Fountain Hills Sanitary District Wastewater Treatment Plant (WWTP)
Aquifer Protection Permit No. P-101563
Place ID 1521, LTF No. 82485
SIGNIFICANT AMENDMENT

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an amendment to the 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:

Name of Permittee:	Fountain Hills Sanitary District
Mailing Address:	16941 East Pepperwood Circle Fountain Hills, Arizona 85268
Facility Name and Location:	Fountain Hills Sanitary District Wastewater Treatment Plant 16941 East Pepperwood Circle Fountain Hills, Arizona 85268 Maricopa County

III. Facility Description:

The Fountain Hills Sanitary District Wastewater Treatment Plant (WWTP) has the capacity to collect and treat up to a maximum monthly average flow (MMAF) of 3.3 million gallons per day (mgd) and an average annual daily flow (AADF) of 2.9 mgd of wastewater. The facility consists of a Wastewater Treatment Plant (WWTP) and an Advanced Water Treatment Facility (AWTF), which provides ultrafiltration and disinfection for up to 2.9 mgd of effluent. The WWTP and the AWTF are classified as producing Class A+ reclaimed water pursuant to A.A.C. R18 11 Article 3.

The WWTP process consists of an influent pump station with new pumps, headworks with fine screens and grit removal, a flow equalization basin, two aeration basins, three secondary clarifiers, rapid mix-flocculation basins, disk filters, a chlorine contact basin and an effluent pump station. The sludge handling process includes two aerobic digesters, two new disk thickeners and two new screw presses for sludge dewatering. In case of an emergency, a lined basin located on-site may be used to store excess effluent or improperly treated wastewater.

The AWTF process consists of membrane feed pumps, strainers, a 3.0 mgd ultrafiltration system, an ultraviolet (UV) disinfection system, a backup chlorination system, and a product water pump station. Effluent is discharged from either the WWTP or the AWTF, but is not typically discharged from both locations at the same time.

Effluent may be reused for beneficial purposes under a valid reclaimed water permit. Up to 2.9 mgd of unchlorinated effluent from the tertiary filters may be routed to the AWTF for ultrafiltration and UV disinfection. Effluent from the AWTF is then injected into the aquifer via five (5) aquifer storage and recovery (ASR) wells or reused for beneficial purposes. Groundwater recovered through the ASR wells (ASR-1, ASR-2, ASR-3, ASR-4 and ASR-5) is restricted to non-potable uses only.

Water recharged to the aquifer may later be recovered via the (ASR) wells. Aquifer storage of effluent is limited to 2,240.6 acre-feet per year under an Arizona Department of Water Resources (ADWR) Underground Storage Facility (USF) permit.

Sewage sludge is thickened, digested, dewatered, and hauled off-site for disposal. 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:

1. To remove the monitoring requirement for Enteric Virus from the Groundwater Monitoring Table because of inconsistency between laboratories methodology of Enteric Virus testing and the history of non-detect results of Enteric Virus in their discharge monitoring and groundwater monitoring.
2. To add total nitrogen and fecal coliform monitoring to Reclaimed Water Monitoring Table because in the previous permit, the Total Nitrogen and Fecal Coliform monitoring was missed. This error will be corrected by adding Total Nitrogen and Fecal Coliform in this amendment.
3. Change the monitoring of Total Coliform to Fecal Coliform in Groundwater Monitoring Table to focus monitoring on bacteria that presents a danger to public health.

This was determined to be a significant amendment because “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” as described in A.A.C. R18-9-A211.B.4.

V. Regulatory Status

This is an existing facility. An Individual APP was issued on October 4, 1996. Significant Amendments were issued on October 23, 2000, April 24, 2002, May 24, 2002, March 24, 2008, and on September 14, 2010. Other Amendments were issued on October 28, 2013, and on July 27, 2017.

An application for this Significant Amendment was received by ADEQ on May 14, 2020.

The latest inspection report (No. # 313109) dated December 4, 2018, indicated that the facility was found to be in compliance with the APP and Arizona rules and statutes.

VI. Best Available Demonstrated Control Technology (BADCT):

The WWTP 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 requirements for pretreatment by conducting monitoring as per R18-9-B204(B)(6)(b)(iii).

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

The Fountain Hills Sanitary District WWTP effluent is required to meet the Discharge Limits in Section 4.2, Table 7, 8, 9, and 10.

The permittee shall monitor the effluent at the WWTP for flow and representative samples of the effluent shall be collected downstream of the point of discharge from the chlorine contact chamber, daily for fecal coliform, monthly for total nitrogen, quarterly for metals, semi-annually for volatile and semi-volatile organic compounds

The permittee shall monitor the effluent at the AWTF for flow and representative samples of the effluent shall be collected at the point of discharge from the ultraviolet disinfection unit or the backup chlorination unit at the AWTF daily for fecal coliform, monthly for total nitrogen, quarterly for metals, semi-annually for volatile and semi-volatile organic compounds.

Reclaimed Water shall be monitored for Fecal Coliform and Total Nitrogen as per Section 4.2, Table 9 and for Turbidity as per Section 4.2, Table 10.

Routine groundwater monitoring shall be performed as per Tables 11 and 12.

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

POC #	POC Type	Latitude (North)	Longitude (West)	ADWR Well Registration Number	Screen Interval[1] (ft bgs)
FHMW-1[2]	Not Applicable	33° 35′ 40″ N	111° 42′ 15″ W	55-576763	429-489
FHMW-2	Hazardous	33° 36′ 11″ N	111° 42′ 51″ W	55-576764	426-486
FHMW-4R[3]	Hazardous	33° 36′ 05″ N	111° 42′ 32″ W	55-907272	410-420 430-450 460-470 480-490

1Construction information came from Imaged Records from the ADWR Website.
2FHMW-1 is not a POC well; it only monitors water levels
3The former POC Well FHMW-4 was replaced by POC Well FHMW-4R

FHMW-5	Hazardous	33° 35′ 54″ N	111° 42′ 52″ W	55-579820	430-490
FHMW-6	Hazardous	33° 36′ 09″ N	111° 43′ 10″ W	55-907271	430-510

Groundwater monitoring is required at the POCs as described in Section 4.2, Table 12. The Director may amend this permit to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need. Groundwater recovered through the Fountain Hills Sanitary District's aquifer storage and recovery wells (ASR-1, ASR-2, ASR-3, ASR-4 and ASR-5) shall be restricted to non-potable uses only.