Town of Clifton Wastewater Treatment Plant
Aquifer Protection Permit No. P-100973
Place ID 1218, LTF No. 78072
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:

The facility is located on the east side of and adjacent to the San Francisco River in Clifton, in Greenlee County, Arizona.

III. Facility Description:

The permittee is authorized to operate Town of Clifton Wastewater Treatment Plant (WWTP) with a capacity to treat 0.2 million gallons per day (mgd) of flow upon construction of the Upgraded WWTP. The Existing WWTP is rated at 0.175 mgd.

Existing WWTP: The Existing WWTP is rated at 0.175 mgd. The Existing WWTP train included an influent pump station, a clarigester tank, a tricking filter and a lined storage pond. Currently, the clarigester tank and trickling filter is out of service and the Existing WWTP is not operating as originally approved. At present, the raw sewage is pumped and stored in storage pond and then diverted to Morenci Mine WWTP #100193 for treatment and disposal.

Upgraded WWTP: The Upgraded WWTP will be rated at 0.2 mgd and provide Moving Bed Bioreactor (MBBR) system. The treatment train will include a new parshall flume, an existing influent pump station with new upgraded pumps, a fine screen, a MBBR treatment tank partitioned to an equalization tank, MBBR tank, a clarifier, and an aerobic digester. The sludge from the digester will be dewatered in two existing concrete lined sludge drying beds. The effluent will be stored in a storage pond lined with 36-mil synthetic liner. The effluent from the storage pond is pumped to Morenci Mine #100193 using the existing pumps an associated transmission pipeline owned and operated by Freeport-McMoRan Copper & Gold, Inc. The effluent will be further treated at Morenci Mine WWTP and then disposed at the mine site.

The disposition of the effluent after it leaves the effluent pump station at Town of Clifton WWTP shall become the responsibility of Freeport McMoRan Copper & Gold, Inc.

IV. Amendment Description: The purpose of this amendment is to:

- Increase the flow from 0.175 mgd to 0.2 mgd to accommodate the growth in near future.
- Add a new Moving Bed Bio Reactor (MBBR) treatment system consisting of an equalization tank, MMBR tank, a clarifier and an aerobic digester.
    - The Existing WWTP is 60 years old and currently, the trickling filter and clarigester tank are out of service. The facility will be adding a new Moving Bed Bio Reactor (MBBR) treatment system. The existing clarigester tank will be retrofitted for a new treatment system. The modification and partition walls will be constructed in a clarigester tank to create an equalization tank, MBBR tank, a clarifier and an aerobic digester.
- Replace the existing pumps with a new upgraded pumps at influent pump station, to replace the existing manual screen with a new fine screen and to replace the existing piping for conveyance of sludge to the existing sludge drying bed.
- Remove the monitoring requirements for total nitrogen and metals for Existing WWTP from the permit.
    - The Existing WWTP is currently out of operation and the treatment components are out of operation and raw sewage is stored in storage pond prior to sending to Morenci Mine. As currently no treatment of sewage is done at the WWTP, the monitoring requirements of total nitrogen and metals has been removed.
- Set the monitoring frequency to annually for total nitrogen and metals for Upgraded WWTP.
- Change the inspection frequency for effluent storage pond freeboard from monthly to weekly per the current permit framework.
- Add the inspection requirements for sludge drying bed freeboard and effluent storage pond liner integrity per the current permit framework.

The permit category for this amendment was determined to be an "Significant Amendment" as per A.A.C. R18-9-A211(B)(2)(b) because the facility is increasing the design flow more than 10%.

V. Regulatory Status:

- This amendment application was received on August 11, 2020.

VI. Best Available Demonstrated Control Technology (BADCT):

The WWTP is designed to meet the treatment performance criteria for under alternative BADCT as specified in Arizona Administrative Code R18-9-B204(D). The facility does not discharge the effluent from the WWTP. The effluent is discharged to Morenci WWTP #100193 for further treatment and disposal. All the treatment tanks are constructed of concrete and the effluent storage pond is lined with 36-mil High Density Polyethylene (HDPE) liner.

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

The facility will not be discharging the effluent. The effluent will be diverted to Morenci WWTP for further treatment and disposal. Representative samples of the effluent will be collected at the effluent storage pond (see Section 4.2, Table 7, in the permit).

Facility inspection and operational monitoring will be performed on a routine basis (see Section 4.2, Table 8, in the permit).