SOAH DOCKET NO. 582-07-0863
TCEQ DOCKET NO. 2006-1931-MSW

APPLICATION OF WASTE MANAGEMENT OF TEXAS, INC. FOR A MUNICIPAL SOLID WASTE PERMIT AMENDMENT; PERMIT NO. MSW-66B	**§**	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

PROTESTANT TJFA'S REPLY BRIEF

TO THE HONORABLE ADMINISTRATIVE LAW JUDGE:

COMES NOW, Protestant TJFA, L.P. and files its Reply Brief, in response to the Closing Arguments of Applicant. TJFA further believes that its responses herein as well as its Closing Argument adequately addresses the issues and arguments contained in the OPIC's and the ED's closing arguments and therefore will not be submitting separate responses to those parties' closing arguments.

This Reply Brief is organized to follow the outline of the Applicant's Closing Argument. However, there are several issues that the Applicant, OPIC and/or the ED did not address in their closing arguments. These issues are of importance to TJFA and the other protestants in that they demonstrate additional failures on the part of the Applicant to meet the rules and regulations necessary in the preparation of a permit application for a municipal solid waste facility in Texas. TJFA's counsel conducted extensive cross-examination of Applicant and ED witnesses to explore and highlight the numerous deficiencies in the Permit Amendment Application (PAA) that is the subject of this hearing, yet many of these have been ignored by the Applicant, OPIC and/or the ED in their closing arguments. Therefore, these deficiencies have been reiterated herein and

TJFA would reserve the right to address any of these issues in a supplemental reply brief if any of the other parties address them in their reply briefs.

I. BACKGROUND

- Applicant Failed to Meet Its Burden of Proof

The Applicant correctly states in its Closing Argument that it has the Burden of Proof in this matter to demonstrate by a preponderance of the evidence that its PAA meets all regulatory and statutory requirements. The evidence and testimony presented at the hearing shows that the Applicant clearly has not met its burden as to a number of issues that were discussed during the hearing. Two of the most blatant failures by the Applicant to meet its burden of proof concerning important issues are discussed below.

First, the Applicant totally failed to establish the location of the 100-year floodplain along Mesquite Creek and its tributary, contrary to 30 TAC 330.301. The Applicant's reliance on the FEMA floodplain map in this case was obviously inappropriate given the lack of any analysis by FEMA of Mesquite Creek and its floodplain. (No witness could establish whether or not FEMA had actually studied Mesquite Creek to determine its floodplain, in spite of the fact that both the Applicant witness and the ED witness agreed that Mesquite Creek had a floodplain). The Commission's prior rulings in Application of Tan Terra Environmental Services, Inc. (SOAH Docket No. 582-05-0868; TCEQ Docket No. 2004-0743-MSW) and Application of Juliff Gardens, LLC. (SOAH Docket No. 582-02-1595; TCEQ Docket No. 2002-0117-MSW) make it clear that Applicants cannot rely on the

FEMA map when no floodplain analysis was ever conducted by FEMA for the area or creek in question. As a result, the Applicant is unable to comply with the various rules regarding identifying areas subject to flooding by the 100-year frequency flood in order to determine if a landfill will be located within a floodplain so that measures can be taken to ensure that waste will not be washed away or discharged into nearby watercourses or that nearby properties will not be adversely impacted (e.g. 30 TAC 330.56(f)(4)(B)(i) and (ii)).

Second, the Applicant completely failed to conduct any permeability tests in Stratum IV to investigate and establish the horizontal hydraulic conductivity/permeability of portions of the subsurface immediately adjacent to and below the landfill excavation, in clear and direct violation of TCEQ rule 330.56(d)(5)(B)(ii). This failure to fully characterize the hydrogeology of the site prevents the Applicant from being able to comply with the various requirements for establishing an adequate groundwater monitoring system to ensure detection of any pollutants in the uppermost aquifer that might leak out of the landfill before escaping from the landfill site (e.g. 30 TAC 330.231(a)). Further, all required geotechnical engineering data required by 30 TAC 330.56(d)(5)(B)(i) and (ii) was not even provided as a signed/sealed engineering document in accordance with 30 TAC 330.51(d)(1)

The failure on the part of the Applicant to meet its burden of proof regarding these two important issues, as well as all of the other deficiencies in this application as noted below,

are fatal flaws that require a conclusion that this permit amendment application must be recommended for denial.

- Applicant Failed to Meet All Regulatory Requirements

The Applicant failed to meet all of the regulatory requirements for obtaining a municipal solid waste permit in Texas, contrary to the Applicant's assertions in its Closing Argument. The following is a list in numerical order of some of the MSW regulations that were not met by the Applicant in this case:

> **30 TAC 330.2(63)** Applicant mischaracterizes its permit amendment application as a "lateral expansion". Applicant is not proposing to horizontally expand the waste boundaries of an existing MSW landfill unit, but simply to expand the facility boundaries and to construct a new and separate MSW landfill unit, Unit 2, within the expanded area. "... Submission of false information shall constitute grounds for denial of the permit ..." (30 TAC 330.51(b)(2).
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> **30 TAC 330.5(a)(1)** Applicant has not demonstrated that the floodplain along Mesquite Creek and its unnamed tributary passing through landfill property will not result in the design and operation of the landfill causing a discharge or a threat of discharge into the waters of the state.
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> **30 TAC 330.5(a)(2)** By failure to meet all MSW rules and other statutory requirements, Applicant has failed to demonstrate that it will not cause the creation and maintenance of a nuisance.
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> **30 TAC 330.5(a)(3)** By acknowledging that the location of the new site entrance proposed in the permit amendment application is not safe, applicant has not demonstrated that it will not cause endangerment of human health and the environment; failure to demonstrate that it meets 30 TAC 330.5(a)(1) and (2) above also is a failure to meet this MSW regulation.
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> **30 TAC 330.5(b)** By failure of the Applicant to demonstrate that it meets all applicable MSW rules, applicant has demonstrated that it has also failed to meet this regulation; therefore, the facility, as proposed, would be an "open dump," which is prohibited under RCRA §4005(a).

30 TAC 330.5(e)(6)(A)(*ii*) Applicant has failed to demonstrate that only leachate and landfill gas condensate derived from Unit 2 will be recirculated into Unit 2 and to make it clear by design and operating procedures that leachate and landfill gas condensate generated from Unit 1, a landfill unit that is not completely covered with a composite liner and leachate collection system, will not be recirculated into Unit 2, which is also prohibited under 40 CFR Part 258.28.

30 TAC 330.51(b)(1) Applicant by his own admission has not provided the Executive Director with an application that addresses all aspects of the application and design requirements including those that are not applicable to this site, such as the lack of floodplain information, design information for Ponds A and B, and horizontal permeability data for Stratum IV.

30 TAC 330.51(b)(2) Applicant by his own admission has not provided the Executive Director with an application for a permit amendment that is sufficiently complete, accurate, and clear that its operation poses no reasonable probability of adverse effects on health, welfare, environment, or physical property of nearby residents or property owners regarding such issues as: failure to provide requisite information on the effects of flooding at the facility; failure to discuss and analyze the effects of increased discharge across neighboring, non-owned properties; failure to fully characterize hydrogeology beneath the landfill excavation; and failure to propose a site entrance location that meets AASHTO roadway safety standards for line of sight.

30 TAC 330.51(d)(1) Applicant by his own admission did not prepare the Application in accordance with the Texas Engineering Practice Act by having Mr. Graves signing/sealing portions of the application that were not performed by him or under his direct supervision as the professional engineer who sealed it.

30 TAC 330.51(d)(2) Appendix 4-E of the Geology Report (containing much of the geotechnical engineering test data) was not signed/sealed by any engineer. The Application is therefore incomplete and should be returned to Applicant.

30 TAC 330.51(f)(1) Drawings must be legible even if reduced; however, Mr. Graves couldn't read or identify the contours in his Figure 6H-1 on p. 02112 of the PAA (TR p. 190 L 4 to p. 191 L 5).

330 TAC 53(b)(10)(D) Applicant failed to identify and provide data on unstable areas, i.e., "*a location that is susceptible to natural or human-induced events capable of impairing the integrity of some or all of a landfill's structural components responsible for preventing releases from the landfill ... shall demonstrate that engineering measures have been incorporated into the MSWLF unit's design to ensure the integrity of the structural components of the MSWLF unit will not be disrupted.*"

30 TAC 330.54(4) By failure to demonstrate that it has met all MSW regulatory requirements and other applicable statutes and regulations, Applicant has failed to demonstrate that in selecting its site and design, Applicant is safeguarding the health, welfare, and physical property of the people and the environment through consideration of all necessary criteria as the specific site dictates.

30 TAC 330.55(b)(1)(A) By its failure to properly and adequately characterize the hydrogeology of the site, identify the floodplain and flood levels along Mesquite Creek and its unnamed tributary, and provide for proper management and control of contaminated runoff, Applicant has not provided sufficient information to document that it will not cause a discharge of solid waste or pollutants into water in the state, specifically Mesquite Creek

30 TAC 330.55(b)(2) By its failure to identify the floodplain and flood levels along Mesquite Creek and its unnamed tributary, the Applicant failed to design a run-on control system capable of preventing flow onto the active portion of the landfill during at least the 25-year storm,

30 TAC 330.55(b)(3) The Applicant failed to design a proper runoff management system to control contaminated water (runoff from the active portion of the landfill)for a runoff volume associated with the 24-hour, 25-year storm event.

30 TAC 330.55(b)(4) By its failure to provide any information regarding Pond B and insufficient information on Pond A, the Applicant cannot demonstrate that these drainage structures or channels can handle the design runoff.

30 TAC 330.55(b)(5)(C) By its failure to provide any information regarding Pond B and insufficient information on Pond A, the Applicant has not provided designs of all drainage facilities within the site area.

30 TAC 330.55(b)(5)(D) Applicant's sample calculations showing a doubling of the runoff volume as proposed to be discharged at Discharge Point E do not verify that natural drainage patterns will not be significantly altered.

30 TAC 330.55(b)(5)(E) Applicant failed to show that geotechnical stability has been provided for final cover using accepted engineering standards.

30 TAC 330.55(b)(6) Through failure to develop an adequate contaminated water management plan, including calculations verifying the design and size of containment area(s), locations, and methods and a suitable liner covering the bottom and sides of containment areas, Applicant has not demonstrated compliance with this regulation.

30 TAC 330.55(b)(7) Through failure to perform a floodplain analysis for Mesquite Creek or have one that can be reasonably relied upon, Applicant has not

demonstrated that the site is protected from flooding by suitable levees to protect from the 100-year frequency flood.

30 TAC 330.56(c) Attachment 3, the existing contour map, does not show the surface drainage entering, exiting or internal to the site, nor the area subject to 100-year flooding, as required.

30 TAC 330.56(d)(5)(A)(*i*) In that no horizontal permeability tests were performed on Stratum IV, into which portions of the proposed facility expansion will be excavated, it must be presumed that the number of borings was insufficient to provide the requisite geotechnical data. No waiver from this requirement was sought, and Ms. Meaux testified that the field tests performed by others for the previous permit amendment were flawed and unreliable.

30 TAC 330.56(d)(5)(A)(*ii*) Applicant's failure to identify the bottom of the upper-most aquifer and thereby demonstrate that all of Stratum IV as it was defined by the Applicant is the aquiclude underlying the uppermost aquifer through any piezometer testing is presumptive evidence that the borings were not sufficiently deep to identify the underlying aquiclude.

30 TAC 330.56(d)(5)(B) The results of the required [geotechnical] engineering tests provided in Appendix 4E of the PAA were not signed/sealed by any engineer. Further, all of the required tests were not performed, e.g. horizontal permeability test of Stratum IV samples.

30 TAC 330.56(d)(5)(B)(*i*) and (*ii*) Soil characteristics, specifically the horizontal permeability measured in the laboratory and/or in the field, of all strata that will form the bottom and sides of the proposed excavation, were not determined; there are no laboratory or field measurements of the horizontal permeability of Stratum IV, into which portions of Unit 2 are proposed to be excavated, included in the geotechnical report as is required.

30 TAC 330.56(d)(5)(C)(*iii*) All information and data required in 30 TAC 330.231(e)(1) has not been provided in the ground water investigation report. Specifically, there has not been a thorough characterization of aquifer thickness, effect of site construction on ground water flow direction and rates, and the hydraulic characteristics of the saturated and unsaturated geologic units of the materials of the lower confining unit of the uppermost aquifer; neither field or laboratory tests of horizontal hydraulic conductivity/permeability were performed in Stratum IV nor was any quantifiable, scientific proof advanced demonstrating that what the Applicant calls Stratum IV is indeed the lower confining layer in the facility expansion area (i.e the aquiclude).

30 TAC 330.56(d)(5)(C)(*iv*) Because of the Applicant's failure to thoroughly investigate the hydrogeologic and hydraulic characteristics of Stratum IV in the facility expansion area, and its failure to consider changes in groundwater flow

that are expected to result from construction of Cell 2 in Unit 1, the analysis of the most likely pathway for pollutant migration is incomplete and inadequate.

30 TAC 330.56(e)(2) Applicant does not demonstrate that it has adequately investigated and defined the uppermost aquifer beneath the facility, in large measure because the Applicant did not thoroughly investigate and evaluate the hydrogeologic and hydraulic properties of Stratum IV beneath the facility.

30 TAC 330.56(f) Applicant has not provided details and typical sections of drainage channels and holding ponds (i.e. Ponds A and B) nor demonstrated that there are adequate provisions for safe passage of externally adjacent floodwaters (i.e. Mesquite Creek floodplain). See 30 TAC 330.55(b)(7)(C) above.

30 TAC 330.56(f)(2) and (4)(*iv*) Applicant has not demonstrated through discussion and analyses that natural drainage patterns will not be significantly altered as a result of the proposed landfill development, specifically, the total volume of runoff discharged onto non-owned property across Schwarzlose Road is approximately doubled. See 30 TAC 330.55(b)(5)(D) above.

30 TAC 330.56(f)(3) and (4)(B)(*i*) and (*ii*) Applicant has not shown the 100-year floodplain on this attachment for Mesquite Creek nor its unnamed tributary, nor has the Applicant identified if the site is in the 100-year floodplain of Mesquite Creek, nor has the Applicant provided information on the specific 100-year flood levels and the impact of flooding on the facility.

30 TAC 330.56(f)(4)(A)(*iii*) Applicant has failed to submit for review the hydraulic calculations and designs for sizing Ponds A and B.

30 TAC 330.56(g) Attachment 7, the final contour map, does not show surface drainage entering and exiting the facility nor identify areas subject to flooding due to a 100-year frequency event.

30 TAC 330.56(o)(1) Applicant has not provided details of the storage, collection, treatment and disposal of all water defined by the Applicant as being considered contaminated, specifically that which runs off daily cover. See 30 TAC 330.5(a)(2), 30 TAC 330.5(b), and 30 TAC 330.55(b)(1)(A), 30 TAC 330.54(4) above.

30 TAC 330.56(o)(2) Neither through design nor operating plan restrictions has Applicant assured that contaminated water will not and cannot be recirculated into Unit 2 of the expanded facility, since the PAA shows that contaminated water will be mixed with leachate and stored in the leachate storage tanks and piped to the leachate evaporation ponds, and then recirculated.

30 TAC 330.56(o)(4) Applicant has not provided for a liner where it intends to pond contaminated water below the working face; in fact, in closing arguments (P. 22), Applicant asserts that the intent is to allow the contaminated water to seep into the landfill to become leachate.

30 TAC 330.57 The Site Operating Plan provided in this permit amendment application does not contain all the information required in 30 TAC 330.114(4), (5) and (6), regarding personnel training requirements, procedures for the detection and prevention of the disposal of prohibited waste, ponding water over waste, and the adequacy of on-site equipment for fire protection.

30 TAC 330.62(a) Applicant does not demonstrate that stormwater runoff leaving the site will not cause injury to adjacent private property not owned by the Applicant, specifically with respect to altering natural drainage patterns at Discharge Point E. See 330.55(b)(5)(D) and 30 TAC 330.56(f)(4)(*iv*) above.

30 TAC 114(4) The Application does not meet these specific training requirements as referenced to 30 TAC 335.586(a) and (c)

30 TAC 330.114(5) The Application inadequately addresses procedures for the detection and prevention of the disposal of prohibited waste – see also TCEQ's RG-420 *Guide for Preparing Site Operating Plans for Municipal Solid Waste Facilities*

30 TAC 330.114(6) The application does not contain all of the general operating instructions required by other sections of 30 TAC 330 subchapter E [330.113 – 330.139]

30 TAC 330.115 The Applicant's fire protection plan is deficient in that it does not show that sufficient equipment will be provided on-site to cover any uncovered waste (working face) since the calculations in the PAA covers only a minimum area of potentially exposed waste and does not address multiple working faces or larger working faces.

30 TAC 330.118 The Applicant does not justify the need for expanded waste acceptance hours and/or operating hours to 24/7, especially since the Applicant acknowledges that it does not intend to accept waste 24/7 and has specifically agreed otherwise. Provisions of this section of the rules already provide flexibility for the emergency and unforeseen circumstances that Applicant asserts is needed for expanded its operating hours.

30 TAC 330.134 Applicant's design and operation, as proposed in the permit amendment application, call for the ponding of contaminated water over the active portion of the landfill, which is prohibited and must be eliminated within 7 days, regardless of origin.

30 TAC 330.139 Through failure to demonstrate that it can adequately contain and manage contaminated water flowing across daily cover, the Applicant has not demonstrated that contaminated water will not be discharged, for which it has not applied for authorization. See 30 TAC 330.5(a)(2), 30 TAC 330.5(b), and 30 TAC 330.55(b)(1)(A), 30 TAC 330.54(4) above.

30 TAC 330.203(a)(1) and (2) The landfill excavation will extend below at least the water table measured in Stratum III (Stratum IV conditions undefined), however, the Application did not provide required calculations to show a factor of safety of at least 1.2 with respect to hydrostatic forces on the liner. see also 30 TAC 330.203(i)(2)

30 TAC 330.203(b) The Application does not show, through a suitable combination of dewatering and/or ballast calculations, that the liner will be "*stable during the filling and operation of the landfill*"

30 TAC 330.203(d) Although the application proposes construction of landfill units below the water table measured in Stratum III (Stratum IV conditions undefined), the required foundation evaluation including stability was not provided.

30 TAC 330.203(i)(2) The Application proposes to use waste for ballast to offset hydrostatic uplift forces resulting from excavation below the water table. Although procedures for calculations of waste for ballast were given in Appendix 10-B to Attachment 10, required calculations were not provided.

30 TAC 330.205(a) Application does not provide calculations using accepted engineering procedures to show *"all constructed liners shall be keyed into an underlying formation of sufficient strength to ensure stability of the constructed lining.*"

330 TAC 205(c) Application does not show that compacted soil liners can be constructed from on-site soils in accordance with the executive director's most recent guidelines, i.e., the *Liner Construction and Testing Handbook*

30 TAC 330.205(e) Application does not provide calculations using accepted engineering procedures to show *"all constructed liners shall be keyed into an underlying formation of sufficient strength to ensure stability of the constructed lining.*"

30 TAC 330.231(a) In that the Applicant has failed to completely and correctly characterize the hydrogeology of the expansion area and failed to adequately define the uppermost aquifer beneath the facility, it cannot demonstrate that a sufficient number of monitoring wells will be installed at appropriate locations and depths to yield representative ground water samples from the uppermost aquifer.

30 TAC 330.231(a)(1) Based on an incomplete and inadequate evaluation, Applicant cannot demonstrate that its single designated upgradient well for Unit 1 (MW-1) would always be unaffected by leakage from a landfill unit, since MW-1 is downgradient from portions of Unit 1; Unit 3 has no designated background well.

30 TAC 330.231(a)(2) In that the Applicant has not adequately defined the vertical limits of the uppermost aquifer, it cannot be demonstrated that the proposed downgradient monitoring well system will allow determination of the quality of ground water passing the relevant point of compliance as defined in §330.2. The downgradient monitoring well system must ensure detection of ground water contamination in the uppermost aquifer.

30 TAC.231(e)(1) Applicant has not demonstrated that the design of the ground water monitoring system is based on a thorough characterization of aquifer thickness, ground water flow directions including seasonal and temporal fluctuations, effects of site construction and operations on ground water flow directions and rates, and on the hydraulic characteristics of materials of the lower confining unit of the uppermost aquifer.

30 TAC 330.300(b) Although the Applicant proposes to construct new MSWLF units within approximately two miles of a public airport runway, Applicant did not contact the Federal Aviation Administration (FAA) and advise the FAA of the proposed construction of a new MSWLF unit as required by federal statute and regulations.

30 TAC 330.301 Applicant did not demonstrate that the units will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the 100-year floodplain, or result in a washout of solid waste.

30 TAC 330.305 Applicant did not provide calculations demonstrating that engineering measures have been incorporated into the MSWLF unit's design to ensure the integrity of the structural components responsible for preventing releases from the landfill unit will not be disrupted.

- Applicant Failed to Meet All Statutory Requirements

The Applicant also failed to meet all of the statutory requirements for obtaining a municipal solid waste permit in Texas, contrary to the Applicant's assertions otherwise, as follows:

Section 11.086 of the Texas Water Code – The Applicant will divert the natural flow of surface water in a manner that will damage the property of others downstream of Discharge Point E in violation of this statute.

Because the Applicant testified it intends to construct new municipal solid waste units within close proximity of the New Braunfels Public Airport, the Application also fails to meet federal statutory requirements for construction of new municipal solid waste units under Section 503(b) of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, P.L. No. 106-181, April 5, 2000, subsequently incorporated into 49 U.S.C. Chapter 447, Section 44718(d) *Limitation on Construction of Landfills*.

> "*(1) No person shall construct or establish a municipal solid waste landfill (as defined in section 258.2 of title 40, Code of Federal regulations, as in effect on date of enactment of this subsection) that receives putrescible waste (as defined in section 257.3-8 of such title) within six miles of a public airport that has received grants under chapter 471 and is primarily served by general aviation aircraft ... unless the State Aviation Agency in which the airport is located requests that the Administrator of the Federal Aviation Administration exempt the landfill from the application of this subsection and the Administrator determines that such exemption would have no adverse impact on aviation safety.*

Note that TCEQ has never referenced or included the Ford Act prohibitions in their 30 TAC Chapter 330 regulations – presumably, because it is not a RCRA requirement. A note attached to the current 40 CFR §258.10 refers to Section 503 of the Ford Act as applicable to "new MSWLFs." As explained in the preamble to the October 15, 2003 Federal Register (FR vol. 68 No. 199, pages 59333-59335) which added the Ford Act note to 40 CFR §258.10, EPA did not promulgate regulations in response to the Ford Act since it did not amend RCRA.

- Applicant Failed to Propose Any Substantive Design Changes

The Applicant states that the PAA does not propose any substantive design changes to the existing facility, "... other than making improvements to the existing groundwater monitoring system to make it more protective..." (Appl. Closing Argument p. 3).

Protestant TJFA would Argue that substantive design changes are necessary for the existing facility in order for it to be in compliance with TCEQ rules and to be protective of human health and the environment, as discussed herein and in TJFA's Closing Argument.

For example, existing stormwater ponds A and B must be lined in order to prevent surface water being stored in those ponds for long periods of time from influencing groundwater flow in the area, including the potential for dilution of groundwater intercepted by nearby monitoring wells. Also, the screening of the existing monitoring wells around the existing Unit 1 do not extend below the excavation within that unit of the landfill, contrary to the TCEQ rules and contrary to the protection of human health and the environment. Additionally, the existing landfill does not provide any levees to protect it from 100-year flooding, as required by the TCEQ rules and to be protective of human health and the environment, since the Applicant does not know the location of the 100-year floodplain of Mesquite Creek in the vicinity of the existing landfill.

- Applicant Failed to Retain Credible Experts

In its Closing Argument, the Applicant states that it utilized highly qualified experts to prepare this PAA. It is also claimed that the key personnel associated with the preparation of this PAA were with Geosyntec Consultants. There is then a statement that this consulting firm is "...one of the leading landfill design and consulting firms in the industry ..." (p. 3). However, there is no citation given for this statement, neither from sworn testimony or from any admitted exhibits presented during the hearing, to support this claim. TJFA would take exception with such a statement, based on the evidence presented at this hearing.

Given the numerous failures on the part of the PAA to comply with the regulatory and statutory requirements identified herein and in TJFA's Closing Argument, one would also have to question whether these "experts" are truly qualified or competent. Given the testimony of many of the Applicant's experts with Geosyntec (i.e. Graves, Meaux and Gross) during the hearing, there is a serious question as to their credibility in being able to provide reliable testimony that this PAA has been designed to be protective of human health and the environment.

The following are some examples of their testimony which raises credibility/competency issues with these "experts":

Scott Graves, P.E.

Mr. Graves admitted that he signed and sealed all parts of the Application even though he did not personally prepare or directly supervise all parts of the Application as those terms are defined in the Texas Engineering Practice Act (TR 54, L 19 to TR 55, L 6 and TR 56, L 15 to TR 57, L 17). Such signing/sealing does not comply with either 22 TAC 137.33 and 137.37 nor 30 TAC 330.51(d). Other parts of the Application were signed/sealed by multiple engineers, including Mr. Graves, without delineating the scope of each engineer's work in violation of 22 TAC 137.37(g).

In preparation of the Application and related documents, Mr. Graves repeatedly misrepresented the amendment as a "lateral expansion". Mr. Graves even misrepresented to the Federal Aviation Administration (FAA) asserting that "*Federal aviation law 49 U.S.C. §44718(d), as amended* [the Ford Act] *restricts location of new MSWLFs within six miles of public airports. However, as stated in AC 150/5200-33A and 150/5200-34, these statutory limitations are not applicable to an existing landfill that is expanded or modified, as is the case for this proposed Comal County Landfill Expansion.*" (page 3, first full paragraph, APP-202, Bates Pages 00269-00272) Mr. Graves subsequently testified that the proposed permit amendment proposes three discrete areas or landfill units (TR 344, L 17-20) and the proposed permit amendment would not expand [existing] Unit No. 1 (TR 344, L 22-25). Interestingly Mr. Graves misrepresentations in the PAA were rebutted by Applicant's own closing argument "*The existing facility consists of two disposal units, Unit 1 and Unit 3... WMTX is seeking to expand the facility to add a third* [new] *disposal unit, Unit 2.*" (page 3, paragraph 1, lines 5-6, paragraph 2, lines 3-4). Construction of a new MSW landfill unit does not meet the definition of a "lateral expansion".

Mr. Graves utilized a FEMA floodplain map to demonstrate that the proposed landfill site is not located within the 100-year floodplain of Mesquite Creek without knowing if FEMA had even studied or analyzed the 100-year floodplain for Mesquite Creek (TR p. 150:21 – 152:5).

Mr. Graves designed a new site entrance location that he subsequently admitted was not in accordance with standard design safety criteria of AASHTO.

Mr. Graves included in the PAA statements that contaminated water would not be allowed to be mixed with leachate, while in other portions of the PAA he has statements that would allow contaminated water to be mixed with leachate (TR 238:10-25).

Mr. Graves designed the drainage system for the landfill so that almost double the amount of runoff is diverted to Discharge Point E, yet includes statements in the PAA that the runoff volume before and after the landfill would be "similar" (APP-202 p. 01821).

Mr. Graves could not determine from his own Exhibit 6H-1 what were the elevations of the contour lines showing ground elevations that he prepared (TR p. 190:4-22).

Mr. Graves was unable to read correctly the model output from his own computer modeling of the drainage system for the landfill by stating "... I'm not sure what the model output corresponds to..." (TR p. 116:23 – 117:3).

Janet Meaux, P.G.

Ms. Meaux does not know that clayey soils, especially those with fractures, may show no indication of the presence of ground water immediately after being drilled (skin effect), but will show ground water later; i.e., the presence or absence of apparent ground water when a bore hole is drilled and a piezometer set is not a reliable indicator of whether the piezometers will later have ground water in it. (TR 516: 5 to 517:20; 559: 5-18; 560: 11-20)

Acknowledges that just because a fracture appears dry when cored or sampled, does not mean that it will always be dry. (TR 519: 12 to 520: 12; 521: 5-16; 560: 11-20)

Acknowledges that most of the borings in which piezometers were installed in Stratum III did not show free water upon drilling and landfill excavations in Stratum III also appeared dry. (TR 691: 20-24; 692: 10-22; 693: 2-11)

Ms. Meaux acknowledges that dry fractures in Stratum III later yielded water to piezometers, but refuses to apply the same logic to Stratum IV, saying there was more water evidence in Stratum III than in Stratum IV. (TR 560: 11 to 561: 7; 560: 24 to 562: 6)

Although Ms. Meaux acknowledges that the three piezometers installed in Stratum IV at the existing site are not necessarily isolated to Stratum IV and that data yielded by slug tests on these piezometers are not reliable, nevertheless she chose to rely on those data in an attempt to characterize the horizontal hydraulic conductivity of Stratum IV, stating that it doesn't matter where the water comes from; such a position is contrary to even a rudimentary understanding of hydrogeology. (TR 529: 16 to 531: 15; 533: 8-21; P. 539: 1 to 540: 22; 553: 1-8; 571: 3 to 572: 15; 675: 24 to 677: 6)

Ms. Meaux simply presumes that since all piezometers screened at the base of Stratum III yielded water, that ground water must move vertically until it gets to the base of Stratum III, even though while moving vertically, the rate of flow is less than the rate of horizontal movement; again, such a position is contrary to even a rudimentary understanding of hydrogeology. (TR 505: 8-25; 534: 15 to 535: 23; 555: 4-17; 557: 20-23; 562: 20-21)

Except in two places in her testimony, Ms. Meaux does not appear to recognize that the piezometric or potentiometric levels measured in the piezometers indicate the water table at the top of the zone of saturation, even if just in fractures; rather she infers that those places where piezometers show water more than 10 feet above the base of Stratum III (e.g. PZ-3 and PZ-5) are anomalous and simply reflect the occurrence of ground water on its way vertically downward to base of Stratum III, and, thus, she did not install piezometers in other places in Stratum III where she saw fractures. (TR 555: 8 to 556: 16; 558: 3-11, 19-24; 559: 5-15; 562: 7-17; 563: 10-13; P. 563: 18 to 565: 15; 651: 22 to 652: 4, 12-14; 652: 20 to 653: 2; 669: 17 to 670: 8)

Ms. Meaux indicates that she does not know what the degree of accuracy is of the values for horizontal hydraulic conductivity derived from testing of the Stratum III piezometers, fundamental knowledge for any anyone claiming to be a hydrogeologist for someone using such information as the basis for a design of a landfill. (TR 540: 23 to 541: 13)

Ms. Meaux acknowledges that a fault beneath the site could influence ground water flow and that she cannot say with absolute certainty that there is not a fault beneath the site; nevertheless she does not recognize that a fault near the site could also influence ground water flow, even though she recognizes that there is one to the southeast of the site, and associated fracturing has allowed ground water to penetrate into Stratum IV on the side of the proposed new Unit 2 nearest the fault (this is consistent with Dr. Clark's testimony about the relationship between faults and fractures). (TR 541: 25 to 542: 8; 544: 18 to 545: 2; 545: 7-8; 545: 23 to 546: 2; 547: 11-25; P. 548, L. 1 to 549: 21; P. 550:9 to 552: 8)

Ms. Meaux does not recognize that a vertical boring might not reveal all the pathways that ground water can move to depth in Stratum IV, even if movement is predominantly vertical. (TR 552: 9 to 553: 19)

Ms. Meaux does not appear to know the difference between PQLs and MDLs and standard reporting requirements wherein detections below the PQL are "J" flagged to indicate that the constituent was detected, but is below a concentration that can be quantified. (TR 574: 16 to 575: 19)

Ms. Meaux did not address whether construction of storm water detention ponds would influence proposed monitoring wells. (TR 583: 22 to 587: 1; 591: 2-19; 617: 23 to 620: 1; 621: 10-12, 16-19; 623: 2-7)

Ms. Meaux does not appear to understand that drawing of contours is interpretive, not simply a deterministic exercise. (P. 608: 2-13; 609: 4-10; 613: 4 to 614: 25; 631: 2-12) Mr. Moore attempts to counter by having Ms. Meaux recite her education and experience. (TR 664: 16 to 665: 11; P. 671: 8 to 672: 1)

Ms. Meaux demonstrates a complete lack of understanding of basic hydrogeology by stating that horizontal hydraulic conductivity of Stratum III should be compared to vertical hydraulic conductivity of Stratum IV to determine whether ground water will move, or tend to move, from Stratum III into Stratum IV; in doing this, she gives no recognition to the role of hydraulic gradient, or even area in ground water flow, which are parts of the equation for Darcy's Law. (TR 674: 21 to 675: 23).

Ms. Meaux appears to presume that vertical hydraulic conductivity of Stratum III, as measured in the laboratory, is the only controlling factor as to whether water will move from a storm water pond through Stratum III, neglecting the role of hydraulic gradient and fractures in fluid flow in Stratum III and appears to relate hydraulic conductivity directly to time. (TR 686: 14-24)

In addition, Ms. Meaux was commonly evasive in attempts to cover up her lack of competence:

> Discussion related to potential for water in Pond A to influence MW-3. (TR 583, L. 22 to 587:1; 591: 2-19)
>
> Discussion related to potential influence of Pond A on location proposed for MW-2A. (TR 617: 23 to 620: 1)
>
> Commonly answered, "I don't know" or "I'd like to check on that" when being questioned by Mr. Dunbar, but readily had the answers to all Mr. Moore's questions on redirect. (TR 663: 9 to 691: 8)

Beth Gross, P. E.

Dr. Gross analyzed stability of the landfill design for the Applicant. During cross-examination, Dr. Gross testified she was unaware of any EPA requirements for landfill slope stability – particularly required minimum factors of safety. Applicant's "expert" witness retained by EPA,

testified that she didn't know if EPA had minimum recommended factors of safety (see TR p. 751-752). Further, she testified that she was not aware of any EPA document that has minimum factors of safety for MSW landfills (see TR p. 756, L 9-15; TR 758, L 17-19: TR 758, L 20-24). However, both Dr. Gross' testimony and the Application referenced a current EPA document that contains EPA's recommended minimum factors of safety for slope stability analyses for MSW landfills (see TR p. 745, L 6-12; APP-202 p. 01649, *Solid Waste Disposal Facility Criteria, Technical Manual*, p. 55).

II. COMPLIANCE WITH REQUIREMENTS PERTAINING TO GEOLOGY OR HYDROGEOLOGY OF THE AREA

A. Faulting

The Applicant discusses the lack of any evidence of the existence of an active fault in the vicinity of this landfill site to demonstrate compliance with the TCEQ rules regarding "faulting" (Appl. Closing Argument p. 6). However, no protestant ever suggested during this contested case hearing anything to the contrary. Rather, Protestant TJFA's expert witness Dr. Clark raised a concern about inactive faults in the vicinity of this landfill site in his prefiled testimony and during cross-examination, and their potential influence on groundwater flow (TJFA Exhibit 3 p. 12; TR. p.832 L 15 to p. 833 L 20). The Applicant's geologist, Ms. Meaux, agreed that an inactive fault can provide a pathway for groundwater flow (TR. p. 542-3).

The Applicant makes a conclusory statement that there is no evidence of inactive faulting affecting groundwater flow beneath the facility (Appl. Closing Argument p.8). This is in spite of the fact that there is evidence to the contrary.

For example, the Permit Amendment Application (PAA) notes the existence of an inactive fault under the existing landfill that has influenced groundwater flow in the area (APP-202 p. 1037). This inactive fault was discovered during the excavation of the existing landfill unit, even though it was not indicated on any of the fault maps for this area (APP-202 p. 1091). Neither was it indicated on boring log cross sections at the time (APP-202 p. 979).

The PAA also notes the potential existence of an inactive fault in the vicinity of the proposed landfill area near Schwarzlose Lane (APP-202 p. 1091). Yet the Applicant failed to conduct any further investigation of the presence of such an inactive fault under the expansion area and its potential to influence groundwater flow in that area, contrary to TCEQ rules (30 TAC 330.231[e][1]). This failure to conduct any further investigation is in spite of the fact that boring logs taken in the area closest to Schwarzlose Lane indicated mysterious loss of water pressure well into the ground that was never explained or investigated. Dr. Clark testified in cross-examination by CCL that further investigation of this water loss should have been conducted (TR. p. 867 L 8 to p. 868 L 10).

The Applicant's failure to investigate the presence of inactive faults in the vicinity of this site and their potential for influencing groundwater flow is contrary to the TCEQ rules and contrary to protecting human health and the environment, warranting a recommendation of denial of this permit amendment request.

B. Geologic Investigation and Characterization of Stratum IV

There was considerable cross-examination of the Applicant's witness, Ms. Meaux, regarding her characterization of Stratum IV as an entirely non-water bearing zone, in spite of the fact that she conducted no piezometer testing of this portion of the subsurface (TR. P 512 L 18-20). She made this characterization even though there was the presence of fracturing and weathering in the upper portions of this stratum as she noted at the hearing (TR p. 485 L 5-8). Furthermore, although she conducted no piezometer tests in Stratum IV in the expansion area, the application and Ms. Meaux both rely on field measurements of horizontal permeability of Stratum IV made by others to reach their conclusions (APP- 202 p. 1085). Then, in a spectacular about-face, Ms. Meaux on cross-examination disavowed all the horizontal permeability tests in the entire application for Stratum IV as being unreliable (Tr. p. 510 L 19 to p. 511 L 17). This produced a fatal flaw for this PAA since the rules require that an applicant measure permeability in each rock layer to be penetrated by the excavation (see 30 TAC 330.56[d][5][B]; TR p 569 L 21 to p. 572 L 15).

> Yet Ms. Meaux acknowledge that it is important to describe the geology of the site and to identify the uppermost aquifer, which she equates with the uppermost water-bearing zone and as required by the MSW regulations. (TR 501:14 to 502: 17; 503: 7 to 504: 17)

> Actual evidence from boring logs is that Stratum IV beneath the proposed new unit does transmit ground water. (TR 547: 11 to 548: 22; 548: 23 to 549: 16; 549: 17 to 550:15; 550: 16 to 551:3; 551: 4-13; 551:14-21; 551: 22-24; 552:1-8).

The Applicant contends in its closing argument that there was no need to install piezometers in Stratum IV since the evidence already shows this stratum does not transmit groundwater (Appl. Closing Argument p. 10). The "evidence" relied upon by the Applicant for making this statement is the borings that were advanced into Stratum IV in the expansion area that did not reveal any water at the time of the boring (Id). However, no one testified at the hearing that such a lack of water in the boring is conclusive of a lack of groundwater flow in the soil. Only the Applicant's counsel has reached such a conclusion in his Closing Argument (Appl. Closing Argument p. 11).

In fact, the testimony that was provided during the hearing by the Applicant's witness, Ms. Meaux, revealed that many of the borings taken in Stratum III were also dry at the time of the boring yet produced water at a later time after a piezometer was installed (e.g. PZ-5) (TR. p. 560-562). This would indicate that the lack of water in a boring log at the time it is taken does not mean that groundwater will not flow through that soil, and therefore is no evidence that Stratum IV cannot transmit groundwater. The simple truth is that no one knows whether Stratum IV can or cannot transmit groundwater because no one has tested for it, which is the responsibility and burden of the Applicant.

> Ms. Meaux presumed that ground water would be found in the lower part of Stratum III, based on previous work by others, so therefore, that is where she had piezometer screens installed. (TR 503: 7 to 504: 17; 505: 8 to 506:3; 508: 15-25; 534:15-20; 563: 10-13; 564: 9-13; 565: 2-15)

> Ms. Meaux presumed that since the length of screen in these piezometers was 10 feet, that lower 10 feet of Stratum III must be the uppermost water-bearing zone. (TR 506:6-9; 563: 10-13)
>
> Based on that presumption, Ms. Meaux further presumed that ground water encountered at higher levels in Stratum III must represent ground water moving vertically downward to the uppermost water-bearing zone at the base of Stratum III. (TR 534: 21 to 535:20; 555: 4-17; 557: 20-23; 558: 3-24; 559: 5-15; 562: 7-21; 669: 24 to 670: 8)
>
> Ms. Meaux presumed, even felt she knew, based on her experience, that Stratum IV was an aquitard and, therefore did not install any piezometers in Stratum IV, testifying that it would be speculation to state that ground water might come into Stratum IV piezometers a day or two after they were installed because the core samples did not show indications of the presence of ground water. (TR 509: 1-16; 512: 18-20; 513: 17-20; 552: 12-18; 553: 10-19; 558: 18; 561: 14-15; 562: 21; 565: 15; 671: 21 to 672: 1)
>
> The inherent presumptiveness underlying the hydrogeologic investigation at the proposed Mesquite Creek Landfill is consistent with the Applicant's preposterous statement in the closing argument that only if the borings show evidence of potential ground water movement would it be necessary to confirm the presence (or absence) of ground water in Stratum IV; such presumptions are contrary to any investigation performed in accordance with the scientific method. (Appl. Closing Argument P. 12)

Furthermore, the boring logs taken in Stratum IV did indicate areas of fracturing and weathering, just like in Stratum III, which are associated with groundwater flow in this area. Yet the Applicant chose not to install any piezometers in Stratum IV in the areas where such fracturing and weathering were identified in the boring logs in order to test whether sufficient groundwater flow was present. Such failure to obtain this vital information prevents anyone, including the Applicant and the TCEQ, from being able to conclude that the entire Stratum IV, as defined by the Applicant, does not transmit

groundwater and is not part of the upper-most aquifer. This is a requirement of the TCEQ and a burden of the Applicant that was not met.

Even Mr. Williamson of the TCEQ agrees that only the lower portion of Stratum IV, where it is unfractured, should be considered as part of the confining unit between the upper-most aquifer at this site and the Edwards Aquifer (TR. p. 1096 L 2-8). Mr. Williamson further stated that the upper portions of Stratum IV exhibit the same kind of groundwater flow characteristics (e.g. hydraulic conductivity) as found in Stratum III (TR. p. 1096 L 19 – p. 1097 L 3). Mr. Williamson even testified that Stratum IV could serve as a possible pollutant migration pathway for those parts of the landfill excavated into Stratum IV (TR. p. 1109 L 7-13). He admitted that it would therefore be preferable that any nearby monitoring well be screened below such excavation (TR. p. 1112 L 22 – p. 1113 L 19).

The PAA even contained evidence that previous geologists working for the Applicant had installed piezometers into Stratum IV under the existing site in order to obtain information about groundwater flow in this portion of the subsurface after having taken boring logs in this area (APP-202 p.1065, 1085). Unfortunately, this information was determined to be unreliable by Ms. Meaux (TR. p. 510 L 19 to p. 511 L 17).

Therefore, there is no reliable information in this PAA regarding the presence of and/or movement of groundwater flow in the upper portions of Stratum IV where there is evidence of fracturing and weathering, and into which landfill excavations will extend,

contrary to the TCEQ rules and contrary to the protection of human health and the environment. This failure to comply with the TCEQ rules is a fatal flaw and therefore a basis for recommending denial of this permit amendment request.

C. Missing Argument Regarding MW-3 Contamination with 1,1-DCE

The Applicant failed to present any discussion or argument regarding the contamination of MW-3 with 1,1-DCE in its Closing Argument, despite the fact that the Applicant flew Mr. Kerfoot in from California to provide the only rebuttal expert testimony presented at the hearing. Obviously, the Applicant thought this issue was important enough to present rebuttal expert testimony at the hearing, yet fails to mention anything about this issue in its Closing Argument. Protestant TJFA reserves the right to reply to any argument made by the Applicant in its Reply Brief on this issue.

III. ADEQUACY OF GROUNDWATER MONITORING SYSTEM

A. Installation of Groundwater Monitoring Wells into Stratum IV

The Applicant contends that there is no need to place any monitoring wells into Stratum IV because there is no groundwater in this stratum to monitor (Appl. Closing Argument p. 14). However, the PAA contains a lack of evidence to meet the Applicant's burden of proof that there is no groundwater in Stratum IV to monitor since the Applicant failed to

install any piezometers into this stratum in order to demonstrate that the upper portions of this stratum that show evidence of fracturing and weathering do not in fact transmit groundwater, as discussed above.

The TCEQ rules require that the upper-most aquifer beneath the landfill excavation be monitored (30 TAC 330.2[99] point of compliance). The Applicant recognizes and acknowledges that portions of the existing and proposed landfill areas will be excavated into the upper portions of Stratum IV (Appl. Closing Argument p. 14). Therefore, there needs to be monitoring wells screened into Stratum IV in the vicinity of such excavations in order to be in compliance with the TCEQ rules and to be protective of human health and the environment. Even the ED's witness agreed with this (TR. p. 1112 L 22 – p. 1113 L 19), as did OPIC. The problem is knowing the depth to which the screening should go into Stratum IV, since no information is available in the PAA regarding the groundwater flow characteristics within the upper portions of Stratum IV where the fracturing/weathering exists to establish the bottom of the uppermost aquifer.

For example, the following rules apply:

> **30 TAC 330.231(a)** requires the installation of a ground water monitoring system that will yield representative samples from the uppermost aquifer.
>
> **30 TAC 330.231(a)(2)** requires the installation of a ground water monitoring system that allows determination of the quality of ground water passing the relevant point of compliance and that ensures detection of contamination of the ground water in the uppermost aquifer.
>
> **30TAC 330.231(c)** allows approval of an alternate design for ground water that employs other means in conjunction with ground water monitoring to ensure detection of contamination of ground water in the uppermost aquifer.

> **30 TAC 330. 230(b)** addresses suspension of all ground water monitoring requirements, not suspension of ground water monitoring requirements in a particular stratum. In addition, there was no demonstration in the permit amendment application or through live testimony that there was "no potential for migration of hazardous constituents from the facility to the uppermost aquifer" nor was there any request for application of this particular regulation. Finally, there was no certification by a qualified ground water scientist of such a demonstration nor were the specific requirements of the demonstration addressed either in the permit amendment application or through live testimony.

B. Installation of Groundwater Monitoring Wells between Leachate Evaporation Ponds and Unit 2

Dr. Clark had testified that there needed to be monitoring wells located between the Leachate Evaporation Ponds and Unit 2. The Applicant does not believe such wells are necessary and is not sure if there is enough room to install any monitoring wells between the leachate evaporation ponds and Unit 2 (Appl. Closing Argument p. 16).

However, Mr. Williamson testified that he thought it would be a good idea to have such wells installed (TR. p. 1133 L 10). The OPIC agreed. If the Applicant truly wanted its groundwater monitoring system to be "more protective", it would not object to having these additional monitoring wells installed. Indeed, the design in the application is for permit purposes only, so there is plenty of time available and little effort required to make the distance between the landfill and leachate evaporation ponds adequate to support a monitoring well.

C. Potential for Stormwater Ponds to Influence Monitoring Wells

The Applicant contends that the existing stormwater ponds A and B do not influence nearby monitoring wells, such as MW-2A, MW-3 and MW-4 (Appl. Closing Argument p. 19). This is despite the fact that the TCEQ raised a concern about the influence of a previously existing unlined pond within Unit 1 as having an influence on MW-3 (TR. p. 591 L 2-25).

Even Ms. Meaux agreed that water in Pond A could influence MW-2A (TR. p. 618 L 21 – p. 619 L 2). The Applicant argues that Ms. Meaux's agreement is predicated on the assumption that these ponds are "retention" ponds rather than "detention" ponds (Appl. Closing Argument p. 20). However, the only assumption Ms. Meaux was asked to make at the hearing was that water could sit within Pond A between its bottom (at elevation 593.0) and six inches higher (at elevation 593.5), which is what Mr. Graves testified as being how Pond A functions as constructed (TR. p. 146:14-20). Within this six-inch range, Pond A does function like a retention pond, according to Mr. Graves, unlike all of the real detention ponds proposed around Unit 2. Ms. Meaux reached her conclusion that Pond A could influence MW-2A only after considering this information and checking groundwater levels in this area.

The lack of information regarding these two stormwater ponds is disturbing. They were not part of the previous permit amendment application for MSW-66A, and yet were

constructed some time after that permit amendment was granted by the TCEQ and before this current permit amendment application was filed. Neither PAA contains complete information about these two ponds; nor was there any evidence presented during the hearing that the TCEQ ever approved the design or construction of these two ponds.

Mr. Graves testified that he did not include much information about these two ponds in the PAA because they were existing ponds (TR. p. 142:1-5). Ms. Meaux obviously did not know anything about these two ponds nor did she consider how they might influence groundwater in the vicinity of these ponds when she was characterizing groundwater flow in the area and proposing her groundwater monitoring system.

> Counsel for the Applicant attempts to distinguish detention ponds from retention ponds, asserting that Mr. Graves testified that at least Pond A is a detention pond (P. 19-20), but ignores the fact that the pond bottom is at 593.0 feet elevation and the invert of the drain pipe from Pond A is 593.5 feet in elevation, leaving as much as 6 inches of surface water storage in the pond even after it is drained as low as possible. (TR 687: 20-23)
>
> Counsel for the Applicant further attempts to bolster Ms. Meaux's testimony that leakage from the ponds would be impeded because the ponds were constructed using heavy equipment and because the clays in the pond bottom would swell. (P. 21)
>
> Ms. Meaux testified that she thought the ponds were constructed using a bulldozer and that this would tend to compact the clays somewhat, (TR 687:24 to 688:11) ignoring the dictum of 30 TAC 330.205(g) that bulldozers may not be used of and by themselves to compact clay liners.

This lack of information in the PAA regarding these two ponds and their potential for influencing groundwater flow in the area is a failure to comply with the TCEQ rules and forms a basis for recommending denial of this permit application request.

D. Missing Argument Regarding Groundwater Monitoring Wells along Kohlenberg Lane

The Applicant failed to discuss or present any argument regarding the issue of needing groundwater monitoring wells along Kohlenberg Lane adjacent to Unit 1. Protestant TJFA conducted cross-examination of the Applicant's witness, Ms. Meaux, on this issue and Dr. Clark presented testimony that there was a need for monitoring wells along Kohlenberg Lane adjacent to Unit 1 in order to be able to detect pollutant migration from Unit 1 and to be in compliance with the TCEQ rules (TR. p. 891:1-14; 30 TAC 330.231(a)). Clearly, a component of groundwater flow is directed across Kohlenberg Lane for which there is proposed to be no monitoring well to detect any pollutant migration in that direction.

It is difficult to understand how the Applicant's proposal for the elimination of wells associated with the existing groundwater monitoring system (e.g. MW-2) makes the existing landfill "more protective" of human health and the environment. The proposed removal of the only existing monitoring well along Kohlenberg Lane (i.e. MW-2) would eliminate any monitoring of groundwater leaving the existing site along that entire side of the landfill, thereby not allowing for the detection of any pollutant migration from the existing landfill in that direction. This is contrary to the TCEQ rules and contrary to designing a landfill that will be protective of human health and the environment.

Protestant TJFA would request that the ALJ recommend that MW-2 not be eliminated but rather retained to be "more protective" of human health and the environment and to be in compliance with TCEQ rules regarding groundwater monitoring (30 TAC 330.231).

Therefore, Protestant TJFA reserves the right to reply to any argument made by the Applicant in its Reply Brief on this issue.

IV. ADEQUACY OF GROUNDWATER AND SURFACE WATER PROTECTION PLAN AND DRAINAGE PLAN

A. Issues Related to Drainage

- Contaminated Water

The Applicant addresses the issue of Contaminated Water in its Closing Argument by discussing the calculation of the necessary containment berms (see p. 21). The Applicant concludes that it met the TCEQ rules by providing in its PAA a sample calculation for these containment berms, thereby allowing "flexibility" for the operator to determine what size berm is needed to hold any contaminated water based on the working face and areas with daily cover that would actually be involved on a day-to-day basis (Id).

The PAA totally fails to comply with the TCEQ rules regarding the handling of contaminated water. The following is a list of the applicable rules and the evidence presented at the hearing on this issue:

1. The applicant, through the PAA and live testimony by Mr. Graves, has defined all runoff from the working face and daily cover (areas that have not yet received intermediate cover) as contaminated water. (P21-22; TR-242: 1 to 243:16).
2. Daily cover includes areas that have received 6 inches of earthen material that have not received intermediate cover. (30 TAC 330.133(a)).
3. Alternate daily cover (ADC) can be used upon authorization of TCEQ provided it meets certain criteria specified in the MSW regulations and certain procedures specified in the MSW regulations, including being limited to a 24-hour period after which daily cover as described above must be placed. (30 TAC 330.133(c).
4. Intermediate cover is defined as an additional 6 inches of earthen material capable of sustaining native plant growth; runoff from intermediate cover is not considered to have come in contact with the working face or leachate; intermediate cover must be applied to all areas that have received waste and have been inactive for longer than 180 days. (30 TAC 330.133(b))
5. The design and sizing of the berms is to keep clean runoff from areas of the landfill that have received intermediate cover separate from contaminated stormwater from the working face and areas that have only received daily cover. These calculations are contained in Attachment 6G of the PAA (P23; TR 243:22 to 244:10)
6. Attachment 6G contains sizing of contaminated runoff areas up to only 2 acres and sizing of the contaminated water containment areas up to only 0.5 acres for the amount of runoff equivalent to the 25 year, 24-hour storm event. (TR 242:1-10; 244:3 to 245:17; 247: 4-5)
7. The contaminated water will be allowed to seep into the landfill and collected through the leachate collection system, pumped to the leachate storage tanks, or hauled offsite. (P. 22; TR 243:17-21)
8. Allowing contaminated water to escape from being collected and treated violates MSW regulations. (30 TAC 330.55(b)(1), (2), (3), (4), and (6); 330.139)
10. Only leachate and landfill gas condensate can be recirculated into a landfill unit and only into the landfill unit from which it was derived. (30 TAC 330.5((e)(6)(A)(*ii*) and 40 CFR 258.

The Applicant's Closing Argument perpetuates the theme in the PAA that the runoff from the working face and daily cover as contaminated water will be controlled and contained by berms sized for a typical working face of 200' by 200'. These calculations are contained in Attachment 6G and can be used to increase the height of the berm, the containment area, or both, if the working face is actually larger than assumed (P. 23-25; TR 247:6; 248:9).

Omitted from the argument and neglected in the calculations provided in Attachment 6G is that there may be daily cover over sizable portions of the landfill. The PAA has a provision that intermediate cover must be applied only after 180 day, and Mr. Graves did not seem to have a sense of when in landfill development intermediate cover would be applied, but acknowledged it could be up to 6 months (TR 248: 10-13; 248:25 to 250: 15). Thus, a major portion of the new Unit 2 to be developed at the proposed expanded MSW facility could simply have only daily cover, all the runoff from which must be managed as contaminated water – there is neither the plan nor the capability to do so.

> It stretches credibility to believe as Applicant's closing argument states, that the formula contained in Attachment 6G can be applied for any drainage area at the landfill facility, no matter how large, that may require stormwater containment. (P. 24)
>
> TCEQ's reviewer, Mr. Prompuntagorn simply accepted the Applicant's calculations and stormwater management plans without considering the total area potentially with only daily cover (TR 1002: 13; 1003:25), although he acknowledged that if runoff from daily cover is not contained, but flows offsite, that would be a violation of TCEQ regulations. (TR 1004:1-10; 1005: 6-9)

Applicant proposes to commingle leachate from Unit 1 and contaminated water in existing storage tanks onsite; thus, there is no method or procedure proposed to keep the two separate. (TR 229: 6023; 230: 8 to 233: 12; 233: 25 to 234: 15; 237: 8-12; 238: 18 to 239: 5; 239: 24 to 240: 9). This is contrary to the statement in the PAA that says "... contaminated water shall not be placed in the leachate evaporation ponds..." (TR p. 232:6-13). Although no specific design is proposed, Applicant also proposes to link leachate collection from Unit 1, the leachate and contaminated water storage tanks, and Unit 2 and the evaporation ponds through a system of force mains. (TR 234: 16 to 236:7).

By linking Units 1 and 2 to these evaporation ponds, Applicant creates the ability to violate 30 TAC 330.5(e)(6)(A)(*ii*) without probability of detection by TCEQ inspectors. This is contrary to the statement in the PAA that says "...contaminated water shall not be placed in the leachate evaporation ponds..." (TR p. 232:6-13).

Applicant and TCEQ have ignored 30 TAC.134, which prohibits ponding of water over waste on a landfill, regardless of origin; and also ignored 30 TAC 330.56(o)(4) which requires that storage areas for contaminated water be lined with an approved liner system.

Applicant has not demonstrated sufficient storage capacity for quantities of leachate and contaminated water generated.

> Leachate storage tanks have limited capacity each, and tanks receive not only leachate from Unit 1, but contaminated water generated on Unit 1.
>
> Leachate ponds were not sized to handle volume of contaminated water, particularly that which would drain from a sizeable area of daily cover. (TR 211: 7-17; 212: 17-20; 213; 16-21; 214: 7-215:7)

- Missing Information Regarding Recirculation of Contaminated Water

The Applicant failed to present any argument in its Closing Argument regarding the issue of recirculating contaminated water onto the landfill. Protestant TJFA's counsel cross-examined the Applicant's witness, Mr. Graves, regarding this issue and its prohibition under the TCEQ rules (TR. p. 228:16). The concern of the protestants is that the PAA provides for the mixing of contaminated water and leachate within the leachate storage

tanks, which is the current practice during the operation of the existing landfill (TR p. 230:11-13). This is allowed under the TCEQ rules so long as this mixture is not then allowed to be recirculated onto the working face of the landfill, since contaminated water is not allowed to be recirculated. Protestant TJFA reserves the right to reply to any argument presented by the Applicant in its Reply Brief on this issue.

- Missing Information Regarding "No Significant Alteration of Natural Drainage Patterns"

The Applicant failed to discuss this issue in its Closing Argument. Protestant TJFA spent considerable time with the Applicant's witness, Mr. Graves, and the ED's witness, Mr. Prompuntagorn, on the issue of the significant increase in the runoff volume proposed to be discharged at Discharge Point E compared to natural conditions and the potential impact this additional storm water could have on downstream properties. Unfortunately, the Applicant's disregard for any concern on this issue in its Closing Argument is reflected in the lack of any discussion in the PAA as well on this issue, even though such is required by the TCEQ rules, specifically 330.56(f). Protestant TJFA reserves the right to reply to any argument presented by the Applicant in its Reply Brief on this issue.

B. Issues Related to Flooding

The Applicant states that the only issue is whether FEMA floodplain maps can be relied upon for determining compliance with the TCEQ rules (Appl. Closing Argument p. 25).

This is not the issue. The TCEQ rules make it clear that FEMA floodplain maps can be relied upon, but only if they are actually useful in making the requisite determination of whether the site is located within a 100-year floodplain and what the 100-year flood levels are that are associated with such a floodplain (30 TAC 330.56(f)(4)(B)(i) and (ii)).

In this case, the relevant FEMA map cannot be used for making such a determination because this map does not provide any information about the 100-year floodplain for Mesquite Creek. Both the Applicant's witness and the ED's witness testified that the FEMA map does not show any floodplain for Mesquite Creek even though in their opinion Mesquite Creek does actually have a 100-year floodplain (TR 381:25 – 382:4; 993:10-15; 999:2-5).

The logical explanation for the lack of a floodplain shown for Mesquite Creek on the FEMA map is that FEMA never studied or analyzed this creek to determine its floodplain. Both of these witnesses agreed that they did not know if FEMA has ever studied Mesquite Creek to determine its floodplain (TR 151:17 – 152:5; TR 996:2-8). Thus, this particular FEMA map is not useful in determining the floodplain for Mesquite Creek, when no floodplain analysis was done by FEMA for this creek.

The Applicant also notes in its Closing Argument that Mr. Graves conducted an analysis of Mesquite Creek (p. 27). However, Mr. Graves admitted that this analysis, found in Attachment 6H of Part III of the PAA, was <u>not</u> a floodplain analysis (TR. 158:4 – 163:19;

TR 172:13-18; TR 173:18-22); nor was it his intent to conduct such an analysis (TR 177:7-13). Therefore, this analysis by Mr. Graves cannot be used to make the requisite determinations of whether or not the facility is located within the 100-year floodplain as required by the TCEQ rules.

This failure to provide the requisite demonstration that the site is not located within the 100-year floodplain is a fatal flaw and has by TCEQ precedent been a basis for denial of a landfill permit. It should be so again in this case.

V. COMPLIANCE WITH GEOTECHNICAL, INCLUDING SLOPE STABILITY

A. Slope Stability

The Applicant argues in its Closing Argument that its PAA meets the applicable regulatory requirements regarding slope stability, since the TCEQ rules do not specifically address any standards for conducting or evaluating slope stability analyses (Appl. Closing Argument p. 29). Applicant is simply wrong and is attempting to cover up failure to conform to the requirements of: 30 TAC 330.53(b)(10)(D); 330.55(b)(5)(E); 330.203(a); 330.203(d); 330.205(a); 330.205(c); 330.205(e); 330.205(e); and 330.305. The rules of the TCEQ also require that the design and construction of the landfill be protective of the health, safety and welfare of the public and the environment (30 TAC 330.5).

The concern of the protestants is that the slope stability analyses conducted by the Applicant's geotechnical engineer are not protective of the health, safety and welfare of the public or the environment, since these analyses show a Factor of Safety of less than 1.25, the minimum Factor of Safety used by the TCEQ staff in reviewing such analyses as recommended by U.S. EPA in it's guidance.

B. Geotechnical Engineering Data

Dr, Gross testified that she prepared the Geotechnical Report and Appendices 4-F and 4-G of Attachment 4 (APP-500, page 7, lines 1-3). The title page and Table of Contents for Attachment 4 Geology Report were signed and sealed consistently with Dr. Gross's testimony (APP-202, pages 01012-01016). Neither Dr. Gross nor any other engineer for the applicant sponsored Appendix 4-E. The geotechnical engineering data (Attachment 4-E) in the Geotechnical Report was provided without any engineering seal (i.e., not offered as an engineering work product) nor was the geotechnical engineering testing conducted, or directly supervised, by Dr. Gross. Clearly, Attachment 4-E does not comply with the requirements of; 30 TAC 330.51(d); 330.51(d)(1); or 330.56(d)(5)(B). The application is therefore incomplete and should be returned to the Applicant per 30 TAC 330.51(d)(2) without further action.

VI. ADEQUACY OF SITE OPERATING PLAN AND FACILITY ENTRANCE DESIGN

A. Operating Hours

The Applicant argues that it should be entitled to have its operating hours be 24 hours a day, seven days a week since it is permissible under the rules, provides flexibility to meet unexpected events, is in the public interest, and is not incompatible with surrounding land use (Appl. Closing Argument p. 31). All of this is in spite of the fact that this landfill has been operating for over 30 years without such operating hours and there have been no complaints from the public:

> Mr. Smith, vice president and general manager for WMI testified that the Comal County Landfill had survived 30 years without the flexibility to operate 24/7, that WMI had no intention of actually operating 24/7, and that WMI might be willing to accept something less, with allowances for emergencies. (TR36: 21; 37:1; 38: 20-22)
>
> Commissioner Kennady's examples of WMI's ability and willingness to deal with emergencies all transpired under the existing operating hours limitations. (TR1151: 20-24; 1155:22 to 1156:21)

The protestants raised considerable concern about this issue before and during the contested case hearing, as did Guadalupe County. As such, the Applicant entered into a Settlement Agreement with the County that specifically addressed this issue (CCL Exhibit 5). Protestants believe and have argued that 30 TAC 330.118 allows extension of operating hours for special occasions and to meet emergency situations or other unforeseen circumstances. Therefore, the Applicant can meet the needs of the community as it has for 30 years with the existing operating hours.

However, at a minimum, the protestants urge that the agreed upon operating hours in that Settlement Agreement be incorporated into this permit amendment as a special provision, only if it is granted. OPIC agrees with this position (OPIC Closing Argument p. ?). Also, the ED's witness, Mr. Prompuntagorn, also agreed that these contractual operating hours should be included in the Draft permit associated with this PAA (TR. p. 1033:15 – 1034:11).

The Applicant also states that the PAA provides screening provisions that will include an additional buffer against potential lights and noise impacts if operations are conducted after dark, without citing to any particular section of the PAA (Appl. Closing Argument p. 31). The lack of a specific reference to the PAA by the Applicant in its Closing Argument is probably because the PAA does not include any such special provisions for after dark operations.

The PAA does state that "Section 29 of this SOP describes screening provisions regarding operations after dark" (APP-202 p. 02847). However, a review of Section 29 of the SOP contained in the PAA reveals that the only screening mentioned is associated with the construction of earthen berms in the site entrance area of the new landfill entrance/exit that will be established for Unit 2, with no mention of any after dark operations or special screening to address this situation (APP-202 p. 02874). This is an additional reason why this applicant should not be allowed to operate 24/7, but rather only as agreed to with the County in its Settlement Agreement.

B. Fire Protection

The Closing Argument asserts that "*Notably, the requirement to maintain sufficient equipment is purely performance-based; that is, whereas § 330.115 specifically requires a facility's SOP to* 'contain calculations demonstrating the adequacy of the earthen material,' *there is no similar, prescriptive requirement for the sop to contain a demonstration of the adequacy of the facility's fire fighting equipment.*" (Appl. Closing Argument p. 33) However, the Closing Argument notes that *WMTX's SOP contains a calculation demonstrating* 'the capability of equipment to place six inches of earthen material over a conservatively large assumed *uncovered* area [200 by 200 feet or approximately one acre] in one hour.'" (Appl. Closing Argument p. 34, [APP 202, pp. 02840-02841])

Protestants contend that the PAA does not provide that sufficient on-site equipment will be available for fire protection, as required by TCEQ rule 330.115. In fact, the Closing Argument states "*WMTX does not dispute that the facility's working face and, therefore, the size of the drainage area that may require containment, may at times exceed two acres.*" (Appl. Closing Argument p. 24) It would appear that Applicant is rebutting their own closing arguments regarding the fire protection plan. Further, Applicant's attempted distinction between separate "prescriptive" and "performance-based" requirements of 330.115 is seriously flawed and out of context with 330.115 as a whole. Applicant attempts to confuse "maintain a source of earthen material", "place a six-inch layer" of

earthen material" with "calculations demonstrating the adequacy of the earthen material." The portion of 30 TAC 330.115 misrepresented by Applicant is quoted below:

> *"The owner or operator shall maintain a source of earthen material in such a manner that it is available at all times to extinguish any fires. The source must be sized to cover any waste received for disposal not covered with six inches of earthen material. Sufficient on-site equipment must be provided to place a six-inch layer of earthen material to cover any waste not already covered with six inches of earthen material within one hour of detecting a fire. The site operating plan must contain calculations demonstrating the adequacy of the earthen material."*

The Applicant notes in its Closing Argument that the PAA contains the statement that additional equipment will be added as necessary to adequately perform all required operations so as to be in compliance with this regulatory requirement (Appl. Closing Argument p. 36 FN 157). In fact, the PAA only says that additional equipment may be added as necessary, not will be added as has been represented by Applicant's counsel in its Closing Argument (APP-202 p. 02831). The significance of this distinction is that the PAA, which becomes part of the permit if issued, must be complied with and if there is any difference between the PAA and TCEQ rules, the PAA would control.

By requiring in the PAA's SOP that adequate fire-fighting equipment must be on-site at all times would make the PAA consistent with the TCEQ rules and place the burden on the Applicant as the operator of the landfill to determine how much fire-fighting equipment is needed at any time and be required to ensure that such equipment is on-site as required by the TCEQ rule 330.115.

Furthermore, the Applicant states in its Closing Argument that TCEQ inspectors can easily calculate if there is sufficient on-site equipment for fire protection if the working face is greater than the assumed 200 feet by 200 feet (Appl. Closing Argument p. 36). Requiring that the SOP contain the requirement that adequate on-site equipment will be available, rather than just may be available, would avoid the need for the TCEQ inspectors to have to perform such a calculation on their own, but instead, they would just have to check that the landfill operator has performed the necessary calculations and can show that the required equipment is on-site.

Finally, the Applicant argues that any additional equipment that may be needed for fire fighting can easily be acquired either from other WMTX facilities or rental stores. However, the Applicant fails to explain how such equipment would be obtained within the necessary time period under the rules in order to put out any fire within one hour as required by 30 TAC 330.115.

C. TPWD Recommendations

The Applicant argues that there is no statutory or regulatory basis to include any TPWD recommendations into its SOP. (Appl. Closing Argument p. 39). However, the TCEQ rules do require that the design, construction and operation of a landfill be protective of the environment (30 TAC 330.5).

Both the Applicant's expert witness on this issue as well as the ED's witness agreed that these four TPWD recommendations should be included in the PAA's SOP (TR. p. 405-409). Obviously, these witnesses believe that these four recommendations being included in the SOP would provide for the protection of the environment as required by the TCEQ rule. Therefore, Protestant TJFA requests that these four recommendations be included in the SOP as agreed to by the Applicant's own expert witness, as well as the ED's witness. OPIC also agrees that these four recommendations be included in the SOP.

D. Site Entrance

The Applicant argues that "*TCEQ's rules require only a* 'generalized design' *of the site entrance to be included in the application, and an* 'as-built set of construction plans and specifications' *following construction of the site entrance, is an indication that the agency and its rules contemplate that changes on the order of feet to the location of the site entrance may be made without the need for a permit modification, as the generalized design in the application is finalized and constructed.*" (Appl. Closing Argument p. 41) The Closing Argument offers only a citation to 330.58 (*Technical Requirements of Part V of the Application*) as a basis for this remarkable interpretation and new MSW rule-making. The quoted statement is not only inconsistent with the given citation, it is not part of the Application requirements and it is inconsistent with other 30 TAC 330 rules, e.g. 30 TAC 330.51(b), 330.51(b)(1), 330.51(b)(2), and 330.51(d). Further, Applicant's

unusual argument would create a "finality" issue with respect to permit compliance and enforcement.

The site entrance plan that was included in the PAA was not designed to be in accordance with AASHTO standards, according to Mr. Graves, the Applicant's permit engineer (TR 1163, L4-6, TR. p. 1171 L 23 – p. 1172 L 3). Since AASHTO requirements are both widely-accepted and widely-used engineering standards, Mr. Graves' failure to recognize the sight-distance problem threatens public safety through potential risk of increased vehicle accidents. Mr. Graves' admission that the sight distance for the proposed landfill entrance does not meet AASHTO standards for public safety on roadways would appear to be a violation of the Texas Engineering Practice Act rules, specifically 22 TAC 137.55(a) and (b). Further, in Mr. Graves' signing and sealing of the Application in general, and the entrance road design in particular, it was labeled "*for permit purposes only.*" No limitation as to the design being "generalized" was provided as required by 22 TAC 137.33(e). In essence, the Closing Arguments is asserting, after the fact of Mr. Graves signing and sealing his engineering work, that the work product was a limited "generalized design". Upon questioning by TJFA's counsel on cross-examination, Mr. Graves admitted to the unsafe design and subsequently during rebuttal testimony presented a new plan relocating the site entrance in an attempt to be in compliance with AASHTO standards (APP-214).

VII. APPORTIONMENT OF REPORTING AND TRANSCRIPT COSTS

The Applicant proposes to have these costs split between itself and Protestant TJFA (Appl. Closing Argument p. 42). As demonstrated above and in its Closing Argument, Protestant TJFA exposed numerous flaws and deficiencies in the PAA that if left uncorrected would result in a landfill design that would not be protective of human health or the environment. The Applicant had years to prepare its PAA, with considerable assistance from the TCEQ staff, in order to be in compliance with the TCEQ rules regarding permit applications for municipal landfill facilities. As the Applicant states, it had a "team of experts" working on this PAA (Appl. Closing Arguments p. 4). Conversely, protestants have just a few months to review the entire 3 volume PAA and determine if it is in compliance with TCEQ rules and is protective of human health and the environment.

The Applicant also makes a gross misrepresentation of the facts in its Closing Argument on Page 44 when it states "it should be noted that this contested case hearing was initiated by Protestant TJFA, as TJFA was the only party to file a request for a contested case hearing on WMTX's application." The TCEQ Chief Clerk's database and the Seguin Gazette-Enterprise say there were 3 requests for a contested case hearing. The Applicant knew that several affected parties requested a contested case hearing in its application for MSW-66A before settling with the Applicant. The Applicant knew that on September 21, 2006 State Representative Edmund Kuempel submitted a written request for a public meeting on behalf of "local government representatives and constituents" of which TJFA is neither. Guadalupe County and at least one area resident obviously were concerned enough to request a contested case hearing, attend the public meetings, make comments,

and take party status. In fact, at least 7 individuals/groups were allowed party status in this contested case hearing. The Applicant's attempt to make it appear this proceeding was caused solely by TJFA is disingenuous. The Applicant had considerable notice as far back as the proceeding on MSW-66A that it could expect opposition from numerous parties.

If the ALJ believes that Protestant TJFA provided any benefit to the public health and safety or to the environment by its involvement in this contested case hearing, then TJFA would argue that the costs for this hearing should be borne by the Applicant for preparing a PAA that was not totally protective of human health and the environment or totally in compliance with TCEQ rules.

WHEREFORE, PREMISES CONSIDERED, Protestant TJFA requests that the PAA for MSW-66B be recommended for DENIAL. As such, attached hereto are TJFA's recommended Findings of Fact and Conclusions of Law for your consideration.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that a true and correct copy of the foregoing document has been served on the following via hand delivery, express mail, electronic mail, facsimile, and/or U.S. First Class Mail, on this the 18th, day of January, 2008.

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PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

I. FLOODING

FINDINGS OF FACT

1. Mesquite Creek runs through the center of the landfill site, between landfill units 1 and 2.

2. The Applicant relied upon the FEMA floodplain map of the area to determine that the site is not within a 100-year floodplain of any creek or stream, including Mesquite Creek.

3. The Applicant failed to establish that FEMA actually studied any creeks flowing within or adjacent to the site, including Mesquite Creek, to determine if there are any floodplains located within the site.

4. The Applicant and the Executive Director acknowledged that Mesquite Creek does have a floodplain, but the Applicant failed to determine the floodplain of Mesquite Creek within the landfill site, including the failure to determine 100-year flood levels associated with such a floodplain.

5. The Applicant failed to determine if the landfill site is located within the 100-year floodplain of Mesquite Creek.

6. The Applicant failed to determine if suitable levees are provided to protect the landfill from flooding due to the 100-year flood.

CONCLUSIONS OF LAW

1. The Applicant failed to determine if the landfill site is located within the 100-year floodplain, which is not in compliance with 30 TAC 330.301 or 30 TAC 330.56(f)(4)(B)(i).

II. DRAINAGE

FINDINGS OF FACT

1. The Applicant developed a Drainage Plan for the landfill that would divert almost twice the natural drainage of the stormwater runoff leaving the site at Discharge Point E.

2. The Applicant developed a Drainage Plan for the landfill that would produce an almost doubling of the stormwater runoff volume leaving the site at Discharge Point E.

3. The Applicant failed to discuss or analyze the significance of this substantial increase in stormwater runoff volume on nearby properties located just downstream of Discharge Point E.

4. The Applicant is unaware how stormwater leaving the site at Discharge Point E would combine with stormwater along the watercourse flowing across adjacent properties.

5. The Applicant failed to provide any information regarding the design of Pond B, located adjacent to Unit 1.

6. The Applicant failed to provide complete information regarding the design of Pond A, located adjacent to Unit 1.

7. The Applicant relied upon Pond A for its Drainage Plan for handling stormwater runoff from the landfill.

CONCLUSIONS OF LAW

1. The Applicant has failed to provide a discussion and analysis to demonstrate that natural drainage patterns will not be significantly altered as a result of the landfill development, as required by 30 TAC 330.56(f)(4)(A)(iv).

2. The Applicant failed to provide sufficient information regarding Ponds A and B in order to demonstrate that these drainage structures can handle the design runoff, as required by 30 TAC 330.55(b)(4).

3. The Applicant has not provided a design of all drainage facilities within the site as required by 30 TAC 330.55(b)(5)(C).

III. GEOLOGY/HYDROGEOLOGY

FINDINGS OF FACT

1. The Applicant did not establish the limits of the uppermost aquifer beneath the site.

2. The Applicant did not establish the horizontal hydraulic conductivity/permeability of the stratum that will form the bottom and sides of the excavation of the landfill.

3. The Applicant failed to establish the bottom of the uppermost aquifer and the top of the underlying aquiclude.

4. The Applicant has not provided a thorough characterization of aquifer thickness, effect of site construction on ground water flow direction and rates, and the hydraulic characteristics of the saturated and unsaturated geologic units of the materials of the lower confining unit of the uppermost aquifer.

5. The Applicant has failed to thoroughly investigate the hydrogeologic and hydraulic characteristics of Stratum IV in the facility expansion area.

6. The Applicant has failed to consider changes in groundwater flow that are expected to result from construction of Cell 2 in Unit 1.

7. The Applicant has failed to establish the most likely pathway for pollutant migration.

CONCLUSIONS OF LAW

1. By failing to determine the uppermost aquifer, the Applicant has failed to comply with 30 TAC 330.231(a) that requires the installation of a ground water monitoring system that will yield representative samples from the uppermost aquifer.

2. By failing to determine the uppermost aquifer, the Applicant has failed to comply with 30 TAC 330.231(a)(2) that requires the installation of a ground water monitoring system that allows determination of the quality of ground water passing the relevant point of compliance and that ensures detection of contamination of the ground water in the uppermost aquifer.

3. The Applicant's failure to identify the bottom of the uppermost aquifer and the top of the underlying aquiclude is not in compliance with 30 TAC 330.56(d)(5)(A)(ii) and 30 TAC 330.56(e)(2).

4. The Applicant's failure to determine the horizontal permeability of all strata that will form the bottom and sides of the landfill excavation is not in compliance with 30 TAC 330.56(d)(5)(B)(i) and (ii).

5. All information and data required in 30 TAC 330.231(e)(1) has not been provided in the ground water investigation report. Specifically, there has not been a thorough characterization of aquifer thickness, effect of site construction on ground water flow direction and rates, and the hydraulic characteristics of the saturated and unsaturated geologic units of the materials of the lower confining unit of the uppermost aquifer.

6. Because of the Applicant's failure to thoroughly investigate the hydrogeologic and hydraulic characteristics of Stratum IV in the facility expansion area, and its failure to consider changes in groundwater flow that are expected to result from construction of Cell 2 in Unit 1, the analysis of the most likely pathway for pollutant migration is incomplete, inadequate, and fails to meet the requirements of 30 TAC 330.56(d)(5)(C)(*iv*).

IV. CONTAMINATED WATER

FINDINGS OF FACT

1. The Applicant failed to size containment berms that would be adequate to handle contaminated water over the working faces of sizes that would be expected to exist during the operation of the landfill.

2. The Applicant failed to provide a design and procedure that would prevent contaminated water from being mixed with leachate and/or landfill gas condensate.

3. The Applicant proposed to transport a mixture of contaminated water, leachate and gas condensate into leachate evaporation ponds adjacent to Unit 2.

4. The Applicant proposed to recirculate water from its leachate evaporation ponds onto Unit 2.

CONCLUSIONS OF LAW

1. The proposal by the Applicant to recirculate contaminated water is prohibited under 30 TAC 330.5(e)(6)(iii), as only leachate or gas condensate can be recirculated onto a landfill unit.

2. The Applicant has failed to design containment berms for contaminated water that will collect and control at least the runoff volume from a 24-hour, 25-year storm, as required by 30 TAC 330.55(b)(3).

V. OPERATING HOURS

FINDINGS OF FACT

1. The landfill has been operating for almost 30 years under normal operating hours as specified in the TCEQ rules.

2. The Applicant has not demonstrated the need to conduct waste operations on a 24/7 basis.

3. The Applicant has entered into a Settlement Agreement with Guadalupe County whereby the agreed to hours of operation are not 24/7, as requested by the Applicant in its permit application.

CONCLUSIONS OF LAW

1. The Applicant is not entitled to operating hours beyond those agreed to in its Settlement Agreement with Guadalupe County.

VI. FIRE PROTECTION

FINDINGS OF FACT

1. The Applicant proposes to only provide fire fighting equipment on-site that would be suitable for a working face of 200' by 200', half of the size of a typical working face.

2. The Applicant's proposal for on-site fire-fighting equipment fails to consider having two working faces or one having as much as 10 acres.

3. The Applicant proposes to have as many as two working faces, with each one being as much as 10 acres in size.

CONCLUSIONS OF LAW

1. The Applicant has failed to provide for an adequate amount of equipment on-site to provide fire protection as required by 30 TAC 330.115.

VII. TPWD RECOMMENDATIONS

FINDINGS OF FACT

1. The TPWD made four recommendations for providing protection of the environment.

2. The Applicant's expert on endangered species agreed with each one of these recommendations.

CONCLUSIONS OF LAW

1. The four recommendations made by the TPWD are for protection of the environment, as required under 30 TAC 330.5, and therefore by not being included in the Site Operating Plan, the Applicant is not in compliance with this rule.

VIII. SITE ENTRANCE

FINDINGS OF FACT

1. The new site entrance as presented in the application was not designed in accordance with generally accepted standards for ensuring the safety and welfare of the public.

CONCLUSIONS OF LAW

1. The design of the new site entrance, by not being designed in accordance with generally accepted safety standards, in not in compliance with 30 TAC 330.5(a)(3), requiring the design to not cause endangerment to human health or the environment.