

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



PWS\_2360035\_CO\_20220224\_Exception

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

February 24, 2022

Mr. Kevin Peterson, President  
Lake Livingston Heights WSC  
119 Palisade Circle  
Huntsville, Texas 77320-0265

Subject: Lake Livingston Heights WSC - PWS ID 2360035  
Review of an Exception to the Sanitary Control Easement Requirement  
Well No. 1 (TCEQ Well ID: G2360035A)  
Walker County, Texas  
RN 101455103 | CN 600639751

Dear Mr. Peterson:

On November 18, 2021, the Texas Commission on Environmental Quality (TCEQ) received your letter of the same date requesting a review of a previously granted exception. In our letter dated September 20, 2021, the TCEQ granted an exception to the requirement that all public water supply wells have properly recorded sanitary control easements as specified in Title 30 of the Texas Administrative Code (30 TAC) §290.41(c)(1)(F). This exception was for the Lake Livingston Heights WSC public water system (PWS) Well No. 1 (TCEQ Well ID G2360035A). This exception was conditionally granted and set to expire after a specific time period. The conditions included the requirement to institute a protocol that would achieve 4-log inactivation of viruses for Well No. 1 (G02360035A), and to receive approval of a submitted 4-log Concentration Time (CT) Study. The 4-log CT Study requires daily data collection and reporting on TCEQ Form 20362: the Groundwater Rule (GWR) 4-log Minimum Specified Residual Monthly Operating Report (MSR MOR). In the TCEQ letter dated February 14, 2022 (Enclosure 1), the TCEQ approved the PWS's compliance strategy for 4-log virus inactivation. The September 20, 2021 exception letter further required that, after the 4-log protocol has been implemented, the PWS must submit a copy of one monthly (30-day) MSR MOR to the Technical Review and Oversight Team for review. In your submittal dated November 18, 2021, you provided a handwritten copy of the MSR MOR for the month of September 2021.

Please note the TCEQ Form 20362, the MSR MOR form, is a Microsoft Excel document that must be used in order to ensure the PWS is continuously meeting 4-log viral inactivation. If on any day the residual is below the designated minimum specified residual (MSR), the MSR MOR form will request additional information which includes flow rate, pH, and water temperature. Since the form was completed by hand and not electronically, **the provided MSR MOR cannot be accepted.** To allow the PWS additional time to provide an MSR MOR for review, the TCEQ is **issuing a new exception, until August 24, 2022**, contingent upon the conditions listed below. The sanitary control easement exception applies to all property not owned by the PWS within 150-foot radius of Well No. 1. This letter supersedes and replaces our letter dated September 20, 2021.

Failure to comply with the conditions of the Monitoring, Reporting, and Recordkeeping listed in the 4-log CT Study letter dated February 14, 2022 (Enclosure 1), and the conditions of approval outlined below, may result in issuance of notices of violation and enforcement action by the TCEQ.

**Condition 1:**

- **The PWS must treat all water produced by Well No. 1 (G2360035A) with the disinfection protocol that will achieve 4-log inactivation of viruses as approved by the TCEQ in its letter dated February 14, 2022.**

**Condition 2:**

- **No later than 3 months from the date of this letter (*May 24, 2022*), the PWS must submit documentation that 4-log inactivation has been implemented. This documentation must include a copy of a 30-day Minimum Specified Residual Monthly Operating Report and a request to grant this exception without an expiration date. This information must be sent to the Technical Review and Oversight Team at the address below or via email to [PTRS@tceq.texas.gov](mailto:PTRS@tceq.texas.gov).**

The system must collect and record the free chlorine residual at the designated monitoring point at least once each day, including weekends and holidays, as long as Well No. 1 is used as a PWS well. The daily flow rate and residual monitoring results will be used to complete each month's MSR MOR using TCEQ Form 20362. If on any day the residual is below the designated minimum specified residual (MSR), the MSR MOR form will request additional information which includes flow rate, pH, and water temperature. Please note the TCEQ Form 20362 is a Microsoft Excel document that must be used in order to ensure the PWS is continuously meeting 4-log viral inactivation. The Microsoft Excel version of the MSR MOR spreadsheet can be accessed at the following webpage:

<https://www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/tcr/gwr-4log-mor-form-20362.xls>

Copies of each monthly MSR MOR must be retained for a period of at least ten (10) years. The PWS must provide copies of all MSR MORs to the TCEQ upon request.

**Condition 3:**

- **Beginning on the date of this letter, the PWS must collect two raw water samples per month from Well No. 1 (TCEQ Well ID G2360035A). The twice-monthly samples must be collected on an interval of no fewer than 10 calendar days between samples. The PWS must submit the samples for bacteriological analysis at a TCEQ-accredited laboratory with a current National Environmental Laboratory Accreditation Program (NELAP) certification and maintain these records on site.**

The sampling procedure should be the same as the one used when collecting routine distribution samples. Please ensure that the sample is delivered to the laboratory clearly labeled with the proper TCEQ Well ID (G2360035A) and marked "RAW."

For a list of TCEQ certified laboratories see our website at:

[www.tceq.texas.gov/assets/public/compliance/compliance\\_support/qa/txnelap\\_lab\\_list.pdf](http://www.tceq.texas.gov/assets/public/compliance/compliance_support/qa/txnelap_lab_list.pdf)

These samples are in addition to the normally required monthly distribution bacteriological samples and must be collected at a point prior to the disinfectant injection point. The sample results should be submitted in the same manner as the results of the monthly distribution bacteriological samples.

Mr. Kevin Peterson, President  
Page 3 of 4  
February 24, 2022

If any of the samples yield a positive result, please follow the instructions specified in Enclosure 2: *Instructions for Positive Bacteriological Samples*.

Please update your system's monitoring plan to reflect the monitoring requirements outlined in this letter and mail to the TCEQ Monitoring Plan Coordinator at the following address:

Monitoring Plan Coordinator (MC 155)  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711

Additional information is available in TCEQ's Regulatory Guidance No. 384 (RG-384), *How to Develop a Monitoring Plan for a Public Water System*, or on our website at:

[https://www.tceq.texas.gov/drinkingwater/monitoring\\_plans](https://www.tceq.texas.gov/drinkingwater/monitoring_plans)

All PWS monitoring plans are required to be kept up-to-date and on file at the system at all times and must be presented to TCEQ staff upon request.

**Condition 4:**

- **This exception will expire 6 months from the date of this letter (*August 24, 2022*).**

A copy of this letter and all related monitoring data must be maintained with the water system's records for as long as this exception is in effect. These records must be made available to TCEQ staff upon request. If contamination of a well occurs which is not remediated through treatment, a new properly constructed well may be required at another location and abandonment, proper plugging, and sealing of the abandoned well will be required.

All exceptions are subject to review. If new information indicates that this exception compromises public health or degrades services or water quality, the exception may be revoked as specified in 30 TAC §290.39(l)(2). Noncompliance with any condition stated in this exception letter may result in enforcement action as specified in 30 TAC §290.39(l)(5). This exception is not intended to waive compliance with any other TCEQ requirements in 30 TAC Chapter 290. This exception cannot be used in the defense of any enforcement action resulting from noncompliance of any other requirement of 30TAC Chapter 290.

Mr. Kevin Peterson, President  
Page 4 of 4  
February 24, 2022

If you have questions concerning this letter, or if we can be of additional assistance, please contact Ms. Regina Frisancho by email at [regina.frisancho@tceq.texas.gov](mailto:regina.frisancho@tceq.texas.gov), by telephone at (512) 239-4726, or by correspondence at the following address:

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

Sincerely,



Stephanie Escobar, Team Leader  
Technical Review and Oversight Team  
Plan and Technical Review Section  
Water Supply Division  
Texas Commission on Environmental Quality

SJE/rf/db

Enclosure 1: *TCEQ CT Study Letter Dated February 14, 2022*  
Enclosure 2: *Instructions for Positive Bacteriological Samples*

cc: Mr. Russell W. Crawley, Operations Manager, Lake Livingston Heights WSC, 12338 FM  
356, Trinity, TX 75862-6502

bcc: TCEQ Houston Regional Office - R12  
Marlo Wanielista Berg, P.E., TCEQ TROT, MC-159



Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



PWS\_2360035\_CO\_20220214\_CT Study

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
*Protecting Texas by Reducing and Preventing Pollution*

February 14, 2022

Mr. Kevin Peterson, President  
Lake Livingston Heights WSC  
119 Palisade Circle  
Huntsville, Texas 77320-0265

Subject: Lake Livingston Heights WSC - PWS ID 2360035  
Public Drinking Water System  
Approval 4-Log Treatment Disinfection Protocol  
Palisade Circle Plant - TCEQ Plant ID No. - TP13798  
Walker County, Texas  
RN 101455103 | CN 600639751

Dear Mr. Peterson:

On November 18, 2021, the Texas Commission on Environmental Quality (TCEQ) received your letter of the same date that contained a request to use 4-log inactivation as a compliance strategy to meet requirements associated with a granted exception. We have reviewed the Groundwater Concentration Time (CT) Study you submitted for the Lake Livingston Heights WSC Palisade Circle Plant (TCEQ Plant ID TP13798). This letter serves as notice that the TCEQ **approves** the proposed compliance strategy for this entry point (EP001) to the distribution system.

**Groundwater Rule (GWR) Compliance Information:**

Please note that per Title 30 of the Texas Administrative Code (TAC) §290.109(d)(4)(A) General requirements, a groundwater system must conduct triggered source water monitoring for *E. coli* or other fecal indicators, if both of the following conditions exist.

- **§290.109(d)(4)(A)(i)** *The system does not provide at least 4-log treatment of viruses (as defined in §290.103(44) of this title (relating to Definitions)) before the first customer for each groundwater source; and*
- **§290.109(d)(4)(A)(ii)** *The system is notified that a routine distribution coliform sample is positive and the sample is not invalidated under subsection (e)(1) of this section.*

As long as your public water system (PWS) continuously meets the viral inactivation requirement, triggered source water monitoring will not be required at the following groundwater source:

- Well No. 1 - TCEQ source code G2360035A

**Description of Disinfection Process:**

The PWS's Well No. 1 (G2360035A) conveys raw water at 60 gallons per minute (GPM) to the treatment plant. The raw water is injected with sodium hypochlorite prior to entry into a 25,000-gallon ground storage tank (GST) (Facility ID No. ST17390). The chlorine residual is monitored via a sample cock on the side of the GST per a conversation between a PWS representative and Ms. Regina Frisancho of my staff on January 31, 2022. After water leaves the GST, the water is pumped by three service pumps, one having a capacity of 100 GPM (PF14905), the other two pumps having a capacity of 150 GPM each (PF14906 and PF14907). After the service pumps, the water is pressurized by a 2,500-gallon pressure tank (ST17391) before the water enters the distribution system at the entry point (EP001).

Concentration Time calculations are used to evaluate the disinfection process. Contact time ( $T_{10}$ ) values are calculated based on flow rates, storage capacities, and baffling factors. The  $T_{10}$  values are used to determine the Minimum Specified Residual (MSR) for the treatment plant. The following table was developed for the groundwater treatment plant using the PWS's Groundwater CT Template (Enclosure 1). The  $T_{10}$  value shown in this table is based on the information provided in your request received on November 18, 2021.

**TABLE 1:  $T_{10}$  and MSR Values for the Lake Livingston Heights WSC Palisade Circle Plant (TCEQ Plant ID TP13798)**

TREATMENT UNIT	VOLUME (gallons)	FLOW RATE (gpm)	BAFFLING FACTOR	CONTACT TIME, $T_{10}$ (minutes)	MINIMUM SPECIFIED RESIDUAL (mg/L)
Ground Storage Tank	12,500 <sup>(1)</sup>	60 <sup>(2)</sup>	0.1 <sup>(3)</sup>	20.8	<b>0.29 free chlorine<sup>(4)</sup></b>

**Notes:**

- 1) Based on the capacity of one GST with a nominal capacity of 25,000 gallons, and a "worst case" operating volume of 12,500 gallons which is 50% of the total capacity, as per submittal received on November 18, 2021.
- 2) Based on the capacity of Well No. 1, as per the submittal received on November 18, 2021.
- 3) Based on the assumption of "unbaffled" baffling characteristics for the GST.
- 4) As free chlorine, based on a maximum pH of less than 9.5 and a minimum water temperature of 10°C.

**Monitoring, Reporting, and Recordkeeping:**

Please refer to 30 TAC §290.116 for specifics concerning Groundwater Corrective Actions and Treatment Techniques. Because you are required as a condition of a granted exception to provide 4-log viral inactivation, you must meet certain requirements associated with this GWR compliance option. These requirements include:

1. **Based on your PWS serving a population less than 3,300**, upon receipt of this letter the system must monitor the free chlorine residual at the designated monitoring point at least once each day, including weekends or holidays. The system may use the results from grab sample tests or continuously record the residual using on-line monitors and recorders. If the system collects grab samples, and the daily reading indicates the residual is less than the approved MSR, the test must be repeated at least once every four hours until the residual is restored to acceptable levels.
2. If the measured residual falls below the approved MSR for a period longer than four consecutive hours, the operators must also measure and record:
  - a. Flow rate through the ground storage tank; and
  - b. Temperature and pH of the water.

3. The system must complete **the Excel version** of the GWR 4-log Minimum Specified Residual Monthly Operating Report (MSR MOR), TCEQ [Form 20362](#).
  - a. **If the disinfectant residual falls below the MSR, the MSR MOR spreadsheet will highlight four more additional boxes to populate, hours below MSR, flow rate in gpm, pH and temperature.**
  - b. If the chlorine residual remains below the MSR for four consecutive hours, the system must notify the TCEQ within 24 hours of the event.
  - c. The MSR MOR may be submitted via e-mail to [GWRData@tceq.texas.gov](mailto:GWRData@tceq.texas.gov) or via fax at (512) 239-3666 so it can be determined if a treatment technique violation has occurred.
  - d. The system must also provide TCEQ a copy of the report upon request.

Blank copies of the MSR MOR spreadsheet (listed as “4-log Groundwater Monthly Operating Report”) and additional information concerning the GWR may be obtained at our GWR website:

[www.tceq.texas.gov/drinkingwater/swmor/swmor/ct\\_info](http://www.tceq.texas.gov/drinkingwater/swmor/swmor/ct_info)

4. The system must maintain copies of all documentation needed to demonstrate compliance with the GWR per 30 TAC §290.46(f)(3). These archived records include:
  - a. Copies of each GWR MSR MOR must be retained for a period of at least ten (10) years.
  - b. Calibration records of flow meters and laboratory instruments as described in 30 TAC §290.46(s); this information must be maintained for a period of at least three (3) years.

Your system must provide 4-log inactivation of viruses to meet the conditions of the exception granted in our letter dated September 20, 2021 (Enclosure 2). Please note, according to Condition 1 of the referenced exception letter, 4-log inactivation must be implemented for Well No. 1 at the Palisade Circle Treatment Plant (TP13798) no later than September 20, 2022. We note you provided a copy of a handwritten completed Minimum Specified Residual Monthly Operating Report (MSR MOR) and a request to grant the exception without an expiration date. **This information will be reviewed in a separate TCEQ response letter. Please note that handwritten MSR MORs are not acceptable since the Excel version is dynamic and additional boxes will populate if the disinfectant residual falls below the MSR.**

As stated in Condition 5 of the September 20, 2021 letter, “No later than 18 months from the date of this letter (*March 20, 2023*), the PWS must submit documentation that 4-log inactivation has been implemented. This documentation must include a correctly completed copy of a 30-day Minimum Specified Residual Monthly Operating Report (MSR MOR) and a request to grant this exception without an expiration date.” Please submit a correctly completed copy of the MSR MOR to Regina Frisancho of my staff, via her email address [regina.frisancho@tceq.texas.gov](mailto:regina.frisancho@tceq.texas.gov).

You must notify the TCEQ of any proposed modifications to the design, operation, or disinfection protocols. The minimum disinfection residual for chlorine (0.2 mg/L) or total chlorine (0.5 mg/L) must be maintained throughout the distribution system at all times, even if 4-log treatment is being claimed. Blank copies of the MSR MOR spreadsheet (listed as “Groundwater Monthly Operating Report”) and additional information concerning the GWR may be obtained at our GWR website:

[http://www.tceq.texas.gov/permitting/water\\_supply/pdw/microbial/gwr\\_main.html](http://www.tceq.texas.gov/permitting/water_supply/pdw/microbial/gwr_main.html)

Mr. Kevin Peterson, President  
Page 4 of 4  
February 14, 2022

Please update your monitoring plan to reflect any changes resulting from the approval of 4-log treatment. Additional information is available in Regulatory Guidance (RG) 384 "How to Develop a Monitoring Plan for a Public Water System" or on our website at:

[http://www.tceq.texas.gov/permitting/water\\_supply/pdw/monitoring\\_plans/monitoring\\_plans.html](http://www.tceq.texas.gov/permitting/water_supply/pdw/monitoring_plans/monitoring_plans.html)

The monitoring plan is required to be kept up to date and on file at all times.

If you have questions concerning this letter, or if we can be of additional assistance, please contact Ms. Regina Frisancho by email at [regina.frisancho@tceq.texas.gov](mailto:regina.frisancho@tceq.texas.gov), by telephone at (512) 239-4726, or by correspondence at the following address:

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

For additional information regarding the GWR, please refer to rule specifics cited in 30 TAC §290.109 and §290.116. Should you have additional questions, comments or for further assistance regarding the GWR you may contact:

Matt Court  
(512) 239-5844  
[Matt.Court@tceq.texas.gov](mailto:Matt.Court@tceq.texas.gov)

Drinking Water  
Assessment Team  
(512) 239-4691  
[GWRData@tceq.texas.gov](mailto:GWRData@tceq.texas.gov)

Sincerely,



Stephanie Escobar, Team Leader  
Technical Review and Oversight Team  
Plan and Technical Review Section  
Water Supply Division  
Texas Commission on Environmental Quality



Claire Carlton, Team Leader  
Drinking Water Assessment Team  
Drinking Water Standards Section  
Water Supply Division  
Texas Commission on Environmental Quality

SJE/CC/rf/db

Enclosure 1: *Groundwater CT Template*  
Enclosure 2: *TCEQ Exception Letter Dated September 20, 2021*

cc w/enclosures: Mr. Russell W. Crawley, Operations Manager, Lake Livingston Heights WSC,  
12338 FM 356, Trinity, TX 75862-6502

bcc: TCEQ Houston Regional Office - R12  
Ms. Claire Carlton, TL, TCEQ Drinking Water Assessment Team, MC 155  
Mr. Robert W. Sims, P.E., CT Coordinator, TCEQ, CCDP Team, MC 159  
Marlo Wanielista Berg, P.E., TCEQ TROT, MC-159



# Groundwater CT Study Template (MS Excel version)

This Template is used to determine the Minimum Specified Residual (MSR)  
at a plant using free chlorine to achieve a 4.0-log viral inactivation

**PWS Name:** Lake Livingston Heights

**PWS ID No.:** 2360035

**Plant Name:** Palisade Circle Plant - TP13798

**Date Completed:** 02/14/22

1	Total capacity (maximum) of all storage tanks at this site		25,000	gallons
2	Minimum volume/water level	12500		gallons (or feet)
3	Maximum volume/water level	25000		gallons (or feet)
4	Actual Min/Max Ratio (line 2 divided by line 3)		0.50	
5	Maximum allowable ratio		0.50	
6	Allowable ratio (minimum of line 4 and line 5)		0.50	
7	Allowable Volume (line 1 times line 6)		12,500	gallons
8	Baffling Factor		0.1	
9	Effective Volume (line 7 times line 8)		1,250	gallons
10	Total capacity (maximum) of the wells feeding these tanks	60		gpm
11	Total capacity (maximum) of all the service pumps fed by these tanks	400		gpm
12	Flow rate (minimum of line 10 and line 11)		60	gpm
13	T <sub>10</sub> for this site (line 9 divided by line 12)		20.8	minutes
14	CT required for a 4-log viral inactivation if the water temperature is at least 10°C and the pH is not greater than 9.5.		6.0	mg/L-min
<b>Assuming that you are using free chlorine, your water temperature does not drop below 10°C (50°F), and the pH is always below 9.5 . . . The Minimum Specified Residual (MSR) for this Entry Point will be:</b> (line 14 divided by line 13)			<b>0.29</b>	<b>mg/L</b>

If the T<sub>10</sub> is less than 1.5 minutes, the TCEQ cannot approve a Minimum Specified Residual for this site because it would be greater than 4.0 mg/L under worst-case operating conditions.

Note: Enter data in the yellow cells. The values in the orange cells will automatically be calculated by the spreadsheet.

# Groundwater CT Study Template (Schematic)

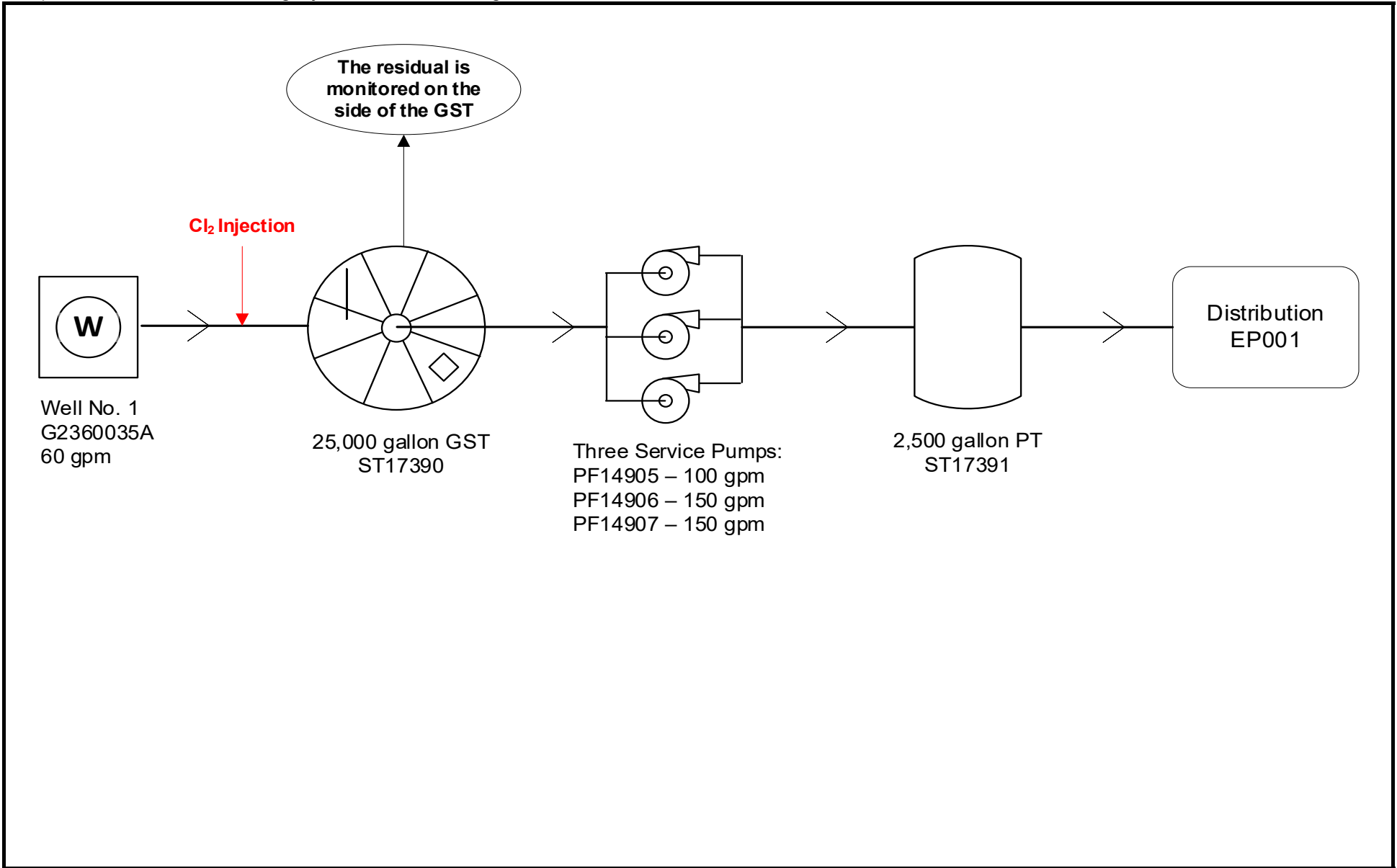
PWS Name: Lake Livingston Heights

PWS ID No.: 2360035

Plant Name: Palisade Circle Plant - TP13798

Date Completed: 02/14/22

Simple Plant Schematic Showing Injection and Monitoring Points



Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



PWS\_2360035\_CO\_20210920\_Exception

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

September 20, 2021

Mr. Kevin Peterson, President  
Lake Livingston Heights WSC  
119 Palisade Circle  
Huntsville, Texas 77320-0265

Re: Lake Livingston Heights WSC - PWS ID No. 2360035  
Review of an Exception to the Sanitary Control Easement Requirement  
Well No. 1 (TCEQ Well ID: G2360035A)  
Walker County, Texas  
RN: 101455103 | CN: 600639751

Dear Mr. Peterson,

In our letter to you, dated December 18, 2018, the TCEQ granted an exception to the requirement that all public water supply wells have properly recorded sanitary control easements as specified in Title 30 of the Texas Administrative Code (30 TAC) §290.41(c)(1)(F). This exception applies to the property not owned by the PWS within a 150-foot radius of Well No. 1 (TCEQ Well ID: G2360035A). The granted exception required the PWS to implement a protocol that would achieve the 4-log inactivation of viruses in water produced by Well No. 1. In addition to twice-monthly raw water bacteriological sampling from Well No. 1, which the PWS has been conducting, the letter also required the submission and approval of a Concentration Time (CT) Study. Lastly, it was required to submit a copy of a 30-day Minimum Specified Residual Monthly Operating Report (MSR MOR) after implementation of the 4-log inactivation protocol and request that the TCEQ grant this exception without an expiration date. As of the date of this letter, neither of those items have been received by the TCEQ.

In a telephone conversation with Jonathan Davis of my staff on September 3, 2021, you indicated the 4-log disinfection protocol has not been implemented. You stated that a new operator had been hired about the time of receiving our December 18, 2018 letter and that they initially did not have the time to address the conditions required in the letter while learning their new duties. Consequently, the pending conditions were overlooked. You also indicated that work on complying with the conditions would commence immediately and stated you did not have any questions or require further assistance in that regard. On September 15, 2021, the TCEQ received your request to issue a new exception with new expiration dates to allow the PWS to implement 4-log viral inactivation. Based on this information, the TCEQ is **issuing a new exception** to the sanitary control easement requirement for Well No. 1, contingent upon the conditions listed later in this letter. This letter supersedes and replaces our letter dated December 18, 2018.

On February 6, 2018, and August 29, 2018, the TCEQ Drinking Water Standards Section sent 'Notice of Corrective Action Requirements' letters to the PWS in response to raw groundwater source samples from Well No. 1 that were positive for fecal indicator bacteria (*E. coli*). These letters were sent per the requirements of the Groundwater Rule established by the U.S.

Environmental Protection Agency (EPA). Please note that the conditions of this exception are in addition to, and separate from, any correction actions required by the Groundwater Rule.

The TCEQ has determined the groundwater source for Well No. 1 is potentially influenced by surface water due to the geological attributes of the underlying aquifer and the well's proximity to Livingston Reservoir (Bethy Creek) and the Trinity River. If this source is determined to be groundwater under the influence of surface water (GUI), additional enhanced treatment will be required for the removal and/or inactivation of pathogenic organisms *Giardia* and *Cryptosporidium* and the well will be required to adhere to the compliance requirements of the Surface Water Treatment Rule (SWTR). If you have any questions regarding GUI determinations and associated regulatory requirements, please contact Ms. Kendall Adair with the Drinking Water Inventory & Protection Team at (512) 239-4309. To address the risk to Well No. 1's groundwater source due to the lack of sanitary control around the well, the geologic conditions, and the proximity to nearby surface water, the TCEQ is requiring the PWS to comply with the conditions of the granted exception as stated below.

In accordance with 30 TAC §290.46(b) and §290.109(d)(4)(E), the PWS is required to fulfill the conditions of approval outlined below:

**Condition 1:**

- **The PWS must continue collecting two (2) raw water samples per month from Well No. 1 (G2360035A). The interval between samples must not be fewer than 10 calendar days. The PWS must submit the samples for bacteriological analysis at a TCEQ-accredited laboratory with a current National Environmental Laboratory Accreditation Program (NELAP) certification and maintain these records on site.**

The sampling procedure should be the same as the one used when collecting routine distribution samples. Please ensure that the sample is delivered to the laboratory clearly labeled with the proper TCEQ Well ID (G2360035A) and marked "RAW."

The PWS must continue to perform the monitoring requirement at Well No. 1 as specified in this letter. These samples are in addition to the normally required monthly distribution bacteriological samples and must be collected at a point prior to the disinfectant injection point. The sample results should be submitted in the same manner as the results of the monthly distribution bacteriological samples.

If any of the samples yield a positive result, please follow the instructions specified in Enclosure 1: *Instructions for Positive Bacteriological Samples*.

For a list of TCEQ certified laboratories see our website at:

[www.tceq.texas.gov/assets/public/compliance/compliance\\_support/qa/txnelap\\_lab\\_list.pdf](http://www.tceq.texas.gov/assets/public/compliance/compliance_support/qa/txnelap_lab_list.pdf)

Please update your system's monitoring plan to reflect the monitoring requirements outlined in this letter and mail to the TCEQ Monitoring Plan Coordinator at the following address:

Monitoring Plan Coordinator (MC 155)  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711

Additional information is available in TCEQ's Regulatory Guidance No. 384 (RG-384), *How to Develop a Monitoring Plan for a Public Water System*, or on our website at:

[https://www.tceq.texas.gov/drinkingwater/monitoring\\_plans](https://www.tceq.texas.gov/drinkingwater/monitoring_plans)

All PWS monitoring plans are required to be kept up-to-date and on file at the system at all times and must be presented to TCEQ staff upon request.

**Condition 2:**

- **No later than 12-months from the date of this letter (*September 20, 2022*), the PWS must implement a disinfection protocol, as specified in a Groundwater CT Study approved by the TCEQ, which will achieve 4-log inactivation of viruses.**

**Condition 3:**

- **The PWS must install suitable improvements to the water system to meet Condition 1 above if the system is currently unable to achieve a 4-log viral inactivation with existing storage capacity.**

Approval of the 4-log disinfection protocol is achieved by submitting a CT study (see Condition 4 below), which is based on either existing TCEQ-approved storage facilities or proposed storage facilities whose plans and specification have been approved by the TCEQ. **It should be noted that pressure tank capacity cannot be claimed for CT Study credit.**

Please be aware that if the system's storage capacity is expanded, engineering plans and specifications for the new facilities, signed and sealed by a Texas registered Professional Engineer, must be submitted to TCEQ for approval prior to construction beginning. Plans and specifications must be submitted via email to [PTRS@tceq.texas.gov](mailto:PTRS@tceq.texas.gov) and a hard copy mailed to:

Texas Commission on Environmental Quality  
Plan Review Team (MC 159)  
P.O. Box 13087  
Austin, Texas 78711-3087

**Condition 4:**

- **No later than 6 months from the date of this letter (*March 20, 2022*), the PWS must submit a CT Study for approval by TCEQ.**

Water systems can claim 4-log viral inactivation by providing a CT Study for approval to the TCEQ. The PWS must submit a CT Study verifying that the chosen design will achieve a minimum 4-log viral inactivation. Information regarding CT Studies for groundwater systems that use free chlorine and desire a minimum specified residual can be found at:

[www.tceq.texas.gov/drinkingwater/swmor/swmor/ct\\_info](http://www.tceq.texas.gov/drinkingwater/swmor/swmor/ct_info)

An electronic version of the Groundwater CT Study Template can be found at the above link and is labeled **Groundwater Minimum Specified Residual (GWMSR) Template**. A completed GWMSR Template can be emailed to [PDWS@tceq.texas.gov](mailto:PDWS@tceq.texas.gov) and a hardcopy can be mailed with a cover letter to:

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

The system is required to maintain 4-log treatment through daily or continuous residual monitoring using the Minimum Specified Residual Monthly Operating Report (MSR MOR) form. The template for the MSR MOR (TCEQ Form 20362) may be found at the link above and is labeled **4-log groundwater monthly operational report** (4-log GWMOR).

**Condition 5:**

- **No later than 18 months from the date of this letter (*March 20, 2023*), the PWS must submit documentation that 4-log inactivation has been implemented. This documentation must include a correctly completed copy of a 30-day Minimum Specified Residual Monthly Operating Report (MSR MOR) and a request to grant this exception without an expiration date.**

The template for the MSR MOR may be found at the web address under Condition 3 in this section. Please note that this template is a Microsoft Excel spreadsheet that you will need to electronically complete. This documentation must be submitted to the Technical Review and Oversight Team at the following address:

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

**Condition 6:**

- **This exception will expire 24 months from the date of this letter (*September 20, 2023*).**

A copy of this letter and all related monitoring data must be maintained with the water system's records for as long as this exception is in effect. These records must be made available to TCEQ staff upon request. If contamination of a well occurs which is not remediated through treatment, a new properly constructed well may be required at another location and abandonment, proper plugging, and sealing of the abandoned well will be required.

All exceptions are subject to review. If new information indicates that this exception compromises public health or degrades services or water quality, the exception may be revoked as specified in 30 TAC §290.39(l)(2). Noncompliance with any condition stated in this exception letter may result in enforcement action as specified in 30 TAC §290.39(l)(5). This exception is not intended to waive compliance with any other TCEQ requirements in 30 TAC Chapter 290. This exception cannot be used in the defense of any enforcement action resulting from noncompliance of any other requirement of 30TAC Chapter 290.

Mr. Kevin Peterson, President  
Page 5 of 5  
September 20, 2021

If you have questions concerning this letter, or if we can be of additional assistance, please contact Mr. Jonathan Davis by email at [jonathan.davis@tceq.texas.gov](mailto:jonathan.davis@tceq.texas.gov), by telephone at (512) 239-5246, or by correspondence at the following address:

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

If you are unable to contact Mr. Davis, please contact another member of the Technical Review and Oversight Team at [PTRS@tceq.texas.gov](mailto:PTRS@tceq.texas.gov).

Sincerely,



Stephanie Escobar, Team Leader  
Technical Review and Oversight Team  
Plan and Technical Review Section  
Water Supply Division  
Texas Commission on Environmental Quality

SJE/jjd/db

Enclosure 1: *Instructions for Positive Bacteriological Samples*

cc: Mr. Russell W. Crawley, Operations Manager, Lake Livingston Heights WSC, 12338 FM 356,  
Trinity, TX 75862-6502

bcc: TCEQ Houston Regional Office - R12  
Mr. Robert W. Sims, P.E., CT Study Coordinator, TCEQ, TROT MC-159  
Ms. Marlo Wanielista Berg, P.E., TCEQ, TROT MC-159  
Ms. Kendall Adair - [PWSGUI@tceq.texas.gov](mailto:PWSGUI@tceq.texas.gov)

### **Instructions for Positive Bacteriological Samples**

If multiple raw water samples are found to be **positive** for total coliform and **negative** for *E. coli* and other fecal indicators, a new exception with revised conditions may be required. TCEQ personnel recommend reviewing the sample collection protocol to ensure proper sample collection methods are in place. Personnel also recommend well disinfection according to American Water Works Association (AWWA) well disinfection standards.

If a raw water sample is found to be **positive** for total coliform and **positive** for *E. coli* or other fecal indicators, Ground Water Rule requirements include:

- A. Issuance of a Public Notice to water system customers in accordance with 30 TAC §290.122(a) within 24 hours of being notified of the positive result.
- B. Notification to all consecutive systems served by the well within 24 hours of being notified of the positive result.
- C. Notification to TCEQ Drinking Water Assessment Team personnel at 512-239-4691 or GWRdata@tceq.texas.gov within 24 hours of being notified of the positive result.
- D. Implementation of one or more of the Corrective Actions described in 30 TAC §290.116 as indicated by TCEQ Drinking Water Assessment Team personnel.

Additionally, the current exception may be revoked and a new exception with revised conditions may be required

Information on the Ground Water Rule can be found by calling 512-239-4691 and asking to speak to a member of the Drinking Water Assessment Team or at the following website:

[https://www.tceq.texas.gov/drinkingwater/gwr\\_main.html](https://www.tceq.texas.gov/drinkingwater/gwr_main.html)

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