

BHP, Inc. – San Manuel Mine (Mine Site)
Aquifer Protection Program Permit No. P-100421
Place ID 2058, LTF No. 66018
Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Program (APP) 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. 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 & Facility Location:

BHP, Inc. has an APP for the San Manuel Mine Site Facilities which are located approximately six miles northwest of the town of San Manuel, Arizona in Pinal County.

III. Facility Description:

The San Manuel Mine operated 51 years from 1948 until underground operations were suspended on June 25, 1999. Mine closure was declared by BHP Copper, Inc. (BHP) to ADEQ on January 22, 2002. The Mine operated two underground mine units for copper sulfide ore, an open pit for copper oxide ore, heap leach and in-situ leaching operations that recovered copper-bearing pregnant leach solution (PLS), and a solvent extraction-electrowinning (SX-EW) Plant. The collection of PLS from the Heap Leach Facility ceased on March 19, 2002.

During operations, 702.9 million tons of rock were mined and hoisted to the surface, including 27.6 million tons of development rock, 624.9 million tons of ore from the San Manuel unit and 50.4 million tons of ore from the Kalamazoo unit. Approximately 121.5 million tons of ore and overburden were mined from the open pit. The copper ore from underground was crushed in a primary crusher at the Mine before shipment to the Plant Site for beneficiation and processing. The SX-EW Plant processed the PLS from the leaching operation.

On July 17, 2004, BHP filed an application for the area-wide closure of the Mine. ADEQ issued a permit on August 16, 2006, authorizing the closure of the discharge facilities listed in Section 2.1 of the APP. The site is in a reclamation status, with on-going closure inspections and monitoring being performed per the schedules in Section 4.2 of the APP.

IV. Amendment Description:

The purpose of this amendment is to:

1. Remove Point of Compliance (POC) monitoring well CR-1 from the permit, as the monitor well does not accurately monitor potential impacts from the mine site. CR-1 was installed in 2000 and was intended to monitor potential impacts that would result from runoff related to a non-inert waste rock pile. This waste rock was completely excavated during closure activities performed prior to 2006. The POC well is within the Passive Capture Containment Zone (PCCZ) and is therefore upgradient, rather than downgradient, of any discharging facilities at the site. There is also evidence the well casing and annulus has been compromised due to a flood event that resulted in the well being under flowing water for several days. Due to this location being within the PCCZ, a replacement POC well is not recommended.
2. Revise the schedule for selected operational monitoring inspections from monthly to quarterly to coincide with inspection frequency at the nearby Plant Site.
3. Update the permit to the current boilerplate and revise permit language to reflect current conditions.

The removal of the POC well is considered a “Significant” amendment per A.A.C. R18-9-A211(B).

V. Regulatory Status

There are no current enforcement actions.

VI. Best Available Demonstrated Control Technology (BADCT):

The BADCT requirements for the closed facilities are not changing from the previous permit. The BADCT table has been revised to reflect current conditions.

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

The changes to the points of compliance are described in Section IV as part of this amendment. Compliance with AWQS will continue to be monitored at the existing POCs.