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Mr. Rochelle's Direct Line: (512) 322-5810  
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September 28, 2009

OPA HR  
SEP 30 2009  
BY   JH  

Ms. LaDonna Castañuela  
Chief Clerk  
Texas Commission on Environmental Quality  
12100 Park 35 Circle  
Bldg. F – 1<sup>st</sup> Floor  
Austin, Texas 78753

**VIA HAND DELIVERY**

TEXAS  
COMMISSION  
ON ENVIRONMENTAL  
QUALITY  
SEP 28 PM 3:52  
CHIEF CLERKS OFFICE

Re: Request for Hearing for Two Sisters Dairy, LLC:  
TPDES Permit No. WQ0004866000 (2402-4)

Dear Ms. Castañuela:

Please accept this letter submitted on behalf of my client, the Bosque River Coalition (the "Coalition"), a Texas non-profit corporation, consisting of property owners located in the vicinity of the dairy that is the subject of draft TPDES Permit No. WQ0004866000 (the "Draft Permit") for Two Sisters Dairy, LLC (hereinafter, the "Dairy" or "the Applicant"). The purpose of this letter is to request a contested case hearing regarding the Draft Permit. The Coalition also hereby requests that it be placed on the mailing list so that it may remain informed on the status of the Draft Permit.

**CONTESTED CASE HEARING REQUEST**

Pursuant to specific requirements of a request for a contested case hearing under Title 30, Sections 55.201, 55.203, 55.205 and 50.115 of the Texas Administrative Code, those same requirements being set forth in the August 27, 2009, Decision of the Executive Director on the Draft Permit, the Coalition offers the following:

**Hearing Request Requirements**

*General Requirements*

The Coalition requests a contested case hearing. The Applicant is Two Sisters Dairy, LLC, and the Draft Permit is TPDES Permit No. WQ0004866000.

The Coalition is a Texas non-profit corporation represented by the undersigned and Lauren Kalisek. Therefore, all communications should be directed to either at the following:

*Handwritten signature/initials*

SEP 28 PM 3:52

CHIEF CLERKS OFFICE

Lloyd Gosselink Rochelle & Townsend, P.C.  
816 Congress Avenue, Suite 1900  
Austin, Texas 78701  
(512) 322-5810 (phone)  
(512) 472-0532 (facsimile)

*Requirements for a Group or Association*

The Coalition was formed for the purpose of furthering the protection and enhancement of water quality in the Bosque River watershed. The Coalition seeks to protect the water quality of the Bosque River watershed—an interest germane to the organization's specific purpose. Neither the claim asserted nor the relief requested requires the participation of individual members in this case. Members of the Coalition, as discussed below, qualify as affected persons and have standing in their own right to request a contested case hearing.

*Requirements for an Affected Person*

Mr. Chuck Markham is a member of the Coalition, with property located about 3/4 mile from the property boundaries of the Dairy and less than one river mile downstream from the Dairy. Mr. Markham qualifies as an affected person under Title 30, Section 55.203 of the Texas Administrative Code with a personal justiciable interest not common to the general public in that his property fronts an unnamed tributary of Little Duffau Creek (the "Creek"), the water body into which the Dairy's discharges and runoff will drain, and he has been previously impacted by operations at this site.

Mr. Markham runs livestock on his property that are watered from the Creek, and he and his family also use the Creek for picnicking and recreational purposes. Mr. Markham is concerned that the proposed discharge authorized by the Draft Permit, and the resulting effects on water quality in the Creek, threaten to erode the use and enjoyment he and his family are able to make of the Creek, which has already been harmed by prior dairy operations at this very site. Such harm is detailed in the Coalition's January 12, 2009 comments on the Draft Permit as well as a May 31, 2002 Commission Order ("2002 Order") regarding such operations that is attached to such comments. For convenient reference, the Coalition's January 12, 2009 comments are enclosed as Attachment A, and the 2002 Order is enclosed as Attachment B—both are fully incorporated herein, by reference. As noted in the Coalition's comments and the 2002 Order, Mr. Markham participated as a party in a contested case hearing regarding a permit renewal for previous dairy operations at the site, and the permit renewal was denied by the Commission due, in part, to significant degradation of the Creek resulting from the upstream dairy operations. This current application seeks a new permit for more than double the size of the previous operation— 5,500 head. Given Mr. Markham's history of impacts from operations at this site, as recognized in the 2002 Order, he clearly meets the requirements as an affected person for an application to significantly increase such operations. Mr. Markham is further concerned about

other impacts that the Dairy has on his right to the quiet enjoyment of his private property. Please see the enclosed map at Attachment C for reference purposes.

*Disputed Issues of Fact*

The Coalition bases its request for hearing on the following disputed issues of fact. In accordance with Title 30, Section 50.115(c) of the Texas Administrative Code, the issues set forth below are disputed questions of fact that were raised during the public comment period and that are relevant and material to the decision on the application.

1. Whether the Draft Permit is adequately protective of the environmental health of the unnamed tributary of Little Duffau Creek, especially given previous impacts to the water body from previous operations at the site (Executive Director's Response to Public Comment ("RTC") No. 1).
2. Whether the Draft Permit is adequately protective of the health of Coalition members who depend on the continued recovery of water quality conditions in the unnamed tributary of Little Duffau Creek (RTC No. 1).
3. Whether allowing the expanded operation of the Dairy after permit issuance, but before the Dairy is required to meet the 25-year, 10-day rainfall event criteria, as is proposed in the Draft Permit, will further erode water quality in the unnamed tributary of Little Duffau Creek, and further risk the health and welfare of Coalition members (RTC Nos. 1, 8, and 23).
4. Whether the Applicant calculated a minimum treatment volume using an appropriately conservative volatile solids loading rate (RTC No. 2).
5. Whether the Applicant's failure to conduct soil samples based on the LMU designations actually proposed in the application does in fact present a "source of inaccuracy" that undermines the reliability of the applicant's NMP (RTC No. 3.)
6. Whether the Applicant's failure to submit sampling data for both Retention Control Structure ("RCS") No. 1 and RCS No. 2 undermines the reliability of the Applicant's NMP (RTC No. 4).
7. Whether the Applicant's process-generated wastewater estimate of 15 gallons per head per day is sufficiently conservative to be adequately protective of water quality and human health in the North Bosque River watershed (RTC No. 5).
8. Whether the Draft Permit is designed to adequately protect against runoff being directed into RCS No. 1 (RTC No. 7).
9. Whether RCS No. 1 currently has the actual ability to meet the 25-year, 24-hour rainfall event standard until the RCS is appropriately modified to meet the 25-year, 10-day rainfall event standard (RTC No. 8).
10. Whether evaporation volumes used in the water balance can be accurately determined by requiring an RCS stage/storage table that shows only storage volume at increments of one-foot of depth (RTC No. 9).

11. Whether the failure to require, and fully review, an RCS Management Plan for each RCS the Applicant would be entitled to use after permit issuance poses an unreasonable risk to water quality (RTC No. 10).
12. Whether the sludge accumulation rate employed by the Applicant is properly calculated, and will be adequately regulated, to protect water quality under the Draft Permit (RTC Nos. 13 and 18).
13. Whether settling basins are properly designed, regulated, and certified to protect water quality (RTC Nos. 14, 15, and 16).
14. Whether settling basin solids are properly characterized and regulated to protect water quality under the Draft Permit (RTC No. 17).
15. Whether capacity certification and requirements for RCSs are properly described and established in the Draft Permit to ensure water quality is protected (RTC No. 19).
16. Whether the settling basin certifications required by the Draft Permit are adequately protective of water quality (RTC Nos. 20 and 21).
17. Whether RCS embankment design, testing, and construction requirements in the Draft Permit are sufficiently protective of water quality (RTC Nos. 22 and 25).
18. Whether the liner certification and testing requirements in the Draft Permit are sufficiently protective of water quality (RTC Nos. 23 and 24).
19. Whether RCS construction soil qualities are appropriately articulated in the Draft Permit to ensure adequate protection of water quality (RTC No. 27).
20. Whether the conditions for granting extensions to the RCS compliance schedule should be included within the Draft Permit (RTC No. 28).
21. Whether an adequate description of structural controls exists in the Draft Permit (RTC No. 29).
22. Whether the Applicant has demonstrated adequate dewatering capacity (RTC No. 30).
23. Whether monitoring, reporting, and evaluation requirements under the Draft Permit will ensure that water quality is protected (RTC Nos. 31 and 32).
24. Whether sampling of wastewater and manure under the Draft Permit is adequate to protect water quality (RTC No. 33).
25. Whether the Draft Permit properly manages phosphorus production (RTC No. 34).
26. Whether removal of solid manure under the Draft Permit is adequate to meet water quality requirements for the North Bosque watershed (RTC No. 35).
27. Whether the Applicant's failure to employ curve numbers in the Phosphorous index that account for the Applicant's proposed LMU grazing will affect proposed application rates in a manner that threatens water quality (RTC No. 37).
28. Whether the Applicant's proposed LMU's are properly sized (RTC No. 38).
29. Whether the Applicant's projected crop yields for its LMUs are reasonable (RTC No. 39).
30. Whether the NMP adequately identifies soil test locations and timing (RTC No. 40).

31. Whether the NMP includes an application rate that will be adequately protective of water quality (Coalition Comment No. 46 [please note that the Executive Director provided no response to this comment]).
32. Whether agronomic rates are properly calculated in the NMP (RTC No. 41).
33. Whether the Draft Permit sufficiently restricts the application of phosphorus to be adequately protective of water quality (RTC No. 42).
34. Whether the Draft Permit provisions regarding waste application on noncultivated fields are adequate to protect water quality (RTC No. 43).
35. Whether the Draft Permit provisions regarding use of third party fields are adequate to protect water quality (RTC No. 44).
36. Whether manure and wastewater application on third party fields will be properly managed and regulated to prevent degradation of water quality (Coalition Comments Nos. 51 and 52 [please note that the Executive Director provided no response to these comments] and RTC Nos. 45 and 46).
37. Whether the Draft Permit should require the NMP to address the five-year permit term as opposed to just the first year (RTC No. 47).
38. Whether the historical waste application fields should be identified in the application or the Draft Permit (RTC No. 48).
39. Whether the Draft Permit provisions relating to silage, commodity, manure and hay storage area runoff are in fact "sufficient to reduce and/or prevent impacts to water quality from these areas" (RTC No. 49).
40. Whether the Draft Permit provides meaningful definition of vegetative buffers (RTC No. 51).
41. Whether provisions of the Draft Permit will allow attainment of bacterial water quality standards (RTC No. 52).
42. Whether the Draft Permit provisions authorizing the use of third-party fields are consistent with applicable law and are sufficiently protective of water quality (Coalition Comments Nos. 51 and 52 [please note that the Executive Director provided no response to these comments] and RTC Nos. 43, 44, 45, 46, 53, 54, and 55).
43. Whether the Draft Permit establishes adequate reporting requirements for third party fields (RTC No. 54).
44. Whether the Draft Permit provides adequate protection of water quality from drainage or discharge from third party fields (RTC No. 55).
45. Whether the Draft Permit is in fact consistent with the North Bosque TMDL for phosphorous (RTC No. 56).
46. Whether the Applicant's proposed increase in the number of cows at its facility will in fact increase instream phosphorous loading (RTC No. 56).
47. Whether the failure of the Draft Permit to account for increased nutrient loading demonstrated by the routine monitoring data from Little Duffau Creek will undermine the protection of water quality in the North Bosque River watershed (RTC No. 56).

Ms. LaDonna Castañuela  
September 28, 2009  
Page 6

Based upon the foregoing, the Coalition hereby requests a contested case hearing and requests that a hearing be held to determine compliance with Texas Surface Water Quality Standards, Title 30, Chapter 307 of the Texas Administrative Code, and concentrated animal feeding operation requirements, Title 30, Chapter 321 of the Texas Administrative Code. I appreciate your consideration of these comments and the contested case hearing request as well as the Coalition's request to be maintained on the mailing list of the above-referenced Draft Permit. If you have any questions or concerns, do not hesitate to contact me or Lauren Kalisek at (512) 322-5847.

Sincerely,



Martin C. Rochelle

MCR/ldp  
2402\04\Two Sisters\ltr090928jth  
ENCLOSURES

cc: Attached Mailing List (via regular mail)

**CERTIFICATE OF SERVICE**

I hereby certify that on this the 28th day of September, 2009, a true and correct copy of the foregoing was sent via first-class mail, electronic mail, facsimile, or hand-delivery to the following persons:

FOR THE APPLICANT:

Anneke Talsma  
Two Sisters Dairy, LLC  
235 Private Road 1266  
Hico, Texas 76457-3508

Michael Martin  
Stephenville Office  
580-D West Lingleville Road  
Stephenville, Texas 76401

Norman Mullin, P.E.  
Enviro-Ag Engineering, Inc.  
3404 Airway Boulevard  
Amarillo, Texas 79118

FOR THE EXECUTIVE DIRECTOR:

Michael T. Parr, Staff Attorney  
Texas Commission on Environmental Quality  
Environmental Law Division (MC 173)  
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FOR THE PUBLIC INTEREST COUNSEL:

Mr. Blas J. Coy, Jr., Attorney  
Texas Commission on Environmental Quality  
Public Interest Counsel (MC 103)  
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Tel: (512) 239-6363  
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CHIEF CLERK'S OFFICE

2009 SEP 29 PM 2:52

TEXAS  
COMMISSION  
ON ENVIRONMENTAL  
QUALITY

FOR THE CHIEF CLERK:

Ms. LaDonna Castañuela

Office of the Chief Clerk (MC-105)

Texas Commission on Environmental Quality

P.O. Box 13087

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MARTIN C. ROCHELLE



1984 ~~25 Years~~ 2009

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January 12, 2009

Ms. LaDonna Castañuela  
Chief Clerk  
Texas Commission on Environmental Quality  
12100 Park 35 Circle  
Bldg. F – 1<sup>st</sup> Floor  
Austin, Texas 78753

**VIA HAND DELIVERY**

2009 JAN 11 PM 3:50  
CHIEF CLERKS OFFICE  
TEXAS COMMISSION  
ON ENVIRONMENTAL  
QUALITY

Re: Comments on Draft Permit for Two Sisters Dairy, LLC:  
TPDES Permit No. WQ0004866000 (2402-04)

Dear Ms. Castañuela:

Please accept these written comments on behalf of the Bosque River Coalition (the "Coalition") concerning the above-referenced draft TPDES permit ("Draft Permit") for Two Sisters Dairy, LLC (hereinafter "the applicant"). The Coalition is a Texas non-profit corporation formed for the purpose of furthering the protection and enhancement of water quality in the Bosque River watershed. Its membership is comprised of concerned property owners and interests within the watershed. Please feel free to contact me at my law firm, Lloyd Gosselink Rochelle & Townsend, P.C., 816 Congress Avenue, Suite 1900, Austin, Texas 78701, phone number (512) 322-5847, fax number (512) 472-0532, concerning any aspect of these comments.

**WRITTEN COMMENTS**

The Coalition appreciates the Texas Commission on Environmental Quality's ("Commission" or "TCEQ") preparation of the Draft Permit and this opportunity to provide comments, and it hereby provides comments to the terms and conditions of the Draft Permit, as follows:

**1. Impacts to Tributary of Little Duffau Creek**

The application seeks a new permit for a proposed 5,500 head operation at a previously permitted facility operated by Gerald Oosten, TPDES Permit No. 03142 for 1,950 cows. The site is bisected by an unnamed tributary of Little Duffau Creek and is bordered on its southwest side by Little Duffau Creek. In 2002, the then Texas Natural Resource Conservation Commission ("TNRCC") declined to renew Mr. Oosten's permit due to his failure to comply

with an outstanding enforcement order and repeated violations of environmental regulations significantly impacting the unnamed tributary of Little Duffau Creek flowing through the site. Please refer to TNRCC Order dated May 31, 2002 attached hereto as Attachment 1. As discussed in Findings of Fact Nos. 49-56, the unnamed tributary of Little Duffau Creek was severely harmed by operations at the site, causing it to become eutrophic, produce methane gas, be devoid of naturally occurring life, and although normally an intermittent stream, run constantly with polluted water, among other impacts.

Prior to operations at the site, this unnamed tributary was used by downstream landowners for watering cattle, picnicking, wading and other activities. The waterbody is just now beginning to recover from the impacts of Mr. Oosten's operations. The Coalition is very concerned that this recovery should be protected and continued. Therefore, the application to commence new operations at this same site, with more than twice the number of permitted cows used by the previous owners, should be reviewed very carefully to ensure that every possible protection is given to avoid any discharge of pollutants that could inhibit the return of this waterbody and its uses.

In addition, the Coalition is concerned that the Draft Permit does not appear to include any conditions recognizing this unique situation with respect to the tributary of Little Duffau Creek. As will be discussed in detail in the comments below, the applicant proposes to modify its Retention Control Structures ("RCSs") to consolidate them and meet the 25-year, 10-day rainfall event criteria. At a minimum, given the heightened need for protection of the tributary running through the site and the fact that the permit renewal for the previous operation was denied, the Draft Permit should prohibit the commencement of new operations at this site until the applicant's proposed RCS modification is complete.

## 2. Volatile Solids Loading Rate

The applicant uses a volatile solids loading rate of 5.3 pounds per day per 1000 cubic foot of treatment volume to calculate the minimum treatment volume. A value of 5.16 pounds per day per 1000 cubic foot of treatment volume would be more appropriate based on the documents on which the applicant relies. Attachments 2 and 3 are provided in support of this assessment. The applicant should be required to recalculate the minimum treatment volume accordingly.

## 3. LMU Sampling for NMP Preparation

The applicant states in its nutrient management plan ("NMP") that "[t]he soil samples that were taken during December of 2007 were sampled by the previous consultant and do not reflect the [land management unit ("LMU")] designations currently being used in the application." It appears, then, that the applicant has prepared and submitted an NMP using soil sample results that do not correspond to the LMU designations in its application. This lack of correlation renders the NMP meaningless. It is unclear why the applicant is not required to provide sample results for its designated LMUs given that the process for such sampling would

only take a few weeks or less. The TCEQ should require that each LMU be sampled as designated and an accurate NMP based on these samples be prepared before the Draft Permit is considered technically complete and certainly before issuance. Otherwise, the permit will be issued with an inaccurate NMP.

4. **RCS Sampling for NMP Preparation**

The applicant has submitted data for only one RCS, without indicating which RCS was sampled. Prior to issuance of the Draft Permit, the applicant should be required to sample both RCSs and prepare an NMP based on the separate samples, as required by Draft Permit Provision X.O.

5. **Documentation of Process-Generated Wastewater Volume Basis**

The applicant represents in the application that the daily volume of process wastewater is estimated to be 15 gallons per day per head. Approximately two gallons per day per head consists of wet manure, leaving 13 gallons per day per head for cow washing and preparation, spilled milk and drinking water, equipment cleaning and sanitation, and manure flushing. Whether these activities can reasonably be expected to generate in the aggregate 13 gallons or less per day per cow will depend entirely on the type of operation and equipment that the applicant intends to use. None of this information is provided in the application. The applicant should be required to describe the operation and equipment and the amount of water produced in each activity in order to determine if the estimated volume is reasonable.

6. **Description of RCS No. 2 on the Site Map**

The applicant represents that RCS No. 2 and RCS No. 3 will be combined. Unless the levee is at least partially removed, and any spillway currently separating the two RCSs is completely removed so that they do not act in series, separate volume allocations should be made for RCS No. 2 and RCS No. 3. Each RCS should also have a pond marker. In addition, the current Site Map does not accurately depict the combined RCS. The applicant should be required to correct these deficiencies in the application before the permit is issued.

7. **Prohibiting Runoff from Entering RCS No. 1**

The applicant has represented on the site map and in volume calculations that RCS No. 1 will receive no runoff other than what falls directly on the settling basin and RCS surface. A special provision should be included in the Draft Permit prohibiting any runoff from being directed to RCS No. 1.

**8. Evaluation of Runoff Containment Prior to Expansion**

Although the applicant proposes to modify the RCSs and drainage area to contain the 25-year 10-day rainfall event, the RCSs must contain runoff from the 25-year 24-hour event until the modifications are completed. Nothing in the application suggests that any evaluation has been made of either RCS Nos. 1, 2, or 3 to determine if any are designed to meet the 25-year 24-hour design rainfall event capacity requirements using the existing drainage area. The applicant should be required to make this evaluation and show that its RCSs meet the 25-year 24-hour event criteria before the Draft Permit is issued. In the alternative, for the reasons discussed in Comment No. 1, the Draft Permit should be amended to make clear that operations cannot commence until the RCS modification is complete.

**9. Demonstration of Adequate Existing Capacity**

Even if the evaluation necessitated by Comment No. 8 demonstrated that the existing RCSs have adequate capacity based on as-built volumes, the sludge accumulation may be so large that RCS No. 1 can no longer maintain the minimum treatment volume or contain even the 25-year 24-hour rainfall event. The TCEQ should require a new capacity certification, including calculation of sludge accumulation, before the Draft Permit is issued. In the alternative, for the reasons discussed in Comment No. 1, the Draft Permit should be amended to make clear that operations cannot commence until the RCS modification is complete.

**10. RCS Surface Areas in the Stage/Storage Table of the RCS Management Plan**

Draft Permit Provision VII.A.5(a)(2)(iv) requires a stage/storage table that shows only storage volume at increments of one-foot of depth. In addition to storage capacity, an RCS surface area is an important component of properly calculating the evaporation in the monthly water balance. Without a stage/surface area table, there is no way to determine evaporation with any reliability, and no way for the TCEQ to determine if the RCS Management Plan and the water balance proposed in the application are valid. Since no stage/surface area data has been provided in the application for the RCSs (existing or proposed), the Draft Permit should require the surface area for each one-foot of depth. The effective surface area for evaporation should be based on the average surface area during each month. The Coalition believes that Draft Permit Provision VII.A.5(a)(2)(iv) should be revised as follows: "a stage/storage table for each RCS with minimum depth increments of one foot, including the storage volume and surface area provided at each depth." Otherwise, the Coalition would appreciate an explanation of how the TCEQ plans to determine if the evaporation volumes used in the water balance are accurate.

**11. Review of RCS Management Plans**

The Draft Permit requires an RCS Management Plan to be prepared and placed into the pollution prevention plan ("PPP") after the RCS is modified, but it does not provide any opportunity for TCEQ to review this plan before the Draft Permit is issued or even before it is

implemented after permit issuance. This approach precludes all opportunity for formal review by the TCEQ or by any member of the public, including the Coalition, of the plan's adequacy. The water balance and RCS Management Plan are each important in properly sizing the RCS. The water balance should be prepared in conjunction with an associated RCS Management Plan, or else it has little utility. The water balance and RCS Management Plan must be based not only on monthly rainfall runoff volumes, but also on the storage requirements and supplemental irrigation needed for crops during the high water demand months of the summer. Otherwise, the projected crop yields will not be met.

Under the Draft Permit, the only time the RCS Management Plan will be subject to scrutiny is during annual inspections by field staff. As a practical matter, this venue provides inadequate time for field inspectors to properly evaluate the validity of a plan. In addition, in some instances, TCEQ inspectors may not have the proper engineering background and training to make such an evaluation. The TCEQ should require that the RCS Management Plan be submitted before issuance of the Draft Permit. However, if the TCEQ is intent on issuing the Draft Permit without reviewing the RCS Management Plan first, the Draft Permit should be revised to at least require that the RCS Management Plan be submitted to the TCEQ permitting staff for review and approval upon permit issuance. Otherwise, the current approach adopted by the TCEQ ensures that the RCS Management Plan, which is critical to the proper operation of this facility, will be placed into effect with virtually no meaningful review.

**12. RCS Management Plan for the Existing RCSs**

The Draft Permit does not require an RCS Management Plan for the existing RCSs, each of which will be used until construction of the modified RCSs is completed. This appears to be inconsistent with the requirements of Title 30, Section 321.42(g) of the Texas Administrative Code, which requires, without exception, the development of an RCS Management Plan for all RCSs. In the alternative, for the reasons discussed in Comment No. 1, the Draft Permit should be amended to make clear that operations cannot commence until the RCS modification is complete.

**13. Including Slurry Storage Areas in RCS Volume Calculations**

Draft Permit Provision X.I.3 requires that "slurry removed from freestall barns must be stored within the drainage area of an RCS." The Site Map provided in Attachment A of the Draft Permit shows the slurry being stored in two areas designated for manure storage (manure storage includes slurry according to the note on the Site Map). These two areas—next to the silage pit and south of the cross ventilated barn—are not located within the drainage area of an RCS as required by Draft Permit Provision X.I.3. These areas should be bermed and the bermed area should be directed into the RCSs. The drainage areas should be corrected and the volume allocations recalculated.

**14. Slurry in Cross-Ventilated Barn**

Draft Permit Provision X.I.3 addresses slurry from the freestall barn. The cross-ventilated barn, however, is neither designated as a freestall barn on the Site Map nor is it referenced in this permit provision. Presumably, the cross-ventilated barn will be treated as a freestall barn. However, to avoid any future dispute over this definition, the cross-ventilated barn should also be included in Draft Permit Provision X.I.3 just as it is in Provision X.L.

**15. Calculations for Sludge Accumulation Rate from Open Lot Runoff**

The applicant has calculated the sludge accumulation volume in RCS No. 2 based on the Kansas Agricultural Field Waste Handbook. The applicant has not provided any of the data or values that were used in this formula, however, making it difficult to meaningfully evaluate and confirm the applicant's calculation. Additionally, neither the TCEQ nor the applicant explain why an equation developed based on conditions commonly experienced in Kansas is applicable in Texas. There is no indication that this methodology has been adopted by the USDA for use in Texas.

**16. Design Specifications and Capacity Certification for Settling Basins**

The TCEQ has concluded that settling basins meet the definition of RCSs. Because Title 30, Section 321.38(e)(2) of the Texas Administrative Code requires, without exception, that design specifications and completed construction specifications for all RCSs be certified by a licensed Texas professional engineer, and because the applicant has not provided any such certifications for the proposed settling basins, it appears that the Draft Permit does not fully satisfy TCEQ rules. While the Coalition agrees that a settling basin does not need to be designed to store the 25-year 10-day design volume, it should be properly sized and have adequate capacity to allow the projected solids removal rate to occur. The applicant should be required to provide completed construction specifications certified by a licensed Texas professional engineer for the settling basins, as required by the rules for RCSs, before the Draft Permit is issued.

**17. Justification of Settling Rates**

The applicant has indicated that the settling basins will remove 50 percent of solids based on estimates from the Midwest Plan Service Structures and Environment Handbook. The removal efficiencies listed in the Midwest Plan Service Structures and Environment Handbook, however, are tied directly to specific settling basin (weir notch or dewatering) design requirements. While the applicant anticipates a 50 percent removal efficiency based on information provided in the handbook, it has provided no indication that it has designed its settling basin based on the corresponding design requirements listed therein. If the settling basins are not designed or ultimately constructed in a manner that satisfies the criteria listed in the Midwest Plan Service Structures and Environment Handbook, the applicant should be required to disclose the data that justifies its purported 50 percent removal rates.

**18. Failure to Require Specific Schedule for Solids Removal in Settling Basins**

Draft Permit Provision X.M. requires the solids in the settling basin to be removed on a "regular and consistent basis so as to assure attainment of the 50% designed removal efficiency." Given the importance of removing solids to maintain the removal efficiency of the settling basin, these removal requirements in the Draft Permit should be more specific and tied directly to requirements of the specific settling basin design employed by the applicant.

Table 2.2a in the application indicates that the settling basin will have a surface area of 0.11 acres. The Midwest Plan Service Structures and Environment Handbook referenced by the applicant suggests that a settling basin of this type be shallow. Assuming, therefore, a settling basin depth of five feet, the settling basin would have a volume of 23,958 cubic feet (even less if the shape is trapezoidal). According to Table 2.1, this settling basin will be receiving 62,500 lb per day of manure from the parlor, or about 7,494 gallons per day (1,002 cubic feet per day) of wet solids. Using the applicant's anticipated 50 percent removal efficiency, this settling basin will reach maximum capacity in 48 days after operation. This assumption of a consistent 50 percent removal rate until capacity is reached is a generous assumption in the applicant's favor, however, because the basin will actually stop achieving 50 percent removal efficiency long before it is completely filled. If the TCEQ intends for the applicant to be bound to its anticipated 50 percent removal efficiency rate, the Draft Permit should be revised to require the applicant to remove solids from the settling basin before the basin reaches half of its maximum capacity. Therefore, the solids should be removed at least every 24 days based on an assumption of five-foot of depth in the basin, and even more frequently if the basin is designed and constructed to have an even shallower depth than five feet.

**19. Designation of Solids from the Settling Basin**

Draft Permit Provision X.G.1 defines settling basin solids as manure. This definition, however, contradicts Title 30, Section 321.32(49) of the Texas Administrative Code, which classifies settling basin solids as sludge. In Draft Permit Provision X.G.2, the TCEQ acknowledges that settling basin solids are different than manure when it requires that settled solids be sampled separately. Since settling basin solids are clearly materials resulting from the "sedimentation of waste in a retention control structure," the Draft Permit should be revised to correctly define settling basin solids as sludge. The TCEQ has previously stated that because settling basins provide no long-term storage allocation for solids, the ED does not consider the settling basin solids to be sludge. This reasoning, however, is flawed. First, there is no distinction in the definition of sludge between long-term or short-term storage of solids. Second, these materials are solids generated by treatment (*i.e.*, sedimentation), not just storage. Third, nothing in the application could be said to demonstrate that these solids will not be stored for a long period of time. There simply is no design information provided in the application for the settling basins to support this contention.

**20. Monitoring of Sludge Accumulation in RCSs**

The buildup of sludge is one of the most common causes of reduced capacity in an RCS. The Draft Permit, however, does not require the applicant to measure sludge volume in the lagoons until two or three years after the date of permit issuance (the Draft Permit, without any real explanation, contains two different monitoring schedules). As discussed above in these comments, the Coalition does not believe that the applicant has provided any justification for its stated sludge accumulation rates. Additionally, the water levels in treatment RCSs are always higher than the sludge level, and the water levels in the storage RCSs are usually kept higher than the sludge levels, so the daily pond marker readings are of little practical assistance in determining excessive sludge accumulation. Because once a problem exists it often can take years to correct to the point that the capacity can be re-certified, the Draft Permit should be revised to require that the sludge accumulation be determined annually.

**21. Description of Capacity Certifications and Definition of Requirements**

Draft Permit Provision VII.A.3(a)(2) should be revised to clarify that each RCS requires a certification of both total as-built capacity as well as the remaining capacity after sludge accumulation. The Coalition suggests revising Draft Permit Provision VII.A.3(a)(2) by inserting the following sentence: "Capacity certifications shall include both the total as-built RCS capacity and the remaining RCS capacity due to sludge accumulation." If there is no sludge accumulation (*e.g.*, in the case of a newly constructed RCS), the certification should be required to state that it is an as-built certification and there is no sludge accumulation. This will avoid questions in the future.

**22. Certification of Concrete Settling Basins As Structurally Sound**

The site map (Attachment A in the Draft Permit) shows two settling basins adjacent to RCS No. 1, but it does not indicate whether they are earthen or concrete. For earthen settling basins, the applicant must provide a certification that there is no hydrologic connection between the basin and any waters in the state. The certification must also state that no significant leakage will occur based on demonstrated evidence. Neither certification was included with the application. Additionally, if any of the applicant's proposed settling basins are designed to be concrete, it has provided no engineer's certification that the concrete settling basins are indeed concrete with both a concrete bottom and sides of adequate height. To the extent that the applicant intends to rely on any concrete settling basins as part of its proposed operation, it should be required to submit a certification that they are designed with appropriate liners or have been constructed of concrete with no cracks and no leaks before the Draft Permit is issued.

**23. Liner Certifications for Earthen Storage Pits and Settling Basins**

The site map (Attachment A in the draft permit) indicates the presence of a silage storage pit and manure storage pit with only concrete bottoms. Presumably the sides of these pits are

earthen. According to the application, no liner certifications have been provided for the sides of these pits. It is difficult to understand how the Draft Permit could be considered technically complete without having these certifications. Before the Draft Permit is issued, the applicant should be required to submit proper liner certifications for the silage storage pit and manure storage pit. Additionally, it is not clear whether the two settling basins adjacent to RCS No. 1 are earthen or concrete. If these settling basins are indeed earthen, then the applicant should be required to submit proper liner certifications prior to permit issuance, as well.

**24. Embankment Construction Requirements**

The applicant indicates that it is unaware when the RCSs were constructed, and has submitted no certification of how the embankments were originally constructed. As a result, each RCS should be held to the current embankment requirements, which include specifications of lift thickness and compaction testing. The Draft Permit should be revised to require that each RCS be reconstructed in accordance with current embankment construction requirements.

**25. Liner Certification for RCS Nos. 1, 2 and 3**

The applicant submitted a liner certification for RCSs No. 1 and No. 2, each dated May 21, 2007, in the application. Neither of the certifications, however, meets the requirements in effect at the time they were developed. The certifications should each have included documentation regarding hydraulic conductivity testing, taken at the optimum moisture content and thickness of the natural materials underlying and forming the walls of the structure up to the wetted perimeter. The applicant has supplied no data indicating that any such testing was conducted at optimum moisture content. The map supplied by the applicant indicates that no samples were taken in the walls of either structure. In addition, the applicant intends to combine RCS No. 3 with RCS No. 2. However, it has provided no certification at all to demonstrate that RCS No. 3 even has a liner.

**26. Requiring Proper Liner Certifications Before RCS Modifications**

The Draft Permit requires each RCS to be certified after it is modified. However, as discussed above, the TCEQ is allowing the applicant to employ inadequately certified RCSs in the interim. The rules do not appear to allow the use of improperly-certified RCSs at any time, even during the time that modifications are being made. As discussed in previous comments, the Draft Permit should be revised to prohibit the commencement of operations until the RCS modification is complete.

**27. Liner Testing Specifications in the Draft Permit**

The TCEQ has previously required liner hydraulic conductivity certifications to be based on a minimum of one floor sample per acre of surface area and one sidewall sample for each two acres of surface area. The Draft Permit, however, allows for certifications based only on one

sample per acre of surface area, and it can be distributed between the sidewalls and the floor. The Draft Permit should be revised to require that liner hydraulic conductivity certifications be based on a minimum of one floor sample per acre of surface area and a minimum of one sidewall sample for each two acres of surface.

**28. Embankment Testing Specifications**

Title 30, Section 321.38(g) of the Texas Administrative Code requires that the Draft Permit identify the required design specifications for all RCSs, including procedures and minimum requirements for liner and embankment testing. The Coalition agrees with the TCEQ that Draft Permit Provision VII.A.3(g)(3), concerning Liner Sampling and Analysis, is appropriate. However, while this addresses the Coalition's liner testing concerns, it does not address the Coalition's concerns regarding embankment construction testing. The Coalition suggests that Draft Permit Provision VII.A.3(f)(4) be revised to: 1) require the field density tests to be based on predetermined moisture-density compaction curves, 2) define the frequency of testing (e.g., number of tests per specific area per lift), 3) require compaction testing on each lift during the construction of the liner, not on the last lift after completion of the liner, 4) require documentation of compaction test locations and results to be provided to the TCEQ, and 5) require continuous on-site inspection during construction.

The importance of RCS embankment integrity to protecting environmental and human health cannot be overstated. The TCEQ must have an opportunity to review the compaction testing results so it can draw independent conclusions regarding the adequacy of the certifications.

**29. Application of Compaction Testing Standards in Effect at the Time of Construction**

Title 30, Section 321.38(e)(3) of the Texas Administrative Code requires RCS construction to be conducted in accordance with standards that are in effect at the time of the construction. Draft Permit Provision VII.A.3(f)(4) refers to ASTM standard D6938-07. This standard has been superseded by ASTM standard D3938-08a. The referenced standard "D6938-07" should be changed to simply "D6938," and the following sentence should be added to Draft Permit Provision VII.A.3(f)(4): "The ASTM standards shall be those that are in effect at the time of construction."

**30. Soil Quality Standards**

Title 30, Section 321.38(g)(1) of the Texas Administrative Code requires that the Draft Permit describe the standards for quality of soils that are used in construction of the RCS. Except for a statement that the soils used be free of foreign materials, the Draft Permit contains no soil quality standards. The Draft Permit should be revised to describe minimum values for the following quality of soil standards: plasticity index, liquid limit, percent passing 200 mesh sieve, and percent passing one-inch screen.

**31. Extensions to the RCS Compliance Schedule**

The compliance schedule in Draft Permit Provision X.A.2 would allow the applicant to receive multiple extensions to the deadline for completing its RCS modifications. Because of the importance to water quality of timely completing RCS modifications, the Draft Permit should be revised to articulate a list of specific circumstances that qualify for an extension (*e.g.*, a documented period of extended bad weather). In the alternative, as discussed in previous comments, the Draft Permit should preclude the commencement of operations until the RCS modifications are complete.

**32. Description of Structural Controls**

The Site Map of the production area (Attachment A in the Draft Permit) provides an outline of the drainage areas, but it does not provide an adequate description of structural controls, particularly with respect to the berms and ditches. The map denotes drainage areas with a dark dashed line but provides no information regarding whether the dashed lines are berms or ditches, nor does it provide any insight on the size of the berms and ditches (*i.e.*, width, height, and depth).

The berms and ditches are an obviously important component of the facility, necessary to prevent contaminated runoff from leaving the site. An inspector can be expected to observe whether berms and ditches are present, and can judge the height, depth and width of the structures, but may not have the requisite training necessary to determine whether the controls are adequate to contain the flows. The inspector certainly could not conduct this type of assessment without performing the necessary surveying and without making the necessary engineering calculations first, something that is unlikely to happen in the field. Therefore, some means must be given to the inspector to evaluate compliance. Additionally, if the operator is not given an adequate description of structural controls, it will not be able to determine its own compliance. The application and the Draft Permit should each describe the size of, and construction methods used for, these berms and ditches in sufficient detail and construction method so that TCEQ inspectors can determine if the facility is in compliance and so that the operator can make adequate repairs when necessary.

**33. Adequacy of Dewatering Capability**

The applicant has indicated that it has a dewatering capacity of 400 gpm and 250 gpm for its center pivot system and walking big gun, respectively. Yet it has provided no information that would allow for any determination of whether this dewatering capacity is adequate or even justifiable—no information indicating the pump models used, their horsepower, or the dynamic head for these pumping systems. Without any of this information, it is only possible to speculate whether the applicant, in fact, has such capacity. If it is using a rated flow, this does not take into account head losses in the piping and irrigation nozzles. Title 30, Section 321.38(f) of the Texas

Administrative Code requires that “[a]n irrigation system or other liquid removal system used by an AFO must be designed to ensure that the system is capable of dewatering the RCSs on a regular schedule.” Nothing submitted in the application suggests that the applicant has ensured that its system is capable of dewatering the RCSs on a regular schedule. Before the Draft Permit is issued, the applicant should be required to provide location of the pumps and transfer lines, the rated capacities of the pumps, the head losses in the transfer lines and irrigation nozzles, and the actual delivery capacities of its system, so that the TCEQ can confirm its capacity. In the alternative, the Coalition would appreciate an explanation as to why such confirmation may not be necessary in TCEQ’s view.

**34. Annual Facility Inspection Report**

Draft Permit Provision VII.A.10(a)(5) requires an annual site inspection. However, this provision does not require a report of the findings to be prepared and sent to the TCEQ, as required by Title 30, Sections 321.46(c)(2) and (e)(2) of the Texas Administrative Code. The TCEQ in previous responses to comments has stated that these rules do not require these records to be submitted to TCEQ. Rule 30 TAC § 321.46 (c) (2) states: “A complete inspection of the facility, including the CAFO, the associated control facilities, and LMUs shall be completed by the CAFO operator and a report documenting the findings of the inspection made at least once per year.” Rule 30 TAC § 321.46 (e) (2) states “CAFO operators shall provide all other reports required by this subchapter to the Office of Compliance and Enforcement, Enforcement Division.” The Coalition interprets these rules to require filing of the annual site inspection report with the Enforcement Division, and the Draft Permit should be revised accordingly

**35. Requiring Five-Year Evaluation Report to Be Sent to TCEQ**

Draft Permit Provision VII.A.10(b) requires the five-year evaluation report to be kept in the PPP, but the provision does not require the report to be sent to TCEQ, as required by Title 30, Section 321.46(e)(2) of the Texas Administrative Code. For the same reasons discussed in Comment No. 33 above regarding the annual site inspection report, the Draft Permit should be revised to require that the five-year evaluation reports be forwarded to TCEQ’s Office of Enforcement and Compliance.

**36. Requiring Five-Year Evaluation to Certify the Adequacy of Structural Controls**

The five-year evaluation referenced in Draft Permit Provision VII.A.10(b) requires a licensed Texas professional engineer to review the existing engineering documentation, complete a site evaluation of the structural controls, review existing liner documentation, and complete and certify a report of his or her findings. The provision does not, however, require the engineer to certify structural control adequacy. The purpose of the five-year evaluation is presumably to determine whether the structural controls are adequate to prevent unauthorized discharges. In addition to requiring a simple certified report of findings, the Draft Permit should require that the engineer certify structural controls adequacy. The fact that a mere report of findings was

prepared might lead to an unjustified conclusion that the controls are adequate. For example, the engineer might certify that berms were present and were of a certain height. This would not, however, provide any information as to whether the berms were adequate. The TCEQ in previous responses to comments has stated that "the site evaluation would be a comparison of what is required by the engineering documentation and the actual structural controls, as constructed, operated, and maintained." Unfortunately, the application contains no engineering documentation for much of the facility, particularly the berms.

**37. Certification of Structural Controls Prior to Issuance of Permit**

Permit Provision VII.A.10(b) requires a licensed Texas professional engineer to complete a site evaluation of the structural controls once every five years and certify a report of findings, but it does not require a certification that the structural controls are adequate prior to issuance of the permit. The structural controls, particularly the berms, are an integral part of the facility necessary to prevent contaminated runoff from leaving the site. If the berms are not sized properly, runoff will leave the facility during significant rainfall events. Without this certification, one cannot be sure that all berms are constructed and functioning properly to contain contaminated runoff and prevent it from leaving the site. The applicant should be required to provide a current certification of structural controls before the Draft Permit is issued.

**38. Adequate Sampling of Wastewater and Solids**

The Draft Permit requires only one annual sample to be collected for wastewater, "dry" manure, slurry, and settling basin solids. The entire NMP and future application to third-party fields are based on these single annual samples. These single samples, if not representative, could drastically underestimate phosphorus loading to a field. Since the TCEQ will require the applicant to take only one sample per year of these materials, the applicant must be required to follow a sampling protocol that will yield the most reliable sampling results. Instead, the Draft Permit would allow the applicant to sample wastewater from the surface of each RCS. Taking a sample from the surface of a quiescent RCS, however, will produce significantly different sample concentrations than if the samples were taken from the irrigation pipeline. When the irrigation pumps in the RCS are operating, sludge in the bottom of the RCS is agitated and becomes mixed with the wastewater. Because this sludge contains such high levels of phosphorus, the wastewater that is actually being used to irrigate the fields contains much higher levels of phosphorus than does the wastewater that is measured from the surface. The concentration of phosphorus in the RCS can be additionally influenced based on the antecedent rainfall or drought conditions, which may cause varying degrees of dilution or concentration. The Draft Permit should be revised to require that RCS samples be obtained from the irrigation pipeline following the pump, rather than from the surface of the RCS, to provide a more realistic estimate of what is actually being applied to the field.

In addition, RCS samples should be taken much more often than once each year—preferably at least once during each irrigation event. Wastewater treatment plants often take

samples daily. At a minimum, one sample per month should be required during irrigation. An average of the sampling events over the year could be utilized in updating the NMP.

Similarly, more than one annual sample should be required for manure, slurry, and settling basin solids (*e.g.*, one each month or one from each transport event). Taking only annual samples from these solids will likely result in significant errors in calculating the amount of nutrients applied to a field. Moisture content plays an important role in calculating the amount of nutrients applied, as well. If the sample is not taken concurrently with the application of the solids, significant errors will likely be made when calculating the application rates. If the solids are sampled while having a high moisture content and then applied much later, when they have a much lower moisture content, the calculated nutrient application rate will be significantly underestimated. A requirement similar to that for sludge in Draft Provision X.K, which requires an analysis for each haul off, should be required for manure, slurry, and settling basin solids.

### 39. Managing Phosphorus Production

The manure production tables in the application indicate that the total phosphorus produced by the proposed 5,500 cows is 1,784 lb/day  $P_2O_5$ . This is equivalent to 651,160 lb/year  $P_2O_5$  (1784 x 365). The NMP (dated November 7, 2008) indicates that the amount of phosphorus to be applied to the LMUs is only 9,191 lb/year  $P_2O_5$ . This leaves 641,969 lb/year  $P_2O_5$  in the manure, slurry, sludge, and wastewater that must be managed. Neither the application nor the Draft Permit give any specific indication or instruction regarding the location of where these solids and wastewater may be applied. Although out-of-watershed composting is listed as a possible option, there is no indication that any of the manure will actually be sent outside of the Bosque River watershed. Thus, a total of 641,969 lb/year  $P_2O_5$  (98.6 percent) from manure, slurry, sludge, and wastewater will be potentially managed on third-party fields within the North Bosque River watershed without any nutrient management plan, and with very little regulation or oversight. If all of the 641,969 lb/year  $P_2O_5$  from solids and wastewater is applied to third-party fields in the watershed that have soil concentrations of less than 151 ppm P, approximately 4,338 additional acres (assuming three coastal cuts) will have phosphorus applied at application rates ranging between the nitrogen crop requirement rate and twice the crop phosphorus removal rate. The application of phosphorous at two times the crop phosphorus removal rate (not to exceed the nitrogen rate) will increase the soil P in these additional acres by 16 ppm per year. The cumulative impact will be substantial. Additionally, these additional acres will be virtually unseen, and thus unaccounted for, by TCEQ inspectors.

It is unfortunate that the TCEQ would allow 98.6 percent of the phosphorus (641,969 lb/year  $P_2O_5$ ) to be applied throughout the watershed with less oversight than the "regulated" LMUs that are located at the facility. Not only does this undercut efforts to achieve the goal of the TMDL to remove 50 percent of the collectable solids from the watershed, it does not even adequately regulate waste application within the watershed. Failure to plan for proper management of this phosphorus will lead to excess and unmanaged phosphorus distribution

within the watershed, resulting undoubtedly in further degradation of water quality in the Bosque River and its tributaries.

**40. Failure to Remove 50% of the Solid Manure from the Watershed as Modeled in the TMDL**

The TMDL for the North Bosque watershed recommends removal of 50 percent of the manure in order to meet the water quality goals. The CDM Erath County Animal Waste Management Study performed for BRA in September 1998, and the SWAT modeling that was done in support of this TMDL, both supported the assumption that 50 percent of the solid manure (38.1 percent of the total manure production) would be removed from the watershed. If this manure is not removed from the watershed, the water quality modeling shows that the water quality goal will not be met. Although there are several disposal options listed in the Draft Permit for manure, TCEQ is still allowing 100 percent of the applicant's manure to be applied in the watershed. The Draft Permit contains no requirement for removal of 50 percent of the solid manure. Neither the applicant nor the TCEQ have provided any information to demonstrate how applying 100 percent of the manure within the watershed is consistent with the accepted water quality modeling. Collectively, there is no data to indicate that anywhere close to 50 percent of the solid manure from dairies in the North Bosque River watershed is being removed from the watershed, even though the TMDL Implementation Plan has been in effect since 2002. The Draft Permit should be revised to require that the applicant remove 50 percent of the solid manure generated at its proposed operation from the North Bosque River watershed.

**41. Identification of Operative NMP**

Draft Permit Provision VII.A.8(a) indicates that the NMP submitted in the application is to be implemented upon permit issuance. The applicant, however, has submitted multiple NMPs for this facility, and the Draft Permit does not clarify which one is applicable and should be reviewed. The Draft Permit should be changed to indicate the date of the NMP so that it is clear to all which NMP this facility will operate under for the year following permit issuance.

**42. Curve Numbers in Phosphorus Index**

The applicant uses curve numbers in the Phosphorous Index based on LMUs that are protected from grazing. However, the applicant plans to graze each LMU except LMU No. 3. The applicant should be required to adjust the curve numbers to account for grazing, and it should be required to correct the NMP accordingly.

43. Limiting LMU Size

Texas NRCS Code 590 requires sampling to be conducted in accordance with Texas A&M University ("TAMU") guidance.<sup>1</sup> According to TAMU guidance, LMUs must measure 40 acres or less in size. LMU No. 3, however, measures 51 acres in size. Additionally, LMU No. 4 is 57 acres, and LMU No. 5 is 44 acres. To ensure consistency with Title 30, Section 321.42(i)(5)(A), each of these LMUs should be subdivided, and the applicant should be required to conduct new soil sampling on the newly configured, smaller LMUs. A revised LMU map and NMP should also be prepared.

44. Crop Removal Rates for Phosphorus in NMP

The crop and yield for LMU No. 6 planned by the applicant is "Coastal graze 1 AU/1 ac, SG mod graze." According to the NMP, the associated crop removal rate for phosphorus is 90 lb P<sub>2</sub>O<sub>5</sub> per acre per year. Although this value is embedded in the NRCS Code 590 spreadsheet, it is an unrealistic value. No literature on phosphorus removal rates in grazed fields that show phosphorus removal rates from grazing as low as 2 to 8 lb P<sub>2</sub>O<sub>5</sub> per acre per year support a removal rate of 90 lb P<sub>2</sub>O<sub>5</sub> per acre per year. By comparison, the phosphorus crop removal rate for 5-6 cut coastal hay is 93 lb P<sub>2</sub>O<sub>5</sub> per acre per year—only marginally greater than for grazing. Similarly, the crop and yield planned by the applicant for LMU Nos. 1, 2, 4 and 6 is "Coastal Hay 3 cut, SG mod graze." According to the NMP, the associated crop removal rate for phosphorus is 96 lb P<sub>2</sub>O<sub>5</sub> per acre per year. Since the crop removal rate for "Coastal 3-cut Hay alone" is 74 lb P<sub>2</sub>O<sub>5</sub> per acre per year, the removal attributed to grazing small grains is 22 P<sub>2</sub>O<sub>5</sub> per acre per year, which is still too high, but not quite as unrealistic as for "Coastal graze 1 AU/1 ac, SG mod graze."

Since most of the phosphorus removed by grazing cows is recycled to the soil by manure deposition, phosphorus is actually removed from the soil of a grazed field only through the weight gain of the cows. In a coastal hay field, the phosphorus is removed through an almost complete removal of biomass by harvesting the crop. A footnote on Table 3 of the applicant's NMP even states that "[w]hen crops are used for grazing, only a portion of the nutrients used by the crop are removed from the field in live weight gain of the livestock, the remainder is returned to the land in manure and urine." The book *Southern Forages* estimates the N, P, & K removed in 100 pounds live weight gain as follows: 2.5 lbs N, 0.68 lbs P, 0.15 lbs K.

The values embedded in the NRCS Code 590 spreadsheet for grazing simply do not account for phosphorus recycling through manure deposition of the grazing cows. The failure of either TCEQ or the applicant to account for this will result in over-application of phosphorus and rapid phosphorus buildup in the soil. The NMP should be revised to reflect more realistic phosphorus removal rates for grazing.

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<sup>1</sup> p. 590-2.

**45. Documenting Soil Test Locations and Disclosing the Time of Year Sampling Will Be Conducted**

Texas NRCS Code 590 requires that the NMP include information describing the approximate locations of where soil tests will be taken and the time of year that sampling will be conducted.<sup>2</sup> The applicant's NMP does not include this information. To ensure that the NMP is consistent with Section 321.42(i)(5)(A) of the Texas Administrative Code, which requires waste to be applied using an NMP that is in accordance with NRCS Code 590, the applicant should be required to revise its NMP to include this important information.

**46. Considering Soil Nutrient Content in Calculating Agronomic Needs**

The basic methodology employed by the applicant to calculate agronomic rates in its NMP is flawed because the NMP does not account for the nutrients available to plants in the soil. Instead, the NMP allows for application of the annual crop requirement, regardless of the actual soil nutrient content, until the soil reaches a concentration of 200 ppm P. Even at 200 ppm P, the NMP allows continued application of nutrients even though there is more than four to seven times the amount of nutrients present than what is necessary for optimum growth. The phosphorus index cannot be relied upon here, because it does not take into account the soil nitrogen at all. More importantly, the phosphorus index does not take into account any increase in soil phosphorus once the soil phosphorus exceeds 60 ppm P.

By analogy, the TCEQ more appropriately makes the agronomic rate calculations when determining agronomic rates for the application of biosolids from municipal treatment plants. For biosolids permit applications, the TCEQ requires that the agronomic rate calculations take into account the nutrients in the soil by taking the crop requirement and subtracting the nutrients available in the soil. Only the amount of nutrients needed to satisfy the overall crop requirement for that year is allowed to be applied. If the amount of nutrients in the soil exceeds the crop requirement, no additional nutrients can be added during that year. The nutrients in biosolids are not fundamentally any different from the nutrients in dairy waste. From a practical nutrient management standpoint, there is no reason that the TCEQ should calculate the agronomic rate any differently for the application. The Draft Permit should allow application of only that quantity of nutrients that will benefit optimum crop production (*i.e.*, beneficial use). Plant available nitrogen, not phosphorus, is the nutrient that most often needs to be added as fertilizer to increase crop yields. Dairy waste is obviously composed of a considerable phosphorus component. The fact that crops need additional nitrogen does not, *per se*, justify also adding phosphorus in watersheds that are impaired for phosphorus. Adding phosphorus in these cases can be detrimental, not beneficial. If the crops need additional nitrogen but not phosphorus, the nitrogen should be added using a source that is low in phosphorus (such as commercial fertilizer).

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<sup>2</sup> p. 590-7.

47. Accounting for Nutrients Available in the Entire Root Zone

The methodology used by the applicant to calculate agronomic rates in the NMP is flawed because the NMP fails to account for the nutrients available to plants in the entire root zone (*i.e.*, both 0-6 inches and 6-24 inches). The methodology only accounts for the nutrients in the 0-6 inch layer to calculate crop requirements and removal. The fact that plants obtain nutrients from the entire root zone, not just the 0-6 inches zone, is widely accepted among scientific professionals. The TCEQ has acknowledged this fact in its biosolids permit applications, where the agronomic rate calculations must account for the soil nutrients in both the 0-6 inch and 6-24 inch soil horizons. Even the applicant seems to acknowledge this in its NMP: "When applying commercial fertilizer, recommendations should account for nutrient residues within the 6-24 inch profile." Nutrients derived from commercial fertilizer are no different than those from organic waste, and the recommendations should be the same if the recommendations are based on agronomic needs. By failing to account for the nutrients in the 6-24" layer, the NMP overestimates the amount of nutrients needed, and underestimates the amount of nutrients removed, from the 0-6 inch layer by crops. As a result, the NMP virtually assures that the phosphorus will rise in the 0-6 inch soil layer, even when nutrients are applied at the "crop removal rate."

48. Waste and Wastewater Application to Fields Exceeding 200 ppm P

The North Bosque River TMDL Implementation Plan, dated December 2002, states that TCEQ will take formal enforcement action if CAFOs "apply waste or wastewater to a WAF that has been documented to have exceeded 200 parts per million phosphorus in Zone 1 of the soil horizon."<sup>3</sup> Draft Permit Provision VII.A.8(c)(2) undermines this position by allowing application to continue as long as an NUP has been prepared and approved. The Draft Permit allows soil phosphorus concentrations to continue rising as long as they do not exceed 500 ppm. But even above 500 ppm, application can continue as long as the NUP contains a phosphorus reduction component. Application of waste and wastewater to fields in excess of 200 ppm P, and particularly those with concentrations of 500 ppm P or greater, should be prohibited outright in order to be consistent with the language of the TMDL. At a minimum, fields in excess of 200 ppm P should be governed by an NUP containing a phosphorus reduction component subject to Draft Permit Provision VII.A.8(c)(5).

Furthermore, regardless of the language in the TMDL, the 200 ppm phosphorus is four to seven times the amount of phosphorus needed for optimum growth of the proposed crops (*i.e.*, four to seven times the agronomic need). TCEQ rules define "beneficial use" to mean the "application of manure, litter, or wastewater to land in a manner that does not exceed the agronomic need or rate for a cover crop." Applying additional waste to soil that already contains four to seven times the agronomic need is not a beneficial use of the waste.

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<sup>3</sup> p. 16.

**49. Regulation of Manure Application on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. Draft Permit Provision VII.A.8(e)(5)(i)(B) requires incorporation of manure on cultivated fields within 48 hours after land application. It provides no similar restrictions for manure application on non-cultivated fields. Because of the significant damage to vegetation and reduction in yield and nutrient uptake that is associated with the application of manure to non-cultivated fields, the practice should be prohibited altogether. At a minimum, application of manure on non-cultivated fields within 500 feet of a stream should be prohibited, especially since no buffers are required for third-party fields.

**50. Regulation of Wastewater Application on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. According to the Technical Information Packet, the applicant plans to apply wastewater to third-party fields. Because the applicant would appear to be prohibited from using its irrigation system to deliver the wastewater—an exercise of control over the third-party field that is prohibited by the third-party fields rules—the Draft Permit should be revised to prohibit application of wastewater on third-party fields unless the owner of the third-party field transports the wastewater from the CAFO by truck.

**51. NRCS Code 590 Requirements on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. Draft Permit Provisions VII.A.8(e)(5)(i)(C-E) should be revised to preclude the application rate from exceeding the requirements of NRCS Code 590. Although the criteria for application rates on third-party fields are more restrictive than for LMUs in most instances, it is possible for third-party fields to meet the requirements of Draft Permit Provisions VII.A.8(e)(5)(i)(C-E) yet fail to meet the requirements of NRCS Code 590. For example, NRCS Code 590 requires that the application rate never exceed the annual crop P requirement in fields with a P-Index rated of "Very High." Draft Permit Provision VII.A.8(e)(5)(i)(C) allows application at the nitrogen crop requirement rate when the field is less than 50 ppm P, irrespective of the P-index. Adherence to NRCS Code 590 should be required in this instance, where it is more restrictive. It would appear unreasonable to allow application at the nitrogen rate to a field with a Very High P-index rating even if it does have less than 50 ppm P. Fields with a Very High P-index have the highest vulnerability as sources of P loss in surface runoff. While the rules for third-party fields do not specifically require adherence to the application rates in NRCS Code 590, the TCEQ should nevertheless revise the Draft Permit to ensure that application rates for third-party fields are not less restrictive than application rates for LMUs in these situations.

**52. NMP for Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. According to Draft Permit Provision VII.A.8(e)(5)(i)(A), no NMP is required for third-party fields. Since an NMP is the necessary planning tool for determining the appropriate application rates, it is difficult to foresee how the applicant can comply with Draft Permit Provisions VII.A.8(e)(5)(i)(C-E) unless it prepares an NMP for third-party fields. An NMP should be required even if the criteria for the NMP are different than those in NRCS Code 590.

**53. Reporting of Crop Yields on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. While Draft Permit Provision VII.A.8(e)(5)(iv) requires the applicant to record the actual yield of each harvested crop in the PPP, it does not require the information to be reported. Similarly, Draft Permit Provision VIII.B.7 does not require reporting of this information in the annual report. Draft Permit Provision VII.A.8(e)(5)(iv) should be revised to include a requirement that records of crops and crop yields on third-party fields be submitted to the TCEQ quarterly. Draft Permit Provision VIII.B.7 should similarly be amended to require that records of crops and crop yields be submitted to the TCEQ in the annual report. Otherwise, the phosphorus crop removal rates cannot be calculated and compliance with the phosphorus application rate limitations cannot be determined.

**54. Sludge Application to Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. Draft Permit Provision VII.A.8(e)(5) allows sludge to be applied to third-party fields. Since Title 30, Section 321.42(j) of the Texas Administrative Code allows only manure, litter, and wastewater to be applied to third-party fields, Draft Permit Provision VII.A.8(e)(5) should be revised accordingly.

**55. Demonstration of Sustainability for the Permit Term**

The NMP provided in the Draft Permit addresses only the first year of operations after permit issuance. It does not address the subsequent years of the five-year permit term. A five-year NMP should be prepared that shows the impacts of all nutrient management issues over the five-year permit term. The Draft Permit should establish an overall maximum application rate that allows the facility to operate in a sustainable manner over life of the permit. An annual NMP can then be used to adjust the annual application schedule and individual field application rates based on annual soil sampling and crop production. If the NMP has any meaning, it must be relied upon as a reasonably accurate predictor of field nutrient loading, assuming the wastewater and manure sampling is representative. As a fundamental matter, the applicant

should be required to demonstrate that, based on projected application rates, it has enough land to sustain its operation for the five-year term of the permit.

**56. Identification of Historical Waste Application Fields**

Title 30, Section 321.42(k) of the Texas Administrative Code requires that soil samples be taken in historical waste application fields in addition to the active LMUs. The results of these soil samples then must be furnished to the TCEQ. Although Draft Permit Provision X.P. requires the applicant to maintain a map of the historical fields in the PPP, the historical fields have not been identified in the application or in the Draft Permit. The Draft Permit should be revised to include the names and locations of the historical fields.

**57. Containment of Runoff from Silage, Commodity, Manure, and Hay Storage**

Draft Permit Provision X.H requires that runoff from silage, commodity, manure and hay storage be contained outside of the RCS drainage area. Appropriate provisions for containment are to be placed in the PPP, but these controls are not described in the application. The appropriate provisions for containment should be part of the application so that it can be properly reviewed to determine if the containment provisions and design are adequate.

**58. Prohibition of Operation Until CNMP Has Been Approved**

Draft Permit Provision VII.A.8 (b) requires a CNMP to be submitted for approval by the NRCS or TSSWCB within 60 days of permit issuance. Since the rules require operation under a certified CNMP, this provision of the Draft Permit should also require that the CNMP be approved and certified prior to permit issuance.

**59. Definition of Vegetative Buffers**

Draft Permit Provision X.D requires the applicant to install and maintain vegetative buffers according to NRCS standards. NRCS has developed practice standards for "filter strips",<sup>4</sup> but it has not developed a practice standard for "vegetative buffers." The buffers specified in the Draft Permit contain both filter strips and a "vegetative buffer setback." Without defining and disclosing standards for what would constitute a "vegetative buffer," the TCEQ has created a significant ambiguity in the terms of the Draft Permit. The TCEQ has previously indicated that it considers the phrase "vegetative buffer" to mean simply vegetation that reduces shock due to contact, and that the Riparian Forest Buffer<sup>5</sup>—referenced by Filter Strips<sup>6</sup>—qualifies in this respect. Nothing in either the Draft Permit, or in TCEQ Rules, requires that a vegetative buffer be considered under this standard. The TCEQ has indicated that it interprets "vegetative buffers" in the North Bosque River watershed to mean Filter Strips as defined by

<sup>4</sup> Code 393.

<sup>5</sup> Code 391.

<sup>6</sup> Code 393.

NRCS Practice Code 393, or Riparian Forest Buffers as defined by NRCS Practice Code 391. This interpretation should be articulated in the terms of the Draft Permit as a definition. Without a specific definition and criteria for "vegetative buffer," the Coalition is concerned that the TCEQ may be unable to enforce its current informal interpretation. Draft Permit Provision X.D should accordingly be revised as follows: "A vegetative buffer shall meet the criteria of Riparian Forest Buffers defined by NRCS Practice Code 391 or the criteria of Vegetative Filter Strips as defined by NRCS Practice Code 393."

**60. Non-Attainment of Bacterial Water Quality Standards**

This facility discharges into Segment No. 1226, which is currently listed on the State's 303(d) list (impaired and threatened waters) for non-attainment of bacteria water quality standards. Neither the applicant nor the TCEQ has demonstrated how the Draft Permit will support the attainment of bacteria water quality standards. No attempt has been made to address how the bacterial problems that exist in the North Bosque River watershed will be corrected, other than through the following single general statement on p.11-12 of the Fact Sheet: "the RCS storage capacity requirements, nutrient management practices, increased TCEQ oversight of operational activities, and requirements of the TMDL Implementation Plan, which are incorporated into the draft permit, are designed to reduce the potential for this CAFO to contribute to further impairment from bacteria."

With respect to the first element—the RCS storage capacity requirements—the increased storage requirement should indeed decrease the amount of bacteria discharged during chronic or catastrophic rainfall events as the TCEQ has indicated. However, chronic and catastrophic rainfall events are not typical in this area. The majority of the occurrences of non-attainment of bacterial water quality standards occur during non-chronic and non-catastrophic rainfall events, so non-attainment during these other conditions should also be addressed.

With respect to the second element—nutrient management practices—the TCEQ has made no demonstration that nutrient management practices will have an ascertainable effect on bacteria. While bacteria and pathogen loads originate from the same sites and materials as nutrients, and are transported via the same streams and rivers, the processes and removal mechanism for bacteria are far different from those for nutrients. Much of the nutrients from this operation will be removed by harvesting growing crops to which the nutrients have been applied. There has been no demonstration that bacteria will be removed by growing crops. There has been no demonstration regarding the extent to which bacteria might be captured by the soil or "filtered out" in grass. Bacteria undergo different process in the streams and rivers. They are not removed by algae, and bacteria have a potential for regrowth.

With respect to the third element—increased TCEQ oversight of operational activities—TCEQ oversight is commendable, but it is inherently a reactive approach to this issue. There has been no demonstration by the TCEQ how specific oversight will eliminate the bacteria non-attainment.

With respect to the fourth and final element—requirements of the TMDL Implementation Plan—the Implementation Plan addresses only phosphorus, not bacteria.

**61. Use of Third-Party Fields**

As discussed in Comment No. 1, this application is for a new permit for new operations at a site for which the previous permit expired. The applicant is not the operator of an “existing CAFO” within the meaning of Section 321.42(j) of the Commission’s rules. Because Section 321.42(j) limits the use of third-party fields to only existing operations and this is a new permit for a new operation, the Draft Permit should be revised to delete all references to the use of third-party fields.

**62. Reporting for Third-Party Fields.**

In the event the use of third party fields is retained in the Draft Permit, the provisions should be modified as follows. The Draft Permit and Commission rules allow for the disposal of wastewater or manure by the use of third-party fields not owned, operated, controlled, rented or leased by the applicant. Both the Draft Permit and Commission rules limit the use of third-party fields to only those for which a soil test phosphorus analysis shows a level less than 200 ppm and which require initial and annual soil sampling. In addition, the Draft Permit sets out land application rates for such fields. However, the Draft Permit does not include provisions that require the applicant to report information regarding land application rates and soil testing to the Commission to ensure compliance. The Draft Permit only requires that the applicant submit records to the regional office containing the “name, locations, and amounts of wastewater, sludge, and/or manure transferred to operators of third party fields.”<sup>7</sup> It is not apparent how compliance with the Draft Permit provisions regarding third-party fields can be determined without further information on soil testing, areas of application, application rates, etc. The inclusion of additional provisions regarding reporting for third-party fields to clarify that information needed to determine compliance will provide for better enforcement. For example, such provisions could include revision of VII.A.8.(e)(5)(iv) to state that:

[t]he permittee shall submit records to the appropriate regional office quarterly that contain the name, locations, and amounts of wastewater, and/or manure transferred to operators of third-party fields, a copy of any initial or annual soil analyses, land application locations, dates and times, and nutrient concentration of applied materials, rates, acreage of application area, and crops and crop yields for the preceding quarter.

In addition, it would be beneficial if this information is also included in the annual report to the Office of Enforcement pursuant to 30 Tex. Admin. Code § 231.36(j), along with (i) copies of contracts with the applicable third-party field operators; (ii) a statement that application rates in any third-party field met permit requirements during the previous year; and (iii) a summary of

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<sup>7</sup> Draft Permit VII.A.8.(e)(5)(iv).

discharges from third-party fields or a statement that there has been no discharge from any third-party field. If such information is included, the performance of the operator with respect to use of third-party fields for the previous year may be reviewed in a holistic manner with all necessary information available.

**63. Control of Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit, the provisions should be modified as follows. The Draft Permit prohibits discharges except as provided by the permit and federal regulations. The Draft Permit authorizes discharges from RCSs whenever "chronic or catastrophic rainfall events or catastrophic conditions cause an overflow."<sup>8</sup> The Draft Permit also prohibits the "drainage of wastewater, sludge and manure from an LMU" unless authorized under certain conditions.<sup>9</sup> However, the Draft Permit, although allowing the application of waste on third-party fields, is silent with respect to drainage or discharges from third-party fields. It is important that the Draft Permit clearly state that drainage or discharges of wastewater or manure from third-party fields is prohibited. Otherwise, there does not appear to be any control regarding the over-application of waste on third-party fields. Better control of third-party fields is very important because such fields do not benefit from the use of RCSs, NMPs, or other protections imposed on LMUs. In addition, the Commission should consider prohibiting the applicant's further use of any third-party field if it is determined that it has ever disposed of waste on a third-party field when the most current soil test reflects phosphorous concentrations of greater than 200 ppm or the application rate established by permit for a third-party field is ever exceeded. The use of third-party fields should be considered to be a privilege that should be revoked if it is ever abused.

**64. Failure to Consider Routine Monitoring Data from Duffau Creek**

Water quality monitoring data shows an increase in Soluble Reactive Phosphorus (SRP) for Segment 1226K Little Duffau Creek. The Texas Institute for Applied Environmental Research ("TIAER") has been collecting data at monitoring stations on tributaries and mainstem sites of the North Bosque River, using techniques and quality assurance plans approved by the TCEQ and EPA, for approximately 20 years. The data for the TCEQ TMDL for Segments 1255 (Upper North Bosque River) and 1226 (North Bosque River) were largely collected by TIAER, and TIAER performed the computer modeling for the TMDL.

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<sup>8</sup> A "chronic or catastrophic rainfall event" is defined at 30 Tex. Admin. Code § 321.32(10) as a "series of rainfall events that do not provide opportunity for dewatering a retention control structure and that are equivalent to or greater than the design rainfall event or any single rainfall event that is equivalent to or greater than the design rainfall event."

<sup>9</sup> Draft Permit VII.A.8.(f)(2)(i).

Two TIAER publications are referenced in this comment concerning the application for Two Sisters Dairy—a new CAFO—in the Little Duffau Creek subwatershed (1226K).<sup>10</sup> All data are from grab and storm samples collected by TIAER staff from July 1997 to June 2002 (TR0302), and July 2002 to June 2007 (TR0801). This provides a continuous record of data at the LD040 site (at FM 1824), as presented in the table below.

Over a period of ten years that included the manure haul-off subsidy and implementation of best management practices under the TMDL, this subwatershed (with no wastewater treatment plant discharge) indicates an increased nutrient loading. The data were divided into two distinct five-year groups in these reports and were not considered as a continuum of one data set.

Table 1 TIAER Data at Little Duffau Creek 1997-2007

TIAER Site	Type	Parameter (mg/L)	1997-2002			2002-2007 (TR0801)			Criteria
			Mean	Median	Number of samples	Mean	Median	Number of samples	
LD040	G	SRP as P	0.530	0.592	7	0.565	0.383	29	2008 TX Water Quality Inventory (3/19/08) 0.37
LD040	G	Total P	0.791	0.710	7	0.92	0.51	29	0.69
LD040	S	SRP as P	0.519	0.538	32	0.693	0.650	159	0.37
LD040	S	Total P	1.20	1.06	32	1.27	1.11	159	0.69

The 2008 Water Quality Inventory approved by the EPA on July 9, 2008 specifically lists the criteria for SRP as 0.37 mg/L. The TIAER data shows the mean for both grab and storm samples of SRP is more than one and a half times greater than 0.37 mg/L criteria established by the TCEQ.

The criteria established for total phosphorus is 0.69 mg/L. The mean for storm samples of total phosphorus, which is indicative of non-point source runoff, is at 1.27 mg/L—nearly double the 0.69 mg/L criteria set by the TCEQ. The mean for grab samples, which is indicative of dry weather discharges for total phosphorus, is more than 130 percent greater than the 0.69 criteria set by the TCEQ.

Sources of Impairments and Concerns listed in this inventory attributes all these elevated nutrient screening levels in Segment 1226K (Little Duffau Creek) to only non-point source permitted runoff from CAFOs.

Land use within the 2,960-acre subwatershed includes 926 acres of waste application field (WAF), according to the TIAER report (May 2008). This 926 acres does not include the

<sup>10</sup> TR0801 “Semiannual Water Quality Report for the North Bosque River Watershed” (May 2008) and the TR0302 “Semiannual Water Quality Report for the Bosque River Watershed” (February 2002)

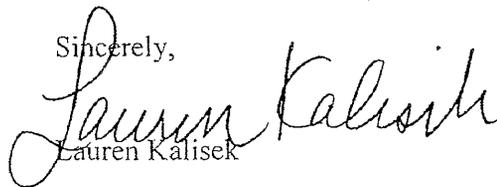
Ms. LaDonna Castañuela  
January 12, 2009  
Page 26

additional 220 acres of WAFs for this proposed new dairy since the dairy was not operating at the time of this report. The water quality data proves that this small microwatershed cannot even handle its current phosphorus loadings, before accounting for the additional loading of 5,500 more cows and 220 acres of WAFs that is to be expected from this new dairy.

The TMDL established a 50 percent reduction needed in loading and concentration of SRP. Increasing the number of cows by 5,500, or increasing the percentage of WAFs within the subwatershed, will not decrease nutrient loading. These data support the conclusions that: 1) currently the TMDL is not working, and 2) approving a new permit increasing the SRP loading contributions in a severely impacted subwatershed is not abiding by or implementing the TMDL. The TCEQ should take into account this important water quality data and consider the impairment of the North Bosque River before authorizing this proposed new permit for 5,500 cows.

The Bosque River Coalition hereby requests that the Executive Director consider these comments in evaluating the Draft Permit which has been proposed to Two Sisters Dairy, LLC. The Coalition appreciates the opportunity to submit these comments and the consideration it hopes the Executive Director and Commission staff will give to them.

Sincerely,

  
Lauren Kalisek

LJK/ldp  
2402\04\TSM\tr090110\jrk  
ENCLOSURES

cc: Applicant Two Sisters Dairy, LLC  
Ms. Leah Hayes, Coalition Attorney, Coalition of Waco  
Mr. Wiley Stem, III, Assistant Coalition Manager, Coalition of Waco  
Mr. Bruce Wiland

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



THE STATE OF TEXAS  
COUNTY OF TRAVIS  
I hereby certify that this is a true and correct copy of a Texas Natural  
Resource Conservation Commission document, which is filed in the  
permanent records of the Commission  
Given under my hand and the seal of office on

*Laborna Castañuela*

MAY 31 2002

Laborna Castañuela, Chief Clerk  
Texas Natural Resource  
Conservation Commission

AN ORDER denying Gerald Oosten Texas Pollution Discharge  
Elimination System (TPDES) Permit No. 03142; TNRCC  
Docket No. 2000-0620-AGR; SOAH No. 582-01-0033.

On March 13, 2002, the Texas Natural Resource Conservation Commission (Commission) considered the application of Gerald Oosten (Mr. Oosten or Applicant) for renewal of his Texas Pollution Discharge Elimination System (TPDES) Permit No. 03142. The permit would authorize Applicant to continue to operate a dairy facility as a confined animal feeding operation (CAFO) in Erath County, Texas, pursuant to Chapter 26 of the Texas Water Code. The application was presented to the Commission with a Proposal for Decision by Robert F. Jones Jr., an Administrative Law Judge with the State Office of Administrative Hearings, who conducted a preliminary hearing concerning the application in Stephenville, Erath County, Texas on January 29, 2001, and an evidentiary hearing concerning the application from June 4 to June 8, 2001, and an additional day of testimony on August 25, 2001, in the City Council Chambers, Stephenville City Hall, 298 West Washington, Stephenville, Erath County, Texas.

The Administrative Law Judge designated the following as parties to the proceeding: the Applicant, represented by Gale Warren as counsel; the Executive Director (the ED), originally represented by Scottie C. Aplin and represented at the hearing by John E. Williams and Michael W. Hughes, Staff Attorneys; the Office of the Public Interest Counsel (OPIC), represented by Scott Jerger, Assistant Public Interest Counsel; and the Protestants, Fred Parker and Charles F. Markham represented by Stuart Henry as counsel.

After considering the Administrative Law Judge's Proposal for Decision and the evidence and arguments presented, the Commission makes the following Findings of Fact and Conclusions of Law:

**ATTACHMENT B**

## I. FINDINGS OF FACT

1. Mr. Oosten holds Texas Pollution Discharge Elimination System (TPDES) Permit 03142, which was issued on September 5, 1997, and which was to expire on May 17, 1999.
2. The permit was issued under Chapter 26 of the Texas Water Code and 30 TAC Chapter 321, Subchapter B.
3. Mr. Oosten timely filed his application for renewal.
4. On June 16, 1999, Mr. Oosten's application was declared administratively and technically complete.
5. On June 30, 1999, Protestants requested a contested case hearing.
6. On June 19, 2000, the ED requested remand of Mr. Oosten's application under 30 TAC § 50.137, for direct referral to SOAH under 30 TAC § 55.26.
7. On June 20, 2000, the TNRCC general counsel remanded Mr. Oosten's application to The ED for direct referral to SOAH.
8. On July 12, 2000, the ED requested the docket clerk to directly refer the matter to SOAH.
9. On December 19, 2000, the TNRCC issued its Notice of Hearing that a contested hearing would be held on the application and informing the parties of the time, place, and nature of the hearing, of the legal authority and jurisdiction under which the hearing was to be held, giving reference to the particular sections of the statutes and rules involved, and including a short, plain statement of the matters asserted.

10. The Chief Clerk of the TNRCC mailed a copy of the Notice of Hearing to affected persons on December 28, 2000.
11. Mr. Oosten published the Notice of Hearing on December 28, 2000, in the EMPIRE-TRIBUNE, a newspaper of general circulation in Erath County, Texas.
12. A preliminary hearing was held on January 29, 2001.
13. A contested case hearing was held before ALJ Robert F. Jones, Jr. on June 4 to June 8, 2001, and August 25, 2001. Applicant appeared through Gale Warren as counsel, the ED appeared through John E. Williams and Michael W. Hughes, the OPIC appeared through Scott Jerger, and the Protestants appeared through Stuart Henry as counsel.
14. The ED has prepared a draft renewed TDPES permit No. 03142.
15. The land owned or operated by Mr. Oosten on the site comprises about 500 acres. The acreage is roughly rectangular in shape, with the long axis oriented roughly west to east. A confined dairy operation and retention control storage ponds are located in the eastern-most third of the rectangle. The western two-thirds of the rectangle is divided into four fields. The fields are numbered, from east to west: Field 3, Field 2, Field 1, and Field 7. The Fields are irrigated using wastewater from the dairy operation.
16. An unnamed tributary to the Little Duffau Creek (the tributary) crosses the Oosten acreage from north to south and separates Field 2 from Field 3. The tributary is a small, intermittent creek averaging about three feet in width. Three other dairies are on the tributary above the Oosten dairy. The tributary eventually joins the Little Duffau.
17. The Little Duffau Creek marks the western boundary of Fields 1 and 7, and runs from north to south. Field 2 separates Field 1 from the tributary, and Field 1 separates Field 2 from the Little Duffau.

18. Both the tributary and the Little Duffau Creek are a part of the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin. Segment No. 1226 is an impaired waterway under Section 303(d) of the Clean Water Act.
19. The dairy or CAFO is located on the eastern portion of the Applicant's land. Applicant has use of or owns 500 acres. The dairy lot comprises a small portion of the 500 total acres. The dairy employs a free stall barn and an open feed lot. The CAFO is surrounded by berms sufficient to contain waste and rainfall into the CAFO and to exclude rainfall from outside the CAFO. Solid waste is dried and stored within the CAFO until disposed of by Applicant off the premises.
20. Liquid waste from the CAFO is collected into three retention control structures (RCS's) or lagoons or ponds. Lagoon #1 has a maximum capacity of 44.5 acre-feet. Lagoon #2 and Lagoon #3 operate in series and have a combined maximum capacity of 28.8 feet. The free stall barn is cleaned by using water that is pumped from Lagoon #3. The free stall barn is flushed three times a day. The water is collected back from the barn and recirculated through a concrete sump, a separator, settling basins, and into Lagoon #2. Lagoon #2 acts as a settling basin for Lagoon #3, which is used for storage. Lagoon #1 handles runoff and wastewater storage from the open feed lots. Lagoon #1 is the source of irrigation water for Fields 1, 2, 3, and 7. Water can be pumped from Lagoon #3 to Lagoon #1 if necessary to reduce Lagoon 1 and 2's volume.
21. Irrigation water from Lagoon #1 is moved by a 100-horsepower electric pump through a six-inch main line that is buried in and bisects Fields 3 and 2 into northern and southern halves. The irrigation line crosses the tributary creek between Fields 3 and 2, and terminates in Field 1. A center pivot sprinkler is located at the terminus in Field 1.
22. Field 1 has 30.5 acres under irrigation (which also includes a small part of Field 7) under the center pivot.

23. Fields 3 and 2 are irrigated by wheel-move sprinklers. These are supplied water by a series of uptakes from the main irrigation line. The wheel-moves irrigate to both the north and south sides of the main line and are rolled in an east-west or west-east direction. Field 2 has 45.4 acres under irrigation, and Field 3 has 30.5 acres under irrigation.

*Failure to comply with the conditions of the permit*

*Discharge of Irrigated Wastewater or Mismanaged Irrigation*

24. On May 6, 1997, Mr. Oosten permitted a discharge consisting of irrigation tailwater from Field 3 into the tributary.
25. The discharge could have been avoided with proper management and maintenance of the dairy's wastewater irrigation system.
26. On December 29, 1998, Mr. Oosten permitted a discharge from the pump supplying the irrigation water from the Lagoon #1 into the Field #3, the adjacent roadway, and the field south of Field #3.
27. On December 29, 1998, Mr. Oosten permitted a discharge from a riser feeding the wheel roll in Field #2 into the tributary.
28. On December 29, 1998, Mr. Oosten permitted a discharge by irrigating Field #2, which was saturated.
29. On December 29, 1998, Mr. Oosten permitted puddled wastewater in Fields #2 and 3.
30. On December 29, 1998, the tributary the creek was not running above Oosten's dairy, but was running black/brown water with an effluent/waste odor below the dairy.

31. On December 30, 1998, Mr. Oosten permitted pooled wastewater in Field #1.
32. On February 3, 1999, Mr. Oosten permitted Field #1 to become saturated. Wastewater was coming from the center pivot, was pooled in Field #1, and had flowed from Field #1 to the Little Duffau.

*Discharge from Wastewater Control Facilities*

33. On or about August 12, 1996, Mr. Oosten permitted a discharge from Lagoon #2 into Field 3.
34. On June 28, 1999, Mr. Oosten permitted an overflow of water and discharge from Lagoon #1 into the tributary.

*Other Failures to Comply with Permit*

35. In August 1996, Mr. Oosten had failed to comply with the terms of his permit by
  - a. exceeding authorized number of head of cattle;
  - b. having no annual analysis of waste and wastewater;
  - c. having no engineer's certificate;
  - d. having no pond liner certificate;
  - e. having no permanent measuring device on lagoons;
  - f. failing to maintain records of waste disposal; and
  - g. failing to contain silage pit runoff.
36. On October 23, 1998, Mr. Oosten kept livestock were being in a non-containment area, *i.e.*, one that would not prevent waste and wastewater runoff, in violation of his permit.

37. October 21, 1999, Mr. Oosten permitted inadequate containment of the confinement area, in violation of his permit.
38. On or about November 30, 2000, Mr. Oosten applied manure to a field, and failed to disc it in within 48 hours, in violation of his permit.

*Failing to comply with a Commission Order*

39. Under the Agreed Order in TNRCC Docket 97-0960-AGR-E, adopted June 24, 1998, Mr. Oosten was required to certify in writing within 30 days construction of wastewater retention facilities.
40. On October 21, 1998, the TNRCC noted that Mr. Oosten had failed to provide the certification, and required compliance within an additional 30 days.
41. Under the Agreed Order in TNRCC Docket 1999-0716-AGR-E, dated May 3, 2000, Mr. Oosten was required to make:
  - a. written certification within 15 days that his irrigation practices were designed and managed to prevent ponding and puddling of wastewater; and
  - b. written certification within 30 days of the CAFO's lagoon's retention volumes.
42. On December 20, 2000, the TNRCC noted that Mr. Oosten had failed to provide the two required certifications, and required compliance by January 22, 2001.
43. Mr. Oosten has not certified in writing that his irrigation practices are designed and managed to prevent ponding and puddling of wastewater and has not provided a written certification of his lagoon's retention volumes.

*Failing to construct, during the life of the permit, facilities necessary to conform with the terms and conditions of the permit.*

44. Permit 03142 requires that "tailwater control facilities shall be provided as necessary to prevent the release of applied wastewater to waters in the State."
45. Under the Agreed Order in TNRCC Docket 1999-0716-AGR-E, dated May 3, 2000, Mr. Oosten was required to construct tailwater control facilities by December of 2000.
46. On December 20, 2000, the TNRCC noted that Mr. Oosten had failed to construct the tailwater control facilities and required compliance by January 22, 2001.
47. Jerry Holligan, a Registered professional engineer, designed and directed the construction of a berm system on Mr. Oosten's property in May and June 2001.

*Failing to fully disclose all relevant facts.*

48. Mr. Oosten failed to disclose the April 10, 2001, discharge in his testimony although asked questions intended to elicit such information.

*Continued operation of the dairy endangering the environment.*

49. Prior to August 1995:
  - a. the tributary did not flow continuously, but intermittently with long-lasting pools of water when it did not flow;
  - b. the tributary could be used for watering livestock and for recreation;
  - c. the tributary was clean;
  - d. the tributary supported game such as deer and turkey for hunting, and other wildlife; and
  - e. the tributary had frogs and small fish.

50. After the August 1995 discharge from the Oosten dairy:
  - a. the tributary turned brown, then black, and stank;
  - b. the tributary water caused cattle and goats to abort;
  - c. the tributary could not be used for human recreation; and
  - d. the tributary runs continuously.
51. The tributary downstream of the Oosten dairy is eutrophic.
52. The tributary downstream of the Oosten dairy is devoid of what would be the naturally occurring life for a stream of its size.
53. The tributary is a first order stream, which should run intermittently, but instead runs constantly with polluted water.
54. The tributary produces methane gas.
55. Although physically configured to be attractive to insect life the tributary has none aside from the simplest form of worm.
56. The discharges from the Oosten dairy have been a major cause, if not the sole cause of, the tributary's eutrophic state.

*Record of environmental violations in the preceding five years.*

57. Findings Nos. 24 - 34 demonstrate that Mr. Oosten has a history of environmental violations from August 1995 to June 1999.

*Violations are significant.*

58. Findings Nos. 24 - 34 demonstrate that Mr. Oosten's environmental violations are significant.

*No substantial attempt to correct the violations.*

59. Mr. Oosten constructed tailwater control facilities after his operation of the dairy for five years, after numerous discharges from irrigation fields caused by over-irrigation, and a year after he was ordered by the Commission to build them.
60. Mr. Oosten has a history of over-irrigating his fields.
61. Mr. Oosten was generally unaware of discharges until informed of the problem by an TNRCC inspector.
62. Mr. Oosten's violations are recurrent.

## II. CONCLUSIONS OF LAW

1. The TNRCC has jurisdiction over this matter pursuant to TEX. WATER CODE ANN. Chapter 26 (Vernon 2002).
2. The State Office of Administrative Hearings has jurisdiction over all matters relating to the conduct of a hearing in this proceeding, including the preparation of a proposal for decision with findings of fact and conclusions of law pursuant to Tex. Gov't Code Ann. Ch. 2003 (Vernon 2002).
3. Notice of the hearing was provided as required by the Administrative Procedure Act, TEX. GOV'T CODE ANN. §§ 2001.051 and 2001.052 (Vernon 2002).

4. Mr. Oosten's permit renewal application was declared administratively complete on June 16, 1999, and Commission Rules 305.63 and 305.66(a), (f) & (g) apply to the application.
5. Based upon Findings Nos. 24 - 38, Applicant has failed to comply with the conditions of the permit.
6. Based upon Findings Nos. 39 - 43, Applicant has failed to comply with a commission order.
7. Based upon Findings Nos. 44 - 47, Applicant has failed to construct, during the life of the permit, facilities necessary to conform with the terms and conditions of the permit.
8. Based upon Finding No. 48, Applicant has failed to fully disclose all relevant facts.
9. Based upon Findings Nos. 49 - 56, Applicant's continued operation of the dairy endangers the environment to such an extent that permit termination is necessary to prevent further harm.
10. Based upon Findings Nos. 57 - 58, Mr. Oosten has a record of significant environmental violations in the preceding five years.
11. Based upon Findings Nos. 59 - 62, Applicant has not made a substantial attempt to correct the violations.
12. Based on the foregoing findings and conclusion, the preponderance of the evidence shows that the permit should not be renewed pursuant to 30 Tex. Admin. Code §§ 305.63 and 305.66(a), (f) & (g)

### III. EXPLANATION OF CHANGES

1. ALJ Robert F. Jones, Jr, agreed during the Commission's public meeting on this matter that the references to the discharge on August 2, 1995, should be removed from the order, as the discharge was an exempt event and was not necessary to his decision. Therefore, the ALJ's Proposed Finding of Fact No. 34 has been removed from the order and the references to that proposed Finding of Fact have been removed from Finding of Fact Nos. 57 and 58 and Conclusion of Law No. 5.
2. In response to questions from the Commission during its public meeting on this matter, ALJ Robert F. Jones, Jr., indicated that the findings relating to the discharge on April 10, 2001, were not necessary to his decision, except as the discharge relates to the issue of whether Applicant failed to fully disclose all relevant facts. Therefore, the ALJ's Proposed Finding of Fact No. 33 has been removed from the order and the references to that discharge and that proposed Finding of Fact have been removed from Finding of Fact Nos. 57, 58, and 60 and Conclusion of Law No. 5.
3. A typographical error was corrected in Finding of Fact No. 18 and the order was renumbered to reflect the deletion of the ALJ's Proposed Finding of Fact Nos. 33 and 34.

**NOW, THEREFORE, BE IT ORDERED BY THE TEXAS NATURAL RESOURCE  
CONSERVATION COMMISSION THAT:**

1. Renewal of TPDES Permit 03142 is denied in accordance with the Findings of Fact and Conclusions of Law contained in this Order.
2. The Executive Director's Response to Comments is adopted.
3. The Chief Clerk of the Texas Natural Resource Conservation Commission will forward a copy of this Order to all parties.

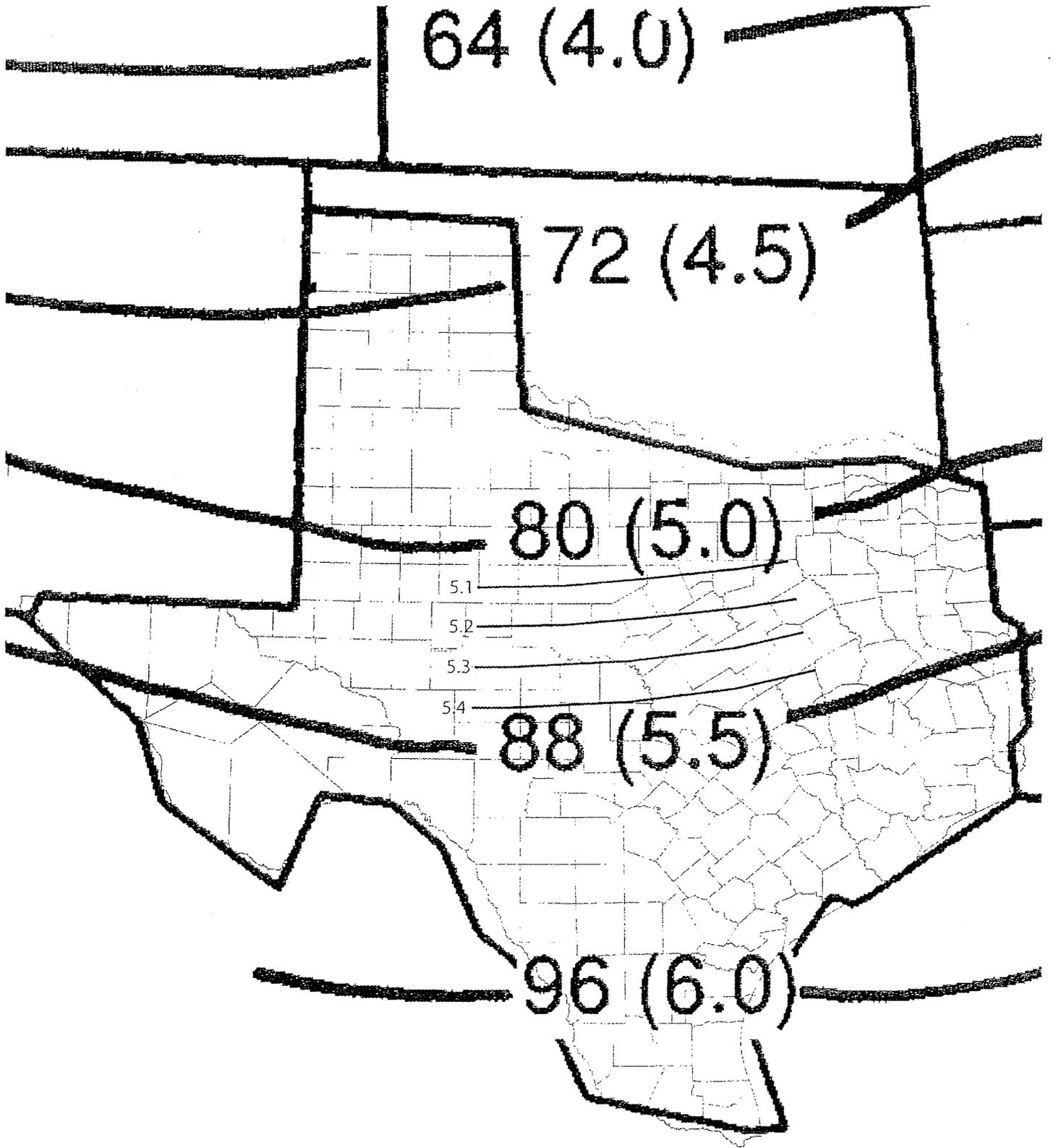
4. If any provision, sentence, clause or phrase of this Order is for any reason held to be invalid, the invalidity of any portion will not affect the validity of the remaining portions of the Order.
5. The effective date of this order is the date the order is final, as provided by 30 TEX. ADMIN. CODE § 80.273 and Section 2001.144 of the Administrative Procedure Act, TEX. GOVT. CODE ANN. (Vernon 2002).
6. Any other requests for entry of specific findings of fact and conclusions of law, and any other requests for general or specific relief, if not expressly set forth herein, are denied.

Issue Date: MAR 22 2002

TEXAS NATURAL RESOURCE  
CONSERVATION COMMISSION



Robert L. Huston, Chairman



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Two Sisters  
(04866)

ATTACHMENT 3



Attachment C

*AGR*  
*65205*

Ms. Kalisek's Direct Line: (512) 322-5847  
E-mail: lkalisek@lglawfirm.com

January 12, 2009

Ms. LaDonna Castañuela  
Chief Clerk  
Texas Commission on Environmental Quality  
12100 Park 35 Circle  
Bldg. F - 1<sup>st</sup> Floor  
Austin, Texas 78753

**OPA VIA HAND DELIVERY**

JAN 13 2009

BY *AB*

Re: Comments on Draft Permit for Two Sisters Dairy, LLC:  
TPDES Permit No. WQ0004866000 (2402-04)

Dear Ms. Castañuela:

Please accept these written comments on behalf of the Bosque River Coalition (the "Coalition") concerning the above-referenced draft TPDES permit ("Draft Permit") for Two Sisters Dairy, LLC (hereinafter "the applicant"). The Coalition is a Texas non-profit corporation formed for the purpose of furthering the protection and enhancement of water quality in the Bosque River watershed. Its membership is comprised of concerned property owners and interests within the watershed. Please feel free to contact me at my law firm, Lloyd Gosselink Rochelle & Townsend, P.C., 816 Congress Avenue, Suite 1900, Austin, Texas 78701, phone number (512) 322-5847, fax number (512) 472-0532, concerning any aspect of these comments.

**WRITTEN COMMENTS**

The Coalition appreciates the Texas Commission on Environmental Quality's ("Commission" or "TCEQ") preparation of the Draft Permit and this opportunity to provide comments, and it hereby provides comments to the terms and conditions of the Draft Permit, as follows:

**1. Impacts to Tributary of Little Duffau Creek**

The application seeks a new permit for a proposed 5,500 head operation at a previously permitted facility operated by Gerald Oosten, TPDES Permit No. 03142 for 1,950 cows. The site is bisected by an unnamed tributary of Little Duffau Creek and is bordered on its southwest side by Little Duffau Creek. In 2002, the then Texas Natural Resource Conservation Commission ("TNRCC") declined to renew Mr. Oosten's permit due to his failure to comply

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with an outstanding enforcement order and repeated violations of environmental regulations significantly impacting the unnamed tributary of Little Duffau Creek flowing through the site. Please refer to TNRCC Order dated May 31, 2002 attached hereto as Attachment 1. As discussed in Findings of Fact Nos. 49-56, the unnamed tributary of Little Duffau Creek was severely harmed by operations at the site, causing it to become eutrophic, produce methane gas, be devoid of naturally occurring life, and although normally an intermittent stream, run constantly with polluted water, among other impacts.

Prior to operations at the site, this unnamed tributary was used by downstream landowners for watering cattle, picnicking, wading and other activities. The waterbody is just now beginning to recover from the impacts of Mr. Oosten's operations. The Coalition is very concerned that this recovery should be protected and continued. Therefore, the application to commence new operations at this same site, with more than twice the number of permitted cows used by the previous owners, should be reviewed very carefully to ensure that every possible protection is given to avoid any discharge of pollutants that could inhibit the return of this waterbody and its uses.

In addition, the Coalition is concerned that the Draft Permit does not appear to include any conditions recognizing this unique situation with respect to the tributary of Little Duffau Creek. As will be discussed in detail in the comments below, the applicant proposes to modify its Retention Control Structures ("RCSs") to consolidate them and meet the 25-year, 10-day rainfall event criteria. At a minimum, given the heightened need for protection of the tributary running through the site and the fact that the permit renewal for the previous operation was denied, the Draft Permit should prohibit the commencement of new operations at this site until the applicant's proposed RCS modification is complete.

## **2. Volatile Solids Loading Rate**

The applicant uses a volatile solids loading rate of 5.3 pounds per day per 1000 cubic foot of treatment volume to calculate the minimum treatment volume. A value of 5.16 pounds per day per 1000 cubic foot of treatment volume would be more appropriate based on the documents on which the applicant relies. Attachments 2 and 3 are provided in support of this assessment. The applicant should be required to recalculate the minimum treatment volume accordingly.

## **3. LMU Sampling for NMP Preparation**

The applicant states in its nutrient management plan ("NMP") that "[t]he soil samples that were taken during December of 2007 were sampled by the previous consultant and do not reflect the [land management unit ("LMU")] designations currently being used in the application." It appears, then, that the applicant has prepared and submitted an NMP using soil sample results that do not correspond to the LMU designations in its application. This lack of correlation renders the NMP meaningless. It is unclear why the applicant is not required to provide sample results for its designated LMUs given that the process for such sampling would

only take a few weeks or less. The TCEQ should require that each LMU be sampled as designated and an accurate NMP based on these samples be prepared before the Draft Permit is considered technically complete and certainly before issuance. Otherwise, the permit will be issued with an inaccurate NMP.

**4. RCS Sampling for NMP Preparation**

The applicant has submitted data for only one RCS, without indicating which RCS was sampled. Prior to issuance of the Draft Permit, the applicant should be required to sample both RCSs and prepare an NMP based on the separate samples, as required by Draft Permit Provision X.O.

**5. Documentation of Process-Generated Wastewater Volume Basis**

The applicant represents in the application that the daily volume of process wastewater is estimated to be 15 gallons per day per head. Approximately two gallons per day per head consists of wet manure, leaving 13 gallons per day per head for cow washing and preparation, spilled milk and drinking water, equipment cleaning and sanitation, and manure flushing. Whether these activities can reasonably be expected to generate in the aggregate 13 gallons or less per day per cow will depend entirely on the type of operation and equipment that the applicant intends to use. None of this information is provided in the application. The applicant should be required to describe the operation and equipment and the amount of water produced in each activity in order to determine if the estimated volume is reasonable.

**6. Description of RCS No. 2 on the Site Map**

The applicant represents that RCS No. 2 and RCS No. 3 will be combined. Unless the levee is at least partially removed, and any spillway currently separating the two RCSs is completely removed so that they do not act in series, separate volume allocations should be made for RCS No. 2 and RCS No. 3. Each RCS should also have a pond marker. In addition, the current Site Map does not accurately depict the combined RCS. The applicant should be required to correct these deficiencies in the application before the permit is issued.

**7. Prohibiting Runoff from Entering RCS No. 1**

The applicant has represented on the site map and in volume calculations that RCS No. 1 will receive no runoff other than what falls directly on the settling basin and RCS surface. A special provision should be included in the Draft Permit prohibiting any runoff from being directed to RCS No. 1.

**8. Evaluation of Runoff Containment Prior to Expansion**

Although the applicant proposes to modify the RCSs and drainage area to contain the 25-year 10-day rainfall event, the RCSs must contain runoff from the 25-year 24-hour event until the modifications are completed. Nothing in the application suggests that any evaluation has been made of either RCS Nos. 1, 2, or 3 to determine if any are designed to meet the 25-year 24-hour design rainfall event capacity requirements using the existing drainage area. The applicant should be required to make this evaluation and show that its RCSs meet the 25-year 24-hour event criteria before the Draft Permit is issued. In the alternative, for the reasons discussed in Comment No. 1, the Draft Permit should be amended to make clear that operations cannot commence until the RCS modification is complete.

**9. Demonstration of Adequate Existing Capacity**

Even if the evaluation necessitated by Comment No. 8 demonstrated that the existing RCSs have adequate capacity based on as-built volumes, the sludge accumulation may be so large that RCS No. 1 can no longer maintain the minimum treatment volume or contain even the 25-year 24-hour rainfall event. The TCEQ should require a new capacity certification, including calculation of sludge accumulation, before the Draft Permit is issued. In the alternative, for the reasons discussed in Comment No. 1, the Draft Permit should be amended to make clear that operations cannot commence until the RCS modification is complete.

**10. RCS Surface Areas in the Stage/Storage Table of the RCS Management Plan**

Draft Permit Provision VII.A.5(a)(2)(iv) requires a stage/storage table that shows only storage volume at increments of one-foot of depth. In addition to storage capacity, an RCS surface area is an important component of properly calculating the evaporation in the monthly water balance. Without a stage/surface area table, there is no way to determine evaporation with any reliability, and no way for the TCEQ to determine if the RCS Management Plan and the water balance proposed in the application are valid. Since no stage/surface area data has been provided in the application for the RCSs (existing or proposed), the Draft Permit should require the surface area for each one-foot of depth. The effective surface area for evaporation should be based on the average surface area during each month. The Coalition believes that Draft Permit Provision VII.A.5(a)(2)(iv) should be revised as follows: “a stage/storage table for each RCS with minimum depth increments of one foot, including the storage volume and surface area provided at each depth.” Otherwise, the Coalition would appreciate an explanation of how the TCEQ plans to determine if the evaporation volumes used in the water balance are accurate.

**11. Review of RCS Management Plans**

The Draft Permit requires an RCS Management Plan to be prepared and placed into the pollution prevention plan (“PPP”) after the RCS is modified, but it does not provide any opportunity for TCEQ to review this plan before the Draft Permit is issued or even before it is

implemented after permit issuance. This approach precludes all opportunity for formal review by the TCEQ or by any member of the public, including the Coalition, of the plan's adequacy. The water balance and RCS Management Plan are each important in properly sizing the RCS. The water balance should be prepared in conjunction with an associated RCS Management Plan, or else it has little utility. The water balance and RCS Management Plan must be based not only on monthly rainfall runoff volumes, but also on the storage requirements and supplemental irrigation needed for crops during the high water demand months of the summer. Otherwise, the projected crop yields will not be met.

Under the Draft Permit, the only time the RCS Management Plan will be subject to scrutiny is during annual inspections by field staff. As a practical matter, this venue provides inadequate time for field inspectors to properly evaluate the validity of a plan. In addition, in some instances, TCEQ inspectors may not have the proper engineering background and training to make such an evaluation. The TCEQ should require that the RCS Management Plan be submitted before issuance of the Draft Permit. However, if the TCEQ is intent on issuing the Draft Permit without reviewing the RCS Management Plan first, the Draft Permit should be revised to at least require that the RCS Management Plan be submitted to the TCEQ permitting staff for review and approval upon permit issuance. Otherwise, the current approach adopted by the TCEQ ensures that the RCS Management Plan, which is critical to the proper operation of this facility, will be placed into effect with virtually no meaningful review.

**12. RCS Management Plan for the Existing RCSs**

The Draft Permit does not require an RCS Management Plan for the existing RCSs, each of which will be used until construction of the modified RCSs is completed. This appears to be inconsistent with the requirements of Title 30, Section 321.42(g) of the Texas Administrative Code, which requires, without exception, the development of an RCS Management Plan for all RCSs. In the alternative, for the reasons discussed in Comment No. 1, the Draft Permit should be amended to make clear that operations cannot commence until the RCS modification is complete.

**13. Including Slurry Storage Areas in RCS Volume Calculations**

Draft Permit Provision X.I.3 requires that "slurry removed from freestall barns must be stored within the drainage area of an RCS." The Site Map provided in Attachment A of the Draft Permit shows the slurry being stored in two areas designated for manure storage (manure storage includes slurry according to the note on the Site Map). These two areas—next to the silage pit and south of the cross ventilated barn—are not located within the drainage area of an RCS as required by Draft Permit Provision X.I.3. These areas should be bermed and the bermed area should be directed into the RCSs. The drainage areas should be corrected and the volume allocations recalculated.

**14. Slurry in Cross-Ventilated Barn**

Draft Permit Provision X.I.3 addresses slurry from the freestall barn. The cross-ventilated barn, however, is neither designated as a freestall barn on the Site Map nor is it referenced in this permit provision. Presumably, the cross-ventilated barn will be treated as a freestall barn. However, to avoid any future dispute over this definition, the cross-ventilated barn should also be included in Draft Permit Provision X.I.3 just as it is in Provision X.L.

**15. Calculations for Sludge Accumulation Rate from Open Lot Runoff**

The applicant has calculated the sludge accumulation volume in RCS No. 2 based on the Kansas Agricultural Field Waste Handbook. The applicant has not provided any of the data or values that were used in this formula, however, making it difficult to meaningfully evaluate and confirm the applicant's calculation. Additionally, neither the TCEQ nor the applicant explain why an equation developed based on conditions commonly experienced in Kansas is applicable in Texas. There is no indication that this methodology has been adopted by the USDA for use in Texas.

**16. Design Specifications and Capacity Certification for Settling Basins**

The TCEQ has concluded that settling basins meet the definition of RCSs. Because Title 30, Section 321.38(e)(2) of the Texas Administrative Code requires, without exception, that design specifications and completed construction specifications for all RCSs be certified by a licensed Texas professional engineer, and because the applicant has not provided any such certifications for the proposed settling basins, it appears that the Draft Permit does not fully satisfy TCEQ rules. While the Coalition agrees that a settling basin does not need to be designed to store the 25-year 10-day design volume, it should be properly sized and have adequate capacity to allow the projected solids removal rate to occur. The applicant should be required to provide completed construction specifications certified by a licensed Texas professional engineer for the settling basins, as required by the rules for RCSs, before the Draft Permit is issued.

**17. Justification of Settling Rates**

The applicant has indicated that the settling basins will remove 50 percent of solids based on estimates from the Midwest Plan Service Structures and Environment Handbook. The removal efficiencies listed in the Midwest Plan Service Structures and Environment Handbook, however, are tied directly to specific settling basin (weir notch or dewatering) design requirements. While the applicant anticipates a 50 percent removal efficiency based on information provided in the handbook, it has provided no indication that it has designed its settling basin based on the corresponding design requirements listed therein. If the settling basins are not designed or ultimately constructed in a manner that satisfies the criteria listed in the Midwest Plan Service Structures and Environment Handbook, the applicant should be required to disclose the data that justifies its purported 50 percent removal rates.

**18. Failure to Require Specific Schedule for Solids Removal in Settling Basins**

Draft Permit Provision X.M. requires the solids in the settling basin to be removed on a “regular and consistent basis so as to assure attainment of the 50% designed removal efficiency.” Given the importance of removing solids to maintain the removal efficiency of the settling basin, these removal requirements in the Draft Permit should be more specific and tied directly to requirements of the specific settling basin design employed by the applicant.

Table 2.2a in the application indicates that the settling basin will have a surface area of 0.11 acres. The Midwest Plan Service Structures and Environment Handbook referenced by the applicant suggests that a settling basin of this type be shallow. Assuming, therefore, a settling basin depth of five feet, the settling basin would have a volume of 23,958 cubic feet (even less if the shape is trapezoidal). According to Table 2.1, this settling basin will be receiving 62,500 lb per day of manure from the parlor, or about 7,494 gallons per day (1,002 cubic feet per day) of wet solids. Using the applicant’s anticipated 50 percent removal efficiency, this settling basin will reach maximum capacity in 48 days after operation. This assumption of a consistent 50 percent removal rate until capacity is reached is a generous assumption in the applicant’s favor, however, because the basin will actually stop achieving 50 percent removal efficiency long before it is completely filled. If the TCEQ intends for the applicant to be bound to its anticipated 50 percent removal efficiency rate, the Draft Permit should be revised to require the applicant to remove solids from the settling basin before the basin reaches half of its maximum capacity. Therefore, the solids should be removed at least every 24 days based on an assumption of five-foot of depth in the basin, and even more frequently if the basin is designed and constructed to have an even shallower depth than five feet.

**19. Designation of Solids from the Settling Basin**

Draft Permit Provision X.G.1 defines settling basin solids as manure. This definition, however, contradicts Title 30, Section 321.32(49) of the Texas Administrative Code, which classifies settling basin solids as sludge. In Draft Permit Provision X.G.2, the TCEQ acknowledges that settling basin solids are different than manure when it requires that settled solids be sampled separately. Since settling basin solids are clearly materials resulting from the “sedimentation of waste in a retention control structure,” the Draft Permit should be revised to correctly define settling basin solids as sludge. The TCEQ has previously stated that because settling basins provide no long-term storage allocation for solids, the ED does not consider the settling basin solids to be sludge. This reasoning, however, is flawed. First, there is no distinction in the definition of sludge between long-term or short-term storage of solids. Second, these materials are solids generated by treatment (*i.e.*, sedimentation), not just storage. Third, nothing in the application could be said to demonstrate that these solids will not be stored for a long period of time. There simply is no design information provided in the application for the settling basins to support this contention.

**20. Monitoring of Sludge Accumulation in RCSs**

The buildup of sludge is one of the most common causes of reduced capacity in an RCS. The Draft Permit, however, does not require the applicant to measure sludge volume in the lagoons until two or three years after the date of permit issuance (the Draft Permit, without any real explanation, contains two different monitoring schedules). As discussed above in these comments, the Coalition does not believe that the applicant has provided any justification for its stated sludge accumulation rates. Additionally, the water levels in treatment RCSs are always higher than the sludge level, and the water levels in the storage RCSs are usually kept higher than the sludge levels, so the daily pond marker readings are of little practical assistance in determining excessive sludge accumulation. Because once a problem exists it often can take years to correct to the point that the capacity can be re-certified, the Draft Permit should be revised to require that the sludge accumulation be determined annually.

**21. Description of Capacity Certifications and Definition of Requirements**

Draft Permit Provision VII.A.3(a)(2) should be revised to clarify that each RCS requires a certification of both total as-built capacity as well as the remaining capacity after sludge accumulation. The Coalition suggests revising Draft Permit Provision VII.A.3(a)(2) by inserting the following sentence: "Capacity certifications shall include both the total as-built RCS capacity and the remaining RCS capacity due to sludge accumulation." If there is no sludge accumulation (*e.g.*, in the case of a newly constructed RCS), the certification should be required to state that it is an as-built certification and there is no sludge accumulation. This will avoid questions in the future.

**22. Certification of Concrete Settling Basins As Structurally Sound**

The site map (Attachment A in the Draft Permit) shows two settling basins adjacent to RCS No. 1, but it does not indicate whether they are earthen or concrete. For earthen settling basins, the applicant must provide a certification that there is no hydrologic connection between the basin and any waters in the state. The certification must also state that no significant leakage will occur based on demonstrated evidence. Neither certification was included with the application. Additionally, if any of the applicant's proposed settling basins are designed to be concrete, it has provided no engineer's certification that the concrete settling basins are indeed concrete with both a concrete bottom and sides of adequate height. To the extent that the applicant intends to rely on any concrete settling basins as part of its proposed operation, it should be required to submit a certification that they are designed with appropriate liners or have been constructed of concrete with no cracks and no leaks before the Draft Permit is issued.

**23. Liner Certifications for Earthen Storage Pits and Settling Basins**

The site map (Attachment A in the draft permit) indicates the presence of a silage storage pit and manure storage pit with only concrete bottoms. Presumably the sides of these pits are

earthen. According to the application, no liner certifications have been provided for the sides of these pits. It is difficult to understand how the Draft Permit could be considered technically complete without having these certifications. Before the Draft Permit is issued, the applicant should be required to submit proper liner certifications for the silage storage pit and manure storage pit. Additionally, it is not clear whether the two settling basins adjacent to RCS No. 1 are earthen or concrete. If these settling basins are indeed earthen, then the applicant should be required to submit proper liner certifications prior to permit issuance, as well.

**24. Embankment Construction Requirements**

The applicant indicates that it is unaware when the RCSs were constructed, and has submitted no certification of how the embankments were originally constructed. As a result, each RCS should be held to the current embankment requirements, which include specifications of lift thickness and compaction testing. The Draft Permit should be revised to require that each RCS be reconstructed in accordance with current embankment construction requirements.

**25. Liner Certification for RCS Nos. 1, 2 and 3**

The applicant submitted a liner certification for RCSs No. 1 and No. 2, each dated May 21, 2007, in the application. Neither of the certifications, however, meets the requirements in effect at the time they were developed. The certifications should each have included documentation regarding hydraulic conductivity testing, taken at the optimum moisture content and thickness of the natural materials underlying and forming the walls of the structure up to the wetted perimeter. The applicant has supplied no data indicating that any such testing was conducted at optimum moisture content. The map supplied by the applicant indicates that no samples were taken in the walls of either structure. In addition, the applicant intends to combine RCS No. 3 with RCS No. 2. However, it has provided no certification at all to demonstrate that RCS No. 3 even has a liner.

**26. Requiring Proper Liner Certifications Before RCS Modifications**

The Draft Permit requires each RCS to be certified after it is modified. However, as discussed above, the TCEQ is allowing the applicant to employ inadequately certified RCSs in the interim. The rules do not appear to allow the use of improperly-certified RCSs at any time, even during the time that modifications are being made. As discussed in previous comments, the Draft Permit should be revised to prohibit the commencement of operations until the RCS modification is complete.

**27. Liner Testing Specifications in the Draft Permit**

The TCEQ has previously required liner hydraulic conductivity certifications to be based on a minimum of one floor sample per acre of surface area and one sidewall sample for each two acres of surface area. The Draft Permit, however, allows for certifications based only on one

sample per acre of surface area, and it can be distributed between the sidewalls and the floor. The Draft Permit should be revised to require that liner hydraulic conductivity certifications be based on a minimum of one floor sample per acre of surface area and a minimum of one sidewall sample for each two acres of surface.

## **28. Embankment Testing Specifications**

Title 30, Section 321.38(g) of the Texas Administrative Code requires that the Draft Permit identify the required design specifications for all RCSs, including procedures and minimum requirements for liner and embankment testing. The Coalition agrees with the TCEQ that Draft Permit Provision VII.A.3(g)(3), concerning Liner Sampling and Analysis, is appropriate. However, while this addresses the Coalition's liner testing concerns, it does not address the Coalition's concerns regarding embankment construction testing. The Coalition suggests that Draft Permit Provision VII.A.3(f)(4) be revised to: 1) require the field density tests to be based on predetermined moisture-density compaction curves, 2) define the frequency of testing (*e.g.*, number of tests per specific area per lift), 3) require compaction testing on each lift during the construction of the liner, not on the last lift after completion of the liner, 4) require documentation of compaction test locations and results to be provided to the TCEQ, and 5) require continuous on-site inspection during construction.

The importance of RCS embankment integrity to protecting environmental and human health cannot be overstated. The TCEQ must have an opportunity to review the compaction testing results so it can draw independent conclusions regarding the adequacy of the certifications.

## **29. Application of Compaction Testing Standards in Effect at the Time of Construction**

Title 30, Section 321.38(e)(3) of the Texas Administrative Code requires RCS construction to be conducted in accordance with standards that are in effect at the time of the construction. Draft Permit Provision VII.A.3.(f)(4) refers to ASTM standard D6938-07. This standard has been superseded by ASTM standard D3938-08a. The referenced standard "D6938-07" should be changed to simply "D6938," and the following sentence should be added to Draft Permit Provision VII.A.3.(f)(4): "The ASTM standards shall be those that are in effect at the time of construction."

## **30. Soil Quality Standards**

Title 30, Section 321.38(g)(1) of the Texas Administrative Code requires that the Draft Permit describe the standards for quality of soils that are used in construction of the RCS. Except for a statement that the soils used be free of foreign materials, the Draft Permit contains no soil quality standards. The Draft Permit should be revised to describe minimum values for the following quality of soil standards: plasticity index, liquid limit, percent passing 200 mesh sieve, and percent passing one-inch screen.

**31. Extensions to the RCS Compliance Schedule**

The compliance schedule in Draft Permit Provision X.A.2 would allow the applicant to receive multiple extensions to the deadline for completing its RCS modifications. Because of the importance to water quality of timely completing RCS modifications, the Draft Permit should be revised to articulate a list of specific circumstances that qualify for an extension (*e.g.*, a documented period of extended bad weather). In the alternative, as discussed in previous comments, the Draft Permit should preclude the commencement of operations until the RCS modifications are complete.

**32. Description of Structural Controls**

The Site Map of the production area (Attachment A in the Draft Permit) provides an outline of the drainage areas, but it does not provide an adequate description of structural controls, particularly with respect to the berms and ditches. The map denotes drainage areas with a dark dashed line but provides no information regarding whether the dashed lines are berms or ditches, nor does it provide any insight on the size of the berms and ditches (*i.e.*, width, height, and depth).

The berms and ditches are an obviously important component of the facility, necessary to prevent contaminated runoff from leaving the site. An inspector can be expected to observe whether berms and ditches are present, and can judge the height, depth and width of the structures, but may not have the requisite training necessary to determine whether the controls are adequate to contain the flows. The inspector certainly could not conduct this type of assessment without performing the necessary surveying and without making the necessary engineering calculations first, something that is unlikely to happen in the field. Therefore, some means must be given to the inspector to evaluate compliance. Additionally, if the operator is not given an adequate description of structural controls, it will not be able to determine its own compliance. The application and the Draft Permit should each describe the size of, and construction methods used for, these berms and ditches in sufficient detail and construction method so that TCEQ inspectors can determine if the facility is in compliance and so that the operator can make adequate repairs when necessary.

**33. Adequacy of Dewatering Capability**

The applicant has indicated that it has a dewatering capacity of 400 gpm and 250 gpm for its center pivot system and walking big gun, respectively. Yet it has provided no information that would allow for any determination of whether this dewatering capacity is adequate or even justifiable—no information indicating the pump models used, their horsepower, or the dynamic head for these pumping systems. Without any of this information, it is only possible to speculate whether the applicant, in fact, has such capacity. If it is using a rated flow, this does not take into account head losses in the piping and irrigation nozzles. Title 30, Section 321.38(f) of the Texas

Administrative Code requires that “[a]n irrigation system or other liquid removal system used by an AFO must be designed to ensure that the system is capable of dewatering the RCSs on a regular schedule.” Nothing submitted in the application suggests that the applicant has ensured that its system is capable of dewatering the RCSs on a regular schedule. Before the Draft Permit is issued, the applicant should be required to provide location of the pumps and transfer lines, the rated capacities of the pumps, the head losses in the transfer lines and irrigation nozzles, and the actual delivery capacities of its system, so that the TCEQ can confirm its capacity. In the alternative, the Coalition would appreciate an explanation as to why such confirmation may not be necessary in TCEQ’s view.

**34. Annual Facility Inspection Report**

Draft Permit Provision VII.A.10(a)(5) requires an annual site inspection. However, this provision does not require a report of the findings to be prepared and sent to the TCEQ, as required by Title 30, Sections 321.46(c)(2) and (e)(2) of the Texas Administrative Code. The TCEQ in previous responses to comments has stated that these rules do not require these records to be submitted to TCEQ. Rule 30 TAC § 321.46 (c) (2) states: “A complete inspection of the facility, including the CAFO, the associated control facilities, and LMUs shall be completed by the CAFO operator and a report documenting the findings of the inspection made at least once per year.” Rule 30 TAC § 321.46 (e) (2) states “CAFO operators shall provide all other reports required by this subchapter to the Office of Compliance and Enforcement, Enforcement Division.” The Coalition interprets these rules to require filing of the annual site inspection report with the Enforcement Division, and the Draft Permit should be revised accordingly

**35. Requiring Five-Year Evaluation Report to Be Sent to TCEQ**

Draft Permit Provision VII.A.10(b) requires the five-year evaluation report to be kept in the PPP, but the provision does not require the report to be sent to TCEQ, as required by Title 30, Section 321.46(e)(2) of the Texas Administrative Code. For the same reasons discussed in Comment No. 33 above regarding the annual site inspection report, the Draft Permit should be revised to require that the five-year evaluation reports be forwarded to TCEQ’s Office of Enforcement and Compliance.

**36. Requiring Five-Year Evaluation to Certify the Adequacy of Structural Controls**

The five-year evaluation referenced in Draft Permit Provision VII.A.10(b) requires a licensed Texas professional engineer to review the existing engineering documentation, complete a site evaluation of the structural controls, review existing liner documentation, and complete and certify a report of his or her findings. The provision does not, however, require the engineer to certify structural control adequacy. The purpose of the five-year evaluation is presumably to determine whether the structural controls are adequate to prevent unauthorized discharges. In addition to requiring a simple certified report of findings, the Draft Permit should require that the engineer certify structural controls adequacy. The fact that a mere report of findings was

prepared might lead to an unjustified conclusion that the controls are adequate. For example, the engineer might certify that berms were present and were of a certain height. This would not, however, provide any information as to whether the berms were adequate. The TCEQ in previous responses to comments has stated that “the site evaluation would be a comparison of what is required by the engineering documentation and the actual structural controls, as constructed, operated, and maintained.” Unfortunately, the application contains no engineering documentation for much of the facility, particularly the berms.

**37. Certification of Structural Controls Prior to Issuance of Permit**

Permit Provision VII.A.10(b) requires a licensed Texas professional engineer to complete a site evaluation of the structural controls once every five years and certify a report of findings, but it does not require a certification that the structural controls are adequate prior to issuance of the permit. The structural controls, particularly the berms, are an integral part of the facility necessary to prevent contaminated runoff from leaving the site. If the berms are not sized properly, runoff will leave the facility during significant rainfall events. Without this certification, one cannot be sure that all berms are constructed and functioning properly to contain contaminated runoff and prevent it from leaving the site. The applicant should be required to provide a current certification of structural controls before the Draft Permit is issued.

**38. Adequate Sampling of Wastewater and Solids**

The Draft Permit requires only one annual sample to be collected for wastewater, “dry” manure, slurry, and settling basin solids. The entire NMP and future application to third-party fields are based on these single annual samples. These single samples, if not representative, could drastically underestimate phosphorus loading to a field. Since the TCEQ will require the applicant to take only one sample per year of these materials, the applicant must be required to follow a sampling protocol that will yield the most reliable sampling results. Instead, the Draft Permit would allow the applicant to sample wastewater from the surface of each RCS. Taking a sample from the surface of a quiescent RCS, however, will produce significantly different sample concentrations than if the samples were taken from the irrigation pipeline. When the irrigation pumps in the RCS are operating, sludge in the bottom of the RCS is agitated and becomes mixed with the wastewater. Because this sludge contains such high levels of phosphorus, the wastewater that is actually being used to irrigate the fields contains much higher levels of phosphorus than does the wastewater that is measured from the surface. The concentration of phosphorus in the RCS can be additionally influenced based on the antecedent rainfall or drought conditions, which may cause varying degrees of dilution or concentration. The Draft Permit should be revised to require that RCS samples be obtained from the irrigation pipeline following the pump, rather than from the surface of the RCS, to provide a more realistic estimate of what is actually being applied to the field.

In addition, RCS samples should be taken much more often than once each year—preferably at least once during each irrigation event. Wastewater treatment plants often take

samples daily. At a minimum, one sample per month should be required during irrigation. An average of the sampling events over the year could be utilized in updating the NMP.

Similarly, more than one annual sample should be required for manure, slurry, and settling basin solids (*e.g.*, one each month or one from each transport event). Taking only annual samples from these solids will likely result in significant errors in calculating the amount of nutrients applied to a field. Moisture content plays an important role in calculating the amount of nutrients applied, as well. If the sample is not taken concurrently with the application of the solids, significant errors will likely be made when calculating the application rates. If the solids are sampled while having a high moisture content and then applied much later, when they have a much lower moisture content, the calculated nutrient application rate will be significantly underestimated. A requirement similar to that for sludge in Draft Provision X.K, which requires an analysis for each haul off, should be required for manure, slurry, and settling basin solids.

### **39. Managing Phosphorus Production**

The manure production tables in the application indicate that the total phosphorus produced by the proposed 5,500 cows is 1,784 lb/day P<sub>2</sub>O<sub>5</sub>. This is equivalent to 651,160 lb/year P<sub>2</sub>O<sub>5</sub> (1784 x 365). The NMP (dated November 7, 2008) indicates that the amount of phosphorus to be applied to the LMUs is only 9,191 lb/year P<sub>2</sub>O<sub>5</sub>. This leaves 641,969 lb/year P<sub>2</sub>O<sub>5</sub> in the manure, slurry, sludge, and wastewater that must be managed. Neither the application nor the Draft Permit give any specific indication or instruction regarding the location of where these solids and wastewater may be applied. Although out-of-watershed composting is listed as a possible option, there is no indication that any of the manure will actually be sent outside of the Bosque River watershed. Thus, a total of 641,969 lb/year P<sub>2</sub>O<sub>5</sub> (98.6 percent) from manure, slurry, sludge, and wastewater will be potentially managed on third-party fields within the North Bosque River watershed without any nutrient management plan, and with very little regulation or oversight. If all of the 641,969 lb/year P<sub>2</sub>O<sub>5</sub> from solids and wastewater is applied to third-party fields in the watershed that have soil concentrations of less than 151 ppm P, approximately 4,338 additional acres (assuming three coastal cuts) will have phosphorus applied at application rates ranging between the nitrogen crop requirement rate and twice the crop phosphorus removal rate. The application of phosphorus at two times the crop phosphorus removal rate (not to exceed the nitrogen rate) will increase the soil P in these additional acres by 16 ppm per year. The cumulative impact will be substantial. Additionally, these additional acres will be virtually unseen, and thus unaccounted for, by TCEQ inspectors.

It is unfortunate that the TCEQ would allow 98.6 percent of the phosphorus (641,969 lb/year P<sub>2</sub>O<sub>5</sub>) to be applied throughout the watershed with less oversight than the "regulated" LMUs that are located at the facility. Not only does this undercut efforts to achieve the goal of the TMDL to remove 50 percent of the collectable solids from the watershed, it does not even adequately regulate waste application within the watershed. Failure to plan for proper management of this phosphorus will lead to excess and unmanaged phosphorus distribution

within the watershed, resulting undoubtedly in further degradation of water quality in the Bosque River and its tributaries.

**40. Failure to Remove 50% of the Solid Manure from the Watershed as Modeled in the TMDL**

The TMDL for the North Bosque watershed recommends removal of 50 percent of the manure in order to meet the water quality goals. The CDM Erath County Animal Waste Management Study performed for BRA in September 1998, and the SWAT modeling that was done in support of this TMDL, both supported the assumption that 50 percent of the solid manure (38.1 percent of the total manure production) would be removed from the watershed. If this manure is not removed from the watershed, the water quality modeling shows that the water quality goal will not be met. Although there are several disposal options listed in the Draft Permit for manure, TCEQ is still allowing 100 percent of the applicant's manure to be applied in the watershed. The Draft Permit contains no requirement for removal of 50 percent of the solid manure. Neither the applicant nor the TCEQ have provided any information to demonstrate how applying 100 percent of the manure within the watershed is consistent with the accepted water quality modeling. Collectively, there is no data to indicate that anywhere close to 50 percent of the solid manure from dairies in the North Bosque River watershed is being removed from the watershed, even though the TMDL Implementation Plan has been in effect since 2002. The Draft Permit should be revised to require that the applicant remove 50 percent of the solid manure generated at its proposed operation from the North Bosque River watershed.

**41. Identification of Operative NMP**

Draft Permit Provision VII.A.8(a) indicates that the NMP submitted in the application is to be implemented upon permit issuance. The applicant, however, has submitted multiple NMPs for this facility, and the Draft Permit does not clarify which one is applicable and should be reviewed. The Draft Permit should be changed to indicate the date of the NMP so that it is clear to all which NMP this facility will operate under for the year following permit issuance.

**42. Curve Numbers in Phosphorus Index**

The applicant uses curve numbers in the Phosphorous Index based on LMUs that are protected from grazing. However, the applicant plans to graze each LMU except LMU No. 3. The applicant should be required to adjust the curve numbers to account for grazing, and it should be required to correct the NMP accordingly.

#### **43. Limiting LMU Size**

Texas NRCS Code 590 requires sampling to be conducted in accordance with Texas A&M University ("TAMU") guidance.<sup>1</sup> According to TAMU guidance, LMUs must measure 40 acres or less in size. LMU No. 3, however, measures 51 acres in size. Additionally, LMU No. 4 is 57 acres, and LMU No. 5 is 44 acres. To ensure consistency with Title 30, Section 321.42(i)(5)(A), each of these LMUs should be subdivided, and the applicant should be required to conduct new soil sampling on the newly configured, smaller LMUs. A revised LMU map and NMP should also be prepared.

#### **44. Crop Removal Rates for Phosphorus in NMP**

The crop and yield for LMU No. 6 planned by the applicant is "Coastal graze 1 AU/1 ac, SG mod graze." According to the NMP, the associated crop removal rate for phosphorus is 90 lb P<sub>2</sub>O<sub>5</sub> per acre per year. Although this value is embedded in the NRCS Code 590 spreadsheet, it is an unrealistic value. No literature on phosphorus removal rates in grazed fields that show phosphorus removal rates from grazing as low as 2 to 8 lb P<sub>2</sub>O<sub>5</sub> per acre per year support a removal rate of 90 lb P<sub>2</sub>O<sub>5</sub> per acre per year. By comparison, the phosphorus crop removal rate for 5-6 cut coastal hay is 93 lb P<sub>2</sub>O<sub>5</sub> per acre per year—only marginally greater than for grazing. Similarly, the crop and yield planned by the applicant for LMU Nos. 1, 2, 4 and 6 is "Coastal Hay 3 cut, SG mod graze." According to the NMP, the associated crop removal rate for phosphorus is 96 lb P<sub>2</sub>O<sub>5</sub> per acre per year. Since the crop removal rate for "Coastal 3-cut Hay alone" is 74 lb P<sub>2</sub>O<sub>5</sub> per acre per year, the removal attributed to grazing small grains is 22 P<sub>2</sub>O<sub>5</sub> per acre per year, which is still too high, but not quite as unrealistic as for "Coastal graze 1 AU/1 ac, SG mod graze."

Since most of the phosphorus removed by grazing cows is recycled to the soil by manure deposition, phosphorus is actually removed from the soil of a grazed field only through the weight gain of the cows. In a coastal hay field, the phosphorus is removed through an almost complete removal of biomass by harvesting the crop. A footnote on Table 3 of the applicant's NMP even states that "[w]hen crops are used for grazing, only a portion of the nutrients used by the crop are removed from the field in live weight gain of the livestock, the remainder is returned to the land in manure and urine." The book *Southern Forages* estimates the N, P, & K removed in 100 pounds live weight gain as follows: 2.5 lbs N, 0.68 lbs P, 0.15 lbs K.

The values embedded in the NRCS Code 590 spreadsheet for grazing simply do not account for phosphorus recycling through manure deposition of the grazing cows. The failure of either TCEQ or the applicant to account for this will result in over-application of phosphorus and rapid phosphorus buildup in the soil. The NMP should be revised to reflect more realistic phosphorus removal rates for grazing.

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<sup>1</sup> p. 590-2.

**45. Documenting Soil Test Locations and Disclosing the Time of Year Sampling Will Be Conducted**

Texas NRCS Code 590 requires that the NMP include information describing the approximate locations of where soil tests will be taken and the time of year that sampling will be conducted.<sup>2</sup> The applicant's NMP does not include this information. To ensure that the NMP is consistent with Section 321.42(i)(5)(A) of the Texas Administrative Code, which requires waste to be applied using an NMP that is in accordance with NRCS Code 590, the applicant should be required to revise its NMP to include this important information.

**46. Considering Soil Nutrient Content in Calculating Agronomic Needs**

The basic methodology employed by the applicant to calculate agronomic rates in its NMP is flawed because the NMP does not account for the nutrients available to plants in the soil. Instead, the NMP allows for application of the annual crop requirement, regardless of the actual soil nutrient content, until the soil reaches a concentration of 200 ppm P. Even at 200 ppm P, the NMP allows continued application of nutrients even though there is more than four to seven times the amount of nutrients present than what is necessary for optimum growth. The phosphorus index cannot be relied upon here, because it does not take into account the soil nitrogen at all. More importantly, the phosphorus index does not take into account any increase in soil phosphorus once the soil phosphorus exceeds 60 ppm P.

By analogy, the TCEQ more appropriately makes the agronomic rate calculations when determining agronomic rates for the application of biosolids from municipal treatment plants. For biosolids permit applications, the TCEQ requires that the agronomic rate calculations take into account the nutrients in the soil by taking the crop requirement and subtracting the nutrients available in the soil. Only the amount of nutrients needed to satisfy the overall crop requirement for that year is allowed to be applied. If the amount of nutrients in the soil exceeds the crop requirement, no additional nutrients can be added during that year. The nutrients in biosolids are not fundamentally any different from the nutrients in dairy waste. From a practical nutrient management standpoint, there is no reason that the TCEQ should calculate the agronomic rate any differently for the application. The Draft Permit should allow application of only that quantity of nutrients that will benefit optimum crop production (*i.e.*, beneficial use). Plant available nitrogen, not phosphorus, is the nutrient that most often needs to be added as fertilizer to increase crop yields. Dairy waste is obviously composed of a considerable phosphorus component. The fact that crops need additional nitrogen does not, *per se*, justify also adding phosphorus in watersheds that are impaired for phosphorus. Adding phosphorus in these cases can be detrimental, not beneficial. If the crops need additional nitrogen but not phosphorus, the nitrogen should be added using a source that is low in phosphorus (such as commercial fertilizer).

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<sup>2</sup> p. 590-7.

**47. Accounting for Nutrients Available in the Entire Root Zone**

The methodology used by the applicant to calculate agronomic rates in the NMP is flawed because the NMP fails to account for the nutrients available to plants in the entire root zone (*i.e.*, both 0-6 inches and 6-24 inches). The methodology only accounts for the nutrients in the 0-6 inch layer to calculate crop requirements and removal. The fact that plants obtain nutrients from the entire root zone, not just the 0-6 inches zone, is widely accepted among scientific professionals. The TCEQ has acknowledged this fact in its biosolids permit applications, where the agronomic rate calculations must account for the soil nutrients in both the 0-6 inch and 6-24 inch soil horizons. Even the applicant seems to acknowledge this in its NMP: "When applying commercial fertilizer, recommendations should account for nutrient residues within the 6-24 inch profile." Nutrients derived from commercial fertilizer are no different than those from organic waste, and the recommendations should be the same if the recommendations are based on agronomic needs. By failing to account for the nutrients in the 6-24" layer, the NMP overestimates the amount of nutrients needed, and underestimates the amount of nutrients removed, from the 0-6 inch layer by crops. As a result, the NMP virtually assures that the phosphorus will rise in the 0-6 inch soil layer, even when nutrients are applied at the "crop removal rate."

**48. Waste and Wastewater Application to Fields Exceeding 200 ppm P**

The North Bosque River TMDL Implementation Plan, dated December 2002, states that TCEQ will take formal enforcement action if CAFOs "apply waste or wastewater to a WAF that has been documented to have exceeded 200 parts per million phosphorus in Zone 1 of the soil horizon."<sup>3</sup> Draft Permit Provision VII.A.8(c)(2) undermines this position by allowing application to continue as long as an NUP has been prepared and approved. The Draft Permit allows soil phosphorus concentrations to continue rising as long as they do not exceed 500 ppm. But even above 500 ppm, application can continue as long as the NUP contains a phosphorus reduction component. Application of waste and wastewater to fields in excess of 200 ppm P, and particularly those with concentrations of 500 ppm P or greater, should be prohibited outright in order to be consistent with the language of the TMDL. At a minimum, fields in excess of 200 ppm P should be governed by an NUP containing a phosphorus reduction component subject to Draft Permit Provision VII.A.8(c)(5).

Furthermore, regardless of the language in the TMDL, the 200 ppm phosphorus is four to seven times the amount of phosphorus needed for optimum growth of the proposed crops (*i.e.*, four to seven times the agronomic need). TCEQ rules define "beneficial use" to mean the "application of manure, litter, or wastewater to land in a manner that does not exceed the agronomic need or rate for a cover crop." Applying additional waste to soil that already contains four to seven times the agronomic need is not a beneficial use of the waste.

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<sup>3</sup> p. 16.

**49. Regulation of Manure Application on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. Draft Permit Provision VII.A.8(e)(5)(i)(B) requires incorporation of manure on cultivated fields within 48 hours after land application. It provides no similar restrictions for manure application on non-cultivated fields. Because of the significant damage to vegetation and reduction in yield and nutrient uptake that is associated with the application of manure to non-cultivated fields, the practice should be prohibited altogether. At a minimum, application of manure on non-cultivated fields within 500 feet of a stream should be prohibited, especially since no buffers are required for third-party fields.

**50. Regulation of Wastewater Application on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. According to the Technical Information Packet, the applicant plans to apply wastewater to third-party fields. Because the applicant would appear to be prohibited from using its irrigation system to deliver the wastewater—an exercise of control over the third-party field that is prohibited by the third-party fields rules—the Draft Permit should be revised to prohibit application of wastewater on third-party fields unless the owner of the third-party field transports the wastewater from the CAFO by truck.

**51. NRCS Code 590 Requirements on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. Draft Permit Provisions VII.A.8(e)(5)(i)(C-E) should be revised to preclude the application rate from exceeding the requirements of NRCS Code 590. Although the criteria for application rates on third-party fields are more restrictive than for LMUs in most instances, it is possible for third-party fields to meet the requirements of Draft Permit Provisions VII.A.8(e)(5)(i)(C-E) yet fail to meet the requirements of NRCS Code 590. For example, NRCS Code 590 requires that the application rate never exceed the annual crop P requirement in fields with a P-Index rated of “Very High.” Draft Permit Provision VII.A.8(e)(5)(i)(C) allows application at the nitrogen crop requirement rate when the field is less than 50 ppm P, irrespective of the P-index. Adherence to NRCS Code 590 should be required in this instance, where it is more restrictive. It would appear unreasonable to allow application at the nitrogen rate to a field with a Very High P-index rating even if it does have less than 50 ppm P. Fields with a Very High P-index have the highest vulnerability as sources of P loss in surface runoff. While the rules for third-party fields do not specifically require adherence to the application rates in NRCS Code 590, the TCEQ should nevertheless revise the Draft Permit to ensure that application rates for third-party fields are not less restrictive than application rates for LMUs in these situations.

**52. NMP for Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. According to Draft Permit Provision VII.A.8(e)(5)(i)(A), no NMP is required for third-party fields. Since an NMP is the necessary planning tool for determining the appropriate application rates, it is difficult to foresee how the applicant can comply with Draft Permit Provisions VII.A.8(e)(5)(i)(C-E) unless it prepares an NMP for third-party fields. An NMP should be required even if the criteria for the NMP are different than those in NRCS Code 590.

**53. Reporting of Crop Yields on Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. While Draft Permit Provision VII.A.8(e)(5)(iv) requires the applicant to record the actual yield of each harvested crop in the PPP, it does not require the information to be reported. Similarly, Draft Permit Provision VIII.B.7 does not require reporting of this information in the annual report. Draft Permit Provision VII.A.8(e)(5)(iv) should be revised to include a requirement that records of crops and crop yields on third-party fields be submitted to the TCEQ quarterly. Draft Permit Provision VIII.B.7 should similarly be amended to require that records of crops and crop yields be submitted to the TCEQ in the annual report. Otherwise, the phosphorus crop removal rates cannot be calculated and compliance with the phosphorus application rate limitations cannot be determined.

**54. Sludge Application to Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit (*see* Comment No. 61), the provisions should be modified as follows. Draft Permit Provision VII.A.8(e)(5) allows sludge to be applied to third-party fields. Since Title 30, Section 321.42(j) of the Texas Administrative Code allows only manure, litter, and wastewater to be applied to third-party fields, Draft Permit Provision VII.A.8(e)(5) should be revised accordingly.

**55. Demonstration of Sustainability for the Permit Term**

The NMP provided in the Draft Permit addresses only the first year of operations after permit issuance. It does not address the subsequent years of the five-year permit term. A five-year NMP should be prepared that shows the impacts of all nutrient management issues over the five-year permit term. The Draft Permit should establish an overall maximum application rate that allows the facility to operate in a sustainable manner over life of the permit. An annual NMP can then be used to adjust the annual application schedule and individual field application rates based on annual soil sampling and crop production. If the NMP has any meaning, it must be relied upon as a reasonably accurate predictor of field nutrient loading, assuming the wastewater and manure sampling is representative. As a fundamental matter, the applicant

should be required to demonstrate that, based on projected application rates, it has enough land to sustain its operation for the five-year term of the permit.

**56. Identification of Historical Waste Application Fields**

Title 30, Section 321.42(k) of the Texas Administrative Code requires that soil samples be taken in historical waste application fields in addition to the active LMUs. The results of these soil samples then must be furnished to the TCEQ. Although Draft Permit Provision X.P. requires the applicant to maintain a map of the historical fields in the PPP, the historical fields have not been identified in the application or in the Draft Permit. The Draft Permit should be revised to include the names and locations of the historical fields.

**57. Containment of Runoff from Silage, Commodity, Manure, and Hay Storage**

Draft Permit Provision X.H requires that runoff from silage, commodity, manure and hay storage be contained outside of the RCS drainage area. Appropriate provisions for containment are to be placed in the PPP, but these controls are not described in the application. The appropriate provisions for containment should be part of the application so that it can be properly reviewed to determine if the containment provisions and design are adequate.

**58. Prohibition of Operation Until CNMP Has Been Approved**

Draft Permit Provision VII.A.8 (b) requires a CNMP to be submitted for approval by the NRCS or TSSWCB within 60 days of permit issuance. Since the rules require operation under a certified CNMP, this provision of the Draft Permit should also require that the CNMP be approved and certified prior to permit issuance.

**59. Definition of Vegetative Buffers**

Draft Permit Provision X.D requires the applicant to install and maintain vegetative buffers according to NRCS standards. NRCS has developed practice standards for “filter strips”,<sup>4</sup> but it has not developed a practice standard for “vegetative buffers.” The buffers specified in the Draft Permit contain both filter strips and a “vegetative buffer setback.” Without defining and disclosing standards for what would constitute a “vegetative buffer,” the TCEQ has created a significant ambiguity in the terms of the Draft Permit. The TCEQ has previously indicated that it considers the phrase “vegetative buffer” to mean simply vegetation that reduces shock due to contact, and that the Riparian Forest Buffer<sup>5</sup>—referenced by Filter Strips<sup>6</sup>—qualifies in this respect. Nothing in either the Draft Permit, or in TCEQ Rules, requires that a vegetative buffer be considered under this standard. The TCEQ has indicated that it interprets “vegetative buffers” in the North Bosque River watershed to mean Filter Strips as defined by

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<sup>4</sup> Code 393.

<sup>5</sup> Code 391.

<sup>6</sup> Code 393.

NRCS Practice Code 393, or Riparian Forest Buffers as defined by NRCS Practice Code 391. This interpretation should be articulated in the terms of the Draft Permit as a definition. Without a specific definition and criteria for “vegetative buffer,” the Coalition is concerned that the TCEQ may be unable to enforce its current informal interpretation. Draft Permit Provision X.D should accordingly be revised as follows: “A vegetative buffer shall meet the criteria of Riparian Forest Buffers defined by NRCS Practice Code 391 or the criteria of Vegetative Filter Strips as defined by NRCS Practice Code 393.”

#### **60. Non-Attainment of Bacterial Water Quality Standards**

This facility discharges into Segment No. 1226, which is currently listed on the State’s 303(d) list (impaired and threatened waters) for non-attainment of bacteria water quality standards. Neither the applicant nor the TCEQ has demonstrated how the Draft Permit will support the attainment of bacteria water quality standards. No attempt has been made to address how the bacterial problems that exist in the North Bosque River watershed will be corrected, other than through the following single general statement on p.11-12 of the Fact Sheet: “the RCS storage capacity requirements, nutrient management practices, increased TCEQ oversight of operational activities, and requirements of the TMDL Implementation Plan, which are incorporated into the draft permit, are designed to reduce the potential for this CAFO to contribute to further impairment from bacteria.”

With respect to the first element—the RCS storage capacity requirements—the increased storage requirement should indeed decrease the amount of bacteria discharged during chronic or catastrophic rainfall events as the TCEQ has indicated. However, chronic and catastrophic rainfall events are not typical in this area. The majority of the occurrences of non-attainment of bacterial water quality standards occur during non-chronic and non-catastrophic rainfall events, so non-attainment during these other conditions should also be addressed.

With respect to the second element—nutrient management practices—the TCEQ has made no demonstration that nutrient management practices will have an ascertainable effect on bacteria. While bacteria and pathogen loads originate from the same sites and materials as nutrients, and are transported via the same streams and rivers, the processes and removal mechanism for bacteria are far different from those for nutrients. Much of the nutrients from this operation will be removed by harvesting growing crops to which the nutrients have been applied. There has been no demonstration that bacteria will be removed by growing crops. There has been no demonstration regarding the extent to which bacteria might be captured by the soil or “filtered out” in grass. Bacteria undergo different process in the streams and rivers. They are not removed by algae, and bacteria have a potential for regrowth.

With respect to the third element—increased TCEQ oversight of operational activities—TCEQ oversight is commendable, but it is inherently a reactive approach to this issue. There has been no demonstration by the TCEQ how specific oversight will eliminate the bacteria non-attainment.

With respect to the fourth and final element—requirements of the TMDL Implementation Plan—the Implementation Plan addresses only phosphorus, not bacteria.

**61. Use of Third-Party Fields**

As discussed in Comment No. 1, this application is for a new permit for new operations at a site for which the previous permit expired. The applicant is not the operator of an “existing CAFO” within the meaning of Section 321.42(j) of the Commission’s rules. Because Section 321.42(j) limits the use of third-party fields to only existing operations and this is a new permit for a new operation, the Draft Permit should be revised to delete all references to the use of third-party fields.

**62. Reporting for Third-Party Fields.**

In the event the use of third party fields is retained in the Draft Permit, the provisions should be modified as follows. The Draft Permit and Commission rules allow for the disposal of wastewater or manure by the use of third-party fields not owned, operated, controlled, rented or leased by the applicant. Both the Draft Permit and Commission rules limit the use of third-party fields to only those for which a soil test phosphorus analysis shows a level less than 200 ppm and which require initial and annual soil sampling. In addition, the Draft Permit sets out land application rates for such fields. However, the Draft Permit does not include provisions that require the applicant to report information regarding land application rates and soil testing to the Commission to ensure compliance. The Draft Permit only requires that the applicant submit records to the regional office containing the “name, locations, and amounts of wastewater, sludge, and/or manure transferred to operators of third party fields.”<sup>7</sup> It is not apparent how compliance with the Draft Permit provisions regarding third-party fields can be determined without further information on soil testing, areas of application, application rates, etc. The inclusion of additional provisions regarding reporting for third-party fields to clarify that information needed to determine compliance will provide for better enforcement. For example, such provisions could include revision of VII.A.8.(e)(5)(iv) to state that:

[t]he permittee shall submit records to the appropriate regional office quarterly that contain the name, locations, and amounts of wastewater, and/or manure transferred to operators of third-party fields, a copy of any initial or annual soil analyses, land application locations, dates and times, and nutrient concentration of applied materials, rates, acreage of application area, and crops and crop yields for the preceding quarter.

In addition, it would be beneficial if this information is also included in the annual report to the Office of Enforcement pursuant to 30 Tex. Admin. Code § 231.36(j), along with (i) copies of contracts with the applicable third-party field operators; (ii) a statement that application rates in any third-party field met permit requirements during the previous year; and (iii) a summary of

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<sup>7</sup> Draft Permit VII.A.8.(e)(5)(iv).

discharges from third-party fields or a statement that there has been no discharge from any third-party field. If such information is included, the performance of the operator with respect to use of third-party fields for the previous year may be reviewed in a holistic manner with all necessary information available.

### **63. Control of Third-Party Fields**

In the event the use of third-party fields is retained in the Draft Permit, the provisions should be modified as follows. The Draft Permit prohibits discharges except as provided by the permit and federal regulations. The Draft Permit authorizes discharges from RCSs whenever “chronic or catastrophic rainfall events or catastrophic conditions cause an overflow.”<sup>8</sup> The Draft Permit also prohibits the “drainage of wastewater, sludge and manure from an LMU” unless authorized under certain conditions.<sup>9</sup> However, the Draft Permit, although allowing the application of waste on third-party fields, is silent with respect to drainage or discharges from third-party fields. It is important that the Draft Permit clearly state that drainage or discharges of wastewater or manure from third-party fields is prohibited. Otherwise, there does not appear to be any control regarding the over-application of waste on third-party fields. Better control of third-party fields is very important because such fields do not benefit from the use of RCSs, NMPs, or other protections imposed on LMUs. In addition, the Commission should consider prohibiting the applicant’s further use of any third-party field if it is determined that it has ever disposed of waste on a third-party field when the most current soil test reflects phosphorous concentrations of greater than 200 ppm or the application rate established by permit for a third-party field is ever exceeded. The use of third-party fields should be considered to be a privilege that should be revoked if it is ever abused.

### **64. Failure to Consider Routine Monitoring Data from Duffau Creek**

Water quality monitoring data shows an increase in Soluble Reactive Phosphorus (SRP) for Segment 1226K Little Duffau Creek. The Texas Institute for Applied Environmental Research (“TIAER”) has been collecting data at monitoring stations on tributaries and mainstem sites of the North Bosque River, using techniques and quality assurance plans approved by the TCEQ and EPA, for approximately 20 years. The data for the TCEQ TMDL for Segments 1255 (Upper North Bosque River) and 1226 (North Bosque River) were largely collected by TIAER, and TIAER performed the computer modeling for the TMDL.

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<sup>8</sup> A “chronic or catastrophic rainfall event” is defined at 30 Tex. Admin. Code § 321.32(10) as a “series of rainfall events that do not provide opportunity for dewatering a retention control structure and that are equivalent to or greater than the design rainfall event or any single rainfall event that is equivalent to or greater than the design rainfall event.”

<sup>9</sup> Draft Permit VII.A.8.(f)(2)(i).

Two TIAER publications are referenced in this comment concerning the application for Two Sisters Dairy—a new CAFO—in the Little Duffau Creek subwatershed (1226K).<sup>10</sup> All data are from grab and storm samples collected by TIAER staff from July 1997 to June 2002 (TR0302), and July 2002 to June 2007 (TR0801). This provides a continuous record of data at the LD040 site (at FM 1824), as presented in the table below.

Over a period of ten years that included the manure haul-off subsidy and implementation of best management practices under the TMDL, this subwatershed (with no wastewater treatment plant discharge) indicates an increased nutrient loading. The data were divided into two distinct five-year groups in these reports and were not considered as a continuum of one data set.

Table 1 TIAER Data at Little Duffau Creek 1997-2007

TIAER Site	Type	Parameter	1997-2002			2002-2007 (TR0801)			Criteria
			Mean	Median	Number of samples	Mean	Median	Number of samples	
	Grab/Storm	(mg/L)							2008 TX Water Quality Inventory (3/19/08)
LD040	G	SRP as P	0.530	0.592	7	0.565	0.383	29	0.37
LD040	G	Total P	0.791	0.710	7	0.92	0.51	29	0.69
LD040	S	SRP as P	0.519	0.538	32	0.693	0.650	159	0.37
LD040	S	Total P	1.20	1.06	32	1.27	1.11	159	0.69

The 2008 Water Quality Inventory approved by the EPA on July 9, 2008 specifically lists the criteria for SRP as 0.37 mg/L. The TIAER data shows the mean for both grab and storm samples of SRP is more than one and a half times greater than 0.37 mg/L criteria established by the TCEQ.

The criteria established for total phosphorus is 0.69 mg/L. The mean for storm samples of total phosphorus, which is indicative of non-point source runoff, is at 1.27 mg/L—nearly double the 0.69 mg/L criteria set by the TCEQ. The mean for grab samples, which is indicative of dry weather discharges for total phosphorus, is more than 130 percent greater than the 0.69 criteria set by the TCEQ.

Sources of Impairments and Concerns listed in this inventory attributes all these elevated nutrient screening levels in Segment 1226K (Little Duffau Creek) to only non-point source permitted runoff from CAFOs.

Land use within the 2,960-acre subwatershed includes 926 acres of waste application field (WAF), according to the TIAER report (May 2008). This 926 acres does not include the

<sup>10</sup> TR0801 “Semiannual Water Quality Report for the North Bosque River Watershed” (May 2008) and the TR0302 “Semiannual Water Quality Report for the Bosque River Watershed” (February 2002)

Ms. LaDonna Castañuela  
January 12, 2009  
Page 26

additional 220 acres of WAFs for this proposed new dairy since the dairy was not operating at the time of this report. The water quality data proves that this small microwatershed cannot even handle its current phosphorus loadings, before accounting for the additional loading of 5,500 more cows and 220 acres of WAFs that is to be expected from this new dairy.

The TMDL established a 50 percent reduction needed in loading and concentration of SRP. Increasing the number of cows by 5,500, or increasing the percentage of WAFs within the subwatershed, will not decrease nutrient loading. These data support the conclusions that: 1) currently the TMDL is not working, and 2) approving a new permit increasing the SRP loading contributions in a severely impacted subwatershed is not abiding by or implementing the TMDL. The TCEQ should take into account this important water quality data and consider the impairment of the North Bosque River before authorizing this proposed new permit for 5,500 cows.

The Bosque River Coalition hereby requests that the Executive Director consider these comments in evaluating the Draft Permit which has been proposed to Two Sisters Dairy, LLC. The Coalition appreciates the opportunity to submit these comments and the consideration it hopes the Executive Director and Commission staff will give to them.

Sincerely,

  
Lauren Kalisek

LJK/ldp  
2402\04\TSM\tr090110\jck  
ENCLOSURES

cc: Applicant Two Sisters Dairy, LLC  
Ms. Leah Hayes, Coalition Attorney, Coalition of Waco  
Mr. Wiley Stem, III, Assistant Coalition Manager, Coalition of Waco  
Mr. Bruce Wiland

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION



THE STATE OF TEXAS  
COUNTY OF TRAVIS

I hereby certify that this is a true and correct copy of a Texas Natural Resource Conservation Commission document, which is filed in the permanent records of the Commission.

Given under my hand and the seal of office on

*Ladonna Castañuela* MAY 31 2002

Ladonna Castañuela, Chief Clerk  
Texas Natural Resource  
Conservation Commission

**AN ORDER** denying Gerald Oosten Texas Pollution Discharge Elimination System (TPDES) Permit No. 03142; TNRCC Docket No. 2000-0620-AGR; SOAH No. 582-01-0033.

On March 13, 2002, the Texas Natural Resource Conservation Commission (Commission) considered the application of Gerald Oosten (Mr. Oosten or Applicant) for renewal of his Texas Pollution Discharge Elimination System (TPDES) Permit No. 03142. The permit would authorize Applicant to continue to operate a dairy facility as a confined animal feeding operation (CAFO) in Erath County, Texas, pursuant to Chapter 26 of the Texas Water Code. The application was presented to the Commission with a Proposal for Decision by Robert F. Jones Jr., an Administrative Law Judge with the State Office of Administrative Hearings, who conducted a preliminary hearing concerning the application in Stephenville, Erath County, Texas on January 29, 2001, and an evidentiary hearing concerning the application from June 4 to June 8, 2001, and an additional day of testimony on August 25, 2001, in the City Council Chambers, Stephenville City Hall, 298 West Washington, Stephenville, Erath County, Texas.

The Administrative Law Judge designated the following as parties to the proceeding: the Applicant, represented by Gale Warren as counsel; the Executive Director (the ED), originally represented by Scottie C. Aplin and represented at the hearing by John E. Williams and Michael W. Hughes, Staff Attorneys; the Office of the Public Interest Counsel (OPIC), represented by Scott Jerger, Assistant Public Interest Counsel; and the Protestants, Fred Parker and Charles F. Markham represented by Stuart Henry as counsel.

After considering the Administrative Law Judge's Proposal for Decision and the evidence and arguments presented, the Commission makes the following Findings of Fact and Conclusions of Law:

**ATTACHMENT 1**

## I. FINDINGS OF FACT

1. Mr. Oosten holds Texas Pollution Discharge Elimination System (TPDES) Permit 03142, which was issued on September 5, 1997, and which was to expire on May 17, 1999.
2. The permit was issued under Chapter 26 of the Texas Water Code and 30 TAC Chapter 321, Subchapter B.
3. Mr. Oosten timely filed his application for renewal.
4. On June 16, 1999, Mr. Oosten's application was declared administratively and technically complete.
5. On June 30, 1999, Protestants requested a contested case hearing.
6. On June 19, 2000, the ED requested remand of Mr. Oosten's application under 30 TAC § 50.137, for direct referral to SOAH under 30 TAC § 55.26.
7. On June 20, 2000, the TNRCC general counsel remanded Mr. Oosten's application to The ED for direct referral to SOAH.
8. On July 12, 2000, the ED requested the docket clerk to directly refer the matter to SOAH.
9. On December 19, 2000, the TNRCC issued its Notice of Hearing that a contested hearing would be held on the application and informing the parties of the time, place, and nature of the hearing, of the legal authority and jurisdiction under which the hearing was to be held, giving reference to the particular sections of the statutes and rules involved, and including a short, plain statement of the matters asserted.

10. The Chief Clerk of the TNRCC mailed a copy of the Notice of Hearing to affected persons on December 28, 2000.
11. Mr. Oosten published the Notice of Hearing on December 28, 2000, in the EMPIRE-TRIBUNE, a newspaper of general circulation in Erath County, Texas.
12. A preliminary hearing was held on January 29, 2001.
13. A contested case hearing was held before ALJ Robert F. Jones, Jr. on June 4 to June 8, 2001, and August 25, 2001. Applicant appeared through Gale Warren as counsel, the ED appeared through John E. Williams and Michael W. Hughes, the OPIC appeared through Scott Jerger, and the Protestants appeared through Stuart Henry as counsel.
14. The ED has prepared a draft renewed TDPEs permit No. 03142.
15. The land owned or operated by Mr. Oosten on the site comprises about 500 acres. The acreage is roughly rectangular in shape, with the long axis oriented roughly west to east. A confined dairy operation and retention control storage ponds are located in the eastern-most third of the rectangle. The western two-thirds of the rectangle is divided into four fields. The fields are numbered, from east to west: Field 3, Field 2, Field 1, and Field 7. The Fields are irrigated using wastewater from the dairy operation.
16. An unnamed tributary to the Little Duffau Creek (the tributary) crosses the Oosten acreage from north to south and separates Field 2 from Field 3. The tributary is a small, intermittent creek averaging about three feet in width. Three other dairies are on the tributary above the Oosten dairy. The tributary eventually joins the Little Duffau.
17. The Little Duffau Creek marks the western boundary of Fields 1 and 7, and runs from north to south. Field 2 separates Field 1 from the tributary, and Field 1 separates Field 2 from the Little Duffau.

18. Both the tributary and the Little Duffau Creek are a part of the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin. Segment No. 1226 is an impaired waterway under Section 303(d) of the Clean Water Act.
19. The dairy or CAFO is located on the eastern portion of the Applicant's land. Applicant has use of or owns 500 acres. The dairy lot comprises a small portion of the 500 total acres. The dairy employs a free stall barn and an open feed lot. The CAFO is surrounded by berms sufficient to contain waste and rainfall into the CAFO and to exclude rainfall from outside the CAFO. Solid waste is dried and stored within the CAFO until disposed of by Applicant off the premises.
20. Liquid waste from the CAFO is collected into three retention control structures (RCS's) or lagoons or ponds. Lagoon #1 has a maximum capacity of 44.5 acre-feet. Lagoon #2 and Lagoon #3 operate in series and have a combined maximum capacity of 28.8 feet. The free stall barn is cleaned by using water that is pumped from Lagoon #3. The free stall barn is flushed three times a day. The water is collected back from the barn and recirculated through a concrete sump, a separator, settling basins, and into Lagoon #2. Lagoon #2 acts as a settling basin for Lagoon #3, which is used for storage. Lagoon #1 handles runoff and wastewater storage from the open feed lots. Lagoon #1 is the source of irrigation water for Fields 1, 2, 3, and 7. Water can be pumped from Lagoon #3 to Lagoon #1 if necessary to reduce Lagoon 1 and 2's volume.
21. Irrigation water from Lagoon #1 is moved by a 100-horsepower electric pump through a six-inch main line that is buried in and bisects Fields 3 and 2 into northern and southern halves. The irrigation line crosses the tributary creek between Fields 3 and 2, and terminates in Field 1. A center pivot sprinkler is located at the terminus in Field 1.
22. Field 1 has 30.5 acres under irrigation (which also includes a small part of Field 7) under the center pivot.

23. Fields 3 and 2 are irrigated by wheel-move sprinklers. These are supplied water by a series of uptakes from the main irrigation line. The wheel-moves irrigate to both the north and south sides of the main line and are rolled in an east-west or west-east direction. Field 2 has 45.4 acres under irrigation, and Field 3 has 30.5 acres under irrigation.

*Failure to comply with the conditions of the permit*

*Discharge of Irrigated Wastewater or Mismanaged Irrigation*

24. On May 6, 1997, Mr. Oosten permitted a discharge consisting of irrigation tailwater from Field 3 into the tributary.
25. The discharge could have been avoided with proper management and maintenance of the dairy's wastewater irrigation system.
26. On December 29, 1998, Mr. Oosten permitted a discharge from the pump supplying the irrigation water from the Lagoon #1 into the Field #3, the adjacent roadway, and the field south of Field #3.
27. On December 29, 1998, Mr. Oosten permitted a discharge from a riser feeding the wheel roll in Field #2 into the tributary.
28. On December 29, 1998, Mr. Oosten permitted a discharge by irrigating Field #2, which was saturated.
29. On December 29, 1998, Mr. Oosten permitted puddled wastewater in Fields #2 and 3.
30. On December 29, 1998, the tributary the creek was not running above Oosten's dairy, but was running black/brown water with an effluent/waste odor below the dairy.

31. On December 30, 1998, Mr. Oosten permitted pooled wastewater in Field #1.
32. On February 3, 1999, Mr. Oosten permitted Field #1 to become saturated. Wastewater was coming from the center pivot, was pooled in Field #1, and had flowed from Field #1 to the Little Duffau.

*Discharge from Wastewater Control Facilities*

33. On or about August 12, 1996, Mr. Oosten permitted a discharge from Lagoon #2 into Field 3.
34. On June 28, 1999, Mr. Oosten permitted an overflow of water and discharge from Lagoon #1 into the tributary.

*Other Failures to Comply with Permit*

35. In August 1996, Mr. Oosten had failed to comply with the terms of his permit by
  - a. exceeding authorized number of head of cattle;
  - b. having no annual analysis of waste and wastewater;
  - c. having no engineer's certificate;
  - d. having no pond liner certificate;
  - e. having no permanent measuring device on lagoons;
  - f. failing to maintain records of waste disposal; and
  - g. failing to contain silage pit runoff.
36. On October 23, 1998, Mr. Oosten kept livestock were being in a non-containment area, *i.e.*, one that would not prevent waste and wastewater runoff, in violation of his permit.

37. October 21, 1999, Mr. Oosten permitted inadequate containment of the confinement area, in violation of his permit.
38. On or about November 30, 2000, Mr. Oosten applied manure to a field, and failed to disc it in within 48 hours, in violation of his permit.

*Failing to comply with a Commission Order*

39. Under the Agreed Order in TNRCC Docket 97-0960-AGR-E, adopted June 24, 1998, Mr. Oosten was required to certify in writing within 30 days construction of wastewater retention facilities.
40. On October 21, 1998, the TNRCC noted that Mr. Oosten had failed to provide the certification, and required compliance within an additional 30 days.
41. Under the Agreed Order in TNRCC Docket 1999-0716-AGR-E, dated May 3, 2000, Mr. Oosten was required to make:
  - a. written certification within 15 days that his irrigation practices were designed and managed to prevent ponding and puddling of wastewater; and
  - b. written certification within 30 days of the CAFO's lagoon's retention volumes.
42. On December 20, 2000, the TNRCC noted that Mr. Oosten had failed to provide the two required certifications, and required compliance by January 22, 2001.
43. Mr. Oosten has not certified in writing that his irrigation practices are designed and managed to prevent ponding and puddling of wastewater and has not provided a written certification of his lagoon's retention volumes.

*Failing to construct, during the life of the permit, facilities necessary to conform with the terms and conditions of the permit.*

44. Permit 03142 requires that "tailwater control facilities shall be provided as necessary to prevent the release of applied wastewater to waters in the State."

45. Under the Agreed Order in TNRCC Docket 1999-0716-AGR-E, dated May 3, 2000, Mr. Oosten was required to construct tailwater control facilities by December of 2000.

46. On December 20, 2000, the TNRCC noted that Mr. Oosten had failed to construct the tailwater control facilities and required compliance by January 22, 2001.

47. Jerry Holligan, a Registered professional engineer, designed and directed the construction of a berm system on Mr. Oosten's property in May and June 2001.

*Failing to fully disclose all relevant facts.*

48. Mr. Oosten failed to disclose the April 10, 2001, discharge in his testimony although asked questions intended to elicit such information.

*Continued operation of the dairy endangering the environment.*

49. Prior to August 1995:

- a. the tributary did not flow continuously, but intermittently with long-lasting pools of water when it did not flow;
- b. the tributary could be used for watering livestock and for recreation;
- c. the tributary was clean;
- d. the tributary supported game such as deer and turkey for hunting, and other wildlife;  
and
- e. the tributary had frogs and small fish.

50. After the August 1995 discharge from the Oosten dairy:
  - a. the tributary turned brown, then black, and stank;
  - b. the tributary water caused cattle and goats to abort;
  - c. the tributary could not be used for human recreation; and
  - d. the tributary runs continuously.
51. The tributary downstream of the Oosten dairy is eutrophic.
52. The tributary downstream of the Oosten dairy is devoid of what would be the naturally occurring life for a stream of its size.
53. The tributary is a first order stream, which should run intermittently, but instead runs constantly with polluted water.
54. The tributary produces methane gas.
55. Although physically configured to be attractive to insect life the tributary has none aside from the simplest form of worm.
56. The discharges from the Oosten dairy have been a major cause, if not the sole cause of, the tributary's eutrophic state.

*Record of environmental violations in the preceding five years.*

57. Findings Nos. 24 - 34 demonstrate that Mr. Oosten has a history of environmental violations from August 1995 to June 1999.

*Violations are significant.*

58. Findings Nos. 24 - 34 demonstrate that Mr. Oosten's environmental violations are significant.

*No substantial attempt to correct the violations.*

59. Mr. Oosten constructed tailwater control facilities after his operation of the dairy for five years, after numerous discharges from irrigation fields caused by over-irrigation, and a year after he was ordered by the Commission to build them.
60. Mr. Oosten has a history of over-irrigating his fields.
61. Mr. Oosten was generally unaware of discharges until informed of the problem by an TNRCC inspector.
62. Mr. Oosten's violations are recurrent.

## II. CONCLUSIONS OF LAW

1. The TNRCC has jurisdiction over this matter pursuant to TEX. WATER CODE ANN. Chapter 26 (Vernon 2002).
2. The State Office of Administrative Hearings has jurisdiction over all matters relating to the conduct of a hearing in this proceeding, including the preparation of a proposal for decision with findings of fact and conclusions of law pursuant to Tex. Gov't Code Ann. Ch. 2003 (Vernon 2002).
3. Notice of the hearing was provided as required by the Administrative Procedure Act, TEX. GOV'T CODE ANN. §§ 2001.051 and 2001.052 (Vernon 2002).

4. Mr. Oosten's permit renewal application was declared administratively complete on June 16, 1999, and Commission Rules 305.63 and 305.66(a), (f) & (g) apply to the application.
5. Based upon Findings Nos. 24 - 38, Applicant has failed to comply with the conditions of the permit.
6. Based upon Findings Nos. 39 - 43, Applicant has failed to comply with a commission order.
7. Based upon Findings Nos. 44 - 47, Applicant has failed to construct, during the life of the permit, facilities necessary to conform with the terms and conditions of the permit.
8. Based upon Finding No. 48, Applicant has failed to fully disclose all relevant facts.
9. Based upon Findings Nos. 49 - 56, Applicant's continued operation of the dairy endangers the environment to such an extent that permit termination is necessary to prevent further harm.
10. Based upon Findings Nos. 57 - 58, Mr. Oosten has a record of significant environmental violations in the preceding five years.
11. Based upon Findings Nos. 59 - 62, Applicant has not made a substantial attempt to correct the violations.
12. Based on the foregoing findings and conclusion, the preponderance of the evidence shows that the permit should not be renewed pursuant to 30 Tex. Admin. Code §§ 305.63 and 305.66(a), (f) & (g)

### III. EXPLANATION OF CHANGES

1. ALJ Robert F. Jones, Jr, agreed during the Commission's public meeting on this matter that the references to the discharge on August 2, 1995, should be removed from the order, as the discharge was an exempt event and was not necessary to his decision. Therefore, the ALJ's Proposed Finding of Fact No. 34 has been removed from the order and the references to that proposed Finding of Fact have been removed from Finding of Fact Nos. 57 and 58 and Conclusion of Law No. 5.
2. In response to questions from the Commission during its public meeting on this matter, ALJ Robert F. Jones, Jr., indicated that the findings relating to the discharge on April 10, 2001, were not necessary to his decision, except as the discharge relates to the issue of whether Applicant failed to fully disclose all relevant facts. Therefore, the ALJ's Proposed Finding of Fact No. 33 has been removed from the order and the references to that discharge and that proposed Finding of Fact have been removed from Finding of Fact Nos. 57, 58, and 60 and Conclusion of Law No. 5.
3. A typographical error was corrected in Finding of Fact No. 18 and the order was renumbered to reflect the deletion of the ALJ's Proposed Finding of Fact Nos. 33 and 34.

**NOW, THEREFORE, BE IT ORDERED BY THE TEXAS NATURAL RESOURCE  
CONSERVATION COMMISSION THAT:**

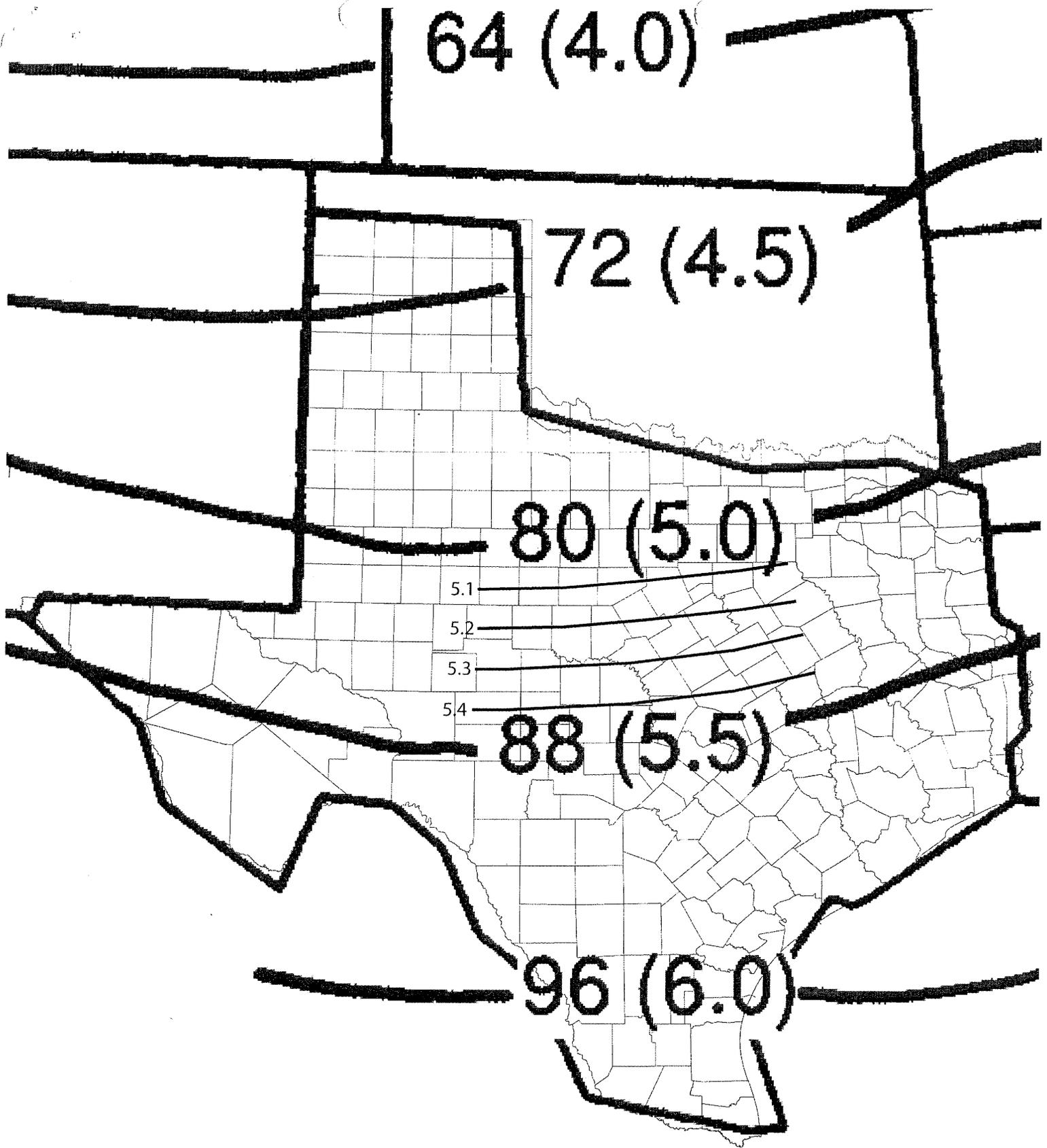
1. Renewal of TPDES Permit 03142 is denied in accordance with the Findings of Fact and Conclusions of Law contained in this Order.
2. The Executive Director's Response to Comments is adopted.
3. The Chief Clerk of the Texas Natural Resource Conservation Commission will forward a copy of this Order to all parties.

4. If any provision, sentence, clause or phrase of this Order is for any reason held to be invalid, the invalidity of any portion will not affect the validity of the remaining portions of the Order.
5. The effective date of this order is the date the order is final, as provided by 30 TEX. ADMIN. CODE § 80.273 and Section 2001.144 of the Administrative Procedure Act, TEX. GOVT. CODE ANN. (Vernon 2002).
6. Any other requests for entry of specific findings of fact and conclusions of law, and any other requests for general or specific relief, if not expressly set forth herein, are denied.

Issue Date: **MAR 22 2002**

TEXAS NATURAL RESOURCE  
CONSERVATION COMMISSION

  
Robert J. Huston, Chairman



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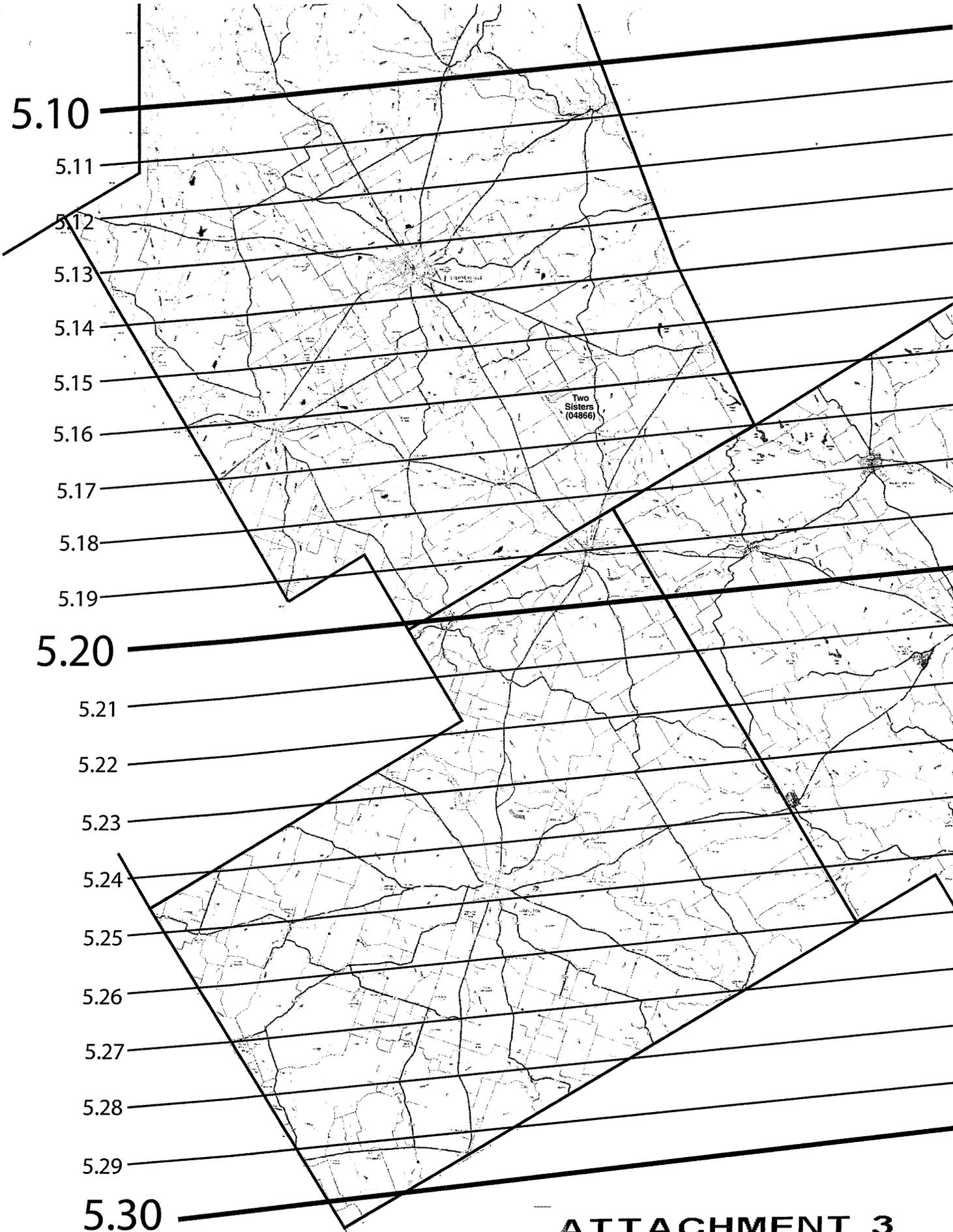
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Two Sisters (04866)

ATTACHMENT 3



**HAND DELIVERY**

<p><b>Lloyd Gosselink</b> ATTORNEYS AT LAW</p> <p>Lloyd Gosselink Rochelle &amp; Townsend, P.C. 816 Congress Avenue Suite 1900 Austin, Texas 78701</p>	<p><b>To:</b></p> <p><b>Ms. LaDonna Castañuela</b> <b>Chief Clerk</b> <b>Texas Commission on Environmental Quality</b> <b>12100 Park 35 Circle</b> <b>Bldg. F – 1<sup>st</sup> Floor</b> <b>Austin, Texas 78753</b></p>
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