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Larry R. Soward, *Commissioner*  
Bryan W. Shaw, Ph.D., *Commissioner*  
Glenn Shankle, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 7, 2008

TO: Persons on the attached mailing list.

RE: P&L Dairy  
TPDES Permit No. WQ0003675000

### **Decision of the Executive Director.**

The executive director has made a decision that the above-referenced permit application meets the requirements of applicable law. **This decision does not authorize construction or operation of any proposed facilities.** Unless a timely request for contested case hearing or reconsideration is received (see below), the TCEQ executive director will act on the application and issue the permit.

Enclosed with this letter is a copy of the Executive Director's Response to Comments. A copy of the complete application, draft permit and related documents, including public comments, is available for review at the TCEQ Central office. A copy of the complete application, the draft permit, and executive director's preliminary decision are available for viewing and copying at the Stephenville Public Library, 174 North Columbia, Stephenville, Texas.

If you disagree with the executive director's decision, and you believe you are an "affected person" as defined below, you may request a contested case hearing. In addition, anyone may request reconsideration of the executive director's decision. A brief description of the procedures for these two requests follows.

### **How To Request a Contested Case Hearing.**

It is important that your request include all the information that supports your right to a contested case hearing. You must demonstrate that you meet the applicable legal requirements to have your hearing request granted. The commission's consideration of your request will be based on the information you provide.

The request must include the following:

- (1) Your name, address, daytime telephone number, and, if possible, a fax number.
- (2) If the request is made by a group or association, the request must identify:
  - (A) one person by name, address, daytime telephone number, and, if possible, the fax number, of the person who will be responsible for receiving all communications and documents for the group; and
  - (B) one or more members of the group that would otherwise have standing to request a hearing in their own right. The interests the group seeks to protect must relate to the organization's purpose. Neither the claim asserted nor the relief requested must require the participation of the individual members in the case.
- (3) The name of the applicant, the permit number and other numbers listed above so that your request may be processed properly.
- (4) A statement clearly expressing that you are requesting a contested case hearing. For example, the following statement would be sufficient: "I request a contested case hearing."

Your request must demonstrate that you are an **"affected person."** An affected person is one who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest affected by the application. Your request must describe how and why you would be adversely affected by the proposed facility or activity in a manner not common to the general public. For example, to the extent your request is based on these concerns, you should describe the likely impact on your health, safety, or uses of your property which may be adversely affected by the proposed facility or activities. To demonstrate that you have a personal justiciable interest, you must state, as specifically as you are able, your location and the distance between your location and the proposed facility or activities.

Your request must raise disputed issues of fact that are relevant and material to the commission's decision on this application. The request must be based on issues that were raised during the comment period. The request cannot be based solely on issues raised in comments that have been withdrawn. The enclosed Response to Comments will allow you to determine the issues that were raised during the comment period and whether all comments raising an issue have been withdrawn. The public comments filed for this application are available for review and copying at the Chief Clerk's office at the address below.

To facilitate the commission's determination of the number and scope of issues to be referred to hearing, you should: 1) specify any of the executive director's responses to comments that you dispute; and 2) the factual basis of the dispute. In addition, you should list, to the extent possible, any disputed issues of law or policy.

### **How To Request Reconsideration of the Executive Director's Decision.**

Unlike a request for a contested case hearing, anyone may request reconsideration of the executive director's decision. A request for reconsideration should contain your name, address, daytime phone number, and, if possible, your fax number. The request must state that you are requesting reconsideration of the executive director's decision, and must explain why you believe the decision should be reconsidered.

### **Deadline for Submitting Requests.**

A request for a contested case hearing or reconsideration of the executive director's decision must be in writing and must be **received** by the Chief Clerk's office no later than **30 calendar days** after the date of this letter: You should submit your request to the following address:

LaDonna Castañuela, Chief Clerk  
TCEQ, MC-105  
P.O. Box 13087  
Austin, Texas 78711-3087

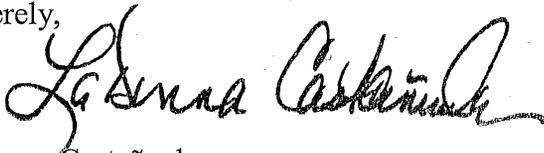
### **Processing of Requests.**

Timely requests for a contested case hearing or for reconsideration of the executive director's decision will be referred to the alternative dispute resolution director and set on the agenda of one of the commission's regularly scheduled meetings. Additional instructions explaining these procedures will be sent to the attached mailing list when this meeting has been scheduled.

### **How to Obtain Additional Information.**

If you have any questions or need additional information about the procedures described in this letter, please call the Office of Public Assistance, Toll Free, at 1-800-687-4040.

Sincerely,



LaDonna Castañuela  
Chief Clerk

LDC/er

Enclosures

MAILING LIST  
for  
P&L Dairy  
TPDES Permit No. WQ0003675000

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Texas Commission on Environmental Quality  
Office of Chief Clerk MC-105  
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TPDES PERMIT NO. WQ0003675000

APPLICATION BY §  
PETER HENRY SCHOUTEN, SR. §  
AND NOVA DARLENE SCHOUTEN, §  
DBA P&L DAIRY §

BEFORE THE  
TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY

CHIEF CLERKS OFFICE

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TEXAS  
COMMISSION ON  
ENVIRONMENTAL  
QUALITY

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EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT

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The Executive Director (ED) of the Texas Commission on Environmental Quality (TCEQ or Commission) files this Response to Public Comment on the preliminary decision by the ED to approve the application of Peter Henry Schouten, Sr. and Nova Darlene Schouten, dba P&L Dairy (Applicant) for a major amendment of its existing Concentrated Animal Feeding Operation (CAFO) Texas Pollutant Discharge Elimination System (TPDES) permit no. WQ0003675000. As required by Title 30 of the Texas Administrative Code (30 TAC) Section (§) 55.156, before a permit is issued, the ED prepares a response to all timely, relevant and material, or significant comments. The Office of the Chief Clerk received timely public comments from the City of Waco, represented by Brown McCarroll L.L.P. (Waco).

This response addresses all such timely public comments received, whether or not withdrawn. If you need more information about this permit application or the wastewater permitting process, please call the TCEQ Office of Public Assistance at 1-800-687-4040. General information about the TCEQ can be found at our website at [www.tceq.state.tx.us](http://www.tceq.state.tx.us).

## BACKGROUND

### Description of Facility

The Applicant has applied for a major amendment of their CAFO individual permit that would allow it to operate an existing dairy cattle facility and to expand its herd size from a maximum of 580 head to a maximum of 990 head. The facility consists of two retention control structures (RCSs) and four land management units (LMUs). The facility is located at the southwest corner of the intersection of County Road 229 and County Road 231 approximately 1.8 miles south of the intersection of County Road 229 and Farm-to-Market Road 913 in Erath County, Texas. The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin.

### Procedural Background

The permit application was received on June 15, 2004 and declared administratively complete on March 11, 2005. TCEQ staff completed a technical review of the application and prepared a draft permit. A combined revised Notice of Receipt and Intent to Obtain a Water Quality

Permit (NORI) and revised Notice of Application and Preliminary Decision (NAPD) for a Water Quality Permit was published in the *Stephenville Empire Tribune* on November 20, 2007.<sup>1</sup> The public comment period ended on December 20, 2007. This application is subject to House Bill 801, 76th Legislature, 1999.

## COMMENTS AND RESPONSES

### Comment 1:

Waco comments that the facility is a "new source" as defined by Title 40 of the Code of Federal Regulations (40 CFR) § 122.2 and as required by 30 TAC § 305.2(24) since it was constructed in 1988, and therefore, should be classified as a "new source" subjecting it to the review required by 40 CFR § 122.2(i). Waco also contends that because the Applicant proposes to expand the size of their retention control structures (RCSs) that also creates a "new source." Waco comments that because dairy is a "new source" it requires TCEQ to do a load allocation to determine if there is sufficient load allocations remain for discharges from this dairy. Waco comments that this has not been done and that most significantly Footnote 2 in Table 1 of Mr. Cooke's EPA letter of 12/31/01 to TCEQ ED Jeff Saitas states the TMDLs "did not include any allocation whatsoever for discharges from the CAFO lagoons."

### Response 1:

40 CFR §§ 122.4(a) and (d) prohibit issuing a permit if the conditions of the permit do not provide for compliance with the Clean Water Act (CWA) and when the imposition of conditions cannot insure compliance with the applicable water quality requirements. 40 CFR § 122.4(i) also prohibits issuance of a permit to a "new source" if the discharge from its construction or operation will cause or contribute to the violation of water quality standards. The ED does not find that the draft permit violates these provisions.

"New source" is defined in the federal rules at 40 CFR § 122.2. The definition states that a "new source" is:

Any building structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced: (A) after promulgation of standards of performance under CWA, § 306, or (B) after proposal of standards of performance in accordance with CWA, § 306, which are applicable to such source, but only if the standards are promulgated in accordance with § 306 within 120 days of their proposal.

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<sup>1</sup> The original NORI was mailed to the Applicant by the Office of the Chief Clerk on March 23, 2005. However, proof of publication of the NORI was not found in the Office of the Chief Clerk file. When the ED reached a preliminary determination on the draft permit in 2007, staff notified the Applicant that there was no evidence in TCEQ's files that the NORI was published and the Applicant was unable to supply documentation that the NORI was published in 2005. Therefore, the Applicant published a combined NORI and NAPD as allowed by 30 TAC § 39.405.

According to 40 CFR § 122.29(b), an applicant is a "new source" if it meets the above definition and meets the following criteria:

- (i) It is constructed at a site where no other source is located;
- (ii) It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
- (iii) Its processes are substantially independent of an existing source at the same site (In making this determination, factors to consider include to the extent the new facility is integrated with the existing facility and to the extent the new facility is engaged in the same general activity as the existing source).

The Applicant is applying for an expansion of an existing dairy and the expansion will be constructed at a site where a source is already located. Also, the Applicant does not seek to replace the existing process. The dairy expansion would be integrated with the existing facility. The expansion of the RCSs to meet the new 2004 CAFO rule requirements does not meet any of the criteria outlined in 40 CFR § 122.29(b), but simply expands an existing part of the facility. Therefore, the facility is not a new source.

**Comment 2:**

Waco comments that there has not been a demonstration that there is sufficient remaining TMDL pollutant load allocations of phosphorus discharged from the CAFO or that existing dischargers are subject to compliance schedules. Waco states that the general load allocation for phosphorus discharges performed by TCEQ in the two Total Maximum Daily Loads (TMDLs) did not include any allocation whatsoever for discharges from CAFO wastewater lagoons.

**Response 2:**

The ED disagrees that load allocations for discharges from CAFO wastewater lagoons were excluded. Page 7 of the TMDL I-Plan specifically addressed this issue as follows: "All loadings that emanated from any aspect of a dairy operation during the monitored period were addressed in the analyses as WAFs, although it is probable that some amount of loading actually originated from authorized or unauthorized 'point source' discharges from retention structures." Furthermore, CAFO loads are not amenable to simple total daily allocations of the type that are often applied to continuous point source discharges.

TCEQ established rules to implement the TMDL I-Plan and the draft permit is consistent with those rules. TCEQ rules and permit requirements are consistent with or more stringent than the federal rules and national guidance. TCEQ has performed TMDL evaluations sufficient to satisfy federal requirements and to justify implementing the new CAFO regulations. The draft permit is consistent with the Bosque TMDL, TMDL I-Plan, and CAFO rules in 30 TAC, Chapter 321. The draft permit for the Applicant was approved by EPA on October 4, 2007.

### **Comment 3:**

Waco comments that issuing the draft permit undercuts the following key modeling assumptions for the TMDLs for phosphorus on Segments 1226 and 1255 of the North Bosque River.

- A) 40,450 dairy cows in the watershed;
- B) 50% of solid manure from 40,450 dairy cows would be removed from the watershed;
- C) Phosphorus in the diet of permitted cows would be limited to 0.4%;
- D) Waste application on existing fields would be limited so that phosphorus never exceeds 200 parts per million (ppm);
- E) Waste application rates would be limited to the phosphorus needs of the crop; and
- F) Initial phosphorus on new fields would be 60 ppm and could not exceed that level.

### **Response 3A – Cows in the Watershed:**

The North Bosque River TMDL for phosphorus is based on narrative water quality criteria and uses BMPs to protect water quality. The TMDL does not limit the number of dairy cows in the watershed. However, permits that are issued must be consistent with the TMDL.

The Applicant will be required to construct RCSs that are designed to hold a 25-year, 10-day rainfall event. This will increase the RCS capacity by approximately 60% over the previous standard in earlier versions of the CAFO rules. It is also anticipated the loading will be reduced due to the emphasis the new CAFO rules place on phosphorus levels in soil application areas.

An adaptive management approach is an appropriate means to manage phosphorus loading in the Bosque. The TMDL Implementation Plan (TMDL I-Plan) emphasized this approach to achieve the phosphorus reductions targeted in the TMDL. The CAFO rules in 30 TAC Chapter 321 reflect the necessary adjustments to management practices necessary to, over time, reach the TMDL target. Accordingly, the TMDL is not directly tied to the number of animals permitted in the watershed. It is instead tied to BMPs, including the land application of the nutrients, consistent with management practices that ensure appropriate utilization by the crops.

The model used in the TMDL demonstrated that water quality conditions would improve significantly even with many more dairy cattle in the watershed if management practices were improved. The new CAFO rules incorporated more stringent management practices in the watershed in order to address phosphorus loading. Regardless of the number of dairy cattle, the in-stream water quality goals remain as they were established in the TMDL.

The TMDL I-Plan recognizes that new dairies may begin operating or existing dairies may expand in the watershed.<sup>2</sup> New or expanding operations are required to meet all the new management

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<sup>2</sup> See "An Implementation Plan for Soluble Reactive Phosphorus in the North Bosque Watershed," December, 2002, page 26: "New or expanding dairy CAFOs will be required to demonstrate through the application process that they will operate under the nutrient management practices as stipulated in Chapter 321 rules pertinent to a major sole source impairment zone." (Emphasis added.)

practices found in the Chapter 321, Subchapter B CAFO rules, which were approved by EPA as meeting all federal requirements for the protection of water quality. The focus of the rules was to reduce nutrient loading by requiring BMPs designed to significantly decrease the potential for discharges. Special provisions applicable to the North Bosque watershed that were not in the previous version of the CAFO rules were designed and adopted to specifically address the TMDL requirements to reduce phosphorus loadings. The operational and management strategies in the rules and draft permit are designed to reduce nutrient loading and be consistent with the North Bosque River TMDL.

**Response 3B – 50% Removal of Solid Manure from the Watershed:**

The North Bosque TMDL has a goal of a 50% reduction in instream loading. The TMDL and TMDL I-Plan address growth of CAFOs through BMPs designed to decrease loading, not by capping the number of head or acres of land. Neither the TCEQ rules nor the TMDL I-Plan requires a 50% haul-out of collectible manure. New or existing CAFOs who seek to add head in the watershed are given five options for dealing with 100% of the collectible manure. The options are found in TWC § 26.503(b)(2) and are:

- (A) Disposed of or used outside of the watershed;
- (B) Delivered to a composting facility approved by the ED;
- (C) Applied as directed by the commission to a waste application field owned or controlled by the owner of the CAFO if the field is not a historical waste application field;
- (D) Put to another beneficial use approved by the ED; or
- (E) Applied to a historical waste application field that is owned or operated by the owner or operator of the CAFO only if:
  - (i) Results of representative composite soil sampling conducted at the waste application field and filed with the commission show that the waste application field contains 200 or fewer ppm of extractable phosphorus; or
  - (ii) The manure is applied with commission approval, in accordance with a detailed nutrient utilization plan approved by the commission that is developed by:
    - (a) An employee of the United States Department of Agriculture's Natural Resources Conservation Service;
    - (b) A nutrient management specialist certified by the United States Department of Agriculture's Natural Resources Conservation Service;
    - (c) The State Soil and Water Conservation Board;
    - (d) The Texas Agricultural Extension Service;
    - (e) An agronomist or soil scientist on the full-time staff of an accredited university located in the state; or
    - (f) A professional agronomist or soil scientist certified by the American Society of Agronomy.

The nutrient management plan (NMP) submitted with the application reflects that the present intent of the Applicant is to route manure off-site. However, the other disposal methods allowed by TWC § 26.503(b)(2) remain available to the Applicant, subject to modification of their NMP.

**Response 3C – Phosphorus Limit in Diet to 0.4%:**

The TMDL I-Plan states that dairy operators will receive training related to diet control but does not mandate lower phosphorus content in feed. There is no TCEQ rule related to requiring reduced phosphorus content in feed rations. The nutrient content in the annual wastewater and manure samples should reflect the Applicant's efforts to lower phosphorus content in feed rations if the Applicant pursues this BMP in an effort to manage nutrients.

The Applicant is required to implement a comprehensive nutrient management plan (CNMP) and one aspect of that planning process is the consideration for reduced phosphorus in the feed. The Applicant may consider the nutritional needs of his herd in implementing a CNMP.

**Response 3D – Limiting Application so that Phosphorus Never Exceeds 200 ppm:**

TCEQ established rules to implement the TMDL I-Plan and the draft permit is consistent with those rules. Neither the rules nor the TMDL I-Plan cap phosphorus at 200 ppm on LMUs. The model used in development of the TMDL did not provide that soil test phosphorous levels on application fields remain at or below 200 ppm. Predicted soil concentrations after the 39 years of application that were simulated by the TMDL model were not specifically considered in discussions or in development of the TMDL. The draft permit requires implementation of an NMP. When LMUs test in excess of 200 ppm of phosphorus, the Applicant must also implement a nutrient utilization plan (NUP) specific to those LMUs that takes into consideration the phosphorus crop removal rate.

**Response 3E – Application Limited to the Phosphorus Needs of the Crop:**

The model used for the TMDL simulated land application rates at the "phosphorus agronomic rate" recommended by U.S. Department of Agriculture and others. Recommended agronomic rates account for some soil storage of phosphorus and may not be identical to the crop phosphorus "need only" application rate. The NMP provided by the Applicant addresses application limitations based on the agronomic needs of the crop. If phosphorus levels rise beyond 200 ppm on LMUs, a NUP must be implemented that will require phosphorus application based on crop removal levels, rather than on the agronomic needs of the crop. This is consistent with the TCEQ CAFO rules.

**Response 3F – Phosphorus on New Fields Would Not Exceed 60 ppm:**

The TMDL model assumed that new waste application fields began at soil concentrations of 60 ppm for phosphorus as an estimate of typical conditions across the North Bosque watershed. The model did not limit application to the new waste application fields to keep soil phosphorus at or below 60 ppm and was not able to do so because of model code limitations. Soil concentrations in the simulated new waste application fields would have been something different than 60 ppm after the

39 years of application simulated by the TMDL model, but that was not specifically considered during development of the TMDL. The TMDL is based on meeting in-stream water quality criteria, not soil concentrations.

**Comment 4:**

Waco comments that contrary to the TMDL, the draft permit discourages the composting or exporting of dairy waste outside the watershed and notes that the basic goal of the TMDL strategy is to remove from the North Bosque watershed approximately 50% of the manure produced by the dairies. Waco also comments that the expanded use of third party fields with little control of nutrient application encourages dairies to avoid exporting of waste.

**Response 4:**

The permit is consistent with the TCEQ rule requirements for allowing the Applicant to use third party fields. Composting is one of the options available to the Applicant for handling its waste. Section VII.A.8.(e)(5) of the permit provides for the following offsite methods of disposal or use of wastewater, manure, and sludge:

- 1) Delivery to a composting facility authorized by the ED;
- 2) Delivery to a permitted landfill located outside of the major sole source impairment zone, subject to the requirements of commission rules relating to industrial solid waste;
- 3) Beneficial use outside of the major sole source impairment zone; or
- 4) Put to another beneficial use approved by the executive director.
- 5) Providing manure, wastewater, and/or sludge to operators of third-party fields that have been identified in the PPP.

Land application on third party fields must be in accordance with the applicable land application requirements established in 30 TAC § 321.36 and 30 TAC § 321.40 at an agronomic rate based on soil test phosphorus. The permit goes beyond the rule requirements by setting a tiered application rate based on soil test results on third party fields. Also, the draft permit caps land application on third party fields when soil test phosphorus levels reach 200 ppm, which is consistent with the rule.

Land application of nutrients to third party fields conducted in accordance with the rules and permit will allow beneficial use of the nutrients for crop production. Crops take phosphorus from the soil into the plant tissue, binding it such that it is not available for runoff. As crops are harvested, the amount of phosphorus taken from the soil into the plant tissue will be removed. Allowing landowners in the watershed to utilize the nutrients in dairy wastewater; manure, and sludge will reduce the amount of inorganic fertilizer imported into the watershed for crop production. Inorganic fertilizer application rates are not regulated. The application rates for dairy wastewater, manure, and sludge on third party fields will be regulated through the CAFO permit.

**Comment 5:**

Waco comments that the ED has provided no technical justification for asserting that the measures recited in the draft permit will attain the water quality standards for phosphorus and implement the TMDLs.

**Response 5:**

The ED disagrees with this comment. TCEQ rules and provisions in the draft permit contain control actions and management measures to address the goals of the TMDL. TCEQ conducts in-stream monitoring to monitor loading in the North Bosque and the issuance of CAFO dairy permits under the new rules will provide for additional protection in order to meet the goals of the TMDL.

The TMDL I-Plan recognizes that an adaptive management approach is an appropriate means to manage phosphorus load to the stream. The TMDL I-Plan emphasizes this approach to achieve the phosphorus reductions targeted in the TMDL. Adaptive management envisions adjustment of BMPs over time as necessary to reach this target. The TMDL anticipated that, to control loading to the stream, dairy CAFO permittees would implement those BMPs that best addressed site-specific conditions. Accordingly, the TMDL is not directly tied to the number of animals permitted in the watershed; it is instead tied to the amount of nutrients that may be land applied consistent with BMPs that ensure appropriate agricultural utilization of nutrients.

The TMDL I-Plan also included a recommendation that the CAFO rulemaking consider more stringent requirements for RCSs, in order to reduce overflows from RCSs. In response, the CAFO rules adopted in July, 2004 by the Commission included the following requirements consistent with the TMDL I-Plan to help manage the phosphorus load in the stream:

1. RCSs must be designed to contain the volume associated with a 25-year, 10-day rainfall event;
2. A permanent marker, graduated in one foot increments from the maximum sludge accumulation volume to the top of the spillway must be installed;
3. A RCS management plan detailing procedures for proper operation and management of wastewater levels based on design and assumptions of monthly expected operating levels must be developed;
4. Daily monitoring records of wastewater levels must be conducted;
5. Notification of TCEQ of discharges within one hour of discovery;
6. Discharge sample analyses must be submitted to the TCEQ; and
7. A report of discharges must be submitted to the TCEQ regional office, documenting that overflows from cumulative rainfall events were beyond the Applicant's control.

**Comment 6:**

Waco comments that the ED has failed to make any best professional judgment (BPJ) determination that the best conventional control technology (BCT) standards for the control of pathogens have been

met by the limitations imposed on the Applicant as required by the *Waterkeeper*<sup>3</sup> case.

**Response 6:**

The requirements in the draft permit satisfy this requirement because the North Bosque River TMDLs are intended to achieve significant reductions in the annual average concentrations and total annual loading of soluble phosphorus in the river. The TMDLs are designed to do this by focusing on controlling soluble phosphorus loading and stream concentrations to obtain and protect designated uses. The management measures for controlling phosphorus loading will also have some corollary effect on reducing pathogen and bacteria loading, since non-point source nutrient and pathogen loads largely originate from the same sites and materials and are transported via the same processes and pathways. Other provisions in the rules and draft permit directed at reducing and minimizing all pollutants, including pathogens and bacteria, that are potential constituents of animal wastes include:

1. Requiring a larger RCS with capacity to contain a designed 25-year, 10-day rainfall event (approximately 60% larger than required to contain the 25-year, 24-hour rainfall event);
2. Establishing an RCS management plan;
3. Controlling runoff from manure piles by covering, berming, or requiring that they drain into an RCS;
4. Setting additional minimum buffer distances between land application units and surface water in the state;
5. Prohibiting nighttime land application between 12 a.m. and 4 a.m.; and
6. Requiring a NMP that uses phosphorus transport considerations to determine allowable applications of nutrients. The P-Index approach reduces allowable application of nutrients to levels that are appropriate for reducing and minimizing all pollutants that are constituents of animal wastes.

Additionally, 40 CFR § 122.43(k)(3) allows states to use BMPs to control or abate discharges “when numeric effluent limitations are infeasible.” In the case of North Bosque dairies, they are only authorized to discharge in the event of a chronic or catastrophic rainfall event that exceeds the 25-year, 10-day storm event. If a discharge event occurs, the amount of rainfall involved and any resulting discharge will be highly variable both in volume and concentration of waste. Discharges from chronic or catastrophic rainfall events are not comparable to the continuous discharges from municipal wastewater treatment plants or industrial facilities.

**Comment 7:**

Waco comments that the third party fields the Applicant plans to use are not identified and should be regulated as LMUs. Waco comments that to implement its NMP, the Applicant must have a plan for where the wastewater will go. Waco comments that the Applicant needs control of application fields

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<sup>3</sup> *Waterkeeper Alliance, Inc. v. Environmental Protection Agency*, 399 F.3d 486 (2<sup>nd</sup> Cir. 2005).

to make sure they are able to dewater the lagoons when necessary. Therefore, these fields are actually offsite LMUs. Waco comments that TCEQ needs to explain how irrigation of wastewater to third party fields is possible without them being considered LMUs and whether EPA concurs with the agency's reasons.

**Response 7:**

TWC § 26.503 provides for disposal practices for dairy CAFOs, which include allowing manure to be put to other beneficial uses, such as land application on third party fields. 30 TAC § 321.42(j)(3) was specifically worded to reflect that “LMUs are not associated with third party fields.”<sup>4</sup> The CAFO operator does not control the third party fields under contract with the CAFO. Application on third party fields is optional and represents “excess capacity to provide for more sound waste management by existing dairy CAFOs.”<sup>5</sup> Even though an applicant does not control third party fields, the rules provide that an applicant is responsible for any non-compliance with the permit or TCEQ rules on such fields. Additionally, third party fields have a 200 ppm cap on phosphorus. Once a third party field contains phosphorus at 200 ppm or greater, land application must cease. Rates of application are set based on annual soil test levels as long as they are below 200 ppm.

Section X.K. of the draft permit requires that the RCS Management Plan have a site specific contingency plan for removal of wastewater to keep planned withdrawals from exceeding maximum allowed allocations, and that all wastewater that cannot be applied in accordance with the NMP be removed from the facility at a minimum of once per calendar year. In addition, the draft permit includes an additional six acre-feet of storage in RCS #2 for the purpose of storing wastewater that cannot be land applied in accordance with the NMP, which is the estimated amount of wastewater that is in excess of what can be applied under the current NMP.

EPA issued a letter on October 30, 2007 stating they have no objection to the issuance of the draft permit.

**Comment 8:**

Waco states that the federal court in the *Waterkeeper* case determined that NMPs are the equivalent of effluent limitations. Therefore, NMPs should be reviewed by the permitting authority, included in the permit, and made available to the public before the permit is issued. Waco comments that this reasoning should extend to other site specific technical plans and documented demonstrations of the methods by which the discharge of pollutants will be controlled at CAFOs permitted by TCEQ, including: CNMPs, NUPs, RCS management plans, and pollution prevention plans (PPPs).

**Response 8:**

*Waterkeeper* states that if the NMP is not included in permits the public is deprived of the right to assist in development, revision, and enforcement of an effluent limitation. EPA has established nine

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4 CAFO Rule Preamble, 29 TexReg 6652, 6658 (July 9, 2004).

5 *Id.* at 6692.

critical elements to be considered as part of the NMP. Included with the permit application is a table that lists the nine elements and the location of those elements in the file reviewed by the ED and made available to the public. The ED requires North Bosque dairies to submit their NMP with their permit applications and the NMP was technically reviewed and available to the public.

A CNMP is not required by the CWA and is not addressed in the *Waterkeeper* case. TCEQ rules at 30 TAC § 321.42(s) require all dairy CAFOs in a major sole-source impairment zone to operate under a CNMP approved by the Texas State Soil and Water Conservation Board. Bosque dairy permits required implementation of the CNMP by December 31, 2006, and the Applicant is required to maintain a copy of the CNMP as part of their PPP. However, the rules do not require the submission of the CNMP to TCEQ and the review of that document is not part of the CAFO permitting process. Furthermore, the CNMPs are confidential under state law as part of the local soil and water conservation district's files unless the Applicant chooses to make the information available to the public. However, most of the information contained in the CNMP is part of the permit technical information packet and available in that form to the public.

NUPs are NMPs that utilizes a crop removal application rate. However, NUPs are not required until annual testing of LMUs indicates phosphorus in excess of 200 ppm. Based on the statute and rule, the NUP is not considered part of the permit, but may be changed to address changing conditions. TWC § 26.504 requires testing every 12 months to determine whether phosphorus levels exceed 200 ppm. Reaching the 200 ppm level triggers the requirement to develop and implement a NUP. TWC § 26.504(c) states "the operator shall file with the commission a new or amended nutrient utilization plan with a phosphorus reduction component. . . ." The statute does not require the NUP to be a part of the permit or permit application. 30 TAC § 321.40 tracks the statute, but also states that land application can begin under a NUP 30 days after the NUP is filed with the ED, unless the ED has returned the NUP for not meeting rule requirements. This requirement is also an indication that the NUP is not intended to be part of the permit.

The draft permit and CAFO rules at 30 TAC § 321.42(g) require that the Applicant implement an RCS management plan and maintain a copy in the PPP. TCEQ rules do not require review of RCS management plans prior to issuing the permit. The RCS management plan must establish expected end of the month water storage volumes for each RCS. These maximum levels are based on the design assumptions used to determine the required size of the RCSs. This plan assures that the Applicant will maintain wastewater volumes within the design capacity of the structures. The Applicant must document and provide an explanation for all occasions when the water level exceeds the expected end of the month storage volumes. By maintaining the wastewater level at or below the expected monthly volume, the RCS will be less likely to encroach into the volume reserved for the design rainfall event and/or discharge during smaller rainfall events. This has resulted in an increased operating volume in the RCSs. The operating volume in RCS #1 is 12.85 acre-feet. The operating volume for RCS #2 is 14.39 acre-feet. Until the actual expansion of the RCS system is completed and volumes certified, the RCS management plan cannot be completed and implemented; and that expansion cannot take place until after the permit is issued.

The draft permit lists the requirements for what to include in the PPP. The Applicant is required to have documentation for all of the following as part of their PPP: Copy of the CNMP, NMP, NUP (if required), RCS liner certifications, the RCS operation and management plan; and the capacity of each RCS, as certified by a licensed Texas professional engineer. The draft permit specifically allows the Applicant to amend the PPP; and lists specific instances when it must be amended. One of those instances being within 90 days of receiving written notification from the ED that the plan does not meet permit requirements.

The PPP is not part of the permit review process, but the information contained in the application, technical information packet, and the NMP make up the core content of the PPP. The other items contained in the PPP are not subject to TCEQ review except during site investigations.

**Comment 9:**

Waco questions the calculation of runoff amounts in the water balance. Waco contends that assumptions in the water balance are flawed and that the entire water balance concept needs to be re-examined and a more realistic approach developed.

**Response 9:**

30 TAC § 321.38(e)(3) requires that RCS designs be based on certain technical standards developed by the National Resources Conservation Service (NRCS) or others. The 30-day runoff curve number was originally utilized by NRCS as part of reservoir operation studies (described in Texas Engineering Technical Note No. 210-18-TX3, dated March, 1983).

Since the early 1990s, the 30-day runoff curve number has been applied by NRCS engineers at the state and national levels to predict average monthly runoff for use in the design of animal waste RCSs. Currently, the 30-day runoff curve number is applied in software developed and used for that purpose by NRCS in Texas and across the nation. The application of the 30-day runoff curve number is an accepted engineering practice for predicting average monthly runoff from the average monthly precipitation.

The application of the 30-day runoff curve number to this permit is appropriate for the purpose of predicting the average monthly runoff from the RCS drainage area and the average monthly runoff from the application fields in the water balance calculations. Use of a one-day curve number for runoff from the application fields could result in a smaller volume requirement for RCSs.

The 25-year, 10-day storm runoff amount used in the application to calculate runoff is based on a 1-day runoff curve number, not the 30-day runoff curve amount.

**Comment 10:**

Waco comments that the 30-day curve number (CN) values used for CAFOs should be much higher than those used in Technical Note 210-18-TX3; and that the current approach is useless for

preparing a meaningful water balance. Until more realistic CN adjustments can be made, TCEQ should use the 1-day CN value for calculating monthly runoff from the production areas.

**Response 10:**

30 TAC § 321.38(e)(3) requires that RCS designs be based on certain technical standards developed by NRCS or others. The 30-day runoff curve number was originally utilized by NRCS as part of reservoir operation studies (described in Texas Engineering Technical Note No. 210-18-TX3, dated March, 1983).

Since the early 1990s, the 30-day runoff curve number has been applied by NRCS engineers at the state and national levels to predict average monthly runoff for use in the design of animal waste RCSs. Currently, the 30-day runoff curve number is applied in software developed and used for that purpose by NRCS in Texas and across the nation. The application of the 30-day runoff curve number is an accepted engineering practice for predicting average monthly runoff from the average monthly precipitation.

The application of the 30-day runoff curve number to this permit is appropriate for the purpose of predicting the average monthly runoff from the RCS drainage area and the average monthly runoff from the application fields in the water balance calculations. Use of a one-day curve number for runoff from the application fields could result in a smaller volume requirement for RCSs.

The 25-year, 10-day storm runoff amount used in the application to calculate runoff is based on a 1-day runoff curve number, not using the 30-day runoff curve amount.

**Comment 11:**

Waco comments that a stage/storage table was not provided in the permit application and that it is required to perform a water balance since the monthly evaporation from the RCSs is based on the surface area of the RCSs. Waco calculates that the evaporation is over-estimated and notes that it is difficult to know by how much without a stage/storage table.

**Response 11:**

The stage/storage table is not a requirement because TCEQ is evaluating proposed construction. Once construction is complete an actual stage/storage curve will be part of the RCS management plan, but that information is not available until the RCS expansion is complete.

The surface area used in the RCS design and water balance inflow for the RCSs was calculated from the top of the berm of the existing structures, plus the expected surface area of the proposed expansion. The expected evaporation surface area used in the water balance was taken as a percentage of the total top of the berm surface area.

**Comment 12:**

Waco comments that the application fails to provide adequate information on settling ponds. Waco notes that the Applicant intends the settling ponds to remove 40% of the solids produced by the milking parlor, but has not provided information the surface area, depth of the ponds, the design criteria, or the maintenance requirements. Waco states that because the removal rate is so high TCEQ should require the design criteria for the settling ponds be submitted so they can be reviewed.

**Response 12:**

This permit requires that documentation describing the sources of information, assumptions, and calculations used in determining the appropriate volume capacity and structural features of each RCS must be included in the PPP. Forty percent is considered an attainable removal rate for a settling basin. Specifics on design and maintenance requirements will be developed and kept in the PPP.

**Comment 13:**

Waco comments that the Applicant did not use the proper RCS sludge accumulation rate for process-generated wastewater. Waco notes that the Applicant has calculated the required sludge accumulation rate from process-generated wastewater based on a rate of 0.0729 cubic feet of storage capacity per pound of total solids. Waco notes that this accumulation rate assumes solids being decomposed in an anaerobic lagoon properly designed for treatment and if the Applicant is to use this rate a minimum treatment level must be provided for in the permit or a much larger value used in the calculation.

**Response 13:**

The design sludge accumulation rate of 0.0729 cubic feet of storage capacity per pound of total solids in wet manure entering the storage facility is based on the characteristics of wet manure.<sup>6</sup> It is the best estimate of sludge accumulation rate currently available for design of agricultural waste containment structures and is considered adequate for modern dairy facilities by the scientific and research community. Treatment volume is only required for facilities with over 1,000 head and this facility will only be permitted at a maximum of 990 head.

**Comment 14:**

Waco comments that the Applicant calculated the sludge accumulation volume from runoff based on 25% of the runoff from the 25-year, 10-day storm event and that there is no technical basis or historical data to justify this value. Waco comments that TCEQ cannot allow some arbitrary number in the calculation of sludge accumulation without providing some data or technical basis for using it.

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<sup>6</sup> Based on NRCS Agricultural Waste Management Field Handbook.

**Response 14:**

Sludge accumulation volume requirements for sludge accumulation from runoff have been estimated as 25% of the 25-year, 24-hour runoff volume from open lot areas. The draft permit uses the calculated 10-year sludge volume as a 5-year design volume. It also uses the 25-year, 10-day storm event, which further increases the design volume of the RCSs. Methodologies for estimating sludge volume requirements are limited. The method used by the Applicant in this application is one of a very limited number of methodologies.

One other available method is used by NRCS in Kansas, and is based on mean annual runoff. The sludge volume allocations included in the draft permit are more conservative than the volumes determined by the Kansas NRCS methodology. Therefore, of the available methods for estimating sludge volume requirements for sludge from runoff, the draft permit incorporates the more conservative value.

**Comment 15:**

Waco comments that the capacity certifications submitted with the application were done in 2003 and did not include any information concerning the accumulated sludge. Waco notes there is nothing in the draft permit requiring that these RCSs be re-certified with respect to the existing sludge volume.

**Response 15:**

Section VII.A.5.(a)(2) of the draft permit requires as part of the RCS management plan a stage/storage table for each RCS, with minimum depth increments of one-foot, including the storage volume provided at each depth. It also requires a second table or sketch that includes increments of water level ranges for volumes of total design storage, including the storage volume provided at each depth (or water level) and the type of storage designated by that depth. In addition, Section VII.A.5.(a)(5) requires the Applicant to install and maintain a permanent pond marker (measuring device) in each RCS visible from the top of the berm to show the volume for the design rainfall event. The marker should be in one foot increments beginning from the bottom of the RCS to the top of the embankment or spillway; and design volume levels for maximum sludge accumulation and operating volume (calculated process generated wastewater plus rainfall minus evaporation). Certification of sludge volume prior to year three is not required. However, the above requirements cannot be met if the sludge volume is in excess of its design capacity.

**Comment 16:**

Waco comments that the liner certification for RCS #1, #2, and the settling pond are inadequate. Waco notes that the certification for RCS #1 is not to scale and does not resemble the shape shown in the capacity certification. Waco also notes that the samples in RCS #1 appear to have been taken in the embankments with none being taken in the bottom of the RCS. Waco comments that the samples in RCS #2 and the settling pond appear to have been taken only in the bottom of the RCS

and none from the embankments. Waco asserts samples should be taken from both the bottom and the embankments.

**Response 16:**

The liner certifications as well as the samples and their location are consistent with the requirements of the current authorization. The draft permit requires new liner certifications for RCS #1 and RCS #2 and the settling basin. Section VII.A.3.(a)(2) reads as follows:

- (2) Documentation of liner and capacity certifications must be completed for each RCS prior to use and kept on-site in the PPP. Once construction of modified RCS #1 and RCS #2 is complete, new capacity and liner certifications will be provided. Upon issuance of this permit, a new liner certification will be provided for the settling basin. The table below shows current liner and capacity certifications provided in the permit application.

RCS	Liner Certification	Capacity Certification	
	Date	Date	Volume (acre-feet)
RCS # 1	March 18, 1997	December 22, 2003	9.81
RCS # 2	October 27, 1999	December 22, 2003	7.54
Settling basin	December 24, 2001	N/A	N/A

**Comment 17:**

Waco comments that the Applicant has not addressed how it will enlarge RCS #1 and #2, or its operational plans while the enlargement is taking place, to meet the requirements of the 25-year, 10-day design rainfall event. Waco notes that it does not appear RCS #2 can be enlarged without encroaching upon the drainage way or LMU.

**Response 17:**

TCEQ rules do not require ED review or approval of the process an applicant will use to enlarge RCSs or their operational practices while doing so. However, Section X.A.1. - 3. of the draft permit requires the Applicant to increase the capacity of RCS #1 and RCS #2 within 180 days of the issuance of the permit. Section VII.A.3 requires that the design and completed construction of the RCS be certified by a licensed Texas professional engineer prior to use; and that documentation of liner and capacity certifications be completed for the RCS prior to use and kept on site in the PPP. Based upon the ED's review of the Site Map provided by the Applicant, there appears to be adequate area to enlarge RSC #2 to meet the requirements in the draft permit.

**Comment 18:**

Waco comments that the permit application does not provide an adequate description of the structural controls, especially the berms. Without a more adequate description it will be difficult for the Applicant and any TCEQ inspector to evaluate compliance. Waco comments that the permit application and draft permit should describe the berms in sufficient detail with respect to location, size, and construction so that TCEQ inspectors can determine if the facility is in compliance and the operator can make needed repairs, if necessary.

**Response 18:**

TCEQ rules and the draft permit require that this information be maintained in the PPP. This information is not part of the permit application review process.

**Comment 19:**

Waco comments that the basic methodology for calculating agronomic rates is flawed because the NMP fails to take into account the nutrients available to plants in the root zone to satisfy the crop requirement. Waco notes that for application of biosolids, the ED requires agronomic rate calculations take into account the nutrients in the soil by taking the crop requirement and subtracting the nutrients available in both the 0-6 inch and 6-24 inch soil depths for the most recent year. This allows only the amount of nutrients needed to satisfy the overall crop requirement for that year to be applied.

**Response 19:**

The methodology used by the Applicant for the calculation of waste application for beneficial use follows the requirements of the NRCS 590 Standard as required by the CAFO rules in 30 TAC § 321.42(i). The NMP based on the NRCS 590 Standard does account for nutrients available to plants. The phosphorus index makes current soil test levels for phosphorus a component of that index value that affects the rate of application.

**Comment 20:**

The Applicant represented in item #1 and #2 of Section 6.2 of the application that a NUP that limits phosphorus application to crop requirements and incorporate a phosphorus reduction component on fields over 200 ppm and that it will limit maximum phosphorus levels in soils to 200 ppm. Waco notes that LMUs #3 and #4 currently have soil phosphorus levels of 198 ppm and the Applicant is planning to land apply at the crop phosphorus level for both. Considering the crop yield, Waco asserts this will result in a net phosphorus increase of 42 ppm in LMU #3 and 35 ppm in LMU #4 after the first year. Additionally, Waco calculates that all the LMUs will be over 200 ppm for phosphorus after four years. Waco notes that if the Applicant really intended to limit maximum phosphorus levels in soil to 200 ppm as represented, it would be applying no waste to its LMUs by the end of the permit term.

**Response 20:**

It is permissible for a permitted facility to establish goals more restrictive than permit or rule requirements. The goal presented by the Applicant in Section 6.2 of the application is not a requirement of Chapter 321, Subchapter B CAFO rules. However, Section VII.A.8.(c)(1)(ii) in the draft permit is consistent with requirements in Chapter 321, Subchapter B relative to the implementation of NUPs.

Regarding the conclusion that it is likely that the dairy will be applying 100% of its waste to third party fields by the end of the permit term, as noted in Response #3B, new or existing CAFOs who seek to add head in the watershed are given five options for dealing with 100% of the collectible manure and are within the existing CAFO rules by exercising any combination of those options.

**Comment 21:**

Waco comments that the RCS management plan is not reviewed by the ED before the permit is issued and that this does not allow for any public comment and notes that the plan will only be seen is when inspectors see it on annual inspections.

**Response 21:**

30 TAC § 321.42(g) and the draft permit require the Applicant to implement a RCS management plan and maintain a copy in the PPP. TCEQ rules do not require review of RCS management plans prior to issuing the permit. Until the actual expansion and modification of the RCS system is completed and volumes certified, which takes place after the permit is issued, the RCS management plan cannot be completed and implemented.

**Comment 22:**

Waco comments that Section X.N. of the draft permit indicates solids in the settling basin must be removed on a "regular and consistent basis." Waco notes that is a very subjective phrase given the importance of removing solids so that the settling basin retains its removal efficiency. Therefore, the removal requirements should be more specific in the permit.

**Response 22:**

Operating factors and climatic conditions affect how often the settling basin would need to be maintained. The draft permit requires a level of maintenance to ensure solids are removed efficiently as opposed to being removed to comply with a specific schedule.

**Comment 23:**

Waco questions how the sludge volume will be monitored in the RCSs. Waco comments that because sludge accumulation problems can take over a year to get corrected, the draft permit should require sludge measurement in the RCSs annually rather than three years after the permit is issued. Waco notes that at this dairy sludge accumulation has not been measured in at least four years.

**Response 23:**

30 TAC § 321.39(c) prohibits the Applicant from allowing sludge accumulation to exceed the design volume. This is achieved by removing the sludge according to the design schedule. The design criterion for this dairy is five years of accumulation. The RCS management plan will establish accumulation rates in the RCSs, which will identify the current sludge volume in each RCS. Taking volume measurements starting in year three will help reevaluate the accumulation rates prior to reaching the five-year design volume.

By starting measurements in year three, the operator will have time to complete modification and expansion of RCSs; and to develop and implement an RCS management plan to appropriately manage the sludge volume in the ponds. Furthermore, taking daily pond marker readings should assist in determining excessive sludge accumulation in any RCS.

**Comment 24:**

Waco comments that the required RCS capacity certification under Section VII.A.3.(a)(2) is ambiguous. Waco states it is not clear whether it refers to total as-built capacity or available capacity above the sludge. Waco states that the permit should clearly reflect that all capacity certifications require both as-built capacity and the volume of sludge accumulation.

**Response 24:**

The RCS management plan requires that the stage/storage data be maintained in the PPP. That data should include increments of water level ranges for volumes of total design storage, including the storage volume provided at each specified depth. This requirement will assure that sludge levels are accounted for on a continuing basis. Accumulated sludge volumes are not required as a part of the permit application.

**Comment 25:**

Waco comments that the permit does not identify all liner design specifications required by 30 TAC § 321.38(g). Further, Waco states 321.28(g)(3)(A) requires information on the "materials underlying and forming walls of the containment structure up to the wetted perimeter. Waco comments that the information provided in Section VII.A.3.(f) to satisfy this requirement is inadequate.

**Response 25:**

Section VII.A.3(b) of the permit requires that the RCSs be designed and constructed in accordance with the technical standards developed by NRCS, the American Society of Agricultural and Biological Engineers (ASABE), the American Society of Civil Engineers (ASCE), or the American Society for Testing and Materials (ASTM). Additionally, the draft permit identifies specific design criteria in Section VII.A.3.(g)(3):

... a liner must be designed by a licensed Texas professional engineer and documented to have hydraulic conductivities no greater than  $1 \times 10^{-7}$  cm/sec in accordance with ASTM D 5084, or other method approved by the Executive Director, with a thickness of 18 inches or greater or its equivalency in other materials.

These requirements are consistent with the rules. The requirement in 30 TAC § 321.28(g)(3)(A) for information on the "materials underlying and forming walls of the containment structure up to the wetted perimeter" pertains to the determination of lack of hydrologic connection. It is not a specific liner design requirement.

**Comment 26:**

Waco notes that the draft permit contains some procedures and requirements for liner and embankment construction, but does not provide adequate procedures for testing. Waco comments that at a minimum TCEQ should: 1) require the field density tests to be based on predetermined moisture-density compaction curves, Atterberg limits, and laboratory permeability of undisturbed field samples of compacted soil liner, 2) define the frequency of testing, e.g. the number of tests per specific area per lift for both bottom and sides of RCSs, 3) require testing during, not after, construction of the liner, and 4) require continuous on-site inspection during construction. Waco states that TCEQ must be able to review the soils testing results to make an independent verification of the certification.

**Response 26:**

Section VII.A.3(b) of the draft permit requires that the RCSs are designed and constructed in accordance with the technical standards developed by NRCS, ASABE, ASCE, or ASTM. Additionally, Section VII.3.(f) of the permit identifies specific RCS design, construction, and testing criteria. The construction and testing requirements for embankment lifts are in Section VII.A.3.(f)(4) and are as follows:

Embankment Lifts. The embankment shall be constructed in lifts or layers no more than eight (8) inches compressed to six (6) inches thick at a minimum compaction effort of 95 percent (%) Standard Proctor Density (ASTM D698) at -1% to +3% of optimum moisture content.

The compaction testing requirements are in Section VII.A.3.(f)(4) and are as follows:

Compaction Testing. Embankment construction must be accompanied by certified compaction tests including in place density and moisture in accordance with the American Society of Testing Materials (ASTM D 1556, D 2167, D 2922 or D 2937; and D 2216, D 3017, D 4643, D 4944 or D 4959) or equivalent testing standards. Compaction tests will provide support for the liner certification performed by a licensed Texas professional engineer as meeting a permeability equal to, or less than,  $1 \times 10^{-7}$  cm/sec over a thickness of 18 inches or its equivalency in other materials.

More specific liner requirements are included in Section VII.3.(g)(3) of the permit as noted in Response #34. The ED believes these testing requirements are adequate and should be protective of water quality.

**Comment 27:**

Waco notes that Section VII.A.10.(b) requires an engineer to complete a site evaluation of the structural controls once every five years and certify a report of findings. Waco comments that the Applicant should be required to certify structural controls prior to or upon issuance of the permit. If a certification has not been provided with the permit application, Waco believes the five-year evaluation should occur immediately upon issuance of the permit and then every five years thereafter.

**Response 27:**

TCEQ rules and the draft permit require that this information be maintained in the PPP. This information is not part of the permit application review process.

**Comment 28:**

Waco comments that the permit requires only one annual sample of wastewater and manure. Waco notes that wastewater is typically sampled from the surface of an RCS and that will result in significantly different sample concentrations than taking it from the irrigation pipeline. Waco contends that operation of the irrigation pumps elevates phosphorus levels beyond what is found in wastewater surface samples. Waco recommends that RCS wastewater samples be taken from the irrigation pipeline following the pump rather than from the surface of the RCS and should be taken more often, preferably at least once during each irrigation event.

Also, Waco comments that manure should be sampled more than once annually, preferably one each month or once for each transport event. Waco notes that a single sample may not be representative and comments that there are factors that can cause significant errors in calculating the application rates due to reliance on a single annual sample.

**Response 28:**

The permit provisions for sampling and monitoring are consistent with 30 TAC § 321.36(e) and (g), and with the requirements of the NRCS Practice Standard Code 590. The draft permit requires annual sampling and the NMP must be updated to modify application amounts based on soil testing and wastewater/manure/slurry testing.

**Comment 29:**

Waco calculates that the permit application fails to account for proper management of phosphorus production.

**Response 29:**

It is projected that 990 cows will generate 385 lbs. of phosphorus per day. The calculation is based on a book value for phosphorus production by dairy cows developed by the American Society of Agricultural and Biological Engineers. It is part of a set of data intended for use in designing facilities to accommodate actual waste production. As long as the phosphorus being land applied or hauled-out is accounted for as required under TCEQ rules, an accounting to reflect what remains in the CAFO production area is not necessary.

The permit is consistent with the TCEQ rule requirements for allowing the Applicant to use third party fields. Composting is one of the options available to the Applicant for handling its waste. Section VII.A.8.(e)(5) of the permit provides for the following offsite methods of disposal or use of wastewater, manure, and sludge:

- 1) Delivery to a composting facility authorized by the ED;
- 2) Delivery to a permitted landfill located outside of the major sole source impairment zone, subject to the requirements of commission rules relating to industrial solid waste;
- 3) Beneficial use outside of the major sole source impairment zone; or
- 4) Put to another beneficial use approved by the executive director.
- 5) Providing manure, wastewater, and/or sludge to operators of third-party fields that have been identified in the PPP.

Land application on third party fields must be in accordance with the applicable land application requirements established in 30 TAC § 321.36 and 30 TAC § 321.40 at an agronomic rate based on soil test phosphorus. The permit goes beyond the rule requirements by setting a tiered application rate based on soil test results on third party fields. Also, the draft permit caps land application on third party fields when soil test phosphorus levels reach 200 ppm, which is consistent with the rule.

Land application of nutrients to third party fields conducted in accordance with the rules and permit will allow beneficial use of the nutrients for crop production. Crops take phosphorus from the soil into the plant tissue, binding it such that it is not available for runoff. As crops are harvested, the

amount of phosphorus taken from the soil into the plant tissue will be removed. Allowing landowners in the watershed to utilize the nutrients in dairy wastewater, manure, and sludge will reduce the amount of inorganic fertilizer imported into the watershed for crop production. Inorganic fertilizer application rates are not regulated. The application rates for dairy wastewater, manure, and sludge on third party fields will be regulated through the CAFO permit.

**Comment 30:**

Waco comments that the permit fails to remove 50% of collectible manure from the watershed as recommended by the North Bosque TMDL. Waco notes that while removal is listed as one of the possible options, there is no indication that any of the manure transferred to other persons will be sent to composting or out of the watershed.

**Response 30:**

New or existing CAFOs who seek to add head in the North Bosque watershed are given five options for dealing with 100% of the collectible manure. Those options are found at TWC § 26.503(b)(2). See Response #3B and Response #29 for those options. The NMP submitted with the application reflects the Applicant's present intent to dispose of manure off-site. However, the other disposal methods allowed by TWC § 26.503(b)(2) remain available to the Applicant. As noted in the comment, the TMDL for the North Bosque "recommends" removal of 50% of the collectible manure, it does not require it.

**Comment 31:**

Waco comments that Section VII.A.8.(c)(2) of the draft permit allows land application on land exceeding 200 ppm of phosphorus as long as a NUP has been prepared and approved by TCEQ. Waco notes that even when the phosphorus concentrations exceed 500 ppm, application may continue as long as the NUP contains a phosphorus reduction component. Waco states that land application on fields that exceed 200 ppm of phosphorus should be prohibited in order to be consistent with the TMDL; and at the very least, be subject to a NUP with a phosphorus reduction component. Waco notes that on page 16 of the North Bosque I-Plan it states that formal enforcement will result if CAFOs apply waste or wastewater to a waste allocation field that has been documented to have exceeded 200 ppm of phosphorus in zone 1 of the soil horizon.

**Response 31:**

The draft permit requirements are consistent with TCEQ rules relative to phosphorus reduction in waste application fields. The use of phosphorus based assessments requires action on fields exceeding 200 ppm. All waste application is limited under the permit provisions to avoid significantly increasing phosphorus runoff into the North Bosque River. An LMU that reaches 200 ppm of phosphorus triggers the NUP requirement. See 30 TAC § 321.40(k)(3). A NUP must be approved by the ED prior to land application of any additional manure, sludge, or wastewater to the LMU addressed by the NUP. For third party fields, there is no NUP requirement, but land

application of all manure, sludge, or wastewater must cease when a field reaches a phosphorus level of 200 ppm or higher. Beneficial use refers to the level of nutrients a crop can use. The crop will use the nutrients applied without regard to the level of nutrients in the soil. The 590 Standard considers both the application rate and the soil test phosphorus level a risk factor.

Page 16 of the TMDL I-Plan for the North Bosque does read as indicated by Waco. However, immediately following this statement the document states that more information is available in the section entitled "Enforcement Program." In that section of the TMDL I-Plan, it states that owners of facilities would be subject to enforcement if they performed land application on fields where soil phosphorus exceeded 200 ppm, unless land application was done according to an approved NUP.<sup>7</sup> This is consistent with TCEQ rules that require an approved NUP prior to any additional land application on LMUs that exceed 200 ppm of phosphorus and prohibit land application on third party fields that exceed that amount.

**Comment 32:**

Waco requests revision to the provisions applicable to third party fields at paragraphs VII.A.8.(e)(5)(i)(E) to state land application is allowed on third party fields is only allowed when phosphorus levels are less than 200 ppm. Waco states that the current language that allows land application when phosphorus levels are less than or equal to 200 ppm is not in compliance with the rule that states land application on third party fields must cease when phosphorus levels are exactly 200 ppm or higher.

**Response 32:**

The ED agrees with the comment and modifies Section VII.A.8.(e)(5)(i)(E) of the draft permit as follows:

(E) Land application rates shall not exceed one times the phosphorus crop removal rate when soil phosphorus concentration in Zone 1 (zero(0) to six(6) inch incorporated; zero(0) to two(2) or two(2) to six(6) inch if not incorporated) is greater than 150 ppm and less than 200 ppm phosphorus.

**Comment 33:**

Waco requests revision to the provisions applicable to third party fields at paragraphs VII.A.8.(e)(5)(i)(C)-(E) to make it clear that the application rate cannot exceed the requirements of NRCS Code 590. Waco comments that adherence to NRCS Code 590 should be required if it is more restrictive than the permit.

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<sup>7</sup> See "An Implementation Plan for Soluble Reactive Phosphorus in the North Bosque Watershed," December, 2002, page 39:

**Response 33:**

The ED declines to make the requested change because the CAFO rules do not require that land application on third party fields be consistent with the NRCS Practice Code 590. The limitations placed in the draft permit assure that application on third party fields will take into account the potential for phosphorus build-up to occur. Land application on third party fields may not exceed a maximum of 200 ppm of phosphorus. When a third party fields tests 200 ppm or higher for phosphorus, all land application on that field must cease.

**Comment 34:**

Waco comments that according to Section VII.A.8.(e)(5)(i)(A) of the draft permit, no NMP is required for third party fields and that the requirements of Section VII.A.8.(e)(5)(i)(C)-(E) cannot be met since the NMP is the planning tool necessary to determine the appropriate application rates. Waco states a NMP should be required for third party fields.

**Response 34:**

The draft permit limits application on third party fields based on soil test phosphorus levels. The application limitations on third party fields are based on soil test phosphorus levels instead of the Phosphorus Risk Index. The restrictions are more conservative than the rules require. Similar to an NMP, as soil phosphorus levels increase on third party fields, the Applicant will have to reduce waste application rates in order to continue land applying on those fields and to prevent those fields from exceeding 200 ppm of phosphorus and be required to cease land application.

**Comment 35:**

Waco requests that Section VII.8.(e)(5)(iv) of the draft permit be revised to include a requirement that records of crops and crop yields be submitted to TCEQ on a quarterly basis and that Section VIII.B.7. needs to include a requirement that the yield records be submitted to TCEQ in the annual report.

**Response 35:**

Record keeping requirements at 30 TAC § 321.46(d)(8)(f) state the actual yield of each harvested crop must be recorded on a monthly basis. The information is available to the ED during field investigations and in the annual report submitted to the ED. Crop removal rates are based on yields when the NMP software is used.

**Comment 36:**

Waco believes that the best management practice in the impaired Bosque watershed is to remove or compost 100% of the sludge. However, if the permit is not going to contain a BMP for removing 100% of the sludge from the watershed or sending it to composting greater oversight is needed over

land application. Therefore, Waco comments that TCEQ should include a provision in the permit that the Applicant provide 10-day notification to TCEQ regarding the date and location of the planned application and an application plan prepared by a certified nutrient management specialist demonstrating that the requirements of Section VII.A.8.(e)(5)(i) will be met.

**Response 36:**

Section VIII.A.1. of the draft permit requires the Applicant to provide 10-day notification to TCEQ before undertaking RCS cleaning. The rules do not require notification prior to land application. If the concern is that TCEQ's Region Office needs notice, then notifying them prior to cleanout should be adequate. The rules do not require a land application plan. However, the restrictions on land application rates in Sections VII.A.8.(e)(5)(i)(C)-(E) apply to both sludge and manure; and are more restrictive than the rules require.

**Comment 37:**

Waco comments that the NMP only addresses the first year of the permit term and states that the NMP should be prepared for the five year permit term so that it is possible to see whether, at the projected application rates, it has enough land to sustain its operation during that time.

**Response 37:**

30 TAC § 321.36(d)(2) requires the operator to create and maintain a site-specific NMP along with documentation regarding implementation of the plan. 30 TAC §§ 321.36(e) and (g) requires annual sampling and the NMP must be updated to modify application amounts based on soil testing and wastewater/manure/slurry testing. A five-year NMP would be impracticable because the NMP is likely to change yearly due to changing climatic and operational conditions; and soil sampling results. It is important that NMPs remain flexible. When the NMP updated, the new version should be kept with their PPP documentation and available to TCEQ personnel during field investigations. Long term sustainability of a field may be a planning consideration, but there are no rule requirements regarding sustainability.

**Comment 38:**

Waco notes that Section X.F. of the draft permit requires the Applicant to install and maintain buffers according to NRCS standards. Waco notes that NRCS has practice standards for filter strips, but not for vegetative buffers. Waco states that TCEQ has previously responded to this comment the riparian forest buffer (Code 391), which is referenced by filter strips (Code 393) qualifies as a vegetative buffer. Waco comments that TCEQ seems to indicate that it is defining vegetative buffers in the Bosque watershed to mean filter strips as defined by NRCS Practice Code 393. Waco states that if TCEQ is defining vegetative buffers to mean either filter strips or as riparian forest buffers as defined in the applicable NRCS code, then this definition should be included in the permit.

**Response 38:**

Although not defined by TCEQ rules, vegetative buffers are commonly understood to mean vegetation that reduces shock due to contact. NRCS Practice Code 393 refers to Practice Code 391, *Riparian Forest Buffer*. Riparian forest buffers are areas predominantly in trees and/or shrubs located adjacent to an up-gradient from watercourses or water bodies. One of the purposes of a riparian forest buffer is to reduce excess amounts of sediments, organic material, nutrients, and pesticides in surface runoff. This purpose is the same as that performed by vegetative filter strips according to NRCS Practice Code 393. Citing the practice code is adequate for permit requirements. The practice standard has an adequate definition.

**Comment 39:**

Waco comments that it is not clear where the measurement of the vegetative buffers and filter strips begin in relation to the stream bed and the center of the stream. Waco notes that TCEQ has previously indicated that the vegetative buffers can only exist as close to the normal water line or at the top of the banks. Waco accepts this definition, but believes it would be clearer if the language in the permit included this definition.

**Response 39:**

The ED agrees that the measurement of the vegetative buffers and filter strips should be done from the banks of a stream, not from the center of the stream. Filter strips,<sup>8</sup> vegetative buffers, and riparian forest buffers are, by definition, vegetated strip flow lengths. These vegetated strips can only exist as close as the normal water line or at the top of the bank.<sup>9</sup> Because the Applicant has to maintain the distance from where the vegetation can be established, no definition is needed. Field marking of land application areas is not required by the regulations. The ED does not believe this definition needs to be added to the permit. It is logical that the appropriate set back distance can only be measured from the land surface.

**Comment 40:**

Waco states that previous responses to their comments regarding the failure to address the discharge of bacteria and other pathogens are inadequate for the following reasons: 1) There has been no demonstration by TCEQ that the management measures for controlling phosphorus will have any effect on bacteria, 2) TCEQ has not indicated they have any idea how much reduction would occur if it does occur, and 3) Though bacteria and pathogen loads may originate from the same sites and materials and transported by the same river and streams the processes and removal mechanism for bacteria are "far different" than those for phosphorus.

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<sup>8</sup> Filter strips are an area of herbaceous vegetation.

<sup>9</sup> Per Practice Standard Code 391.

**Response 40:**

As stated previously, 40 CFR § 122.43(k)(3) allows states to use BMPs to control or abate discharges “when numeric effluent limitations are infeasible.” This also applies to bacteria. In the case of North Bosque dairies, they are only authorized to discharge in the event of a chronic or catastrophic rainfall event that exceeds the 25-year, 10-day storm event. Since discharges are not allowed except in the event of a chronic or catastrophic rainfall, there are no bacteria discharged from the control facilities except during chronic or catastrophic rainfall events. If such an event occurs, the amount of rainfall involved and any resulting discharge will be highly variable both in volume and concentration of waste. Discharges from chronic or catastrophic rainfall events are not comparable to the continuous discharges from municipal wastewater treatment plants or industrial facilities. A discharge during chronic or catastrophic rainfall events is authorized by EPA and TCEQ rules. Therefore, no bacteria are discharged from the control facilities except during authorized discharges. The BMPs in place to limit the amount on nutrients applied to the LMUs also limit the amount of bacteria that can be applied. Therefore, bacteria applied to LMUs are limited by the BMPs that limit nutrient application.

**Comment 41:**

Waco comments that the ED has failed to prepare an accurate Fact Sheet because on page 5 it states:

In determining the application rate, the nutrient management plan also evaluates the amount of nutrients needed for optimal crop production and then balances that need between the nutrients in the soils and nutrient source (i.e. wastewater).

Waco states that this statement is factually incorrect because the NMP allows nutrients in the soil to far exceed what is needed for optimal crop production and allows continued application of nutrients in excess of this.

Changes to Draft Permit as a result of public comment:

Section VII.A.8.(e)(5)(i)(E) of the draft permit now reads:

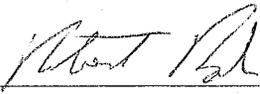
(E) Land application rates shall not exceed one times the phosphorus crop removal rate when soil phosphorus concentration in Zone 1 (zero(0) to six(6) inch incorporated; zero(0) to two(2) or two(2) to six(6) inch if not incorporated) is greater than 150 ppm and less than 200 ppm phosphorus.

Respectfully submitted,

Texas Commission on Environmental Quality

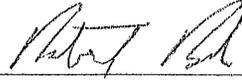
Glenn Shankle  
Executive Director

Robert Martinez, Director  
Environmental Law Division

By   
Robert D. Brush, Staff Attorney  
Environmental Law Division  
State Bar No. 00788772  
Representing the EXECUTIVE DIRECTOR of the  
Texas Commission on Environmental Quality

CERTIFICATE OF SERVICE

I certify that on February 28, 2008 the "Executive Director's Response to Public Comments" for Permit No.WQ0003675000 was filed with the Texas Commission on Environmental Quality's Office of Chief Clerk.



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Robert D. Brush, Staff Attorney  
Environmental Law Division  
State Bar No. 00788772