

CITY OF PEORIA – BUTLER DRIVE WATER RECLAMATION FACILITY
Aquifer Protection Permit No. P-105401
Place ID 19869, LTF No. 81764
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:

City of Peoria
8660 N. 79th Avenue
Peoria, Arizona 85345
Maricopa County

III. Facility Description:

The permittee is authorized to operate an 11.5 million gallons per day (MGD) water reclamation facility (WRF), based on a maximum monthly average. The WRF treatment process consists of an influent pump station, a headworks facility that includes grit removal and fine screens, activated sludge secondary treatment with de-nitrification, membrane filtration, and ultraviolet disinfection. Sludge from the aeration basins will be thickened by using a polymer and dewatered in centrifuges. The dewatered sludge will be discharged to roll-off type transport containers, and ultimately disposed off-site.

The effluent may be used under a valid reclaimed water permit or discharged to the New River under emergency conditions as regulated under AZPDES Permit No. AZ0025119. The effluent may be conveyed to the off-site Salt River Project (SRP) New River-Agua Fria River Underground Storage project (NAUSP) for recharge under APP Permit No. P-105479. Effluent may also be directed to a new ASR well (ASR-1), installed at the Butler Drive WRF. The permittee may amend this permit to discharge effluent off-site for future recharge using vadose zone wells located within the City limits or to Aquifer Storage and Recovery wells, under separate permits.

The depth to groundwater is approximately 180 feet below the recharge facility and the direction of groundwater flow is to the northwest.

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. In the Groundwater Monitoring Table, reduce sampling and reporting frequency for metals (currently quarterly) and VOCs (except TTHMs) (currently semi-annually) to annually.

- a. The Facility has demonstrated that there have been no exceedances of AQLs for metals and VOCs (with the exception of Trihalomethane [TTHMS]) in their Groundwater Monitoring and therefore ADEQ agrees to reduce the sampling and reporting frequency for metals and VOCs (except TTHMs) to annually. The sampling and reporting frequency will remain the same from the previous permit for Discharge Monitoring and Reclaimed Monitoring.
2. Change compliance point location from BD-PZ-1 to BD-POC-1 for water level monitoring.
 - a. Due to the shallow well completion depth of BD-PZ-1 and that the well is dry, BD-POC-1 is a more appropriate monitoring point for water levels at the Facility.
3. Revise Enteric Virus units from PFU to MPN in the Reclaimed Monitoring Table and remove Enteric Virus monitoring from the Groundwater Monitoring Table.
 - a. ADEQ agrees to revise the Enteric Virus units from PFU to MPN in the Reclaimed Monitoring Table. ADEQ agrees to remove Enteric Virus Monitoring from the Groundwater Monitoring Table as this is not required in our current framework, additionally the Facility is monitoring for Enteric Virus in their Reclaimed Monitoring and treating water to Class A+ standards therefore there is not reasonable potential for Enteric Virus to impact groundwater at the Site.

The permit category for this amendment was determined to be a “Significant Amendment” as per A.A.C. R18-9-A211(B)(4): “The permittee requests and the Department agrees to less stringent monitoring that reduces the frequency in monitoring or reporting or reduces the number of pollutants monitored, and the permittee demonstrates that the changes will not affect the permittee’s ability to remain in compliance with Articles 1 and 2 of this Chapter.”

V. Regulatory Status

The facility was last inspected on September 26, 2016 and was found to be in compliance with the APP and Arizona Rules and Statutes.

VI. Best Available Demonstrated Control Technology (BADCT):

The treatment facility 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).

Underground storage and recovery projects are exempt from BADCT as per A.A.C. R18-9-A201(C). The treatment facilities supplying the effluent for recharge under this permit have APPs and meet BADCT requirements.

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

To ensure that site operations do not violate Aquifer Water Quality Standards at the point of compliance, representative samples of the effluent shall be collected at the point of discharge from the ultra violet disinfection channel. The permittee shall monitor the effluent daily for E.coli, monthly for total nitrogen, quarterly for metals, and semi-annually for VOCs (see Section 4.2, Table 7 in the permit). Effluent flows will be measured at the flow meters for the NAUSP, ASR-1, and Reuse. Discharges to the AZPDES outfall are under emergency conditions. If the total flow for the AZPDES discharges in a calendar year exceeds 300 million gallons (mg) per year (10.0 mgd, yearly average flow, x 30 days), the facility shall request a significant permit amendment, within 30 days of such an exceedance to install a monitor well located at POC #3 below the discharge into the New River, All discharges to the New River will be monitored daily

for Nitrate, total Nitrogen and E.coli as per Section 4.2, Table 9, Contingency Monitoring per Section 2.6.2.1.1.

The WRF is rated to produce reclaimed water meeting the Class A+ Reclaimed Water Quality Standards and can be used for any allowable use in that class under a valid reclaimed water permit (A.A.C. R18-9, Article 7).

To ensure that site operations do not result in violation of Aquifer Water Quality Standards at the point of compliance, the permittee will monitor the groundwater at the POC-1 well monthly for nitrogen species and Total Coliform, and annually for metals, annually for VOCs and SVOCs (with the exception of semi-annually monitoring for TTHMs). Groundwater monitoring will be conducted as per Section 4.2, Table 10, in the permit. POC-1 shall monitor the water level within the screened interval with the AL set at 50 ft-bgs. Water levels shall be monitored quarterly and recorded in the logbook.

Facility inspections and operational monitoring shall be performed on a routine basis (see Section 4.2, Table 11 in the permit).

The Points of Compliance (POCs) have been established at the following locations:

Table 1: POINT(S) OF COMPLIANCE				
POC #	POC Location	Latitude (North)	Longitude (West)	ADWR #
1	Approximately 210 feet downgradient of ASR- Well	33° 33' 44" N	112° 13' 57" W	55-225723
2	Northwest corner of the WRF (Conceptual Well)	33° 33' 46" N	112° 13' 54" W	TBD
3	Within 750 feet of the discharge point into the New River (Conceptual Well)	33° 31' 52" N	112° 31' 17" W	TBD

Groundwater monitoring is required at POC Well #1. POC Wells #2 and #3 are conceptual wells, monitoring is not required except as a contingency action. Water level monitoring is required at well POC #1 to monitor the water level within the screened interval with the AL set at 50 ft-bgs. Water levels shall be monitored quarterly and recorded in the logbook.

The director may require an amendment of this permit to install a monitoring well if there is cause or concern that groundwater quality may be impacted at the POC. The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.