

**TOWN OF FLORENCE SOUTH WATER RECLAMATION FACILITY**

Aquifer Protection Permit No. P-100370

Place ID 854, LTF No. 65685

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:**

Permittee: Town of Florence

Facility Location: 100 South Plant Road, Florence, Arizona, 85132

**III. Facility Description:**

The permittee is authorized to operate the Town of Florence South Water Reclamation Facility (WRF) with an average daily flow of 2.5 million gallons per day (mgd). The facility treats residential and industrial discharges. The process consists of an influent pump station, a fine screen, grit removal, three (3) sequencing batch reactors (SBRs) units with nitrification/denitrification, a post-equalization tank, two (2) disk filters, an ultraviolet (UV) disinfection unit, an aerobic sludge digester, a belt press for sludge dewatering, and an effluent pump station. Chlorination/dechlorination will be used as a back-up to UV disinfection. Sludge, including screenings, grit, and scum shall be hauled off-site to a state-approved facility.

From the influent sewer, wastewater travels through the influent pump station to the fine screen and grit removal chamber. The influent pump station includes four (4) 40-HP lift station pumps. The screened wastewater goes through flow splitters that split the flow into the three sequencing batch reactors (SBRs). Each of SBR consists of a fixed fine bubble diffuser, a 25-HP AQUA DDM floating mixer, a decanter, and a 7.5-HP submersible sludge waste pump with VFD. From the SBRs, water travels to the post equalization tank. The three (3) 20-HP turbine effluent pumps, pump water from the post equalization tank to disk filters and then to the UV disinfection unit. The sludge pumps in each of the SBR basin, pump sludge into the aerobic digester tank and then to the belt press for sludge dewatering. Sludge, including screenings, grit, and scum are hauled off-site to a state-approved facility.

The facility is rated as producing Class B+ reclaimed water (A.A.C. R18-11, Article 3). Effluent will be discharged to the three recharge basins, or disposed to the Gila River under a valid AZPDES

(AZ0025208) permit or utilized for beneficial purposes under a valid Recycled Water Permit (A.A.C. R18-9, Article 7).

The effluent can only be discharged to the Gila River or for reuse when chlorination/de-chlorination will be used as back up to UV disinfection. The effluent cannot be discharged through recharge basins during the failure or maintenance of UV disinfection unit as the WRF does not have pipeline constructed to discharge through recharge basins upon chlorination/de-chlorination.

All industrial hookups and other non-residential hookups to the treatment system shall be authorized according to the applicable federal, state or local regulations.

#### **IV. Amendment Description:**

The purpose of this amendment is to:

1. Upgrade current sequencing batch reactors (SBRs) by replacing the Submersible Aerated Mixers (SAMs) with fixed fine bubble diffusers and floating mixers,
2. Install sludge pumps and new decanters in the SBR units,
3. Update Closure Costs/FA,
4. Removal of alert levels and aquifer quality limits in upgradient POC well #1,
5. Submittal of CSIs 1-3 for ECOCs for Recharge Basins 1A, 1B, and 1C.

The permit category for this amendment was determined to be an “Significant Amendment” as per A.A.C. R18-9-A211(B)(4).

#### **V. Regulatory Status**

The facility was last inspected on June 22, 2022 and was issued a notice of violation (NOV), Case ID 205788, on 7/6/2022. The NOV was closed on October 25, 2022.

#### **VI. Best Available Demonstrated Control Technology (BADCT):**

The WRF shall be designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204. The facility shall meet the performance requirement for industrial pre-treatment as per A.A.C. R18-9-B204 (B)(6)(b).

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

Routine discharge monitoring is required per Permit Section 4.2, Table 9. The Facility shall monitor for flow, *E.coli*, total nitrogen, total metals, VOCs and SVOCs.

The treatment facility is rated as producing reclaimed water meeting the Class B+ Reclaimed Water Quality Standards (A.A.C. R18-11, Article 3) and may be used for any allowable Class B, or C use under a valid reclaimed water permit (A.A.C. R18-9, Article 7). The facility monitors the reclaimed water per Permit Section 4.2, Table 10 for *E.coli* and total nitrogen.

The facility is required to monitor groundwater quality at the downgradient POC #2 according to Permit Section 4.2, Table 12 for nitrogen species, total coliform, water level, dissolved metals, and VOCs and SVOCs.