



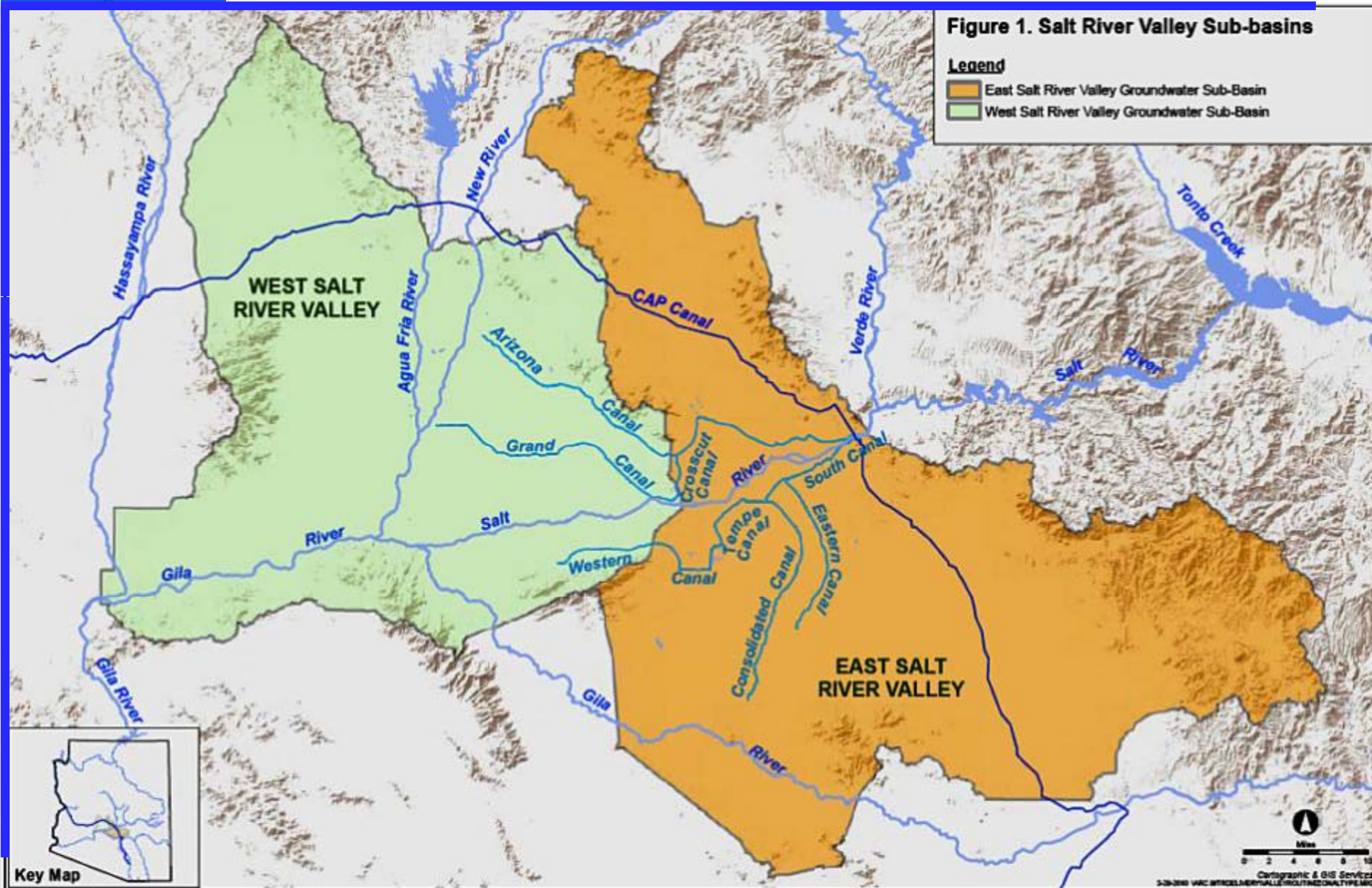
# Salt River Valley Groundwater *AZ Ag Forum*

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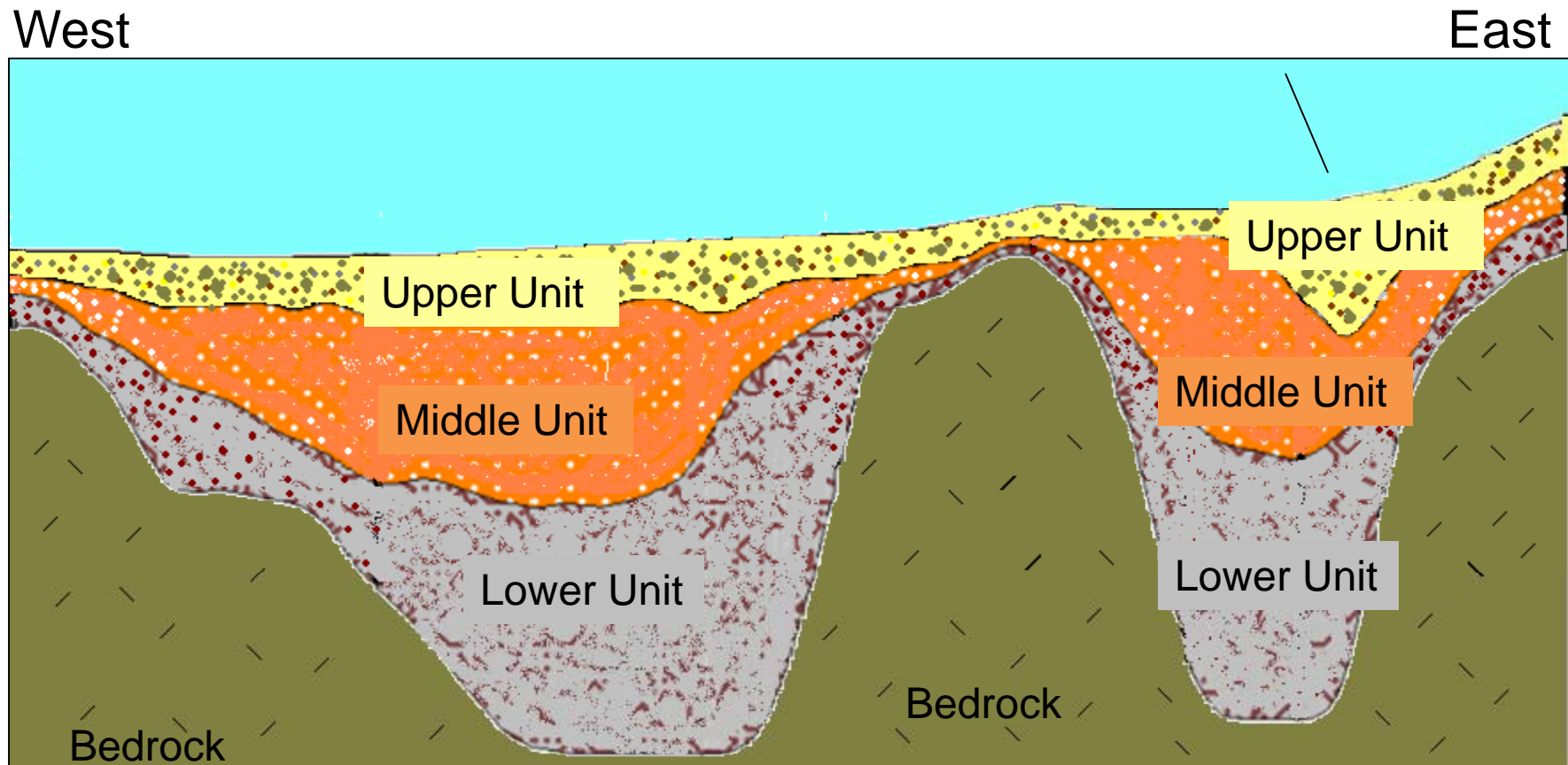


# The Salt River Valley Groundwater Basin





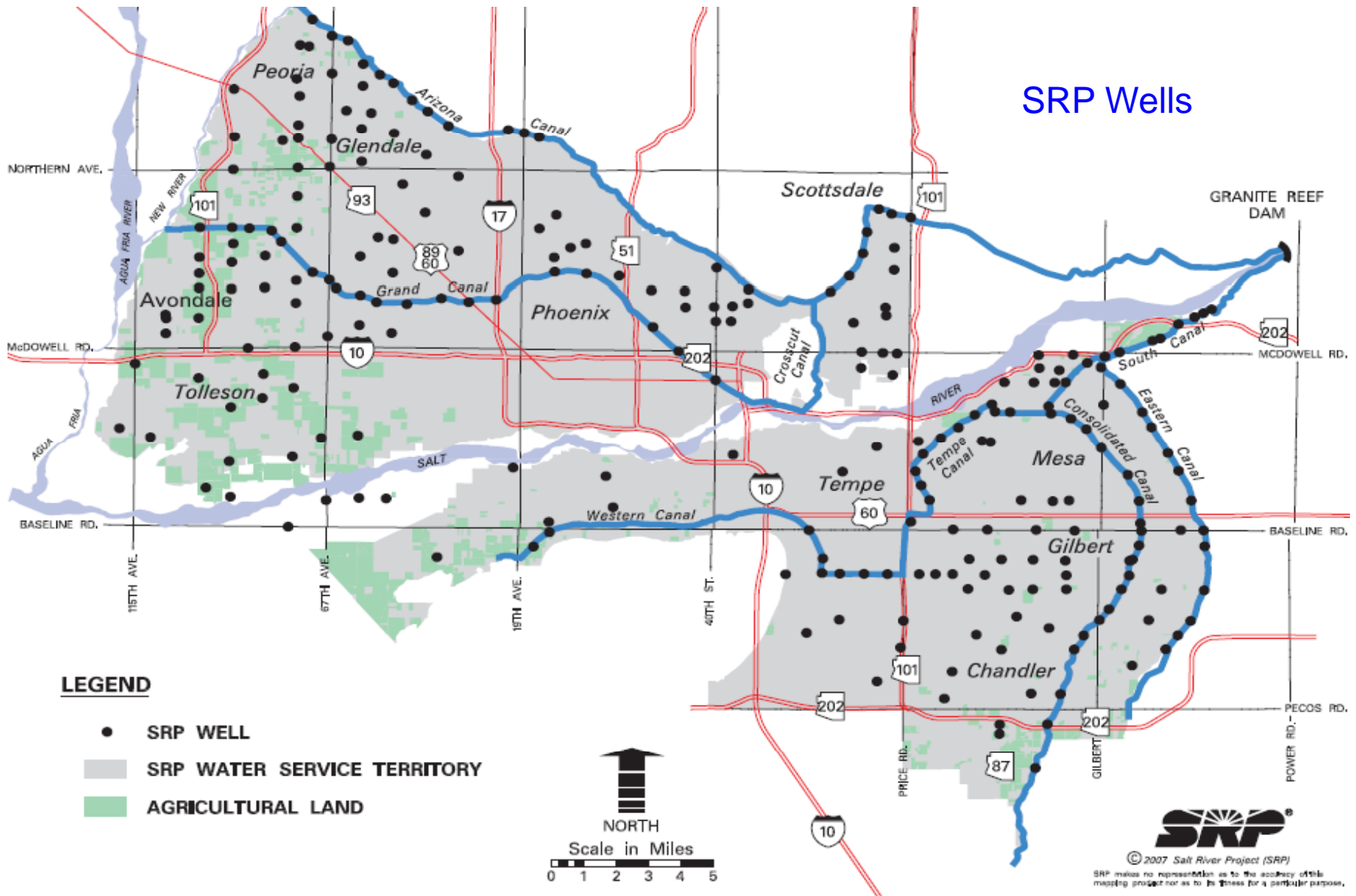
## *The Salt River Valley Groundwater Basin*





# Groundwater Operations

## SRP Wells



### LEGEND

- SRP WELL
- SRP WATER SERVICE TERRITORY
- AGRICULTURAL LAND





## *Typical Well Depths*



**555 feet**



**990 feet**



**1815 feet**



# ***Basics of the SRP Well System***

## Purpose

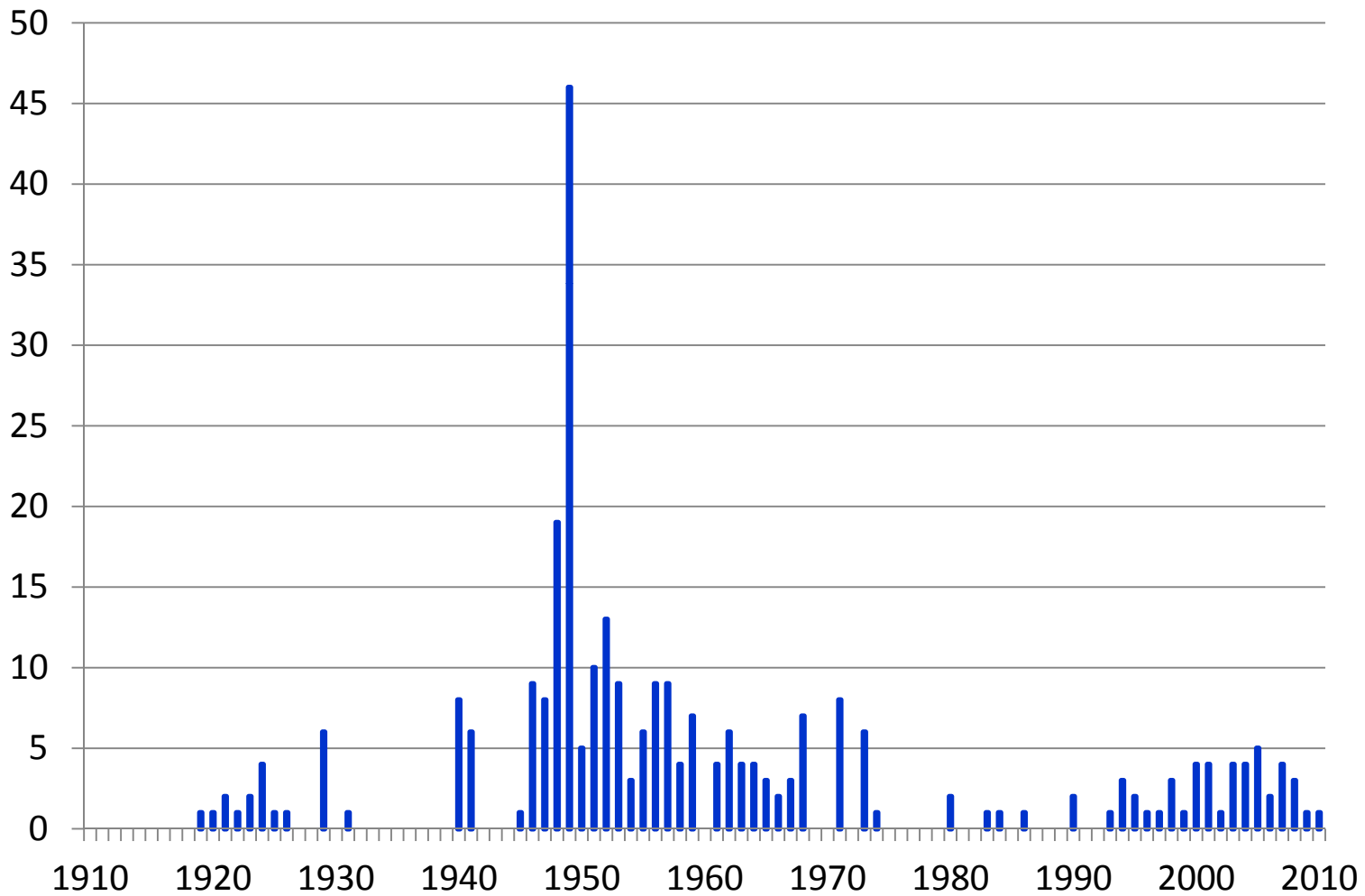
- Supplement surface water supplies during drought
- Provide operational flexibility
- Sole supply in some cases

## How the system operates

- GW designs, builds and maintains but does not operate
- Wells built to discharge to canals, laterals or city
- Irregular operation – High during summer months and drought
- Turbidity and other water quality events on the canals



## *Wells Drilled By Year*





## ***Well Site – McKellips, west of Stapley***







## ***Well Site – 59<sup>th</sup> Ave, south of Cactus***





## ***Supply Wells (cont)***

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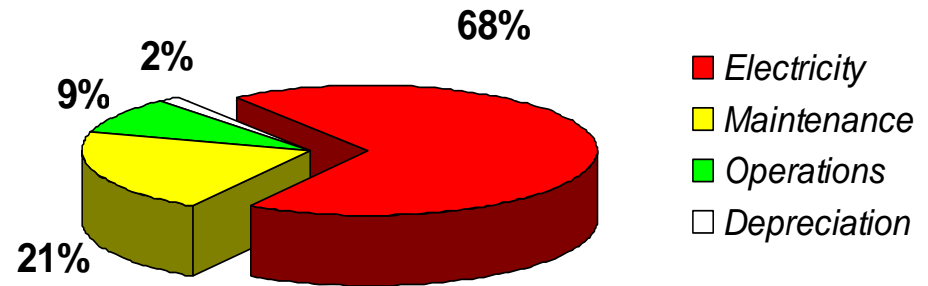
### Maintenance

- Small trucks – several times per month
- Pump replacements – once every 5 years
- Major workover – once every 20 years



# Why Is Efficiency Testing Important?

- Electricity Consumption 68% Of Operating Costs
- Routine Repair And Maintenance 21% Of Operating Budget
- Monthly Preventative Maintenance 9%
- Depreciation Of Well 2%



*Note: Percentages based on historic averages*



# ***Pump and Well Equipment***





# ***Pump Replacement***



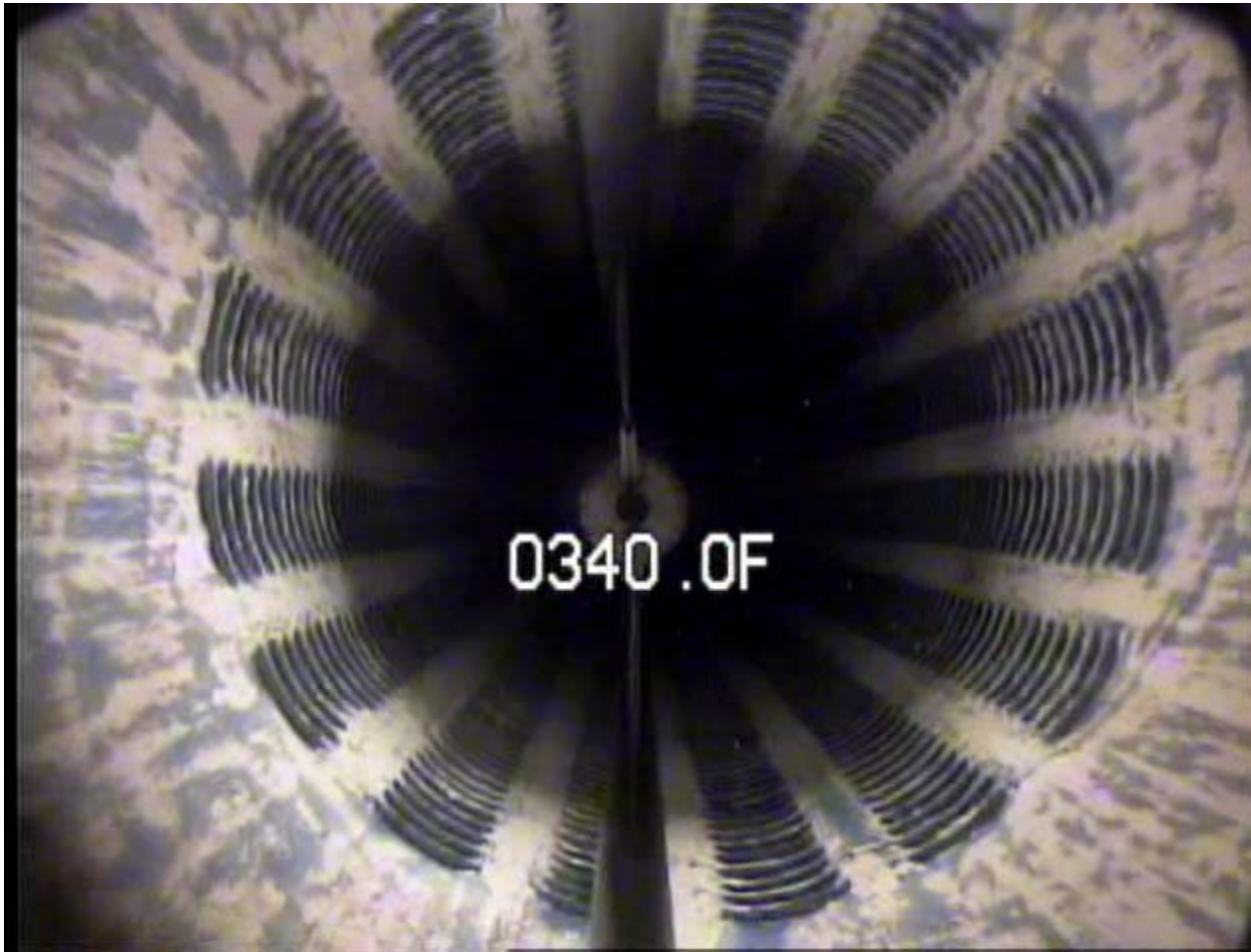


# *Well Assessment Tools*



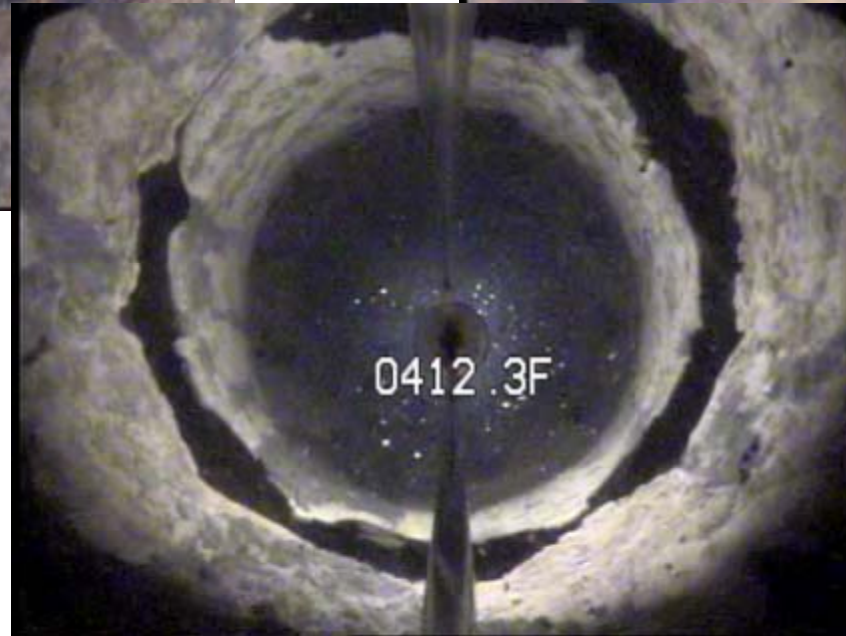
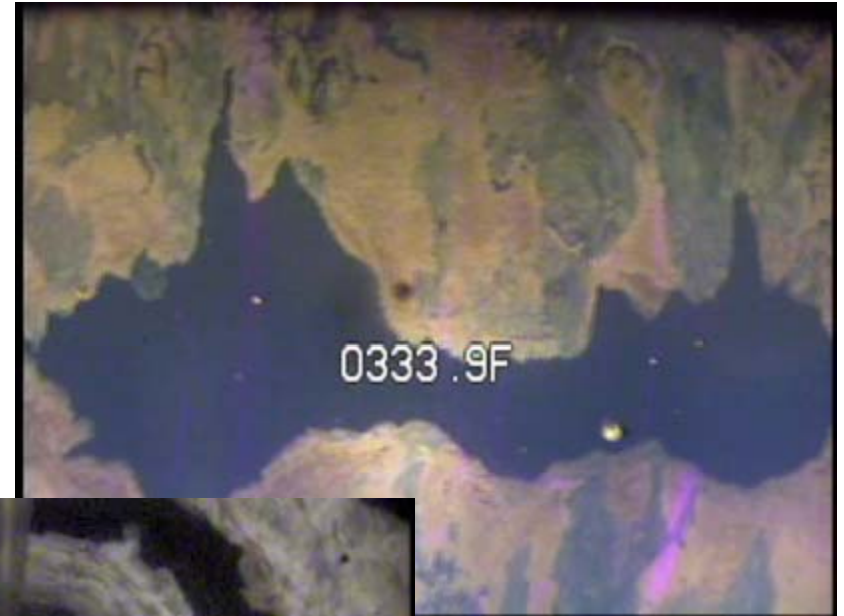


# ***Well Condition***





# *Well Condition*







## ***Land Considerations - Location***

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### Replacement Wells

- 660' Rule (ADWR)
- Geology, water quality, overhead power, buried utilities, proximity to water infrastructure, etc

### New Wells

- Impacts on existing wells (ADWR)
- Geology, water quality, overhead power, buried utilities, proximity to water infrastructure, etc



## ***Land Considerations – How much?***

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- Permanent Site – 100' x 150' standard
- Ingress/Egress – 30' x 50' (easement)
- TCE – assume add'l 50' on two contiguous sides



# *Access Rural and Baseline*



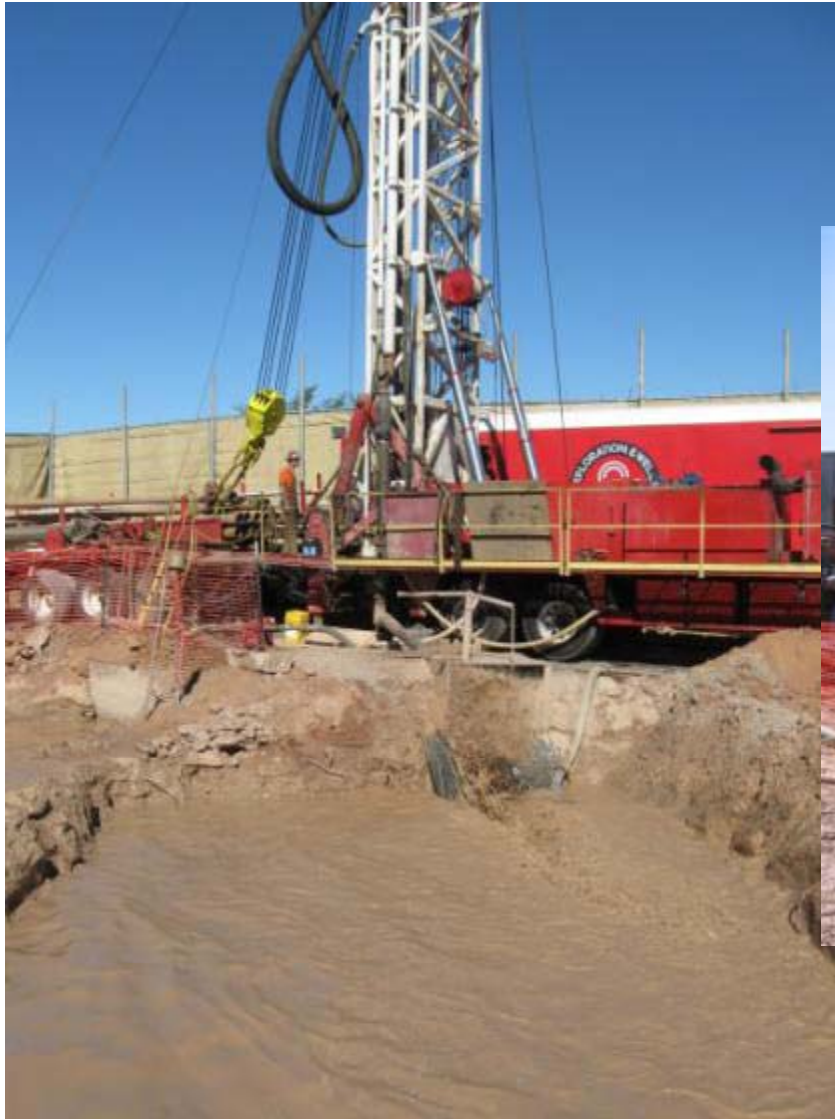


# *Well Drilling*





# *Mud Pits*





## ***Drilling Noise and Neighborhood***





# *Final Well Construction*





# *Well Development and Aquifer Testing*







# *Site Construction*





# *Release To Operations*





# *Groundwater Issues in the Salt River Valley*

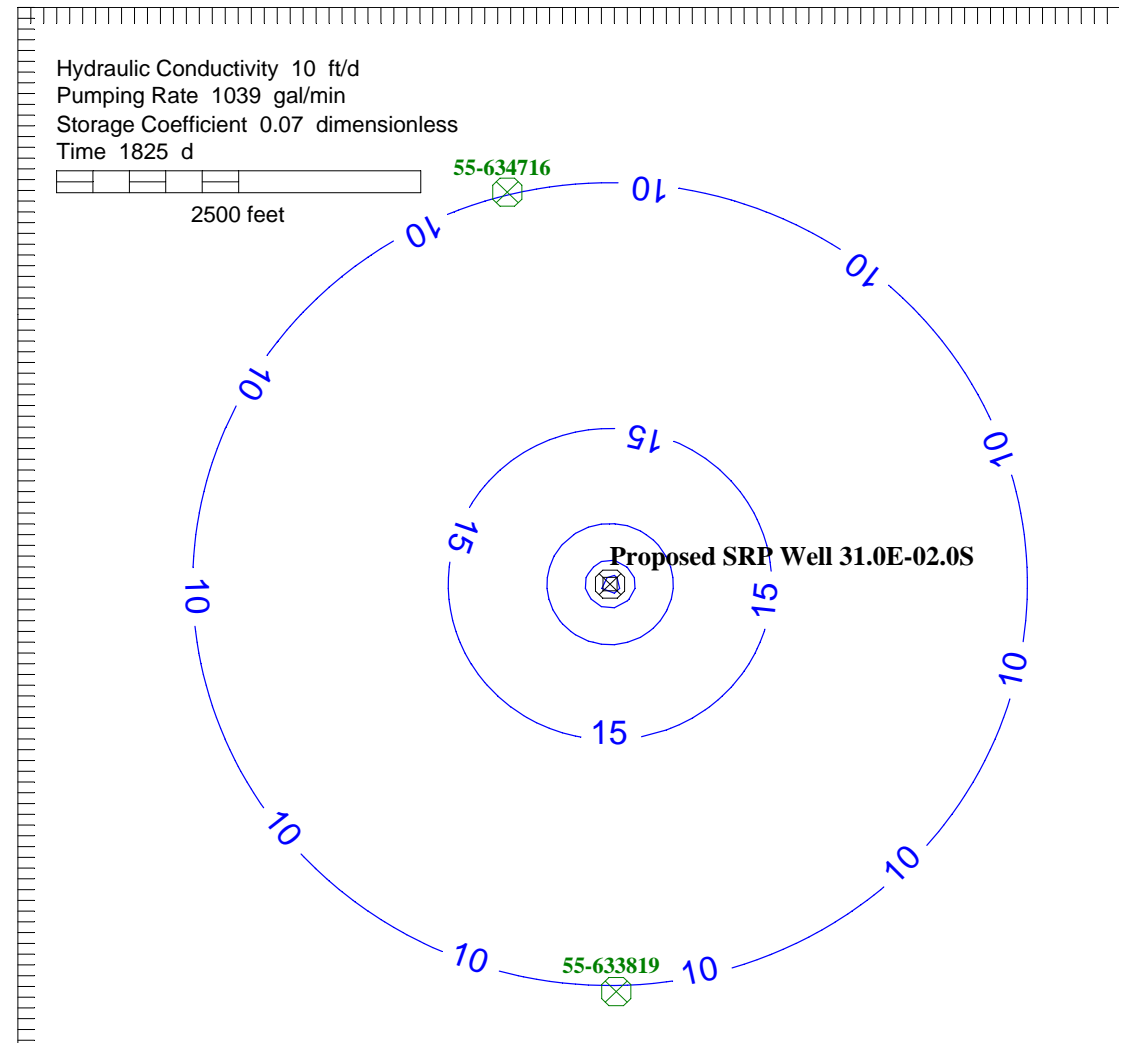
- *Water Quantity*
- *Water Quality*





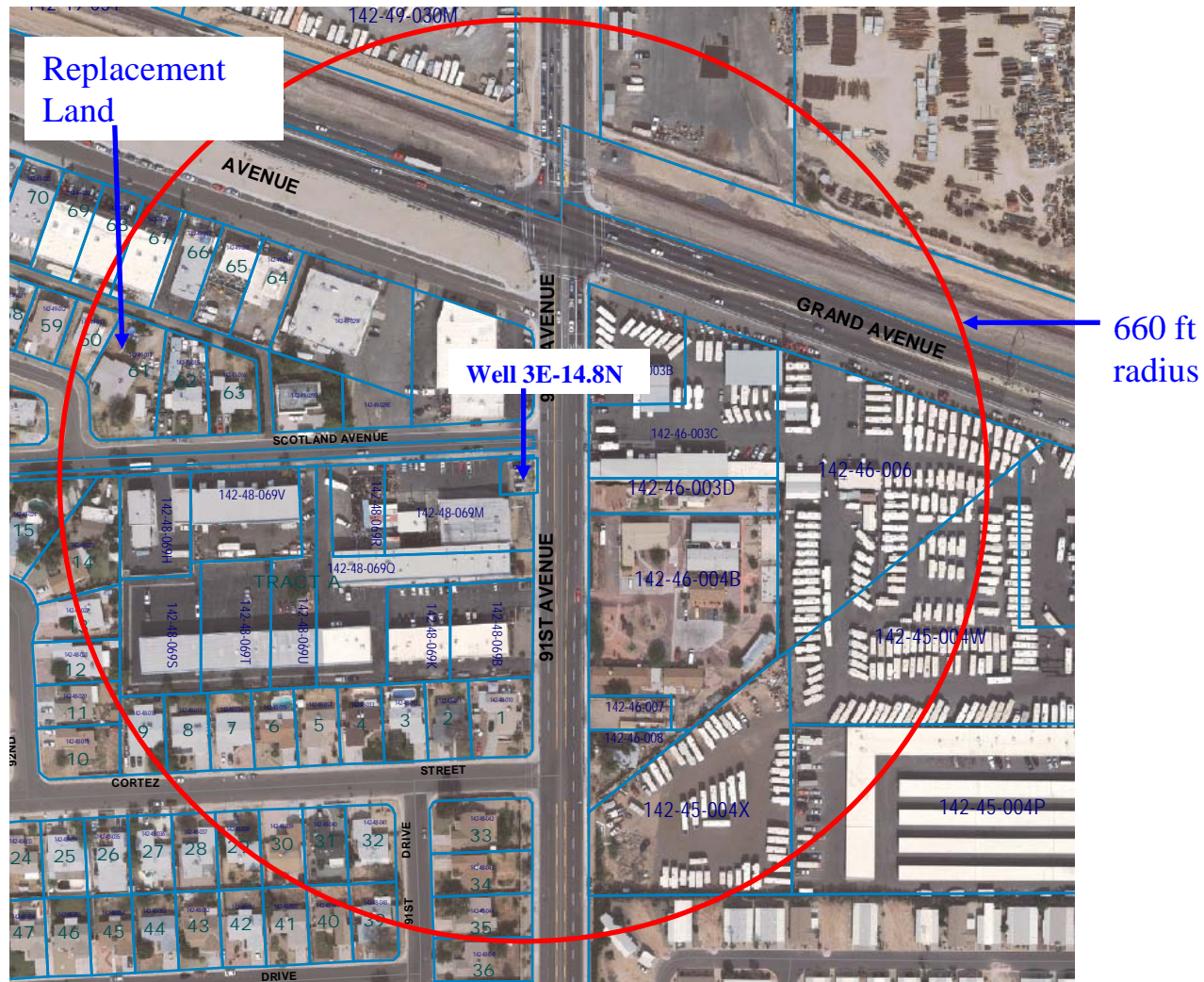
# Water Quantity

- Groundwater Management Act 1980
- Impact Analysis





# Land Acquisition





# Well Impact Analysis





## Urbanization at 107<sup>th</sup> Ave & Oak St.





## ***Urbanization at 107<sup>th</sup> Ave & Oak St.***







## *Water Quantity (Cont.)*

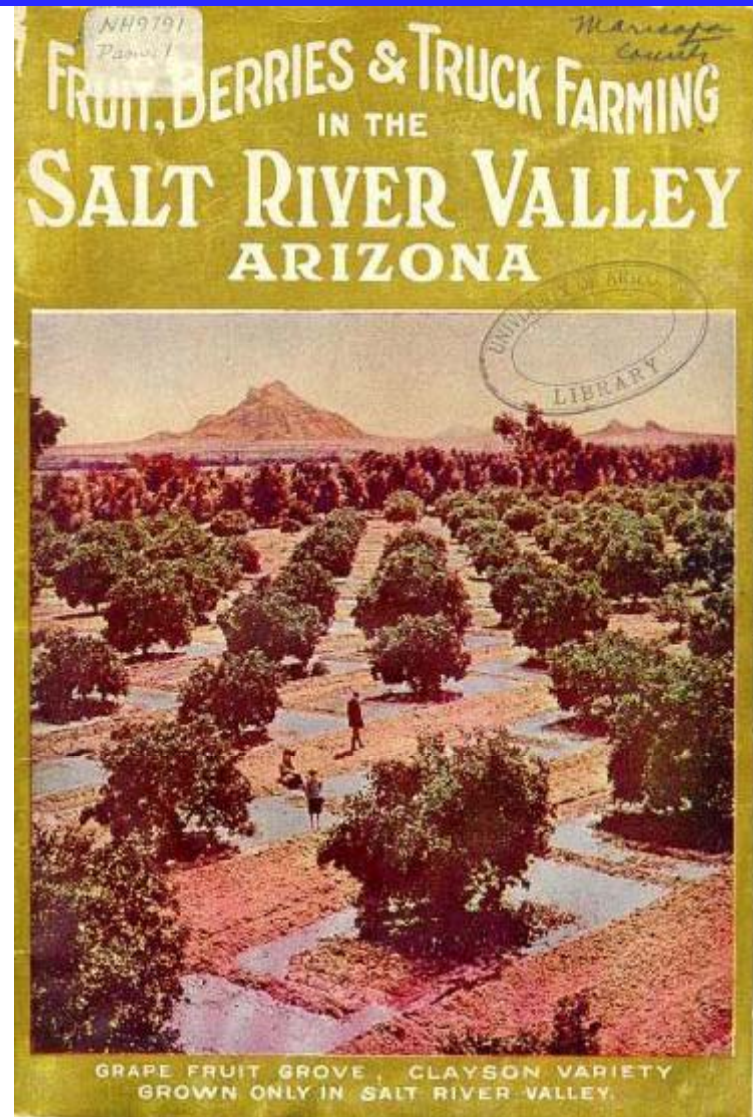
- Subsidence/Earth Fissures





## Water Quality

- Sources of pollution
  - Agricultural
  - Natural
  - Industrial





*Questions?*



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