



BIGGS & MATHEWS, INC.

Consulting Engineers

July 16, 2013

Joel Klumpp, Team Leader
Technical Review & Oversight Team MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

RE: City of Wichita Falls
PWS ID No. 2430001
Temporary Direct Potable Reuse Project
Response to 2nd set of TCEQ Questions (6/26/13)

Dear Mr. Klumpp:

On June 26, 2013 the Texas Commission on Environmental Quality (TCEQ) provided us by E-Mail (Attached) a 2nd set of twenty (23) questions (12 General & 11 Physical Modifications and Drawings) for the City to answer and provide additional information to TCEQ in response to their continuing review of the Temporary Direct Potable Reuse Project (DPRP) for the City of Wichita Falls.

As requested, please find attached our response to each of the 23 questions along with all requested additional information. We have provided three (3) hardcopies to Austin, Texas and also provided one (1) copy directly to Red Weddell in San Angelo, Texas.

General

1. A diagonal berm splitting Existing Sludge Lagoon No. 2 is shown on Sheet 1 of 2 in Appendix N; is this existing or proposed? How does the City refer to the portion south of the berm where the RO membrane permeate is proposed to be discharged?

Response: This berm is existing and it creates two (2) separate lagoons that the City normally uses to temporarily storage their filter backwash water prior to returning it to the head of the plant. It is referred to as the "South Washwater Lagoon" and will be used to store the treated "Reuse" water.

2. Do the MF membrane units have prefilters or screens? If so, how many?

Response: The MF membrane units do not have pre-filters or screens.

3. Do the RO membrane units have prefilters or screens? If so, how many?

Response: The RO membrane units do not have pre-filters or screens.

4. The PER submittal did not include which specific pieces of equipment will be used during Full Scale Verification. Please identify each of the following pieces of equipment that will be tested at the fullscale flow rate:

a. MF membrane prefilter(s);

Response: There are no existing MF prefilters, therefore they will not be tested during the Full Scale Verification.

b. MF membrane units (note that at least two will be required to treat 2.9 MGD at the TCEQ-approved flow rate of 2.788 MGD at 20 C);

Response: Microfilter Cell #1 will be the Primary MF test bed for the Full Scale Verification and will be tested at the maximum TCEQ approved flow rate of 2.788 MGD. Microfilter Cell #2 will make up the remainder of the required flow and serve as the Backup filter while Cell #1 is in a Backwash or a Clean Cycle.

c. RO membrane prefilter(s);

Response: There are no existing RO Prefilters, therefore they will not be tested during the Full Scale Verification.

d. RO membrane unit (note that a single RO unit is approved by the TCEQ to treat up to 2.0 MGD at 20 C);

Response: Reverse Osmosis Skid #2 will be the Primary RO test bed for the Full Scale Verification and will be tested at the TCEQ approved flow rate of 2.0 MGD @ 20°C (or adjusted for temperature). Reverse Osmosis Skid #6 will serve as the Backup filter, in the event that RO Skid #2 is in a Clean cycle.

e. Gravity media conventional filters (note that at least two will be required to treat 4.0 MGD at the TCEQ-approved flow rate of 1800 gpm or 2.592 MGD);

Response: Conventional Gravity Media Filter #1 & #2 will serve as the Primary Conventional Gravity Media test bed for the Full Scale Verification at the TCEQ approved flow rate of 2.592 MGD. Conventional Gravity Media Filter #3 will serve as the Backup filter while Filters #1 & #2 are in a Backwash.

f. All pumps and their installed capacities, and describe how pumps will be operated to maintain intended constant flow rate.

Response:

MF Feed Pumps: Two (2) Ea. VFD Rated at 2500 gpm (Lead/Lag)

MF Backwash Pumps: Two (2) Ea. Rated at 5500 gpm (Lead/Lag)

MF CIP Pump: One (1) rated at 2000 gpm

RO Feed Pumps: Two (2) Ea. VFD Rated at 2100 gpm (Lead/Lag)

Brine Pumps: Two (2) Ea. Rated at 3000 gpm (Lead/Lag)

Recovery Well Pumps: Two (2) Ea. Rated at 3000 gpm (Lead/Lag) in addition to two (2) Ea. Rated at 10,500 gpm (Lead/Lag) to be utilized during backwash of gravity filters.

2010 Transfer Pumps: Two (2) VFD Ea. Rated at 6945 gpm (Lead/Lag)

Note: The VFD's will be utilized to maintain a "set" pre-determined flow rate.

g. Any other pieces of equipment used.

Response:

Aeration Blowers: Two (2) Ea. Rated at 4,200 CFM (Lead/Lag)

5. Will the flow rate of the RO Permeate Lagoon and Secondary Reservoir pumps be adjusted during backwashing of a gravity media filter? If not, how will the excess flow be handled?

Response: It was the City's understanding from previous conversations with the TCEQ that any fluctuation in the flow/treatment of the DPR during the Full Scale Verification Study would "reset" the 45 day testing clock. Therefore, the City of Wichita Falls does not anticipate adjusting the flow rate of the RO Permeate Lagoon and Secondary Reservoir pumps during the backwashing of a gravity media filter.

The City's plan is to utilize a third backup gravity media filter (#3) to treat the flow from any primary gravity media filter (#1 & #2) that is in a backwash cycle. Once the primary gravity media filter has completed its backwash sequence, it will be placed back into service and the backup gravity media filter taken out of service.

6. Will the flow rate of the RR WWTP effluent pumps be adjusted during backwashing or chemical cleaning of one of the selected MF membrane units or selected RO membrane unit? If not, how will the excess flow be handled?

Response: Again, it was the City's understanding from previous conversations with the TCEQ that any fluctuation in the flow/treatment of the DPR during the Full Scale Verification Study would "reset" the 45 day testing clock. Therefore, the City of Wichita Falls does not anticipate adjusting the flow rate of the RRWWTP Effluent Pumps during the backwashing of a MF or RO membrane unit.

During an MF Air Wash (10 minutes), the backup MF Filter will increase its flow to the maximum and the remaining unused flow will simply buildup in the MF Cell's Feed Trough. The City does not anticipate that there will be any need to adjust flows for this type of activity.

During a Daily MF Maintenance Wash (60 minutes), the backup MF Filter will increase its flow to the maximum and the remainder of the unused flow will fill up the MF Cell's Feed Trough and at some point may overflow into a stormwater detention pond that outlets into the street.

The CIP for the MF's occurs every 720 hours of use (30 days). It is anticipated that both the Reverse Osmosis and the Microfiltration will come off line at the same time for this Clean in Place procedure, requiring the entire DPR facility to be shut down for 24 hours, and then restarted for the remaining 15 days of the Full Scale Verification Study. **Note:** The RO membranes come off line for CIP based on the differential pressure between Stage 1 and Stage 2. It typically takes several months for this to occur, but the City will conduct one at the end of 30 days to coincide with the MF CIP.

7. How will the following pumps be immediately shutdown in the event that a manual or automatic shutdown event is triggered:

Response: The immediate, or "instantaneous", shutdown of an entire Water Treatment Plant is a difficult thing to accomplish, similar to stopping a loaded freight train on a dime. It simply can't be done. However, the City can shutdown the DPR system within several minutes of being alerted to a problem.

The City of Wichita Falls has developed, in its Operating Procedures for the Emergency DPR, procedures for shutting down the system in a timely fashion. Operations staff between the Wastewater and Water Facilities will use either the phone system or the City's new narrowband UHF Radio system to contact one another.

On a Wastewater Trigger: Once the Wastewater Operators are made aware, either by observation, lab analysis result or on-line SCADA alarm, that a RRWWTP shutdown trigger has been reached they will immediately manually disengage the RRWWTP Effluent Pumps and immediately notify the Cypress DPR facility that water transfer between the two facilities has stopped.

On a Water Trigger: Once the Water Operators are made aware, either by observation, lab analysis result or on-line SCADA alarm, that the Emergency DPR needs to be shut down the Water Operators will immediately call the RRWWTP to manually disengage the RRWWTP Effluent Pumps and then begin the shutdown of the Cypress DPR facility.

Some of the pump systems are simply a manual shutdown. The ones that have Automatic shutdowns based on pre-set triggers, also have the ability for manual (human intervention) shutdown.

To answer your areas of specific concern:

- a. *RR WWTP Effluent Pumps?* Manually
- b. *MF Membrane Unit Feed Pumps?* Automatic and Manually
- c. *RO Membrane Unit Feed Pumps?* Automatic and Manually
- d. *RO Permeate Lagoon Transfer Pumps?* Automatic and Manually
- e. *Secondary Reservoir Pumps?* Manually
- f. *2010 Clearwell Transfer Pumps?* Automatic and Manually
- g. *Chemical Feed Pumps?* Manually

8. *Will online nitrate monitors be installed for the proposed automatic shutdown triggers listed on Page 15 of Section 8.0?*

Response: The City does not anticipate a 10 ppm Nitrate concentration in the POE monitoring point due to the monitoring that will be taking place upstream within the treatment processes.

However, should a shutdown be triggered by Nitrate at the POE, then the on-line monitor will send an alarm to the SCADA system to alert the Water Operators to initiate immediate shutdown procedures, briefly described above in answer #7.

9. *Section 14.0 of the PER submittal, Page 27, second bullet, discusses returning two RO Permeate Tanks back to service for treating only raw surface water. Please show these two tanks on the schematics for the proposed sample sites (online and grab), as well as existing chemical injection points, associated pipe modifications, and any other schematic/diagram for the proposed Cypress DPR WTP.*

Response: The Reverse Osmosis Permeate Tanks only exists to serve as a supply of treated water for the backwash of the Reverse Osmosis Skids. It will not be used for any chemical dosing. It is simply a wide spot in the line. The permeate tanks in relation to the rest of the facilities is shown on Sheet 4-M-1.

10. *This question relates to the sections titled “Regarding the list of Key Tasks” and “Task Completion Date” under the PER’s Section 16.0 on Pages 29 and 30: After the City receives the TCEQ’s response to the PER, the TCEQ’s granting of the temporary exceptions, and the TCEQ’s approval of the City’s proposed Full-Scale Verification Test Protocol:*

- a. *When does the City plan to prepare and submit signed, sealed and dated engineering plans and specifications for the TCEQ’s review?*

Response: Signed, sealed, and dated final engineering construction plans and specifications will be submitted to TCEQ within 14 days following approval of PER, granting of exceptions, and approval of Verification Testing Protocol.

b. When does the City plan to prepare the Full-Scale Verification Test Report and submit it to the TCEQ?

Response: The City will endeavor to get a Full Scale Verification Test Report to the TCEQ as quickly as possible for their review and approval. During the 45 days that it will take to conduct the Full Scale Verification Test, the City will be entering data into the developed spreadsheet, having weekly meetings on the data, and writing the Verification Report as the 45 days progresses.

The only testing parameter that will be a major hindrance to the Full Scale Verification Test Report will be the analysis for Viruses (Total Culturable Viruses, Enterovirus and Norovirus). The Enterovirus and Norovirus analysis can take up to 8 weeks to perform and there is absolutely no way to expedite the analysis because it is an incubation procedure. The Total Culturable Viruses can be performed faster (3-4 weeks), due to the lack of additional plating/incubation necessary to determine different serotypes (as in Enterovirus and Norovirus analysis). There is also a delay for Radionuclide analysis, which requires a minimum of 3 weeks to allow for radioactive decay.

The City of Wichita Falls is requesting that the TCEQ allow several Data Submission Reports to be submitted, as data becomes available after the termination of the 45 day Verification Test, so as to keep advancing the review process by the TCEQ. Due to the critical nature of getting the DPR on-line and providing water to the citizens, the City of Wichita Falls will use the expensive, expedited lab analysis to get results back in the most expeditious time. We anticipate the worst-case Report timeline to be:

First Report (First week after the termination of the 45 day Full Scale Verification Test)

This report will include the major items:

- All 15-minute, 4-hour, Daily, Twice Daily and Weekly Sample Results.
- All of the “Start” Sample Results (except Enterovirus, Norovirus & Radionuclides)
- The “Start” & “30-Day” Sample Results for Giardia and Cryptosporidium
- The “Start” & “30-Day” Sample Results for Inorganics, Organics & Metals
- The “Start” & “30-Day” Sample Results for Non-regulated Constituents

It will not include:

- Any Enterovirus or Norovirus Sample Results
- The “Day 30” and “End” (Day 45) Total Culturable Virus Sample Results
- The “End” (Day 45) Cryptosporidium and Giardia Sample Results
- The “End” (Day 45) Inorganics, Organics and Metals Sample Results
- The “Day 30” and “End” (Day 45) Radionuclide Sample Results
- The “End” (Day 45) Non Regulated Constituents Sample Results

First Follow-up Report (2 weeks after the First Report – 15 days after termination of the Full Scale Verification Test)

This report will include:

- The “Start” (Day 0) Enterovirus & Norovirus Sample Results
- The “Day 30” Total Culturable Virus Sample Results
- The “End” (Day 45) Cryptosporidium and Giardia Sample Results
- The “End” (Day 45) Inorganics, Organics and Metals Sample Results
- The “Day 30” Radionuclide Sample Results
- The “End” (Day 45) Non Regulated Constituents Sample Results

It will not include:

- The “Day 30” or “End” (Day 45) Enterovirus & Norovirus Sample Results
- The “End” (Day 45) Total Culturable Virus Sample Results
- The “End” (Day 45) Radionuclide Sample Results

Second Follow-up Report (two weeks after the First Follow-up Report – 30 Days after the termination of the Full Scale Verification Test)

This report will include:

- The “End” (Day 45) Total Culturable Virus Sample Results
- The “End” (Day 45) Radionuclide Sample Results

It will not include:

- The “Day 30” or “End” (Day 45) Enterovirus & Norovirus Sample Results

Third Follow-up Report (two weeks after the Second Follow-up Report – 45 Days after the termination of the Full Scale Verification Test)

This report will include:

- The “Day 30” Enterovirus & Norovirus Sample Results

It will not include:

- The “End” (Day 45) Enterovirus & Norovirus Sample Results

The Final Follow-up Report (two weeks after the Second Follow-up Report – 60 days after termination of the Full Scale Verification Test)

This report will include:

- The “Day 45” Enterovirus & Norovirus Sample Results

If everything follows the timeline set forth by the City in its PER (Section 16.0, Page 30), without any significant deviations:

Start Full Scale Verification Test	February 17, 2014
Completion of the Full Scale Verification Test	April 2, 2014
First Full Scale Verification Test Report	April 7, 2014
First Full Scale Verification Test Follow-up Report	April 21, 2014
Second Full Scale Verification Test Follow-up Report	May 5, 2014
Third Full Scale Verification Test Follow-up Report	May 21, 2014
Final Full Scale Verification Test Follow-up Report	June 4, 2014

As you can see, the Enterovirus and Norovirus sample results are going to severely delay the approval of putting the DPR into service. **Therefore, the City of Wichita Falls is respectfully requesting that the TCEQ tentatively approve the DPR going to the Distribution based on the Second Full Scale Verification Test Follow-up Report.** This report will complete all of the Total Culturable Virus sample analysis and give the TCEQ the verification on whether or not Viruses are being shed from the DPR. This will also allow the City to keep with its original schedule of getting water into the system and augmenting/supplanting its supply from the declining lakes.

11. Please confirm that the City will be sending the backwash from conventional filters to another location instead of the reservoir it is proposing be used to blend partially treated WWTP effluent and raw lake water.

Response: Backwash water from the conventional filters will gravity to the recovery well and be pumped through the 20" brine discharge line to the Wichita River.

12. Has the City considered requesting not to use a high chlorine/total chlorine residual level in the RR WWTP effluent to the proposed DPR WTP as an automatic shutdown trigger?

Response: The City placed a "High Chlorine/Total Chlorine" trigger on the RRWWTP Effluent due to equipment issues.

The Siemens S10V Membranes are sensitive to Chlorine. Working over the last several years, the City has developed a maximum Total Chlorine residual of 2.0 ppm which Siemens has endorsed as acceptable for their membranes and module material.

It is possible that once the DPR is functioning and the City develops a better understanding of how the disinfectant residuals are going to perform down the Effluent pipeline and through the MF/RO Clarifier, that the City could raise this trigger value to a level above the conceptualized 2.5 ppm at the RRWWTP.

Per Proposed Physical Modifications and Drawings:

1. Please provide copies of engineering drawings that are sealed, signed, and dated.

Response: Sealed, signed, and dated engineering drawings are herein provided. In addition, where applicable, we have included support documents in the form of construction plans for clarification.

2. Detail 1 of Sheet 2 of the submitted drawings must be modified to identify the pipeline's source. Specifically, the one for which the new cap is proposed.

Response: Detail 1 of Sheet 2 has been modified to identify the pipeline's source of water. The existing 36" RO line that currently feeds the 61 Plant & 2010 Plant clearwell will be cut and capped just east of an existing 36" RO line. This modification will direct the flow of the treated wastewater (TWW) from the RO facilities directly to the isolated Lagoon No. 1 where the RO treated wastewater (ROWW) will be stored.

3. Detail 3 of Sheet 2 of the submitted drawings must be modified to show the isolation of the Cypress 2010 SWTP clearwell's transfer pumps' discharge to the 10-million gallon (MG), 5.0-MG and 3.0 MG ground storage tanks (GST) during the Full-Scale Verification Testing.

Response: Detail 3 of Sheet 1 & 2 has been modified and additional construction plan sheets (YP-D-4 & YP-E-5) provided to show multiple isolation valves to be closed from the 2010 SWTP clearwell transfer pumps' discharge to the 10 MG, 5 MG and 3 MG ground storage tanks during the full-scale verification testing. Multiple line valve closures in series provides for adequate isolation protection of the ground storage facilities.

In addition, the majority of the valves are less than two (2) years old and are operated on a frequent basis a part of the normal operations of the Cypress WTP. We are extremely confident that the series of valve closures will provide for required isolation of the facilities.

4. Sheet 1 of the submitted drawings indicates that the RO permeate will be discharged into the south corner of the Cypress facility's sludge and backwash lagoons. This area has a berm separating it from the area labeled as Existing Sludge Lagoon No. 2. Existing Sludge Lagoon No. 2 is separated by another berm from is the area identified as Existing Sludge Lagoon No 1. on the north. However, Sheet 2 has a detailed drawing of the Existing Pump Station:

a. Indicating the reuse water will come from Lagoon No.1.

Response: Sheets No. 1 of 2 and 2 of 2 have been corrected to show the ROWW (Reuse Water) to come from Lagoon No. 3. (Stored Reuse Water Lagoon). In addition, we have modified Detail No. 2 to show an Air Gap for the above ground line into Lagoon No. 3.

b. Showing that a 12-inch plug is installed in the pipeline from Lagoon No.2.

Response: Sheet No. 2 has been modified to show a proposed 12" plug in the 12" line from Lagoon No. 2, which is isolated from Lagoon No. 3.

c. Indicating that another unidentified 8-inch pipeline is plugged.

Response: Sheet No. 2 has been modified to show a proposed 8" plug in the existing 8" Filter-to-Waste line. This will keep any filter-waste water from entering the reuse water Lagoon No. 3.

Sheet 1 and 2 are in conflict. Also, please indicate whether the 8-inch and 12-inch diameter plugs already exist or are to be installed. Please submit necessary corrections and clarifications.

Response: Requested modifications have been made to Sheets 1 of 2 and 2 of 2.

5. Sheet 2 of the submitted drawings must be amended to include an air gap for the proposed new aboveground 12 inch diameter pipeline shown in Detail 4.

Response: Sheet 2 Detail 4 has been modified to show an air gap for the proposed above ground 12" line. This proposed line will convey T-SW/WW (Combined Treated Surface Water & Wastewater) into an existing gravity manhole and into the existing recovery well and pumped/discharged into the Wichita River.

6. Include the rated, installed capacities of the new RR WWTP effluent pumps, raw water Secondary Reservoir pumps, and the proposed RO Permeate Lagoon pumps (existing recycle pumps). Include a description of how the proposed operating flow rates will be maintained, and not exceeded, using these pumps.

Response: As requested, the rated installed capacity and means for maintenance of flow rates for the RRWWTP Effluent Pumps, Raw Water Secondary Pumps, and the RO Lagoon No. 3 Pumps are as follows:

RRWWTP Pumps: Proposed Two (2) Ea. VFD Pumps Rated at 5800 GPM (Lead/Lag)

Raw Water Secondary Pumps: Existing Two (2) Ea. VFD Pumps...One Rated at 7600 GPM and another Rated at 12,000 GPM (Lead/Lag)

RO Lagoon No. 3 Pumps (Re-Cycle Pumps): Existing Four (4) Pumps Ea. Rated at 1400 GPM (Lead/Lag/Additive)

RRWWTP pumps are manually controlled & flows are set/maintained by VFD based on local flow meter. Secondary Pumps are manually controlled & flows are set/maintained by VFD based on 2010 Parshall Flume measurements. RO Lagoon No. 3 Pumps are manually set and controlled by discharge pipe Flow Control Valve (FCV) based on local flow meter.

7. The PER's Section 8, Page 15, paragraph for "Reverse Osmosis" gives conditions when the MF membrane units' effluent (RO membrane feed water) must discharge to the brine pump station. Please provide a drawing and description showing how this will be accomplished.

Response: ORP: When the ORP exceeds 500 mV the reverse osmosis trains will automatically shut down. The Operator must then manually open one of the RO by-pass valves from the SCADA system (click on either value, place it in manual and click open) to flush water from the break tank to the brine pump station until the ORP drops below 500 mV.

SDI: The SDI value is manually calculated once per shift. If a value of 3 or greater is reached, the Operator must manually shut down the reverse osmosis trains. The RO by-pass valve will then be manually opened on the SCADA system to flush water from the break tank to the brine pump station until the SDI value drops below 3.

(Note: The RO By-Pass Valves are shown in an attached SCADA screen diagram)

8. Based on the identification of DPR Facilities #8, #9, #10, and #11 on Sheet 1 of 2, the RO permeate will be taken from the temporary reuse storage lagoon by the existing recycle pump station and discharged through an 18" pipe into the 42" raw surface water pipe from the Secondary Reservoir and before the Splitter Box. No air gap into the Splitter Box is shown. Whether this is correct or incorrect, we request additional information:

a. If incorrect, please provide a detailed drawing showing an air gap.

Response: There is no air-gap at the splitter box for the existing 18" line. The 18" line is connected to the 42" Raw Water Line just prior to entering the Splitter Box utilizing an 18" x 42" tee. (See Drawing YP-B-2). Sample to be taken directly out of the pump station wet-well prior to connection to 42" raw surface water line.

b. If correct, is there a sample tap before the 18' by 42" tee? If no sample tap is currently located in the appropriate location, please provide a detailed drawing showing the necessary modifications to install the sample tap.

Response: Sample for the Lagoon Reuse Water will be taken directly from the pump station wet-well which is prior to the splitter box and discharge into the 42" raw water line.

9. How will the Splitter Box be disconnected from the pipelines to the Cypress' 61 and' 87 SWTPs? Please provide this drawing and associated description.

Response: The discharge lines for the Cypress 61 and Cypress 87 SWTP's will be isolated from flows out of the splitter box by closing the existing weir gates to each plant, installing the existing stop logs prior to weir gate of each plant, and closing the raw water valves to each plant in the basement of the chemical building. (See Sheets 1-S-1, 1-M-1, & YP-M-33)

10. Our review only found a description for the proposed RR WWTP effluent transfer pumps to the Cypress facility. Please provide engineering drawings and specifications for the pumps, motors, and transfer station.

Response: The RRWWTP Station consists of temporary skid mounted pumps and header piping to take treated wastewater from the Chlorine Contact Basin at the plant and pump it to the Cypress WTP. There will be two (2) VFD Pumps each rated at 5800 GPM (Lead/Lag). One pump will be electric motor driven and one pump (Stand-By) will be diesel engine driven. See Sheet 24 of 25. Flow controlled by set VFD and flow metered locally.

11. Please provide hydraulic profiles for the proposed Cypress DPR WTP during all varying flow rates for:

- a. Full-scale operation; and*
- b. Full-scale Verification Testing*

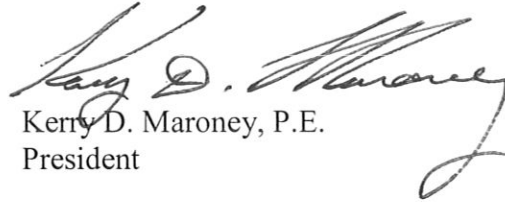
Response: As requested, see Sheet G-17 for Hydraulic Profile from Splitter Box through 2010 SWTP for flows of 10 MGD (Full Scale Operation) and 4 MGD (Verification Testing.). In addition, the following Water Surface Elevations (WSE) are listed below as shown on sheet G-17.

Location	4 MGD	10 MGD
1	1044.45	1044.82
2	1037.75	1039.00
3	1037.60	1038.70
4	1036.55	1036.60
5	1036.52	1036.53
6	1035.95	1036.25
7	1035.95	1036.25
8	1035.85	1036.06
9	1035.00	1035.00
10	1026.20	1026.40
11	1025.75	1025.75

As you have additional questions please provide those in a timely manner for our response.

Sincerely,

BIGGS & MATHEWS, INC.

A handwritten signature in black ink, appearing to read "Kerry D. Maroney". The signature is fluid and cursive, with a large, stylized "K" and "M".

Kerry D. Maroney, P.E.
President

Cc: Russell Schreiber, P.E.
Public Works Director
City of Wichita Falls, Texas

Daniel Nix
Public Utilities Operations Manager
City of Wichita Falls, Texas