Texas State University
SAN MARCOS

Facilities Department

June 15, 2004

TO: Edwards Aquifer Authority, Board of Directors

VIA: Javier Hernandez, EAA Conservation Coordinator

FROM: Brad Smith, Texas State University, Director, Grounds Operations

SUBJ: Request for variance from suggested BMP's for Industrial Users

I am submitting the following request for a variance from the prescribed BMP's because I believe that I can accomplish the same goals in a more efficient manner, at least for our particular situation. I wish to fully comply with the program's goals and am very interested in having Texas State be a model for large landscape conservation efforts. We have worked in this direction for several years and will continue to do so.

In Appendix C, Ind-4, Large Landscape Conservation Programs, the requirements for receiving credit for the BMP are:

1. Within one year of implementation date, perform a landscape survey to determine ETo-based water-use budget; and
2. Within two years of implementation date, install a dedicated landscape meter if landscape use is determed to exceed 20% of total use.

Additionally, we must provide documentation of the following:

1. Results of landscape survey with estimated ETo-based budget and annual water savings.

The suggested method in the BMP for obtaining the needed data includes measuring all irrigable areas in order to quantify the number of gallons used per unit of area. On our 427 acre campus, we have over 700 sections of irrigation. We don't have that data for each section of irrigation and it would be extremely time consuming to obtain it. We do, however, have an alternative means for obtaining the necessary data to achieve the program goal of ETo-based water use budgets.

We have regularly performed landscape irrigation audits on turf areas which are based on the format taught by Dr. Guy Fipps of Texas A&M. I was originally certified (Irrigation Association certification) in 1994. Since that time, I and our Irrigation Supervisor, Joe Rodriguez, have also been certified through the Texas Landscape Irrigation Auditor (TLIA) program that is administered through the Texas Cooperative Extension and the Department of Biological and Agricultural Engineering at Texas A&M University.

The landscape irrigation audit process involves collecting field data (including catch can measurements for precipitation rates, soil depth, soil texture, type of turf) on individual sections of irrigation and entering this data into the software provided to everyone who completes the certification process. The software then calculates irrigation schedules that are based on historical ET and rainfall data. The software also calculates Distribution Uniformity for each section audited. The ET data used by the software can be edited so that real time data can be used to make the scheduling that much more precise. According to Table 1.1 of the manual, the average water saved from three audits illustrated was 25%.

The proposed variance to the recommended method that I would like to use is as follows:

1. We will complete our "landscape survey to determine ETo-based water-use budget" in the following manner:
    a. Within the first year following the implementation date, we will complete at least one audit of all turf irrigation sections on campus and will implement the resultant schedules. Additionally, in order to obtain the best data possible, we will repeat the audits as time allows to collect comparative data to make sure that our methods remain reliable. Where DU numbers fall below 70%, we will repeat the audit process to double check our accuracy. In cases where the DU remains below 70%, we will further investigate the system design/installation to assess whether additional repairs or complete renovation is needed.
    b. By the end of the second year following the implementation date, we will complete measurements of all irrigated non-turf areas. The TLIA program is designed to audit irrigation performance in turf areas only but there are no crop coefficients for other landscape plants so we will need to use the prescribed method in Appendix C for these areas in order to complete this aspect of the program.

2. We should already be in complance with the separate metering requirement regardless of % of total use. Most of our systems are tied in with our Motorola central computerized controller. As a result, most of our systems already have separate flow meters installed which automatically shut the system down via communication with the computer if a section's flow is higher or lower that the expected parameters.

3. We will provide our results of landscape irrigation audits and annual water savings as requested.

I hope you will consider my requested variance to the EAA Ind-4 BMP's. As previously stated, I am commited to water conservation efforts in our campus landscape irrigation water usage and I believe the methods we have been using thus far - and would like to continue to use - will allow us to accomplish our common goal. If you have any questions, please contact me and I'd be happy to address them at your convenience.

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