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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 22, 2014

Mr. Kerry D. Maroney, P.E.
Biggs & Mathews, Inc.
2500 Brook Avenue
Wichita Falls, Texas 76301

Re: City of Wichita Falls - Public Water System ID No. 2430001
Final Engineering Report for 6-month Temporary Direct Potable Reuse (DPR)
Project Engineer Contact Telephone: (940) 766-0156
Plan Review Log No. P-12112013-063
Wichita County, Texas

Dear Mr. Maroney:

On December 11, 2013, the Texas Commission on Environmental Quality (TCEQ) received the final engineering report (FER) for the temporary Direct Potable Reuse (DPR) project for the above referenced public drinking water system. Due to the ongoing drought conditions, the City of Wichita Falls (City) has requested temporary approval to modify the City's Cypress 2008 and 2010 Surface Water Treatment Plants (SWTP) to treat the City's River Road Wastewater Treatment Plant (RR WWTP) effluent to a safe level for human consumption. The treatment will be for a period not to exceed six months as stated in the City's November 2012 Concept Paper for the Emergency Reuse of Wastewater Effluent as a Source for Direct Potable Reuse in Wichita Falls and approved by the TCEQ. The proposed project includes the temporary piping modifications at the 2010 Cypress SWTP to convert the existing plant to a DPR plant.

This letter authorizes the City to begin the Full-Scale Verification (FSV) Test. At the City's request, TCEQ staff is planning on being present at the start of the FSV Test on January 27, 2014. TCEQ staff request that the individuals who will prepare the FSV Test report be on-site to meet with TCEQ staff regarding the FSV test and preparation of the report.

Review of Engineering Report and Plans

Based on the review of the information submitted, the temporary piping modifications at the existing Cypress 2008 and Cypress 2010 SWTPs to operate in series as a temporary DPR WTP are **conditionally approved under the following requirements**:

1. **This letter is NOT TCEQ approval for**:
    a. the full scale verification (FSV) Test Report;

b. the City to discharge the treated RR WWTP effluent to distribution for human consumption; or

c. the City to use the Cypress facility's SWTPs for treating surface water and discharging it to distribution for human consumption.

2. This letter does not modify the conditions for the granted temporary exceptions or requirements for the FSV Test Protocol previously specified in our September 5, 2013 letter and Enclosures B through H or our October 15, 2013 Addenda I, J and K. **The City must comply with all the conditions listed in TCEQ's September 5, 2013 letter and Enclosures B through H and October 15, 2013 Addenda I, J and K regarding temporary exceptions and the FSV Test Protocol. Please note that the conditional approval for the City to conduct the FSV Test is contingent upon the City complying with all requirements as currently specified in these TCEQ documents without change, modification or amendment.**

3. Based on our review of your submitted FER and Appendices A through Q, we found omissions and the need for clarifications to ensure the City complies with the requirements in the TCEQ's previous correspondences, emails and conference calls. These clarifications (such as the distinction of when "chlorine" as free chlorine, "total chlorine" as chloramine, and "monochloramine" are being measured and reported) will prevent possible mistakes and confusion for City staff during the FSV Test and potential delays in the TCEQ staff review of the FSV Test Report. Please see the TCEQ's comments regarding the noted omissions and requested clarifications in this letter's Enclosure A.

   The City must comply with and implement the clarifications and necessary amendments to the submitted FER and Appendices A through Q stated in this letter and Enclosure.

4. During the FSV testing or mock testing, the produced water from the temporary DPR WTP must not be sent to the distribution system and must be discharged in accordance with the current waste discharge permit issued on February 9, 2006.

5. **Lake Kemp raw water pipeline valve located in the 2008 SWTP flow control vault before the temporary RR WWTP effluent pipeline connection must be kept closed from this date forward during the FSV Test and during the TCEQ approved temporary operation of the DPR WTP. This valve cannot be opened until the City receives written or email approval from the TCEQ.**

6. Since the City has begun discharging the RR WWTP effluent into the Cypress facility, the Cypress Splitter Box's weir gates for the conventional 1961 and 1987 SWTPs must always be closed and cannot be opened again until the City receives written or email approval from the TCEQ.

Project Description

The proposed DPR project utilizes treated wastewater effluent from the RR WWTP to augment the supply of raw surface water from Lake Kemp through Lake Diversion and from Lake Arrowhead and Lake Kickapoo through the Secondary Reservoir. The temporary project includes the installation and construction of temporary skid mounted pumps at the RR WWTP and temporary transmission waterline. The temporary pumps and waterline will transport treated wastewater from the RR WWTP to the Lake Diversion raw surface water pipeline in the Cypress 2008 SWTP's Flow Control Vault. The valve on the Lake Diversion pipeline at the 2008 SWTP's Flow Control Vault located immediately before the connection with the RR WWTP effluent transmission pipeline will remain closed as long as the RR WWTP effluent transmission pipeline is connected to the Cypress Facility. The constructed temporary RR WWTP effluent transmission line is approximately 12 miles of 32-inch outside diameter, high density polyethylene (HDPE) waterline. Pre-formed chloramines (measured as monochloramine) will be used as a disinfectant in the temporary RR WWTP effluent transmission pipeline for inactivation CT credit.

The RR WWTP effluent is partially treated through the 2008 Cypress Microfiltration/Reverse Osmosis (MF/RO) Membrane SWTP using coagulation, flocculation, clarification, MF membranes for pathogen removal, RO membranes for chemical removal, and chloramines (measured as monochloramine) as a disinfectant. The RO permeate will discharge into the Cypress Lagoon No. 3 which has previously received backwash waste for recycling. Pipe modifications will prevent the discharge of RO permeate to the Cypress 2010 SWTP Clearwell and Cypress 1961 SWTP Clearwell and any facility process or wastewater from discharging into Lagoon No. 3 during the temporary operation of the Cypress Facility as a DPR WTP.

The partially treated RR WWTP effluent from Lagoon No. 3 and Secondary Reservoir raw surface water will be blended before the existing Cypress raw water Splitter Box. The Cypress Splitter Box's weir gates to the Cypress 1961 SWTP and Cypress 1987 SWTP will remain closed as long as the temporary RR WWTP effluent transmission pipeline is connected to the Cypress Facility. The blending ratio of 50.00 percent for the partially treated RR WWTP effluent from Lagoon No. 3 to Secondary Reservoir raw surface water is to be maintained by an existing reuse flow meter (set at a maximum of 5.0 MGD) and existing 2010 SWTP's parshall flume flow measurements (set at a maximum of 10.0 MGD). The ratio will be continuously monitored at Cypress SWTP control room. The blended partially treated RR WWTP effluent and raw surface water will then be treated through the existing 2010 Cypress SWTP using coagulation, flocculation, clarification, gravity media filtration, and chloramines (measured as monochloramine) as a disinfectant.

The temporary piping modifications include the isolation of the Cypress 3.0-MG, 5.0-MG, and 10.0-MG ground storage tanks (GST) from the Cypress 2010 SWTP's Clearwell transfer pumps during the FSV Test.

The submittal consisted of two volumes of specifications and eight sheets of temporary piping modifications drawings for the Cypress Facility's SWTPs. The project consists of:

- Approximately 3,800 linear feet (l.f.) of proposed temporary 24-inch above ground HDPE waterline to divert the Cypress 2008 SWTP's RO permeate to existing storage Lagoon No. 3 with a nine-inch vertical separation between the bottom of the pipe and the top of the lagoon's berm;
- Approximately 4,400 l.f. of 18-inch above-ground HDPE waterline from the 2010 SWTP's Clearwell transfer pumps to an existing manhole with a minimum 9-inch air gap;
- Two temporary 24-inch above ground pipes to supply backwash water to the 2010 SWTP filters from the 2010 SWTP Clearwell with flow and pressure control from the existing backwash supply equipment; and
- Approximately 2,100 l.f. of a temporary 18-inch HDPE above ground waterline from the 2010 Lagoon Valve Vault, located north of Lagoon No. 2 that will discharge into an existing 20-inch brine line that ultimately discharges to the Wichita River;
- Related valves, piping and appurtenances.

Temporary Exceptions Previously Granted

The innovative temporary DPR WTP project requires exceptions. The following temporary exceptions were approved on a conditional basis by TCEQ's letters dated September 5, 2013 and October 15, 2013:

- Treated wastewater effluent as a public water system raw water source [30 Texas Administrative Code (TAC) Section 290.41].
- Isolation of the Cypress 1961 and 1987 SWTPs' equipment and piping from the temporary Cypress DPR WTP equipment and piping during the verification testing to prevent contamination of these facilities and a risk to public health when the Cypress 2008 and 2010 SWTPs are returned to normal operation treating only surface water [30 TAC §290.42(d)(2)];
- Pre-formed chloramines for pre-disinfection [30 TAC Section 290.42(e)(3)(G)];
- Hollow-Fiber Microfiltration membranes for removal of pathogens [30 TAC Section 290.42(g)(3)].
- Use of Reverse Osmosis (RO) membrane treatment for the removal of primary and secondary contaminants [30TAC Section 290.42(g)]; and,
- Post-RO membranes pH Adjustment [30 TAC Section 290.42(g)].

The following piping and related appurtenance modifications for isolation must remain in place and specified valves must remain closed during the operation of the temporary Cypress DPR water plant while conducting the FSV Test:

- Existing 24-inch valve in the Lake Kemp Headquarters Road flow control vault must remain closed at all times during the operations of the DPR plant;
- The existing 36-inch RO permeate line will be temporarily disconnected and plugged from the 1961 and 2010 SWTPs;
- Piping modifications at Lagoon No. 3 pump station to prevent water entering from Lagoon No. 2 and filter to waste line with 12-inch plugs;
- Weir gates in the Cypress SWTP splitter box feeding 1961 and 1987 SWTPs must remain closed at all times;
- Removal of existing 42-inch 90 degree bend at the Cypress 2010 SWTP's Clearwell transfer pump header to disconnect from all three ground storage tanks and an 18-inch pipe to be laid above ground to an existing manhole that discharges into the existing recovery well;
- Removal of a portion of 24-inch pipe from the backwash supply line and installation of a 24-inch 90 degree bend to disconnect from backwash pumps located at the High Service Pump Station and removal of the existing flanged coupling adaptor in the valve vault to disconnect backwash supply to 1961 and 1987 plants;
- Existing drain valves at the 1961 SWTP settling basins and 1987 SWTP Parshall Flume must remain open during the operation of the temporary DPR plant.

TCEQ Staff January 9, 2014 On-Site Cypress Facility Visit

On January 9, 2014, Mr. Red Weddell of the TCEQ Water Supply Division and Mr. Cliff Moore and Ms. Jennelle Crane from the TCEQ Abilene Region 3 Office visited the City's Cypress Facility. Mr. Mark Southard and other City staff conducted the TCEQ staff through the Cypress Facility during this on-site visit. The purpose of the TCEQ staff visit was to verify that the City was in compliance with the requirements listed under Condition No. 12 of TCEQ's September 5, 2013 letter as specified in Condition No. 13 of the same letter and repeated below:

> *All of the above [Condition Nos. 12.a through No. 12.g] referenced valve and gate closures and piping modifications must be completed prior to the RR WWTP transfer pumps being turned on after connecting the wastewater effluent piping to the temporary Cypress DPR WTP. TCEQ staff will inspect the DPR WTP to confirm isolation as described in Condition No. 12 has been completed. The inspection must occur before the Full-Scale Verification Test may begin.*

The following is a summary of the TCEQ staff's findings during this visit. All references to engineering drawings are for those drawings in the submittal with your December 10, 2013 letter and FER contained in Appendix N-Temporary Direct Potable Reuse Cypress WTP Piping Modifications.

12.a *The 2008 SWTP flow control vault's valve located on the Lake Kemp/Headquarters Road Reservoir pipeline must remain closed at all times during the verification testing (and during the proposed six-month temporary discharge of potable water to the distribution system).*

The 2008 MF/RO SWTP flow control vault's 24-inch existing valve

located on the Lake Kemp/Headquarters Road Reservoir pipeline shown as Detail 10 on Sheet 1 and Connection 10 on Sheet 8 of the engineering drawings must remain closed before the new interconnection with the RR WWTP effluent pipeline. This valve was closed at the time the TCEQ staff performed its on-site visit in compliance with 12.a. City staff installed a short chain and lock on the gate valve handle while TCEQ staff were on-site since the handle could not be removed. The digital display for the flow meter immediately after the valve was reading zero before the connection with the RR WWTP. The Lake Kemp/Headquarters Road pumps were turned off and the RR WWTP pumps were also off. However, the City had already pumped RR WWTP effluent through the 2008 MF/RO static mixer and into the 2008 MF/RO clarifier, but not past that treatment unit as reported by the City. The SCADA system indicated the valves for the high flow static meter were open. The City was attempting to replace the Lake Kemp water with the RR WWTP effluent in preparation for the FSV Test.

While this meter is not located to measure the flow rate of RR WWTP effluent into the 2008 MF/RO SWTP, one of the City operators indicated that the turbulence caused from the RR WWTP effluent downstream of this meter had caused it to give random readings when the WWTP pumps had been on. Mr. Weddell and the City operators discussed if there was a way to determine if the gate valve was leaking WWTP effluent into the Kemp/Headquarters Road pipeline at the time, or at a time in the future. Neither Mr. Weddell nor the operators noted a method to use.

12.b *The weir gates in the Cypress Splitter Box to the 1961 and 1987 SWTPs must be maintained closed.*

During the on-site visit the TCEQ noted that the weir gate for the 1961 SWTP was closed in compliance with Condition No. 12.b. However, the weir gate for the 1987 SWTP was open in noncompliance with Condition No. 12.b. The City was treating water from the Secondary Reservoir (Lakes Kickapoo and Arrowhead) and discharging it to distribution at the time of the on-site visit. This also was not in compliance with Condition No. 13 above.

Please see the January 10 and January 13, 2014 emails from Ms. Linda Brookins, Manager, TCEQ Water Supply Division, regarding this issue. We have attached these emails as Enclosure B.

It was observed that the level of water in Lagoon No. 3 (where the partially treated RR WWTP effluent from the 2008 MF/RO SWTP will discharge) was near the bottom and barely over the intake for the Reuse Pumps (Detail 1 on Sheets 1 & 2 and Connection No. 1 on Sheet 8). These pumps will be used to discharge the partially treated RR WWTP effluent into the Secondary Reservoir pipeline before the Cypress Splitter Box. In addition, the four Reuse Pumps were not in operation. City staff reported that the purpose of continuing operation of the 1987 SWTP was so that customers in the pressure plane served by the Cypress Facility would not begin experiencing reduced

pressures, yet that will occur once the Cypress pressure plane and Jasper pressure planes are combined during the FSV Test.

(iii) As proposed by the City in your July 29, 2013 email, the drain valve in the 1961 SWTP settling basin must be maintained open during the verification testing and during the proposed six-month temporary discharge to the potable water distribution system;

The 1961 SWTP's settling basin was observed to be drained at the time of the on-site visit and the City staff reported that the valve was still open in compliance with Condition No. 12.b(iii).

(iv) The drain valve in the 1987 SWTP Parshall flume must be maintained open during the verification testing and during the proposed six-month temporary discharge to the potable water distribution system;

Since the 1987 SWTP was still in operation, the drain valve in the parshall flume was closed and not in compliance with Condition No. 12.b(iv) at the time of the TCEQ's on-site visit.

Please see the January 10 and January 13, 2014 emails from Ms. Linda Brookins, Manager, TCEQ Water Supply Division, regarding this issue. We have attached these emails as Enclosure B.

12.c *As shown in Detail No. 1 on Sheet 2 of the engineering drawings in the PER's Appendix N, also included with your July 16, 2013 letter, the RO membrane permeate 36-inch pipeline from the RO permeate tanks to the 2010 and 1961 SWTP clearwells must be cut (or an appropriate fitting removed) after the RO permeate flow meter and connected to the proposed temporary above-ground, 24-inch pipeline to waste Lagoon No. 3. The 36-inch pipe to the clearwells must have a blind flange installed or be capped to prevent the entrance of contaminants during the DPR WTP's verification testing.*

TCEQ staff was unable to observe this piping modification at the time of the on-site visit because the City had already buried the piping. However, the City staff provided a photograph showing the modification as having been constructed in compliance with Condition No. 12.e and shown on the FER's Appendix N Detail 2 on Sheets 1 & 2 and Connection No. 2 on Sheet 4.

12.d *Detail No. 2 on Sheet 2 of the engineering drawings in the PER's Appendix N, also included with your July 16, 2013 letter, must be modified to require a minimum separation distance of nine (9) inches from the bottom of the 24-inch pipe to the top elevation of the waste Lagoon No. 3's berm.*

The TCEQ staff noted that the temporary RO permeate discharge piping into Lagoon No. 3 was installed at least nine inches above the lagoon's freeboard in compliance with Condition No. 12.d and shown on the FER's Appendix N Detail 3 on Sheets 1 & 2 and Connection No. 3 on Sheet 4.

12.e *(e) A 42-inch, 90-degree elbow must be removed (as proposed by the City in your email dated July 29, 2013) from the 2010 SWTP transfer pumps' discharge and the discharge piping connected to the temporary 12-inch,*

above-ground pipe discharging into the manhole that drains to the 2010 SWTP recovery well located on waste Lagoon No. 2. A blind flange or cap must be installed on the 42-inch pipe to the 3.0-MG, 5.0-MG and 10.0-MG GST) to prevent the entrance of contaminants during the DPR WTP's verification testing and TCEQ-approved temporary operation.

The TCEQ staff observed the above ground 90-degree elbow on the 2010 clearwell's transfer pumps was removed and the pipeline to the Cypress 10.0 MG, 5.0 MG and 3.0 MG GSTs was capped with a flange in compliance with Condition No. 12.e and shown on the FER's Appendix N Detail 4 on Sheets 1 & 3 and Connection 4 on Sheet 5.

12.f *Detail No. 4 on Sheet 2 of the engineering drawings in the PER's Appendix N, also included with your July 16, 2013 letter, must be modified to require a minimum separation distance of nine (9) inches from the bottom of the 12-inch pipe to the top elevation of the manhole.*

The TCEQ staff observed that the City's proposed temporary piping modification was not made in accordance with Detail 7 on Sheets 1 & 3 and Connection 7 on Sheet 6. While this modification eliminates the Condition No. 12.f requirement, the TCEQ has not had the opportunity to review this "as-built" modification.

The TCEQ must receive the appropriate change order engineering drawings showing the modifications that were not constructed and including those that were for our files.

City Staff reported that after originally constructing this modification and testing it, water discharged not only went into the manhole, but all over the ground surface. As an alternative, the TCEQ staff noted that the City had used the 90-degree elbow to continue the temporary 2010 Clearwell transfer pumps' discharge piping on top of the ground to terminate approximately six feet out into the 2010 Recovery Well level with the overflow elevation of the Recovery Well.

As long as the water level in the 2010 Recovery Well can never rise to the bottom of the temporary 2010 Clearwell transfer pumps' discharge piping, the alternate construction would be acceptable. This concern must be addressed with change order drawings for our files.

12.g *The backwash supply pipe for the 2010 SWTP gravity media filters must be disconnected from the backwash pumps' pipe coming from the Cypress High Service Pump Station during the verification testing. The pipe from the pump station will need to be temporarily plugged or capped at the point of disconnection to prevent the entrance of contaminants. During the verification testing, the City will need to use one of the following methods to supply backwash water for the 2010 SWTP gravity media filters by temporarily connecting the backwash supply pipe at the 2010 SWTP gravity media filters either:*

(i) *To a pipe from the temporary 2010 SWTP transfer pumps' discharge header (going to waste) with necessary flow and pressure control valves to prevent blowing media out of the filters;*
(ii) *Directly to the discharge of one of the 2010 SWTP transfer pumps with any necessary flow and pressure control valves solely for the purpose of backwashing the tested 2010 SWTP gravity media filters; or*
(iii) *To a temporary dedicated pump and any necessary flow and pressure control valves that are taking suction from either:*
    1. *The 2010 SWTP clearwell; or*
    2. *An acceptable temporary storage tank that will be filled with gravity media filtered water or water from the 2010 SWTP clearwell transfer pumps.*

The TCEQ noted that the City selected option 12.g(i) above to provide a backwash supply of water to the 2010 SWTP conventional filters during the FSV Test as shown on Details 4, 5 & 6 of Sheets 1 & 3, Connection Nos. 4 & 5 on Sheet 5, and Connection No. 6 on Sheet 6. TCEQ staff noted that the existing Cypress backwash supply pumps and the 1961 and 1987 conventional filters were isolated as shown on these drawings and complied with Condition No. 12.g. The modifications also included the use of the existing flow meter and flow control facilities to regulate the backwash supply.

Additional findings during the TCEQ's January 9, 2014 on-site visit:

1. The City staff reported the connection from Lagoon No. 2 to the Reuse Pump Station shown on Connection No. 1 of Sheet 8 was actually made before the manhole and not between the manhole and this pump station's wet well. TCEQ staff was unable to see this change as it had already been buried. On January 10, 2014, after reviewing the old Cypress Water Treatment Plant drawing previously submitted to the TCEQ, Mr. Weddell and other TCEQ Water Supply Division staff determined that if the modification was as reported, the required isolation was being achieved.

   However, the TCEQ must receive the appropriate change order engineering drawings for our files showing the elimination of the modifications that were not constructed and including those that were made.

2. The City staff reported that the 12-inch filter-to-waste (FTW) pipeline from the 2010 process control pump station shown on Connection No. 1 of Sheet 8 was not made at the Reuse Pump Station. However, the City staff showed the TCEQ staff where the two pipes had been cut in the vault immediately after the pump station referred to by City staff as the 2010 Process Control Pump Station. On January 10, 2014, after reviewing the old Cypress Water Treatment Plant drawing previously submitted to the TCEQ, Mr. Weddell and other TCEQ Water Supply Division staff determined that since no other pipes were connected between the Reuse Pump Station and the vault after the referenced 2010 Process Control Pump Station, the required isolation for the FSV Test was being achieved.

However, the TCEQ must receive the appropriate change order engineering drawings for our files showing the elimination of the modifications that were not constructed and including those that were made.

3. Due to the modifications already being buried, the TCEQ staff was unable to observe the capping of the 24-inch backwash pipeline to Lagoon No. 3 from the 2010 Lagoon Valve Vault and addition of the temporary connection to the brine pipeline as shown in Connection Nos. 8 & 9 on Sheet 7. City staff reported that the temporary pipe modifications had to be buried in order to take delivery of chemicals.
4. TCEQ staff was able to see that the 24-inch Flange Coupling Adapter (FCA) fitting to Lagoon 2 located in the 2010 Lagoon Valve Vault had been removed.
5. Please submit the change order engineering drawings described in 12.f and 12.g above within 30 days of the date of this letter..

Utilities Technical Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Please refer to the Utilities Technical Review Team's Log No. P-12112013-063 in all correspondence for this project. This will help complete our review and prevent it from being considered a new project.

Please complete a copy of the most current Public Water System Plan Review Submittal form for any future submittal to TCEQ. Every blank on the form must be completed to minimize any delays in the review of your project. The document is available on our website at the address shown below.

http://www.tceq.texas.gov/utilities/planrev.html

For future reference, you can review part of the Utilities Technical Review Team's database to see if we have received your project. This is available on the TCEQ's homepage on the Internet at the following address:

http://www.tceq.texas.gov/utilities/planrev.html#status

You can download most of the well construction checklists and the latest revision of Chapter 290 "Rules and Regulations for Public Water Systems" from this site.

If you have any questions regarding Enclosure A, conditions for the temporary exceptions, FSV Protocol or Report, or the TCEQ's January 9, 2014 on-site visit, please contact James "Red" Weddell by email at james.weddell@tceq.texas.gov or by telephone at (325) 481-8056 or by correspondence at:

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

If you have any questions regarding the plan review process please contact Pritesh Tripathi at (512)239-3794 or by email at pritesh.tripathi@tceq.texas.gov, Vera Poe at (512)239-6988 or by email at vera.poe@tceq.texas.gov. . Please contact by correspondence at the following address:

Utilities Technical Review Team, MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,

Vera Poe

Vera Poe, P.E., Team Leader
Utilities Technical Review Team
Plan & Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

James 'Red' Weddell

James "Red" Weddell, P.E.
Technical Review & Oversight Team
Plan & Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

Linda Brookins

Linda Brookins, Director
Water Supply Division
Office of Water
Texas Commission on Environmental Quality

PT/VP/JW/LB/av

Enclosures: Enclosure A – TCEQ Clarifications and Comments
Enclosure B – TCEQ January 10, 2014 and City January 13, 2014 Emails

cc: Honorable Glenn Barham, Mayor, City of Wichita Falls, P.O. Box 1431, Wichita Falls, TX 76307-1431
Mr. Darron Leiker, City Manager, 1300 7th Street Room, Wichita Falls, TX 76301
City of Wichita Falls - Attn.: Daniel K. Nix, Utilities Operations Manager, P.O. Box 1431, Wichita Falls, Texas 76307-1431

Enclosure A

TCEQ Clarifications and Comments

The submittal generally addressed the minimum requirements set by the TCEQ's letter dated February 8, 2013 - TCEQ's review of the City's Concept Paper for the Emergency Reuse of Wastewater Effluent as Source for DPR, TCEQ's letter dated September 5, 2013 regarding review of Preliminary Engineering Report for Temporary Reuse of Wastewater Effluent as a Source of DPR, temporary exception requests, Full–Scale Verifications (FSV) Test, and TCEQ's letter dated October 15, 2013 regarding modifications of TCEQ's temporary exceptions and DPR FSV test protocol. Due to the innovative nature of this temporary project, planning materials must be as complete, exact and precise as possible. TCEQ has several clarifications on the submittal as noted below. Significant wordings omissions and needed corrections noted in your submittal are highlighted in yellow. There is no need to resubmit the changes to TCEQ. **The clarifications must be accepted and implemented in full by the City of Wichita Falls for the project to proceed.**

Volume 1 Engineering Report

Section 4.0 Existing Wastewater Treatment Facilities

Page ER-8:

- Reference is made to "chlorine residual" and should state "total chlorine residual" to avoid any confusion that break-point chlorination is being achieved and the specified residual is for free chlorine.

Section 8.0 Proposed Reuse Treatment Facilities

Page ER-11:

- The first sentence should be amended to clarify that the concept agreed to by the TCEQ is "...temporary and only for six months of operation."

Page ER-12, Description of DPR Treatment Process and Compliance Standards:

- 1st paragraph needs to be clarified that free chlorine will only be added to the existing free ammonia available in the RR WWTP effluent to create "pre-formed chloramines" and not to break-point chlorination to form a free chlorine residual.
- 3rd paragraph after the list of pumps should include the following TCEQ requirement:

  All chemicals to be utilized in the treatment processes must comply with American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 60 and be certified by an organization accredited by ANSI.

- 4th paragraph needs to be corrected:
  - The first sentence has the TCEQ's specified 50.0% rounded to 50% which was not approved.

- The TCEQ has required a combined total 9.0-log removal and inactivation for viruses, 7.0-log removal and inactivation for *Giardia* cysts and 5.5-log removal and inactivation for *Cryptosporidium* oocysts at this time. Therefore, the FER statement in this section is incorrect.
- The TCEQ has required a total removal and inactivation of 7.0-log not 6.0-log for *Giardia* cysts.

The correct statement as shown by the yellow highlights is, "In addition, the mixture ratio of reuse effluent to conventional lake source water will not exceed 50.0% and to further ensure that the public health is protected from certain microbial contaminants, the DPR WTP will be maintained and operated so as to provide for a minimum 9.0-log total combined removal and inactivation of Viruses, 7.0-log total combined removal and inactivation of *Giardia* cysts, and 5.5-log removal of *Cryptosporidium* oocysts."

Page ER-13, RR WWTP Effluent Quality:

- 2nd paragraph after Primary Secondary Standards tables, TCEQ expects that all of regulated constituents be reduced below the required MCLs. This must be demonstrated on a continual basis in the FSV.

PageER-15, RR WWTP Operating Procedures:

- Top of ER-15, are we okay with receiving notification of the WWTP shutdown (and DPR WTP) with 24 hours, or do we want sooner?

Pages ER-15, 16, 17, 18 & 19: MF/RO and 2010 Cypress WTP Operating Procedures:

List of existing and proposed online monitoring equipment:

- ER-16, RO Permeate Instrumentation must include the addition of on-line nitrate monitor.
- ER-17, High Service Pumps, must include the addition of a continuous on-line nitrate monitor. Automatic shutdown was required in Condition No. 6.f of our September 5, 2013 letter.
- ER-17: 2010 Clearwell, must include the addition of a level indicator due to the condition that the clearwell remain 50.0% full as specified in Condition No. 6.e of our September 5, 2013 letter.

List of shutdown triggers for the 2008 MF/RO and 2010 Conventional SWTPs:

- ER-17, 2nd paragraph states that treatment facilities to be "immediately stopped." Due to past discussions regarding "manual shutdown" and the TCEQ's "automatic shutdown" requirements by electronic controls and not by the operators, this list needs to be clarified to specify which triggers will result in "automatic shutdown" as required by the TCEQ's September 5, 2013 letter.
- All shutdown triggers also need to include an alarm for the operators
- ER-17, Chlorine,
  - The term "chlorine" must be replaced with "monochloramine" in the title and the bullets. Monochloramine must be used for compliance to eliminate any potential for false elevated residuals that are known to occur when measuring total chlorine (i.e., chloramine) residual in WWTP effluent.

- 1st bullet must read:
  "CT failure (would be caused by low/no monochloramine residual in a disinfection zone that prevents the required pathogen inactivation from being achieved.)"
- 2nd bullet must read:
  "Systemic problems with monochloramine residuals in the distribution system dropping below 1.5 ppm, collected at the distribution system bacteriological sample sites."
- 3rd bullet must read:
  "Notify Supervisors if the monochloramine residual in the water entering the distribution system drops below 3 ppm."

- ER-17, Turbidity,
  - 1st and 2nd bullets:
    "Tap water" is a term not normally used in federal and TCEQ rules. Based on past conversations with the City staff, it is understood that the City is using "tap" to refer to "finished," "entry point into distribution" or "finished" water. In the FER this distinction should be made to prevent future confusion and a potential delay in the TCEQ's review of the FSV Report.
  - 2nd and 3rd bullets read as notifications and not as shutdown triggers, the bullets must be changed or moved to a notification section..
  - 3rd bullet needs to read:
    "Notify Supervisors if any IFE turbidity readings are over 0.3 NTU (or 0.15 NTU if additional removal credit is being sought) for two consecutive 15-minute readings at the conventional water treatment plant."
  - A bullet needs to be added to specify the "automatic shutdown" trigger specified in Condition No. 6.d of our September 5, 2013 letter:
    "A gravity media filter must automatically be taken out of service when the IFE turbidity level exceeds 0.3 NTU (or 0.15 NTU if additional removal credit is being sought) for two consecutive 15-minute readings."

- ER-18, Micro-filtration,
  - 1st bullet needs to be amended to read:
    "Any MF membrane unit that fails a DIT using a TCEQ approved or greater test pressure will be removed from service until it is repaired and passes a TCEQ approved DIT."
  - 2nd bullet must read:
    "When a MF unit's IFE turbidity level exceeds 0.100 NTU for 2 consecutive 5-minute readings, the MF unit will automatically be shutdown and an alarm sounded. The MF unit must be backwashed and pass a TCEQ approved DIT before being returned to service.
  - 3rd bullet must read:
    "Any MF CFE turbidity reading that exceeds 0.15 NTU for 2 consecutive 5 minute readings will trigger an alarm, a shut-down of all MF units and an investigation of the MF system."
  - A 4th bullet must be added as required by Item No. 24 in TCEQ's 9-5-12 letter:
    "If a MF unit used for testing during the FSVT exceeds 0.100 NTU for two consecutive five-minute readings twice in a one-hour period during the FSVT,

the verification testing must be temporarily halted and the TCEQ Technical Review & Oversight Team contacted."

- ER-18, Reverse Osmosis,
  - 1st bullet must be clarified. The following is the TCEQ's understanding of the intent:
    "If the RO units' feed water (MF filtrate) SDI is over 3, the MF filtrate water must by-pass the RO units and go to the brine pump station until the SDI is below 3."
  - 2nd bullet must be clarified. The following is the TCEQ's understanding of the intent:
    "If the RO units' feed water (MF filtrate) ORP is over 500, or has any detectable total chlorine residual, the MF filtrate water must by-pass the RO units and go to Brine Pump Station."

- ER-18, Nitrate,
  - 1st bullet needs to read:
    "During the FSV Test a nitrate of 10 ppm at the 2010 conventional plant POE will sound an alarm and trigger an automatic shutdown of all the 2010 transfer pumps discharging to the 2010 Recovery Well."
  - 2nd bullet needs to read:
    "Nitrate of 10 ppm in RO permeate will sound an alarm and require shutdown of the RO train."
- ER-18, Cryptosporidium/Giardia/Viruses,
  - 1st bullet must read:
    "Crypto/Giardia detected in RO permeate."
  - 2nd bullet must read:
    "Any detection of Giardia or Cryptosporidium by a TCEQ acceptable laboratory after filtering a minimum of 15 liters of water collected at the POE to the Distribution System and analyzing it using EPA Method 1623 will trigger an immediate shutdown of the DPR WTP upon the City receiving notification of the detection."
  - 3rd bullet must read:
    "Any detection of Total Culturable Viruses by a TCEQ acceptable laboratory from a sample collected at the POE to the Distribution System will trigger an immediate shutdown of the DPR WTP upon the City receiving notification of the detection."
  - 4th bullet must be corrected. EPA Method 1623 does not distinguish between the species of *Cryptosporidium* and *Giardia* nor does the TCEQ rules. In addition, the TCEQ did not receive or approve a list of human pathogenic pathogens. This bullet must be amended to read:
    "Using the City's methodology for on-site q-PCR, any detection of *Giardia* or *Cryptosporidium* at the effluent of the 2010 Clearwell during the FSV Test or POE to the Distribution System during a TCEQ approved temporary discharge of the DPR WTP effluent for human consumption will trigger an immediate shutdown of the DPR WTP upon the City staff receiving the detection result."

- ER-19, Identified Waterborne Pathogen Outbreak,
  The single bullet must be amended to read as follows:

"Any identified waterborne pathogen outbreak when the temporary DPR WTP water is discharging to the distribution system, will trigger and immediate shutdown of the DPR WTP and notification of the TCEQ. The TCEQ will work in conjunction with the Health Department and Water Quality Task Force to determine if the DPR WTP can be placed back in service."

- ER-19, Pipeline,
  This single bullet needs to be amended to read:
  "A leak in the transmission line from the WWTP to the Cypress WTP that requires the line to be dewatered for repair and any suspicious leaks indicating contaminants may have been introduced to the RR WTP effluent.

- ER-19, Power Outage,
  The single bullet needs to be amended to read:
  "A power outage that causes shutdown of the 2008 MF/RO SWTP, the 2010 WTP, online monitors, alarms, automatic shutdown controls or the chemical feed systems will also require shutdown of the transmission of water from the River Road WWTP."

To comply with Condition Nos. 6.c, 6.e and 6.f(ii) for the TCEQ granted temporary exceptions in our September 5, 2013 letter, the following automatic shutdown triggers must be added:

- Lagoon No. 3's Transfer Pumps (normally used to recycle decanted backwash waste)
  If the discharge flow rate from these pumps is greater than the Secondary Reservoir's raw surface water flow rate to the Splitter box, an alarm must sound and the Lagoon No. 3's pumps must be automatically shutdown.

- 2010 Clearwell Transfer Pumps
  If the 2010 Clearwell's volume of water is less than 50.0% of the total volume, an alarm must sound and the transfer pumps must be automatically shutdown.

- Cypress High Service Pumps
  If the 10.0 MG GST's volume of water is less than 50.0% of the total volume, an alarm must sound and all the Cypress high service pumps that can discharge water into the distribution system must be automatically shutdown.

Page ER-19, Source Water Disinfection Regime

- Conventional Source Water From Lakes
  - 1st bullet needs to be clarified and read:
    "ClO2 injected at Secondary Reservoir (1 mile pipeline prior to Cypress WTP's Splitter Box) with three disinfection zones and monitoring locations for CT credit for the treatment of raw surface water."
  - 2nd bullet needs to be clarified and read:
    "Chloramines are injected at the discharge of the Splitter Box Prior to 2010 Plant Rapid Mix and measured as monochloramine at the end of the disinfection zone for CT credit when RR WWTP effluent is being treated."
  - 3rd bullet needs to be clarified and read:

"Chloramines are injected after the conventional filters prior to 2010 Clearwell/Ground Storage and measured as monochloramine at the end of the disinfection zone for CT credit when RR WWTP effluent is being treated."

- Reuse Source Water from RR WWTP
  - 1st bullet needs to be clarified and read:
    "Free chlorine is injected at the beginning of the RR WWTP Chlorine Contact Basin to create pre-formed chloramines in the 12.3 mile pipeline prior to the 2008 MF/RO SWTP and measured as monochloramine at the end of the disinfection zone for CT credit."
  - 2nd bullet needs to be clarified and read:
    "Chloramines are injected into the center well of the MF/RO Clarifier and measured as monochloramine at the end of the disinfection for CT credit."
  - 3rd bullet needs to be clarified and read:
    "Chloramines are injected prior to MF Filtration and measured as monochloramine at the end of the disinfection for CT credit."
  - 5th bullet needs to be clarified and read:
    "Chloramines are injected at the discharge of the Splitter Box prior to 2010 Plant Rapid Mix and measured as monochloramine at the end of the disinfection zone for CT credit when RR WWTP effluent is being treated."
  - 6th bullet needs to be clarified and read:
    "Chloramines are injected after the conventional filters prior to 2010 Clearwell/Ground Storage and measured as monochloramine for CT credit when RR WWTP effluent is being treated."

Pages ER-20, ER-21 & ER-22, Anticipated Removal/Log Inactivation Through DPR WTP

- ER-20, 1st paragraph, states that 5-degrees centigrade was used for the inactivation calculations through the 2010 SWTP when operated as part of the temporary DPR WTP in Appendix J. **Based on the CT Template in the FER's Appendix J a minimum temperature of 7.2-degrees is the lowest temperature that the 2010 conventional SWTP can be operated and the required inactivations achieved when treating RR WWTP effluent at the entered operating flow rates, pH and monochloramine residuals.**

- ER-20, **Viruses (Need 9-Log Total)** table,
  - One of the following change needs to be made:
    - Another column on the right titled "Log Inactivations" needs to be added to correctly reflect the logs entered for the different treatment process; Or
    - Change the title of the last existing column to: "Log Removals and Inactivations"
  - 9th row:
    Since 5.0 MGD partial treated WWTP effluent is being treated by the 2010 Conventional SWTP, the "Agent" column must be changed from "Total Chlorine/ClO2" to "Monchloramine"

The TCEQ has specified that the measured monochloramine residual must be used for calculating inactivation credit, not total chlorine.

Also, listing of ClO2 as a disinfectant on Page ER-20 is incorrect and misleading since it is not used in the treatment of any WWTP effluent and no credit can be claimed.

- 5th row:
  The "Log Removal or Inactivation" column must be changed to read "0.05".
- 6th row:
  The "Log Removal or Inactivation" column must be changed to read "0.04".
- 10th row:
  The "Temperature" column entry for the 2010 Conventional WTP must be changed to "7.5°C."
- 13th row:
  The Total log removal and inactivation at 30° C must be changed to read "22.09" based on 4.0-log total removal and a 18.09-log inactivation from the CT Calculator sheet.
- 14th row:
  The Total log removal and inactivation at 7.5° C must be changed to read "9.17" based on 4.0-log total removal and a 5.13-log inactivation from the CT Calculator sheet.

This table is to reflect the ability to meet the removal and inactivation when treating the WWTP effluent, not raw surface water from the Secondary Reservoir.

- ER-21, **Giardia (Need 7-Log Total)** table,
  - One of the following change needs to be made:
    - Another column on the right titled "Log Inactivations" needs to be added to correctly reflect the logs entered for the different treatment process; Or
    - Change the title of the last existing column to: "Log Removals and Inactivations"
  - 9th row:
    Since 5.0 MGD partial treated WWTP effluent is being treated by the 2010 Conventional SWTP, the "Agent" column must be changed from "Total Chlorine/ClO2" to "Monchloramine".

The TCEQ has specified that the measured monochloramine residual must be used for calculating inactivation credit, not total chlorine.

Also, listing of ClO2 as a disinfectant on Page ER-21 is incorrect and misleading since it is not used in the treatment of any WWTP effluent and no credit can be claimed.

- 2nd row:
  The achieved Inactivation must be "1.09" at 7.5° C.
- 4th row:
  The achieved Inactivation must be "0.68" at 7.5° C.

- 5th row:
  The achieved Inactivation must be "0.02" at 30° C.
- 6th row:
  The achieved Inactivation must be "0.02" at 7.5° C.
- 9th row:
  The achieved Inactivation must be "1.66" at 30° C.
- 10th row:
  The "Temperature" column entry for the 2010 Conventional WTP must be changed to "7.5°C".
- 11th row:
  The total "Physical Removal" for the 2010 Conventional SWTP allowed for *Giardia* must be changed to either"3.0," "3.5," or "4.0" based on the City's operation of the conventional filters. A system **cannot simultaneously claim a 0.5-log for CFE turbidity reduction and 1.0-log for IFE turbidity reduction as stated in 30 TAC §290.111(g)(2)(C)**.
  - 3.0-log at **IFE & CFE operated at ≤ 0.3 NTU**;
  - 3.5-log w/**CFE operated at ≤ 0.15 NTU and IFE ≤ 0.3 NTU**; or
  - 4.0-log **w/IFE operated at ≤ 0.15 NTU** (if all of the IFEs are ≤ 0.15 NTU, then any CFE > 0.15 NTU is not from the filtration process).
- 13th row, last column:
  The "Total" removal and inactivation at 30°C must now be changed to "12.85" based on 6.30-log total removal (**at IFE & CFE both operated at < 3.0 NTU as noted above**) and a 6,55-log total inactivation.
- 14th row, last column:
  The "Total" removal and inactivation at 7.5°C must now be changed to "9.75" based on 6.30-log total removal **(at IFE & CFE both operated at < 3.0 NTU as noted above**) and a 3.45-log total inactivation.
- A row needs to be added:
  Showing the "0.5"-log removal credit the TCEQ gives for MF/RO Clarifier.

- ER-21, **Cryptosporidium (Need 5.5-Log Total)** table,
  - One of the following change needs to be made:
    - Another column on the right titled "Log Inactivations" needs to be added to correctly reflect the logs entered for the different treatment process; Or
    - Change the title of the last existing column to: "Log Removals and Inactivations".
  - 9th row:
    The "Agent" column must be changed from "Total Chlorine/ClO2" to "*Monchloramine*".

The TCEQ has specified that the measured monochloramine residual must be used for calculating inactivation credit, not total chlorine.

Also, listing of ClO2 as a disinfectant on Page ER-21 is incorrect and misleading since it is not used in the treatment of any WWTP effluent and no credit can be claimed.

- 10th row:
  The "Temperature" column entry for the 2010 Conventional WTP must be changed to 7.5°C.
- 11th row, last column:
  The total "Physical Removal" allowed for *Cryptosporidium* through gravity media filters must be changed from "4.5" to either "3.0," "3.5," or "4.0" based on the City's operation of the conventional filters. A system **cannot simultaneously claim a 0.5-log for CFE turbidity reduction and 1.0-log for IFE turbidity reduction as stated in 30 TAC §290.111(g)(2)(C)**. The maximum possible TCEQ approved log removals for *Cryptosporidium* through a conventional SWTP are:
  - 3.0-log at **IFEs & CFE operated at ≤ 0.3 NTU**;
  - +0.5-log for 3.5-log **w/CFE operated at ≤ 0.15 NTU and IFE ≤ 0.3 NTU** (how do you do that? By blending IFEs); or
  - +1.0-log for 4.0-log w/**IFEs operated at ≤ 0.15 NTU** (if all of the IFEs are ≤ 0.15 NTU, then any CFE > 0.15 NTU is not from the filtration process).
- 13th row, last column:
  The "Total" removal and inactivation at 30°C must now be changed to "6.3" based on "6.30"-log total removal (**at IFE & CFE both operated at < 3.0 NTU as noted above**) and a "0.0"-log total inactivation.
- 14th row, last column:
  The "Total" removal and inactivation at 7.5°C must now be changed to "6.3" based on "6.30"-log total removal **(at IFE & CFE both operated at < 3.0 NTU as noted above**) and a "0.0"-log total inactivation.
- A row needs to be added:
  Showing the "0.5"-log removal credit the TCEQ gives for MF/RO Clarifier.

- ER-22
  - 1st paragraph should read:
    "As shown in the above tables, the calculated total removal and inactivation credits are above the needed minimum for Viruses, *Giardia*, and *Cryptosporidium* for the reported concentrations in the RR WWTP effluent to date.
  - 2nd paragraph should read:
    "Furthermore, based on the results shown in the Tables, the *Cryptosporidium* minimum total log removal and inactivation requirement cannot be met if either the MF membrane or gravity filter removal barriers are lost at any temperature. The minimum total removal and inactivation requirement for Viruses may not be met if any one of the physical removal barriers is lost at the lower temperatures. Even with a loss of only one of the removal or inactivation treatment barriers, the City could meet the minimum log removal and inactivation requirements needed for Giardia and Viruses for the reported concentrations in the RR WWTP effluent to date.

OR the FER can be amended to include a single table like the example provided below.

DPR WTP Removal / Inactivation Treatments	Approved Log Removal / Log Inactivation Credits for Individual Treatment Processes				
	at °C	Residual (mg/L)	Virus	*Giardia*	*Cryptosporidium*
DZ 1: Pre-Formed Chloramines measured as Monochloramine*	30	1.0	3.87	1.40	-0-
	7.5	2.0	1.63	1.09	-0-
2008 SWTP's Coagulation, Flocculation and Clarification Physical Removal	NA	NA	0.5	0.5	0.5
DZ 2: Chloramines measured as Monochloramine*	30	1.0	2.42	0.88	-0-
	7.5	2.0	1.02	0.68	-0-
2008 MF Membranes Physical Removal	NA	NA	1.5**	2.8	2.8
DZ 3: Chloramines measured as Monochloramine*	30	1.0	0.05	0.02	-0-
	7.5	2.0	0.04	0.02	-0-
2008 RO Membranes	NA	NA	-0-	-0-	-0-
Blended 50% reclaimed WWTP effluent to 50% surface water	NA	NA	-0-	-0-	-0-
2010 SWTP'S Coagulation, Flocculation and Clarification Physical Removal	NA	NA	0.5	0.5	0.5
2010 Gravity Filters Physical Removal	NA	NA	1.5**	2.5***	2.5
2010 Gravity Filters w/CFE ≤ 0.15 NTU Filter Removal Option 1 (FRO 1)	NA	NA	-0-	(+0.5)****	(+0.5)****
2010 Gravity Filters w/IFE ≤ 0.15 NTU Filter Removal Option 2 (FRO 2)	NA	NA	-0-	(+1.0)****	(+1.0)****
DZ 4: Chloramines measured as Monochloramine*	30	3.5	2.55	0.92	-0-
	7.5	3.5	0.54	0.36	-0-
DZ 5: 2010 Clearwell Chloramines measured as Monochloramine*	30	3.8	0.32	0.12	-0-
	7.5	3.8	0.07	0.05	-0-
DZ 6: 10.0 MG GST Chloramines measured as Monochloramine*	30	3.8	8.88	3.21	-0-
	7.5	3.8	1.87	1.25	-0-
Total Log Inactivation Credits	30	Varies per DZ	**18.09**	**6.55**	**-0-**
	7.5	Varies per DZ	**5.17**	**3.45**	**-0-**
Total Log Removal Credits	NA	NA	**4.0**	**6.3**	**6.3**
(with FRO 1 Credits	NA	NA	**NA**	**(6.8)**	**(6.8)**
(With FRO 2 Credits	NA	NA	**NA**	**(7.3)**	**(7.3)**
Total of Log Removal & Log Inactivation Credits	30	Varies per DZ	**22.09**	**12.85** (w/FRO 1 = 13.35) (w/FRO 2 = 13.85)	**6.3** (w/FRO 1 = 6.8) (w/FRO 2 = 7.3)
	7.5	Varies per DZ	**9.17**	**9.75** (w/FRO 1 = 10.25) (w/FRO 2 = 10.75)	**6.3** (w/FRO 1 = 6.8) (w/FRO 2 = 7.3)

Notes:

*** In all cases where chloramines is being used as disinfectant while treating the RR WWTP effluent, the disinfectant residual must be measured and reported as a monochloramine residual to receive inactivation credit.**

**** To receive virus removal credit for the 2008 MF membranes and 2010 gravity filters, the membranes and filters must be preceded by continuous coagulation.**

***** To receive Giardia removal credit for 2010 gravity filters, the filters must be preceded by continuous coagulation.**

******Both conventional gravity filter Removal Option 1 and Option 2 cannot be simultaneously claimed (See 30 TAC §290.111(g)(2)(C)).**

Enclosure A

Operating Parameters for Table:

1. **For 7.5° C through all six DZ:**
   a. DZ1:
      i. minimum residual 2.0 mg/L monochloramine;
      ii. 7.5 MGD flow rate; and
      iii. pH = 7.5.
   b. DZ2:
      i. minimum residual 2.0 mg/L monochloramine;
      ii. 7.5 MGD flow rate; and
      iii. pH = 7.5.
   c. DZ3:
      i. minimum residual 2.0 mg/L monochloramine;
      ii. **2.293 MGD** maximum allowable flow rate, based on the approved temperature corrected flux rate from 19.16 gfd at 20° C; and
      iii. pH = 7.5.
   d. DZ4:
      i. minimum residual 3.5 mg/L monochloramine;
      ii. 10.0 MGD flow rate; and
      iii. pH = 9.0.
   e. DZ5:
      i. minimum residual 3.8 mg/L monochloramine;
      ii. 10.0 MGD flow rate; and
      iii. pH = 8.9.
   f. DZ6:
      i. minimum residual 3.8 mg/L monochloramine;
      ii. 7.5 MGD flow rate; and
      iii. pH = 8.9.

2. **For 30° C through all six DZ:**
   a. DZ1:
      i. minimum residual 1.0 mg/L monochloramine;
      ii. 7.5 MGD flow rate; and
      iii. pH = 7.5.
   b. DZ2:
      i. minimum residual 1.0 mg/L monochloramine;
      ii. 7.5 MGD flow rate; and
      iii. pH = 7.5.
   c. DZ3:
      i. minimum residual 1.0 mg/L monochloramine;
      ii. **4.152 MGD** maximum allowable flow rate, based on the approved temperature corrected flux rate from 19.16 gfd at 20° C; and
      iii. pH = 7.5.
   d. DZ4:
      i. minimum residual 3.5 mg/L monochloramine;
      ii. 10.0 MGD flow rate; and
      iii. pH = 9.0.
   e. DZ5:
      i. minimum residual 3.8 mg/L monochloramine;
      ii. 10.0 MGD flow rate; and
      iii. pH = 8.9.
   f. DZ6:
      i. minimum residual 3.8 mg/L monochloramine;
      ii. 7.5 MGD flow rate; and
      iii. pH = 8.9.

Page ER-22: 9.0 DPR Verification Testing

- 1st paragraph, last sentence must read:
  The same two filters for each type of filtration (MF and gravity media filters) must be utilized throughout the 45 day verification."

Pages ER-25 to ER-28: 11.0 Pro-Active health and Safety Initiatives

- ER-26: **Water purification triggers for a WQTF meeting include the following:**
  - Add a bullet that states:
    "All monitoring triggers that are required automatic shutdown of the 6-month temporary DPR WTP when it is discharging water to the distribution."
- ER-26: **Wastewater triggers for WQTF meeting include the following:**
  - Add a bullet that states
    "Any time the RR WWTP exceeds the 210 reclamation Type I permit requirements."
  - Add a bullet that states
    "*Cryptosporidium*, *Giardia* or virus concentrations found in the WWTP effluent greater than those maximum concentration previously measured and reported to the TCEQ."

ER-28 to ER-29: 12.0 Cypress WTP Temporary Piping Modifications
(see Appendix N)

Pages ER-30 to ER-33: 15.0 Post DPR Disinfection Procedures

Pages ER-30 to ER-33, all locations where "C652-02" is stated it must be changed to "C652-11"

MF/RO Treatment Facility

- ER-31, 1st bullet, must be corrected to:
  "The MF/RO clarifier will be drained (to the Brine Pump Station), washed out with fire hoses using finished of filtered water and disinfected in using a one of the approved methods in AWWA Standard C653-03. After the appropriate contact time, the clarifier will then be refilled with finished or filtered water. Once the water level is at sufficient height, the chloramine biocide system will be restarted in the clarifier. Since disinfection is provided prior to this treatment component, bacteriological tests will be performed before it is placed into service only treating surface water to verify the disinfection procedure. If the bacteriological test is positive, then the cleaning, disinfection and testing procedure will be repeated until the bacteriological test result is negative."
- ER-32, needs a bullet added for disinfection of all piping from the tee where the RR WWTP pipeline is tied into the 2008 MF/RO SWTP:
  "All MF/RO treatment facility piping shall be disinfected using one of the approved methods in AWWA Standard C651-05. Since disinfection was provided prior to the pipes when treating the RR WWTP effluent and will be provided when treating the raw surface water, bacteriological tests will be performed to verify the disinfection procedure before it is placed into service treating only surface water. If the bacteriological test is positive, then the cleaning, disinfection

and testing procedure will be repeated until the bacteriological test result is negative."

Conventional Treatment Facility

- ER-32, 1st bullet, needs to be amended:
  "All water within the lagoon system that contains any RO permeate that originated from treating wastewater effluent, will be completely treated through the conventional plant using the TCEQ approved CT for treating the RR WWTP effluent and replaced with 100% lake water."

- ER-32, 2nd bullet, must be corrected:
  "The 2010 Clarifier will be drained (to the Belt Press Holding Tanks), washed out with fire hoses using finished water and disinfected using a one of the approved methods in AWWA Standard C653-03. After the appropriate contact time, the clarifier will then be refilled with finished or filtered water. Since disinfection was provided prior to this treatment component during the treatment of RR WWTP effluent and will be provided prior to this component when returned to treating only surface water, bacteriological tests performed will ~~not~~ be performed before it is placed back into service only treating surface water to verify the disinfection procedure. If the bacteriological test is positive, then the cleaning, disinfection and testing procedure will be repeated until the bacteriological test result is negative.

- ER-32, 3rd bullet, must be corrected:
  "The Recarbonation Basin will be drained (to the belt Press Holding Tanks), washed out with fire hoses using finished or filtered water and the walls disinfected using one of the approved methods in AWWA Standard C653-03. After the appropriate contact time, the Recarbonation Basin will then be refilled with finished or filtered water. Since disinfection was provided prior to this treatment component during the treatment of RR WWTP effluent and will be provided prior to this component when returned to treating only surface water, a bacteriological test will be performed before it is placed into service only treating surface water to verify the disinfection procedure. If the bacteriological test is positive, then the cleaning, disinfection and testing procedure will be repeated until the bacteriological test result is negative.

- ER-32, needs a bullet added for disinfection of the Cypress Splitter Box:
  "The Cypress Splitter Box will be drained, washed out with fire hoses using finished water and the walls disinfected using one of the approved methods in AWWA Standard C653-03. After the appropriate contact time, the Splitter Box will then be refilled with finished water. Since disinfection was provided prior to this basin during the treatment of RR WWTP effluent and will be provided prior to this component when returned to treating only surface water, a bacteriological test will be performed before it is placed into service only treating surface water to verify the disinfection procedure. If the bacteriological test is positive, then the cleaning, disinfection and testing procedure will be repeated until the bacteriological test result is negative."

- ER-33, needs a bullet added for disinfection of all piping from Lagoon No. 3 pipeline going to the 2010 Conventional SWTP's Splitter Box to the Cypress High Service Pumps:
  "All Conventional Treatment Facility piping shall be disinfected using one of the approved methods in AWWA Standard C651-05. Since disinfection was provided prior to the pipes when treating the RR WWTP effluent and will be provided when treating only surface water, bacteriological tests will be performed before the pipes are placed into service for treating only surface water to verify the disinfection procedure. If a bacteriological test is positive for a section pipe, then the cleaning, disinfection and testing procedure will be repeated until the bacteriological test result is negative for that section of pipe."

ER-33: 17.0 Report Closure and Recommendations

Third paragraph refers to the listed Key Tasks and Task Completion Date as recommendations for the City to adopt for implementation. It also includes timelines for TCEQ to complete tasks which are dependent on circumstances beyond the TCEQ's control, such as when the TCEQ receives an acceptable submittal for review. In addition, the TCEQ could become involved in events that could be a higher priority during the specified time frames, such as an unforeseen public health risk or a higher priority drought risk with one or more other public water systems. Therefore, the TCEQ cannot commit to specific dates until after each submittal is received and even that commitment is subject to possible change due to the above mentioned reasons.

Appendices

Appendix A:

- A summary table would be helpful

Appendix F:

- The flow diagram on Page F-13 does not show that ammonia is also injected after the 2010 granular media filters as reported by the City in their past CT submittals.

Appendix G:

- Primary and Secondary Drinking Water Standards:
  Pages G-3 through G-5 contain the chemical MCLs from Subchapter F. However, our review indicated several errors based on 30 TAC Chapter 290, Subchapter F:
  - Page G-3: The "Applicable Systems" column for Fluoride needs to be amended with a "N" to indicate that the MCL applies to nontransient noncommunity PWS as well as community PWS.
  - Page G-3: The MCL column for Nitrate, Nitrite & Total Nitrate & Nitrite needs to be revised from 10.0, 1.0, and 10.0 changed to 10, 1, and 10, respectively.
  - Page G-4: The MCL column for Toluene needs to be changed from 1.0 mg/L to 1 mg/L.

- Page G-4: The MCL column for Xylenes (total) needs to be changed from 10.0 mg/L to 10 mg/L.
- Page G-5: The "Level" column for Silver needs to be changed from 0.10 mg/L to 0.1 mg/L.
- Page G-5: Footnote 1 needs to be corrected to state:
  "With the exception of the MCL for fluoride, which applies only to community and nontransient noncommunity PWS, these MCLs apply to all PWS."

- With the list of NSF Certifications, a list of all chemicals used by the City to treat water would be very helpful.

Appendix H:

- A summary of the table for the biological sample results would be helpful.

Appendix K:

Verification Testing Protocol

This section only includes Addendum J (which replaced 9-5-2013 Enclosure A)-Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates. However, it **does not include the following TCEQ's 9-5-2013 requirements for the FSV Test Protocol found in**:

- Enclosure B: Full-Scale Verification Test Protocol Monitoring and Reporting of Operating Processes specifies the **minimum operating processes to be recorded during the FSV Test**.
- Enclosure C: Acceptable Analytical Methods, Calibration Methods and Calibration Frequencies specifies the **analytical methods, calibration requirements and laboratory requirements during the FSV Test**.
- Enclosure D: Design, Operating and Monitoring Requirements for Fluoride Adjustment requires the **fluoride system to be in operation during the FSV Test and includes monitoring and reporting requirements**.
- Enclosure E: Full-Scale Verification Test Report Format specifies the **formats that the collected data must be submitted in and that the Report must be prepared by the City's P.E. and the cover letter sealed, signed and dated**.
- Enclosures F1 & F2: Temporary Full-Scale Verification Test CT Templates are to be used during the FSV Test **to verify the inactivation of pathogens being achieved.**

While not included here for the Verification Testing Protocol, all the enclosures for the TCEQ's September 5, 2013 letter are with a copy of this TCEQ letter in Appendix Q. **However, the above five Enclosures need to be included with the TCEQ's Addendum J in the FER's Appendix K since the FSV Testing Protocol is incomplete without them.**

Pages K-22 to K-41 are the City's engineering drawings with Addendum J's Sample Set monitoring locations shown on them. **Some corrections/clarification needed**:

- Actual sample taps and flow meters or sensor locations connected to the SCADA system **are not** shown on most of the drawings.
- Page K-29, Does not provide the identification number for the MF membrane tanks to be used during the verification testing. However, based on Page K-30 MF Membrane Tank Nos. 1 and 2 are to be used.
- Page K-30, Sample Set 9J includes the inlet pressure on the bottom of the MF membranes. This cannot be monitored in the influent trough as shown on this page. **It has to be monitored in each MF membrane tank just like the outlet pressures have to be monitored at each vacuum pump**.
- Pages K-33 & 34, Show that Sample Sets 16J, 19J and 20 J will be monitored at taps located on a RO Panel. However, **tap locations for Sample Sets 17J and 18J are not identified on the RO Panel of taps**.
- Page K-41, Show Sample Sets 34J for phosphate addition to be monitored at Filter No. 2" influent and 35J for the selected conventional filter IFE data to be monitored at the effluent piping for Filter No. 1. **Both Sample Sets 34J and 35J need to be monitored on the same filter or Sample Set 34J in the influent channel to all filters**.

Appendix M:

Disease Surveillance and Response Program

This is the Wichita Falls-Wichita County Public Health District's plan and program as referred to in the 1st paragraph of Section 11.0 of the FER on Page ER-25. A description of the City's "Water Quality Task Force" is contained in Section 11.0 of the FER. Following comments are regarding the City's and County's Disease Surveillance and Response Program.

- Page M-16: Attachment 5 – 2013 Texas Notifiable Conditions table,
  - Does not include methemoglobinemia (blue baby syndrome) or giardiasis.
  - Also, it only requires notification within one week for Cryptosporidiosis, E. coli infections and Legionellosis.
  - Expires 1/31/2014.

Appendix N:

- Our review did not find a set of drawings addressing (as stated in Condition No. 4 on Page 16 of our 9/5/2013 letter) the:
  - All locations or acceptable method for flow monitoring;
  - flow control;
  - monitoring locations and alarms; and
  - automatic shutdown and control mechanisms.

Appendix O:

- Page O-5, in the paragraphs under Removal Rates Based on Conventional Treatment Processes states that monitoring during the verification test will provide additional information regarding the removal of unregulated contaminants through conventional surface water treatment. However, the City has stated since the PER submittal that they did not want to monitor for

unregulated contaminants, except for perchlorate, and the TCEQ removed all of the unregulated contaminants from the Addendum J list. **If the City monitors for unregulated contaminants during the FSV Test, the results must be included with the FSV Report submitted to the TCEQ for review**. If the City does not intend to monitor for other than unregulated contaminants, other than perchlorate, then Appendix O needs to be revised.

Appendix Q:

It was noted that Appendix Q section Summary of Temporary Exceptions/ Conditions summarizes the TCEQ's Condition Nos. 1 through 36 for the granted temporary exceptions in our September 5, 2013 letter. It also includes statements after each summary that the City "Will Comply" or "Accepts." Based on our review, these summaries did not include certain critical TCEQ wording from our September 5, 2013 letter Condition Nos. 1 through 36 for the temporary exception conditions. If only the submitted Appendix Q was read and not the TCEQ's letter, City staff might inadvertently violate a condition for a temporary exception. **Please note that the TCEQ's specifications in our September 5, 2013 letter are the conditions for the granted temporary exceptions and not the summaries in your Appendix Q as they are currently worded**. We have highlighted necessary revisions below that correspond to parts of the TCEQ's conditions for the granted temporary exceptions that were omitted from the Appendix Q summaries:

- Page Q-155, Item No. 1, does not include sub-conditions "a" and "b":
  a. "The conditional granting of the temporary exceptions is valid for a period of two years from the date of this letter or until the City completes a TCEQ-acceptable Full-Scale Verification Test, whichever occurs first. If the City fails to complete construction of the TCEQ-approved modifications in accordance with all TCEQ requirements, conduct a TCEQ-approved Full-Scale Verification Test of the DPR WTP, and submit a TCEQ-approvable Report within two years of the date of this letter, all temporary exceptions will be revoked. If the City wishes to pursue the DPR WTP project after the revocation of these temporary exceptions, all temporary exception requests and supporting documentation must be resubmitted for TCEQ review.
  b. The conditional granting of the above temporary exceptions is valid only for the approval to construct the TCEQ-approved modifications to the Cypress SWTPs and conduct verification testing of the proposed temporary Cypress DPR WTP treatment process contained in the City's Concept Paper for the Emergency Reuse of Wastewater Effluent as a Source for Direct Potable Reuse in Wichita Falls (received November 13, 2012) and Preliminary Engineering Report For Temporary Direct Potable Reuse Project For City of Wichita Falls, Texas (dated May 2013)."
- Page Q-155, Item No.2, does not contain the TCEQ's second sentence: "Failure to comply with one or more of the conditions of this letter and its enclosures may result in the City being required to shut down the Full-Scale Verification Test and possibly restart it in order to accomplish the TCEQ's minimum required test duration while complying with the TCEQ conditions."

- Page Q-155, Item No. 3, the summary does not include the adjective "temporary" for describing the proposed DRP WTP.
- Page Q-155, Item No. 4, the summary does not include the adjective "temporary" for describing the proposed DRP WTP and contain the TCEQ's second and third sentences:

  "In addition, pursuant to the provision No. 11, under "Monitoring and Reporting Requirements" of the RR WWTP's wastewater discharge Permit, all publicly owned treatment works (POTWs) must provide adequate notice to the executive director (with a copy to the Regional Office), of any substantial change in volume or character of pollutants being introduced into the POTW by a source introducing pollutants at the time of issuance of the permit. As such, prior to the effluent from the proposed temporary Cypress DPR WTP being discharged, during the verification testing, via a permitted outfall in No. WQ00104419-000, proper notification to TCEQ central office and the appropriate regional office must be provided."
- Page Q-155:
  - Item No. 5, the summary does not include the adjective "temporary" for describing the proposed DRP WTP.
  - Item No. 5.e, needs to be corrected to read "...50.0 %.volume..." as stated in the TCEQ's letter in lieu of "...50% volume..."
- Page Q-155 & Q-156, Item No. 6, the following revisions/additions need to be made:
  - "...taking out of service a MF membrane unit when filtrate turbidity level is greater than 0.100 NTU for two consecutive five minute readings,..."
  - "...taking out of service the Waste Lagoon No. 3 reuse pumps when the partially treated RR WWTP flow rates exceed the Secondary Reservoir raw surface water flow rate to the Cypress Splitter Box,..."
  - "...taking out of service all 2010 SWTP Clearwell transfer pumps when the 2010 SWTP Clearwell is less than 50.0% of full operating capacity,..."
  - "...taking out of service all high service pumps when the nitrate level in the 10.0 MG GST effluent is greater than 10.0 mg/L or the volume of water in the tank is less than 50.0%of its full operating capacity."
- Page Q-156, Item No. 8, needs to be amended:
  "...at the frequencies specified in the FSV Test Protocol the TCEQ's October 15, 2013 Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates. When samples are collected for analysis at an off-site laboratory using EPA Method 1623, a portion of the same water (split sample) must also be collected for analysis using the on-site qPCR method.
  The City has reported that it has been using the qPCR method on-site, but has some concerns about the validity of the results and interferences when analyzing the RR WWTP effluent. The City uses the MoBio RapidWater® DNA Isolation Kit, which includes a disclaimer in the manual, stating that the kit is for research purposes only. Splitting samples and comparing the results from the two

analytical methods will provide the TCEQ and the City with data from both methods to review and compare. After the Full-Scale Verification Test is complete, the TCEQ will determine the appropriate application of the data.
In addition, the City has reported that it would like to use an alternate real-time, on-site analytical method or possible surrogate for representing the number of Giardia cysts and Cryptosporidium oocysts in the RR WWTP effluent and water after different stages of treatment. However, the City has not provided a TCEQ-acceptable alternative for review at this time. If the City desires to evaluate an alternate analytical method or surrogate during the verification testing, the City will need to collect split samples at the same time as the on-site qPCR samples are collected. The results of these City tests will need to be submitted with the Report in comparison tables and graphs with the above required qPCR and EPA Method 1623 results as specified in Enclosure E: Full-Scale Verification Test Report Format.
As noted in the TCEQ's July 17, 2013-email, a TCEQ-acceptable real-time, on-site monitoring method must be used by the City when the proposed temporary DPR WTP is discharging effluent to the distribution system. Without a TCEQ acceptable real-time, on-site monitoring method, additional measures will have to be implemented to verify that the public's health is being continuously protected."

- Page Q-156, Item No. 9, needs to be corrected to read "...50.00 %.volume..." in lieu of "...50% volume..."
- Page Q-156, Item No. 10, needs to be corrected to read "...50.00 %.volume..." in lieu of "...50% volume..."
- Page Q-157. Item No. 12.e, needs to be revised to match the condition in TCEQ's letter:
"As shown in Detail No. 1 on Sheet 2 of the engineering drawings in the PER's Appendix N, also included with your July 16, 2013 letter, the 36" RO pipeline from the RO permeate tanks to the 2010 and 1961 SWTP clearwells shall be isolated must be cut (or an appropriate fitting removed) after the RO permeate flow meter from the 2010 and 1961 SWTP clearwells and connected to the proposed temporary above-ground, 24-inch pipeline to waste Lagoon No. 3. The 36-inch pipe to the clearwells must have a blind flange installed or be capped to prevent the entrance of contaminants during the DPR WTP's verification testing."
- Page Q-158, Item No. 18, needs to be revised and amended to include:
"During the FSV Test, the free ammonia, free chlorine, total chlorine and nitrate nitrite levels while treating the RR WWTP effluent must be monitored at the locations and frequencies specified in the FSV Test Protocol Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates. The following analytical methods must be used:

    a. Free ammonia: EPA 350.1 or SM* 4500-NH3-G;
    b. Free chlorine: One of the methods in 30 TAC §290.110(d)(1) except that a color comparator cannot be used;
    c. Monochloramine: SM* 4500-Cl D or SM* 4500-Cl F;

d. Total chlorine: One of the methods in 30 TAC §290.110(d)(1) except that a color comparator cannot be used; and
e. Nitrite: EPA 300.0 or EPA 353.2.
* Standard Methods for the Examination of Water and Wastewater, APHA

- Page Q-159, Item No. 24, needs to be amended:
"If the selected MF membrane unit for FSV Test cannot be repaired, cannot pass a TCEQ-approved DIT, or exceeds the 0.100 NTU limit for two consecutive five-minute readings in a one-hour period after being returned to service, then the FSV Test must be temporarily halted and the City must contact the TCEQ Technical Review & Oversight Team at (512) 239-4691 to discuss the problem."

- Page Q-159, Item No. 25, needs to be amended:
"The selected MF membrane unit influent and effluent water qualities and operating parameters must be monitored, analyzed, and recorded as specified in the FSV Test Protocol Full-Scale Verification Test Protocol section of the TCEQ's September 5, 2013 letter and Enclosure B: Full-Scale Verification Test Protocol Monitoring and Reporting of Operating Processes and October 15, 2013 Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates."

- Page Q-159, Item No. 27, needs to be amended:
"The selected RO membrane skid's influent and effluent water qualities and operating parameters must be monitored, analyzed, and recorded during the FSV Test as specified in the FSV Test Protocol TCEQ's:

a. October 15, 2013 Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates; and
b. September 5, 2013 Enclosure B: Full-Scale Verification Test Protocol Monitoring and Reporting of Operating Processes."

- Page Q-159, Item No. 28, needs to be amended:
"The 2010 SWTP clearwell effluent must have a pH level of 7.0 or greater, cannot be corrosive and the Langelier Saturation Index (LSI) and the pH levels must be monitored and reported as specified in the FSV Test Protocol TCEQ's October 15, 2013 Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates,"

- Page Q-159, Item No. 29, needs to be amended:
"The filtered water discharge from the 2010 SWTP clearwell must be monitored, analyzed and the results recorded as specified in the FSV Test Protocol TCEQ's October 15, 2013 Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates, and September 5, 2013 Enclosure D: Design, Operating and Monitoring Requirements for Fluoride Adjustment."

- Page Q-160, Item No. 34, the last sentence needs to be corrected:
  "Enter the sample set results that achieved the lowest inactivation for virus and *Giardia* on the SWMORs for both the Secondary Reservoir raw surface water and RR WWTP effluent sources and record the results from the simulated inactivation for TCEQ Sample Sets 41A 41J and 42A 42J of the TCEQ's October 15, 2013 Addendum J."

Enclosure B

Amanda Farley

From: Linda Brookins
Sent: Monday, January 13, 2014 1:20 PM
To: Daniel Nix
Cc: Russell Schreiber; Vera Poe; mark.southard@wichitafallstx.gov; kdm@bmiwf.com; Joel Klumpp; Justin Taack; Emily Young; Isaac Jackson; Ada Lichaa; Cari-Michel Lacaille; Shawn Garcia; Mark Harmon; L'Oreal Stepney; Kim Wilson; Emily Lindley; Kevin Mccalla; Randy Ammons; Cliff Moore; Jennelle Crane; Winona Henry; James Weddell
Subject: RE: City of Wichita Falls DPR Project

Daniel,

Thank you for your email. With this response I acknowledge that the City of Wichita Falls (City) has met the required isolation conditions at the Cypress Water Treatment Facility in order to proceed with the City's "mock" verification test that is preceding the actual Full-Scale Verification Test.

Per the September 5, 2013 TCEQ letter to the City, the conditional granting of temporary exceptions and approval to construct do not grant approval for the water from the proposed 6-month temporary Direct Potable Reuse Water Treatment Plant (DPR WTP) to be discharged to the City's potable water distribution system. The City is required to discharge all water generated from the proposed 6-month temporary DPR WTP to waste until it receives written TCEQ approval to discharge the treated effluent to distribution for human consumption.

We will provide you the TCEQ's response to the Final Engineering Report as soon as it has been finalized.

Sincerely,

Linda Brookins, Director
Water Supply Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087
(512) 239-4625

From: Daniel Nix [mailto:daniel.nix@wichitafallstx.gov]
Sent: Monday, January 13, 2014 9:34 AM
To: Linda Brookins
Cc: Russell Schreiber; Vera Poe; mark.southard@wichitafallstx.gov; kdm@bmiwf.com; Joel Klumpp; Justin Taack; Emily Young; Isaac Jackson; Ada Lichaa; Cari-Michel Lacaille; Shawn Garcia; Mark Harmon; L'Oreal Stepney; Kim Wilson; Emily Lindley; Kevin Mccalla; Randy Ammons; Cliff Moore; Jennelle Crane; Winona Henry; James Weddell
Subject: Re: City of Wichita Falls DPR Project

Linda,

As of this morning at 9am, the City of Wichita Falls has switched all water treatment from the 87 Plant (Cypress) to the Jasper Water Treatment Plant. At Cypress, the weirs at the Splitter Box have been closed for the 87 and 61 Plants, as well as the drain valves opened at both the 61 Plant (Sludge valves in the bottom of the basins) and the 87 Plant (Drain valves in the Parshall Flumes).

Additionally, the valve that shuts off Lake Kemp flow to the 2008 MF/RO Clarifier has been closed and the valve wheel chained, as per TCEQ instructions from the site visit last week.

Now that the 87 and 61 Plants are completed isolated from the DPR Plant, and are not treating water, we are starting to running water from the River Road Wastewater Treatment Plant down the HDPE pipeline to Cypress.

We will take the next couple of days to exchange the Lake Kemp water that is in the 2008 Clarifier with treated Wastewater Effluent, draining it through the MF drains.

Once the 2008 Clarifier is primarily treated Wastewater Effluent, we will begin treating the water through the MF and RO facilities to fill the RO Permeate Lagoon.

When the Lagoon is full, then we will begin blending it with Raw Water from the Secondary Reservoir and running it through the 2010 Plant.

We suspect that we will have the entire DPR Plant charged with water that has wastewater effluent in it, by the end of this week.

If you have any questions, please feel free to contact me.

--

Daniel K. Nix
Public Utilities Operations Manager
City of Wichita Falls
Physical Address: 4801 Big Ed Neal Drive, Wichita Falls, Texas 76310
Mailing Address: P.O. Box 1431, Wichita Falls, Texas 76307
940-691-1153 FAX: 940-691-4121
Daniel.Nix@wichitafallstx.gov



Those who have the privilege to know have the duty to act. ~Albert Einstein

On Fri, Jan 10, 2014 at 6:09 PM, Linda Brookins <linda.brookins@tceq.texas.gov> wrote:

Russell,

Per our telephone conversation earlier this afternoon and per the site visit conducted yesterday by Mr. Red Weddell of my staff and TCEQ Abilene Region 3 staff, the City of Wichita Falls (City) pumped wastewater effluent from the River Road Wastewater Treatment Plant (RR WWTP) to the Cypress Water Treatment Facility while continuing to operate the 1987 Cypress surface water treatment plant (SWTP). You stated that at this time, the RR WWTP effluent has been pumped through the 2008 Cypress SWTP's flow control vault and into the clarifier but will not be pumped further through the treatment process. You also stated that the RR WWTP transfer pumps have been turned off and will not be turned on again until the 1987 surface water treatment plant (SWTP) is off-line. Per our conversation, you stated that the 1987 SWTP will continue operation through the weekend and will cease operation on Monday, January 13, 2014.

As I stated to you on the phone, the City must cease operation of the 1987 Cypress SWTP and maintain closure of the 1961 Cypress SWTP when the City resumes pumping of the RR WWTP effluent to the Cypress Water Treatment Facility. Additionally, the City may not send the wastewater effluent in the 2008 Cypress SWTP clarifier further through the treatment process until operation of the 1987 Cypress SWTP has ceased.

The City must follow these instructions in order to be in compliance with items listed under Condition No. 12 of our September 5, 2013 letter for the City's proposed six-month temporary Direct Potable Reuse Water Treatment Plant (DPR WTP) as specified in Condition No. 13 and repeated below:

> *All of the above [Condition Nos. 12.a through No. 12.g] referenced valve and gate closures and piping modifications must be completed prior to the RR WWTP transfer pumps being turned on after connecting the wastewater effluent piping to the temporary Cypress DPR WTP. TCEQ staff will inspect the DPR WTP to confirm isolation as described in Condition No. 12 has been completed. The inspection must occur before the Full-Scale Verification Test may begin.*

I would like to repeat Condition No. 12(b) which requires the City to maintain the weir gates closed in the Cypress Splitter Box to the 1987 and 1961 SWTPs during the verification testing and during the proposed six-month temporary discharge of potable water to the distribution system.

Please notify me by email and phone (512-239-4625) and the TCEQ Abilene Regional Office by phone (325-698-9674) when:

- The 1987 Cypress SWTP ceases operation;
- The City resumes pumping of the RR WWTP effluent to the Cypress Water Treatment Facility; and
- The City sends the wastewater effluent in the 2008 Cypress SWTP clarifier further through the treatment process.

Please let me know if you have any questions.

We will provide you the TCEQ response to the City's Final Engineering Report as soon as it has been finalized.

Sincerely,

Linda Brookins, Director

Water Supply Division

Texas Commission on Environmental Quality

P.O. Box 13087