of the permitted wells were drilled, the design, construction, and operation of the landfill would have to be altered." However, Mr. Dunbar actually testified that, "*to the extent that any or all of*

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[158] Ex. A-240, Technical Summary, secs. 1.1 and 4.2 at 2-3.

[159] Tr. v. 1 at 24.

these wells interfere with the ability to construct and operate the landfill as designed," the landfill would have to be altered.[160]

It is, of course, possible that Applicant may, in the future, seek a permit modification related to resequencing of cell development based on its agreement with Rosetta. It is also possible that Applicant will seek other permit modifications during the expected 94-year life of the proposed facility. What those potential permit modification requests might be and when they might be sought cannot be known in advance. There is clearly no requirement that an applicant for a permit for a new MSW facility must determine and address possible future permit modifications or amendments that may be sought over the life of a facility. The Commission has rules that establish procedures to be followed in connection with requested changes (via modifications or amendments) to municipal solid waste facility permits, including rules that address notice, public comment, and opportunity for hearing. Those rules will dictate the procedures that are to be followed if and when requests for modifications or amendments are submitted to TCEQ by Regional.

The Judges conclude that due process is not yet due. Obviously, neither Webb County, the Coalition, nor any other person can be deprived of due process related to future requests for permit modifications or amendments that may occur at some unknown time during the 94-year expected life of the proposed landfill facility. The Judges agree with Applicant that due process rights related to any such requests cannot even be determined, let alone afforded or denied, unless and until TCEQ first issues a permit to Regional and, at some time in the future, Regional requests a modification of or amendment to that permit.

The fact that Commission rules allow for permit modifications and amendments is a clear indication that the possibility of changed circumstances over the life of a landfill facility was contemplated. The rules also afford a degree of flexibility by allowing landfills to be reconfigured and resequenced under certain circumstances.

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[160] Tr. v. 10 at 1797.

It is also important to note that issues relating to possible permit modifications or amendments are not before the Judges or the Commission at this time. Commission Rule 305.70, relating to permit modifications and amendments, is only applicable if the permit is issued and if Rosetta drills a well that requires changes to the existing permit.

Furthermore, the Judges do not believe that Applicant is required to revise its Surface Water Management Plan to account for speculative and undrilled wells. However, Mr. Murray's report[161] regarding the impact of the potential wells on drainage at the landfill site is enlightening because it demonstrates that any such wells should have little effect.

As mentioned previously, Mr. Murray's report analyzes two additional conditions: the natural condition with wells, and the landfill condition with wells. The natural condition with wells was evaluated to determine the effect on drainage that would result from the development of all the wells, assuming no landfill development. The landfill condition with wells evaluates the effects on drainage that would result from development of and ongoing production from all of the wells and development over time of the landfill, reconfigured to avoid well areas and access roads. This is considered a "worst case" scenario for determination of possible impacts from the mutual development of the landfill and wells because it represents the most significant change to the configuration of the landfill. If the actual number of wells that are drilled decreases, the landfill's development will be less severely affected; both the completed landfill and drainage from the site would much more closely resemble the landfill condition without wells, evaluated by Regional in its permit application for the Ponderosa Regional Landfill.

As with the original analyses, the conditions with wells were analyzed hydrologically and hydraulically to assess the impacts of wells on the site. They were first analyzed to determine effects on the individual stormwater discharge points from the landfill permit boundary and, in the case involving the developed landfill, their effects on the proposed drainage system. The

[161] Ex. A-313.

conditions were then analyzed to determine the impacts of the various scenarios on off-site drainage. Mr. Murray concludes:

> Based on the analyses of both the internal drainage conditions and the off-site drainage conditions, the development of and ongoing production from the mineral recovery wells would not adversely affect drainage either internally to the landfill, at the landfill discharge points, or at off-site locations. In fact, the development of the landfill and its perimeter channel and pond system will reduce the impacts to Natural Condition drainage that would result from construction of the well areas and access roads.[162]

The Judges acknowledge that, for site development and surface water management plans to be meaningful, they must address the conditions that can be reasonably expected on the site. However, it would be unreasonable to require Applicant to anticipate and provide for every contingency that may arise over the life of a landfill expected be in operation for 94 years. The Judges believe that Applicant has done a remarkable job of demonstrating how contingencies related to possible oil and gas development can be dealt with, should they arise.

For the above reasons, the Judges recommend the Commission find that the proposed landfill and oil and gas development on the site are compatible uses. However, the Judges conclude that recommending the Commission make findings of fact regarding effects that might result from wells that may never be drilled would be inappropriate.

V. ADDITIONAL FACTS

In addition to the facts addressed in the preceding discussion, the Findings of Fact contained in the attached proposed Order include other facts established during the proceeding that are necessary to show compliance with regulatory requirements applicable to these proceedings. These additional facts are incorporated by reference into this Proposal for Decision.

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[162] *Id.* at 8.

VI. CONCLUSION

The Judges recommend that the Commission adopt the attached proposed order finding that Regional met its burden of proof on each of the 16 referred issues. Because the Commission referred only those issues to the Judges, the Commission should add other findings and conclusions necessary to fully determine whether to grant or deny Regional's application for a permit.

In addition to addressing the issues referred by the Commission, the proposed order also includes a conclusion of law and an ordering provision stating that the terms of the permit and the ED's review of the application comply with all applicable federal and state requirements. These items are included as a convenience to the Commission in order to allow it to more easily issue a single decision on the application in accordance with 30 TAC § 50.117(g). The Judges make no recommendation regarding issues not referred for hearing.

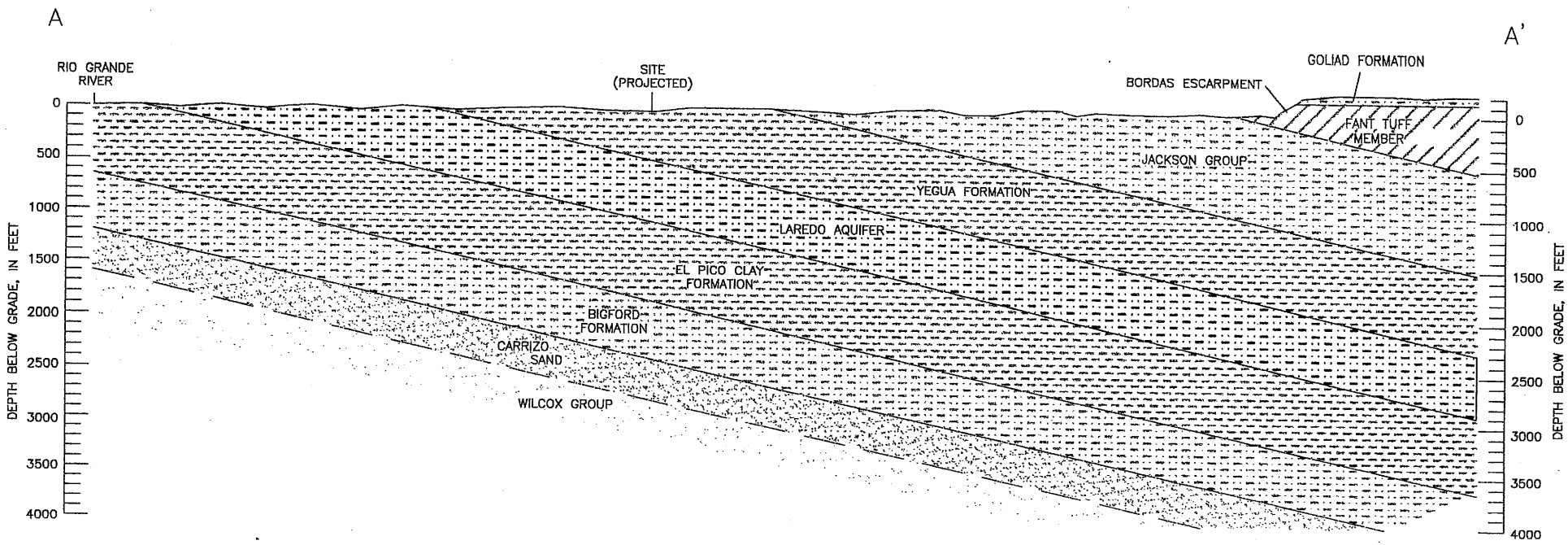
SIGNED September 2, 2008.

Carol S. Birch for

CAROL WOOD
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS

Carol S. Birch

CAROL S. BIRCH
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS



SOURCE:
BUREAU OF ECONOMIC GEOLOGY, 1976,
GEOLOGIC ATLAS OF TEXAS, LAREDO SHEET.

0 1000
VERTICAL SCALE
1"=1000'

0 250,000
HORIZONTAL SCALE
1:250,000

ATTACHMENT A

SECOR
INTERNATIONAL INCORPORATED
HOUSTON, TEXAS

PONDEROSA REGIONAL LANDFILL
LAREDO, TEXAS

TYPICAL REGIONAL
HYDRO-GEOLOGIC CROSS-SECTION

SECOR PROJECT #: 080.43282.004 | FILENAME: TEXAS-XS1 | DATE: 10/23/01

FIGURE
III-4.11

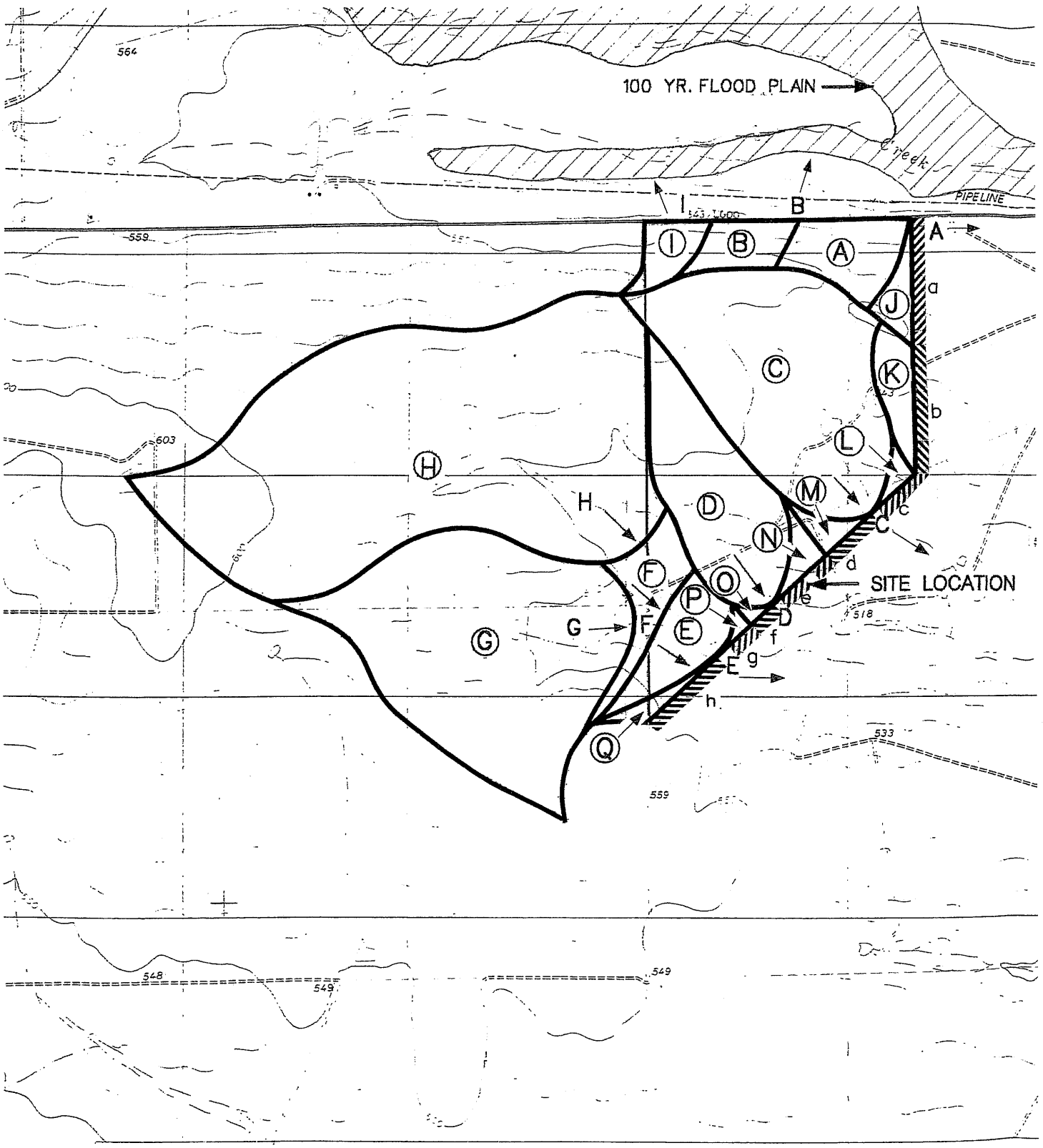


Exhibit A-127

NOTE:

THIS DRAWING IS INTENDED FOR PERMIT PURPOSES ONL
NOT INTENDED FOR BIDDING OR CONSTRUCTION.

ATTACHMENT B

Analysis of Scenarios for Rosetta's Proposed Well Locations at the Ponderosa Regional Landfill Site

With regard to each of Rosetta's proposed well locations, either:

1. A well will not be drilled at the proposed location **[and development of the landfill at that location may proceed in accordance with the permit design]**,

OR

2. A well will be drilled at the proposed location, in which case either:

A. The well will be drilled after a landfill cell has been constructed at the well location, in which case the well will be subject to the provisions of joint rules between TCEQ and RCT, at 30 TAC 7.117 and 16 TAC §3.30(f)(5)[1], and **development of the landfill and operation of the well may proceed** in accordance with directives of TCEQ and the Railroad Commission of Texas, determined after the proposal to drill a well through the landfill is evaluated by TCEQ and the Railroad Commission.

OR

B. The well will be drilled prior to the time a landfill cell is constructed at the location, in which case either:

(1) The well will be a dry hole (not completed as a producing well) **[and development of the landfill cell may proceed in accordance with the permit design]**, OR

(2) The well will be completed as a producing well, in which case either:

a. Production from the well will end prior to the time a landfill cell is constructed in the area of the well location **[and development of the landfill cell may proceed in accordance with the permit design]**, OR

b. Production from the well will be ongoing at the time a landfill cell would (in accordance with the landfill site development plan) be constructed at the well location, in which case either:

(i) The well may not remain in place because it "affect(s) or hamper(s) landfill operations", per TCEQ rule at 30 TAC 330.131(b)[2] **[and development of the landfill cell may proceed in accordance with the permit design]**, OR

(ii) The well remains in place until production from the well is exhausted, and either:

(a) the landfill is resequenced **[pursuant to a permit modification]** to avoid the location of the well and locations of associated facilities (surface facilities at the well site, access road, gathering lines), AND/OR

(b) the landfill is temporarily or permanently reconfigured **[pursuant to a permit modification]** to avoid the location of the well and locations of associated facilities (surface facilities at the well site, access road, gathering lines)

[note: this scenario 2.A.(2)b.(ii) would not result from the application of any TCEQ rule, but it could occur as a result of

- an agreement between RLMS and Rosetta regarding cooperation in development of the landfill and production of minerals, or
- a decision by RLMS for the landfill to avoid a well location]

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[1] "Drilling in landfills. The TCEQ will notify the Environmental Services Section of the Oil and Gas Division of the RRC and the landfill owner at the time a drilling application is submitted if an operator proposes to drill a well through a landfill regulated by the TCEQ. The RRC and the TCEQ will cooperate and coordinate with one another in advising the appropriate parties of measures necessary to reduce the potential for the landfill contents to cause groundwater contamination as a result of landfill disturbance associated with drilling operations."

[2] "...Producing crude oil or natural gas wells that do not affect or hamper landfill operations may be operated within the facility boundary, if identified in the permit for the facility or in a written notification to the executive director."

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AN ORDER **granting the application of Regional Land Management Services, Ltd. for MSW Permit No. 2286; Docket No. 2003-0729-MSW; SOAH Docket No. 582-04-0975**

On _____, 2008, the Texas Commission on Environmental Quality (Commission) considered the application of Regional Land Management Services, Ltd. (Regional or Applicant) for a Type I municipal solid waste landfill permit authorizing the disposal of municipal solid waste, construction-demolition waste, and special waste in Webb County, Texas. The application was presented to the Commission with a proposal for decision by Carol Wood and Carol Birch, Administrative Law Judges (ALJs) with the State Office of Administrative Hearings (SOAH).

After considering the ALJs' proposal for decision and the evidence and arguments presented, the Commission makes the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

A. General Facts and Procedural History

1. Regional has applied to the Commission for a Type I municipal solid waste landfill permit authorizing the disposal of municipal solid waste (MSW), construction-demolition waste, and special waste.

2. The Ponderosa Regional Landfill (Ponderosa Regional Landfill or Facility) will be a new Type I MSW landfill located in Webb County, Texas, and serving Webb County and the surrounding South Texas Region.

3. The Ponderosa Regional Landfill will be located south of State Highway 359, approximately 11 miles east of the intersection of Loop 20 and Highway 359 and 3.6 miles east of the city limits of the City of Laredo (Laredo).

4. The proposed site of the Ponderosa Regional Landfill consists of approximately 499 acres, with a disposal area (waste footprint) of 347 acres.

5. The Ponderosa Regional Landfill will accept municipal solid waste and certain special wastes that do not require prior approval. It will not accept Class 1, 2, or 3 industrial waste, regulated asbestos-containing material, PCB wastes, regulated hazardous waste, untreated waste from health-care related facilities, and other wastes prohibited by Commission rules.

6. The Ponderosa Regional Landfill will have a total permitted disposal capacity of 88,271,000 cubic yards, including waste and daily cover, and a site life of approximately 94 years, subject to change based on changes in waste generation and acceptance rates.

7. Regional's application was received on July 3, 2000, and declared administratively complete on August 8, 2000.

8. On July 2, 2002, the Commission's Executive Director (ED) completed technical review of the application and issued a draft permit on July 17, 2002.

9. On September 23, 2003, the Commission issued an Interim Order referring the matter to SOAH for a contested case hearing on the following issues:

   a. Is the proposed Facility compatible with area land uses?

b. Is the proposed groundwater monitoring adequate?

c. Are the proposed surface water controls adequate?

d. Does the application meet TCEQ site selection criteria with regard to unstable areas, faults, wetlands, and floodplains?

e. Is the proposed landfill compatible with the Regional Solid Waste Plan?

f. Does Applicant's compliance history at any other facilities operated by Applicant warrant permit denial or require special conditions?

g. Is the proposed Site Operating Plan (SOP) adequate?

h. Is the information submitted on geology and hydrology for the site adequate?

i. Are the designs for the landfill liner, sidewalls, leachate collection systems, and storm water controls adequate?

j. Did Applicant adequately evaluate endangered or threatened species at the site?

k. Does Applicant propose adequate financial assurance?

l. Did the application present adequate transportation information?

m. Is the proposed buffer zone and screening adequate?

n. Should the permit term be for the life of the facility?

o. Does the application adequately evaluate the soils and geotechnical conditions at the proposed landfill?

p. Does the application adequately address drainage?

10. On January 21, 2004, a preliminary hearing was conducted in Laredo by Deborah Ingraham, a former SOAH Judge.

11. The following were designated as parties: Applicant; the Commission's Public Interest Counsel (PIC); Webb County, and Protestants Manuel and Karen Gonzales, Bette and Antonio Flores, Olga and Agustin Alvarado, Mayme and Joe Schwarz, Mary Louise and Guillermo Cavazos, and Highway 359 Landowners Coalition.

12. Protestants Manuel and Karen Gonzales, Bette and Antonio Flores, Olga and Agustin Alvarado, Mayme and Joe Schwarz, and Mary Louise Cavazos later withdrew as parties and joined Highway 359 Landowners Coalition (Coalition).

13. By letter dated January 20, 2004, the ED notified SOAH that he would not participate as a party in the contested case hearing.

14. On May 3, 2004, the proceeding was abated until the Commission completed its rulemaking project for Chapter 330, Subchapter F.

15. New rules for site operating plans (SOPs) for MSW landfills were adopted by the Commission on November 10, 2004, and became effective December 2, 2004.

16. On March 1, 2005, the following question was certified to the Commission: whether a pending application for a new MSW permit was subject to the Commission's new rules governing SOP requirements.

17. On April 13, 2005, the Commission considered the certified question and, on April 19, 2005, the Commission issued an Interim Order that permitted Applicant to request the new SOP rules apply to its pending application.

18. On July 7, 2005, and October 27, 2005, Applicant submitted to TCEQ revisions to the proposed Facility's SOP.

19. On April 19, 2006, Applicant advised all parties it intended to prepare revisions to its application, including revisions to its surface water management plan, based on the Commission's decision to deny the application of Tan Terra Environmental Services, Inc., for a permit to operate a Type I MSW Facility (Docket No. 2004-0743-MSW). In response, Protestants filed motions to abate the proceeding, which were granted on May 15, 2006.

20. On October 23, 2006, Regional submitted to TCEQ amendments to its application.

21. In November 2006, the ED issued a revised permit.

22. On March 10, 2007, the motion of Rosetta Resources Operating L.P. (Rosetta) to be admitted as a party was granted.

23. Judges Carol Wood and Carol Birch conducted a hearing on the merits in Austin, Texas, on July 24–July 27, 2007; July 30–July 31, 2007; and August 1–2, 2007.

24. On November 15, 2007, Applicant filed a motion to reopen the record to admit Exhibits A-288 through A-290, regarding Regional's application and the South Texas Development Council's Regional Solid Waste Management Plan.

25. On November 19, 2007, Rosetta filed a motion to reopen the record to provide additional evidence concerning seven new drilling permits for oil and gas wells on the proposed landfill site, which had been issued to Rosetta by the Texas Railroad Commission on November 16, 2007.

26. A hearing regarding the additional evidence was conducted on March 3–5, 2008, and March 13, 2008, in Austin, Texas.

27. Applicant and Rosetta entered into an Accommodation Agreement on April 15, 2008.

28. On June 26, 2008, Rosetta withdrew its protest but retained its party status.

B. Land Use

29. The proposed site is not zoned and there are no zoning requirements that apply to the property. Although it is within Laredo's extraterritorial jurisdiction, the site does not require a special permit from the City nor approval as a non-conforming use.

30. The predominant land use within one mile of the permit boundary is characterized as "open," and includes range land, widely scattered oil and gas operations, and recreational

lands. The open land is primarily thick brush land, interspersed with dirt roads or clearings, and areas plowed to increase livestock grazing capacity, and much of it is used for hunting. Open land comprises approximately 4,420 acres, nearly 99 percent of the 4,483 total acres within one mile of the proposed site.

31. There are three occasional residences (hunting camps or weekend homes) and three full-time residences within one mile of the proposed landfill boundary. Allocating two acres per residential use results in 12 acres being used residentially—less than 0.3% of the land area within one mile.

32. One full-time residence is just inside the one-mile radius to the west of the permit boundary, on the north side of Highway 359. The other two are located approximately 5/8 of a mile east of the site, and they are houses provided by Protestant Guillermo Cavazos to his employees.

33. Mr. Cavazos, a resident of Laredo, has a weekend house at the same location as the employee housing. The other two occasional-use residences are located to the east and southeast of the proposed permit boundary.

34. The nearest occasional residence is approximately 140 feet southeast of the permit boundary (310 feet from the limit of fill within which waste disposal operations will occur). The nearest full time residence is approximately 2,500 feet east of the permit boundary, or 2,750 feet east of the proposed waste disposal operations.

35. No retail or other businesses are located within one mile of the permit boundary, and only two uses are classified as commercial. A very large steel tower that provides a platform for communications antennas is located approximately 1,000 feet west of the permit boundary, on the south side of Highway 359. The only other commercial use within the one-mile radius is a waste storage and injection well disposal operation. It consists of approximately six large steel tanks used for waste storage, an injection well, and a

portable building. This operation is located approximately 3,600 feet east of the site on the Cavazos property, just south of Highway 359 and less than one quarter mile from the residences on the property.

36. Within one mile of the site there are no schools, no day care centers, no churches, no cemeteries, no historic sites, no archaeologically significant sites, and no sites of exceptional aesthetic quality.

37. Residential growth is occurring in all sectors of Laredo. A new water line extends eastward from Laredo along Highway 359, but ends approximately 2.5 miles west of the site. This water line was sized large enough to meet existing needs in colonias along Highway 359 and to provide excess capacity for future growth, equivalent to 2,252 residences, in the area along the line.

38. The easternmost tract for which water service will be provided from the new water line is on the north side of Highway 359, 2.5 miles west of the proposed landfill site. Because there are no plans for water service east of the end of this new water line, the future urban/suburban growth east of Laredo along Highway 359 will be limited to the area served by the new water line for the foreseeable future.

39. There is a low probability of significant additional development occurring in the general vicinity of the proposed landfill site whether or not the landfill is developed.

40. The only well within 500 feet of the proposed landfill is a natural gas well located within the property boundaries of the site. There is only one water well located within one mile of the site. It is located approximately 2,800 feet east of the proposed permit boundary.

41. There are three easements on the proposed site. One of the easements is for a telephone line and another relates to an electric line. These utility lines and related easements will be relocated outside the proposed landfill footprint in the buffer zone prior to

development of the landfill. The third easement is a private road easement located just inside the eastern line of the proposed permit boundary. This easement is fenced along both sides and its continued use by the owner of the property immediately south of the site will not interfere with operation of the Facility, nor will operation of the Facility interfere with the use of the road easement.

42. From a land use standpoint, the site proposed for the Ponderosa Regional Landfill is a very good one. It is located in an area with very little development, low population density, and a low probability of additional development occurring in the foreseeable future. The site is located in reasonable proximity of and with good highway access to the metropolitan area of Laredo.

43. The South Texas Development Council conducted a general land use compatibility review of the Application in accordance with provisions in Chapter Four, Volume II of the South Texas Development Council Regional Solid Waste Management Plan and determined that the Facility as proposed is compatible with land uses in the vicinity of the proposed Facility.

44. The proposed Ponderosa Regional Landfill will be compatible with surrounding land uses.

C. Groundwater Monitoring

45. The uppermost aquifer is the geologic formation nearest the natural ground surface at the site of a municipal solid waste landfill facility that is capable of yielding significant quantities of water to wells or springs.

46. Soil at the surface of the site consists of alluvial sediments (alluvium) that vary in thickness from five to more than 30 feet.

47. Out of a total of 46 soil borings advanced through the alluvuial soils at the surface of the site, approximately 40 of the borings encountered no water and were dry.

48. The alluvial materials at the surface of the site are not an aquifer

49. Underlying the surficial deposits at the site is the Yegua Formation, a complexly interbedded sequence of claystone, siltstone, and sandstone with a thickness of approximately 400 to 500 feet.

50. The Texas Water Development Board has identified the Yegua Formation (in conjunction with the Jackson Formation that overlies it in areas well to the east of the site) as a "minor aquifer." However, there are locations in Texas where the Yegua-Jackson Formation is present but little or no water can be obtained from it

51. There are no more than 15 water wells completed in the Yegua Formation in all of Webb County.

52. The nearest water well completed in the Yegua Formation is approximately seven miles from the site.

53. The Yegua Formation is not capable of yielding significant quantities of water to wells or springs at the site.

54. The formation immediately below the Yegua Formation at the site is the Laredo Formation, the upper portion of which is located approximately 400 to 500 feet below ground surface.

55. The Laredo Formation is capable of yielding significant quantities of water to wells in the vicinity of the site.

56. The uppermost aquifer at the site is the Laredo Formation.

57. There is no potential for migration of hazardous constituents from the landfill unit to the Laredo Formation during the active life and the closure and post-closure care period of the unit.

58. The "no-migration" demonstration in the application is sufficient to support suspension of groundwater monitoring for the Ponderosa Regional Landfill.

59. Although the Facility is exempt from groundwater monitoring requirements, Regional has proposed to monitor groundwater in the water-bearing zones in the Yegua Formation found near the surface at the site of the proposed Ponderosa Regional Landfill and has requested that a special provision be included in the permit requiring the installation of a groundwater monitoring system and implementation of a groundwater sampling and analysis plan.

D. Drainage

60. The application includes documentation that the Facility will not cause discharges in violation of applicable Commission rules.

61. The application includes provisions for the design, construction, and maintenance of a run-on control system.

62. The application includes provisions for the design, construction, and maintenance of a run-off management system.

63. The application includes provisions for the design, construction, and maintenance of dikes, embankments, drainage structures, or diversion channels sized and graded to handle the run-off.

64. The application includes provisions for the grading of the slopes of the sides and toe.

65. The application includes surface water protection and erosion control practices.

66. The application includes a plan for contaminated water and leachate.

67. The application includes a final cover design that provides effective long-term erosional stability.

68. The application includes an existing contour map.

69. The Application includes a discussion of the regional physiography and topography.

70. The Facility's plan for management of uncontaminated surface water (stormwater) drainage intercepts all uncontaminated surface water run-off from the completed landfill at its perimeter and channels it to the same six discharge points and drainage features from the site as occur in the existing (natural or pre-development) condition.

71. Drainage terraces, situated near the shoulder of the landfill, provide the first level of control for uncontaminated surface water and will intercept side-slope drainage and convey it to the final cover drainage channels.

72. Nine final cover drainage channels will be located in the side slopes of the landfill.

73. Perimeter drainage channels located at the base of the landfill slopes and completely surrounding the landfill will collect side-slope drainage from below the lowest terrace, from the final cover drainage channels, and from the perimeter access road and will discharge into one of five detention ponds located on the site.

74. Discharges from each of the five ponds will be routed to one of five existing drainage discharge points on the site. Discharge Point E, near the far southern end of the site, will

continue to be a discharge point primarily for uncontaminated water that enters the site from off-site areas to the west and flows through a drainageway to the south-southeast.

75. The landfill design, with its drainage terraces, perimeter channels, and detention ponds generally creates a longer, more complicated path for stormwater than occurs in the existing condition. The resulting detention minimizes the impacts of the development of the landfill.

76. Sheet flow is uncontaminated surface water flow that originates in areas between the perimeter of the landfill improvements and the permit boundary that flows off the site in a shallow, unconcentrated manner, not channelized in a drainageway.

77. Sheet flow will continue to occur after the landfill is constructed from areas along the east and southeast sides of the site, similar to sheet flow that occurs there in the existing condition.

78. The existing receiving channels into which surface water from the site flows will not be overtopped or suffer erosion losses above permissible levels due to the development of the landfill.

79. After the Facility is constructed (the post-development condition), peak flow rates from each of the existing discharge points A, B, C, D, and I following a 25-year, 24-hour storm event will decrease from or, in the case of discharge point B, stay the same as the peak flow rates at those locations in the existing condition.

80. After the Facility is constructed (the post-development condition), and following a 25-year, 24-hour storm event, peak flow rates from the existing discharge point E (along the southeast side of the site) will increase by 20 cubic feet per second, or cfs, (from 1138 cfs

to 1158 cfs, or approximately 1.8 percent) over the peak flow rates at that locations in the existing condition.

81. After the Facility is constructed, the total of peak flow rates from the other existing discharge points (C and D) and sheet flow areas (c, d, e, f, g, and h)along the southeast side of the Site will decrease by 74 cfs, following a 25-year, 24-hour storm event.

82. Water discharged from discharge points C, D, and E and water flowing from sheet flow areas c, d, e, f, g, and h will be commingled in a drainageway a short distance from the site boundary, after crossing areas with no land uses that would be sensitive to minor changes in peak flow rates in that drainageway.

83. The changes in peak flow rates from the southeast side of the site following a 25-year, 24-hour storm event will not result in a significant alteration of natural drainage patterns.

84. An increase in surface water run-off volumes from a site is expected from any sort of development, including the development of a landfill.

85. In evaluating projected increases in water volumes leaving a site as the result of landfill development, the ED uses a "rule of thumb" of approximately a 10 percent change. If the projected change exceeds that approximate amount, the applicant is notified that the project as proposed may significantly alter the natural drainage patterns.

86. Following a 25-year, 24-hour storm event, the volume of water leaving the site from the existing discharge points and sheet flow areas after the Facility is constructed will increase from approximately 431.5 acre-feet to approximately 478.5 acre-feet, an increase of approximately 47.5 acre feet, or 11.0 percent, over the volumes leaving the site in the existing condition. Most of that increase will occur at discharge points A, B, and I, which discharge to the north and east from the northern part of the site.

87. The run-off volume increases that will result from development of the Ponderosa Regional Landfill will not increase flooding depth or width in receiving channels or increase flow velocities in receiving channels.

88. The projected increase in run-off volume from the Facility, approximately 11 percent, is within the "rule of thumb" used by the ED.

89. With regard to the additional run-off volumes projected to occur at discharge points A, B, and I, any significant adverse effect to downstream water rights or uses would be the result of a decrease in run-off volume, not an increase.

90. With regard to the additional run-off volumes projected to occur at discharge points A, B, and I, Regional has demonstrated that the additional volume will be released at a rate that will not significantly impact the downstream receiving water body because:

    a. Peak flow rates at discharge points A and I will decrease.
    b. The peak flow rate at discharge point B will remain the same.
    c. Regional is proposing to use stormwater retention (detention) ponds.

91. The discharge volume and peak flow rates are relatively the same, both pre- and post-development.

92. After development of the Ponderosa Regional Landfill, water surface elevations in the Lobo Creek channel and floodplain following a 25-year, 24-hour storm event will be approximately 0.01 foot (0.12 inches) higher than they would be if the landfill were not constructed.

93. The run-off volume increases at discharge points A, B, and I that will result from development of the Ponderosa Regional Landfill will not result in significant alteration of natural drainage patterns.

94. Development of the Ponderosa Regional Landfill will not result in significant alteration of natural drainage patterns.

95. The application includes a groundwater and surface water protection plan and drainage plan, including demonstration that natural drainage patterns will not be significantly altered as a result of the proposed landfill development .

96. The application includes a final contour map.

97. The application includes provisions that address ponded water.

98. A separate stormwater and surface water system has been designed to keep such waters that have not come in contact with solid waste at the Facility separated from leachate and contaminated water.

99. The Facility drainage system has been designed so that run-off from the site in the post development condition (after construction of the landfill) will match the existing condition (or "natural") flows.

100. The leachate and contaminated water management plan for the Facility will ensure the proper management of those materials.

E. Unstable Areas, Faults, Wetlands, and Floodplains

101. The Ponderosa Regional Landfill is not proposed to be located in an unstable area.

102. The nearest documented surface faults are at least two and a half to three miles away from the proposed Ponderosa Regional Landfill site.

103. The proposed waste management units at the Ponderosa Regional Landfill will not be located within 200 feet of a fault that has had displacement in Holocene time.

104. There are no wetlands in the areas of the site proposed to be developed as waste management units.

105. The relevant FEMA flood map (the May 17, 1982 FEMA Flood Insurance Rate Map) indicates that the entire site is located outside of the 100-year floodplain.

106. The new preliminary FEMA flood map for the area of the site (September 7, 2006) shows that the entire proposed permit boundary for the Ponderosa Regional Landfill is located outside of the 100-year floodplain.

107. No area of the proposed permit boundary for the Ponderosa Regional Landfill is located in a 100-year floodplain.

F. Regional Solid Waste Plan

108. The proposed Ponderosa Regional Landfill is located in the planning area of the South Texas Development Council.

109. The South Texas Development Council prepared "Volume I: Regional Solid Waste Management Plan" and "Regional Solid Waste Management Plan Amendment 2002-2022, Volume II."

110. "Regional Solid Waste Plan Amendment 2002-2022, Volume II" includes the following:

a. Long-range disposal capacity in the region is not expected to be sufficient to meet needs, and adding more disposal capacity is the number one priority.

b. The long-term solution to the region's MSW disposal needs is best met through regional landfills, and any future expansions of current landfills or development of new landfills should conform to this approach.

c. The combined disposal capacity of the six landfills currently located in the region is projected to reach capacity by 2018. Adding additional disposal capacity for the region is critical for meeting solid waste management needs for the long term.

d. The permit for the new Ponderosa Regional Landfill is currently pending. It represents the only current permitting effort to add additional disposal capacity in the region.

111. The Ponderosa Regional Landfill can meet the solid waste disposal needs of the South Texas Development Council region.

112. The South Texas Development Council conducted a plan conformance review of Regional's application and determined it is in conformance with the South Texas Development Council Regional Solid Waste Management Plan.

113. The proposed Ponderosa Regional Landfill is consistent and compatible with the South Texas Development Council Regional Solid Waste Management Plan.

G. Compliance History

114. Regional has no compliance history.

115. Regional's compliance history at any other facilities operated by it does not warrant permit denial or require special conditions.

H. Site Operating Plan

116. The Site Operating Plan for the proposed Ponderosa Regional Landfill satisfies applicable Commission rules regarding site operations and site operating plans.

I. Geology and Soils

117. Field and laboratory investigations of geology, soils, and geotechnical conditions at the site of the proposed Ponderosa Regional Landfill were performed in accordance with applicable Commission rules and were adequate.

J. Landfill Liner, Sidewalls, and Leachate Collection System

118. The liner system for the entire landfill will include a minimum two-feet thick compacted clay liner, a flexible membrane (plastic) liner component, liner system drainage layer, and leachate collection system.

119. The designs for the liner and sidewalls of the proposed Ponderosa Regional Landfill are consistent with good engineering practice and methods.

120. The application includes design data for ballasting and an underdrain (dewatering system) to control uplift from hydrostatic forces during liner construction.

121. The liner system will not undergo uplift from hydrostatic forces during its construction.

122. The application includes a soil liner quality control plan that is adequate for construction and development of the proposed landfill,

K. Endangered or Threatened Species

123. The United States Fish and Wildlife Service and the Texas Parks and Wildlife Department were contacted for locations and specific data relating to endangered and threatened species.

124. A biological assessment for the site of the proposed Ponderosa Regional Landfill and its operation, as well as additional field studies regarding threatened or endangered species at the site were performed by Horizon Environmental Services, Inc.

125. No designated critical habitat is situated on or near the proposed landfill site.

126. State-listed threatened species that may utilize the site and potentially be impacted by the landfill include the indigo snake, reticulate collared lizard, Texas tortoise, and Texas horned lizard.

127. State-listed threatened species are not included in the Texas Endangered Species Act.

128. Even though the four state-listed species that may use the proposed Ponderosa Regional Landfill site are not included in the Texas Endangered Species Act, Regional has prepared and will implement a species management plan to protect those species.

129. Adverse impacts to state and federally listed species and their habitats will be negligible for the following reasons:

a. The lack of designated critical habitat on or near the proposed landfill site.
b. Intense land management practices that have previously occurred on the site.
c. General domination of the site by buffalo grass.
d. The establishment of a listed species management plan by Applicant.

L. Financial Assurance

130. The application includes a final closure plan for the proposed Ponderosa Regional Landfill that describes closure procedures for the completed landfill.

131. The application includes a post-closure plan for the proposed Ponderosa Regional Landfill that discusses operational, inspection, and maintenance procedures to be followed during the thirty-year post-closure care period for the Facility.

132. The application includes cost estimates for closure and post-closure care of the proposed Ponderosa Regional Landfill.

133. Because Ponderosa Regional Landfill will be a new Facility, financial assurance will not have to be submitted to TCEQ until 60 days prior to the initial receipt of waste, which could not occur until at least several months after the issuance of a permit.

M. Transportation

134. Access to the Facility will be via Highway 359, which is the only public use roadway within one mile of the site.

135. The existing volume of vehicular traffic on Highway 359 within one mile of the site is between 3,500 and 4,000 vehicles per day.

136. Traffic volumes on Highway 359 are expected to increase to approximately 14,000 vehicles per day in 2020, approximately 288 (2.05 percent) of which are expected to be generated by the Facility.

137. Highway 359 is an asphalt-paved roadway with paved shoulders. It is a well constructed highway, with adequate travel lands and shoulders, that is of sufficient construction and size to accommodate the addition of the proposed Facility with no significant reduction in its current level of service.

138. Highway 359 will not be significantly impacted by the anticipated landfill operations. There is more than sufficient site distance along Highway 359, both east and west of the proposed entrance to the Ponderosa Regional Landfill, to allow for safe maneuvering of traffic entering and leaving the landfill, as well as traffic traveling by the site on Highway 359.

139. The Texas Department of Transportation has the responsibility for maintaining and improving Highway 359 as necessary.

140. The nearest public use airport is Laredo International Airport, located well over 10 miles from the proposed landfill site.

N. Buffer Zone

141. The proposed landfill has buffer zones that range from a minimum of 125 feet to more than 2,200 feet.

142. On the east, west and south sides of the site, buffer zones will consist of at least a 125-foot buffer from the site boundary to the edge of waste placement.

143. Along the north side of the site, a minimum 300-foot buffer zone shall be left between the site boundary and the beginning of waste placement.

144. No solid waste unloading, storage, disposal, or processing operations shall occur within any buffer zone.

145. The buffer zones and the perimeter roadways located within them will provide for safe passage for fire-fighting and other emergency vehicles.

O. Screening

146. Final, intermediate, and daily cover used at the Ponderosa Regional Landfill will provide screening of deposited waste materials from view.

147. Where possible, existing vegetation in the 125-foot minimum buffer zones will be maintained to provide visual screening of deposited waste materials from view.

148. As much as possible, the natural vegetation in the buffer zone around the landfill will be left as is to provide visual screening and to keep the area with the appearance of the natural surrounding.

P. Permit Term

149. The permit provides that it will be valid until canceled, amended, or revoked by the Commission, or until the site is completely filled or rendered unusable, whichever occurs first.

150. No evidence was presented that would support shortening of the permit term to less than the life of the Facility.

Q. Potential Oil and Gas Development

151. RLMS and Rosetta (the current owner of the mineral estate of a 2,000 acre tract that includes the proposed site) have entered into an accommodation agreement that allows Rosetta to make limited use of the surface of the site for mineral exploration and production operations.

152. It would be possible, without difficulty, to make changes to the sequence of landfill development and/or to make changes to the configuration of the landfill to reduce the waste disposal area in order to avoid surface locations of existing or future mineral exploration or production activities.

153. Resequencing and/or reconfiguration of the landfill would not impact off-site drainage or increase landfill disposal capacity and TCEQ approval for such changes could be accomplished by way of future permit modifications pursuant to Commission rules.

154. The groundwater and surface water protection and drainage plan in the Application includes, at Section 2.11, a discussion of possible future changes to the surface water and drainage plans for the Facility. It addresses possible future changes, including revisions to top-slopes and/or side-slopes of the landfill that may result in adjustment to approved final contours, including possible reduction in the size of the area proposed for waste disposal operations resulting from temporary or permanent reduction in the landfill footprint area to avoid areas of existing or future mineral exploration or production, or both. The section provides that, if the site owner or operator contemplates any change to the Facility that would affect stormwater management or drainage, the owner or operator must obtain TCEQ approval prior to implementing any such change, either as a permit modification or a permit amendment.

155. Oil or gas wells and the proposed Ponderosa Regional Landfill would be compatible land uses.

R. Transcription Costs

156. Transcription and reporting costs totaling $19,964.60 have been paid by Applicant. Applicant seeks no reimbursement for payment of the transcription and reporting costs.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the disposal of municipal solid waste and the authority to issue this permit under TEX. HEALTH & SAFETY CODE (Health and Safety Code § 361.061.

2. Notice was provided in accordance with Health & Safety Code § 361.0665, 30 TAC §§ 39.5 and 39.101, and TEX. GOV'T CODE (Gov't Code) §§ 2001.051 and 2001.052.

3. SOAH has jurisdiction to conduct a hearing and to prepare a proposal for decision. Gov't Code § 2003.47.

4. Based on the above Findings of Fact, the proposed Ponderosa Regional Landfill will be compatible with surrounding land uses.

5. Based on the above Findings of Fact, oil and gas wells and the proposed Ponderosa Regional Landfill will be compatible land uses.

6. Based on the factors specified in 30 TEX. ADMIN. COCE (TAC) § 330.230(b)(1) and (2), there is no potential for migration of hazardous constituents from the landfill unit to the Laredo Formation during the active life and the closure and post-closure care period of the unit.

7. The "no migration" demonstration in the application is sufficient to support suspension of groundwater monitoring for the Ponderosa Regional Landfill.

8. The design and proposed operation of the Ponderosa Regional Landfill satisfies the requirements set forth in 30 TAC Chapter 330 regarding surface water, drainage, and stormwater.

9. Based on the above Findings of Fact, the leachate and contaminated water management plan for the Facility satisfies the requirements of 30 TAC Chapter 330 and will ensure the proper management of those materials.

10. The Ponderosa Regional Landfill is not proposed to be located in an unstable area as described in 30 TAC § 330.305.

11. The proposed Ponderosa Regional Landfill is consistent and compatible with the South Texas Development Council Regional Solid Waste Management Plan

12. The Site Operating Plan for the proposed Ponderosa Regional Landfill satisfies the requirements set forth in 30 TAC Chap. 330 regarding site operations and site operating plans, including the December 2004 revisions to the site operating rules.

13. Field and laboratory investigations of geology, soils, and geotechnical conditions at the site of the proposed Ponderosa Regional Landfill were performed in accordance with the requirements set forth in 30 TAC Chap. 330, and the Geology Report in the application complies with the requirements set forth in 30 TAC Chap. 330.

14. All areas of the proposed Ponderosa Regional Landfill will include liner systems that satisfy the 1993 Subtitle D liner requirements that have been incorporated into 30 TAC Chapter 330.

15. The financial assurance proposed for the Ponderosa Regional Landfill complies with the financial assurance requirements set forth in 30 TAC Chap. 330.

16. In accordance with 30 TAC § 50.117, the Commission issues this Order and the attached permit as its single decision on the permit application. Information in the agency record of this matter, which includes evidence admitted at the hearing and part of the evidentiary record, document the Executive Director's review of the permit application, including that part not subject to a contested case hearing, and establishes that the terms of the attached permit (Exhibit A) are appropriate and satisfy all applicable federal and state requirements.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, IN ACCORDANCE WITH THESE FINDINGS OF FACT AND CONCLUSIONS OF LAW THAT:

1. The Commission adopts the Executive Director's Response to Public Comment in accordance with 30 TAC § 50.117. Also in accordance with Section 50.117, the Commission issues this Order and the attached permit (Exhibit A) as its single decision on the permit application. Information in the agency record of this matter, which includes evidence admitted at the hearing and part of the evidentiary record, documents the Executive Director's review of the permit application, including that part not subject to a contested case hearing, and establishes that the terms of the attached permit are appropriate and satisfy all applicable federal and state requirements.

2. Permit No. 2286 for a Type I MSW landfill in Webb County, Texas is hereby issued to Regional Land Management Services, Ltd., as set out in Draft Permit No. MSW-2286, with the following modification:

   > a groundwater monitoring system shall be installed and the Groundwater Sampling and Analysis Plan described and shown in Exhibit A-287, TCEQ Docket No. 2003-0729-MSW shall be implemented.

3. The Chief Clerk of the Commission shall forward a copy of this Order to all parties and issue the attached permit as changed to conform to this Order.

4. All other motions, requests for specific Findings of Fact or Conclusions of Law, and other requests for general and specific relief, if not expressly granted, are denied for want of merit.

5. If any provision, sentence, clause, or phrase of the Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of this Order.

6. The effective date of this Order is the date the Order is final, as provided by 30 TAC § 80.273 and TEX. GOV'T CODE § 2001.144.

ISSUED:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Buddy Garcia, Chairman