



Fact Sheet

Aquifer Protection Permit #P-100665
 Place ID 7505, LTF 43614
 City of Coolidge Wastewater Treatment Plant
 SIGNIFICANT AMENDMENT

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an amendment to the 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:	City of Coolidge
Mailing Address:	355 South 1 st Street Coolidge, Az. 85228
Facility Name and Location:	City of Coolidge Wastewater Treatment Plant 802 S Kenworthy Rd Coolidge, Arizona 85228 Pinal County

Regulatory Status

A Notice of Disposal (NOD) was received for this facility on August 27, 1994. The original Aquifer Protection Permit (APP) was issued for this facility on March 21, 1999. An Other APP Amendment was issued on November 25, 2003. A Significant APP Amendment was issued on November 18, 2005. An application for this Significant Amendment was received March 13, 2007. There are no active Notices of Violation (NOVs), and the permittee is considered to be in compliance with the existing APP.

Facility Description

The permittee is authorized to operate the City of Coolidge Wastewater Treatment Plant at a flow rate of 1.0 million gallons per day (mgd) during Phase I of the permit, and 2.0 mgd during Phase II. Incoming wastewater flows through an influent pump station to a headworks with a magnetic flow meter, then to four treatment lagoons (3A, 3B, 2B, and 1B) connected in series. The effluent from the treatment ponds will be chlorinated and stored in two storage ponds with a capacity of 18.2 million gallons, prior to distribution for beneficial reuse.

The WWTP will produce reclaimed water meeting Class C Reclaimed Water Standards (A.A.C. R18-11, Article 3) that may be delivered for beneficial use under a valid reclaimed water permit under A.A.C. R18-9, Article 7.

The WWTP has the capacity to collect and treat a maximum average monthly flow of 2.0 million gallons per day (mgd) of domestic wastewater. The 370 acre reuse site can accept 1.0 mgd of reclaimed water. Therefore, the permitted flow limit during Phase I is 1.0 mgd (Section 4.2, Table IA-1 in the APP). Once additional acreage is added to increase the reclaimed water capacity to a total of 2.0 mgd and ADEQ issues an amended reclaimed water permit, this permit will enter Phase II (Section 3.0, Compliance Schedule and Section 4.2, Table IA-2), with a permitted flow limit of 2.0 mgd.

Sludge shall be land applied on a permitted sludge disposal area, or hauled to a state-approved landfill for management and disposal. Screenings and grit shall be hauled to a state-approved landfill for management and disposal. In addition to the APP conditions pertaining to treatment and disposal of sewage sludge, the permittee must also comply with the requirements for sewage sludge disposal, use, and transportation in 40 Code of Federal Regulations (CFR) Part 503 and 18 A.A.C. 9, Article 10.

The depth to groundwater is approximately 60 feet below the surface, and the direction of groundwater flow is toward the northwest. The WWTP was designed, constructed, and located according to plans approved by the Arizona Department of Health Services.

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

The site includes the following permitted discharging facilities:

Facility	Latitude	Longitude¹
City of Coolidge WWTP	32° 58' 10" N	111° 32' 47" W

Amendment Description

The purpose of this amendment is to make room for the first phase of construction of a new mechanical Water Reclamation Facility, to be built in the same location as the current lagoons. The facility currently treats wastewater using six treatment lagoons (1A, 1B, 2A, 2B, 3A, 3B) connected in parallel. Under this permit Lagoons 1A and 2A will be removed from service, the remaining lagoons (3A, 3B, 2B, and 1B) will be connected in series, rather than parallel operation, and the aeration system will be upgraded. Lagoons 1A and 2A are to be closed under a closure plan, as per Section 3.0 (Compliance Schedule). After lagoons 1A & 2A are closed, a 2.0 mgd mechanical plant will be constructed in the footprint of the closed lagoons under APP No. P-105911. Phase I of this amendment sets the permitted flow limit to 1.0 mgd, and Phase II sets the permitted flow limit to 2.0 mgd. This permit amendment also changes the frequency of monitoring for Fecal Coliform and Volatile Organic Compounds (VOCs) in Section 4.2, Table

¹ All latitudes and longitudes are in NAD 83

IA-1 and IA-2. In addition, relevant permit language has been changed to conform to the current APP format.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

The WWTP is designed to meet the treatment performance criteria for existing facilities as specified in Arizona Administrative Code R18-9-B205.

Effluent dechlorination is not required. None of the total Trihalomethanes (TTHMs) produced is expected to reach the groundwater because the effluent is stored in large holding ponds that are lined with 40 mil high density polyethylene (HDPE) liner. TTHMs formed in the effluent are expected to volatilize during storage and reuse application.

All the WWTP lagoons and holding ponds are lined with 40 mil HDPE geomembrane liners; therefore, no significant leakage of wastewater or effluent from the WWTP is expected. All effluent will be applied for beneficial use at or below consumptive rates as Class C reclaimed water under a valid reclaimed water permit.

III. HYDROGEOLOGIC SETTING

Hydrogeologic information was derived from ADWR Hydrologic Map Series Report Number 23, *Maps Showing Groundwater Conditions in the Eloy and Maricopa-Stanfield Sub-basins of the Pinal Active Management Area, Pinal, Pima, and Maricopa Counties, Arizona - 1992* by B.A. Hammett with additional on-site information submitted by the applicant. The regional hydrology has been affected in recent decades by the delivery of CAP water and decreasing the volume of groundwater pumped from the Sub-basin.

Geologic setting: The facility is located in the Basin and Range Physiographic Province which is defined by uplifted blocks or mountain ranges with intervening alluvial basins or valleys, created by extensional (pull apart) faulting. The elongated basins and ranges typically trend northwest-southeast and parallel one another. The facility site is located in an alluvial basin composed of alluvium divided into stream alluvium, Upper Basin Fill and Lower Basin Fill. These alluvial units are located over bedrock similar to the mountain ranges bordering the basin. The geologic units of the basin are as follows:

Stream Alluvium: Sediments deposited along surface drainages under recent flow conditions. Consist primarily of unconsolidated sands and gravels within the flood plains of the Gila and Santa Cruz Rivers. Some fine-grained sediments are also present within the flood plains which can be up to several miles wide. The stream alluvium can be up to 100 feet thick.

Upper Basin Fill: Coarse grained alluvial deposits although some fine-grained deposits are present. Alluvium consists of moderately consolidated to unconsolidated gravel, sand, silt and clay with finer materials grading toward the center of the basin. There may be some evaporites. The alluvium was deposited during the latter stages of the Basin and Range disturbance, when the basins were being unfilled and the surface drainages were through-flowing most of the time.

Lower Basin Fill: The lower basin fill is a complex unit consisting of a lower conglomerate unit and an upper fine-grained unit. Basin centers typically contain very fine-grained facies of mostly silt and clay with thick evaporite deposits and gypsiferous mudstones. or a moderately fine-grained facies of mostly silt and clay. Both facies are found in the basins with the very fine-grained facies underlying the moderately fine-grained facies. Grading into the fine-grained basin center facies are coarser sediments, which become increasingly coarser toward the basin margins. These sediments also underlie and interfinger with the fine-grained facies and unconformably overlie the bedrock. Deposition of the lower basin fill occurred during the early stages of the Basin and Range disturbance with fine grained center facies deposited during periods of blockages of surface drainages and formation of playas.

Bedrock: Consists mostly of well-cemented Tertiary age sedimentary rocks which are generally faulted and tilted; deposited prior to the Basin and Range disturbance.

Soils on-site consist primarily of silty sand, silt and clay. These soils are not favorable for recharge basins.

Depth to groundwater was measured at 63' below ground surface in an on-site well (55-591694) on June 11, 2002. The regional groundwater flow direction and gradient is to the northwest.

IV. STORM WATER/SURFACE WATER CONSIDERATIONS

Storm water/surface water considerations for this WWTP included whether the facility was located within a 100-year flood plain, and whether the discharge had the potential to impact nearby surface water drainages. The facility is located in the Lower McClellan Wash-Middle Gila sub-basin of the Middle Gila Surface Water basin, within the headwaters drainage area for McClellan Wash. McClellan wash is an ephemeral stream that flows northwest during storm events. The streambed near the facility has been disturbed by irrigation practices and can no longer be traced until about four miles downstream from the WWTP. The nearest traceable surface water is the westward trending Pima Lateral Canal located about 1.5 miles north of the facility. This canal delivers groundwater and impounded surface water from the Gila River to agricultural areas nearby.

Based on data submitted, the facility is not located within one mile of a 100-year flood plain.

V. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Depth to groundwater in the vicinity of this facility is approximately 60 feet below land surface. Because all of the effluent will be used for beneficial reuse, the groundwater will be protected from contamination due to the diffused areal loading, the nitrogen uptake of plants, and the volatilization of TTHMs in the large storage area and during application for beneficial use.

Monitoring and Reporting Requirements

Pollutants of concern from the WWTP are primarily nutrients, bacteria and TDS

Effluent flow shall be limited to 1.0 mgd in Phase I, and raised to 2.0 mgd in Phase II. Fecal coliform shall be monitored monthly. Volatile organic compounds shall be monitored at a quarterly frequency.

Groundwater monitoring shall be required in this permit. The applicant shall install a monitoring well at POC #2 to collect groundwater samples. Samples will be analyzed monthly for all the parameters listed in permit Table II to determine the ambient groundwater quality. In addition, the groundwater level in ADWR Well No 55-591694 shall be monitored on a monthly basis. Upon completion of the ambient monitoring, the facility shall submit a report reviewing all the data collected and suggesting ALs and AQLs for Table II in a Significant APP Amendment application.

Point of Compliance (POC)

The locations of the hazardous/non-hazardous POCs are determined by an analysis of the PMA, the DIA, and locations and uses of groundwater wells in the area. The POC locations are selected to verify BADCT performance, to allow early detection of potential negative impacts from the WWTP discharges and to protect off-site uses of groundwater. Based on these analyses, the following hazardous/non-hazardous POCs have been designated for this facility.

The hazardous/non-hazardous POCs are identified below:

POC #	POC Location	Latitude	Longitude
1	Approximately 1371 feet east of Lagoon 1B	32° 58' 09" N	111° 32' 28" W
2	Approximately 250 feet northwest of Lagoon 2A.	32° 58' 16" N	111° 32' 48" W

Groundwater monitoring is not required at POC #1, except as a contingency action. Groundwater monitoring is required at POC #2. Initial groundwater monitoring will be conducted to determine Alert Levels (ALs) and Aquifer Quality Limits (AQLs), followed by routine monitoring.

VI. COMPLIANCE SCHEDULE

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Groundwater Section. A copy of the cover letter must also be submitted to the ADEQ Water Quality Compliance Section.

Description	Due by:
<p>3.1 The permittee shall submit for ADEQ approval a closure plan for lagoons 1A and 2A that complies with the requirements of Arizona Revised Statute (A.R.S.) § 49-252(D) and A.A.C. R18-9-A209(B) and (C). The plan shall include a description of the methodologies and procedures to be used to provide the following:</p> <ul style="list-style-type: none"> a. Descriptions and photographs of each of the liners, showing their condition upon removal, b. The depth of visibly impacted soils. c. After the sludge and impacted soils are removed, the City shall collect confirmation soil samples from below the liner to insure that no soils remain that have pollutant concentrations above applicable GPLs and SRLs. Sludge and soil shall be tested for the pollutants in permit Table I. d. A photographic log of the closure activities, to be submitted to the Groundwater Section. e. A report of the volume of sludge and impacted soils removed from each lagoon. f. A characterization of the sludge and impacted soils removed from each lagoon, providing “cradle to grave” waste disposal documentation. If any material is taken away for disposal, documentation shall be provided. g. Contingency plans to be followed if the results of the soil samples are above SRLs or GPLs. 	<p>Within 30 days after the date of permit signature.</p>
<p>3.2 The permittee shall install a groundwater monitoring well at POC #2 according to ADEQ approved plans.</p>	<p>Within 30 days after the date of permit signature.</p>
<p>3.3 The permittee shall submit detailed geologic and well construction logs for the well at POC #2 to the ADEQ Groundwater Section, APP & Drywell Unit. Where identification is possible, the logs should note moisture and the depth at which groundwater is first encountered. The ADWR Registry ID (55 No.) shall be submitted to ADEQ.</p>	<p>Within 60 days after completion of well installation.</p>
<p>3.4 The permittee shall conduct initial groundwater sampling at POC #2 in accordance with AAC R18-9-A202(A)(6) and Section 4.2, Table IIA.</p>	<p>Within 30 days after completion of well construction.</p>

Description	Due by:
3.5 The permittee shall submit an APP Amendment Application with a report of the test results and propose ALs & AQLs for POC #2 for all the pollutants listed in Section 4.2, Table IIA in accordance with A.A.C. R18-9-A202(A)(6) and A.A.C. R18-9-A205.	Within 15 months after the date of permit signature.
3.6 The permittee shall begin routine depth-to-water (DTW) measurements from ADWR Registered Well # 55-591694, located adjacent to the chlorine contact basin. Frequency shall be monthly for 1 year, then quarterly thereafter.	Within 30 days after the date of permit signature.
3.7 The permittee shall cease monitoring under Section 4.2, Table IA-1 and begin monitoring under Table IA-2.	Within 30 days after the signature date of a reclaimed water permit allowing a total of 2.0 mgd of reclaimed water to be delivered.

VII. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

The City of Coolidge 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 WWTP was designed as per the design report prepared and stamped, dated, and signed (sealed) by Dr. Fred E. Goldman, Ph.D., Kennedy/Jenks Consultants, AZ Registered Professional Engineer (Civil) No. 11580, dated December 03, 2004 and subsequent sealed submittals that served as additions to the design report. The permittee is expected to maintain technical capability throughout the life of the facility.

Financial Capability

The City of Coolidge in support of Coolidge WWTP has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The estimated dollar amount demonstrated for financial capability is \$450,000.00. The permittee shall maintain financial capability throughout the life of the facility.

Zoning Requirements

The City of Coolidge WWTP 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 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. 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.

The public notice for this permit was published in the (enter name of publication) on (enter date) under public notice no. (enter public notice number).

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

The Department shall accept written comments from the public before a significant permit amendment is made. The written public comment period begins on the publication date of the public notice and extends for 30 calendar days. 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.

A public hearing was deemed to be (un)necessary for this significant permit amendment. (If a public hearing was held, include the details (location and date) in the final factsheet.)

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: Bob Manley
1110 West Washington Street, Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771-4498