FINAL PHASE I GROUND WATER INVESTIGATION REPORT

San Mateo Creek Basin Uranium Legacy Site

Management Update

August 24, 2016

9881456

Charge to
San Mateo Creek Basin
A6K6 T Fund

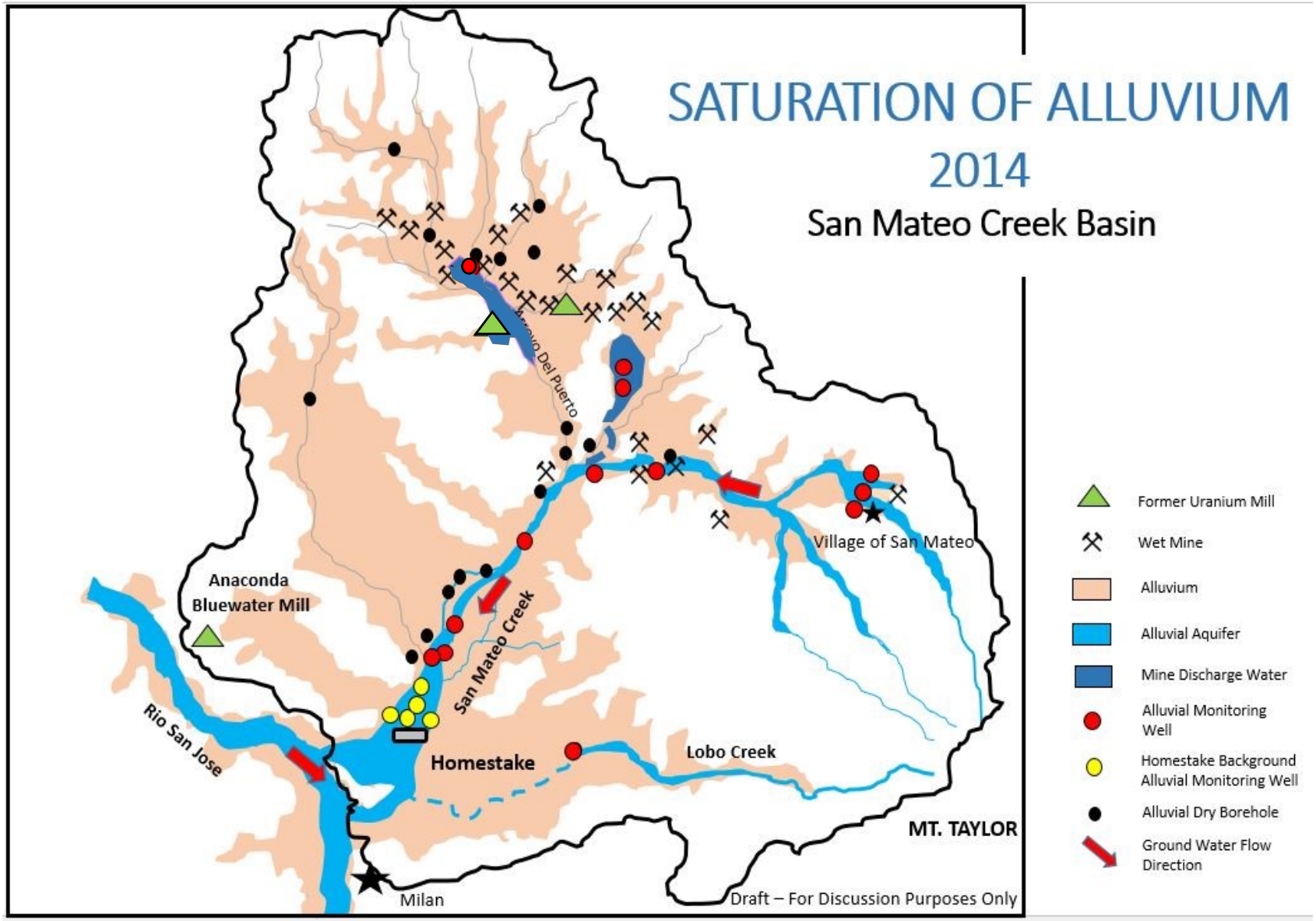
SUMMARY OF CONCLUSIONS

Alluvial Aquifer

- Attempt to Characterize Background had Mixed Results
  - Lack of Natural Saturation in Many Areas Investigated
- Water Quality Varies Across Basin
  - Good quality upgradient of mines and mills
    - Meets standards
  - Poor quality downgradient of mines and mills
    - Exceeds standards
    - Similar to mine discharge water quality
- Mine Discharge Water Draining Through and Out of Alluvium

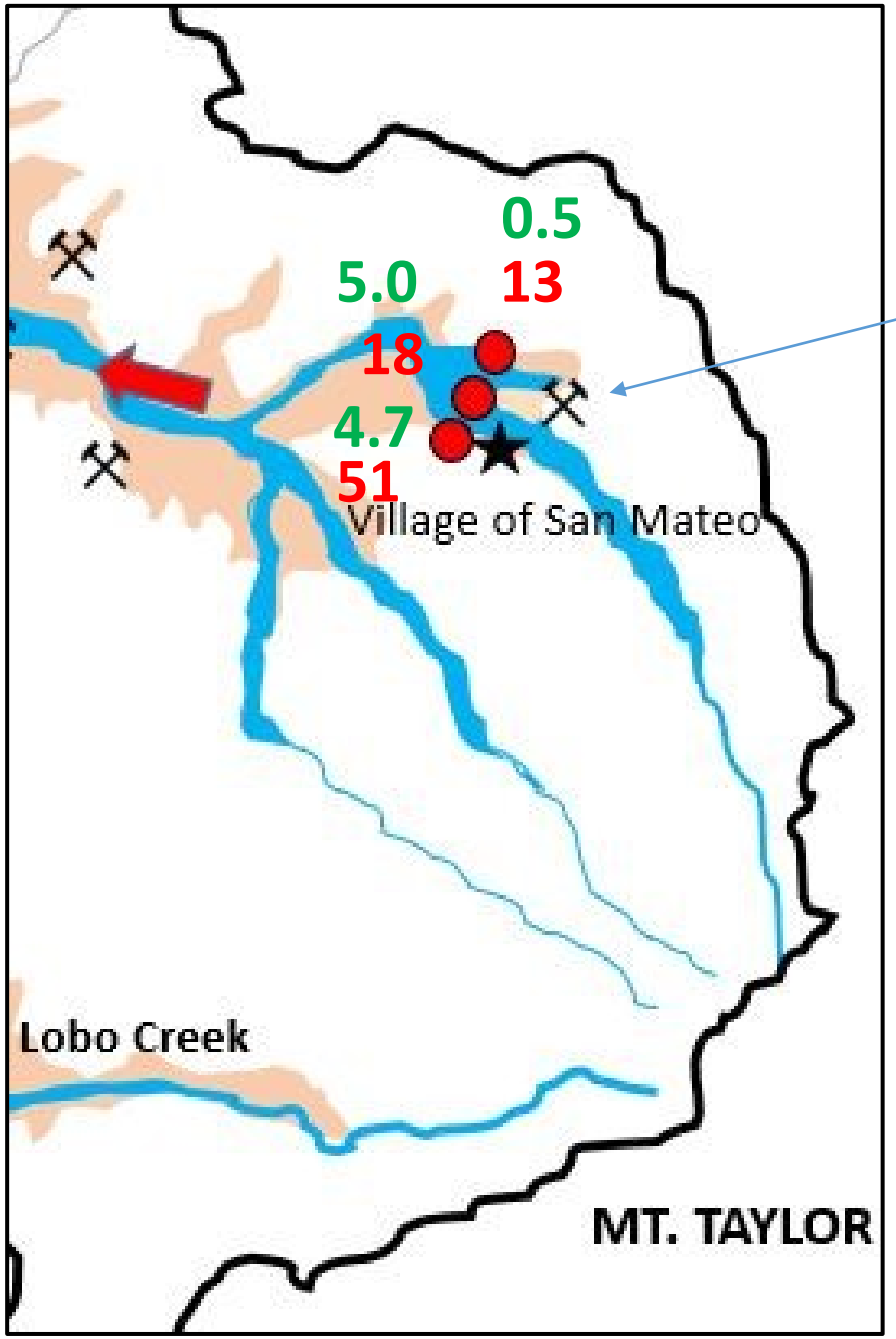
Conclusion No. 1

Limited Saturation in Alluvium



Conclusion No. 2

- **Significant saturation near village of San Mateo**
- **Ground water quality below standards, except for Gross Alpha**
- **Radium 226 elevated, but below standard**



Chevron
Mount Taylor Mine

51.0 Gross Alpha

5.0 Radium 226

Conclusion No. 3

- Alluvial ground water downgradient of legacy mines exceed standards
- In comparison to background wells:
  - Greater than 3 times background

    Uranium

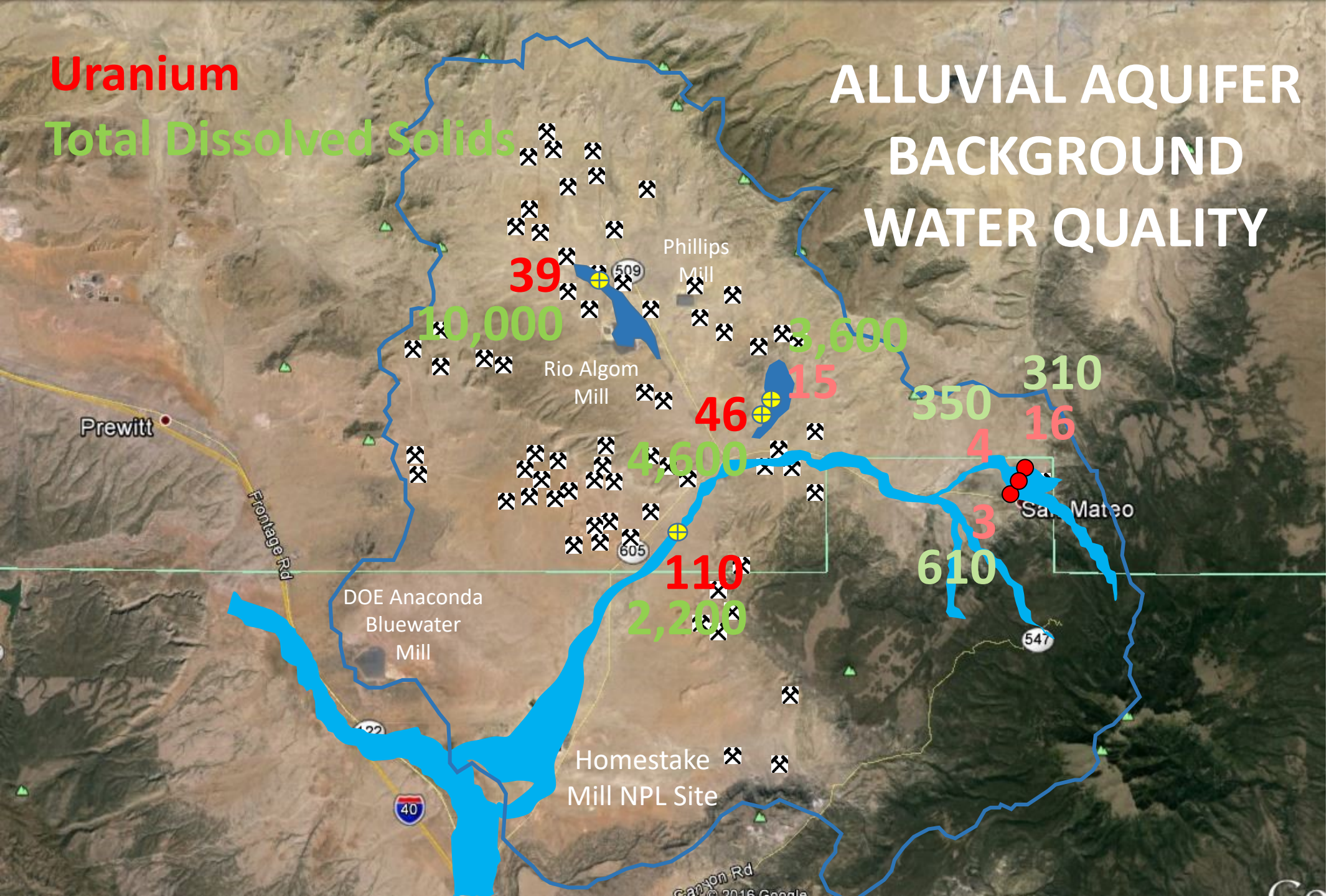
    Selenium

    Total Dissolved Solids

    Sulfate

Conclusion Nos. 4 and 6

- Alluvial water downgradient of Rio Algom Mill and Sec 35/Cliffside Mines of poorest quality
- Appear to be residual mine discharge water
- Draining into bedrock formations



EPA Background Well

Well Downgradient to Legacy Mines

16 Uranium (ppb)

16 Total Dissolved Solids (ppm)

Alluvial Water

Mine Discharge Water

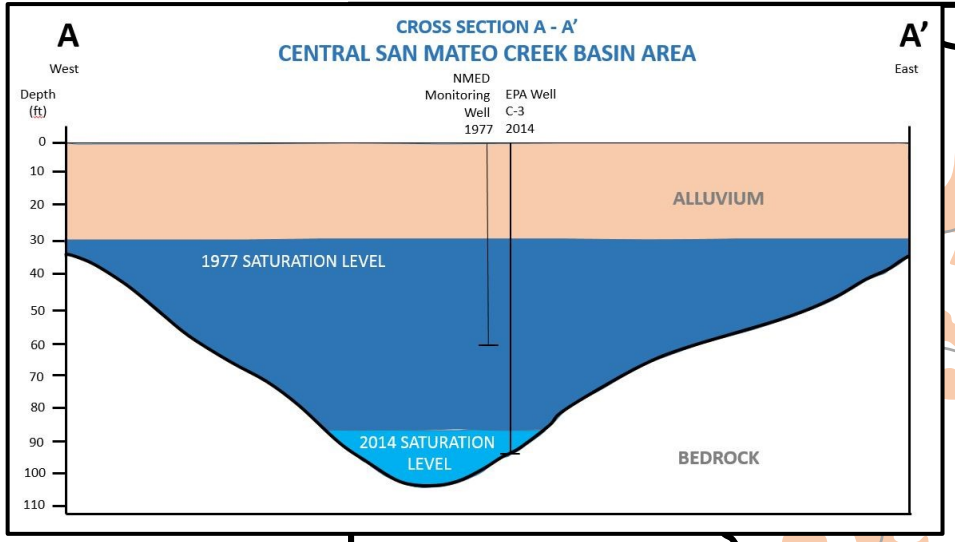
Conclusion No. 5

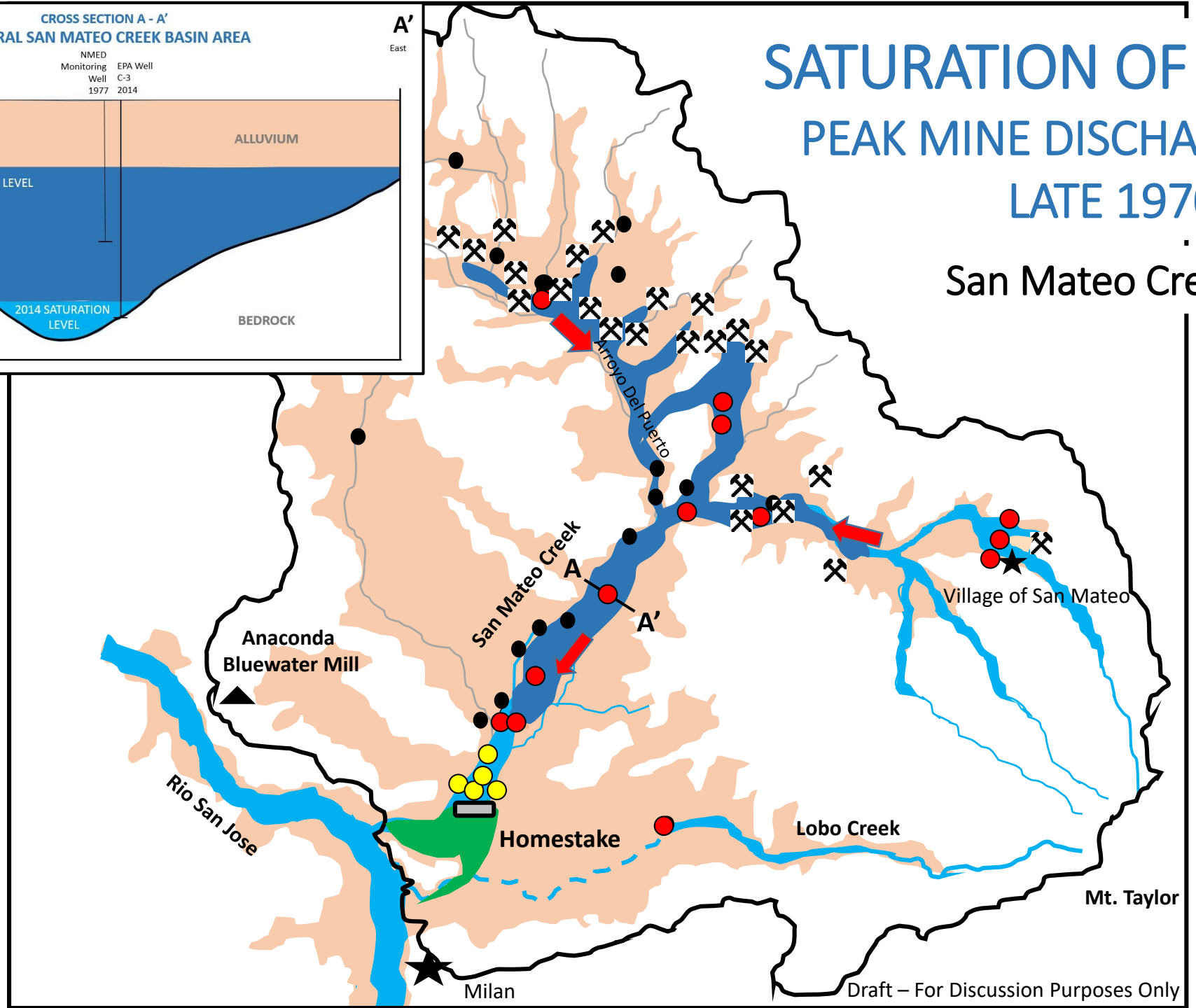
- Mine water discharges resulted in saturation and desaturation of Alluvium on massive scale
- Water levels in central part of basin raised and dropped over 50 feet
- Drain down not observed at Homestake

SATURATION OF ALLUVIUM

PEAK MINE DISCHARGE PERIOD

LATE 1970S

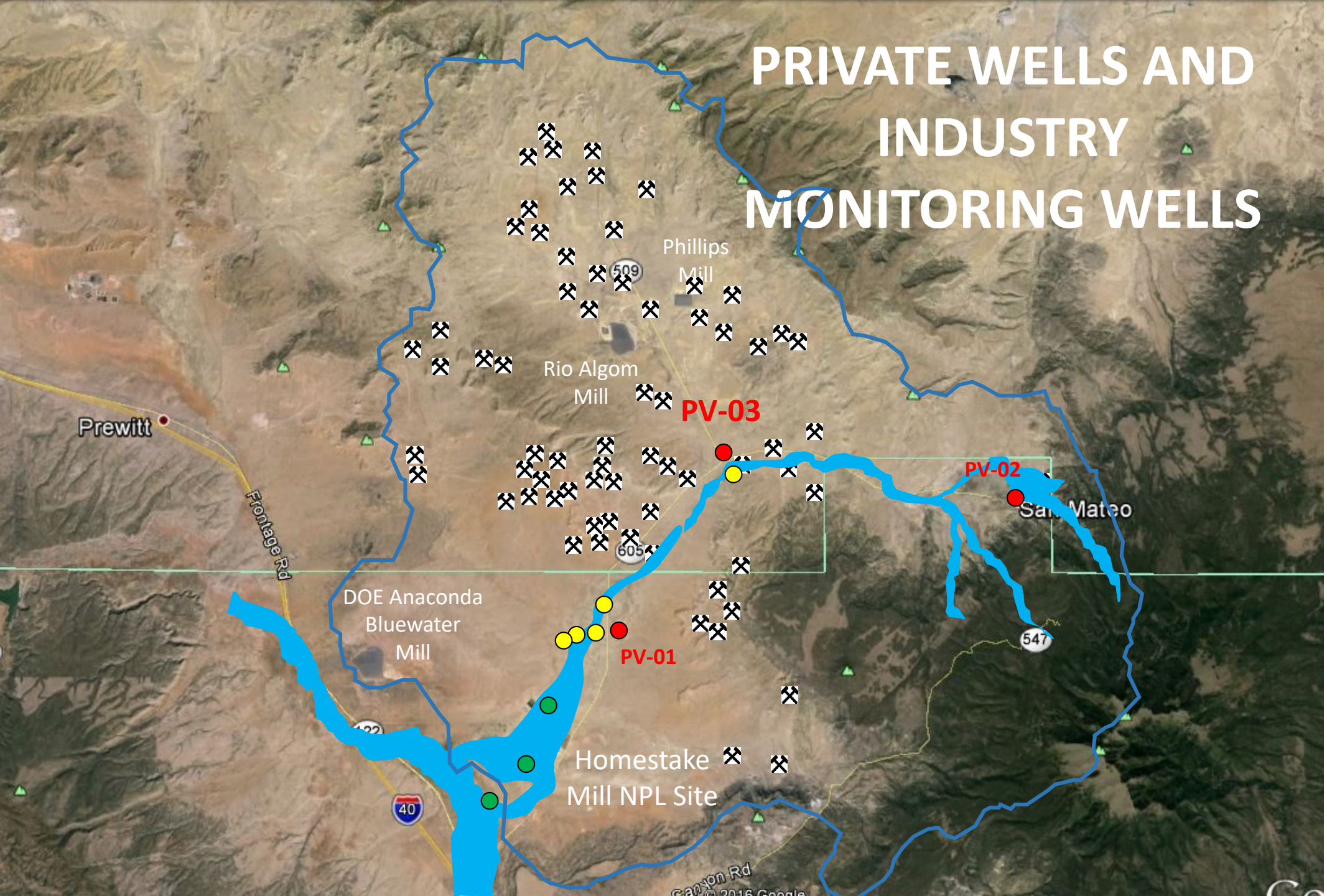




Conclusion No. 7

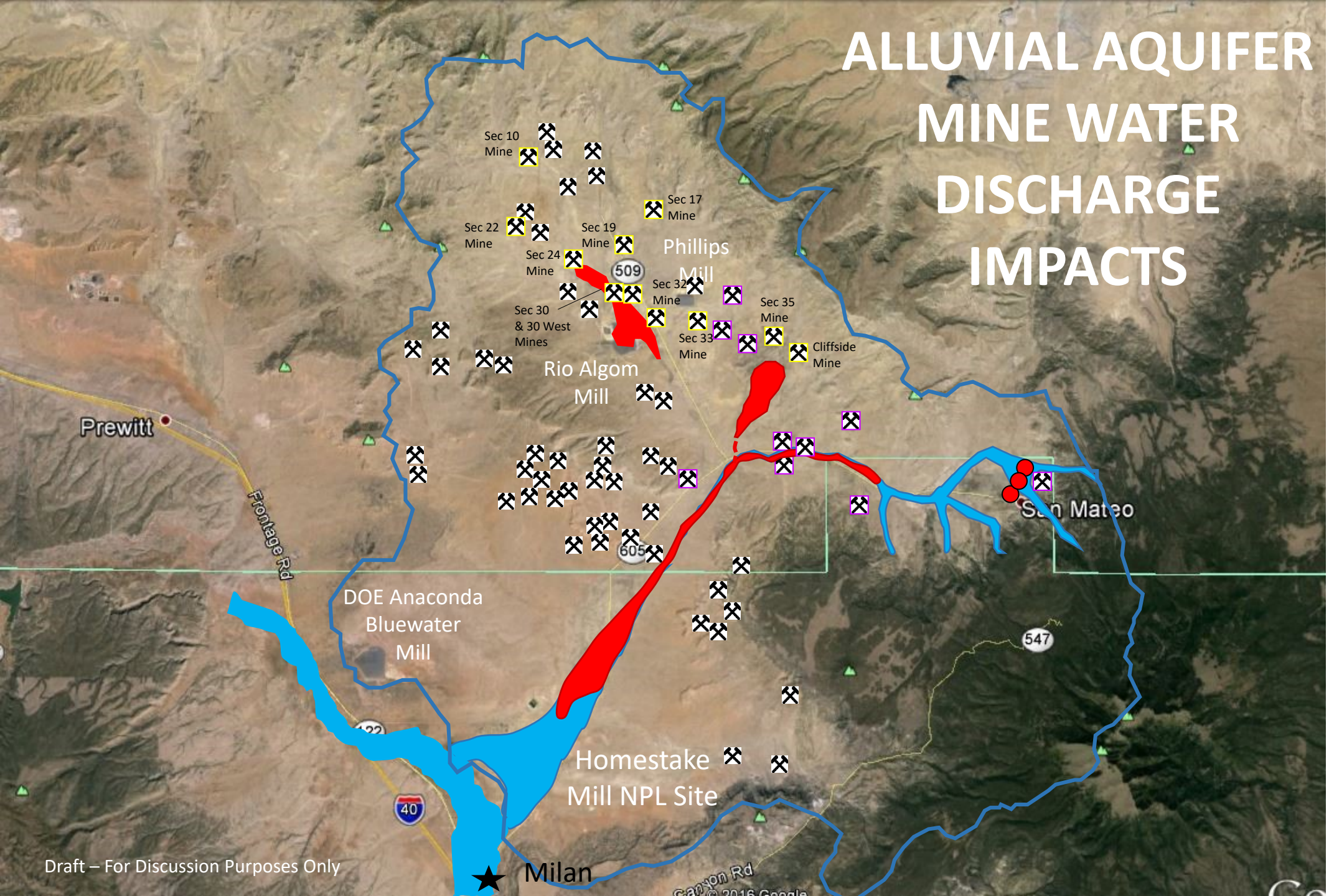
- 12 private wells and other industry monitoring wells exceeded standards
- Only 3 of 12 wells used for drinking water supply
- Only 1 of the 3 exceeded EPA MCLs or NM drinking water standards (PV-03)
- Point of Use Treatment Systems installed by Removal at home for PV-03

PRIVATE WELLS AND INDUSTRY MONITORING WELLS



- Private Well
- Other Private Well (Livestock Watering or industry Monitoring Well
- Other industry Monitoring Well San Andres/Glorieta

ALLUVIAL AQUIFER MINE WATER DISCHARGE IMPACTS



Kerr McGee Mine

Other Wet Mine

Alluvial Aquifer

Mine Water Discharge Impacts

EPA Background Well

Draft – For Discussion Purposes Only