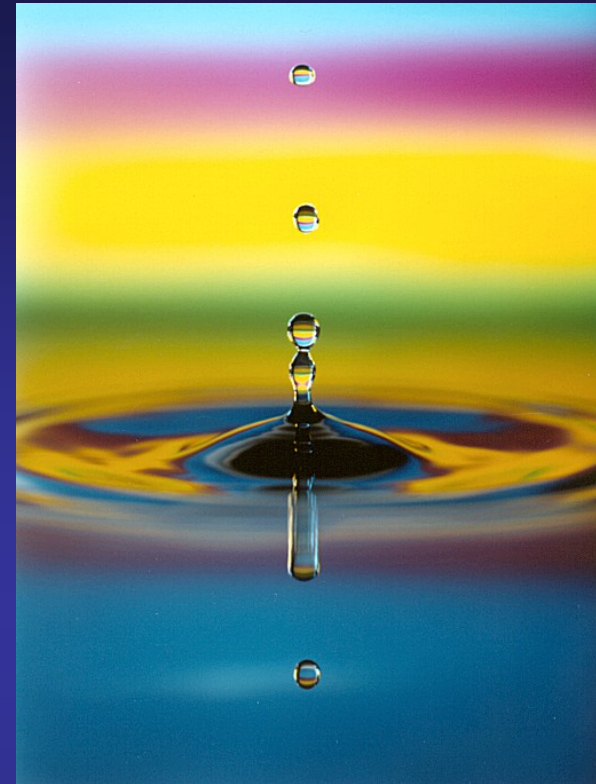


Presentation to the Campo/Lake  
Morena Planning Group

# Groundwater Program and GP2020 Groundwater Study Update



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By: Jim Bennett  
County Groundwater Geologist  
Department of Planning and Land Use  
August 15, 2006



# TONIGHT'S TOPICS

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- County and Campo Groundwater Monitoring Network
- Groundwater Ordinance Amendment
- County Water Quality – Nitrates and Radioactivity
- Business Process Reengineering
- Update of GP2020 Groundwater Study
- Formation of Groundwater Technical Advisory Committee

# GROUNDWATER MONITORING NETWORK UPDATE

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## 2006 Additions to Monitoring Well Network

- 74 New Wells Countywide
- 16 New Wells in Campo

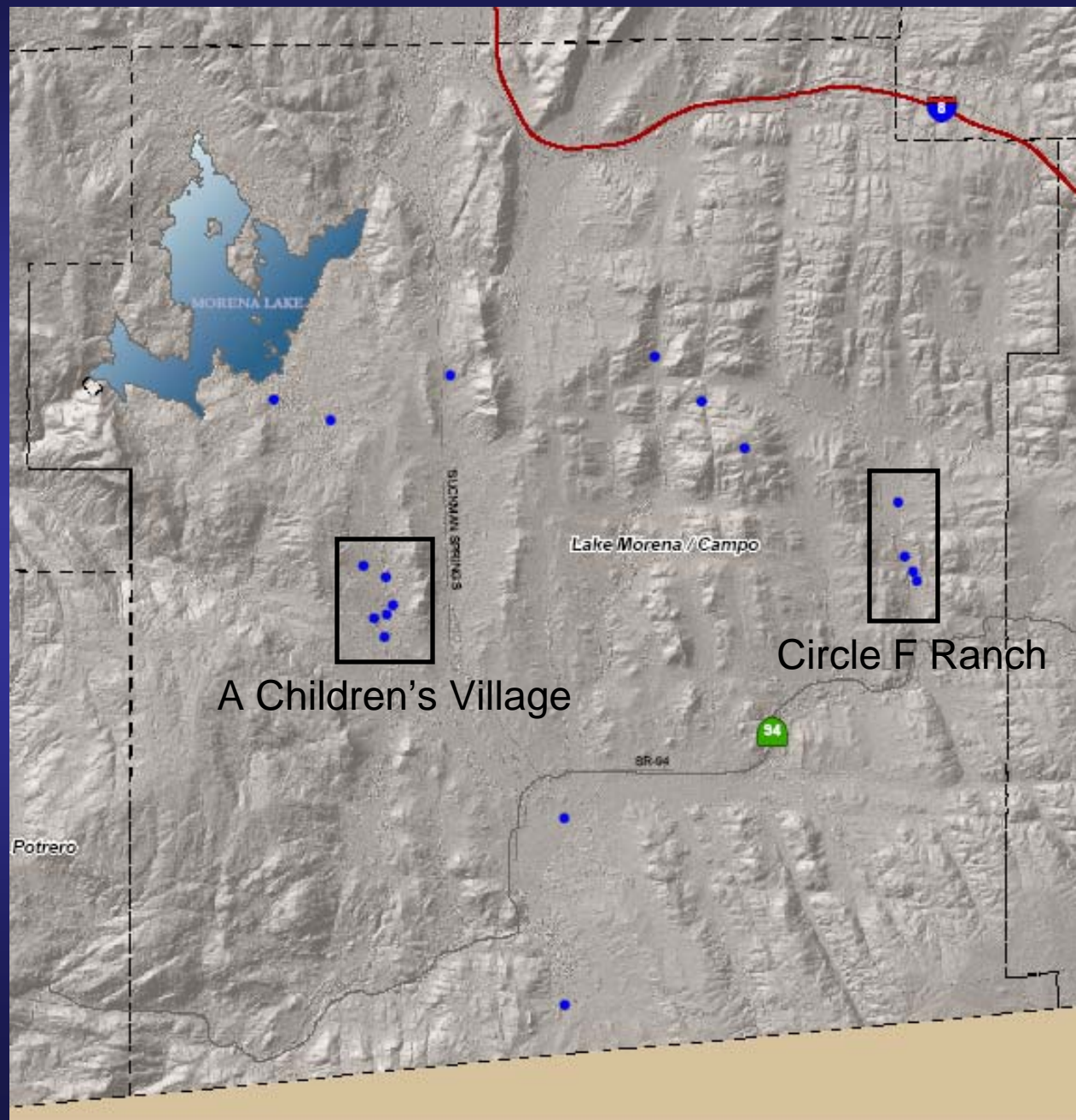
## Current County Monitoring Well Network: 212 Wells

- 127 Wells Monitored by County
- 85 Wells Monitored by Other Entities

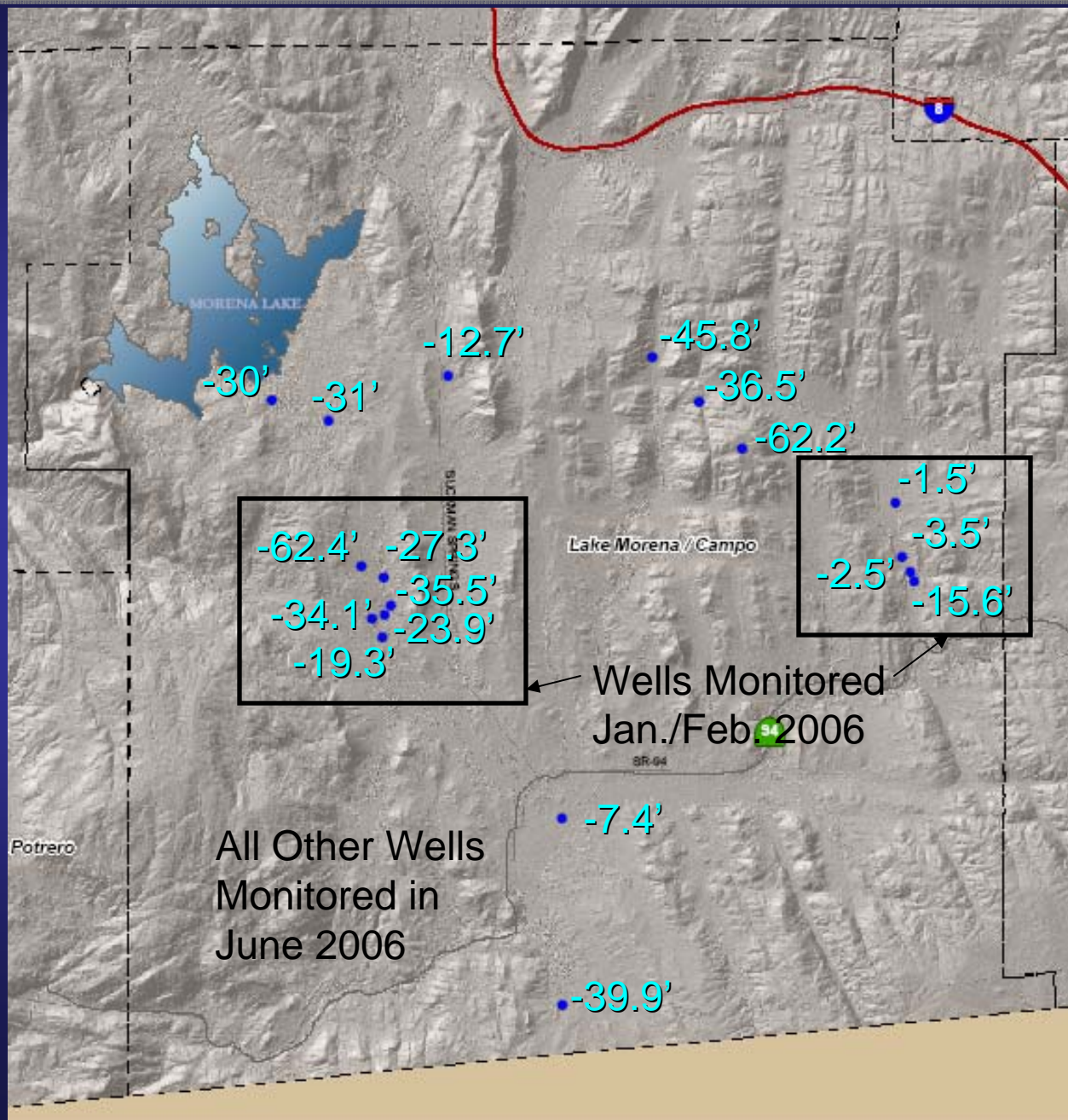
## Current Campo Monitoring Well Network: 18 Wells

- 8 Wells Monitored by County
- 10 Wells Monitored by Other Entities

# MONITORING WELL NETWORK IN CAMPO

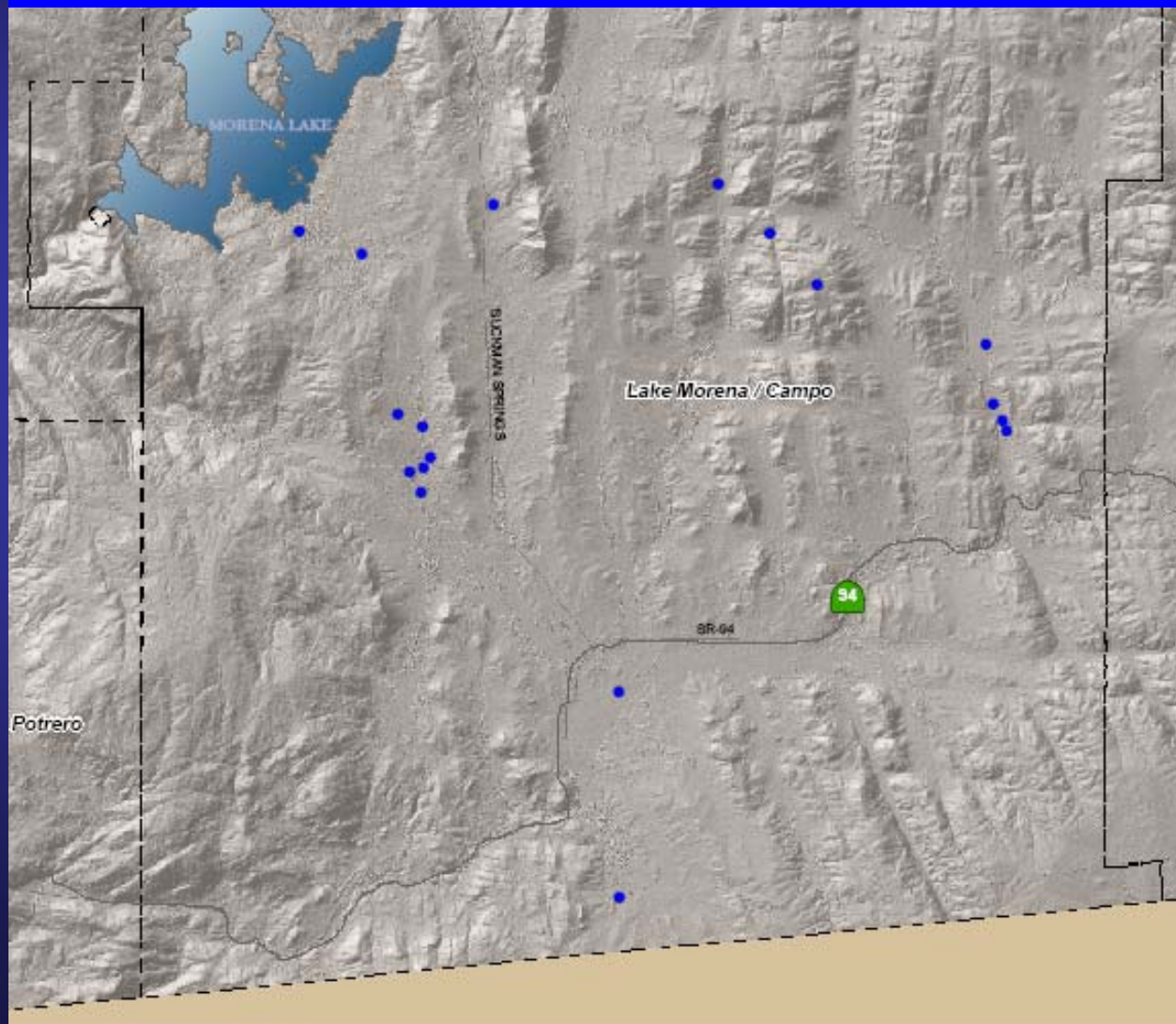


# RECENT WATER LEVELS IN CAMPO



# LAKE MORENA/CAMPO WELL NETWORK DATA GAPS

THANKS TO ALL WHO HAVE VOLUNTEERED!  
HOWEVER, WE STILL COULD USE MORE WELLS!!!!  
PLEASE CALL DAN BAHMAN AT DPLU: 858-694-3294



# **GROUNDWATER ORDINANCE AMENDMENT**

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## **Groundwater Ordinance Changes Proposed:**

1. Changes to Well Testing Requirements
2. Boundary Adjustments to be Subject to Ordinance

**New Detailed Guidance Document (currently in draft form):**  
*Guidelines for Performing Residential Well Tests*

# WATER QUALITY MAP

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## **New Potential Water Quality Problem Areas Map - Nitrates and Radioactivity**

(currently in draft form, prepared by County  
Department of Environmental Health)



# WATER QUALITY MAP, CONTD.

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Potential naturally occurring radioactivity problem areas include portions of:

- Campo/Lake Morena
- Potrero
- Julian
- Descanso
- Warner Springs

Potential nitrates problem areas include portions of:

- Lake Morena/Campo
- Ramona
- Borrego Springs
- Valley Center
- Other Areas in Western San Diego County

# **BUSINESS PROCESS RE-ENGINEERING (BPR) IMPLEMENTATION FOR GROUNDWATER**

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## **Groundwater tasks related to BPR implementation:**

### **1. Guidelines for Determining Significance for Groundwater**

### **2. Report Format Standards for Groundwater**

Report format standards will become the required format for all groundwater technical studies.

### **3. Forming a Consultant List for Groundwater**

# GP2020 GROUNDWATER STUDY UPDATE

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## DATA COMPILATION EFFORTS COMPLETED INCLUDING:

1. Groundwater Recharge Data into 300'x300' Cells:
  - Precipitation
  - Potential Evapotranspiration
  - Runoff
  - Soil Moisture Capacities (including data gap areas)

# GP2020 GROUNDWATER STUDY UPDATE

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## DATA COMPILATION EFFORTS COMPLETED, CONTD.:

### 2. Groundwater in Storage Including:

- Moderately Fractured Rock (Valley Areas)
  - Slightly Fractured Rock (Upland Steep Slope Areas)
  - Alluvial River Valleys and Basins
  - Residuum (overlies fractured rock)
  - Coastal Marine Sediments
- } ~1,000 Well Logs reviewed including  
~200 Well Logs in Campo

# GP2020 GROUNDWATER STUDY UPDATE

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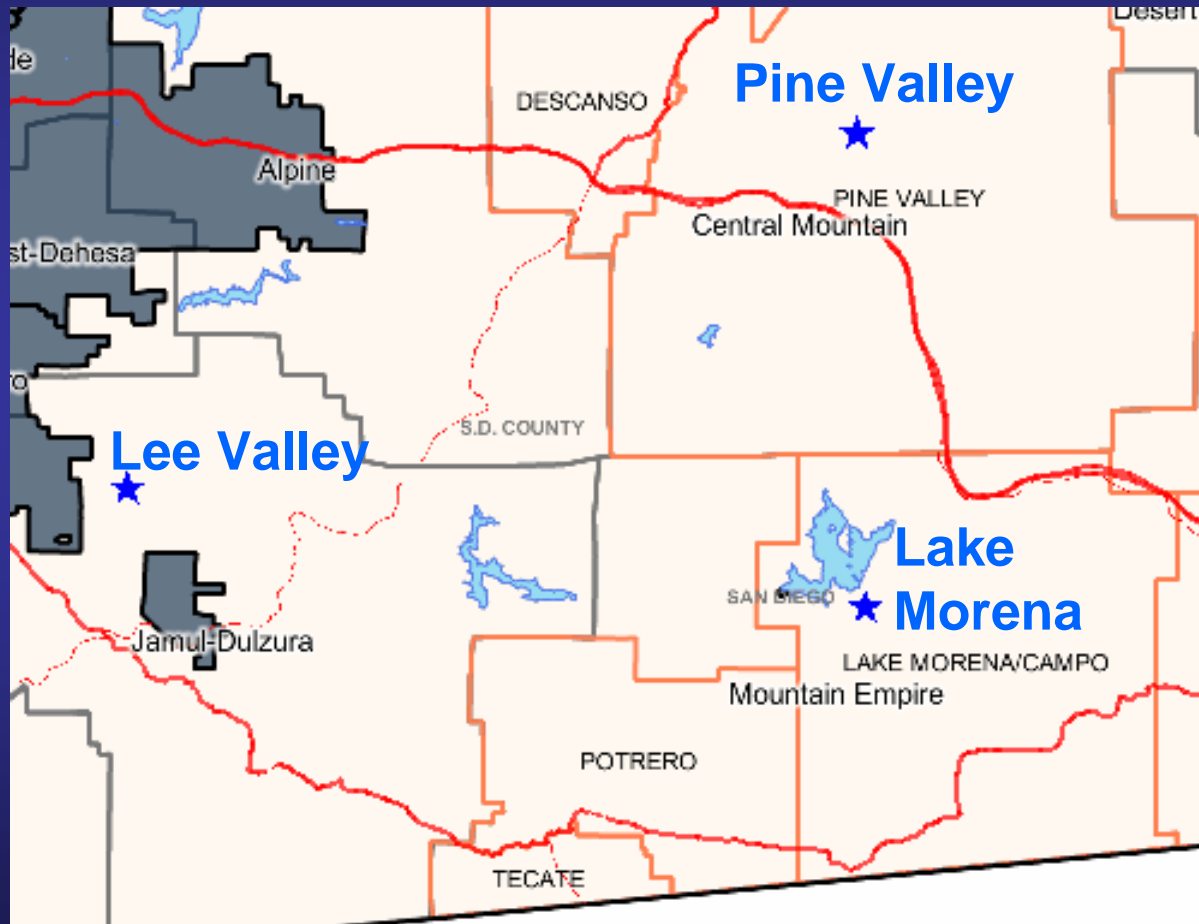
## DATA COMPILATION EFFORTS COMPLETED, CONTD.:

### 3. Groundwater Demand Input Including:

- Existing Conditions
- Maximum Buildout Allowed by Current General Plan
- Maximum Buildout Allowed by GP2020

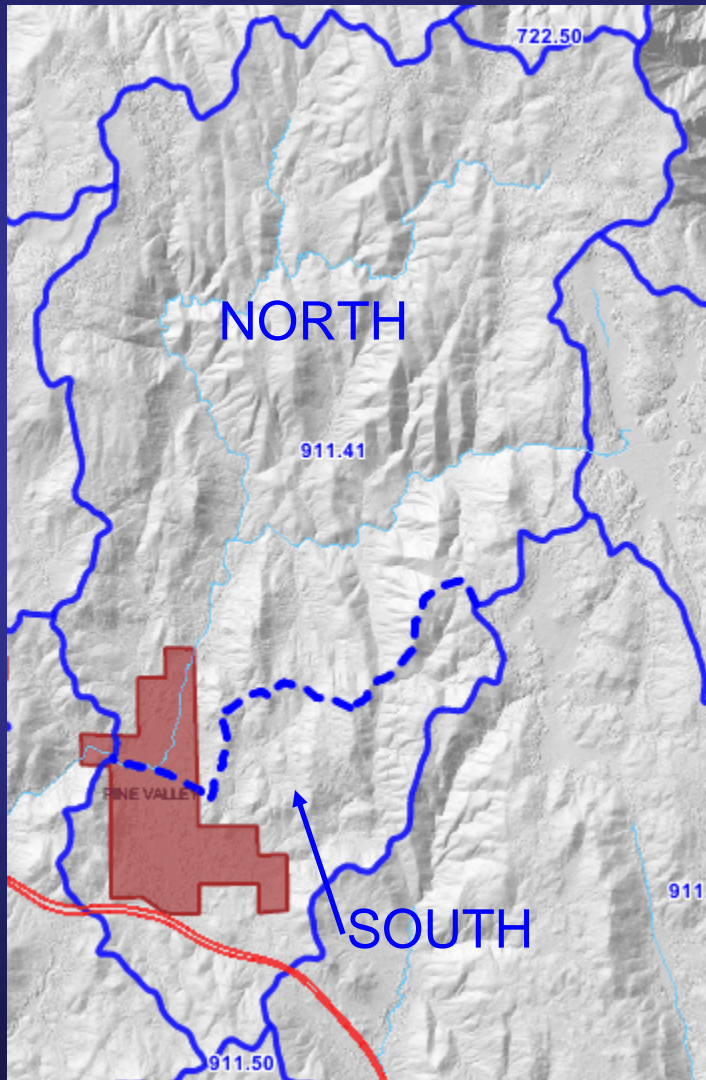
# GP2020 GROUNDWATER STUDY UPDATE

## CALIBRATION OF GROUNDWATER MODEL



# GP2020 GROUNDWATER STUDY UPDATE

## SPOT CHECK – PINE VALLEY



BASIN WAS SUBDIVIDED INTO NORTH AND SOUTH SUB-BASINS

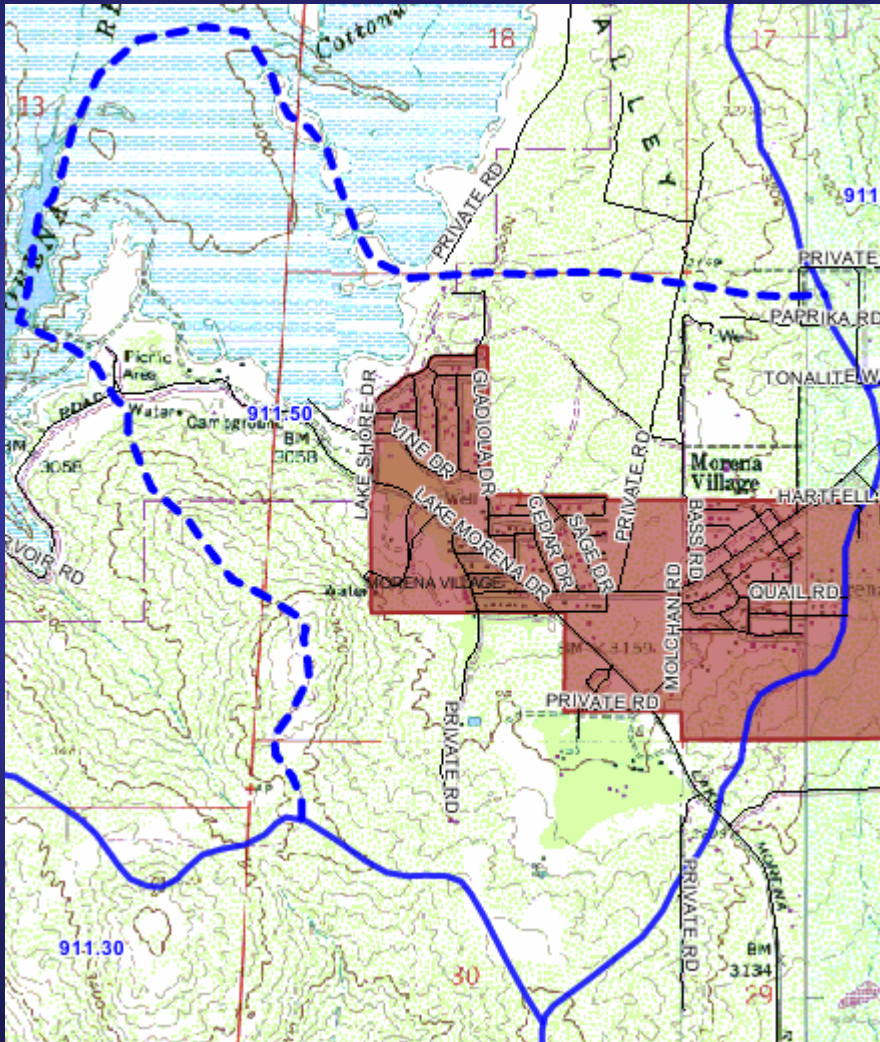
GROUNDWATER MODEL RUN AND COMPARED TO EXISTING HYDROGRAPHS

LONG-TERM WATER LEVEL RECORDS USED FROM COUNTY AND PINE VALLEY MUTUAL WATER COMPANY WELLS

MODEL RESULTS CLOSELY MATCHED ACTUAL WATER LEVEL CONDITIONS WITHOUT ANY ADDITIONAL CALIBRATION REQUIRED

# GP2020 GROUNDWATER STUDY UPDATE

## SPOT CHECK – LAKE MORENA



BASIN WAS SUBDIVIDED INTO SMALLER SUB-BASIN

GROUNDWATER MODEL RUN AND COMPARED TO EXISTING HYDROGRAPHS FROM COUNTY MONITORED WELLS

AS WAS THE CASE IN PINE VALLEY, MODEL RESULTS CLOSELY MATCHED ACTUAL WATER LEVEL CONDITIONS WITHOUT ANY ADDITIONAL CALIBRATION REQUIRED

# GP2020 GROUNDWATER STUDY UPDATE

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## NEXT STEPS IN STUDY

- Model to be Run Countywide
- Final Output of Model Results – Determined Based on Initial Countywide Model Results