

(Agenda item 7)

Simulated Future Shallow Well Impact Analysis

Methodology

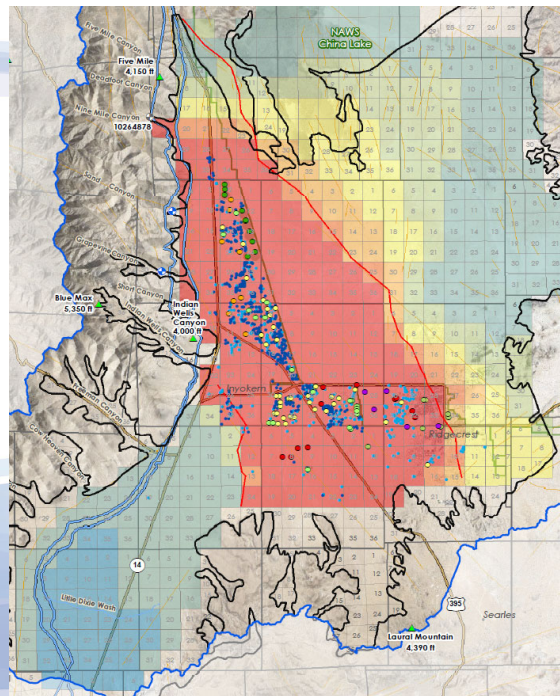
1. Simulated groundwater levels at the end of 2020, 2025, 2030, 2040, and 2070 for each 15.4-acre model cell.
2. GIS calculated avg annual DDN rate by Section for 4 time periods.
3. Shallow well impact based on
 - a. Estimated drill date and well construction
 - b. Simulated groundwater level change over time
4. Updated Analysis with 872 Shallow Wells
 - 377 DOM wells from Kern County Health Department Well Permits
 - 455 other private wells (randomized drill-date distribution)
 - 40 mutual and community service district wells

Baseline
50-Year Predicted DDN

Simulated Predicted
Groundwater Level Change
2020 to 2070



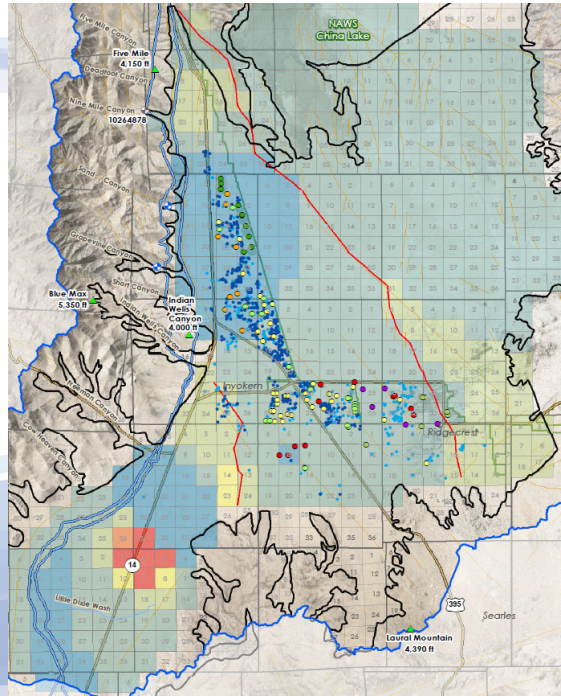
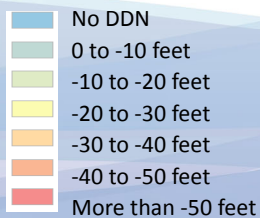
40 Mutual and CSD
832 Domestic/Private
872 Shallow Wells
66 Larger Production
 938 Total Production Wells



Scenario #1 50-Year Predicted DDN

Pumping Ramp Down for 20 years
Imported Water Recharge & Recovery
Recycled Water Use
Management Concepts:
Cliff Pumping
Leasing

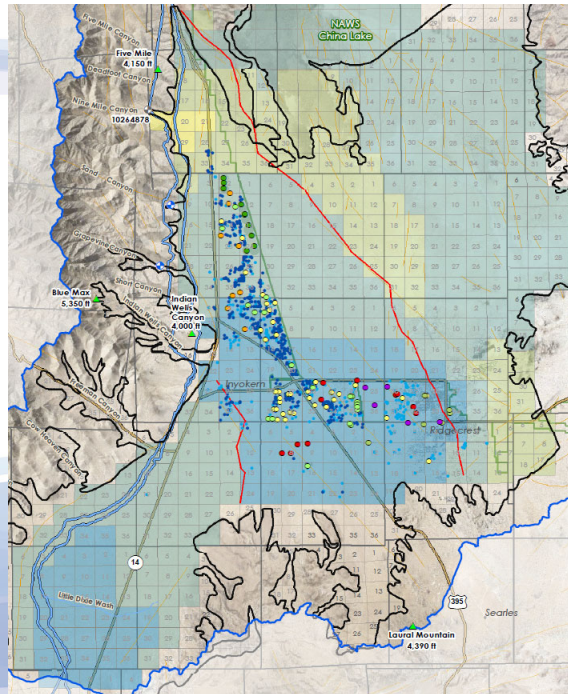
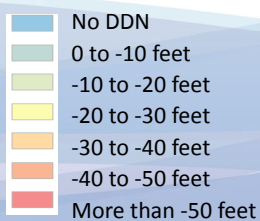
Simulated Predicted
Groundwater Level Change
2020 to 2070



Scenario #2 50-Year Predicted DDN

Reduced Pumping
by 38% in 2025 to 21,680 AFY
by 54% in 2030 to 13,650 AFY
Recycled Water Use
Imported Water Recharged in 2030
Direct Use of Imported Water in 2030

Simulated Predicted
Groundwater Level Change
2020 to 2070



Next Steps

- Complete estimated impacts by Model Run
- Review method/results with Model Ad Hoc

