



# WATER QUALITY ASSURANCE REVOLVING FUND (WQARF)

FY18 ANNUAL REPORT





## OUR MISSION AND VISION

The Arizona Department of Environmental Quality's (ADEQ's) mission is to protect and enhance public health and the unique environment in Arizona. To achieve this, ADEQ administers the state's environmental laws and delegated federal programs to prevent pollution of the air, water and land, and to ensure cleanup when pollution occurs.

ADEQ's vision is to be the No. 1 state in the nation in:

- Balanced, leading edge environmental protection through
- Technical and operational excellence, and
- Radical simplicity for customers and staff.

## TABLE OF CONTENTS

Foreword .....	4
Executive Summary .....	5
State WQARF Program Timeline .....	6
WQARF Funding.....	7
WQARF Site Mission Outcome Detail.....	8
Federal Site Mission Outcome Detail .....	9
WQARF Phases .....	10
WQARF Status Chart .....	11
WQARF Progress .....	12
Emergency Response Unit (ERU) Actions .....	18
Emergency Response Funded Sites.....	19
WQARF Cost Recovery Activity.....	20
Metropolitan Sites.....	21
Statewide Sites.....	19
Appendices:	
1 - WQARF Revenue and Expenditures.....	28
2 - WQARF Expenditure Statement.....	29
3 - WQARF Site Budget .....	30
4 - Water Quality Assessment and Management.....	31
5 - Arizona Department of Health Services (ADHS) .....	32
6 - Arizona Department of Water Resources (ADWR).....	34



# FOREWORD

The Water Quality Assurance Revolving Fund (WQARF) program is critical to protecting public health and the environment in Arizona, while supporting future development and fostering economic growth. WQARF cleans up contaminants in groundwater and overlying soil; ensuring the people of Arizona have access to clean water, and that their land is unencumbered and available for development.

Despite the program's importance, funding remains a major challenge. Although Arizona Revised Statutes (ARS) §49-282(B) directs \$15 million from Corporate Income Tax (CIT) revenue to WQARF annually, funding has gradually decreased over the last decade to \$0 in Fiscal Year 2019. And while cost-recovery from responsible parties is a part of the WQARF process, Arizona's proportionate liability law (as opposed to joint and the several liability), leaves "orphan shares" when responsible parties are no longer viable. The current orphan share liability for the State is estimated to be over \$185 million.

As a countermeasure, ADEQ has supported the WQARF program through legislatively authorized fund transfers of savings generated in other ADEQ fee funds. However, this is not a sustainable solution to the problem. A top priority of ADEQ is to work with stakeholders and elected officials to identify a long-term funding source.

Even as funding has been a challenge, the WQARF team has produced fantastic results by implementing the Arizona Management System (AMS). In the last few years, six WQARF sites have been delisted – compared to zero in the first 25 years of the program. One site was cleaned up using innovative methods, saving the State \$1.2 million and 15 years of operations and maintenance. Another example is a former smelter site in Patagonia where lead contamination was identified and addressed in record time: 15 months.

Whether cleaning up contaminants in small towns or city centers, or deploying emergency response to wildfires and other hazardous events, WQARF projects directly benefit public health, our unique environment and the economy in our great state of Arizona.

Misael Cabrera  
Director

# EXECUTIVE SUMMARY

This report has been prepared for the Water Quality Assurance Revolving Fund (WQARF) as directed in Arizona State Bill 1520 Section 33 (Laws 2018, Chapter 276).

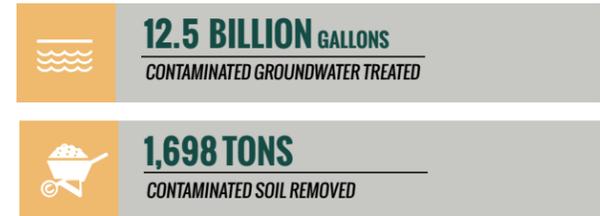
Created under the Environmental Quality Act of 1986, the WQARF program supports the Arizona Department of Environmental Quality (ADEQ) identifying, prioritizing, assessing and resolving the threat of contaminated soil and groundwater sites in the state. The WQARF Reform Legislation of 1997 resulted in significant revisions to better address contaminated soil and groundwater site cleanup.

**36** of the state's worst hazardous waste sites are being cleaned up through the WQARF program

**21** additional sites are being evaluated for inclusion to the WQARF program

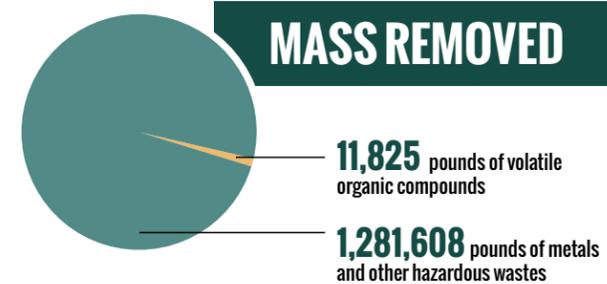
**Sites Added:**  
Lake Havasu Avenue and Holly Avenue (Lake Havasu City)

## FY18 MISSION OUTCOMES (OVERALL TOTALS)

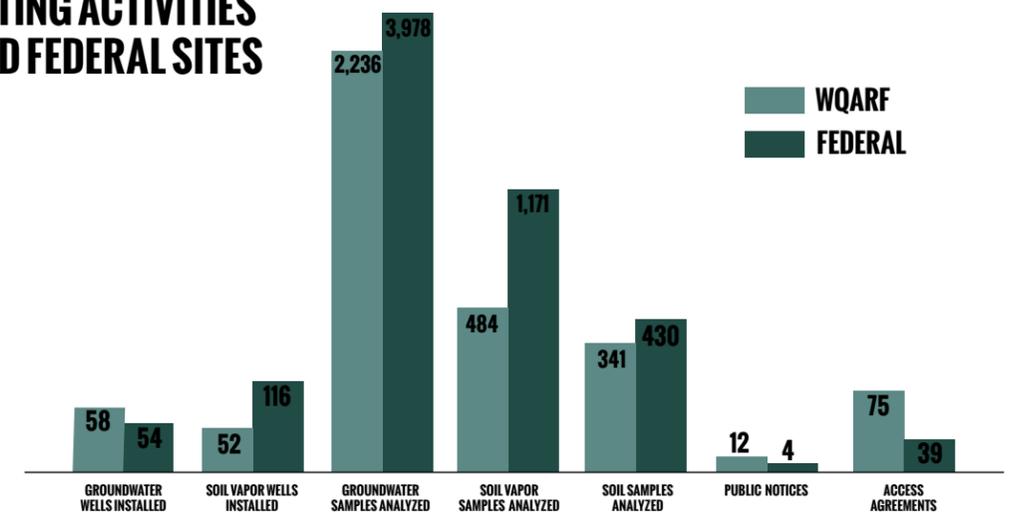


## FY18 MAJOR ACCOMPLISHMENTS

- Removed the East Central Phoenix - 38th Street & Indian School Road site from the Registry
- Completed 4-year evaluation of 86 sites on the Preliminary Investigation list
- First WQARF site remediated within 180 days for the first time in program history
- Implemented first remedies on 3 sites in less than 2 years for the first time in program history

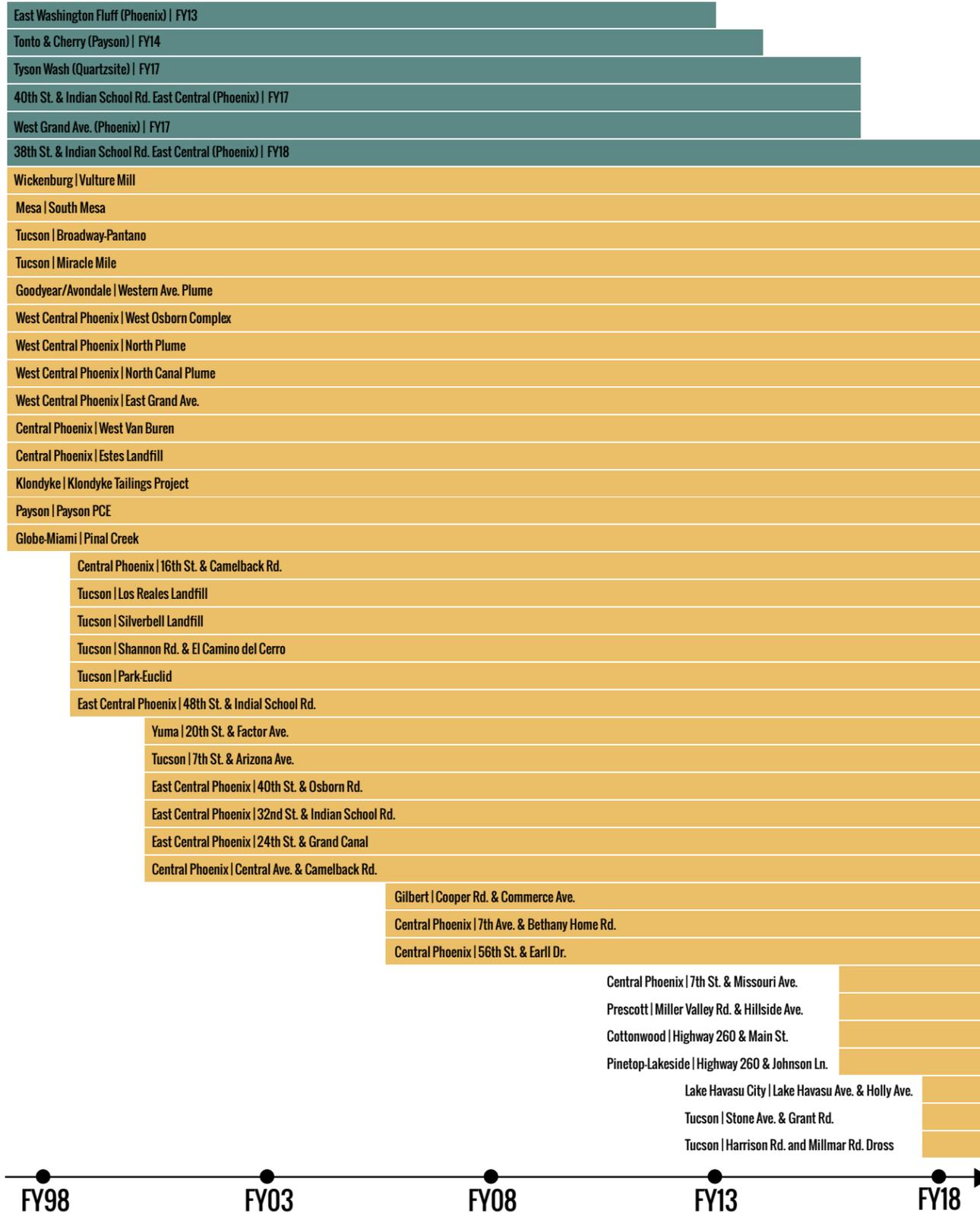


## FY18 SUPPORTING ACTIVITIES FOR STATE AND FEDERAL SITES



# STATE WQARF PROGRAM TIMELINE

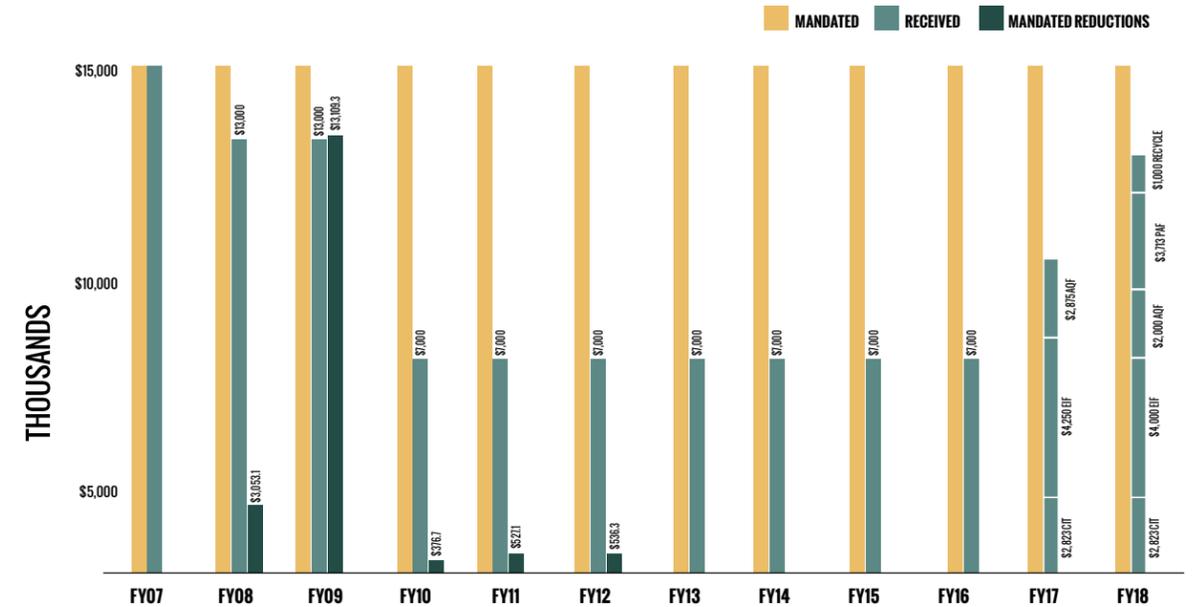
REMOVED  
ACTIVE



# WQARF FUNDING

Arizona Revised Statutes (ARS) §49-282(B) has specified a cap of \$18 million annually with \$15 million of that coming from Corporate Income Tax (CIT) revenue. While statutorily mandated, the funding has been reduced to \$0 for FY19. For FY18, ADEQ supplemented funding for WQARF through the Emissions Inspections Fund (EIF) and Air Quality Fund (AQF). In addition to these funds, for FY19 ADEQ will supplement funding through the Permit Administration Fund (PAF) and Recycle Fund (RECYCLE).

## CORPORATE INCOME TAX REVENUE COMPARISON FY07 - FY18



## FUNDS ARE USED FOR:

**WQARF Registry** | Remediation of all sites currently in the WQARF program

**WQARF Registry Third-Party Work** | Oversight of privately funded cleanup efforts at WQARF Registry sites

**Federal Oversight** | Review and oversight of work done by the Environmental Protection Agency on National Priorities List (Superfund) and Department of Defense sites

**Emergency Response** | Immediate action to address confirmed contamination or threat of contamination that could impact public health and/or the environment

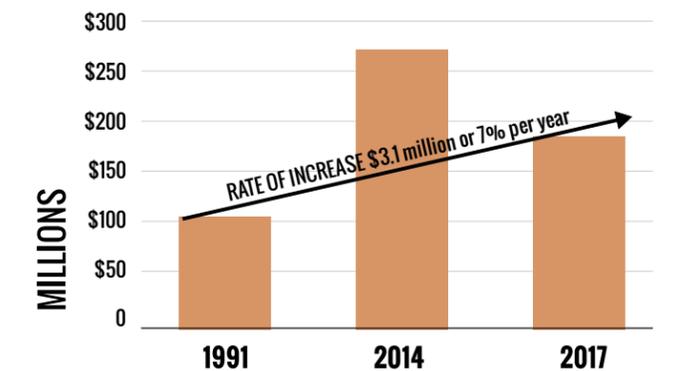
**Water Quality Assessment and Management** | Data gathering for projects that assess and improve water quality throughout Arizona (Appendix 4)

**Partner Agencies** | Work conducted by the Arizona Department of Health Services (Appendix 5) and Arizona Department of Water Resources (Appendix 6)

**Voluntary Remediation Program** | Oversight of voluntary cleanup funded by responsible parties and/or property owners

Other remedial actions as deemed necessary by the ADEQ Director

## ORPHAN SHARE ESTIMATE BASED ON MODELED TOTAL WQARF LIABILITY



In 2017, WQARF's orphan share was estimated at \$185 million (58 percent) of a total \$318 million liability. This equates to a \$3.1 million or a 7 percent increase per year.

In 2014, WQARF's orphan share was estimated to be \$268 million (62.5 percent) of a total \$429 million liability. This equates to a \$6.9 million or a 11 percent increase per year.

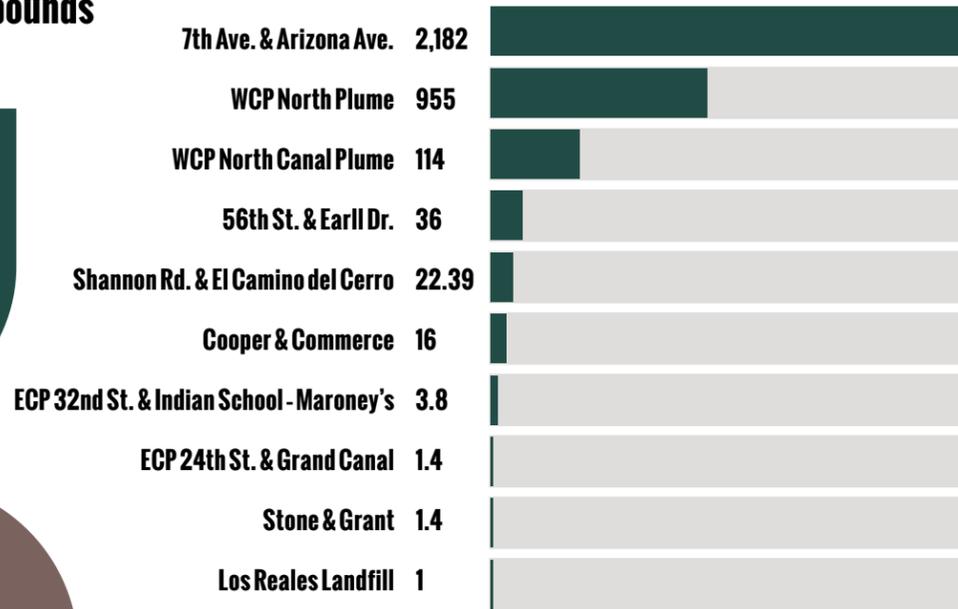
In 1991, WQARF's orphan share was estimated to be \$105 million (35 percent) of a total \$300 million liability.

WQARF's liability was first modeled by ADEQ in 1991, in 2014 and in 2017 using RACER® (Remedial Action Cost Engineering Requirements) software, supported by AECOM Asset Management Division.

# WQARF SITE MISSION OUTCOME DETAIL

## REMEDIATION:

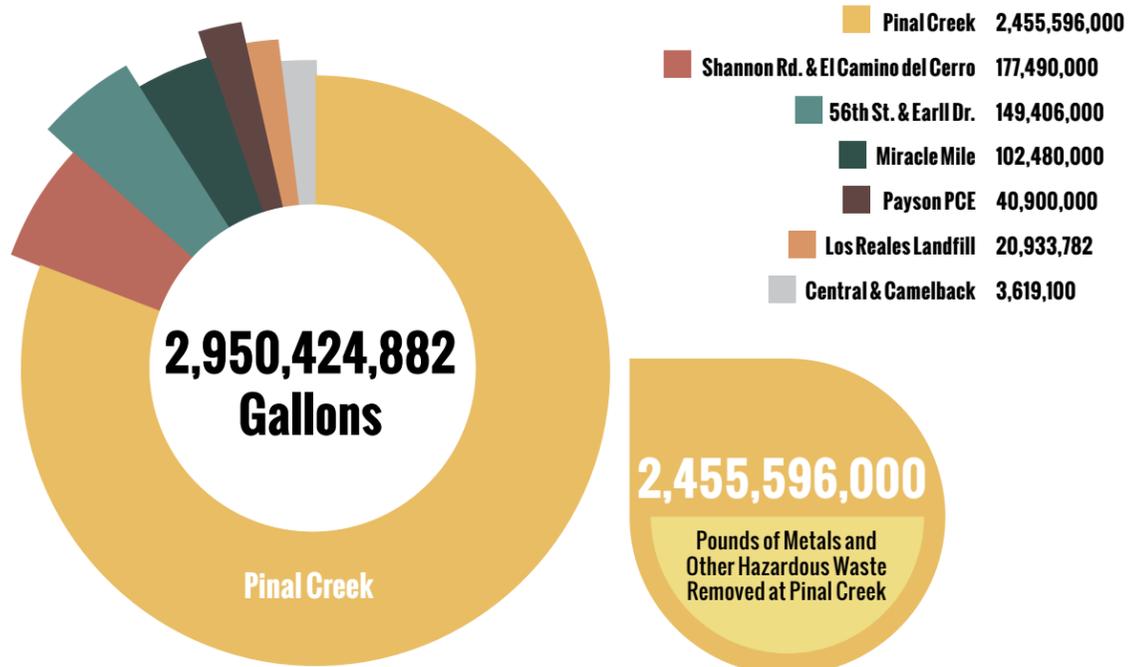
### Volatile Organic Compounds (VOCs) Removed



**712**

Tons of Contaminated Soil Removed from 3rd and Smelter

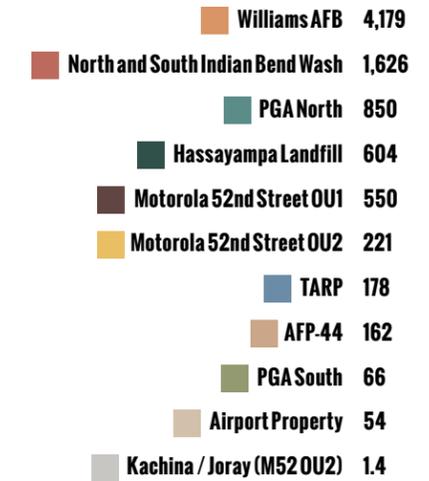
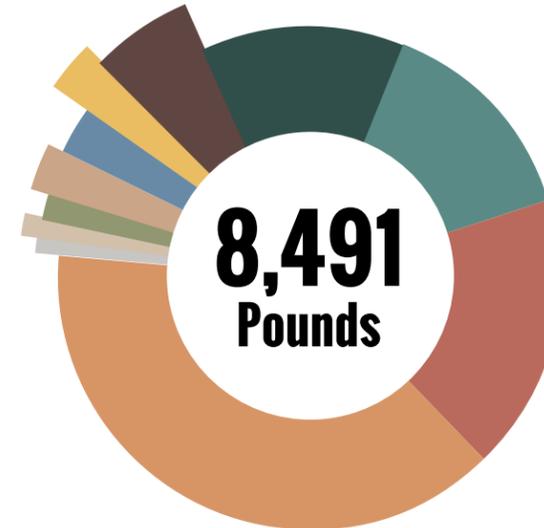
### Gallons of Groundwater Treated



# FEDERAL SITE MISSION OUTCOME DETAIL

## REMEDIATION:

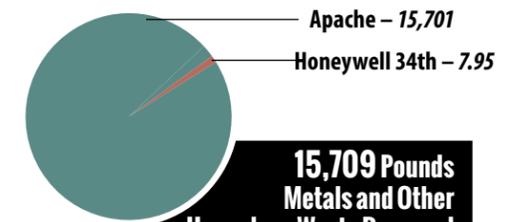
### Volatile Organic Compounds (VOCs) Removed



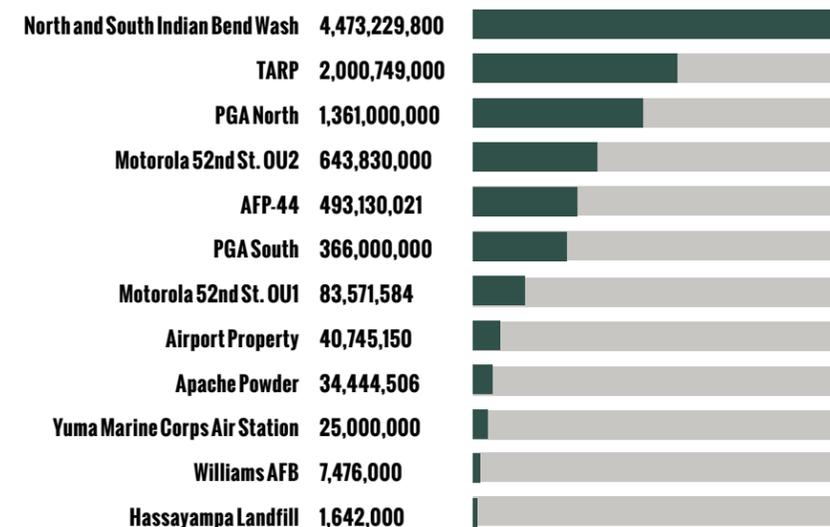
**986 Tons**  
Contaminated Soil Removed



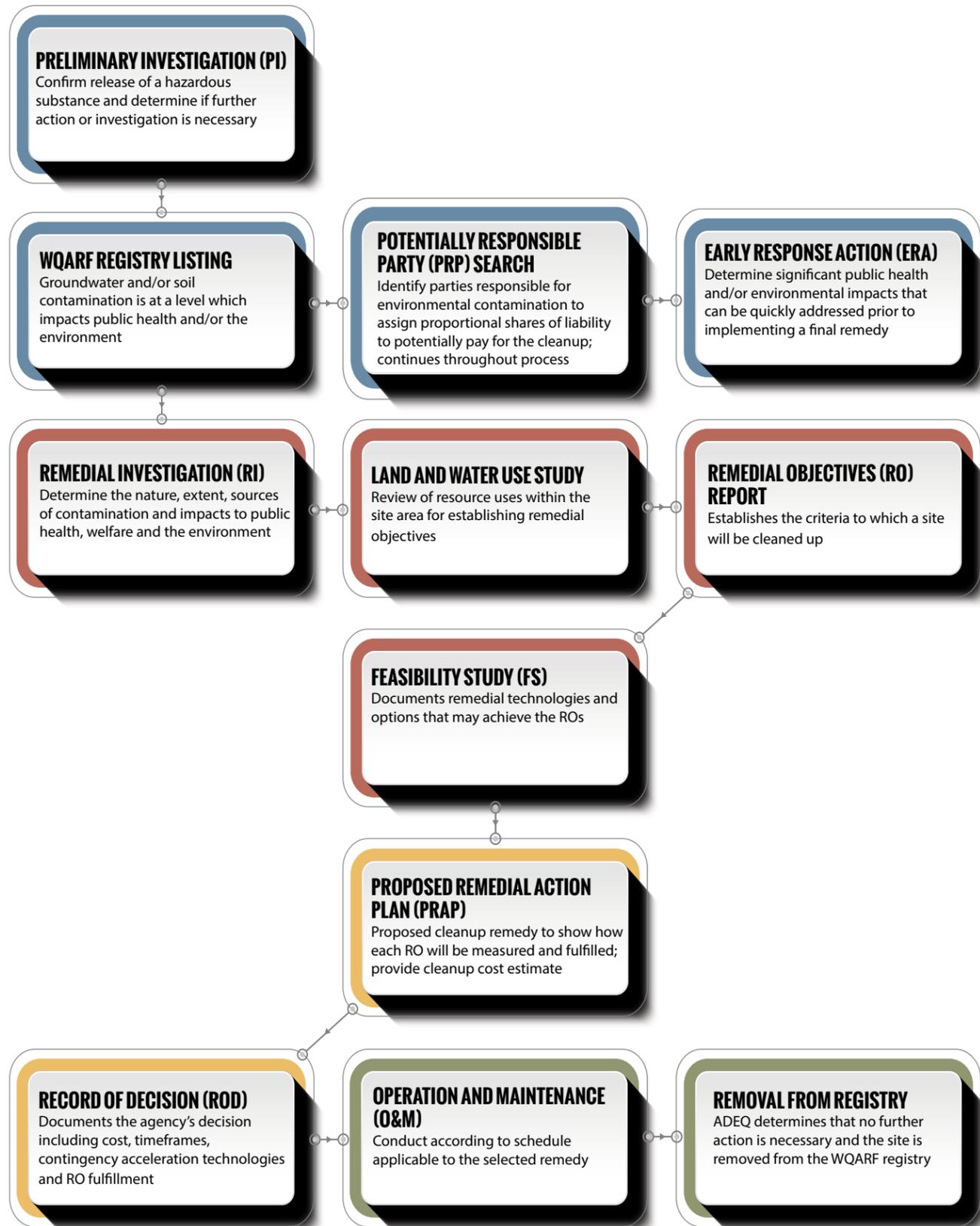
**15,709 Pounds**  
Metals and Other Hazardous Waste Removed



### Gallons of Groundwater Treated



# WQARF PHASES AND TERMS



# FY18 WQARF STATUS CHART

SITES	EARLY RESPONSE ACTION	REMEDIAL INVESTIGATION	FEASIBILITY STUDY	PROPOSED REMEDIAL ACTION PLAN	RECORD OF DECISION	OPERATION AND MAINTENANCE
7TH AVENUE AND ARIZONA AVENUE						
7TH STREET AND BETHANY HOME ROAD						
7TH STREET AND MISSOURI						
16TH STREET AND CAMELBACK ROAD						
20TH STREET AND FACTOR AVENUE						
56TH STREET AND EARLL DRIVE						
BROADWAY-PANTANO						
CENTRAL AVENUE AND CAMELBACK ROAD						
COOPER ROAD AND COMMERCE AVENUE						
ECP - 24th STREET AND GRAND CANAL						
ECP - 32nd STREET AND INDIAN SCHOOL ROAD						
ECP - 40th STREET AND OSBORN ROAD						
ECP - 48th STREET AND INDIAN SCHOOL ROAD						
ESTES LANDFILL						
HARRISON RD AND MILLMAR RD						
HIGHWAY 260 & MAIN						
HWY 260 & JOHNSON LANE						
KLONDYKE TAILINGS						
LAKE HAVASU AVE AND HOLLY AVE						
LOS REALES LANDFILL*						
MILLER VALLEY RD & HILLSIDE AVE						
MIRACLE MILE						
MOUNTAIN VIEW ESTATES**						
PARK - EUCLID						
PAYSON PCE						
PINAL CREEK*						
SHANNON RD/EI CAMINO del CERRO						
SILVERBELL LANDFILL*						
SOUTH MESA						
STONE AVENUE AND GRANT ROAD						
VULTURE MILL						
WCP - EAST GRAND AVENUE						
WCP - NORTH CANAL PLUME						
WCP - NORTH PLUME						
WCP - WEST OSBORN COMPLEX						
WESTERN AVENUE						
WEST VAN BUREN						
<b>REMOVED FROM REGISTRY</b>						
1. EAST WASHINGTON FLUFF (PHOENIX)   FY13						
2. TONTO AND CHERRY (PAYSON)   FY14						
3. TYSON WASH (QUARTZITE)   FY17						
4. ECP - 40TH STREET AND INDIAN SCHOOL ROAD (PHOENIX)   FY17						
5. WCP- WEST GRAND AVENUE (PHOENIX)   FY17						
6. ECP - 38TH STREET AND INDIAN SCHOOL ROAD (PHOENIX)   FY18						

**NOTES:**

- \* Long-term operation and maintenance - Old WQARF Program
- \*\* Former National Priority List site, only ongoing long-term operation and maintenance

# FY18 WQARF PROGRESS

## WQARF REGISTRY DELISTING

### EAST CENTRAL PHOENIX - 38TH STREET & INDIAN SCHOOL ROAD

Added to the Registry in 1998, this site was one of six WQARF sites grouped together in East Central Phoenix (ECP). This is the second ECP site to be delisted. The first was removed from the WQARF Registry in FY17.

In June 2017, ADEQ conducted an Early Response Action (ERA) to address contamination of tetrachloroethene (PCE) in groundwater at two wells. In-Situ Chemical Oxidation (ISCO) was conducted in January, April and May 2018. Data show the treatment effectively reduced the contaminants and no further action was necessary. The site was removed from the WQARF Registry in June 2018.

*“It is exciting to see a second site removed from the registry. ADEQ has tirelessly worked on this effort. To see the technological advancements over the years and their impact on these sites has been fascinating. ADEQ and their community outreach has kept the community and committee informed of each advance and success. Congratulations on one more closure.”*

*- Jolene Morris, a member of the Community Advisory Board for WQARF Sites in East Central Phoenix.*

## EFFORTS TO ACCELERATE CLEANUPS

ADEQ is emphasizing efforts to accelerate cleanups at WQARF sites by incorporating innovative remedial technologies, in addition to work already being done. Optimization of remedies for sites within Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) phases is conducted to decrease years of potentially costly operation and maintenance (O&M). ADEQ also periodically reviews previous RODs to ensure effectiveness of cleanup and the objectives of the RODs are met.

### PAYSON PCE (PAYSON)

ADEQ evaluated options to expedite the cleanup of PCE contamination after data showed the groundwater remediation system currently installed would not meet cleanup goals until 2036. ADEQ selected Enhanced Reductive Dechlorination (ERD) and bioaugmentation, consisting of microbial enhancement, to shorten the time needed to cleanup the site. Since these processes were implemented in FY16, data show groundwater contaminant levels are decreasing. ADEQ expects work to continue through FY19.

### 16TH STREET AND CAMELBACK (PHOENIX)

ADEQ evaluated options to expedite the cleanup of PCE contamination after data showed the current remedy selected in the ROD would not meet cleanup goals until 2028. ADEQ selected ERD to accelerate the remedy, and injections were conducted in FY18. Data show groundwater contaminant levels continue to decrease. ADEQ expects work to continue through FY19.

### ESTES LANDFILL (PHOENIX)

ADEQ evaluated options to expedite the cleanup of contamination at this site after data showed the current remedy selected in the ROD would not meet cleanup goals until 2031. Contaminants of concern include vinyl chloride, dichloroethene (DCE), and PCE in groundwater, plus lead, arsenic and thallium in soil. ADEQ will conduct a pilot test during the second half of 2018 to determine if ISCO will be able to accelerate cleanup of the groundwater at the site.

### WEST CENTRAL PHOENIX - NORTH PLUME (PHOENIX)

To expedite the cleanup of groundwater contamination at the site, ADEQ conducted a pilot test using ERD in FY17. ADEQ will continue using ERD in FY19. Also in FY19, ADEQ will evaluate the use of thermal treatment to increase contaminant mass removal from impacted soil, along with the effectiveness of enhancing the existing Soil Vapor Extraction (SVE) system.

### SOUTH MESA (MESA)

ADEQ evaluated options to expedite the cleanup of PCE, TCE and DCE contamination at this site after data showed the current remedy selected in the ROD would not meet cleanup goals until 2031. ADEQ is currently conducting an ISCO pilot test to determine if this remedy acceleration could shorten cleanup time. Data already show implementing this process will have favorable results.

## EARLY RESPONSE ACTION (ERA)

ADEQ developed ERA to quickly address contamination where public health and/or the environment is potentially impacted, where sources of contamination can cause significant environmental impact or where swift action can save significant WQARF funds by limiting the spread of contamination.



### EAST CENTRAL PHOENIX - 24TH STREET AND GRAND CANAL (PHOENIX)

Since installing a SVE system in FY16, nearly 78 pounds of PCE have been removed from the environment. A Remedial Investigation (RI) is expected to be completed in FY19 and will better define the extent of contamination as work continues.



### EAST CENTRAL PHOENIX - 32ND STREET AND INDIAN SCHOOL ROAD (PHOENIX)

To address contaminated soils, two SVE systems are currently operating behind Maroney's Cleaners and the former Viking Cleaners facilities. Both systems were optimized in FY17 and have removed a total of 158 pounds of PCE from the environment. A RI is expected to be complete in FY19 and will define the extent of contamination as work continues.

### HIGHWAY 260 AND JOHNSON LANE (PINETOP-LAKESIDE)

ADEQ installed three Granulated Activated Carbon (GAC) wellhead treatment systems to address PCE found in three residential, private drinking water wells. A Feasibility Study (FS) will be completed in FY19, and the systems are expected to be incorporated into the final remedy for the site.

### HIGHWAY 260 AND MAIN STREET (COTTONWOOD)

ADEQ installed a GAC wellhead treatment system to address PCE found in a residential, private drinking water well. A RI for this site is expected to be completed in FY19, and the system is expected to be incorporated into the final remedy.

## STONE AND GRANT (TUCSON)

In February 2017, ADEQ confirmed the presence of PCE contamination in soil and groundwater through a Preliminary Investigation (PI) and a nearby UST investigation. A SVE system was installed in December 2017 to remove contaminants from the soil and the possible source of groundwater contamination. A RI for this site is currently in progress to determine if contaminants have impacted the regional aquifer.

## WEST CENTRAL PHOENIX - NORTH CANAL PLUME (PHOENIX)

Through a RI completed in FY17, ADEQ confirmed PCE, DCE and TCE were impacting indoor air at some buildings and the groundwater. A SVE system removed 53 pounds of contaminants in FY17 and 114 pounds in FY18. ADEQ also installed a deep soil vapor well at the source property and is planning to install a permanent SVE in FY19. A FS is currently in process to determine the extent of the contamination.



## 3RD AVE AND SMELTER AVE (PATAGONIA)

After cleanup at a neighboring youth center in FY17, additional remediation was done in FY18 at the former Patagonia smelter. Yards surrounding homes now located on the former smelter property was capped with an engineered soil barrier to prevent contaminated soil from blowing off the property or leaving the property through rainfall runoff. Roads were capped, either through paving or gravel, and 15,000 ft<sup>2</sup> was regraded to prevent contamination spreading through rainfall runoff. Two additional properties near the smelter were also remediated. Approximately 712 tons of impacted soil and smelter debris were removed from the site. Clean fill material totaling 1474 tons was imported to replace the removed soil and create the soil cap.

## 7TH STREET AND MISSOURI AVENUE (PHOENIX)

A draft RI published in May 2017 found a rise in PCE contamination in groundwater over the previous year and elevated soil gas concentrations. ADEQ worked with a property owner near the potential source area to install a SVE system in an underground parking garage. In FY17, a pilot test of the SVE system removed 1.6 pounds of PCE. In FY19, ADEQ is installing a larger SVE system to remove additional PCE.

## 7TH STREET & ARIZONA AVENUE (TUCSON)

Since operation of a SVE system began in FY18, nearly 2182 pounds of PCE have been removed from the environment. The system remains operational.

## INTERIM REMEDIAL ACTION (IRA)

IRAs are implemented at a site to protect a water supply, provide an alternative water supply, replace a well or treat water.

## MIRACLE MILE (TUCSON)

ADEQ and the Flowing Wells Irrigation District (FWID) have an Intergovernmental Service Agreement (IGA) to provide wellhead treatment to remove TCE and chromium at two FWID production wells. The treatment system was designed to incorporate an existing arsenic treatment system. Treated water is distributed to FWID customers for drinking water. In FY18, the system removed approximately 0.12 pounds of TCE and 0.07 pounds of chromium from 102 million gallons of water. Since 2007, the system has treated over 2 billion gallons of water, removing approximately 8.4 pounds of TCE and 30 pounds of chromium.

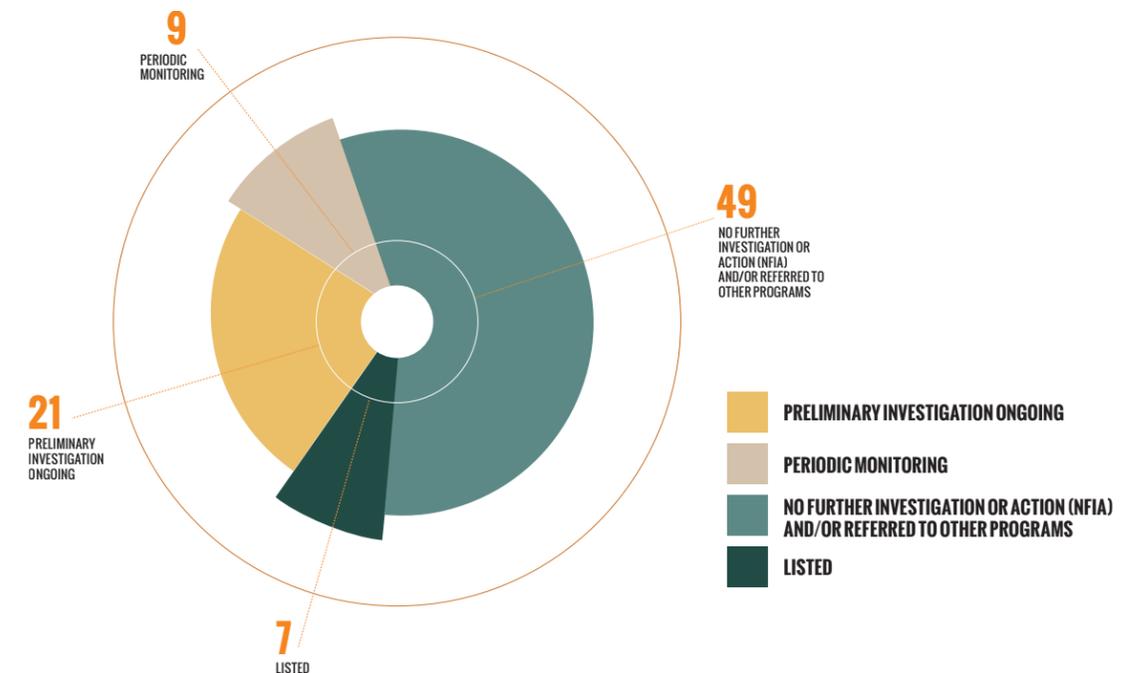
## SHANNON ROAD/EL CAMINO DEL CERRO (TUCSON)

Through a cooperative agreement with Metro Water, ADEQ has been funding wellhead treatment, plus operation and maintenance costs, associated with a water treatment system for groundwater contaminated with volatile organic compounds (VOCs). Treated water is distributed to Metro Water customers for drinking water. The system captures and contains the contaminated plume of groundwater. In FY18, the system treated approximately 177 million gallons of water and removed 20 pounds of VOCs.

**These two critical water treatment projects treat nearly 280 million gallons per year, serving around 66,000 people.**

## PRELIMINARY INVESTIGATION (PI) SITE RESOLUTION

Sites are often referred to the program by other ADEQ Value Streams. These referrals trigger the program to begin assessment through a PI. Over the years, the list had grown to 86 sites. ADEQ began addressing these sites in FY16. In FY18, all sites have been or were being addressed. The PI results and current FY19 status are:



## NEWLY LISTED WQARF REGISTRY SITES



### LAKE HAVASU AVENUE AND HOLLY AVENUE (LAKE HAVASU CITY)

ADEQ confirmed groundwater was contaminated with VOCs, nitrates and hexavalent chromium from a former manufacturing plant. In FY18, ADEQ collected groundwater monitoring data and conducted source area sampling. An RI investigation is ongoing.

## OPERATION & MAINTENANCE (O&M)

In FY19, ADEQ continues to fund ongoing and necessary O&M activities at the following WQARF sites:

WQARF SITE	WORK CONDUCTED
7th Avenue and Arizona Avenue	SVE System
7th Street and Missouri	SVE System
7th Ave and Bethany Home Road	ERD
16th Street and Camelback Road	Monitored Natural Attenuation (MNA) & ERD
20th Street and Factor Avenue	Engineered Cap Maintenance & ERD
Central Avenue and Camelback Road	Groundwater Treatment & SVE Systems
Cooper Road and Commerce Avenue	SVE System
East Central Phoenix (ECP) - 24th Street and Grand Canal	SVE System
East Central Phoenix (ECP) - 32nd Street and Indian School Road	Dual SVE Systems
Estes Landfill	MNA & ISCO
Harrison Road and Millmar Road	Cap Maintenance
Highway 260 & Main	Wellhead Treatment
Highway 260 & Johnson Lane	Wellhead Treatment
Klondyke Tailings	Tailings Pile Maintenance
Miracle Mile	Wellhead Treatment
Mountain View Estates (former NPL site)	Soil Cap Maintenance
Payson PCE	Groundwater Treatment System & ERD
Shannon Road/El Camino del Cerro	Wellhead Treatment
South Mesa	ISCO Pilot Test
Stone Avenue and Grant Road	SVE System
Vulture Mill	Soil Cap Maintenance
West Central Phoenix (WCP)-North Canal Plume	SVE
West Central Phoenix (WCP)-North Plume	SVE System & ERD
Western Avenue	MNA & Groundwater Treatment System

## OPERATION & MAINTENANCE (O&M)

ADEQ project managers also oversee WQARF site investigation and remedial activities that cooperating parties pay for and conduct. Costs ADEQ incurs for this oversight are recoverable.

WQARF SITE	THIRD-PARTY
56th Street and Earll Drive	<i>NXP USA, Inc. (formerly Freescale Semiconductor, Inc.)</i> under a Consent Order
Los Reales Landfill	<i>City of Tucson</i> under a Remedial Action Plan
Park-Euclid	<i>Park-Euclid Group</i> under a working agreement
Pinal Creek	<i>Freeport McMoRan Inc. as successors of interest</i> under a Consent Decree; <i>BHP and Pinal Creek Working Group</i> under a Consent Decree
Silverbell Jail Annex Landfill	<i>City of Tucson</i> under a Remedial Action Plan
West Central Phoenix (WCP) - East Grand Avenue	<i>Univar</i> under a working agreement
West Van Buren	<i>Air Liquide America Specialty Gases LLC</i> under an Amended Consent Order

# FY18 EMERGENCY RESPONSE UNIT (ERU) ACTIONS

Program monies fund a wide array of critical remedial response actions taken by the Emergency Response Unit (ERU) to protect public health and the environment from a release or threat of release of a hazardous substance or pollutant through Arizona Revised Statute (ARS) 49-282(E)(8).

These actions range from isolated chemical spills that threaten motorists' safety and the environment to coordinated statewide emergency response actions (e.g. wildfires) to multi-agency taskforce work to address potential statewide health risks associated with various exposure pathways.

## AIR QUALITY MONITORING SUPPORT FOR EMERGENCY RESPONSE

ADEQ ERU served a key role in a multi-agency taskforce with the Maricopa County Sheriff's Office, Phoenix Fire Department and Police Department, plus Chase Field in support of public safety during events in the downtown Phoenix area.

ADEQ ERU has partnered with Maricopa County Air Quality Division as the emergency response provider for incidents that occur after business hours. This initiative also includes assisting public safety personnel with air quality monitoring during large scale events at many of the downtown venues that draw large crowds.

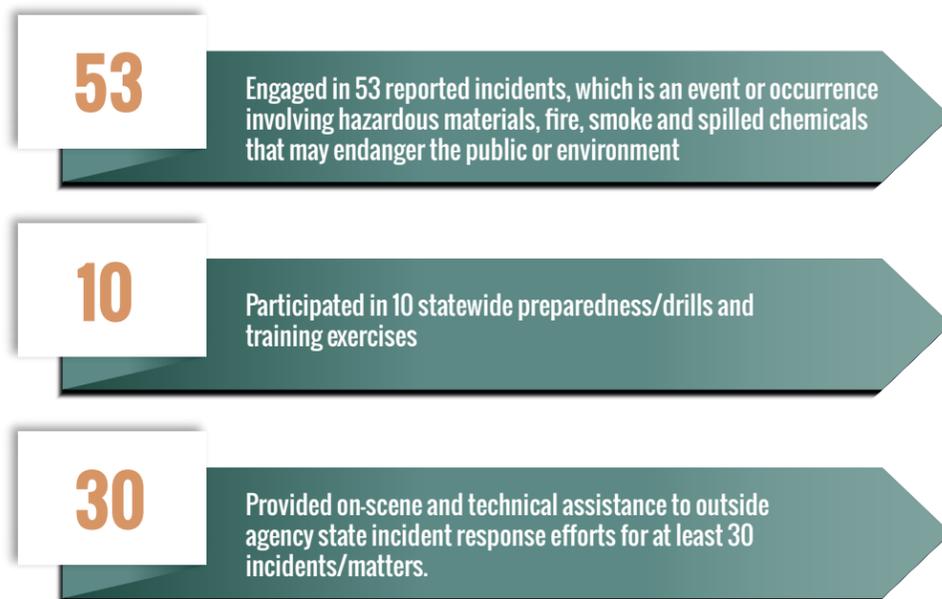
Since initiation of the program in November 2017, ADEQ ERU has participated in several events at Chase Field and other venues downtown, including:

- Public Safety Table-Top Exercise at Chase Field | Emergency Response Plan update
- Opening Day for Arizona Diamondbacks at Chase Field | Sold out crowd of more than 45K people
- Kenny Chesney Concert at Chase Field | Sold out crowd of more than 42K people

## WILDFIRE SMOKE MONITORING - TINDER & COPLEY FIRES

At the request of the Coconino and Navajo County Emergency Managers, ERU responded to conduct smoke monitoring and provide data to the Coconino and Navajo County Health Department and Emergency Managers so they could make decisions regarding residents' safety.

## PREPAREDNESS RESPONSE SUMMARY



# FY18 EMERGENCY RESPONSE FUNDED SITES

Program monies are used to fund cleanup of selected sites to protect public health and the environment from a release or threat of release of a hazardous substance or pollutant through the WQARF Emergency Response under Arizona Revised Statutes (ARS) 49-282.02.

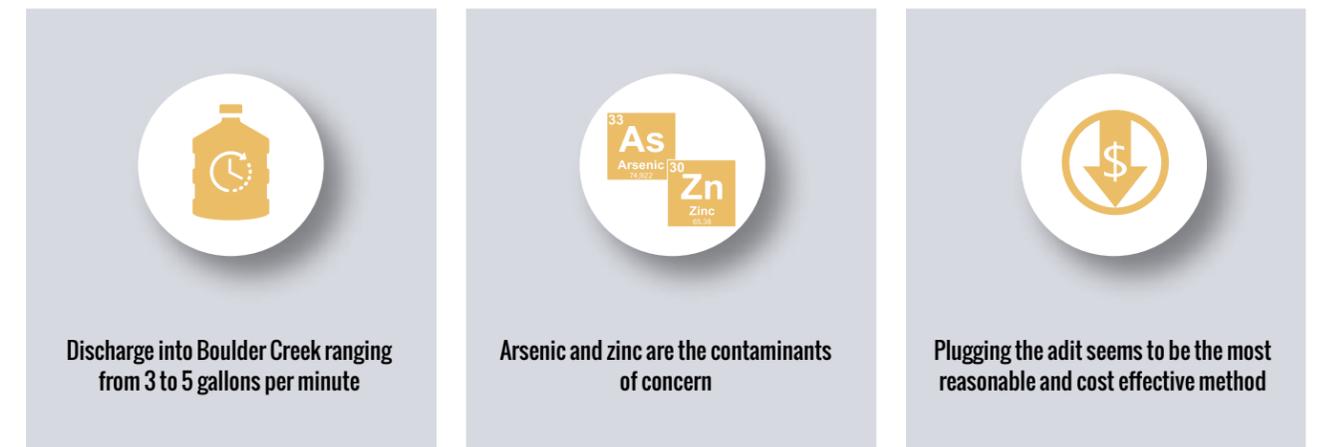


## HILLSIDE MINE

ADEQ investigated and assessed a historical mine adit draining into Boulder Creek approximately 5 miles northwest of Bagdad, Arizona. Residents and visitors in this area are at risk or potentially at risk through the exposure to hazardous substances that discharge to the surface water.

In FY18, the project successfully assessed the environmental issues related with the discharging adit and developed a remediation plan to be conducted in FY19.

## ASSESSMENTS INDICATED:

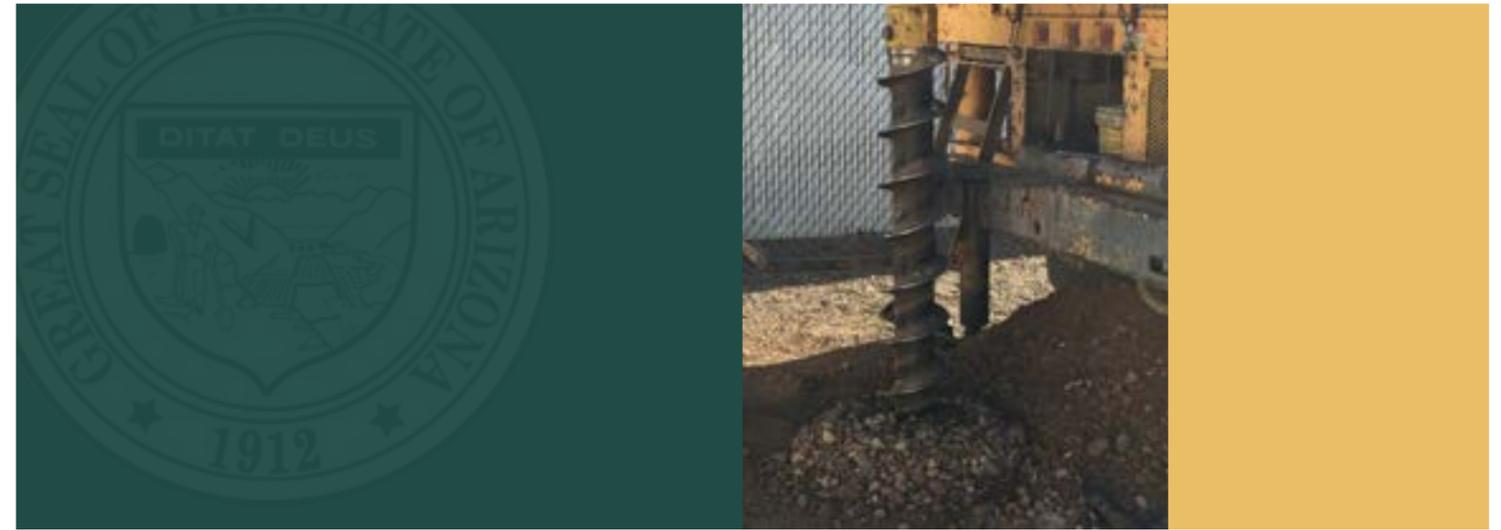


# FY18 WQARF COST RECOVERY ACTIVITY

Pursuant to ARS § 49-282(E)(1), WQARF can be used to provide state-matching funds or to meet other obligations as prescribed by §104 of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). WQARF funds also are used for oversight activities at state-lead CERCLA sites, which are reimbursed by the responsible parties. Cost reimbursement activities at WQARF and CERCLA sites supported by ADEQ are provided below.

WQARF SITE	NO. OF PACKAGES	THIRD-PARTY
27th Ave Remediation	3	\$2,150,535.26
56th Street and Earll Drive	2	\$7,713.86
Camp Navajo DEMA	4	\$15,349.35
Copper Cities Unit	2	\$2,525.06
Honeywell 34th St	3	\$8,774.14
Kingman Range NDNODS	2	\$7,093.60
Magma Copper Old Dominion Mine	1	\$111.10
Maroon Crater	2	\$10,616.83
Miami Tailings Reprocessing	2	\$2,032.33
North Indian Bend Wash	1	\$6,836.58
Park Euclid	3	\$6,375.43
Phoenix Goodyear Airport South	1	\$21,606.11
Pinal Creek	2	\$34,179.73
<b>TOTAL</b>	<b>28</b>	<b>\$2,273,749.38</b>

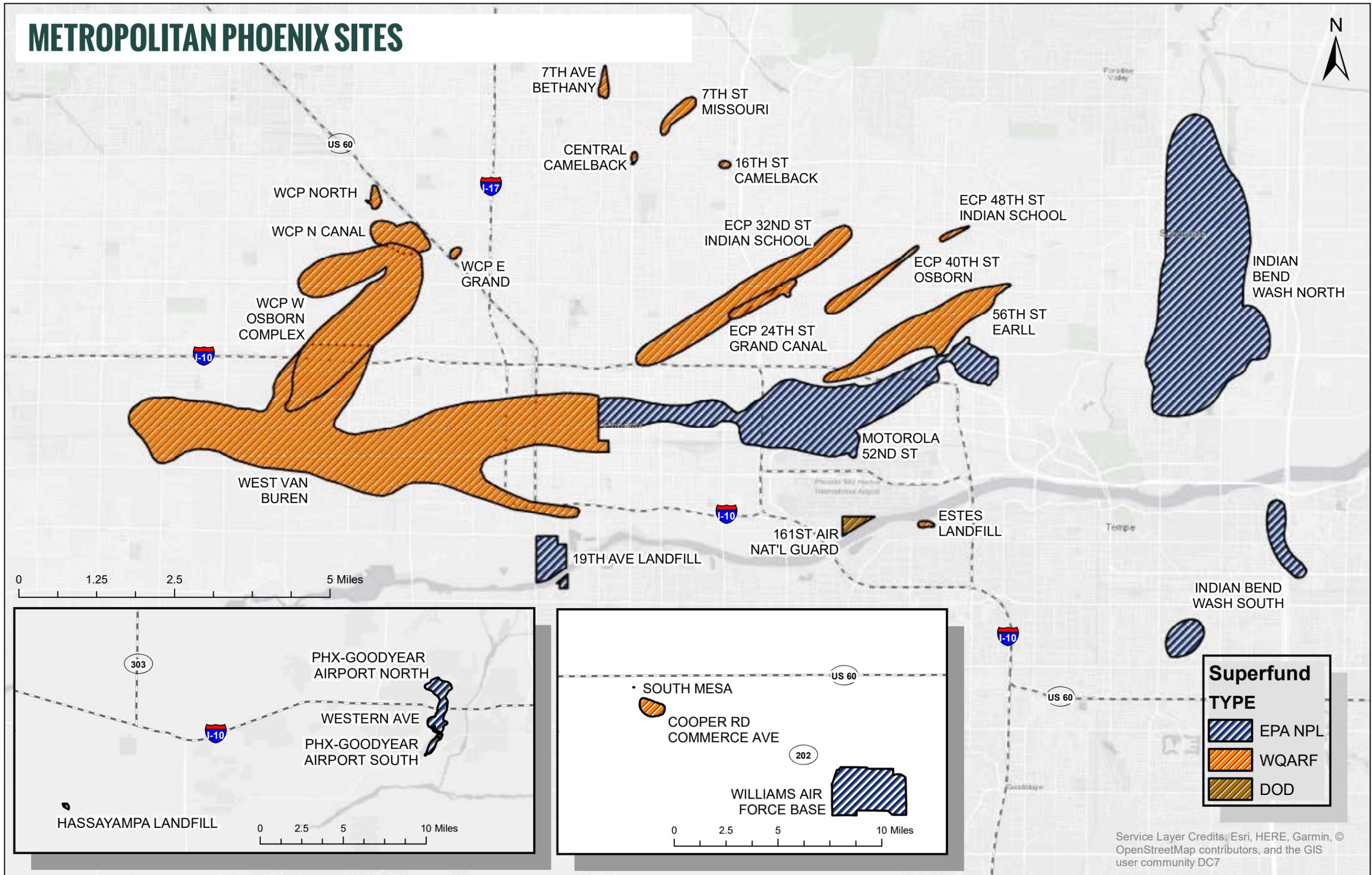
**Note:**  
Packages are cost recovery and pre-paid account statements.



# FIGURES

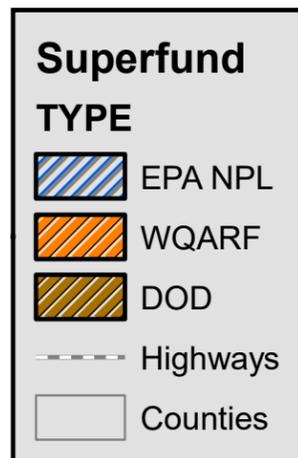
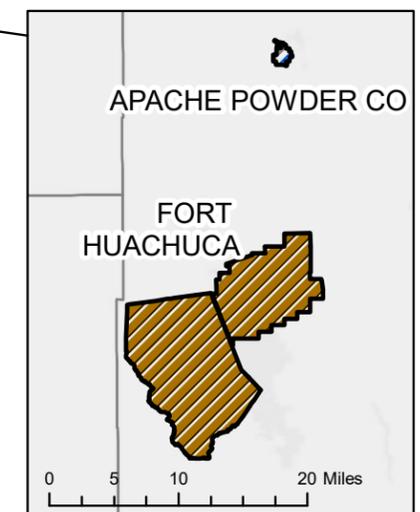
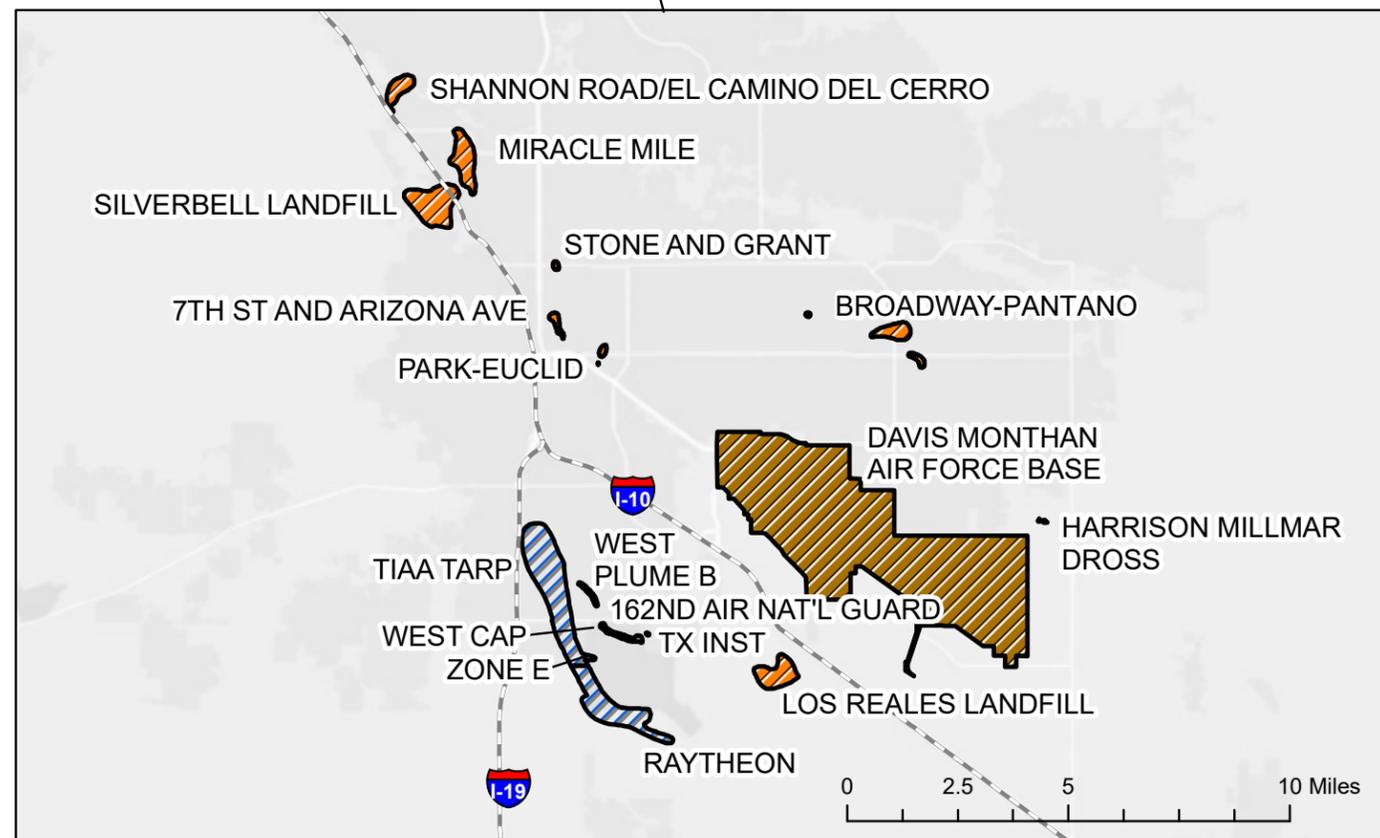
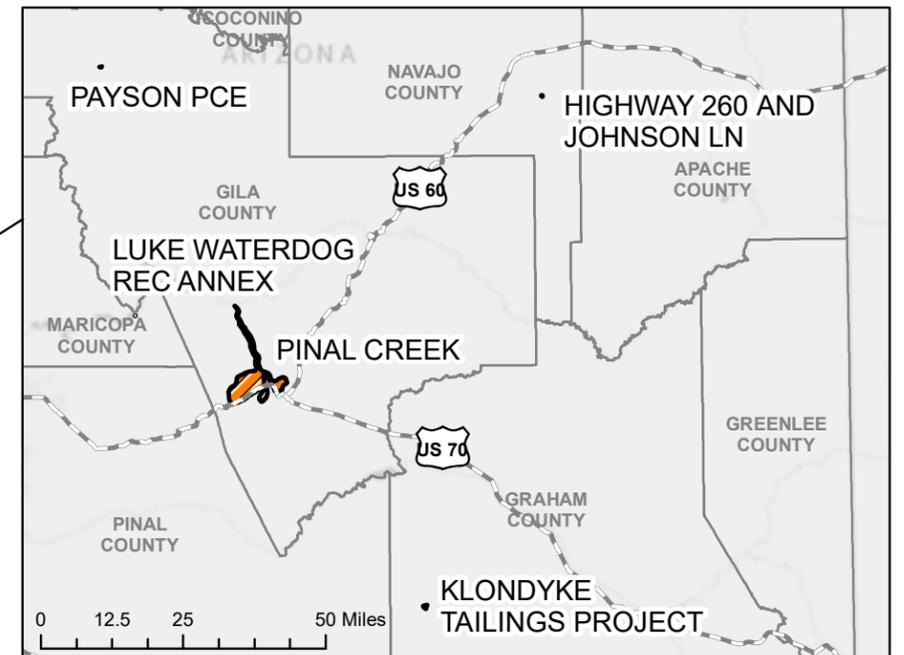
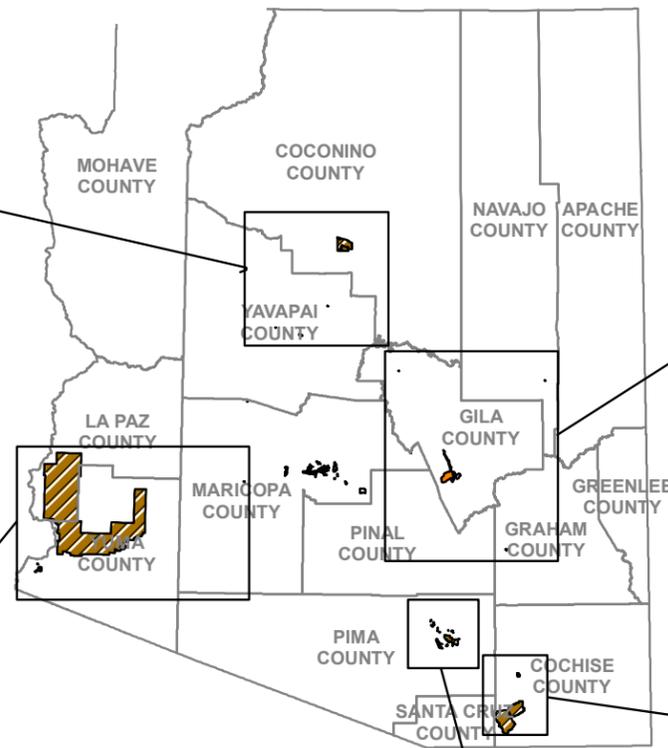
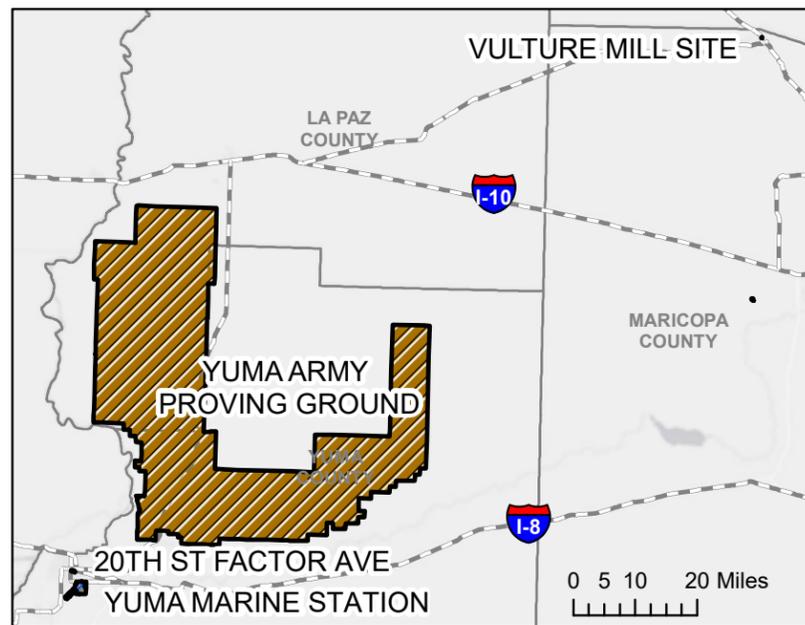
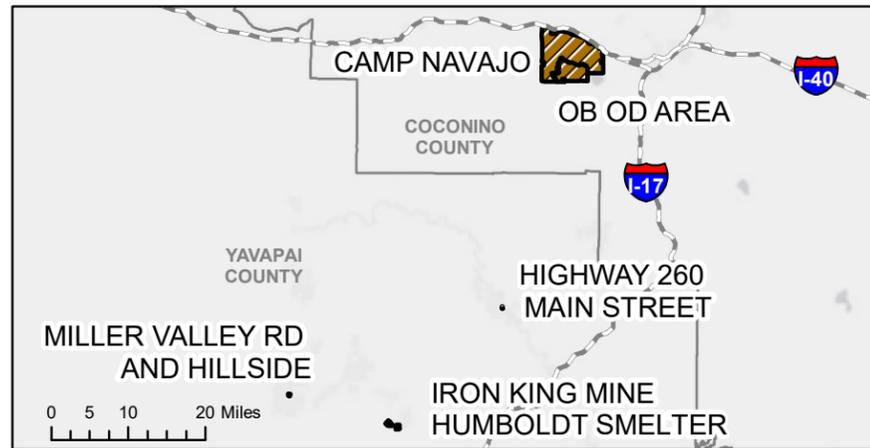


# METROPOLITAN PHOENIX SITES



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# STATEWIDE SITES



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# APPENDICES



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# APPENDIX 1

## WQARF REVENUES AND EXPENDITURES

BALANCE	FY17 ACTUAL	FY18 PROJECTION	FY18 ACTUAL
Beginning Fund Balance - WQARF & Priority Sites	2,371.8	4,585.0	4,585.0
Beginning Fund Balance - Site Specific Account	1,283.5	1,667.3	1,667.3
<b>Subtotal: Funds Available</b>	<b>3,655.3</b>	<b>6,252.3</b>	<b>6,252.3</b>
Prior Year Corporate Income Tax Reversion	0.0	0.0	0.0
<b>Total Balance from Prior Year</b>	<b>3,655.3</b>	<b>6,252.3</b>	<b>6,252.3</b>
REVENUE SUBJECT TO 18M CAP	FY17 ACTUAL	FY18 PROJECTION	FY18 ACTUAL
Corporate Income Tax (CIT)	2,823.6	2,823.6	2,823.6
Emissions Inspections Fund (EIF)	4,250.0	4,000.0	4,000.0
Air Quality Fund (AQF)	2,875.0	2,000.0	2,000.0
Permit Administration Fund (PAF)	0.0	3,713.3	3,713.3
Recycling Fund (RECYCLE)	0.0	1,000.0	1,000.0
<b>FEES:</b>			
Municipal Water (ARS 42-5302)	2,472.7	560.0	889.4
Fertilizer Registration (ARS 3-272)	76.3	75.0	74.1
HW Facility Registration Fee (ARS 49-929/49-930)	203.1	150.0	141.3
HW Manifest Re-submittal Fee (ARS 49-922.01)	0.0	0.0	0.0
Industrial Discharge Permit Fee (ARS 49-209)	29.3	25.0	28.4
Pesticide Registration (ARS 3-351)	1,299.1	1,100.0	934.7
Quality Assurance Fee (ARS 45-616)	0.0	0.0	0.0
<b>Subtotal: Fees</b>	<b>4,080.5</b>	<b>1,910.0</b>	<b>2,067.9</b>
<b>Total: Revenue Subject to 18M Cap</b>	<b>14,029.1</b>	<b>10,733.6</b>	<b>15,604.8</b>
REVENUE NOT SUBJECT TO 18M CAP	FY17 ACTUAL	FY18 PROJECTION	FY18 ACTUAL
Consent Decrees	215.8	0.0	251.7
Cost Recovery (ARS 49-282)	398.7	0.0	2,273.7
<b>Responsible Parties</b>	<b>614.5</b>	<b>0.0</b>	<b>2,525.4</b>
<i>*Includes revenue from prior year packets</i>			
Prospective Purchaser Agreement (ARS 49-285.01)	16.1	0.0	0.0
Interest (ARS 49-282)	52.1	38.0	88.6
Other Income	0.0	0.0	2,441.5
<b>Other Revenue</b>	<b>68.2</b>	<b>38.0</b>	<b>2,530.1</b>
<b>Total: Revenue Not Subject to 18M Cap</b>	<b>682.7</b>	<b>38.0</b>	<b>5,055.5</b>
<b>Beginning Balance and Revenue</b>	<b>18,367.1</b>	<b>17,023.9</b>	<b>26,912.6</b>
EXPENDITURES	FY17 ACTUAL	FY18 PROJECTION	FY18 ACTUAL
Non-Site Expenditures	4,647.0	7,665.9	4,701.8
Site Expenditures	7,314.8	8,300.0	10,348.9
Transfers Out	153.0	190.0	1.0
General Fund Sweep	0.0	0.0	0.0
<b>Total Expenditures</b>	<b>12,114.8</b>	<b>16,155.9</b>	<b>15,051.7</b>

Note: All figures expressed in thousands.

# APPENDIX 2

## WQARF EXPENDITURE STATEMENT

CORE EXPENDITURES	FY19 SPENDING PLAN
WQARF Professional & Support Staff	3,704.6
Professional & Outside - Remedial Projects	0.0
Hydrologic Support & Assessment	1,017.1
Professional & Outside - Hydrologic Support & Assessment	0.0
Emergency Response	332.6
Attorney General's Office	325.0
PRP Identification/Liability	515.0
Litigation	0.0
Appeals	0.0
Advisory Board	0.0
Rule Development	0.0
Community Involvement/General WQARF	0.0
<b>Core Expenditures</b>	<b>5,894.3</b>
REGISTRY SITES AND PRELIMINARY INVESTIGATIONS (PI)	FY19 SPENDING PLAN
RI/FS - Site Specific WQARF	2,225.0
Clean up - Site Specific WQARF	7,059.4
ERA	500.0
O&M	3,000.0
Community Involvement	28.2
Preliminary Investigations	503.2
<b>Registry Sites &amp; PI</b>	<b>13,315.8</b>
<b>Subtotal: WQARF Program</b>	<b>\$19,210.1</b>
TRANSFERS AND DISBURSEMENTS	FY19 SPENDING PLAN
Department of Health Services - Risk Assessment	0.0
Department of Water Resources - Appropriation Transfer Out	189.9
Aid to Municipalities	0.0
Voluntary Program	0.0
<b>Subtotal: Transfers &amp; Disbursements</b>	<b>189.9</b>
<b>Total Disbursements</b>	<b>19,400.0</b>

\* Money reimbursed by Federal Project Unit for cost recovery not included in sites total

# APPENDIX 3

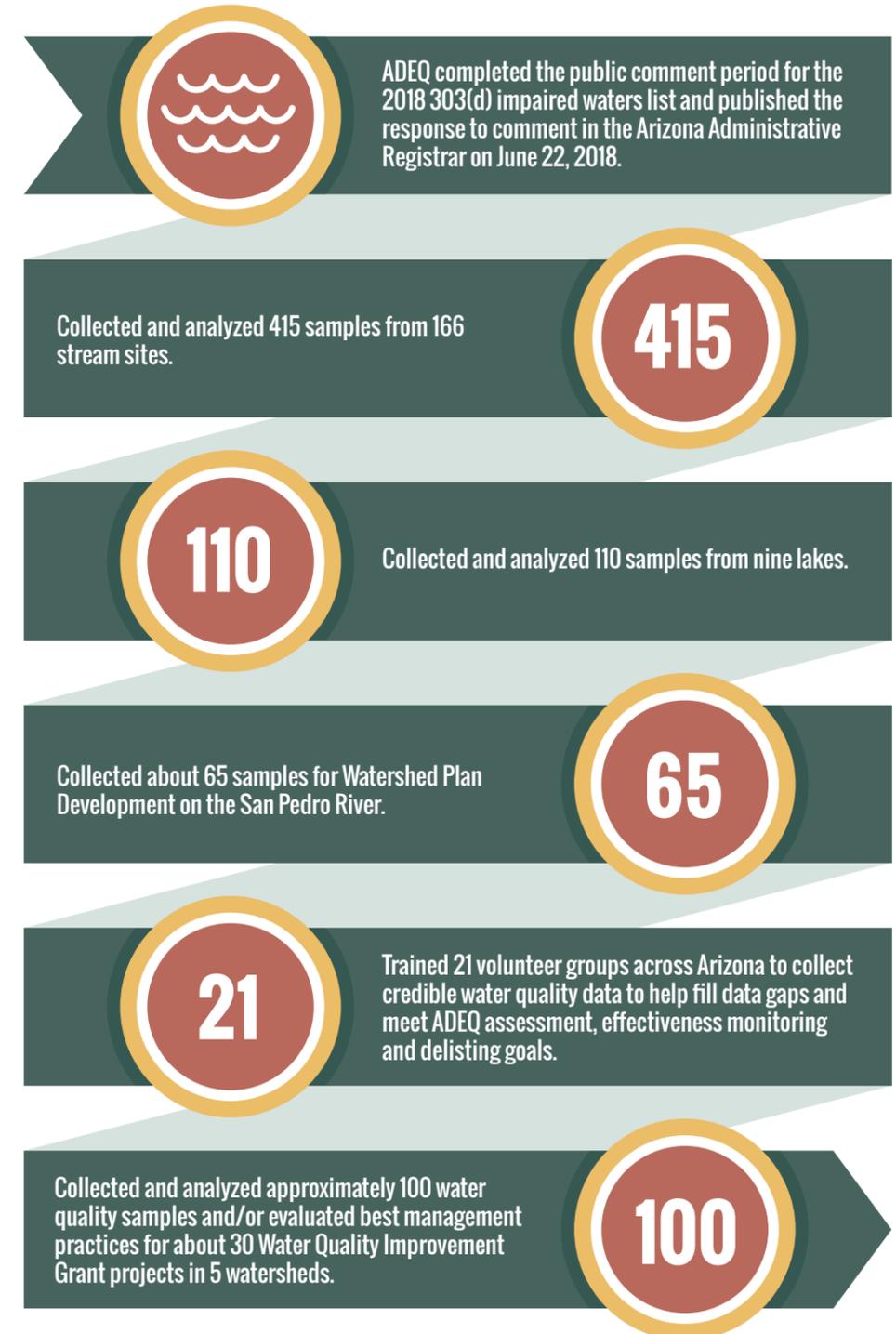
## WQARF SITE BUDGET

SITE	FY19 PROJECTED BUDGET
7th Street and Arizona Avenue	\$200,000
7th Avenue and Bethany Home Road	\$549,000
7th Avenue and Missouri Avenue	\$500,000
16th Street and Camelback Road	\$200,000
20th Street and Factor Avenue	\$1,005,800
56th Street and Earll Drive	\$0
Highway 260 and Johnson Lane	\$100,000
Highway 260 and Main	\$750,000
Broadway-Pantano	\$1,460,500
Central Avenue and Camelback Road	\$400,000
Cooper Road and Commerce Avenue	\$350,000
ECP - 24th Street and Grand Canal	\$250,000
ECP - 32nd Street and Indian School Road	\$250,000
ECP - 40th Street and Osborn	\$400,000
ECP - 48th Street and Indian School Road	\$150,000
Estes Landfill	\$300,000
Harrison Road and Millmar	\$50,000
Klondyke Tailings	\$250,000
Los Reales Landfill	\$0
Lake Havasu and Holly Avenue	\$750,000
Miller Valley Road	\$250,000
Miracle Mile	\$300,000
Mountain View Estates	\$50,000
Park-Euclid	\$0
Payson PCE	\$150,000
Pinal Creek	\$0
Shannon Road-Rillito Creek/El Camino del Cerro	\$500,000
Silverbell Landfill	\$0
South Mesa	\$300,000
Stone Avenue and Grant Road	\$100,000
Vulture Mill	\$150,000
WCP - East Grand Avenue	\$43,050
WCP - North Canal Plume	\$543,050
WCP - North Plume	\$1,084,100
WCP - West Osborn Complex	\$1,243,900
West Van Buren	\$80,000
Western Avenue	\$75,000
Community Involvement	\$28,200
Preliminary Investigations	\$503,200
<b>WQARF Sites Budget FY17</b>	<b>\$13,315,800</b>

# APPENDIX 4

## SURFACE WATER QUALITY ASSESSMENT AND MANAGEMENT

WQARF money helps provide the ADEQ Surface Water Quality Improvement Value Stream with data necessary to evaluate the quality of Arizona's water bodies, develop watershed improvement plans, assess projects implemented and improve water quality throughout Arizona.



# APPENDIX 5

## ARIZONA DEPARTMENT OF HEALTH SERVICES (ADHS)

The following provides an overview of the ADHS/ADEQ Interagency Service Agreement (ISA) project work for risk assessment consultation services with ADEQ in FY18. The performance period, site location, contaminants of concern (COCs), activities and ADHS recommendation(s) are provided in the following table.

HAYDEN/WINKELMAN (EPA SUPERFUND ALTERNATIVE SITE DESIGNATION)		
Contaminant(s) of Concern	Activity	Recommendations
Arsenic (As) Lead (Pb)	<ul style="list-style-type: none"> <li>ADHS completed a health consultation to evaluate the potential health concerns associated with exposure to SO2 and lead in ambient air.</li> <li>ADHS developed fact sheets to provide information on how to reduce exposures from the environment.</li> <li>Attended multi-agency (ATSDR, EPA, ADEQ, U of Arizona) calls.</li> <li>ADHS reviewed and provided comments to the health languages used in the contaminant forecast app.</li> </ul>	ADHS supports ongoing efforts by ADEQ and EPA to reduce SO2 and lead levels in air and other environmental media. Such actions include implementation of the EPA/ASARCO 2015 Consent Decree, ADEQ state implementation plan revisions to bring the area into attainment with the SO2 and lead NAAQS, and remedial actions taken through EPA's Superfund Alternative Approach process.
MOTOROLA 52ND (EPA SUPERFUND SITE)		
TCE PCE	<ul style="list-style-type: none"> <li>Attended CIG meetings</li> </ul>	N/A
IRON KING MINE AND HUMBOLDT SMELTER (DEWEY-HUMBOLDT, AZ) (EPA SUPERFUND SITE)		
As	<ul style="list-style-type: none"> <li>Discussed comments and response to EPA's remediation report</li> <li>Attended multi-agency (ATSDR, EPA, ADEQ, Community representatives) calls</li> </ul>	N/A
RESOLUTION COPPER		
As	<ul style="list-style-type: none"> <li>Attended meetings to discuss on using the EPA's bioaccessibility approach for the site</li> <li>Participated the EPA's webinar: bio-availability of contaminants in soil for human health risk assessment (test-run)</li> <li>Reviewed IVBA addendum to the SSRL report</li> <li>Provided comments to contaminant forecast</li> </ul>	N/A
19TH AVENUE AND OSBORN ROAD		
PCE	<ul style="list-style-type: none"> <li>Provided comments to PCE health effect section on a fact sheet</li> </ul>	N/A
JOHNSON UTILITIES		
H2S	<ul style="list-style-type: none"> <li>Conducted risk evaluation for 2 sets of ambient air data sampled on different time periods</li> </ul>	<ul style="list-style-type: none"> <li>From 11/17 to 1/18 data set: no health concerns</li> <li>From 1/30/18 to 1/31/18: the exposed population, especially sensitive population such as asthmatics, may have an increased chance to develop respiratory symptoms (i.e. bronchial obstruction) and headaches.</li> <li>From 1/31/18 to 2/8/18: no health concerns.</li> </ul>

# APPENDIX 5

## ADHS CONT.

ARLINGTON AND TONOPAH		
Contaminant(s) of Concern	Activity	Recommendations
H2S and Ammonia	<ul style="list-style-type: none"> <li>Conducted risk evaluations for H2S and ammonia in ambient air</li> </ul>	No apparent public health concerns for short-term exposures
KINGMAN		
PAH	<ul style="list-style-type: none"> <li>Reviewed the report "Remedial Investigation of Former Skeet Range MRS03, Kingman Ground-to-ground gunnery Range, Mohave County, Arizona"</li> </ul>	N/A
PECAN WRF SSO		
E. Coli Fecal Coliform	<ul style="list-style-type: none"> <li>Reviewed the water and soil sampling results</li> <li>Attended a meeting to discuss the community's concern</li> </ul>	<ul style="list-style-type: none"> <li>It is recommended that individuals who have contact with the contaminated water wash the affected area with non-contaminated water and soap.</li> <li>It is recommended that people wash their hands with soap and avoid accidentally ingesting soil in general.</li> </ul>

## ADHS FY18 BUDGET AND EXPENDITURES

BUDGET AND EXPENDITURES	TOTAL
<b>Funds Available</b>	
Beginning Balance	\$60,000
FY18 Expenditures	\$44,545
<b>Funds Unused</b>	<b>\$15,455</b>

ITEMIZED EXPENDITURES	BUDGET	TOTAL EXPENDITURE
Contracts	\$21,048	\$21,032
Travel	\$0	\$0
Operations	\$1,050	\$191
Direct & Indirect Costs	\$8,750	\$4,953
Salary	\$22,752	\$15,041
Benefits	\$6400	\$3,328
Equipment	\$0	\$0
<b>Total - Expenditures</b>	<b>\$60,000</b>	<b>\$44,545</b>

# APPENDIX 6

## ARIZONA DEPARTMENT OF WATER RESOURCES (ADWR)

### ARIZONA WATER QUALITY FUND PROGRAM OBJECTIVES

- Perform technical review of well applications (Notices of Intent to Drill/Abandon/Deepen/Modify/Replace a Well, Applications to Drill and Operate a Non-Exempt Well, and Groundwater Withdrawal Permits)\* and consult with ADEQ regarding new wells, abandonments, modifications to wells near remedial action sites.
- Conduct well inventories to support ADEQ's WQARF program as requested. †
- Coordinate with ADEQ regarding database needs in support of ADEQ's WQARF program. \*
- Establish a mechanism to exchange verified well locations and GPS measurements within ADWR's Well Registry (WELLS55) database. †
- Perform other WQARF and water quality activities as required by statute, rule or ISA.

\*Required by statute or rule

† Recommended by Groundwater Cleanup Task Force

### FY18 ARIZONA WATER QUALITY FUND PROGRAM ACCOMPLISHMENTS

#### WELL APPLICATION AND WITHDRAWAL PERMIT REVIEW:

- Reviewed 3,368 Notices of Intent (NOI) to Drill/Abandon/Deepen/Modify/Replace a well for proximity to WQARF, CERCLA or other remedial action sites.
- Performed technical review of 917 NOIs to Drill/Abandon/Deepen/Modify/Replace wells near or within WQARF, CERCLA or other remedial action sites for water quality concerns, potential contaminant plume migration and well construction.
- Reviewed 98 permit applications to withdraw groundwater for proximity to WQARF, CERCLA or other remedial action sites.
- Performed further technical review of 31 well permit applications near or within WQARF, CERCLA or other remedial action sites for water quality concerns, potential contaminant plume migration, well construction and well impacts. These permits include Poor Quality Ground Water Withdraw Permits for remediation projects.

#### WELL INVENTORIES:

- No well inventory activities were scheduled during FY18.

#### OTHER WQARF AND WATER QUALITY ACTIVITIES

- Submitted quarterly reports to ADEQ as required by the ADEQ-ADWR ISA.
- Submitted annual report on ADWR WQARF activities to the Governor, Legislature and WQARF Advisory Board for FY17.
- ADWR selected the Groundwater Permitting and Wells Section as a Lean Transformation in Government project. The project was initiated in FY16 and fully implemented in FY17 and FY18.
- ADEQ and ADWR collaborative review process for NOIs near remedial action sites. This new process has continued successfully throughout FY18.

# APPENDIX 6

## ADWR: FY18 REVENUES AND EXPENDITURES & FY19 BUDGET

FY18 REVENUE AND EXPENDITURES	REMAINING BALANCE
<b>Funds Available</b>	
Beginning Balance, (7/1/17)	\$497,389.91
Transfer from ADEQ	\$130,000.00
Earnings on Investments	\$6,517.76
<b>Total - Funds Available</b>	<b>\$633,907.67</b>

Expenditures	
Personal Services	\$88,045.93
Employee related Expenditures	\$25,790.35
Professional and Outside Services	
Travel – In State	
Travel – Out of State	
Other Operating Expenditures	
Capital Equipment	
Non-Capital Equipment	
Indirect Costs	\$56,348.61
Transfers Out – Legislative Actions	

**Total – Expenditures \$170,184.89**

**Cash Balance \$463,722.78**

**Less: Outstanding Encumbrances**

**Fund Balance \$463,722.78**

FY19 BUDGET	REMAINING BALANCE
<b>Funds Available</b>	
Beginning Balance, (7/1/18)	\$463,722
Transfer from ADEQ	130,000
<b>Total - Funds Available</b>	<b>\$593,722</b>

Expenditures	
Personal Services	\$140,000
Employee related Expenditures	55,000
Travel – In State	2,000
Other Operating Expenditures	7,000
Non-Capital Equipment	0
Indirect Costs	70,000

**Total – Expenditures \$274,000**

**Fund Balance (06/30/19 estimate) \$319,722**

