



Fact Sheet

Aquifer Protection Permit #P-105953
 Place ID 129312, LTF 45906
 Black Canyon Wastewater Treatment Plant

The Arizona Department of Environmental Quality (ADEQ) proposes to issue 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:	Mogollon domestic Wastewater Improvement District
Mailing Address:	PO Box 345 Overgaard, Arizona 85933
Facility Name and Location:	Black Canyon Wastewater Treatment Plant 3527 Brenda Way Heber, Arizona 85928

Regulatory Status

An application for an Aquifer Protection Permit (APP) for this facility was received on October 23, 2007. This is a new facility and there are no outstanding compliance issues or violations at the time of permit issuance.

Facility Description

Mogollon Domestic Water Improvement District (MDWID) is authorized to operate the Black Canyon Wastewater Treatment Plant (WWTP) with a maximum average monthly flow of 0.0486 million gallons per day (mgd). The WWTP will be constructed in two phases. Each phase is designed to treat 0.0283 mgd. The WWTP consists of an influent lift station and a package treatment unit called 'Blivet', Model BL4000. Each phase will have an identical Blivet unit. The Blivet unit consists of primary settlement, aerobic treatment, secondary settlement, Blue Nite denitrification sand filter, filter holding tank and UV disinfection. The Blivet unit is capable of removing nitrogen. The Blivet unit will be covered and the influent lift station will be provided with odor control. The WRF meets the required setback of 50 feet. The effluent will be discharged to Black Canyon Wash under a valid AZPDES permit. All the sludge will be hauled off-site for disposal in accordance with state and federal regulations. The depth to groundwater is

approximately 300 feet below ground surface (ft bgs). The groundwater flow direction in the aquifer is from the south to the north.

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.

During the initial start-up period, the facility shall monitor as per Section 4.1, Table I.

The WRP was designed and shall be constructed according to plans approved by the ADEQ Wastewater, Recharge, & Reuse Unit.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

The WWTP is designed to meet the treatment performance criteria for new facilities with a design flow of less than 250,000 gpd as specified in R18-9-B204.

The permittee requested reduction in pathogen removal monitoring from once a day to once a week. As per A.A.C. R18-9-B204 (B)(4)(iii), ADEQ has approved the reduction in monitoring of *E. coli* from daily to weekly. The facility will be provided with continuous UV transmittance monitor as an alternate indicator parameter. The discharge limit for *E. coli* will be 126 CFU/100 ml. The facility will be monitoring *E. coli* daily for a 60-day test period to determine the UV transmittance at the *E. coli* discharge limit. The permittee will be required to submit a permit amendment application after 60-day test period, to set an alert level for UV transmittance as per the Compliance Schedule described in Section 3.0. If the discharge limit (DL) for *E. coli* is exceeded, the permittee shall conduct verification sampling according to the contingency plan described in Section 2.6.2.2.2 of this permit.

III. HYDROGEOLOGIC SETTING

A Hydrogeologic Study was prepared by GeoTrans, Inc. in support of the APP application.

The Black Canyon WWTP is located on the Colorado Plateau. The WWTP is located in the Little Colorado River Watershed and the Chevelon Canyon Sub-basin. The Chevelon Canyon Sub-basin is located in the southern part of the Lower Colorado River Watershed.

The geologic formations observed near the WWTP include the Kaibab Limestone and the underlying Coconino Sandstone. The Coconino Sandstone is approximately 250 to 850 feet thick in northern Arizona. The Kaibab Limestone is the primary bedrock unit and outcrops along the southern edge of the Colorado Plateau along the Mogollon Rim. The Coconino Sandstone outcrops locally along the surface and in deeply incised canyons.

The primary aquifer is the C-Aquifer. The C-Aquifer is composed of the Upper Supai Formation, the Coconino Sandstone and the Kaibab Limestone. Groundwater movement is northward from near the Mogollon Rim and follows the regional dip, north, of the sedimentary rocks. The

Coconino Sandstone is the primary water-bearing unit within the C-Aquifer. The Coconino Sandstone is approximately 500 feet thick in the vicinity of Heber and is partially saturated.

The depth to groundwater at the Black Canyon WWTP is estimated to be approximately 300 ft bgs. The groundwater flow direction in the aquifer in the vicinity of the Black Canyon WWTP is from the south to the north. There are few wells located to the south, up-gradient, of the Black Canyon WWTP. The WWTP would not impact these wells.

IV. STORM WATER/SURFACE WATER CONSIDERATIONS

Stormwater/surface water considerations include whether the facility is located within the 100-year flood plain and whether the discharge has the potential to impact surface water drainages located down-stream of the WWTP.

The WWTP is located within the Black Canyon Wash floodplain and is located one-mile downstream from the confluence of Buckskin Wash and Black Canyon Wash. Both the Buckskin Wash and the Black Canyon Wash are relatively well incised and the 2003 Navajo County Flood Insurance Study states that no flood-control structures have been constructed for the purpose of reducing or eliminating the magnitude of existing flood hazards. A drainage study of Black Canyon WWTP was conducted to update the effective 100-year floodplain and will be used to update the existing Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). Under the current FEMA FIRM, the WWTP is within the 100-year floodplain. Under the new analysis, the WWTP is just outside the 100-year floodplain but is within the 500-year floodplain. According to the application, the discharge point and associated piping are within the 100-year floodplain, and designed to be sacrificed during flooding.

V. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Depth to groundwater at the proposed WWTP is approximately 300 ft bgs and the direction of flow is to the north. The effluent is expected to meet Aquifer Water Quality Standards (AWQS) at the point of discharge. The effluent will be discharged to Black Canyon Wash under a valid AZPDES permit. Groundwater monitoring is not currently required by the permit.

Monitoring and Reporting Requirements

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 from the point of discharge downstream of the UV disinfection unit. The permittee shall monitor the effluent daily for flow rate, weekly for *E. coli*, monthly for total nitrogen, quarterly for metals and for major cations and anions, semi-annually for volatile organic compounds, and annually for radionuclide (see Section 4.2, Table IA in the permit).

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

Groundwater monitoring is not required at the time of permit issuance. Contingency groundwater monitoring shall be performed at the POC monitoring well according to the Compliance Schedule described in Section 3.0.

Point of Compliance (POC)

The location of the contingency POC was determined by an analysis of the pollutant management area (PMA), the discharge impact area (DIA), and groundwater flow direction. The PMA includes the proposed WWTP and the surface expression of the effluent discharge in Black Canyon Wash. The furthest that effluent discharge is expected to reach is 1,610 feet downstream of the point of discharge.

The calculated DIA was estimated to be approximately 84 to 1,018 feet from the toe of the original discharge to the surface and was evaluated at 10, 20, and 50 year time intervals. The contingency POC location was selected to protect off-site uses of groundwater, to verify BADCT performance, and to allow early detection of potential impacts from WWTP discharges. One contingency hazardous/non-hazardous point of compliance has been designated for this facility and was located based upon the average infiltration rate.

The hazardous/non-hazardous POC is located as follows:

POC #	Descriptive Location	Latitude	Longitude
1	Located approximately 640 feet north-northeast of the point of discharge	34° 26' 45.3" N	110° 35' 6.3" W

Contingency groundwater monitoring will be conducted at the Point of Compliance, only if six consecutive sampling events exceed the Discharge Limit (DL) for Routine Discharge Monitoring.

VI. COMPLIANCE SCHEDULE

The following compliance schedule items shall be included in the permit.

Description	Due by:
WWTP Construction:	
The permittee shall submit a signed, dated, and sealed Engineer’s Certificate of Completion in a format approved by the Department that confirms that the facility is constructed according to the Department-approved design report or plans and specifications, as applicable.	Prior to discharging under this permit and within 90 days of completion of construction.

<p>The permittee shall notify discontinuance of start-up plan monitoring.</p>	<p>Within 15 days of the date of the commencement of monitoring under Table IA-1 (Routine Discharge Monitoring).</p>
<p>POC Well:</p>	
<p>The permittee shall notify if discharge Limit (DL) for Routine Discharge Monitoring is exceeded for consecutive sampling events as listed below: Total Nitrogen - six sampling events Metals - two sampling events VOC - one sampling event</p>	<p>Notify ADEQ within 30 days of the last sampling exceedance.</p>
<p>The permittee shall install POC monitoring well.</p>	<p>Within three months of notification date in the above item.</p>
<p>The permittee shall submit POC well installation report to ADEQ.</p>	<p>Within 3 months of installing the POC monitoring well.</p>
<p>The permittee shall commence groundwater monitoring at POC well according to Section 4.2, Table IIA.</p>	<p>Within 30 days of installing the POC monitoring well.</p>
<p>Flood Insurance Rate Map (FIRM):</p>	
<p>The permittee shall submit revised FIRM to ADEQ, once it has been finalized by Federal Emergency Management Agency (FEMA).</p>	<p>Within 30 days of availability of revised FIRM.</p>
<p>Flood Event:</p>	
<p>The permittee shall submit a report description of the damage that was sustained and a description of the repairs if the discharge point and associated piping is impacted by flooding.</p>	<p>Within 30 days of the flood impact.</p>
<p>60-day Test for Indicator Parameter:</p>	
<p>The permittee shall begin monitoring under Section 4.2, Table IC.</p>	<p>Within 31 days of commencement of WWTP operation.</p>
<p>The permittee shall notify ADEQ when the 60-day test has been completed.</p>	<p>Within 10 days of the last sample.</p>

The permittee shall submit a 60 day report that demonstrates that the alternative indicator parameters for UV disinfection will produce the effluent quality required for Table IA, <i>E coli</i> monitoring.	Within 30 days of completing the 60-day test.
The permittee shall discontinue monitoring under Section 4.2, Table IC.	Upon receiving written approval from ADEQ.
The permittee shall submit a permit amendment application to ADEQ to set alert levels for UV transmittance in Section 4.2, Table IA.	Within 30 days of receiving written approval for 60-day test results from ADEQ

VII. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

Mogollon domestic Wastewater Improvement District 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 WRF was designed as per the design report prepared and signed (sealed) by Don Barker, P.E. of Barker and Associates, Inc., dated October 15, 2007, 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

Mogollon domestic Wastewater Improvement District 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 \$20,000 closing costs. The permittee shall maintain financial capability throughout the life of the facility.

Zoning Requirements

The Black Canyon 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 Mogollon Connection on May 27, 2009 under public notice no. 44-09.

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.

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: Shivani Shah
1110 West Washington Street, Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771-4465