

Aquifer Protection Permit 100381
 Place ID 873, LTF 65263
 Significant Amendment
Frito-Lay, Inc. – Casa Grande Facility

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 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 (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.

I. FACILITY INFORMATION

Name and Location

| | |
|-----------------------------|---|
| Permittee's Name: | Frito-Lay, Inc. |
| Mailing Address: | 1450 West Maricopa Highway Casa Grande, AZ 85122 |
| Facility Name and Location: | Frito-Lay, Inc. - Casa Grande Facility 1450 West Maricopa Highway Casa Grande, AZ 85122 |

Amendment Description

Frito-Lay, Inc. has submitted a significant amendment application to the current permit, LTF 59873, signed by the ADEQ Water Quality Division Director on May 1, 2014, to request the following changes:

1. Submit MW-2/2b ambient monitoring results and AL/AQL calculations for nitrate-nitrite as N, fluoride and arsenic. AL/AQL results added to Section 4.2, Table 2B.
2. Change MW-1b/1c to contingency point of compliance (POC) groundwater monitoring location.
3. Establish MW-7 as a POC groundwater monitoring location.

4. Add groundwater monitoring well tables to Section 4.2 for MW-4/4b, MW-5b, MW-6 and new monitoring well to be located on southeast corner of Frito-Lay property. Nitrate-nitrite as N and groundwater levels will be monitored for annual report.

Regulatory Status

Arizona Department of Environmental Quality (ADEQ) received this Significant Amendment on December 20, 2016.

| Type of license | License identifier | Effective date |
|--|--------------------|--------------------|
| Notice of Disposal (NOD) | 100381 | November 26, 1988 |
| Aquifer Protection Permit (APP) for the closure of a leach pit | 100381 | October 16, 1998 |
| Significant Amendment | 100381 | July 21, 2000 |
| Significant Amendment | 100381 | December 4, 2003 |
| Significant Amendment | 100381 | June 13, 2005 |
| Significant Amendment | 100381 | March 6, 2006 |
| Other Amendment | 100381 | October 11, 2006 |
| AZPDES Permit | No. AZ0025798 | June 4, 2009 |
| Significant Amendment | 100381 | February 24, 2010 |
| Minor Amendment | 100381 | March 5, 2012 |
| Other Amendment | 100381 | September 24, 2013 |
| Other Amendment | 100381 (59873) | May 1, 2014 |

The facility received a Notice of Violation dated April 20, 2004.

Facility Description

The Frito-Lay facility is located in Casa Grande, Pinal County, Arizona and covers 289 acres in Section 14, T. 6 S., R. 5 E. The facility’s entrance is located at 32° 54’ 20” N and 111° 47’ 40” W. The address is 1450 West Maricopa Highway. Surrounding lands are industrial and agricultural.

The permittee has manufactured snack foods at the facility since 1984. Three waste streams related to manufacturing processes have been identified: process wastewater, oily wastewater from fryer boilouts, and starch water from potato slice washer overflow. Historically, process and sanitary wastewaters were discharged to a land

disposal area (LDA) adjacent to the facility in order to irrigate crops, including Sudan Grass and alfalfa.

In 2010, Frito-Lay began operating a newly installed IWTS, to treat process wastewater at the facility. The IWTS consists of a primary clarifier, a nitrification and denitrification system, and a membrane bioreactor (MBR) followed by a low pressure reverse osmosis (LPRO) system. The treated process water (MBR and /or MBR in combination with LPRO permeate) can either be recycled back into the manufacturing facility or is discharged to the NBSCW at AZPDES Outfall 001. Sanitary wastewater, emergency discharges, and LPRO reject are discharged to the Casa Grande WWTP. MBR waste activated sludge is sent off-site for disposal. Following the IWTS start-up activities in 2010, all discharges to the LDA have ceased.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

BADCT is identified as the IWTS operated by Frito-Lay.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Hydrogeological Setting

The Frito-Lay facility is located within the Eloy Sub-basin of the Pinal Active Management Area (AMA). According to ADWR, there are four distinct regional subsurface hydrogeologic units in this area, described in descending order below.

- The Upper Alluvial Unit (UAU). This unit is primarily unconsolidated sands and gravels with some interbedded finer sediments. Within the Eloy Sub-basin, thickness of the UAU varies from 200 to 1,000 feet.
- Middle Silt and Clay Unit (MSCU) The MSCU varies in thickness from zero to about 4,000 feet in the Eloy Sub-basin.
- Lower Conglomerate Unit (LCU) The LCU ranges in thickness from 50 feet to an unknown thickness in the center of the Eloy Sub-basin.
- Hydrologic Bedrock Unit (HBU)
- Perched Aquifer. In the area of the facility, a localized, perched groundwater unit is believed to be present at about 27-46 feet below ground surface (bgs). This perched unit may have been created by discharges from the facility, leakage from a San Carlos Irrigation and Drainage District (SCIDD) canal on the north edge of the facility, and by historical agricultural irrigation. The perched aquifer is typically comprised of silt and clay from the surface to about 5-15 feet bgs, underlain by sand and gravel, which is in turn underlain by additional silt/clay layers. Frito-Lay facility monitor wells are completed in this unit.

Groundwater Assessment

As part of the facility's 2014 groundwater assessment, the applicant performed the following.

- Advanced four soil borings within the LDA and collected samples for analysis
- Installed five groundwater monitoring wells (MW-3 through MW-7) around the perimeter of the facility and collected samples for analysis
- Collected 10 groundwater samples using HydroPunch®
- Collected surface water samples at five locations
- Performed a slug test, step-drawdown test, and a constant-rate pumping test

The groundwater assessment has significantly changed the understanding of the hydrology in the area of the facility. The regional groundwater flow direction in the perched unit is westerly, and consistent with Arizona Department of Water Resources (ADWR) flow modeling. However, recently installed monitor wells at the facility indicate that groundwater in the perched unit is flowing southwesterly. The localized shift in groundwater flow direction, from regionally westerly to locally southwesterly at the facility is thought to be the result of an unlined tailwater pond north of the LDA.

As part of the groundwater assessment, the applicant collected soil samples from several soil borings, monitor well borings, and HydroPunch® locations at five-foot depth intervals between 0 and 40 feet bgs. Many, though not all, of the samples indicated elevated concentrations of nitrogen species at depth. The highest concentrations of detected nitrogen species occurred in the upper parts of the soil column, specifically in the root zone of the LDA, where the crop management plan was designed for the uptake of these nutrients.

Surface water was also sampled as part of the groundwater assessment in the following locations.

- The SCIDD irrigation canal on the north side of the facility (SW-01 through SW-03)
- Channels of the North Branch Santa Cruz Wash north of the facility (SW-04)
- Stormwater flowing from offsite agricultural lands to the facility via a highway box culvert (SW-05)

Surface water samples were analyzed for nitrogen species and very low concentrations were found. Surface water does not appear to be a significant source of nitrogen at the facility.

Monitoring and Reporting Requirements

Routine discharge quality monitoring and daily flow monitoring shall be performed for the discharge from the MBR and/or LPRO to the AZPDES Outfall 001. Daily flow monitoring and discharge quality shall be monitored for the operational life of the facility. The permittee shall collect representative samples from the AZPDES outfall according to Section 4.2, Table 1.

Routine groundwater monitoring is required for POC well MW-2/MW-2b in accordance with Section 4.2, Table 2B, and in POC Well MW-7 in accordance with Section 4.2, Table 2C of the permit. Ambient groundwater sampling shall be conducted at POC well MW-7 to establish background water quality in accordance with the Compliance Schedule in Section 3.0.

Annual reporting is required in accordance with Section 2.7.4.1 and Section 3.0, compliance schedule item No. 9 of the permit.

Points of Compliance

The POCs are at the following locations:

| POC Locations | Latitude | Longitude | ADWR 55- | Screened Interval (ft bgs) |
|---|---------------------|----------------------|----------|----------------------------|
| MW-1b (Contingency well paired with MW-1c) | 32° 54' 25.59" N | 111° 48' 17.57" W | 209086 | 18-38 |
| MW-1c (Contingency well paired with MW-1b) | 32° 54' 25.59" N | 111° 48' 17.57" W | 916399 | 30-50 |
| MW-2 (Paired with MW-2b) AZPDES Discharge to the North Bank of the Santa Cruz Wash | 32° 54' 30.79" N | 111° 48' 15.9" W | 912009 | 19-39 |
| MW-2b (Paired with MW-2) AZPDES Discharge to the North Bank of the Santa Cruz Wash | 32° 54' 30.79" N | 111° 48' 15.9" W | 916397 | 30-59 |
| MW-7 (Near former LDA Pivot 3) | 32° 54' 08.00759" N | 111° 47' 48.89381" W | 912146 | 31-51 |
| Monitoring Well at the edge of the PMA for the NBSCW (Location only, no well) | 32° 55' 55.55" N | 111° 52' 57.14" W | N/A | N/A |

*MW-1b/1c will initiate compliance monitoring if groundwater flow direction change meets criteria located in Section 2.6.1.2 of permit.

IV. STORM WATER AND SURFACE WATER CONSIDERATIONS

The ephemeral and westward-flowing NBSCW is located about one-half mile north of the facility. The wash only flows in response to precipitation events, generally summer thunderstorms and winter rains. Santa Rosa Wash and Greene Wash are ephemeral tributaries to the Santa Cruz Wash and are located to the southwest of the facility. The Casa Grande WWTP and the Salt River Project (SRP) Desert Basin electrical generating station have AZPDES permits, which allow discharges to the NBSCW. There are no storm/surface water considerations for this facility. The facility is outside the 100-year flood plain.

V COMPLIANCE SCHEDULE

Compliance schedule items are included in Section 3.0 of the permit.

VI OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

Frito-Lay, Inc. 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 on-going demonstration of technical capability. The permittee shall maintain technical capability throughout the life of the facility.

Financial Capability

Frito-Lay, Inc. 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 A.A.C. R18-9-A203. The permittee is expected to maintain financial; capability throughout the life of the facility.

Zoning Requirements

Frito-Lay, Inc. is properly zoned for the permitted use and the permittee has complied with all Pinal County zoning ordinances in accordance with A.R.S. § 49-243(O) and A.A.C. R18-9-A201(B)(3).

VII. ADMINISTRATIVE INFORMATION

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

The Department shall accept written comments from the public prior to granting the significant amendment. 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 as 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.

VIII.ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division – APP Unit
Attn: Travis Taylor, Project Manager
1110 W. Washington St., Mail Code 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771- 4512