

Draft: Groundwater Assistance Program Annual Needs Assessment 2025

Prepared for:



Post Oak Savannah Groundwater Conservation District
310 E Ave C
Milano, TX 76556

Prepared by:



9600 Great Hills Trail
Suite 300
Austin, TX 78759

August 6, 2025

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Prepared for:



Post Oak Savannah Groundwater Conservation District
310 E Ave C
Milano, TX 76556

Prepared by:



Nick Lamkey, PG

Steven Young PE, PG

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Version 3.0

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EXECUTIVE SUMMARY

This report comprises the Post Oak Savannah Groundwater Conservation District (POSGCD) Groundwater Assistance Program (GWAP) Annual Needs Assessment for 2025, hereafter referred to as GANA. The objective of the GANA is to identify eligible wells where water levels are likely to decline below the elevation of the pump setting within the next 10 years. To be eligible for funding under the GWAP, a well must be: (1) either a low-capacity permitted well or an exempt well used for domestic and/or livestock use, and, (2) completed in any aquifer in the District other than the Trinity Aquifer, Yegua-Jackson Aquifer and river alluvial or terraced formations. POSGCD currently estimates that there are 5,050 eligible wells.

The report identifies high-priority wells based on simulations of a modified pumping future pumping scenario created by GMA 12 to develop its DFCs. The high-priority classification requires that the pump elevation of the well is known. For a well to be classified as a high-priority well, the following two conditions need to be met: (1) its simulated water level in 2025 is greater than 15 ft above the pump elevation, and (2) its simulated water level in 2035 is less than 15 ft above the elevation of its pump elevation.

A primary reason for identifying high-priority wells is to forecast the financial requirements for POSGCD GWAP. The purpose of GWAP is to provide technical and/or financial assistance to well owners to help prevent the loss of water supply in wells caused by regional water level declines for wells that met the GWAP eligibility criteria. Since 2020, POSGCD has lowered the pump in 137 wells. One-hundred-seventeen of the 137 GWAPs are screened in the Carrizo Aquifer. Prior to GWAP-related field investigations, POSGCD estimates that about 55% to 65% of the GWAP wells did not have pump depth information in their database. Moreover, POSGCD does not have the pump setting for about 78% of the 4,928 exempt wells eligible for GWAP and about 50% of the 229 permitted low capacity wells. The lack of pump information for most of the eligible wells introduces a large amount of uncertainty in predicting the number of wells that will require GWAP assistance in the future.

To help address the problems associated with the missing pump settings for most of the eligible GWAP wells, the report develops and implements a method of analysis for estimating the number of wells without pump setting that would likely be identified as a high-priority well if the pump setting was known. The end-result of application of the analysis method is an estimate of the number of wells that are designated as moderate-priority wells. The report identifies a total of 60 high-priority wells and 13 moderate priority wells. The distribution of these two well groupings among the aquifer type is listed in Table E-1.

The assessment of high-priority and moderate-priority wells is highly dependent on the well construction information and on predictive groundwater modeling. The modeling relies on assumptions regarding well data, future pumping scenarios and the accuracy of historical pumping values. Since these assumptions may not always be valid, some wells that are designated as high-priority or moderate-priority may not require assistance within the next 10 years. Therefore, future GANA reports would benefit from POSGCD efforts to develop accurate model predictions and to maintain a comprehensive and accurate well database. Among the well data that will be highly beneficial to POSGCD management of groundwater resources is to measure water levels in the wells annually. This

data will directly help with evaluating compliance with POSGCD Desired Future Conditions and Protective Drawdown Limits and with the development of POSGCD operational groundwater model.

Table E-1. Distribution of High-Priority and Moderate-Priority wells by Aquifer

Aquifer	Number of Wells		
	High-Priority	Moderate-Priority	Total
Sparta	0	0	0
Queen City	2	0	2
Carrizo	15	13	28
Calvert Bluff	16	0	16
Simsboro	25	0	25
Hooper	2	0	2
TOTAL	60	13	73

Study Limitations

The findings contained in this report represent INTERA's professional opinion arrived at in accordance with applicable professional standards and based upon analysis of information available at the time the report was produced. The report was prepared at the request of the Post Oak Savannah Groundwater Conservation District (POSGCD) to support on-going assessment of the District's aquifers, groundwater resources, and management policies. This report is a technical analysis and may or may not be partially or wholly consistent with the POSGCD Board's policies or current thinking. Because groundwater management is an adaptive process, updates and changes to the report findings may be appropriate as conditions change and new information becomes available.

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ACRONYMS AND ABBREVIATIONS

%	percent
AFY	acre-feet per year
BVGCD	Brazos Valley Groundwater Conservation District
DEM	Digital Elevation Model
DFCs	Desired Future Conditions
ft	feet
GAM	groundwater availability models
GANA	Groundwater Assistance Program Annual Needs Assessment for 2020
GMA	Groundwater Management Area
gpm	gallons per minute
GWAP	Groundwater Assistance Program
ID	identification
NED	National Elevation Dataset
LPGCD	Lost Pines Groundwater Conservation District
POSGCD	Post Oak Savannah Groundwater Conservation District
PS	Pumping Scenario
TWDB	Texas Water Development Board

1.0 INTRODUCTION

This report comprises the Post Oak Savannah Groundwater Conservation District (POSGCD, or “District”) Groundwater Assistance Program (GWAP) Annual Needs Assessment for 2024, referred to herein as the GANA. According to the POSGCD GWAP documentation (POSGCD, 2020), the GANA:

“Shall identify high-priority wells that are projected to experience water level declines below the pump within the next 10 years. The projections will be based on an integration of two sources of information. One source will be water level predictions from the GAM. The other source will be adjustments to GAM model predictions based on potential biases in the GAM simulations.”

This report documents the process used to identify high-priority wells and provides a discussion of the tools and assumptions used to make this assessment as well as prioritize the wells based upon their need for assistance over the next 10 years. Finally, the report reviews GANA findings and makes recommendations for improving both the GWAP and the GANA to achieve District goals.

1.1 GWAP Background

The GWAP was created to assist owners of exempted and low-capacity permitted wells (typically domestic & livestock) whose water levels are projected to decline below the pump from regional groundwater production in Groundwater Management Area (GMA) 12 over the course of the next decade. The GWAP is a proactive program meant to identify high-priority wells in the District projected to experience water level declines below their pump during typical operations from groundwater production in the District and GMA 12. A second objective is to provide technical and/or financial assistance to well owners to help prevent the loss of water supply in high-priority wells. While meant to be proactive, assistance under GWAP may include temporarily restoring a water supply to those well owners should a situation arise where the water level in a well has dropped below the pump before corrective action has taken place.

The following sections describe the methodology used to identify priority wells that should be investigated by POSGCD. The District Water Resource Management Specialist has the primary responsibility of recommending appropriate actions to be taken.

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2.0 DATA SOURCES SUPPORTING THE ASSESSMENT

There are several types of data required to perform the GANA. These data include information regarding exempt and permitted POSGCD wells, monitoring well data from the POSGCD Monitoring Well Network, and future predicted aquifer water levels using the groundwater availability models (GAMs) used by the POSGCD to simulate Desired Future Conditions (DFCs) in the relevant POSGCD aquifers. Each of these data sources will be described in the following subsections of this report.

2.1 Eligible Wells

According to the POSGCD GWAP documentation (POSGCD, 2020), to be eligible for assistance in the GWAP, a well must meet the following criteria:

1. Located in Milam or Burleson counties
2. Functional and registered with the District
3. Accessible for monitoring water levels by POSGCD
4. Owner must agree to allow monitoring by POSGCD
5. Either a low-capacity permitted well that produces less than 50 gallons per minute (gpm) OR an exempt well used for domestic and/or livestock use as defined in the District's Rules
6. Completed in any aquifer in the District other than the Trinity Aquifer, Yegua-Jackson Aquifer and river alluvial or terraced formations
7. May not be covered by a mitigation agreement included in a permit issued by the District or required by the State of Texas

POSGCD maintains an online database of all wells registered in the District (<https://posgcd.halff.com>). The HALFF database was used to help identify wells eligible for assistance. Well information needed to determine wells potentially eligible includes whether they are exempt or non-exempt (permitted) status and, if they are permitted, whether they are incapable of producing greater than 50 gpm. Other important well attributes required are what aquifer the well is completed in and well completion details, in particular the pump depth. **Table 1** provides the total number of exempt wells in the POSGCD HALFF database completed in GWAP-eligible aquifers, along with an accounting of how many of those wells have pump depth in the HALFF database. **Appendix A** provides maps of the locations of the exempt wells that are currently registered by POSGCD in the aquifers relevant to this analysis. **Figure 1** shows the map of exempt well locations for the Carrizo Aquifer provided in Appendix A.

Table 1 All Exempt Wells in POSGCD in Eligible Aquifers

Aquifer	Has Pump Depth Information	No Pump Information	Total Eligible Exempt Wells
Sparta	181	971	1152
Queen City	190	996	1186
Carrizo	236	623	859
Calvert Bluff	238	658	896
Simsboro	194	547	741
Hooper	25	69	94
TOTAL	1064	3864	4928

For this report, a well is considered a low-capacity, permitted well (eligibility requirement #5) if the maximum production pumping capacity of the permitted well in the HALFF database is 50 gpm or less and the well is completed in an eligible aquifer (requirement #6). If the maximum production capacity of the well is not listed in the database, a well would also be included if the average annual permitted production is less than 81 acre-feet, which is equivalent to pumping continuously at a rate of 50 gpm for an entire year. **Table 2** provides the total number of permitted wells that meet requirements #5 and #6, along with an accounting of how many of those wells have pump depth in the HALFF database. **Table 3** provides the total number of exempt and permitted wells eligible for the GWAP and summarized by aquifer. **Appendix B** shows the locations of the low-capacity permitted wells that are currently registered by POSGCD. **Figure 2** shows the map of low-capacity permitted well locations for the Carrizo Aquifer provided in Appendix B.

Table 2 Permitted wells in POSGCD with an average annual permitted production of 50 gallons per minute or less in eligible aquifers

Aquifer	Has Pump Depth Information	No Pump Depth Information	Total Eligible Permitted (Low Capacity) Wells
Sparta	17	34	51
Queen City	15	25	40
Carrizo	32	22	54
Calvert Bluff	32	24	56
Simsboro	19	17	36
Hooper	0	4	4
TOTAL	115	126	241

Table 3 Number of exempt and permitted wells eligible for the GWAP by aquifer

Aquifer	Total Eligible Exempt Wells	Total Eligible Permitted Wells	Total Eligible Wells
Sparta	198	1005	1203
Queen City	193	1021	1214
Carrizo	177	645	822
Calvert Bluff	257	682	939
Simsboro	211	564	775
Hooper	24	73	97
TOTAL	1060	3990	5050

There are a total of 5,050 eligible wells in the POSGCD database. Of those 5,050 eligible, 4,928 wells are exempt wells and 241 are low-capacity permitted wells meeting the capacity requirement for eligibility. The depth to the well pump is only known for 22 percent (%) of the exempt wells. The depth to the well pump is known for 48% of the low-capacity permitted wells.

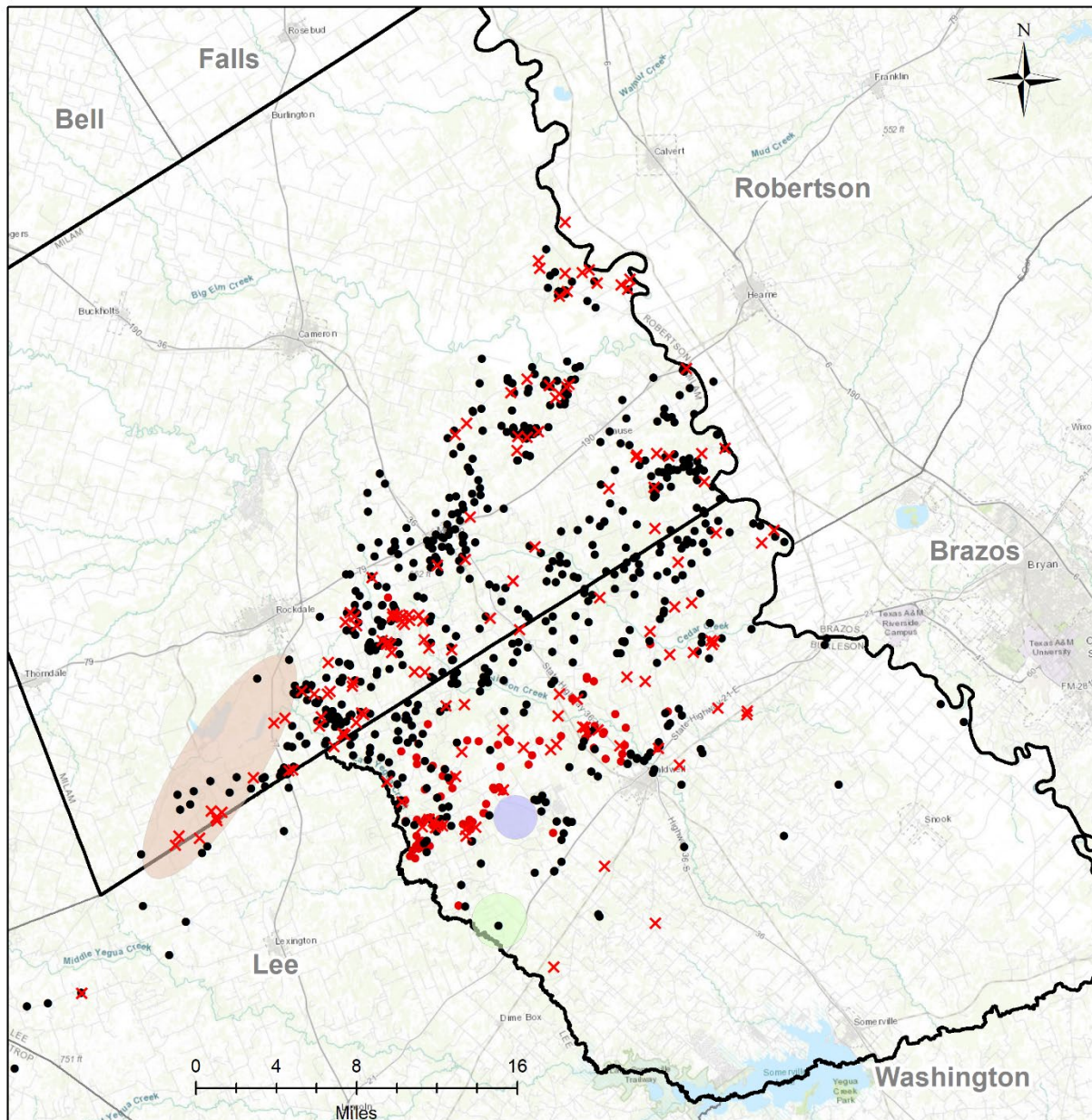
As will be discussed, if an eligible well is found to be a high-priority well, the POSGCD will attempt to characterize the well completion details through cooperation with the well owner to make it eligible for corrective action. Throughout the analysis, individual wells will be referenced by their POSGCD

identification (ID). Any well owner can obtain the POSGCD ID for a well by contacting the POSGCD office in Milano, Texas.

2.2 Monitoring Network

One of the eligibility requirements for well owners to receive assistance from the GWAP is to agree to allow POSGCD to monitor the water level and or water quality in their well. Depending on its location, the POSGCD may decide to incorporate the well into the POSGCD network of groundwater monitoring wells. **Figure 3** shows the locations and aquifer assignments for 436 wells currently in the POSGCD network. The POSGCD uses measured water levels from the POSGCD monitoring wells to evaluate the aquifer conditions and to improve its understanding of the groundwater system. One of the evaluations performed by POSGCD is to determine whether or not the drawdowns determined from the aquifer water levels are in compliance with the drawdown-based DFCs that POSGCD has for its aquifers. Currently, the DFCs are expressed as a maximum amount of water level change that can occur over a 60-year period. The POSGCD also uses the measure water levels to update and improve the capability of groundwater models to predict the impact of future pumping on water level change.

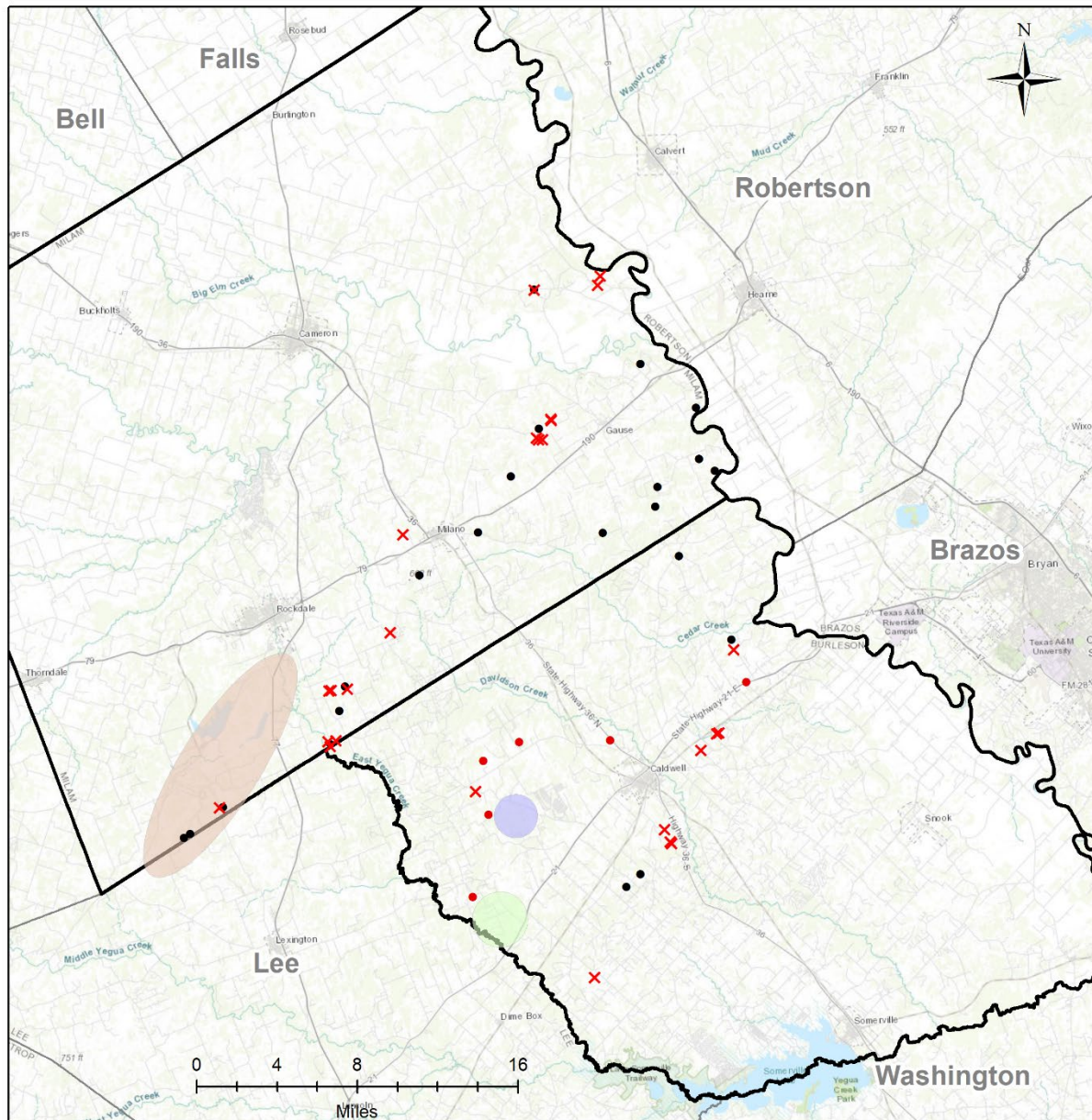
POSGCD Monitoring Well network consists of the 436 wells shown in **Figure 3**.



Carrizo

- | | | | |
|---|------------------------|---|-----------------------------------|
|  | 130 Well Field |  | Exempt with Pump Depth (n=151) |
|  | SLR Well Field |  | Exempt without Pump Depth (n=623) |
|  | Vista Ridge Well Field |  | Exempt GWAP (n=85) |
|  | POSGCD Boundary | | |
|  | County Line | | |

Figure 1 Locations of eligible exempt wells completed in the Carrizo Aquifer



Carrizo

- | | |
|--|--|
|  130 Well Field |  Low Capacity with Pump Depth (n=26) |
|  SLR Well Field |  Low Capacity without Pump Depth (n=22) |
|  Vista Ridge Well Field |  Low Capacity GWAP (n=6) |
|  POSGCD Boundary | |
|  County Line | |

Figure 2 Locations of eligible low-capacity permitted wells completed in the Carrizo Aquifer

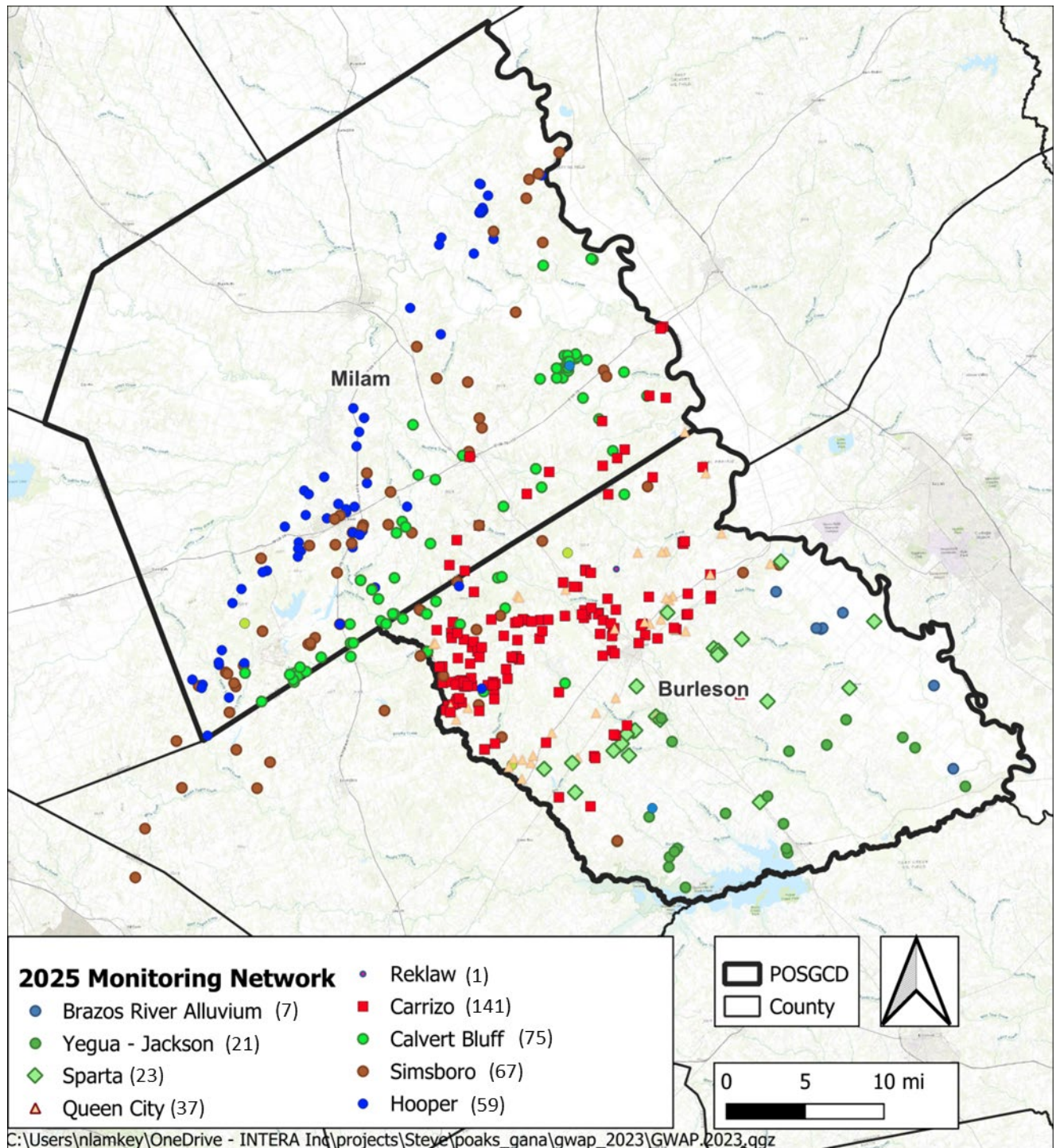


Figure 3 Monitoring wells in POSGCD Groundwater Monitoring Network

2.3 Modeled Groundwater Water Levels

As part of the joint planning process in GMA 12, POSGCD uses the updated Texas Water Development Board (TWDB) Central Queen City, Sparta and Carrizo-Wilcox GAM to simulate changes in water levels in

response to future pumping. The updated Queen City, Central Sparta and Carrizo-Wilcox GAM is accepted by the TWDB as the best available science for the region (Young and others, 2018). In 2020, the GMA 12 consultants agreed to incorporate new aquifer test data in the Simsboro in the vicinity of the Vista Ridge Project to improve model parameters in that area. The revised GAM was documented (Young and others, 2020), reviewed by the TWDB, and has been developed with stakeholder review and comment.

In 2020, POSGCD had collected measured water levels for the first year of pumping from the Vista Ridge monitoring project. Monitoring wells are shown in Figure 3. The additional data warranted another update to the Central Queen City, Sparta and Carrizo-Wilcox GAM which used the monitoring well data from December 2019 through July 2021. The parameter estimation code PEST++ IES (iterative ensemble smoother) (White and others, 2020) was used to improve the GAM so that it would be a better predictor of water level change caused by pumping from the Vista Ridge wells and other wells in POSGCD.

Table 4 Groundwater Availability Models used by POSGCD to simulate impacts of pumping on water levels as part of the regional planning process

Groundwater Availability Model	Aquifers	Reference
Central Sparta, Queen City, and Carrizo-Wilcox Aquifers	Sparta, Queen City, Calvert Bluff, Simsboro, Hooper	Young and others (2018)
GMA-12 Update to the Central Sparta, Queen City, and Carrizo-Wilcox Aquifers	Sparta, Queen City, Calvert Bluff, Simsboro, Hooper	Young and others (2020)
GMA-12 Update to the update of Central Sparta, Queen City, and Carrizo-Wilcox Aquifers	Sparta, Queen City, Calvert Bluff, Simsboro, Hooper	Young and others (2021)

The POSGCD GWAP documentation (POSGCD, 2021) states that GAMs or modified GAMs will be used to perform GANA annual assessments and that the GAM simulations will include the most recent information on projected pumping in GMA 12. This study used the interim version of POSGCD Operational Model called OPMAN. OPMAN is being developed by POSGCD as part of a project that is co-funded by the Department of Reclamation by updating a portion of the GAM for the central portion of the Sparta/Queen City/Carrizo-Wilcox aquifer that includes Milam and Burleson counties. The well file used with OPMAN is a modified version of the well file for Run PS-19 was used by the GMA 12 to help develop and to justify the Desired Future Conditions (DFCs) that are being considered for the fourth round joint planning. For this study, the pumping rates in PS-19 were modified to account for any anticipated changes in pumping associated with permits in POSGCD, Lost Pines GCD (LPGCD) and the Brazos Valley GCD (BVGCD). **Figure 4** shows a time series of the GAM pumping rates by aquifer in the Modified Run PS-19 in the POSGCD. **Table 5** lists the pumping rates in POSCD by aquifer included in Modified Run PS-19. **Figure 5** and **Figure 6** provide time series plots of the pumping rates by aquifer in the Modified Run PS-19 in Lost Pines Groundwater Conservation District (LPGCD) and Brazos Valley Groundwater Conservation District (BVGCD), respectively.

Table 5 Pumping rates in POSGCD aquifers for Opman Model

Aquifer	Pumping Rate (Acre-feet per year) for OPMAN Model							
	2025	2027	2028	2030	2035	2045	2055	2065
Sparta	2,692	2,748	2,776	2,832	2,976	3,272	3,584	3,916
Queen City	4,022	4,137	4,195	4,314	4,626	5,317	6,115	7,044
Carrizo	17,021	17,062	17,083	17,125	17,232	17,453	17,685	17,930
Calvert Bluff	2,354	2,420	2,453	2,960	3,138	3,533	3,986	4,512
Simsboro	37,681	39,536	40,463	65,550	70,191	78,586	78,902	79,241
Hooper	1,509	1,537	1,551	1,579	1,648	1,788	1,928	2,067

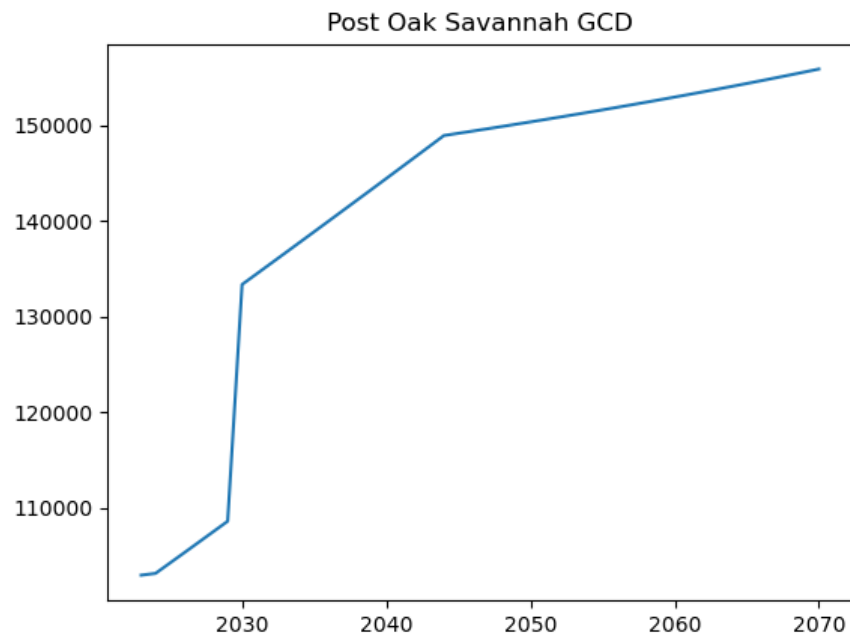


Figure 4 POSGCD pumping rates from the year 2025 to 2070 used in GANA Simulations in 2025

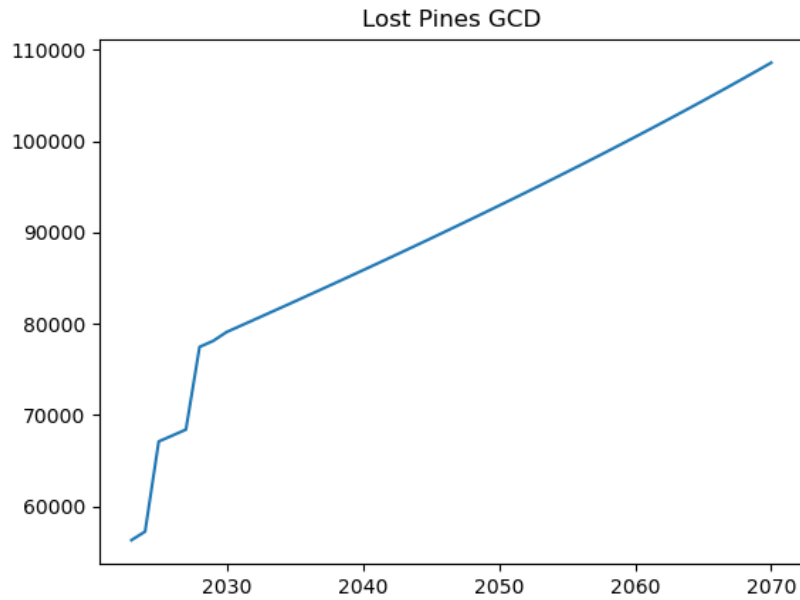


Figure 5 LPGCD pumping rates from the year 2025 to 2070 used in GANA Simulations in 2025

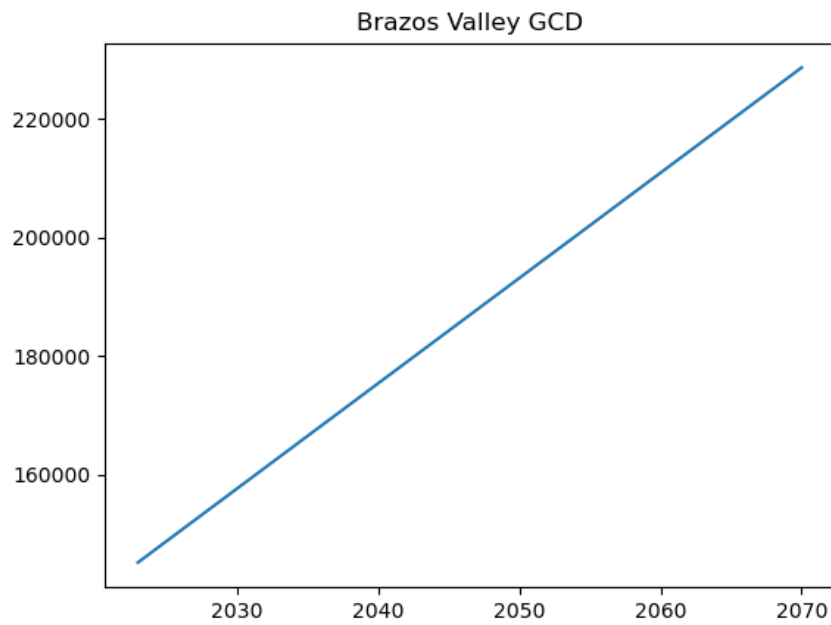


Figure 6 BVGCD pumping rates from the year 2025 to 2070 used in GANA Simulations in 2025

3.0 GWAP ASSESSMENT

3.1 Priority Assessment Methodology

The primary objective of the GWAP assessment is to estimate the number of eligible wells where the water levels will fall below the pump elevation within 10 years. The relevant time frame of interest in this year's assessment for high-priority wells is a 10-year period from December 2025 to December 2035.

The assessment uses predicted water levels from the modified PS-19 GAM simulation to predict water levels in the eligible wells. In addition to predicted water levels, the GANA must either know, or assume, the elevation of a well's pump. The pump elevation for each well is determined by subtracting the reported pump depth from the surface elevation or an elevation determined from the 10-meter resolution National Elevation Dataset (NED) Digital Elevation Model (DEM). We have assumed that the pump cannot properly operate if the regional water level decline drops the water level in the pump to less than 15 feet above the elevation of the pump. For the GANA assessment, the assumption is made that in order for the well to pump, the water column above the pump needs to be at least 15 ft during non-pumping conditions. If the simulated water level is less than 15 feet above the pump elevation, the well is considered a high-priority well.

Because the majority of eligible wells do not have pump depth information on record in the POSGCD database, a second analysis is performed to identify wells that likely would have been identified as high-priority wells if the pump elevations of the wells were known. One reason for conducting the second analysis is to estimate how many of the wells with no pump elevation information may need corrective action.

3.2 Results

3.2.1 Simulated Drawdown in Relevant Aquifers

To help identify high-priority wells and the time frame these wells may need corrective action, we have analyzed drawdown over two different time periods. The first is a three-year period from 2025 through 2028. The second is a ten-year period from 2025 through 2035. The ten-year period is the time frame recognized in the GWAP for identifying high-priority wells. The reason we also looked at a three-year period is because we noticed that the drawdown cones propagated quickly and that it may be important to prioritize the sequence in which the well investigations are conducted.

Figure 7 through **Figure 12** show the drawdown that occurs between 2025 and 2028 and 2025 and 2035 as simulated by the Central Sparta/Queen City/Carrizo-Wilcox GAM based on pumping in modified PS-19 for all qualifying aquifers. These figures identify which wells have pump information in the POSGCD database and which ones do not. For those eligible wells that have pump information, the figures identify if the predicted water level at the well is greater than or less than 15 feet above the pump at the period of interest (2028 or 2035). The figures also identify wells where the simulated water levels in 2025 are less than 15 feet above the pump elevation. Wells that have water levels below the pump in 2025 are not necessarily considered as high-priority wells because, if both the pump data and the

simulated water levels were correct, the well would have stopped operating properly in 2025 and the well owner would have reported the problem to POSGCD or have lowered the pump. For this report, wells with water levels less than 15 feet above the pump elevation in 2025 are identified as wells of concern.

Table 6 lists the high-priority wells associated with 2028 and 2035, the wells of concern, and the number of GWAP wells by aquifer. GWAP wells are wells that POSGCD has lowered the pump setting in a well to accommodate the regional decline in the water level. Appendix F lists the GWAP wells and provides information on the vertical distance that a pump was lower in a well. Figures 11 through 16 shows the locations of the GWAP wells by aquifer.

Table 6 Wells Identified as High-Priority Wells and Wells of Concerns

Aquifer	High-Priority wells (simulated water level is < 15 ft above pump setting)		Wells of Concern (simulated water level is < 15 ft above pump setting in 2025)	GWAP Wells
	2028	2035		
Sparta	0	0	15	0
Queen City	0	2	13	12
Carrizo	6	15	71	92
Calvert Bluff	3	16	52	13
Simsboro	8	25	144	2
Hooper	1	2	5	1
Total	18	60	300	120

Several key observations are organized by aquifer below.

- **Sparta Aquifer** - Figure 7 shows the drawdown contours for the Sparta Aquifer from 2025 through 2028 and for 2025 through 2035. Maximum drawdowns contours for 2028 and 2035 are 30 ft and 40 ft, respectively. For the years 2028 and 2035, there are zero high-priority wells identified. Currently, there are no GWAP wells located in the Sparta Aquifer.
- **Queen City Aquifer** - Figure 8 shows the drawdown contours for the Queen City Aquifer from 2025 through 2028 and for 2025 through 2035. Maximum drawdown contours for 2028 and 2035 are 20 ft and 30 ft, respectively. For the years 2028 and 2035, there are two high-priority wells in 2035. Currently, there are 12 GWAP wells located in the Queen City Aquifer.
- **Carrizo Aquifer** - Figure 9 shows the drawdown contours for the Carrizo Aquifer from 2025 through 2028 and for 2025 through 2035. The maximum drawdown for the years 2028 and 2035 are greater than 370 feet. In the 2025 and 2035 figures, six and 15 high-priority wells are identified, respectively. Currently, there are 92 GWAP wells located in the Carrizo Aquifer. The drawdown contours in 2025 and in 2035 illustrate the significant impact that Vista Ridge pumping has on regional water levels. The largest drawdown occurs in the vicinity of the Vista Ridge well field and the drawdown values decrease radially outward towards Robertson and Brazos counties.

- Calvert Bluff Aquifer - Figure 10 shows the drawdown contours for the Calvert Bluff Aquifer from 2025 through 2028 and for 2025 through 2035. Maximum drawdown contours for 2028 and 2035 are 160 feet and 190 feet, respectively. For the years 2025 and 2035, there are three and 16 high-priority wells, respectively. Currently, there are 13 GWAP wells located in the Calvert Bluff Aquifer. The drawdown contours in 2025 and in 2035 illustrate the significant impact that Vista Ridge pumping has on regional water levels. The largest drawdown occurs in the vicinity of the Vista Ridge well field and the drawdown values decrease radially outward towards Robertson and Brazos counties
- Simsboro Aquifer - Figure 11 shows the drawdown contours for the Simsboro Aquifer from 2025 through 2028 and for 2025 through 2035. Maximum drawdown contours for 2025 and 2035 are 270 and 350 feet, respectively. For the 2025 and 2035 years, there are eight and 25 high-priority wells, respectively. Currently, there are two GWAP wells located in the Simsboro Aquifer. The drawdown contours in 2025 and in 2035 illustrate the significant impact that Vista Ridge pumping has on regional water levels. The largest drawdown occurs in the vicinity of the Vista Ridge well field and the drawdown values decrease radially outward towards Robertson and Brazos counties.
- Hooper Aquifer - Figure 12 shows the drawdown contours for the Hooper Aquifer from 2025 through 2028 and for 2025 through 2035. Maximum drawdown contours for 2025 and 2035 are 150 and 230 feet, respectively. For the years 2025 and 2035, there are one and two high-priority wells, respectively. Currently, there are one GWAP well located in the Hooper Aquifer. The drawdown contours in 2025 and in 2035 show that Vista Ridge pumping has a substantial impact on regional water levels. The largest drawdown is located on the East side of Burleson County.

Appendix C lists the 60 wells identified as high-priority wells and the 300 wells of concern that have simulated water levels in 2025 that are less than 15 feet above the pump elevation.

Appendix D shows the hydrographs of the simulated water levels for the 60 high-priority wells.

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2020

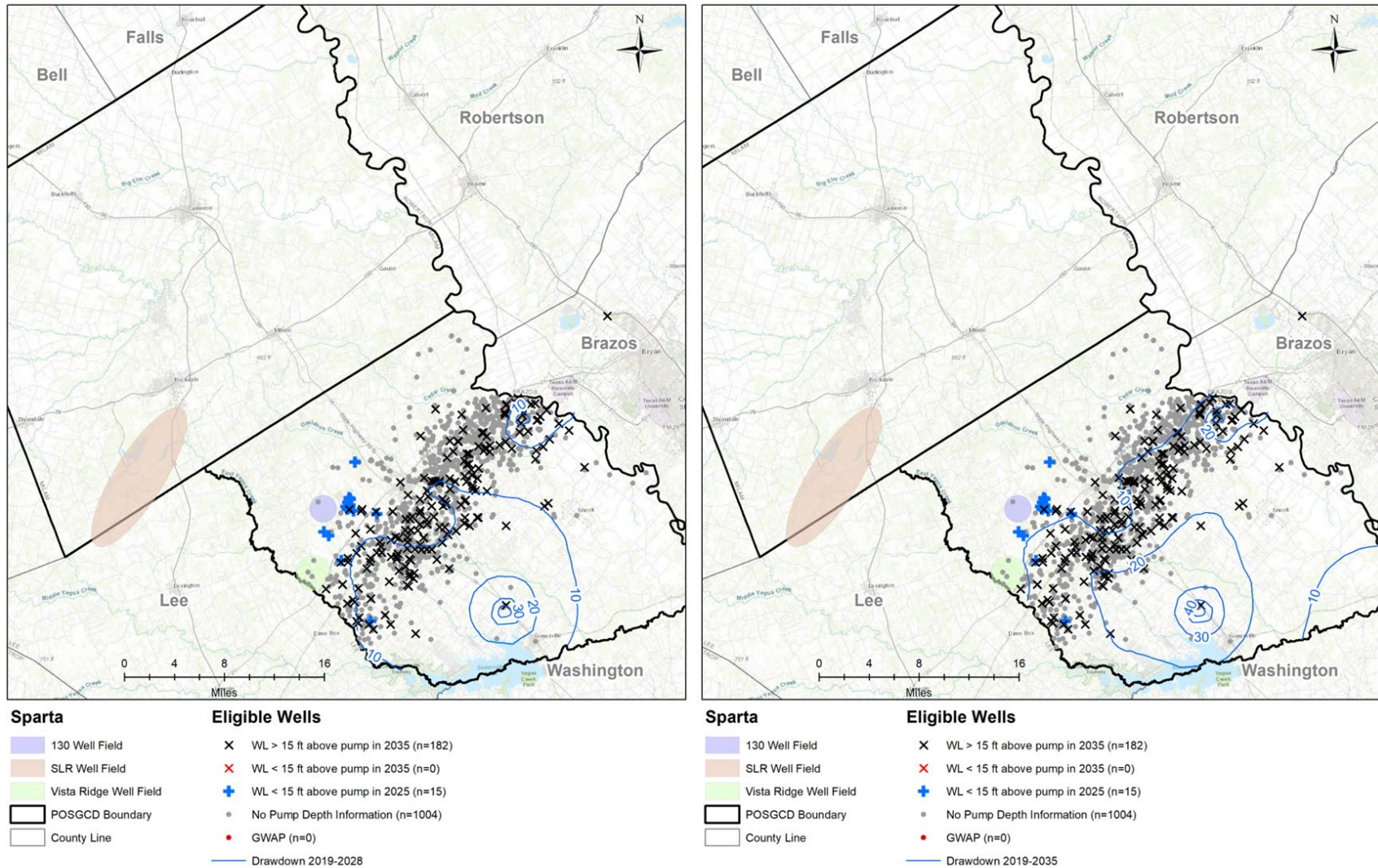


Figure 7 Contours of simulated drawdown from 2025 to 2028(left) and from 2025 to 2035 (right) in the Sparta Aquifer

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2020

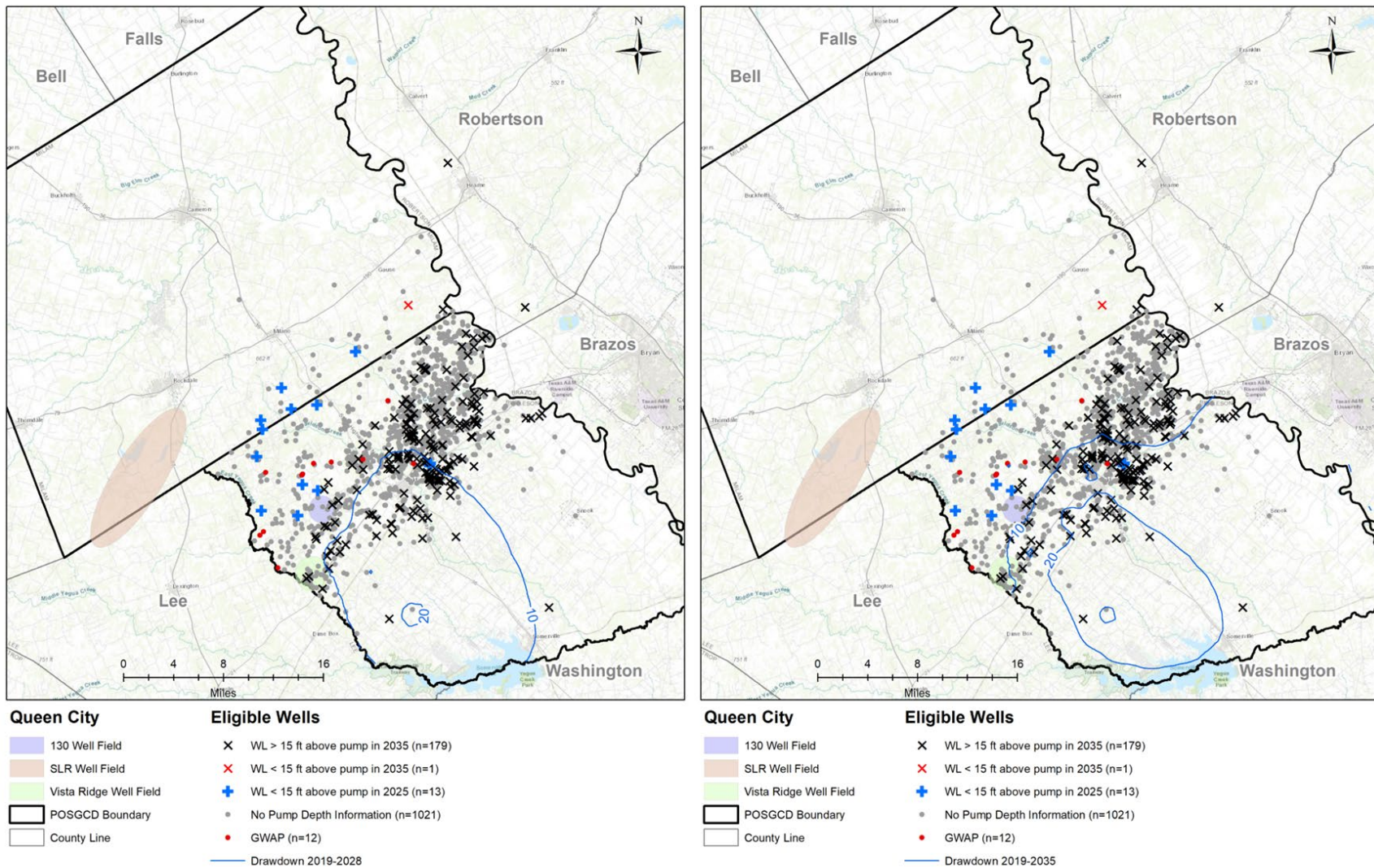


Figure 8 Contours of simulated drawdown from 2025 to 2028(left) and from 2025 to 2035 (right) in the Queen City Aquifer

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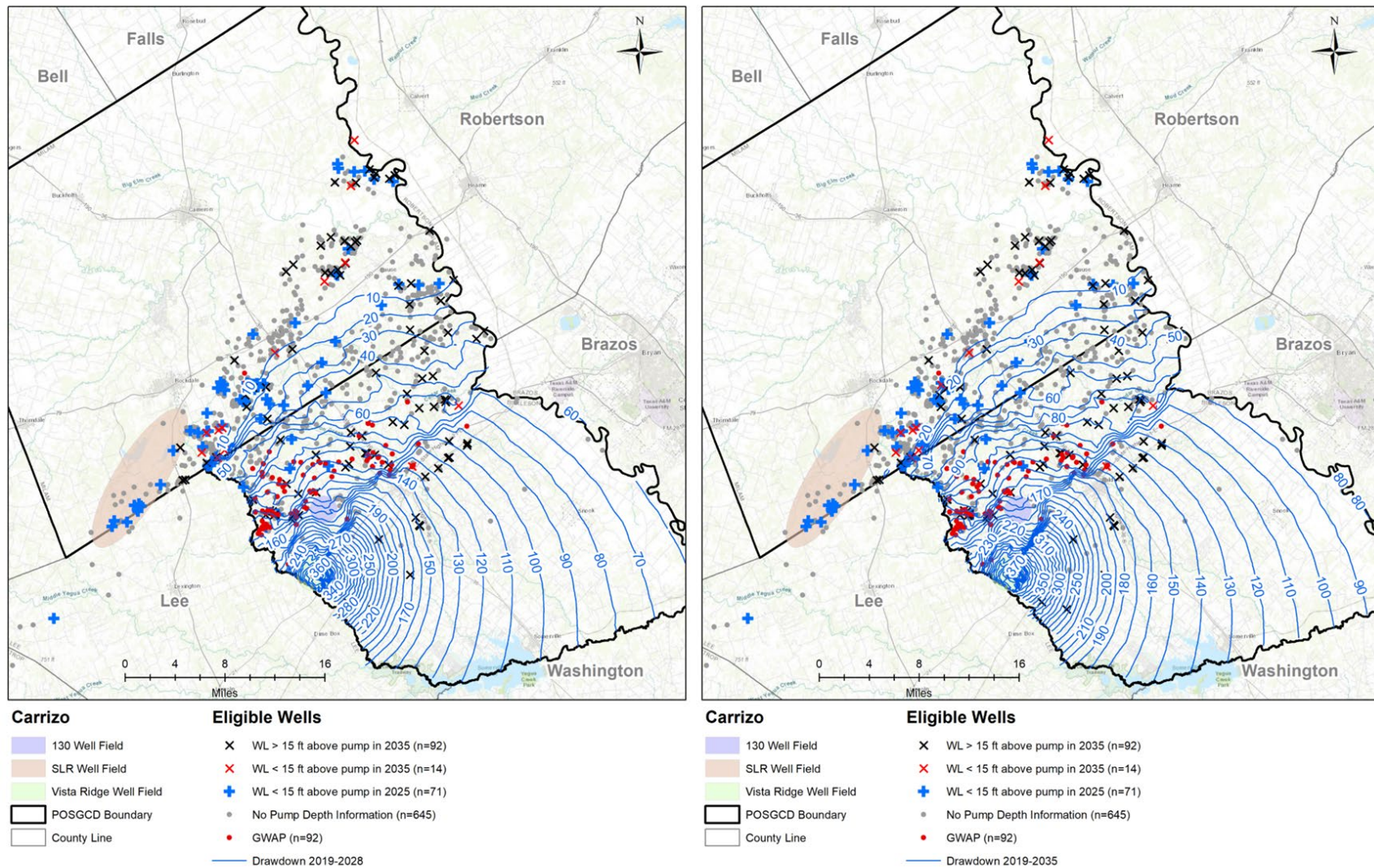


Figure 9 Contours of simulated drawdown from 2025 to 2028(left) and from 2025 to 2035 (right) in the Carrizo Aquifer

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2020

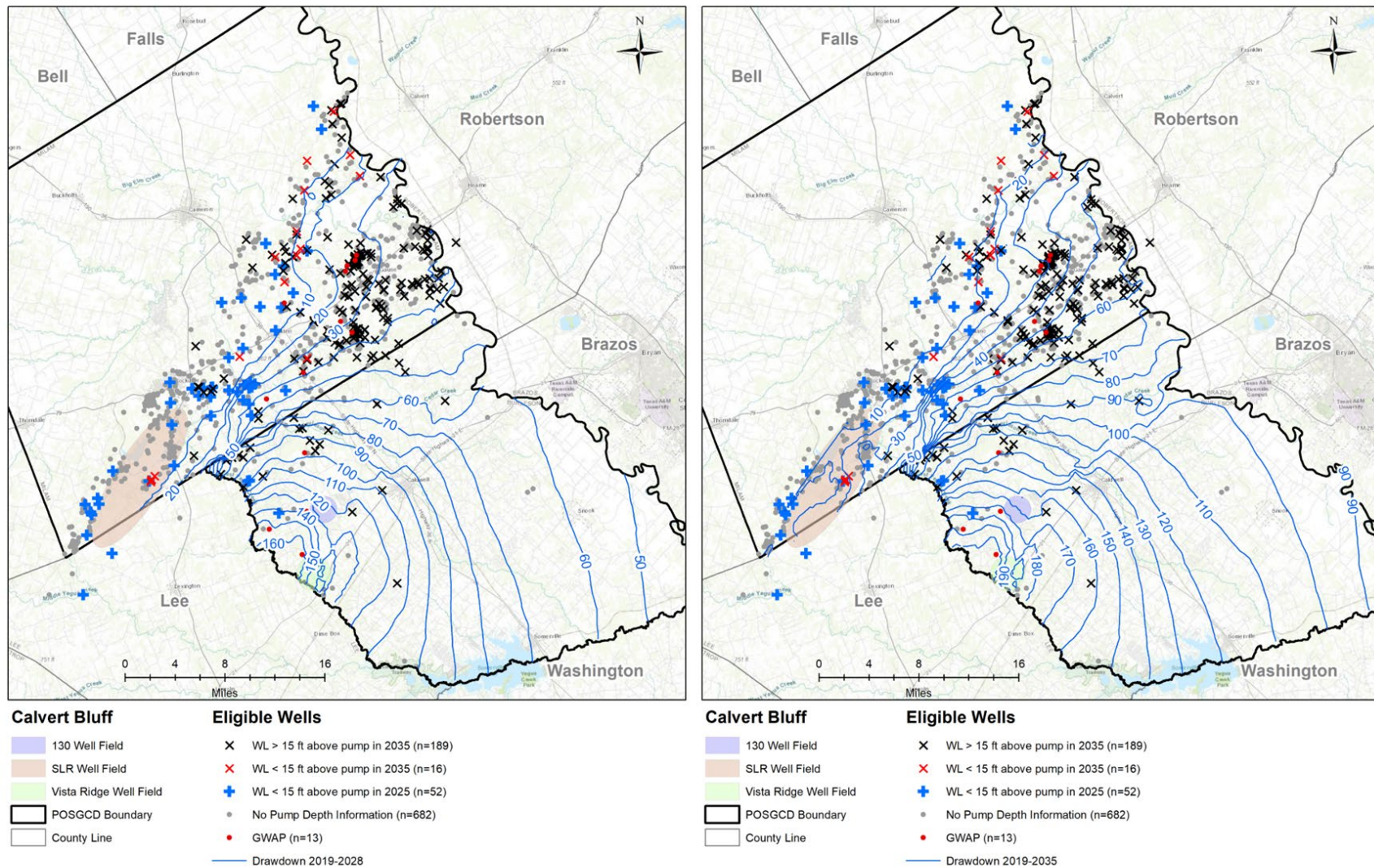


Figure 10 Contours of simulated drawdown from 2025 to 2028(left) and from 2025 to 2035 (right) in the Calvert Bluff Aquifer

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2020

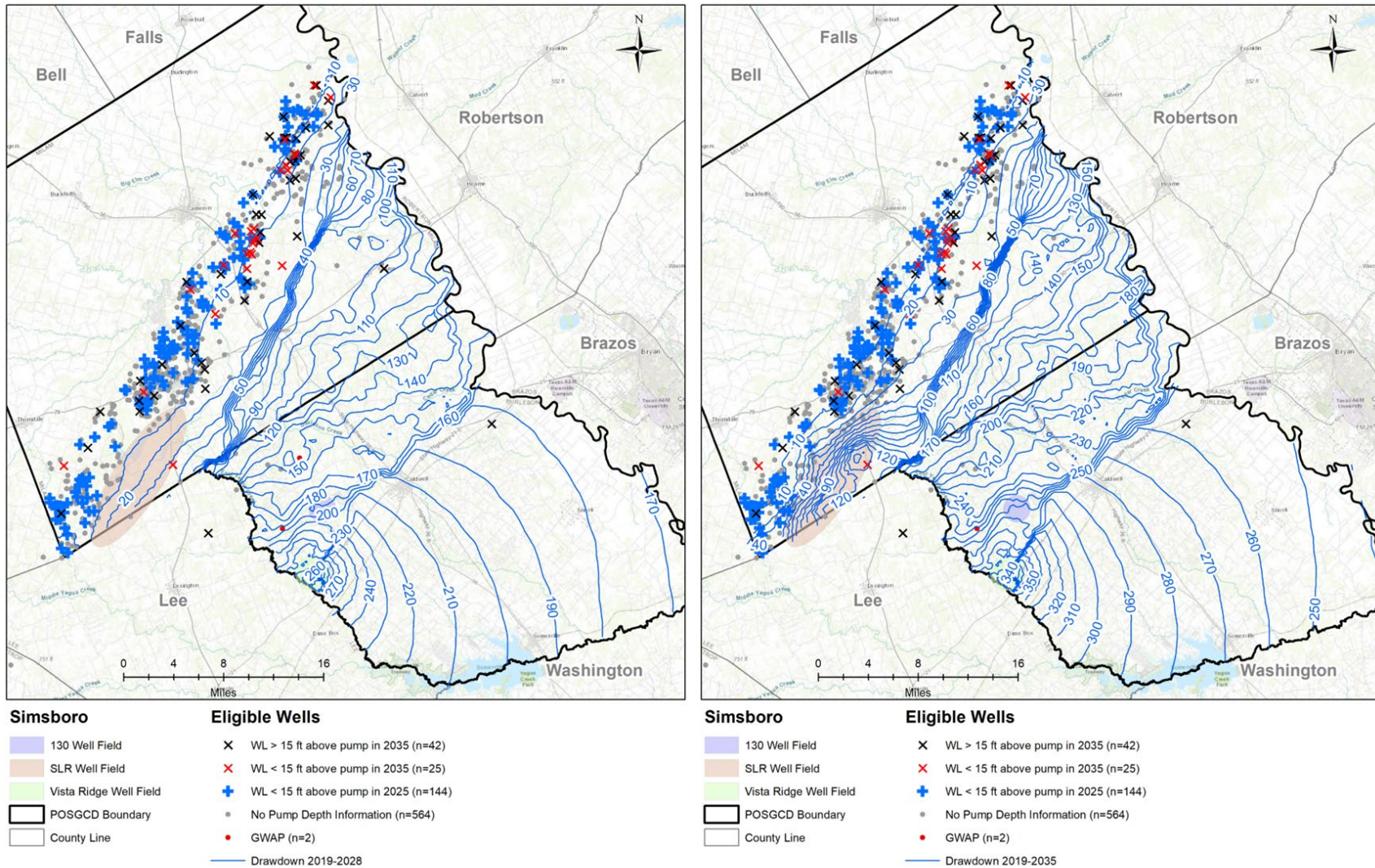


Figure 11 Contours of simulated drawdown from 2025 to 2028(left) and from 2025 to 2035 (right) in the Simsboro Aquifer

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2020

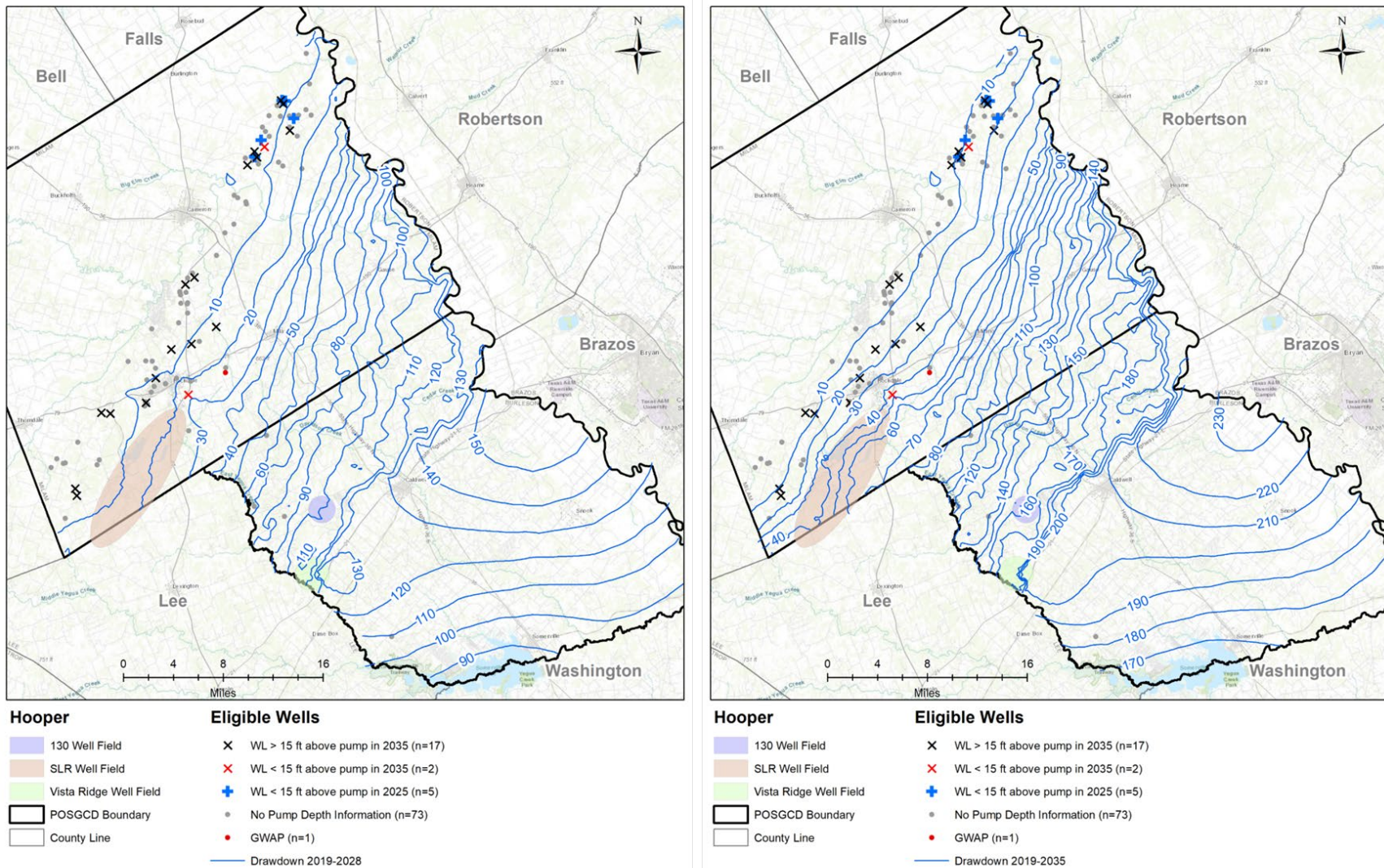


Figure 12 Contours of simulated drawdown from 2025 to 2028(left) and from 2025 to 2035 (right) in the Hooper Aquifer

3.2.2 High-Priority Wells Based Upon Known Pump Elevations

Changes in water levels from 2025 to 2028 and from 2025 to 2035 were simulated for 1179 eligible wells; either exempt wells (n=1064) or low-capacity permitted wells (n=115) that have a pump elevation in the POSGCD well database. A well is considered a high-priority well if the following two conditions are met: (1) the simulated water level is greater than 15 ft above the pump elevation in 2025, and (2) the simulated water level is less than 15 ft above the pump elevation in 2035. The information provided in Figures 7 through 12 shows the location of 60 eligible wells that are classified as high-priority. **Table 6** provides the statistics for the elevation difference between the simulated water level and the pump elevation for 2028 and 2035.

Table 6 Simulated water level elevation relative to pump elevation in eligible wells for 2025 through 2028 and for 2025 through 2036. .

Aquifer	Eligible Wells w/Pump Info	Year	Simulated Water Level Elevation Relative to Pump Elevation									
			<15 ft above pump	<10 ft above pump	<5 ft above pump	< 2 ft above pump	> 2 ft below pump	> 5 ft below pump	>10 ft below pump	>25 ft below pump	>50 ft below pump	> 100 ft below pump
Sparta	197	2028	0	0	0	0	0	0	0	0	0	0
		2035	0	0	0	0	0	0	0	0	0	0
Queen City	205	2028	0	0	0	0	0	0	0	0	0	0
		2035	2	1	0	0	0	0	0	0	0	0
Carrizo	268	2028	6	1	1	0	0	0	0	0	0	0
		2035	15	12	7	7	7	4	3	0	0	0
Calvert Bluff	270	2028	3	0	0	0	0	0	0	0	0	0
		2035	16	12	9	5	2	2	0	0	0	0
Simsboro	213	2028	8	5	1	1	0	0	0	0	0	0
		2035	25	22	17	15	14	14	14	6	1	0
Hooper	25	2028	1	1	1	1	0	0	0	0	0	0
		2035	2	1	1	1	1	1	1	1	0	0

3.2.3 Treatment of Wells without Pump Information in the Carrizo and Calvert Bluff

Based on the review of the well data in Figures 7 through 12 some of the Carrizo wells without pump information are located either near high-priority or GWAP wells and may have been identified as high-priority wells if their pump elevation were known. The estimated number of Carrizo wells without pump information that may have been identified as high-priority wells if their pump setting was known is 12. The calculations to support the estimate of 12 wells is provided in Table 7. The calculated number of moderate wells is based on the assumption that for 35% of the GWAP wells for all aquifers, POSGCD had information on the pump elevation prior to performing corrective action on the well.

The well data in Table 7 was determined using a three step process, which is described below.

Step 1 – Identify the drawdown area that encompass high-priority and GWAP wells that are impacted by Vista Ridge Production

Carrizo:. Figure 13 shows that the area covered by the drawdown contour lines encompasses 2 high-priority wells, 91 GWAP wells, and 43 wells with more than 15 feet of water column above the pump elevation. These well numbers were used to calculate that 141 wells (see Column a in Table 7) in the area of interest have information on the pump elevation.

Step 2 -Determine percentage of wells with pump information impacted inside the drawdown area that have been affected.

Carrizo: The estimated number of wells with pump depth information is 141 (column a in Table 7). The value of 93 in column b in Table 7 was determined by adding the 2 high-priority wells to the 91 GWAP wells with pump information. The value of 66% in column C in Table 7 was determined by dividing 93 wells by 141 wells.

Step 3 – Estimate the number of wells without pump information inside a drawdown contour that would likely have been designated a high-priority well if their pump setting was known

Carrizo: The estimated number of wells without pump information is 111 (column d in Table 7) is obtained from Figure 13. The value of 73 in column e in Table 7 was determined by multiplying the column (d) by column (c). The value in column (f) was calculated by subtracting the number of GWAP wells ($93 * 0.65$) without pump information from column (e)

Table 7 Estimate of Number of Moderate-Priority Carrizo Wells that will have a water level less than 15 feet about the pump in 2035 based on location of high-priority wells and GWAP wells in 2035 shown in Figure 13

Number of Wells located in the Drawdown Area of Concern in 2035 for the Carrizo Aquifer					
(a) Wells with Pump Information	(b) Number of High-Priority Wells & GWAP Wells with Pump Info	(c) Percent of Wells with Pump Info that have been or will be impacted before 2035	(d) Wells with no Pump Info	(e) Wells with no Pump Info that became GWAP wells or will be impacted before 2035	(f) Estimated wells in column e that will be impacted between 2025 and 2035
141	93	66	111	73	13

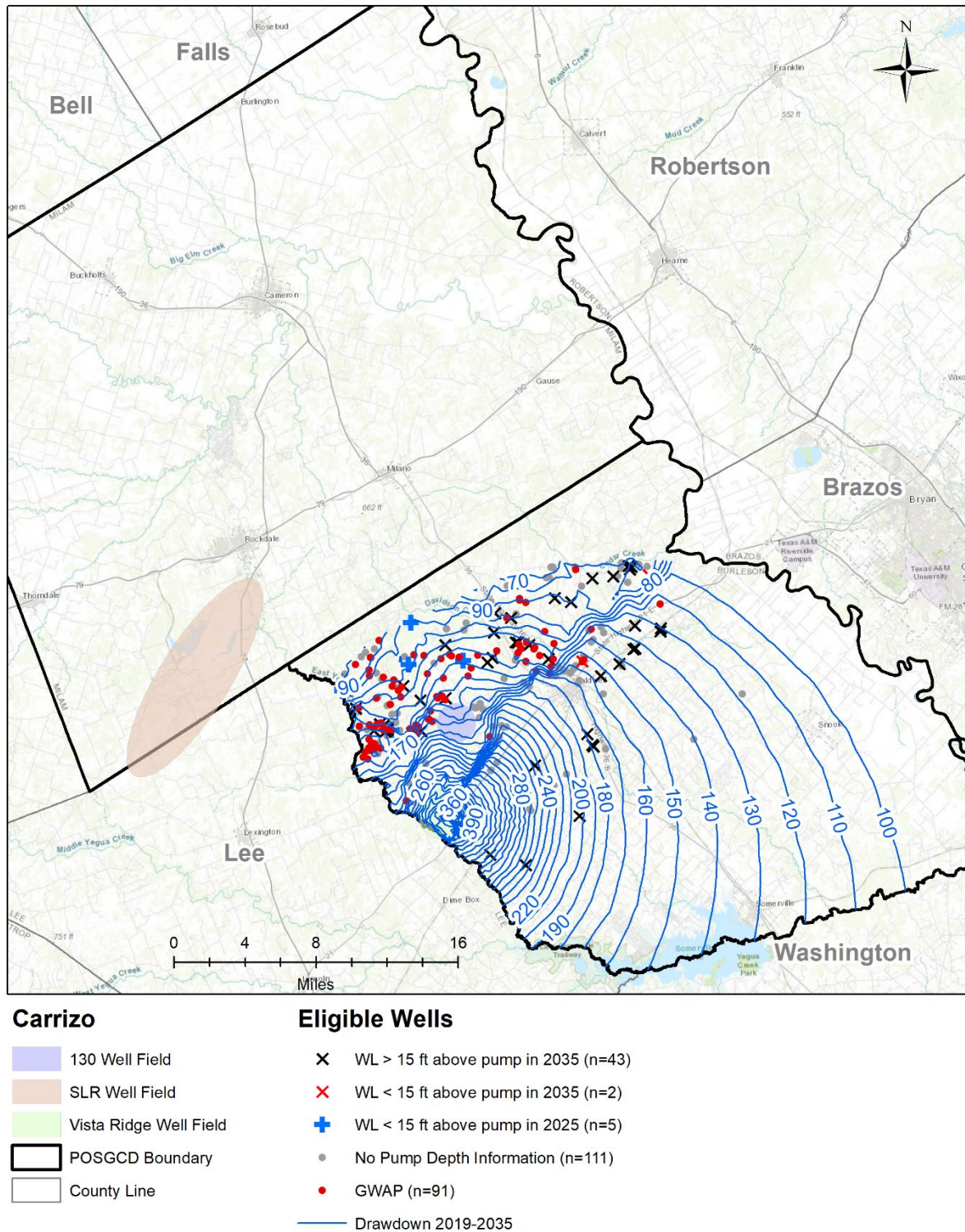


Figure 13 Drawdown in the Carrizo Aquifer greater than 100 feet from 2025 to 2035 and location of wells grouped based on predicted water level relative to pump setting.

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4.0 SUMMARY OF ANALYSES AND RECOMMENDATIONS

The GWAP assists well-owners with exempt and permitted low-capacity wells whose water levels are predicted to decline to less than 15 feet above the pump setting prior to 2035 as a result of regional groundwater production in GMA 12. The report identifies high-priority wells based on simulations of a modified pumping future pumping scenario created by GMA 12 to develop its DFCs. The high-priority classification for a well requires that the pump elevation of the well is known. For a well to be classified as a high-priority well, the following two conditions need to be met: (1) its simulated water level in 2025 is greater than 15 ft above the pump elevation, and (2) its simulated water level in 2035 is less than 15 ft above the elevation of its pump elevation. For wells without pump information, the well is designated as a moderate-priority well if there is sufficient cause to believe that the well would be classified as a high-priority well if the pump information were available.

The future water levels are generated from GAM simulations and estimates of future pumping. The incorporation of multiple sources of data and multiple analysis includes several assumptions that introduce error and uncertainty into each well evaluation. Because our analyses are predictive and therefore not certain, some wells that are designated as priority wells may not require assistance within the next 10 years .

4.1 Summary of Analyses

This section summarizes the key analysis performed and documented in this report.

- An interim version of the POSGCD Operational Model called OPMAN was used to simulate water levels in POSGCD and surrounding counties using a future pumping scenario called Modified Run PS-19. Run PS-19 was modified to account for changes in permitted production and water supply contracts that occurred between January 2022 and October 2025. The modified Run PS-19 generated drawdowns from 2025 to 2035 that can be described at follows:
 - Across most of the Sparta and Queen City aquifers, the drawdown is generally less than 30 ft with maximum drawdowns less than 50 ft.
 - In the Carrizo Aquifer, drawdown in the vicinity of the Vista Ridge well field is greater than 300 ft and decreases radially outward from the well field to about 80 ft at the Brazos County line and to 10 ft in the outcrop in Milam County
 - In the Calvert Bluff Aquifer, drawdown in the vicinity of the Vista Ridge well field is greater than 170 ft and decreases radially outward from the well field to about 100 ft at the Brazos County line and to 20 ft in the outcrop in Milam County
 - In the Simsboro Aquifer, drawdown in the vicinity of the Vista Ridge well field is greater than 350 ft and decreases radially outward from the well field to about 250 ft at the Brazos County line and to 10 ft in the outcrop in Milam County
 - In the Hooper Aquifer, the maximum drawdown is located towards the East side of Burleson County and is about 230 ft. High drawdowns are also centered near the Vista Ridge well field and is greater than 200 ft. Across most of the outcrop for the Hooper Aquifer in Milam County, the drawdowns are less than 30 ft.
- For all eligible wells with information about the pump settings, a comparison was made between the simulated water level in the well and the elevation of the pump to determine the likelihood of whether there would be sufficient water for pumping the well for the next ten

years. A well was classified as a high-priority well if the following two conditions are met: (1) its simulated water level in 2025 is greater than 15 ft above the pump elevation, and (2) its simulated water level in 2025 is less than 15 ft above the elevation of its pump elevation. A total of 60 wells were identified as high-priority wells. Of the 60 wells, 25 wells are completed in the Simsboro, 15 wells are completed in the Carrizo, 16 wells are completed in the Calvert Bluff, 2 wells are completed in the Queen City, and 2 wells are completed in the Hooper.

- Forty percent of the 15 Carrizo wells that would become high-priority wells by 2035 will have already met the criteria by 2028 (n=6).
- For eligible wells without information about the pump settings, wells were classified as moderate-priority well if there is sufficient lines of evidence to believe that the well would be classified as a high-priority well if the pump information were available. The identification of moderate-priority wells was based on estimated drawdown at the well in 2035. Thirteen wells were classified as potential candidates for moderate-priority wells. All wells were located in the Carrizo Aquifer.
- Hydrographs of simulated water levels from 2000 to 2035 were created for the 60 high-priority wells, 141 candidates for moderate-priority wells, and 300 wells of concern. Wells are classified as wells of concern if their simulated water levels in 2025 are less than 15 ft above their pump setting.
- As part of their GWAP, POSGCD staff has assisted 137 wells by lowering the pump setting to accommodate recent and future declines in the water level at the well location. One-hundred and seventeen of the wells are located in the Carrizo Aquifer.

4.2 Recommendations

Based on the data, data analysis, and findings presented in the report, the following actions are recommended:

- POSGCD's Water Resource Specialist should verify the eligibility and review the well construction of the 60 high-priority wells, the 141 candidates for 13 moderate-priority wells, and the 300 wells of concern and then consider measuring water levels at these wells to check the accuracy of the simulated water levels.
- Water levels should be measured at each high-priority Carrizo well (or at nearby wells) at least once every four months and the elevation of the pump setting should be verified
- The OPMAN model should be continually updated using monitoring data so that it will be better suited for predicting the drawdown impacts that will be caused by the pumping of more than 50,000 AFY associated with the Vista Ridge Project and the planned pumping of 50,000 AFY from the SLR well field.
- A methodology should be developed for using measured water level data to help adjust for biases and error in the simulated water levels.
- POSGCD should develop a practice for checking and quantifying the accuracy of reported pumping for non-exempt permits that do not require monitoring equipment as condition of the permit.
- POSGCD should continue their efforts in GMA 12 to include an assessment of the impacts of GAM DFC simulations on exempt and lower capacity permitted wells as a consideration for evaluating DFC.
- POSGCD should continue their efforts to perform joint GCD evaluations of large-scale production from wellfields that will likely cause notable drawdown impacts across GCD boundaries production during the next 25 to 50 years

- POSGCD should strongly promote their Driller Guidance Document for educating landowners about how to best help safeguard the long-term production capacity of a new well against the decline in the water levels in GMA -12 during the next 50-years caused by permitted pumping.

5.0 REFERENCES

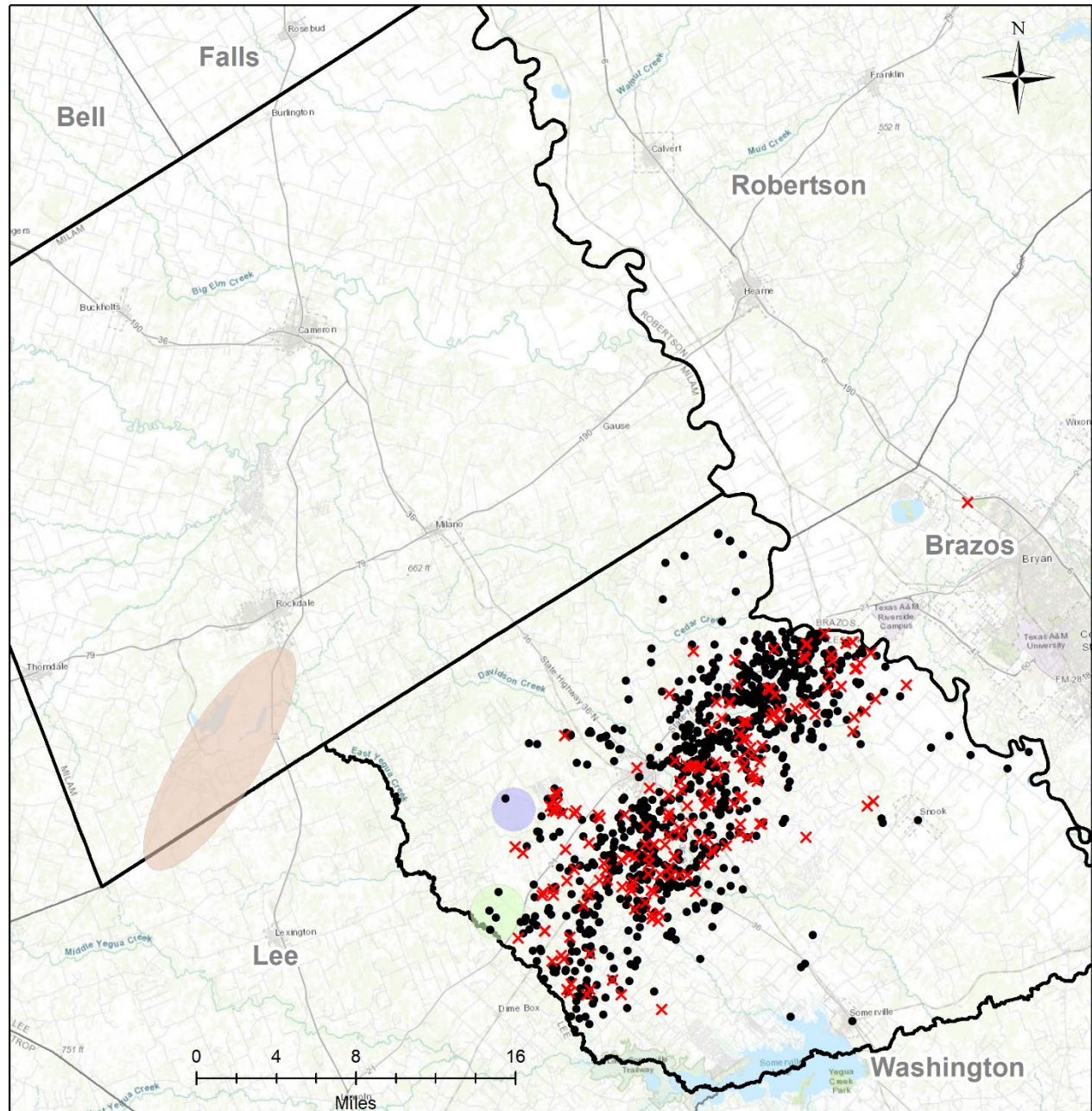
- Post Oak Savannah Groundwater Conservation District (POSGCD), 2021. Post Oak Savannah Groundwater Conservation District Groundwater Well Assistance Program (GWAP).
- White, J.T., Hunt, R.J., Fienen, M.N., and Doherty, J.E., 2020, Approaches to Highly Parameterized Inversion: PEST++ Version 5, a Software Suite for Parameter Estimation, Uncertainty Analysis, Management Optimization and Sensitivity Analysis: U.S. Geological Survey Techniques and Methods 7C26, 52 p., <https://doi.org/10.3133/tm7C26>.
- Young, S., Jigmond, M., Jones, T., and Ewing, T. 2018. Groundwater Availability Model for Central Portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifer, prepared for the TWDB, unnumbered report, September 2018
- Young, S., Kushnereit, R. Donnelly, A., Seifert, J., and Deed, N. 2020. GMA 12 Update to the Groundwater Availability Model for the Central Portion of the Sparta, Queen City, and Carrizo-Wilcox Aquifers: Update to Improve Representativeness of the Transmissive Properties of the Simsboro Aquifer in the Vicinity of the Vista Ridge Well Field, Prepared for GMA 12, November 2020.
- Young, S., Kushnereit, R., Kelly, V. 2020. Groundwater Assistance Program Annual Needs Assessment December 2020.
- Young, S., Kushnereit, R., White, J., and Beal, L. 2021. The Future is Here: Comparing Projected and Actual Impacts of Vista Ridge Project. Presented at Milam and Burleson Counties 2021 Groundwater Summit. Caldwell, Texas. August 12, 2021.

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APPENDIX A
LOCATION OF EXEMPT WELLS BY AQUIFER

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Sparta

- | | |
|--|---|
|  130 Well Field |  Exempt with Pump Depth (n=181) |
|  SLR Well Field |  Exempt without Pump Depth (n=971) |
|  Vista Ridge Well Field |  Exempt GWAP (n=0) |
|  POSGCD Boundary | |
|  County Line | |

Figure A-1 Location of eligible exempt wells in the Sparta Aquifer

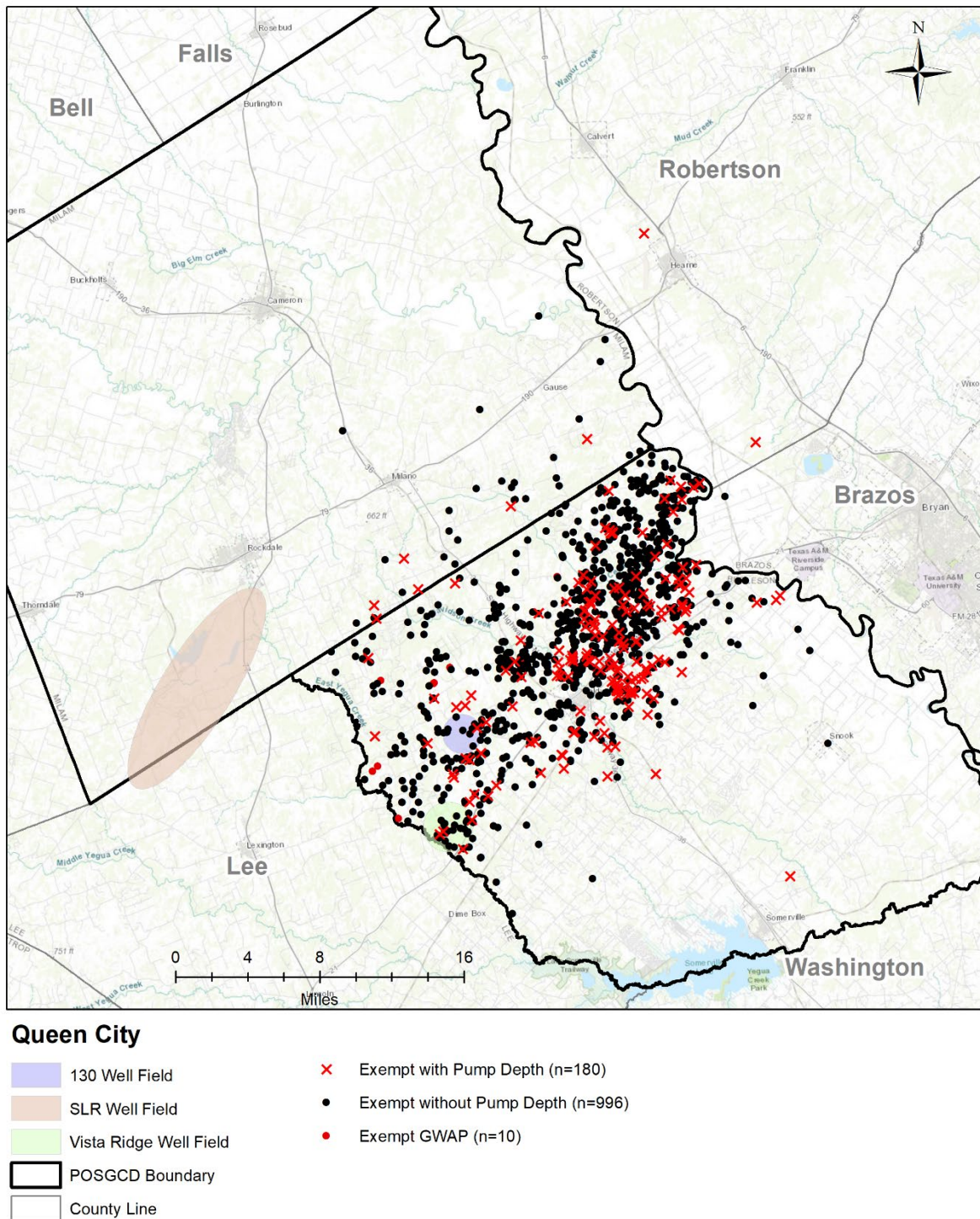
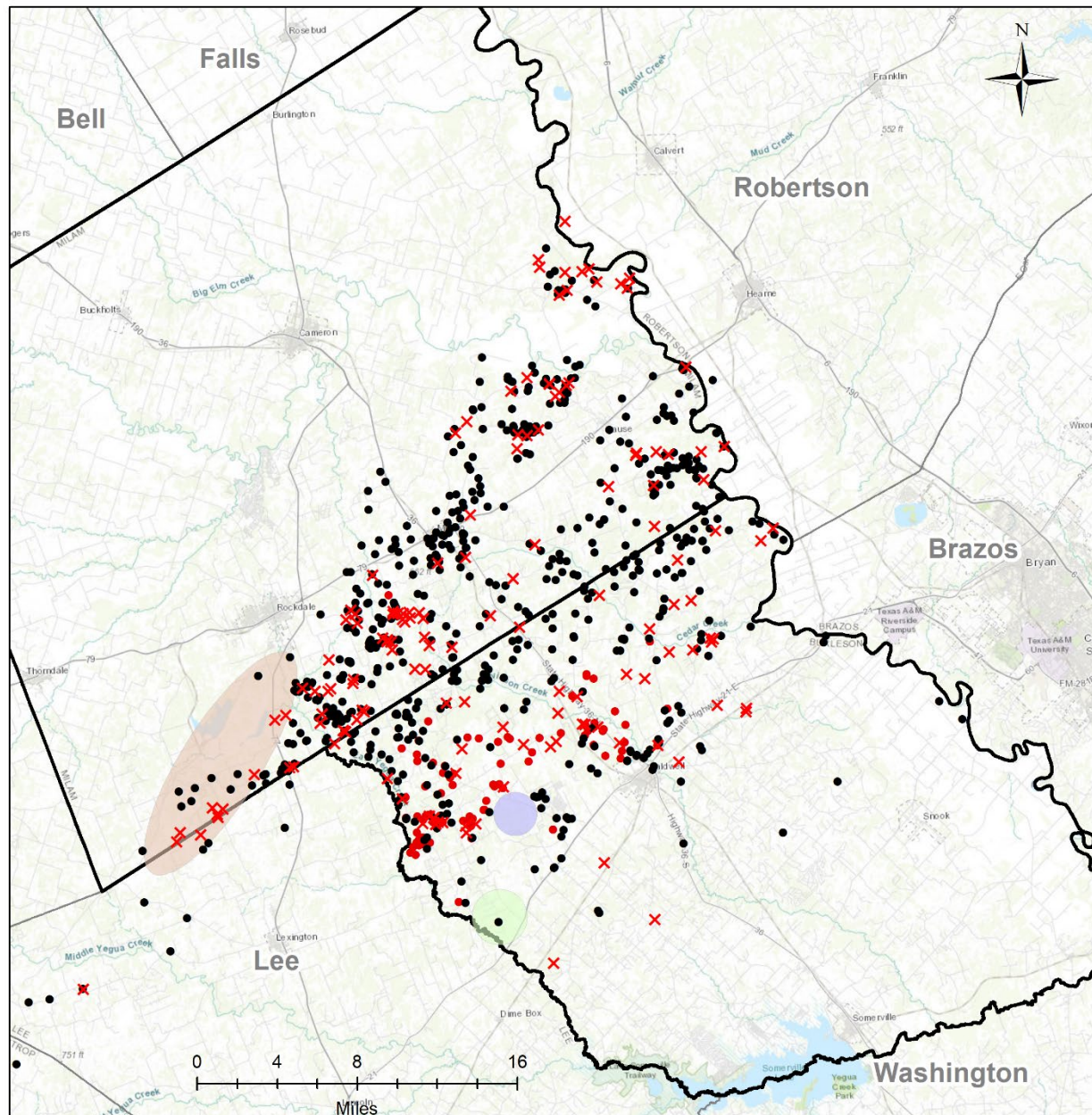


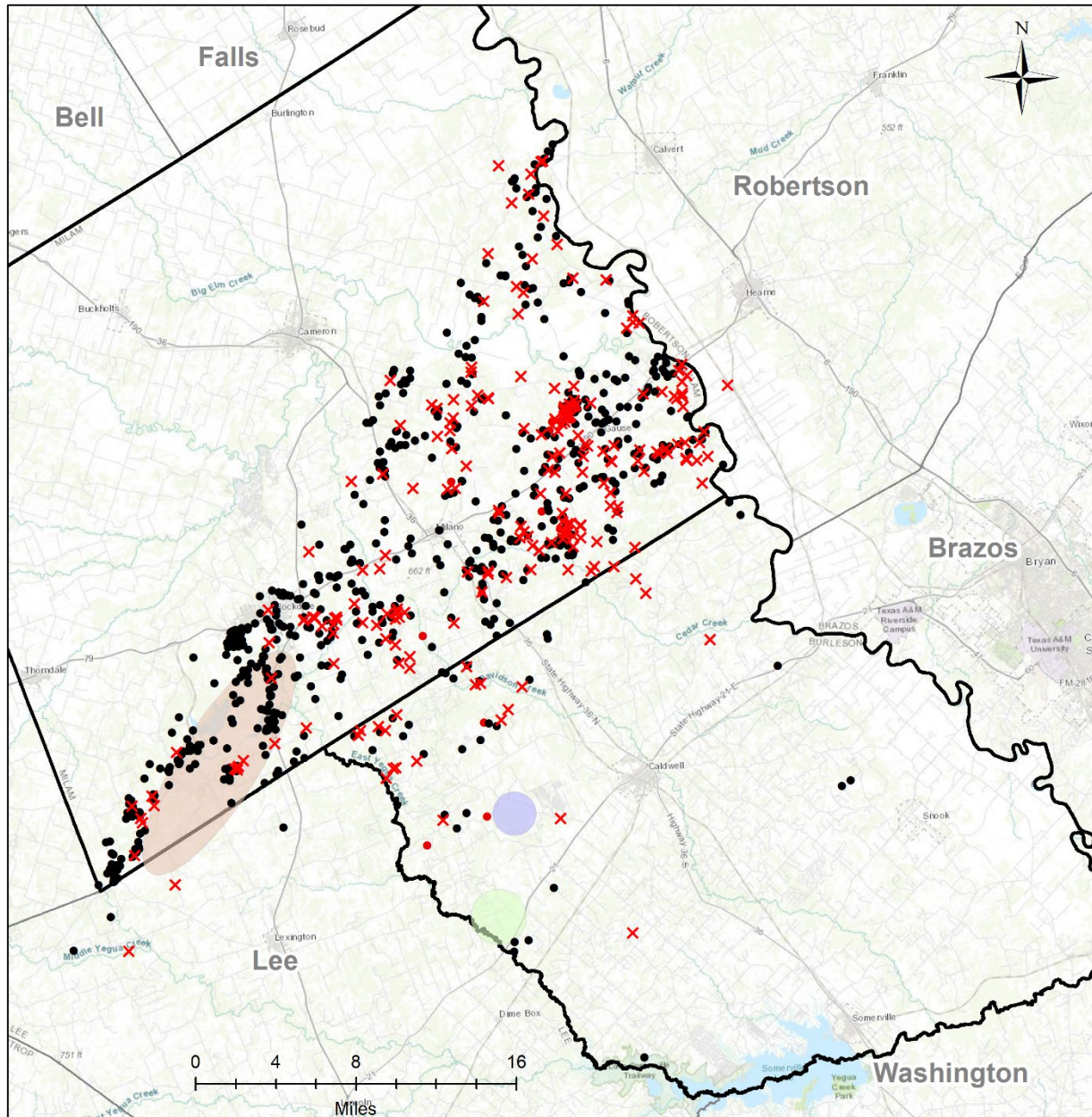
Figure A-2 Location of eligible exempt wells in the Queen City Aquifer



Carrizo

- | | |
|--|---|
|  130 Well Field |  Exempt with Pump Depth (n=151) |
|  SLR Well Field |  Exempt without Pump Depth (n=623) |
|  Vista Ridge Well Field |  Exempt GWAP (n=85) |
|  POSGCD Boundary | |
|  County Line | |

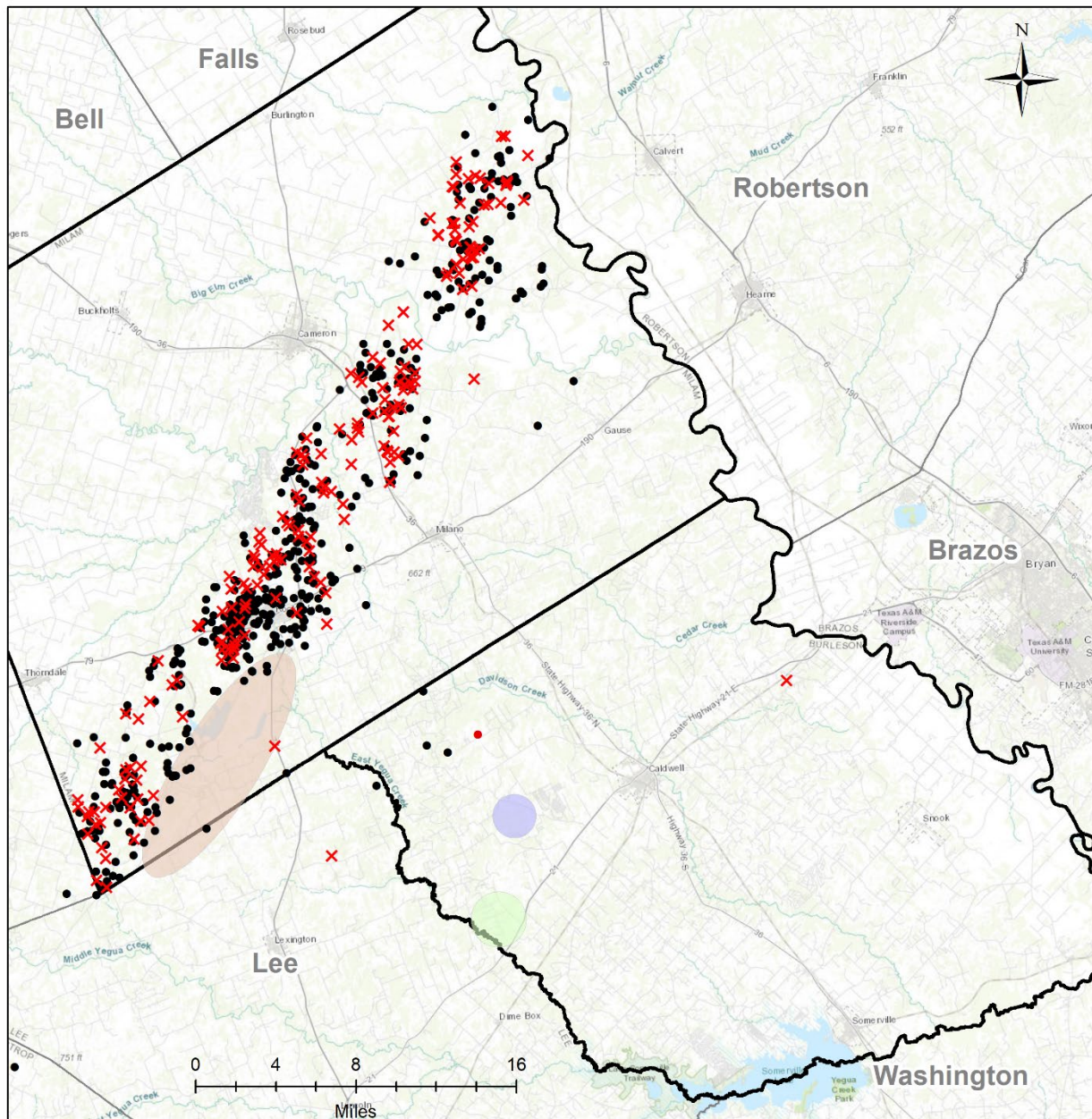
Figure A-3 Location of eligible exempt wells in the Carrizo Aquifer



Calvert Bluff

- | | |
|--|---|
|  130 Well Field |  Exempt with Pump Depth (n=226) |
|  SLR Well Field |  Exempt without Pump Depth (n=658) |
|  Vista Ridge Well Field |  Exempt GWAP (n=12) |
|  POSGCD Boundary | |
|  County Line | |

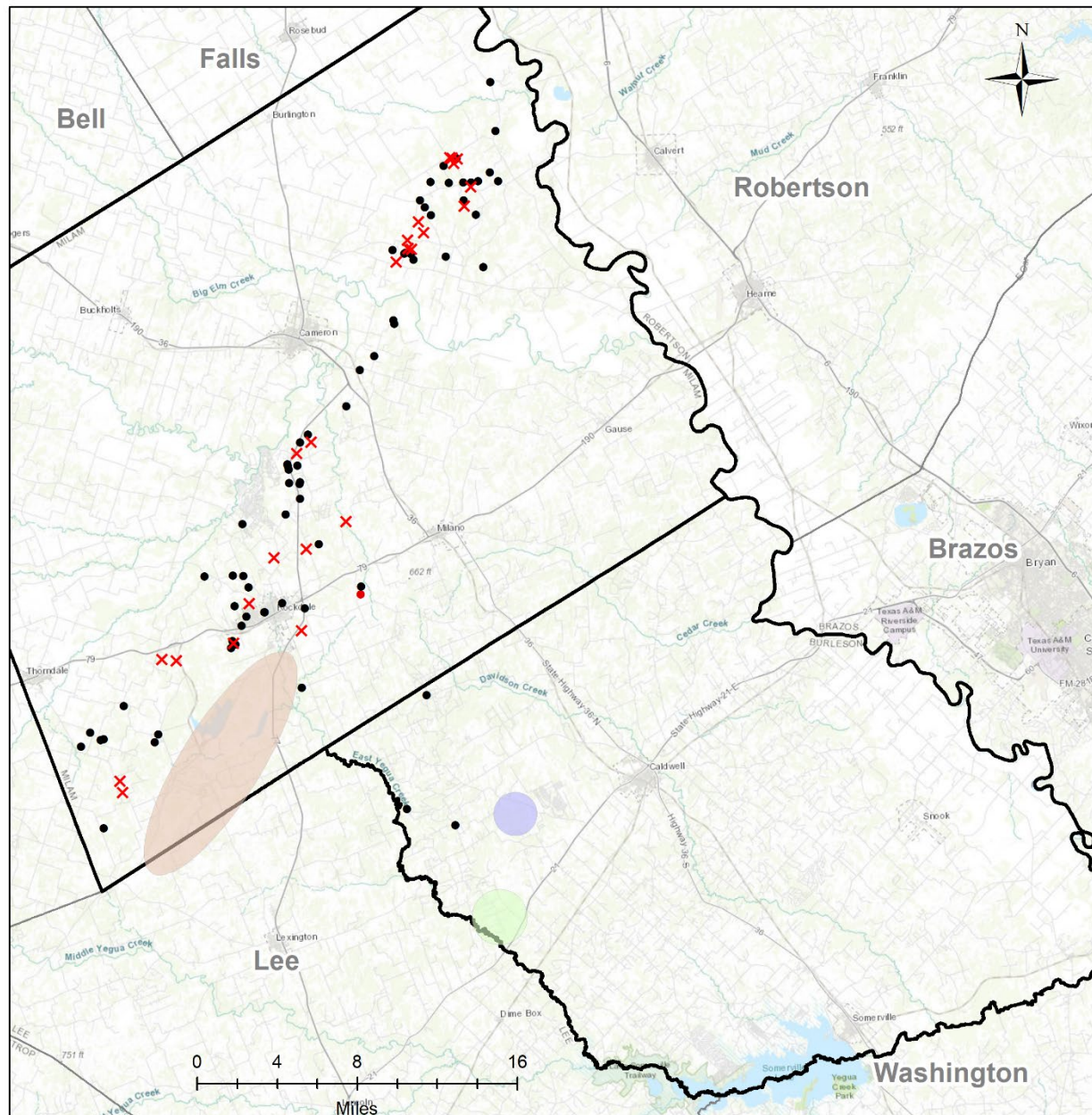
Figure A-4 Location of eligible exempt wells in the Calvert Bluff Aquifer



Simsboro

- | | |
|--|---|
|  130 Well Field |  Exempt with Pump Depth (n=193) |
|  SLR Well Field |  Exempt without Pump Depth (n=547) |
|  Vista Ridge Well Field |  Exempt GWAP (n=1) |
|  POSGCD Boundary | |
|  County Line | |

Figure A-5 Location of eligible exempt wells in the Simsboro Aquifer



Hooper

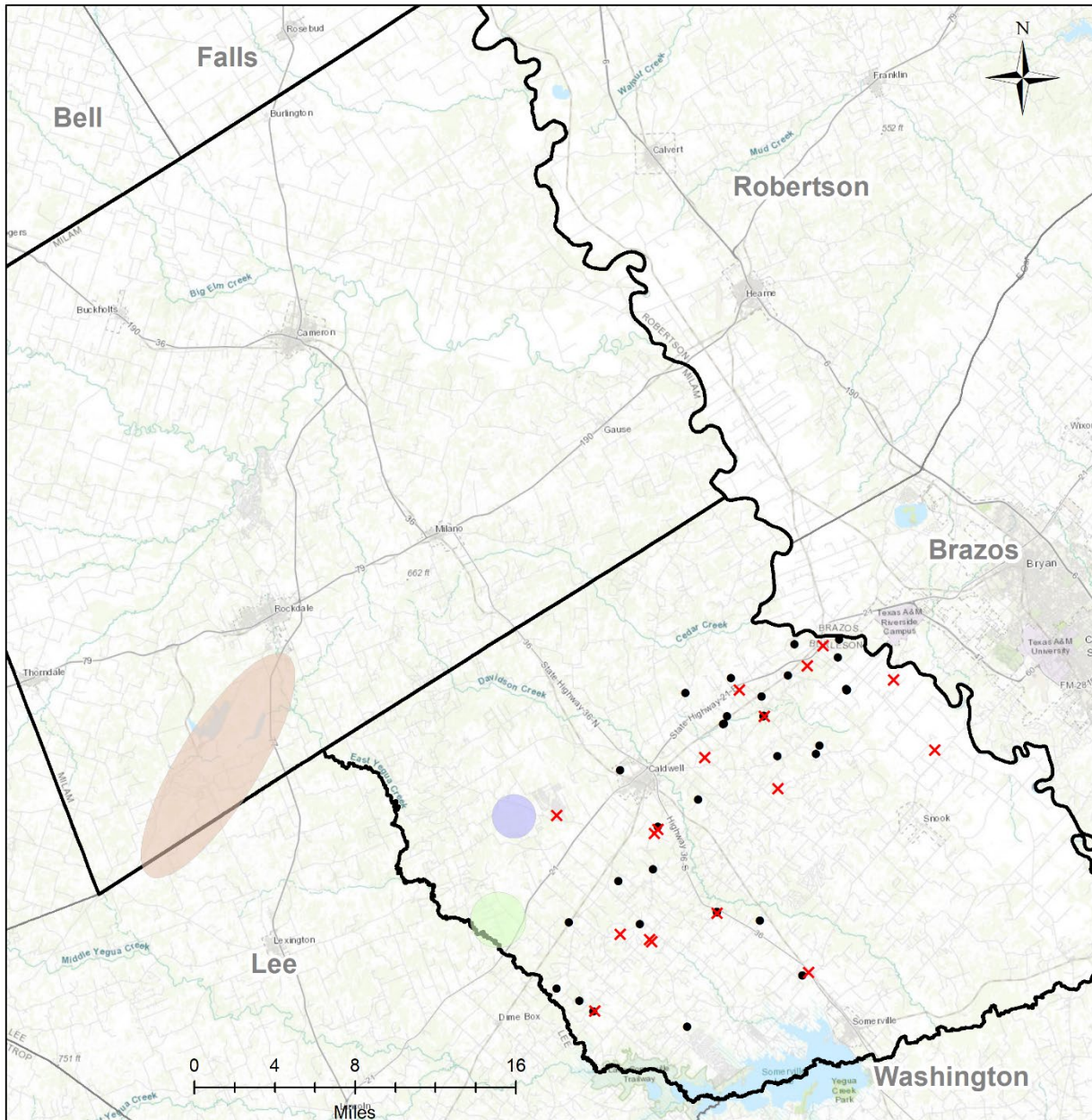
- | | |
|--|--|
|  130 Well Field |  Exempt with Pump Depth (n=24) |
|  SLR Well Field |  Exempt without Pump Depth (n=69) |
|  Vista Ridge Well Field |  Exempt GWAP (n=1) |
|  POSGCD Boundary | |
|  County Line | |

Figure A-6 Location of eligible exempt wells in the Hooper Aquifer

APPENDIX B

LOCATION OF LOW-CAPACITY PERMITTED WELLS BY AQUIFER

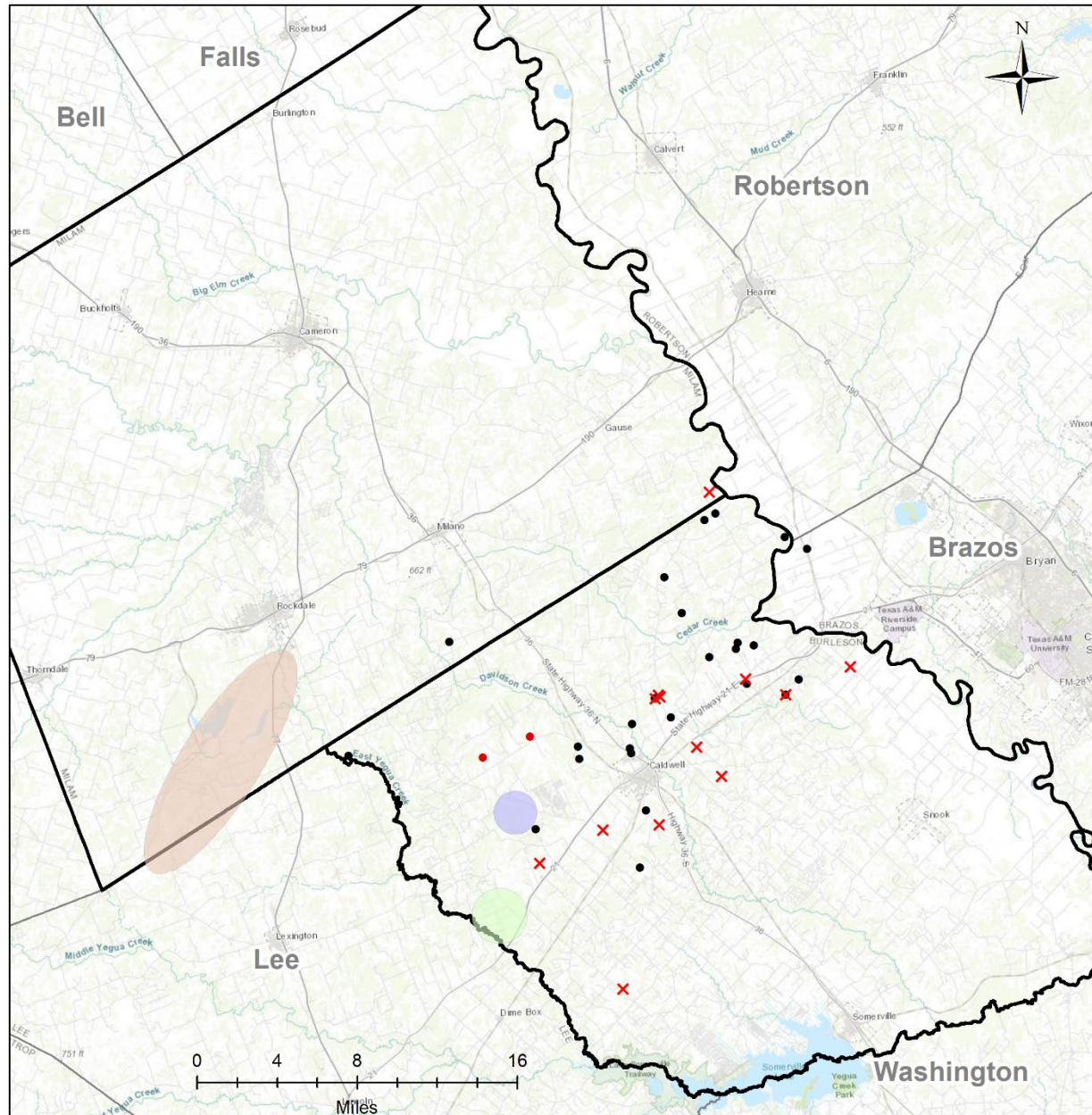
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Sparta

- | | | | |
|---|------------------------|---|--|
|  | 130 Well Field |  | Low Capacity with Pump Depth (n=17) |
|  | SLR Well Field |  | Low Capacity without Pump Depth (n=34) |
|  | Vista Ridge Well Field |  | Low Capacity GWAP (n=0) |
|  | POSGCD Boundary | | |
|  | County Line | | |

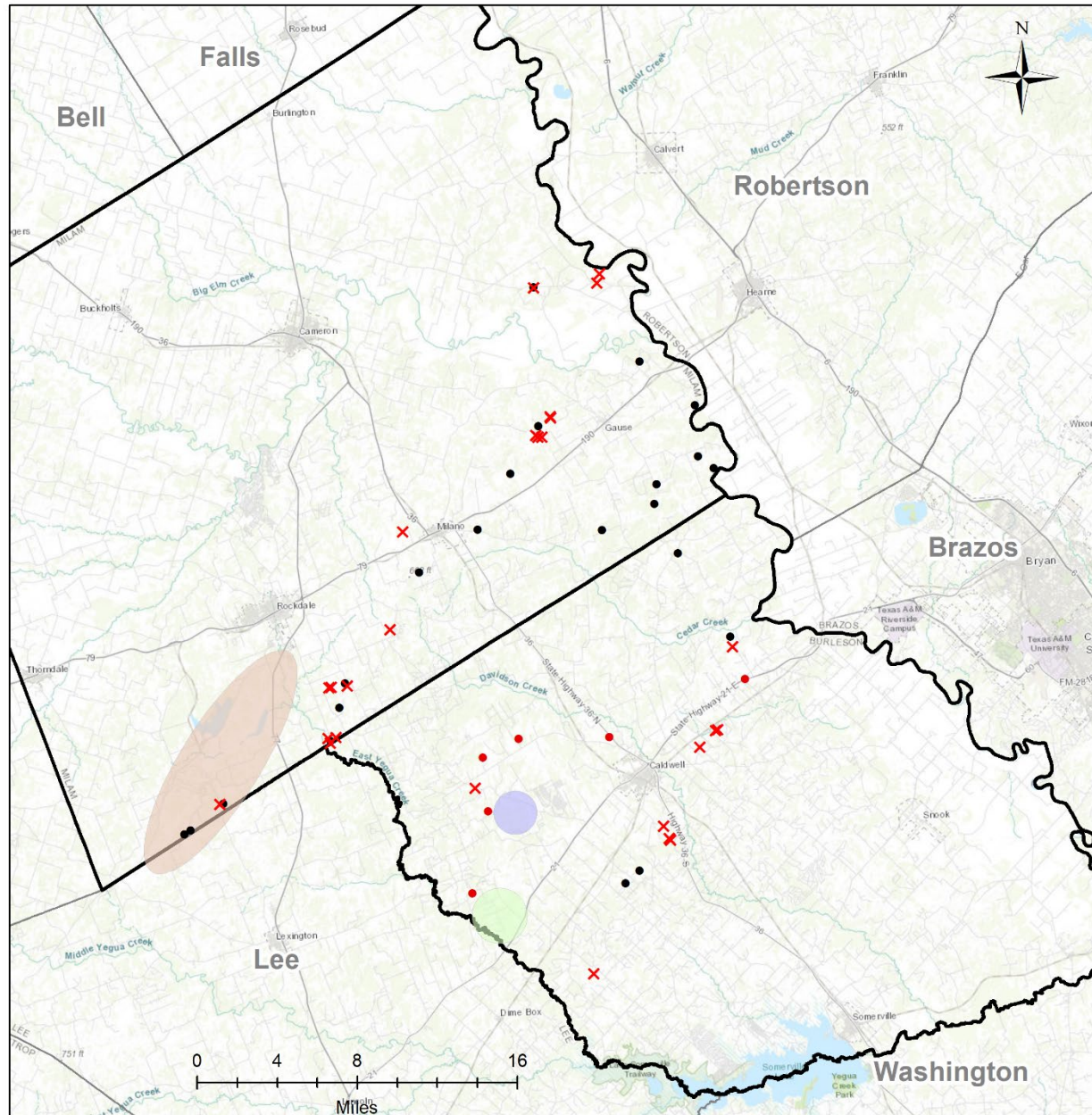
Figure B-1 Location of eligible low-capacity permitted wells in the Sparta Aquifer



Queen City

- | | | | |
|---|------------------------|---|--|
|  | 130 Well Field |  | Low Capacity with Pump Depth (n=13) |
|  | SLR Well Field |  | Low Capacity without Pump Depth (n=25) |
|  | Vista Ridge Well Field |  | Low Capacity GWAP (n=2) |
|  | POSGCD Boundary | | |
|  | County Line | | |

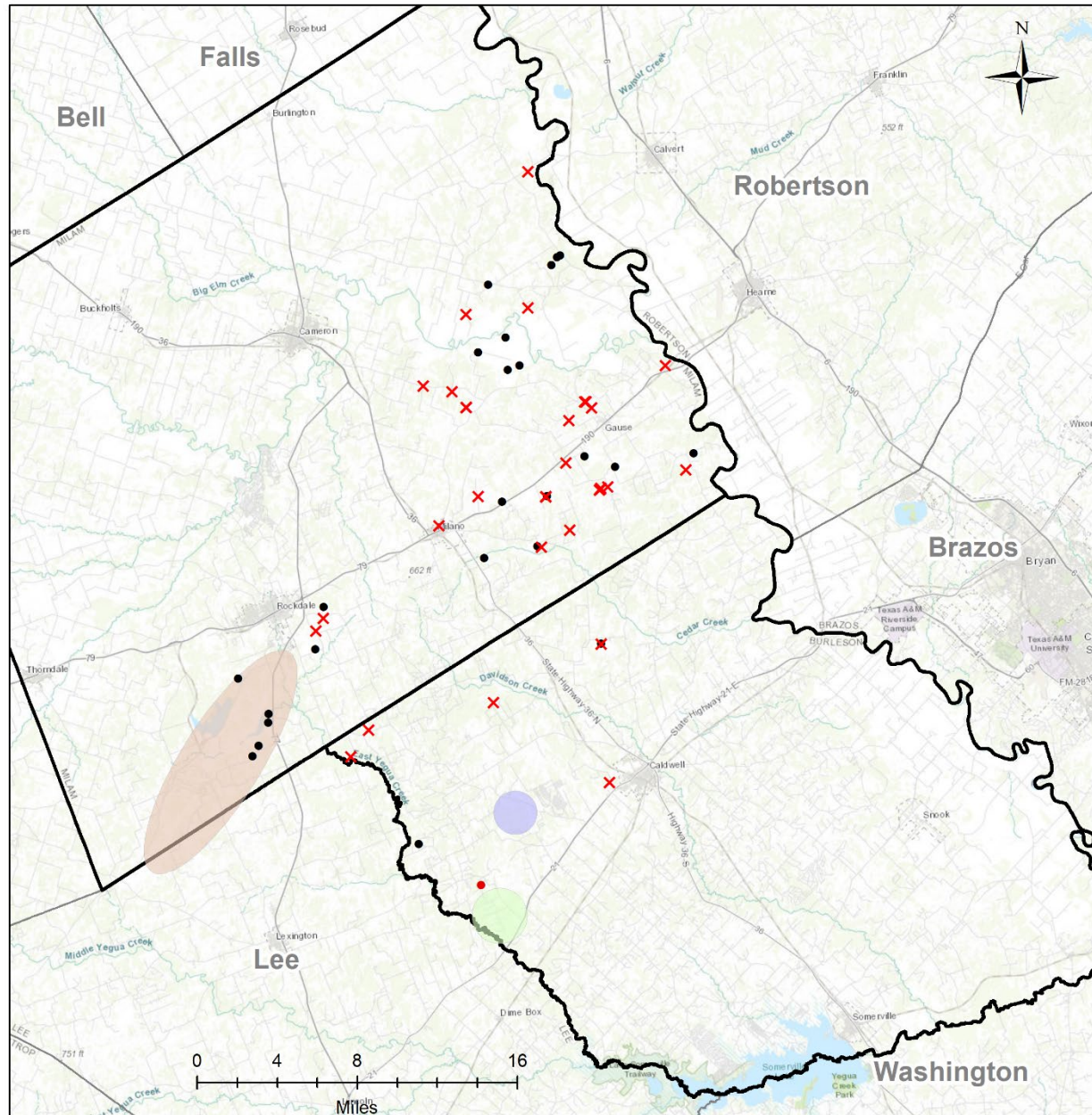
Figure B-2 Location of eligible low-capacity permitted wells in the Queen City Aquifer



Carrizo

- | | | | |
|---|------------------------|---|--|
|  | 130 Well Field |  | Low Capacity with Pump Depth (n=26) |
|  | SLR Well Field |  | Low Capacity without Pump Depth (n=22) |
|  | Vista Ridge Well Field |  | Low Capacity GWAP (n=6) |
|  | POSGCD Boundary | | |
|  | County Line | | |

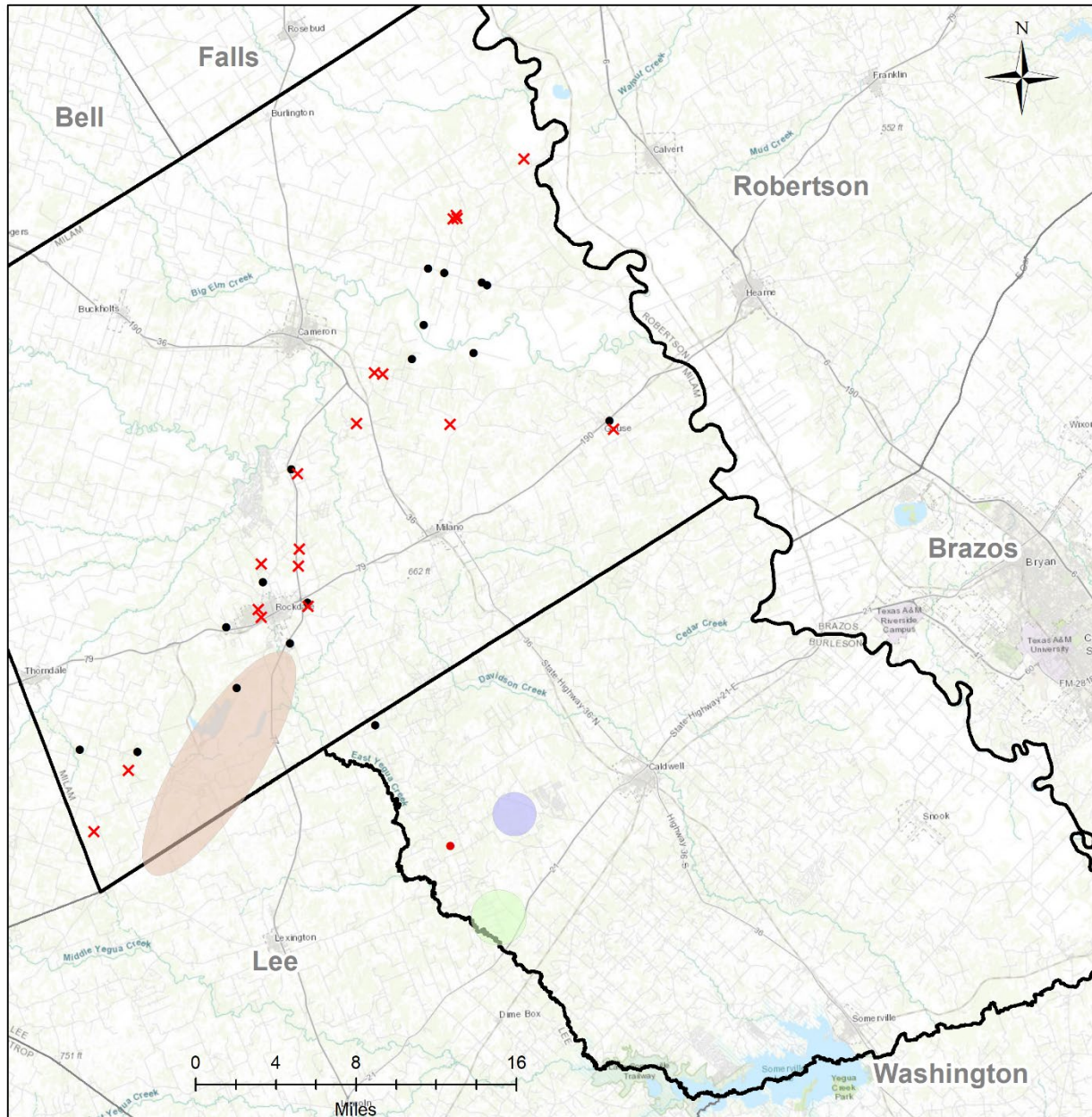
Figure B-3 Location of eligible low-capacity permitted wells in the Carrizo Aquifer



Calvert Bluff

- | | | | |
|---|------------------------|---|--|
|  | 130 Well Field |  | Low Capacity with Pump Depth (n=31) |
|  | SLR Well Field |  | Low Capacity without Pump Depth (n=24) |
|  | Vista Ridge Well Field |  | Low Capacity GWAP (n=1) |
|  | POSGCD Boundary | | |
|  | County Line | | |

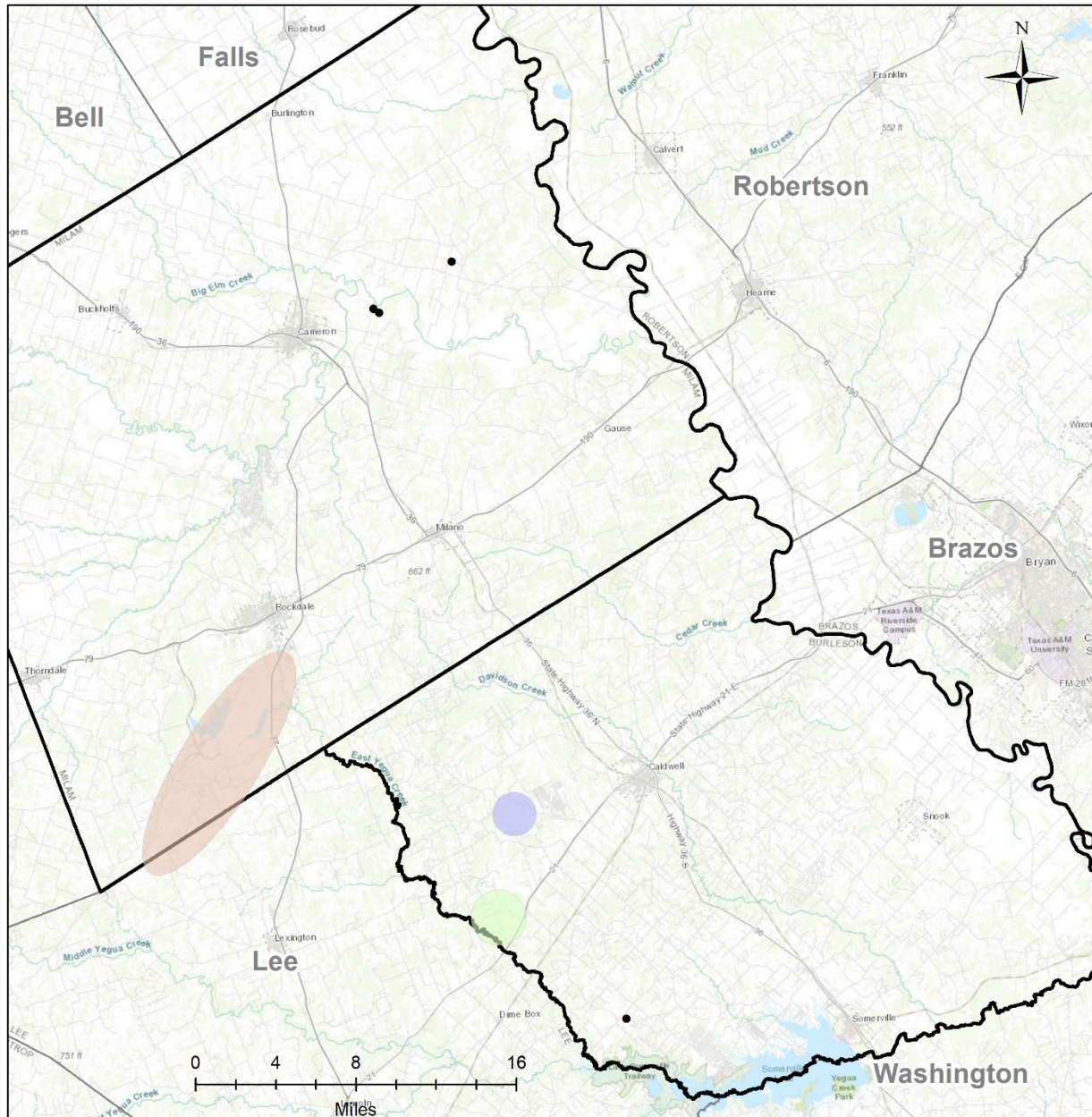
Figure B-4 Location of eligible low-capacity permitted wells in the Calvert Bluff Aquifer



Simsboro

- | | | | |
|---|------------------------|---|--|
|  | 130 Well Field |  | Low Capacity with Pump Depth (n=18) |
|  | SLR Well Field |  | Low Capacity without Pump Depth (n=17) |
|  | Vista Ridge Well Field |  | Low Capacity GWAP (n=1) |
|  | POSGCD Boundary | | |
|  | County Line | | |

Figure B-5 Location of eligible low-capacity permitted wells in the Simsboro Aquifer



Hooper

- | | |
|--|---|
|  130 Well Field |  Low Capacity with Pump Depth (n=0) |
|  SLR Well Field |  Low Capacity without Pump Depth (n=4) |
|  Vista Ridge Well Field |  Low Capacity GWAP (n=0) |
|  POSGCD Boundary | |
|  County Line | |

Figure B-6 Location of eligible low-capacity permitted wells in the Hooper Aquifer

APPENDIX C

Tabulation of high-priority wells and wells of concern

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-001181	Calvert Bluff	1	1	1	yes	no
PO-001192	Calvert Bluff	1	1	1	yes	no
PO-001361	Calvert Bluff	0	0	1	no	yes
PO-001450	Calvert Bluff	1	1	1	yes	no
PO-001485	Calvert Bluff	1	1	1	yes	no
PO-001794	Calvert Bluff	0	0	1	no	yes
PO-001883	Calvert Bluff	1	1	1	yes	no
PO-001935	Calvert Bluff	1	1	1	yes	no
PO-002014	Calvert Bluff	1	1	1	yes	no
PO-002205	Calvert Bluff	1	1	1	yes	no
PO-002538	Calvert Bluff	1	1	1	yes	no
PO-006225	Calvert Bluff	1	1	1	yes	no
PO-006250	Calvert Bluff	1	1	1	yes	no
PO-006277	Calvert Bluff	1	1	1	yes	no
PO-006371	Calvert Bluff	0	1	1	no	yes
PO-006660	Calvert Bluff	1	1	1	yes	no
PO-006796	Calvert Bluff	1	1	1	yes	no
PO-006970	Calvert Bluff	1	1	1	yes	no
PO-007026	Calvert Bluff	0	0	1	no	yes
PO-007129	Calvert Bluff	0	0	1	no	yes
PO-007363	Calvert Bluff	1	1	1	yes	no
PO-007365	Calvert Bluff	0	0	1	no	yes
PO-007622	Calvert Bluff	1	1	1	yes	no
PO-007672	Calvert Bluff	0	0	1	no	yes
PO-007718	Calvert Bluff	1	1	1	yes	no
PO-007774	Calvert Bluff	1	1	1	yes	no
PO-007824	Calvert Bluff	1	1	1	yes	no
PO-008000	Calvert Bluff	0	0	1	no	yes
PO-008274	Calvert Bluff	0	0	1	no	yes
PO-008659	Calvert Bluff	1	1	1	yes	no
PO-008700	Calvert Bluff	1	1	1	yes	no
PO-008793	Calvert Bluff	1	1	1	yes	no
PO-008799	Calvert Bluff	1	1	1	yes	no
PO-008936	Calvert Bluff	1	1	1	yes	no
PO-008961	Calvert Bluff	1	1	1	yes	no
PO-009053	Calvert Bluff	1	1	1	yes	no
PO-009084	Calvert Bluff	1	1	1	yes	no
PO-009155	Calvert Bluff	1	1	1	yes	no

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-009222	Calvert Bluff	1	1	1	yes	no
PO-009244	Calvert Bluff	1	1	1	yes	no
PO-009346	Calvert Bluff	1	1	1	yes	no
PO-009372	Calvert Bluff	1	1	1	yes	no
PO-009495	Calvert Bluff	1	1	1	yes	no
PO-009534	Calvert Bluff	0	0	1	no	yes
PO-009536	Calvert Bluff	0	0	1	no	yes
PO-009550	Calvert Bluff	1	1	1	yes	no
PO-009604	Calvert Bluff	0	0	1	no	yes
PO-009753	Calvert Bluff	1	1	1	yes	no
PO-009754	Calvert Bluff	1	1	1	yes	no
PO-009766	Calvert Bluff	1	1	1	yes	no
PO-009768	Calvert Bluff	1	1	1	yes	no
PO-010966	Calvert Bluff	1	1	1	yes	no
PO-011143	Calvert Bluff	1	1	1	yes	no
PO-011150	Calvert Bluff	1	1	1	yes	no
PO-011287	Calvert Bluff	1	1	1	yes	no
PO-011293	Calvert Bluff	1	1	1	yes	no
PO-011351	Calvert Bluff	1	1	1	yes	no
PO-011403	Calvert Bluff	1	1	1	yes	no
PO-011406	Calvert Bluff	0	1	1	no	yes
PO-011473	Calvert Bluff	1	1	1	yes	no
PO-011490	Calvert Bluff	1	1	1	yes	no
PO-011514	Calvert Bluff	1	1	1	yes	no
PO-011526	Calvert Bluff	1	1	1	yes	no
PO-011547	Calvert Bluff	0	1	1	no	yes
PO-011550	Calvert Bluff	1	1	1	yes	no
PO-011615	Calvert Bluff	0	0	1	no	yes
PO-011623	Calvert Bluff	1	1	1	yes	no
PO-011666	Calvert Bluff	1	1	1	yes	no
PO-012330	Calvert Bluff	0	0	1	no	yes
PO-001870	Carrizo	1	1	1	yes	no
PO-001990	Carrizo	1	1	1	yes	no
PO-002147	Carrizo	1	1	1	yes	no
PO-002157	Carrizo	1	1	1	yes	no
PO-002164	Carrizo	1	1	1	yes	no
PO-002173	Carrizo	1	1	1	yes	no
PO-006253	Carrizo	0	0	1	no	yes

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-006278	Carrizo	1	1	1	yes	no
PO-006282	Carrizo	1	1	1	yes	no
PO-007184	Carrizo	1	1	1	yes	no
PO-007217	Carrizo	0	0	1	no	yes
PO-007242	Carrizo	1	1	1	yes	no
PO-007285	Carrizo	1	1	1	yes	no
PO-007433	Carrizo	1	1	1	yes	no
PO-007685	Carrizo	1	1	1	yes	no
PO-008067	Carrizo	1	1	1	yes	no
PO-008095	Carrizo	1	1	1	yes	no
PO-008217	Carrizo	0	1	1	no	yes
PO-008255	Carrizo	1	1	1	yes	no
PO-008421	Carrizo	1	1	1	yes	no
PO-008423	Carrizo	1	1	1	yes	no
PO-008442	Carrizo	0	0	1	no	yes
PO-008478	Carrizo	1	1	1	yes	no
PO-008488	Carrizo	1	1	1	yes	no
PO-008908	Carrizo	1	1	1	yes	no
PO-008967	Carrizo	1	1	1	yes	no
PO-009000	Carrizo	1	1	1	yes	no
PO-009004	Carrizo	1	1	1	yes	no
PO-009009	Carrizo	1	1	1	yes	no
PO-009036	Carrizo	1	1	1	yes	no
PO-009050	Carrizo	0	0	1	no	yes
PO-009121	Carrizo	0	0	1	no	yes
PO-009134	Carrizo	1	1	1	yes	no
PO-009138	Carrizo	1	1	1	yes	no
PO-009150	Carrizo	1	1	1	yes	no
PO-009158	Carrizo	1	1	1	yes	no
PO-009197	Carrizo	1	1	1	yes	no
PO-009345	Carrizo	0	1	1	no	yes
PO-009363	Carrizo	1	1	1	yes	no
PO-009369	Carrizo	1	1	1	yes	no
PO-009391	Carrizo	1	1	1	yes	no
PO-009395	Carrizo	1	1	1	yes	no
PO-009432	Carrizo	1	1	1	yes	no
PO-009462	Carrizo	1	1	1	yes	no
PO-009479	Carrizo	1	1	1	yes	no

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Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-009488	Carrizo	1	1	1	yes	no
PO-009499	Carrizo	0	1	1	no	yes
PO-009541	Carrizo	1	1	1	yes	no
PO-009583	Carrizo	1	1	1	yes	no
PO-009584	Carrizo	1	1	1	yes	no
PO-009587	Carrizo	1	1	1	yes	no
PO-009638	Carrizo	1	1	1	yes	no
PO-009647	Carrizo	0	0	1	no	yes
PO-009769	Carrizo	1	1	1	yes	no
PO-009809	Carrizo	1	1	1	yes	no
PO-010916	Carrizo	0	1	1	no	yes
PO-010918	Carrizo	1	1	1	yes	no
PO-011069	Carrizo	1	1	1	yes	no
PO-011280	Carrizo	1	1	1	yes	no
PO-011288	Carrizo	1	1	1	yes	no
PO-011317	Carrizo	1	1	1	yes	no
PO-011329	Carrizo	1	1	1	yes	no
PO-011349	Carrizo	1	1	1	yes	no
PO-011410	Carrizo	1	1	1	yes	no
PO-011411	Carrizo	1	1	1	yes	no
PO-011444	Carrizo	1	1	1	yes	no
PO-011455	Carrizo	1	1	1	yes	no
PO-011495	Carrizo	1	1	1	yes	no
PO-011498	Carrizo	1	1	1	yes	no
PO-011529	Carrizo	1	1	1	yes	no
PO-011551	Carrizo	1	1	1	yes	no
PO-011552	Carrizo	1	1	1	yes	no
PO-011553	Carrizo	1	1	1	yes	no
PO-011555	Carrizo	0	1	1	no	yes
PO-011574	Carrizo	1	1	1	yes	no
PO-011625	Carrizo	0	1	1	no	yes
PO-011646	Carrizo	1	1	1	yes	no
PO-011667	Carrizo	1	1	1	yes	no
PO-011696	Carrizo	1	1	1	yes	no
PO-011711	Carrizo	0	0	1	no	yes
PO-011730	Carrizo	0	0	1	no	yes
PO-011753	Carrizo	1	1	1	yes	no
PO-011832	Carrizo	1	1	1	yes	no

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Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-011846	Carrizo	1	1	1	yes	no
PO-011873	Carrizo	1	1	1	yes	no
PO-012026	Carrizo	0	0	1	no	yes
PO-012294	Carrizo	1	1	1	yes	no
PO-008207	Hooper	1	1	1	yes	no
PO-008208	Hooper	1	1	1	yes	no
PO-008209	Hooper	0	0	1	no	yes
PO-009241	Hooper	1	1	1	yes	no
PO-009741	Hooper	1	1	1	yes	no
PO-011910	Hooper	1	1	1	yes	no
PO-012388	Hooper	0	1	1	no	yes
PO-005228	Queen City	0	0	1	no	yes
PO-005236	Queen City	1	1	1	yes	no
PO-006308	Queen City	1	1	1	yes	no
PO-006566	Queen City	1	1	1	yes	no
PO-007384	Queen City	1	1	1	yes	no
PO-007764	Queen City	1	1	1	yes	no
PO-008800	Queen City	1	1	1	yes	no
PO-008921	Queen City	1	1	1	yes	no
PO-009333	Queen City	1	1	1	yes	no
PO-009339	Queen City	0	0	1	no	yes
PO-009435	Queen City	1	1	1	yes	no
PO-009436	Queen City	1	1	1	yes	no
PO-011136	Queen City	1	1	1	yes	no
PO-011146	Queen City	1	1	1	yes	no
PO-011554	Queen City	1	1	1	yes	no
PO-000170	Simsboro	1	1	1	yes	no
PO-001072	Simsboro	1	1	1	yes	no
PO-001073	Simsboro	0	0	1	no	yes
PO-001247	Simsboro	1	1	1	yes	no
PO-001565	Simsboro	1	1	1	yes	no
PO-001570	Simsboro	1	1	1	yes	no
PO-001607	Simsboro	1	1	1	yes	no
PO-001947	Simsboro	1	1	1	yes	no
PO-001982	Simsboro	1	1	1	yes	no
PO-001983	Simsboro	1	1	1	yes	no
PO-002061	Simsboro	1	1	1	yes	no
PO-002537	Simsboro	1	1	1	yes	no

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Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-002556	Simsboro	1	1	1	yes	no
PO-002566	Simsboro	1	1	1	yes	no
PO-002580	Simsboro	1	1	1	yes	no
PO-006226	Simsboro	0	0	1	no	yes
PO-006228	Simsboro	0	0	1	no	yes
PO-006356	Simsboro	1	1	1	yes	no
PO-006426	Simsboro	1	1	1	yes	no
PO-006605	Simsboro	1	1	1	yes	no
PO-006691	Simsboro	1	1	1	yes	no
PO-006733	Simsboro	1	1	1	yes	no
PO-006827	Simsboro	1	1	1	yes	no
PO-006832	Simsboro	1	1	1	yes	no
PO-006867	Simsboro	1	1	1	yes	no
PO-006894	Simsboro	1	1	1	yes	no
PO-007019	Simsboro	1	1	1	yes	no
PO-007117	Simsboro	1	1	1	yes	no
PO-007136	Simsboro	1	1	1	yes	no
PO-007198	Simsboro	1	1	1	yes	no
PO-007283	Simsboro	1	1	1	yes	no
PO-007364	Simsboro	1	1	1	yes	no
PO-007442	Simsboro	1	1	1	yes	no
PO-007466	Simsboro	1	1	1	yes	no
PO-007491	Simsboro	1	1	1	yes	no
PO-007613	Simsboro	1	1	1	yes	no
PO-007772	Simsboro	1	1	1	yes	no
PO-007783	Simsboro	1	1	1	yes	no
PO-007837	Simsboro	1	1	1	yes	no
PO-007839	Simsboro	1	1	1	yes	no
PO-007992	Simsboro	1	1	1	yes	no
PO-008043	Simsboro	1	1	1	yes	no
PO-008068	Simsboro	1	1	1	yes	no
PO-008070	Simsboro	1	1	1	yes	no
PO-008086	Simsboro	1	1	1	yes	no
PO-008096	Simsboro	1	1	1	yes	no
PO-008172	Simsboro	1	1	1	yes	no
PO-008234	Simsboro	1	1	1	yes	no
PO-008278	Simsboro	1	1	1	yes	no
PO-008325	Simsboro	0	1	1	no	yes

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-008337	Simsboro	1	1	1	yes	no
PO-008455	Simsboro	1	1	1	yes	no
PO-008696	Simsboro	1	1	1	yes	no
PO-008739	Simsboro	1	1	1	yes	no
PO-008787	Simsboro	1	1	1	yes	no
PO-008795	Simsboro	0	1	1	no	yes
PO-008844	Simsboro	1	1	1	yes	no
PO-008891	Simsboro	1	1	1	yes	no
PO-008895	Simsboro	1	1	1	yes	no
PO-008896	Simsboro	0	0	1	no	yes
PO-008951	Simsboro	1	1	1	yes	no
PO-008960	Simsboro	1	1	1	yes	no
PO-008969	Simsboro	1	1	1	yes	no
PO-008976	Simsboro	1	1	1	yes	no
PO-008997	Simsboro	1	1	1	yes	no
PO-009001	Simsboro	1	1	1	yes	no
PO-009010	Simsboro	0	1	1	no	yes
PO-009049	Simsboro	1	1	1	yes	no
PO-009052	Simsboro	0	0	1	no	yes
PO-009071	Simsboro	1	1	1	yes	no
PO-009094	Simsboro	1	1	1	yes	no
PO-009103	Simsboro	1	1	1	yes	no
PO-009124	Simsboro	1	1	1	yes	no
PO-009162	Simsboro	1	1	1	yes	no
PO-009198	Simsboro	0	0	1	no	yes
PO-009209	Simsboro	1	1	1	yes	no
PO-009231	Simsboro	0	0	1	no	yes
PO-009250	Simsboro	1	1	1	yes	no
PO-009273	Simsboro	1	1	1	yes	no
PO-009275	Simsboro	1	1	1	yes	no
PO-009289	Simsboro	1	1	1	yes	no
PO-009304	Simsboro	1	1	1	yes	no
PO-009325	Simsboro	1	1	1	yes	no
PO-009329	Simsboro	1	1	1	yes	no
PO-009352	Simsboro	1	1	1	yes	no
PO-009392	Simsboro	1	1	1	yes	no
PO-009458	Simsboro	1	1	1	yes	no
PO-009466	Simsboro	1	1	1	yes	no

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Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-009469	Simsboro	1	1	1	yes	no
PO-009482	Simsboro	0	0	1	no	yes
PO-009490	Simsboro	1	1	1	yes	no
PO-009491	Simsboro	0	0	1	no	yes
PO-009500	Simsboro	1	1	1	yes	no
PO-009522	Simsboro	1	1	1	yes	no
PO-009525	Simsboro	1	1	1	yes	no
PO-009527	Simsboro	1	1	1	yes	no
PO-009538	Simsboro	0	1	1	no	yes
PO-009585	Simsboro	1	1	1	yes	no
PO-009595	Simsboro	1	1	1	yes	no
PO-009603	Simsboro	1	1	1	yes	no
PO-009608	Simsboro	1	1	1	yes	no
PO-009616	Simsboro	1	1	1	yes	no
PO-009658	Simsboro	1	1	1	yes	no
PO-009670	Simsboro	1	1	1	yes	no
PO-009698	Simsboro	1	1	1	yes	no
PO-009702	Simsboro	0	0	1	no	yes
PO-009742	Simsboro	1	1	1	yes	no
PO-009772	Simsboro	1	1	1	yes	no
PO-010896	Simsboro	1	1	1	yes	no
PO-010906	Simsboro	1	1	1	yes	no
PO-010931	Simsboro	1	1	1	yes	no
PO-010946	Simsboro	1	1	1	yes	no
PO-010968	Simsboro	1	1	1	yes	no
PO-010992	Simsboro	1	1	1	yes	no
PO-011013	Simsboro	1	1	1	yes	no
PO-011039	Simsboro	0	1	1	no	yes
PO-011040	Simsboro	0	0	1	no	yes
PO-011070	Simsboro	1	1	1	yes	no
PO-011074	Simsboro	1	1	1	yes	no
PO-011076	Simsboro	1	1	1	yes	no
PO-011134	Simsboro	1	1	1	yes	no
PO-011139	Simsboro	0	1	1	no	yes
PO-011224	Simsboro	0	0	1	no	yes
PO-011235	Simsboro	1	1	1	yes	no
PO-011255	Simsboro	1	1	1	yes	no
PO-011259	Simsboro	1	1	1	yes	no

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-011271	Simsboro	1	1	1	yes	no
PO-011273	Simsboro	1	1	1	yes	no
PO-011278	Simsboro	0	1	1	no	yes
PO-011283	Simsboro	1	1	1	yes	no
PO-011294	Simsboro	1	1	1	yes	no
PO-011303	Simsboro	1	1	1	yes	no
PO-011312	Simsboro	1	1	1	yes	no
PO-011324	Simsboro	0	0	1	no	yes
PO-011400	Simsboro	1	1	1	yes	no
PO-011417	Simsboro	1	1	1	yes	no
PO-011445	Simsboro	1	1	1	yes	no
PO-011447	Simsboro	1	1	1	yes	no
PO-011449	Simsboro	1	1	1	yes	no
PO-011457	Simsboro	1	1	1	yes	no
PO-011480	Simsboro	1	1	1	yes	no
PO-011486	Simsboro	1	1	1	yes	no
PO-011487	Simsboro	1	1	1	yes	no
PO-011491	Simsboro	1	1	1	yes	no
PO-011506	Simsboro	0	0	1	no	yes
PO-011512	Simsboro	1	1	1	yes	no
PO-011531	Simsboro	1	1	1	yes	no
PO-011544	Simsboro	0	0	1	no	yes
PO-011557	Simsboro	1	1	1	yes	no
PO-011560	Simsboro	1	1	1	yes	no
PO-011577	Simsboro	1	1	1	yes	no
PO-011580	Simsboro	1	1	1	yes	no
PO-011604	Simsboro	1	1	1	yes	no
PO-011640	Simsboro	1	1	1	yes	no
PO-011659	Simsboro	1	1	1	yes	no
PO-011669	Simsboro	0	0	1	no	yes
PO-011681	Simsboro	1	1	1	yes	no
PO-011732	Simsboro	1	1	1	yes	no
PO-011741	Simsboro	1	1	1	yes	no
PO-011752	Simsboro	1	1	1	yes	no
PO-011779	Simsboro	1	1	1	yes	no
PO-011860	Simsboro	1	1	1	yes	no
PO-011864	Simsboro	1	1	1	yes	no
PO-011892	Simsboro	1	1	1	yes	no

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Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-011895	Simsboro	1	1	1	yes	no
PO-011931	Simsboro	1	1	1	yes	no
PO-012061	Simsboro	0	1	1	no	yes
PO-012085	Simsboro	1	1	1	yes	no
PO-012274	Simsboro	0	0	1	no	yes
PO-006427	Sparta	1	1	1	yes	no
PO-006861	Sparta	1	1	1	yes	no
PO-007771	Sparta	1	1	1	yes	no
PO-007822	Sparta	1	1	1	yes	no
PO-008824	Sparta	1	1	1	yes	no
PO-009005	Sparta	1	1	1	yes	no
PO-009119	Sparta	1	1	1	yes	no
PO-009470	Sparta	1	1	1	yes	no
PO-009474	Sparta	1	1	1	yes	no
PO-009558	Sparta	1	1	1	yes	no
PO-011432	Sparta	1	1	1	yes	no
PO-011609	Sparta	1	1	1	yes	no
PO-011698	Sparta	1	1	1	yes	no
PO-011901	Sparta	1	1	1	yes	no
PO-012296	Sparta	1	1	1	yes	no
PO-005250	Weches	1	1	1	yes	no
PO-006471	Weches	1	1	1	yes	no
PO-006560	Weches	1	1	1	yes	no
PO-007009	Weches	1	1	1	yes	no
PO-007137	Weches	1	1	1	yes	no
PO-007579	Weches	1	1	1	yes	no
PO-008206	Weches	1	1	1	yes	no
PO-008827	Weches	1	1	1	yes	no
PO-009026	Weches	0	0	1	no	yes
PO-009183	Weches	1	1	1	yes	no
PO-009263	Weches	1	1	1	yes	no
PO-009393	Weches	1	1	1	yes	no
PO-009529	Weches	1	1	1	yes	no
PO-009810	Weches	1	1	1	yes	no
PO-010965	Weches	1	1	1	yes	no
PO-011327	Weches	1	1	1	yes	no
PO-011419	Weches	1	1	1	yes	no
PO-011670	Weches	1	1	1	yes	no

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Well ID	Aquifer	Water Level is less than 15 feet above Pump in Year			Well of Concern	High- Priority Well
		2025	2028	2035		
PO-011789	Weches	0	0	1	no	yes

APPENDIX D

Hydrographs for High-Priority Wells

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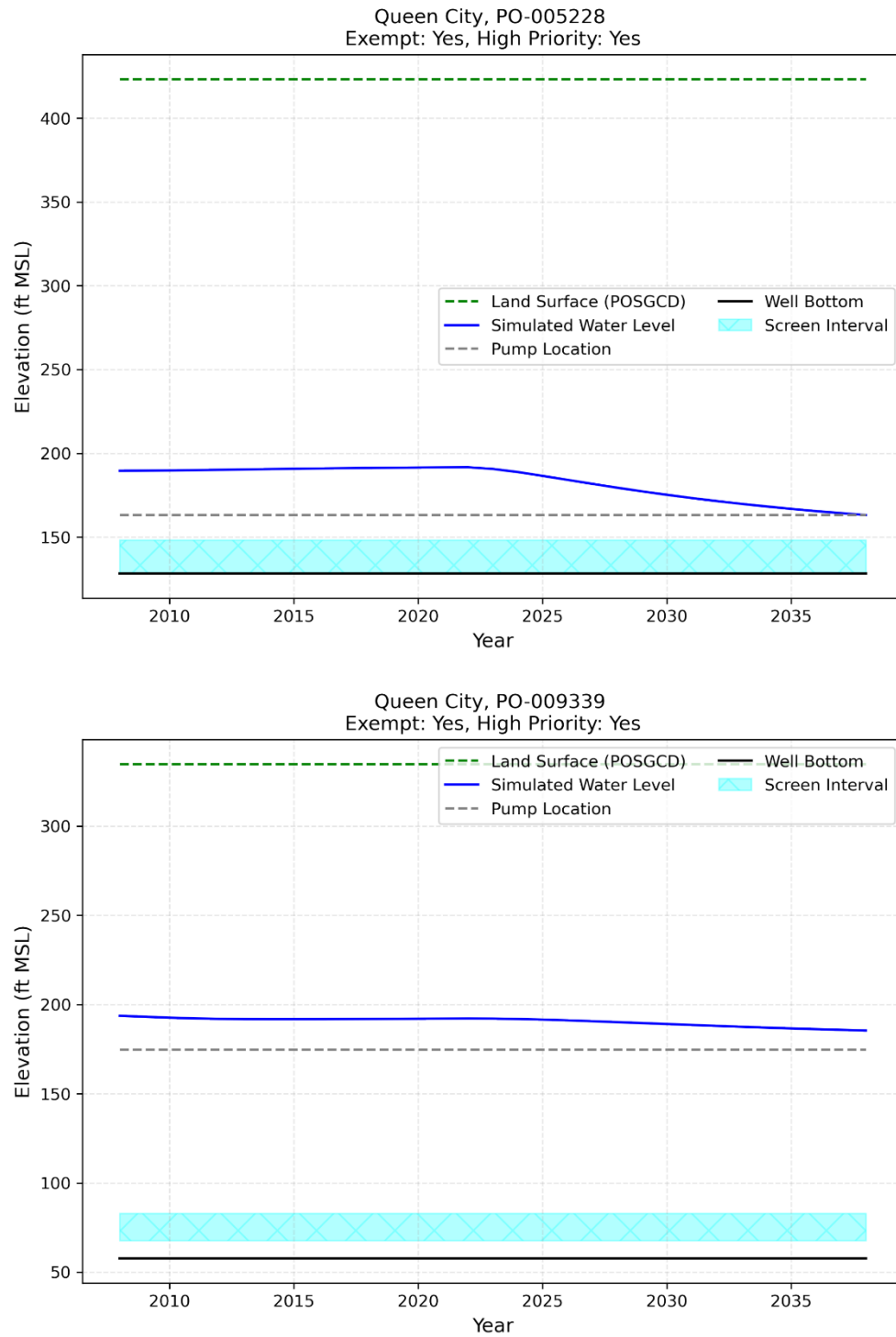


Figure D-1 Simulated water levels for high-priority wells PO-005228 and PO-009339 located in the Queen City Aquifer

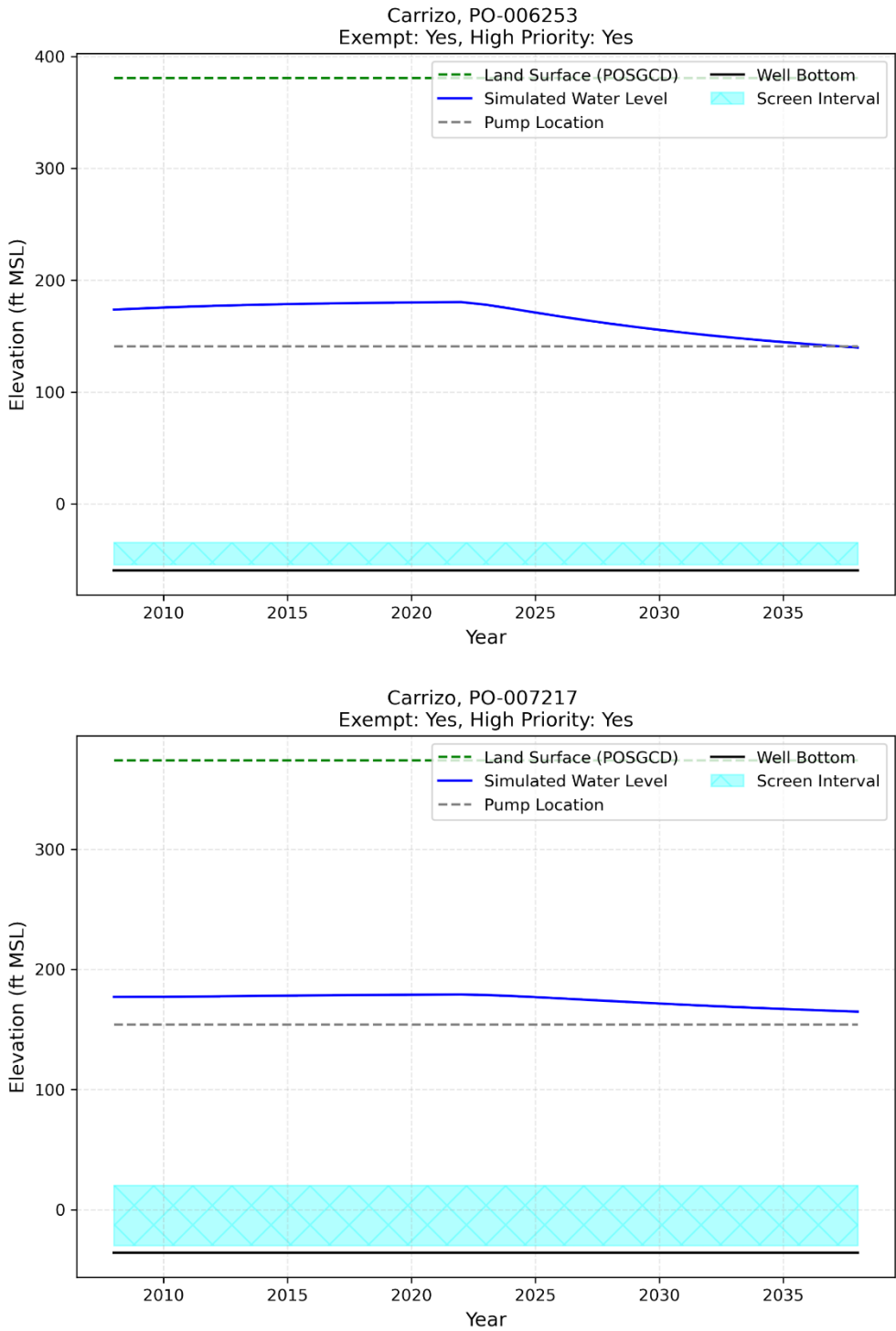


Figure D-2 Simulated water levels for high-priority well PO-006253 and PO-007217 located in the Carrizo Aquifer

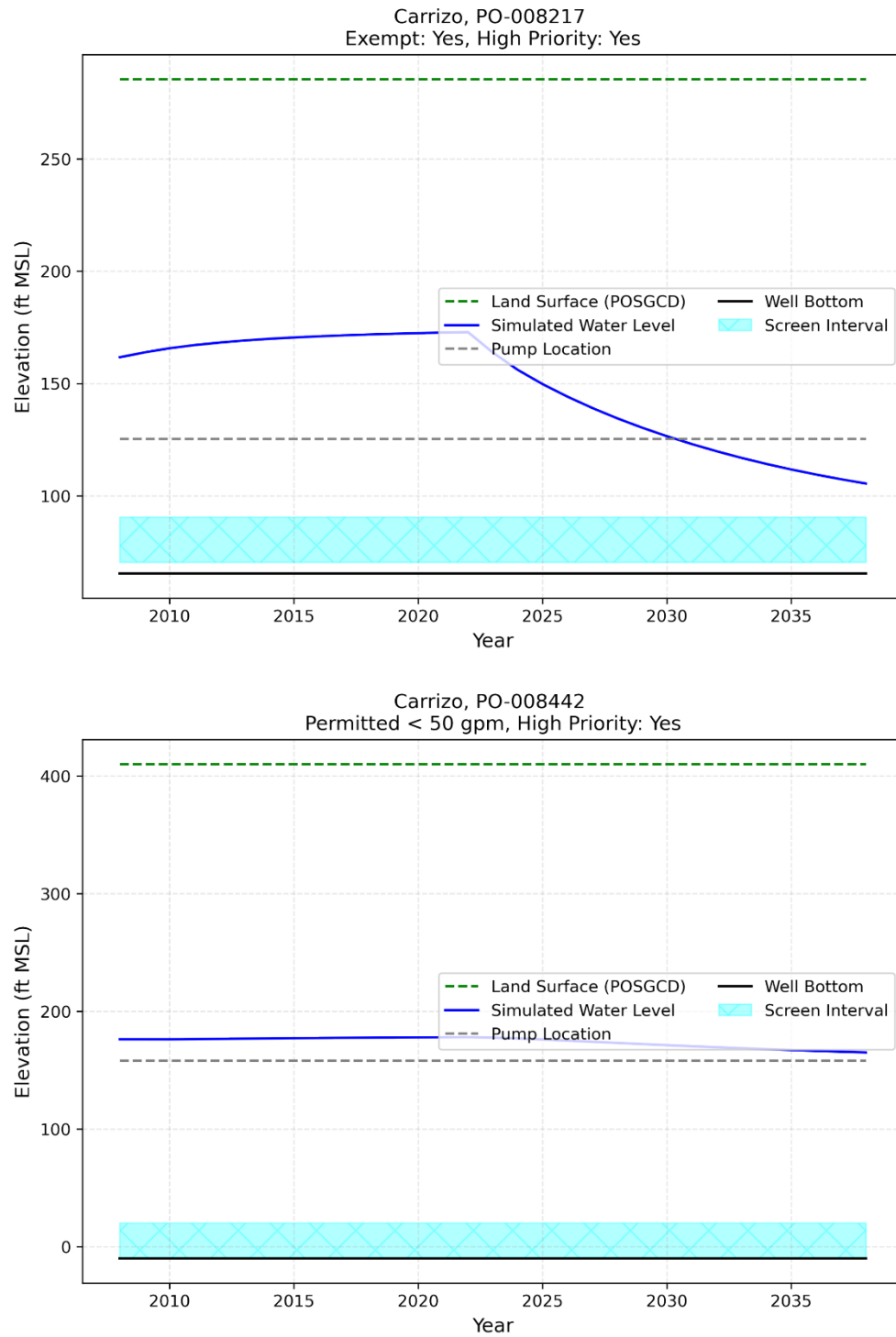


Figure D-3 Simulated water levels for high-priority well PO-008217 and PO-008442 located in the Carrizo Aquifer

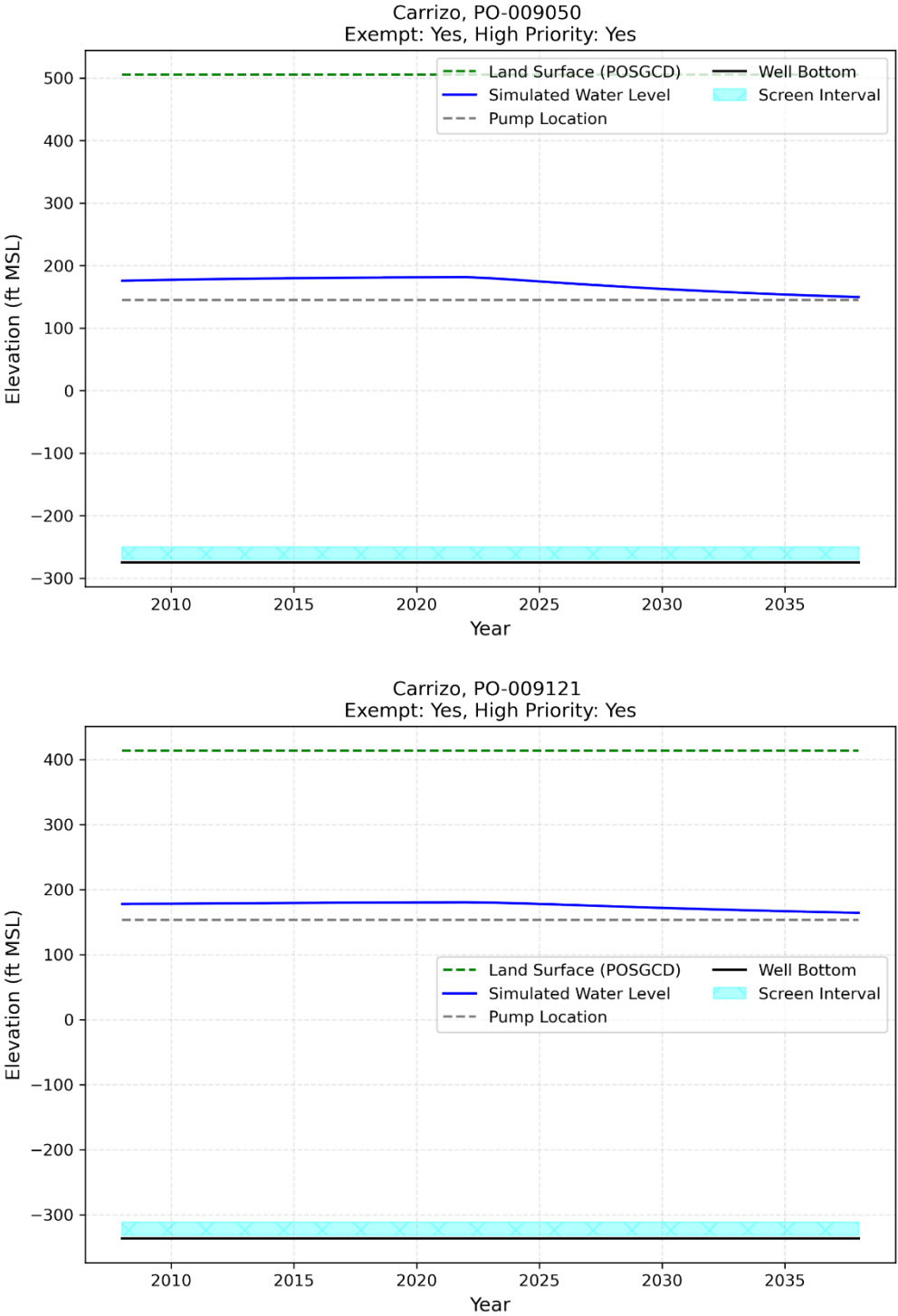


Figure D-4 Simulated water levels for high-priority wells PO-009050 and PO-009121 located in the Carrizo Aquifer

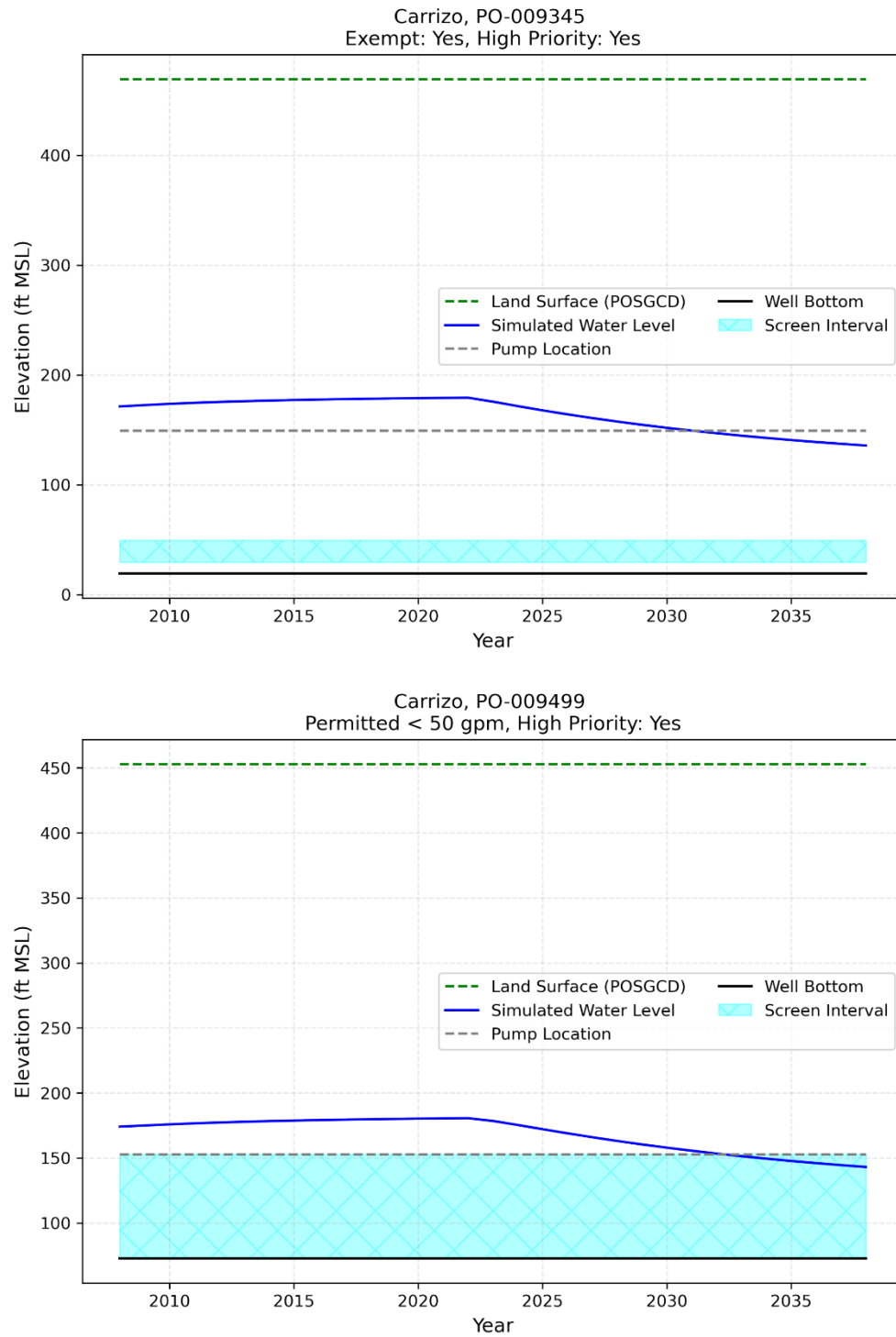


Figure D-5 Simulated water levels for high-priority wells PO-009345 and PO-009499 located in the Carrizo Aquifer

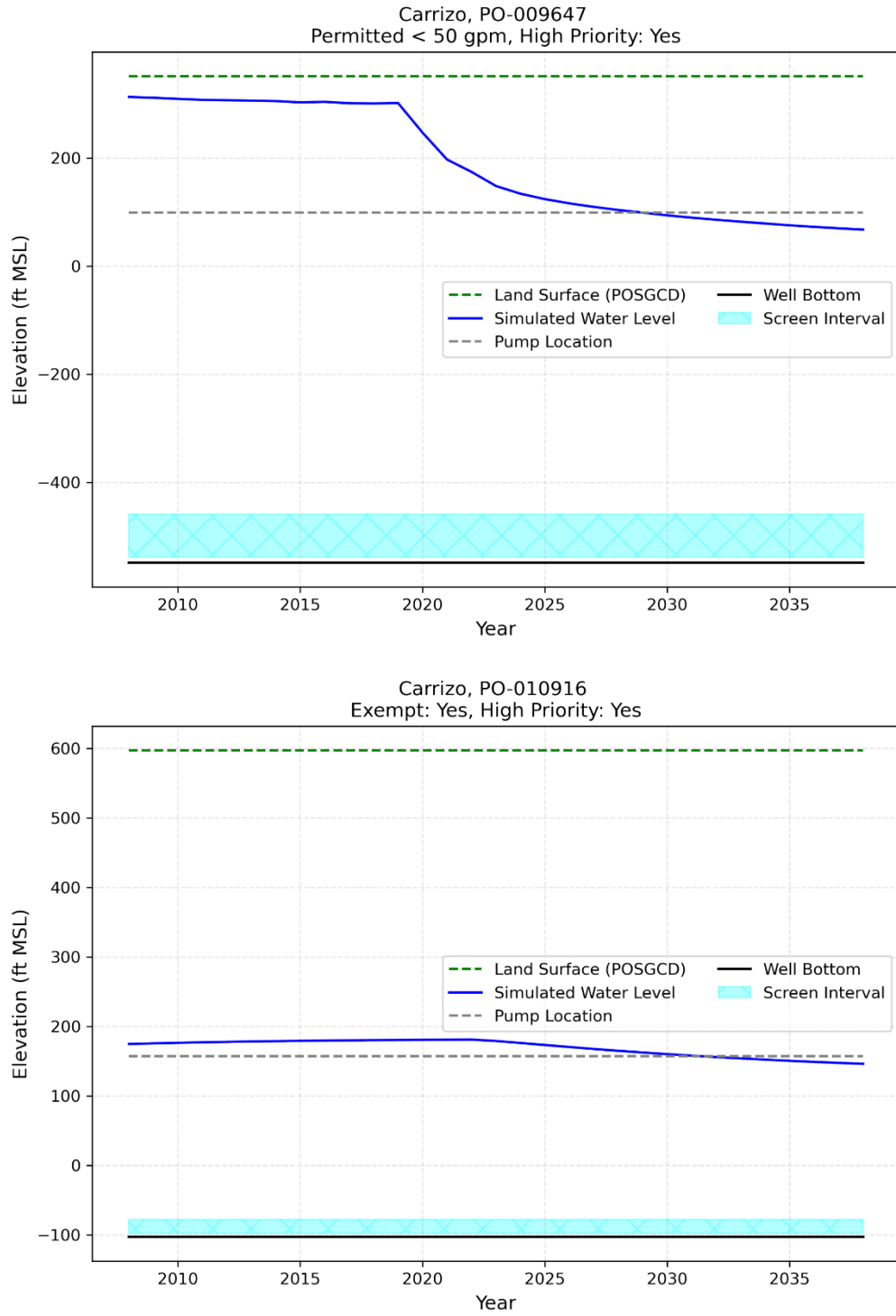


Figure D-6 Simulated water levels for high-priority wells PO-009647 and PO-010916 located in the Carrizo Aquifer

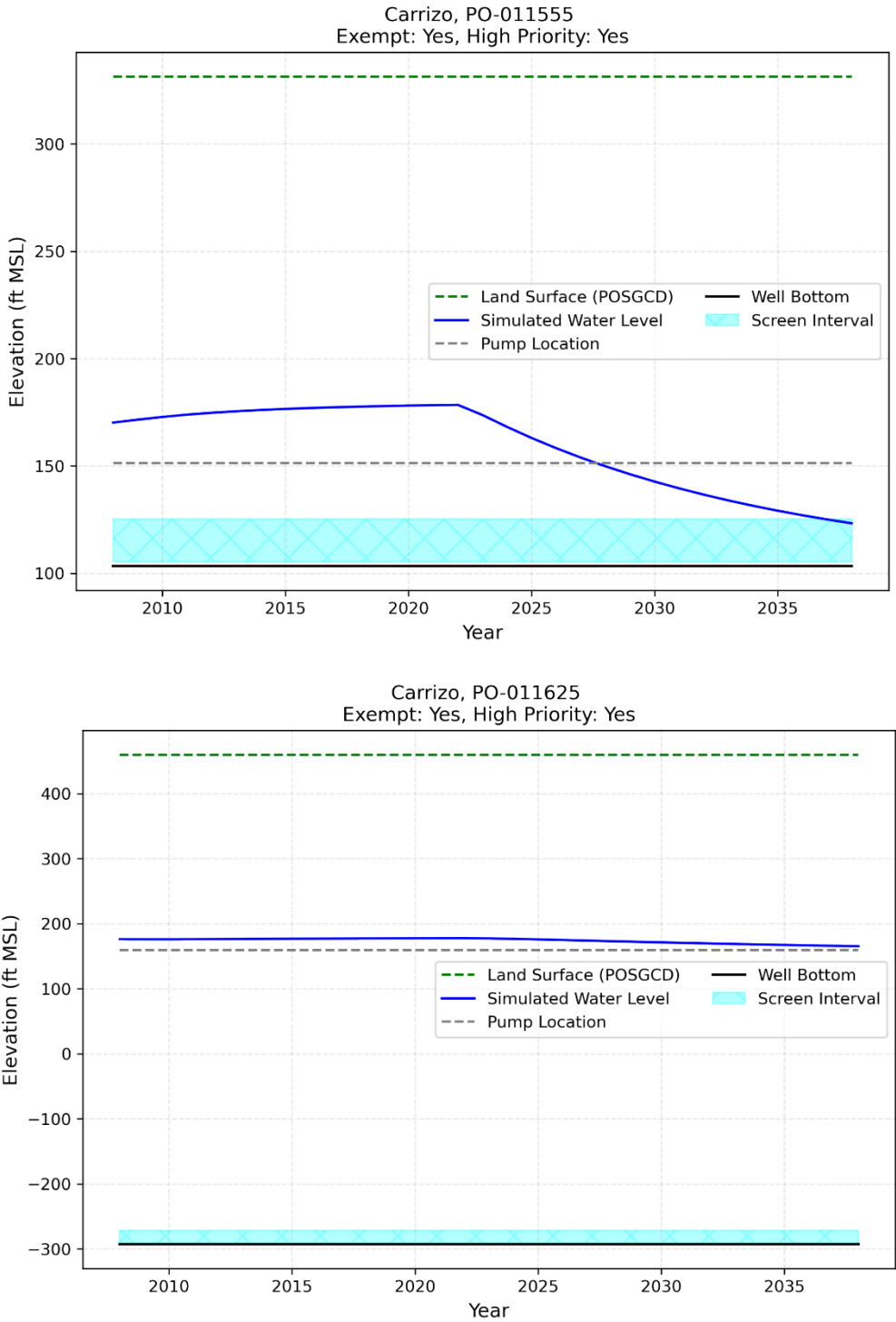


Figure D-7 Simulated water levels for high-priority wells PO-011555 and PO-011625 located in the Carrizo Aquifer

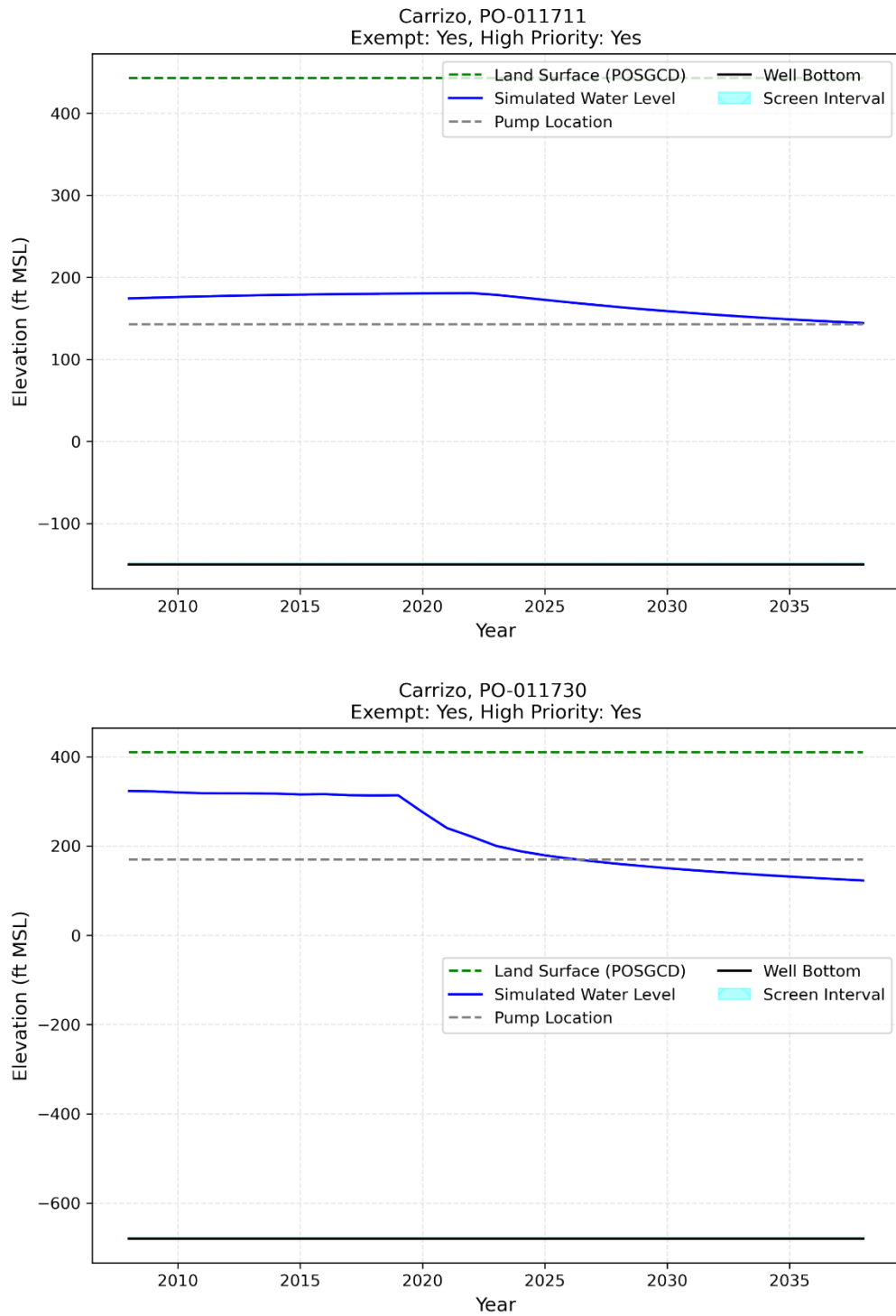


Figure D-8 Simulated water levels for high-priority wells PO-011711 and PO-011730 located in the Carrizo Aquifer

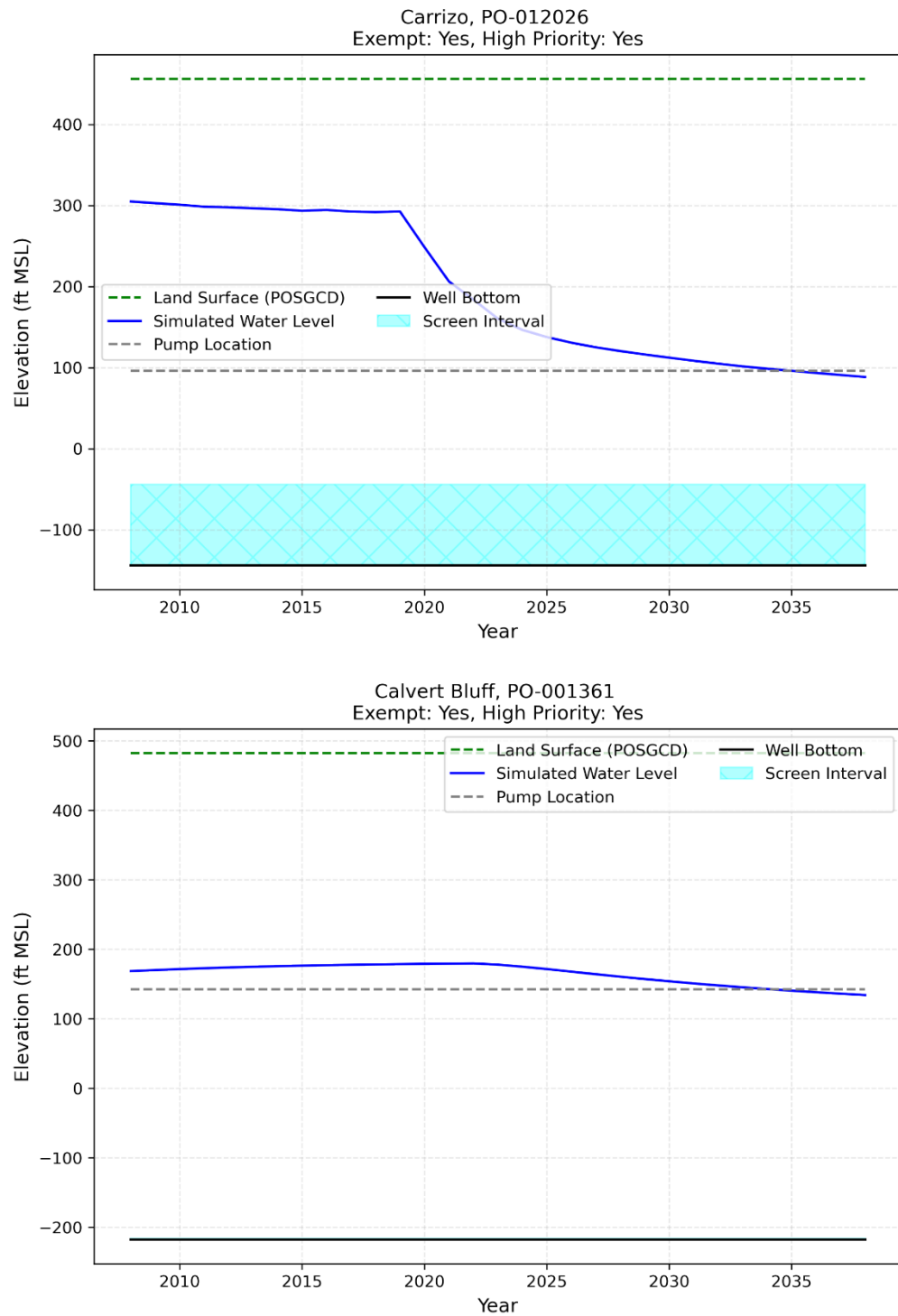


Figure D-9 Simulated water levels for high-priority wells PO-012026 and PO-001361 located in the Carrizo and Calvert Bluff Aquifers, respectively

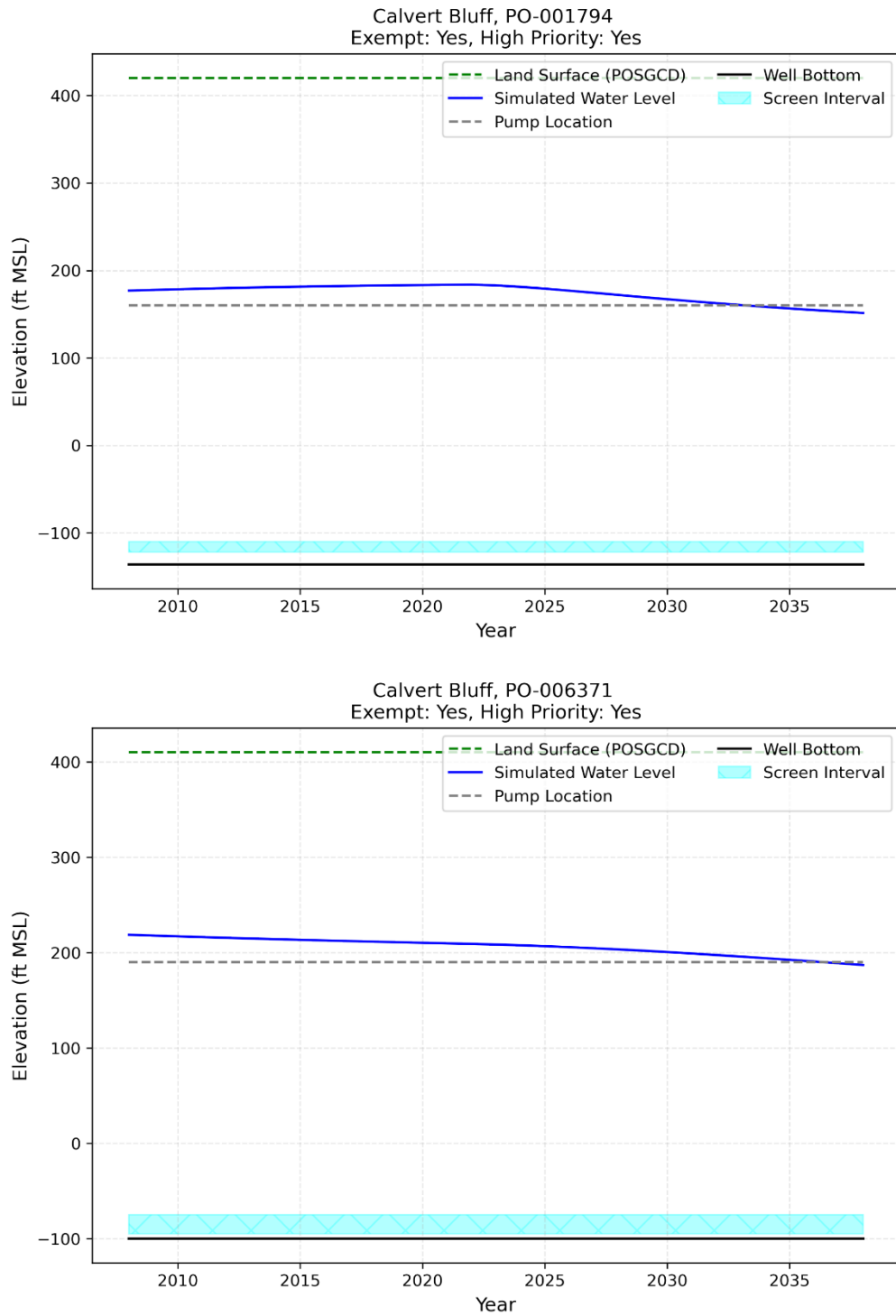


Figure D-10 Simulated water levels for high-priority wells PO-001794 and PO-006371 located in the Calvert Bluff Aquifer

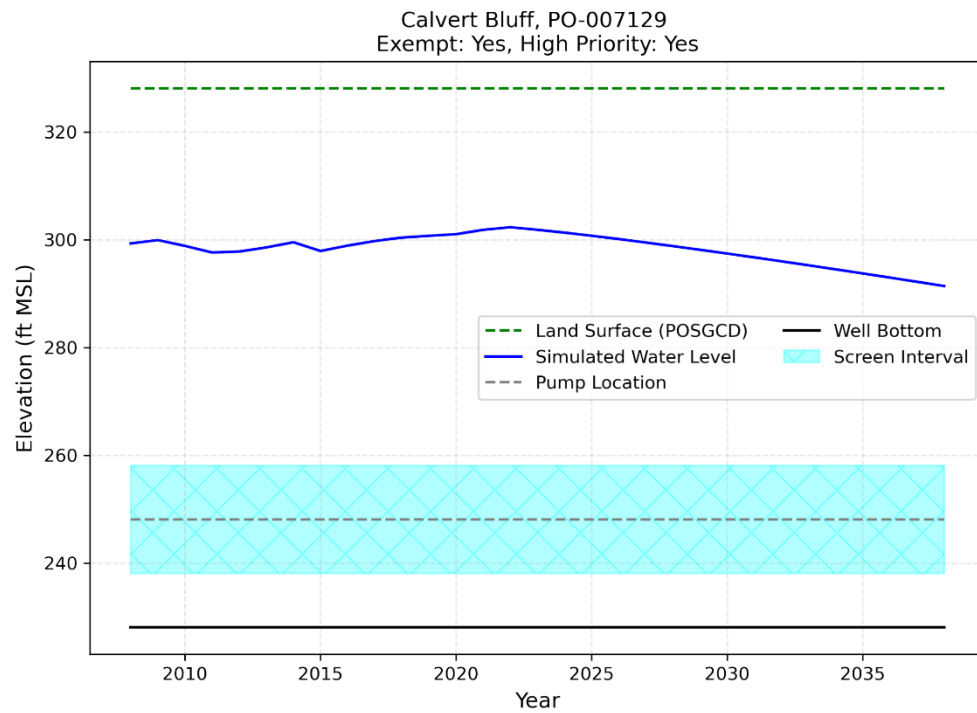
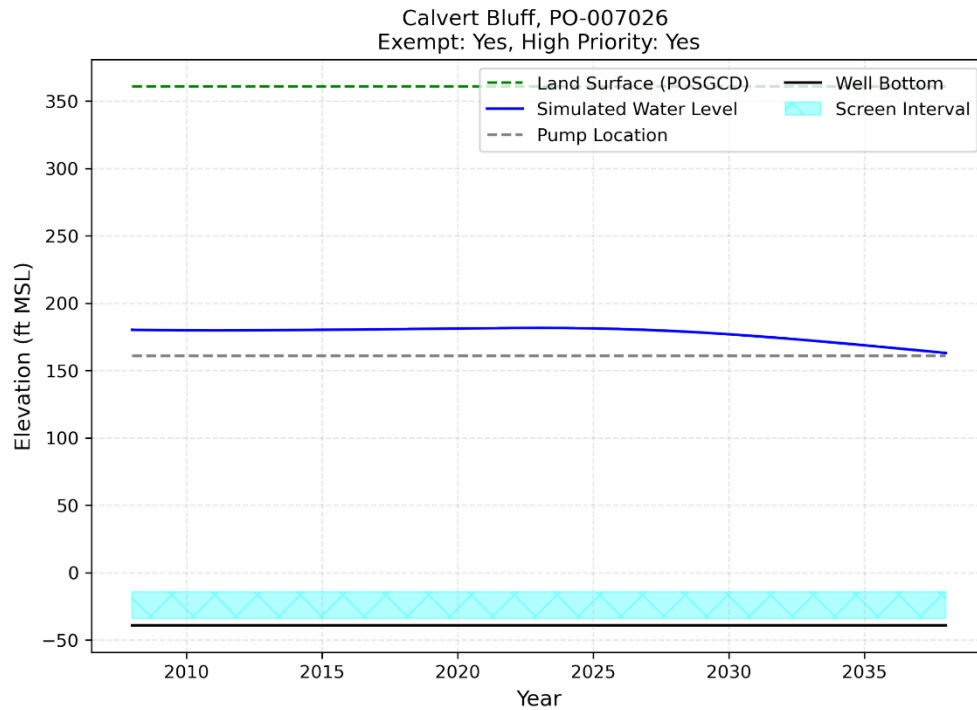


Figure D-11 Simulated water levels for high-priority wells PO-007026 and PO-007129 located in the Calvert Bluff Aquifer

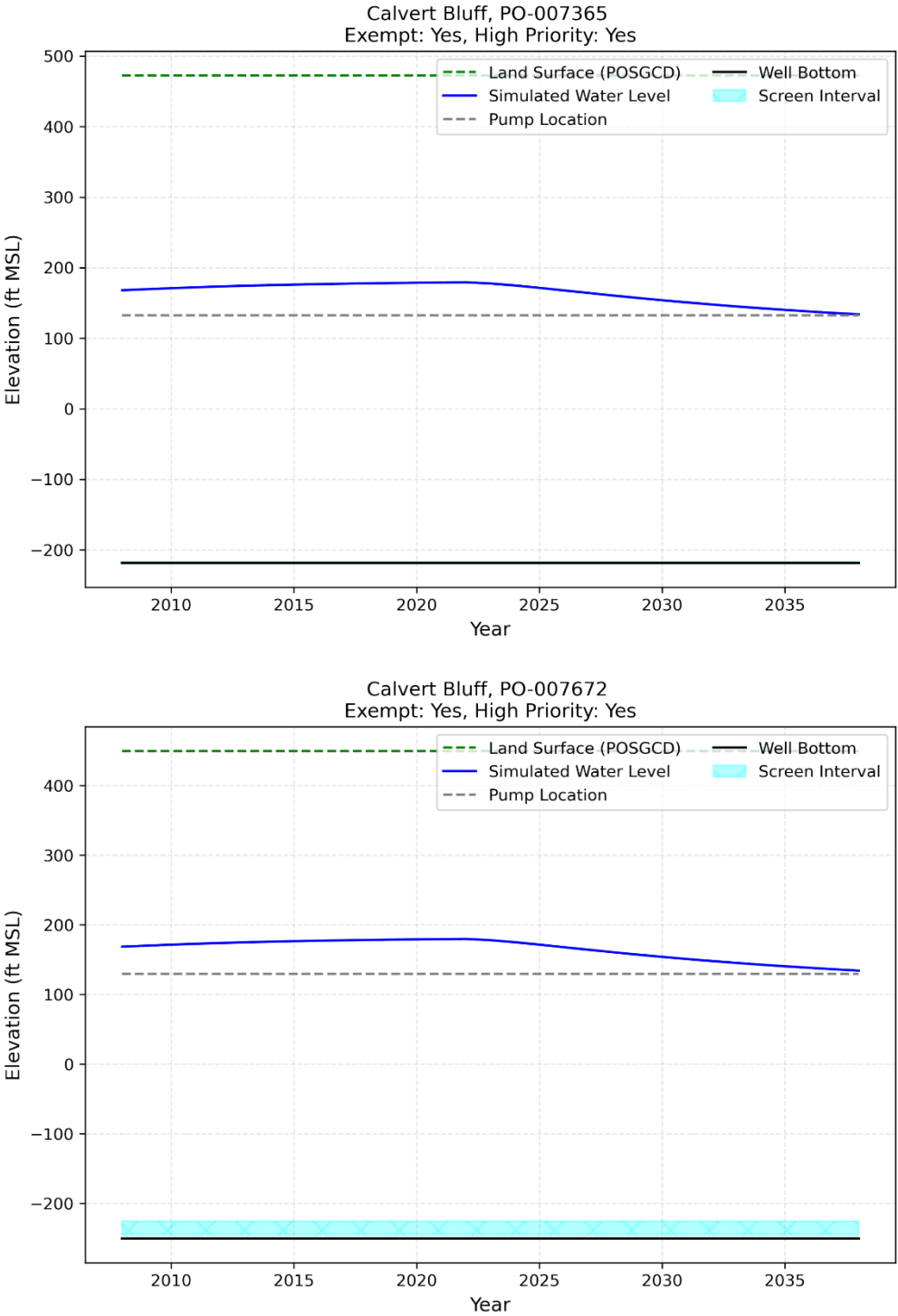


Figure D-12 Simulated water levels for high-priority well PO-007365 and PO-007672 located in the Calvert Bluff Aquifer

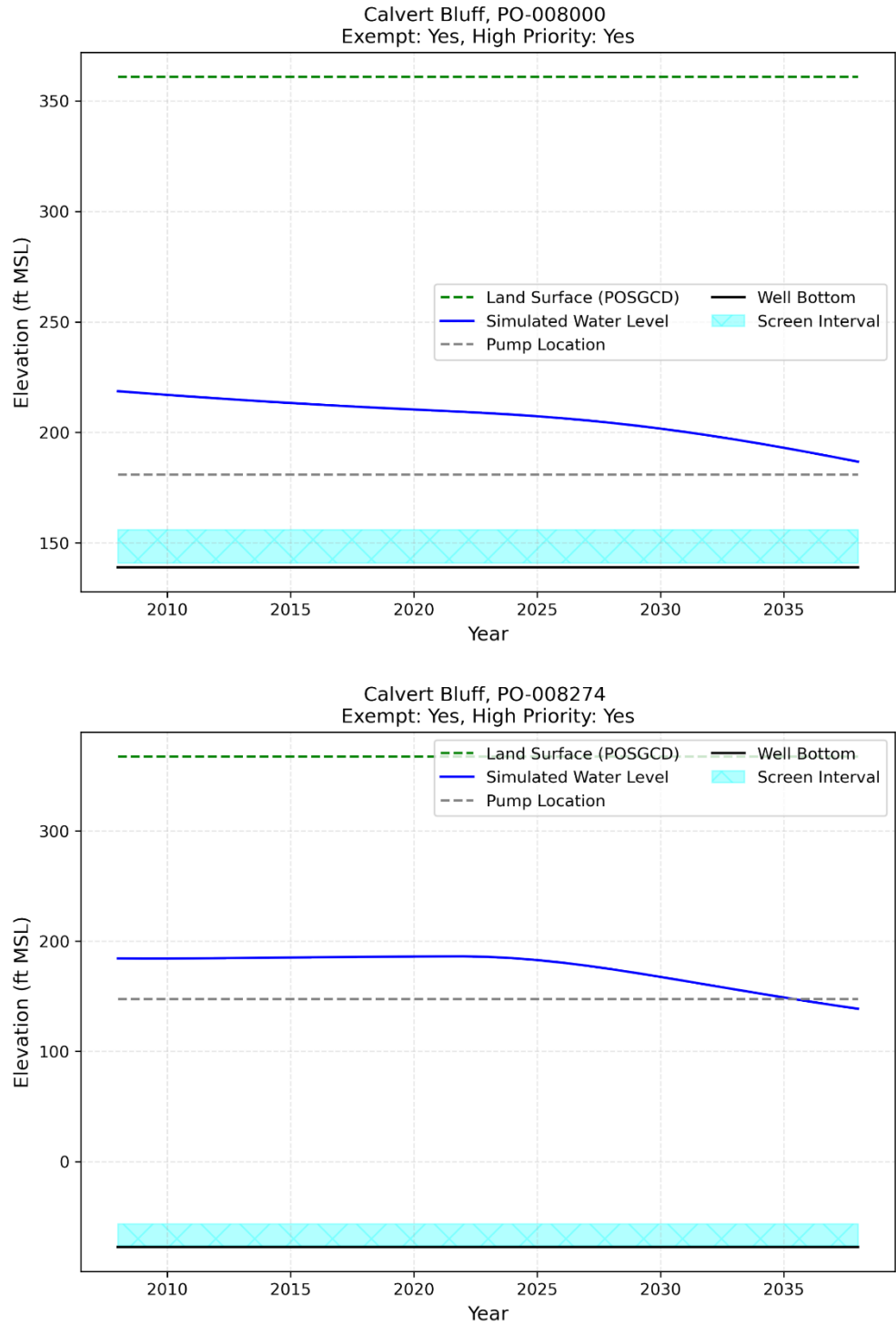


Figure D-13 Simulated water levels for high-priority wells PO-008000 and PO-008274 located in the Calvert Bluff Aquifer

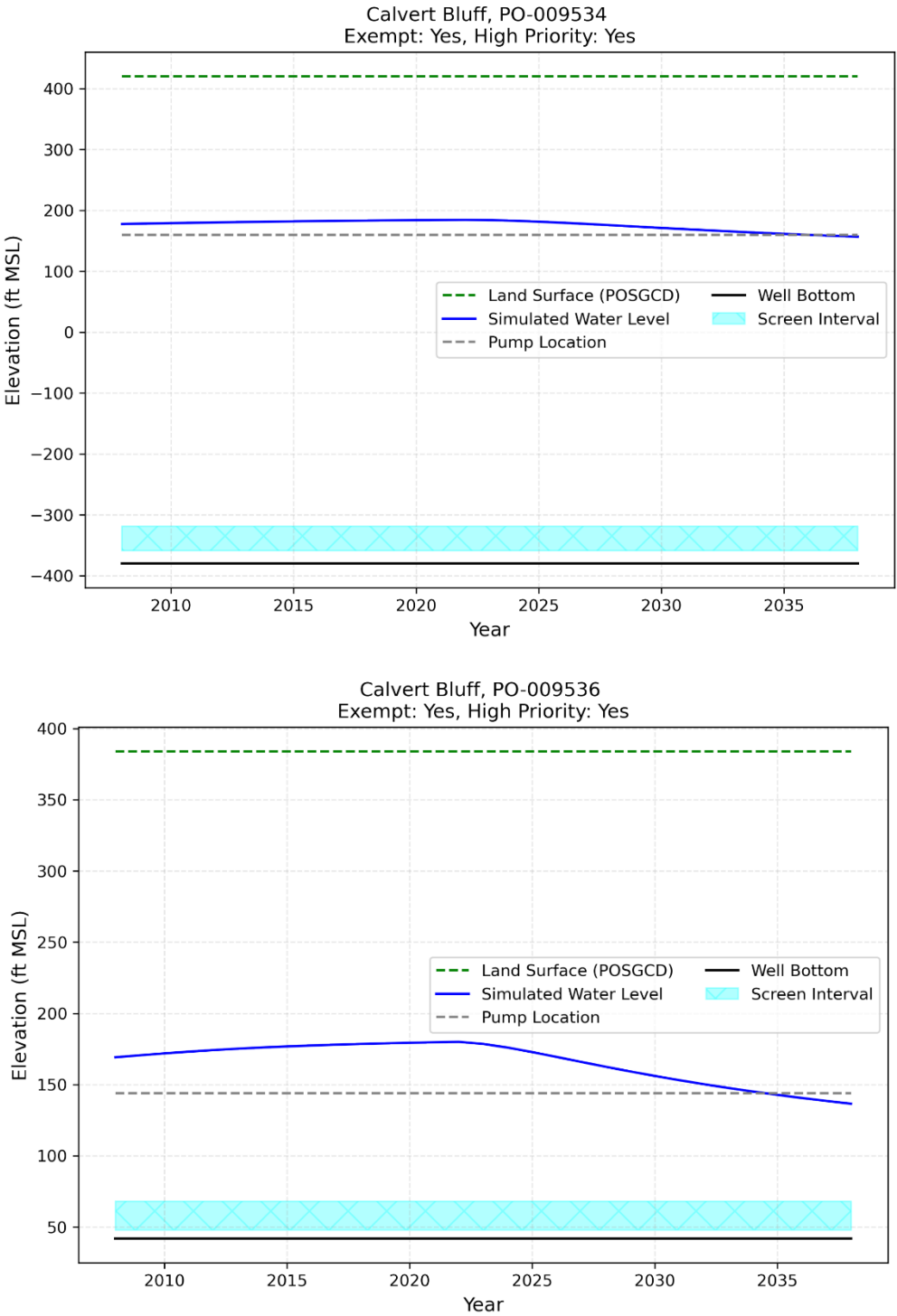


Figure D-14 Simulated water levels for high-priority well PO-009534 and PO-009536 located in the Calvert Bluff Aquifer

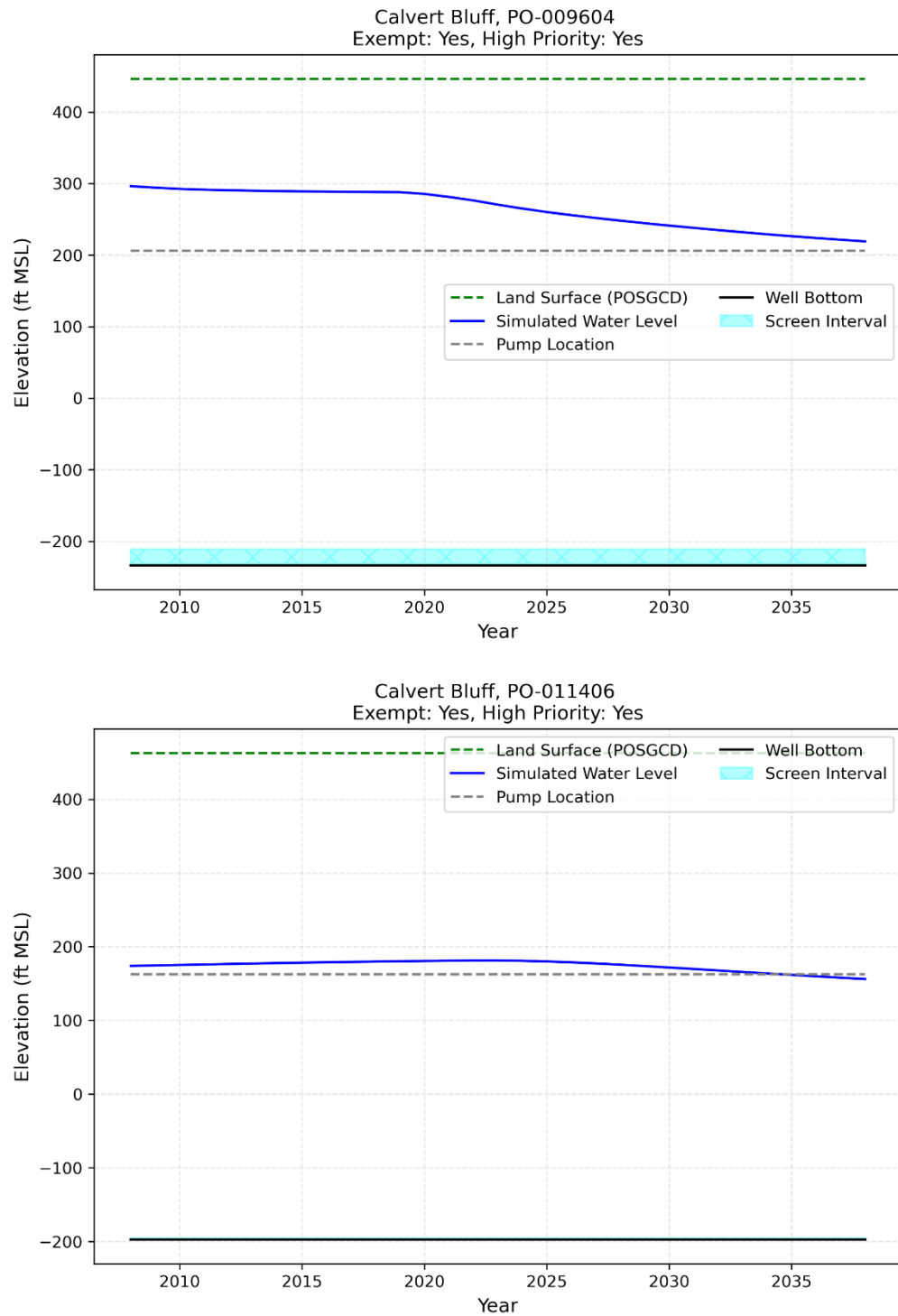


Figure D-15 Simulated water levels for high-priority well PO-009604 and PO-011406 located in the Calvert Bluff Aquifer

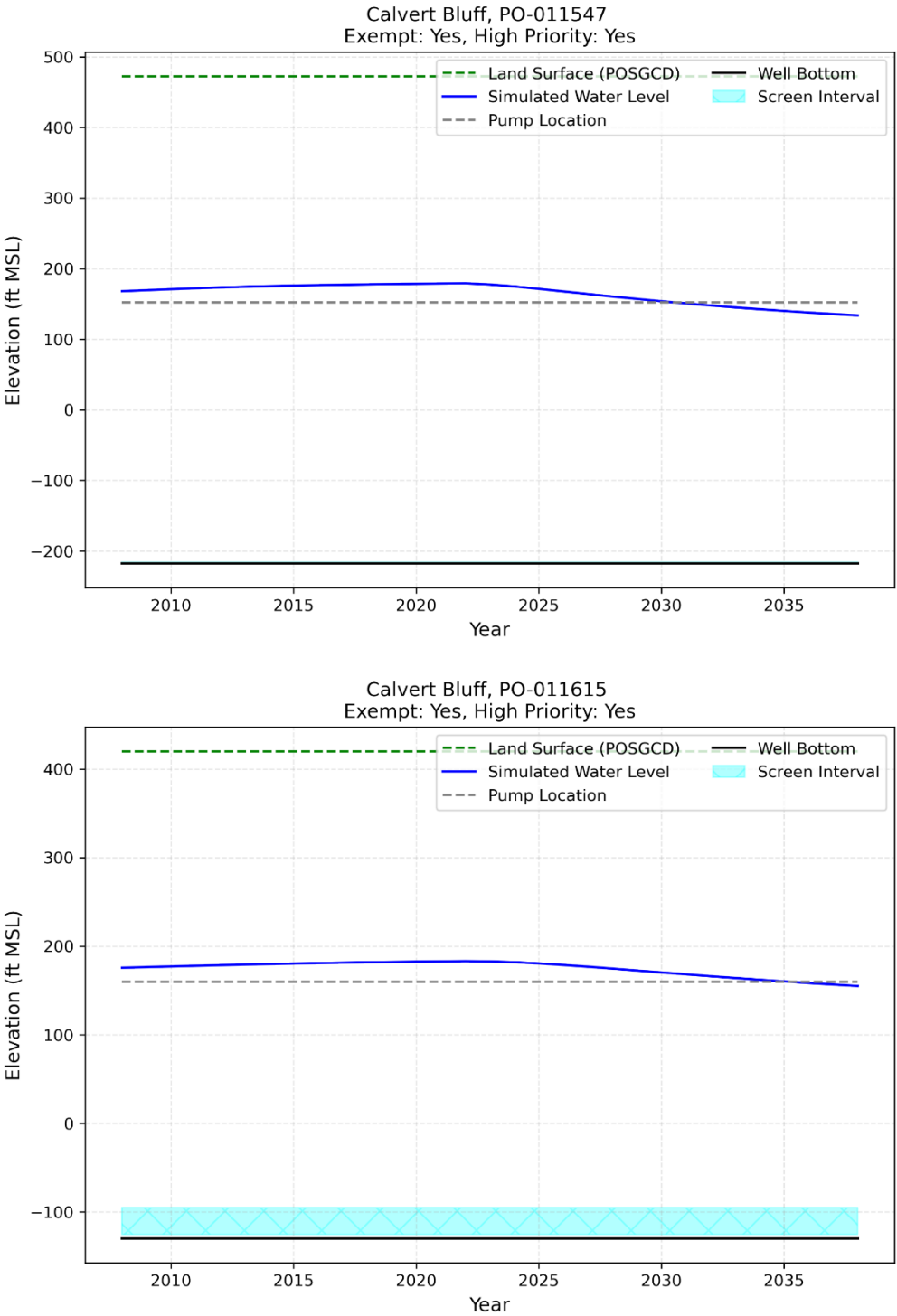


Figure D-16 Simulated water levels for high-priority wells PO-011547 and PO-011615 located in the Calvert Bluff Aquifer

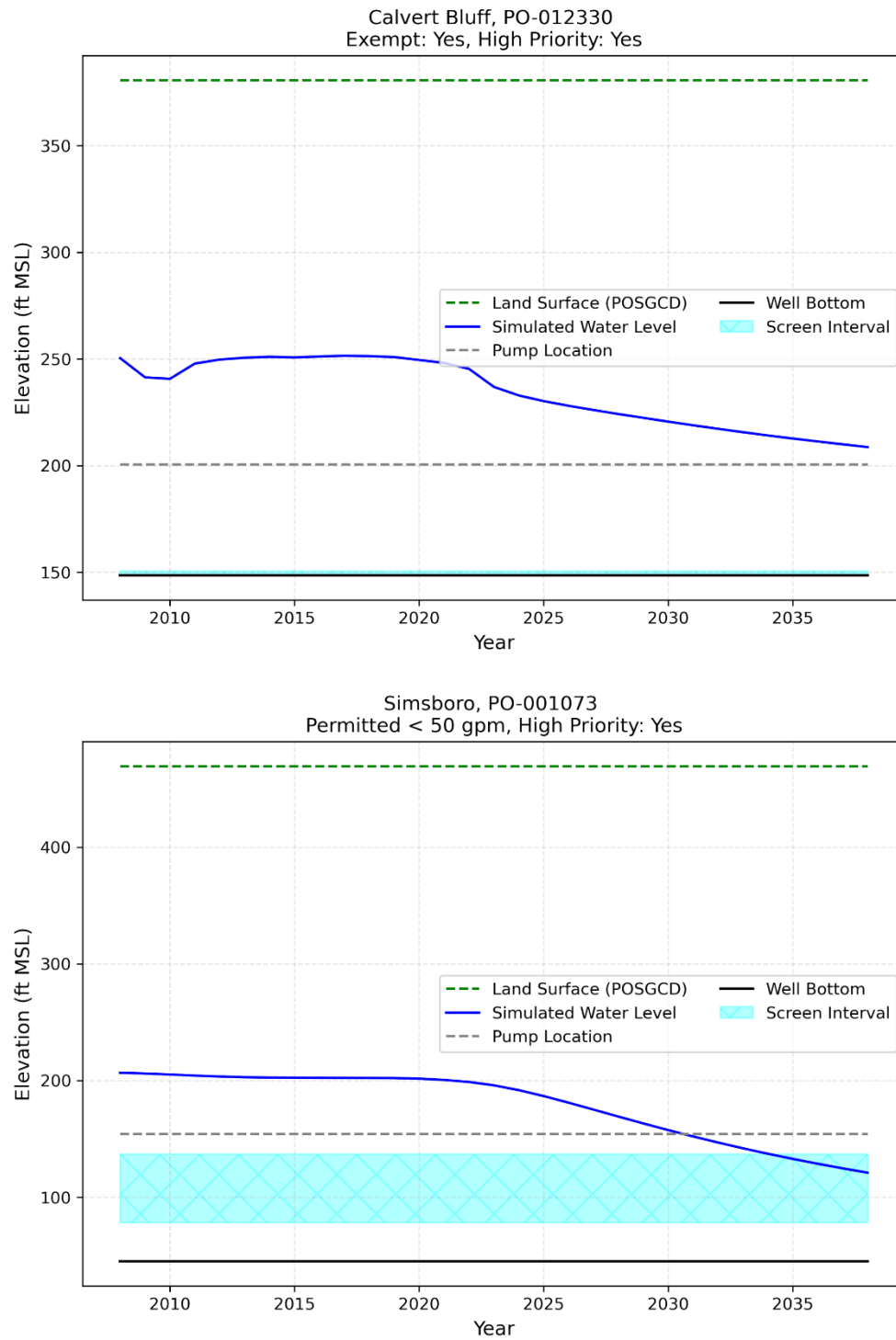


Figure D-17 Simulated water levels for high-priority wells PO-012330 and PO-001073 located in the Calvert Bluff and Simsboro Aquifers, respectively

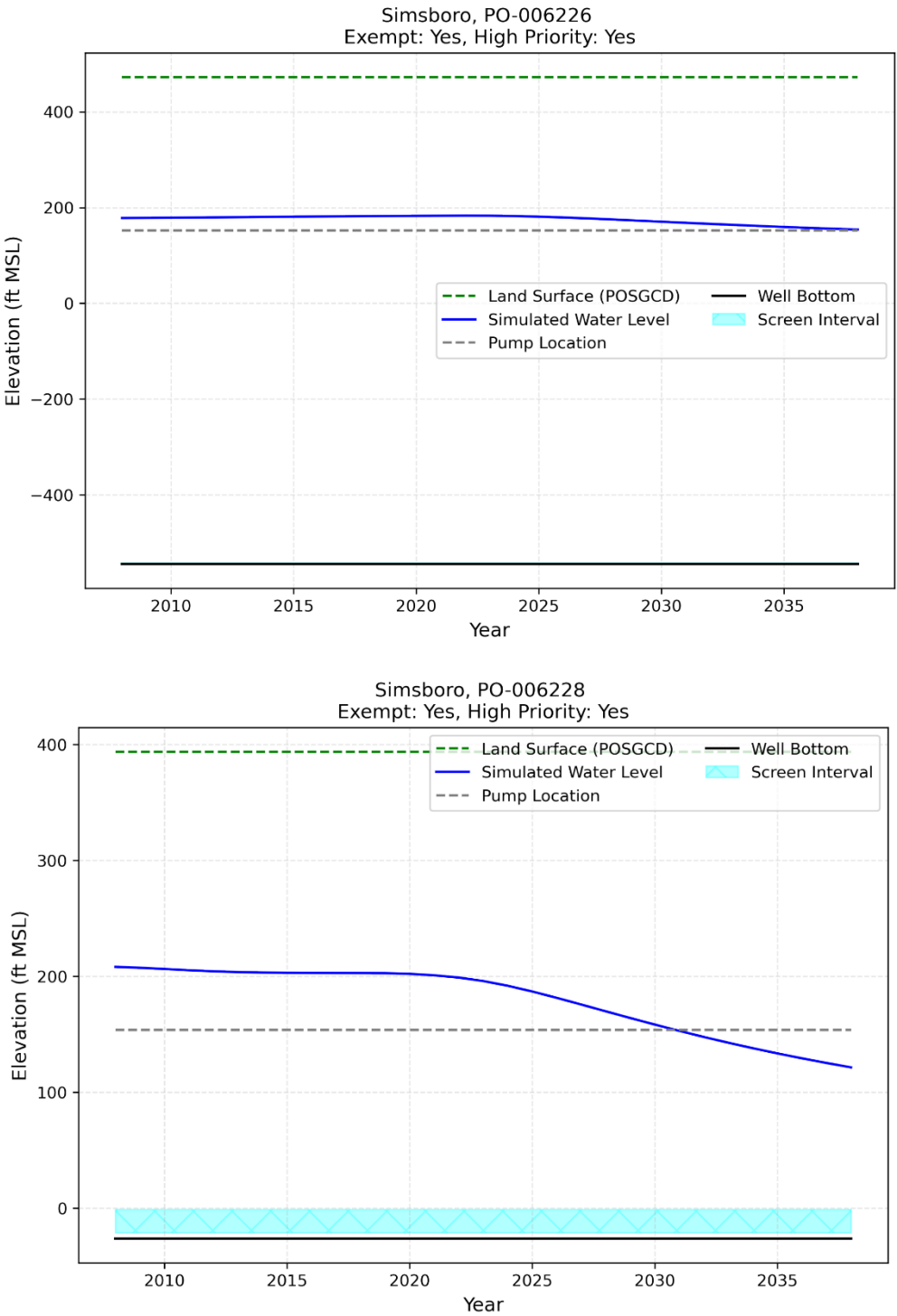


Figure D-18 Simulated water levels for high-priority wells PO-006226 and PO-006228 located in the Simsboro Aquifer

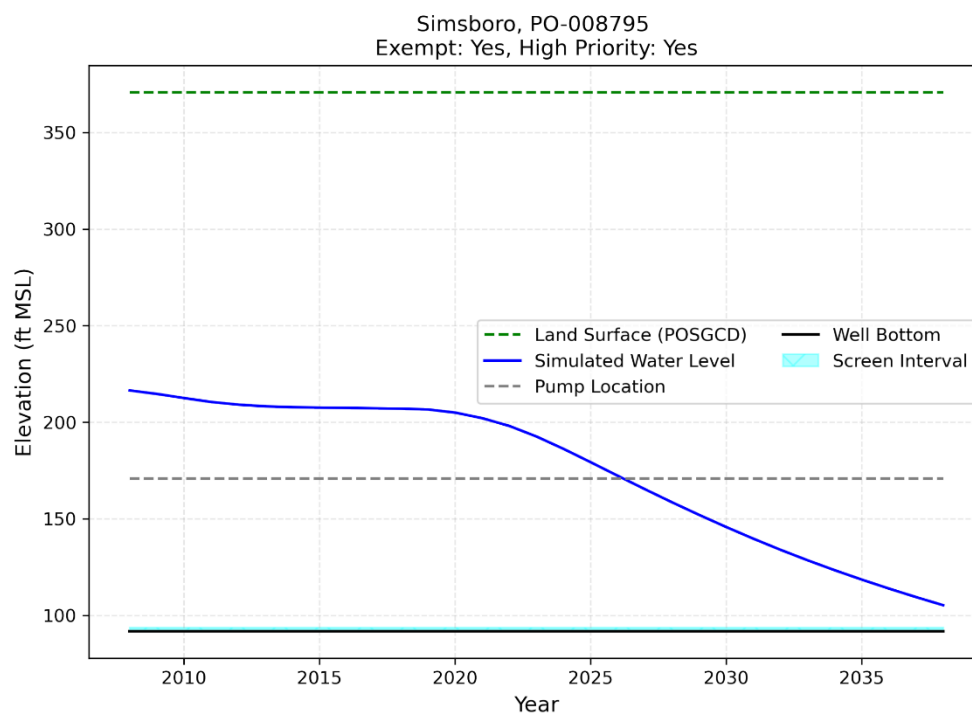
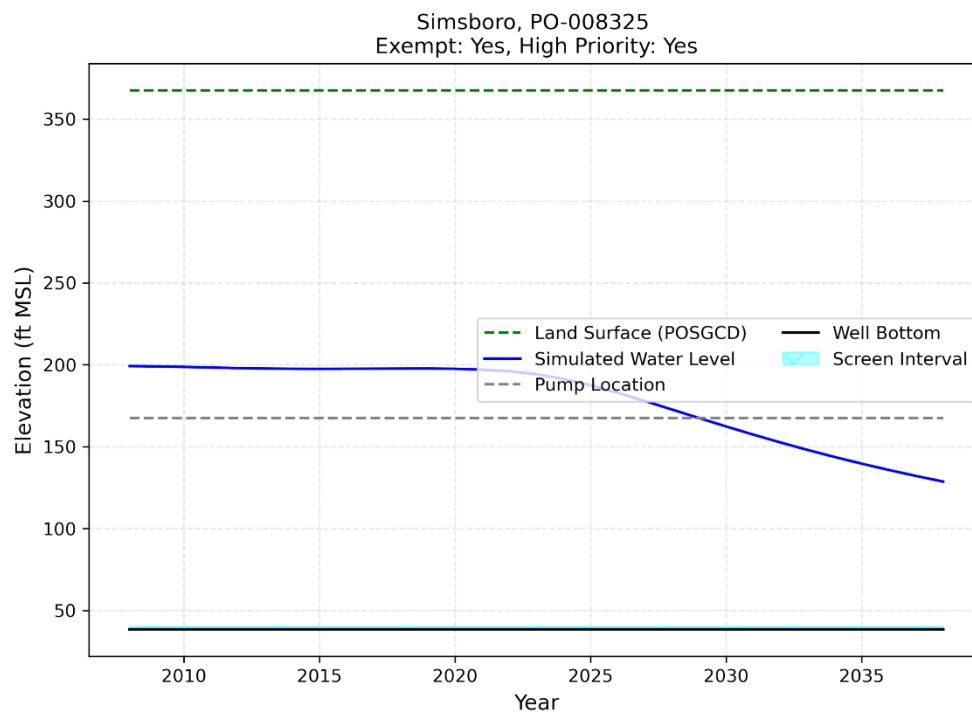


Figure D-19 Simulated water levels for high-priority wells PO-008325 and PO-008795 located in the Simsboro Aquifer

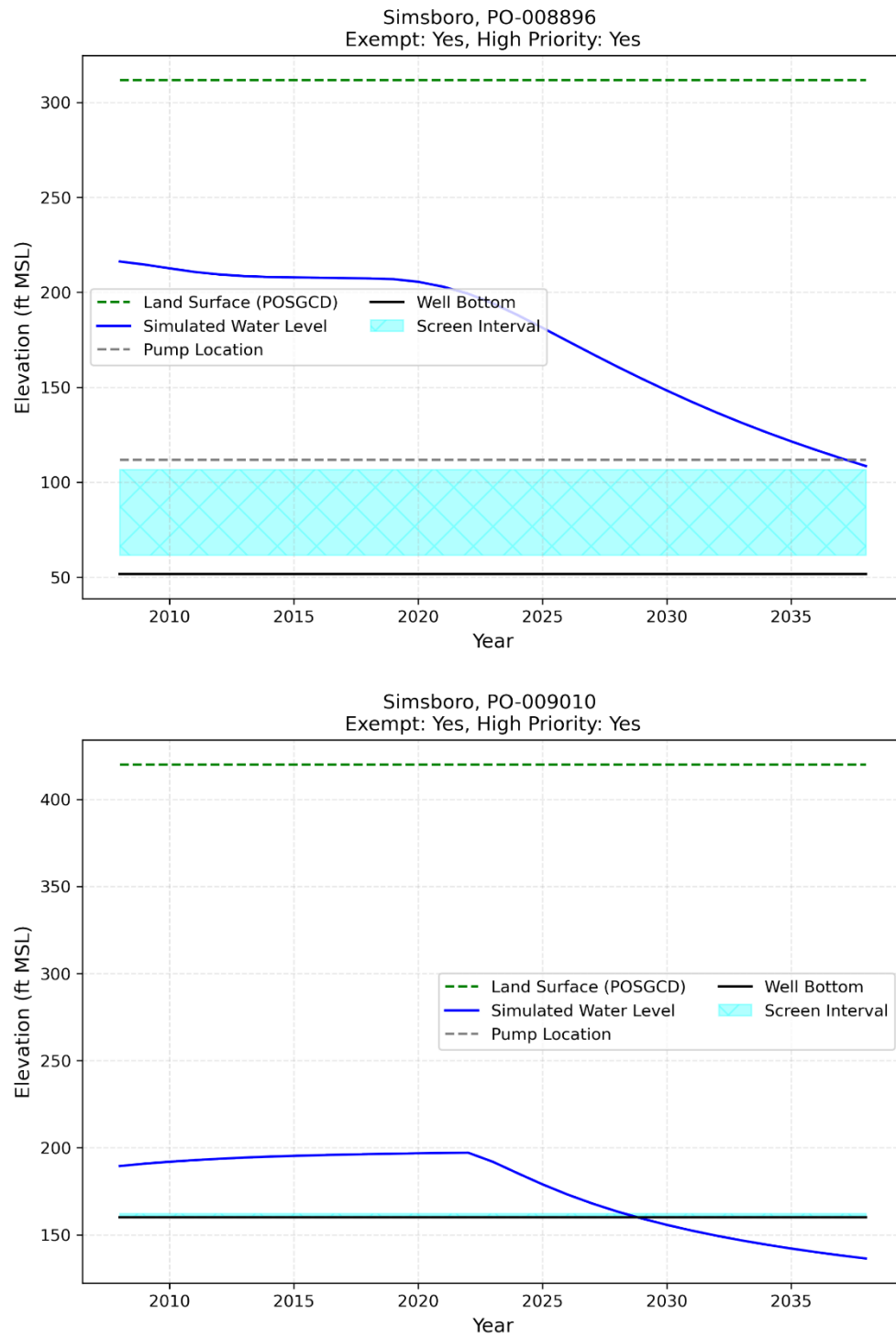


Figure D-20 Simulated water levels for high-priority wells PO-008896 and PO-009010 located in the Simsboro Aquifer

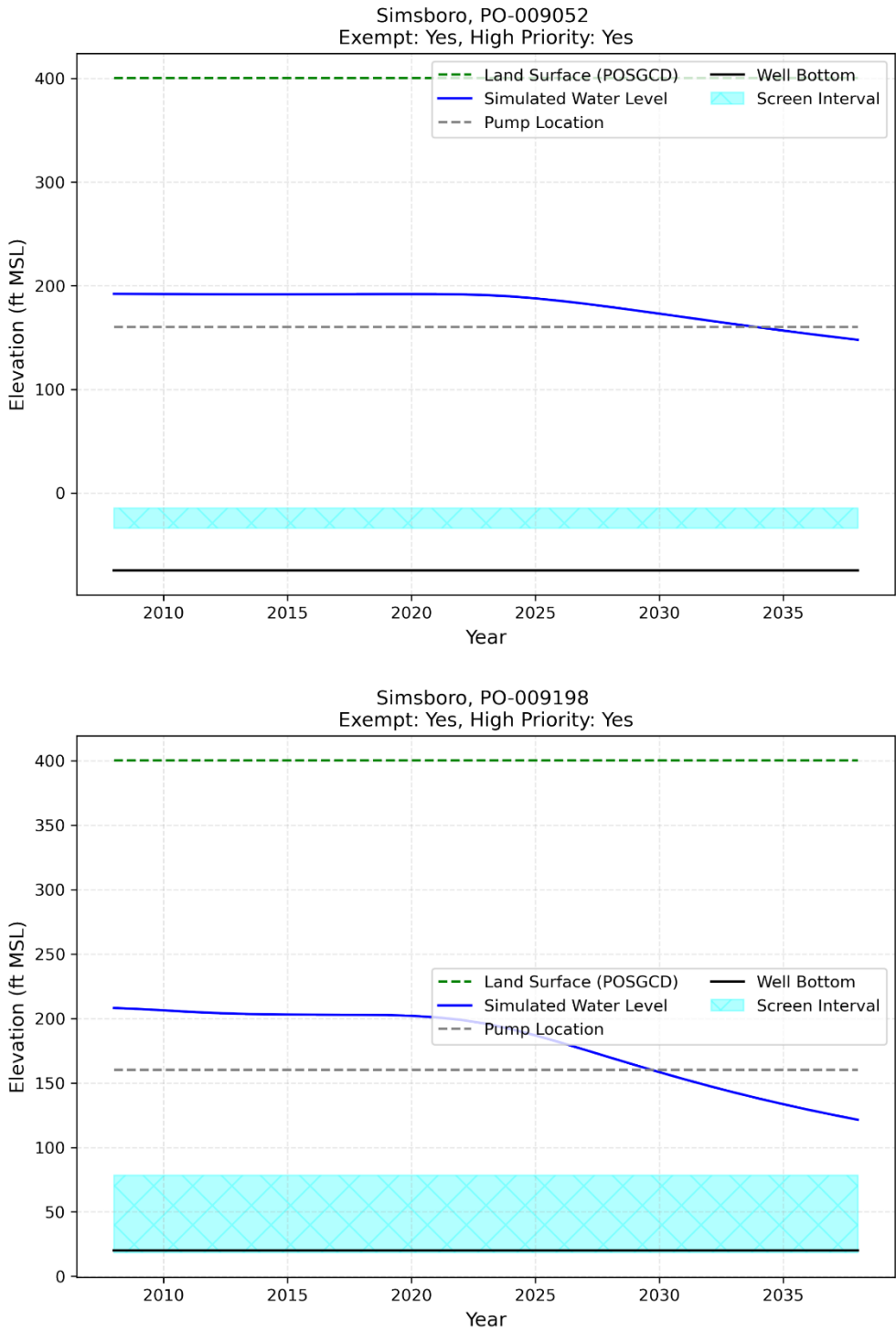


Figure D-21 Simulated water levels for high-priority wells PO-009052 and PO-009198 located in the Simsboro Aquifer

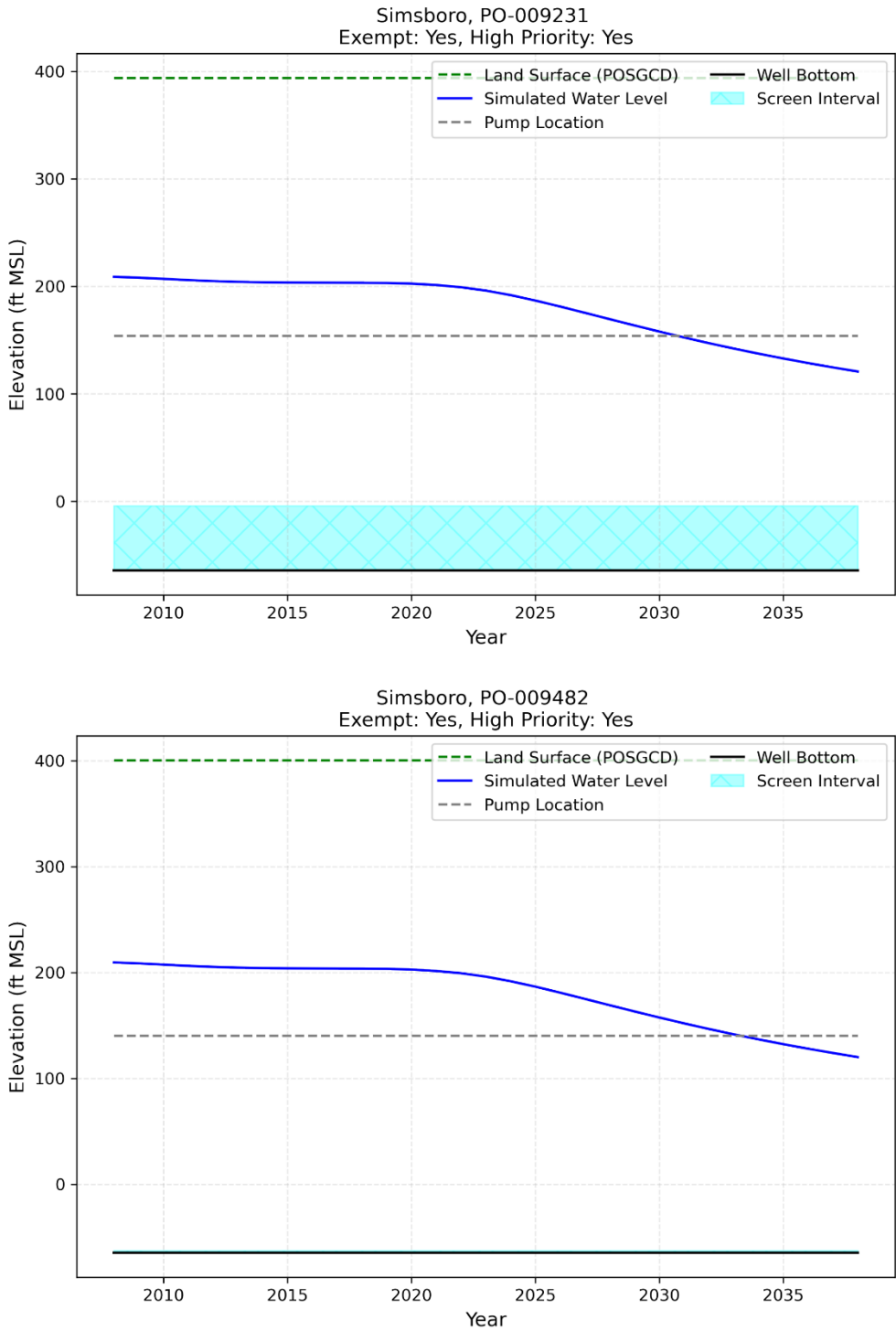


Figure D-22 Simulated water levels for high-priority wells PO-009231 and PO-009482 located in the Simsboro Aquifer

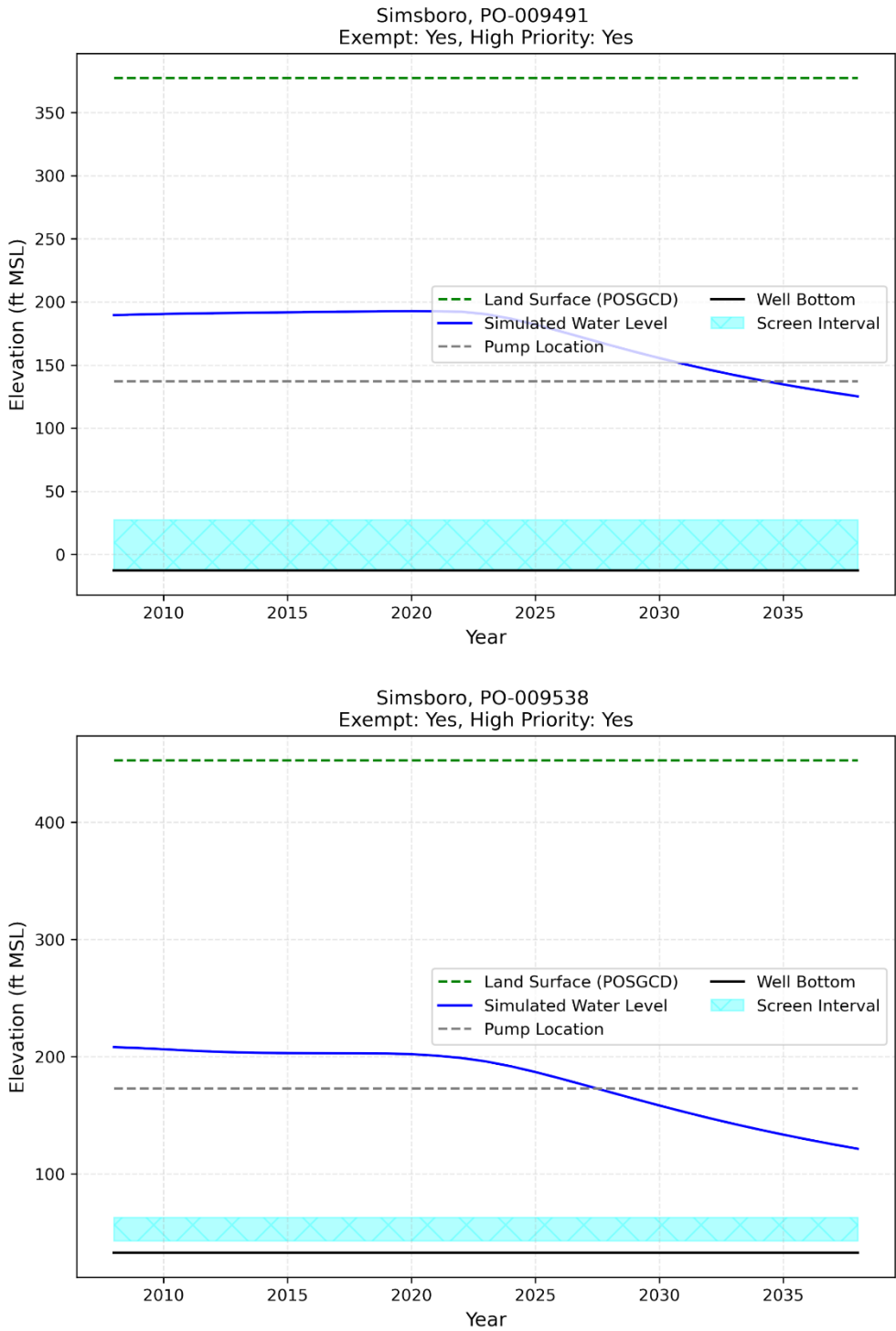


Figure D-23 Simulated water levels for high-priority wells PO-009491 and PO-009538 located in the Simsboro Aquifer

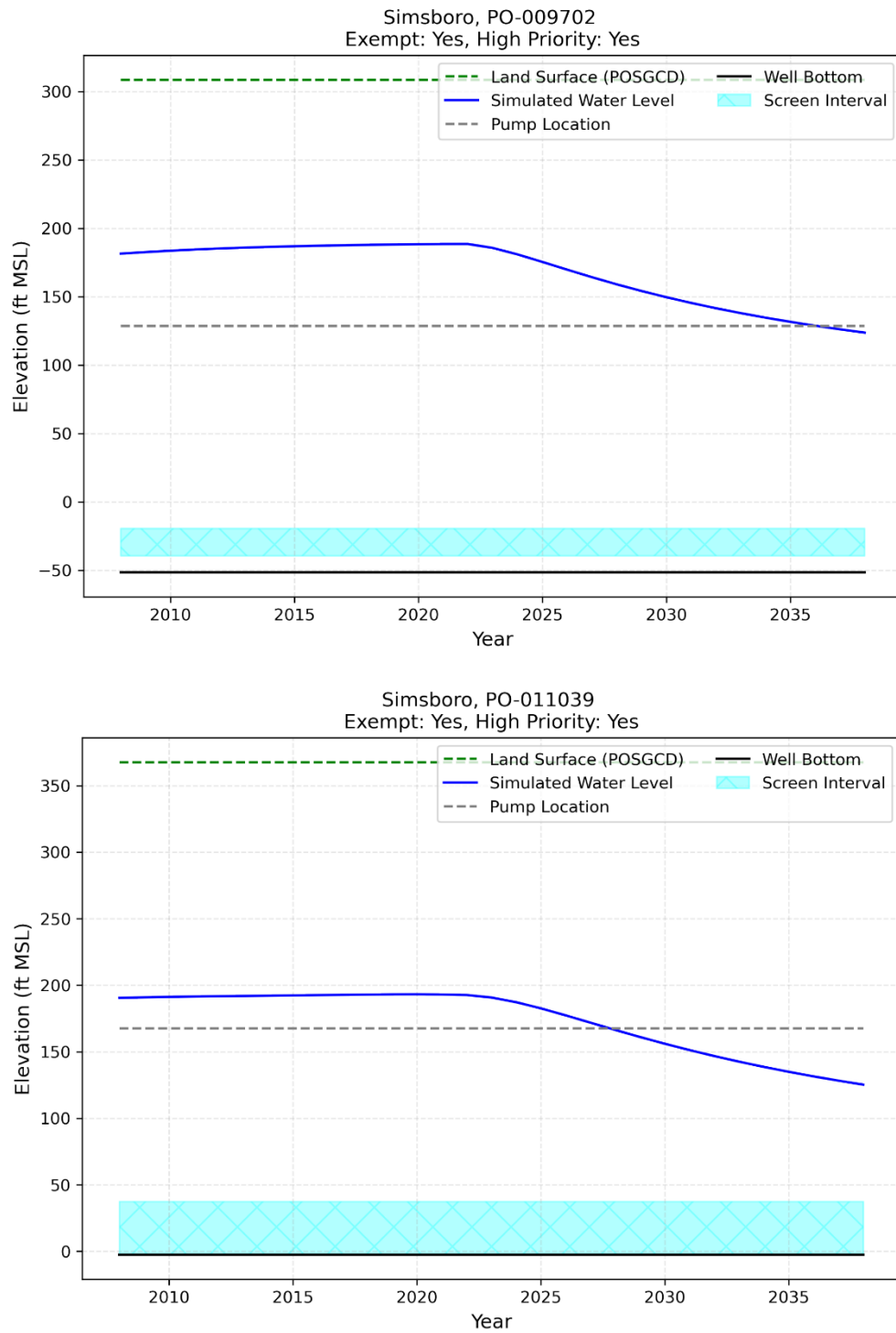


Figure D-24 Simulated water levels for high-priority wells PO-009702 and PO-011039 located in the Simsboro Aquifer

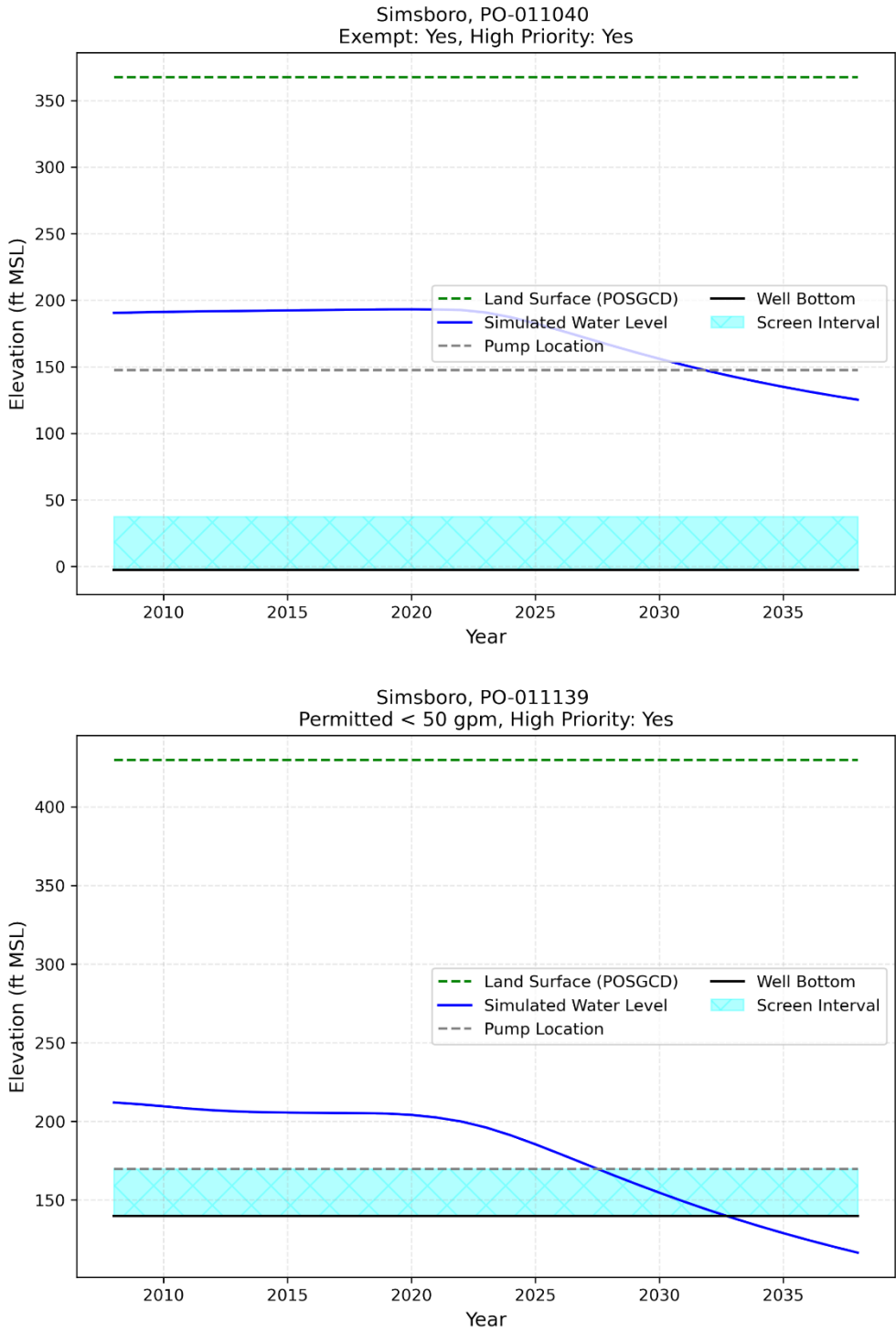


Figure D-25 Simulated water levels for high-priority wells PO-011040 and PO-011139 located in the Simsboro Aquifer

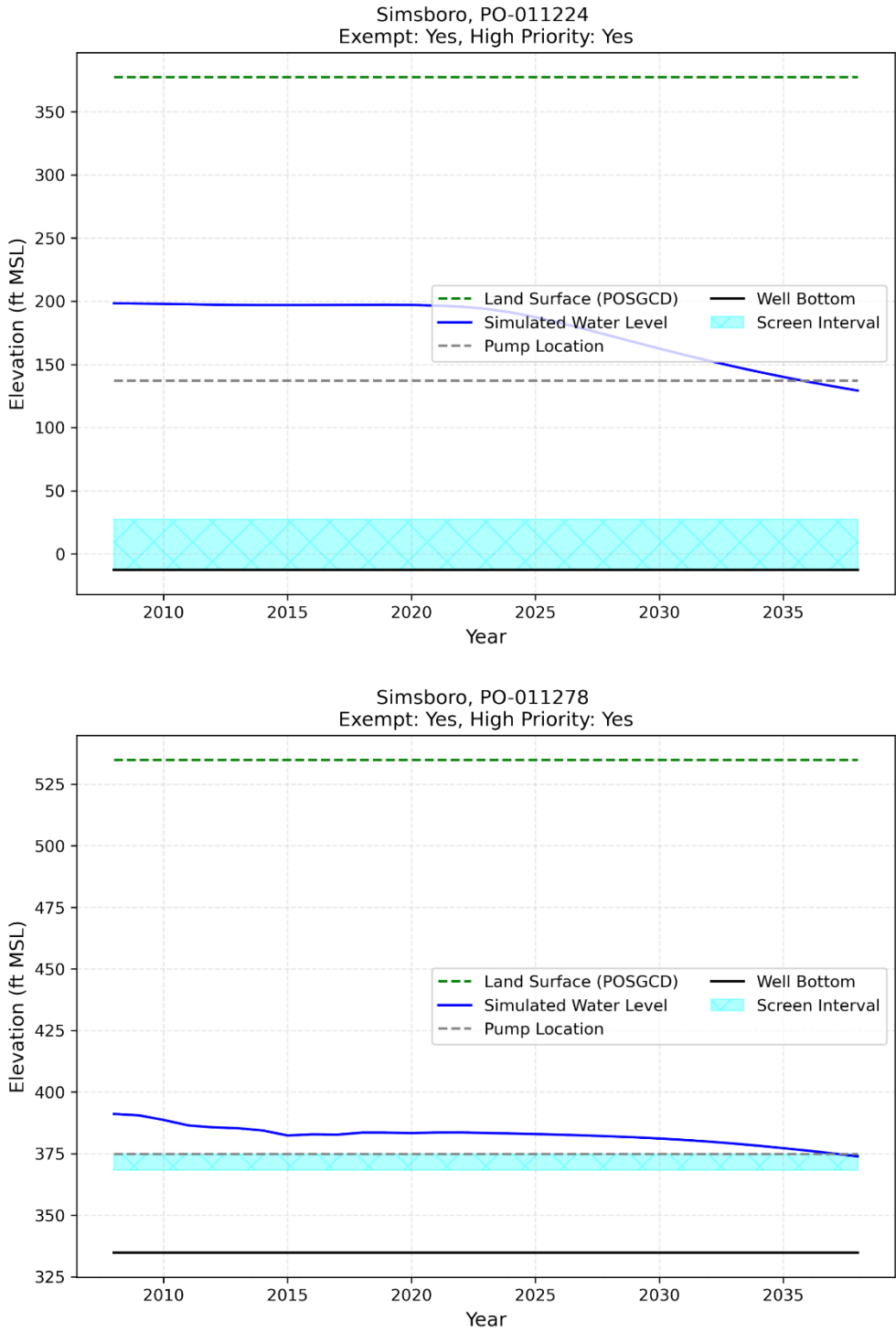


Figure D-26 Simulated water levels for high-priority wells PO-011224 and PO-011278 located in the Simsboro Aquifer

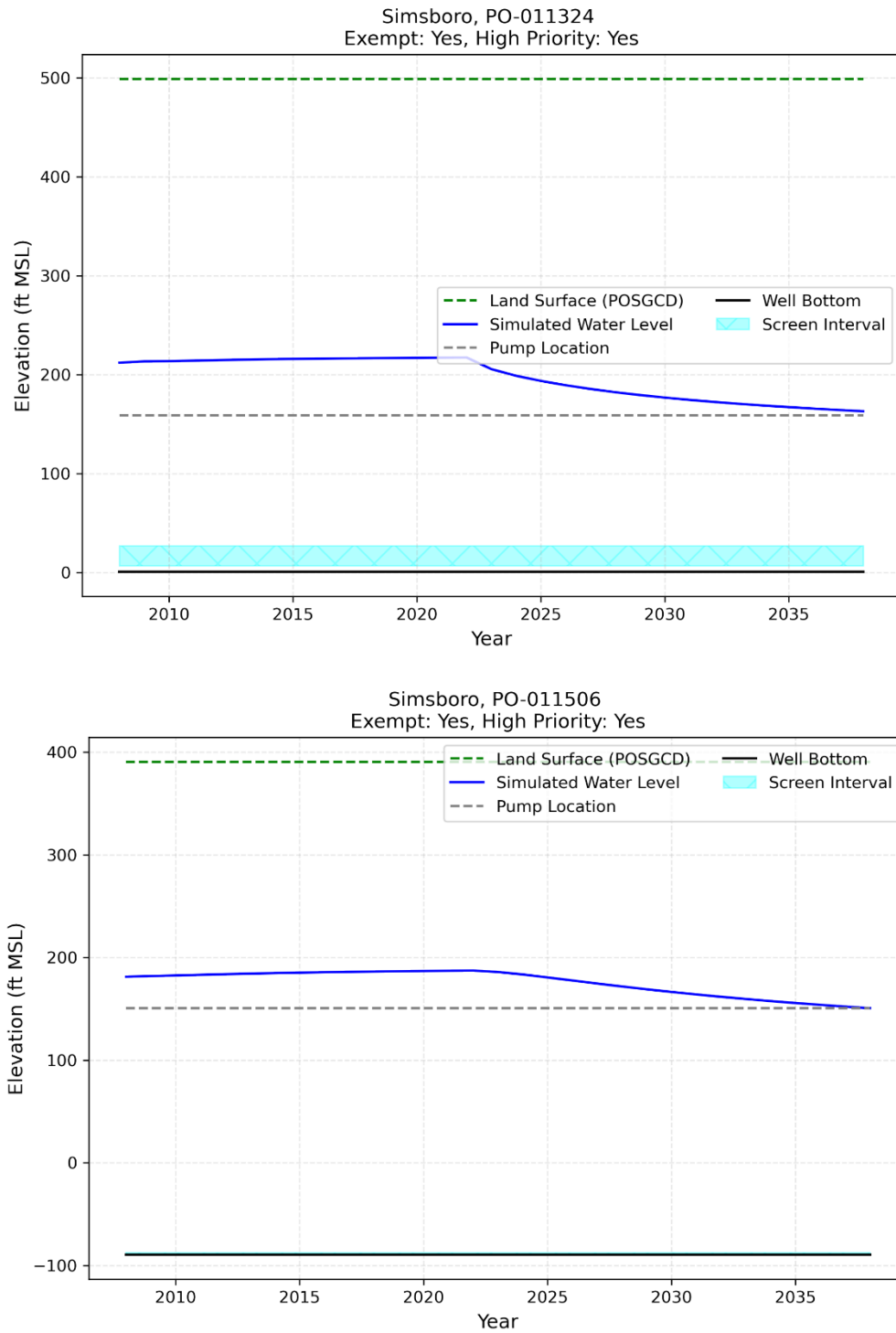


Figure D-27 Simulated water levels for high-priority wells PO-011324 and PO-011506 located in the Simsboro Aquifer

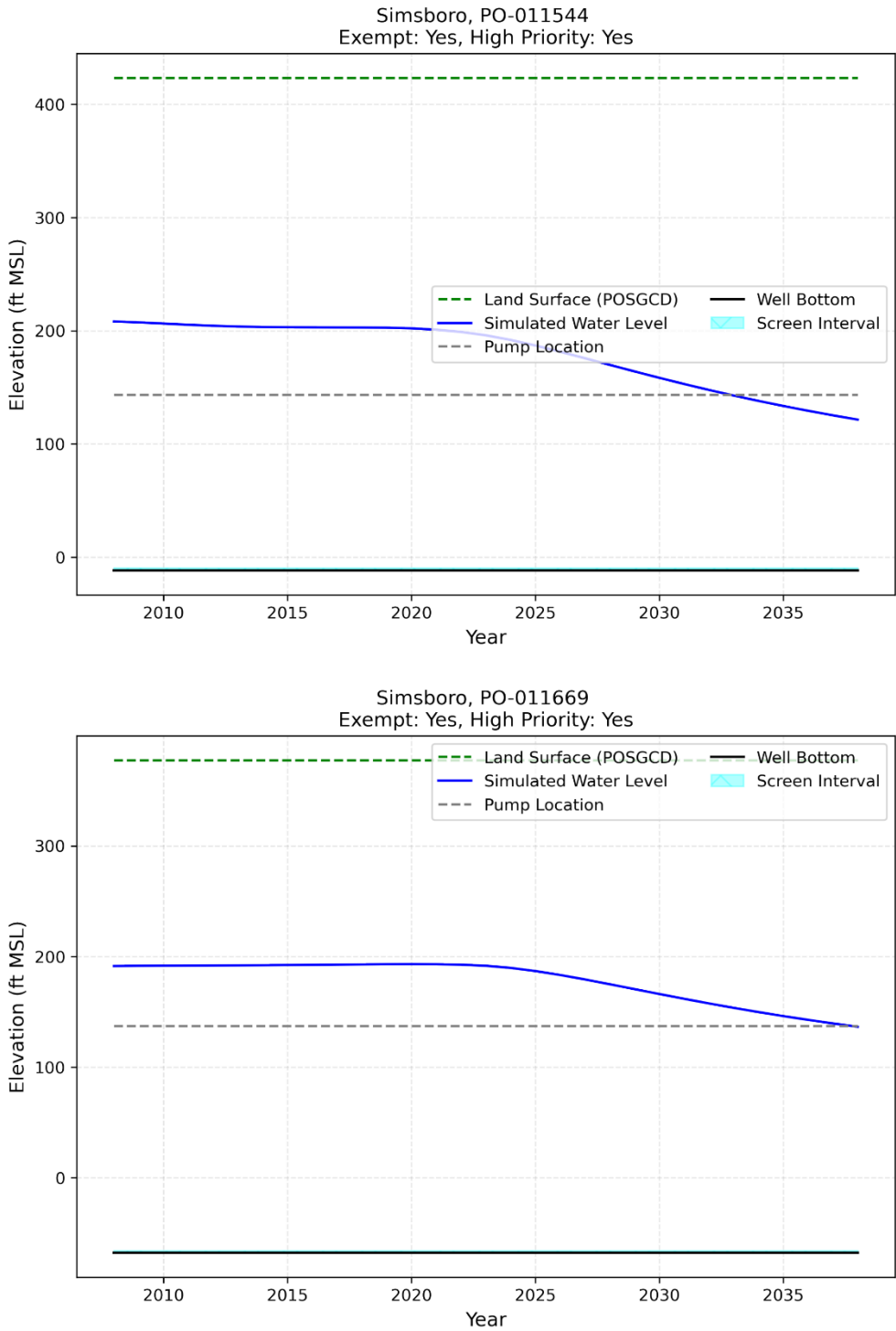


Figure D-28 Simulated water levels for high-priority well PO-011544 and PO-011669 located in the Simsboro Aquifer

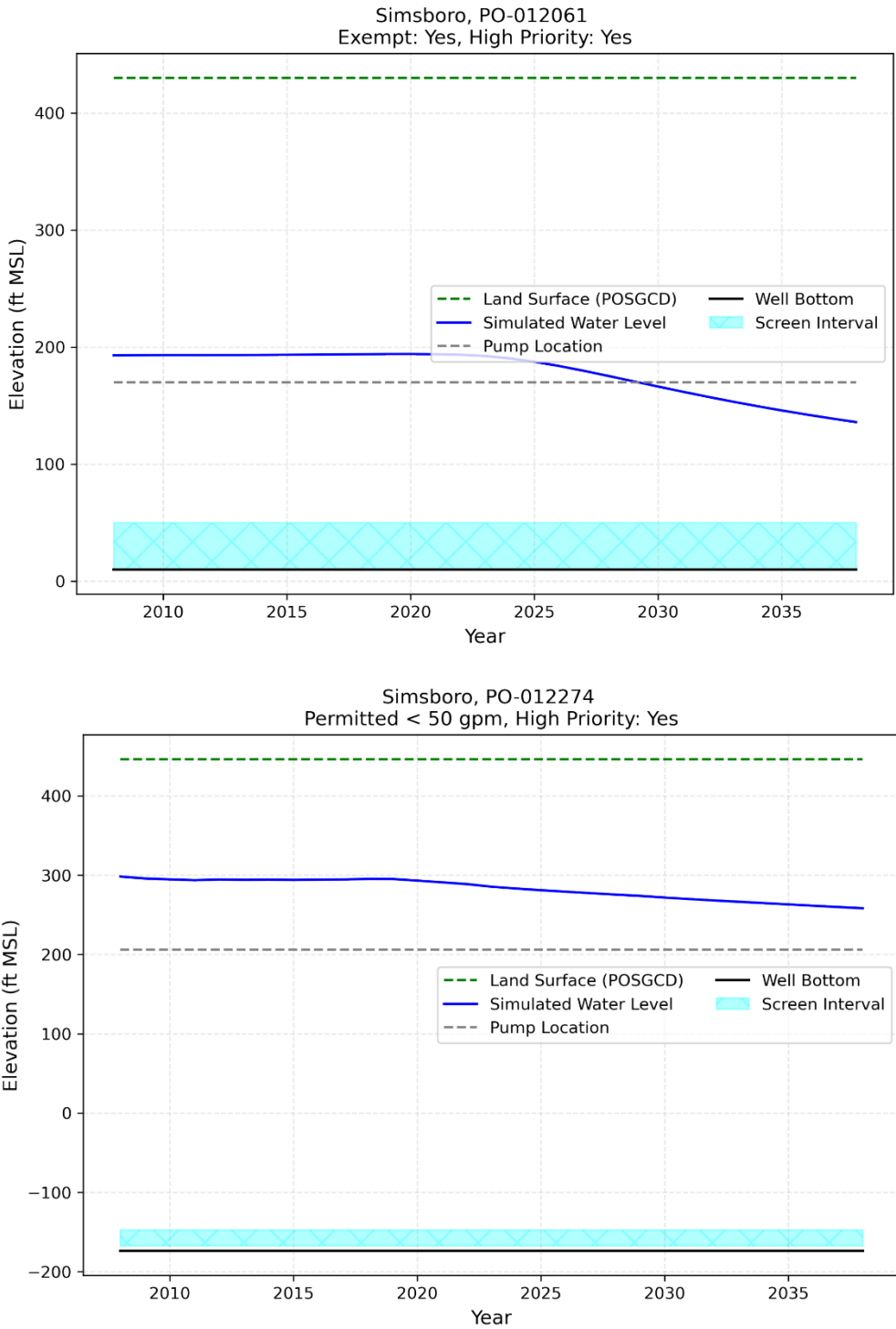


Figure D-29 Simulated water levels for high-priority well PO-012061 and PO-012274 located in the Simsboro Aquifer

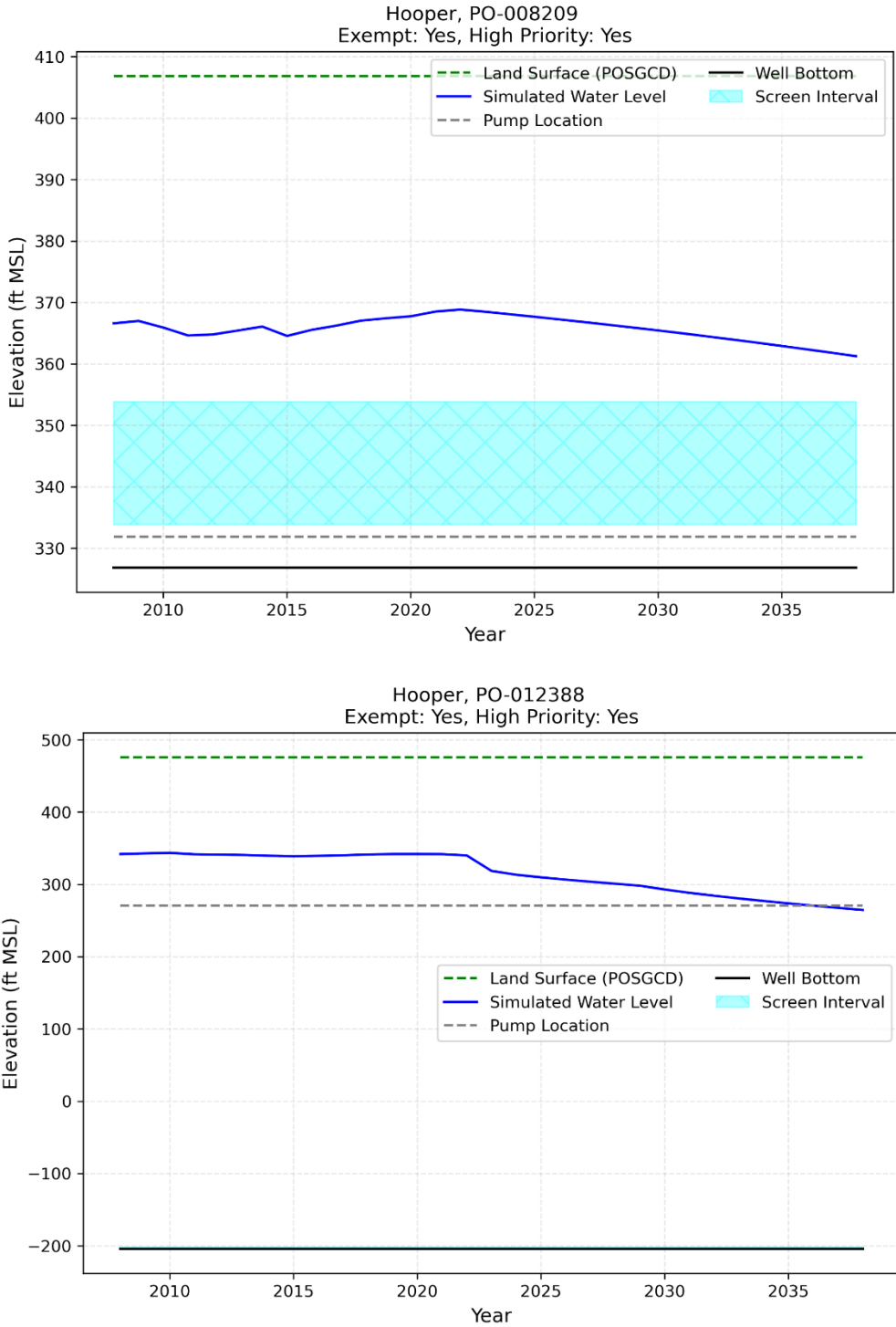


Figure D-30 Simulated water levels for high-priority well PO-008209 and PO-012388 located in the Hooper Aquifer

APPENDIX E

**Listing of Wells with No Pump Depth information that are Candidate for
Moderate Priority Wells.**

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Well ID	Aquifer
PO-005348	Carrizo
PO-005343	Carrizo
PO-008988	Carrizo
PO-005781	Carrizo
PO-000920	Carrizo
PO-005371	Carrizo
PO-005008	Carrizo
PO-000321	Carrizo
PO-005080	Carrizo
PO-000625	Carrizo
PO-011387	Carrizo
PO-005217	Carrizo
PO-005182	Carrizo
PO-000315	Carrizo
PO-003983	Carrizo
PO-011519	Carrizo
PO-005183	Carrizo
PO-005173	Carrizo
PO-000525	Carrizo
PO-000506	Carrizo
PO-003447	Carrizo
PO-000510	Carrizo
PO-011342	Carrizo
PO-005202	Carrizo
PO-009386	Carrizo
PO-005213	Carrizo
PO-000393	Carrizo
PO-011885	Carrizo
PO-000982	Carrizo
PO-005194	Carrizo
PO-000940	Carrizo
PO-005102	Carrizo
PO-003430	Carrizo
PO-005100	Carrizo
PO-011388	Carrizo
PO-005196	Carrizo
PO-007286	Carrizo
PO-005214	Carrizo
PO-005814	Carrizo
PO-000503	Carrizo

Well ID	Aquifer
PO-005544	Carrizo
PO-005545	Carrizo
PO-005224	Carrizo
PO-005730	Carrizo
PO-005560	Carrizo
PO-005756	Carrizo
PO-004998	Carrizo
PO-012050	Carrizo
PO-011883	Carrizo
PO-004975	Carrizo
PO-005717	Carrizo
PO-005113	Carrizo
PO-000325	Carrizo
PO-011712	Carrizo
PO-004955	Carrizo
PO-004971	Carrizo
PO-005813	Carrizo
PO-005718	Carrizo
PO-000502	Carrizo
PO-012077	Carrizo
PO-000488	Carrizo
PO-000497	Carrizo
PO-005114	Carrizo
PO-005728	Carrizo
PO-000493	Carrizo
PO-005197	Carrizo
PO-004963	Carrizo
PO-000938	Carrizo
PO-005109	Carrizo
PO-004954	Carrizo
PO-003475	Carrizo
PO-005211	Carrizo
PO-005716	Carrizo
PO-003476	Carrizo
PO-008734	Carrizo
PO-011771	Carrizo
PO-005542	Carrizo
PO-005553	Carrizo
PO-005555	Carrizo
PO-005246	Carrizo

Well ID	Aquifer
PO-011857	Carrizo
PO-005098	Carrizo
PO-011708	Carrizo
PO-011922	Carrizo
PO-003437	Carrizo
PO-000508	Carrizo
PO-003467	Carrizo
PO-005548	Carrizo
PO-001404	Carrizo
PO-005249	Carrizo
PO-000496	Carrizo
PO-007246	Carrizo
PO-005490	Carrizo
PO-003469	Carrizo
PO-005485	Carrizo
PO-005161	Carrizo
PO-005480	Carrizo
PO-000302	Carrizo
PO-005244	Carrizo
PO-012334	Carrizo
PO-000504	Carrizo
PO-000404	Carrizo
PO-000513	Carrizo
PO-005243	Carrizo
PO-007545	Carrizo
PO-006817	Carrizo
PO-009291	Carrizo
PO-005554	Carrizo
PO-002788	Carrizo
PO-007438	Carrizo
PO-011607	Carrizo

APPENDIX F

Tabulation of Wells Assisted Serviced Under the Groundwater Assistance Program (GWAP)

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Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

District ID	Aquifer	Latitude	Longitude	Well Elevation (ft. amsl)	Well Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	K-Packer Depth (ft. bgs)	Old Pump Depth (ft. bgs)	New Pump Depth (ft. bgs)
PO-001390	Calvert Bluff	30.571577	-96.829333	515.09	1120	980	1,110		340	440
PO-001928	Calvert Bluff	30.710096	-96.761098	433.07	718	698	718	630	180	300
PO-002659	Calvert Bluff	30.793544	-96.753895	472.44	470	430	450		260	360
PO-007614	Calvert Bluff	30.799439	-96.751916	419.95	460	435	455	--	300	360
PO-007773	Calvert Bluff	30.787523	-96.76501	436.35	430	405	424	384	260	360
PO-008149	Calvert Bluff	30.664946	-96.828151	501.97	770	739	759	739	340	365
PO-009125	Calvert Bluff	30.503529	-96.829045	406.82	920	880	900	817	240	420
PO-009239	Calvert Bluff	30.48408	-96.88014	419.95	44	42	43		100	100
PO-011621	Calvert Bluff	30.453484	-96.836843	351.05	2120	2,070	2,120	--	320	600
PO-012022	Calvert Bluff	30.746489	-96.851042	501.97	788	786	787	640	399	399
PO-012109	Calvert Bluff	30.723065	-96.77577	423.23	988	937	967	580	280	400
PO-012116	Calvert Bluff	30.78133	-96.7674	387.14	480	440	480		200	300
PO-012151	Calvert Bluff	30.635283	-96.878869	505.25	550	440	512		400	400
PO-000475	Carrizo	30.506835	-96.828994	442.91	887	831	887	782	200	300
PO-000943	Carrizo	30.488497	-96.843686	439.63	840	800	840	719	300	420
PO-001120	Carrizo	30.596919	-96.609785	351.05	1252	1,104	1,252	500	124	360
PO-001327	Carrizo	30.484592	-96.887769	383.86	500	460	500	440	260	360
PO-001328	Carrizo	30.50556	-96.88139	374.02	467	465	466	346	260	320
PO-001331	Carrizo	30.502683	-96.883648	364.17	500	450	500	409	168	380
PO-001342	Carrizo	30.541997	-96.817217	544.62	890	888	889	785	320	500
PO-002108	Carrizo	30.66625	-96.90739	482.28	860	858	859		189	440
PO-003440	Carrizo	30.504611	-96.898057	337.93	312	272	312	--	80	260
PO-003444	Carrizo	30.483461	-96.892957	347.77	492	411	463	403	160	380
PO-004459	Carrizo	30.506583	-96.877112	393.70	400	398	399	--	300	362
PO-004965	Carrizo	30.567265	-96.711529	354.33	1048	1,013	1,048	964	140	360
PO-004976	Carrizo	30.564696	-96.730025	367.45	1057	1,055	1,056	975	120	320
PO-005178	Carrizo	30.57812	-96.676026	419.95	1014	979	1,014	804	210	400

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

District ID	Aquifer	Latitude	Longitude	Well Elevation (ft. amsl)	Well Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	K-Packer Depth (ft. bgs)	Old Pump Depth (ft. bgs)	New Pump Depth (ft. bgs)
PO-005218	Carrizo	30.5535	-96.683637	403.54	1082	1,080	1,081	998	210	380
PO-005230	Carrizo	30.55511	-96.90023	465.88	497	495	496		200	340
PO-005231	Carrizo	30.542774	-96.793715	495.41	915	873	894	684	260	440
PO-005360	Carrizo	30.62726	-96.68875	272.31	677	675	676	387	200	360
PO-005475	Carrizo	30.563632	-96.743217	377.30	813	733	793	628	180	400
PO-005725	Carrizo	30.550325	-96.887471	416.67	522	442	502	435	200	420
PO-005759	Carrizo	30.497436	-96.843636	406.82	640	540	640	540	280	440
PO-005767	Carrizo	30.501072	-96.871648	403.54	500	380	391	367	255	363
PO-005810	Carrizo	30.536518	-96.865835	426.51	358	318	351	318	160	294
PO-005816	Carrizo	30.545651	-96.887229	429.79	338	304	311	304	210	382
PO-005817	Carrizo	30.504211	-96.875653	449.48	486	416	437	371	240	360
PO-005821	Carrizo	30.508631	-96.831789	426.51	890	855	885	750	280	420
PO-006049	Carrizo	30.543942	-96.874195	403.54	533	493	533	--	200	360
PO-006405	Carrizo	30.504366	-96.84455	456.04	780	690	770	690	360	500
PO-006415	Carrizo	30.548487	-96.715193	390.42	1020	900	917	800	200	360
PO-006551	Carrizo	30.563604	-96.730581	367.45	950	890	950	--	150	320
PO-006658	Carrizo	30.508651	-96.832573	416.67	1200	710	870	--	260	420
PO-006815	Carrizo	30.535556	-96.857222	439.63	563	542	563	479	240	380
PO-006816	Carrizo	30.541605	-96.864043	462.60	583	581	582	497	231	420
PO-007222	Carrizo	30.577516	-96.719997	367.45	850	840	850		200	360
PO-007332	Carrizo	30.543163	-96.716374	380.58	1020	809	885	799	220	360
PO-007393	Carrizo	30.573925	-96.876983	469.16	440	420	440	400	220	360
PO-007765	Carrizo	30.505293	-96.888663	357.61	380	340	380	--	100	320
PO-008053	Carrizo	30.490157	-96.884686	370.73	460	420	460	379	160	340
PO-008054	Carrizo	30.489236	-96.883408	354.33	520	480	520	379	180	310
PO-008073	Carrizo	30.545419	-96.729014	390.42	1001	802	895	791	220	400
PO-008111	Carrizo	30.604722	-96.742778	429.79	800	760	780	676	220	320

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

District ID	Aquifer	Latitude	Longitude	Well Elevation (ft. amsl)	Well Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	K-Packer Depth (ft. bgs)	Old Pump Depth (ft. bgs)	New Pump Depth (ft. bgs)
PO-008147	Carrizo	30.479463	-96.895314	341.21	460	435	455	393	200	320
PO-008219	Carrizo	30.557925	-96.819078	488.85	960	860	950	810	363	440
PO-008223	Carrizo	30.554789	-96.712604	370.73	1000	870	897	790	200	320
PO-008246	Carrizo	30.603568	-96.742789	426.51	780	755	775	671	200	400
PO-008271	Carrizo	30.532768	-96.860146	459.32	535	425	525	425	220	380
PO-008326	Carrizo	30.562828	-96.765936	459.32	980	850	970	850	220	400
PO-008338	Carrizo	30.4853	-96.8849	442.91	510	450	490	--	340	460
PO-008794	Carrizo	30.52723	-96.8188	469.16	760	735	755	693	280	440
PO-008805	Carrizo	30.559859	-96.809093	492.13	863	843	863	662	300	420
PO-008826	Carrizo	30.561022	-96.810813	495.41	860	840	860	559	300	440
PO-008884	Carrizo	30.5606	-96.7458	387.14	790	770	790	760	200	360
PO-008885	Carrizo	30.553581	-96.738834	416.67	840	820	840	810	240	400
PO-008922	Carrizo	30.559905	-96.783883	492.13	1000	830	990	830	300	440
PO-008923	Carrizo	30.524279	-96.816012	485.56	780	754	774	670	260	420
PO-008956	Carrizo	30.493049	-96.774833	410.11	940	899	940	710	320	480
PO-008964	Carrizo	30.500746	-96.873852	390.42	500	390	490	390	220	300
PO-008965	Carrizo	30.527381	-96.858233	479.00	600	500	590	500	260	440
PO-009032	Carrizo	30.549636	-96.790548	492.13	900	898	899	--	262	440
PO-009061	Carrizo	30.560277	-96.885555	459.32	520	480	520	419	240	400
PO-009067	Carrizo	30.558721	-96.801712	472.44	970	840	960	830	220	480
PO-009090	Carrizo	30.56755	-96.744939	393.70	800	710	721	710	200	400
PO-009135	Carrizo	30.48639	-96.89	354.33	480	430	450	389	140	260
PO-009242	Carrizo	30.493667	-96.889403	354.33	500	480	500	379	140	320
PO-009260	Carrizo	30.552021	-96.685339	406.82	1090	1,000	1,038	890	240	400
PO-009332	Carrizo	30.5155	-96.830277	495.41	850	810	840	726	280	460
PO-009431	Carrizo	30.569484	-96.737646	380.58	820	790	810	748	200	340
PO-009434	Carrizo	30.502645	-96.841991	459.32	635	615	635	494	240	340

Post Oak Savannah GCD Groundwater Assistance Program Annual Needs Assessment 2025

District ID	Aquifer	Latitude	Longitude	Well Elevation (ft. amsl)	Well Depth (ft. bgs)	Top of Screen (ft. bgs)	Bottom of Screen (ft. bgs)	K-Packer Depth (ft. bgs)	Old Pump Depth (ft. bgs)	New Pump Depth (ft. bgs)
PO-009570	Carrizo	30.501391	-96.850256	442.91	620	575	615	470	260	420
PO-009572	Carrizo	30.525757	-96.823085	462.60	780	757	777	673	280	440
PO-009609	Carrizo	30.519722	-96.898056	390.42	420	360	380	339	160	300
PO-009683	Carrizo	30.601667	-96.7371	436.35	760	735	755	693	240	420
PO-009765	Carrizo	30.561598	-96.844456	508.53	604	564	604	--	300	440
PO-009786	Carrizo	30.557836	-96.725392	406.82	1002	842	982	762	220	360
PO-009787	Carrizo	30.501521	-96.84481	436.35	675	655	675	655	280	420
PO-010952	Carrizo	30.501033	-96.875433	387.14	500	420	490	420	200	340
PO-010967	Carrizo	30.486798	-96.884378	383.86	560	440	560	--	180	340
PO-010979	Carrizo	30.506375	-96.878803	387.14	446	444	445	361	240	340
PO-011024	Carrizo	30.502712	-96.883924	351.05	520	460	520		320	320
PO-011370	Carrizo	30.486304	-96.878513	410.11		410	410	398	180	340
PO-011373	Carrizo	30.488554	-96.887625	347.77	500	498	499	--	140	320
PO-011380	Carrizo	30.500667	-96.8675	446.19	520	480	520	--	315	420
PO-011383	Carrizo	30.526923	-96.823943	472.44	740	705	735	663	240	440
PO-011435	Carrizo	30.526949	-96.881265	396.98	420	418	419	--	200	320
PO-011489	Carrizo	30.442634	-96.855599	347.77	710	708	709		420	420
PO-011622	Carrizo	30.447696	-96.844344	318.24	980	920	980	--	210	504
PO-011811	Carrizo	30.56075	-96.835072	508.53	750	748	749	549	420	420
PO-011937	Carrizo	30.521567	-96.868288	456.04	438	410	429	358	260	380
PO-012008	Carrizo	30.545822	-96.832233	538.06	845	620	715	--	520	609
PO-012026	Carrizo	30.521567	-96.868288	456.04	600	500	600	--	400	360
PO-012095	Carrizo	30.5894	-96.7554	387.14	730	728	729	500	180	360
PO-012192	Carrizo	30.477548	-96.890872	367.45	640	638	639		380	380
PO-002217	Hooper	30.667238	-96.930797	469.16	938	918	922	670	180	300
PO-005228	Queen City	30.550039	-96.880943	423.23	295	275	295	--	160	260
PO-007057	Queen City	30.629513	-96.713472	410.11		410	410	384	200	340

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PO-007206	Queen City	30.546284	-96.83171	538.06	680	610	670	610	340	520
PO-008668	Queen City	30.55983	-96.792198	485.56	722	680	722	617	315	500
PO-009388	Queen City	30.547134	-96.831098	538.06	680	600	670	600	360	500
PO-011170	Queen City	30.558905	-96.815985	495.41	720	600	710	590	280	440
PO-011361	Queen City	30.562081	-96.749488	406.82		407	407	728	260	400
PO-011382	Queen City	30.439002	-96.867786	324.80	121	119	120		400	400
PO-011384	Queen City	30.481244	-96.886019	423.23		423	423	--	180	287
PO-011385	Queen City	30.477487	-96.890817	367.45		367	367	--	180	275
PO-011797	Queen City	30.545778	-96.832155	538.06	700	560	566	--	280	520
PO-011893	Queen City	30.555194	-96.681333	400.26	800	620	800		305	305
PO-006910	Simsboro	30.564832	-96.834747	492.13	2200	1,750	1,764	--	400	609
PO-008767	Simsboro	30.483562	-96.86045	406.82	2230	1,800	2,100	--	462	565
PO-011376	Weches	30.483057	-96.890506	383.86	253	233	253		240	240

