

State Office of Administrative Hearings



Shelia Bailey Taylor
Chief Administrative Law Judge
July 11, 2007

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TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY

Derek Seal
General Counsel
Texas Commission on Environmental Quality
PO Box 13087
Austin Texas 78711-3087

Re: SOAH Docket No. 582-05-5610; TCEQ Docket No. 2005-0180-SLG; In Re: Synagro
of Texas CDTR Line - **AMENDED - LETTER ONLY**

Dear Mr. Seal:

The above-referenced matter will be considered by the Texas Commission on Environmental Quality on a date and time to be determined by the Chief Clerk's Office in Room 201S of Building E, 12118 N. Interstate 35, Austin, Texas.

Enclosed are copies of the Proposal for Decision and Order that have been recommended to the Commission for approval. Any party may file exceptions or briefs by filing the original documents with the Chief Clerk of the Texas Commission on Environmental Quality no later than July 26, 2007. Any replies to exceptions or briefs must be filed in the same manner no later than August 6, 2007.

This matter has been designated **TCEQ Docket No. 2005-0180-SLG; SOAH Docket No. 582-05-5610**. All documents to be filed must clearly reference these assigned docket numbers. Copies of all exceptions, briefs and replies must be served promptly on the State Office of Administrative Hearings and all parties. Certification of service to the above parties and an **original and eleven copies** shall be furnished to the Chief Clerk of the Commission. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

Carol Wood

Carol Wood
Administrative Law Judge

CW/ds
Enclosures
cc: Mailing List

State Office of Administrative Hearings



Shelia Bailey Taylor
Chief Administrative Law Judge

July 6, 2007

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
2007 JUL - 6 PM 4:53
CHIEF CLERKS OFFICE

Derek Seal
General Counsel
Texas Commission on Environmental Quality
PO Box 13087
Austin Texas 78711-3087

Re: SOAH Docket No. 582-05-5610; TCEQ Docket No. 2005-0180-SLG; In Re: Synagro
of Texas CDTR Line

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This matter has been designated **TCEQ Docket No. ; SOAH Docket No. 582-**. All documents to be filed must clearly reference these assigned docket numbers. Copies of all exceptions, briefs and replies must be served promptly on the State Office of Administrative Hearings and all parties. Certification of service to the above parties and an **original and eleven copies** shall be furnished to the Chief Clerk of the Commission. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

A handwritten signature in cursive script that reads "Carol Wood".

Carol Wood
Administrative Law Judge

CW/ds
Enclosures
cc: Mailing List

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AGENCY: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)

STYLE/CASE: Application by Synagro of Texas-CDR, Inc.

SOAH DOCKET NUMBER: 582-05-5610

TCEQ DOCKET NUMBER: 2005-0180-SLG

STATE OFFICE OF ADMINISTRATIVE
HEARINGS

CAROL WOOD
ADMINISTRATIVE LAW JUDGE

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SOAH DOCKET NO. 582-05-5610
TCEQ DOCKET NO. 2005-0180-SLG

APPLICATION BY SYNAGRO OF
TEXAS-CDR. INC., FOR TCEQ PERMIT
NO. WQ0004671000

§
§
§
§
§

BEFORE THE STATE OFFICE
OF
ADMINISTRATIVE HEARINGS

PROPOSAL FOR DECISION

I. INTRODUCTION

Synagro of Texas-CDR, Inc. (Synagro or Applicant) first applied to the Texas Commission on Environmental Quality (Commission or TCEQ) for a permit authorizing the land application of wastewater treatment plant sewage sludge (Class B sludge) for beneficial use on 1,134.94 acres, at a rate not to exceed 6.18 dry tons per acre per year (dry tons/acre/year) on Fields 1 - 3. Synagro subsequently amended its application to authorize the land application of wastewater treatment sewage sludge for beneficial use on 1,073.92 acres at a rate not to exceed 5.02 dry tons/acre/year on Fields 1 and 2, and at a rate not to exceed 4.66 dry tons/acre/year on Field 3. The proposed permit does not authorize a discharge of pollutants into waters in the State.

The land application site is located approximately 4.5 miles from the City of Lissie, southwest of the intersection of Highway 90 and Farm-to-Market Road 271, and approximately 7 miles southeast of the City of Eagle Lake in Wharton County, Texas. The proposed land application site is generally referred to as Duncan Ranch 1 to distinguish it from three other Synagro applications before the Commission for other Duncan Ranch properties located elsewhere. The site is in the drainage area of the San Bernard River Above Tidal in Segment No. 1302 of the Brazos Colorado Coastal Basin.

The main issues are whether the new agronomic rates have been properly calculated; the impact, if any, of the new agronomic rates on surface water runoff from Applicant's facility; and whether such runoff will impact or affect fishing and wildlife ponds located on adjacent property.

The Administrative Law Judge (Judge) recommends the Commission find that Synagro's newly proposed agronomic rates have been properly calculated; they will have no adverse impact on surface water runoff from the site; and there will be no expected adverse impact on Protestants' fishing and wildlife ponds from surface water runoff from Applicant's facility.

II. PROCEDURAL HISTORY

Synagro's application was received on August 21, 2003, and declared administratively complete on August 29, 2003. The Commission's Executive Director (ED) completed technical review of the application on January 29, 2004, and prepared a draft permit. A notice of public meeting was published on May 15, 2004, in the *El Campo Leader News*, and the public meeting was held on June 20, 2004, in Wharton, Texas. Notice of Application and Preliminary Decision for a Water Quality Permit was published on July 14, 2004, in the *Wharton Journal-Spectator*.

On March 23, 2005, the Commission considered numerous requests for a contested case hearing and determined that Bret and Phyllis Hudman were affected persons entitled to a hearing. The Commission denied all other hearing requests. Prior to referral to the State Office of Administrative Hearings (SOAH), the Commission sent the matter to the Commission's Alternative Dispute Resolution staff. Because mediation failed to result in a settlement, the case was forwarded to SOAH on May 2, 2005, for a hearing on the single issue of whether surface water runoff from Applicant's facility will impact or affect fishing and wildlife ponds on adjacent property.

On July 5, 2005, SOAH Judge Carol Wood conducted a preliminary hearing in Austin, Texas, and designated the following as parties to the proceeding: Synagro, the Commission's Public Interest Counsel (PIC), Bret and Phyllis Hudman (Hudmans or Protestants), and Rodney Scott.¹

¹ Mr. Scott owns 160 acres north of the Hudmans' property and has two ponds on his property, which is across the creek from the land application site. The Judge later removed him as a party for his failure to participate in the proceedings.

Synagro appeared through its attorney (currently, Lambeth Townsend), attorney Scott Humphrey represented the PIC, and Protestants and Mr. Scott appeared *pro se*. The ED declined to participate in the proceedings.

The hearing on the merits was held in Austin on September 20, 2005, and the Judge issued a proposal for decision (PFD) on December 21, 2005, recommending issuance of the original draft permit. After the parties submitted exceptions to the PFD, Synagro requested that the matter be remanded to SOAH for further hearings to correct a technical flaw in the application that was discovered after completion of the hearing on the merits and that affected calculations of the sludge application rates.

At the agenda meeting on April 12, 2006, the Commission granted Synagro's request and remanded the matter to SOAH for further hearings "for additional evidence on the new agronomic loading rate calculations, and the impact, if any, of the new calculations and agronomic rates on surface water runoff from the Applicant's facility and whether such runoff will impact or affect fishing and wildlife ponds on adjacent property." The Commission also "strongly urged" that the ED participate in the supplemental hearing and present evidence. The Commission's interim order remanding the case to SOAH was issued on April 28, 2006.

Although appearing *pro se* at the hearing on the merits, the Hudmans appeared through their attorney, Eric Allmon, at the Commission agenda meeting on April 12, 2006. The Hudmans filed a motion for rehearing on May 18, 2006, arguing that the Commission erred in remanding this matter to SOAH rather than denying Synagro's application for a permit. The Hudmans' motion for rehearing was overruled by operation of law on June 20, 2006.

A telephonic prehearing conference was held on May 8, 2006, and the Judge designated the ED as a party to the remand hearing. The supplemental evidentiary hearing was held from January 22 through January 24, 2007, in Austin. Additional, supplemental evidence was received

on February 8, 2007, and a telephonic post-hearing conference was held on March 5, 2007. The record closed on May 7, 2007, upon submission of the parties' final arguments.

III. ISSUES AND DISCUSSION

1. **Whether Synagro's newly proposed agronomic rates of 5.02 dry tons/acre/year on Fields 1 and 2 and 4.66 dry tons/acre/year on Field 3, filed on June 8, 2006, have been properly calculated according to the relevant statutory and regulatory requirements and TCEQ forms.**

The Judge recommends the Commission find that Synagro's newly proposed agronomic rates have been properly calculated.

A. **Background and Applicable evidentiary**

Section 361.121 of the Texas Health & Safety Code, entitled "Land Application of Certain Sludge; Permit Required," was amended by the 78th Legislature in 2003. In addition to amending Subsections (b), (c), (d), and (h) of that statute, the Legislature added Subsections (j), (k), (l), (m), and (o). The amended statute became effective September 1, 2003, and applied only to applications (1) filed with the Commission on or after the effective date or (2) *filed with the Commission before September 1, 2003, but not found to be **administratively** complete before that date.*

In Order No. 9, issued on November 9, 2006, the Judge denied Applicant's motion to certify questions to the Commission, finding that the Commission did not need to determine which statutes and rules apply to this matter. Instead, the Judge ruled that the statutes and Commission rules in effect before September 1, 2003, apply.

B. Applicant's Position

Applicant asserts that its reduced agronomic rates are correctly calculated according to the statutes and rules in effect before September 1, 2003.² Ken High, a civil engineer and Applicant's witness responsible for developing the agronomic rates, explained that the rates are based on an equation that is completed in the application form.³ The equation involves taking the nutrient that is needed by the crop for the specific yield goal (that is, the type of crop and the number of cuttings or grazings in one year) and subtracting the nutrient that is available in the soil, which is based on the highest nitrate nitrogen content for the soil sampled at depth increments of 0 to 6 and 6 to 24 inches. The next step is to calculate the plant available nitrogen (PAN) that is provided by the sludge. The PAN is then divided into the nitrogen amount still needed to achieve the maximum sludge application rate (SAR) based on crop nitrogen needs. The maximum SAR is calculated based on the metals in the sludge, accomplished by dividing the maximum metal load rate (lbs/acre/year) into the metals in the sludge (lbs/ton) to derive the sludge applied yearly. This value is compared to the SAR, and the lower of the two values is the final maximum allowable SAR in tons per acre per year.⁴ Mr. High noted that only nitrogen levels in the soil and nitrogen requirements of the cover crop were used pursuant to the instructions on the form.⁵

Applicant contends that Mr. High provided evidence demonstrating that the yield goals for Fields 1 - 3 are reasonably achievable for the site and are even conservative. Synagro notes that Mr. High testified he calculated a yield goal of 6 tons per acre of common Bermuda grass, a species

² The agronomic rate is the whole sludge application rate designed to provide the amount of nitrogen needed by a crop or vegetation to achieve a desired yield while minimizing the amount of nitrogen in the sewage sludge that will pass below the root zone of the crop or vegetation to the groundwater. Commission rules require that the rate of land application for bulk biosolids be equal to or less than the agronomic rate. (Ex. A-28 at 6.)

³ Ex. A-28 at 7.

⁴ *Id.* at 7-8.

⁵ *Id.* at 6.

native to the site. He further stated that this conservative yield is based on his knowledge and experiences with similar crops in the region, specific soil data from the site, and relevant articles relied on by experts in his field.⁶ Additionally, Applicant asserts that Mr. High properly determined the nutrient needed by the crop to meet this yield goal and that Kimon Lymberry, Synagro's technical services manager, provided uncontroverted evidence regarding the amount of nitrogen in the soil at the site.

Synagro further argues that the following values are correctly calculated: the PAN contained in the Class B biosolids; the maximum SAR based on crop nitrogen needs and metals; and the cumulative loading rate. For these reasons, Applicant asserts that its June 8, 2006, revised and reduced agronomic rates have been properly calculated according to applicable Commission rules.

C. Protestants' Position

Protestants contend that Synagro has overestimated both the quantity of crop that will be produced at the site and the amount of nitrogen used by the crop per unit of production. These factors, argue Protestants, will contribute to the over-application of sludge, which will result in the buildup of nutrients in the soil and increased quantities of runoff from Synagro's application fields.

Protestants assert that Synagro's yield goal of 6 tons/acre/year is unrealistic. They note that Bruce Wiland, a certified management specialist and Protestants' witness who evaluated the agronomic rate calculations in the application, testified that, if the predicted crop yield in the application fields is not achieved, nitrogen will not be removed in the quantities predicted and excess nitrogen will remain in the fields.⁷ Protestants contend that available data for yields in

⁶ Tr. at 476-477. Ex. A-19 at 10, 13 and 16.

⁷ Ex. P-2 at 4.

Wharton County, Texas, do not support a yield goal of 6 tons/acre/year; rather, statistical data show the yield to be about 3 tons/acre/year for harvested and managed fields.⁸

Protestants also argue that Synagro's production assumptions contradict the production patterns predicted by the Natural Resource Conservation Service (NRCS). They assert that Synagro assumes a production in each field during the fall season that is 50 percent more than the summer production, that is, a total production in the fall season of 150 percent of the amount grown in the longer summer season. However, Protestants contend that Exhibit A-52 demonstrates that the reverse production pattern is the norm, with twice the production in the summer as during the fall season. They argue that Synagro's plan to apply more nutrients in the fall at a time when the crops will be achieving an even lower production will result in more drastic increases in nutrient concentrations in the soil during the fall season.

Protestants further contend that Applicant's assumption that Bermuda grass requires 223 -241 lbs/acre of nitrogen annually is unreasonably high. They point out Mr. Wiland testified that NRCS data suggest that a nitrogen demand of 140 lbs/acre/year is more reasonable.⁹ Protestants also argue that Exhibit A-55 relied on by Synagro to justify a higher nitrogen demand is based on a cropping scheme that includes harvesting the crop. However, Protestants contend that harvesting is not part of Applicant's proposed cropping scheme; rather, activities such as grazing and shredding are proposed. Additionally, they criticize Mr. High's usage of 1.88 percent to represent the concentration of nitrogen in common Bermuda grass. Protestants assert that, because the site will begin as rangeland and not a 100 percent Bermuda grass pastureland, the percentage of nitrogen in the grass will be lower than 1.88 percent. They also argue that Synagro in its calculations has not accounted for the nitrogen returned to the soil as manure and urine, which will result in the over-application of nutrients to the application fields.

⁸ Ex. P-2B.

⁹ Ex. P-2 at 8.

Finally, Protestants assert that Synagro did not submit an *administratively* complete application prior to September 1, 2003, because significant information was missing from Appendix A of the application form. Specifically, Protestants contend Applicant did not provide for "the nutrient needed by crop for specific yield goal" for any of the application fields until June 8, 2006. Only then, argue Protestants, was Synagro's application *technically* complete. Protestants, therefore, argue that Synagro's application is subject to the new requirements set forth in amended Health & Safety Code § 361.121 that requires, among other things, that an applicant for a Class B sludge permit demonstrate that a nutrient management plan has been developed for the facility. And Mr. Wiland, relying on NRCS recommendations known as Code 590, also emphasized the need to calculate the agronomic rate based on both nitrogen and phosphorus.¹⁰

D. ED's Position

The ED strongly disagrees with Protestants' argument that Synagro's application was not administratively complete until June 2006 and that Synagro's June 8, 2006, changes constituted a substantial technical change to the application. The ED asserts that Protestants confuse the statute's¹¹ and the ED's distinction between administrative completeness and technical completeness. The ED argues that the material submitted by Synagro on June 8, 2006, is *technical*, involving calculations ultimately leading to the final maximum SAR that the proposed permit will allow. It has, notes the ED, nothing to do with the initial administrative review of an application, which only looks at items such as signatures, notarizations, maps, mailing addresses for adjacent landowners, payment of fees, and so forth. The ED points out that the technical nature of the material submitted by Synagro on June 8, 2006, is beyond the capacity of his administrative review

¹⁰*Id.* at 4.

¹¹ Health & Safety Code § 361.121.

team to evaluate. The ED contends that, for this reason, he has two teams, an administrative review team and a technical review team, to review permit applications.

The ED argues that the Commission rules in effect prior to September 1, 2003, apply to this application. The ED contends that Protestants' argument that these rules are not fully protective of surface water quality is properly a matter for a rulemaking proposal before the Commission, not an issue in a permitting process. The ED notes that ED witness Dr. Paul Askenasy, an agronomist and soil chemist, testified that TCEQ's instructions for filling out the form for calculating agronomic rates did not permit him to consider phosphorus as a limiting factor in that analysis.¹² However, the ED points out that Dr. Askenasy also testified that, even if phosphorus had been taken into consideration in calculating the application rate, that probably would not have resulted in a lower application rate because currently the soil phosphorus at the Duncan Ranch site "is very, very low."¹³

The ED asserts that Synagro's agronomic rates filed on June 8, 2006, have been properly calculated. He points out Dr. Askenasy testified that he had reviewed the nutrient calculations for all the application fields and that Synagro had provided the correct information and calculated the application rates correctly.¹⁴

E. PIC's Position

The PIC recommends a finding that the agronomic rates proposed by Synagro and agreed upon by the ED are in compliance with Commission rules and regulations. The PIC notes Dr. Askenasy testified that the original agronomic rate of 6.18 dry tons/acre/year proposed by

¹² Tr. v. 3 at 432.

¹³ *Id.* at 432-433.

¹⁴ Ex. ED-3 at 5-6.

Synagro was incorrect because it did not take into consideration the soil nitrogen content.¹⁵ However, the PIC points out that Dr. Askenasy also stated that, because Applicant's new calculations take into account the soil nitrogen content as required by Commission rules, Synagro's proposed agronomic rates are now consistent with all applicable state and federal rules and statutes.¹⁶

The PIC also asserts that, if the amended statute and new rules were applied and Synagro had taken into consideration some of the concerns of Protestants' witness Mr. Wiland, the recommended agronomic rates in the proposed permit would most likely be stricter and more protective. The PIC notes that, at the time the Commission originally considered this application, the PIC recommended denying the permit. The PIC further points out that, at that time, he asserted Synagro should be required to start the entire process anew, thereby subjecting Synagro's next application to the new rules and amended statute. However, the PIC observes that the Commission declined to adopt the PIC's recommendation and chose instead to remand the existing application to SOAH. For this reason, the PIC agrees that the standards and rules that Synagro must follow are those in existence prior to September 1, 2003. The PIC acknowledges that Synagro could have "gone above and beyond" the existing rules as suggested by Protestants; however, it was not required to do so. Because Synagro has now complied with the applicable rules and statutes by taking into consideration the soil nitrogen content, the PIC's position is that Synagro's proposed agronomic rates are in compliance with Commission rules and statutes.

F. Judge's Analysis and Recommendation

The Judge concurs with the position of Applicant, the ED, and the PIC that Synagro's proposed agronomic rates of 5.02 dry tons/acre/year on Fields 1 and 2 and 4.66 dry tons/acre/year

¹⁵ Ex. ED-3 at 5.

¹⁶ *Id.* at 6.

on Field 3 have been properly calculated according to the relevant statutory and regulatory requirements. Synagro's application was declared *administratively* complete on August 29, 2003. Amended Section 361.121 of the Health & Safety Code became effective September 1, 2003, and applied only to applications (1) filed with the Commission on or after the effective date or (2) filed with the Commission before September 1, 2003, but not found to be *administratively* complete before that date. Because Synagro's application was declared administratively complete prior to the effective date of the amended statute, the statutes and Commission rules in effect before September 1, 2003, apply to this application.

In contrast to Mr. Wiland's testimony, the Judge is persuaded by Mr. High's testimony regarding the calculations of Synagro's revised agronomic rates. Mr. High's training and years of experience exceed the prerequisites to be an expert on calculating agronomic rates for purposes of preparing an application to land apply Class B biosolids in Texas. He is a Certified Environmental Inspector by the Environmental Assessment Association and experienced in the field of land application of Class B biosolids.¹⁷

Mr. High's calculations and assumptions regarding his agronomic rates calculations are based on his knowledge and experience with other projects in the region, specific soil data from the site, and relevant research-based articles published by the Texas A & M University Agricultural Extension Service and NRCS that are relied upon by experts in his field.¹⁸ Mr. High's personal knowledge of calculating agronomic rates for applications to land apply biosolids is extensive and outweighs that of Mr. Wiland. Specifically, Mr. High has worked with sludge-related activities for 35 years and has been involved in approximately 60-65 new applications, renewal applications, and site management plans for the beneficial land use of Class B biosolids and septage.¹⁹ In contrast,

¹⁷ Ex. A-29.

¹⁸ Exs. A-51 and A-52.

¹⁹ Ex. A-28 at 3.

Mr. Wiland has never prepared an application and has only been involved in one other Class B biosolids matter.²⁰ Moreover, Mr. High is thorough in his research and calculations in that, when faced with conflicting data, he goes to the source of the discrepancy to determine which data are better for the specific use. For example, he contacted NRCS soil scientist Mr. Risinger to determine which NRCS soil survey was more reliable for the site. Because of Mr. High's decades of experience in calculating agronomic loading rates, completing Commission applications, and knowledge of the region, the Judge is persuaded by his testimony regarding the calculations of Synagro's revised agronomic rates.

The Judge agrees with the assertion of both Applicant and the ED that Synagro's revised agronomic rates properly assess the nitrogen required by the common Bermuda grass at the site. Applicant's 6 tons/acre/year yield goal for the site is based on Mr. High's knowledge and experiences with similar crops in the region, specific soil data from the site, and relevant articles relied upon by experts in his field and is reasonably achievable.

Also, Mr. High's calculations for the nitrogen needed to meet the 6 tons/acre/year yield goal are accurate: he looked to the site specific range production data contained in the NRCS Web Soil Survey for Wharton County; multiplied those yields by 1.88 percent, a percentage that he consistently found in published articles as representing the concentration of nitrogen in common Bermuda grass; and then reduced the nitrogen by the amount that will return to the soil from the shredded grass, based upon the nitrogen in the actual grass samples. Although Protestants criticize Mr. High's usage of the 1.88 percent factor, Synagro points out that Protestants have not considered that the site may contain other grasses as listed in Ex. A-55 that have nitrogen concentrations as high as 2.91 percent,²¹ and Synagro's grass samples taken from the site showed that the grasses actually contained nitrogen concentrations of 2.1 percent, 2.07 percent and 1.75 percent for Fields 1-3,

²⁰ Tr. v. 3 at 325.

²¹ Ex. A-55, third page.

respectively.²² Furthermore, contrary to Protestants' assertion, Mr. High's agronomic rate calculations did take into account nitrogen returning to the soil from the wastes of the grazing cattle.²³

For the above reasons, the Judge recommends the Commission find that Synagro's proposed agronomic rates for Fields 1 - 3 have been properly calculated according to the relevant statutory and regulatory requirements.

2. What impact, if any, will Synagro's newly proposed agronomic rates have on surface water runoff from the site?

The Judge recommends the Commission find that Applicant's newly proposed agronomic rates should have no adverse impact on surface water runoff from the site.

A. Background

As noted by the ED, at issue here is the likelihood of pollutants leaving the application site, the quantity of pollutants that might leave the site, and the probability of those pollutants entering the surface water of Gum Tree Branch Creek. This issue includes factors such as the buffer zones required by the proposed permit.

The Federal Emergency Management Agency (FEMA) produces maps that indicate areas that are designated as floodways and as floodplains. The ED's witness Michael Chadwick, a geologist, testified that a floodway is an area of a river or stream channel, including the inner banks, that confines the water flow at various elevated stages of water height. The floodway also includes an additional foot in elevation from the most elevated stage of flooding, where restricting the flood

²² Ex. A-19at 3.

²³ Tr. v. 3 at 491-492.

waters with a man-made structure will not raise the flood level further. The floodway usually is an area of active recent scouring from water flow.²⁴

Mr. Chadwick defined the floodplain as that portion of the river valley, adjacent to the channel, that is built of sediments deposited during the present regimen of the stream and is covered with water when the river overflows its banks at flood stages.²⁵ He noted that sludge application areas are not allowed in floodways but are allowed in floodplains.²⁶

Based on newly issued FEMA floodplain maps for Wharton County, Applicant's witness, Ken High, submitted a new map of the application site²⁷ and eventually provided new calculations for acreage in each field. Because Synagro had previously agreed not to apply sludge within the 100-year floodplain designation, Applicant was required to adjust the size of the application area.²⁸

B. Applicant's Position

Synagro argues that its proposed agronomic rates for the site will have no adverse impact on surface water runoff. Applicant asserts that it has committed in its site management plan to maintain buffer zones that go beyond applicable Commission rules, both in terms of the vegetative quality of the buffer zone and the quantity of land excluded from sludge application at the site. Synagro points out that the Class B biosolids will not be applied within 200 feet of Gum Tree Branch Creek and, in fact, Applicant has designated as buffer zones portions of the site that extend well beyond the required 200 feet from the creek because Synagro will not land apply biosolids within the 100-year

²⁴ Ex. ED-1 at 5.

²⁵ *Id.*

²⁶ *Id.*

²⁷ Ex. A-31.

²⁸ Tr. v. 1 at 66-67.

floodplain of Gum Tree Branch Creek.²⁹ Synagro contends this added buffer area provides more protection than required by applicable Commission rules.

Applicant notes Mr. High testified that the purpose of a buffer zone is to reduce the possibility of the nutrients and any metals in the biosolids from entering the surface water or a conduit to groundwater, such as a water well, gas well, or any other kind of well or hole in the ground.³⁰ Synagro asserts that, even though it is not required by Commission rules to have vegetation in its buffer zones, it has committed in its site management plan, and thus in the proposed permit,³¹ to maintain vegetated buffer zones at the site. Relying on Mr. High's testimony, Applicant argues that vegetated buffer zones are better than non-vegetated buffer zones because vegetation absorbs constituents in the biosolids and reduces the flow of any waters.³²

Synagro further points out that ED witness Dr. Askenasy noted that, pursuant to NRCS Code 393, only 90 feet of vegetated buffer zones, called filter strips, would be necessary to prevent runoff of constituents into surface water from this Site. Dr. Askenasy also confirmed that, based on the 90-foot requirement, Synagro's minimum of 200 feet of vegetated buffer zones between the land application area and Gum Tree Branch Creek is more conservative than NRCS Code 393 requirements.³³ As to the current conditions of the proposed buffer zones, Applicant argues that the buffer zones at the Site are already vegetated, as shown by the photographs in Exhibit A-56.

Synagro also asserts that the permeability of the Edna and Crowley soils at the site will absorb the nutrients that could be in the surface water runoff from the site. Applicant notes that, in

²⁹ See Ex. A-31.

³⁰ Tr. v. 1 at 96.

³¹ Ex. ED-11 at 16.

³² Tr. v. 1 at 98.

³³ Tr. v. 3 at 424-425.

response to Mr. Wiland's criticism concerning the permeability of the soils at the site, Mr. High testified that he found reliable NRCS data indicating that the Edna and Crowley soils are suitable for application of biosolids. Mr. High cited to Exhibit A-57, a USDA-NRCS Web Soil Survey referred to as "Application of Municipal Sewage Sludge (TX) Rating." He testified that this soil survey indicated that, for Wharton County, the Crowley soil is rated "Not Limited" for the application of municipal sludge and the Edna A and B soils are rated "Somewhat Limited."³⁴

Synagro points out Protestants questioned Mr. High about a separate USDA-NRCS Web Soil Survey referred to as "Land Application of Municipal Sewage Sludge Rating," that lists the Crowley and Edna soils as "Very Limited."³⁵ However, Applicant notes Mr. High testified that he had noticed the inconsistency between the two web soil surveys and had contacted Michael Risinger, the state soil scientist at the NRCS in Temple, Texas, to clarify the inconsistency between the two surveys. Mr. High stated that Mr. Risinger informed him that Exhibit P-14 was based upon general nationwide data, while Exhibit A-57 was based on all of the subsoil data and surface soil data for Texas. Consequently, Synagro notes, Mr. High testified he found the data in Exhibit A-57 more reliable for the site than the data in Exhibit P-14, and he stated that he relied upon the information in Exhibit A-57 to conclude that the permeability of the Edna and Crowley soils is suitable for land application of biosolids.³⁶

For these reasons, Synagro asserts that its proposed agronomic rates for the site will have no adverse impact on surface water runoff.

³⁴ Ex. A-57 at 3; Tr. v. 3 at 499-500.

³⁵ Ex. P-14.

³⁶ Tr. v. 3 at 544-545.

C. Protestants' Position

Protestants argue that the over-application of nutrients at Synagro's site will increase the chance that nutrients will leave the site; buffer zones will not adequately prevent the migration of nutrients off-site; and the impermeability of the soils present at the site will enhance the likelihood of off-site migration of nutrients and other contaminants. Protestants contend that witnesses for the ED and Applicant who testified regarding nutrient application (that is, Michael Chadwick, Brian Sierant, and Ken High) were unwilling to estimate what percentage of the sludge applied would leave the site. Moreover, Protestants assert that no witness beyond Applicant's witness Dr. William Espey, a hydrologist, was willing to challenge the assumption of Protestants' witness Raymond Slade that 1.9 percent of the sludge applied to the fields would exit the site during a rainfall event.

Protestants argue that, even though the NRCS has stated that filter strips should generally not be relied upon as a stand-alone practice,³⁷ Synagro relies heavily on the existence of a buffer between the application fields and Gum Tree Branch Creek to remove contaminants that would impact the wildlife ponds on Protestants' property. However, Protestants assert that buffer zones will not adequately serve this purpose for the following reasons: inundation of the buffer zones will impair their effectiveness; the buffer zones may reduce contaminants but will not eliminate them; the buffer zones will not be adequately vegetated; grazing will occur in the buffer zones; and low grass height caused by grazing and shredding will reduce the filtering ability of the buffer zones. Protestants point out that Mr. Slade's analysis of water quality impacts is premised on only 1.9 percent of the applied sludge washing off the site. However, Protestants contend that filter strips achieve only minimal removal of soluble constituents because they allow 20 to 40 percent of the suspended solids and attached constituents in the runoff water to pass through.³⁸

³⁷ Ex. P-16.

³⁸ *Id.*

Protestants also argue that Synagro will not be required to comply with the vegetation and care requirements set forth in NRCS Code 393 and that Applicant has proposed no control measures to keep grazing animals outside the buffer zones. Protestants assert that failure to have control measures to keep grazing animals outside the buffer zones will result in degradation of the filtering capability of the buffer zones and in the deposition of nutrients in the form of manure and urine directly into the buffer zones by roving animals.

D. ED's Position

The ED argues that, based on the evidence and testimony presented, the newly calculated application and agronomic rates should reduce any impact on surface water from the site. Moreover, the ED asserts that the wider buffer zones and lower application rates at the site show that the buffer zones are more protective of surface water quality than those previously proposed by Synagro.

The ED points out his witnesses testified that there should not be any significant migration of pollutants off the application site. He notes Dr. Askenasy stated that the buffer zone requirements in the proposed permit exceed what is required by Commission rules and the recommendations of the NRCS in Code 393 for filter strips.³⁹ The ED further notes that even Protestants' witness, Mr. Wiland, conceded that the NRCS recommendation for width of filter strips was less than the width of buffer zones in the proposed permit.⁴⁰ The ED also points out that ED witness Brian Sierant, an environmental permit specialist in TCEQ's Water Quality Division, testified that, if sludge is applied according to the terms of the proposed permit, there should be no movement of pollutants off the application site.⁴¹

³⁹ Tr. v. 3 at 423-425.

⁴⁰ Tr. v. 3 at 387-389.

⁴¹ Tr. v. 3 at 442.

E. PIC's Position

The PIC recommends a finding that there will be no anticipated adverse impact on surface water. He notes that both Mr. Lymberry and Mr. High stated that no land application of biosolids will occur in the floodplain.⁴² The PIC further points out that Mr. High testified that the required buffer zones will act as filter strips as described in NRCS Code 393 and will absorb contaminants and nutrients from any possible runoff from the site.⁴³

Also, the PIC notes that ED witness Mr. Chadwick reviewed Synagro's application for potential groundwater impacts and visited the site. Mr. Chadwick observed, among others, the following: the recommended buffer areas that exclude sludge application are appropriate; further buffer areas are not required to be protective of either groundwater or surface water; and the area had been terraced to prevent large scale erosion and movement of soil off the permitted site boundaries.⁴⁴ The PIC points out that Mr. Chadwick also summarized the buffers and the distances excluded from sludge application: 150-foot buffer from water wells; 200-foot buffer from surface water; all of FEMA-designated Zone A 100-year floodplain; 50-foot buffer from the property boundary; and 10-foot buffer from irrigation canals and designated Cleno soils surface depressions.⁴⁵ As noted by the PIC, Mr. Chadwick concluded that the buffer areas, combined with the terracing and the good coverage and density of the surface grasses he observed, would prevent the runoff of sludge from the application site.⁴⁶ The PIC also points out that Mr. High presented several photographs showing that the buffer zones are highly vegetated.⁴⁷

⁴² Ex. A-1B at 10; Ex. A-28 at 18.

⁴³ Ex. A-28 at 19.

⁴⁴ Ex. ED-1 at 4.

⁴⁵ *Id.* at 7.

⁴⁶ *Id.*

⁴⁷ Tr. v. 3 at 494-497; Ex. A-56.

Based on the proposed permit's buffer zones consistency with Commission rules,⁴⁸ the additional special permit provision that prohibits sludge application in the floodplain, Mr. Chadwick's observations of the site, and Synagro's photographs depicting the vegetated buffer zones, the PIC asserts there will be no anticipated adverse impact on surface water.

F. Judge's Analysis and Recommendation

The Judge agrees with the PIC's and Applicant's assertion that Synagro's newly proposed agronomic rates should have no adverse impact on surface water runoff from the site. Protestants' criticisms of Synagro's buffer zones are not based on the Commission rules and do not acknowledge that Synagro has exceeded the applicable requirements in terms of the quantity of land excluded as buffer zones and the quality of the buffer zones themselves. Pursuant to the applicable Commission rules,⁴⁹ Applicant must maintain a 200-foot buffer zone from any surface water body; the buffer zone need not be vegetated; and Synagro must not land apply the biosolids in a floodway. Synagro, however, has committed in its site management plan to extend its buffer zone beyond 200 feet from Gum Tree Branch Creek to encompass the 100-year floodplain and to maintain vegetated buffer zones. These commitments have been incorporated in the proposed permit. Also, as noted by the PIC, the evidence demonstrates that the proposed buffer zones are currently highly vegetated.

Furthermore, although Protestants argue that the height of the grass in both the land application area and the vegetated and maintained buffer zones after shredding will be such that the filtering ability of the grasses will be reduced, the Judge observes there is no evidence showing that the buffer zones will be shredded. Mr. High did testify that Synagro intends to have 4 to 6 inches of growth after shredding on the application site.⁵⁰ However, Protestants cite to no evidence

⁴⁸ 30 TAC § 312.44©.

⁴⁹ 30 TAC § 312.44(i)(6) (West 2003); See Ex. A-30 at 1978.

⁵⁰ Tr. v. 3 at 490.

supporting their contention that shredding the grass on the application area to 4 to 6 inches will cause runoff of nutrients. The Judge also agrees with Synagro's assertion that the soil permeability at the site complies with Commission rules.⁵¹ Because the depths of the Edna and Crowley soils at the site extend more than 60 inches deep, the evidence demonstrates that the permeable soils at the site exceed the 2-foot requirement of Commission rules. Moreover, while the permeability of the Edna and Crowley soils is described as very slow in general, those soils are permeable.⁵²

3. Whether surface water runoff from Applicant's facility will impact or affect fishing and wildlife ponds on Protestants' adjacent property.

The Judge recommends the Commission find that there will be no expected adverse impact on Protestants' fishing and wildlife ponds from surface water runoff from Applicant's facility.

A. Background

Protestants have owned the property adjacent to Applicant's proposed site for approximately 14 years.⁵³ Gum Tree Branch Creek flows through Synagro's application site and then through Protestants' property in a northeasterly direction toward the San Bernard River.⁵⁴ Protestants have a 51-acre duck pond that is about 100 feet from the proposed site and a 17-acre duck pond that is approximately 200 feet from the proposed site.⁵⁵ Protestants also have a bass pond that is used for fishing, swimming, bird dog training, and recreation. Additionally, Protestants' property includes Bermuda grass and a soybean crop.⁵⁶

⁵¹ 30 TAC § 312.44(i)(2) (West 2003). See Ex. A-30 at 1978.

⁵² Ex. A-14 at "Soil Information."

⁵³ Ex. P-1 at 2.

⁵⁴ *Id.* at 3.

⁵⁵ *Id.* at 7.

⁵⁶ *Id.* at 9-10.

Protestants' ponds attract numerous amphibians and fish, which in turn attract ducks and other waterfowl. Fish tend to enter the ponds from Gum Tree Branch Creek because they provide relatively still water in which the fish can lay their eggs.⁵⁷ Protestants hunt on their property, and they also invite various civic groups such as the 4H Club and the Boy Scouts to do likewise.⁵⁸

Mr. Hudman testified that flood waters from Gum Tree Branch Creek has caused his duck ponds to flood at least 15 times in the past 10 years, and the actual number of floods is probably closer to 30.⁵⁹

B. Protestants' Position

Protestants assert that the excess application of nutrients at Synagro's site and the limited effectiveness of the proposed buffers will cause contaminants and nutrients to enter Gum Tree Branch Creek; Gum Tree Branch Creek will then carry the material into the wildlife ponds on Protestants' property, resulting in a concentration of contaminants in their ponds sufficient to cause adverse impacts.

As previously noted, Protestants contend that Synagro's buffer zones will be inundated during times of rainfall, thus impairing the effectiveness of the buffer zones. They argue that Raymond Slade, Protestants' witness, testified that the buffer zone boundary is comparable to the 100-year floodplain; and when runoff occurs from the application site, Gum Tree Branch Creek will usually be higher than the base flow stage because of runoff from the watershed upstream from the application area.⁶⁰ Protestants assert that the buffer zones will not effectively filter contaminants

⁵⁷ *Id.*

⁵⁸ *Id.* at 8.

⁵⁹ *Id.* at 4.

⁶⁰ Ex. P-3 at 5.

while underwater.

Protestants point out that Mr. Slade performed an analysis of how the overflow of Gum Tree Branch Creek into Protestants' wildlife pond would impact the water quality in those ponds. They note that his analysis assumed that only 1.9 percent of the material applied on the application fields would enter Gum Tree Branch Creek. Protestants contend that, "considering that even well designed and maintained filter strips will only remove 60 to 80 percent of the suspended solids and constituents in run-off,⁶¹ this value may well underestimate the quantity of material leaving the site."⁶² They also argue that Mr. Slade found that phosphorus levels in the duck ponds would be 78 times the Environmental Protection Agency's criteria for the protection of aquatic life.⁶³

Protestants note that Mr. Slade performed a frequency analysis to determine the occasions that flooding most likely would occur. Mr. Slade used stream gauge data from the Redgate Gage near Columbus, Texas; normalized the data for the drainage basin of Gum Tree Branch Creek upstream of Protestants' property; and calculated what the flow of Gum Tree Branch Creek must be to flood Protestants' wildlife ponds if the ponds had been flooded 15 times in the past 10 years. He determined that a flow of 199 cubic feet per second (cfs) was the threshold amount of flooding to have an effect on Protestants' ponds by overtopping the levees and spilling floodwaters into the ponds.⁶⁴

Protestants assert that Mr. Slade, knowing the quantity of runoff that exceeds the threshold for the flooding of the ponds, was able to determine how much runoff from Synagro's application site would enter Protestants' wildlife ponds during the spring and fall. They note Mr. Slade determined

⁶¹ Ex. P-16.

⁶² Protestants' Closing Argument at 25.

⁶³ Ex. P-3D.

⁶⁴ Ex. P-3C.

that a spring runoff event would displace 47 percent of the water in the duck ponds, and a fall event would displace 100 percent of the water in the ponds.⁶⁵ Protestants assert that Mr. Slade, knowing the quantity of displacement for each season, was then able to evaluate what the water quality of the wildlife ponds would be as a result of this displacement.⁶⁶

C. Applicant's Position

Applicant contends that surface water runoff from the application site will not adversely impact Protestants' fishing and wildlife ponds. Synagro points out that its witness, Dr. William Espey, concluded that it would take a 50-year flooding event to overtop the fishing and wildlife ponds on Protestants' property.⁶⁷ In reaching his conclusion, Dr. Espey did a backwater analysis using surveyed elevations and estimates of floodplain profiles to determine the elevation of floodwaters necessary to overtop the levees on Protestants' ponds.⁶⁸ Dr. Espey determined that the volume of water necessary to overtop the levees would occur only once every 50 years, or a 2-percent likelihood of that occurring in any one year. Applicant notes Dr. Espey also testified that the volume of water in such a flood event would be 4,700 cfs, approximate 20 times the flow determined by Mr. Slade based on the same normalized stream gauge data.⁶⁹

D. ED's Position

Relying on Dr. Espey's backwater analysis, the ED asserts that, if any pollutants during a flood event leave the Duncan Ranch site and enter Gum Tree Branch Creek, the likelihood that

⁶⁵ Id.

⁶⁶ Ex. P-3D and P-3E.

⁶⁷ Tr. v. 2 at 238.

⁶⁸ See Exhibits A-46, A-47, A-48, A-49.

⁶⁹ Tr. v. 2 at 276-277.

those pollutants will affect the water quality of Protestants' ponds is 2 percent in any given year, or once every 50 years on average. The ED points out that Dr. Espey's backwater analysis is a standard technique used in many areas of TCEQ permitting, and the ED can find no fault in Dr. Espey's analysis.

E. PIC's Position

The PIC asserts that the proposed permit is consistent with Commission rules and that Synagro has provided sufficient additional evidence as it relates to Protestants' property. For these reasons, the PIC recommends a finding that there will be no expected adverse impact on Protestants' fishing and wildlife ponds.

The PIC notes there is no way to ensure that, as a result of Synagro's proposed permitted activity, there never will be an adverse impact on Protestants' ponds. However, the PIC argues that the only way to guarantee no impact is to never allow such permits to be issued.

F. Judge's Analysis and Recommendation

The Judge agrees with the PIC's recommended finding that there will be no expected adverse impact on Protestants' fishing and wildlife ponds from surface water runoff from Applicant's facility. Dr. Espey determined that the volume of water necessary to overtop the levees on Protestants' ponds would occur only once every 50 years, or a 2-percent likelihood of that occurring in any one year. In other words if, contrary to expectations, any pollutants during a flood event leave Synagro's Duncan Ranch site and enter Gum Tree Branch Creek, the likelihood that those pollutants will affect the water quality of Protestants' ponds is 2 percent in any given year, or once every 50 years on average. Dr. Espey also found that the volume of water in such a flood event would be 4,700 cfs, approximate 20 times the flow determined by Mr. Slade based on the same normalized stream gauge data. Dr. Espey's flood frequency and backwater analyses of Gum Tree Branch Creek refute

Mr. Hudman's testimony that floodwaters from Gum Tree Creek Branch have flooded his duck ponds at least 15 times in the last ten years.

Protestants challenge Dr. Espey's findings and raise questions regarding his judgment in performing his analyses, such as normalizing the flow data, considering the partial clogging of the creek, applying a skew coefficient, and assuming one-dimensional flow. However, Dr. Espey, a civil engineer, has performed water flood analyses for decades,⁷⁰ and his decisions in performing his analyses in this case were matters of judgment as an expert.

Dr. Espey also verified all his judgment decisions in performing his analyses with FEMA 100-year floodplain maps. He confirmed that, when taking the 100-year discharge of 5,410 cfs and looking at the area inundated by water without the presence of Protestants' levees, his model mimicked FEMA's findings. Because Dr. Espey's findings regarding the area of inundation from flooding are consistent with FEMA's official floodplain maps, his decisions regarding skew, one dimensional flow, the normalization of the data of the Redgate Gage, and the partial clogging of Gum Tree Branch Creek are correct exercises in professional judgment.

Based on Dr. Espey's decades of experience in performing water flood analyses and his flood frequency and backwater analyses of Gum Tree Branch Creek, the Judge concurs with the ED's assertion that, if any pollutants leave Synagro's application site and enter Gum Tree Branch Creek, the likelihood that those pollutants will impact the water quality of Protestants' ponds is 2 percent in any given year, or once every 50 years on average.

4. Whether Synagro's compliance history justifies either denial or modification of the proposed permit.

The Judge recommends the Commission find that Synagro's compliance history does not justify denial or modification of the proposed permit.

⁷⁰ Ex. A-39.

A. Applicable Law

In pertinent part, 30 TAC § 60.2(b), entitled "Classification," reads as follows:

- (b) Inadequate information. For purposes of this rule, "inadequate information" shall be defined as no compliance information. If there is no compliance information about the site at the time the [ED] develops the compliance history classification, then the classification shall be designated as "average performer by default"

In pertinent part, 30 TAC § 60.3(a)(2), entitled "Use of Compliance History," reads as follows:

- (2) Review of permit application. In the review of any application for a new . . . permit, the [ED] or commission may require permit conditions or provisions to address an applicant's compliance history. Poor performers are subject to any additional oversight necessary to improve environmental compliance.

B. ED's Position

The ED recommends neither denial nor modification of the proposed permit based on Synagro's compliance history. The ED points out that he submitted evidence, admitted as Exhibit ED-9, concerning Synagro's compliance history. After Protestants submitted supplemental documents relating to Synagro's compliance history,⁷¹ the ED noted he adjusted Synagro's compliance classification and rating for some of Applicant's sites.⁷² The ED points out that ED witness Brian Sierant testified that Synagro's compliance history, considered by the permit writers when drafting the proposed permit, raised no issues of concern.⁷³

⁷¹ Ex. P-17.

⁷² See Ex. ED-13.

⁷³ Ex. ED-5 at 6.

C. Protestants' Position

Protestants complain that TCEQ's method for evaluating Synagro's compliance history is fundamentally flawed. They argue that, with each TCEQ investigation of Synagro for which no written notice of violation was issued, Synagro's compliance history classification was raised. Thus, Protestants assert, Synagro's compliance history classification actually improved on occasions where Synagro was found to be committing violations for which no notices of violation were issued.

D. Applicant's Position

Applicant argues that Synagro's compliance history provides no basis for the Commission to either deny or modify the proposed permit. Applicant notes that Commission rules define a poor performer as one that performs "below average."⁷⁴ Applicant contends that nothing in its compliance history indicates that Synagro is a "poor performer," requiring the Commission to deny or add special oversight provisions to the proposed permit.

Applicant points out Mr. Sierant testified that any rating between 0.1 and 45 is considered "average" and an overall rating above 45 is classified as "poor."⁷⁵ Mr. Sierant stated he reviewed Synagro's compliance history and determined that Synagro's overall classification for all its sites in Texas was "average," with an overall rating of 1.75.⁷⁶ After supplemental compliance history documents were filed, Applicant notes that its overall rating then improved from 1.75 to 1.74, with an overall classification of "average."⁷⁷

⁷⁴ 30 TAC § 60.2(a)(3).

⁷⁵ Tr. v. 3 at 450.

⁷⁶ *Id.* at 453.

⁷⁷ Ex. ED-13.

E. PIC's Position

The PIC recommends a finding that Synagro's compliance history warrants neither denial nor modification of the proposed permit. The PIC argues that the "average by default" classification really tells nothing about Synagro's compliance history. However, the PIC notes that Mr. Sierant's compliance classification for Synagro is consistent with the "average by default" classification set out in Commission rules. Therefore, the PIC asserts that the proposed permit should not be denied or modified based on Synagro's compliance history.

In response to Protestants' complaint that TCEQ's method of evaluating compliance history is fundamentally flawed, the PIC observes that he must determine whether the ED's staff followed the procedures set in place for the use of Synagro's compliance history. Because TCEQ staff followed the procedures required by Commission rules, the PIC concludes that the proposed permit should not be modified or denied based on Synagro's compliance history.

F. Judge's Analysis and Recommendation

The Judge concludes that Synagro's compliance history justifies neither denial nor modification of the proposed permit. Synagro's compliance history classification of "average by default" is consistent with Section 60.2(b) of Commission rules. Moreover, as noted by Applicant in response to Protestants' complaint that TCEQ's method for evaluating Synagro's compliance history is fundamentally flawed, Protestants do not contend that the alleged flaws in TCEQ's method warrant denial or modification of the proposed permit.

IV. ADDITIONAL FACTS

In addition to the facts addressed in the preceding discussion, the Findings of Fact contained in the attached proposed order include other facts, established during the proceeding, that are

necessary to show compliance with regulatory requirements applicable to this administrative process. Those additional facts are incorporated by reference into this proposal for decision.

V. CONCLUSION

The Judge recommends that the Commission adopt the attached proposed order finding that Synagro's newly proposed agronomic rates have been properly calculated; they will have no adverse impact on surface water runoff from the site; and there will be no expected adverse impact on Protestants' fishing and wildlife ponds from surface water runoff from Applicant's facility. Because the Commission only referred those issues to the Judge, the Commission should add other findings and conclusions necessary to fully determine whether to grant or deny Synagro's application for a permit.

SIGNED July 6, 2007.

Carol Wood

**CAROL WOOD
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



**AN ORDER concerning the application of
Synagro of Texas-CDR, Inc. for
Permit No. WQ0004671000
Docket No. 2005-0180-SLG**

On _____, 2007, the Texas Commission on Environmental Quality (Commission) considered the application of Synagro of Texas-CDR, Inc. (Synagro), for a permit authorizing the land application of wastewater treatment plant sewage sludge for beneficial use on 1,073.92 acres in Wharton County, Texas. The application was presented to the Commission with a proposal for decision by Carol Wood, an Administrative Law Judge (ALJ) with the State Office of Administrative Hearings (SOAH).

After considering the ALJ's proposal for decision and the evidence and arguments presented, the Commission makes the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

1. Synagro has applied to the Commission for a permit authorizing the land application of wastewater treatment plant sewage sludge for beneficial use on 1,073.92 acres at a rate not to exceed 5.02 dry tons/acre/year on Fields 1 and 2, and at a rate not to exceed 4.66 dry tons/acre/year on Field 3.
2. Synagro intends to apply Class B biosolids; that is, the biosolids will have to meet the requirements of EPA's 40 CFR Part 503 regulations, which are based on at least a 99 percent reduction of pathogens.

3. The permit does not authorize a discharge of pollutants into waters in the State.
4. The land application site is located approximately 4.5 miles from the City of Lissie, south-southwest of the intersection of Highway 90 and Farm-to-Market Road 271, and approximately 7 miles southeast of the City of Eagle Lake in Wharton County, Texas.
5. The land application site is in the drainage area of the San Bernard River Above Tidal in Segment No. 1302 of the Brazos Colorado Coastal Basin.
6. Synagro's application was received on August 21, 2003, and declared administratively complete on August 29, 2003.
7. Notice of Receipt and Intent to Obtain a Water Quality Permit was published on September 10, 2003, in the *Wharton Journal-Spectator*, a newspaper published and generally circulated in Wharton County, Texas.
8. The Commission's Executive Director (ED) completed technical review of the application on January 29, 2004, and prepared a draft permit.
9. A notice of public meeting was published on May 15, 2004, in the *El Campo Leader News*, a newspaper regularly published in Wharton County.
10. The public meeting was held on June 20, 2004, in Wharton, Texas.
11. Notice of Application and Preliminary Decision for a Water Quality Permit was published on July 14, 2004, in the *Wharton Journal-Spectator*.
12. Notice of Hearing on the application was published on May 25, 2005, in the *Wharton Journal-Spectator* in Wharton County, Texas; and on May 26, 2005, in the *Banner Press*, a newspaper regularly published or generally circulated in Austin, Colorado, and Fayette Counties, Texas.

13. On March 23, 2005, the Commission considered numerous requests for a contested case hearing and determined that Bret and Phyllis Hudman (Hudmans or Protestants) were affected persons entitled to a hearing. The Commission denied all other hearing requests.
14. By Interim Order dated May 27, 2005, the Commission referred the matter to SOAH for a contested case hearing on the following single issue: whether surface water runoff from Synagro's facility will impact or affect fishing and wildlife ponds on adjacent property.
15. On July 5, 2005, a preliminary hearing was held in Austin, Texas. The following were designated as parties to the proceeding: Synagro, the Commission's Public Interest Counsel (PIC), the Hudmans, and Rodney Scott.
16. An evidentiary hearing was conducted on September 20, 2005, in Austin, Texas.
17. The ALJ issued a proposal for decision on December 21, 2005, recommending issuance of the original draft permit.
18. After the parties submitted exceptions to the proposal, Synagro requested that the matter be remanded to SOAH for further hearings to correct a technical flaw in the application that was discovered after completion of the evidentiary hearing and affected calculations of the sludge application rates.
19. On April 12, 2006, the Commission granted Synagro's request and remanded the matter to SOAH for further hearings to receive additional evidence on the new agronomic rate calculations ; the impact, if any, of the new calculations and agronomic rates on surface water runoff from Applicant's facility; and whether such runoff will impact or affect fishing and wildlife ponds on adjacent property.
20. Protestants filed a motion for rehearing on May 18, 2006, arguing that the Commission erred in remanding the matter to SOAH rather than denying Synagro's application for a permit.

21. Protestants' motion for rehearing was overruled by operation of law on June 20, 2006.
22. On May 8, 2006, the ALJ designated the ED as a party to the proceeding.
23. On October 19, 2006, the ALJ removed Rodney Scott as a party for his failure to participate in the proceedings.
24. The supplemental evidentiary hearing was conducted in Austin, Texas, from January 22 through January 24, 2007.
25. On June 8, 2006, Synagro provided its revised agronomic rates for use in evaluation of its application, reducing the rates for Fields 1-3 of the site from 6.18 dry tons/acre/ year, to 5.02 dry tons/acre/ year on Fields 1 and 2, and 4.66 dry tons/acre/year on Field 3.
26. Synagro will land apply Class B biosolids originating from nine City of Houston wastewater treatment plants to Fields 1-3 of the Site.
27. Synagro accurately detailed the average concentration of nutrients and pollutants in the sludge from the nine City of Houston wastewater treatment plants.
28. Synagro correctly took soil samples from all three fields at the site and submitted those samples to A & L Plains Agricultural Laboratories, Inc. for analysis.
29. A & L Plains Agricultural Laboratories, Inc. provided the moisture percentage and the crude and digestible protein in the plant from the grass samples taken from all three fields at the site.
30. Crowley (Cr- Telferner) and Edna (EdA and EdB) soils are predominant on the three fields at the site.
31. The site receives annual rainfall of 48.26 inches and has a slope of 0 to 1 percent.

32. Synagro will manage the three fields at the site for a given year under the biosolids application schedule as follows:
 - a. Land apply the first application of biosolids in the spring;
 - b. Use cattle to graze down approximately 66.67 percent of the vegetation, beginning no sooner than 30 days after the application of biosolids;
 - c. Shred the remaining vegetation (forage) down to approximately 4-6 inches in the summer;
 - d. Land apply the second application of biosolids in the late summer; then
 - e. Use cattle to graze down the second vegetation.

33. With the implementation of the biosolids application schedule, Synagro's yield goal of 6 tons/acre/year is reasonably achievable.

34. Synagro correctly calculated that to meet the yield goal 6 tons/acre/year of common Bermuda grass, Field 1 will need 235 lbs of nutrient per acre per year, Field 2 will need 241 lbs of nutrient per acre per year, and Field 3 will need 223 lbs per acre of nutrient per year.

35. After taking into consideration A & L Plains Agricultural Laboratories' analysis of nitrogen in the soil and the nitrogen returning to the soil from shredding of the forage, the nitrogen available in the soils for Field 1 was 67 lbs/acre, 73 lbs/acre for Field 2, and 67 lbs/acre for Field 3.

36. The initial soil samples and subsequent annual soil sampling take into consideration the return of nitrogen to the soil by deposits of manure from cattle.

37. By subtracting the nutrient available in the soil for each field from the nutrient needed to reach the crop yield goal for that field, Synagro correctly calculated the amount of nutrient still needed for each field to meet its 6 tons/acre/year yield goal.

38. The amount of nutrient still needed for Fields 1 and 2 is 168 lbs/acre and 156 lbs/acre for Field 3.

39. Based on the average concentration of nutrients in the sludge from the nine City of Houston wastewater treatment plants and Synagro's commitment in its site management plan not to incorporate the biosolids at the site except in certain unique circumstances, Synagro correctly calculated the plant available nitrogen (PAN) provided by the sludge as 33.480 lbs/ton.
40. By dividing the amount of nitrogen still needed by the soil for each field to meet the crop yield goal by the PAN in the sludge, Synagro correctly computed the maximum sludge application rate (SAR) for Fields 1 and 2 to be 5.02 tons of sludge/acre/year and 4.46 tons of sludge/acre/ year for Field 3.
41. Based on the concentrations of regulated metals in the sludge, Synagro correctly determined that its agronomic rates need not be further reduced.
42. Synagro correctly determined that, based on its calculated agronomic rates, it could apply the biosolids to Field 1 for 285.4 years, 285.4 years to Field 2, and 307.35 years for Field 3.
43. As set forth in its site management plan, incorporated in the permit, Synagro will maintain vegetated buffer zones as follows:
 - a. 200 feet from Gum Tree Branch Creek, at a minimum;
 - b. 200 feet from other surface waters;
 - c. 150 feet from a private water well;
 - d. 500 feet from a public water supply well, intake, public water supply spring, or similar source; public water supply treatment plant; or public water supply elevated or ground storage tank;
 - e. 200 feet from a solution channel, sinkhole, or other conduit to groundwater;
 - f. 750 feet from an established school, institution, business, or occupied residential structure;
 - g. 50 feet from a public right-of-way and property boundaries;
 - h. 10 feet from an irrigation conveyance canal; and
 - i. 50 feet from the property boundary of the Duncan property, at a minimum.

44. As set forth in its site management plan, Synagro will not land apply biosolids in the current Federal Emergency Management Administration (FEMA) designated floodway or 100-year floodplain and has included those areas in the buffer zones.
45. According to FEMA's current map, Synagro's sludge application area is not within a floodway or a floodplain.
46. Synagro's buffer zone adjacent to Gum Tree Branch Creek meets or exceeds 200 feet.
47. By reducing the flow of water and the movement of constituents, vegetated buffer zones increase the absorption of nutrients into the soil, thereby reducing the movement of nutrients from the site.
48. The areas Synagro has designated as buffer zones are already fully vegetated.
49. The United States Department of Agriculture - Natural Resources Conservation Service (NRCS) Web Soil Survey, referred to as "Application of Municipal Sewage Sludge (TX) Rating," is based on Texas state-specific subsoil and surface soils data and criteria.
50. According to NRCS's "Application of Municipal Sewage Sludge (TX) Rating," the Edna A and B and Crowley soil types at the site are rated as suitable for the application of municipal sewage sludge.
51. Synagro's revised agronomic rates will not impact surface water runoff from the site as a result of land application of sludge during conditions of wet weather or saturated soils.
52. As set forth in its site management plan, Synagro will do the following:
 - a. Neither apply sludge in wet weather nor land apply when precipitation is imminent;
 - b. Neither land apply if the soils are saturated nor apply sludge if there is a flood event upstream from the site;

- c. Immediately cease land application operations if it begins to rain while Synagro is applying the biosolids;
 - d. Not land apply if the soil at the site is saturated, frozen, or covered in ice, and land application will not resume until sufficient soil drying has occurred and the fields will support Synagro's land application equipment without excessive tracking or compaction;
 - e. Monitor soil moisture with soil moisture probes and not apply if the probe readings are 30 centibars or less.
53. Within 30 days from the date of application of Class B biosolids, the biosolids become encapsulated in the root system of the grass.
54. The soils on all three fields at the site are permeable to a depth of at least 60 inches.
55. The site is not located within a sole-source impairment zone.
56. The level of phosphorus in the soils at the site is very low.
57. Erosion of the biosolids application area will be low at less than two tons per year .
58. Synagro's revised agronomic rates will not adversely affect or impact the surface water runoff from the site.
59. The drainage area for Gum Tree Branch Creek is 14.1 square miles.
60. The levees of Protestants' ponds will not be overtopped by water overflowing the banks of Gum Tree Branch Creek unless there is a 50-year flood event.
61. The likelihood of a 50-year flood event is once every 50 years, or a 2 percent chance in any given year.

62. Protestants' ponds are flooded with water draining from other portions of the 14.1 square-mile drainage area, which does not include surface water runoff from the site.
63. A cultivated rice field adjacent to Protestants' property drains into Protestants' ponds.
64. Surface water runoff from the site will not impact or affect fishing and wildlife ponds on adjacent property.
65. Synagro's compliance history has an overall rating of 1.74 and a classification of Average.

CONCLUSIONS OF LAW

1. The Commission has jurisdiction over permits to land apply Class B biosolids pursuant to TEX. WATER CODE; Acts of 77th Leg., 2001 R.S., ch. 965, § 9,05(a), 2001 Tex. Gen. Laws 1857-1858 (amended 2003) (current version at TEX. HEALTH & SAFETY CODE § 361.121); and 30 TEX. ADMIN. CODE ch. 312 (West 2003).
2. Because Synagro's application for a permit was declared administratively complete on August 29, 2003, current version TEX. HEALTH & SAFETY CODE § 361.121, effective September 1, 2003, does not apply.
3. Because Synagro's application for a permit was declared administratively complete on August 29, 2003, current version 30 TEX. ADMIN. CODE ch. 312 does not apply.
3. SOAH has the authority to conduct evidentiary hearings and prepare proposals for decision on contested matters referred by the Commission pursuant to TEX. GOV'T CODE § 2003.047.
4. Permit No. WQ0004671000 contains sufficient provisions to assure that sludge will be applied by a method and under conditions that will prevent runoff of sewage sludge beyond the active application area and will protect the quality of the surface water and the soils in the unsaturated zone.

5. Permit No. WQ0004671000 contains sufficient provisions to assure that surface water runoff from the facility will not impact or affect fishing and wildlife ponds on adjacent property.
6. Based on the above findings of fact and conclusions of law, the application of Synagro for Permit No. WQ0004671000 complies with the requirements of Acts of 77th Leg., 2001 R.S., ch. 965, § 9,05(a), 2001 Tex. Gen. Laws 1857-1858 (amended 2003); and 30 TEX. ADMIN. CODE ch. 312 (West 2003).
7. In accordance with 30 TEX. ADMIN. CODE § 50.117, the Commission issues this Order and the attached permit as its single decision on the permit application. Information in the agency record of this matter, which includes evidence admitted at the hearing and part of the evidentiary record, document the ED's review of the permit application, including the part not subject to a contested case hearing, and establishes that the terms of the attached permit (Exhibit A) are appropriate and satisfy all applicable federal and state requirements.

NOW, THEREFORE, IT IS ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY THAT:

1. The Commission adopts the Executive Director's Response to Public Comment in accordance with 30 TEX. ADMIN. CODE § 50.117. Also, in accordance with Section 50.117, the Commission issues this Order and the attached permit (Exhibit A) as its single decision on the permit application. Information in the agency record of this matter, which includes evidence admitted at the hearing and part of the evidentiary record, document the ED's review of the permit application, including the part not subject to a contested case hearing, and establishes that the terms of the attached permit are appropriate and satisfy all applicable federal and state requirements.