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

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

APPLICANT WASTE MANAGEMENT OF TEXAS, INC.'S
RESPONSE TO CLOSING ARGUMENTS

TO THE HONORABLE ADMINISTRATIVE LAW JUDGE:

COMES NOW Applicant Waste Management of Texas, Inc. ("***Applicant***" or "***WMTX***") and files this consolidated response to the closing arguments of Protestants in the above-captioned contested case. This response also addresses the recommendations made by the Office of Public Interest Counsel ("***OPIC***") in its closing arguments.

For the reasons set forth below, and more fully in Applicant's Closing Argument, WMTX has demonstrated, by proof exceeding a preponderance of the evidence, that its application to expand the Mesquite Creek Landfill complies with all applicable statutory and regulatory requirements. In their closing arguments, Protestants fail to cite to any record evidence sufficient to overcome this demonstration. Protestants cannot reasonably claim that there is any legal impediment to the proposed expansion of the Mesquite Creek Landfill, nor any reasoned, lawful justification for denying WMTX's application. Accordingly, for the foregoing reasons, as set out more fully below and in Applicant's Closing Argument, Permit No. MSW-66B should be issued to WMTX.

OBJECTION TO ARGUMENT OF NON-RECORD INFORMATION

At the outset, WMTX states its objection to Protestant Concerned Citizens and Landowners' ("***CCL's***") reliance on and recitation of information that is not part of the record evidence admitted in this proceeding. Specifically, in its closing arguments, CCL attempts to offer and argue alleged facts that are not in the record, and references and relies upon information that was never offered nor admitted into evidence in this case.[1] Protestant's argument of information outside of the record is improper and prohibited by the Texas Rules of Civil Procedure.[2]

WMTX recognizes and appreciates that Protestant CCL's closing arguments were not prepared by an attorney and that CCL may not be acting on the advice of counsel, and, as a result, may not be familiar with the Texas Rules of Civil Procedure. However, the rules do not exempt *pro se* parties from the requirement that closing arguments be limited "strictly to the evidence."[3] Accordingly, the portions of CCL's closing arguments that reference and rely upon such non-record information should not be considered by the Administrative Law Judge ("***ALJ***").

---

1 *See, e.g.*, CCL Closing Arguments at 2 (discussing erosion), 2 (referencing prior overflow events at Freedom Lake), 2 (discussing research regarding slope stability apparently conducted post-hearing), 2 (discussing an alleged slope failure in Ohio), 2 (discussing soil conditions during drought periods), 3 (discussing and describing the local fire department), 3 (discussing soil conditions during drought periods).

2 *See* TEX. R. CIV. P. 269(e) ("Counsel shall be required to confine the argument strictly to the evidence and to the arguments of opposing counsel."); *see also Bryant v. Lucent Technologies, Inc.*, 175 S.W.3d 845, 849 (Tex. App.—Waco 2005, pet. filed); MICHOL O'CONNOR, O'CONNOR'S TEXAS RULES – CIVIL TRIALS 605 (Michol O'Connor & Byron P. Davis eds., 2006) (In final arguments, "[l]awyers are required to stay inside the evidence presented at trial.") (citing *Texas Sand Co. v. Shield*, 381 S.W.2d 48, 57-58 (Tex. 1964); *Lone Star Ford v. Carter*, 848 S.W.2d 850, 853 (Tex. App.—Houston [14th Dist.] 1993, no writ)).

3 TEX. R. CIV. P. 269(e).

ARGUMENT

To avoid repetition, this consolidated response seeks only to address Protestants' allegations in their respective closing arguments that were not anticipated and refuted in Applicant's Closing Argument. However, where appropriate and for clarity, this brief may provide concise additional responses to those allegations that are more fully addressed in Applicant's Closing Argument. Here again, as requested by the ALJ, the arguments in this consolidated response follow the outline set forth in the ALJ's Order No. 8.

I. COMPLIANCE WITH REQUIREMENTS PERTAINING TO THE GEOLOGY OR HYDROGEOLOGY IN THE AREA

A. TJFA's Arguments Demonstrate A Fundamental Misunderstanding Of Groundwater Movement In Stratum III

Because Stratum III has greater hydraulic conductivity (i.e., is more permeable) horizontally than vertically, Protestant TJFA theorizes that groundwater is, in actuality, moving faster horizontally than vertically at all times and at all points within Stratum III. Such a theory reflects a fundamental misunderstanding of groundwater movement in unsaturated soils, which comprise the upper portions of Stratum III.

As discussed in WMTX's application, the hydraulic conductivity (i.e., permeability) of Stratum III beneath the Mesquite Creek Landfill was measured horizontally and vertically (i.e., on the stratum's horizontal and vertical axes).[4] Horizontal hydraulic conductivity is typically measured in the field, through the use of "slug tests," whereas vertical hydraulic conductivity is

[4] *See* Ex. APP-202 at 1043, 1052-53; *see also* Ex. APP-500 at 11:6-7 (noting that "hydraulic conductivity" and "permeability" are used interchangeably"), 12:4-16 (discussing horizontal and vertical hydraulic conductivity testing) (Gross).

typically measured in the laboratory using extracted samples of the stratum being tested.[5] Both approaches – slug testing and laboratory testing – mechanically force water into the stratum to simulate groundwater pressures and gradients and measure the stratum's hydraulic conductivity.[6] As such, these tests indicate how fast groundwater *could* move both vertically and horizontally through the stratum, *if* groundwater is present in the stratum, and *if* there is a force (e.g., pressure, gradient, gravity) driving that groundwater vertically, horizontally, or in both directions.[7]

As set forth in WMTX's application and as discussed by Ms. Meaux, in the upper, unsaturated portion of Stratum III, "there is no horizontal gradient driving flow laterally" through the stratum.[8] Therefore, while the horizontal hydraulic conductivity of Stratum III may be greater than the stratum's vertical hydraulic conductivity,[9] horizontal flow is not the predominant direction of groundwater flow in the upper, unsaturated portion of Stratum III because there is no force driving groundwater in that direction.[10] By contrast, gravity is, at all times, acting on the

---

5 *See* Ex. APP-202 at 1043 (discussing hydraulic conductivity testing in the lab), 1052-53 (discussing both slug tests and laboratory tests for hydraulic conductivity); Ex. APP-500 at 12:4-16 (Gross) (discussing both slug tests and laboratory tests for hydraulic conductivity); Trial Tr. at 520:19-21, 653:3-25, 693:23 to 694:3 (Meaux); *id.* at 723:14-23 (Gross); *id.* at 879:3-10 (Clark).

6 *See* Ex. APP-202 at 1043, 1052-53; Trial Tr. at 653:3-25 (Meaux); *id.* at 802:2 to 803:5 (Gross); *id.* at 879:3-10 (Clark).

7 *See, e.g.*, Ex. APP-202 at 1053-55, 1734-35 (discussing the affect of hydraulic gradients on groundwater flow patterns), 1740 (discussing the lack of a "horizontal gradient driving flow laterally through unsaturated soil"); Trial Tr. at 669:4-23 (Meaux) (discussing affects of gravity and gradient on groundwater flow); *id.* at 847:5-10 (Clark) (discussing flow through the subsurface following the gradient of the subsurface strata and "experiencing the influence of the orientation of the fracture system").

8 Ex. APP-202 at 1740; *see also* Trial Tr. at 534:21 to 535:23, 669:4-23 (Meaux)

9 As both Ms. Meaux and Mr. Williamson explained, for any stratum, the horizontal hydraulic conductivity is nearly always greater than the stratum's vertical hydraulic conductivity. *See* Trial Tr. at 693:19-22 (Meaux); *id.* at 1089:10-23 (Williamson).

10 *See* Ex. APP-202 at 1740.

groundwater in Stratum III, driving it vertically down through a network of vertically-oriented fractures to the zone of groundwater saturation in the lower portion of Stratum III.[11]

As Ms. Meaux explained, once groundwater reaches the saturated zone in Stratum III, it disperses throughout the zone, both vertically to the base of Stratum III and horizontally along the Stratum III/IV contact.[12] As discussed in more detail below, the base of Stratum III, where Stratum III contacts Stratum IV, is at a gradient and is much more permeable in the horizontal direction than Stratum IV is in the vertical direction.[13] Thus, groundwater remains in the saturated zone of Stratum III, following the gradient and the slope of the Stratum III/IV contact (i.e., the path of least resistance).[14]

TJFA relies on hydraulic conductivity results alone to arrive at its misplaced conclusion that groundwater is moving faster horizontally than vertically everywhere within Stratum III. TJFA's reasoning fails to appreciate that hydraulic conductivity is only a measure of a stratum's permeability; it is a factor, but not the only factor, in determining the direction and rate of groundwater flow. The hydraulic conductivity of a stratum alone does not move water through

---

11 *See* Ex. APP-202 at 1740 ("Any liquid release from the landfill would be expected to percolate vertically through the vadose zone until the water-bearing zone of Stratum III is encountered, since there is no horizontal gradient driving flow laterally through the unsaturated soil."); Trial Tr. at 520:8-15, 520:25 to 521:6, 534:21 to 535:23, 541:14-20, 555:4-17, 557:20-23, 558:21-24, 667:4 to 670:13 (Meaux).

12 *See* Trial Tr. at 520:8-15, 520:25 to 521:6, 535:16-20, 555:4-17, 669:4-23 (Meaux).

13 *See* sources cited *infra* note 27 and accompanying text.

14 *See* sources cited *infra* note 28 and accompanying text; *see also* Trial Tr. at 537:21-23 (Meaux).

A simple, analogous scenario would be a drop of water placed on a flat, horizontal surface, such as a tabletop. While there is virtually no impediment to lateral flow across the tabletop (as compared to vertically through the tabletop), there is no force driving the water across the tabletop. However, if a tiny hole is drilled through the tabletop beneath the droplet of water, gravity will cause the water to seep through the hole in the table, although vertical flow through the tabletop is impeded by the aperture of the hole, whereas lateral flow across the table top is, again, virtually unimpeded. Similarly, if one end of the table is tilted vertically, the water on the table will flow in the opposite direction, following the gradient (i.e., slope) of the raised table and the path of least resistance.

the stratum; rather, forces such as pressure, gradient, and gravity cause groundwater to flow, where groundwater is present.

B. The Application Fully And Correctly Characterizes And Defines Strata III And IV And Identifies The Contact Between Those Strata

TJFA argues that the contact between Stratum III and Stratum IV beneath the Mesquite Creek Landfill was not properly identified in WMTX's application. TJFA alleges (1) that a change in color from Stratum III to Stratum IV was the sole criterion that WMTX used to distinguish Stratum III from Stratum IV, and (2) that the "upper portions" of Stratum IV should have been considered part of Stratum III or otherwise as part of the uppermost aquifer beneath the facility. Both allegations lack support in the evidentiary record.

1. A Number Of Factors Were Used To Distinguish Stratum III From Stratum IV

The Geology Report in WMTX's application and the testimony of Ms. Meaux demonstrate that a number of factors, in addition to color, were used to characterize the strata beneath the facility and to distinguish Stratum III from Stratum IV. While the change in color from Stratum III to Stratum IV is readily apparent, Stratum III and Stratum IV are also distinguishable due to the oxidation of Stratum III; the prevalence of clay, bedding planes, fractures, and calcite seams in Stratum III; and the hardness of Stratum IV.[15] Moreover, as

---

[15] *See* Ex. APP-202 at 1035, 1037, 1041, 1044, 1050-51, 1188-289; Trial Tr. at 467:13-14, 467:25 to 468:1 (Meaux) (discussing the different colors of Stratum III and Stratum IV); *id.* at 473:16-25 (Meaux) (testifying that "there are many more fractures in Stratum III than Stratum IV"); *id.* at 475:9-11, 479:22-24 (Meaux) (testifying that Stratum III is comprised primarily of clay and contains more clay than claystone, whereas Stratum IV is comprised primarily of claystone and contains more claystone than clay); *id.* at 485:5-8 (Meaux) ("There was much less evidence of weathering in the Stratum IV samples we observed than the Stratum III [samples]."); *id.* at 486:2 to 487:11 (Meaux) (testifying that all of Stratum III "primarily appeared weathered and oxidized"); *id.* at 487:25 to 488:3, 489:25 to 490:8, 490:16-23 (Meaux) (explaining that color changes are evidence of oxidation – that the stratum was exposed to water or air – and that "there was no color change observed [in Stratum IV], indicating that

Ms. Meaux explained and as discussed in WMTX's Closing Argument, Stratum III is markedly different from Stratum IV in that the soil borings conducted by GeoSyntec showed evidence of groundwater or the hallmarks of groundwater movement in Stratum III, whereas those same borings showed *no* evidence of groundwater or groundwater transmittal in Stratum IV.[16]

Although TJFA offers no support for its insinuation that color changes in subsurface strata alone are insufficient to characterize the stratigraphy beneath a site, the record demonstrates that the strata beneath the Mesquite Creek Landfill were fully and correctly characterized based on multiple criteria. There is no evidence in the record that challenges those characterizations. Indeed, even TJFA's own witness, Dr. Clark, testified that the approach taken by Ms. Meaux and her GeoSyntec team to evaluate the soil borings and identify and define the strata beneath the facility "was pretty reasonable."[17]

---

there was no oxygen or air that was in contact" with Stratum IV); *id.* at 498:3-15 (Meaux) (discussing the differences in hardness).

[16] *See* Applicant's Closing Argument at 9-13; *see also* Trial Tr. at 509:6-10 (Meaux) (explaining that the portions of the cores obtained from Stratum IV were "always dry" and that "[t]here was no indication of water flowing in Stratum IV or any indications of water movement in Stratum IV"); *id.* at 512:10-17 (Meaux) (testifying that GeoSyntec's geologic investigation of the proposed expansion area did not show any evidence of water-bearing fractures in Stratum IV); *id.* at 513:15-16 (Meaux) ("There was no evidence of water movement in Stratum IV."); *id.* at 552:12-13 (Meaux) (testifying that there was no water noted in the boring logs for any of the fractures identified in Stratum IV); *id.* at 552:25 to 556:3 (Meaux) (explaining that it was "pretty clear" from the boring logs that Stratum IV would not convey groundwater); *id.* at 560:24 to 561:7, 562:25 to 563:3 (Meaux) (testifying that Stratum III had indications of groundwater, whereas "Stratum IV was dry"); *id.* at 670:21 to 671:7 (Meaux) (testifying that GeoSyntec's geologic investigation yielded "no evidence" that Stratum IV may be transmitting groundwater, but did yield "clear evidence" that Stratum III was transmitting groundwater); *id.* at 1088:4-11, 1098:21-22, 1100:15-20 (Williamson) ("It appears that groundwater prefers to move through Stratum III."); Ex. APP-202 at 1051 ("GeoSyntec's observations during the site investigation showed that Stratum IV material in the expansion area was dry, with no water-bearing zones found.").

[17] Trial Tr. at 872:6 to 873:3 (Clark).

2. No Portion Of Stratum IV Should Be Considered Part Of Stratum III Or Otherwise Part Of The Uppermost Aquifer

For the reasons set forth in the arguments above, Stratum III should not be extended into any portion of Stratum IV. As characterized in WMTX's application and in the testimony presented in this matter, the two strata are separate and distinct. Nor should the "upper portion" of Stratum IV, or any portion of Stratum IV, be considered part of the uppermost aquifer beneath the facility. There is no evidence in the record to suggest that Stratum IV or any portion thereof meets the regulatory definition of an "aquifer" – that it is "capable of yielding significant quantities of groundwater to wells or springs."[18] As discussed in WMTX's Closing Argument, the record evidence demonstrates just the opposite – that Stratum IV is not an aquifer per the applicable regulatory definition, or any reasonable definition of the term "aquifer."[19]

In an effort to portray the upper portion of Stratum IV as part of the uppermost aquifer, Protestant TJFA cites the hearing testimony of the Executive Director's expert geologist, Mr. Williamson. Specifically, TJFA cites Mr. Williamson's testimony that the upper portion of Stratum IV is "a transitional zone where the fracturing tapers out."[20] Notably, TJFA fails to cite or even acknowledge Mr. Williamson's testimony that shortly followed the foregoing statement and directly addressed the question at hand. Responding to a question from counsel for TJFA inquiring whether any portions of Stratum IV should be considered part of the uppermost aquifer, Mr. Williamson explained, as follows, that no portion of Stratum IV comprises any part of the uppermost aquifer beneath the Mesquite Creek Landfill:

---

18 30 TEX. ADMIN. CODE § 330.2(6).

19 *See* Applicant's Closing Argument at 9-16; *see also* Ex. APP-202 at 1051, 1733; ED Ex. 8 at 4:7-10 (Williamson); Trial Tr. at 1105:5-10 (Williamson).

20 Trial Tr. at 1096:11-12 (Williamson).

[T]here's no communication between Stratum III and Stratum IV. There may be fractures, but that doesn't mean groundwater moves between them.[21]

While WMTX and its expert geologist, Ms. Meaux, agree with Mr. Williamson's assessment – that no part of the uppermost aquifer extends into Stratum IV – Mr. Williamson's description of a transitional zone in the upper portion of Stratum IV is not borne out in the logs of the 24 borings that GeoSyntec drilled at the site.[22] Nevertheless, the conclusions reached by Ms. Meaux and Mr. Williamson, and the bases for those conclusions, are identical: Stratum IV is not part of the uppermost aquifer beneath the Mesquite Creek Landfill because groundwater is not flowing into and within Stratum IV.[23]

Protestant TJFA attempts to support its claims by noting that the horizontal hydraulic conductivities of Stratum III and Stratum IV are similar.[24] However, as Ms. Meaux explained, comparing horizontal hydraulic conductivities is not the correct comparison for purposes of determining whether groundwater will flow across the Stratum III/IV contact, rather than horizontally above and along that contact.[25] Ms. Meaux explained that, to determine the route that groundwater will take once it reaches the Stratum III/IV contact, one should compare the

---

21 *Id.* at 1098:9-11 (Williamson); *see also id.* at 1110:7-14 (Williamson) (testifying that groundwater does not appear to be moving from Stratum III into Stratum IV). Even if Stratum IV or any portion thereof were to be considered an aquifer – a claim which is entirely without support – Stratum IV would also have to be "hydraulically interconnected" with Stratum III to be considered part of the "uppermost aquifer." 30 TEX. ADMIN. CODE § 330.2(158); *see also* Ex. APP-400 at 27:22 to 28:3 (Meaux) (testifying that Stratum III is not hydraulically interconnected to any underlying aquifer).

22 *See* Ex. APP-202 at 1188-289 (GeoSyntec boring logs). Of the 24 borings, only one indicates confirmed fracturing in the upper ten feet of Stratum IV (in claystone noted as dry on the boring log), and only five other borings even indicate the possibility of fractures in the upper ten feet of Stratum IV. *See* Trial Tr. at 522:13-25 (Meaux) (explaining that a "possible fracture" notation on a boring log could indicate the possibility of a fracture that was caused by drilling and coring the soil boring).

23 *See* Applicant's Closing Argument at 9-16.

24 Notably, as discussed below, TJFA subsequently claims in its closing arguments that the horizontal hydraulic conductivity of Stratum IV is unknown.

25 *See* Trial Tr. at 674:12 to 675:23 (Meaux).

horizontal hydraulic conductivity of Stratum III to the vertical hydraulic conductivity of Stratum IV and take into account that the Stratum III/IV contact is at a gradient beneath the site.[26]

Because bedding planes, fractures, and seams are prevalent at the base of Stratum III, the lower reaches of Stratum III are orders of magnitude more permeable in the horizontal direction than Stratum IV is in the vertical direction.[27] Because of this difference in permeability, and because the Stratum III/IV contact is at a gradient beneath the site, groundwater will *always* travel laterally above and along the Stratum III/IV contact rather than vertically across the contact and into Stratum IV.[28] In fact, Dr. Clark even testified that it was his understanding that groundwater moves laterally along the Stratum III/IV contact beneath the landfill.[29]

In order for groundwater to exist in Stratum IV, even in theory, groundwater must travel vertically downward, through the saturated zone at the base of Stratum III, where groundwater is monitored at the facility and known to flow, and across the Stratum III/IV contact and into Stratum IV.[30] The lack of such vertical movement of groundwater into Stratum IV is what Mr. Williamson was referring to when he testified, as noted above, that "[t]here's no

---

26 *See id.* at 669:4-23, 674:21 to 675:10 (Meaux).

27 *See* Ex. APP-202 at 1037, 1052-53, 1188-289; Trial Tr. at 514:4-23 , 535:11-15, 541:14-20, 561:3-7 (Meaux).

28 *See* Trial Tr. at 669:4-23 (Meaux) (explaining that "gradient will take [groundwater] along the Stratum III/IV contact, which is typically at a slope"); *id.* at 675:11-23 (Meaux) (testifying that groundwater will always choose to flow along the interface of Stratum III and IV instead of across it): *see also id.* at 1098:21-22 (Williamson) ("It appears that groundwater prefers to move through Stratum III.").

29 *See id.* at 843:10-16 (Clark).

30 *See id.* at 505:17-19, 520:8-15, 534:15 to 535:3, 555:4-17, 557:20-23, 562:20-21, 668:11-17, 669:19-23, 674:12 to 675:23 (Meaux); *id.* at 1110:7-14 (Williamson); *id.* at 842:25 to 843:16 (Clark).

communication between Stratum III and Stratum IV."[31] Such movement, even in theory, is entirely without support in the evidentiary record. The characteristics of the stratigraphy beneath the site do not support such a theory and there is no evidence of such groundwater movement in any of the many soil borings that have been advanced beneath the site. Accordingly, there is no basis for TJFA's claim that the upper portion of Stratum IV – or any portion of Stratum IV – is part of the uppermost aquifer.

C. Contrary To TJFA's Assertions, The Horizontal Hydraulic Conductivity Of Stratum IV Has Been Tested And Those Test Results Are Reliable

Despite its attempts to rely upon the horizontal hydraulic conductivity of Stratum IV to support its misguided conception of the uppermost aquifer, TJFA also claims in its closing arguments that the horizontal hydraulic conductivity of Stratum IV is unknown. That claim, too, lacks merit. The Geology Report in the application includes the results of "slug tests" that were conducted beneath the existing facility to determine the horizontal hydraulic conductivity of Stratum IV.[32] Contrary to TJFA's assertions, the data from those tests are reliable and can be applied equally to the existing site and the proposed expansion area.

To the extent that there are questions regarding the reliability of any testing of Stratum IV, those questions concern groundwater elevation measurements, not measurements of hydraulic conductivity.[33] Those questions concern the source of the water in certain piezometers installed prior to WMTX's previous application for Permit No. MSW-66A; specifically, whether the water in the piezometers came from a source other than Stratum IV (e.g., infiltration from

---

[31] *Id.* at 1098:9-10 (Williamson); *see also id.* at 1110:7-14 (Williamson) (testifying that groundwater does not appear to be moving from Stratum III into Stratum IV).

[32] *See* Ex. APP-202 at 1052-53, 1085, 1426-29, 1438-45; Trial Tr. at 529:9-22, 677:2-6 (Meaux); *see also* Ex. APP-202 at 1733; Ex. APP-500 at 12:4-11 (Gross).

[33] *See* Trial Tr. at 677:7-21 (Meaux); *id.* at 906:18 to 909:8 (Clark).

Stratum III or from the surface) due to improper construction of the piezometers or damage to the above-ground portions of the piezometers.[34] There does not appear to be any dispute that water that does not come from Stratum IV should not be relied upon to determine whether there is any water in Stratum IV.[35] Because the source of the water in these Stratum IV piezometers is unknown, the water in the piezometer borehole is not a reliable measure of the presence or elevation of groundwater Stratum IV.

However, as Ms. Meaux testified, any source of water may be used for purposes of determining the horizontal hydraulic conductivity of Stratum IV.[36] The source of the water does not affect the reliability of the measurement.[37] As discussed above, a "slug test" is simply a mechanical means of placing water in a borehole under pressure and forcing that water out of the borehole and into the surrounding stratum.[38] The resulting measure of the stratum's horizontal hydraulic conductivity is wholly unrelated to the source of the water or whether the stratum naturally contains any water at all: "Water is water" for purposes of conducting slug tests and measuring horizontal hydraulic conductivity.[39] A dry stratum containing no groundwater, such as Stratum IV, can be tested for its horizontal hydraulic conductivity simply by adding water to a borehole advanced into the stratum and conducting a slug test.[40]

---

34 *See, e.g., id.* at 533:11-21, 538:16 to 540:22, 553:1-9 (Meaux); *see also id.* at 509:17 to 511:17, 571:3 to 572:15 (Meaux); *id.* at 908:11 to 909:8 (Clark).

35 *See id.* at 677:7-21 (Meaux); *id.* at 908:11 to 909:8 (Clark).

36 *See id.* at 675:24 to 676:16 (Meaux) (testifying that the source of the water used to conduct a slug test for horizontal hydraulic conductivity does not matter); *id.* at 571:3 to 572:1 (Meaux) (testifying that, for purposes of measuring hydraulic conductivity, "[w]ater is water").

37 *See id.* at 676:17 to 677:1 (Meaux).

38 *See id.* at 653:3-25 (Meaux); *id.* at 879:3-10 (Clark).

39 *Id.* at 571:3 to 572:1 (Meaux); *see also id.* at 675:24 to 677:1 (Meaux).

40 *See id.* at 675:24 to 677:1 (Meaux).

Because Ms. Meaux questioned the source of water found in the piezometers that were previously installed, at least partially, within Stratum IV, she did not rely upon groundwater elevation data obtained from those piezometers.[41] She did, however, properly rely upon horizontal hydraulic conductivity data obtained from slug tests conducted in those same piezometers, because the source of the water used to conduct the slug tests is immaterial to the reliability of the test data.[42]

TJFA's arguments, although somewhat vague and contradictory, appear to suggest that, even if the horizontal hydraulic conductivity data in the application is reliable – which it is – WMTX should have also tested the horizontal hydraulic conductivity of Stratum IV beneath the proposed expansion area. Additional testing of Stratum IV was neither necessary nor required by the applicable regulatory requirement or sound geologic principles.

While the Stratum IV horizontal hydraulic conductivity data in the application were derived from testing beneath the existing landfill, the record demonstrates that the characteristics of Stratum IV are consistent across the site, from the existing facility to the proposed expansion area.[43] Indeed, TJFA's own witness, Dr. Clark, testified that he would not expect the

---

41 *See id.* at 509:17 to 511:17 (Meaux).

42 *See id.* at 677:2-6 (Meaux) (testifying that the slug tests that were conducted in Stratum IV tested the horizontal hydraulic conductivity of only Stratum IV beneath the Mesquite Creek Landfill); *see also id.* at 533:11-21, 538:16 to 540:22, 571:3 to 572:1 (Meaux) (testifying that the horizontal hydraulic conductivities for Stratum IV listed in the application "do represent . . . the transmissivity of the sediments"); *id.* at 830:5-10 (Clark) (testifying that the slug tests conducted for at the Mesquite Creek Landfill "were properly performed"); *id.* at 1100:9-14 (Williamson) (testifying that the slug test information in the application is sufficient and adequate and that the test methods complied with the applicable regulatory requirements).

43 *See* Ex. APP-202 at 1036-37, 1043, 1044; Ex. APP-400 at 23:19-27, 25:16-27, 26:15 to 27:2 (Meaux); Ex. APP-500 at 10:24 to 11:2 (Gross).

unweathered portion of the Lower Taylor Group (i.e., Stratum IV)[44] to change from one location to another.[45] Furthermore, the applicable regulatory requirement, 30 Tex. Admin. Code § 330.56(d)(5)(B), requires testing only of "one sample from each soil layer or stratum." WMTX's application exceeds the applicable regulatory requirement in that it includes horizontal hydraulic conductivity test results from not one, but three slug tests conducted in three separate Stratum IV piezometers.[46]

II. ADEQUACY OF GROUNDWATER MONITORING SYSTEM

A. The Groundwater Monitoring Network Proposed In The Application Improves Upon The Existing Network And Is Fully Protective Of Human Health And The Environment; No Additional Monitoring Wells Are Required Or Necessary

1. The Installation Of Groundwater Monitoring Wells Into Stratum IV And Between Unit 2 And The Leachate Evaporations Ponds Is Neither Required Nor Necessary

TJFA claims, and OPIC recommends, that groundwater monitoring wells should be installed and screened to monitor Stratum IV, and that wells should be installed between Unit 2 and the leachate evaporation ponds on the expansion area. These claims and recommendations were fully addressed in Applicant's Closing Argument;[47] no further discussion is warranted here. The proposed wells are neither required nor necessary; they would not increase the protectiveness of the groundwater monitoring network proposed in WMTX's application.

---

44 *See id.* at 470:5-7 (Meaux); *id.* at 838:16-19 (Clark).

45 *See id.* at 855:22 to 856:4, 860:11-17 (Clark).

46 *See* Ex. APP-202 at 1052, 1085; *see also* Trial Tr. at 1100:9-14 (Williamson) (testifying that the slug tests discussed in the application complied with the applicable regulatory requirements).

47 *See* Applicant's Closing Argument at 14-18.

2. TJFA's Construction Of The Groundwater Contour Maps In The Application Is Not Supported By The Evidentiary Record

With each geology witness presented in this case, counsel for TJFA attempted to construe the groundwater contour maps (i.e., "potentiometric surface" maps) in WMTX's application[48] to suggest that additional wells were needed around the perimeter of the existing, currently permitted landfill. Each attempt with each witness failed. Nevertheless, in its closing arguments, TJFA persists in its efforts to manipulate WMTX's groundwater contour maps. Those efforts, again, must fail; there is overwhelming evidence in the record demonstrating that TJFA's interpretation of groundwater flow is flawed.

As explained in the application and by Ms. Meaux, one improvement that WMTX is proposing for the groundwater monitoring network for the existing facility is to replace monitoring well MW-2 with well MW-2A, because MW-2 is functioning as an upgradient well, not as a true downgradient well, the purpose it was intended to serve.[49] In his cross-examinations of Ms. Meaux and Mr. Williamson, counsel for TJFA sought to challenge this improvement, as well as the continued designation of existing monitoring well MW-1 as an upgradient well. Notably, well MW-1 has been designated and permitted as an upgradient well since its installation at the existing facility in 1992.[50]

In his cross-examination of Ms. Meaux, counsel for TJFA insinuated (if not outright alleged) that Ms. Meaux purposefully drew the groundwater contour maps in the application to falsely portray MW-1 and MW-2 as upgradient wells. Ms. Meaux unequivocally refuted any

---

48 *See* Ex. APP-202 at 1105-07 (potentiometric surface maps).

49 *See id.* at 1739; Trial Tr. at 599:16 to 600:2, 603:17 to 604:2, 608:2-10, 677:22 to 678:24 (Meaux).

50 *See* Ex. APP-202 at 1048, 1054, 1065, 1321-22, 1736, 1739, 1747; *see also* Trial Tr. at 602:16-22 (Meaux).

such accusation, and both Ms. Meaux and Mr. Williamson testified that, in their respective expert opinions, the historic groundwater data and contour maps in the application show that both MW-1 and MW-2 are functioning as upgradient wells.[51] Additionally, any suggestion that Ms. Meaux prepared the contour maps in the application with the goal of depicting MW-1 and MW-2 as upgradient wells is further refuted by the historic potentiometric maps of the existing facility that were not prepared by Ms. Meaux or GeoSyntec, nor for purposes of the pending application.[52] These maps also show MW-1 and MW-2 to be upgradient wells.[53]

Even TJFA's own witness, Dr. Clark, provided little, if any, support for TJFA's claim that well MW-2 is a downgradient well and should be retained as such, or that additional wells should otherwise be added along the existing facility's boundary paralleling Kohlenberg Lane. On redirect, Dr. Clark reviewed a "Leachate Collection System Plan" that was prepared for WMTX's prior application for Permit No. MSW-66A and concluded, in part from the topographic contour lines shown on that plan and in part from his "general impression" of the

---

51 *See* Trial Tr. at 607:3-6 (Meaux) ("MW-1 is functioning as an upgradient well because it is detecting . . . groundwater [that] flows through that well before it flows through the landfill."); *id.* at 609:11-18 (Meaux) ("MW-1 is still functioning as an upgradient well because water at that well location emanates from an upgradient direction [from] the site."); *id.* at 613:4 to 614:25 (Meaux) ("[T]he water that would come to [MW-2] is clearly from offsite."); *id.* at 615:15-17 (Meaux) ("[T]he water that's coming to MW-1 is . . . coming from offsite, and that's the definition of an upgradient well."); *id.* at 615:18-24 (Meaux) (testifying that the contour lines on the groundwater contour maps in the application do not indicate that MW-1 is a downgradient well); *id.* at 615:25 to 616:16 (Meaux) (refuting any accusation that the contour lines on the groundwater contour maps in the application were "drawn to infer one conclusion or another"); *id.* at 1120:14 to 1121:5 (Williamson) (testifying that MW-1 is an upgradient well); *id.* at 1126:4 to 1128:13 (Williamson) (testifying that the potentiometric maps in the application do not support a claim that MW-2 is a downgradient well); *see also id.* at 677:22 to 678:24 (Meaux) (testifying that the proposed improvements to the existing groundwater monitoring network will make the network more protective of human health and the environment).

52 *See* Ex. APP-202 at 1376-80.

53 *See id.*

topography at the site, that a release of leachate from the existing landfill "could possibly" cross under Kohlenberg Lane.[54]

Notably, Dr. Clark didn't offer the foregoing opinion based on the potentiometric maps in the application, or even on any information in the geology or groundwater portions of the application. His opinion was based solely on topography and, further still, largely on his "general impression" of the surface topography that he gained from a visit to the site.[55] As Mr. Williamson explained, while groundwater generally flows in relative conformance with the surface topography at the site, that general rule is not an absolute.[56] Therefore, groundwater potentiometric maps, if available, are the more definitive source for determining the direction of groundwater flow.[57]

In fact, on recross-examination, Dr. Clark examined a potentiometric map from the Geology Report in the application and agreed that, in the area of well MW-2, the map shows groundwater flowing towards Mesquite Creek – towards the proposed location of well MW-2A – not beneath Kohlenberg Lane.[58] Furthermore, when Dr. Clark explained his reasoning for proposing additional wells along Kohlenberg Lane, it was apparent that this was yet another

---

54 Trial Tr. at 883:4 to 884:22 (Clark).

55 *See id.* at 884:8-22 (Clark); *see also id.* at 891:6-14 (Clark) (testifying that the basis for his proposal to put additionally monitoring wells along Kohlenberg Lane was "based on the topography and the concept that groundwater flow at the site is topographically controlled").

If Dr. Clark's "general impression" of the topography that he's seen at the site is based on the one formal site visit that he made during the discovery process, then that "general impression" is even more suspect. The formal site visit that Dr. Clark attended was a driving tour of the facility that Dr. Clark himself described as follows: "We were moving right along in our trucks . . . ." *Id.* at 831:2 to 832:1 (Clark).

56 *See id.* at 1126:21-22 (Williamson) ("Groundwater doesn't move always by topographic means.").

57 *See id.* at 1126:19 to 1127:23 (Williamson) ("I would lean more on the . . . potentiometric surface maps.")

58 *See id.* at 910:18 to 911:20 (Meaux).

instance of Dr. Clark simply wanting to experiment and wanting more information, regardless of what the regulations require: "I have an interest in what might be happening with old pre-Subtitle D landfills, so I would want to see not only two but more monitor wells along Kohlenberg Lane."[59]

For the foregoing reasons, and based on the testimony in the record and the groundwater information in WMTX's application, well MW-1 should retain its historic, currently permitted designation as an upgradient well, and well MW-2 should be replaced with a true downgradient well, MW-2A, as proposed in the application. Additional wells along Kohlenberg Lane, while perhaps an interesting proposition to Dr. Clark, are neither required nor necessary.

3. Contrary To TJFA's Assertions, No Additional Monitoring Wells Are Necessary Between Well MW-6 And Piezometer P-Z3 On The Existing Facility

TJFA contends that additional monitoring wells should be installed between monitoring well MW-6 and piezometer P-Z3, along the unnamed tributary of Mesquite Creek that crosses the western corner of the existing facility between Unit 1 and Unit 3.[60] WMTX does not dispute that, in the unlikely event that a release of leachate occurs from either Unit 1 or Unit 3, the release may initially flow in the direction of the tributary (depending upon the area of Unit 1 or Unit 3 from which the release originates).[61] However, that does not support TJFA's claim that monitoring wells should be installed along the tributary between Unit 1 and Unit 3.

---

[59] *Id.* at 887:22-25 (Clark); *see also id.* at 823:12-18, 906:2-17 (Clark) (confirming that, no mater what the project is, or what the regulations require, Dr. Clark always wants more information).

[60] The unnamed tributary is depicted in Ex. APP-202 at 1752. MW-6 and PZ-3 are shown on the potentiometric maps in the application. *See, e.g.*, Ex. APP-202 at 1105-07.

[61] *See* Trial Tr. at 598:4-25, 629:15 to 630:7, 631:13-24, 633:1-9, 633:23 to 634:10 (Meaux); *see also id.* at 1128:16 to 1130:24, 1131:3-18 (Williamson).

As both Ms. Meaux and Mr. Williamson testified, if such a release were to occur, the release would be detected by existing monitoring well MW-6, which is located downgradient of all points along the tributary between PZ-3 and MW-6.[62] As Mr. Williamson explained, any such release would initially flow toward the tributary, then would follow the natural gradient of the tributary down to MW-6 where it would be detected.[63] Even Dr. Clark agreed that a release from Unit 3 would flow toward MW-6 and that MW-6 could be "an effective monitoring well."[64]

Recognizing that MW-6 monitors, and will continue to monitor, the downgradient point of compliance for Unit 1 and Unit 3, TJFA next contends that additional wells nevertheless should be installed in order for the facility to determine if the release originated from Unit 1 or Unit 3, in the event that a release is detected at MW-6. As set forth in Applicant's Closing Argument, such a determination falls under the scope of "assessment monitoring," not "detection monitoring."[65] A facility remains in detection monitoring until such time as a release is detected

---

62 *See id.* at 598:4-25 (Meaux) (testifying that MW-6 monitors both Unit 1 and Unit 3); *id.* at 634:11-15 (Meaux) (noting that MW-6 is positioned where the unnamed tributary exits the site); *id.* at 634:16 to 635:4 (Meaux) (testifying that any release from Unit 3 should be detected by MW-6); *id.* at 690:15 to 691:3 (Meaux) (testifying that groundwater would flow from the topographic high of the streambed to the topographic low); *id.* at 1128:16 to 1130:24, 1131:3-18 (Williamson) (testifying that he would not recommend any wells along the west side of Unit 1 because topography affects the movement of groundwater in this area of the facility and would direct any release from Unit 1 or Unit 3 to MW-6).

Notably, TCEQ's rules require downgradient groundwater monitoring wells to be installed at the facility's "point of compliance," which is located within 500 feet of "the *hydraulically downgradient limit of the waste management unit boundary*." 30 TEX. ADMIN. CODE §§ 330.2(98), 330.231(a)(2).

63 *See id.* at 1128:16 to 1130:24, 1131:3-18 (Williamson).

64 *Id.* at 899:4-12 (Clark); *see also id.* at 897:13-20 (Clark).

65 *See* 30 TEX. ADMIN. CODE §§ 330.234 (TCEQ's detection monitoring program), 330.235 (TCEQ's assessment monitoring program).

and confirmed.[66] If that occurs, the facility may enter assessment monitoring and, if necessary, a third and final corrective action phase.[67]

TCEQ's detection monitoring rules require only that groundwater monitoring wells be positioned and installed such that they will detect a release of constituents in groundwater passing the facility's point of compliance.[68] If such a detection is made, and if it is confirmed, determining the exact origin of the release would be the focus of assessment monitoring, a groundwater monitoring program separate and distinct from detection monitoring.[69] If assessment monitoring is triggered, then – and only then – would WMTX be required to determine the source of the release.[70] If such a determination could not be made without the installation of additional wells, or through other means, then WMTX may be required to install one or more groundwater monitoring wells specifically for the purpose of identifying the source of the release.[71]

---

66 *See id.* § 330.234(d)(2); Trial Tr. at 703:3-5 (Hultman) (describing detection monitoring as the "initial phase of groundwater monitoring"); *id.* at 709:14 to 712:18 (Hultman) (describing the process from detection monitoring, to assessment monitoring, to corrective action); *see also* Trial Tr. at 578:20 to 579:12 (Meaux); *id.* at 1135:13 to 1136:6, 1139:3 to 1141:11 (Williamson).

67 *See* 30 TEX. ADMIN. CODE §§ 330.234-.238; *see also id.* Trial Tr. at 709:14 to 712:18 (Hultman) (describing the process from detection monitoring, to assessment monitoring, to correction action).

68 *See* 30 TEX. ADMIN. CODE § 330.231(a)(2); *see also id.* § 330.231(c).

69 *See id.* § 330.235; *see also* Trial Tr. at 660:11-22 (Meaux); *id.* at 702:20-21, 709:14 to 712:18 (Hultman).

70 *See* 30 TEX. ADMIN. CODE § 330.235; *see also* Trial Tr. at 710:21 to 712:1 (Hultman).

71 *See* 30 TEX. ADMIN. CODE § 330.235(g)(1)(A)-(B) (providing that the installation of additional monitoring wells may be required as part of an assessment monitoring program); *see also* Trial Tr. at 710:25 to 711:10 (Hultman).

4. Well MW-1 Has Historically Served As The Existing Facility's Background Well And Will Continue To Serve In That Role; No Additional Background Wells Are Required Or Necessary

TJFA contends that an additional groundwater monitoring well should be installed at some undisclosed location in the vicinity of, and upgradient of, Unit 3 to serve as a "background" well, presumably dedicated solely to Unit 3. Such a well is neither required nor necessary.

TCEQ's rules require the installation of "background" wells at a facility "to allow determination of the quality of groundwater that has not been affected by leakage from a unit."[72] Contrary to TJFA's reading of the applicable regulations, TCEQ's rules do not require separate background wells for each separate disposal unit, nor do they require background wells to be upgradient wells (i.e., background wells do not have to be hydraulically upgradient of the facility).[73] Thus, a facility may be permitted and may operate without *any* upgradient wells, or may otherwise determine background groundwater quality by sampling wells other than, or in addition to, the facility's upgradient wells.[74]

As discussed above, monitoring well MW-1 has been designated and permitted as an upgradient well since its installation at the existing facility in 1992.[75] Because groundwater elevations are highest in the vicinity of MW-1 and decrease across the existing site toward well

---

72 30 TEX. ADMIN. CODE § 330.231(a)(1).

73 *See id.* (allowing a determination of background groundwater quality from "sampling of wells that are not hydraulically upgradient of the waste management area if hydrogeologic conditions do not allow the owner or operator to determine which wells are hydraulically upgradient or if sampling at other wells will provide a better indication of background groundwater quality than is possible from upgradient wells"); *see also id.* § 330.233(e) (allowing establishment of "background groundwater quality in hydraulically upgradient wells *or* in background wells") (emphasis added).

74 *See id.* §§ 330.231(a)(1), 330.233(e).

75 *See* Ex. APP-202 at 1048, 1054, 1065, 1321-22, 1736, 1739, 1747; *see also* Trial Tr. at 602:16-22 (Meaux).

MW-6,[76] the point of compliance well for Unit 3,[77] MW-1 has served, and should continue to serve, as the background well for the existing facility, including Unit 3. There is no evidence in the record to suggest that an additional background well is required or otherwise necessary to serve Unit 3.

In her prefiled testimony in this case, Ms. Meaux testified that groundwater sampled from the facility's background wells, including MW-1, "will not have been affected by a release from the facility."[78] As set forth above in response to TJFA's claim that MW-1 is a downgradient well, TJFA cannot reasonably maintain that the groundwater sampled in MW-1 has been affected by leakage from any landfill unit. Moreover, Mr. Hultman testified in this matter regarding the provisions that the facility will use to establish background groundwater quality, which are set forth in the Groundwater Sampling and Analysis Plan ("***GWSAP***") in WMTX's application.[79] No party challenged either Mr. Hultman's testimony or any provision of the GWSAP. Indeed, TJFA did not even question Mr. Hultman at the hearing.

Furthermore, although TJFA does not suggest an actual location for the well it contends should be installed "around Unit 3" to measure background groundwater quality, it should be noted that a monitoring well was previously attempted in the only location in the immediate vicinity of Unit 3 (i.e., in the western corner of the existing facility) that is arguably upgradient

---

76 *See* Ex. APP-202 at 1054.

77 *See* Trial Tr. at 641-12-14 (Meaux).

78 Ex. APP-400 at 36:19-30.

79 *See* Ex. APP-600 at 10:11-13; Ex. APP-202 at 2262-63; *see also id.* at 1743.

of that unit. As discussed in Applicant's Closing Argument, the well was later decommissioned because it was always dry.[80]

B. WMTX's Application Provides A Thorough Characterization Of The Direction Of Groundwater Flow At The Facility

TJFA claims that WMTX's application does not show the direction of groundwater flow in the vicinity of existing Unit 3. This claim was squarely addressed by Mr. Williamson, who explained that the groundwater contour lines shown on the potentiometric surface maps in WMTX's application do not extend – and should not be extended – to Unit 3 because groundwater has never been detected in that area of the facility.[81] To supplement the potentiometric maps in the application, Mr. Williamson requested, and WMTX submitted, a "preconstruction" topographic map showing the natural contours of the site as they existed prior to development of the landfill, as well as the locations of the monitoring wells in the proposed groundwater monitoring network.[82] As both Mr. Williamson and Ms. Meaux explained, Unit 3 is located on a topographic high, which would affect the flow of groundwater in this area of the facility, if groundwater were present.[83] Therefore, as Mr. Williamson testified, using the preconstruction topographic map to supplement the potentiometric maps in the application

---

80 *See* Applicant's Closing Argument at 14-15; Ex. APP-202 at 1051 (discussion at § 8.3.4.), 1736 (discussing monitoring well MW-5); Trial Tr. at 911:21 to 912:25 (Clark) (same); *id.* at 1129:3-9 (Williamson) (same).

81 *See* Trial Tr. at 1131:19 to 1132:8 (Williamson); *see also id.* at 1128:16 to 1129:9 (Williamson).

82 *See* Ex. APP-202 at 1753 ("Proposed Groundwater Monitoring Network with Pre-Landfill Development Topography"); Trial Tr. at 1129:14-19 (Williamson); *id.* at 695:16 to 696:15(Meaux).

83 *See* Trial Tr. at 1128:16 to 1130:24, 1131:8-13 (Williamson) ("If water does exist [beneath Unit 3], it would move back toward the site following the topographic high."); *id.* at 633:23 to 634:6 (Meaux) (testifying that there is a topographic high in the western corner of Unit 3); *see also id.* at 632:22 to 633:4, 633:23 to 634:10 (Meaux) (referencing the surface topography in the area of Unit 3 to determine the downgradient direction); *id.* at 629:17-21, 631:21-24, 690:15-23 (Meaux) (testifying that groundwater at the site generally flows in relative conformance to the surface topography and would be expected to flow from a topographic high to a topographic low).

provides a good indication of the direction that groundwater would flow in the vicinity of Unit 3, if groundwater were present in that area of the facility.[84] Indeed, on cross-examination, neither Ms. Meaux nor Mr. Williamson had difficulty explaining where groundwater flows or would flow in the vicinity of Unit 3.[85]

In addition to the preconstruction topographic map, WMTX also included in its application a map contouring the elevation of the top of Stratum IV across the site.[86] As set forth above and in Applicant's Closing Arguments, groundwater – if it is present at the facility – flows within the saturated zone at the base of Stratum III, following the gradient of the Stratum III/IV contact. Accordingly, as Ms. Meaux explained, the top-of-Stratum IV topographic map in the application provides yet another means of characterizing the direction of groundwater at the facility, including in the area of Unit 3.[87]

For the foregoing reasons, WMTX's application provides a thorough characterization of the direction of groundwater flow at the facility, including the direction that groundwater would flow in the vicinity of Unit 3, if groundwater were present in that area of the facility.

---

84 *See id.* at 1129:14-19 (Williamson).

85 *See id.* at 633:1-4 (Meaux); 1128:16 to 1130:24 (Williamson).

86 *See* Ex. APP-202 at 1104 ("Drawing 4-12" – top-of-Stratum IV topographic map); *see also id.* at 1037, 1733 (referencing Drawing 4-12).

87 *See* Trial Tr. at 633:1-9 (Meaux) (referencing the top-of-Stratum IV topographic map to confirm the downgradient direction in the area of Unit 3); *see also* Ex. APP-202 at 1733 (explaining that "groundwater elevations in Stratum III generally mimic the natural ground surface topography at the site, as well as the elevation changes of the top of Stratum IV" and referencing the top-of-Stratum IV topographic map)

C. There Is No Evidence Of Ponds Influencing Any Of The Monitoring Wells At The Facility, Nor Any Reason To Expect That Such Influence May Occur

TJFA claims that two existing stormwater ponds – ponds A and B – at the Mesquite Creek Landfill may influence certain groundwater monitoring wells, including wells that have been in existence for over fifteen years (MW-3 and MW-4),[88] and one that is proposed to be installed, per WMTX's application, to improve the existing monitoring network (MW-2A).[89] These claims were fully addressed and refuted in Applicant's Closing Argument.[90]

Notably, in its closing arguments, TJFA continues to base its claims on the mistaken premise that existing ponds A and B are "retention" ponds, which store water "for long periods of time."[91] As discussed in Applicant's Closing Argument, Mr. Graves testified these ponds were "detention" ponds, designed to detain water temporarily and release it at a controlled rate.[92] Indeed, as discussed below, Mr. Graves testified that "pond" B is "really just a wide ditch" that "provides so little storage capacity."[93]

In any event, as demonstrated in Applicant's Closing Argument, there is no evidence that any of the currently existing stormwater ponds are influencing any of the currently existing monitoring wells, nor is there any reason to expect that any of the additional wells proposed in WMTX's application will be influenced by a stormwater pond.

---

88 *See* Ex. APP-202 at 1065, 1325-29, 1736 (noting installation of MW-3 and MW-4 in 1992).

89 *See* sources cited *supra* note 49 and accompanying text.

90 *See* Applicant's Closing Argument at 18-21.

91 TJFA Closing Argument at 10.

92 *See* Applicant's Closing Argument at 19-20.

93 Trial Tr. at 137:21 to 138:1 (Graves); *see also id.* at 143:17-19 (Graves) (explaining that Pond B is essentially a ditch, small in size and with limited storage volume); Ex. APP-202 at 1857 ("It is noted that Pond B along the south side of Unit 1 was not incorporated into the [stormwater pond design] model due to its small size and minimal storage/detention capabilities. The primary function of Pond B is to serve as a sediment trap for higher frequency storms.").

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

A. The Increased Volume Of Stormwater Runoff That Will Discharge From Discharge Point E Is Not Significant And Will Not Significantly Alter Natural Drainage Patterns

Attachment 6 to Part III of WMTX's application contains an analysis of stormwater (i.e., surface water) runoff from the facility. The requirements for this analysis are specified in § 330.56(f) of TCEQ's rules.[94] In his testimony in this matter, Mr. Graves testified that the stormwater analysis in Attachment 6 to Part III of WMTX's application complies with each and every one of the requirements in § 330.56(f).[95]

Of the numerous requirements in § 330.56(f) that are applicable to the stormwater analysis, TJFA's closing arguments are almost exclusively concerned with whether the analysis in the application demonstrates compliance with a single requirement – the requirement in § 330.56(f)(4)(A)(iv) to "demonstrate that natural drainage patterns will not be significantly altered as a result of the proposed landfill development."[96] Furthermore, TJFA's claims concern only an increase in stormwater runoff volume at a single discharge point that will result from development of the proposed expansion area.

Specifically, TJFA summarily claims that increasing the volume of runoff discharging at discharge point E from 6.9 acre-feet ("***ac-ft***") to 12.1 ac-ft is *de-facto* significant[97] and may result

---

94 *See* 30 TEX. ADMIN. CODE § 330.56(f).

95 *See* Ex. APP-200 at 43:1-10 (Graves).

96 30 TEX. ADMIN. CODE § 330.56(f)(4)(A)(iv).

97 *See* Ex. APP-209 at 3, § 2.1 ("There is no clear-cut number or percentage of change that can be set to indicate a 'significant' change."); *id.* at 3, § 2.1.1 ("What is considered 'significant' is a subjective term that cannot be defined as a specific, objective criterion.").

in a significant alteration of drainage patterns at some point downstream of the facility.[98] Actually, in its closing arguments, TJFA never references the actual volume that will be discharged at point E, attempting instead to sensationalize the facts by claiming only that the volume "would almost double." Notably, of the four discharge points proposed for the Mesquite Creek Landfill (points A-E), discharge point E will be discharging the second smallest volume of water.[99] For purposes of context and comparison, discharge point B will discharge 1,182 ac-ft, and discharge point A will discharge 400 ac-ft.[100]

Nevertheless, TJFA has chosen to focus its arguments on the additional 5.2 ac-ft of runoff that will discharge from discharge point E. For the reasons set forth below, this increased volume of stormwater runoff is not significant and will not significantly alter natural drainage patterns.

1. The Increased Volume Of Stormwater Discharged From Point E Will Be Discharged At Rates And Velocities That Are Less Than Those That Occur Under Natural Drainage Conditions

Increased volumes of stormwater runoff resulting from the development of a landfill are not exceptional, given that the natural ground surface is being replaced by the above-grade portions of the landfill, which have elevated sidewalls and slopes and a fairly impermeable final cover that is designed to prevent the infiltration of precipitation.[101] Indeed, TCEQ's *Guidelines for Preparing a Surface Water Drainage Plan for a Municipal Solid Waste Facility* ("***Surface***

---

98 The pre- and post-development runoff volumes for discharge point E are provided in APP-202 at 1820 (Table 3.5.1-3).

99 *See* Ex. APP-202 at 1820 (Table 3.5.1-3).

100 *See id.*

101 *See, e.g.*, Trial Tr. at 71:22-25, 72:15-19 (Graves).

Water Guidelines") specifically recognize that, by developing a site as a landfill, the overall volume of stormwater runoff from the site will increase in the developed condition.[102]

Thus, the question is not whether stormwater runoff will increase as a result of landfill development – the question is how will the facility manage the increased stormwater volumes to ensure that "natural drainage patterns will not be significantly altered as a result of the proposed landfill development."[103] As Mr. Graves explained, increased volumes of stormwater runoff resulting from development of the Mesquite Creek Landfill will be managed through the use of detention ponds.[104] The facility's detention ponds have been designed to accommodate the calculated increases in stormwater runoff – to detain those volumes and discharge them, via the site's drainage points, in a controlled manner that will not significantly alter natural drainage patterns.[105]

Specifically with respect to discharge point E, the increased volume of stormwater discharged from the developed site will be discharged at a peak discharge rate and a maximum flow velocity that are less than those that occur at discharge point E under natural drainage conditions. In the natural (i.e., pre-landfill development) condition,[106] stormwater is being discharged at point E at a peak discharge rate of 43 cubic feet per second ("***cfs***").[107] The design of the detention ponds and other stormwater management features that Mr. Graves has developed

---

102 *See* APP-209 at 4, § 2.1.2.

103 30 TEX. ADMIN. CODE § 330.56(f)(4)(A)(iv).

104 *See* Trial Tr. at 75:5-24, 83:17 to 84:25, 99:5-25, 273:1 to 274:9, 294:7-17, 295:10-15, 297:3-16 (Graves).

105 *See id.* at 345:20 to 346:7 (Graves).

106 *See* Ex. APP-200 at 47:13-26 (Graves) (explaining what constitutes "natural," "pre-development," and "post-development" drainage conditions); *see also* Trial Tr. at 74:17 to 75:4 (Graves).

107 *See* Ex. APP-202 at 1820 (Table 3.5.1-2).

for the expanded landfill will reduce this peak discharge rate by more than half – from 43 cfs to 21 cfs.[108] Similarly, the maximum flow velocity for stormwater discharging from point E will be significantly reduced, from 4.25 feet per second ("***ft/s***") to 3.55 ft/s.[109]

Thus, while the volume of stormwater discharging at point E will increase following development of the expansion area, that increased stormwater will be detained (i.e., attenuated) by the facility's detention ponds and released at the facility boundary at rates and velocities that are less than those that are occurring today and that have historically occurred in the natural drainage condition.[110] The use of detention ponds in this manner – to control stormwater runoff volumes and maintain or improve natural drainage conditions – is entirely consistent with the guidance provided by TCEQ in the agency's *Surface Water Guidelines*:

> A focus of a storm water management system design for a MSW facility should be to return the storm water flow to its predevelopment condition before it leaves the permit boundary—a goal that is also consistent with maintaining natural drainage patterns. *To achieve this goal, locate detention pond outlet structures and other velocity-dissipation devices upstream from the storm water discharge point to allow flow to return to the predevelopment condition at the permit boundary.*[111]

Accordingly, by lessening discharge rates and velocities and improving the natural drainage condition at discharge point E, WMTX has demonstrated that the proposed increase in stormwater runoff volume discharging at point E will not significantly alter natural drainage

---

108 *See id.*; *see also* Trial Tr. at 297:20 to 297:7 (Graves) (explaining that the rate of discharge leaving the facility at the discharge point is "the primary concern" when designing a stormwater drainage system for a landfill); *id.* at 346:14 to 347:8 (Graves) ("[T]he peak flow rate has been substantially reduced compared to the natural conditions."); *id.* at 352:22-24 (Graves) ("I have reduced the peak flows almost in half from the natural conditions to the post-development conditions."); *id.* at 981:6-23, 983:15-23 (Prompuntagorn).

109 *See* Ex. APP-202 at 1821 (Table 3.5.1-5).

110 *See* Trial Tr. at 346:14 to 347:8 (Graves).

111 Ex APP-209 at 5, § 2.1.3 (emphasis added); *see also id.* at 13, § 7 (discussing the purpose and design of detention ponds in landfill drainage systems).

patterns.[112] Mr. Graves' testimony on this issue was unequivocal: "*No significant impact. Yes, I'm confident.*"[113] TJFA fails to cite any evidence (and offered no witness of its own) to explain how discharging at rates and velocities that are less than those in the natural condition could significantly alter natural drainage patterns – drainage patterns that, in their natural state, are receiving waters at rates and velocities higher than what will be discharged from point E.

TCEQ's *Surface Water Guidelines* provide that "the 'significantly altered' issue is best determined on a case-by-case basis and is one of professional judgment."[114] TJFA attempts to fault Mr. Graves for his use of engineering judgment in responding to certain of the questions and hypothetical scenarios posed by counsel for TJFA on cross-examination. While TJFA asserts that various factors should inform Mr. Graves' professional judgment, it is clear that TJFA is seeking additional engineering calculations, not more informed engineering judgment. Attachment 6 to Part III of WMTX's application contains the requisite engineering calculations to demonstrate that natural drainage patterns will not be significantly altered as a result of the proposed landfill development. For the reasons set forth below, the additional engineering calculations that TJFA claims are lacking are not required for, nor properly part of, a demonstration of no significant drainage alterations.

---

112 *See* Ex. APP-200 at 48:6-12 (Graves); *see also* Trial Tr. at 293:23 to 294:6, 346:14 to 347:8, 348:9-15, 352:10 to 353:3 (Graves).

113 Trial Tr. at 347:9 to 348:15 (Graves); *see also id.* at 99:5-25 (Graves) (testifying that he has no concerns regarding the discharge of additional volume at point E); *id.* at 352:10 to 353:3 (Graves) (testifying that the discharge of additional volume at point E would have "no effect" on drainage patterns, and that the reduction in peak flows "would be beneficial").

114 Ex. APP-209 at 3, § 2.2.1.

2. TCEQ Rules And Precedent Require That The Determination Of Significant Alterations To Natural Drainage Patterns Be Made At The Permit Boundary, Not Off-Site

In his cross-examination of Mr. Graves, counsel for TJFA attempted to discredit WMTX's stormwater drainage analysis under counsel's theory that the analysis should have analyzed stormwater discharges from discharge point E at points downstream of the facility's permit boundary. This theory is carried forward in TJFA's closing arguments. In its closing arguments, TJFA contends that the increased volume of stormwater discharged from discharge point E may have potential impacts downstream that have not been addressed. On this basis alone, TJFA claims that WMTX failed to demonstrate that natural drainage patterns will not be significantly altered. However, TJFA fails to offer any support for its theory that WMTX should have analyzed stormwater discharges from the facility at points downstream of the facility's permit boundary.

The stormwater analysis in Attachment 6 to Part III of WMTX's application complies with all applicable regulatory requirements. Extending the stormwater analysis beyond the scope of the analysis included in the application is not required by law or regulation and would not provide additional information that is of any use or reliability in determining compliance with the applicable regulatory requirement. There are no prescribed criteria for selecting downstream points for analysis; there are an infinite number of points downstream of any upstream point, and no criteria exist for selecting the location or number of downstream points for analysis, or for determining how far downstream the analysis should extend. Additionally, extending the analysis to some undefined point or points downstream of the permit boundary opens the analysis up to influence by far too many variables – variables unrelated to the discharge from the

facility – which renders the analysis virtually useless in answering the regulatory question at issue: Will natural drainage patterns "be significantly altered *as a result of the proposed landfill development*"?[115]

Furthermore, prior determinations of the TCEQ and the State Office of Administrative Hearings ("***SOAH***") hold that an analysis of stormwater discharges downstream of the facility's permit boundary is not relevant to any statutory or regulatory requirement applicable to WMTX's application. Specifically, as set forth below, the TCEQ Commissioners have previously ruled that potential or alleged off-site impacts of stormwater drainage are not part of, nor relevant to, the "no significant alteration" demonstration required by 30 Tex. Admin. Code § 330.56(f)(4)(A)(iv). That ruling has subsequently been recognized by SOAH and reaffirmed by the TCEQ Commissioners.

In the ALJs' Proposal for Decision ("***PFD***") in SOAH Docket No. 582-98-1390 (the *Blue Flats* case), the ALJs concluded that it may be appropriate to examine the potential off-site impacts to natural drainage patterns "beyond the permit boundary" of a landfill.[116] When the TCEQ Commissioners considered the *Blue Flats* PFD, they specifically rejected the ALJs' Proposed Findings of Fact related to off-site impacts of stormwater drainage "because *Commission rules and precedent require that the determination of significant alteration be made at the permit boundary, not off site.*"[117]

---

115 30 TEX. ADMIN. CODE § 330.56(f)(4)(A)(iv) (emphasis added).

116 *In the Matter of the Application of Blue Flats Disposal, L.L.C., for Proposed Permit No. MSW-2262*, SOAH Docket No. 582-98-1390, TNRCC Docket No. 98-0415-MSW, Proposal for Decision at 31 (Oct. 2, 2000).

117 *An Order Denying the Application of Blue Flats Disposal, L.L.C., for Permit No. MSW-2262*, TNRCC Docket No. 98-0415-MSW, SOAH Docket No. 582-98-1390, at 8 ("Explanation of Changes to the ALJs' Proposed Findings of Fact and Conclusions of Law") (Jan. 2, 2001) (emphasis added).

SOAH later revisited the issue of off-site impacts following the Commission's order in the *Blue Flats* case. In his PFD in SOAH Docket No. 582-02-3386, the ALJ reviewed the *Blue Flats* order and concluded that, in light of that order, "*calculations and analyses of off-site drainage patterns are wasted motion.*"[118] The ALJ's exclusion of off-site drainage impacts was affirmed by the TCEQ Commissioners when they considered the ALJ's PFD.[119]

Furthermore, the guidance provided in TCEQ's *Surface Water Guidelines* is consistent with the orders of the TCEQ Commissioners quoted above. Specifically, the guidelines provide additional support for the conclusion that the point of discharge from the facility to the downstream receiving channel at the facility's permit boundary is the critical point for purposes of determining whether a facility's stormwater discharge will significantly alter natural drainage patterns – i.e., for determining compliance with 30 Tex. Admin. Code § 330.56(f)(4)(A)(iv).[120]

For the foregoing reasons, an analysis of stormwater discharges downstream of the facility's permit boundary is not relevant to any statutory or regulatory requirement applicable to

---

[118] *In re Application of North Texas Municipal Water District for Municipal Solid Waste Permit No. MSW-2294*, SOAH Docket No. 582-02-3386, TCEQ Docket No. 2002-0745-MSW, Proposal for Decision at 28 & n.98 (July 18, 2003) (emphasis added).

[119] *An Order Approving the Application of North Texas Municipal Water District for Municipal Solid Waste Permit No. MSW-2294*, TCEQ Docket No. 2002-0745-MSW, SOAH Docket No. 582-02-3386, at 18 (Finding of Fact No. 105), 27 (Conclusion of Law No. 27) (Oct. 20, 2003).

[120] *See* Ex. APP-209 at 5, § 2.1.3 ("Another important way to show that there is no significant alteration of natural drainage patterns is to demonstrate that the velocity of the flow exiting the site *at the discharge point along the permit boundary* does not cause an increase in erosion. . . . Typically, the postdevelopment geometry of the drainage way *at the permit boundary* . . . should be consistent with the predevelopment condition. Therefore, if the postdevelopment flow rate is equal to or less than the predevelopment flow rate *at the discharge point*, the postdevelopment velocity will also be less. . . . A focus of a storm water management system design for a MSW facility should be to return the storm water flow to its predevelopment condition before it leaves *the permit boundary* . . . . To achieve this goal, . . . allow flow to return to the predevelopment condition *at the permit boundary*.") (emphasis added).

WMTX's application. Accordingly, such an analysis is not required to demonstrate that WMTX's application "complies with all applicable statutory and regulatory requirements."[121]

B. All Of The Information That TJFA Demands Regarding Attachments 3 And 7 Of Part III Of The Application Has Been Provided

TJFA claims that Attachments 3 and 7 of Part III of WMTX's application are lacking; however, TJFA demands far more than the applicable rules require. TJFA incorrectly claims that both attachments must show "the location and quantities of surface drainage entering, exiting, and internal to the site" and "where stormwater is going."[122]

With respect to Attachment 7, such language is nowhere found in the applicable regulatory provision, 30 Tex. Admin. Code § 330.56(g). That provision requires a "map showing the final contour of the entire landfill to include internal drainage and side slopes plus *accommodation* of surface drainage entering and departing the completed fill area."[123] TJFA cannot reasonably claim that Attachment 7 fails to include the facility's internal stormwater drainage slopes and side slopes, or the proposed accommodations (i.e., stormwater management features) for surface drainage entering and departing the site. Indeed, Attachment 7 includes maps showing all of the features that the facility will use for stormwater management.[124]

With respect to Attachment 3, the applicable regulation, 30 Tex. Admin. Code § 330.56(c), also does not *require* any of the information that TJFA demands. Rather, the pertinent provision of the rule reads that Attachment 3 "*should* show the location and quantities

---

121 30 TEX. ADMIN. CODE §55.210(b).

122 TJFA's Closing Argument at 15.

123 30 TEX. ADMIN. CODE § 330.56(g) (emphasis added).

124 *See* Ex. APP-202 at 2131-33; *see also* Trial Tr. at 105:5-9 (Graves) (testifying that Attachment 7 also shows flow patterns within the site).

of surface drainage entering, exiting, *or* internal to the site."[125] TJFA attempts to rewrite this rule to read "*shall* show the location and quantities of surface drainage entering, exiting, *and* internal to the site" and further overreaches by demanding information that is not even arguably contemplated by the rule.

During the hearing, Mr. Graves stated his understanding of what *should* be shown on Attachment 3 based on the foregoing quoted language from § 330.56(c).[126] Applying that understanding, Mr. Graves provided the following information, and more, in Attachment 3: (1) locations of natural drainage features entering, exiting, and internal to the site; (2) surface topography; (3) all natural discharge points for stormwater exiting the facility; (4) the peak flow rate, flow volume, and flow velocity for each discharge point for the 25-year, 24-hour storm event; (5) an identification and delineation of each drainage area, including the size of each drainage area, contributing flow to each discharge point; (6) an identification and delineation of each drainage area, including the size of each drainage area, entering, exiting, or internal; and (7) a notation that a more detailed analysis of the natural drainage conditions is presented in Attachment 6.[127]

As the foregoing list demonstrates, the provided information exceeds that contemplated by the applicable regulatory provision. Moreover, Mr. Prompuntagorn, the TCEQ permit engineer that reviewed Attachment 3, testified that, while he would have preferred that Attachment 3 also contain arrows depicting the direction of surface water flow, the attachment provided him with the information that he needed to conduct his review of the relevant portions

---

125 30 TEX. ADMIN. CODE § 330.56(c) (emphasis added).

126 *See* Trial Tr. at 103:12 to 104:21, 123:14-16 (Graves).

127 *See* Ex. APP-202 at 1011; *see also* Trial Tr. at 106:2 to 107:1 (Graves) (testifying that Attachment 3 also has flow direction arrows for channelized flow coming from offsite areas).

of the application.[128] Furthermore, while the additional information that TJFA demands is not required by TCEQ's rules, nor necessary for TCEQ's review of the application, all of that information was included in the application, provided to and reviewed by TCEQ, and discussed at length at the hearing.[129]

C. The Application Contains All Required Information For Ponds A And B

TJFA claims that WMTX's application is missing information regarding existing ponds A and B, and that the allegedly missing information is required by TCEQ's rules. TJFA's claims are false. WMTX's application contains all the information on ponds A and B that is required by rule.

As Mr. Graves testified, and as TJFA recognizes in its closing arguments, ponds A and B were in place at the existing facility prior to GeoSyntec's work on the pending application; the ponds were not designed by GeoSyntec, nor were they installed for purposes of the pending application.[130] Furthermore, the application does not propose any changes to these existing ponds.[131]

With respect to pond B, Mr. Graves testified that this feature is not a true stormwater pond; it was not included in his drainage calculations and the application specifically provides that it is not among the drainage facilities that WMTX will utilize to comply with TCEQ's rules relating to stormwater management.[132] As Mr. Graves explained, "pond" B is "really just a wide

---

128 *See* Trial Tr. at 987:11-22, 1064:13 to 1065:14 (Prompuntagorn).

129 *See* Trial Tr. at 86:22 to 95:7, 101:16 to 102:15, 103:8 to 124:1, 301:6 to 306:21 (Graves); *see also* TJFA Exs. 7, 8.

130 *See* Trial Tr. at 135:12 to 136:11 (Graves).

131 *See* Ex. APP-202 at 1843 n.1.

132 *See* Trial Tr. at 137:7 to 138:1, 143:12-19 (Graves); Ex. APP-202 at 1857 ("It is noted that Pond B along the south side of Unit 1 was not incorporated into the [stormwater pond design] model due to its

ditch."[133] Therefore, design information for this feature was not required to be included in the application.[134]

With respect to pond A, TJFA appears to demand (1) a plan view of the pond, (2) identification of the pond's outlet structure, and (3) a maintenance plan. TCEQ's rules do not require "plan views" of stormwater ponds; however, simple plan views of pond A are shown on multiple figures in the application.[135] With respect to an identification of the pond's outlet structure, here again, TJFA's requests exceed the requirements of TCEQ's rules. However, information regarding the outlet devices and other design details for pond A is included in Appendix 6A-8 in Part III of the application.[136] Additionally, Mr. Graves identified the location of the outlet structure for pond A during the hearing.[137] Finally, a maintenance plan for pond A and all other on-site stormwater ponds is included in Attachment 6 to Part III of the application.[138]

---

small size and minimal storage/detention capabilities. The primary function of Pond B is to serve as a sediment trap for higher frequency storms.").

133 Trial Tr. at 137:22-23 (Graves); *see also id.* at 143:17-19 (Graves) (explaining that Pond B is essentially a ditch).

134 *See, e.g.*, 30 TEX. ADMIN. CODE §§ 330.55(b)(5)(C) (requiring designs only of "drainage facilities"), 330.56(f)(4)(A)(iii), (v) (requiring designs only for "the necessary collection, drainage, and/or detention facilities").

135 *See, e.g.*, Ex. APP-202 at 1832, 1835; *see also* Trial Tr. at 142:23-25 (Graves).

136 *See* Ex. APP-202 at 1964-65; *see also* Trial Tr. at 145:22 to 146:25 (Graves) (referencing the information on pond A in Appendix 6A-8).

137 *See* Trial Tr. at 144:3 to 145:21 (Graves).

138 *See* Ex. APP-202 at 1829-30 (requiring periodic cleaning of all stormwater ponds and erosion control structures in order to maintain design capacity). Since the primary function of Pond B is to serve as a sediment trap for higher frequency storms, as noted above, this maintenance plan will apply to pond B as well.

D. WMTX's Application Does Not Propose To Recirculate Contaminated Water Through The Landfill

Contrary to TJFA's allegations, WMTX does not propose to recirculate contaminated water through the landfill. While commingling of leachate and contaminated water in storage tanks is provided for in the application, such storage is in full compliance with TCEQ's rules. WMTX recognizes that commingled leachate and contaminated cannot be recirculated through the landfill.[139] Indeed, WMTX's application expressly states that "recirculation of contaminated water (including contaminated water mixed with leachate) is not permitted."[140] This prohibition is repeated multiple times in various provisions of the Leachate and Contaminated Water Plan in WMTX's application.[141] Additionally, the Site Operating Plan in WMTX's application includes provisions for training site personnel on the facility's permit requirements.[142]

Any leachate that is stored with contaminated water will be disposed of properly, pursuant to TCEQ's regulations and WMTX's application.[143] As Mr. Smith testified, WMTX has a demonstrated record of compliance with TCEQ's rules and fully appreciates its obligation to operate the Mesquite Creek Landfill in compliance with those rules.[144]

---

139 *See* 30 TEX. ADMIN. CODE § 330.56(o)(2).

140 Ex. APP-202 at 2546.

141 *See, e.g., id.* at 2550-51 ("Contaminated water shall not be placed in the leachate evaporation ponds."); *id.* at 2552 ("Contaminated water will not be recirculated."); *id.* at 2552 ("Contaminated water will neither be recirculated nor will contaminated water that is mixed with leachate be recirculated.").

142 *See id.* at 2833.

143 *See id.* § 330.56(o)(3); Ex. APP-202 at 2545-46, 2552-53..

144 *See* Ex. APP-100 at 9:27 to 10:13 (Smith).

E. Other Issues Raised By TJFA In Its Closing Arguments Relating To Attachment 6 To Part III Of WMTX's Application Have Been Fully Addressed In Applicant's Closing Argument

Also with respect to Attachment 6 to Part III of WMTX's application, TJFA raises claims in its closing arguments regarding identification of the 100-year floodplain and the design of stormwater containment berms. These claims have been fully addressed and refuted in Applicant's Closing Argument.[145]

With respect to the 100-year floodplain issue, TJFA claims that a floodplain map produced by the Federal Emergency Management Agency ("***FEMA***") cannot be relied upon to determine whether an area is within the floodplain associated with a 100-year frequency flood unless the FEMA map expressly states whether the area is within or outside of the 100-year floodplain.[146] As Mr. Graves explained, FEMA maps only depict the area within the 100-year floodplain; everything outside of that area is not within the floodplain.[147] Thus, TJFA's logic would lead to the absurd conclusion that a FEMA map can only be used to confirm that an area is within a 100-year floodplain, because if the map does not depict an area to be within the 100-year floodplain, TJFA concludes that the area has not been studied and that the map is of no use. Accordingly, following TJFA's logic, a FEMA map could *never* be used to demonstrate that an area is *not* within a 100-year floodplain. Such logic is directly at odds with TCEQ's rules.[148]

---

145 *See* Applicant's Closing Argument at 21-25 (stormwater containment berms), 25-27 (100-year floodplain).

146 TJFA's Closing Argument at 18.

147 *See* Trial Tr. at 157:9-14 (Graves).

148 *See* Applicant's Closing Argument at 25-27; 30 TEX. ADMIN. CODE § 330.56(f)(4)(B)(i).

In this case, FEMA has mapped the area around the landfill.[149] The relevant FEMA map shows the areas that are within the 100-year floodplain; depicts Mesquite Creek; and affirmatively shows that Mesquite Creek is *not* within the floodplain.[150] The FEMA map provides that the landfill is in "Zone C" – defined as "areas of minimal flooding."[151] Additionally, the FEMA map also specifies zone designations for areas within the 100-year flood boundary ("Zone A") and "undetermined" areas ("Zone D").[152] The landfill is *not* within either of those two areas.[153] The applicable regulatory requirements are satisfied; there is nothing more to prove.

IV. COMPLIANCE WITH GEOTECHNICAL REQUIREMENTS, INCLUDING SLOPE STABILITY

TJFA's claims in its closing arguments regarding the geotechnical engineering portions of the application were fully addressed and refuted in Applicant's Closing Argument;[154] no further discussion is warranted here.

V. ADEQUACY OF SITE OPERATING PLAN AND FACILITY ENTRANCE DESIGN

A. TJFA's Claims

All of TJFA's claims in its closing arguments regarding the Site Operating Plan ("***SOP***") in WMTX's application and the proposed facility entrance design were fully addressed and refuted in Applicant's Closing Argument, with one limited exception. TJFA claims that "TCEQ

---

149 *See* Ex. APP-211.

150 *See id.*

151 *Id.*

152 *Id.*

153 *See id.*

154 *See* Applicant's Closing Argument at 27-29.

policy" requires the SOP to include provisions for coordination with the local fire department.[155] However, TJFA fails to cite any such policy.

In any event, per WMTX's SOP, coordination with the local fire department is part of the training that site personnel will receive.[156] TJFA apparently finds this insufficient, claiming that "the Applicant does not know who is the local fire department nor is it identified in the" application.[157] TJFA's concerns are easily dismissed. First, TJFA never asked "the Applicant" about the local fire department; rather, counsel for TJFA asked Mr. Graves if he knew the name of the local fire department.[158] Moreover, the name of the local fire department is not required to be included in the application.

B. OPIC's Recommendations

With respect to issues related to the SOP and the proposed facility entrance design, OPIC makes three recommendations in its closing arguments: (1) that the facility's operating hours be limited to those in the settlement agreement between Guadalupe County and WMTX; (2) that the SOP include recommendations made by the Texas Parks and Wildlife Department ("***TPWD***"); and (3) that, prior to construction of the proposed site entrance, WMTX be required to document to TCEQ that the entrance meets the standards of the American Association of State and Highway Transportation Officials ("***AASHTO***").

WMTX has no objection to OPIC's third recommendation regarding compliance with AASHTO standards. However, for the reasons set forth below, and more fully in Applicant's

---

155 TJFA's Closing Argument at 23.

156 *See* Ex. APP-202 at 2837.

157 TJFA Closing Argument at 23.

158 *See* Trial Tr. at 251:17-18 (Graves).

Closing Argument, WMTX respectfully objects to OPIC's other recommendations. Such conditions are not required and should not be conditions upon which the permit is issued.

As discussed in Applicant's Closing Argument, in its application, WMTX requested the flexibility to operate the Mesquite Creek Landfill, as necessary, without limitations on the facility's operating hours.[159] WMTX chose to accept some limitations on its waste acceptance hours (not its other operating hours)[160] in order to reach agreement with Guadalupe County on a number of other issues, which are set forth in the parties' settlement agreement.[161] No provision of that agreement requires those agreed-upon waste acceptance hours to be included in WMTX's permit. The agreement with Guadalupe County is not part of the permit process and is subject to change upon consent of the parties.

Furthermore, the agreement with Guadalupe County still provides WMTX with a significant measure of flexibility that it would not otherwise have if the agreed-upon waste acceptance hours in the settlement agreement were prescribed as a condition of WMTX's permit. Specifically, the settlement agreement expressly provides that WMTX may extend its waste acceptance hours on a temporary basis to meet the needs of local, state, or federal governments, or the citizens of Guadalupe or Comal County.[162] Additionally, the agreement provides provisions whereby WMTX can extend the agreed-upon waste acceptance hours on a permanent basis with approval from Guadalupe County.[163] This flexibility would be lost if the waste

---

159 *See* Applicant's Closing Argument at 29-31.

160 *See* 30 TEX. ADMIN. CODE § 330.118(a) (distinguishing between "waste acceptance hours and the hours when materials will be transported on or off site, and the hours when heavy equipment may operate," as well as "[o]perating hours for other activities").

161 *See* Ex. CCL-5.

162 *See id.* at 2.

163 *See id.*

acceptance hours were taken from the settlement agreement and written into WMTX's permit as a binding permit condition.

With respect to the TPWD recommendations, while WMTX appreciates that these recommendations may seem simple to implement to those that do not have experience in the day-to-day operations of a landfill, in reality they can significantly hinder landfill operations. For instance, depending upon one's interpretation of "land clearing activities," TPWD's recommendation that land clearing activities not be conducted during the period from March to August could potentially result in a near shutdown of landfill operations for six months out of the year.

As set forth in Applicant's Closing Argument, while WMTX does not doubt that TPWD's recommendations reflect that agency's sincere and aspirational efforts to provide the utmost protection for species and ecosystems, the legal reality is that the agency's recommended measures are no more than that – recommendations.[164] They are not statutory or regulatory requirements, nor are they measures requisite to achieve or maintain compliance with an applicable statutory or regulatory requirement. Accordingly, they should not be included in WMTX's application or made conditions of permit issuance.

VI. ADDITIONAL ISSUES

In its closing arguments, TJFA claims that there was a detection of 1,1-dichloroethene ("***1,1-DCE***") at the Mesquite Creek Landfill that triggered, or should have triggered, a host of additional regulatory requirements. TJFA makes this claim despite the fact that every witness that TJFA's counsel questioned regarding this issue testified that there was never a confirmed

---

164 *See* Applicant's Closing Argument at 36-39.

detection of 1,1-DCE at the facility that would have triggered the regulatory requirements cited by TJFA.[165] Indeed, even Dr. Clark testified that a detection should be confirmed through resampling.[166] Moreover, TCEQ previously issued a letter to WMTX acknowledging that these requirements had not been triggered.[167]

Additionally, TJFA's claims are premised on the erroneous assumption that the prior unconfirmed detections of 1,1-DCE were caused by a release of leachate from the landfill. Any such theory was soundly disproved by Mr. Kerfoot, one the foremost experts on landfill gas transport and landfill gas effects on groundwater at municipal solid waste facilities.[168] Mr. Kerfoot testified that, within a reasonable degree of scientific certainty, the unconfirmed detections of 1,1-DCE in well MW-3 at the existing facility were the product of landfill gas transport, not a release of leachate from the facility.[169] Mr. Kerfoot's testimony was not challenged by any competing expert, nor was it discredited on cross-examination in any way.

Accordingly, it is undisputed that the prior, unconfirmed detections of 1,1-DCE at MW-3 were the product of landfill gas and did not trigger any of the groundwater-related regulations that TJFA cites.[170] There simply is no evidence in the record to the contrary. There is no

---

165 *See, e.g.*, Trial Tr. at 573:4 to 579:17 (Meaux); *id.* at 1135:13 to 1136:6, 1139:23 to 1140:8, 1141:3-7 (Williamson).

166 *See id.* at 852:5 to 854:15, 862:13-23 (Clark).

167 *See id.* at 579:18 to 580:14 (Meaux); *id.* at 1137:10 to 1139:6 (Williamson); Ex. APP-202 at 1737.

168 *See* Trial Tr. at 1181:5 to 1187:9 (Kerfoot); Ex. APP-800.

169 *See id.* at 1197:22 to 1198:12 (Kerfoot); *see also id.* at 577:21 to 578:13, 694:17 to 695:15 (Meaux).

170 *See id.* at 578:23 to 579:17 (Meaux); *id.* at 1135:13 to 1141:11 (Williamson).

evidence of any "plume of contamination that has entered the groundwater" at the facility.[171] Indeed, the unconfirmed detections of 1,1-DCE occurred solely at a single monitoring well and 1,1-DCE has not been detected – unconfirmed, confirmed, or otherwise – in any groundwater monitoring well at the facility since the last unconfirmed detection of the compound in 2002.[172]

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

WMTX's Proposed Findings of Fact and Conclusions of Law are enclosed with this consolidated response.

CONCLUSION

For the foregoing reasons, and those put forth in WMTX's Closing Argument, and based on the evidentiary record in this proceeding, WMTX respectfully requests that the ALJ recommend issuance of Permit No. MSW-66B.

Respectfully submitted,

VINSON & ELKINS L.L.P.
2801 Via Fortuna, Suite 100
Austin, Texas 78746
Telephone: 512.542.8729
Facsimile: 512.236.3257

Bryan J. Moore/SBN 24044842
John A. Riley/SBN 16927900
M. Nicole Adame Winningham/SBN 24045370

COUNSEL FOR APPLICANT
WASTE MANAGEMENT OF TEXAS, INC.

---

171 30 TEX. ADMIN. CODE § 330.56(e)(4); *see also* Trial Tr. at 662:10 to 663:1 (Meaux) (testifying that there are no known plumes of contamination beneath the landfill); *id.* at 846:4 to 847:4 (Clark) (testifying that "plumes" are associated with releases of leachate from a landfill).

172 *See* Trial Tr. at 577:5-20, 580:15-18 (Meaux); *id.* at 1135:13 to 1137:6, 1141:3-7 (Williamson); Ex. APP-202 at 1737.

CERTIFICATE OF SERVICE

I certify that a true and correct copy of the foregoing Response to Closing Arguments has been served on the following on this the 18th day of January, 2008:

Anthony C. Tatu
Amie Dutta Richardson
Texas Commission on Environmental Quality
P.O. Box 13087, MC-173
Austin, Texas 78711-3087
Phone: (512) 239.0600
Fax: (512) 239.0606

Representing the Executive Director of the Texas Commission on Environmental Quality

Garrett Arthur
Office of Public Interest Counsel
Texas Commission on Environmental Quality
P.O. Box 13087, MC-103
Austin, Texas 78711-3087
Phone: (512) 239.6363
Fax: (512) 239.6377

Representing the Texas Commission on Environmental Quality Office of Public Interest Counsel

James Ballowe
Solid Waste Manager
424 S. Castell Avenue
New Braunfels, Texas 78130
Phone: (830) 221.4044
Fax: (830) 608.2109

Representing City of New Braunfels

Lawrence G. Dunbar
Dunbar, Harder & Benson, L.L.P.
One Riverway, Suite 1850
Houston, Texas 77056
Phone: (713) 782.4646
Fax: (713) 782.5544

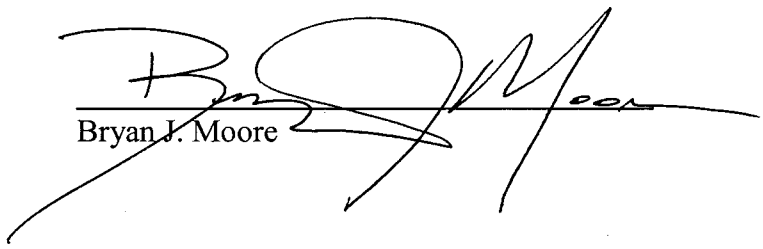
Representing TJFA, L.P.

Nancy Schwarzlose
2041 Schwarzlose Road
New Braunfels, Texas 78130
Phone: (830) 372.1500
Fax: (830) 372.4233

Representing Concerned Citizens and Landowners

John Holtman
1520 Schwarzlose Road
New Braunfels, Texas 78130
Phone: (210) 364.4618

Representing Concerned Citizens and Landowners



Bryan J. Moore

Austin 917143v.1