

Tres Rios Wastewater Reclamation Facility
Aquifer Protection Permit No. P-100630
Place ID 429, LTF No. 85762
Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit (APP) for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards (AWQS) at the Point of Compliance (POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

II. Permittee & Facility Location:

Pima County Regional Wastewater Reclamation Department
7101 N. Casa Grande Highway
Tucson, Arizona 85743

III. Facility Description:

The permittee is authorized to operate the Tres Rios Wastewater Reclamation Facility (WRF), formerly known as Ina Road WRF, with a capacity to collect and treat a maximum average monthly flow of 50.0 million gallons per day (mgd). The WRF consists of two treatment trains (the East Plant and the West Plant), one shared upgraded headworks, four emergency influent overflow storage basins, a chlorine contact basin as needed, and a solids handling facilities. The influent wastewater flows through the common headworks of the East and West treatment trains, to three (3) coarse screens, an influent pump station with four (4) pumps, four (4) fine screens, and four new grit chambers.

The East Plant treatment process consists of three primary clarifiers, the 8.3 mgd 5-stage Bardenpho treatment train, the retrofitted 16.7 mgd Bardenpho treatment train, four (4) secondary clarifier and a chlorine contact basin. The West Plant treatment process will consist of four (4) primary clarifiers, the 25 mgd 5-stage Bardenpho treatment train, four (4) secondary clarifiers, and a chlorine contact basin. The treatment system contains a third chlorine contact basin for the combined flows from the East and West treatment trains and will be used as needed. All of the effluent will be nitrified, de-nitrified, and chlorinated. The effluent may be disposed to the Santa Cruz River under a valid AZPDES permit No. AZ0020001 and/or used for beneficial purpose under a valid Recycled Water Permit. Effluent that is not disposed of, under a valid AZPDES permit will be de-chlorinated. During emergencies, the wastewater may be routed to four emergency influent overflow storage basins.

IV. Amendment Description:

The purpose of the amendment is to terminate odor monitoring for Hydrogen Sulfide (H₂S) at the secondary clarifiers. Specifically, this means deleting the following from the permit:

- 2.6.1.1 Contingency Requirements for Odor Control
- 2.7.4.1 H₂S Monitoring Exceedance and Compliance Report
- Requirement for maintenance of odor monitoring as designed in Table 11: FACILITY INSPECTION AND OPERATIONAL MONITORING

This monitoring was added to the permit because the WRF did not meet the odor setback requirement specified in A.A.C. R18-9-B201(I), and H₂S monitoring at the secondary clarifiers was added to the permit in 2013 as a contingency requirement following negotiations between ADEQ and PCRWRD to demonstrate that the clarifiers do not produce odors.

The monitoring of the secondary clarifiers is being removed based on the following considerations:

1. Monitoring results between January 2014 and June 2020, the daily average H₂S levels exceeded the 24 ppb permit limit on a total of 7 days, indicating that the plant met the compliance criteria 99.7 percent of the time. PCRWRD also stated that these occurrences do not appear to have been due to any emissions from the active clarifiers. **This verifies PCRWRD's original assertion that the secondary clarifiers do not produce odors.**
2. This facility does not meet the setback requirement because of the highway right of way on Ina Road, and a small parcel of state-owned vacant land. All other properties within 1,000 feet of the secondary clarifiers are owned by the permittee.
3. PCRWRD will continue to capture, treat, and monitor H₂S throughout the facility, but not specifically at the secondary clarifiers.
4. The Pima County DEQ Air Quality permit for this facility (ATO 6205) requires control of H₂S, including a prohibition on causing ambient air at any occupied place outside the fenceline to exceed 0.03 parts per million H₂S.

The permit category for this amendment was determined to be an "Significant Amendment" due to reduction in monitoring as per A.A.C. R18-9-A211(B)(4).

V. Regulatory Status:

The facility was in compliance with the permit during latest inspection conducted on November 6, 2019.

VI. Best Available Demonstrated Control Technology (BADCT):

The WRF was designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204. The PCRWRD implements an Industrial Wastewater Pretreatment ordinance to limit pollutant concentrations in industrial

wastewaters entering the WRF. The facility has met the new facility BADCT requirement for pre-treatment as per A.A.C. R18-9-B204(B)(6)(b).

The treatment facility shall not exceed a maximum seepage rate of 550 gallons per day per acre for all containment structures within the treatment works.

VII. Compliance with Aquifer Water Quality Standards (AWQS):

To ensure that site operations do not result in violation of AWQS at the POC, representative samples of the effluent will be collected downstream of chlorine contact chamber (see Section 4.2, TABLE 8: ROUTINE DISCHARGE MONITORING, in the permit).

Groundwater monitoring is required under this permit per Section 4.2, TABLE 10: GROUNDWATER MONITORING for *E. Coli*, nitrogen species, metals and organic compounds.

Facility inspection and operational monitoring will be performed on a routine basis (see Section 4.2, TABLE 11: FACILITY INSPECTION AND OPERATIONAL MONITORING, in the permit).