

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 5, 2013

Mr. Todd Darden, Assistant City Manager
City of Big Spring
310 Nolan Street
Big Spring, Texas 79720-26720

Re: Reclaimed Water Authorization
City of Big Spring, TCEQ Permit No. WQ0010069-003
Authorization No. R10069-003
RN101721249; CN600668693
Howard County, Texas

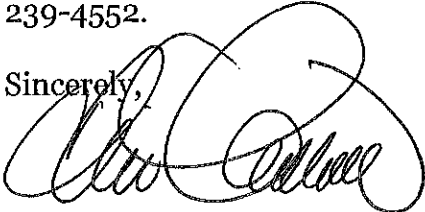
Dear Mr. Darden:

We have completed our review of information on the above referenced project. The project under review consists of the reuse of wastewater effluent from the City of Big Spring Wastewater Treatment Plant (TCEQ Permit No. WQ0010069-003). The treated effluent will be used as source water for water treatment plants.

Our review showed that the material generally meets the applicable minimum standards as set forth in the Texas Commission on Environmental Quality's rules titled Use of Reclaimed Water. The project is approved. The attachment to this letter indicates the approved site and conditions that apply to this approval.

Thank you for your cooperation during this review process. If you have any questions, please contact Louis C. Herrin, III of my staff at louis.herrin@tceq.texas.gov or (512) 239-4552.

Sincerely,



Chris Linendoll, Manager
Wastewater Permitting Section
Water Quality Division

cc: Brian Stephens, P.E.; Parkhill, Smith and Cooper; 4222 85th Street, Lubbock, Texas 79423

bcc: Deirdre Shepphard, Applications Review & Processing Team
Katherine McKenzie, Applications Review & Processing Team
Louis Herrin, Wastewater Permitting Section
Water Section Manager, R7, Midland

AUTHORIZATION FOR RECLAIMED WATER



Authorization No. R10069-003

Producer: City of Big Spring
310 Nolan Street
Big Spring, Texas 79720

Provider: City of Big Spring
310 Nolan Street
Big Spring, Texas 79720

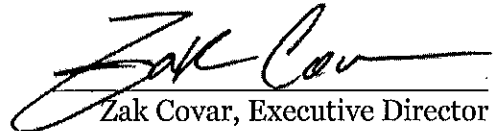
User: Colorado River Municipal Water District
P.O. Box 869
Big Spring, Texas 79721

Location: The wastewater treatment facility is located on the north side of East Eleventh Place, approximately 1,400 feet east of the intersection of Farm-to-Market Road 700 (East Marcy Drive) and East Eleventh Street in Howard County, Texas

Authorization: Type II reclaimed water from the City of Big Spring's Water Reclamation Plant (TPDES Permit No. WQ0010069003) is to be used for industrial process water (treatment of effluent to be used as source water for water treatment plants). The service area is shown in Section XI, Service Area Map.

This authorization contains the conditions that apply for the use of reclaimed water. The approval of reclaimed water use under Chapter 210 does not affect any existing water rights. If applicable, a reclaimed water use authorization in no way affects the need of a producer, provider, or user to obtain a separate water right authorization from the commission. This authorization does not allow irrigation of any area authorized for irrigation under a Texas Land Application Permit.

Issue Date: April 5, 2013


Zak Covar, Executive Director

I. General Requirements

- A. No producer or provider may transfer reclaimed water to a user without first notifying the commission.
- B. Reuse of untreated wastewater is prohibited.
- C. Food crops that may be consumed raw by humans must not be spray irrigated. Food crops including orchard crops that will be substantially processed prior to human consumption may be spray irrigated. Other types of irrigation that avoid contact of reclaimed water with edible portions of food crops are acceptable.
- D. There must be no nuisance conditions resulting from the distribution, the use, or storage of reclaimed water.
- E. Reclaimed water must not be used in a way that degrades groundwater quality to a degree adversely affecting its actual or potential uses.
- F. Reclaimed water stored in ponds must be prevented from discharging into waters in the state, except for discharges directly resulting from rainfall events or in accordance with a permit issued by the commission. All other discharges are unauthorized.
- G. If an overflow of a holding pond occurs causing discharge into or adjacent to water in the state, the user or provider, as appropriate, shall report the noncompliance. A written submission of pertinent information must be provided to the TCEQ Region 7 office in Odessa and to the TCEQ Enforcement Division (MC-149) in Austin, within five (5) working days after becoming aware of the overflow. The submission must contain:
 - 1. a description of the noncompliance and its cause;
 - 2. the potential danger to human health or safety, or the environment;
 - 3. the period of noncompliance, including exact dates and times;
 - 4. if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
 - 5. steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- H. Unless otherwise provided in this authorization, there must be no off-site discharge, either airborne or surface runoff of reclaimed water from the user's property except to a wastewater treatment collection system or wastewater treatment facility unless the reclaimed water user applies for and obtains a permit from the commission that authorizes discharge of the water.
- I. All reclaimed water piping must be separated from potable water piping when trenched by a distance of at least nine feet for Type II effluent and four feet for Type I. All buried pipe must be manufactured in purple, painted purple, taped with purple metallic tape or bagged in purple. All exposed piping, hose bibs and faucets must be painted purple, designed to prevent connection to a standard water hose, and stenciled with a warning reading "NON-POTABLE WATER."
- J. The design of any new distribution system that will convey reclaimed water to a user requires the approval of the executive director. Materials must be submitted to the executive director in accordance with the Texas Engineering Practice Act (Article 3271a, Vernon's Annotated Texas Statutes). The plans and specifications for any new

distribution system constructed pursuant to this authorization must be approved by the executive director. Failure to secure approval before commencing construction or making a transfer of reclaimed water is a violation of this authorization. Each day of a transfer is a separate violation until approval has been secured.

- K. Nothing in this authorization modifies any requirements in 30 TAC Chapter 290, Public Drinking Water.
- L. A major change from a prior notification for use of reclaimed water must be approved by the executive director before it can be implemented. A major change includes:
 - 1. a change in the boundary of the approved service area, not including the conversion of individual lots within a subdivision to reclaimed water use;
 - 2. the addition of a new provider;
 - 3. a major change in the intended use, such as conversion from irrigation of a golf course to residential irrigation; or
 - 4. a change from either Type I or Type II use to the other.
- M. The reclaimed water producer, provider, and user shall maintain current operation and maintenance plans on the sites over which they have operational control. The operation and maintenance plan must contain the following, as a minimum:
 - 1. a copy of the signed contract between the user and provider and a copy of the signed contract between the provider and the producer, as applicable;
 - 2. a labeling and separation plan for the prevention of cross connections between reclaimed water distribution lines and potable water lines;
 - 3. the measures that will be implemented to prevent unauthorized access to reclaimed water facilities (e.g., secured valves);
 - 4. procedures for monitoring reclaimed water;
 - 5. a plan for how reclaimed water use will be scheduled to minimize the risk of inadvertent human exposure;
 - 6. schedules for routine maintenance;
 - 7. a plan for worker training and safety; and
 - 8. contingency plan for system failure or upsets.
- N. One of the following requirements must be met by the user or provider, for any area where reclaimed water is stored or where there are hose bibs or faucets:
 - 1. Signs having a minimum size of eight inches by eight inches must be posted at all storage areas and on all hose bibs and faucets reading, in both English and Spanish, "Reclaimed Water, Do Not Drink" or similar warning.
 - 2. The area must be secured to prevent access by the public.
- O. Where a reclaimed water line parallels a sewer line, the reclaimed water line must be constructed in accordance with subsection (p) or (q) of this section. The horizontal separation distance must be three feet (outside to outside) with the reclaimed water line at the level of or above the sewer line. Reclaimed water lines that parallel sewer lines may be placed in the same benched trench. Where a reclaimed water line crosses a sewer line,

the requirement of 30 TAC §290.44(e)(4)(B), Water Line Installation—crossing lines, must be followed with the reclaimed water line substituted for the water line.

P. Reclaimed water pipes must meet the following requirements:

1. lines that transport reclaimed water under pressure must be sized according to acceptable engineering practices for the needs of the reclaimed water users.
2. reclaimed water force mains must have an expected life of at least as long as that of the associated lift station and must be suitable for the reclaimed water being pumped and operating pressure to which it will be subjected.
3. must be identified in the technical specifications with appropriate American Society for Testing and Materials, American National Standard Institute, or American Water Works Association standard numbers for both quality control (dimensions, tolerance, and installation such as bedding or backfill).
4. pipes and fittings must have a minimum working pressure rating of 150 pounds per square inch.
5. Final plans and specifications must describe required pressure testing for all installed reclaimed water force mains.
6. Minimum test pressure must be 1.5 times the maximum design pressure. Allowable leakage rates must be determined as described in 30 TAC §217.97, Pressure Sewer Systems.
7. Gravity flow reclaimed water lines must meet the requirements of 30 TAC Chapter 217, Subchapter C, Conventional Collection Systems. The provider shall prevent high velocity scouring and maintain adequate fluid velocity to prevent the deposition of solids in the lines.

Q. All exposed piping and piping within a building must be either purple pipe or painted purple. All exposed piping should be stenciled in white with a warning reading "NON-POTABLE WATER. All exposed or buried reclaimed water piping constructed at a wastewater treatment facility is exempt from the color-coding requirement of this section.

R. When applicable, in accordance with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems, the design of the distribution systems that will convey reclaimed water to a user must be submitted to the executive director and must receive an approval before the distribution system may be constructed. The design of the distribution systems must meet the criteria of 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. When a municipality is the plan review authority for certain sewer systems that transport primarily domestic waste, in lieu of the commission, design submittal will not be subject to submittal to the commission and instead must be approved by the municipality.

S. All ground level and elevated storage tanks must be designed, installed, and constructed in accordance with current AWWA standards with reference to materials to be used and construction practices to be followed, except for health-based standards strictly related to potable water storage and contact practices, where appropriately less restrictive standards may be applied.

II. Storage Requirements for Reclaimed Water

- A. Storage facilities for retaining reclaimed water prior to use must not be located within a floodway.
- B. Storage ponds must be hydraulically separated from waters in the state.
- C. Any holding pond designed to contain Type II effluent that is located within a DRASTIC Pollution Potential Index Zone of less than 110, shall conform to the following requirements:
 - 1. Ponds with an earthen liner must meet the following requirements
 - a. A permeability of less than 1×10^{-4} cm/sec;
 - b. The ponds must be designed and constructed to prevent groundwater contamination;
 - c. Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and
 - d. All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density;
 - e. Soil liners must meet the following particle size gradation and Atterberg limits:
 - i. 30% or more passing a number 200 mesh sieve; and
 - ii. a liquid limit of 30% or greater; and
 - iii. a plasticity index of 15 or greater;
 - f. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-4} cm/sec are acceptable alternatives; In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.
- D. Any holding pond containing Type II effluent and is located within a DRASTIC Pollution Potential Index Zone of 110 or greater, shall conform to the following requirements:
 - 1. Ponds with an earthen liner must meet the following requirements
 - a. A permeability of less than 1×10^{-7} cm/sec;
 - b. The ponds must be designed and constructed to prevent groundwater contamination;
 - c. Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and
 - d. All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density;
 - e. Soil liners must meet the following particle size gradation and Atterberg limits:
 - i. 30% or more passing a number 200 mesh sieve; and
 - ii. a liquid limit of 30% or greater; and
 - iii. a plasticity index of 15 or greater;

- f. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-7} cm/sec are acceptable alternatives; In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.
- E. Synthetic membrane linings must have a minimum thickness of 40 mils and have a leak detection system;
- F. Certification by a Texas licensed professional engineer must be furnished stating that the pond liner meets the appropriate criteria prior to use of the facilities;
- G. Soil embankment walls must have a top width of at least five feet. The interior and exterior slopes of soil embankment walls must be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are used. All soil embankment walls must be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals must be installed on all pipe penetrating the embankments; and
- H. An alternative method of pond lining that provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director; and
- I. Reclaimed water may be stored in leak-proof, fabricated tanks;
- J. Subsequent holding ponds utilized for the receipt and storage of reclaimed water of a quality that could cause or causes a violation of a surface water quality standard or impairment of groundwater for its actual or intended use will be also subject to the storage requirements of this section.

III. Specific Uses and Quality Standards for Reclaimed Water

- A. Numerical parameter limits pertaining to specific reclaimed water use categories are contained in this section. These limits apply to reclaimed water before discharge to initial holding ponds or a reclaimed water distribution system.
- B. The reclaimed water producer shall establish that the reclaimed water meets the quality limits at the sample point for the intended use in accordance with the monitoring requirements identified in Section IV, Sampling and Analysis.
- C. Types and quality standards for reclaimed water.
 - 1. Type II Reclaimed Water Use. The use of Type II reclaimed water is for situations where the public will not be exposed to the reclaimed water. The use allowed by this authorization is industrial process water (treatment of effluent to be used as source water for water treatment plants).
 - 2. The following conditions apply to Type II use of reclaimed water. At a minimum, the reclaimed water producer shall transfer only reclaimed water of the following quality. Type II reclaimed water on a 30-day average must have a quality of no more than:

Table 1. Type II Quality Requirements

Parameter	Limit	Limit Type
CBOD ₅	15 mg/l	30-day average

<i>E. coli</i>	200/100 ml	30-day geometric mean (MPN or CFU)
<i>E. coli</i>	800/100 ml	maximum single grab sample (MPN or CFU)

D. Test Procedures

1. Test procedures for the analysis of pollutants must comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations must accurately represent the reclaimed water.
2. All laboratory tests submitted to demonstrate compliance with this authorization must meet the requirements of 30 TAC Chapter 25, *Environmental Testing Laboratory Accreditation and Certification*.

IV. Sampling and Analysis

- A. The reclaimed water producer shall sample the reclaimed water prior to distribution to the entity that first received the reclaimed water after it leaves the wastewater treatment facility (provider or user) to assure that the water quality meets the standard for the contracted use.
- B. Analytical methods must be in compliance with 30 TAC Chapter 319, *Monitoring and Reporting*.
- C. The minimum sampling and analysis frequency for Type II reclaimed water is once per week when reclaimed water is being produced and shall be reported as outfall 900.
- D. The monitoring must be done after the chlorine contact chamber.
- E. The records of the monitoring must be kept on a monthly basis and be available at the facility site for inspection by representatives of the Commission for at least five years.

V. Record Keeping and Reporting

- A. The reclaimed water provider and user shall maintain records on site for a period of at least five years.
- B. The producer shall maintain the following records:
 1. copies of notifications made to the commission concerning reclaimed water projects;
 2. as applicable, copies of contracts with each reclaimed water user (this requirement does not include reclaimed water users at residences that have separate distribution lines for potable water);
 3. records of the volume of water delivered to each reclaimed water user per delivery (this requirement does not apply to reclaimed water users at residences that have separate distribution lines for potable water); and
 4. reclaimed water quality analyses.
- C. The reclaimed water provider or producer shall report to the commission on a monthly basis the following information on forms furnished by the executive director. The reports are due by the 20th day of the month following the reporting period.
 1. volume of reclaimed water delivered to each user; and

2. quality of reclaimed water delivered to a user or provider reported as a monthly average for each quality criteria, except those listed as "not to exceed" that must be reported as individual analyses.

- D. Monitoring requirements contained in the authorization are suspended from the effective date of the authorization until the reclaimed water is transferred. The provider shall provide written notice to the Water Quality Application Team (MC 148) and the appropriate TCEQ regional office at least thirty (30) days prior to transfer of reclaimed water.

VI. Transfer of Reclaimed Water

- A. Reclaimed water must be transferred from a provider to a user on a demand only basis. A reclaimed water user may refuse delivery of reclaimed water at any time.
- B. All reclaimed water transferred to a user must be of at least the quality specified in Section IV, *Sampling and Analysis*.
- C. Transfer must be by pipes or tank trucks.
- D. The transfer of reclaimed water must be terminated immediately if a provider becomes aware of the misuse of the reclaimed water by the user, regardless of contract provisions.

VII. Restrictions

- A. This authorization does not convey any property right and does not grant any exclusive privilege.
- B. This authorization does not allow the use of reclaimed water on land that is authorized as a disposal site under either a Texas Pollutant Discharge Elimination System (TPDES) permit or a Texas Land Application Permit (TLAP).

VIII. Responsibilities and Contracts

- A. The producer of reclaimed water is not liable for misapplication of reclaimed water by users, except as provided in this section. Both the reclaimed water provider and user have at least but are not limited to the following responsibilities:
 1. The reclaimed water producer shall: transfer reclaimed water of at least the minimum quality required by this chapter at the point of delivery to the user;
 - a. sample and analyze the reclaimed water and report the analyses in accordance with Section IV, *Sampling and Analysis*, and Section V, *Recordkeeping and Reporting*; and
 - b. notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director.
 2. The reclaimed water provider shall:

- a. ensure construction of reclaimed water distribution systems in accordance with 30 TAC Chapter 217, Design of Domestic Wastewater Systems, and in accordance with approved plans and specifications;
 - b. transfer reclaimed water of at least the minimum quality required by this authorization at the point of delivery to the user;
 - c. notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director; and
 - d. not be found in violation of this chapter for the misuse of the reclaimed water by the user if transfer of such water is shut off promptly upon knowledge of misuse regardless of contract provisions.
3. The reclaimed water user shall:
- a. use the reclaimed water in accordance with this authorization; and
 - b. maintain and provide records as required by Section V, Record Keeping and Reporting.

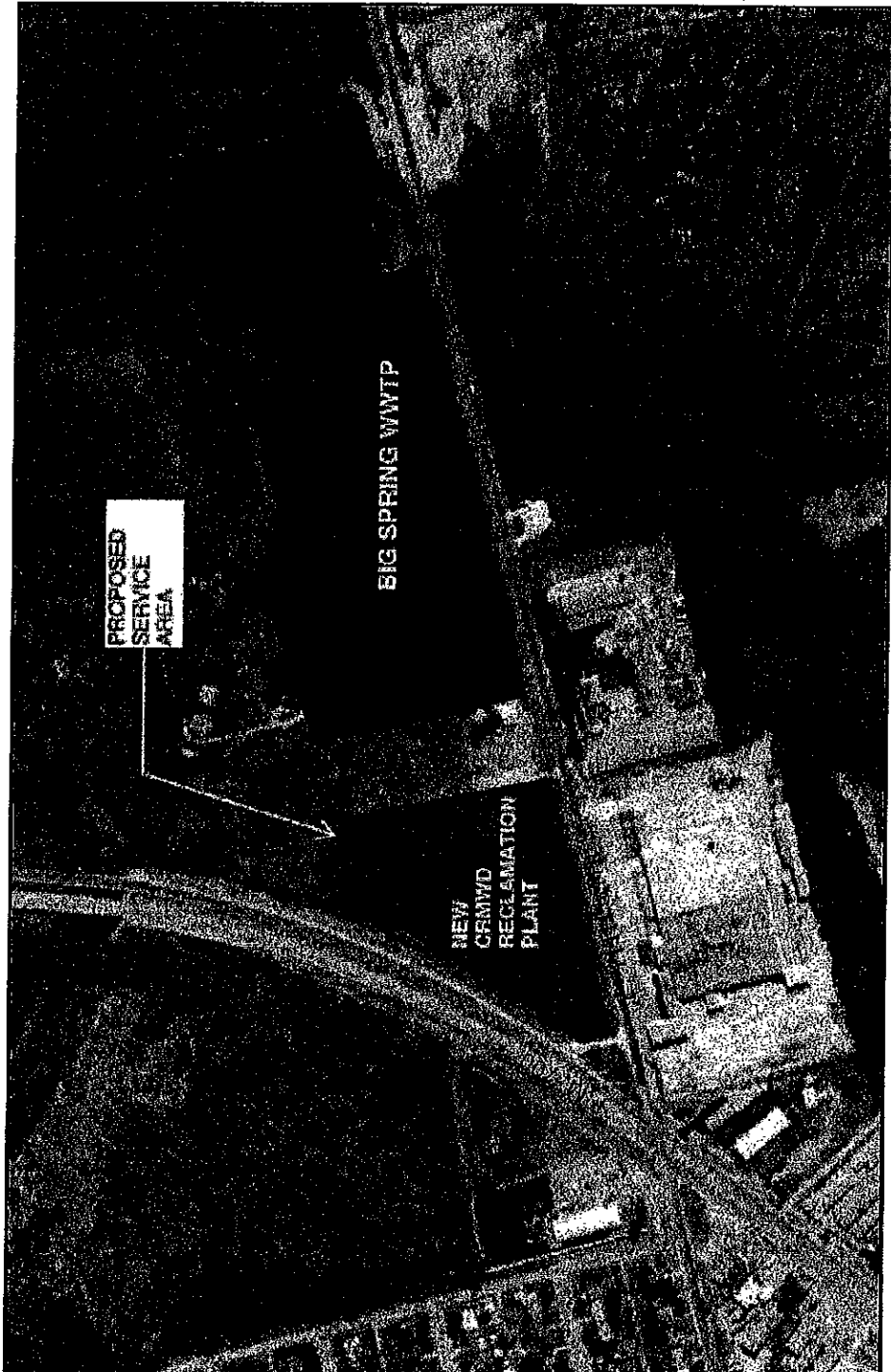
IX. Enforcement

If the producer, provider, or user fail to comply with the terms of this authorization, the executive director may take enforcement action provided by the Texas Water Code §26.019 and §26.136.

X. Standard Provisions

- A. This authorization is granted in accordance with the rules and orders of the commission and the laws of the state of Texas.
- B. Acceptance of this authorization constitutes an acknowledgment and agreement that the producer, provider and user will comply with all the terms, provisions, conditions, limitations and restrictions embodied in this authorization and with the rules and other orders of the commission and the laws of the state of Texas. Agreement is a condition precedent to the granting of this authorization.

XI. Service Area Map



PARKHILL SMITH & COOPER



RECEIVED
FEB 20 2013
by Quality Applications Team

BIG SPRING WWTP

Date: 02/14/13
Sheet: 1 OF 1

Issue:
Project No: