

Freeport-McMoRan Safford Mine Aquifer Protection Permit No. P-100534 Place ID 5425, LTF No. 95831 Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit (APP) amendment 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. 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.

II. Permittee

Freeport-McMoRan Safford Inc.

III. Facility Name & Location:

Freeport-McMoRan Safford Mine 8500 N. Freeport-McMoRan Road Safford, Arizona, 85546 Graham County

IV. Facility Description:

The Freeport-McMoRan Safford Mine is located in Graham County, Arizona, approximately eight miles north of the City of Safford, in the foothills of the Gila Mountains. The project is located on Freeport-McMoRan Safford Inc. (FMSI) patented land. This site involves open-pit copper mining and leaching of the ore on a lined leach pad. The resulting pregnant leach solution is processed at an on-site solution extraction/electrowinning (SX/EW) plant. Existing Dos Pobres/San Juan Project facilities include the Dos Pobres and San Juan pits, Heap Leach Pad (Pad), Excess Process Solution Impoundment (EPSI), Non-stormwater Impoundment (NSI), San Juan Non-stormwater Evaporation Impoundment (SJNEI), SX/EW plant, and infrastructure and support facilities associated with copper mining. Recent Lone Star Project facilities include the Lone Star Pit, Lone Star Heap Leach Facility (HLF), North Process Solution Impoundment (NPSI), Process Solution Tank, North Non-Stormwater Impoundment (NNSI), and South Non-Stormwater Impoundment (SNSI). Domestic wastewater discharges are authorized separately under Type 4 general aquifer protection permits.



V. Amendment Description:

The purpose of this amendment is to:

- 1. Modify design of the HLF and SNSI:
 - a. Expand the HLF to the Southwest by approximately 860 feet,
 - b. Expand the SNSI to the Southeast, and
 - c. Increase the solution flow rate from 50,000 gallons per minute (gpm) to 71,000 gpm.
- 2. Update closure and post-closure cost estimates.

The permit category for this amendment was determined to be an "Significant Amendment" as per A.A.C. R18-9-A211(B)(2)(9).

VI. Regulatory Status

The latest inspection dated October 27, 2011, indicates that the facility was found to be in compliance with the APP and Arizona rules and statutes.

VII. Best Available Demonstrated Control Technology (BADCT):

All of the discharging facilities listed above employ BADCT requirements as set forth in Arizona Revised Statutes (A.R.S.) § 49-243.B.1.

VIII. Compliance with Aquifer Water Quality Standards (AWQS):

The facility has demonstrated that potential pollutants discharged from the discharging facilities listed above will not cause or contribute to a violation of aquifer water quality standards at the applicable points of compliance and that no pollutants discharged will further degrade at the applicable points of compliance the quality of any aquifer that at the time of issuance of this amendment violates the aquifer quality standard for that pollutant.

Six point of compliance (POC) wells are approved and have been installed.

A biennial expanded list, along with a quarterly reduced list, of constituents are required to be monitored at the POC wells.

The quarterly monitoring list is composed of the following constituents:

Depth to water, water level elevation, field pH, field specific conductance, field temperature, copper, beryllium, cadmium, cobalt, nickel, selenium, fluoride, magnesium, nitrate + nitrite as N, sulfate, and total dissolved solids.

The biennial monitoring list is composed of the following constituents:

Total alkalinity, carbonate, bicarbonate, hydroxide, chloride, sodium, potassium, calcium, aluminum, antimony, arsenic, barium, chromium, iron, lead, thallium, copper, cobalt, manganese, zinc, gross alpha particle activity, radium 226 + radium 228, total uranium, benzene, toluene, ethylbenzene, total xylenes, and total petroleum hydrocarbons.