

# Overview of the 5-Year Review Process & Discussion of Results from Compliance Report

Presented To:



December 12, 2023

# Summary of 2023 Compliance Report

- DFCs Summary

- Exceedance of Threshold 1 (50%)
  - 1- Carrizo (50.1%)
- Exceedance of Threshold 2 (60%) or Threshold 3 (75%)
  - 0 – No aquifers

- PDLs Summary

- No exceedance of Threshold 1 (50%)
  - 1 – Carrizo (56.2%)
- No exceedance of Threshold 2 (60%) or Threshold 3 (75%)
  - 0 – No aquifers

## Rule 16.4.1 Threshold 1

If Threshold Level 1 is exceeded, the District will perform studies to provide information on aquifer properties, aquifer recharge, aquifer and surface water interactions, and aquifer pumping. To the extent possible, the studies shall distinguish between the causes and effects of pumping occurring within the District and outside of the District. The results may be used to improve the models, tools, and methodologies used to analyze data and predict future groundwater levels and availability. The District will contract with a professional hydrogeologist to (i) conduct studies and/or (ii) establish the parameters for the studies and review the results of studies. The results of the studies shall be made available to the public in a reasonable manner during one or more public meetings within ninety (90) calendar days after the completion of the studies. [Amended July 2, 2019] [Amended May

# Summary of 2023 Compliance Report

Management Zone	2070 DFC (ft)	Avg. Drawdown (ft) / % of DFC	Compliant With DFC
Sparta	32	11.8 (37%)	Yes
Queen City	30	14.3 (47.6%)	Yes
Carrizo	146	73.2 (50.1%)	No
Calvert Bluff (Upper Wilcox)	156	60 (38.5%)	Yes
Simsboro (Middle Wilcox)	278	69.3 (24.9%)	Yes
Hooper (Lower Wilcox)	178	18.1 (10.2%)	Yes
Yegua-Jackson	61	-26.1 (-42.8%)	Yes

# Summary of 2023 Compliance Report

Management Area		2070 PDL (ft)	Avg. Drawdown (ft) / % of PDL	Compliant With PDL
Sparta	Area 1	28	-2.1 (-7.6%)	Yes
Queen City	Area 1	75	-4.2 (-22.1%)	Yes
Carrizo	Area 1	75	17.1 (22.8%)	Yes
	Area 2	175	98.3 (56.2%)	No
Calvert Bluff (Upper Wilcox)	Area 1	88	23.6 (26.8%)	Yes
	Area 2	223	65.4 (29.3%)	Yes
Simsboro (Middle Wilcox)	Area 1	91	-10.1 (-11.1%)	Yes
	Area 2	335	100.7 (30.1%)	Yes
Hooper (Lower Wilcox)	Area 1	210	20.6 (9.8%)	Yes

# Summary of 2023 Compliance Report

Management Zone	2070 DFC (ft)	2010 to 2023 Drawdown	Compliant With DFC
		Avg. Drawdown (ft) / % of DFC	
		Drawdown values from the T2R, and KWL	
Yegua-Jackson	61	-30.2 (-49.4%)	Yes
		-27.0, -33.3	

Management Zone	DFC (ft)	From 2010 to 2016	From 2010 to 2017	From 2010 to 2018	From 2010 to 2019	From 2010 to 2020	From 2010 to 2021	From 2010 to 2022	From 2010 to 2023
		Avg. Drawdown (ft)							
		% of DFC							
		Maximum Threshold Level Violation for T2R and KWL							
		-8.1	-13.5	-18.5	-14.8	-14.6	-14.3	-16.3	-30.2
Yegua-Jackson	61	-13.3%	-22.2%	-30.3%	-24.2%	-23.9%	-23.4%	-26.7%	-49.4%
		-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-

# Overview of Rule 16.5 Five Year Review: Evaluation Criteria

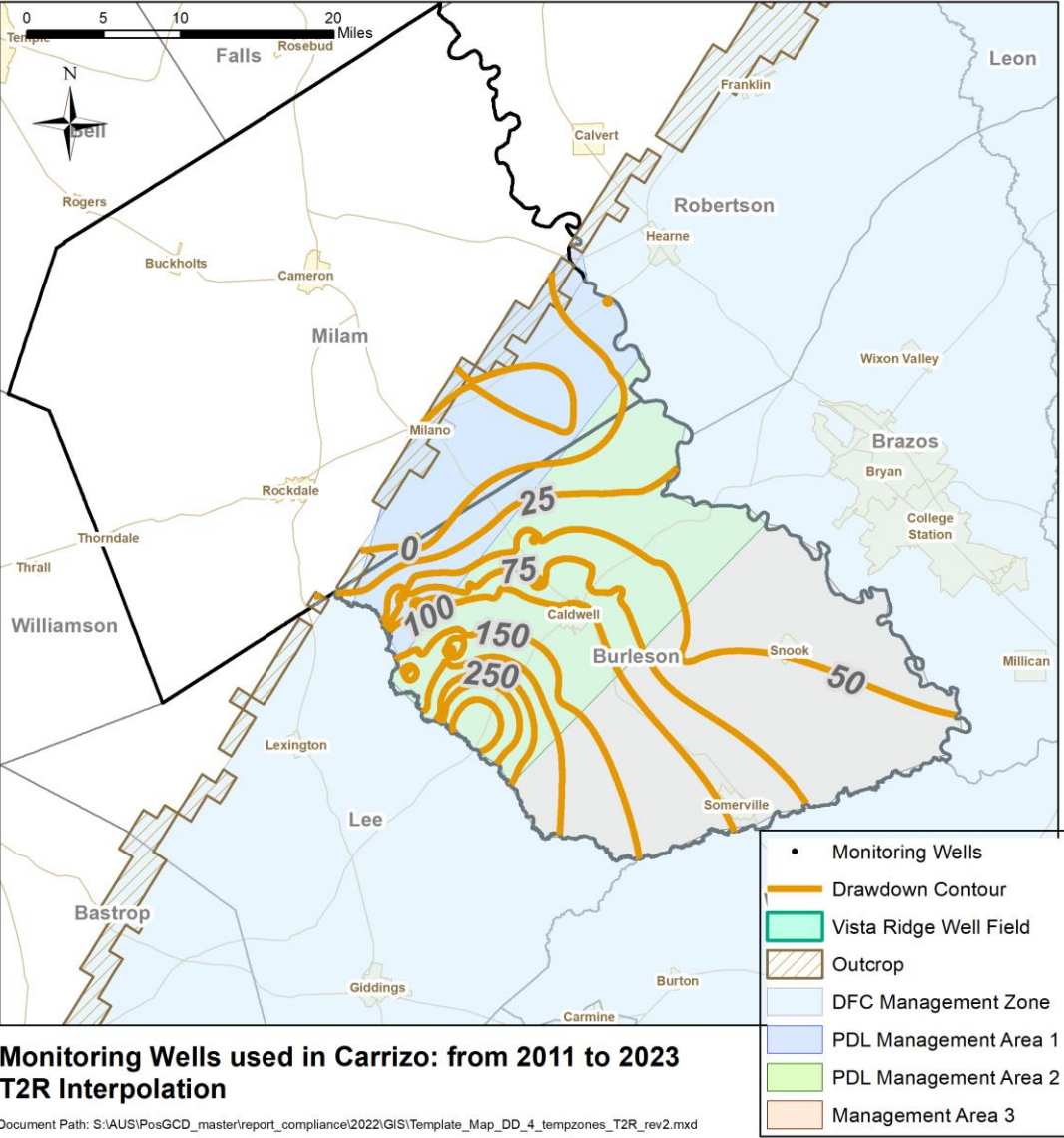
- Compliance with District rules and reporting
- Permit is part of State Water Plan
- Permittee has ASR or MAG Permits from TCEQ
- Producing under historic use permit
- Permittee is a local water utility
- Permittee has option to obtain water through local sources for the purpose of reducing need for localized pumping
- Permittee has filed a water conservation plan
- Permit has voluntary mitigation program to address unreasonable impacts
- Assessment of
  - PDLs and DFCs\*
  - Unreasonable impacts\*
  - Adequacy of well monitoring program for water levels
  - Comparison of Modeled Available Groundwater (MAG) to projected and permitted pumping

\*involve possible Board action to pursue curtailment



# DFCs and PDLs Compliance for Carrizo

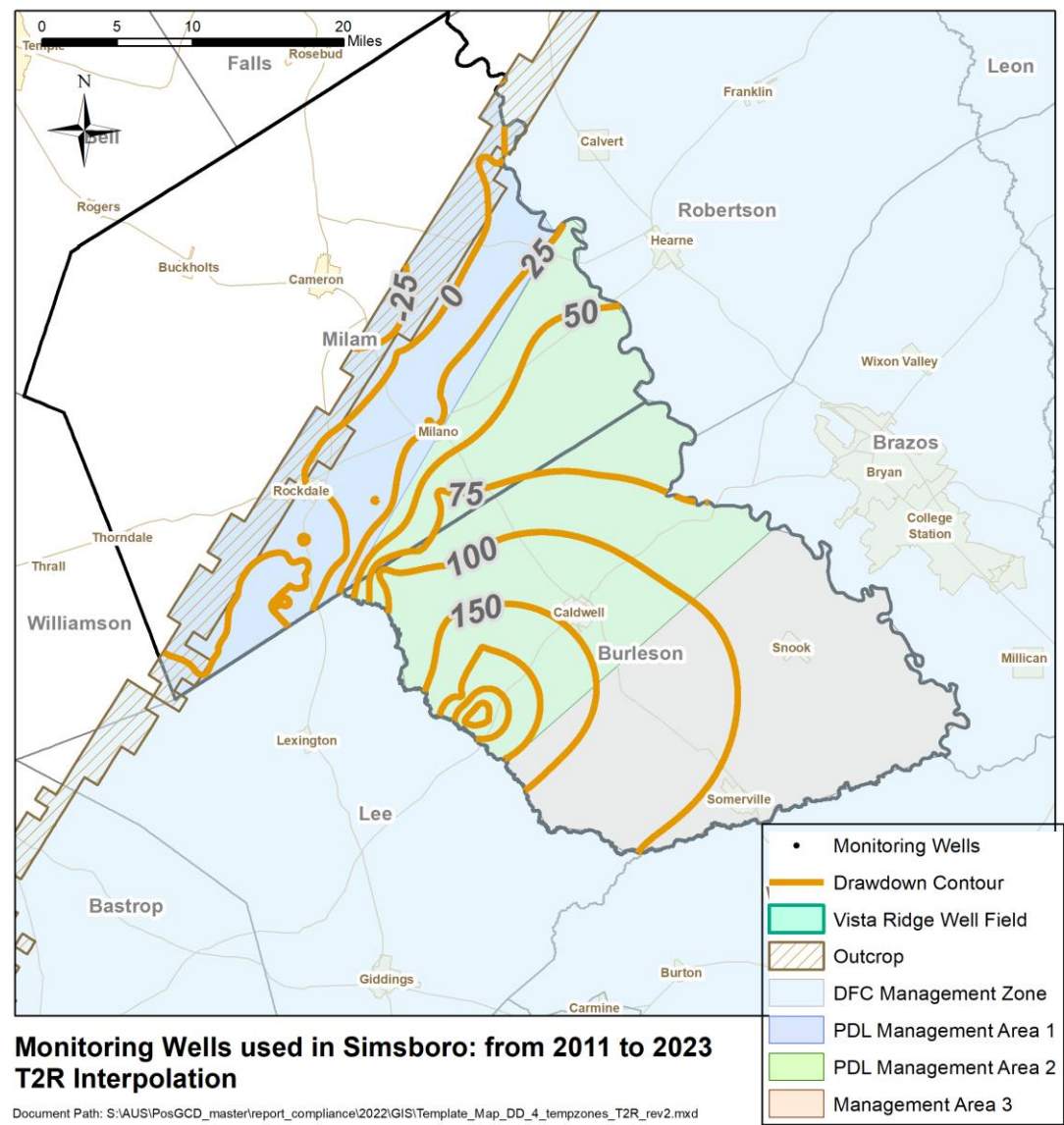
2023 Water Levels



Parameter	Coverage	Regulatory Value 2011-2070	Compliance Value 2011 - 2023
DFC	Entire Aquifer	145 ft	73 ( 50%)
PDL - Area 1	Management Area 1	75 ft	17 (23%)
PDL - Area 2	Management Area 2	175 ft	98 (56%)

# DFCs and PDLs Compliance for Simsboro

2023 Water Levels



Parameter	Coverage	Regulatory Value 2011-2070	Compliance Value 2011 - 2023
DFC	Entire Aquifer	278	69 (25%)
PDL - Area 1	Management Area 1	91 ft	10 (-11%)
PDL - Area 2	Management Area 2	335 ft	101 (30%)



# Threshold-based Action for DFCs and PDLs (Rule 16.4)

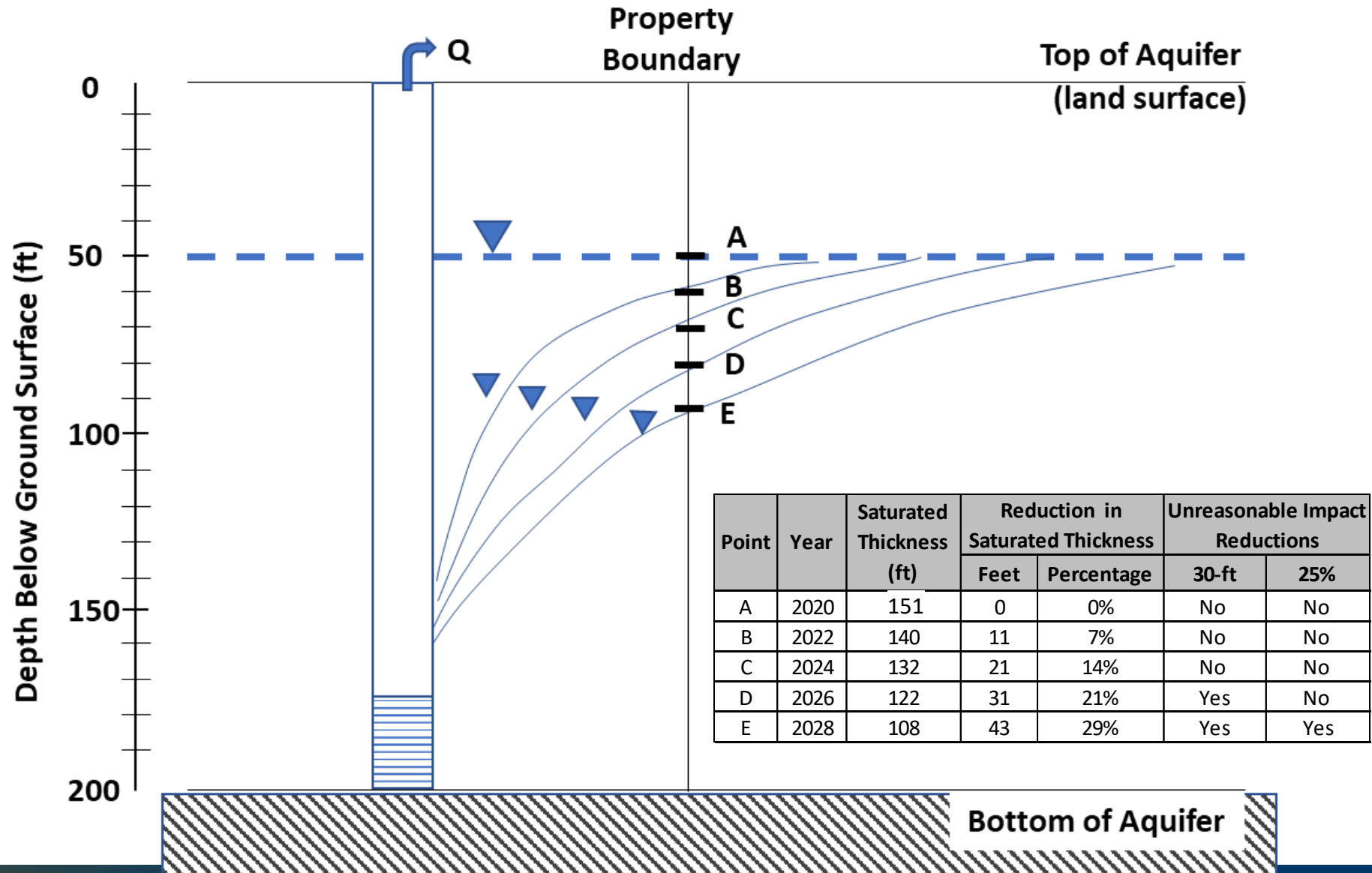
- Threshold 2
  - Criteria
    - 70% or greater than MAG
    - 60% or greater than DFC or MAG
  - Action
    - Review management plan, rules, & results
    - Board has option to notify well owners of possible curtailment and to develop plans/approach/strategies for curtailment
- Threshold 3
  - Criteria
    - 75% or greater than DFC or MAG
  - Action
    - Conduct public meeting to discuss status of aquifers and to develop a Response Action Work Plan
    - Board consider modifications to management plan, rules & results
    - Board can adopt one or more strategies for curtailment

# Unreasonable Impacts (Rule 16.4)

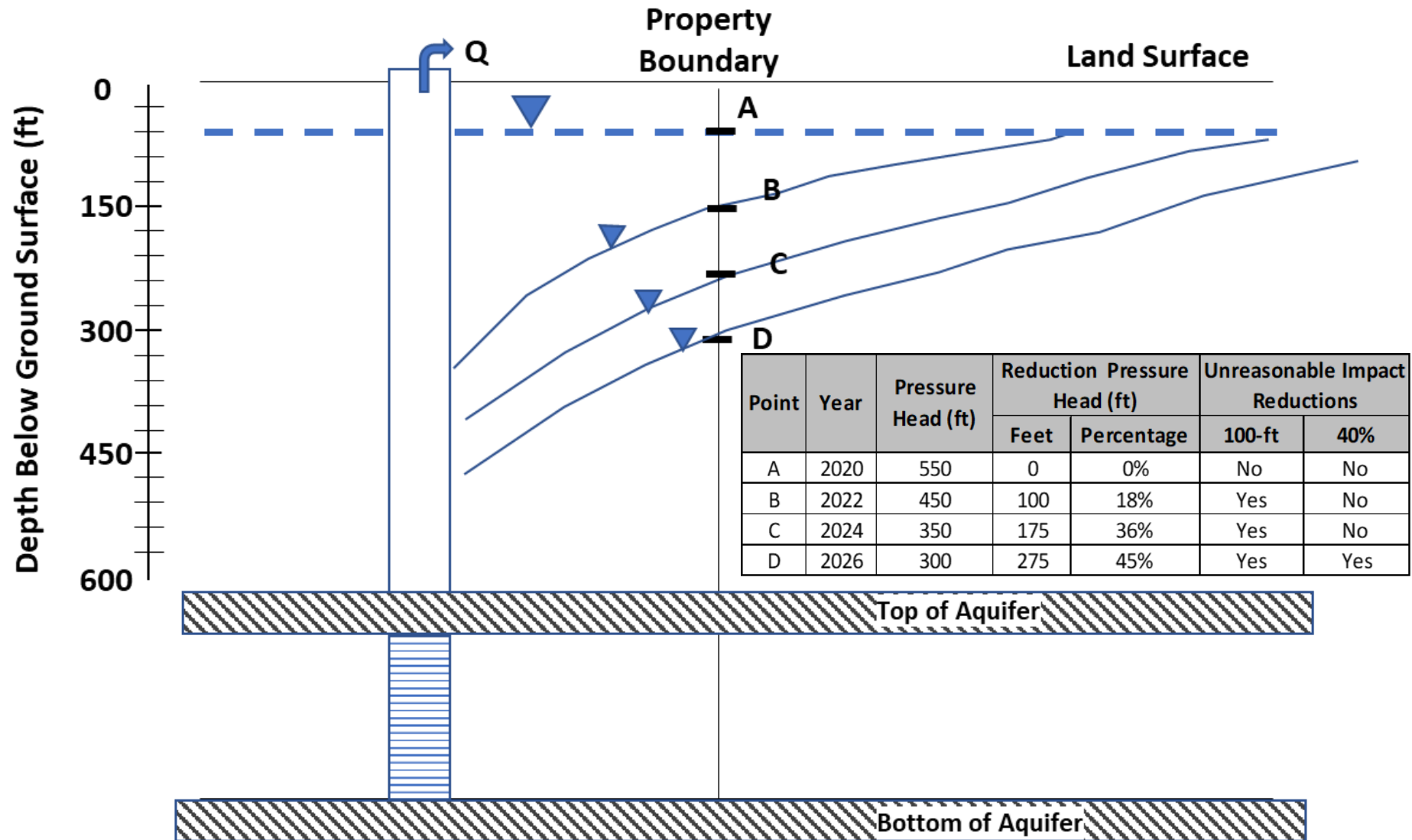
Rule 16.4.6 Unreasonable Impacts: In order to evaluate the balance between production and conservation of groundwater resources, the District will consider the impacts from an aggregate of wells associated with one or more operating permits to be unreasonable if pumping from the aggregate wells, by themselves and without contribution from other pumping wells, cause any of the following:

- a) Land subsidence
- b) Intrusion of surface water or groundwater from another aquifer into a aquifer
- c) More than a **30-foot reduction** and more than a **25% reduction in the saturated thickness** of the aquifer being pumped by the aggregate wells at any well location outside of one or more operating permits' property or along any part of the boundary of the operating permits' property;
- d) More than a **100-foot reduction** and more than a **40% reduction in the pressure head** above the top of the aquifer at any well location outside of one or more operating permits' property or along any part of the boundary of the operating permits' property;

# Unreasonable Impacts: Unsaturated Thickness



# Unreasonable Impacts: Pressure Head



# Possible Action for Exceedance of Unreasonable Impacts

- Hydrogeologic Report
  - Prepared by Permittee
  - Determine water level change at along property boundary
  - Completed 120 days after request from District
- Monitoring Wells
  - Permittee install at least two monitoring wells
  - POSGCD and Permittee jointly determine the location
  - Wells installed and instrumented within 270 days after locations determined
  - Report data at regular intervals





Questions ?