



Fact Sheet

Aquifer Protection Permit #P-105904
 Place ID 128417, LTF 44704
 Superstition Sunrise RV Resort Wastewater
 Treatment System (WWTS)

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to A.A.C. R18-9-A213. This document gives pertinent information concerning the issuance of the permit. 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 at the Point of Compliance; and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). The purpose of BADCT is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., local subsurface geology) to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer, or to keep pollutants from reaching the aquifer.

I. FACILITY INFORMATION

Name and Location

Name of Permittee:	Superstition Sunrise RV Resort
Mailing Address:	702 S. Meridian Road Apache Junction, Arizona 85220
Facility Name and Location:	Superstition Sunrise RV Resort Wastewater Treatment System 702 S. Meridian Road Apache Junction, Arizona 85220 (Maricopa County)

Regulatory Status

The Superstition Sunrise RV Resort WWTS is an existing facility defined in A.R.S. § 49-201(16).

Facility Description

The Superstition Sunrise RV Resort WWTS is an existing facility defined in A.R.S. § 49-201(16) which, has been operating without an Aquifer Protection Permit (APP). This Individual APP shall authorize Superstition Sunrise RV Resort to operate the Superstition Sunrise RV Resort Wastewater Treatment (Septic) System (WWTS), a 0.095 million gallons per day (mgd) facility. The Wastewater system consists of 15 separate on-site Wastewater Treatment (septic) Systems in which the effluent is discharged to 58 seepage pits for sub-surface disposal.

On-site septic systems "A" through "M", shall serve the 1119 RV spaces. System, "AA" shall serve the administration/recreation building, and system "BB" shall serve the laundry/post office building, indoor pool, cabana/hobby shop and maintenance building. All of the septic systems have two 5,000-gallon capacity septic tanks each, except for system "A", which has only one 8,000-gallon tank. The number of seepage pits at each septic tank system varies from two to seven.

The effluent quality does not meet performance requirements of A.A.C. R18-9-B 204. Under A.A.C. R18-9-B 205, the existing system is required to work towards meeting the treatment performance requirements of A.A.C. R18-9-B204, which is subject to the maximum spending requirement of \$1 per gallon per day (gpd). The permittee has doubled the spending requirement by installing a 610-foot Point of Compliance (POC) monitoring well downgradient from the facility and the addition of a Nitrex™ denitrifying system to treat the wastewater from septic systems “I” and “H”. This permit shall bring the maximum estimated design flow of the existing septic tank systems “I” and “H” to 2,700 gpd.

The depth to groundwater is approximately 550 feet below ground surface (bgs) and the direction of groundwater flow is toward the west. The POC well shall be constructed to an approximate depth of 610 feet bgs and the screen interval shall be 100 feet long and extend from 40 feet above the water table to 60 feet below the water table. The POC well will be constructed at the southwest corner of the RV Resort, in an area outside of the softball playing field and the storm runoff retention basin.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

The Superstition Sunrise RV Resort WWTS is an existing 0.095 mgd facility defined in A.R.S. § 49-201(16). The applicant has submitted wastewater system design improvements intended to bring the facility closer to, or within the treatment performance requirements of R18-9-B204. A Nitrex™ filter will be installed to serve two of the septic systems, between the septic tank and the seepage pits. Nitrex™ filters contain a patented nitrate-reactive media that denitrifies nitrate in wastewater and converts it to nitrogen gas.

According to the manufacture, for septic tank applications, the Nitrex™ system requires an oxidative pretreatment step (nitrification) to convert ammonium (NH_4^+) to nitrate (NO_3^-) before the Nitrex™ filter can perform the reductive denitrification. The system shall have built-in pretreatment.

III. HYDROGEOLOGIC SETTING

The Facility is located in the Eastern Salt River Valley (ESRV) sub-basin of the Phoenix Active Management Area. The sub-basin covers approximately 1,710 square miles and consists of consolidated to semi-consolidated deposits 3.3 to 15.8 million years old and may get up to 9000 feet in parts of the sub-basin. Located in the eastern half of the AMA, it is a broad, gently sloping alluvial plain bounded on the north and east by the New River, McDowell, Utery, Goldfield, and Superstition Mountains; on the south by the Santan and Sacaton Mountains; and on the west by the South Mountains, the Papago Buttes, the Phoenix Mountains, Union Hills, and the Deem Hills.

The basin fill deposits are subdivided into three hydrogeologic units. The Upper Alluvial Unit (UAU) is composed of silt, sand and gravel. The UAU is generally 200 to 300 feet thick in the ESRV and thins towards the sub-basin margins. It is dewatered throughout the basin. The Middle Alluvial Unit (MAU) underlies the UAU and consists mainly of clay, silt, mudstone, gypsiferous mudstone, with interbedded sand and gravel. The MAU thickens towards the center of the sub-basin. The Lower Alluvial Unit (LAU) overlies the Hydrologic Bedrock Unit (HBU) and the RED Unit. It is primarily conglomerate and gravel near basin margins grading to mudstone, gypsiferous

and anhydrite in the central basin. The unit contains interbedded volcanics locally and consists of alluvial fan deposits at the mountain fronts grading to fluvial, playa, and evaporate deposits in the central basin. The LAU ranges in thickness from 0 feet at basin margins to several thousands of feet in the central basin area.

Prior to extensive development, groundwater underflow entered the ESRV basin from the north, south, and southeast. Groundwater flowed generally east to west within the sub-basin toward and along the Salt and Gila Rivers. Since 1940 when extensive groundwater pumping to meet growing agricultural and municipal water demand began, water levels have declined significantly. Three large cones of depression in the Scottsdale, Mesa, and Santan Mountain areas have been created by agricultural pumping. Water levels declined by more than 400 feet near the Santan Mountains and 350 feet east of Mesa (Laney, Ross, and Litten, 1978).

Depth to groundwater in 1998 was approximately 550 feet below land surface near the Superstition Mountains. Today, most groundwater flows toward the large cone of depression west of the facility.

IV. STORM WATER/SURFACE WATER CONSIDERATIONS

The WWTS is outside the 100-year flood plain.

V. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Section 3.0 in the permit requires the permittee to submit an Engineer's Certification of Completion within 90 days of completing construction.

Monitoring and Reporting Requirements

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and Chain-of-Custody procedures shall be followed, in accordance with currently accepted standards of professional practice. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) PART 136 for guidance in this regard. Copies of laboratory analyses and Chain-of-Custody forms shall be maintained at the permitted facility. Upon request these documents shall be made immediately available for review by ADEQ personnel.

Points of Compliance (POCs)

The Points of Compliance (POCs) are designated at the following locations:

POC #	Descriptive Location	Latitude	Longitude
1	The southwest corner of the RV Resort	33° 24' 4.32" N	112° 35' 17.2" W

Groundwater monitoring is required at the POC.

Monitoring and Reporting Requirements

Effluent, groundwater, and recharge monitoring are required for this facility and are recommended to monitor as follows:

Monitoring Point	Point Identification	Latitude	Longitude
1	Effluent Discharge from Nitrex™	33° 24' 5.9"N	111° 35' 15.1"W
2	POC #1 The southwest corner of the RV Resort	33° 24' 4.32" N	112° 35' 17.2" W

VI. COMPLIANCE SCHEDULE

A compliance schedule is included in Section 3.0 of the permit which includes the requirement for, Installation of a POC well within 60 day of permit issuance, Ambient Water Quality Monitoring and Setting of Alert Levels (ALs) and Aquifer Quality Limits Groundwater Monitoring at POC-1, Routine Groundwater Quality Report, and Ambient Groundwater Quality Report in a tabulated form to ADEQ for review with an application for an “Other Amendment” to incorporate ALs and AQLs into the permit.

VI. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

Superstition Sunrise RV Resort has demonstrated the technical competence necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A202(B).

The permit requires that appropriate documents be sealed by an Arizona Registered Geologist or Professional Engineer. This requirement is a part of an ongoing demonstration of technical capability. The permittee is expected to maintain technical capability throughout the life of the facility.

Financial Capability

Superstition Sunrise RV Resort has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-(C)(3). The permittee shall maintain financial capability throughout the life of the facility. The dollar amount demonstrated for closure and post closure cost estimates is \$95,000.00. The financial capability was demonstrated through A.A.C. R18-9-A203(C)(3).

Zoning Requirements

Superstition Sunrise RV Resort has been properly zoned for the permitted use and the permittee has complied with all zoning ordinances in accordance with A.R.S. § 49-243(O) and A.A.C. R18-9-A201(A)(2)(c).

VIII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-108(A))

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft permit or other significant action with respect to a permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-109(A))

The aquifer protection program rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C. R18-9-109(B))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

IX. ADDITIONAL INFORMATION

Additional information relating to this permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division - Groundwater Section - APP and Reuse Unit
Attn: Monica Phillips
1110 West Washington Street, Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771-2253