



# **WATER QUALITY ASSURANCE REVOLVING FUND (WQARF)**

**FY2014 ANNUAL REPORT**



## OUR MISSION AND VISION

Arizona Department of Environmental Quality's (ADEQ) mission is to protect and enhance public health and the environment in Arizona. The department achieves this mission by administering the state's environmental laws and delegated Federal programs to prevent pollution of the air, water and land, and to ensure clean up of such pollution when it occurs.

ADEQ's goal is to lead Arizona and the nation in protecting and enhancing the environment and improving the quality of life for the people of our state. The agency helps Arizonans respect the balance between the natural world and the people who depend on it for sustenance, prosperity and a fulfilling quality of life.



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# FOREWORD



As we conclude fiscal year 2014, ADEQ is extremely proud of its progress in implementing the Water Quality Assurance Revolving Fund (WQARF) program. Despite funding shortfalls, the WQARF program was able to fund sites where treatment systems were actively operating or being maintained including the treatment of more than 2,670 million gallons of groundwater, the removal of 3,565 tons of contaminated soil, the removal of 3,508 pounds of volatile organic compounds and the removal of 1,603,833 pounds of hazardous substances. In fiscal year (FY) 14, the WQARF program aggressively pushed 12 sites through the RI stage of the WQARF process. Also, the WQARF program performed the first residential indoor vapor intrusion investigation in the state, in which 414 indoor air samples were collected from residences during two sampling events. In addition, ADEQ removed a second site from the WQARF registry. ADEQ has closed two sites within the last two years versus 0 closures for the prior 15-plus years.

These kinds of outcomes directly benefit the quality of life in our state and deliver real value for the citizens of Arizona. ADEQ is achieving mission outcomes better and faster than ever before because we recognize that to do more environmental good, as our mission requires, we must continue advancing the methods by which we continuously strive for perfection in all that we do. ADEQ has made the conscious choice to deploy Lean as our management philosophy. There are other business methods to choose from, and Lean alone is not the sole answer to challenges the agency faces. ADEQ continues to evaluate the WQARF process to implement improvements in order to accelerate cleanups and ultimately reduce the overall costs of remediating contaminated sites.

Although ADEQ is proud of these successes, there are challenges ahead with maintaining the momentum achieved in FY14. Session laws have been passed for the last five FYs to reduce ADEQ's allotment of the Corporate Income Tax (CIT) for the WQARF program. Arizona Revised Statutes (A.R.S.) § 49-282(B) mandates that \$15 million is transferred from CIT revenue to the WQARF program. This annual transfer of \$15 million of CIT to WQARF was mandated to offset and fund the state's costs associated with the "orphan" share of cleanup. It was calculated in 1991 for the State of Arizona Office of the Auditor General's Performance Report that for the \$15 million annual funding to be adequate, WQARF's or the state's share of the cleanup costs must not exceed 35 percent. Based on current estimations, the state's "orphan" share is conservatively estimated at over 50 percent. Several years ago, ADEQ calculated the total liability to the state for the WQARF sites and that amount exceeded \$300 million. In FY14, the WQARF program undertook the project again to calculate the total liability for the known sites. Based on this calculation, the total potential liability to the state for the WQARF sites has increased nearly 50 percent to \$429 million. This increase is due to several factors, including the fact that contaminated waters move in the natural environment and contamination spreads over time.

Based on the current liability scheme and funding challenges, it is becoming clear that the WQARF program is not sustainable. ADEQ continues to look for alternative funding sources, in addition to reviewing our own internal processes to implement improvements to the WQARF program as a whole.

As the water demands driven by future economic growth are anticipated to outstrip supplies, and as the availability of water supplies have been reduced by persistent drought, the need to protect and remediate scarce surface water and groundwater supplies becomes increasingly critical to the water supply future of Arizona. Over the next 25 to 100 years, the Arizona Department of Water Resources estimates an additional 900,000 to 3.2 million acre feet of water supplies will be needed to meet the projected water demand. While importing new supplies is one of the options being considered, protecting and restoring the water resources right here in Arizona is critical for meeting future demand.

Henry Darwin, Director



# PROGRAM OVERVIEW

This annual report was prepared pursuant to HB 2703, Section 29 of Laws 2014, Chapter 18 making appropriations for the different departments of the state, for state institutions and for public schools; providing for certain reporting requirements. HB 2703 requires that a report on the Water Quality Assurance Revolving Fund (WQARF) along with specific site budgets for FY15 be submitted to the Joint Legislative Budget Committee (JLBC) members on or before September 1, 2014.

The Waste Programs Division is committed to safeguarding public health, protecting the environment and restoring natural resources through investigation, management and remediation of soil and groundwater contaminated with hazardous substances. Through the WQARF Program, ADEQ identifies, prioritizes, assesses and remediates these threats. The Program conducts these efforts state-wide using state funds and also oversees privately funded cleanup efforts. Responsible parties are identified, notified and then legal and technical evidence is gathered for recovery of ADEQ's costs and enforcement of cleanup requirements.

**The WQARF program was created under the Environmental Quality Act of 1986 to support cleanup efforts in the state. The program underwent significant revisions as a result of what is known as the WQARF Reform Legislation of 1997 (Laws 1997, Chapter 287). The major provisions of the WQARF Reform Legislation are as follows:**

## Proportionate Liability

Liability for the costs of the cleanup of contaminated sites is proportionate, rather than joint (as it is in the federal regulations). Cleanup costs are proportionately allocated among responsible parties using a process defined in statute. ADEQ is responsible for identifying responsible parties and allocating cleanup costs. A non-judicial allocation hearing process is available for dispute resolution.

## Program Funding

The adoption of a proportionate liability system increased the need for adequate and dedicated program funding. To ensure the WQARF program funding is sufficient to administer the Program and pay allocated, noncollectable orphan shares, WQARF reform legislation provided for an annual \$18 million expenditure. The WQARF fund is dependent upon the direct transfer of funds from legislative appropriations, corporate income tax, cost recovery and special fees.

## Site Prioritization

Sites are to be prioritized with a greater emphasis on risk to human health. The statute provides a process to score sites according to actual and potential exposure to hazardous substances. This score and other factors are considered when prioritizing the expenditure of WQARF funds.

## Cleanup Methods and Goals

WQARF reform provided increased flexibility in selecting of groundwater cleanup methods and levels. ADEQ adopted and applies remedy selection rules that incorporate analysis of a range of cleanup options, from remediation of the contamination to no action. Significantly, the statute clarifies that the cleanup need not always result in the achievement of drinking water standards within the aquifer.

## Community Involvement

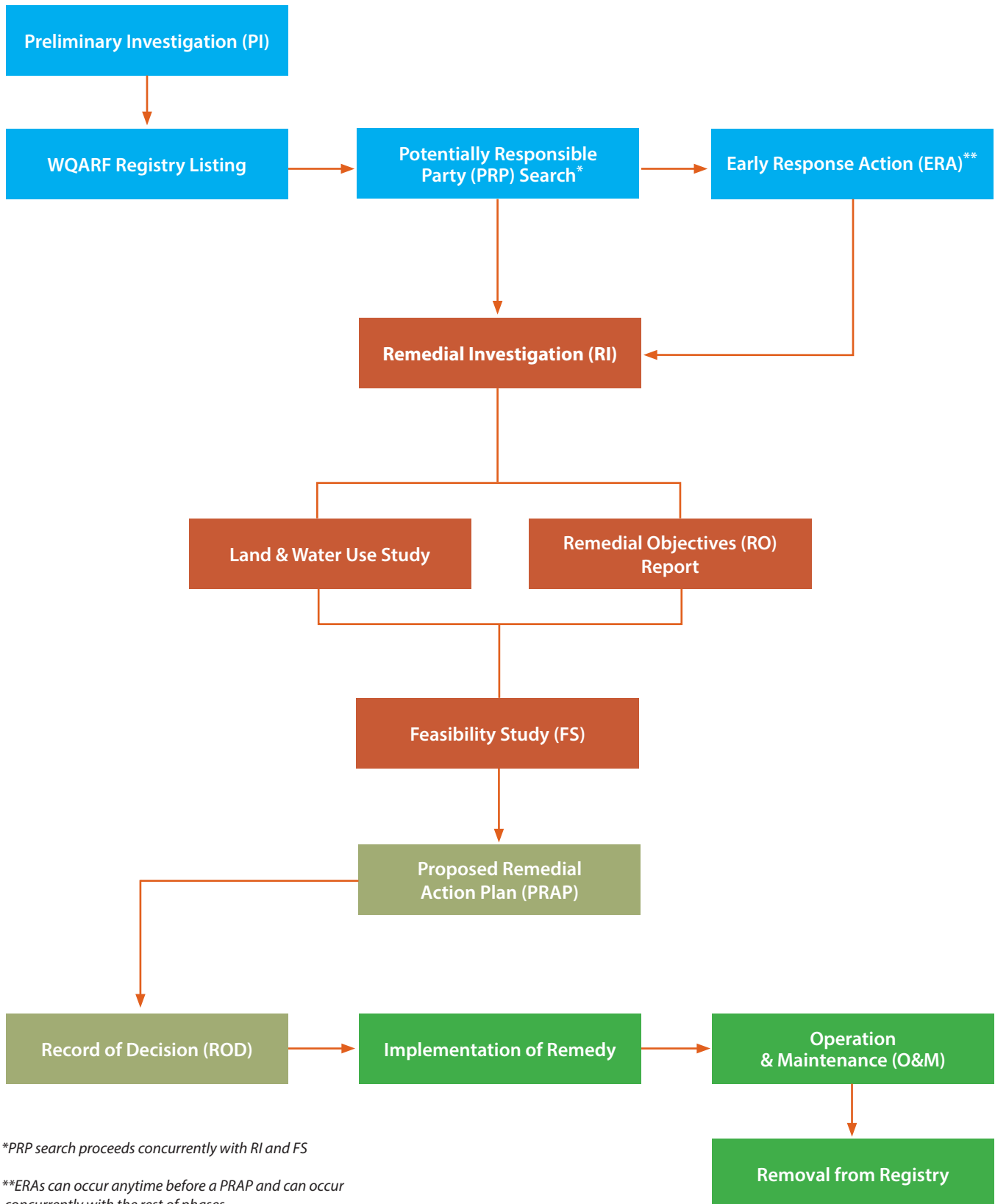
Enhanced community involvement is required at all stages of the cleanup process. The statute establishes a process to encourage active community involvement, including provisions for notices, community involvement plans and the formation of a Community Advisory Board (CAB) for each site.

## Settlements

Prompt settlements as an alternative to litigation are encouraged. ADEQ is authorized to offer a 25 percent discount to responsible parties who settle after the department provides notice to them of their proportionate share of liability.



# WQARF PHASES



\*PRP search proceeds concurrently with RI and FS

\*\*ERAs can occur anytime before a PRAP and can occur concurrently with the rest of phases



# DESCRIPTION OF WQARF PHASES

## PRELIMINARY INVESTIGATION (PI)

The WQARF process begins when ADEQ receives information about a release or potential release of a hazardous substance. This information may come from a citizen complaint, from an investigation conducted by ADEQ or from an investigation conducted by an outside party. ADEQ assesses whether the information is credible, if another regulatory program has jurisdiction, or if the site is already being cleaned up voluntarily. If a potential release has occurred and no other regulatory program has jurisdiction, a WQARF PI is initiated.

The purpose of the PI is to confirm the release or potential release and determine whether further investigation or action is necessary. The PI is not a full investigation to determine the extent of the contamination nor is its purpose to identify the parties potentially responsible for the contamination. If ADEQ determines that no additional investigation or action is necessary, the site is removed from further consideration. If ADEQ determines that additional investigation or action is necessary, the site is scored using the eligibility and evaluation model and is eligible for listing on the WQARF registry.

## WQARF REGISTRY LISTING

The WQARF registry provides public access to information on WQARF sites. The registry replaces the former WQARF Priority List and provides a list of sites where groundwater and/or soil contamination is known to be present. Sites listed on the WQARF registry qualify for WQARF funds for investigation and/or clean up. The WQARF registry contains a brief description of each site, the site's score, and the current status of the cleanup. The date that a site is added to the registry does not necessarily indicate the date that a cleanup is started.

## POTENTIALLY RESPONSIBLE PARTY (PRP) SEARCH

If ADEQ determines that cost recovery may be appropriate at a site, ADEQ initiates a PRP search that proceeds concurrently with the RI. ADEQ uses information gathered in the PRP search to determine the financial viability and the legal liability of PRPs. Identification of PRPs enables ADEQ to allocate proportional shares of liability among the identified responsible parties in order to finance the remedy.

## EARLY RESPONSE ACTION (ERA)

Many years are normally required to conduct a full investigation of a site and select the remedy. ADEQ developed the ERA process to address contamination where human health or the environment is potentially impacted, where sources of contamination can cause significant environmental impact, or where early actions can save significant WQARF funds by limiting the spread of contamination. ERAs may be relatively inexpensive short-term actions, such as fencing or providing alternative water supplies, or they may involve an expensive large-scale groundwater treatment system.

An initial evaluation (ERA evaluation) of risks at a site occurs immediately after a site is listed in the WQARF registry. If a current or potential risk to human health or the environment exists through direct contact with a hazardous substance, an ERA may be implemented immediately. If there is no risk, ADEQ collects information about a site to determine if an ERA is appropriate to protect a water supply or to prevent the spread of contamination. A site is continuously reevaluated as more data becomes available and an ERA can be implemented at any time prior to the selection of a final remedy. Just as with the selection of a final remedy, the implementation of an ERA includes design and construction and may include a period of operation and maintenance.



## REMEDIAL INVESTIGATION (RI)

The purpose of a RI is to collect enough information to determine the appropriate cleanup actions needed at the site. The information collected includes the physical characteristics of the site; the nature, extent and sources of the contamination and the actual and potential impacts of contaminants on the site to public health, welfare and the environment. The RI also identifies present and reasonably foreseeable uses of land and waters of the state that have been or may be impacted by the contamination.

After conditions at the site are known, ADEQ holds public meetings to establish remedial objectives. ADEQ invites land owners, local governments, water providers, and the public to discuss land and water uses impaired or lost due to the contamination as well as future uses which could be impacted by the contamination. Based upon this input, ADEQ prepares a report of the proposed ROs for the site that lists the uses, the time frames when completion of cleanup is required to protect or provide for the use, and the duration of the required actions.

## FEASIBILITY STUDY (FS)

Using the information collected in the RI, the FS documents technologies and options that may achieve the ROs. Various options are identified and compared to facilitate selection of the most feasible and cost-effective cleanup method for the site.

## PROPOSED REMEDIAL ACTION PLAN (PRAP)

After the FS is completed, ADEQ prepares a PRAP to document the proposed cleanup or remedy. The plan describes the means by which the proposed remedy will meet each of the ROs identified in the RI and how accomplishment of the ROs is to be measured. The plan also provides an estimate of the cost of the cleanup.

If ADEQ intends to seek recovery of costs from PRPs, notice is provided to these parties of the opportunity to submit an accounting of cleanup costs they may have incurred at the site and of the opportunity to object to costs submitted by other PRPs. Any costs approved by ADEQ as reasonable and necessary may be used as a credit against potential liability in a settlement or allocation.

## RECORD OF DECISION (ROD)

The ROD documents the selected remedy for a site. The ROD includes an estimated cost, time frames for beginning and completing the cleanup process, and a demonstration that the selected remedy meets the ROs. After the ROD is signed, an allocation process follows in which past and future costs are distributed among responsible parties.

## IMPLEMENTATION OF REMEDY

The design and implementation stage includes the development of the engineered design of the selected remedy and implementation of the remedy through construction. A period of O&M may follow the design and construction activities.

## OPERATION AND MAINTENANCE (O&M)

The O&M is conducted pursuant to a schedule applicable to the type of remedy completed. This includes performance of all operations and maintenance steps required for performance of the remedy.

## REMOVAL FROM REGISTRY

Once the remedy has met the specified cleanup criteria at a site, or ADEQ determines that no further investigation or cleanup is needed, the site is eligible for delisting from the WQARF registry.

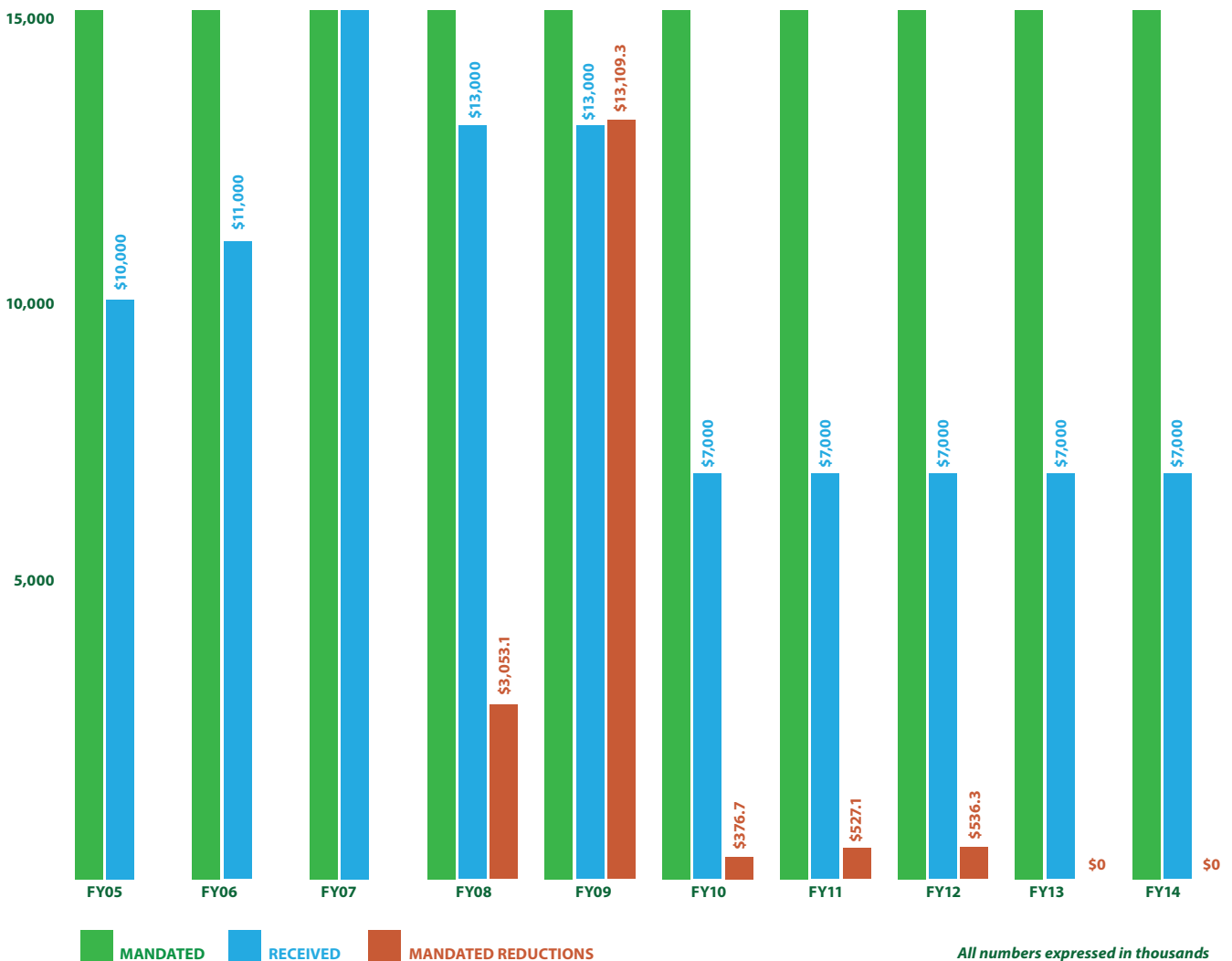
# WQARF FUNDING

ADEQ's ability to fully administer and implement the WQARF program depends on \$18 million per year in dedicated funding to offset and fund the State's costs associated with the "orphan" share of cleanup Arizona Revised Statutes (A.R.S.) § 49-282(B) specifies that \$15 million of that \$18 million is received from Corporate Income Tax (CIT) revenue. However, due to budget shortfalls, the WQARF program received \$53 million less in CIT revenue for the last 10 fiscal years and funding was further reduced by legislative fund transfers in the amount of \$17.6 million. The only time during the last 10 fiscal years that the WQARF program received full CIT funding was in FY07. During the last four fiscal years, the WQARF program's fund balance has been reduced by \$33 million through reductions in CIT transfers and legislative fund transfers.

It was calculated in 1991 for the State of Arizona Office of the Auditor General's Performance Report that for the \$15 million annual funding to be adequate, WQARF's or the State's share of the cleanup costs must not exceed 35 percent. Based on current estimations, the State's "orphan" share is conservatively estimated at over 50%.

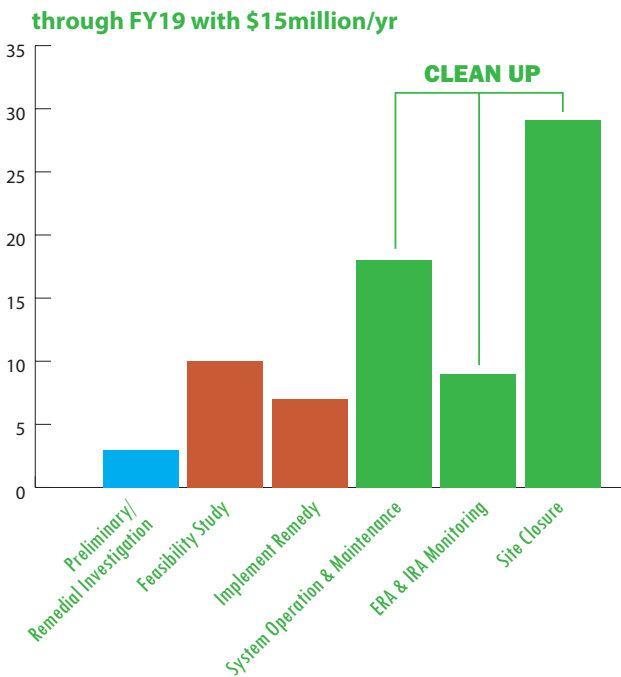
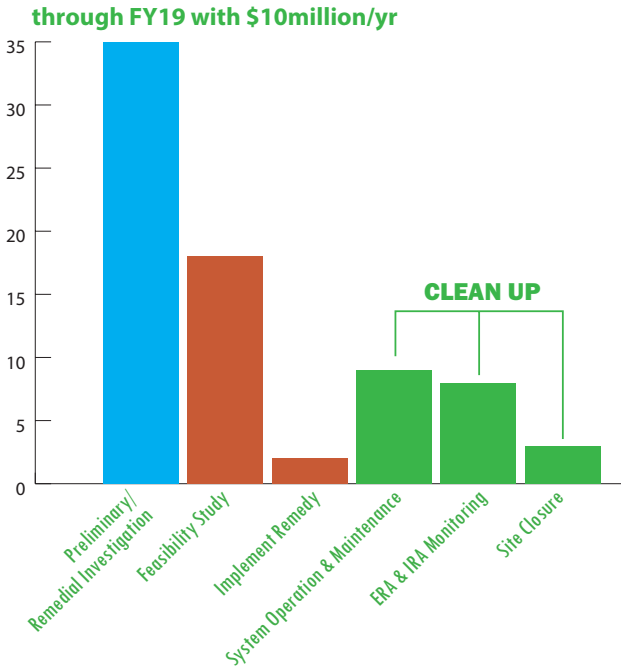
The chart below depicts CIT funding of the WQARF program during the past 10 fiscal years and also accounts for the additional reduction in program funding that resulted from the legislative fund transfers.

## CORPORATE INCOME TAX REVENUE COMPARISON FY05 – FY14





## PROJECTED WQARF PROGRESS



The reduction in funding to the WQARF Program has had a negative impact on all sites and many goals were not achieved. Reductions in funding over the last five fiscal years have significantly delayed cleanup at many WQARF sites and have severely limited activities that can be accomplished including groundwater monitoring, feasibility studies, and the design and construction of remediation systems. In addition, 70 non-registry sites have been identified and have not been fully evaluated and have gone unaddressed. Because contamination associated with several of these non-registry sites is believed to be extensive, in FY15, the WQARF Program is planning on performing limited investigations at several of the most known contaminated sites. However, performing these limited investigations takes funds away from the WQARF Registry sites.

The amount of funds the WQARF Program receives largely dictates the overall process and speed at which the WQARF sites move to the cleanup phase (see following charts). The difference between receiving \$10 million and \$15 million is significant; \$10 million per year for five years maintains the majority of the WQARF sites in the investigation and assessment phase for many years. The majority of funds only can be used to assess the contamination rather than used for site cleanup.

The graph also shows that receiving just \$5 million per year for 5 years moves the majority of the WQARF sites (and non-registry sites) through investigation and assessment and into the cleanup phase. Remediation system installation and long-term monitoring increases, and site closures increase dramatically as well. WQARF Program Revenue and Expenditures for FY14 are found in Appendix 1. WQARF site budget is found in Appendix 2.

# ACCOMPLISHMENTS

The WQARF Program accomplished many goals and milestones during FY14. As a result of continuing to increase the efficiency of the cleanup process, ADEQ has developed and published ambitious goals to accelerate clean-ups. Specifically, ADEQ determined that the RI step had the most delays and set out to expedite this step in the WQARF process. Improvements have drastically reduced the amount of time and money necessary to complete this phase of work that documents the extent and degree of contamination. In FY14, ADEQ set an aggressive goal of "14 in 14" to complete 14 RIs during the fiscal year. This plan succeeded in moving 12 of the 14 sites forward in the clean-up process. The remaining two sites require more extensive investigations and are still scheduled to be completed in FY15.

This accelerated clean-up approach depleted the FY14 \$9 million fund balance down to approximately \$5.6 million. Full funding is critical to ensure that the accelerated clean-up rate is maintained to support future development and economic growth. Accelerated clean-ups through increased efficiencies and full funding also will reduce overall long-term costs and reduce the State's orphan share.

Several years ago, ADEQ calculated the State's total liability for the WQARF sites at greater than \$300 million. In FY14, ADEQ undertook the project to again calculate the total liability for the known sites. The total potential liability to the State for the WQARF sites has increased nearly 50 percent to \$429 million.

Important milestones achieved during FY14 also included the removal of the second site from the WQARF Registry. The Tonto and Cherry site was added to the Registry in 2000. This site, a former dry cleaning facility, had impacted private drinking water wells in Payson with tetrachloroethene (PCE). As part of an ERA, the WQARF Program provided bottled drinking water to the private well owners until the detected PCE concentrations posed no threat to public health. According to the ROD, monitored natural attenuation (MNA) was chosen as the remedy and achievement of the cleanup criteria would be met in the year 2018. In FY14, groundwater tests showed that all contaminant concentrations within the Tonto and Cherry WQARF site met the applicable cleanup standards. Upon remedy review, response actions conducted at the site indicated that cleanup levels had been achieved and no further remedial actions were necessary to protect human health and the environment. The site was removed from the WQARF Registry in December 2013.

Governor approval in FY13 paved the way in FY14 for the first ever residential indoor air assessment/vapor intrusion study. Vapor intrusion is the movement of volatile organic compounds (VOCs) from subsurface soil and groundwater into the indoor air of buildings. To account for seasonal effects related to air exchange changes in homes, winter and summer indoor sampling events were conducted. A total of 414 indoor air samples were collected from residences located within the East Central Phoenix 32nd Street and 48th Street and Indian School Road sites. Laboratory analyses indicated that the threat to residences was minimal and no indoor mitigation systems were necessary.

Groundwater remediation systems were decommissioned at the Payson PCE and Ted's Truck Stop (Main Street and Kofa Avenue) sites during FY14. The Payson PCE Interim Groundwater Treatment System (IGTS), initially constructed for the site and began operation in October 1988, was permanently decommissioned. The IGTS was phased out with the construction of the Expanded Groundwater Treatment System (EGTS) which continues to remediate contaminated groundwater and supply drinking water to the Town of Payson. The Ted's Truck Stop groundwater extraction system, initially constructed in 2007, was permanently decommissioned due to declining concentrations of benzene and methyl tert-butyl ether (MTBE). Due to remaining MTBE still above the Health Based Guidance Level (HBGL) of 20 micrograms per liter ( $\mu\text{g/L}$ ), the site was transferred to the Underground Storage Tank (UST) Program, State Lead Unit.

The following consists of a summary of major FY14 accomplishments.



## EARLY RESPONSE ACTIONS (ERA)

ADEQ's WQARF program continues to place a high priority on ERAs at sites where human health is potentially impacted, where sources of contamination can cause significant environmental impact, or where early actions can reduce potential future costs to the WQARF program by limiting the spread of contamination. In FY14, the WQARF program continued O&M on ERAs that were initiated in prior years, in addition to new ERA program initiatives.

### East Central Phoenix (32nd Street and Indian School Road, Phoenix)

To address contaminated soils, in FY13 a soil vapor extraction (SVE) system became operational behind the Maroney's Cleaners facility near the corner of 32nd Street and Indian School Road. To address contaminated soil behind the former Viking Cleaners facility, an additional SVE system was installed and became operational in FY14. Depending on contaminant concentrations across the site, additional ERAs for soil and possibly groundwater may be necessary at this site.

### East Central Phoenix (48th Street and Indian School Road, Phoenix)

In 2006, a SVE system became operational behind the Sandy's dry cleaning facility but for several years the system did not remove the amount of contaminants as expected and the system was shut off in 2011. In FY14, the system was dismantled and removed from the site. To accelerate source removal of contaminants, a new SVE system was designed and built and is expected to begin operating in FY15.

### 7th Avenue and Bethany Home Road, Phoenix

ADEQ initiated an innovative technology pilot test to address increasing contaminant levels in groundwater. The pilot test examined the use of organic substrates to enhance the natural removal of chlorine molecules from VOCs. This process, if successful, will remove the hazardous substances from groundwater and accelerate groundwater cleanup at this site.

### Tyson Wash, Quartzsite:

A 2009 ROD specified groundwater pump and treat and continued monitoring as the selected remedy to address groundwater contamination at the site. Groundwater tests showed that contaminants were not decreasing as anticipated and were escaping the groundwater capture area. Rather than expand the extraction well field, ADEQ initiated an ERA pilot test using In-Situ Chemical Oxidation (ISCO) to break down contaminants. The pilot test conducted in FY13 dramatically reduced the groundwater contaminant level. Because of its success, in FY14, an ISCO system was installed and operated at the site, further decreasing contaminant concentrations in groundwater.

## PRELIMINARY INVESTIGATION REMEDIAL ACTIONS (PI)

### 7th Avenue and Missouri Road, Phoenix (not on WQARF registry)

ADEQ installed additional monitor wells to characterize the groundwater contamination plume. PCE concentrations ranged from non-detect to 850 µg/L. A neighboring Salt River Project well registered a PCE concentration of 67.9 µg/L. Petroleum hydrocarbons and trihalomethanes were also detected in some of the samples. This site is currently undergoing evaluation for placement on the WQARF registry.

## INTERIM REMEDIAL ACTIONS (IRA)

IRAs are taken at a registry site to protect water supply wells, provide alternative water supplies, replace wells, or for water treatment. ADEQ has been working with the Flowing Wells Irrigation District (FWID) and the Metropolitan Domestic Water Improvement District (Metro Water) to implement IRAs at the Miracle Mile and Shannon Road/El Camino del Cerro WQARF sites, respectively.

### Miracle Mile, Tucson

ADEQ entered into a cooperative agreement with FWID to provide wellhead treatment for the removal of VOCs at two FWID production wells. The treatment system was jointly designed and constructed by ADEQ and FWID and incorporated into FWID's arsenic treatment system. The 900 gallon per minute (gpm) system was put into operation in January 2007 and treated approximately 192 million gallons of water in FY14. The treated water is distributed for drinking water use by FWID customers.

### Shannon Road/El Camino del Cerro, Tucson

Through a cooperative agreement with Metro Water, ADEQ has been funding the wellhead treatment and O&M costs associated with a system designed to treat VOC contaminated groundwater. The location of the pumping wells associated with this remediation system allows for the capture and containment of the groundwater contaminant plume. Approximately 201 million gallons of water were treated and nearly 48 pounds of VOCs were removed by this system in FY14. The treated water is distributed for drinking water use by Metro Water customers.

## OPERATION & MAINTENANCE (O&M)

In FY14, ADEQ continues to fund O&M activities at the following sites:

WQARF SITE	WORK CONDUCTED
20th Street and Factor Avenue	engineered cap placement/maintenance
Broadway – Pantano	groundwater pump and treat
Central Avenue and Camelback Road	groundwater pump and treat and SVE system
Cooper Road and Commerce Avenue	groundwater pump & treat, SVE and air sparge
East Central Phoenix 32nd Street and Indian School Road	SVE system
Klondyke Tailings	upper tailings cap protection
Miracle Mile	FWID wellhead treatment
Mountain View Estates ( <i>former NPL site</i> )	soil cap maintenance
Shannon Road/El Camino del Cerro	Metro Water wellhead treatment
Tyson Wash	groundwater pump and treat/ISCO
Vulture Mill	soil cap maintenance
West Central Phoenix – North Plume	SVE system



## REMEDIAL INVESTIGATIONS (RI)

In FY14, ADEQ set the goal of “14 in 14”, an aggressive plan to complete 14 RIs during the fiscal year. This plan succeeded in moving 12 of the 14 sites forward in the clean-up process and 12 draft RI reports were completed. Draft RI reports were completed at the following sites in FY14:

- Broadway – Pantano
- 16th Street and Camelback Road
- South Mesa
- 20th Street and Factor Avenue
- Central Avenue and Camelback Road
- Cooper Road and Commerce Avenue
- East Central Phoenix 38th Street and Indian School Road
- East Central Phoenix 40th Street and Indian School Road
- East Central Phoenix 40th Street and Osborn Road
- Klondyke Tailings
- Shannon Road/El Camino del Cerro
- 7th Street and Arizona Avenue

## FEASIBILITY STUDIES (FS)

ADEQ completed the FS for the Western Avenue site.

## RECORD OF DECISION (ROD)

ADEQ completed a ROD for the Tonto and Cherry site.

## PARTIES CONDUCTING WORK WITH ADEQ OVERSIGHT

The following parties are conducting site investigations and remedial activities at WQARF sites with ADEQ project manager oversight. The work is being paid for by the parties and ADEQ costs are recoverable.

WQARF SITE	WORK CONDUCTED BY
West Van Buren	<i>Air Liquide America Specialty Gases LLC and Prudential Overall Supply under an Amended Consent Order</i>
	<i>Roosevelt Irrigation District and West Van Buren Working Group under a working agreement</i>
56th Street and Earll Drive	<i>Freescale Semiconductor, Inc. under a Consent Order</i>
West Central Phoenix- East Grand Avenue	<i>Univar under a working agreement</i>
Pinal Creek	<i>Freeport McMoRan Inc. as successors of interest under a Consent Decree</i>
	<i>BHP and Pinal Creek Working Group under a Consent Decree</i>
Los Reales Landfill	<i>City of Tucson under a Remedial Action Plan</i>
Silverbell Jail Annex Landfill	<i>City of Tucson under a Remedial Action Plan</i>
Park-Euclid	<i>Park-Euclid Group under a working agreement</i>

A.R.S. §49-282(E)(11) also provides for reimbursement to political subdivisions for the costs incurred in response to a release or a threat of a release of a hazardous substance or pollutant that presents an immediate and substantial endangerment to public health or the environment. In FY14, ADEQ received three packages: City of Phoenix, Town of Payson and the Roosevelt Irrigation District. ADEQ reimbursed a total amount of \$250,000 divided among the three applicants.

# ACTIVITIES

Summaries are provided of activities and accomplishments for WQARF and PI sites. FY14 revenues and expenditures for the WQARF Program can be found in Appendix 1.

## REMEDIATION:

**2,669.6\***  
**Groundwater Treated**

*\* in millions of gallons*

7.5	Broadway – Pantano	192.5	Miracle Mile	201.4	Shannon Rd/El Camino del Cerro
23.4	Central Avenue and Camelback Road	50.9	Nogales Wash	743.2	West Van Buren
56.7	Cooper Road and Commerce Avenue	23.3	Payson PCE	111.0	56th Street and Earll Drive
48.0	Los Reales Landfill	1,211.7	Pinal Creek		

**3,508\***  
**Volatile Organic Compounds Removed**

*\* pounds removed from the environment*

686	Central Avenue and Camelback Road	47.5	Shannon Road/El Camino del Cerro
74.3	Cooper Road and Commerce Avenue	1,066.5	West Van Buren
13	East Central Phoenix 32nd Street and Indian School Road	35.7	56th Street and Earll Drive
3.4	Los Reales Landfill	1,132	West Central Phoenix – North Plume
449.6	Park-Euclid		

**1,603,833\***  
**Metals Removed from Pinal Creek**

*\* pounds removed from the environment*

**3,565\***  
**Contaminated Soils Removed**

*\* tons removed from the environment*

45	20th Street and Factor Avenue
3,520	Klondyke Tailings

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## Groundwater Wells Installed

3	West Van Buren	8	East Central Phoenix 40th Street and Osborn Road
6	Cooper Road and Commerce Avenue	2	16th Street and Camelback Road
5	East Central Phoenix 24th Street and Grand Canal	1	Central Avenue and Camelback Road
8	East Central Phoenix 38th Street and Indian School Road	1	7th Street and Missouri Road
10	East Central Phoenix 40th Street and Indian School Road		

## 7 Soil Vapor Wells Installed at 20th Street and Factor Avenue

## 3,793 Groundwater Samples Collected

## 777 Soil Gas Samples Collected

# 29\*

## Community Involvement Activities

\* public meetings held

4	Broadway–Pantano	1	7th Avenue and Bethany Home Road
3	Central Avenue and Camelback Road	2	7th Street and Arizona
1	Cooper Road and Commerce Avenue	1	Klondyke Tailings
5	East Central Phoenix Sites (six total sites)	3	20th Street and Factor Avenue
1	Miracle Mile	1	56th Street and EarlI Drive
2	Shannon Road/El Camino del Cerro	2	Western Avenue
2	Park–Euclid	1	West Van Buren

### THE FOLLOWING LEGAL ACTIONS WERE EXECUTED IN SUPPORT OF THE WQARF PROGRAM:

#### Legal Notices

##### 16th Street and Camelback Road

ADEQ sent out eight A.R.S. §49-287.03 Notices that initiated the RI/FS process to all parties who “may be liable.”

##### WCP West Osborn Complex

ADEQ sent out three A.R.S. §49-287.04 Notices to the list of preliminary responsible parties of the opportunity to provide comment to the PRAP.

7	Prospective Purchaser Agreement Applications	205	Witness Interviews
69	Access Agreements	27	Potentially Responsible Parties Reports
1	Prospective Purchaser Agreement Approved		

# WQARF COST RECOVERY ACTIVITY

Pursuant to A.R.S. § 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 recovery activities at WQARF and federal sites supported by ADEQ are provided below.

	NO. OF PACKAGES	\$ AMOUNT	TOTAL AMOUNT
<b>Packages at the beginning of the year</b>	<b>0</b>		<b>\$0</b>
<b>New Packages</b>	<b>60</b>		<b>\$ 526,388.50</b>
Motorola 56th Street Plant	4	4,624.98	
Phoenix Goodyear Airport	2	17,031.66	
19th Avenue Landfill	1	15,650.97	
West Van Buren- Air Liquide	1	1,063.10	
Asarco-Hayden	4	16,719.32	
West Van Buren - RID	4	8,594.15	
Honeywell Area 13	4	12,137.59	
D-Velco	4	6,280.05	
Motorola 52nd Street	16	247,429.27	
North Indian Bend Wash	1	46,699.37	
PGA - South	4	54,755.31	
Pinal Creek	2	70,595.18	
Inspiration Mine	2	7,663.11	
Copper Cities Unit	2	3,536.23	
Miami Tailings Reprocessing	2	8,142.72	
Magma Copper Old Dominion	1	238.73	
West Van Buren - Prudential	2	2,544.06	
West Van Buren Work Group	4	2,682.70	
<b>Payments Received</b>	<b>60</b>		<b>\$ 526,388.50</b>
<b>Balance at End of Year</b>	<b>0</b>		<b>\$0</b>



# FEDERAL SITES ACTIVITIES

Summaries are provided of activities and accomplishments for Federal sites supported by WQARF.

## REMEDIATION:

**7,307.6\***  
**Groundwater Treated**  
*\* in millions of gallons*

976	Motorola 52nd Street / OU2 and OU2
4,562	North and South Indian Bend Wash
1,505	Phoenix Goodyear Airport - North
264.6	Phoenix Goodyear Airport - South

**7,464.9\***  
**Volatile Organic Compounds Removed**  
*\* pounds removed from the environment*

1,081	Motorola 52nd Street/ OU1 and OU2
10.9	Motorola 52nd Street/ OU3
2,544	North and South Indian Bend Wash
3,000	19th Avenue Landfill
775	Phoenix Goodyear Airport - North
54	Phoenix Goodyear Airport - South

**487.3\***  
**Other Hazardous Substances Removed**  
*\* pounds removed from the environment*

483	Honeywell 34th Street
4.3	Phoenix Goodyear Airport - North

**17**  
**Community Involvement Activities**

Fact Sheets and Public Notices		Public Meetings	
2	Motorola 52nd Street/OU1 and OU2	2	Honeywell 34th Street
1	Camp Navajo	2	Motorola 52nd Street
2	Phoenix Goodyear Airport - North	1	Camp Navajo
7	Phoenix Goodyear Airport - North and South		

# WQARF FUNDING FOR OTHER USES

In addition to the costs of administering the program and conducting remedial actions, A.R.S. § 49-282(E) authorizes WQARF funding for other uses. Descriptions of the following uses/programs and their accomplishments are discussed later in the report:

## **EMERGENCY RESPONSE PROGRAM**

Pursuant to A.R.S. § 49-282(E)(8), WQARF monies may be used for all reasonable costs incurred for remedial actions taken in response to a release or threat of a release of a hazardous substance or pollutant that presents a threat to public health or the environment. The FY14 accomplishments of the Well Inspections and Approval Program are found in Appendix 3.

## **WELL INSPECTION AND APPROVAL PROGRAM**

Pursuant to A.R.S. § 282(E)(12), WQARF funds are used to fund the Arizona Department of Water Resources (ADWR) to conduct well inspections and remedial actions, and for the review and approval of well construction design necessary to prevent vertical cross-contamination. The FY14 accomplishments of the Well Inspections and Approval Program are found in Appendix 4.

## **RISK ASSESSMENT PROGRAM**

Pursuant to A.R.S. § 282(E)(15), WQARF funds are used to fund the Arizona Department of Health Services (ADHS) to assess and evaluate the effect of a release or a threatened release of hazardous substances to the public health, welfare, or the environment. The FY14 accomplishments of the Risk Assessment Program are found in Appendix 5.

## **WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM**

Pursuant to A.R.S. § 49-282(E)(3), WQARF funds are used for the costs of monitoring, assessing, identifying, locating, and evaluating the degradation, destruction, loss of, or threat to the waters of the state resulting from a release of a hazardous substance to the environment. Pursuant to A.R.S. § 49-282(E)(6), WQARF monies also are used for the costs of the water quality monitoring program described in A.R.S. § 49-225. A description of Water Quality Assessment and Management Program FY14 activities and accomplishments are found in Appendix 6.

# FY14 WQARF PROGRESS CHART

SITES	PRELIMINARY INVESTIGATION	REGISTRY LISTING	EARLY RESPONSE ACTION	REMEDIAL INVESTIGATION	FEASIBILITY STUDY	PROPOSED REMEDIAL ACTION PLAN	RECORD OF DECISION	REMEDY IMPLEMENTATION	OPERATION AND MAINTENANCE	REMOVAL FROM REGISTRY
7TH AVENUE AND BETHANY HOME ROAD			█							
7TH STREET AND ARIZONA AVENUE				█						
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 38th STREET AND INDIAN SCHOOL ROAD				█						
ECP 40th STREET AND INDIAN SCHOOL ROAD				█						
ECP 40th STREET AND OSBORN ROAD				█						
ECP 48th STREET AND INDIAN SCHOOL ROAD			█							
ESTES LANDFILL										
KLONDYKE TAILINGS				█					█	
LOS REALES LANDFILL*									█	
MIRACLE MILE									█	
PARK - EUCLID										
PAYSON PCE*									█	
PINAL CREEK*									█	
SHANNON RD/EI CAMINO del CERRO				█					█	
SILVERBELL LANDFILL*									█	
SOUTH MESA				█						
TONTO AND CHERRY							█			█
TYSON WASH			█						█	
VULTURE MILL									█	
WCP - EAST GRAND AVENUE										
WCP - NORTH CANAL PLUME				█						
WCP - NORTH PLUME									█	
WCP - WEST GRAND AVENUE										
WCP - WEST OSBORN COMPLEX										
WESTERN AVENUE					█					
WEST VAN BUREN										
7TH STREET AND MISSOURI ROAD	█									
MOUNTAIN VIEW ESTATES**									█	

**Notes:**

\* = Long-term operation and maintenance not funded by WQARF

\*\* = Former National Priority List Site, only on going long-term monitoring and upkeep

# THE WQARF TEAM

## ADEQ DIRECTORS



**Henry R. Darwin**  
Director,  
ADEQ



**Misael Cabrera, P.E.**  
Deputy Director,  
ADEQ



**Laura L. Malone**  
Director,  
Waste Programs



**Ana I. Vargas**  
Deputy Director,  
Waste Programs

## REMEDIAL PROJECTS SECTION



**Tina L. LePage**  
Section Manager



**Raymundo Lincon Ortega**  
Administrative Support

## REMEDIAL PROJECTS UNIT



**Scott R. Green, R.G.**  
Unit Manager



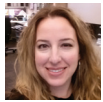
**Donald Atkinson**  
Project Manager



**Mel Bunkers**  
Project Manager



**Scott Goodwin, R.G.**  
Project Manager



**Nichole Osuch**  
Project Manager



**Kevin Snyder, R.G.**  
Project Manager



**Danielle Taber, EIT**  
Project Manager



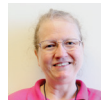
**Wendy Flood**  
Community  
Involvement, Lead



**Caroline Oppeleman,  
R.S., REHS/RS**  
Community  
Involvement



**Debra Crouse**  
GIS Support



**Mary Hessler**  
Legal Support



**Christina Silva**  
Legal Support

## FEDERAL PROJECTS UNIT



**Harry Hendler**  
Unit Manager



**Sara Benovic**  
Project Manager



**Laura Fischer**  
Project Manager



**Wayne Miller, R.G., P.E.**  
Project Manager



**Patrick Shinabery**  
Project Manager



**Brian Stonebrink**  
Project Manager



**Jessica Lange**  
Administrative Support

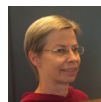
## SOUTHERN REGIONAL OFFICE



**Amanda E. Stone**  
Director,  
Southern  
Regional Office



**William Ellett, R.G.**  
Manager



**Gretchen Wagensellar**  
Project Manager



**Marc Herman**  
Project Manager



**Mathew Narter, Ph.D**  
Hydrologist



**Hazel Cox, Ph.D**  
Hydrologist



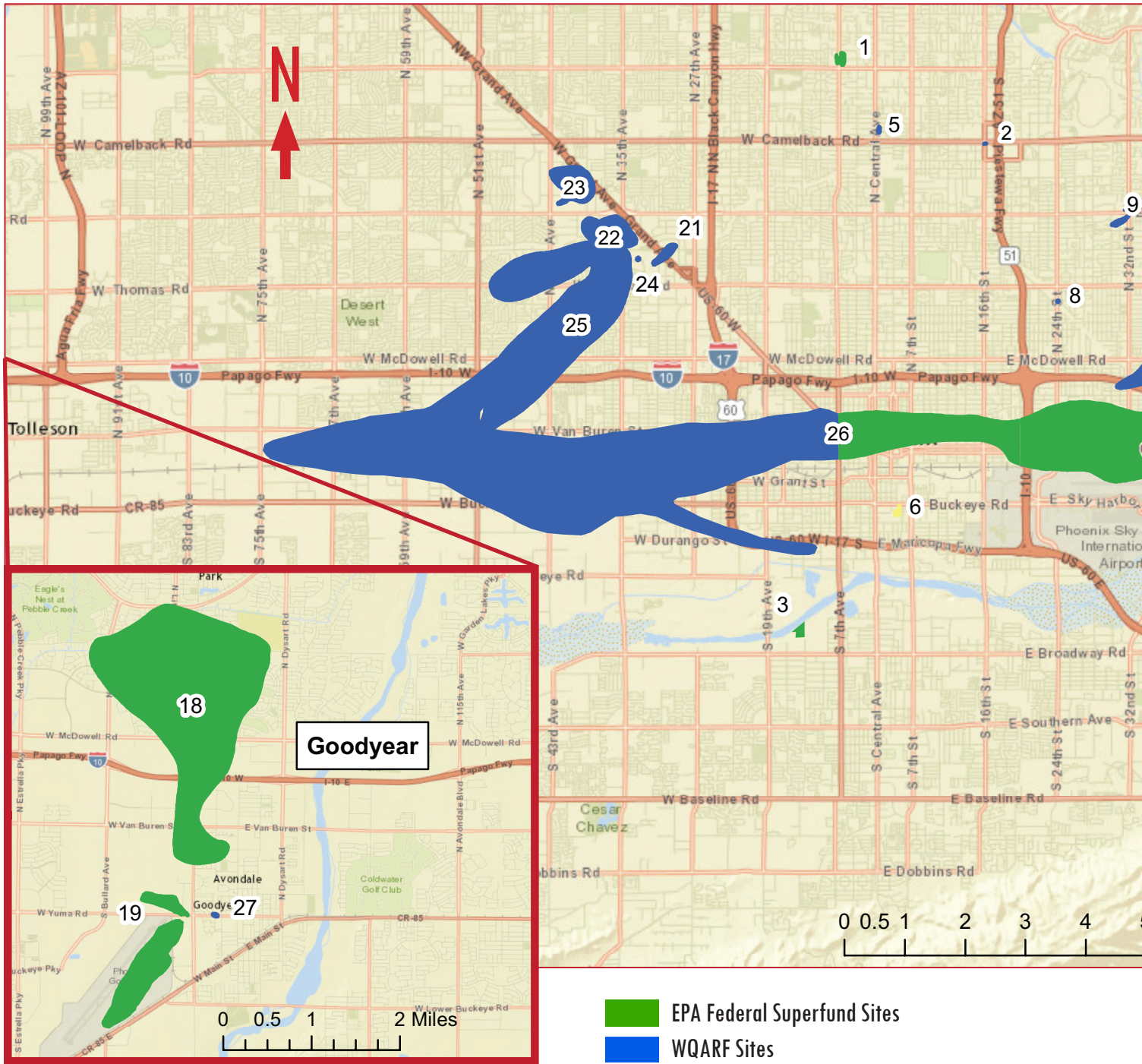
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# FIGURES



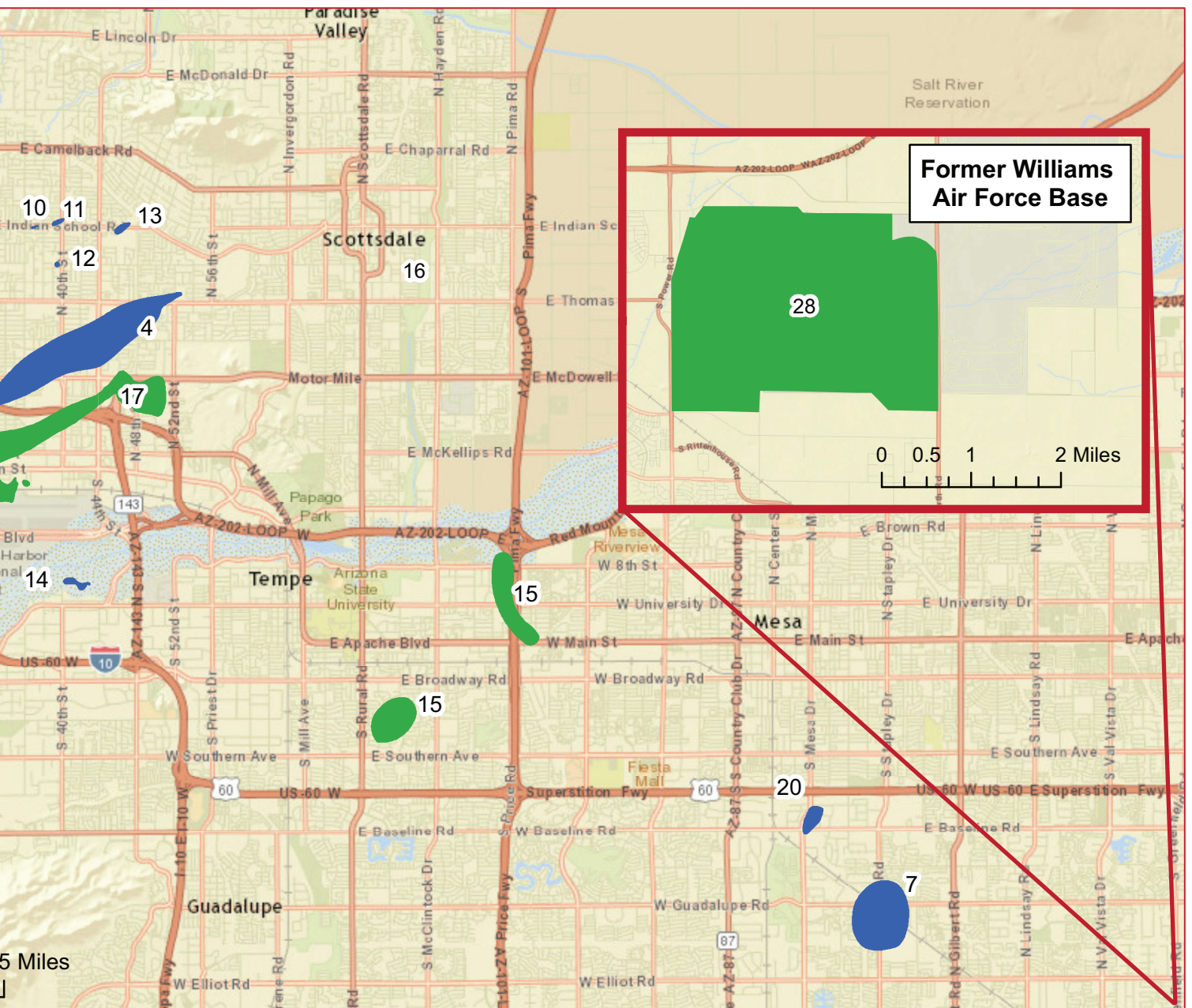
# METROPOLITAN PHOENIX SITES



Disclaimer: plumes are estimated and subject to change over time.

DJCrouse: 7/10/2014





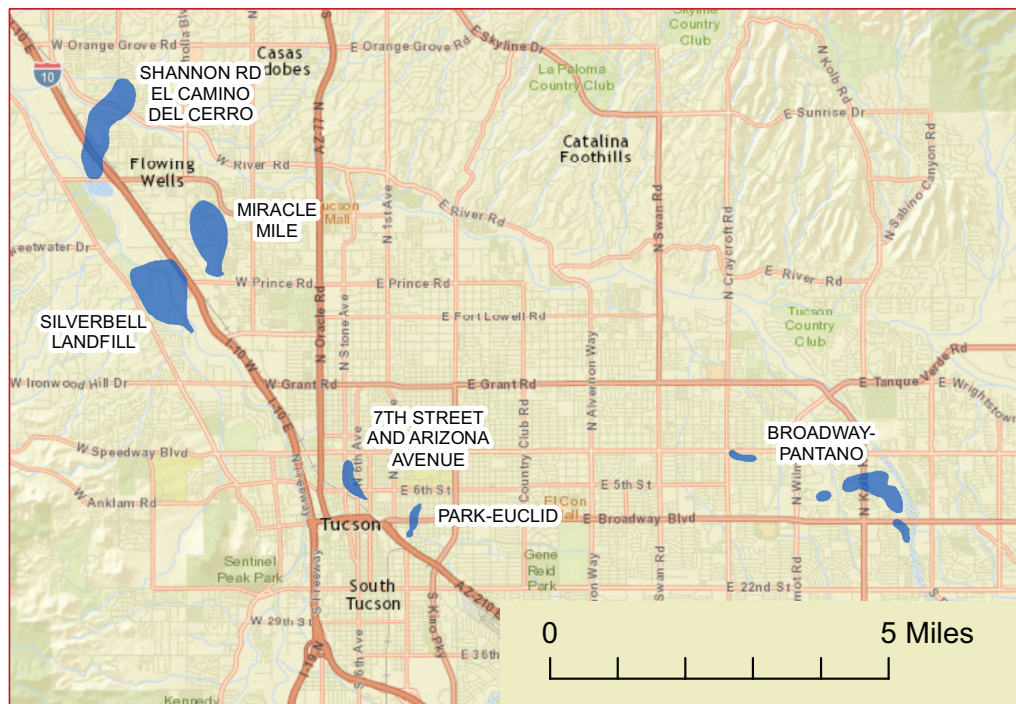
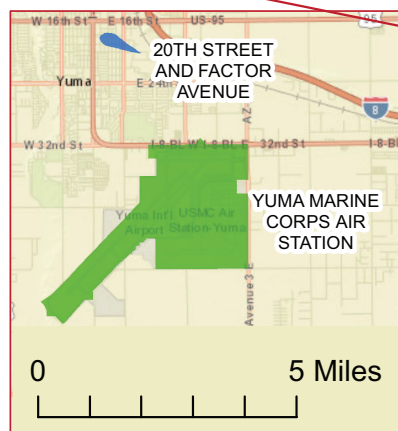
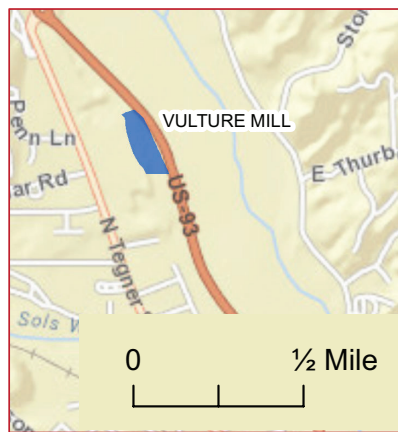
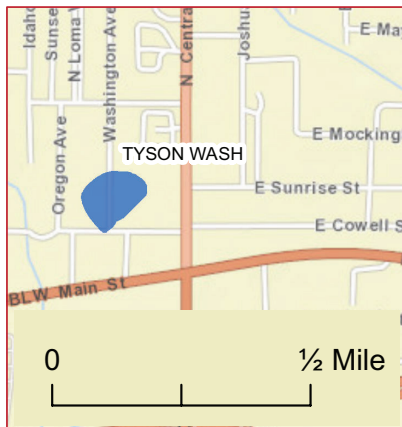
- 1. 7th Avenue and Bethany Home Road
  - 2. 16th Street and Camelback Road
  - 3. 19th Avenue Landfill
  - 4. 56th Street and Earll Drive
  - 5. Central Avenue and Camelback Road
  - 6. East Washington Fluff (Delisted)
  - 7. Cooper Road and Commerce Avenue
- East Central Phoenix (ECP)**
- 8. ECP, 24th Street and Grand Canal
  - 9. ECP, 32nd Street and Indian School Road

- 10. ECP, 38th Street and Indian School Road
- 11. ECP, 40th Street and Indian School Road
- 12. ECP, 40th Street and Osborn Road
- 13. ECP, 48th Street and Indian School Road
- 14. Estes Landfill
- 15. Indian Bend Wash—South
- 16. Indian Bend Wash—North
- 17. Motorola 52nd Street
- 18. Phoenix Goodyear Airport—North
- 19. Phoenix Goodyear Airport—South

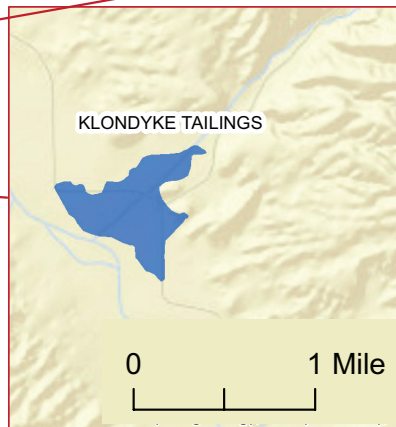
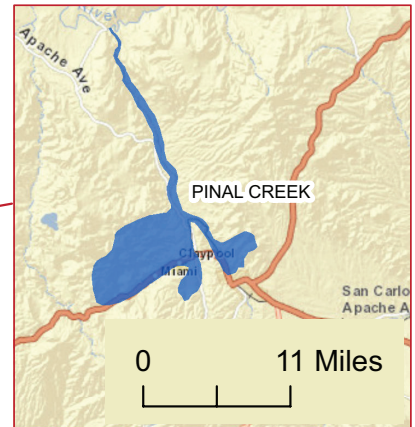
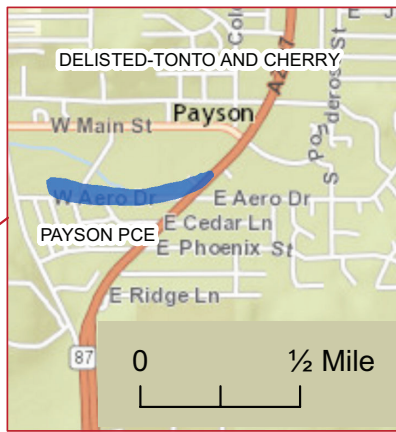
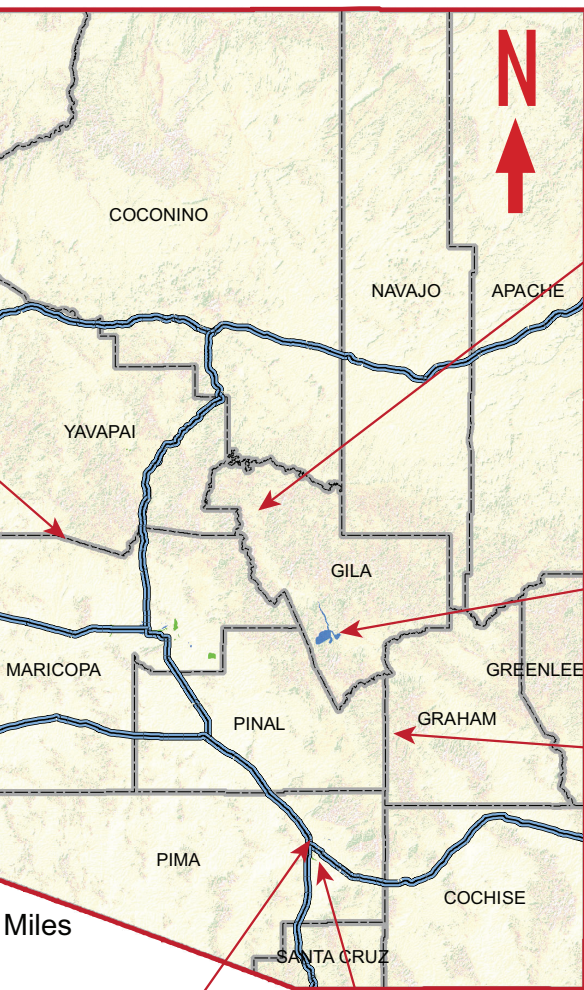
- 20. South Mesa
- West Central Phoenix (WCP)**
- 21. WCP, East Grand Avenue
  - 22. WCP, North Canal Plume
  - 23. WCP, North Plume
  - 24. WCP, West Grand Avenue
  - 25. WCP, West Osborn Complex
  - 26. West Van Buren
  - 27. Western Avenue
  - 28. Williams Air Force Base



# STATEWIDE SITES

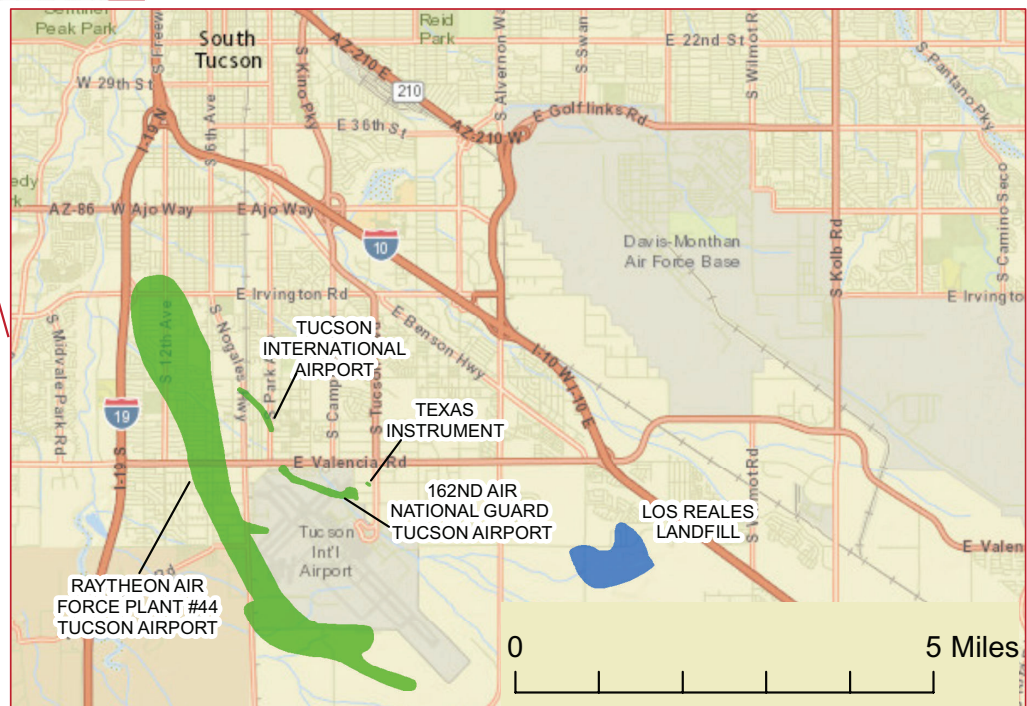






Miles

- EPA Federal Superfund Sites
- WQARF Sites
- Counties
- Interstate Highways



Disclaimer: plumes are estimated and subject to change over time.

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# APPENDICES





# APPENDIX 1

## WQARF REVENUES AND EXPENDITURES

BALANCE	FY13 ACTUAL	FY14 PROJECTION	FY14 ACTUAL
Beginning Fund Balance - WQARF & Priority Sites	7,067.4	8,108.3	7,830.9
Beginning Fund Balance - Site Specific Account	1,206.0	887.8	1,165.2
<b>Sub-Total: Funds Available</b>	<b>8,273.4</b>	<b>8,996.1</b>	<b>8,996.1</b>
Prior Year Corporate Income Tax Reversion	0.0	0.0	0.0
<b>Total Balance from Prior Year</b>	<b>8,273.4</b>	<b>8,996.1</b>	<b>8,996.1</b>

REVENUE SUBJECT TO 18M CAP	FY13 ACTUAL	FY14 PROJECTION	FY14 ACTUAL
Corporate Income Tax	7,000.0	7,000.0	7,000.0
<b>FEES:</b>			
Municipal Water (ARS 42-5302)	2,427.1	2,500.1	2,428.1
Fertilizer Registration (ARS 3-272)	60.3	57.0	60.7
HW Facility Registration Fee (ARS 49-929/49-930)	229.3	217.0	128.2
HW Manifest Re-submittal Fee (ARS 49-922.01)	0.0	0.0	0.0
Industrial Discharge Permit Fee (ARS 49-209)	25.2	33.6	30.3
Pesticide Registration (ARS 3-351)	1,085.6	1,032.1	909.5
Quality Assurance Fee (ARS 45-616)	330.0	328.0	327.5
<b>Sub-total: Fees</b>	<b>4,157.5</b>	<b>4,167.9</b>	<b>3,884.3</b>
<b>Total: Revenue Subject to 18M Cap</b>	<b>11,157.5</b>	<b>11,167.9</b>	<b>10,884.3</b>

REVENUE NOT SUBJECT TO 18M CAP	FY13 ACTUAL	FY14 PROJECTION	FY14 ACTUAL
Consent Decrees	75.0	0.0	75.0
Cost Recovery (ARS 49-282)	538.9	0.0	452.3
<b>Responsible Parties Subtotal</b>	<b>613.9</b>	<b>0.0</b>	<b>527.3</b>
Prospective Purchaser Agreement (ARS 49-285.01)	16.9	0.0	17.2
Interest (ARS 49-282)	89.5	81.5	62.7
Prior Year Reimbursement (ADHS)			
Other Income	12.0	0.0	43.0
<b>Sub-Total: Funds Available</b>	<b>118.4</b>	<b>81.5</b>	<b>122.9</b>
<b>Total: Revenue Not Subject to 18M Cap</b>	<b>732.3</b>	<b>81.5</b>	<b>650.2</b>

<b>Beginning Balance and Revenue</b>	<b>20,163.2</b>	<b>20,245.5</b>	<b>20,530.6</b>
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EXPENDITURES	FY13 ACTUAL	FY14 PROJECTION	FY14 ACTUAL
Non-Site Expenditures	5,727.9	7,749.0	6,712.1
Site Expenditures	5,139.2	8,285.6	7,780.9
Transfers Out	300.0	300.0	300.0
General Fund Sweep	0.0	108.1	108.1
<b>Total Expenditures</b>	<b>11,167.1</b>	<b>16,442.7</b>	<b>14,901.1</b>

Note: All figures expressed in thousands.

# APPENDIX 1

## WQARF EXPENDITURE STATEMENT

CORE EXPENDITURES	FY2015 SPENDING PLAN
WQARF Professional & Support Staff	3,490.1
Professional & Outside - Remedial Projects	250.0
Hydrologic Support & Assessment	931.9
Professional & Outside - Hydrologic Support & Assessment	260.0
Emergency Response	30.0
Attorney General's Office	633.0
PRP Identification/Liability	1,000.0
Litigation	20.0
Appeals	0.0
Advisory Board	0.0
Rule Development	0.0
Community Involvement/General WQARF	0.0
<b>Sub-total: Core Expenditures</b>	<b>6,615.0</b>

REGISTRY SITES AND PRELIMINARY INVESTIGATIONS (PI)	FY2015 SPENDING PLAN
Proposed New Sites	0.0
RI/FS - Site Specific WQARF	1,000.0
Cleanup - Site Specific WQARF	2,250.0
ERA	2,250.0
O&M	1,250.0
Community Involvement	350.0
Preliminary Investigations	750.0
<b>Sub-total: Registry Sites &amp; PI</b>	<b>7,850.0</b>

<b>Subtotal: WQARF Program</b>	<b>14,465.0</b>
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REGISTRY SITES AND PRELIMINARY INVESTIGATIONS (PI)	FY2015 SPENDING PLAN
Department of Health Services - Risk Assessment	60.0
Department of Water Resources - Appropriation Transfer Out	300.0
Emergency Response - Aid to Municipalities	250.0
Voluntary Program	0.0

<b>Total Disbursements</b>	<b>15,075.0</b>
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PROPOSED CARRY FORWARD	FY13 ACTUAL	FY14 PROJECTION	FY14 ACTUAL
Beginning Balance and Revenue minus Expenditures	8,996.1	3,802.8	5,629.6
Revenue in Excess of 18M Cap to be Reverted	0.0		0.0

<b>Uncommitted Balance/Carry Forward</b>	<b>8,996.1</b>	<b>3,802.8</b>	<b>5,629.6</b>
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Note: All figures expressed in thousands.

# APPENDIX 2

## WQARF SITE BUDGET

WQARF is funded in part from an annual \$15 million transfer from the Corporate Income Tax (CIT), as stipulated in A.R.S. § 49-282. In addition, WQARF generates other revenue from various license and registration fees.

Some types of revenue, including cost recovery collections and interest, are not included in this calculation. Therefore, actual program revenues can exceed \$18 million in a year depending on how much is deposited from these other sources.

In FY10, the transfer of CIT revenues to WQARF was reduced from \$15 million to \$7 million and remained at that level through FY14.

SITE	PROJECTED BUDGET
7th Street and Arizona Avenue	\$250,000
7th Avenue and Bethany Home Road	\$525,000
16th Street and Camelback Road	\$150,000
20th Street and Factor Avenue	\$200,000
56th Street and Earll Drive	\$25,000
Broadway–Pantano	\$75,000
Central Avenue and Camelback Road	\$200,000
Cooper Road and Commerce Avenue	\$300,000
ECP - 24th Street and Grand Canal	\$250,000
ECP - 32nd Street and Indian School Road	\$450,000
ECP - 38th Street and Indian School Road	\$125,000
ECP - 40th Street and Indian School Road	\$125,000
ECP - 40th Street and Osborn	\$125,000
ECP - 48th Street and Indian School Road	\$550,000
Estes Landfill	\$50,000
Klondyke Tailings	\$225,000
Miracle Mile	\$250,000
Mountain View Estates	\$25,000
Park–Euclid	\$25,000
Payson PCE	\$250,000
Pinal Creek	\$0
Shannon Road-Rillito Creek/El Camino del Cerro	\$250,000
South Mesa	\$50,000
Tyson Wash	\$350,000
Vulture Mill	\$25,000
WCP - North Canal Plume	\$250,000
WCP - North Plume	\$1,000,000
WCP - West Osborn Complex	\$375,000
WCP - East Grand Avenue	\$25,000
WCP - West Grand Avenue	\$25,000
Western Avenue	\$25,000
West Van Buren	\$200,000
Proposed New Sites	\$0
Site specific community Involvement	\$350,000
Preliminary Investigations	\$750,000
<b>WQARF Sites Budget FY15</b>	<b>\$7,850,000</b>

**\$250,000\***

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

# APPENDIX 3

## EMERGENCY RESPONSE PROGRAM

The Emergency Response Unit (ERU) was notified of 176 reported incidents and handled more than 284 calls and complaints from the "Spill Report Line." During the year, the ERU took part in several drills and exercises around the state. ERU also provided several outside agencies with both on-scene and technical assistance involving incidents around the state.

### FY14 ACTIVITIES:

#### Train Derailment/Acid Release

ERU responded to a remote area in Greenlee County after receiving conflicting reports of a train derailment several miles south of the Town of Clifton. Upon arrival at the scene, ERU personnel found that six rail cars from a train belonging to the Arizona Eastern Railroad had derailed and rolled down an approximately 20-foot embankment. Five of the rail cars were found to be empty boxcars and the sixth car was a tanker loaded with sulfuric acid. The acid car was breached during this accident and approximately 13,600 gallons of acid were released onto the soils and into a dry tributary wash of the San Francisco River. Actions taken by local responders and the Arizona Eastern Rail Road had prevented the acid from reaching the river, which was located approximately 200 yards from the derailment site. Clean up actions were undertaken by the Arizona Eastern Rail Road and all the free standing acid, contaminated soils and debris were removed from the site.

#### Used Oil Facility Fire

At the request of the Phoenix Fire Department, ERU personnel responded to a fire at the Fuels, LLC facility located on 24th street in Phoenix. This fire began as employees of the facility were attempting to load waste oil from a 20,000 gallon storage tank into a 7,000 gallon over-the-road cargo tanker. During this incident, two facility employees received severe burns and the cargo tanker and storage tank were damaged. Much of the oil that was released was burned off by the fire but an unknown amount of oil and contaminated water runoff from the firefighting efforts made their way into the city storm water drains and some of the liquids were found at the 24th Street outfall to the Salt River. It was determined the contaminated liquids did not make it into the river bottom. Actions were taken to remove all free liquids from the storm drains and all contaminated products and debris were removed from the Fuels, LLC site.

#### Oil Cargo Tanker Accident

At the request of Arizona Department of Transportation (ADOT) and Arizona Department of Public Safety (DPS), ERU personnel responded to a single vehicle accident located on I-17 northbound at mile post 237, near the community of New River. When responders arrived at the accident site, they found a tanker truck overturned onto its side blocking the northbound lanes of I-17. Approximately 7,000 gallons of oil were released onto the highway, right of way and into a dry tributary wash of the New River which was also dry at the time of the accident. Clean-up contractors were hired by the truck's owner, Solvent System Inc., to handle the environmental impacts of this release. ADOT provided oversight of this clean-up operation.

# APPENDIX 4

## ARIZONA DEPARTMENT OF WATER RESOURCES

### 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 and 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 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 Interagency Service Agreement (ISA).  
*\*Required by statute or rule*  
*+Recommended by Groundwater Cleanup Task Force*

### FY14 ACCOMPLISHMENTS:

- Well application and withdrawal permit review:
  - Reviewed 3,672 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 1,604 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 87 permit applications to withdraw groundwater for proximity to WQARF/CERCLA or other remedial action sites.
  - Performed technical review of 13 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.
- No well inventory activities were performed during fiscal year 2014
- Well application and withdrawal permit review:
  - Submitted quarterly reports to ADEQ and the WQARF Advisory Board as required by the ADEQ-ADWR ISA.
  - Submitted annual report on ADWR WQARF activities to the governor, legislature, and WQARF Advisory Board for fiscal year 2013.

### FY14 ACTIVITIES:

- Continue technical review of Notices of Intent to drill/abandon/deepen/modify/replace a well for water quality concerns and for compliance with applicable well construction requirements, or site-specific special well construction requirements, to prevent vertical cross-contamination between aquifers.
- Continue technical review of Applications to Drill and Operate a Non-Exempt Well and Groundwater Withdrawal Permit Applications for potential impacts to other wells of record from potential contaminant plume migration, and for compliance with applicable well construction requirements to prevent vertical cross-contamination between aquifers.
- Continue to coordinate with ADEQ regarding database needs in support of the WQARF program.
- Continue to prepare quarterly, annual and other reports as specified in the Inter-agency Service Agreement for fiscal year 2015.
- Submit annual report on ADWR WQARF activities to the governor, legislature, and WQARF Advisory Board for fiscal year 2014.



# APPENDIX 4

## DEPARTMENT OF WATER RESOURCES: FY14 REVENUES AND EXPENDITURES & FY15 BUDGET FOR THE YEAR ENDED JUNE 30, 2014, INCLUDING 13TH MONTH

FY14 REVENUE AND EXPENDITURES	REMAINING BALANCE
<b>Funds Available</b>	
Beginning Balance, (7/1/13)	171,846.38
Transfer from ADEQ	300,000.00
Earnings on Investments	1,720.36
<b>Total – Funds Available</b>	<b>\$473,566.74</b>
<b>Expenditures</b>	
Personal Services	73,185.19
Employee related Expenditures	22,590.91
Professional and Outside Services	
Travel – In State	
Travel – Out of State	
Other Operating Expenditures	8,900.00
Capital Equipment	
Indirect Costs	34,911.70
Transfers Out – Legislative Actions	2,200.00
<b>Total – Expenditures</b>	<b>\$141,787.80</b>
<b>Cash Balance</b>	<b>\$331,778.94</b>
<b>Less: Outstanding Encumbrances</b>	
<b>Fund Balance</b>	<b>\$331,778.94</b>

FY15 BUDGET	REMAINING BALANCE
<b>Funds Available</b>	
Beginning Balance, (7/1/13)	331,779
Transfer from ADEQ	300,000
<b>Total – Funds Available</b>	<b>\$631,779</b>
<b>Expenditures</b>	
Personal Services	180,000
Employee related Expenditures	72,000
Travel – In State	2,000
Other Operating Expenditures	17,000
Non-Capital Equipment	0
Indirect Costs	113,400
<b>Total – Expenditures</b>	<b>\$384,400</b>
<b>Fund Balance (06/30/15 estimate)</b>	<b>\$247,379</b>

# APPENDIX 5

## ARIZONA DEPARTMENT OF HEALTH SERVICES

### PROGRAM OBJECTIVES:

A.R.S. §36-(1691-1694) created the Environmental Toxicology Program to analyze health risks from environmental exposure, provide independent evaluation of strategies to prevent health risks from environmental exposures, and provide ADEQ and others with information to address potential public health risks from environmental exposures.

ADHS also receives federal funding from the Agency for Toxic Substances and Disease Registry (ATSDR). ADHS follows ATSDR'S guidance for conducting public health risk assessments and health consultations. Documents created for superfund sites are peer reviewed and ultimately published by ATSDR. ADHS also receives "credit" under the cooperative agreement with ATSDR for work on other sites such as state superfund (WQARF) sites, technical assistance, and health education activities.

#### ADEQ/ADHS ISA Agreement

ADHS and ADEQ have signed and annually reviewed an Interagency Service Agreement (ISA) which provides ADHS with \$15,000 minimum quarterly payments and a maximum of \$25,000 per quarter. The additional \$10,000 is dependent on additional work. Up to and including FY14, the ISA has been used to provide availability of ADHS staff on demand. Two ADHS staff were partially funded by the ISA (0.2 FTE or \$60,000 annually). In FY15, the ISA will be used to fund staff contracted with ADHS to provide risk assessment services to ADEQ. One contracted staff is currently funded and \$60,000 annually will provide this base availability.

### FY14 ISA ACCOMPLISHMENTS:

**Salero Mine Risk Assessment Work Plan Review (VRP):** The Voluntary Remediation Program (VRP) at ADEQ requested ADHS to review a risk assessment work plan for Salero Mine submitted to ADEQ by Tetra Tech, Inc. ADHS reviewed the Risk Assessment Work Plan, attended meetings with ADEQ and Tetra Tech, Inc. and provided comments in a letter addressed to ADEQ. ADHS and ADEQ used this opportunity to inform the development of procedures and a timeline for similar projects in the future.

**Arsenic Bioaccessibility/Bioavailability (VRP):** VRP asked ADHS to review a proposal by Resolution Copper to use in vitro bioaccessibility methods for estimating relative bioavailability of soils in Superior, Arizona. An ADHS toxicologist reviewed literature and consulted with toxicologists at ATSDR and EPA Region 9. ADHS attended meetings and conference calls with ADEQ and Resolution Copper and provided a written response to ADEQ.

# APPENDIX 5

## ARIZONA DEPARTMENT OF HEALTH SERVICES

### FY14 NON ISA PROJECTS:

ADHS receives federal funding from the ATSDR. ADHS follows ATSDR'S guidance for conducting public health risk assessments and health consultations. Documents created for superfund sites are peer reviewed and ultimately published by ATSDR. ADHS also receives "credit" under the cooperative agreement with ATSDR for work on other sites such as state superfund (WQARF) sites, technical assistance, and health education activities.

#### Health Consultations:

**Iron King Mine (ambient air), Yavapai County:** Community residents expressed concerns that dust storms and windy conditions could be blowing soil from the mine tailings piles into the community. They were concerned that they might be exposed to harmful levels of metals in the soil. In response, ADHS reviewed air data and concluded that the measured levels of metals in the air were not a public health concern, but the measured levels of particulate matter near the Humboldt Smelter may be a public health concern to sensitive individuals.

**Dairy Farm, Maricopa County:** Maricopa County requested ADHS to review measured levels of hydrogen sulfide. Air samples were taken at a residence near a dairy farm to measure hydrogen sulfide. The residents had complained about health effects and corrosion on wires and electrical units at their homes. ADHS concluded that based on the available data, adverse health effects were possible from exposure to hydrogen sulfide.

**Kinder Morgan, Yuma County:** ADHS received a request from ADEQ to conduct an updated assessment of groundwater at the Kinder Morgan Yuma Booster Station. ADHS conducted a health consultation which evaluated the potential health risks associated with exposure to the detected chemicals in the third quarter 2012 Groundwater Monitoring Report. ADHS concluded that at the present time, the chemicals detected in the monitoring wells around the Yuma Booster Station are not expected to cause public health concern. The general public or workers have no contact or limited contact with the well water. If the groundwater is used for vegetable crop irrigation, the general public may uptake very small amounts of ethylbenzene, toluene, xylene and MTBE via food ingestion. The evaluation results indicated that this route of exposure is not likely to result in adverse impact to human health. ADHS also concluded that there would be no public health concern if these wells were to be used as residential wells because no cancerous or non-cancerous adverse health effects would be expected under the assumed exposure scenarios.

**Private Residence 1, Yavapai County:** ADHS received a request to evaluate the quality of the water collected from a kitchen sink of a resident on private well water. ADHS conducted an evaluation to determine if the water can be used for drinking, cooking, laundry, showers, and washing dishes. ADHS determined that the measured levels of arsenic were high enough to be a public health concern for both acute and chronic health effects, as well as increased cancer risk. In addition the water had total coliform levels that were also of public health concern. ADHS recommended not using the water for drinking, showering, washing dishes, or brushing teeth, but that using it for laundry was acceptable.

**Private Residence 2, Maricopa County:** ADHS received a request to conduct an evaluation to determine if a groundwater well could be used for drinking and cooking purposes as well as for irrigation, hydroponics and aquaponics (growing vegetables and tilapia fish and prawns for human consumption). ADHS concluded that consuming the water for a short time (acute exposure) would not be expected to result in adverse health effects. ADHS also found that consuming fish/spawn raised from the groundwater is not expected to cause adverse noncancerous health effects. ADHS concluded that using the water for drinking and cooking for long periods (chronic exposure) has an increased risk of non-cancer health effects. The risk of cancer is categorized as "moderate."

**Private Residence 3, Gila County:** A parent was concerned about their child's blood lead level and asked ADHS to evaluate soil and water samples collected from their home. They also wanted to know if gardening would have health impacts. ADHS determined that the levels were below screening values and no public health concern existed.

# APPENDIX 5

## ARIZONA DEPARTMENT OF HEALTH SERVICES

### TECHNICAL ASSISTANCE:

**World Resources Company (WRC) Facility – AAQ:** ADEQ requested ADHS to review the ambient air toxic benchmark values proposed by the EPA. These values are pertinent to the WRC hazardous waste permit evaluation. Overall, the EPA-recommended approach is comparable with ADHS' general approach to assess public health issues related to environmental exposures.

**Arizona Infectious Disease Conference:** ADHS' Office of Infectious Diseases requested the Office of Environmental Health to speak during the environmental health section of the AZID conference. The presentation topic was how ATSDR and ADHS work together to address environmental health concerns, and how EPA uses risk assessment to develop maximum contaminant levels (MCL's).

**Advisory Panel on Emerging Contaminants:** The objective of the panel is to develop approaches that ensure Arizona's water is safe for drinking and other uses. The program developed a presentation that covered risk assessment principles and how EPA uses risk assessment in developing MCL's. In addition, the program reviewed and rewrote a section of the draft panel report to ensure technical accuracy and readability.

**ADHS Weekly Update:** The Environmental Toxicology Program drafted a summary of a pesticide poisoning event in India which included a description of the pesticides, toxicity, and the potential health effects. The information was distributed to employees of ADHS in the Director's "Weekly Update."

**Phoenix Institute of Herbal Medicine and Acupuncture:** The Environmental Toxicology Program delivered a presentation to oriental medicine students. The presentation topics included an introduction to environmental health and toxicology as well as new information regarding lead in spices, imported make-up and ayurvedic medicines.

**Sanitarian Conference:** The Environmental Toxicology Program delivered a presentation to registered sanitarians, healthcare workers, and public health professionals. The presentation topic was how ATSDR and ADHS work together to address environmental health concerns, and how EPA uses risk assessment to develop MCL's

**Cigarettes and Asbestos – Will's Blog:** The Environmental Toxicology Program drafted a blog about the relationship between cigarettes, asbestos, and smoking. The information was distributed to employees of ADHS in the Director's "Weekly Update."

**Avondale Workshop:** The Environmental Toxicology Program delivered two presentations to families in Avondale. The presentation topics included a description of lead sources in the home, how to get tested for lead, and how to reduce/eliminate exposure, and mold and asbestos identification and clean up recommendations.

**Oil Tanker Fire – smoke exposure factsheet:** The Environmental Toxicology Program developed a smoke exposure factsheet to be distributed to licensed care facilities and the public near an oil tanker fire in Phoenix to prevent smoke-related health effects.

**San Tan Generating Station:** The San Tan Neighborhood Committee is comprised of representatives from five homeowner associations in the area, Maricopa County Air Quality Division, Arizona Department of Health Services, the Town of Gilbert, and a registered engineer who is not affiliated with SRP. Meetings are held twice a year to review air and water data and other updates. ADHS participates by answering any questions when they arise.

# APPENDIX 5

## ARIZONA DEPARTMENT OF HEALTH SERVICES

### HEALTH EDUCATION:

**Iron King Mine:** ADHS and ATSDR worked together to develop three factsheets for the community: 1) a summary of the health consultation, 2) ways to reduce one’s exposure to metals, and 3) ADHS and ATSDR’s work at the site. ADHS attended a community event and spoke to the community about the findings of the health consultation and answered individual’s questions at a table.

**Superior:** ADHS was invited by Resolution’s community involvement group to talk about ways ADHS can answer community questions about environment and health.

**Motorola 52nd Street:** ADHS attended community information group (CIG) meetings. ADHS explained the limitations of cancer studies and studies with small populations and small disease rates.

**Hayden ASARCO:** ADHS has worked with ATSDR to develop health education material for an upcoming exposure investigation in Hayden and Winkelman.

**East Central Phoenix:** ADHS developed a poster to explain public health risk assessment, and presented the poster at a community meeting.

**Avondale Workshop:** ADHS developed a series of presentations and handouts about healthy homes for families. Topics included lead, asbestos, and mold.

**Wildfires:** ADHS developed press releases and public health messaging for communities affected by wildfires.

**Floods:** ADHS developed press releases and public health messaging for communities affected by floods.

### FY14 BUDGET AND EXPENDITURES

BUDGET AND EXPENDITURES	TOTAL
<b>Funds Available</b>	
Beginning Balance	\$60,000
FY14 Expenditures	13,667
<b>Funds Unused</b>	<b>\$46,333</b>

ITEMIZED EXPENDITURES	BUDGET	TOTAL EXPENDITURE
Personnel	\$32,000	\$9,110
Benefits	15,000	2,557
Travel	1,000	0
Operations	3,740	0
Indirect Costs	8,260	2,000
<b>Total – Expenditures</b>	<b>\$60,000</b>	<b>\$13,667</b>



# APPENDIX 6

## WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

### FY14 ACCOMPLISHMENTS:

#### **SURFACE WATER MONITORING:**

A.R.S. § 49-225 (Water quality monitoring) & § 49-282 (Remedial investigations)

- Integrated Report of the Status of Arizona's Water Quality: The draft 2012/2014 assessment is complete and a public notice was issued in April 2014.
- Ambient Surface Water Program: FY14 monitoring focused on the on coldwater sites (sites located above 5,000 feet). Approximately 147 samples were collected from more than 36 sites. Sample sites were used to fill in data gaps, monitor outstanding Arizona waters, and to monitor sites for reference conditions. The Surface Water Section (SWS) continues to fund a joint cooperative agreement with the USGS to sample 10 sites on the large rivers in the state from its gauging stations (§49-225).
- Lakes program: No lakes were monitored under the Ambient Surface Water Program in FY14. Sampling of Watson Lake and Pena Blanca Lake continued under the Total Maximum Daily Load (TMDL) program.
- Fish program: 50 fish samples were collected and analyzed for mercury. Fish were collected from the Phoenix riparian area, Lyman Lake, Green Valley Lake, Pena Blanca Lake and the middle Gila and Salt rivers.
- Status of ongoing water quality studies (§49-225 & §49-282):

#### **TMDL Monitoring and Development:**

The TMDL Unit achieved the following in FY14

- 1 TMDL was approved by EPA
- The Watson Lake TMDLs were public noticed
- TMDL data collection continued on 34 additional TMDLs for 16 water bodies
- Delisting reports were developed for the Gila River pesticide and East Verde River selenium impairments
- Conducted effectiveness monitoring on three effectiveness monitoring projects
- Conducted 23 field evaluations of ADEQ funded water improvement projects

# APPENDIX 6

## WATER QUALITY ASSESSMENT AND MANAGEMENT PROGRAM

### FY14 ACCOMPLISHMENTS:

#### **GROUNDWATER MONITORING:**

A.R.S. §49-225 (Water Quality Monitoring)

##### **Ambient Groundwater Monitoring**

Field staff is limited to one employee. Despite this, the groundwater program achieved the following in FY14:

- More than 51 groundwater samples were collected from wells/springs in Arizona. Results of sample analyses were provided to owners.
- The Harquahala and Tonto basin reports have been completed and are in the review process.
- Sampling in the Lower Gila basin is on-going.

##### **Pesticide Program § 49-249 (Pesticides)**

- Reviewed and approved 23 biopesticide waivers and 16 active ingredients for FY14. ADEQ staff presented an update on the state of the program to the Western Plant Health Association (WPHA) on May 1, 2014. ADEQ staff created Standard Operating Procedures (SOPs) for Waiver and New Active Ingredient Reviews. The SOPs were reviewed internally and externally by the Arizona Department of Agriculture and the WPHA. Pesticide Program Coordinator conducted a training session on June 16, 2014 for ADEQ APP technical staff on the SOPs for waive and new active ingredient reviews.

##### **Quality Assurance/Quality Control (QA/QC) Activities**

- Served as WQD representative on QA/QC Advisory Committee for the redrafting of the agency's Quality Management Plan (QMP).
- The SWS Comments were received from EPA in FY14 on the redrafted an integrated and comprehensive Quality Assurance Program Plan (QAPP) that covers SWS monitoring programs that was submitted to EPA for approval in June 2007. SWS responded to the comments and made appropriate changes to the QAPP.

##### **Other Technical Activities: § 49-202 through § 49-205**

- Continuing coordination with Remedial Projects Section in the Waste Programs Division to capture WQARF, CERCLA and UST groundwater quality data.
- Continue to develop performance measurement tools to determine effectiveness of several water quality programs including nonpoint source pollution control, best management practices and enhanced application of WQIP grants program to reduce impacts of pollutants in impaired areas (§49-225).

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