

**Explanation of Significant Differences
To 2023 Interim Record of Decision Amendment
Area A North of Los Reales Road
Treatment for Per- and Polyfluoroalkyl Substances**

**Tucson Airport Remediation Project
Tucson International Airport Area Superfund Site**

June 2026

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Region 9

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List of Acronyms and Abbreviations

ADEQ	Arizona Department of Environmental Quality
AFP44	Air Force Plant 44
AOP	advanced oxidation process
ARAR	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
DCE	dichloroethene
EPA	U.S. Environmental Protection Agency
FFS	focused feasibility study
GAC	granular activated carbon
HA	Health Advisory
HFPO-DA	hexafluoropropylene oxide dimer acid
IX	ion exchange
MCL	Maximum Contaminant Level
µg/L	micrograms per liter, equivalent to ppb
NWF	North Well Field
PCA	packed column aeration
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
ppb	parts per billion, equivalent to ug/L
ppt	parts per trillion, equivalent to nanograms per liter
RAO	remedial action objective
RI	remedial investigation
ROD	Record of Decision
SDWA	Safe Drinking Water Act
SWF	South Well Field
TARP	Tucson Airport Remediation Project
TCE	trichloroethene
TIAA	Tucson International Airport Area
USAF	United States Air Force
VOC	volatile organic compound
WTP	water treatment plant

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1.0 Purpose of Document

The U.S. Environmental Protection Agency (EPA) is issuing this Explanation of Significant Differences (ESD) to modify the remedy selected in the 1988 Record of Decision (ROD), modified by the 2023 Interim ROD Amendment for the Tucson International Airport Area (TIAA) Superfund Site (Site), Area A North of Los Reales Road, for the Tucson Airport Remediation Project (TARP) (EPA, 1988 and 2023). EPA is the lead agency for the Site, and the Arizona Department of Environmental Quality (ADEQ) is the support agency.

This ESD was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) section 117(c), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) section 300.435(c)(2)(i), and *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Decision Documents*, July 1999. Section 117(c) of CERCLA and Section 300.435(c)(2)(i) of the NCP require issuance of an ESD when EPA determines that changes to the original selected remedy are significant, but do not fundamentally alter the selected remedy with respect to scope, performance or cost.

This ESD describes the remedy modification and confirms that the remedial action complies with the statutory requirement of Section 121 of CERCLA, 42 U.S.C. § 9621. The remedy is being modified to add:

- Per- and polyfluoroalkyl substances (PFAS) to the list of contaminants of concern (COCs),
- Applicable or Relevant and Appropriate Requirements (ARAR)- and risk-based cleanup levels for PFAS,
- Updated remedial action objectives (RAOs) for groundwater contamination in Area A, and
- Treatment of PFAS at the TARP water treatment plant (WTP).

This ESD is based on information contained in the Administrative Record for the Site and will become part of the Administrative Record file in accordance with NCP section 300.825(a)(2). The Administrative Record is available for review at the following locations:

- EPA Region 9 Superfunds Records Center, 75 Hawthorne Street, San Francisco, California, Monday through Friday, excluding holidays, between 8:00 AM and 5:00 PM.
- Pima County Library Valencia Branch, 202 W. Valencia Rd., Tucson, Arizona, between 10:00 AM and 6:00 PM on Monday and Wednesday, 10:00 AM to 7:00 PM on Tuesday and Thursday, and 10:00 AM to 5:00 PM on Friday and Saturday.

2.0 Site Background

2.1 Tucson International Airport Area Superfund Site

EPA placed the Site on the National Priorities List (NPL) in 1983 to address groundwater contamination, principally by trichloroethene (TCE), in the vicinity of Tucson International Airport and adjacent industrial areas (Figure 1). The aquifer underlying the Site is designated as a Class II aquifer, a current source of drinking water.

Groundwater contamination at the Site is divided into Areas A and B. The Area A groundwater contamination plume is located in the western portion of the Site. As described in EPA's 1988 ROD, the remedial investigation (RI) of the Area A plume identified two main source areas of groundwater contamination: Air Force Plant 44 (AFP44) and the Three Hangars site located on Tucson Airport Authority (TAA) property (EPA, 1988a). Groundwater contamination occurred from solvent use and land disposal of spent industrial solvents at these facilities starting in the 1940s, allowing hazardous substances, pollutants and contaminants to migrate in groundwater for decades. Migration of volatile organic compounds (VOCs) in groundwater resulted in a contaminant plume extending approximately 5.5 miles northwest from the source areas.

Area B includes several smaller TCE contamination plumes in shallow groundwater underlying the east-central portion of the Site. The Area A and Area B Plumes have separate remedial actions. The Tucson Airport Remediation Project (TARP) facility addresses the portion of the Area A Plume north of Los Reales Road. Area B sub-areas are being addressed by other response efforts.

2.1.1 Tucson Airport Area Remediation Project

TARP was implemented to address contamination in Area A groundwater north of Los Reales Road. Area A groundwater contamination south of Los Reales Road is being addressed by the United States Air Force (USAF) at AFP44.

The TARP groundwater remediation system was placed into service in September 1994. The system includes the following major components: the North Well Field (NWF), located north of Irvington Road; well R-127A, located south of Irvington Road; the South Well Field (SWF), located south of Drexel Road; and the TARP Water Treatment Plant (WTP), located northwest of Irvington Road and Interstate 19 (Figure 2).

The NWF is comprised of four remediation wells screened in the deep regional Undivided Aquifer and is operated to contain the Area A Plume, preventing further downgradient migration. Well R-127A is operated primarily to reduce the mass of contaminants in the Area A Plume. The SWF is comprised of five remediation wells located in the area historically having the greatest mass of TCE. The SWF was originally designed to reduce the mass of contaminants in the Area A Plume, thus reducing downgradient migration of contaminants; however, the SWF has not been in operation since June 2021 due to high concentrations of PFAS. Section 2.3 provides additional information on PFAS concentrations in groundwater at the Site.

The TARP WTP was initially designed and constructed with a packed column aeration (PCA) treatment process to remove VOCs from groundwater extracted by the NWF and SWF remediation wells, as required by the 1988 ROD. Treated groundwater from the TARP WTP was delivered to the City of Tucson drinking water distribution system in accordance with the ROD and 1991 Consent Decree. The TARP system has reduced concentrations of TCE in the southern portion of the plume, and the majority of the remaining TCE contamination occurs in the regional Undivided Aquifer in the vicinity of the NWF.

In 2002, 1,4-dioxane was detected in groundwater samples collected from TARP monitoring and remediation wells. Prior to 2011, treated water from the TARP WTP was blended with groundwater from both Tucson Water's Southside Well Field and drinking water from the distribution system to ensure the water that was delivered met the EPA Safe Drinking Water Act (SDWA) Health Advisory (HA) level of 3 µg/L for 1,4-dioxane. In 2011, EPA lowered the SDWA HA level for 1,4-dioxane to 0.35 µg/L. Because the blended water could not achieve the 2011 HA level, Tucson Water shut the SWF down and began upgrades to the TARP WTP to remove 1,4-dioxane. Pilot testing of treatment technologies supported the application of advanced oxidation process (AOP) using ultraviolet (UV) light and hydrogen peroxide to effectively treat 1,4-dioxane. The TARP AOP facility began routine operation in February 2014.

Between February 2014 and May 2020, contaminated groundwater was treated in the AOP facility and then through the PCA. During this period, water quality data indicated that the AOP facility effectively and consistently treated TCE and 1,4-dioxane prior to the PCA. In June 2020, Tucson Water completed construction modifications at TARP to implement a PCA Retirement Demonstration approved by EPA and ADEQ. During the demonstration, the PCA was bypassed, and treated water from the AOP facility, with a free chlorine disinfection residual added at the TARP WTP, was conveyed directly to the drinking water distribution system as part of the demonstration. The 2023 Interim ROD Amendment approved elimination of the PCA system from the remedy (EPA, 2023).

2.1.2 Previous Remedy Modification for 1,4-Dioxane

In July 2007, EPA issued USAF an Administrative Order for Response Action pursuant to Section 1431 of the SDWA which required USAF to install a treatment system at AFP44 to mitigate the TCE and 1,4-dioxane impacts from AFP44 on groundwater. USAF had previously conducted a treatability study in 2004 to identify technologies to remove 1,4-dioxane from groundwater and had selected an AOP system using ozone and hydrogen peroxide to oxidize 1,4-dioxane and TCE in groundwater at AFP44 (APT, 2005). The AOP system at AFP44 became operational in September 2009. USAF reinjects treated groundwater from the AFP44 AOP system into the underlying aquifer.

In 2016, USAF conducted a Focused Remedial Investigation/Feasibility Study (RI/FS), which characterized the nature and extent of 1,4-dioxane in the entire Area A plume and evaluated alternatives for remediating 1,4-dioxane and managing TARP-treated water (EGC, 2016). Based on the evaluation conducted in the 2016 Focused FS (FFS), EPA prepared a Proposed Plan to address 1,4-dioxane and VOCs (EPA, 2017). The purpose of the 2016 FFS was to address the treatment of 1,4-dioxane contained in the extracted groundwater. The preferred remedy consisted of treatment of 1,4-dioxane and TCE in groundwater from the TARP remediation well fields via the existing AOP facility at the TARP WTP, with delivery of treated water to the municipal drinking water system.

In August 2021, an addendum to the 2016 FFS (First Addendum) was prepared. The First Addendum evaluated alternative end uses of treated water from TARP other than as drinking

water (Carollo, 2021). Potential uses included discharge to the Tucson Water recycled water system and discharge to the Santa Cruz River. In September 2021, EPA signed a Minor Changes Memorandum to remove the specification of the end use of treated water (EPA, 2021). In March 2023, EPA issued an Interim ROD Amendment for the selection of the AOP system at the TARP WTP as a remedy modification to address the 1,4-dioxane contamination (EPA, 2023).

2.2 2026 FFS Addendum

In April 2026, EPA prepared a Second Addendum to the FFS (EPA, 2026). The 2026 FFS Second Addendum supplements the 2016 FFS and 2021 First Addendum by evaluating the feasibility of treating water entering the TARP WTP for PFAS.

Modifications to the remedy for TARP are necessary because:

- The SWF has not been in operation since June 2021 due to concentrations of PFAS that are too high to treat with the current system at the TARP WTP;
- The TARP system needs to be able to operate with all current (and any future) extraction wells to treat contaminants effectively;
- Concentrations of several PFAS are greater than their SDWA Maximum Contaminant Levels (MCLs) (Carollo, 2024a);
- PFAS concentrations are projected to continue increasing (Carollo, 2024b);
- PFAS are not treated by the AOP plant; and
- While the granular activated carbon (GAC) contactor vessels do remove PFAS, the GAC vessel capacity for removing PFAS is quickly exhausted, and the system is not operating effectively or as designed.

The FFS Second Addendum evaluated several PFAS treatment technologies: granular activated carbon (GAC), ion exchange (IX) resin, foam fractionation, submicron powdered activated carbon, and reverse osmosis. GAC and IX were determined to be applicable treatment technologies for use at TARP. The 2026 Addendum then evaluated six operational scenarios using GAC, IX, or a combination of GAC and IX.

Based on the comparative analysis, the Second Addendum recommended Alternative 4 for identification as the preferred alternative: install IX upstream of the AOP to remove PFAS from the combined NWF and SWF flows (Figure 4). This alternative is expected to reduce GAC changeout frequency and allow the AOP quench system to operate as designed. EPA determined that preparing an ESD, rather than issuing a Proposed Plan and a second ROD Amendment, is appropriate because the changes to the TARP remedy are significant but do not fundamentally alter the remedy's scope, performance, or cost (40 CFR 300.435(c)(2)).

Because the nature and extent of PFAS in groundwater are still being defined in the ongoing remedial investigations, the 2026 FFS Addendum did not address aquifer restoration for PFAS. When a more complete understanding of PFAS in groundwater is achieved, a future feasibility study may be conducted to develop and evaluate remedial alternatives for aquifer restoration.

2.3 Basis for the Document

The current knowledge of the nature and extent of PFAS in groundwater is based on the analytical results from more than 300 wells from the Area A and Area B plumes. Both plumes contain groundwater exceeding MCLs (for the following PFAS: perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorohexanesulfonic acid (PFHxS), perfluorononanoic acid (PFNA)), and the Hazard Index criteria. Table 2 presents the PFAS compounds with MCLs and a mixture of PFAS with a Hazard Index.

PFOS and PFOA were initially detected in groundwater in the TARP system in 2013. Monitoring results indicated increasing concentrations over time. In June 2021, TARP was shut down to retrofit the system to accommodate alternative discharge options for the treated water. In November 2021, the TARP system returned to service; however, Tucson Water did not resume operating the SWF wells. The SWF wells remain out of service due to high concentrations of PFAS. In the following paragraphs, a single compound (PFOS) was selected to illustrate the currently known nature and extent of the PFAS contamination. PFOS is both prevalent and detected at elevated concentrations in the groundwater at the Site.

Area A groundwater contamination extends approximately 4.5 miles from Los Reales Road to the TARP NWF. Figure 2 shows the concentrations of PFOS in the TARP extraction well system. In the northern part of the extraction well system (NWF and R-127A), PFOS concentrations in 2023 ranged from 2.44 parts per trillion (ppt) in R-006A to 90 ppt in R-127A. Within the SWF, PFOS concentrations ranged from 116 ppt to 244 ppt. Within Area A monitoring wells in 2023, PFOS concentrations range from less than 1.6 ppt to 2,700 ppt. PFOS was detected at concentrations above the MCL of 4 ppt in 41% of the samples.

The results of PFOS analysis (2023) are presented in Figure 3 with the Area A and B TCE plumes shown to provide a more complete depiction of the current understanding of the groundwater contamination at TIAA. The full extent of PFAS contamination at the Site has not been defined. Any potential PFAS contribution from the Area B plume to the TARP system is currently unknown.

The existing TARP system is designed to capture and treat the Area A TCE plume. In doing so, it also captures elevated levels of 1,4-dioxane and PFAS. The purpose of the 2016 FFS was to address the treatment of 1,4-dioxane contained in the extracted groundwater, the 2021 FFS First Addendum evaluated alternative end uses of treated water from TARP other than as drinking water, and the 2026 FFS Second Addendum addressed the treatment of select PFAS in the TARP system. The effectiveness of the TARP system to address aquifer restoration of PFAS in the Area A plume has not been determined.

The NWF extraction wells are operated to contain the Area A plume. Although operation of the SWF and R-127A extraction wells is not required for plume containment, these wells are important for contaminant mass removal, and the TARP system does not operate to its full potential without them. Contaminant mass removal from the TARP plume affects migration and

how long the TARP remedy will be in operation. The SWF has not been in operation since June 2021 due to elevated concentrations of PFAS in the wells. Adding PFAS treatment to the TARP WTP will enable the SWF to be operated and the full capacity of the TARP WTP to be utilized, thus reducing contaminant migration, the overall cleanup cost, and the expected time to achieve TCE cleanup.

3.0 Remedial Action Objectives

Remedial Action Objectives (RAOs) are high-level goals for the cleanup that protect people and the environment. They describe the cleanup's purpose and address what contaminants are present and where they are, how they move, how people and wildlife could be exposed, and how the land is used now and in the future.

EPA is updating the RAOs selected in the 1988 ROD and 2023 Interim ROD Amendment. These updated RAOs will guide cleanup work in Area A.

Table 1: Comparison of Original and Updated RAOs

1988 ROD RAOs	2023 Interim ROD Amendment RAOs	RAO #	Updated RAOs
Manage migration of contaminants	Prevent migration of 1,4-dioxane in groundwater that would pose an unacceptable risk to human receptors	1	Prevent migration of groundwater containing COCs (VOCs, 1,4-dioxane and PFAS) at concentrations above levels protective of beneficial use as a source of drinking water (i.e., ARAR-based and risk-based cleanup levels) beyond the Area A boundary.
To achieve public acceptance of the remedy		--	<i>EPA is eliminating this objective because it is not an RAO. Community acceptance is part of the remedy selection process (40 CFR 300.430(e)(9)(iii)(I))</i>
To protect public health and the environment	Prevent human ingestion, inhalation, and/or direct contact exposure to COCs in groundwater above levels that would pose an acceptable health risk	2	Prevent exposure (ingestion, inhalation and/or dermal absorption) to groundwater containing COCs (VOCs, 1,4-

			dioxane and PFAS) at concentrations above levels protective of human health (i.e., ARAR-based and risk-based cleanup levels).
To attain consistency with ARARs	Restore contaminated groundwater throughout the VOC plume to levels that allow for beneficial use (i.e., drinking water).	3	Restore Area A groundwater at TARP to beneficial use as a source of drinking water by meeting ARAR-based cleanup levels for VOCs throughout the plume.*
To determine the most environmentally sound, technically feasible, and cost-effective remedy, which can be implemented in a timely manner, and		--	<i>EPA is eliminating this objective because it is not an RAO. These criteria are part of the remedy selection process (40 CFR 300.430(e)(9)(iii))</i>
To ensure consistency with AFP44 remedial actions.		--	<i>EPA is eliminating this objective because it is not an RAO. This response action is designed to be compatible with and not preclude ongoing and planned remedial actions at Air Force Plant 44 (AFP-44).</i>
	*This action focuses on exposure mitigation and does not establish final plume-wide cleanup levels. Establishing and attaining ARAR-based (or, where ARARs are unavailable, risk-based) cleanup levels will be addressed in a groundwater remedy to be selected in a future ROD.		

The groundwater COC concentrations for Area A—ARAR-based cleanup levels (Federal MCLs) and risk-based cleanup levels—used to demonstrate attainment of the RAOs are in the following table.

Table 2: ARAR-Based and Risk-Based Cleanup Levels

COC ¹	Cleanup Level	Basis
Trichloroethene (TCE)	5 parts per billion (ppb) ²	2023 Interim ROD cleanup level (Federal MCL).
1,1-DCE	7 ppb	2023 Interim ROD cleanup level (Federal MCL).
Trans 1,2-DCE	100 ppb	2023 Interim ROD cleanup level (Federal MCL).
1,4-dioxane	0.35 ppb	2023 Interim ROD cleanup level (10-6 risk level, SDWA Health Advisory).
Chloroform	70 ppb	2023 Interim ROD cleanup level (Federal MCL).
PFOA	4 ppt	Federal MCL
PFOS	4 ppt	Federal MCL
PFHxS	10 ppt	Federal MCL
PFNA	10 ppt	Federal MCL
HFPO-DA (GenX Chemicals)	10 ppt	Federal MCL
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS		Hazard Index of 1
Notes: ¹ Acronyms defined on page iv ² TCE Treatment Level of 1.5 ppb per 1988 ROD (EPA, 1988a)		

4.0 Description of Significant Differences

This ESD modifies the remedy selected in the 1988 ROD and 2023 Interim ROD Amendment by adding:

- PFAS as a COC;
- ARAR-based and risk-based cleanup levels for PFAS;
- Updated RAOs for groundwater contamination in Area A; and
- Treatment of the combined flow of groundwater from the NWF and SWF for PFAS with IX prior to the AOP.

The selected remedy modification will allow for full-flow capacity from all TARP remediation wells; decrease the GAC changeout frequency; provide long-term effective removal of PFAS; allow the existing GAC contactors to serve as a redundant treatment for PFAS, further ensuring continuous achievement of treated water quality goals, and allow the AOP facility's GAC system to operate as designed. The selected remedy modification has an estimated cost of approximately \$23,510,000, plus average annual operations and maintenance costs of approximately \$2,380,000.

CERCLA § 121 requires remedial actions to be protective of human health and the environment while complying with all ARARs. Cleanup of groundwater at the TARP WTP to SDWA MCLs for PFAS (Table 1) is considered an additional ARAR for this ESD. Chemical-specific ARARs and To Be Considered criteria (TBC) associated with the remedy modification are listed in Table 3. Action-specific ARARs are listed in Table 4. No additional location-specific ARARs have been identified.

The selected modified remedy is expected to achieve RAOs 1 and 2 (Table 2). The remedy will continue to be protective of human health and the environment in the short term, because treated water will continue to meet the SDWA MCLs. TARP will continue to remove VOCs and 1,4-dioxane as specified in the 1988 ROD and 2023 Interim ROD Amendment. RAO 3 may be addressed in a remedy modification or final remedy for Area A to be selected in a future decision document.

4.1 Support Agency Comments

ADEQ concurs with this ESD for the Tucson International Airport Area Superfund Site Area A, based on correspondence dated June 2, 2026.

4.2 Statutory Determinations

The modified remedy satisfies CERCLA § 121. EPA and ADEQ believe that the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

4.3 Public Participation Requirements

This document satisfies the public participation requirements under CERCLA Section 117(c) and the National Contingency Plan, 40 C.F.R. § 300.435(c)(2)(i). It will become part of the Administrative Record file for the TIAA Superfund Site, as specified in the NCP, 40 C.F.R. § 300.825(a)(2).

The Administrative Record for the Site is available for public review online at <http://www.epa.gov/superfund/tucsonairport>; at EPA Region IX, Superfund Records Center, 75 Hawthorne Street, San Francisco, CA 94105; and at the Pima County Library Valencia Branch, 202 W. Valencia Rd. Tucson, AZ 85706.

4.4 Authorizing Signature

MICHAEL

MONTGOMERY

Digitally signed by MICHAEL
MONTGOMERY

Date: 2026.07.01 08:53:09
-07'00'

Michael Montgomery, Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency, Region 9

5.0 References

APT. 2005. HiPOx™ Technology Field Evaluation: Raytheon Systems Company Plant 44. Prepared for Raytheon Systems Company, Prepared by Applied Process Technology, Inc., Job Order P-1341, January.

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FIGURES



FIGURE 1 SITE MAP

TUCSON INTERNATIONAL AIRPORT
TUCSON, ARIZONA

NOTES:
TARP = Tucson Airport Remediation Project
WTP = Water Treatment Plant

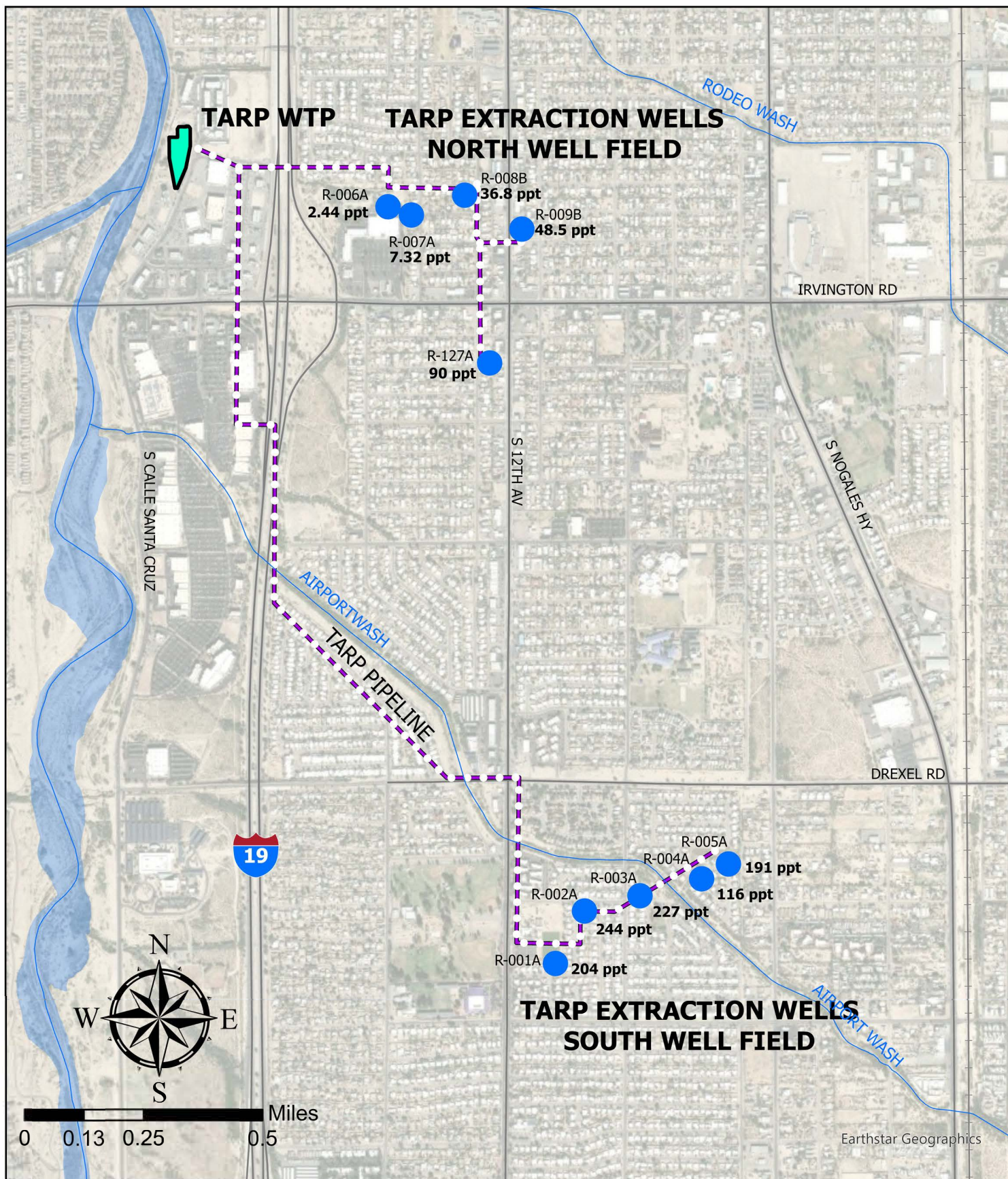


FIGURE 2 TARP REMEDIATION SYSTEM

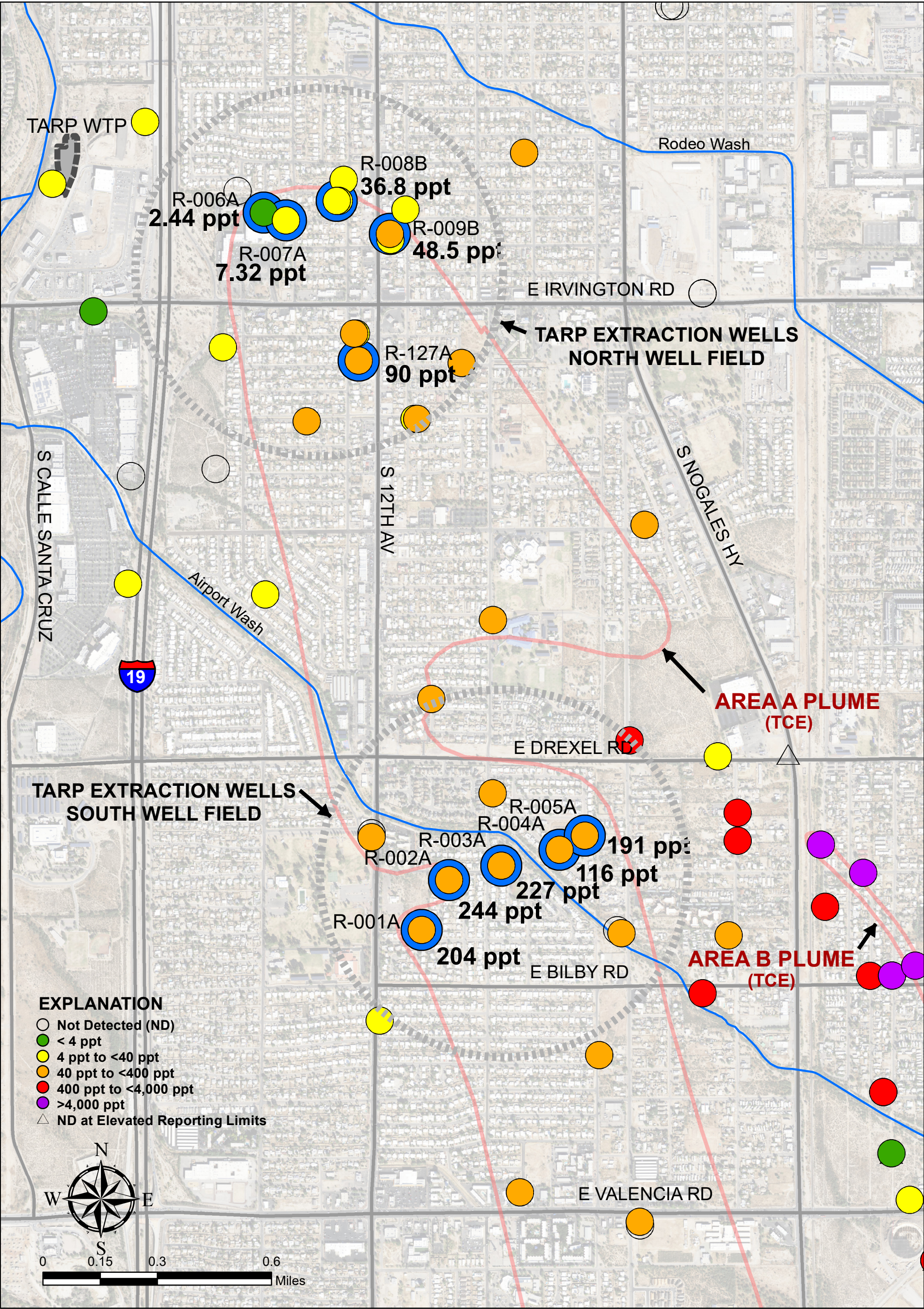
NOTES:

ppt = Parts per Trillion
TARP = Tucson Airport Remediation Project
WTP = Water Treatment Plant
PFOS = Perfluorooctanesulfonic Acid

**TUCSON INTERNATIONAL AIRPORT
TUCSON, ARIZONA**

NOTES:

● R-001A TARP Extraction Well ID
204 ppt PFOS Concentrations (2023)



EXPLANATION

- R-001A TARP Extraction Well ID
- 204 ppt PFOS Concentrations (2023)

NOTES:

- ppt = Parts per Trillion
- TARP = Tucson Airport Remediation Project
- WTP = Water Treatment Plant
- PFOS = Perfluorooctanesulfonic Acid
- TCE = Trichloroethene

FIGURE 3 PFOS IN GROUNDWATER

TUCSON INTERNATIONAL AIRPORT AREA

Tucson, Arizona

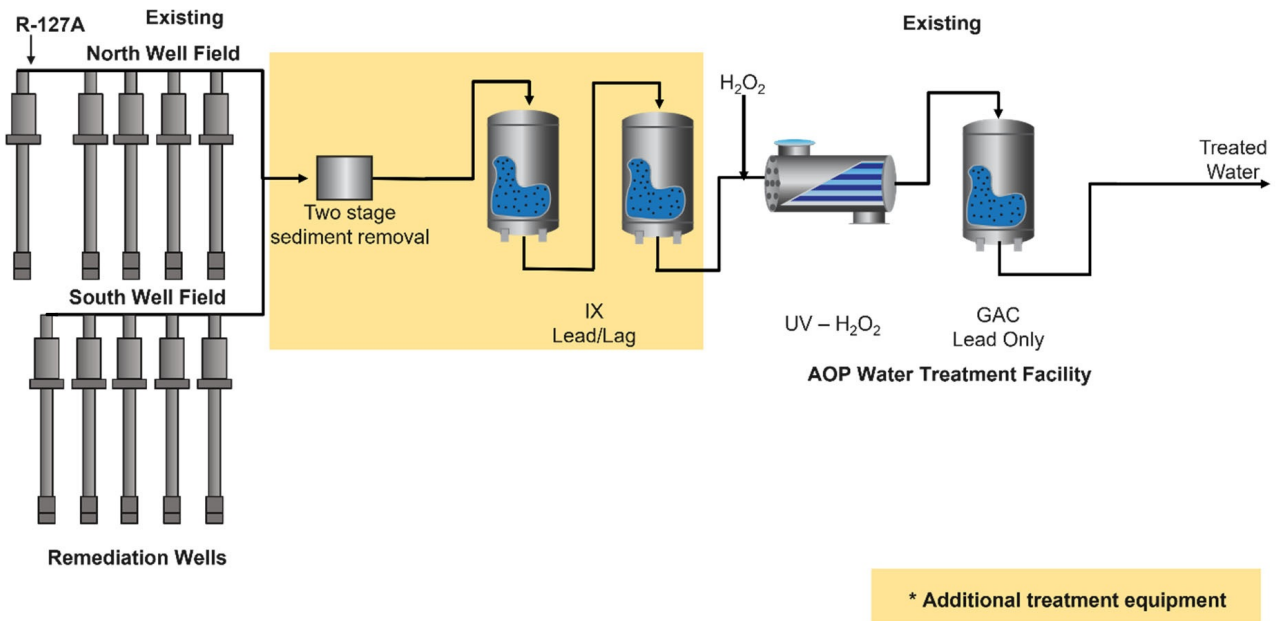


Figure 4: Selected Remedy:
Treatment of SWF and NWF Using Ion Exchange and AOP

TABLES

Table 3
Chemical-Specific ARARs

Source	Standard, Requirement, Criteria, or Limitation	ARAR/TBC Status	Description of Standard, Requirement, Criteria or Limitation	Manner in which ARAR Applies to Alternative
Safe Drinking Water Act	42 U.S.C. § 300g-1; 40 C.F.R. Part 141, Subpart G	Relevant and Appropriate	MCLs for certain contaminants in drinking water to protect human health.	TARP-treated water delivered to EPTDS shall meet MCLs.
Arizona Class A Reclaimed Water	A.A.C § R18-11-304	Relevant and Appropriate	Class A reclaimed water shall meet treatment and water quality requirements.	The Reclaimed Water System distributes Class A reclaimed water and will meet the treatment and water quality requirements.
Arizona Aquifer Water Quality Standards	A.R.S. § 49-223; A.A.C. Title 18, Chapter 11, Article 4 (Aquifer Water Quality Standards).	Relevant and Appropriate	Standards for drinking water use of Arizona aquifers.	On-site discharge from the Reclaimed Water System be protective of the aquifer water quality standards.
Arizona Water Quality Standards for Surface Water for Non-WOTUS Protected Waters	A.A.C. Title 18, Chapter 11, Article 2	Applicable	Discharge from treatment systems must comply with the requirements specified if treated water is discharged to a surface water.	Discharged water shall meet requirements.
Safe Drinking Water Act MCLGs	40 CFR Part 141 Subpart F	TBC	EPA identifies the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals. Relevant and appropriate non-zero MCLGs shall be attained by groundwater remedial actions that are current or potential sources of drinking water.	These goals are not enforceable should be considered for any constituent with a non-zero MCL.

Table 4
Action-Specific ARARs

Source	Standard, Requirement, Criteria, or Limitation	ARAR/TBC Status	Description of Standard, Requirement, Criteria or Limitation	Manner in which ARAR Applies to Alternative
Arizona Clean Air Act	A.R.S. §§ 49-457.05	Relevant and Appropriate	If in Maricopa, Pinal, Yuma, or Pima Counties must adhere to: Parties involved in remedial activities should implement Best Management Practices to reduce or prevent PM10 particulate emissions as soon as practicable before and during a day that is forecast to be at high risk of dust generation.	Reasonable precautions, such as wetting or covering, must be taken for dust producing sources (e.g., machinery or storage piles) to minimize fugitive dust on days with high risk of dust generation.
ANSI Standards – Arizona Safe Drinking Water	A.A.C. R18-4-213	Applicable if products are added to TARP water during treatment.	Each product added directly to water during treatment must conform to ANSI/National Sanitation Foundation (NSF) Standard 60. Material or products (e.g., granular-activated carbon or pipes) that come into contact with water must conform to ANSI/NSF Standard 61.	Added products (e.g., peroxide or new piping) shall have a seal of the certifying entity that it is accredited by ANSI. If they are not certified, regulation lists other steps that the TARP plan can take to meet the requirement.
Hazardous Waste Management/RCRA Requirements	Title 40 CFR Part 262 Subparts A-D, Part 273 Subpart B and/or C, and Part 279 Subpart C	Applicable if TARP generates waste material (e.g., hazardous waste, universal waste, and used oil) during remediation activities.	Substantive, but not administrative, parts of RCRA requirements must be met on a CERCLA site.	Requires waste analysis, inspection, training, and handling and storage requirements.
Hazardous Materials Transportation Regulations	Title 49 CFR Part 172 Subparts C-H and Part 173 Subparts A, B, D and E	Applicable if shipping waste to another site.	Covers requirements for marking, labeling, and placarding of shipping containers. If waste is identified as hazardous, recordkeeping and manifesting are required.	Requires marking and labeling investigative-derived waste and other hazardous material shipments before shipping off site.
Well Construction and Abandonment Standards	Arizona Administrative Code, Title 12, Chapter 15, Article 8: well construction and abandonment regulations (these are regulations promulgated pursuant to A.R.S. 45-594, under the Arizona Groundwater Management Act): R12-15-811 (Minimum Well Construction Requirements) R12-15-813 (Unattended Wells) R12-15-816(G, H, I, and J) (Abandonment of Wells) R12-15-822 (Capping of Open Wells)	Applicable	Well construction and well abandonment will comply with the substantive requirements within the regulations, including: R12-15-811, Minimum Wells Construction Requirements. R12-15-813, Unattended Wells: “All wells, when unattended during well drilling, shall be securely covered for safety purposes and to prevent the introduction of foreign substances into the well.” R12-15-816(G, H, I, and J), Abandonment of Wells R-12-15-822, Capping of Open Wells	Applies to construction of new wells or replacement wells; unattended wells; abandonment of wells, and open wells.
Pipeline Conveyances of Reclaimed Water	A.A.C. § R18-9-B702(J)	Relevant and Appropriate	Engineering standards for pipeline conveyances of reclaimed water.	Reclaimed water conveyances shall be constructed according to the standards.
Aquifer Protection	A.R.S. § 49-243(B)	Relevant and Appropriate	A person who discharges shall obtain an Aquifer Protection Permit (APP). APPs implement technology standards and aquifer water quality standards. Remedial actions are exempt from the requirement to obtain this permit, under A.R.S. §49-250 and CERCLA §121(e).	On-site discharges shall meet the substantive standards at the point of compliance.
Design Criteria for public water systems	A.A.C. Title 18 Chapter 5 Article 501 through 502	Relevant and Appropriate	If the remedy includes a groundwater pump and treat remedial system technology.	Meet siting requirements and minimum design criteria for water treatment units specified for drinking water system.
Arizona Remedial Action Requirements	A.R.S. §§ 49-282.06(A)(2)	Applicable	Any treatment of groundwater must be conducted in a manner to provide for the maximum beneficial use of the waters of the state.	The beneficial use of the treated groundwater shall be presented and described.
Arizona Groundwater Management Act	A.R.S.45-454.01(A)(2)	Applicable	If the groundwater that is withdrawn as part of a CERCLA remedial action is not reinjected into the aquifer, the groundwater shall be put to reasonable and beneficial use.	Requires groundwater that is withdrawn as part of a CERCLA remedial action to be put to reasonable and beneficial use, if the water that is withdrawn is not reinjected into the aquifer.