

City of Phoenix State Route 85 Landfill

Aquifer Protection Permit No. P-105868

Place ID 19859, LTF 63371

SIGNIFICANT AMENDMENT

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. 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 (POC); 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., 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.

I. FACILITY INFORMATION

Name and Location

Name of Permittee:	City of Phoenix Public Works Department Solid Waste Disposal Management Division
Mailing Address:	3060 S. 27th Avenue Phoenix, Arizona 85009
Facility Name and Location:	City of Phoenix State Route 85 Landfill 28361 West Patterson Road Buckeye, Arizona 85326 Maricopa County

Regulatory Status

The City of Phoenix State Route 85 Landfill is an existing facility and was issued an individual Aquifer Protection Permit (APP) on August 31, 2011. On January 6, 2014 a Minor Permit Amendment was issued and on July 2, 2014 an Other Amendment was issued. This Significant Amendment was received on December 10, 2015.

Facility Description

The State Route 85 (SR 85) Landfill is operated by the City of Phoenix (COP) and is being permitted to reuse the reject water from the on-site reverse osmosis (RO) water treatment system. The Landfill is located in southwestern Maricopa County approximately 17 miles south of Interstate 10 (I10), approximately one mile west of SR 85 and immediately south of Patterson Road. The Landfill site covers approximately 2,652 acres of agricultural land. 640 acres of the site are permitted for waste disposal. Daily operations at the Landfill include disposal of municipal solid waste (MSW) by tipping waste containers at the active landfill area, which is limited to several acres and is covered daily.

The RO System generates approximately 30,000 gallons per week or 4,286 gallons per day of RO reject water, which is stored in an aboveground storage tanks located near the Administration Building and the Patterson Building. The RO reject water shall be used to supplement the groundwater currently used at the facility for dust suppression on the soil stockpiles that are greater than five feet above the ground surface and within the approximately 400 acres designated as the pollution management area (PMA).

The RO reject water shall be applied by utilizing a water truck and/or water pull with a spray bar. The soil stockpile sprayed with the RO reject water shall be consumed in the landfill operations within 15 days of starting dust control spray. No overspray that can cause ponding or surface flow is allowed in the sprayed area.

The depth to groundwater is approximately 250 to 325 feet below ground surface (bgs) at the facility and the direction of groundwater flow is south.

The site includes the following permitted discharging facilities:

Facility Name	Latitude (North)	Longitude (West)
Administration Building RO Reject Tank	33° 10' 60"	112° 40' 09"
Patterson Building RO Reject Tank	33° 11' 21"	112° 40' 32"

Amendment Description

ADEQ has reviewed and approved the following change under this other amendment: to increase the volume of reverse osmosis (RO) reject water from 5,000 gallons per week (gpw) to 30,000 gpw for dust suppression at the landfill site.

Other changes include updating the permit language to conform to the most current permit format and corrections.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

COP shall use RO reject water from their on-site reverse osmosis water treatment system to conduct dust suppression on soil stockpiles that are greater than five feet above ground surface and within the approximately 400 acres designated as the PMA. The dust suppression activity at the facility shall include the use of approximately 30,000 gallons per week of RO reject water to supplement the groundwater currently used at the facility on the soil stockpile. The soil stockpile sprayed by the RO reject water shall be consumed in the landfill operations within 15 days of starting dust control spray. No overspray that can cause ponding or surface flow is allowed in the sprayed area.

The subsurface characteristics of the project site consist of relatively low permeability soils (clayey sand) that typically minimize discharge into the underlying water bearing formations. Based on geotechnical data obtained from the site, the permeability of soils in the upper 10 feet of the site had a value of 3.6×10^{-4} centimeters per second (cm/sec). A Hydrologic Evaluation of Landfill Performance Version 3.0 (HELP-3) Model was used to evaluate the amount of percolation through the ground surface. The modeling results indicate that the dust suppressant activities will result in a low percolation rate through the modeled 12-inch soil layer immediately below the surface, assuming the worst case ponding scenario, and the discharge is not likely to percolate beyond 4 feet of the upper most vadose zone.

Surface water shall be diverted away from the landfill through topographic measures and drainage channels. The dust suppression activity shall not result in excessive ponding or runoff to adjacent drainage channels located on the site. The stormwater control system shall be designed to convey the 100-year, 24-hour on-site and off-site flows around the landfill and ensure the adjacent floodplains are not adversely impacted.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Monitoring and Reporting Requirements

Groundwater flow direction is to the south. Depth-to-water (DTW) is approximately 300 feet. In 2008, DTW ranged from 250 feet to 325 feet bgs in wells at the landfill.

Groundwater depth is historically at least 60 feet below the planed lowest point of the landfill liner. The lowest point of the liner will be 690 feet above mean sea level (AMSL). The land elevation across the landfill ranges from approximately 770 feet to 850 feet AMSL.

DTW is falling based on data from 2007 through 2009. MW-4 has a 100 foot screen, and a Total Depth of 325 feet. Recently the pump was lowered to approximately 5 feet from the bottom of the well. DTW was 319.10' on 4-23-2009.

Groundwater monitoring is required at the site for the solid waste landfill permit. Nickel was detected above Aquifer Water Quality Standards in monitoring well MW-4 (55-901440). Other groundwater wells required by the solid waste permit include: MW-1 (55-901437), MW-2 (55-901438), and MW-3 (55-901439).

The stormwater conveyances and the south retention basin are not part of the PMA.

Soil monitoring

No soil monitoring is required as part of this amendment. All soil stockpiles sprayed shall be used in the landfill cover within 15 days of start of spraying.

Discharge Monitoring

The permittee shall monitor the volume of RO reject water used for dust suppression weekly and will conduct RO reject water routine monitoring annually and the RO reject water characterization every five years, beginning in 2017.

Operational Monitoring

The permittee shall perform weekly inspections of the storage tank, water truck and spray system. The permittee shall also maintain an application logbook tracking the discharge activities including the volume and location of RO reject water discharge within the PMA. The record of all inspections and information required to be recorded in the facility logbook shall be included in the Annual Report.

Point(s) of Compliance (P.O.C)

The Point of Compliance (POC) is designated at the following location:

Well Number	POC Locations	Latitude	Longitude	ADWR No.
POC #1 (conceptual)	Located along the Southwest corner of the PMA	33° 08' 57" N	112° 40' 04" W	TBD

Groundwater monitoring is not required at POC No. 1 at the time of permit issuance. The Director may amend this permit to require installation of the well and initiation of groundwater monitoring at the POC or to designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

IV. SURFACE WATER CONSIDERATIONS

The Landfill is located in the middle of the Middle Gila River Watershed and Agua Fria River Sub watershed. Three water bodies near the site include the Rainbow Wash to the north, and the Gila River and Gila Bend Canal to the west. In this area the Gila River has a

southerly flow direction and the Gila Bend Canal marks the eastern edge of The Gila River terrace, while the Rainbow Wash flows west into Gila River.

In general, surface water is diverted away from the Landfill area through topographic measures and drainage channels as follows:

The Gila Bend Canal is west of the landfill and trends north to south. Surface water can be conveyed over the Canal by means of a canal overshoot. The floodplain at the Canal Overchute will receive flow from three sources: the South Channel, the West Channel, and the natural watershed south of the landfill site. The flow of stormwater from the South Retention Basin into the South Channel will be regulated using a broad-crested weir so that the total inflow from the three sources does not cause an increase in the effective elevation of the Canal Overchute Floodplain (Preliminary Drainage Report SR 85 SWFP Volume I, Appendix 3). Please note that this Canal Overchute is no longer within the proposed 640(+/-) acres of the currently proposed landfill boundaries. A map of the overshoot and channel is included in the application as Figure 4 Alternative 4 – Interim Stormwater Control System City of Phoenix SR 85 Landfill by URS dated March 15, 2002.

V. COMPLIANCE SCHEDULE

The permittee shall submit an annual report that contains all the information required in Section 2.7.4 of the permit. Every 5 years starting in 2017, an RO reject characterization shall include all of the pollutants listed in A.A.C. R18-11-406 and shall provide a report in tabular format.

VI. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

The City of Phoenix 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).

ADEQ 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

The City of Phoenix has demonstrated the financial responsibility necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and is expected to maintain financial capability throughout the life of the facility. The estimated closure and post-closure cost for the facility is \$72,024.00. The financial capability was demonstrated through A.A.C. R18-9- A203 (B) (3).

Zoning Requirements

The City of Phoenix has been properly zoned for the permitted use and the permittee has complied with all Maricopa County zoning ordinances in accordance with A.R.S. § 49-243(O) and A.A.C. R18-9-A201(B)(3).

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 – APP Unit
Attn: Monica Phillips
1110 W. Washington Street, Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771-2253

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