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September 5, 2007

CHIEF CLERKS OFFICE

2007 SEP -5 PM 4:03

TEXAS  
COMMISSION  
ON ENVIRONMENTAL  
QUALITY

***VIA HAND DELIVERY***

LaDonna Castañuela, Chief Clerk  
Texas Commission on Environmental Quality  
12100 Park 35 Circle  
Building F, Room 1101  
Austin, Texas 78753

Re: SOAH Docket No. 582-06-1581; TCEQ Docket No. 2005-1720-MWD;  
Application of Midtex Partners, Ltd. for Water Quality Permit No. 14472-001,  
Authorizing the Disposal of Treated Domestic Wastewater

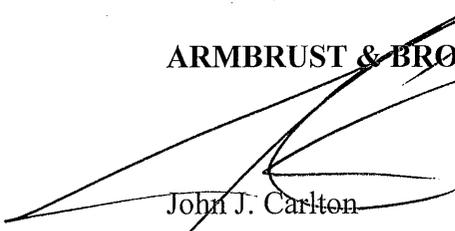
Dear Chief Clerk:

Enclosed for filing is an original and eleven copies of the City of Pflugerville's Exceptions to the Proposal for Decision in the above referenced matter. I have also enclosed an additional copy for you to file mark and return to the courier delivering same.

If you have any questions or concerns, please contact me at your earliest convenience.

Sincerely,

**ARMBRUST & BROWN, L.L.P.**

  
John J. Carlton

Enclosure

cc: William G. Newchurch, ALJ (*via hand delivery*)  
Mark Zeppa (*via facsimile & first class mail*)  
Emily Collins (*via facsimile & first class mail*)  
Robert D. Brush (*via facsimile & first class mail*)  
Stuart Henry (*via email*)

SOAH DOCKET NOS. 582-06-1581

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TCEQ DOCKET NOS. 2005-1720-MWD

CHIEF CLERKS OFFICE

APPLICATION OF MIDTEX § BEFORE THE STATE OFFICE  
PARTNERS, LTD., FOR WATER §  
QUALITY PERMIT NO. 14472-001, § OF  
AUTHORIZING THE DISPOSAL OF §  
TREATED DOMESTIC WASTEWATER§ ADMINISTRATIVE HEARINGS

**CITY OF PFLUGERVILLE'S  
EXCEPTIONS TO THE PROPOSAL FOR DECISION**

**TO THE HONORABLE COMMISSIONERS:**

COMES NOW the City of Pflugerville ("City" or "Pflugerville") and files this Exceptions to the Proposal for Decision and would respectfully show as follows:

**I.**

Midtex Partners, Ltd., applied for water quality permit number 14472-001. The City of Pflugerville and neighboring landowners protested. The application was referred to a hearing, which was conducted by an Administrative Law Judge ("ALJ") from May 2, 2007, through May 4, 2007. After receiving post hearing briefs, the ALJ submitted his Proposal for Decision ("PFD") to the Commission on August 16, 2007. The PFD recommends denial of the proposed permit.

**II.**

While the City wholly supports the ultimate recommendation of the Administrative Law Judge to deny Midtex's permit application and most of the ALJ's findings and conclusions, the City is compelled to point out a significant error in the ALJ's analysis with respect to the suitability of site for disposal of effluent based upon the proposed effluent application rate and the soil permeability. In particular, the ALJ erred in his comparison of the effluent application rate directly to soil permeability and in his finding that there was no evidence to contradict

Midtex's expert's conclusion that the soil was sufficiently permeable based upon his experience and an alleged soil permeability study that is not in the record. On the contrary, there is ample evidence in the record to dispute Midtex's expert's conclusion.

As discussed in the City's closing arguments, Midtex did not use appropriate methodology for determining whether the proposed application rate was protective of water quality. And unfortunately, the ALJ oversimplified part of this important analysis in his Proposal for Decision.

At the hearing, the City's Expert, Mr. Sasha Earl, testified that the appropriate methodology for evaluating whether an irrigation site was suitable for subsurface disposal of effluent, as limited by the hydraulic capacity of the soil, is illustrated in the Metcalf and Eddy text ("Metcalf").<sup>1</sup> None of the witnesses disputed Mr. Earl's opinion that Metcalf is authoritative on application rate methodologies and wastewater engineering. Mr. Earl testified, and Metcalf indicates, that one must evaluate the hydraulic loading limit based on both soil permeability and nitrate loading.<sup>2</sup> In fact, this same methodology has been adopted by the Commission in 30 TAC Chapter 222, which governs subsurface drip disposal permit applications filed after its effective date. Although Chapter 222 was not effective at the time of this Application, the adoption of the same methodology used by Metcalf supports the validity of the methodology, and at a minimum, its acceptance by the Commission and its staff.

To evaluate the hydraulic loading limits of the soil based upon permeability using the Metcalf methodology, one must fully understand the existing soil and crop characteristics and rainfall conditions. The Metcalf formula for determining the hydraulic loading limits of the soil based on soil permeability is:

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<sup>1</sup> City Exhibit CoP - S, p. 958-961.

<sup>2</sup> Sasha Earl Direct, p. 15, lines 12-15; and, City Exhibit CoP - S., p. 958.

$$L_{w(p)} = ET - P + W_p^3$$

The variables used in the formula are defined as follows:

$L_{w(p)}$  = wastewater hydraulic-loading rate based on soil permeability

$ET$  = design evapotranspiration rate

$P$  = design precipitation rate

$W_p$  = design percolation rate<sup>4</sup>

Metcalf describes  $ET$  as “the average monthly  $ET$  rate of the selected crop.”<sup>5</sup> The Mean Crop Consumptive Use and Free Water Evaporation for Texas text (“MCCU”) that MidTex’s expert relies upon, states that the best  $K_{cb}$  value for bermuda grass with average maintenance is 0.80.<sup>6</sup> According to MCCU, using a  $K_{cb}$  of 0.80 yields an annual  $ET$  for bermuda grass of 53.19 in/yr.<sup>7</sup>

Metcalf states that using the wettest year in a 10-year period is reasonable for purposes of determining  $P$ .<sup>8</sup> According to the National Oceanic and Atmospheric Administration data, the wettest year in the Austin, Texas, area was 2004<sup>9</sup>. During that year, there were 52.27 inches of rainfall.<sup>10</sup>

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<sup>3</sup> City Exhibit CoP - S., p. 958

<sup>4</sup> Id.

<sup>5</sup> Id.

<sup>6</sup> City Exhibit CoP - M, p. 109.

<sup>7</sup> City Exhibit CoP - R, p. 149.

Even if one uses a  $K_{cb}$  of 0.9, which is at the high end of what is appropriate for high maintenance bermuda grasses (see City Exhibit CoP - P, p. 109), the annual  $ET$  only rises to 56.02 in/yr (see Midtex Exhibit 4, p. 95, col. 3). This increase results in just 2.83 in/yr of additional effluent application at the site. Even with this increase there is still an over-application of effluent in the amount of 33.78 in/yr based upon the calculations described below.

<sup>8</sup> City Exhibit CoP - S, p. 958.

<sup>9</sup> City Exhibit CoP - T, p. 4.

<sup>10</sup> Id.

Finally, Metcalf describes the design percolation rate as “the amount of water allowed to percolate each month beyond the root zone into underlying groundwater or drainage systems.”<sup>11</sup> Metcalf goes on to state that “a maximum daily value of 2 to 6 percent of the minimum soil profile permeability can be used for preliminary design.”<sup>12</sup> The only evidence of soil permeability in the record is found in the soil survey for Travis County, Texas, which describes the soils present on the Midtex site as Heidin (HeD2, HeC2) (“Heiden”) and Houston Black (HnB)(“Houston”).<sup>13</sup> These two types of soil are clay and have permeability of < 0.06 inches per hour, which is the lowest value in the tables.<sup>14</sup> These soils are also described as being severely limited for septic tank filter fields because of “very slow permeability” and as having a “very slow intake rate” for irrigation.<sup>15</sup> If one uses the highest possible permeability, 0.06 in/hr equals 525.6 in/yr (0.06 in/hr \* 24 hr/day \* 365 day/yr).

Calculating the hydraulic limitation based on soil permeability using the formula adopted by Metcalf and the TCEQ and the data that is available in the record is a simple math equation that can be completed by almost anyone.

$$\begin{aligned} \text{Hydraulic limitation} &= ET \text{ for crop} - \text{Precipitation} + \text{Percolation [all in in/yr]} \\ &= ET \text{ for crop} - \text{Precipitation} + (\text{Permeability} * 0.04) \text{ [all in in/yr]} \end{aligned}$$

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<sup>11</sup> City Exhibit CoP – S, p. 958

<sup>12</sup> Id.

For purposes of the calculation of the hydraulic loading rate limit, it is prudent to use the average of 4 percent as the maximum daily value.

<sup>13</sup> Midtex Exhibit 4, p. 130

<sup>14</sup> City Exhibit CoP – L

Midtex did not conduct a basin infiltration test or any other tests to determine the actual permeability of the soils. Without the basin infiltration test, which was recommended by Mr. Earl (Earl direct, p. 16, lines 4-6), the exact permeability of the soil is unknown. The only “tests” Midtex made were by visual and hand held analysis of the soil profile characteristics to generally classify the soils as Type IV for purposes of applying the Chapter 285 limit of 0.1 gallons per square foot per day. (Phelps direct, p. 3, lines 17 – 23.)

<sup>15</sup> City Exhibits CoP - L, M and N

$$= 53.19 - 52.27 + (525.6 * 0.04) = 21.944 \text{ in/yr}$$

The result is that the hydraulic loading rate based on soil permeability should be limited to approximately 21.944 in/yr of effluent. However, Midtex proposes and the draft permit would allow an effluent application rate of 0.1 gallons per square foot per day, which is equal to 58.552 in/yr.<sup>16</sup> This is an excess of 36.608 in/yr.

In order to ensure protection of the environment, the permit should be denied based upon the fact that the application rate exceeds 21.944 in/yr. It is a simple calculation to convert this rate to gallons per square foot per day using the same formula that was correctly stated by the ALJ.<sup>17</sup> One gallon equals 231 cubic inches (in<sup>3</sup>); one square (ft<sup>2</sup>) contains 144 square inches (in<sup>2</sup>); and one year contains 365 days; .

$$\begin{aligned} \text{Hydraulic Limit Application Rate} &= 21.944 \text{ in/yr} * 1 \text{ yr}/365 \text{ days} \\ &= 0.0601 \text{ in/day} * 144 \text{ in}^2/1 \text{ ft}^2 \\ &= 8.657 \text{ in}^3/\text{ft}^2/\text{day} * 1 \text{ gal}/231 \text{ in}^3 \\ &= 0.037 \text{ gals/ft}^2/\text{day} \end{aligned}$$

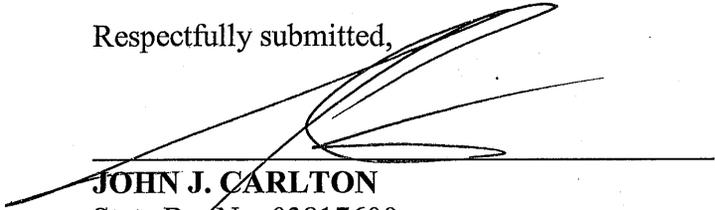
The application rate of 0.037 gals/ft<sup>2</sup>/day is the maximum amount of effluent application based upon soil permeability assuming the maximum potential soil permeability of 0.06. The assumption of 0.06 is likely high, but without a basin infiltration test there is no way to know the specific rate of soil permeability. The 0.06 rate is the only evidence of the rate of soil permeability in the record so the less conservative number was used and still results in a significant reduction in the allowable application rate. Using a lower rate resulting from a basin infiltration test would only reduce the allowable number of gallons for disposal even further. The proposed application rate of 0.1 gallons/square foot/day is excessive and the permit should

<sup>16</sup> Midtex Exhibit 4, p. 98, column G

<sup>17</sup> Proposal for Decision, p. 30

be denied for this reason in addition to the other reasons set forth in the ALJ's Proposal for Decision.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John J. Carlton", is written over a horizontal line. The signature is stylized and somewhat cursive.

**JOHN J. CARLTON**

State Bar No. 03817600

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**ATTORNEYS FOR THE CITY OF**

**PFLUGERVILLE**

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing City of Pflugerville's Exceptions to the Proposal for Decision have been sent by Hand Delivery, Certified Mail, Return Receipt Requested, Facsimile and/or First Class Mail on this 5<sup>th</sup> day of September, 2007, to the following:

State Office of Administrative Hearings

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Administrative Law Judge  
State Office of Administrative Hearings  
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Austin, Texas 78701  
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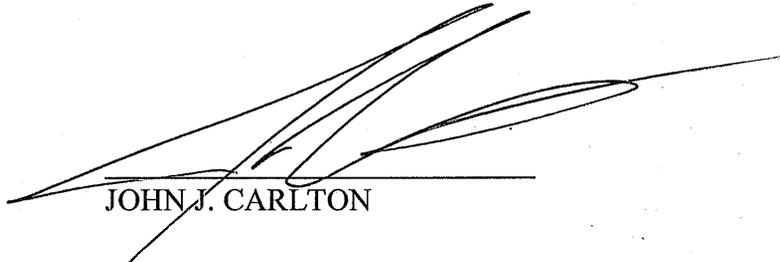
Representing Wilbert Alvin Becker, Ronald D. and Marilyn L. Diener

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