



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
WinSystems Center Building  
711 Stadium Drive, Suite 252  
Arlington, Texas 76011

OPA

SEP 20 2005

BY     *llc*    

September 15, 2005

Ms. LaDonna Castañuela  
Office of the Chief Clerk, MC 105  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, Texas 78711-3087

*AG*  
*49649*

CHIEF CLERK'S OFFICE

20 SEP 19 AM 10:50

U.S. DEPARTMENT OF THE INTERIOR  
OFFICE OF THE CHIEF CLERK

Re: U.S. Fish and Wildlife Service Comments Concerning Migratory Birds and Federally Listed Species on Proposed Texas Pollutants Discharge Elimination System (TPDES) Permit No. 04136

Dear Ms. Castañuela:

This responds to your Notice of Concentrated Animal Feeding Operation (CAFO) Renewal Application received by the U.S. Fish and Wildlife Service (Service) on September 12, 2005. The Cottonwood Auction Barn has applied to the State of Texas to operate an existing CAFO under TPDES Permit No. 04136. This CAFO is located within the North Bosque River drainage area (Texas Brazos River Segment No. 1226) in Erath County, Texas. As stated in the permit, the maximum capacity for this CAFO is 1,500 head. Waste control structures employed by the facility consist of one retention control structure with an approximate total capacity of 4.30 acre-feet. Wastewater and waste (i.e., manure) generated by the facility will be beneficially used on 84 acres of agricultural land located on-site.

The Service is concerned about the location of this CAFO, since a review of the records for Erath County indicates that the facility is located within the wintering range of the bald eagle (*Haliaeetus leucocephalus*), a federally listed threatened species. In addition, the facility is within the migratory range of the whooping crane (*Grus americana*), a federally listed endangered species.

In Texas, the preferred nesting habitat for the bald eagle is along river systems or within 1-2 miles of some large body of water. Nesting typically occurs from October to July. Clutch size varies from 1-3 eggs which are incubated for approximately 35 days. Young eagles generally fledge in April, after 10-12 weeks of growth, but parental care continues for another 4-6 weeks. Northern migration begins in May. Wintering eagles may be observed on rivers, streams, reservoirs, and other areas of open water where fish, waterfowl, and/or carrion are available for food. Current threats to this species include, but are not limited to, habitat loss, human encroachment on nesting sites and lead poisoning.

*llc*

The whooping crane spends the summer and breeding season in Canada then migrates to the Texas Gulf Coast to spend the winter months. Migration southward from Canada occurs from October through November while northward migration from the Texas Coast occurs from March through April. During migration, this species uses stopover areas in north Texas and the Texas Panhandle. Croplands are used for feeding and wetland areas are used for feeding and roosting. Current threats to this species include the destruction of wintering and breeding habitat, collisions with power lines and fences, shooting, specimen collecting and human disturbance.

Based on the location of this CAFO, the discharge of waste as a result of a storm event in excess of a 25-year, 24-hour event or through accidental releases which could result in adverse affects to these listed species appears to be unlikely. However, the Service recommends that the permittee notify the Service immediately if an accidental release or storm event in excess of a 25-year, 24-hour event results in a discharge of waste or wastewater. The permittee will also initiate measures to assure that no federally listed species are affected as a result of this discharge. Discharges resulting in an adverse affect to a federally listed species (i.e., take) could be in violation of Section 9 of the Endangered Species Act (ESA). Permittees responsible for discharges that result in the take of federally listed species could potentially be held liable for civil and/or criminal penalties as specified in Section 11 of the ESA.

In addition to the bald eagle and the whooping crane, the Service is concerned about the potential affects the waste management practices employed by the CAFO may have on other migratory avian species. Erath County is located in the Central Flyway, an area heavily used by migratory birds. During flight, migratory birds may not distinguish between retention structures and natural water bodies, and could be attracted to them to drink, rest, and perhaps feed on the algae and invertebrates that may be associated with the waters contained in these structures. This water may contain harmful trace elements, heavy metals, residual pesticides, and residual veterinary chemicals which could pose a health risk to migratory avian species and other wildlife. In addition, elevated levels of organic material, nitrogen compounds and anaerobic bottom sediments which may exist in the waste management units may favor proliferation of such disease causing vectors as avian botulism (*Clostridium botulinum*), avian cholera (*Pasteurella multocida*), Salmonella, Staphylococcus, and Streptococcus. For these reasons, the Service recommends that this CAFO develop a migratory bird monitoring program.

The monitoring program should include as a minimum, periodic visual monitoring activities, the maintenance of a log book for recording observations, and establishing contact with the Service's Arlington, Texas field office when detrimental affects to migratory birds are observed. This program may also be modified to include the establishment of a migratory bird exclusion system by the CAFO to prevent the birds from using the retention structures as stop over areas in the event that detrimental affects are observed. The development of such an overall program could reduce the potential for the unauthorized taking of migratory birds attributed to waste management activities employed by the CAFO. The unauthorized taking of a migratory bird, unless and except as permitted by the Service, is prohibited and would be in violation of Section 703 of the Migratory Bird Treaty Act (MBTA). Permittees which are responsible for such takings could be held liable for criminal penalties as specified in Section 707 of the MBTA.

On September 15, 2005, the Service's Arlington, Texas, field office contacted the CAFO's representative, Mr. A.C. Lowther. Mr. Lowther stated that this facility would initiate a migratory bird monitoring program (maintaining a logbook is optional) and would verbally contact the Service's Arlington field office within 24-hours in the event that effects to federal trust resources were detected. Based on this information, no further comments by the Service regarding this permit amendment are warranted.

Thank you for allowing the Service an opportunity to review and comment on this permit. If you have any questions concerning this matter, please contact Jacob Lewis of my staff at (817) 277-1100.

Sincerely,

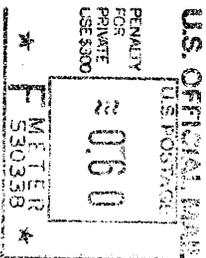
A handwritten signature in cursive script that reads "Tom Cloud".

Thomas J. Cloud, Jr.  
Field Supervisor

cc: Mr. A.C. Lowther, Lowther Consulting, Inc.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
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ARLINGTON, TX 76011  
**OFFICIAL BUSINESS**  
**PENALTY FOR PRIVATE USE, \$300**

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**RECEIVED**  
SEP 19 2005

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49649

Mr. Rochelle's Direct Line: (512) 322-5810  
mrochelle@lglawfirm.com

September 26, 2008

Ms. LaDonna Castañuela  
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Texas Commission on Environmental Quality  
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Austin, Texas 78753

VIA HAND DELIVERY  
2008 SEP 26 PM 1:25  
CHIEF CLERKS OFFICE  
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

OPA  
SEP 26 2008  
BY EB

Re: Comments on Draft Permit for Cottonwood Auction Barn, L.L.C.:  
TPDES Permit No. WQ0004136000 (2402-4)

Dear Ms. Castañuela:

Please accept these written comments on behalf of my client, the City of Waco ("City"), concerning the above-referenced draft TPDES permit ("Draft Permit") for Cottonwood Auction Barn, L.L.C. (hereinafter, "Cottonwood" or "the applicant"). 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) 322-5810, fax number (512) 472-0532, concerning any aspect of these comments or the Commission's responses to same.

**WRITTEN COMMENTS**

The City appreciates the Commission's preparation of the Draft Permit and this opportunity to provide comments, and it hereby provides several comments to the terms and conditions of the Draft Permit, as follows:

**1. Calculation of Anticipated Runoff from Design Rainfall Event**

In its application for the above-referenced permit, the applicant has calculated the runoff curve number ("CN") for the area between the open lots and the runoff control structure by assuming the presence of grass in good condition. The applicant appears to be using the CN value for Meadow (continuous grass, protected from grazing and generally mowed for hay) from Texas Engineering Technical Note 210-18-TX5 for Soil Group D, as a result. It does not appear from any materials supplied by the applicant or from what is otherwise known about the location of this operation that this particular area could be objectively characterized as a meadow of continuous grass, as the use of the CN value for Meadow would suggest. In addition, this particular area contains the manure storage area, as well as caliche, each of which have much higher CNs than meadows under Technical Note 210-18-TX5.

The applicant, additionally, has adjusted the CNs to be lower than average Antecedent Runoff Condition (ARC) II. This adjustment makes the applicant's CNs much closer to a very

MW

dry condition than is appropriate. The applicable Technical Note sounds caution against the precise practice that the applicant utilizes in its application:

“Although ARC II may not be the average throughout the state, historically the design of conservation practices using CNs associated with ARC II has proven to be very successful. Therefore, prudent judgment should be exercised in using the adjusted average condition runoff curve number procedure. Experience has indicated that use of this procedure is more appropriate to the dry subhumid and semiarid regions of the state.”<sup>1</sup>

As an initial matter, the facility at issue in the application is not located in a dry subhumid or semiarid region of the State. Additionally, however, this approach would only be applicable to 24-hour rainfall events. The appropriate standard of care, of course, assumes a 10-day rainfall event where grounds are usually saturated at the end of the first day of rainfall and certainly well before the end of the 10-day event. If the applicant is allowed to deviate from the ARC II standard by any measure, prudence would suggest that it be calculated closer to ARC III rather than close to ARC I.

Furthermore, the applicant has indicated an absence of any roof area that would contribute to the retention control structures (“RCSs”) on page 4 of the Technical Information Packet. This assumption contradicts the 2004 NAIP aerial orthophotograph, which clearly shows roofed structures in the pen area.

In addition, the applicant uses 0.75 acres as the surface area of the RCSs to compute the runoff. The 2004 NAIP aerial orthophotograph of the area indicates that the RCS has a surface area of at least 0.82 acres or larger—since it cannot be determined from the photo how far the water level is below the spillway elevation. The Draft Permit requires the RCS to be enlarged from 2.46 acre-feet to 4.94 acre-feet. It seems implausible that the capacity of the RCS could be doubled with no resulting increase in surface area. The surface area of the expanded RCS has been severely underestimated.

Finally, if the site map is correct, the applicant has incorrectly determined the overall acreage of the drainage area of the RCS as well as the open lot area and adjacent area. The overall drainage area is about 11 percent larger than represented -- the open lot area is larger, and the adjacent area is smaller.

Unless all of the aforementioned deficiencies are corrected, the volume of runoff from the design rainfall event will be underestimated by 30 percent or more. The obvious consequence of this miscalculation, if unmitigated, is that the RCS will not be large enough to capture the design rainfall event.

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<sup>1</sup> Technical Note 210-18-TX5, at 7.

**2. Estimation of LMU Size**

If the Land Application Area map (Attachment B of the Draft Permit) is correct, the applicant has overestimated the size of LMU #1 by three acres. The Land Application Area map indicates that "LMU #1" is 28 acres in size. This is not correct. Recalculation of the area shows that the actual size of the area is approximately 25 acres. This three-acre discrepancy can have a direct impact on nutrient management, particularly if the applicant changes the planned application rate, which it would be allowed to do any time after permit issuance without any permit changes. Basing the application rate on an overestimation of acreage could lead to nutrient accumulations in excess of that which is appropriate or allowed. There is no reason for the areas not to be correctly identified, if the map is correct. There is also the possibility that the map is not drawn correctly.

**3. Identification of Composting Area**

Page 6 of the Technical Information Packet indicates that the applicant will conduct onsite composting of solids. The location and controls for this composting area have not been given. Since the compost area has not been shown on the site plan and accounted for in the design calculations of the RCS, then presumably the compost area will not be within the drainage area of the RCS and will, as a consequence, be covered, roofed, or bermed to prevent runoff. Permit provision VII.A.5(e) should, therefore, require that the composting area be located outside of the drainage area of the RCS and be covered, roofed, or bermed to prevent any contaminated runoff. If bermed, the containment berms should be certified by a professional engineer as being able to contain runoff from the 25-year 10-day rainfall event.

**4. 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 as well as active LMUs. The analytical results of these soil samples are required to be furnished to the TCEQ. Although Special Provision X.I. of the Draft Permit requires a map of the historical fields to be maintained in the PPP, the historical fields have not been identified in the application or in the permit. It is not clear why the historical fields were not identified in the permit. Much potential confusion relating to the naming, numbering, and location of waste application fields could easily be alleviated with this simple inclusion.

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

Draft Permit Provision VII.A.4(a)(2)(iv) requires a stage/storage table which shows only storage volume at increments of one-foot of depth. While the TCEQ's rules do not specifically refer to surface area, the Draft Permit should require this stage/storage table to provide the surface area for each one-foot of depth as the surface area is an integral part of properly calculating the evaporation in the monthly water balance. The effective surface area for

evaporation should be based on the average surface area during each month. Without a stage/surface area table, there would be no way to accurately calculate evaporation and no way for the TCEQ to determine if the RCS Management Plan is valid. In this respect, the City requests that Draft Permit Provision VII.A.4(a)(2)(iv) 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.”

**6. RCS Management Plan for the Existing RCS**

The applicant proposes to use the existing RCS until the proposed modified RCS is constructed. Commission rules require that an RCS Management Plan be implemented for the RCS system employed in a CAFO-permitted operation. However, no provision exists in the Draft Permit that expressly requires an RCS Management Plan for the existing RCS. There is no express exception for RCSs that are used on an interim basis at any point during the life of the permit. The absence of such a requirement in the Draft Permit would, thus, seem to be at odds with Title 30, Section 321.42(g) of the Texas Administrative Code. Because of this inadequacy in the application, it does not appear that the applicant has demonstrated compliance with all applicable Commission rules.

**7. RCS Management Plan for the Modified RCS**

The Draft Permit requires an RCS Management Plan to be prepared and placed in the PPP after the RCS is modified, but no review of this plan by the TCEQ is required before the permit is issued or even before it is implemented after the permit is issued. This all but assures no meaningful review of its adequacy by potentially affected persons and interested members of the public. The water balance and RCS Management Plan are an integral part of properly sizing the RCS, with multiple factors to be considered in assessing the adequacy of a proposed RCS.

The water balance should be prepared in conjunction with an associated RCS Management Plan to have any meaningful value. The water balance and RCS Management Plan should consider not only monthly rainfall runoff, but also the storage requirements and supplemental irrigation necessary to enable the supply of sufficient water to the crops during the high water demand months of the summer. An RCS Management Plan should be required to be submitted before issuance of the permit.

Under the current Draft Permit, the only time the RCS Management Plan will be seen is when the inspectors see it on annual inspections. As a practical matter, field inspectors will likely not have sufficient time, and in some instances, perhaps, the requisite engineering expertise, to properly evaluate the validity of such a plan. At a minimum, the Commission should consider a provision in the Draft Permit that requires the RCS Management Plan to be submitted to the TCEQ permitting staff for review and approval. Otherwise, the potential is high that the RCS Management Plan—a critical component to the proper operation of this facility—might never be subject to any meaningful scrutiny.

**8. Sludge Accumulation Rate from Open Lot Runoff**

The applicant has calculated the sludge accumulation volume resulting from runoff based on 25 percent of the runoff from the 25-year 10-day rainfall event, but without articulating a technical basis or historical data (site-specific or otherwise) to justify this value. Because all runoff events that occur at the facility will cause some portion of the manure to enter the lagoon and lead to sludge accumulation, it is important that these accumulation rates be calculated based on technically-grounded and -justified values.

If annual measurement of the sludge accumulation were required in the permit, the City's concern with respect to this comment would not be as important, and the City would consider the issue to have been adequately addressed.

**9. Constructing RCS with Required Capacity**

The existing permit issued December 13, 1999 requires an RCS with a capacity of 4.02 acre-feet. The engineering certification dated February 28, 2007 indicates that the capacity is 2.46 acre-feet. The applicant may be enlarging the RCS, but this may take up to a year to accomplish. The TCEQ should consider requiring in the Draft Permit that the existing RCS at least meet the current permit requirements until the new RCS is constructed. Otherwise, the applicant has presented no information demonstrating that the facility will be able to contain runoff from major rainfall events.

**10. Monitoring of Sludge Accumulation**

The buildup of sludge is one of the most common causes of reduced capacity in an RCS. The Draft Permit does not require measurement of the sludge volume in the lagoons until three years after the date of permit issuance. Once a problem exists, it can take years to get it corrected and the capacity re-certified. To remedy this potentially significant issue, the TCEQ could easily require in the Draft Permit that the sludge accumulation be measured annually.

**11. Description of Capacity Certifications and Requirements**

The Draft Permit language for the required RCS capacity certification under provision VII.A.3(a)(2) should make clear that all capacity certifications require certification of both total as-built capacity and the remaining capacity as a result of sludge accumulation. This could be addressed by incorporating the following provision into the terms of the Draft Permit: "Capacity certifications shall include both the total as-built RCS capacity and the remaining RCS capacity due to sludge accumulation."

**12. Conditions for Granting Extensions to the RCS Compliance Schedule**

The compliance schedule in Draft Permit Provision X.A.2 allows CAFOs to obtain multiple extensions to the deadline for completing RCS modifications. A list of specific circumstances which would qualify for an extension (*e.g.*, a documented period of extended bad weather) could be incorporated into the Draft Permit to close this potential loophole.

**13. Liner Certifications**

According to the submitted liner certification for the RCS, the certification was based on samples taken in the bottom of the RCS. Since samples were not taken in the embankments, the embankments may not meet the criteria at all, and there is no data to support a finding that there will not be leakage from the RCS. Before the permit is issued, proper certification should be performed verifying that both the embankments and bottom of the RCS meet criteria.

**14. Embankment Testing Specifications in the Permit**

Title 30, Section 321.38(g) of the Texas Administrative Code requires the permit to identify the required design specifications for all RCSs including procedures and minimum requirements for liner and embankment testing. The City appreciates the addition of Draft Permit Provision VII.A.3(g)(4) concerning Liner Sampling and Analysis. However, while this addresses liner testing, it does not address the City's concerns related to testing of embankment construction. To remedy this issue, in Draft Permit Provision VII.A.3(f)(4) related to compaction testing, the TCEQ should consider 1) requiring the field density tests to be based on predetermined moisture-density compaction curves, 2) defining the frequency of testing (*e.g.*, number of tests per specific area per lift), 3) requiring compaction testing on each lift during the construction of the liner (not on the last lift after completion of the liner), 4) requiring documentation of compaction test locations and results to be provided to the TCEQ, and 5) requiring on-site inspection during construction.

RCS embankments play a critical role in protecting public and animal health and welfare. An embankment breach or other failure could be catastrophic not only to water quality but also to human life. Therefore, the provision of a certification from a licensed professional engineer should not substitute for review of the supporting information by the TCEQ staff. Accordingly, the City would encourage the TCEQ to review the compaction testing results and make an independent verification of the certification. This additional layer of review could pay rich dividends in ensuring that the applicant's RCS embankments are structurally sound.

**15. Description of Structural Controls**

The Site Map of the production area (Attachment A in the Draft Permit) gives an outline of the drainage areas but does not provide an adequate description of structural controls,

particularly the berms. The map shows a dashed line surrounding the RCS drainage area, but no information has been provided as to the size of the berms (e.g., in width, height).

The berms are an important part of the facility and are necessary to prevent contaminated runoff from leaving the site. An inspector can observe whether berms are present or not and can judge the height and width, but an inspector may not in all circumstances be technically capable of determining whether the berms are adequate to contain the flows. The inspector certainly could not do this without performing the necessary surveying and making the necessary engineering calculations first, something that likely will not happen in the field. Therefore, some means must be given to the inspector to evaluate compliance. Additionally, if the operators are not given an adequate description of structural controls, the operators will not be able to determine their own compliance and how to make repairs if, for example, a berm deteriorates over time as a result of settling or runoff erosion. Simply pushing up a few inches of uncompacted dirt with a tractor blade is usually not adequate. The application documents and the Draft Permit should describe these berms in sufficient detail with respect to location, size, and construction method so that TCEQ inspectors can determine if the facility is in compliance and so that the operator can make adequate repairs, if necessary.

#### **16. Adequacy of Dewatering Capability**

The applicant states that it has a dewatering capacity of approximately 250 gpm with its walking big gun, but no information has been provided to determine if this dewatering capacity assessment is accurate or, if so, is adequate. Additionally, there is no information in the permit application indicating the pump models, horsepower, or dynamic head for these pumping systems with which to verify any pumping capacities. The stated pumping capacity is more than likely a rated flow and does not take into account head losses in the piping and irrigation nozzles. The applicant has provided no design information to show that it can ensure that the system is capable of dewatering the RCSs on a regular schedule. Before issuing the permit, the TCEQ should verify the adequacy of the dewatering equipment by requesting the necessary information to determine the actual delivery rate of this equipment and how it is designed and operated.

#### **17. Annual Facility Inspection Report**

Section VII.A.9(a)(5) of the Draft Permit requires an annual site inspection. However, this provision does not require a report of the findings to be prepared and sent to the TCEQ although Title 30, Sections 321.46(c)(2) and (e)(2) would appear to require it. To clarify, the requirement to send this report to TCEQ's Office of Enforcement and Compliance should be added to Draft Permit Provision VII.A.9(a)(5).

#### **18. Five-Year Evaluation**

Draft Permit Provision VII.A.9(b) requires the five-year evaluation to be kept in the PPP. However, this provision does not require it to be sent to TCEQ as required by Title 30, Section

321.46(e)(2). The requirement to send this report to TCEQ's Office of Enforcement and Compliance should be added to Draft Permit Provision VII.A.9(b).

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

Draft Permit Provision VII.A.9(b) requires this five-year evaluation to be kept in the PPP. This evaluation requires that a licensed Texas professional engineer review the existing engineering documentation, complete a site evaluation of the structural controls, review existing liner documentation, and complete and certify a report of their findings. However, it does not require the engineer to certify that the controls are adequate. Presumably, the purpose of this evaluation is to determine if the structural controls are adequate to prevent unauthorized discharges. In addition to simply certifying a report of findings, the Draft Permit should require that the engineer certify that the structural controls are either adequate or inadequate. This could alleviate the potential for misinterpretation of whether the controls are adequate.

**20. Certification of Structural Controls Prior to or Upon Issuance of Permit**

Draft Permit Provision VII.A.9(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. This type of evaluation should occur prior to issuance of the permit or at the very least immediately after 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, the applicant would be unable to demonstrate that all berms are constructed and functioning properly to contain contaminated runoff and prevent it from leaving the site. If a certification has not been provided with the permit application, the five-year evaluation should occur immediately upon issuance of the permit and then every five years thereafter. This is particularly important since the applicant never provided an engineer's certification that the existing facilities had been constructed properly as required by the existing permit. Additionally, it has already been over 4 years since the rules requiring the certification passed, so these certifications should occur within the next year, anyway (by July 2009).

**21. Sampling of Wastewater and Manure**

Only one annual sample is required to be collected for wastewater, "dry" manure, 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. Wastewater is typically sampled from the surface of RCSs. Taking a sample from the surface of a quiescent RCS will result in significantly different sample concentrations than taking it from the irrigation pipeline. When the irrigation pumps in the RCSs are operating, sludge in the bottom of the RCSs is agitated and becomes mixed with the wastewater. This sludge agitation has often been cited by the dairies as a reason that sludge removal may not be needed as often as predicted. Since this sludge contains high

levels of phosphorus, the wastewater that is actually being used to irrigate the fields contains much higher levels of phosphorus than is measured in the single annual surface sample. This undermines the reliability of the assumptions used in the NMP. Additionally, the concentration of phosphorus in the RCS varies according to the antecedent rainfall or drought conditions which may cause varying degrees of dilution or concentration. RCS samples should 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.

Furthermore, RCS samples should be taken much more often (preferably at least once during each irrigation event). Wastewater treatment plants typically take samples daily. There is no practical reason why one sample per irrigation event (which may often last for several days) should not be required. At the very least, one sample per week or month (when irrigating) should be required. The City does not advocate updating the NMP after every irrigation event. An average of the sampling events over the year could be utilized in updating the NMP.

Similar problems arise with the manure. More than one annual sample of the manure should be performed (preferably one each month or one from each transport event). Taking only annual samples from manure can result in significant errors in calculating the amount of nutrients applied to the land. Moisture content plays an important role in calculating the amount of nutrients applied. If the sample is not taken concurrently with the application of the manure, significant errors may exist when calculating the application rates. If the manure is sampled while having a high moisture content and then applied much later when it has a much lower moisture content, the calculated nutrient application rate will be significantly underestimated.

## **22. Management of Phosphorus Production**

The manure production tables in the application indicate that the total phosphorus produced by the proposed 1800 cows is 163 lb/day  $P_2O_5$  (50 from covered pens and 113 from open lots). This is equivalent to 59,495 lb/yr  $P_2O_5$  (163 x 365). The NMP (dated 5/21/2008) indicates that the amount of phosphorus to be applied to the LMUs or third-party fields is only 23,125 lb/yr  $P_2O_5$  (23,122 from solids + 3 from effluent). So, 36,470 lb/yr  $P_2O_5$  or 61.3% of the phosphorus generated is unaccounted for. This "missing" phosphorus demonstrates that the wastewater and manure sampling is unrepresentative as described previously in these comments.

## **23. Removal of Solid Manure from the Watershed as Modeled in the TMDL**

The Total Maximum Daily Load ("TMDL") for the North Bosque watershed recommends removal of 50 percent of the manure in order to meet the TMDL's water quality goals. Based on the CDM Erath County Animal Waste Management Study performed for the Brazos River Authority in September 1998 and the SWAT modeling that was completed in support of the TMDL, 50 percent of the solid manure (38.1 percent of the total manure production) was assumed to be removed from the watershed. If this manure is not removed from the watershed, water quality modeling shows that the water quality goal will not be met.

Although there are several disposal options in the Draft Permit for the manure, it still allows 100 percent of the manure to be applied in the watershed. There is no requirement for removal of 50 percent of the solid manure. Based on the latest NMP submitted in the permit application, the applicant is proposing to apply 52 percent of its total manure production onsite and 48 percent of its total manure production offsite, presumably to third-party fields in the Bosque watershed. The TCEQ has not provided any information to demonstrate how allowing 100 percent of the manure to be applied within the watershed is consistent with the TMDL or the water quality modeling.

**24. Date for NMP Submittal**

Draft Permit Provision VII.A.7(a) indicates that the NMP submitted in the permit application shall be implemented upon issuance of the permit. Multiple NMPs have been submitted for this facility, and it is not clear which one is applicable. Unlike many of the individual permits issued in the North Bosque River watershed, this permit does not contain the date of the NMP to be implemented. The Draft Permit should be changed to indicate the date of the NMP so that it is clear under which NMP this facility will operate for the year following issuance of the permit.

**25. Anticipated Crop Yields**

The applicant is making projections of crop yields which are dependent on soil types, water availability, and sufficient nitrogen. These projected crop yields directly impact the nutrient management plans. No data has been submitted to demonstrate that these crop yields are reasonable for this land even though the PPP has for years required the operator to maintain records of the actual annual yield of each harvested crop. The actual annual yield of harvested crops should be submitted to demonstrate that the applicant is using reasonable crop yield properties.

**26. Calculation of Agronomic Rates**

The basic methodology being applied in the NMP to calculate agronomic rates is flawed because the NMP fails to account for the nutrients available to plants in the root zone to satisfy the crop requirement. Instead, application of the annual crop requirement is allowed regardless of the actual soil nutrient content until the soil reaches a concentration of 200 ppm P. Even then, continued application of nutrients is allowed even though there is more than three times the amount of nutrients necessary for optimum growth.

As an analogy, the TCEQ more properly makes agronomic rate calculations when determining agronomic rates for the application of biosolids. 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 both the 0-6" and 6-24" soil depths for the most recent year. 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. It is not clear why the TCEQ advocates calculating the agronomic rate differently for CAFO permits than it does for biosolids applications. The Draft Permit should be revised to allow application of only that quantity of nutrients that will benefit optimum crop production (*i.e.*, beneficial use), as required by the rules.<sup>2</sup>

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

The North Bosque River TMDL Implementation Plan, dated December 2002 (p. 16), states that formal enforcement action will result 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.” Draft Permit Provision VII.A.7(c)(2) seemingly negates this enforcement threat by allowing application to continue as long as a NUP has been prepared and approved by the TCEQ. Soil phosphorus concentrations can continue to rise as long as they do not exceed 500 ppm. 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 (and especially 500 ppm) should be prohibited in order to be consistent with the language of the TMDL. At the very least, fields in excess of 200 ppm should be required to have a NUP containing a phosphorus reduction component subject to Draft Permit Provision VII.A.7(c)(5).

Further, regardless of the language in the TMDL, the 200 ppm phosphorus is four times the amount of phosphorus needed for optimum growth of the proposed crops (*i.e.*, four times the agronomic need). The rules require NUPs to ensure the beneficial use of manure, litter, or wastewater. The definition of “beneficial use” in the rules is 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.”<sup>3</sup> Applying waste to soil that contains four times the agronomic need cannot possibly be considered “beneficial.” Phosphorous application should be severely curtailed or restricted outright for fields which contain phosphorus exceeding the agronomic needs of the crop.

## **28. Third-Party Fields**

Draft Permit Provision VII.A.7(e)(5)(i)(B) requires incorporation of waste on cultivated fields within 48 hours after land application. It provides no restrictions regarding application of manure and sludge on non-cultivated fields. Application on non-cultivated fields should be prohibited.

The language in Draft Permit Provisions VII.A.7(e)(5)(i)(C-E) needs to also include a statement that the application rate is not to exceed the requirements of NRCS Code 590.

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<sup>2</sup> 30 Tex. Admin. Code § 321.40.

<sup>3</sup> *Id.*, § 321.32(b).

Although more restrictive in many instances, it is possible for third-party fields to meet the requirements of Draft Permit Provisions VII.A.7(e)(5)(i)(C-E) and fail to meet the requirements of NRCS Code 590. For example, NRCS Code 590 requires that the application rate not exceed the annual crop P requirement in fields with a P-Index rated of "Very High." Draft Permit Provision VII.A.7(e)(5)(i)(C) allows the nitrogen crop requirement rate if the field is less than 50 ppm irrespective of the P-Index. Adherence to NRCS Code 590 should be required if it is more restrictive. A specific permit provision should be added to the Draft Permit to require adherence to NRCS Code 590 for third-party fields if that conservation standard is more protective.

According to Draft Permit Provision VII.A.7(e)(5)(i)(A), no NMP is required for third-party fields. Without preparing an NMP, the requirements of Permit Provisions VII.A.7(e)(5)(i)(C-E) cannot be met since an NMP is the planning tool that is necessary to determine the appropriate application rates. An NMP must be required.

Finally, while Title 30, Section 321.46(d)(8)(F) of the Texas Administrative Code requires recording the actual yield of each harvested crop in the PPP, it does not require those values to be reported. Similarly, Draft Permit Provision VIII.B.7 does not require reporting this information in the annual report. Draft Permit Provision VII.A.7(e)(5)(iv) should 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 be revised to include a requirement 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 will be very difficult to determine.

## **29. Sludge Application to Third-Party Fields**

Draft Permit Provision VII.A.7(e)(5) allows sludge to be applied to third-party fields. This provision appears to be inconsistent with Title 30, Section 321.42(j) of the Texas Administrative Code, which allows only manure, litter, and wastewater to be applied to third-party fields.

## **30. Demonstration of Sustainability for the Term of the Permit**

The NMP addresses only the first year of the permit. It fails to address the subsequent years of the five-year permit term. A 5-year NMP should be prepared that shows the impacts of all nutrient management issues over the five-year permit term and whether the operation is sustainable. The Draft Permit should establish an overall maximum application rate that allows the facility to operate in a sustainable manner over the five-year term. An annual NMP can then be used to fine-tune each year's application schedule and adjust application to any individual field based on annual soil sampling and crop production. The Texas State Soil & Water Conservation Board requires that the smaller AFOs for which they prepare certified Water Quality Management Plans have sustainable operations and NMPs. The TCEQ should require no less of a standard for much larger CAFOs.

The TCEQ has previously indicated that because an NMP is likely to change each year based on site-specific sampling, an NMP for the term of the permit would not be relevant. While an NMP may change each year based on site-specific sampling results, an NMP for the term of the permit is far from irrelevant—it is a reasonably accurate predictor of what will occur in the fields, assuming the wastewater and manure sampling is representative, and even if it may change over time. 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. If the applicant cannot demonstrate this in its application, then the chances of it sustaining its operation in reality would appear to be unlikely.

### **31. Definition of Vegetative Buffers**

Draft Permit Provision X.D of the Draft Permit requires that the permittee install and maintain buffers according to NRCS standards. While the NRCS does have practice standards for “filter strips” (Code 393), the NRCS has no practice standards for “vegetative buffers.” The buffers specified in the permit contain both filter strips and a “vegetative buffer setback”. Without a definition and standard for “vegetative buffer”, the term is quite vague. A single tree in the buffer area might be considered a “vegetative buffer” under such a standard, for example.

In past responses to comments, the TCEQ seems to indicate that it is defining “vegetative buffers” in the North Bosque River watershed to mean Filter Strips as defined by NRCS Practice Code 393 including Riparian Forest Buffers as defined by NRCS Practice Code 393. If the TCEQ is defining “vegetative buffers” to mean either Filter Strips as defined by NRCS Practice Code 393 or Riparian Forest Buffers as defined by NRCS Practice Code 393, then this definition should be placed in the permit to make it clear to the permittee. Otherwise, the permittee may decide that a few trees or a little grass qualify as vegetation that reduces shock due to contact. In actually determining compliance with the vegetative buffer setback requirement, the TCEQ could expressly require that “vegetative buffers” meet the requirements of NRCS Practice Code 393.

### **32. Vegetative Buffer and Filter Strip Boundary Measurement**

It is not clear how the applicant is expected to calculate the boundaries of the vegetative buffers and filter strips required under the terms of the Draft Permit. The TCEQ has previously indicated that the appropriate method is to measure the filter strip starting from the bank of the stream and measuring up to the edge of the buffer, not starting from the centerline of the stream. The City, too, believes that this is the appropriate method, but believes that the Draft Permit does not make clear whether this is the method that the applicant will be expected to follow. The City would suggest simply articulating this accepted measurement method in the Draft Permit as a means of resolving this ambiguity.

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

Special Provision X.H of the Draft Permit requires containment of runoff from silage, commodity, and hay storage. Appropriate provisions for containment are to be placed in the PPP but they are not required to be included as part of 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 are adequate.

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

The Draft Permit should be amended to include additional provisions that address the control of pathogens from the land application and irrigation operations authorized therein, given the bacterial problems that exist in the North Bosque Watershed.

**35. Compliance History**

This CAFO has a history of not complying with its permit and the rules. It failed to construct an RCS with the capacity required by its existing permit; it failed to submit an engineering certification of structural controls; and it failed to submit an engineering certification of RCS capacity within 90 days of completion. Great care should be taken in ensuring that the applicant is capable of meeting its obligations of the Draft Permit before the TCEQ grants it any such authority.

The City of Waco hereby requests that the Executive Director consider these comments in evaluating the Draft Permit which has been proposed to Cottonwood Auction Barn, L.L.C. The City appreciates the opportunity to submit these comments and the consideration it hopes the Executive Director and Commission staff will give to them.

Respectfully submitted,

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