

WEST VALLEY  
  
Groundwater  
CLEANUP COALITION

**Potentially  
Responsible Party  
Presentation**

September 16, 2009



# Agenda

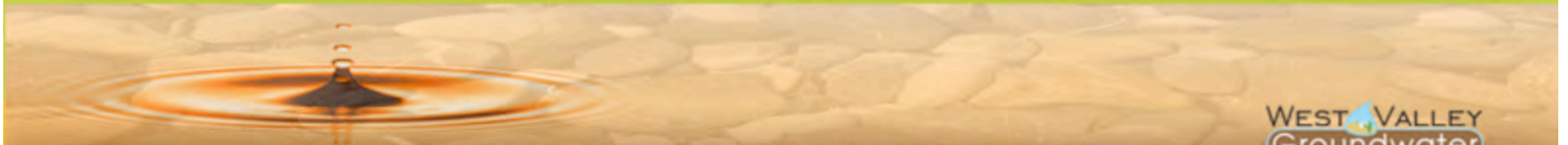
- Introduction of RID Project Team
- RID Remediation Project PRP Presentation
- Communications/Web Site
- Question & Answer
- PRP Fact Sheet Handout

# Roosevelt Irrigation District Response Action Team

- Stan Ashby – RID Superintendent
- Gallagher & Kennedy (G&K) – Legal Team
- Montgomery & Associates – Technical Team
- Lawrence Moore – Public Relations

# Arizona Aquifer Water Quality Assurance Revolving Fund (WQARF) Program History

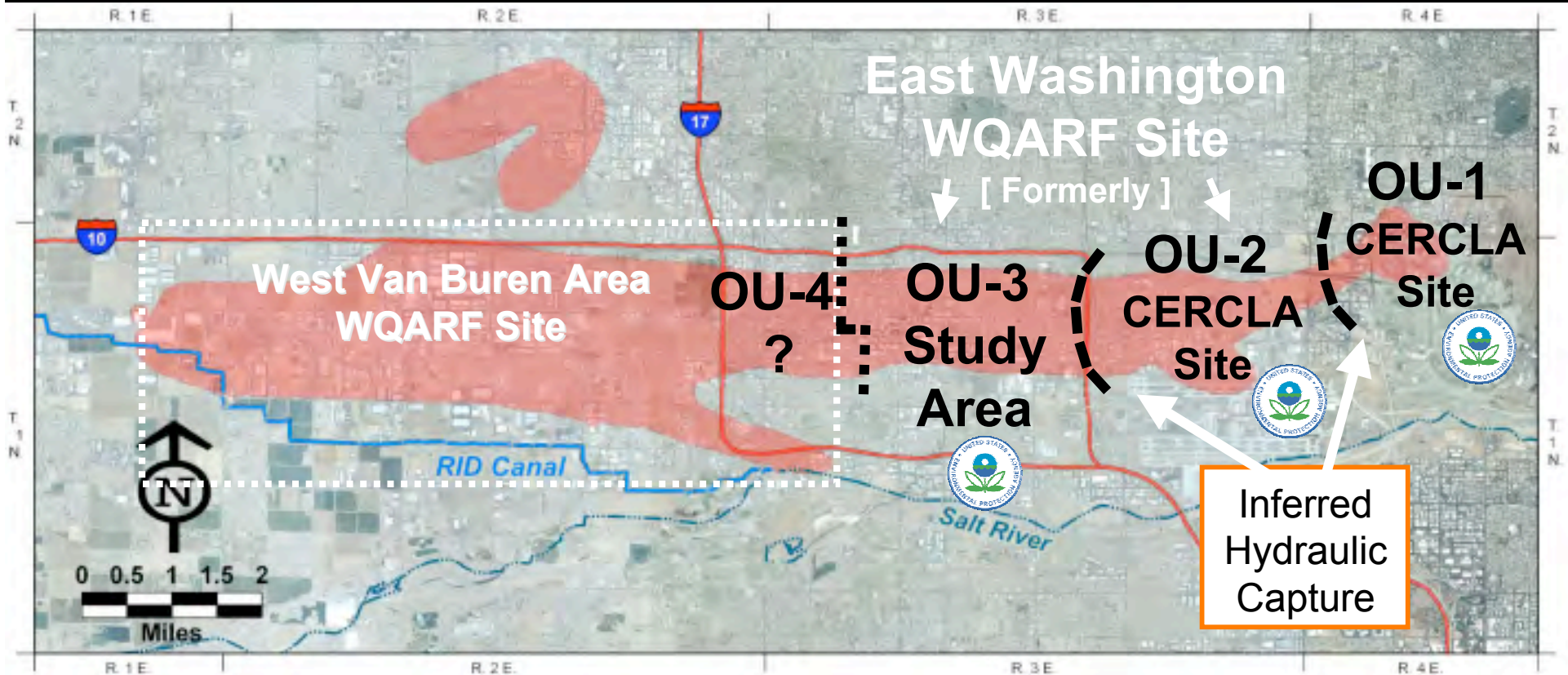
- State Superfund Program – 1986
- West Van Buren Area (WVBA) listed as State WQARF Site – November 13, 1987
- Draft WVBA WQARF Site Remedial Investigation Report – October 31, 2008



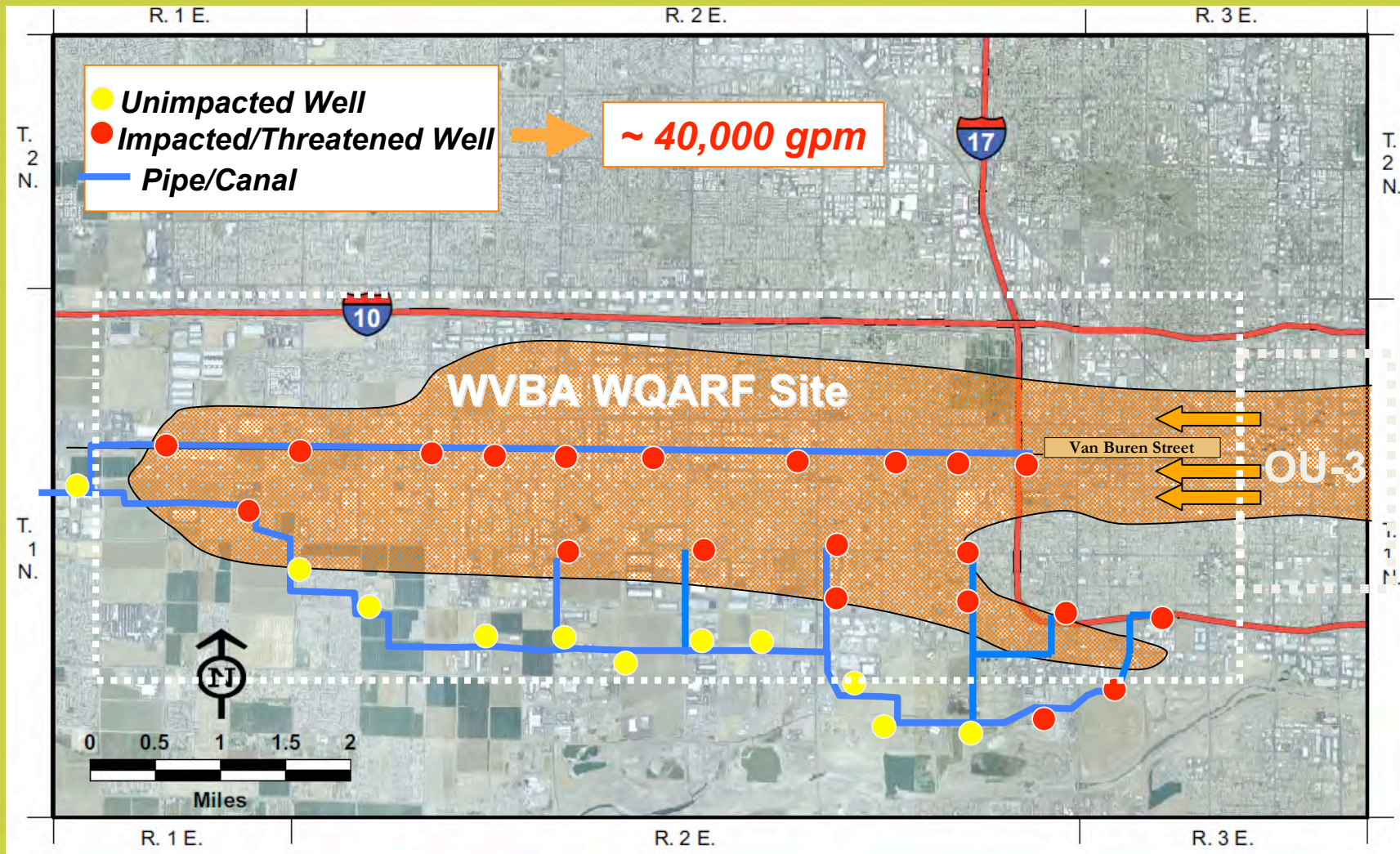
# West Van Buren Remediation Investigation

## Draft report genesis of RID remediation project

- WVBA RI characterized extent of West Van Buren groundwater plume
- WBVA RI Contaminants of Concern: tetrachloroethene (PCE); trichloroethene (TCE), 1,1-dichloroethane (1,1-DCA), cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE) and chromium

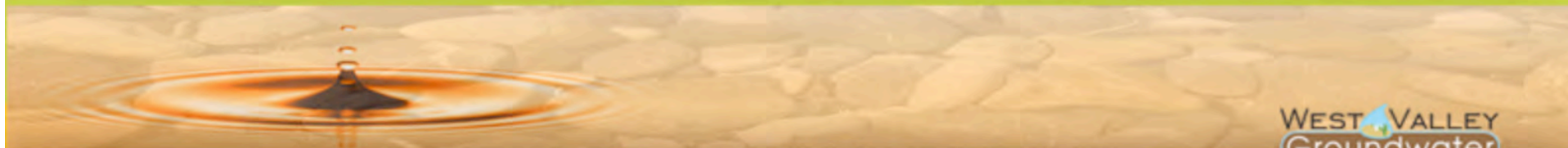


# WVBA Remediation Investigation confirmed VOC impact to 21 RID wells

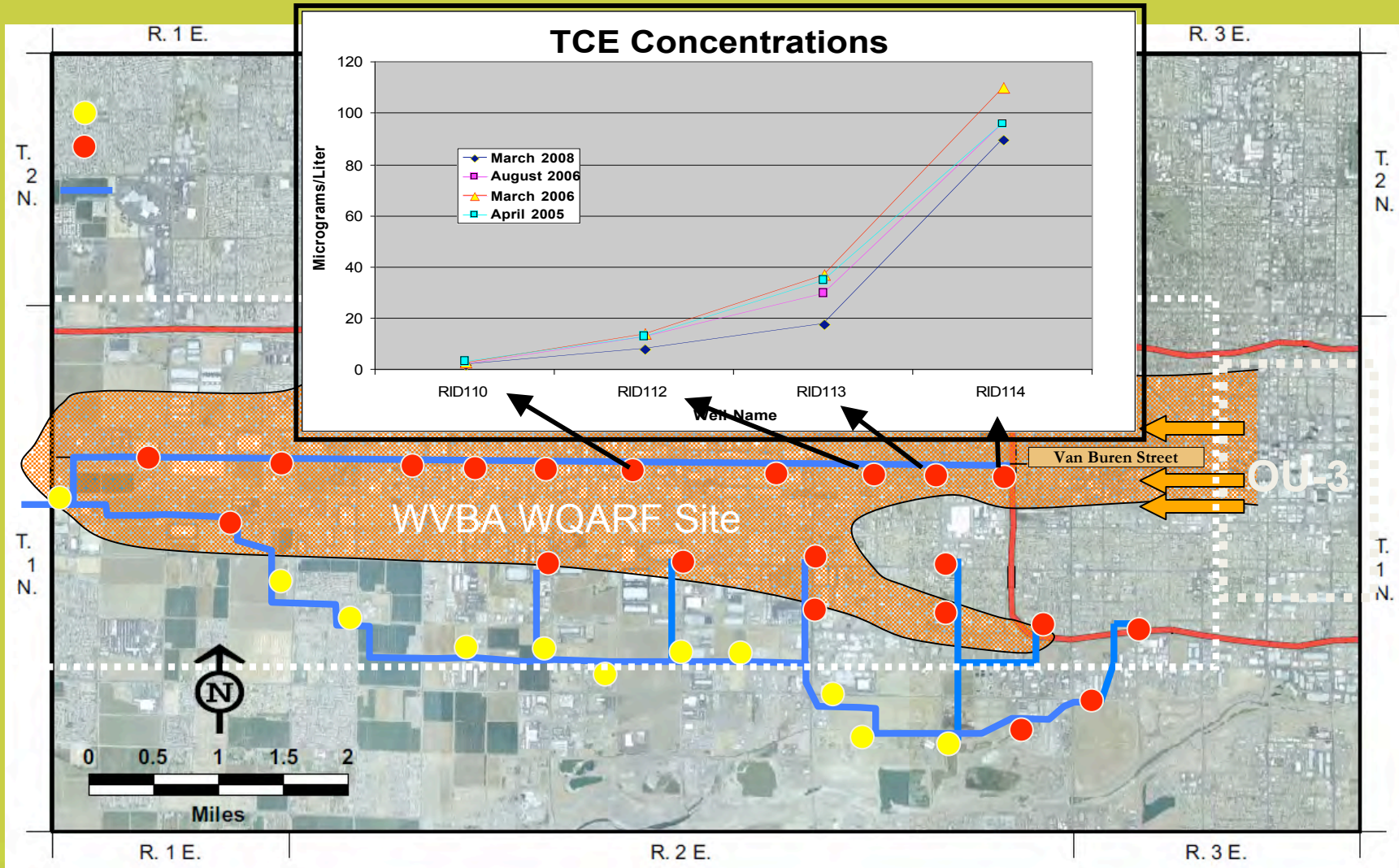


# VOC Impact

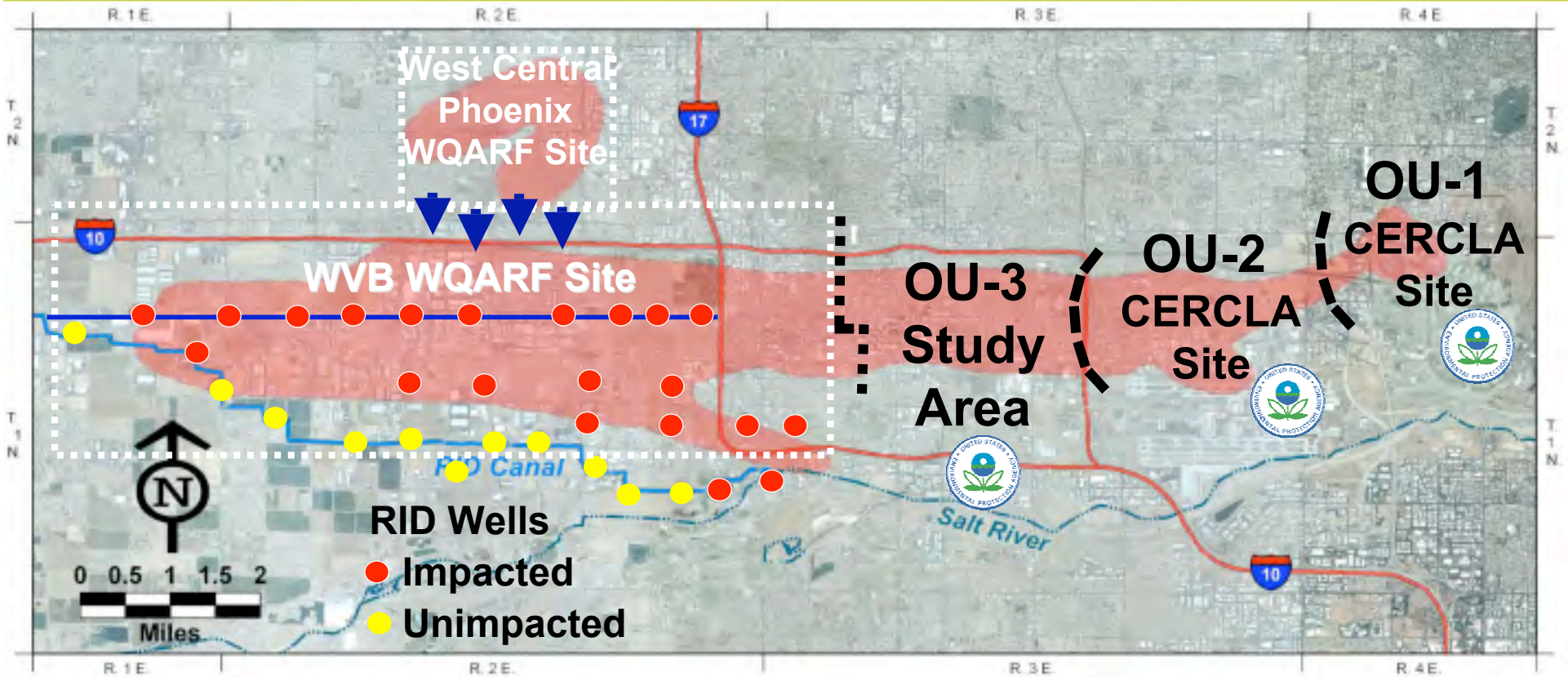
- 21 wells impacted by VOCs
- 18 wells > 5ppb VOC
- Concentrations of VOCs:
  - TCE @ 85 ppb
  - PCE @ 19 ppb
  - MTBE @ 45 ppb
  - 1,1-DCE @ 9 ppb
  - cis 1,2-DCE @ 8 ppb
  - 1,1-DCA @ 5 ppb
- 40,000 gpm impacted water supply



# WVBA RI confirmed VOC impacts to RID wells from upgradient federal Superfund OUs



# RI confirmed West Central Phoenix WQARF Site plume has merged into WVBA plume



# Potential Responsible Parties

- WVBA RI identified specific facilities (through sampling) where releases or threatened releases of VOCs occurred within the WVBA WQARF Site
- WVBA RI identified Potentially Responsible Parties (PRPs) as owners or operators of the facilities where releases were documented

# Basis for RID's PRP List

1. PRPs identified by ADEQ in its WVBA RI
2. PRPs identified by ADEQ in draft and final RIs from the WCP WQARF site files
3. PRPs identified by EPA in the federal OUs
4. Other agency documents

# Individualized RID PRP Fact Sheet

- Identifies each Potentially Responsible Party
- Identifies the locations of each facility with documented releases
- Identifies specific contaminants of concern released to soils and/or groundwater at the specified facility
- Identifies EPA or ADEQ source documenting the release information upon which RID is relying

## Why has RID pursued its own response action?

- RID could lose control over its well field/operations
- If RID did not pursue its own response action,
  - EPA would pursue separate OU-3 remedy (and still may)
  - EPA could pursue separate OU-4 remedy (and still may)
  - ADEQ could pursue separate WVBA remedy
  - ADEQ could pursue separate WCP remedies

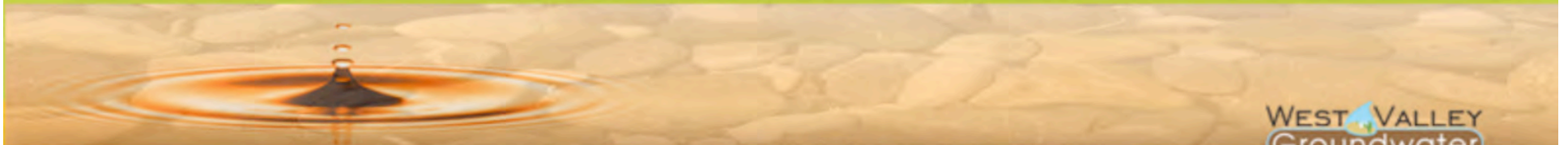
# Result of RID Inaction

- Multiple separate remedies with significant regulatory oversight
- Substantially higher PRP capital/O&M and administrative costs
- ✓ Requires new extraction wells and piping
- ✓ Requires new treatment systems
- ✓ Results in fragmented end use

# RID's Two-Phase Remedy

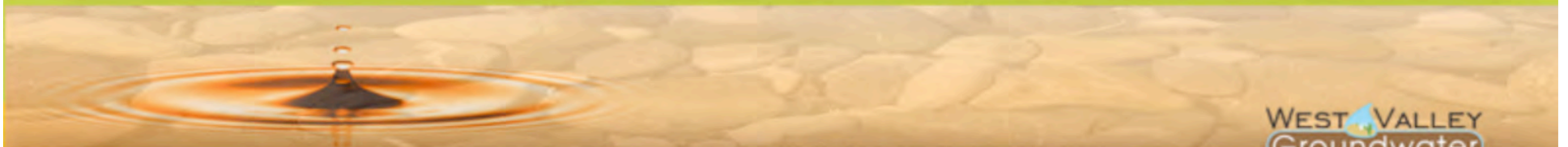
## Cost-Effective Response Action

- Provides a single, comprehensive and effective regional pump and treat remedy that maximizes existing RID infrastructure
- Restores ~ 40,000 gallons per minute of impacted water supply
  - Drinking water use (Phase 1) ~ 20,000 gpm
  - Continued irrigation use (Phase 2) ~ 20,000 gpm



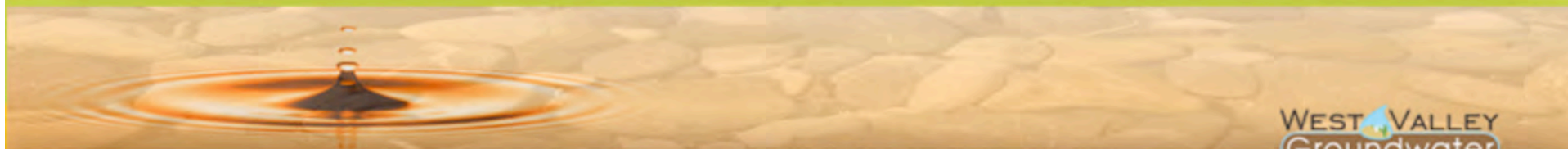
# Phase 1 - Drinking Water End Use (Early Response Action)

- **Phase 1A** – continuous pumping of impacted RID wells along the Salt Canal (up to 20,000 gpm) and treat using liquid phase GAC for drinking water supply
- **Phase 1B** – pipe and continuously pump most highly impacted RID wells to Salt Canal and treat using liquid phase GAC for drinking water supply



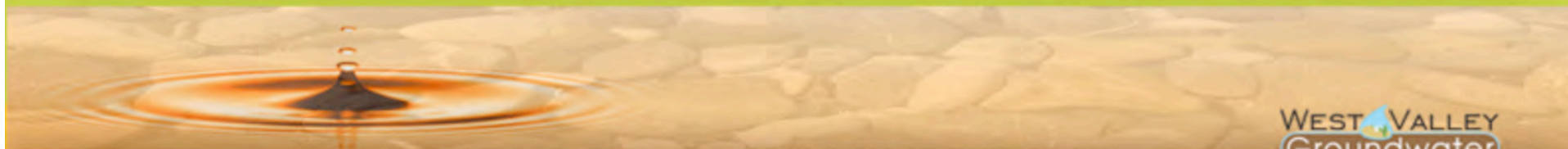
# Phase 1 Objectives

- Protect human health and the environment by reducing exposure to VOCs in groundwater
- Prevent transfer of VOCs from contaminated groundwater to air
- Maintain plume containment
- Protect non-impacted RID wells



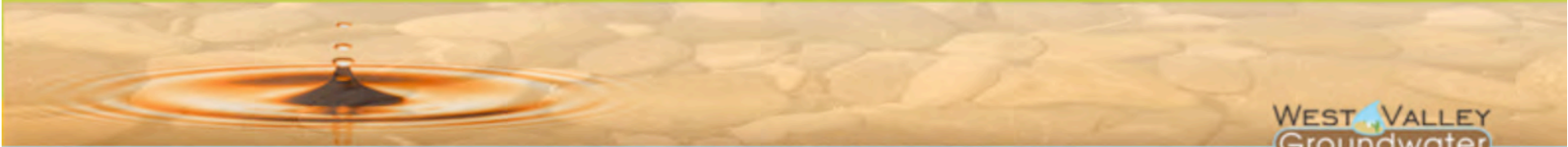
# Phase 1 Objectives

- Mitigate VOC impacts to impacted RID wells
- Prevent further groundwater degradation
- Begin restoration of groundwater
- Treat highest concentrations with fail-safe treatment technology
- Provide drinking water supply



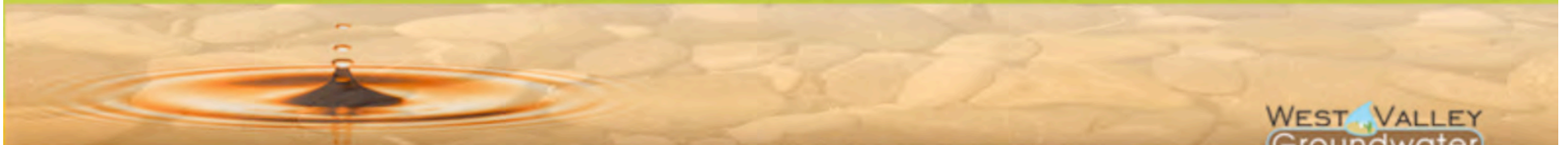
# Phase 1 Preliminary Cost Estimates

- Capital Costs . . . . . \$30 - \$35M
- Annual O&M Costs . . . . . \$4 - \$5M
- 30-Year NPV O&M Costs . . . \$75 - \$95M  
(30 year NPV @ 6% discount)



## Phase 2 - Irrigation End Use

- Pipe lower VOC concentrations to less expensive remedial measures (air stripping, blending, well replacement) prior to discharge to Main Canal for continued irrigation use



## Phase 2 Objectives

- Protect human health and the environment by reducing exposure to VOCs in groundwater
- Mitigate transfer of VOCs from contaminated groundwater to air
- Remove lower VOC concentrations at lesser expense for continued irrigation use
- Restore all RID wells/capacity
- Restore groundwater quality

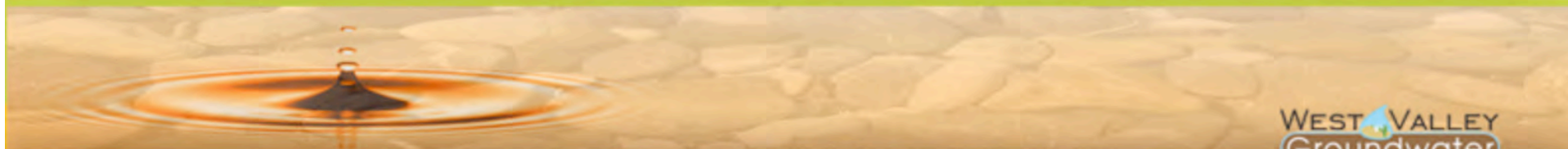
# Phase 2 Preliminary Cost Estimates

- Capital Costs . . . . . \$10 - \$15M
- Annual O&M Costs . . . . . \$0.5 - \$1.5M
- 30-Year NPV O&M Costs . . . \$10 - \$30M  
(30 year NPV @ 6% discount)

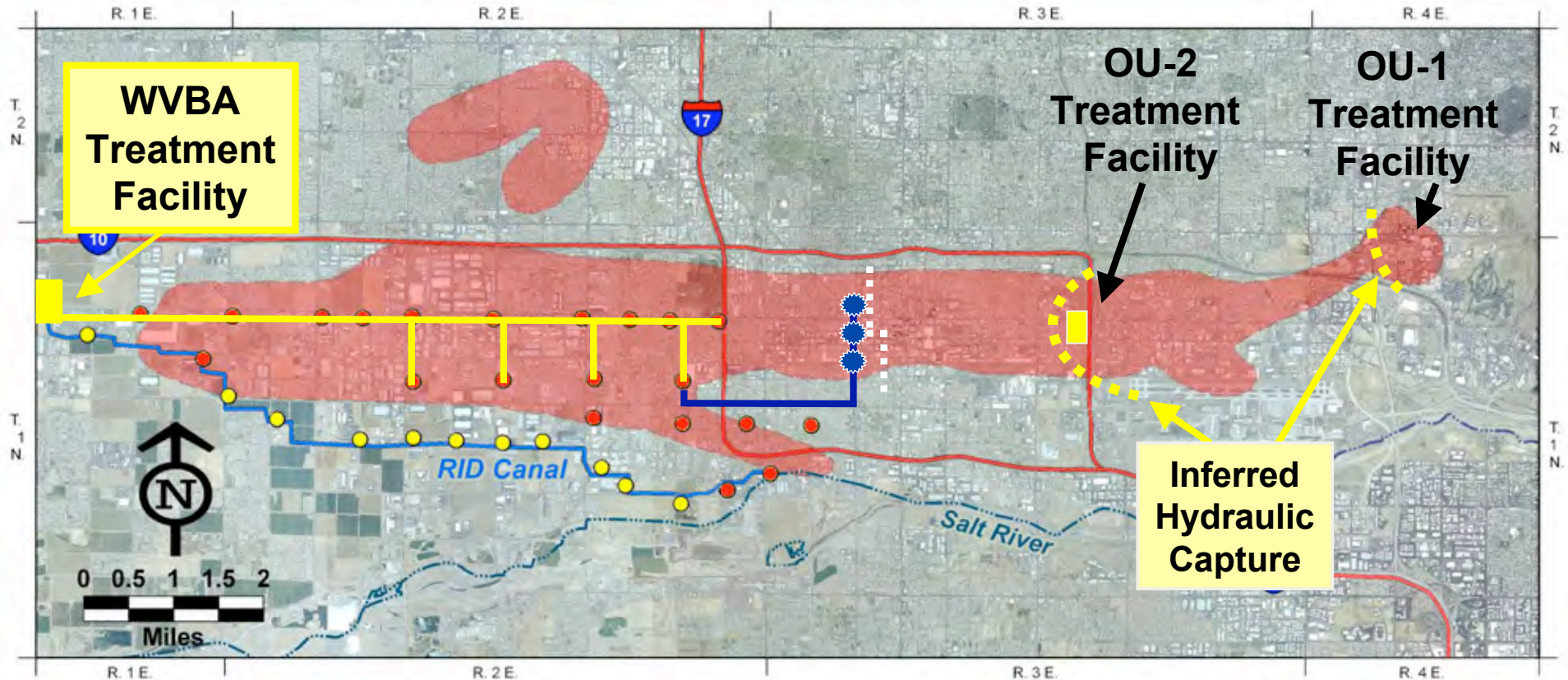
Note: Phase 2 remedial actions will be evaluated and selected through Feasibility Study and Proposed Plan

# RID Final Regional Remedy

- Significantly less costly than multiple separate P&T systems
- Does not require costly liquid phase GAC treatment for treated waters that will be used for continued irrigation for the reasonable foreseeable future (unlike OU2)
- Removes substantially greater VOC mass than existing P&T systems



# Regional Groundwater VOC Mass Removal



- OU-1 Interim Remedy Removes ~ 600 lbs./yr. (2008 data)
- OU-2 Interim Remedy Removes ~ 1,200 lbs./yr. (2007 data)
- RID Early Response Action – Phase 1A to Remove ~ 3,500 lbs./yr.
- RID Early Response Action – Phase 1B to Remove ~ 2,500 lbs./yr.
- OU-3 Alternative Could Remove an Additional 3–4,000 lbs./yr.

## RID Cost Recovery Options

- RID is prepared to implement this two-phase regional remedy and pursue cost recovery litigation on a joint and several liability basis against all identified PRPs
- However . . . RID's preferred option is to settle with PRPs

# Traditional Settlement Option

- RID will settle with PRPs who enter into a consent decree with RID and ADEQ to fund RID/ADEQ response costs including:
  - Capital costs - \$40 - \$50M for necessary upgrades to existing RID infrastructure and design/construction of new treatment facility (ies)
  - Legal obligation – Fund annual O&M (\$4.5 - \$6.5M)
    - \$85 - \$125M (30-year NPV O&M @ 6% discount)
  - Total capital and O&M costs \$125 - \$175M (30-year NPV)

# Creative Settlement Option

- In addition to funding capital costs, settling PRPs agree to fund installation of a delivery pipeline adjacent to the RID main canal to convey treated groundwater to West Valley communities
- Treated water provides water supply to West Valley
- End users of this water pay treatment O&M costs (instead of PRPs)

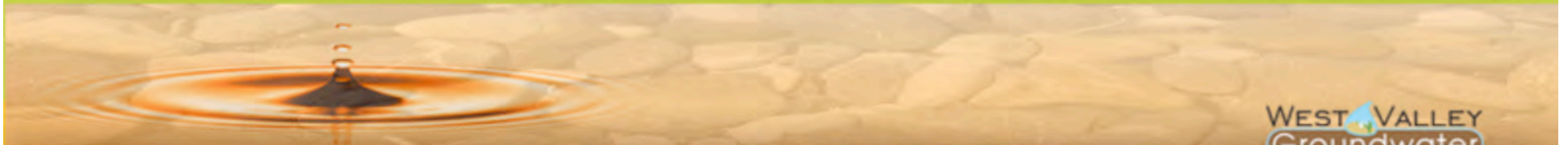


## Finality of Liability Under Creative Settlement

- Consent decree with RID, ADEQ and End Users
- PRPs pay only agreed settlement amount (no O&M)
- Liability release from RID
- Covenant not to sue/contribution protection from ADEQ

# Unique Opportunity for Early and Final Settlement

- WVBA WQARF Site RI completed:
  - Plume characterized
  - PRPs identified
- Effective regional remedy in place
  - 20+ years of demonstrated “containment”
- Need funding/legal obligation to:
  - Optimize existing water extraction/conveyance infrastructure
  - Construct necessary treatment facility(ies)
  - Operate and maintain treatment facility(ies)
- Can reasonably estimate remediation costs now for early and final settlement

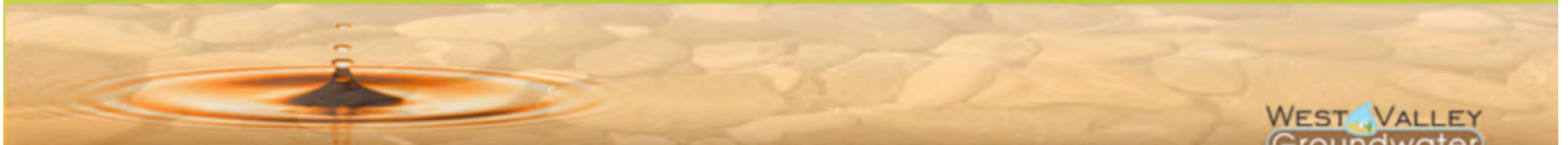


## To assist RID in deciding where to allocate its resources, RID requests:

- By **October 9, 2009**, indicate whether your organization is interested in participating in settlement discussions
- If there is a critical mass of PRPs who indicate settlement is likely, RID will pursue settlement. If not, RID will pursue litigation.

## If by October 9<sup>th</sup> a critical mass of PRPs indicate interest in settlement:

- By **October 31, 2009**, indicate whether your organization is interested in the traditional or the creative settlement option
- Unless a critical mass of PRPs indicate a desire to pursue the creative option, RID will pursue the traditional settlement option



# Stakeholder/Constituency Focus

Lawrence E. Moore, Ph.D.  
Project Communications

- Media Relations
- Community Relations
- Public Affairs

What Is The Coalition? Coalition Participants Contact The Coalition

## WEST VALLEY Groundwater CLEANUP COALITION

Home Project Q & A Glossary Timeline Map

### NEWS AND PROGRESS

RID hosts first groundwater cleanup meeting [more](#)

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### Roosevelt Irrigation District proposes West Phoenix groundwater cleanup plan

One of the largest plumes of contaminated groundwater in the United States is located just west of downtown Phoenix. Until the contaminants are removed and the water is treated, this vital asset cannot be used to serve the needs of the Valley's growing population. The Roosevelt Irrigation District (RID) intends to change all that.

RID has developed a plan for a comprehensive cleanup program, designed to remove industrial pollutants from approximately 30,000 acre feet of groundwater per year, making this valuable resource safe and available for public use.

The proposed cleanup program is designed to protect human health and the environment, while preventing the spread of the contaminants, and eventually eliminating them from the underground aquifers.

RID has submitted its proposed plan to the Arizona Department of Environmental Quality (ADEQ) for review and comment. In September 2009, RID formed the West Valley Groundwater Cleanup Coalition as a way to link potentially responsible parties, the community and government representatives to the project.

For more info please [contact us](#).

### RID hosts first groundwater cleanup meeting

On Sept. 16, representatives from the Roosevelt Irrigation District hosted a meeting to discuss plans to clean the groundwater feeding more than 100 wells it operates in west Phoenix. The groundwater was contaminated by industrial solvents and other chemicals that leaked or were improperly disposed from the 1950s until the 1980s.

RID wells are affected by three federal Superfund sites and two state WQARF sites in Phoenix; each of the sites and the potentially responsible parties (PRPs) are in various stages of study, remediation and ongoing legal action. The Environmental Protection Agency and the Arizona Department of Environmental Quality (ADEQ) provide oversight for groundwater cleanup projects.

At the meeting, RID representatives presented their remediation plan to the PRPs. The comprehensive RID plan offers a cost-effective, more efficient alternative to the lengthy and costly remediation processes typically imposed by the EPA and ADEQ.

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**Thank you for  
attending ...**

**Please pick up your  
PRP Fact Sheet**

**[www.wvgroundwater.org](http://www.wvgroundwater.org)**

