

APPENDIX N
REMEDIAL OBJECTIVES REPORT

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7th Street and Arizona Avenue Water Quality Assurance Revolving Fund Site Tucson, Arizona



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ACRONYMS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
AWQS	Aquifer Water Quality Standard
bgs	below ground surface
DCE	Dichloroethene, dichloroethylene
LWU	Land and Water Use Study
PCE	tetrachloroethene, tetrachloroethylene
RI	Remedial Investigation
RO	Remedial Objective
TCE	trichloroethene, trichloroethylene
WQARF	Water Quality Assurance Revolving Fund

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Remedial Objectives (ROs) Report for the 7th Street and Arizona Avenue Water Quality Assurance Revolving Fund (WQARF) site (Site) in Tucson, Arizona.

The ROs for the Site were developed as required by R18-16-406(I) of the remedy selection rules of the Arizona Administrative Code (A.A.C.). These rules require that ROs be 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 above a regulatory or risk-based standard. The rule specifies that the reasonably foreseeable uses of land are those likely to occur at the site. The reasonably foreseeable uses of water are those likely to occur within 100 years, unless a longer time period is shown to be reasonable based on site-specific circumstances (A.A.C. R18-16-406 [D]). Reasonably foreseeable uses are those likely to occur, based on information provided by water providers, well owners, land owners, government agencies, and others.

The ROs for the Site are based on the Land and Water Use Study (LWU) (see Appendix A of draft RI) and they focus on contaminants and media of concern, exposure routes and receptors. Not every use identified in the LWU will have a corresponding RO. Uses identified in the LWU may or may not be addressed based on information gathered during the public involvement process, the WQARF statutory authority, and whether the use is reasonably foreseeable. A public meeting to obtain community and stakeholder input on the proposed ROs was held by ADEQ on February 18, 2014, at ADEQ's Southern Regional Office in Tucson.

The RO's chosen for the site will be evaluated in the feasibility study (FS) phase of the WQARF process. The FS will evaluate specific remedial measures and strategies required to meet the ROs and propose a reference remedy and at least two alternative remedies, all capable of meeting the ROs. The proposed remedies will also be generally compatible with the future land use specified by land owners.

Definitions

Remedial Strategy: One or a combination of the six general strategies identified in Paragraph B.4 of A.R.S. §49-282.06 and further defined in rules promulgated in accordance with this statute. In general, these strategies are as follows: *plume remediation, physical containment, controlled migration, source control, monitoring, and no action.*

Remedial Measure: A specific action taken in conjunction with remedial strategies as part of the remedy to achieve one or more of the remedial objectives. For example, remedial measures may include well replacement, well modification, water treatment, provision of replacement water supplies, and engineering controls.

Reference Remedy: A combination of remedial strategies and remedial measures which, as a whole, is capable of achieving remedial objectives. The reference remedy is compared with the alternative remedies for purposes of selecting a proposed remedy at the conclusion of the feasibility study.

Alternative Remedy: A combination of remedial strategies and remedial measures different from the reference remedy that is capable of achieving remedial objectives. The alternative remedies are compared with the reference remedy for purposes of selecting a proposed remedy at the conclusion of the feasibility study.

Written comments on this RO report will be accepted for a period of 30 days following the release. If significant public interest exists or if significant issues or information is brought to the attention of ADEQ, the comment period may be extended. The final report will include a responsiveness summary to written comments received from the public during the comment period. Upon completion of the final RO report, the Final Remedial Investigation (RI) Report will be available to the public. 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.

2.0 REMEDIAL OBJECTIVES FOR LAND USE

The former Oliver's Laundry and Dry Cleaners Co. (Oliver's Cleaners) is located at 300 E. 7th Street, Tucson, Arizona 85705. The former Oliver's Cleaners property is bounded by 7th Street to the north, Herbert Avenue to the east and 5th Avenue to the west. Downtown Auto Center and Towing is located on the parcel to the south. The property currently consists of an asphalt-paved parking lot. The approximate WQARF Site boundaries are based on the extent of a plume of tetrachloroethene (PCE) greater than its Aquifer Water Quality Standard (AWQS) in the perched groundwater underlying the Site.

Typically, ROs for land use are established for those properties known to be contaminated with hazardous substances above a Soil Remediation Level or a risk-based level. At the Site, the perched groundwater and vadose zone are contaminated above regulatory standards with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), trichloroethene (TCE) and cis-1,2-dichloroethene (cis-DCE). The source of the Site contamination is the former Oliver's Cleaners facility, which performed dry cleaning there from at least 1957 until 1989 (when the facility building burned down). This facility also stored solvents in one 10,000-gallon and four 1,000-gallon tanks which were removed from the property in 1991.

2.1 SUMMARY OF CURRENT AND REASONABLY FORESEEABLE LAND USE

The Site and the larger LWU Study area currently consists largely of commercial and residential areas, and roadways and rights-of-way within the City of Tucson (COT). There are no parcels owned by Pima County within the Site. Based on information provided by COT, the area is largely "built-out" and COT has no specific plans to re-develop the area. Land uses for the foreseeable future in the Site area are expected to remain similar to the current land uses.

COT has completed construction of the Streetcar Project. Impacts to the Site area from the Streetcar Project include construction of rail line sections and overhead electrical lines. The Streetcar project is not expected to change land use. The Downtown Links roadway and drainage project is under construction. Impacts from construction of the roadway and drainage project to the Site area are construction of the 6th Street segment of the project, including at-grade and below-grade sections of roadway and a temporary railroad shoofly. Future Downtown Links expansion work is not expected to change land use.

Commercial properties in the immediate vicinity of the source property are expected to remain commercial, but a change in zoning to mixed use residential/commercial, as occurred with one of the businesses to the south of the source property, is possible.

The former Oliver's Cleaners property is currently being used as a parking lot. The property owner intends to develop the source property as a multiple-story development with both commercial and residential use. COT zoning for this parcel is currently commercial.

2.2 SOIL REMEDIAL OBJECTIVE

Because the former Oliver's Cleaners property is currently, and will for the foreseeable future, be zoned for commercial use, non-residential soil cleanup standards apply. Therefore, the RO for land use at the former Oliver's Cleaners property is:

To restore soil conditions to the remediation standards for non-residential use specified in A.A.C. R18-7-203 (specifically background remediation standards prescribed in R18-7-204, predetermined remediation standards prescribed in R18-7-205, or site specific remediation standards prescribed in R18-7-206) that are applicable to the hazardous substances identified (tetrachloroethene (PCE), trichloroethene (TCE) and cis-1,2-dichloroethene (cis-DCE)). This action is needed for the present time and for as long as the level of contamination in the soil threatens its use as a non-residential property.

3.0 REMEDIAL OBJECTIVES FOR WATER USE

There are no surface water uses within the Site or the larger LWU Study area. Groundwater beneath the Site is present in a shallow perched zone which exists from approximately 65 to 80 feet below ground surface (bgs) and the regional aquifer which begins at approximately 170 feet bgs. A plume in the perched groundwater predominated by PCE, TCE, and *cis*-DCE extends northwest from the former Oliver's Cleaners property source property at least 4,500 feet. This solute plume begins near the northeastern fringe of an extensive body of diesel fuel thought to be associated with the UPRR passenger depot which is located approximately 1,000 feet to the south. Chlorinated solvents from the Oliver's Cleaners property historically moved downward through the vadose zone and mixed with diesel fuel extending beneath the Site.

Site-related contaminants have not been detected in the regional groundwater since 2004, and have never been detected above AWQSSs.

3.1 SUMMARY OF CURRENT AND REASONABLY FORESEEABLE USES OF GROUNDWATER

There are no current groundwater uses in the Study area. The regional aquifer is considered a drinking water source, although there are no municipal wells within the Site area. There are two, and possibly as many as three, unused regional aquifer wells, several abandoned regional aquifer wells, and four groundwater monitoring wells in the regional aquifer that are used only to monitor possible Site-related contaminants and groundwater elevations. The perched groundwater is not considered a drinking water source and there are no known municipal or private domestic wells completed in the perched groundwater within the Site. There are thirty monitoring wells currently used to monitor Site water quality and groundwater elevations within the perched groundwater. There are also a number of perched groundwater wells used by UPRR to monitor perched groundwater impacted by diesel fuel.

3.2 GROUNDWATER REMEDIAL OBJECTIVE

There are no current groundwater uses in the Study area, however, the regional aquifer is considered to be a drinking water source for the City of Tucson. Therefore, current and future use of the regional aquifer must be protected.

The remedial objective for regional groundwater at the site is to protect for the use of the groundwater supply by the City of Tucson from contamination at the Site. This action is needed for the present time and for as long as the level of contamination in the soil threatens the use of the regional groundwater for municipal uses.