

**PROPOSED REMEDIAL OBJECTIVES REPORT
MILLER VALLEY ROAD AND HILLSIDE AVENUE
WATER QUALITY ASSURANCE REVOLVING FUND REGISTRY SITE
PRESCOTT, ARIZONA**



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LIST OF ABBREVIATIONS & ACRONYMS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AMA	Active Management Area
A.R.S.	Arizona Revised Statutes
AWQS	Aquifer Water Quality Standard
CAB	Community Advisory Board
COC	Chemicals of Concern
COP	City of Phoenix
ERA	Early Response Action
FS	Feasibility Study
H+A	Hargis + Associates, Inc.
Use Report	Land and Water Use Report
PCE	Tetrachloroethene
RO	Remedial Objective
RI	Remedial Investigation
the Site	40th Street and Indian School Road
SRL	Soil Remediation Level
SRP	Salt River Project
SVE	Soil Vapor Extraction
µg/L	Micrograms per liter
VOCs	Volatile Organic Compounds
WQARF	Water Quality Assurance Revolving Fund

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Proposed Remedial Objective (RO) Report for the Miller Valley Road and Hillside Avenue Water Quality Assurance Revolving Fund (WQARF) Registry Site (the Site) to meet requirements established under Arizona Administrative Code (A.A.C.) R18-16-406.

The Site is located in the City of Prescott (COP) and is bounded approximately to the north by the Merritt Avenue alignment, to the south by Miller Creek, to the east by Division Street, and to the west by Miller Creek and Valley Street. The contaminants of concern (COC) for the Site are tetrachloroethene (PCE) and trichloroethene (TCE).

This RO Report relies upon the Land and Water Use Study (LWUS) dated October 2019, and the solicitation of proposed ROs during a public meeting held on January 9, 2020. The LWUS is contained in Appendix K of the Site Remedial Investigation (RI) Report prepared by Hydro Geo Chem, Inc., (HGC) for ADEQ. The public responses to the RO solicitation are available in Appendix A.

ROs are established for the current and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be affected by a release of a hazardous substance. Pursuant to A.A.C. R18-16-406(D), it is specified that reasonably foreseeable uses of land are those likely to occur at the site and the reasonably foreseeable uses of water are those likely to occur within one hundred years unless site-specific information suggests a longer time period is more appropriate.

Reasonably foreseeable uses are those likely to occur, based on information provided by water providers, well owners, land owners, government agencies, and others. Not every use identified in the Use Report will have a corresponding RO. Uses identified in the Use Report may or may not be addressed based on information gathered during the public involvement process, limitations of WQARF, and whether the use is reasonably foreseeable.

The ROs must be stated in the following terms: (1) protecting against the loss or impairment of each use; (2) restoring, replacing, or otherwise providing for each use; (3) when action is needed to protect or provide for the use; and (4) how long action is needed to protect or provide for the use.

The ROs chosen for the site will be used during remedy screening in the feasibility study (FS) phase of the WQARF process. The FS will evaluate specific remedial measures and strategies required to meet ROs. A remedial strategy is one or a combination of six general strategies identified in Paragraph B.4 of Arizona Revised Statutes (A.R.S.) 49-282-06; plume remediation, physical containment, controlled migration, source control, monitoring, and no action. A remedial measure is a specific action taken in conjunction with remedial strategies to achieve one or more ROs, for example, well replacement, well modification, water treatment, water supply replacement, and engineering controls.

Public comments on this proposed RO report will be accepted for 30 days following its release.

2.0 REMEDIAL OBJECTIVES FOR LAND USE

Typically, ROs for land use are established for those properties known to be contaminated with hazardous substances above a Soil Remediation Level (SRL) or a risk-based level. Several phases of investigation have been conducted including soil and soil vapor sample collection, and groundwater monitoring well installation and sampling. The results of these investigations have indicated that volatile organic compounds (VOCs), primarily PCE, are present in soil gas and groundwater in the vicinity of the Site.

2.1 Summary of Current and Reasonably Foreseeable Land Use

Land use within the study area consists primarily of commercial use along the major roads and low to moderate-density residential use set back from the major roads. Land ownership in the Study area is predominantly private, with the exception of a small section of the COP's Granite Creek Park at the southeastern edge of the area along Miller Creek. The COP indicates that it aims to promote infill development in the core city areas, which could increase the density of residential and commercial areas. Future land use in the Site area may shift to include a greater proportion of residential and low-intensity commercial uses, and the transition from single-family homes to multi-family homes and businesses.

Responses to LWUS study questionnaires distributed to property owners within the study area generally indicated continuation of the current land use or the possibility for more intense residential development, consistent with the COP planning described above. The COP questionnaire response indicated land use was not anticipated to change in the study area.

2.2 Soil Remedial Objective

The RI found no soil contamination from the Site above either residential or non-residential regulatory standards; therefore no soil RO is necessary at this time.

3.0 REMEDIAL OBJECTIVES FOR GROUNDWATER USE

The groundwater use portion of the LWUS is an inclusive summary of information gathered from the Arizona Department of Water Resources (ADWR), private well owners, water providers and municipalities. The water provider within the Site is the COP.

3.1 Summary of Current and Reasonably Foreseeable Groundwater Use

The Site lies within the Prescott Active Management Area (AMA) (ADWR, 2018b) The Prescott AMA was created by the Arizona Groundwater Management Code passed in 1980 and covers approximately 485 square miles in the Central Highlands physiographic province. All groundwater withdrawn from any AMA must occur under a groundwater right or permit, unless groundwater is being withdrawn from an exempt well.

According to ADWR records and the RI investigation there are up to 112 private exempt groundwater wells located near the Site. Of these, 29 wells were sampled during PI and RI activities. Detections of PCE and/or TCE above AWQS were limited to those wells immediately adjacent to the suspected source area, at 923 and 925 Fair St. These two wells were reported by the owners as being used for irrigation.

A total of 48 LWUS questionnaires were completed and returned by private well owners, pertaining to 48 properties. Of the responses received three did not respond to questions regarding wells, 31 indicated the well was out of service, capped, abandoned, unknown or destroyed, 12 indicated the well was used for irrigation, one indicated the well was used for domestic use other than drinking (bathing and washing); and one was utilized for potable use. In addition, two wells currently not utilized for potable use were indicated as possible potable water sources in the future. No responses indicated future plans to install private drinking water wells.

Responses from local water providers indicated no supply wells are present in the study area, and that none are anticipated to be developed in the future. The only wells owned by the COP within the study area are monitoring or geotechnical wells. COP does not anticipate installation of future wells within the LWUS area.

According to the RI, the highest PCE concentration detected at the site was during drilling monitoring well MVH-9s (BH-17) at 95 feet below ground surface at 970 µg/L, over the PCE Aquifer Water Quality Standard (AWQS) of 5 µg/L. The highest detection in a monitoring well at the site was in MVH-9s at 740 µg/L. The highest TCE concentration detected at the site during the RI was 7.1 µg/L in MVH-9s, over the TCE AWQS of 5 µg/L.

The highest concentration detected in the private irrigation wells was 747 µg/L in September 2017. The most recent PCE results from this well was 430 µg/L in February 2019. The highest TCE concentration was 6.55 µg/L, with the most recent at 3.2 µg/L.

3.2 Groundwater Remedial Objectives

PCE and TCE concentrations exceed the AWQS in groundwater at the Site. Currently, groundwater within the Site is used for irrigation and domestic purposes. Thus, the ROs for groundwater use at the Site are as follows:

Irrigation Use

Protect against the threatened loss or impairment of irrigation water due to an exceedance of the Aquifer Water Quality Standards of the contaminants of concern at the Miller Valley Road and Hillside Avenue WQARF Site. Restore, replace, or otherwise provide for irrigation water to the extent it has been or will be lost or impaired due to an exceedance of the Aquifer Water Quality Standards for the contaminants of concern at the Miller Valley Road and Hillside Avenue WQARF Site. The actions will be needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the Miller Valley Road and Hillside Avenue WQARF Site does not prohibit or limit the designated use of groundwater.

Potable Use

Protect against the threatened loss or impairment of potable water due to an exceedance of the Aquifer Water Quality Standards of the contaminants of concern at the Miller Valley Road and Hillside Avenue WQARF Site. Restore, replace, or otherwise provide for potable water to the extent it has been or will be lost or impaired due to an exceedance of the Aquifer Water Quality Standards for the contaminants of concern at the Miller Valley Road and Hillside Avenue WQARF Site. The actions will be needed for as long as necessary to ensure that, while the water exists and the resource remains available, the contamination associated with the Miller Valley Road and Hillside Avenue WQARF Site does not prohibit or limit the designated use of groundwater.

4.0 REMEDIAL OBJECTIVES FOR SURFACE WATER USE

The surface water use portion of the Use Report indicates that surface water usage within the Site is for residential irrigation. The surface water source comes from groundwater wells outside the Site.

4.1 Summary of Current and Reasonably Foreseeable Surface Water Use

Miller Creek, the surface water within the study area, is not being utilized directly for irrigation or any other consumptive purposes. Future consumptive use is not anticipated and surface water supply and access are limited. The designated uses for Miller Creek are aquatic wildlife habitat (cold water), full body contact (e.g. swimming) and fish consumption. Currently these uses are impaired at Miller Creek by non-attainment of the surface water standard for *e. coli* bacteria. These uses do not appear to be impaired by contamination related to the Site.

Samples collected from Miller Creek along did not find PCE or TCE in the creek. A hydrogeologic survey indicated it is unlikely that the creek in the area of the Site is connected to the contaminated groundwater at the Site.

4.2 Surface Water Remedial Objective

The RI found no contamination or threat of the contamination from the Site to Miller Creek; therefore no surface RO is necessary at this time.

APPENDIX A

Responses to Solicitation for Proposed Remedial Objectives

Responses to Solicitation for Proposed Remedial Objectives

As per A.A.C. R18-16-406(I), a community meeting was held at Prescott Public Library on January 7, 2020, after 45 days but before 90 days from the release of the RI report. The purpose of the meeting was to solicit proposed ROs for the Miller Valley Road and Hillside Avenue WQARF Site. ADEQ received two oral RO responses to the solicitation during the meeting.

Mr. Steven Cook, Sierra Club

Mr. Cook would like to have the word “impaired” (in the example Remedial Objective provided in the presentation) more clearly defined. He would like clear language stating that the site will be brought to acceptable drinking water standards prior to closing the project.

Oren Thomas, City of Prescott

Mr. Thomas would also like to have it stated in the ROs that impaired groundwater means over Aquifer Water Quality Standards.