

## **DRAFT SITE REGISTRY REPORT**

### **PROPOSED WATER QUALITY ASSURANCE REVOLVING FUND (WQARF) SITE MESA DBCP**

**Mesa, Maricopa County, Arizona**

**November 2016**

#### **Site Location**

The proposed Mesa DBCP Water Quality Revolving Fund (WQARF) Registry site (the Site) consists of a contaminated groundwater plume located in the vicinity of the intersection of East McKellips Road and North 24<sup>th</sup> Street, Mesa, Arizona. Based on the extent of recent DBCP detections in the area, the Site is generally bounded to the north by the McDowell Road, to the east by Higley Road to the south by Broadway Road, and to the west by Gilbert Road.

#### **Background**

The contaminant of concern at the Site, 1,2-Dibromo-3-Chloropropane (DBCP), was legally applied to citrus groves in the Site area as a nematicide from the mid-1950s to at least 1977. The US Environmental Protection Agency (EPA) suspended registration for products containing DBCP in 1977 and has since classified DBCP as a probable human carcinogen.

In 1979, groundwater contaminated by DBCP above the Aquifer Water Quality Standard (AWQS) of 0.2 parts per billion was first reported in the area by the Arizona Department of Health Services in a City of Mesa (COM) supply well named Falcon Field Airport Well Number 2. Further investigation into DBCP in groundwater was conducted by the Maricopa Association of Governments in 1985 and 1986, which found that DBCP was also present at concentrations exceeding the AWQS in water samples from several wells near the Falcon Field Airport, including Salt River Project (SRP) and Roosevelt Water Conservation District (RWCD) irrigation wells along the RWCD Canal and Southern Canal. DBCP was also detected above the AWQS in COM municipal wells Falcon Field Airport Well Number 2 and Falcon Field Airport Well Number 6, and a private irrigation well. Detectable DBCP below the AWQS was measured across a wider area, including in COM wells further to the west and south and in SRP wells along the Eastern Canal.

The Site was added to the WQARF Priority List in 1987. Falcon Field Airport Well Number 2 was removed from service until an activated carbon treatment system was installed in 1991. The well was then in service until 1993, when it was placed on standby. Falcon Field Airport Well Number 6 was briefly returned to potable service in 1986 when concentrations decreased temporarily below AWQS, and thereafter was permanently removed from service. DBCP continued to be detected in public supply wells in the Site area at concentrations below AWQS. In 2004, ADEQ determined that groundwater DBCP concentrations were decreasing and suspended WQARF activities at the Site.

The Site was reevaluated in 2015 to determine if it should be included on the WQARF registry. DBCP was consistently measured above the AWQS in recent sampling events at one SRP irrigation supply well, 30.5E-5.0N, 55-617865, along the Eastern Canal. The most recent concentration measured in this SRP well was 0.29 parts per billion. Concentrations of DBCP in this well had generally been declining since 2001, but then had increased above the AWQS again by 2008. DBCP was detected below the AWQS in 2014 and 2015 sampling events in several other SRP irrigation supply wells along the Eastern Canal and North Gilbert Road, one RWCD irrigation supply well along the RWCD Canal, one COM public supply well along North Gilbert Road, and several private domestic wells used to provide drinking water. Exposure pathways include the ingestion of contaminated groundwater and direct contact from incidental exposure of irrigation water.

Local groundwater flow directions within the Site are influenced by groundwater pumping as well as surface water features including the Salt River and the Granite Reef Underground Storage Project to the north. Leakage from the Southern, Eastern and RWCD irrigation canals routed through the Site may also be influential. The overall groundwater flow trend in deep groundwater in the greater Site vicinity is to the south-southwest. In the Site vicinity, groundwater is typically first encountered at depths between 100 and 300 feet below ground surface. Groundwater from this area is pumped to the Eastern canal to augment surface water supplies.

The E&E score for the Site is 34 out of a possible 120. The Arizona Department of Environmental Quality (ADEQ) proposes that the Site be added to the WQARF Registry established pursuant to Arizona Revised Statutes (ARS) § 287.01(D). This Draft Site Registry Report (SRR) was prepared to meet the requirements of ARS § 287.01(B).

#### **Rationale to list the Site on the WQARF Registry**

- DBCP concentrations continue to be present above the AWQS at one well in the area of the Site.
- There are several privately owned domestic water wells providing drinking water within the boundaries of the Site where DBCP continues to be detected at concentrations below the AWQS. These wells may require continued monitoring.