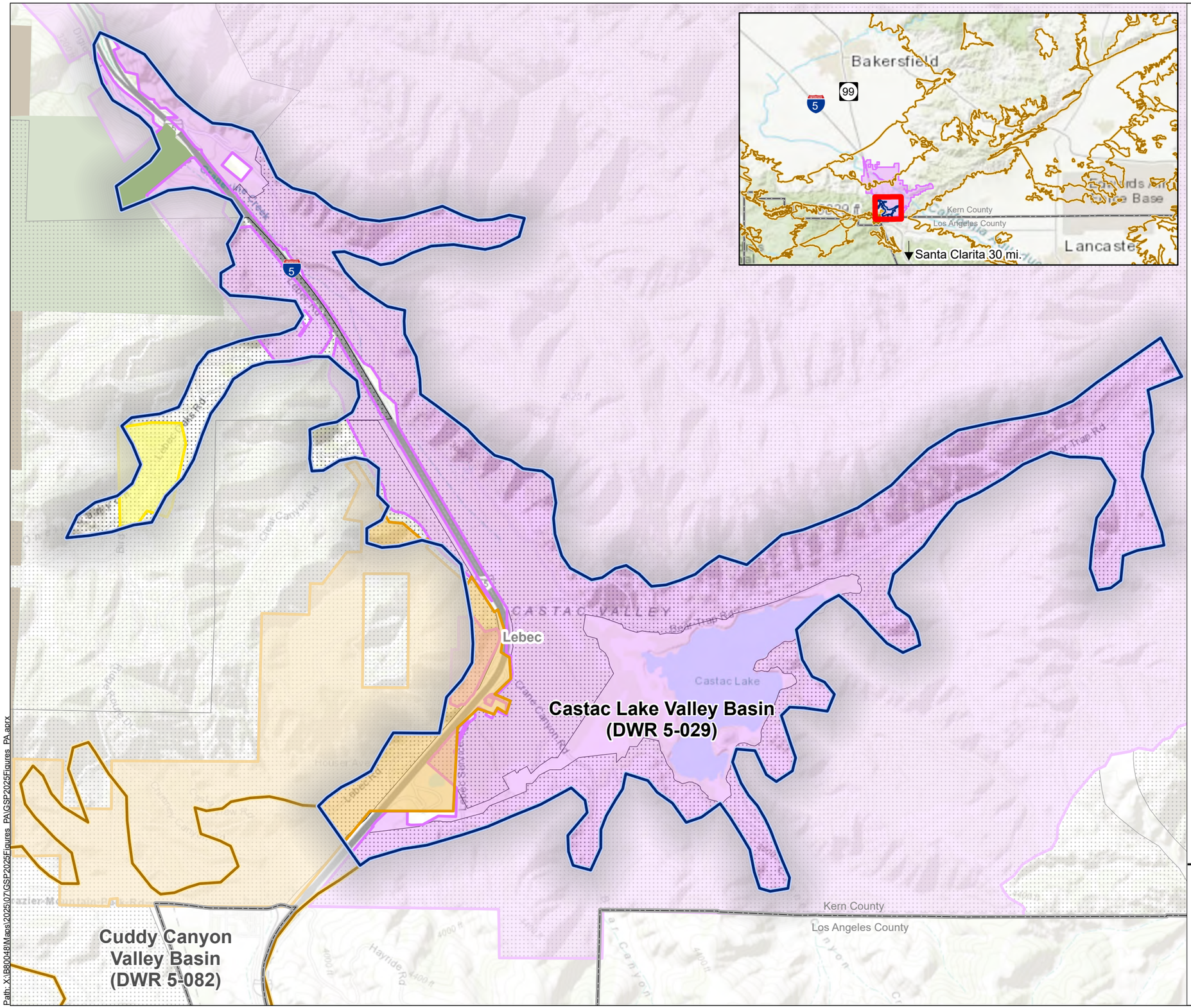

Legend

- Castac Lake Valley Groundwater Basin and Castac Basin GSA Boundary
- Other Groundwater Basin
- Tejon-Castac Water District
- Lebec County Water District
- Krista Mutual Water Company
- Federal Lands
- State Lands
- Specific Plan Area
- County Boundary

Abbreviations

DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency
LCWD = Lebec County Water District
TCWD = Tejon-Castac Water District

Notes

1. All locations are approximate.
2. Castac Basin GSA boundary is coterminous with the Castac Lake Valley Groundwater Basin (5-029) boundary.
3. The entire displayed area within Kern County is covered by the Kern County General Plan.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
3. LCWD service area obtained from LCWD on 16 March 2017.
4. TCWD service area obtained from TCWD on 11 May 2017.
5. Federal and State Lands from California Protected Areas Database (CPAD) August 2017. www.calands.org
6. Kern County General Plan information obtained on 16 August 2018 from http://esps.kerndsa.com/gis/gis-download-data

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(Scale in Miles)

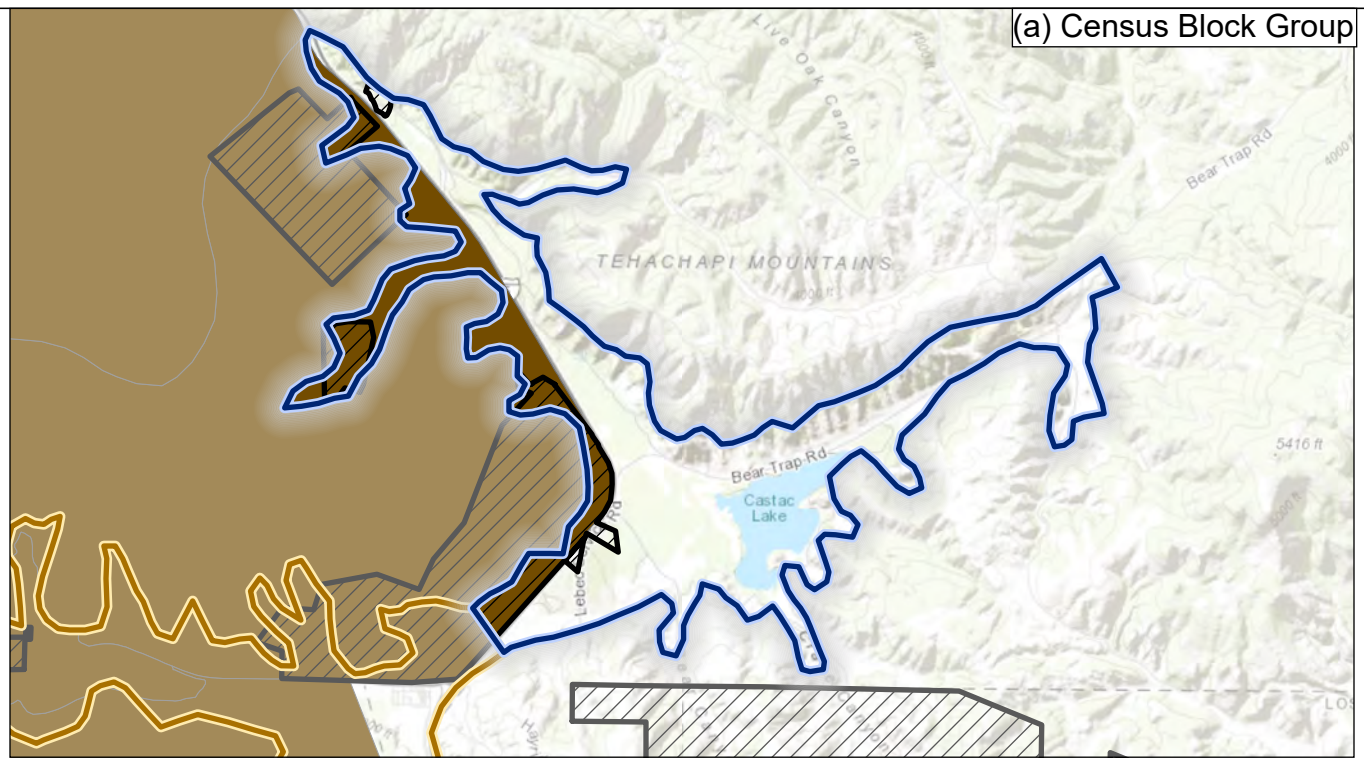
Castac Lake Valley Groundwater Basin Plan Area and Relevant Boundaries

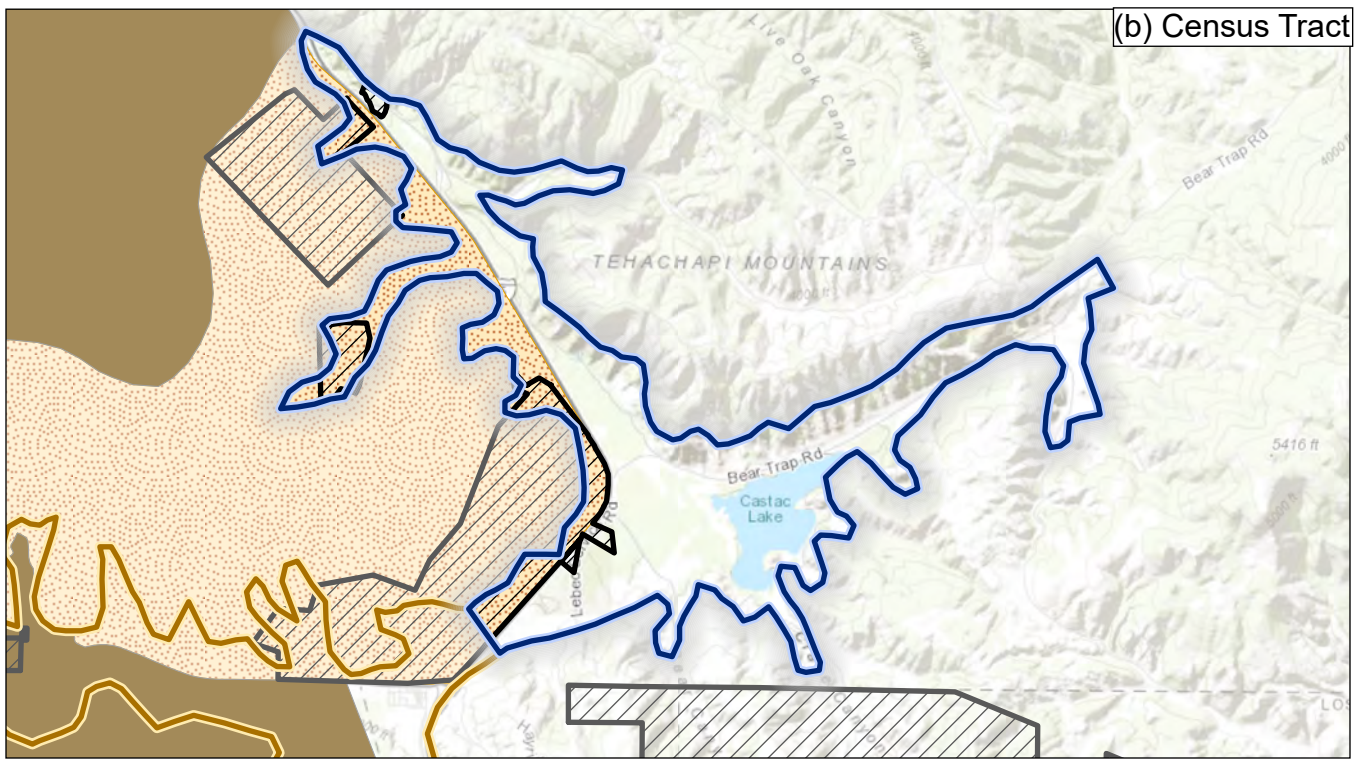
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

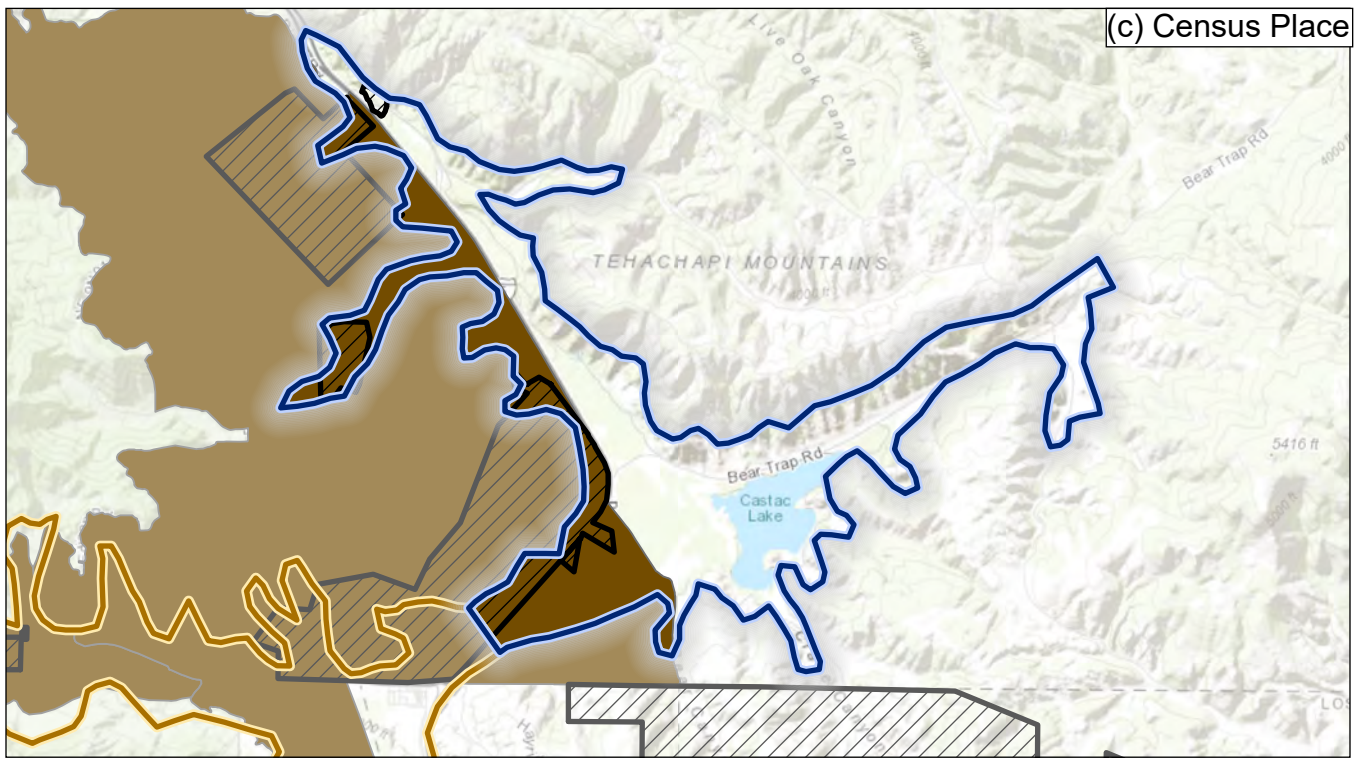
Figure PA-1

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_PA\GSP2025Figures_PA.aprx







Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- Public Water System Service Area

Disadvantaged Communities

- Severely Disadvantaged Communities
- Disadvantaged Communities

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.
2. Not all public water system service areas are mapped.
3. Disadvantaged communities defined based on 2020 median household income.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2016 Update.
3. DWR 2020 Disadvantaged Communities information downloaded on 4 November 2022 from the CNRA Open Data Platform: https://data.cnra.ca.gov/
4. Public Water System Service area boundaries are from the California Department of Public Health Drinking Water Systems Geographic Reporting Tool. (https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/water_supplier.shtml)

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(Scale in Miles)

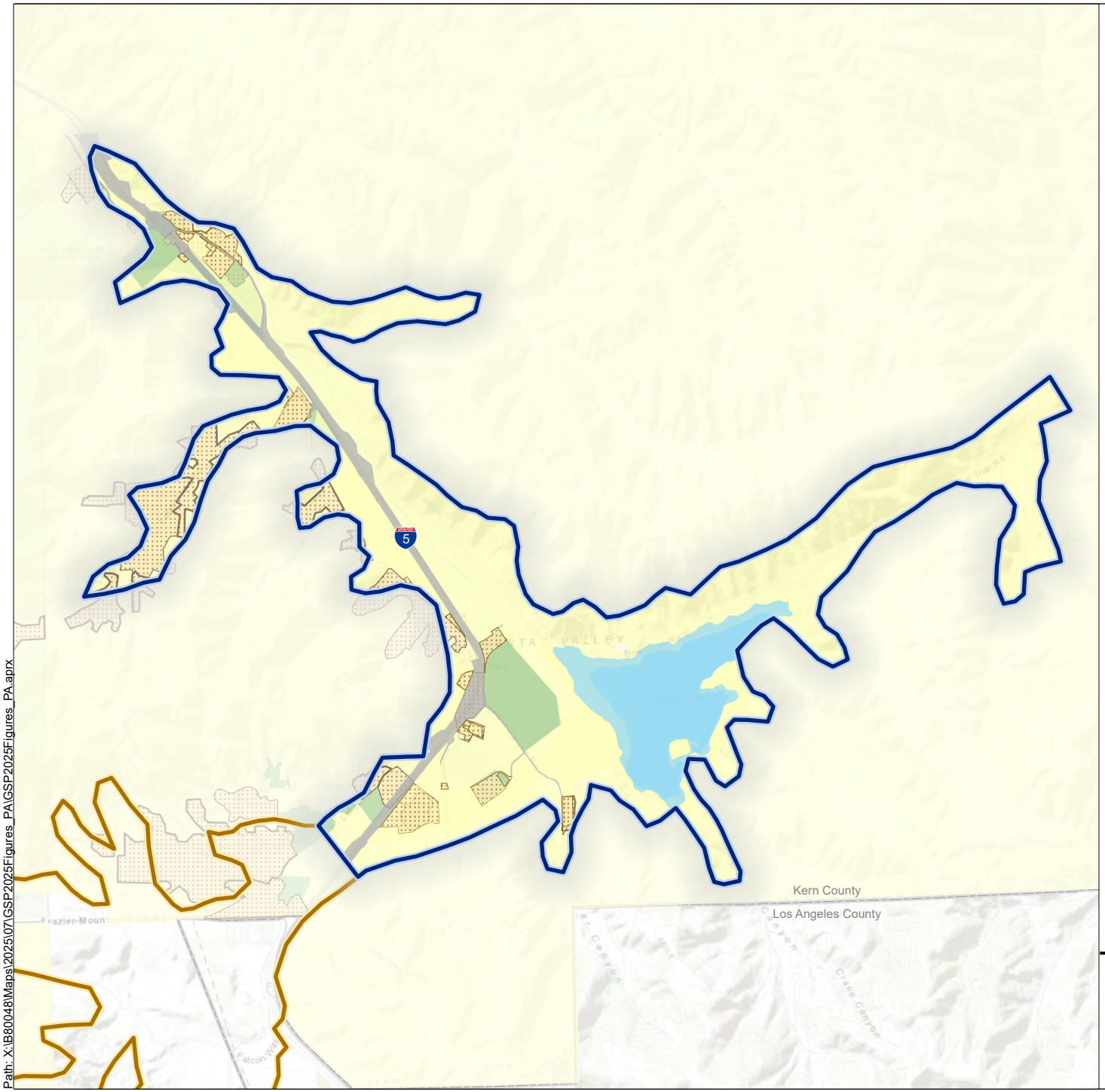
Disadvantaged and Severely Disadvantaged Communities

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure PA-2

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_PA\GSP2025Figures_PA.aprx



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin

Current (2025) Land Use

- Roads
- Irrigated Land
- Residential & Commercial
- Lake
- Range/ Undeveloped Land

Abbreviations

DWR = California Department of Water Resources
TCWD = Tejon-Castac Water District

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
3. Current Land Use data from TCWD 31 May 2019 and California Department of Conservation Important Farmland, Kern County 2016. Updated 15 August 2025.

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Miles

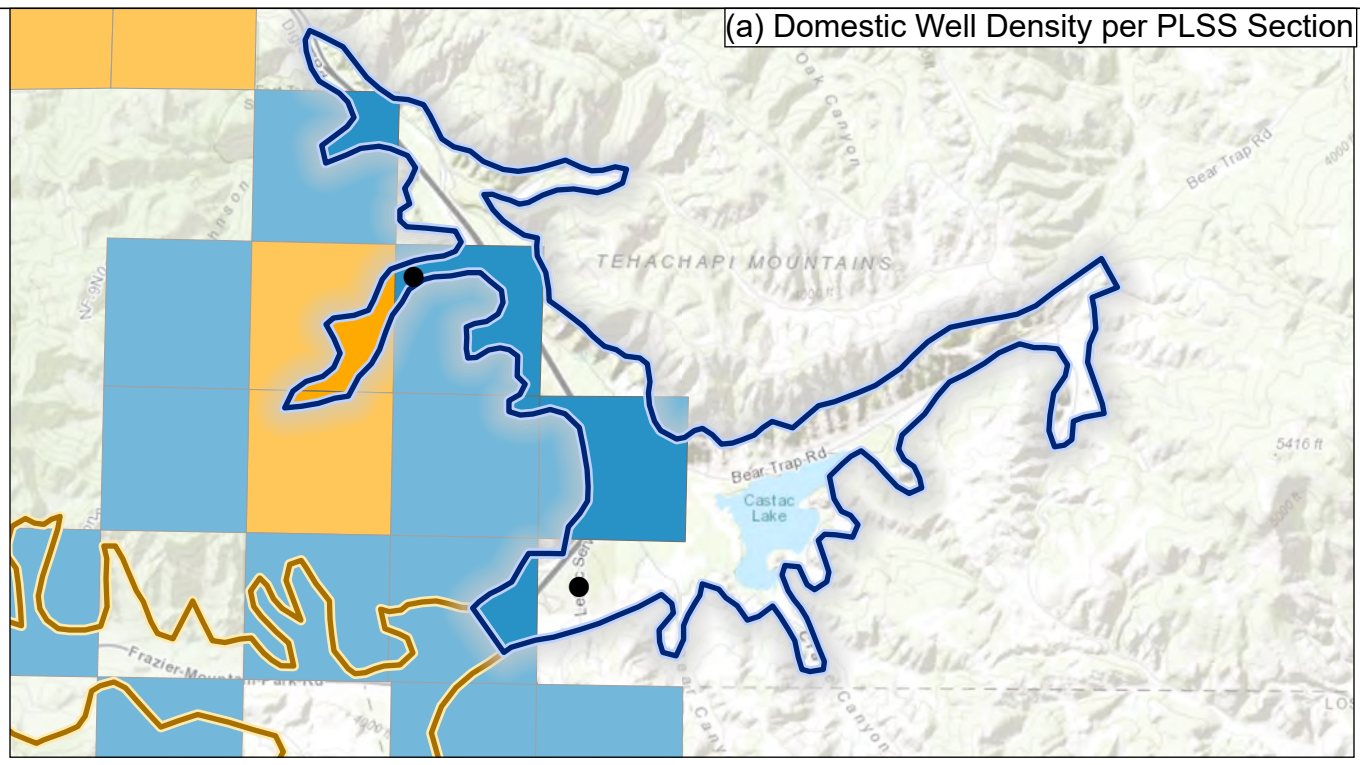
Current (2025) Land Use

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

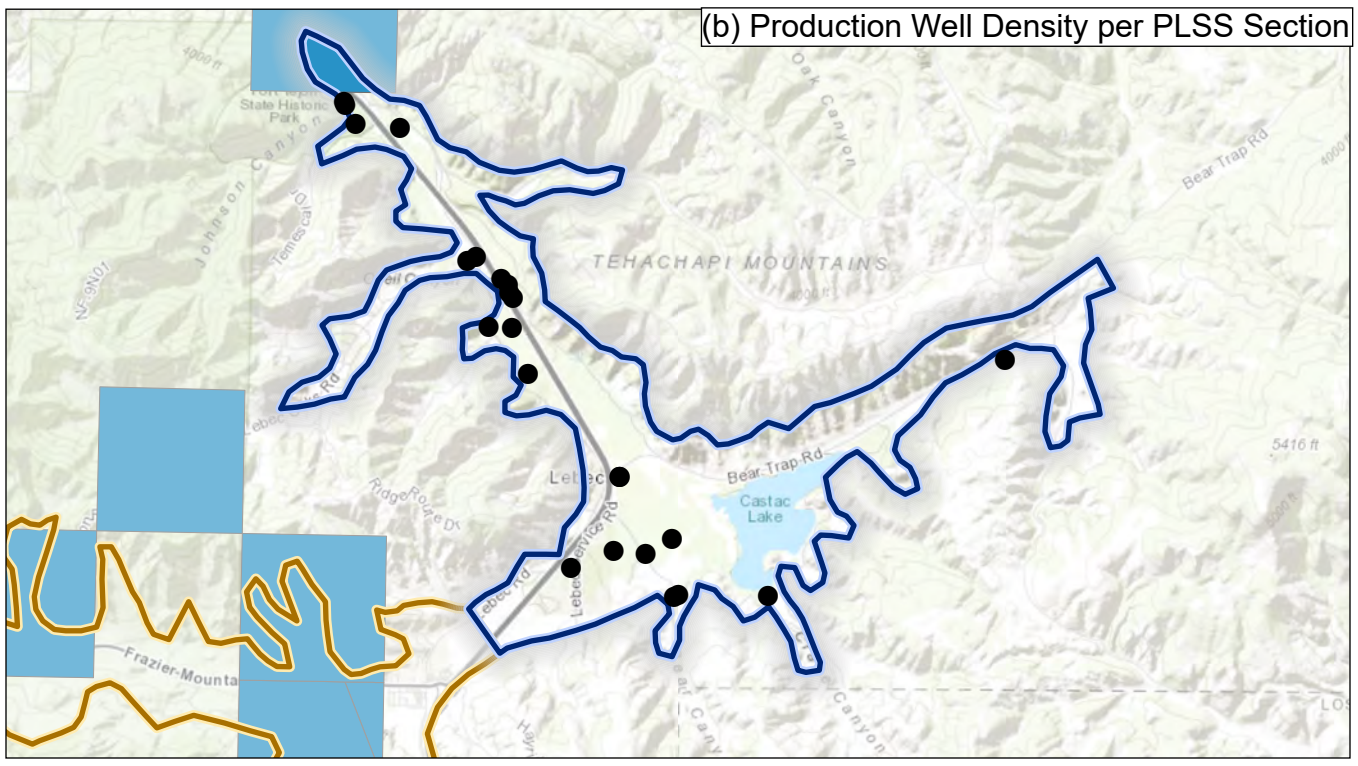
Figure PA-3

Path: X:\B80048\Maps\2025\07\GSP2025Figures_PA\GSP2025Figures_PA.aprx

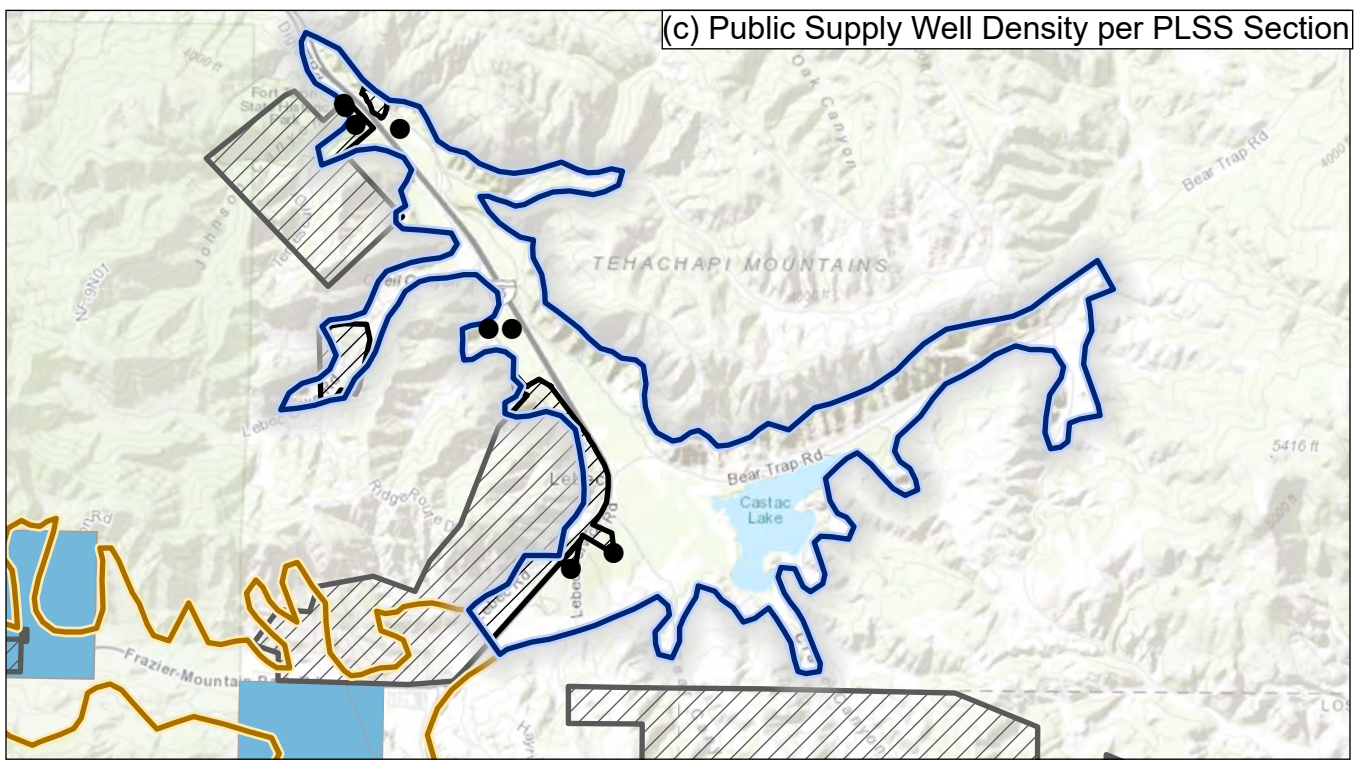
(a) Domestic Well Density per PLSS Section



(b) Production Well Density per PLSS Section



(c) Public Supply Well Density per PLSS Section



Legend

- Well
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin

Well Density per PLSS Section

- 1 - 2
- 3
- 4
- > 4

- Public Water System Service Area

Abbreviations

DWR = California Department of Water Resources
PLSS = Public Land Survey System

Notes

1. All locations are approximate.
2. Not all public water system service areas are mapped.

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2016 Update.
3. Well count per square mile (PLSS section) from DWR's Well Completion Report Map Application, obtained on 28 August 2025. (https://dwr.maps.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37).
4. Public Water System Service area boundaries are from the California Department of Public Health Drinking Water Systems Geographic Reporting Tool. (https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/water_supplier.shtml)

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(Scale in Miles)

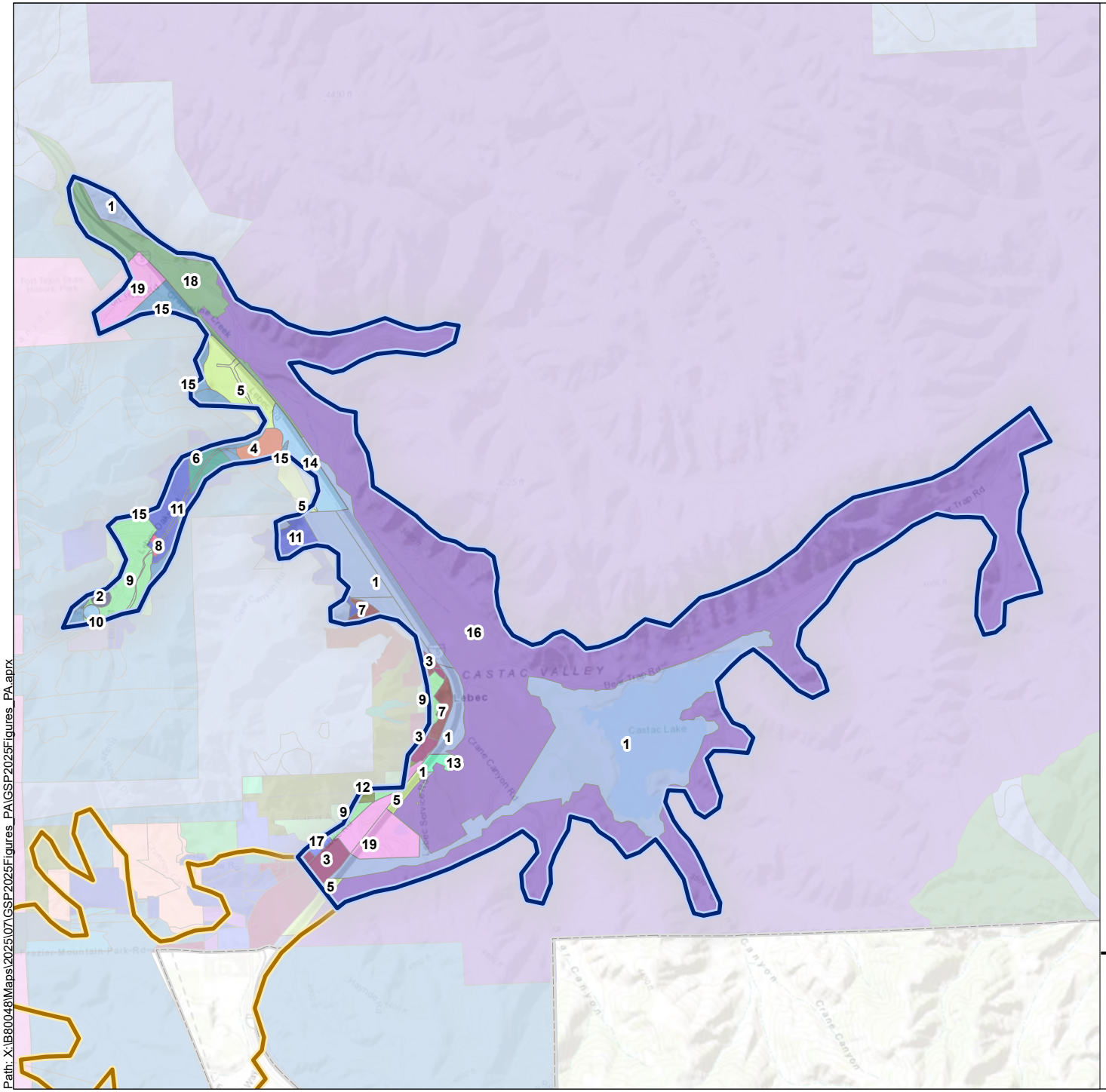
Well Density from DWR Well Completion Reports and Basin Wells

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure PA-4

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_PA\GSP2025Figures_PA.aprx



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Kern County General Plan Land Use Designation

1 Extensive Agriculture (Min. 20 Acre Parcel Size)	12 Minimum 20 Gross Acres/Unit
2 Educational Facilities	13 Other Facilities
3 General Commercial	
4 Heavy Industrial	14 Public or Private Recreation Areas
5 Highway Commercial	15 Resource Management (Min. 20 Acre Parcel Size)
6 Maximum 1 Unit/Net Acre	
7 Maximum 10 Units/ Net Acre	16 TMV Specific Plan Area
8 Maximum 2 Units/Net Acre	17 Service Industrial
9 Maximum 4 Units/Net Acre	18 Specific Plan Required
10 Minimum 10 Gross Acres/Unit	19 State or Federal Land
11 Minimum 2.5 Gross Acres/Unit	

Abbreviations

DWR = California Department of Water Resources
TMV = Tejon Mountain Village

Notes

1. All locations are approximate.
2. Specific Plan areas shown on Figure PA-6.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
3. Kern County General Plan information obtained on 16 August 2018 from http://esps.kerndsa.com/gis/gis-download-data

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Miles

Kern County General Plan - Land Use Designation

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure PA-5

eki environment & water

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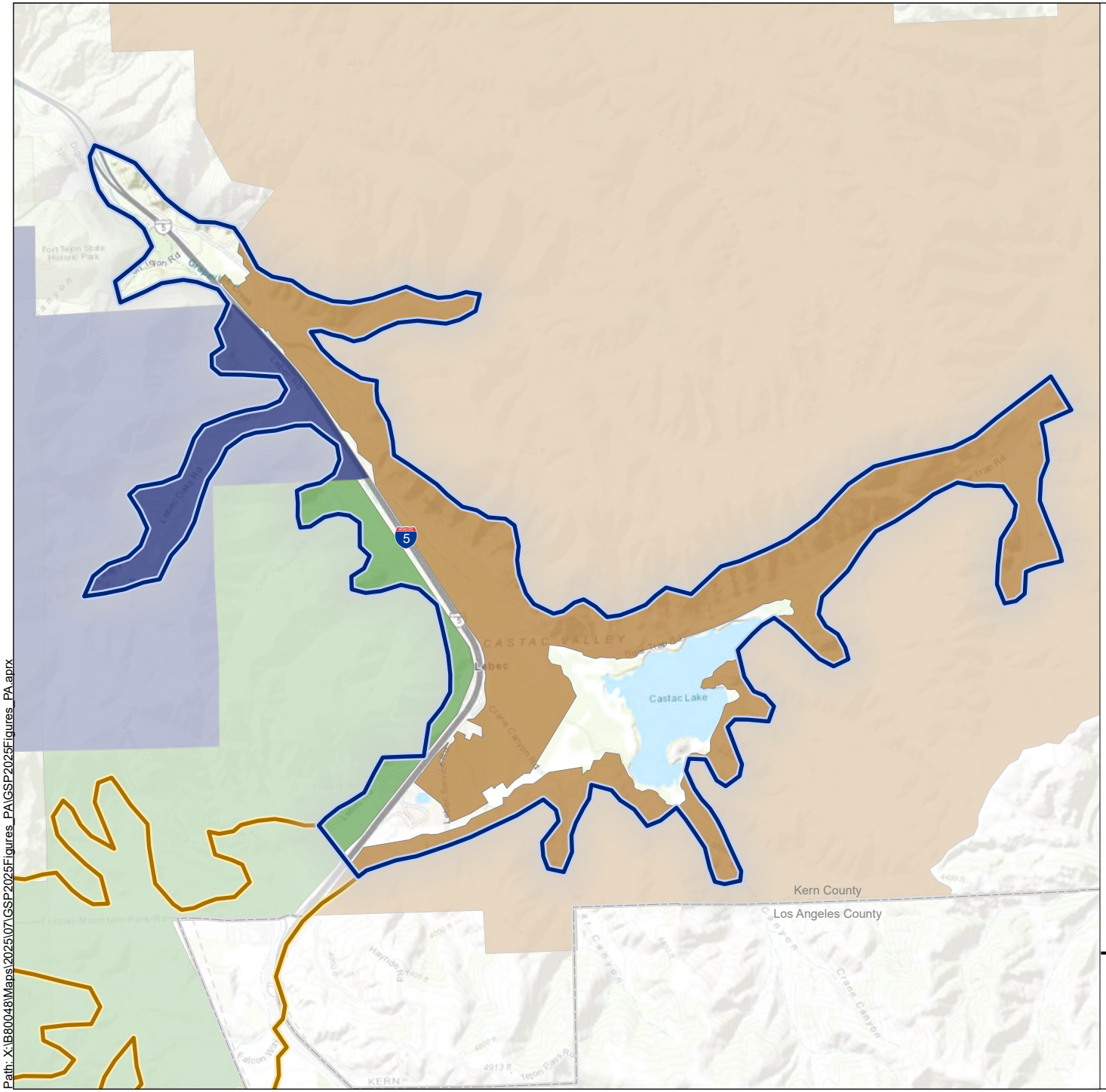

Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Specific Plan Area

- Frazier Park/Lebec
- O'Neil Canyon
- Tejon Mountain Village

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
3. Kern County General Plan information obtained on 16 August 2018 from http://esps.kerndsa.com/gis/gis-download-data

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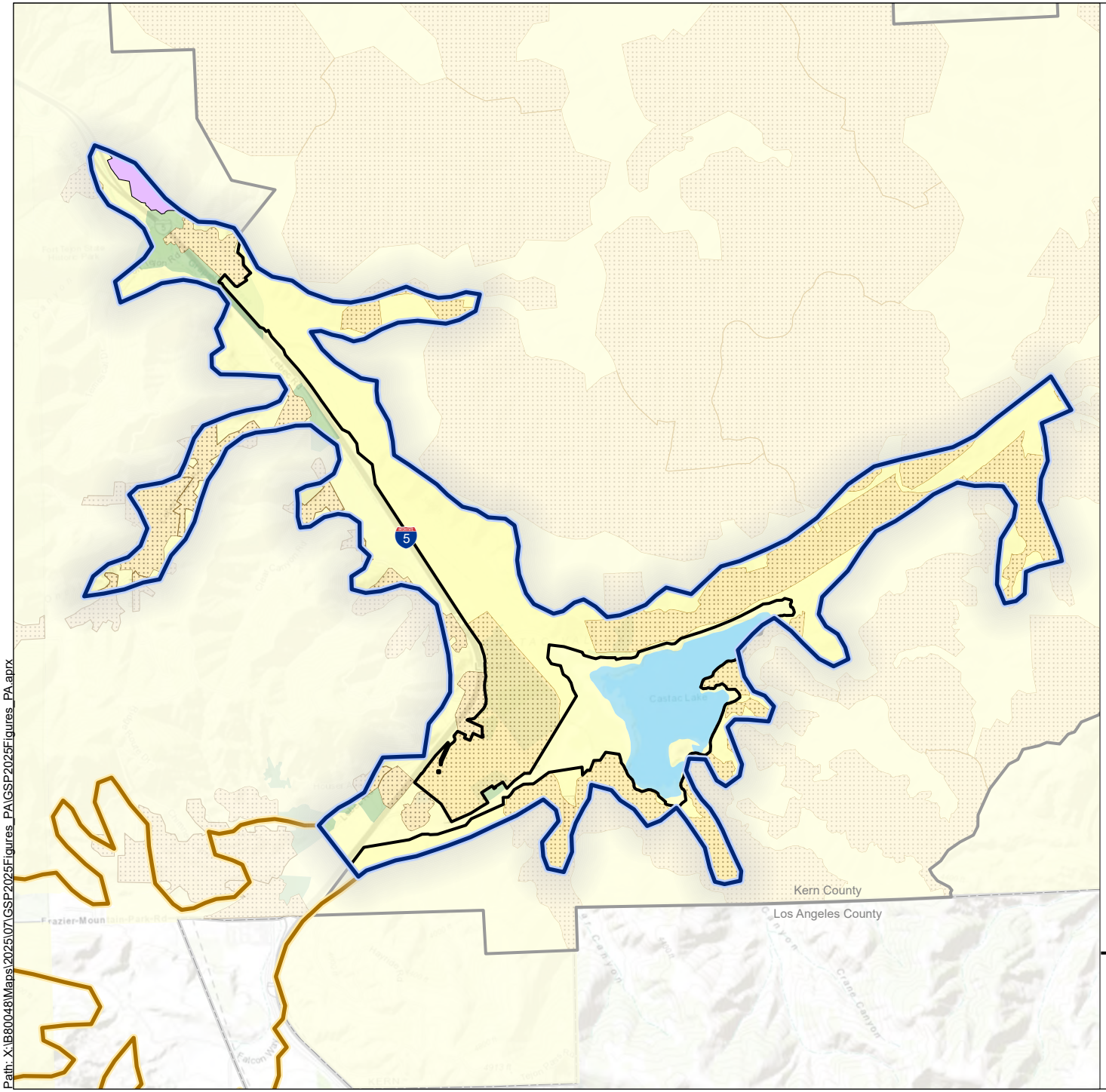
Miles

Kern County General Plan - Specific Plan Areas

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure PA-6

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_PA\GSP2025Figures_PA.aprx



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- TMV Boundary

Future Land Use

- Residential & Commercial
- Range / Undeveloped Land
- Irrigated Land
- Ranch Wide Agreement: Future Dedicated Conservation Easement Area

Abbreviations

DWR = California Department of Water Resources
TCWD = Tejon-Castac Water District
TMV = Tejon Mountain Village

Notes

1. All locations are approximate.
2. Future land use within the TMV Boundary is representative of projected TMV zoning at full build-out.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 20 November 2025.
3. Future land use data is from TCWD 31 May 2019.

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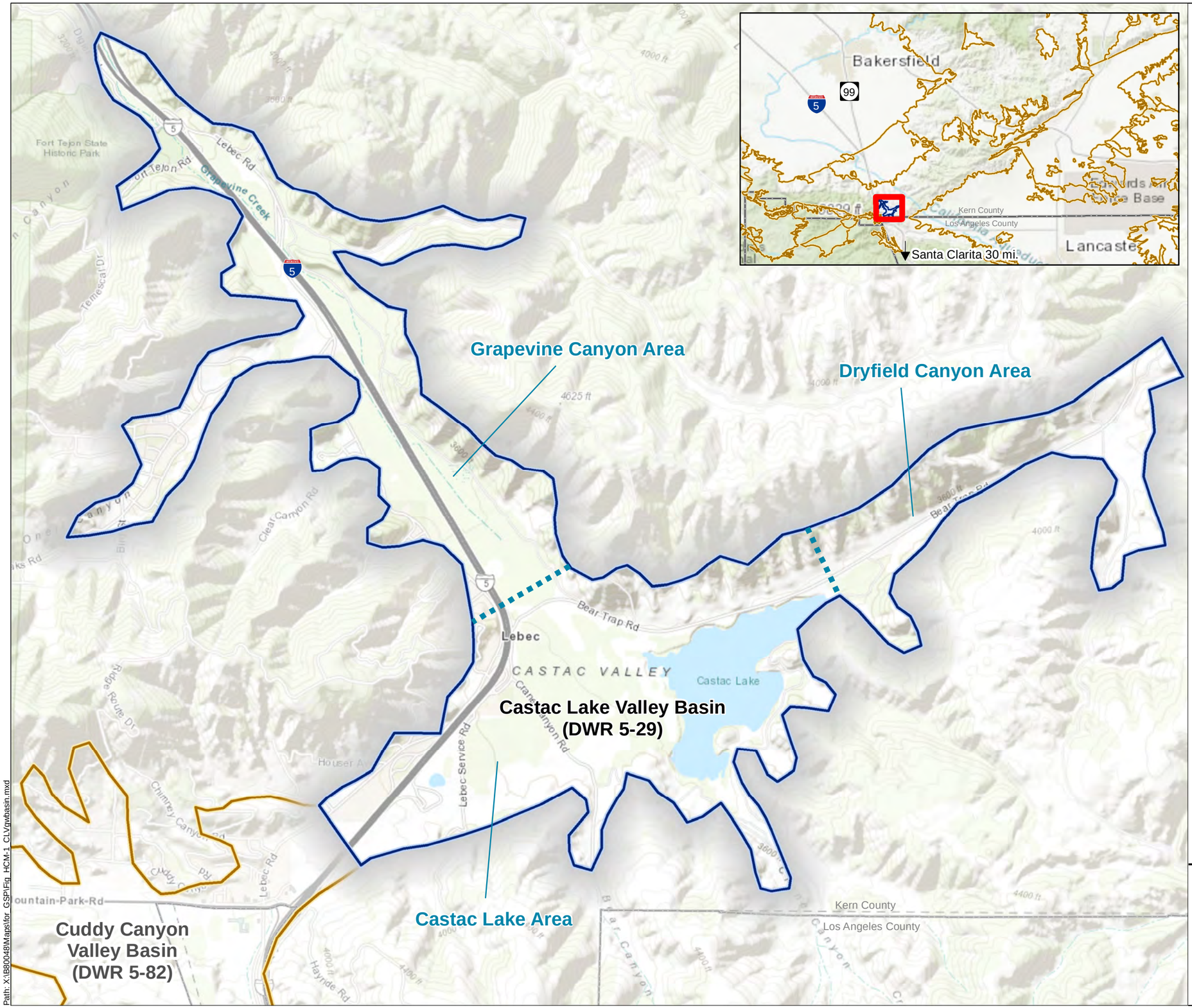
Projected Future Land Use

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure PA-7

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_PA\GSP2025Figures_PA.aprx



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- Fault Zone

Fault Traces

- Mapped
- Approximately Located
- Concealed
- Boundary Between Castac Lake Valley Groundwater Basin Subareas

Abbreviations

CGS = California Geological Survey
DWR = California Department of Water Resources

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Fault trace and fault zone locations from CGS https://maps.conservation.ca.gov/cgs/EQZApp/app, accessed 6 November 2018.

N

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(Scale in Miles)

Castac Lake Valley Groundwater Basin

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-1

eki environment & water

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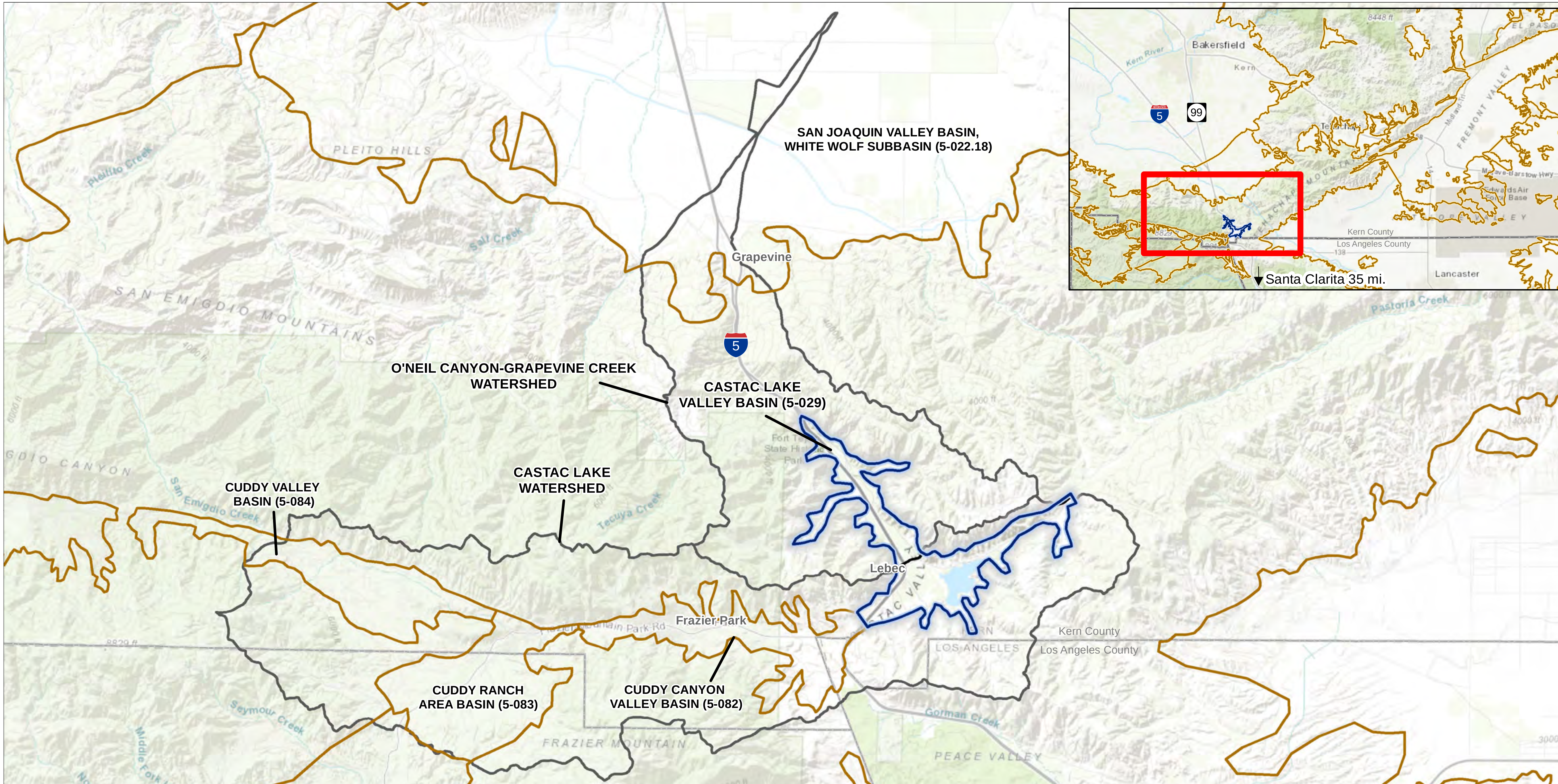

Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- Watershed Boundary
- County Boundary
- Fault Zones

Fault Traces

- Mapped
- Approximately Located
- Concealed

Abbreviations

DWR = California Department of Water Resources
CGS = California Geological Survey

Notes

1. All locations are approximate.
2. Only groundwater basins which are either directly upgradient or downgradient of Castac Lake Valley Groundwater Basin are shown.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Watershed boundaries HUC12 obtained from USDA NRCS on 16 July 2018.
4. Fault trace and fault zone locations from CGS https://maps.conservation.ca.gov/cgs/EQZApp/app, accessed 6 November 2018.

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(Scale in Miles)

Castac Lake Valley Groundwater Basin and Upgradient Groundwater Basins

Tejon-Castac Water District
Kern County, CA
November 2025
EKI B80048.00

eki environment & water

Figure HCM-2

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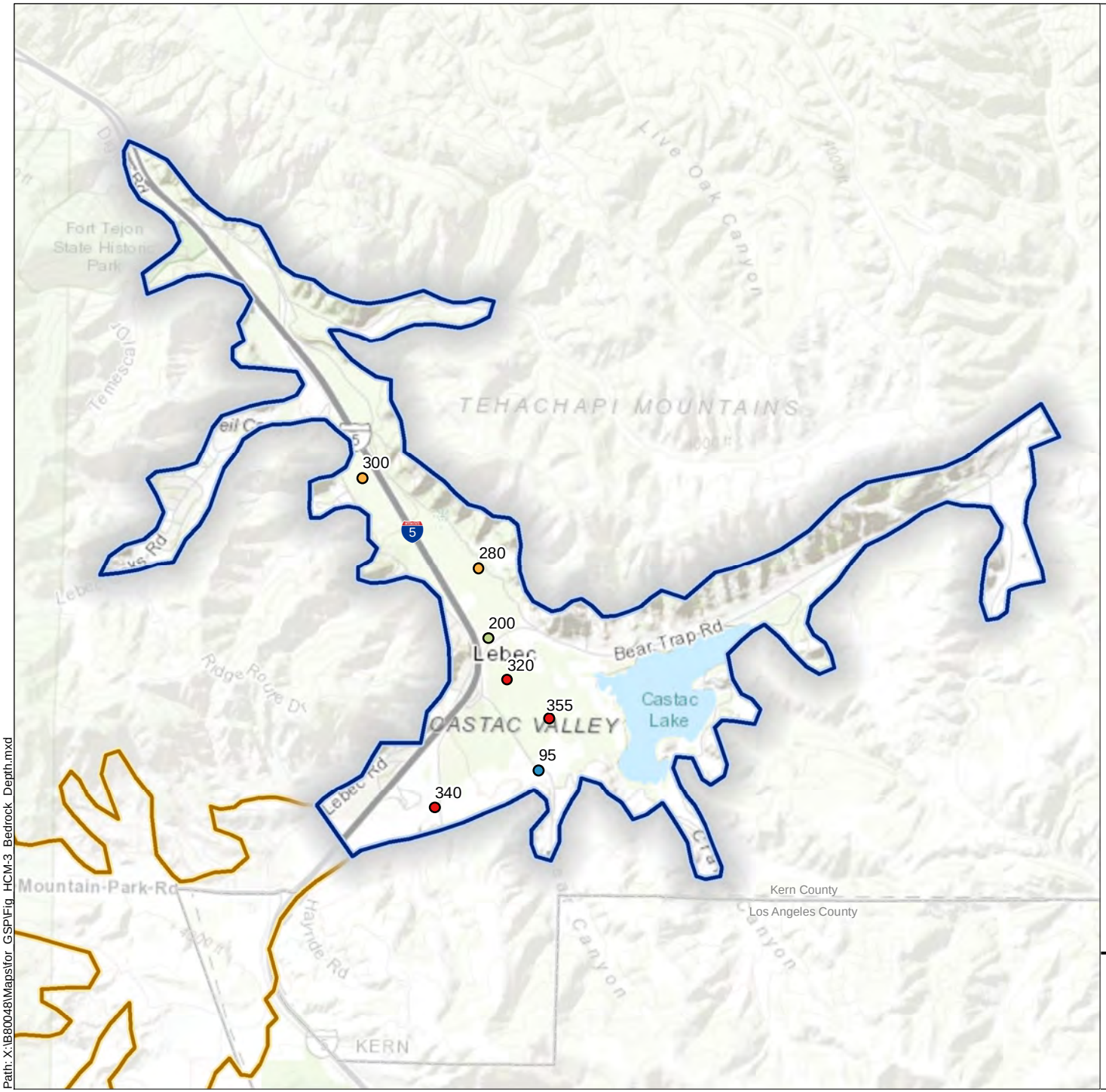

Legend

Depth to Bedrock (ft bgs)

- < 100
- 101 - 200
- 201 - 300
- 300 - 400
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources
ft bgs = feet below ground surface

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.

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Miles

Depth to Bedrock

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure HCM-3

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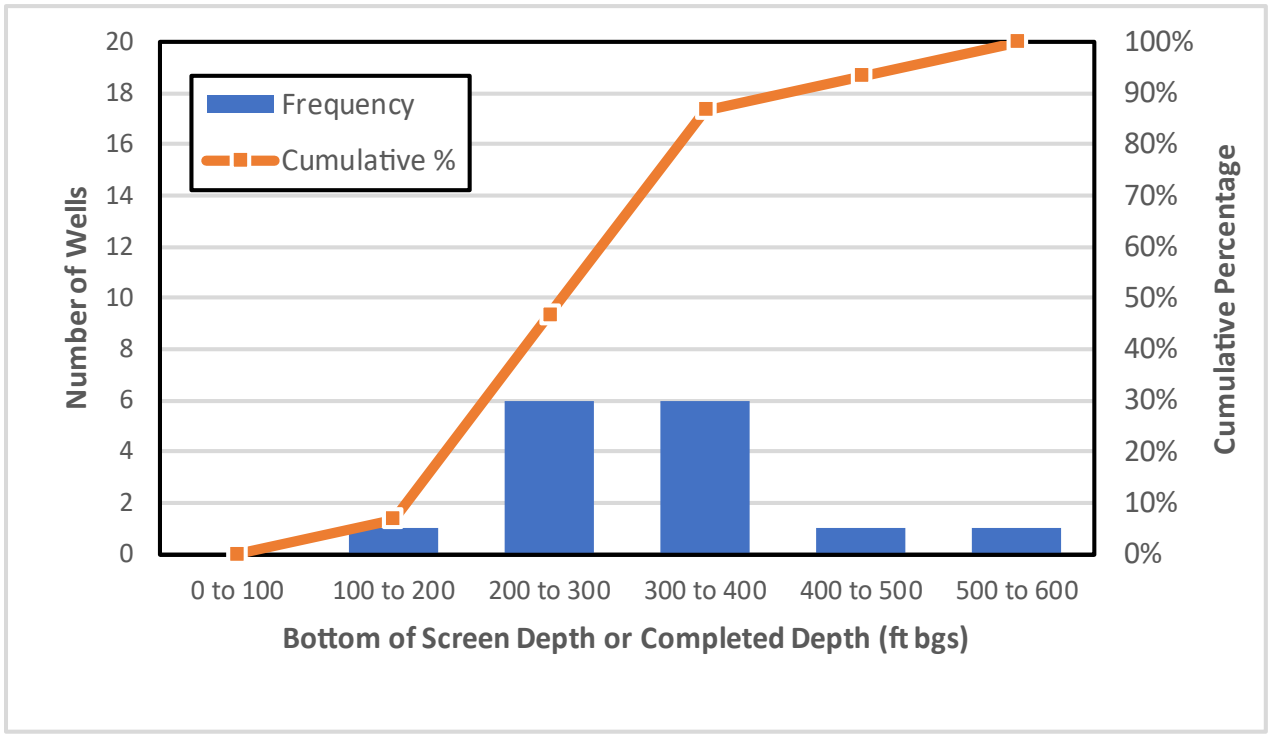


Abbreviations

ft bgs = feet below ground surface

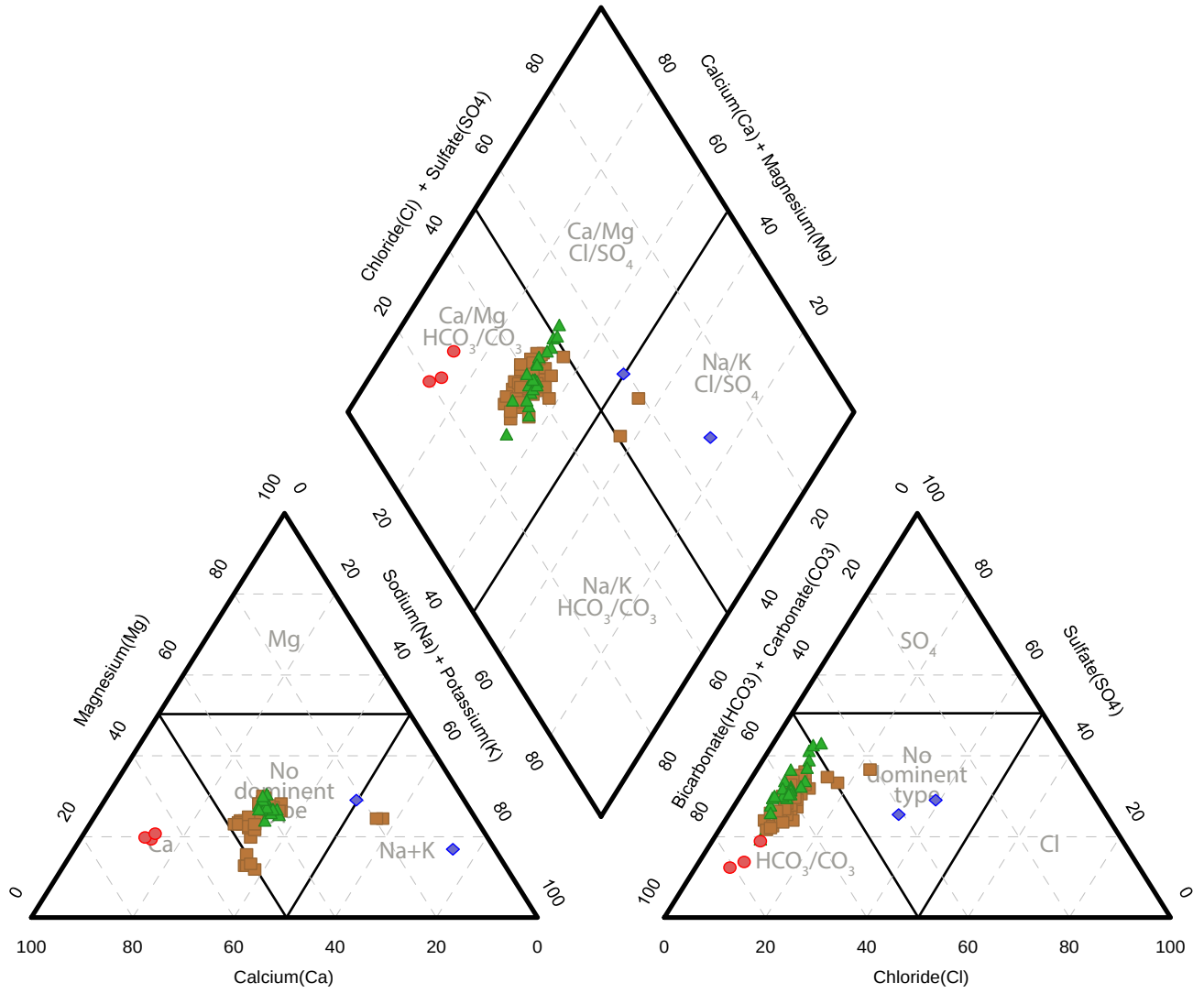
Notes

1. Well depth data is based on well records for 15 wells in the Castac Lake Valley Basin.
2. Completed depth was used when bottom of screen depth was not available.

Summary of Pumping Well Depth Data

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-4



Legend

- Castac Lake Valley area Well
- Dryfield Canyon area Well
- Grapevine Canyon area Well
- Castac Lake

Notes

1. Samples collected between 1998 and 2019.
2. Dominant water type is labeled in grey.

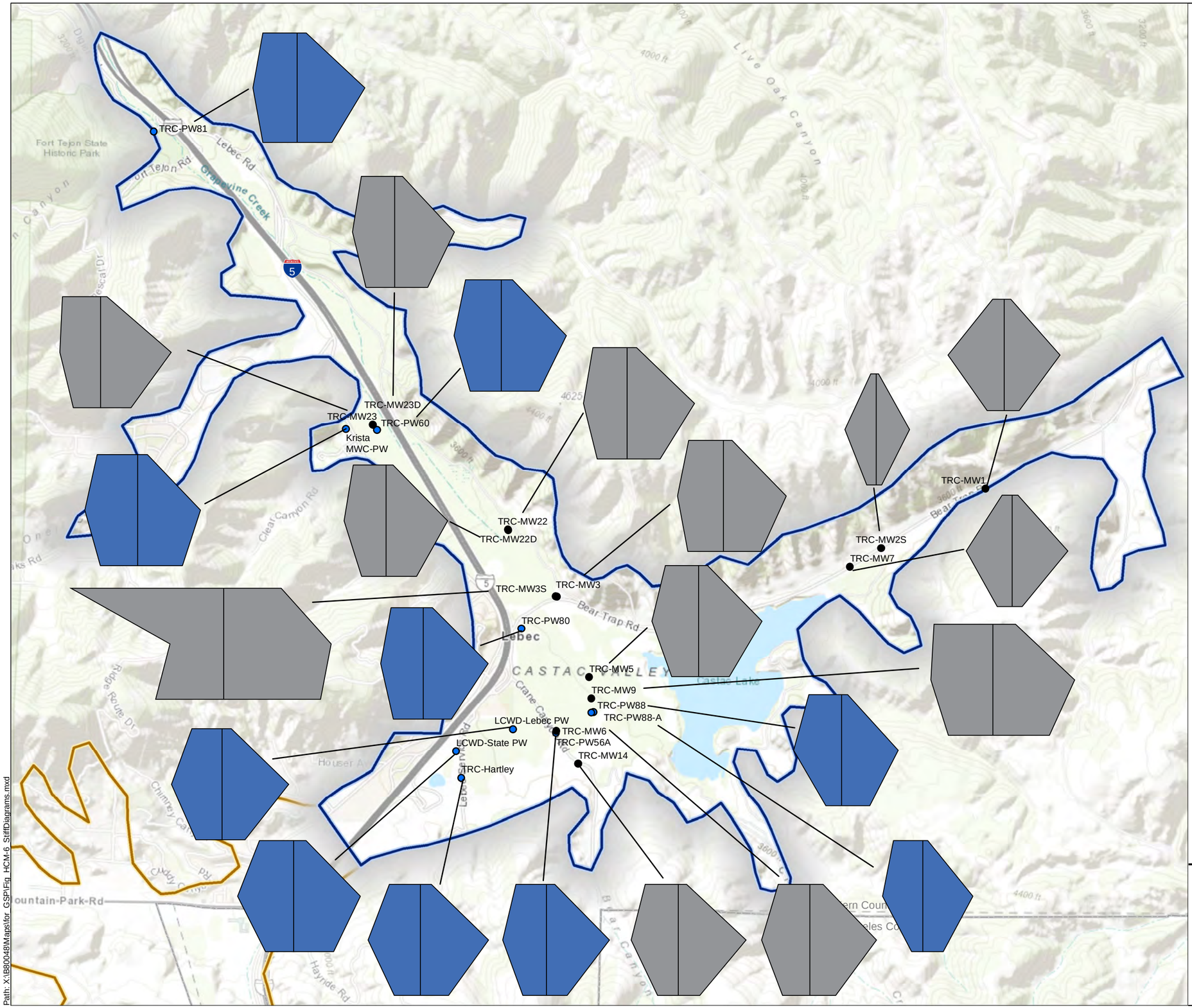
Sources

1. Standard ion concentration data from the Castac Basin Data Management System.

Piper Diagram

eki environment & water

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure HCM-5

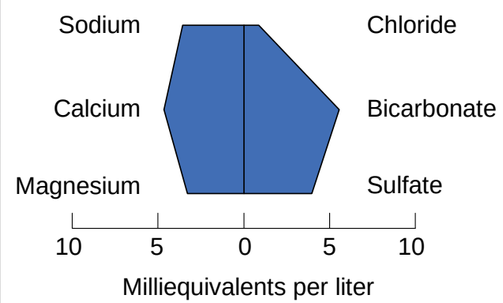


Legend

Well wtih Major Ion Data

- Monitoring Well
- Production Well
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Stiff Diagram



Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.
2. Stiff diagrams show the most recent well-water sample collected between 1998 and 2019.
3. Grey stiff diagram indicates a monitoring well; blue stiff diagram indicates a production well.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.

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(Scale in Miles)

Spatial Characteristics of Groundwater Chemistry

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-6

eki environment & water

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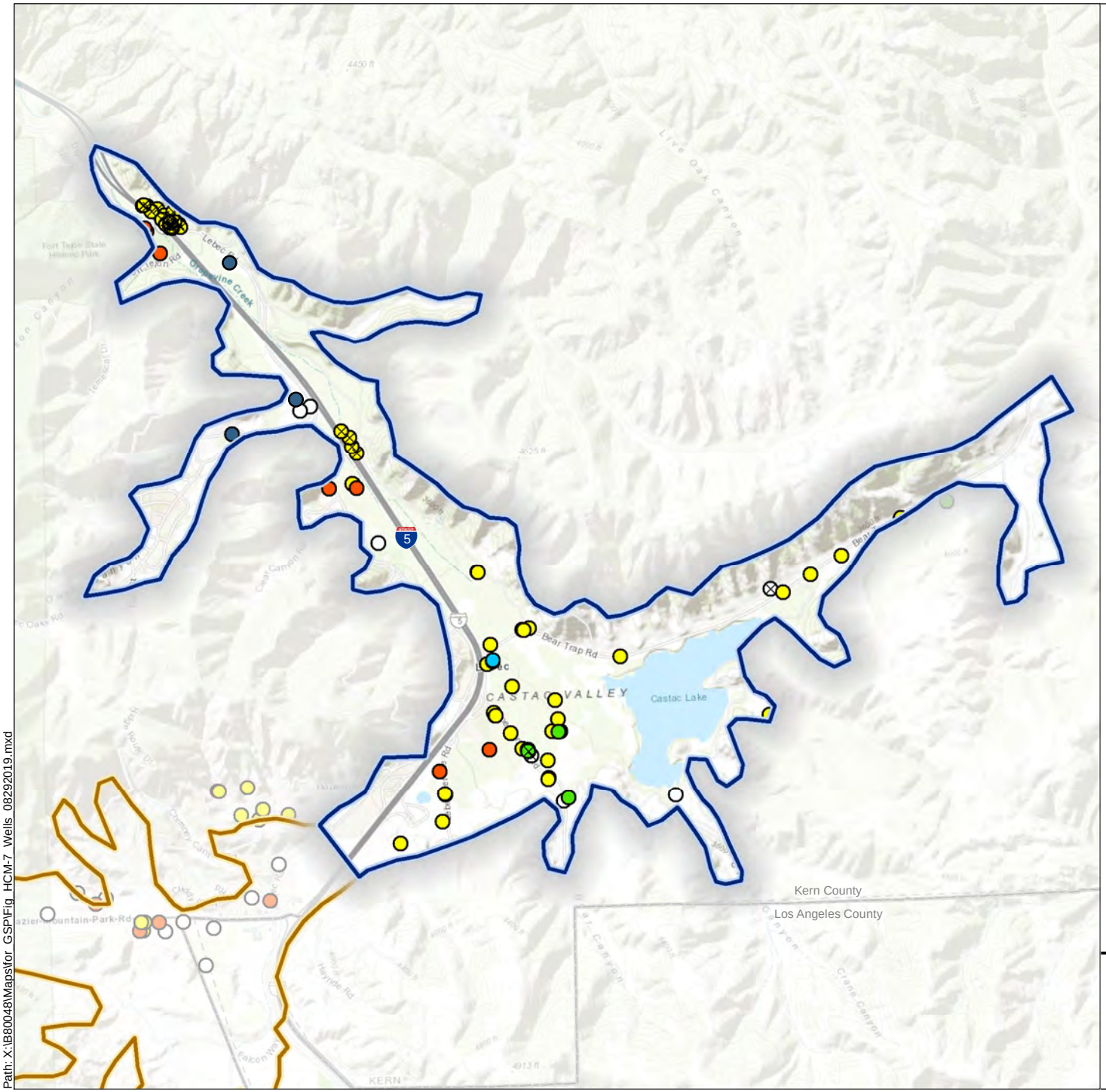

Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Well Use

- Public Supply
- Domestic
- Domestic/Irrigation
- Irrigation
- Monitoring
- Unknown
- Abandoned

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.

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0 0.5 1

Miles

Well Location, Use, and Status

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-7

eki environment & water

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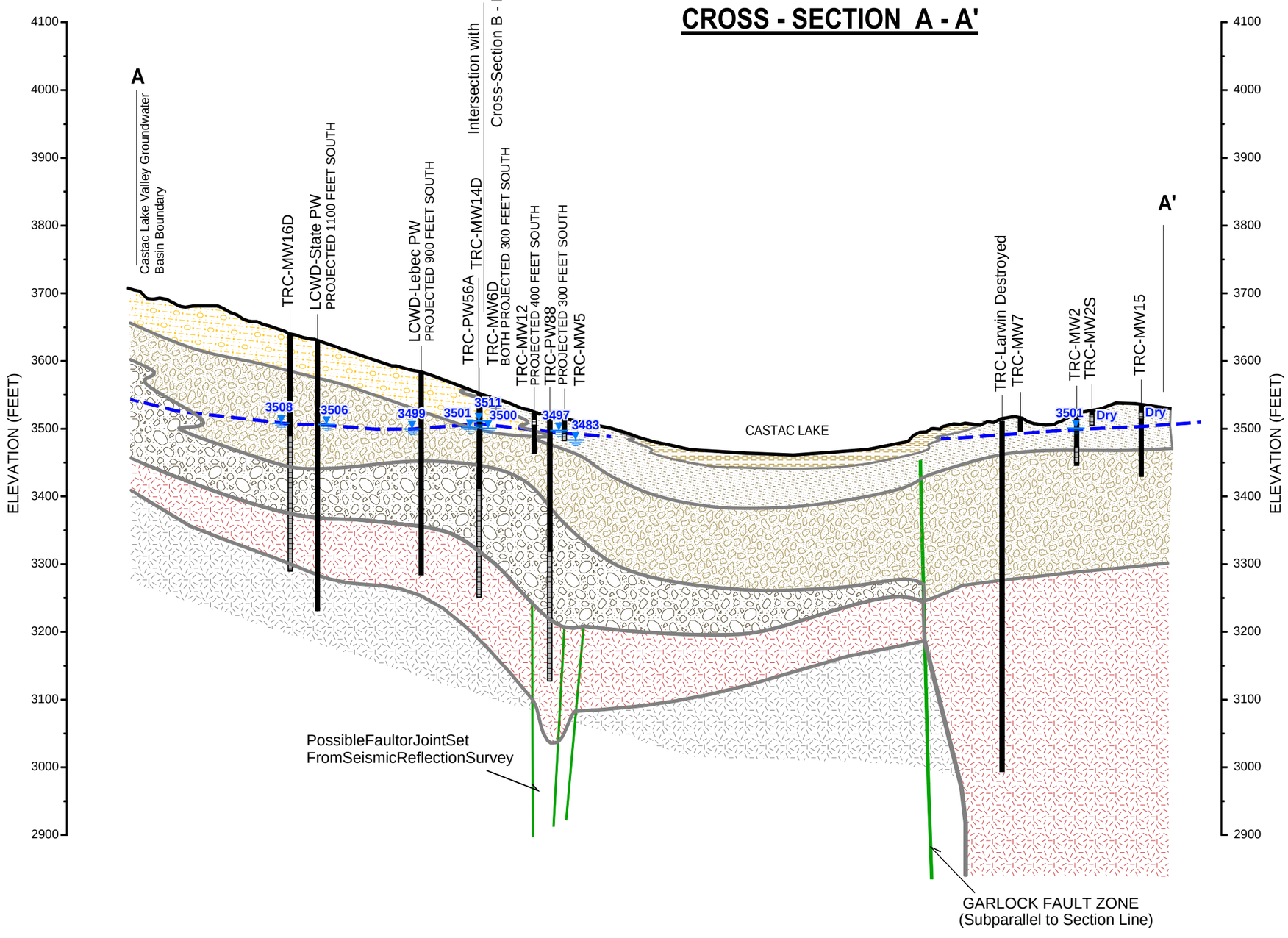
CROSS - SECTION A - A'

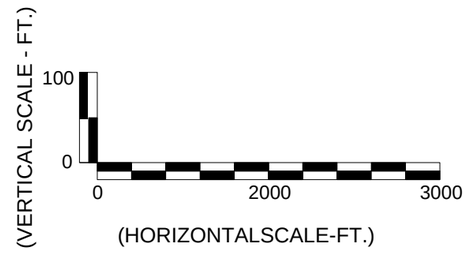


Legend

- Well Blank Casing
- Well Screened Interval
- Water Level Elevation (Wet/Normal Conditions) [piezometric heads from Spring 2015]
- RECENT INTERBEDDED ALLUVIUM
- RECENT LAKEBED SEDIMENTS
- FINE-GRAINED ALLUVIUM WITH CLAY
- MEDIUM-GRAINED ALLUVIUM
- COARSE-GRAINED ALLUVIUM
- VERY COARSE-GRAINED ALLUVIAL GRAVELS AND COBBLES
- WEATHERED BEDROCK
- UNWEATHERED BEDROCK
- Fault

NOTES:

1. All locations, depths, and dimensions are approximate.
2. Wells and boreholes are projected as much as 500 ft perpendicular to cross-section.
3. Wells with unknown screened intervals are shown with all blank casing.



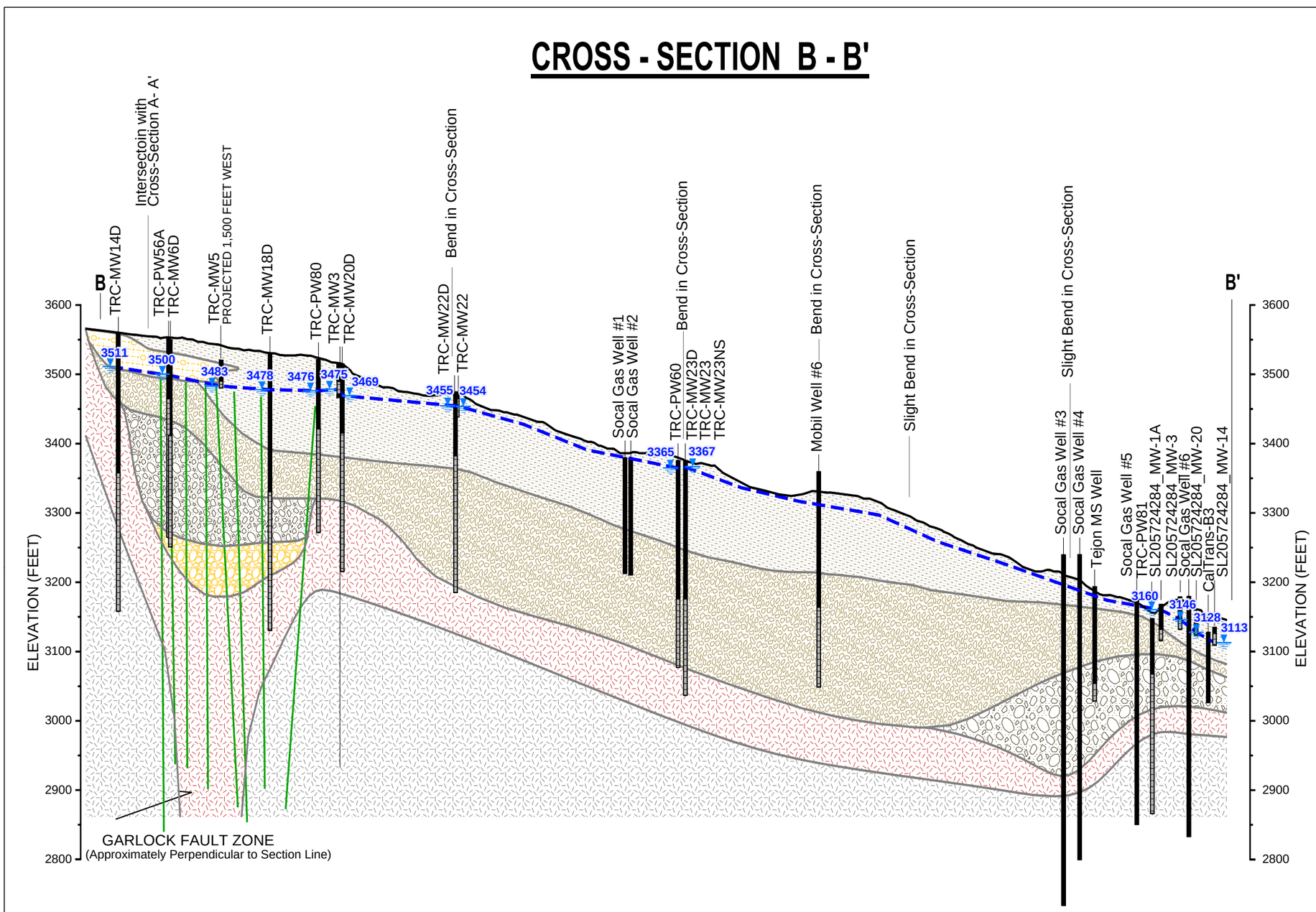
Geologic Cross-Section A - A'

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-8

eki environment & water

CROSS - SECTION B - B'

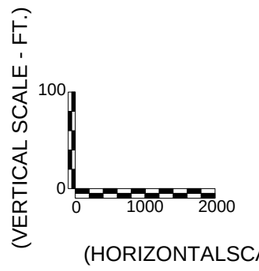


Legend

- Well Blank Casing
- Well Screened Interval
- Water Level Elevation (Wet/Normal Conditions) [piezometric heads from Spring 2015]
- RECENT INTERBEDDED ALLUVIUM
- RECENT LAKEBED SEDIMENTS
- FINE-GRAINED ALLUVIUM WITH CLAY
- MEDIUM-GRAINED ALLUVIUM
- COARSE-GRAINED ALLUVIUM
- VERY COARSE-GRAINED ALLUVIAL GRAVELS AND COBBLES
- WEATHERED BEDROCK
- UNWEATHERED BEDROCK
- Fault

NOTES:

1. All locations, depths, and dimensions are approximate.
2. Wells and boreholes are projected as much as 500 ft perpendicular to cross-section.
3. Wells with unknown screened intervals are shown with all blank casing.

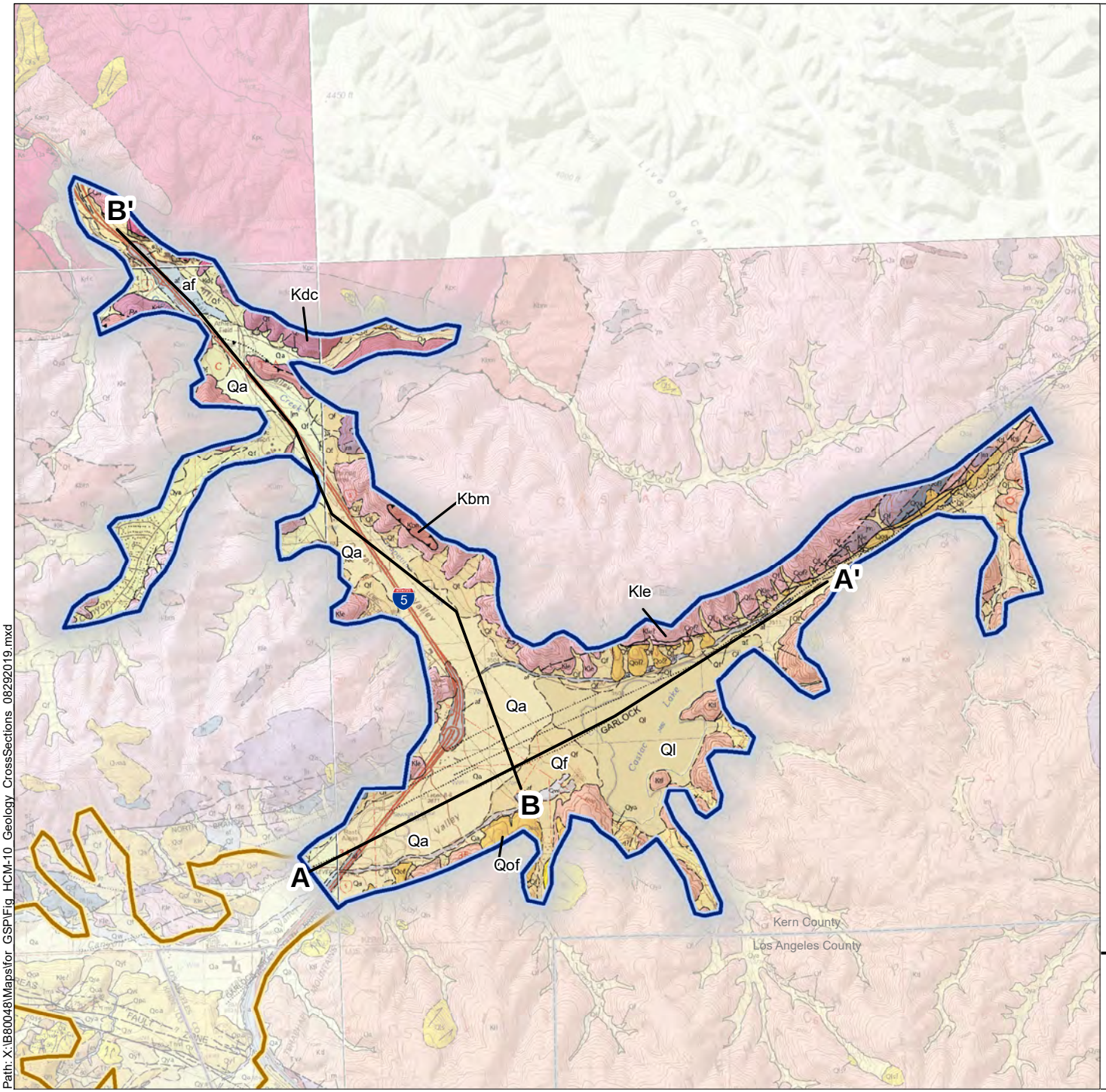


Geologic Cross-Section B - B'

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-9

eki environment & water



Legend

- Cross-Section Line
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

af	Artificial fill and disturbed areas	Qyf	Younger alluvial fan deposits
Qw	Wash deposits	Qls	Landslide deposits
Qf	Modern alluvium fan deposits	Kle	Lebec Granodiorite
Qa	Modern alluvium	Ktl	Tejon Lookout Granite
Ql	Lake deposits	Kbm	Granite of Bush Mountain
Qof	Older fan deposits	Kdc	Digier Canyon Quartz Diorite Orthogneiss
Qoa	Older alluvium	Pzm	Marble
Qya	Younger alluvium and terrace deposits		

Abbreviations

DWR = California Department of Water Resources
CGS = California Geological Survey

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Olson BPE, 2014. Preliminary Geologic Map of the Grapevine 7.5' Quadrangle, Kern County, California: A Digital Database. Version 1.0. CGS.
4. Olson BPE and Swanson BJ, 2017. Preliminary Geologic Map of the Lebec 7.5' Quadrangle, Kern, Los Angeles, and Ventura Counties, California. Version 1.0. CGS.
5. Swanson BJ and Olson BPE, 2016. Preliminary Geologic Map of the Frazier Mountain 7.5' Quadrangle, Kern, Los Angeles, and Ventura Counties, California. Version 1.0. CGS.

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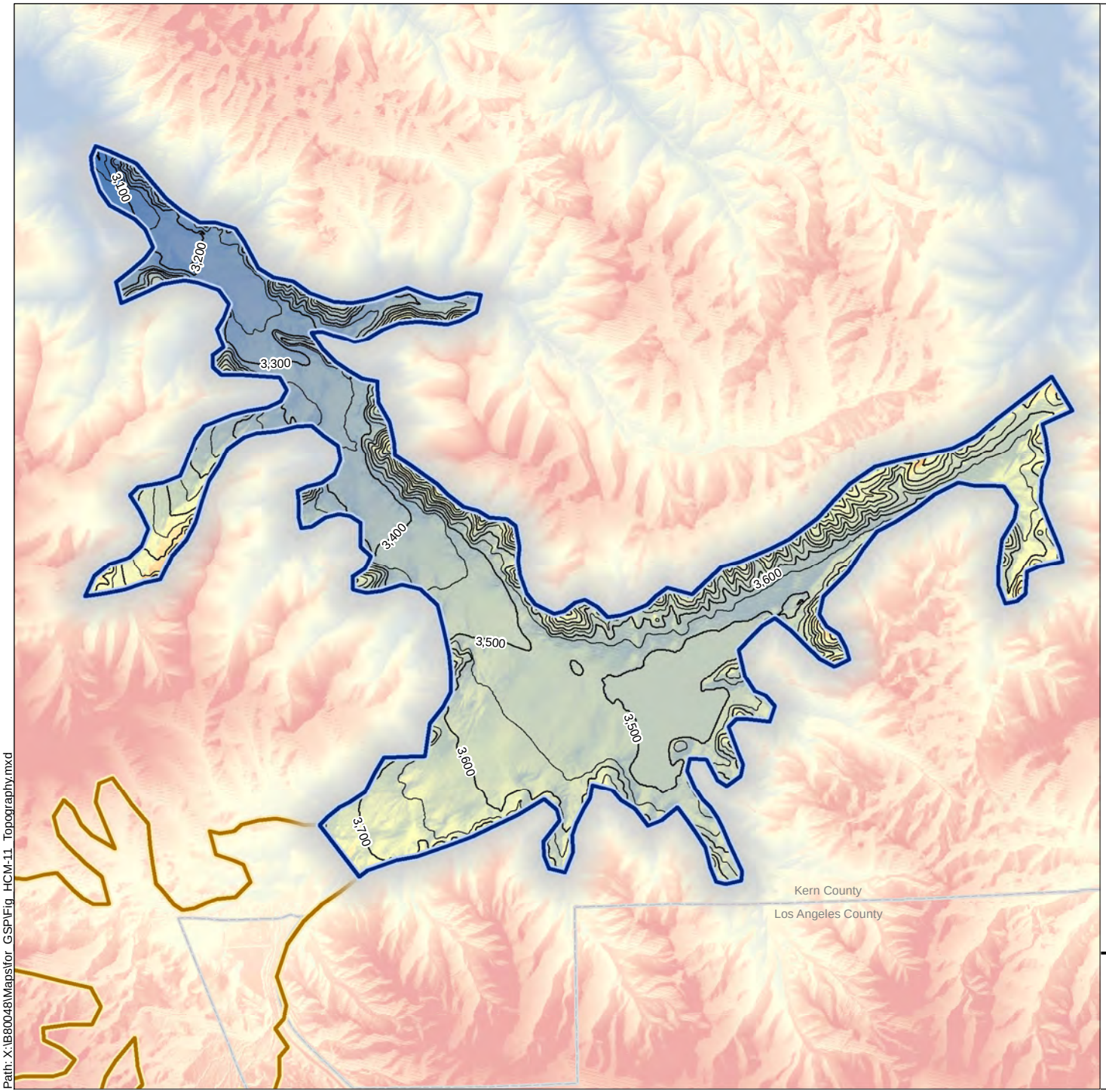
Geologic Map and Location of Cross-Section Lines

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-10

Path: X:\B80048\Maps\for_GSP\Fig_HCM-10_Geology_CrossSections_08292019.mxd



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- Land Surface Elevation Contour (ft MSL)

Land Surface Elevation (ft MSL)

High : 5000

Low : 3000

Abbreviations

DWR	= California Department of Water Resources
ft MSL	= feet above mean sea level
NED	= National Elevation Dataset
USGS	= United States Geological Survey

Notes

1. All locations are approximate.
2. Color scale is based on minimum and maximum elevations within the Castac Lake Valley Basin.
3. Land surface elevation contours shown with a 50 foot contour interval.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Land surface elevation data obtained from USGS NED (https://viewer.nationalmap.gov/basic/).

N

0 0.5 1

Miles

Topography

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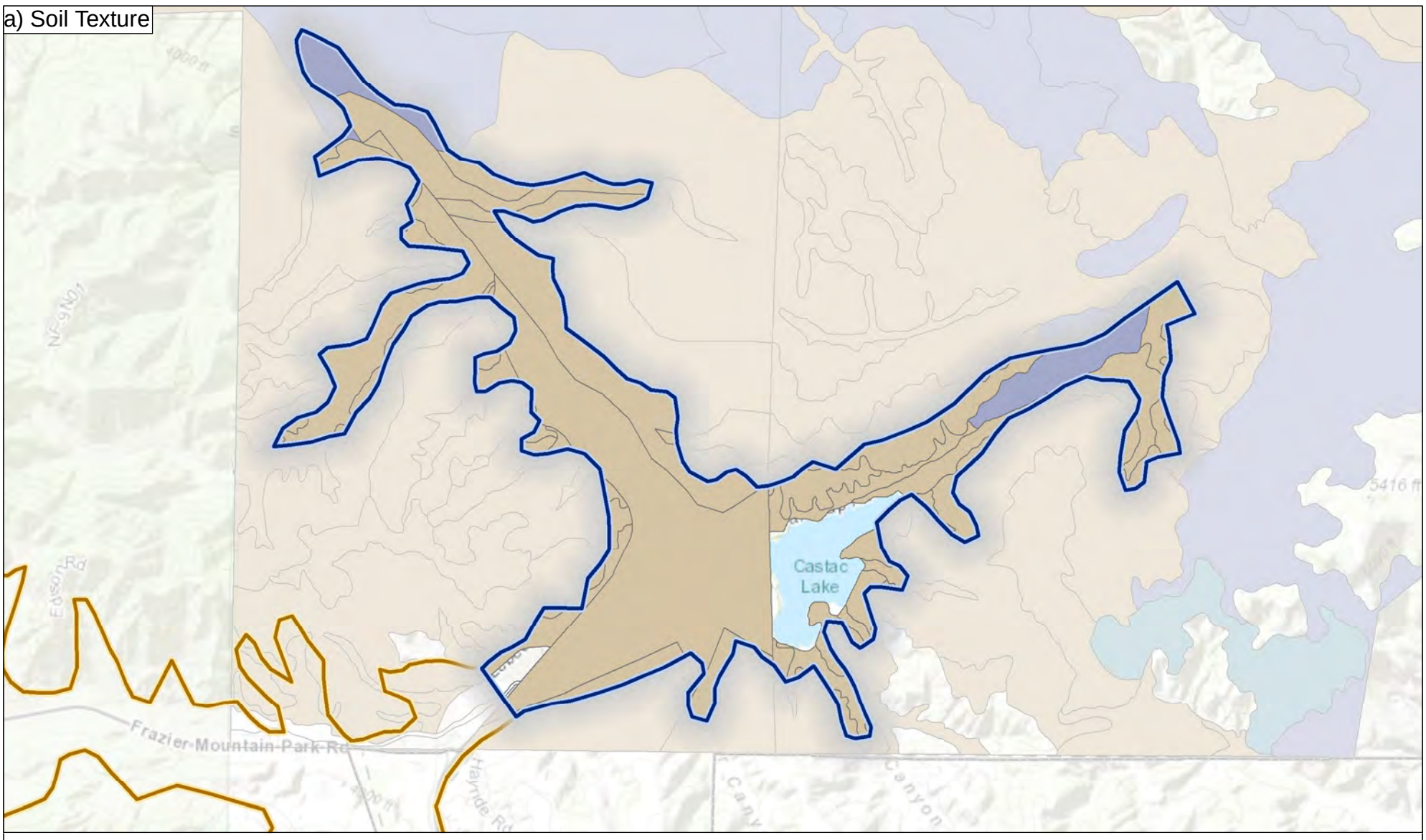
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

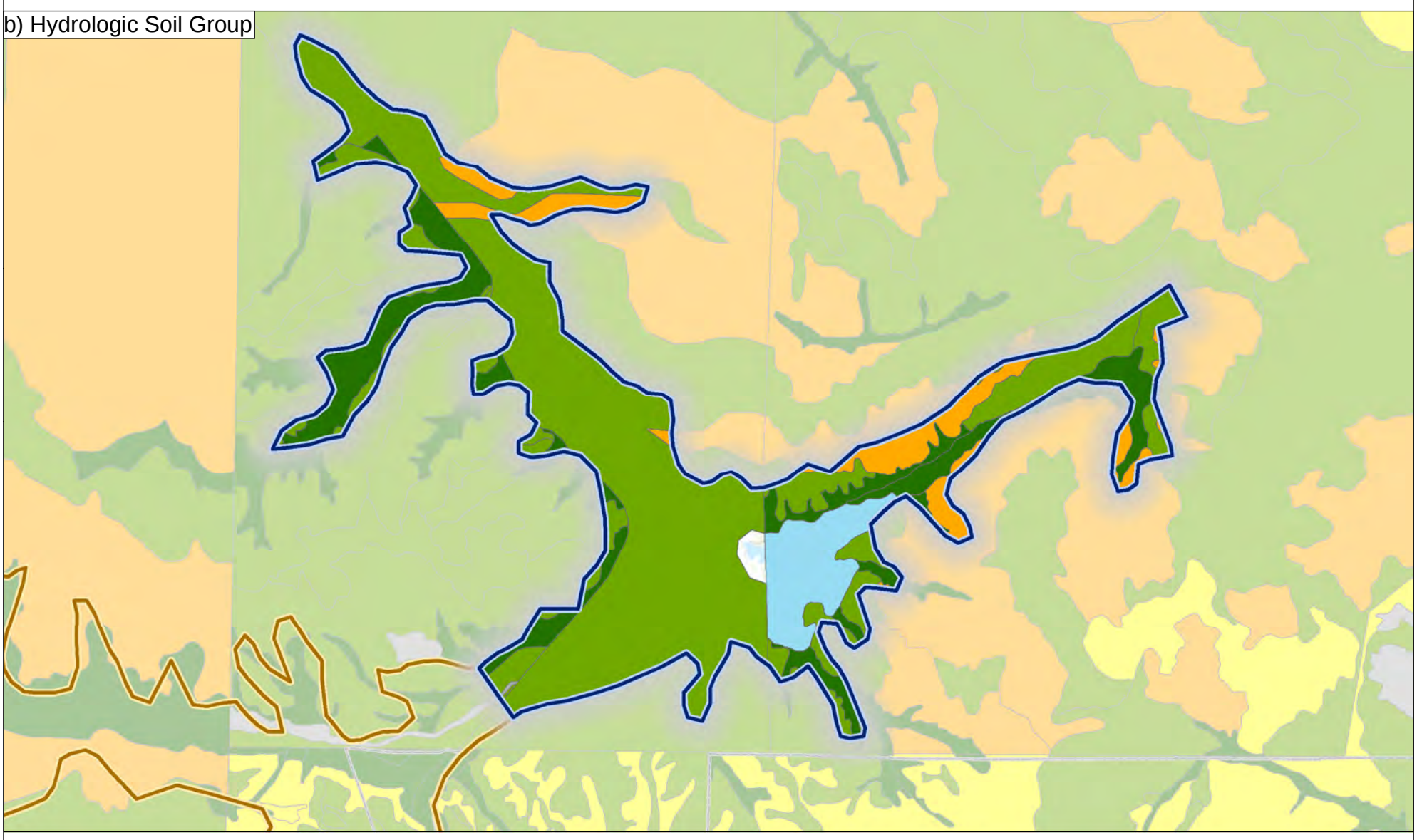
Figure HCM-11

Path: X:\B80048\Mapsfor GSP\Fig HCM-11 Topography.mxd

a) Soil Texture



b) Hydrologic Soil Group



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Soil Texture

- Sandy Loam
- Sandy Clay Loam
- Clay Loam
- Loamy Sand
- Loam
- Other
- Not Identified

Hydrologic Soil Groups

- A
- B
- C
- D
- Not Identified

N

0 0.5 1

(Scale in Miles)

Abbreviations

DWR = California Department of Water Resources
SSURGO = Soil Survey Geographic Database

Notes

1. All locations are approximate.
2. Only soil units of greatest extent are labeled.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Soil data from United States Department of Agriculture SSURGO (https://gdg.sc.egov.usda.gov/GDGOrder.aspx#).

Soil Texture and Hydrologic Soil Group

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-12

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Path: X:\B80048\Maps\for GSP\Fig HCM-12 Soils 08292019.mxd

Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- Castac Lake
- Stream/Creek
- Active Pumping or Flowing Artesian Well
- Inactive Pumping Well
- County Boundary

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.
2. Pumping wells shown are only those with known well uses.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 17 September 2020.

N

0 0.5 1

Miles

Recharge and Discharge Areas

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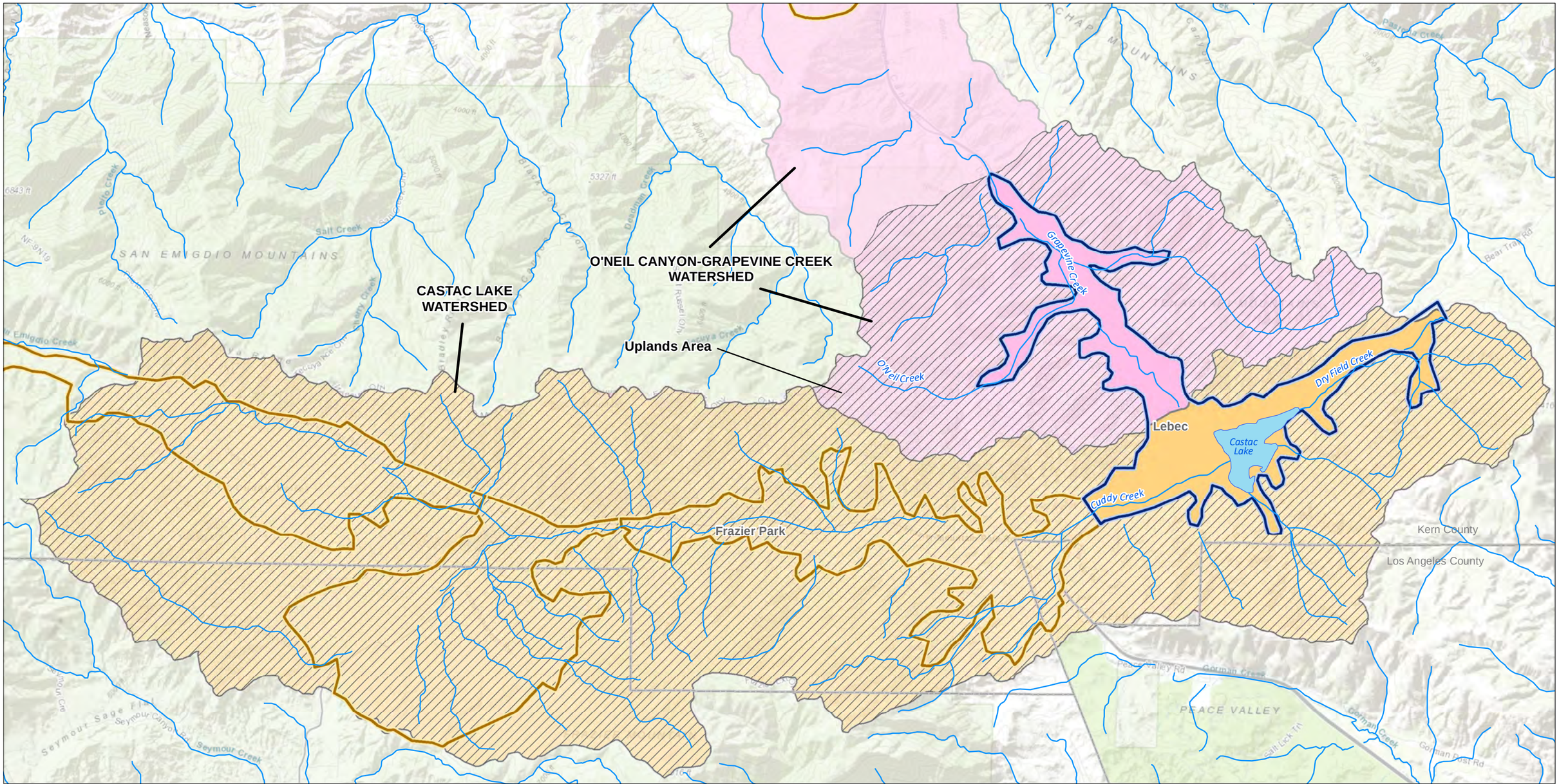
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure HCM-13

Path: X:\B80048\Mapsfor GSP\Fig HCM-13 ConceptualModel 08292019.mxd



Legend

- Stream/Creek
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Watershed Boundary

- Castac Lake
- O'Neil Canyon-Grapevine Creek
- Uplands Area

Abbreviations

DWR = California Department of Water Resources
NHD = National Hydrography Dataset

Notes

1. All locations are approximate.
2. Only groundwater basins which are either directly upgradient or downgradient of Castac Lake Valley Groundwater Basin are shown.
3. Uplands Area signifies the watershed area contributing runoff to Castac Lake Valley Groundwater Basin.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Watershed boundaries HUC12 obtained from USDA NRCS on 16 July 2018.
4. Surface water features and watersheds from NHD (https://viewer.nationalmap.gov/basic/).

N

0 1 2

(Scale in Miles)

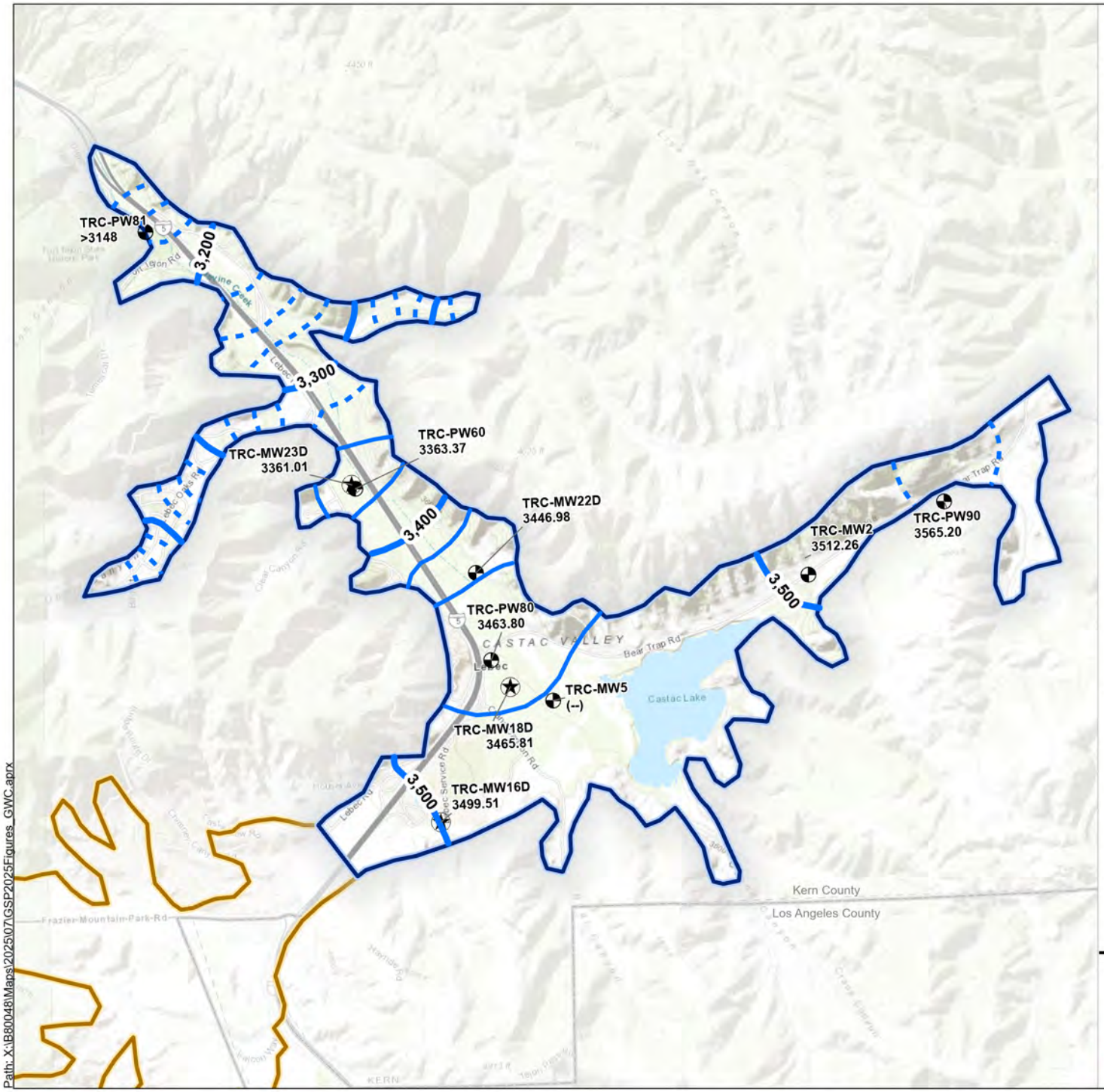
Natural Surface Water Features

Tejon-Castac Water District
Kern County, CA
November 2025
EKI B80048.00

Figure HCM-14

eki environment & water

Path: X:\B80048\Maps\for_GSP\Fig_HCM-14_SurfaceWater.mxd



Legend

Monitoring Wells

- Representative Monitoring Well
- Other Wells

Groundwater Elevation Contour (ft msl)

- (Dashed where uncertain)
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources
ft msl = feet above mean sea level

Notes

1. All locations are approximate.
2. Contour interval: 25 feet.
3. Groundwater elevation contours were estimated where data are sparse. Dashed lines indicate greater uncertainty.
4. Groundwater elevation measurements collected between 1 January 2024 - 30 April 2024.
5. Water year 2024 is October 2023 through September 2024.
6. Data posted next to each well show water elevation in feet relative to NAVD 1988. A double dash (--) indicates no data are available for that well.
7. TRC-PW81 was flowing artesian at time of measurement.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.

N

0 0.5 1
Miles

Groundwater Elevations
Spring 2024

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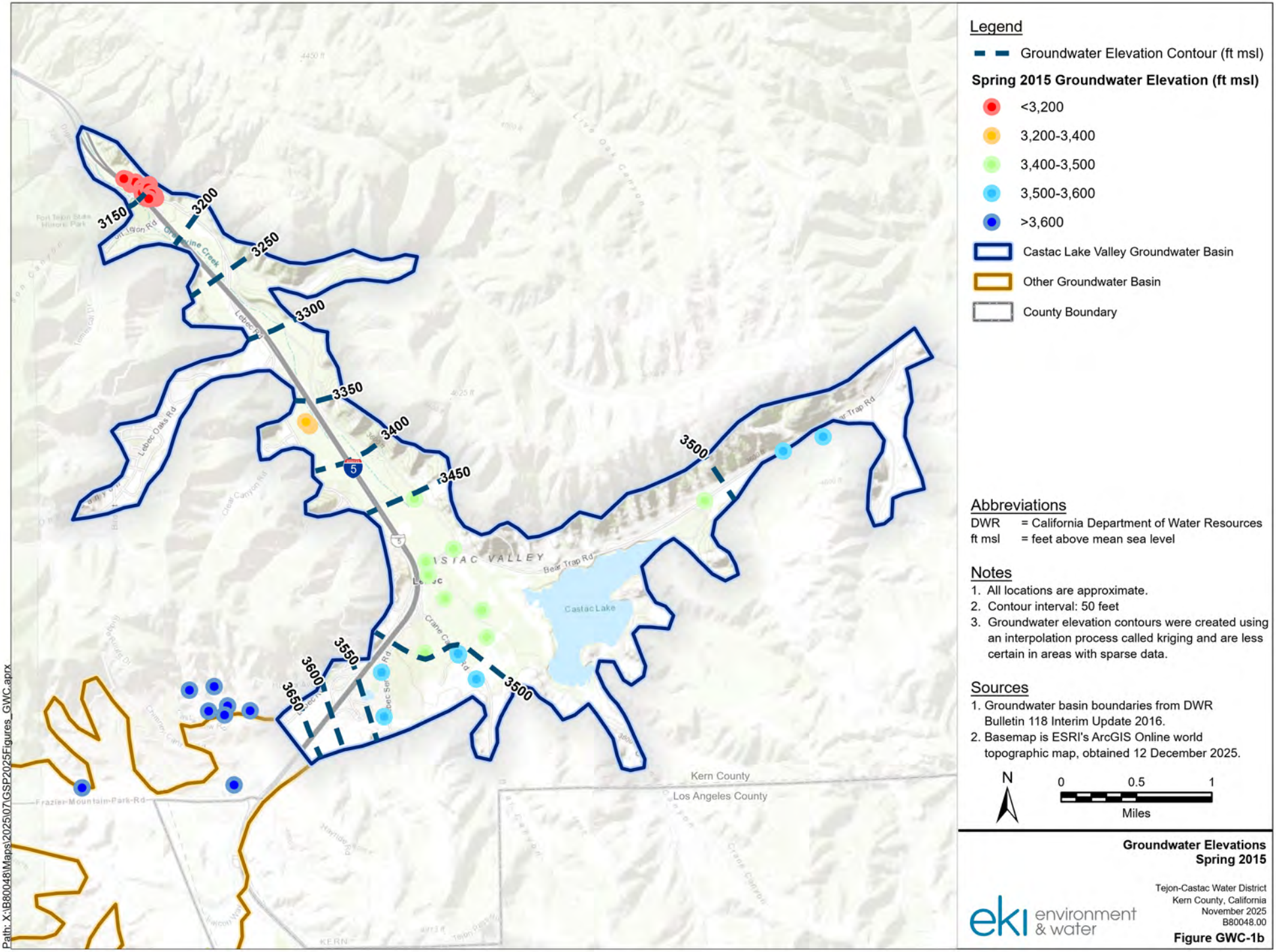
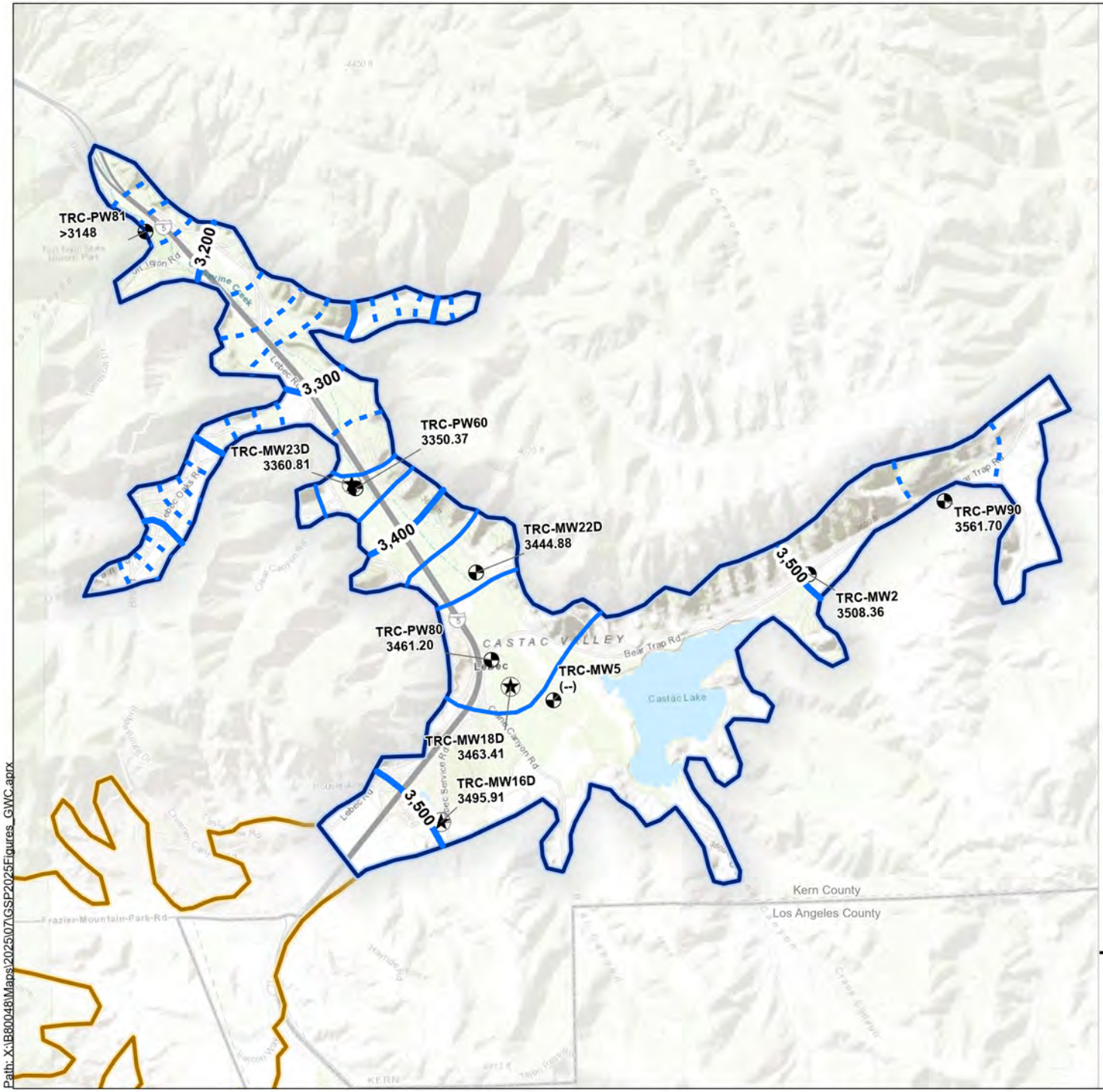
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure GWC-1a

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx


Legend
Groundwater Elevation Contour (ft msl)
Spring 2015 Groundwater Elevation (ft msl)
<3,200
3,200-3,400
3,400-3,500
3,500-3,600
>3,600
Castac Lake Valley Groundwater Basin
Other Groundwater Basin
County Boundary
3150
3200
3250
3300
3350
3400
3450
3500
3500
3550
3600
3650
Castac Lake
Kern County
Los Angeles County
Frazier Mountain Park Rd
Lebec Oaks Rd
Bear Trap Rd
Abbreviations
DWR = California Department of Water Resources
ft msl = feet above mean sea level
Notes
1. All locations are approximate.
2. Contour interval: 50 feet
3. Groundwater elevation contours were created using an interpolation process called kriging and are less certain in areas with sparse data.
Sources
1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.
N
0
0.5
1
Miles
Groundwater Elevations
Spring 2015
eki environment & water
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure GWC-1b
Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx



Legend

Monitoring Wells

- Representative Monitoring Well
- Other Wells

Groundwater Elevation Contour (ft msl)

- (Dashed where uncertain)
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources
ft msl = feet above mean sea level

Notes

1. All locations are approximate.
2. Contour interval: 25 feet.
3. Groundwater elevation contours were estimated where data are sparse. Dashed lines indicate greater uncertainty.
4. Groundwater elevation measurements collected between 1 January 2024 - 30 April 2024.
5. Water year 2024 is October 2023 through September 2024.
6. Data posted next to each well show water elevation in feet relative to NAVD 1988. A double dash (--) indicates no data are available for that well.
7. TRC-PW81 was flowing artesian at time of measurement.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.

N

0 0.5 1
Miles

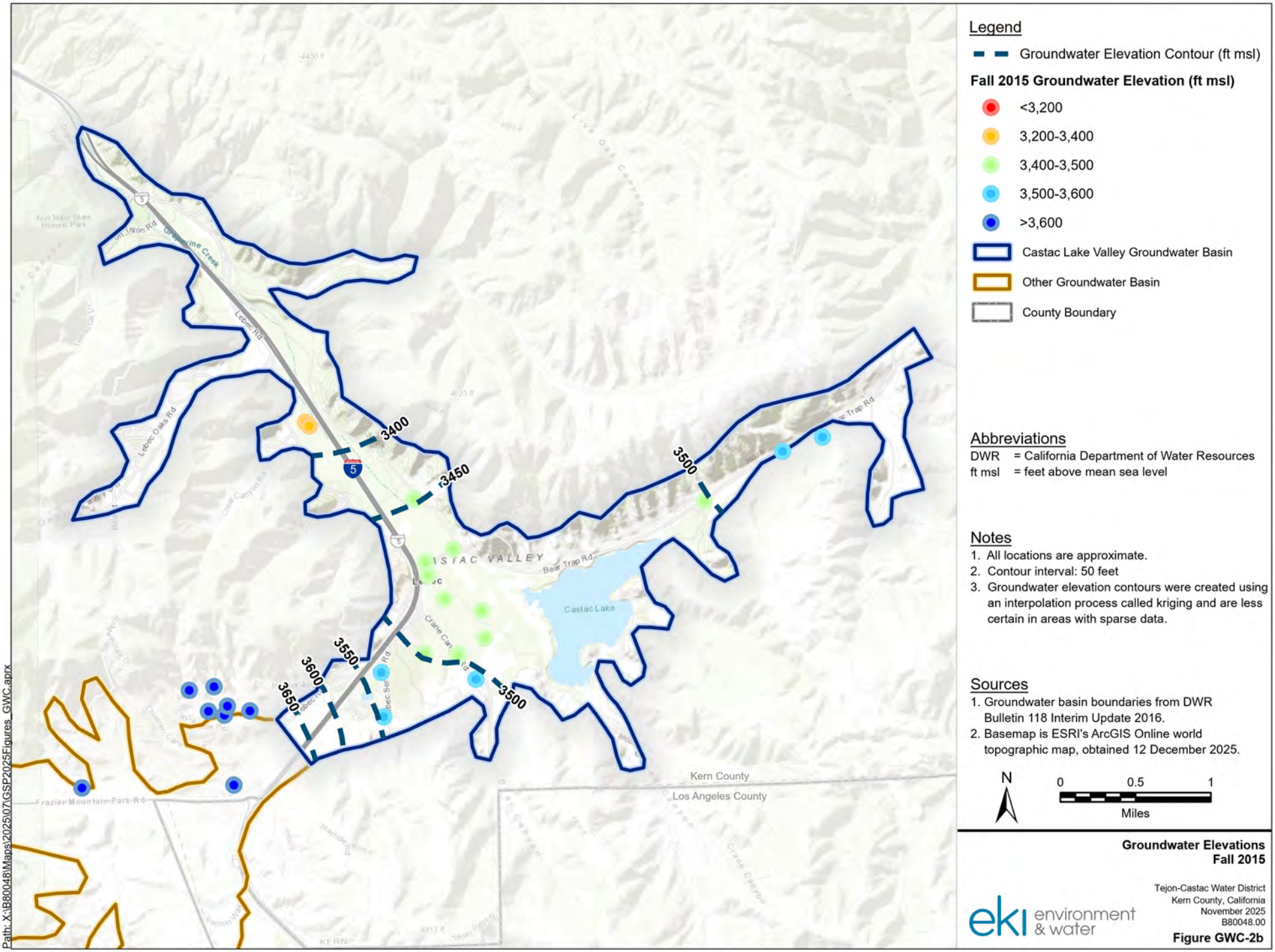
Groundwater Elevations
Fall 2023

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure GWC-2a

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx

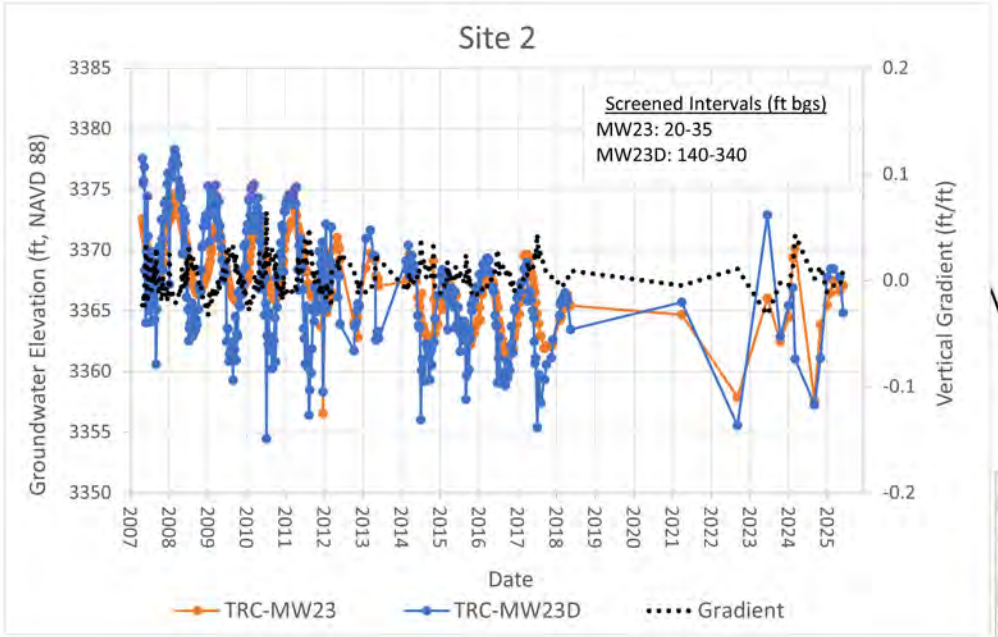


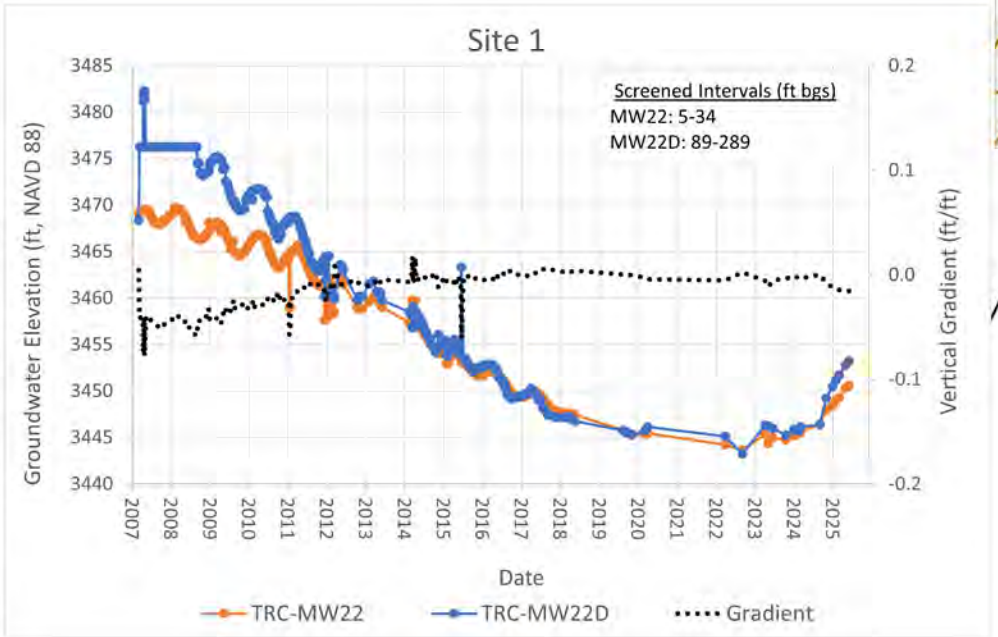
Groundwater Elevations
Fall 2015

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure GWC-2b

eki environment & water

Path: X:\B80048\Maps\2025\07GSP2025Figures_GWC.aprx





Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- Monitoring Well

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 August 2025.

N

0 2 4

Miles

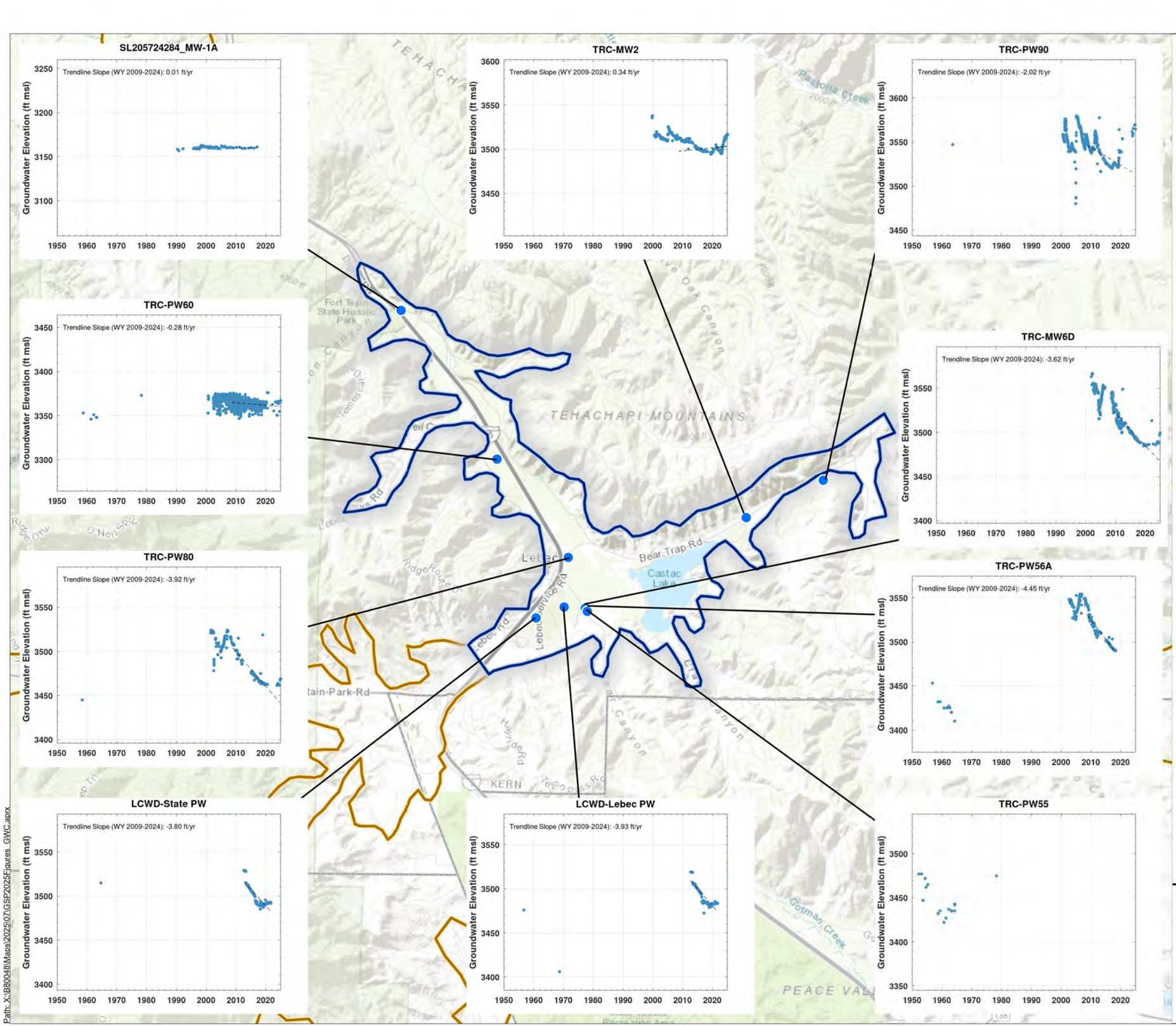
Vertical Gradient Hydrographs

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure GWC-3

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx



Legend

- County Boundary
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- Groundwater Monitoring Well

Abbreviations

DWR	= California Department of Water Resources
ft msl	= ft above mean sea level
ft/yr	= ft per year

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 August 2025.

N

0 1 2

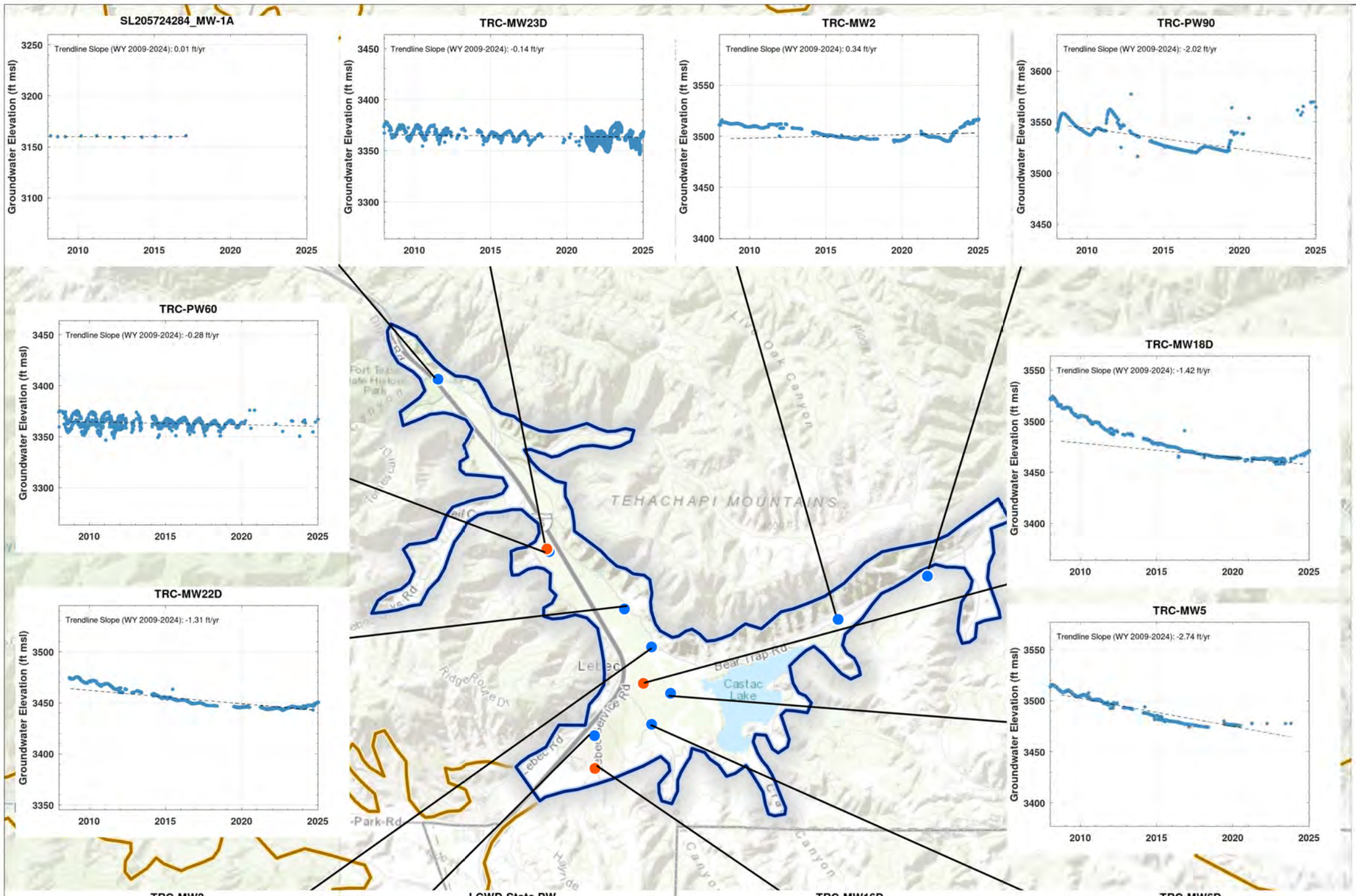
(Scale in Miles)

Historical (1950-2024)
Groundwater Elevation Hydrographs

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure GWC-4

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx



Legend

- County Boundary
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- Representative Monitoring Well
- Groundwater Monitoring Well

Abbreviations

DWR	= California Department of Water Resources
ft msl	= ft above mean sea level
ft/yr	= ft per year

Notes

1. All locations are approximate.
2. Representative Monitoring Wells are those defined as the SGMA Monitoring Network (see Section 19).

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 August 2025.

N

0 1 2

(Scale in Miles)

Recent (2009-2024) Groundwater Elevation Hydrographs

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure GWC-5

eki environment & water

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx

Legend

DWR Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

Abbreviations

AFY = acre-feet per year
DWR = California Department of Water Resources

Notes

1. "Seasonal high" condition of a given year is defined here as February through March. Storage changes shown are estimated over the year between each seasonal high period.
2. The color of each vertical bar is based on the DWR-published Water Year Type for that water year. Note that the Water Year is 6 months out of phase with the seasonal high period year defined above.

Sources

1. DWR Water Year type is from DWR's Water Year Hydrologic Classification Indices for the San Joaquin Valley (http://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST)

Annual Change in Storage Between Seasonal Highs vs. DWR Water Year Type

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

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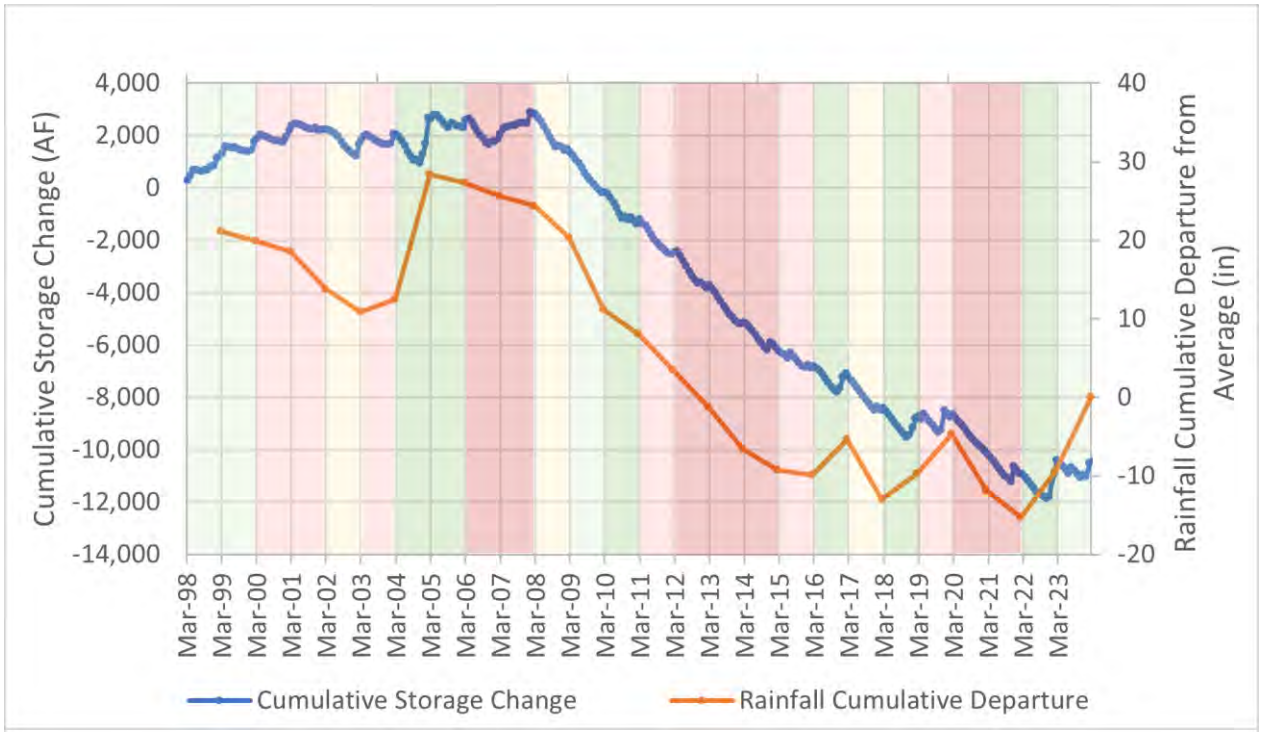
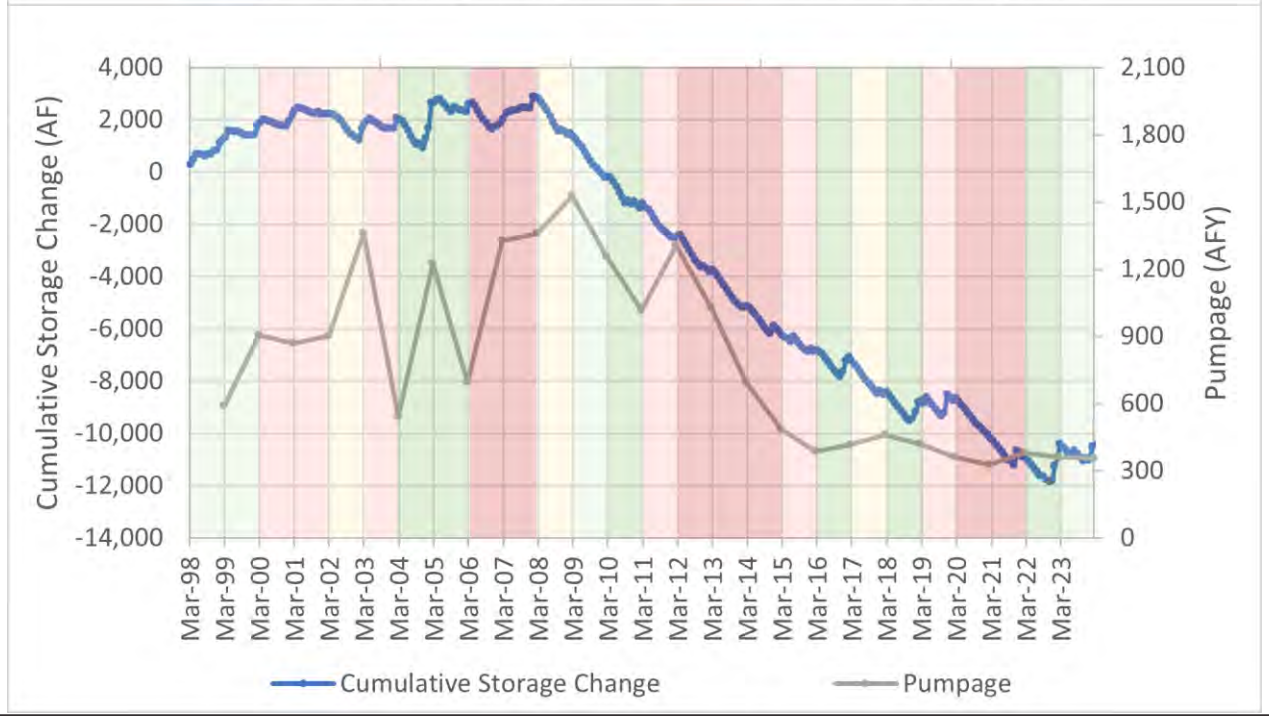
Figure GWC-6





Legend

DWR Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

- Cumulative Storage Change
- Rainfall Cumulative Departure
- Estimated Groundwater Pumpage

Abbreviations

AFY	= acre-feet per year
DWR	= California Department of Water Resources
NOAA	= National Oceanic and Atmospheric Administration

Notes

1. "Seasonal high" condition of a given year is defined here as February through March. Storage changes shown are estimated over the year between each seasonal high period.
2. The color of each vertical bar is based on the DWR-published Water Year Type for that water year. Note that the Water Year is 6 months out of phase with the seasonal high period year defined above.
3. Rainfall cumulative departure from average is calculated based on rainfall measured at the Lebec NOAA station between Water Years 1949 and 2024.

Sources

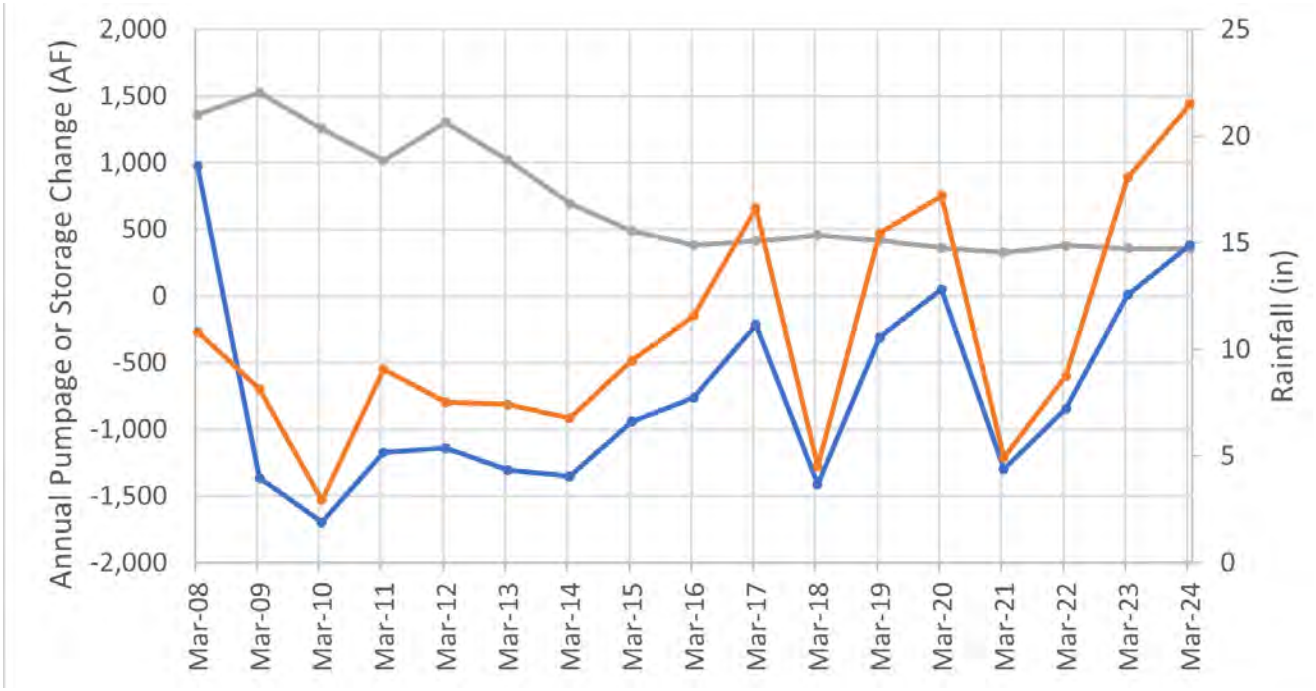
1. DWR Water Year type is from DWR's Water Year Hydrologic Classification Indices for the San Joaquin Valley (http://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST)
2. NOAA Lebec climate station Coop ID #44863 (www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4863)

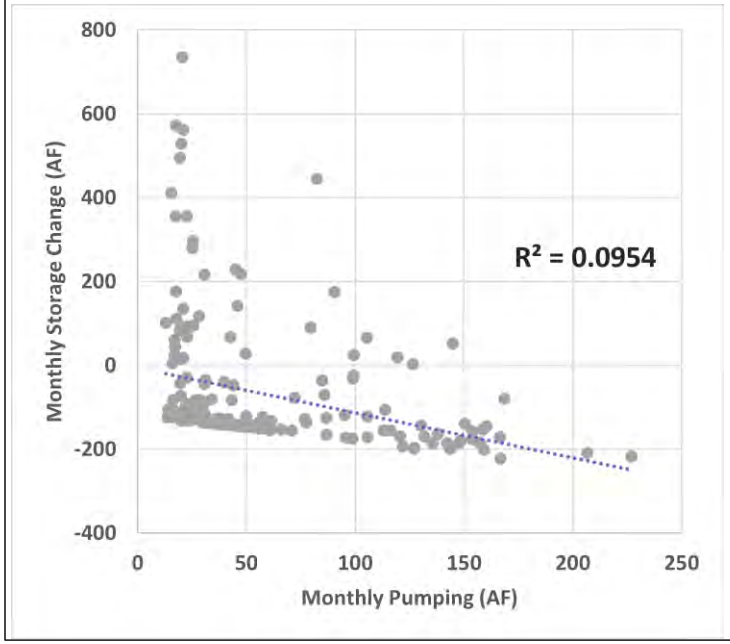
Modeled Cumulative Change in Storage, Rainfall Cumulative Departure from Average, and Pumpage vs. DWR Water Year Type

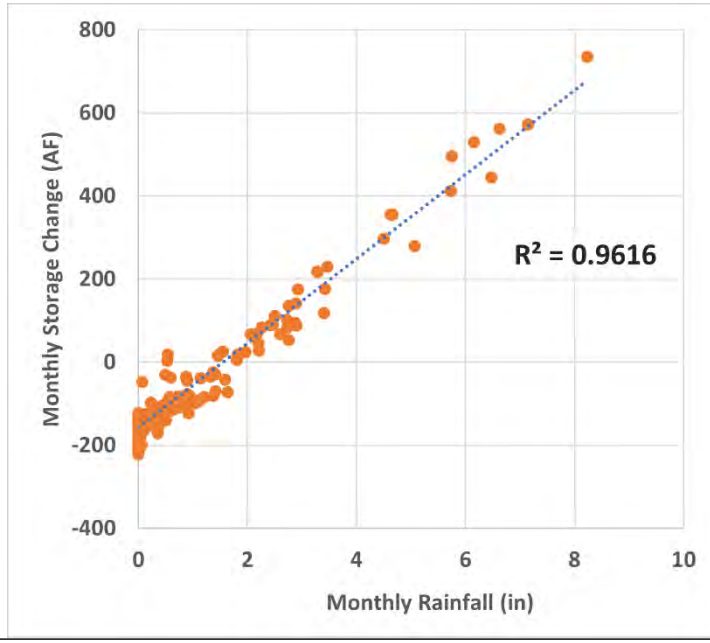
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

eki environment & water

Figure GWC-7







Legend

- Annual Storage Change
- Rainfall
- Estimated Groundwater Pumpage

Abbreviations

AF = acre-feet
DWR = California Department of Water Resources
in = inches
NOAA = National Oceanic and Atmospheric Administration
PRISM = Parameter-Elevation Regressions on Independent Slopes Model

Notes

1. "Seasonal high" condition of a given year is defined here as February through March. Storage changes shown are estimated over the year between each seasonal high period.
2. The color of each vertical bar is based on the DWR-published Water Year Type for that water year. Note that the Water Year is 6 months out of phase with the seasonal high period year defined above.
3. Rainfall is based on data from the Lebec NOAA station between Water Years 1949 and 2020, and locally-calibrated precipitation estimates from PRISM between Water Years 2021 and 2024.

Sources

1. NOAA Lebec climate station Coop ID #44863 (www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4863)
2. PRISM precipitation data from https://prism.oregonstate.edu/

Annual and Monthly Comparisons of Modeled Change in Groundwater Storage, Pumpage, and Rainfall

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

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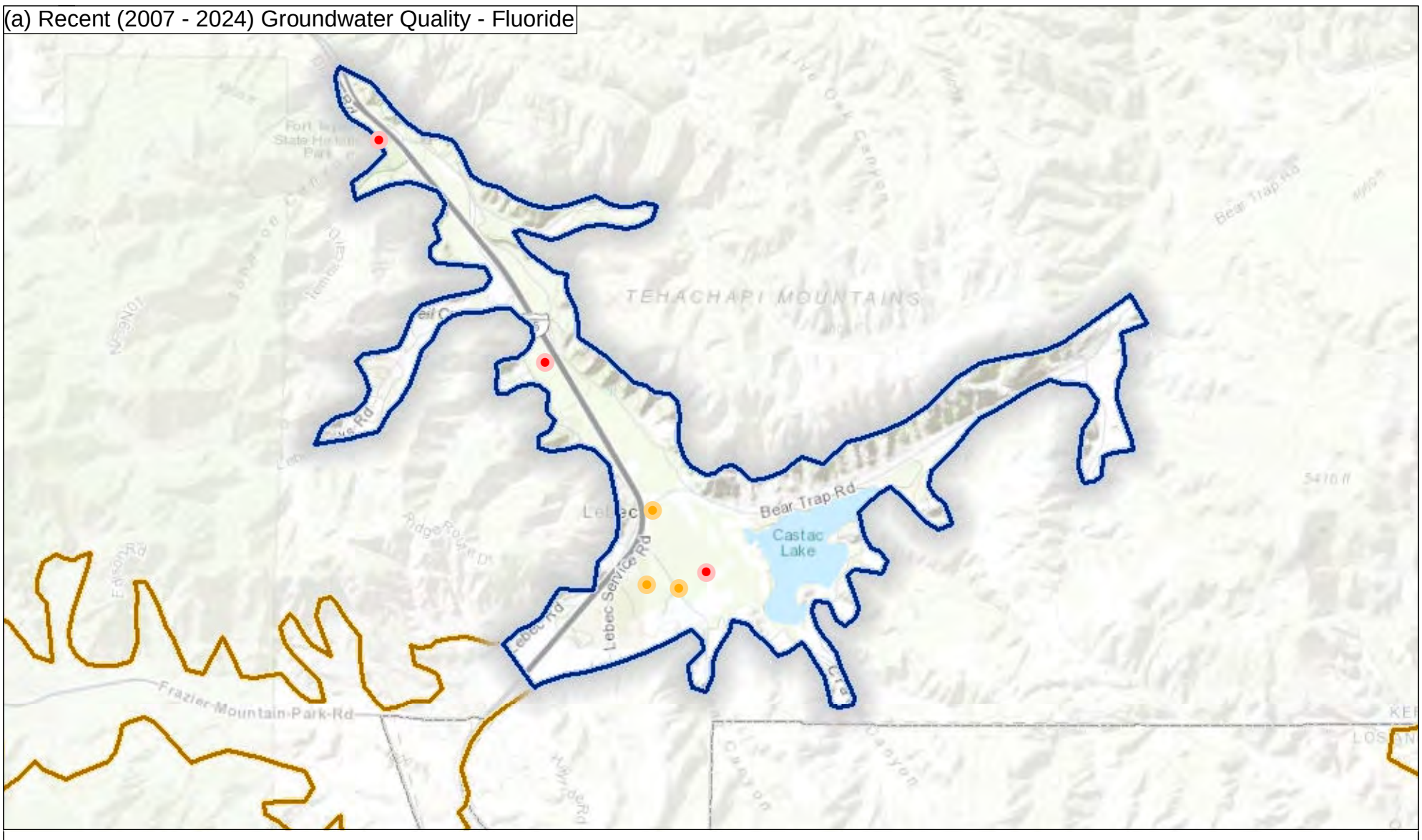
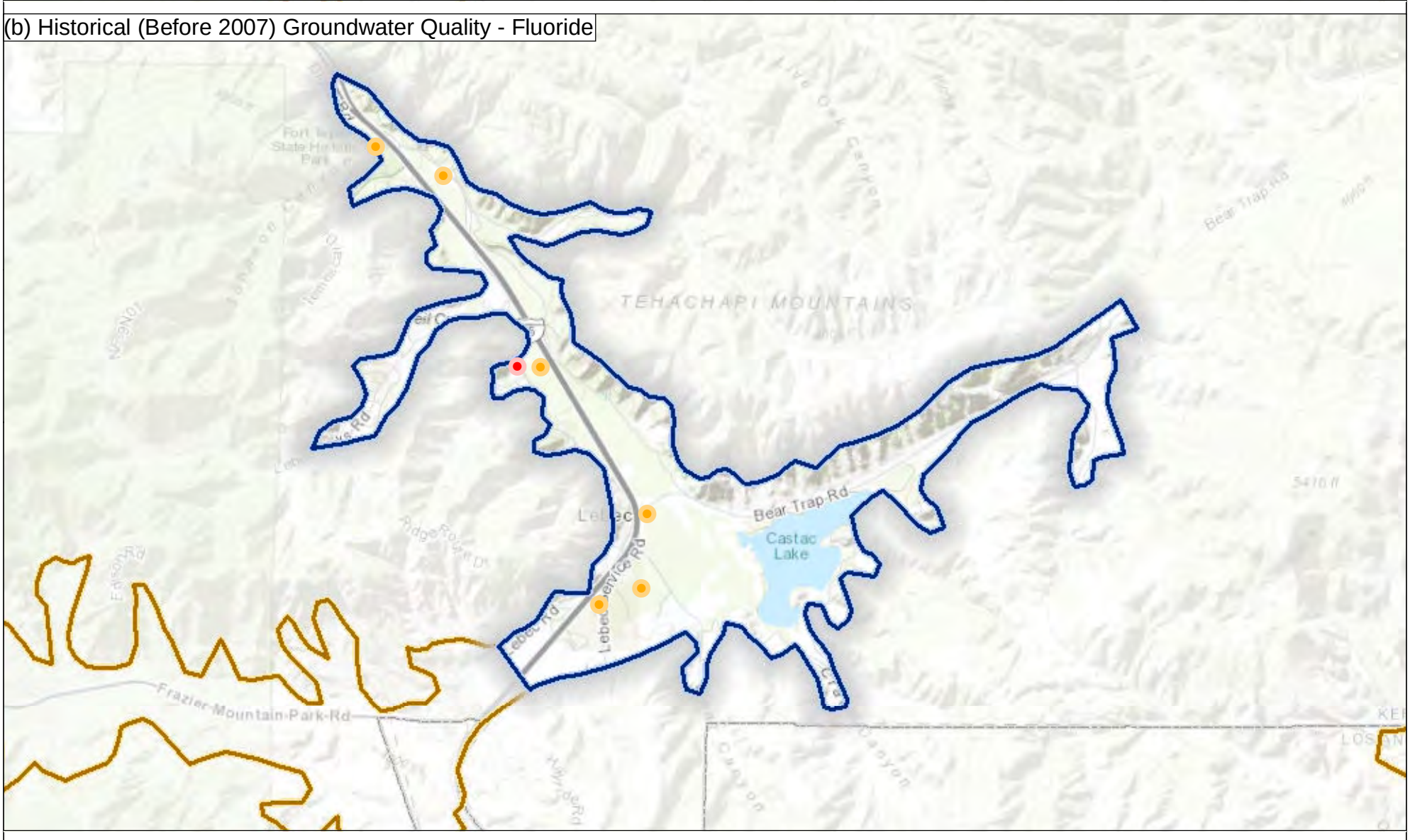
Figure GWC-8

(a) Recent (2007 - 2024) Groundwater Quality - Fluoride



(b) Historical (Before 2007) Groundwater Quality - Fluoride



Legend

Fluoride Concentration (mg/L)

- < 0.5
- 0.5 - 1
- 1 - 2
- > 2 (Exceeding MCL)
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources
MCL = Maximum Concentration Level
mg/L = miligrams per liter

Notes

1. All locations are approximate.
2. Constituent concentration is the maximum observed for each well between 2007 and 2024 (Figure GWC-9(a)) and before 2007 (Figure GWC-9(b)).
3. Fluoride has a MCL of 2 mg/L.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.

N

0 2,500 5,000

Feet

Groundwater Quality – Recent (2007 - 2024) and Historical (Before 2007) Fluoride Concentrations

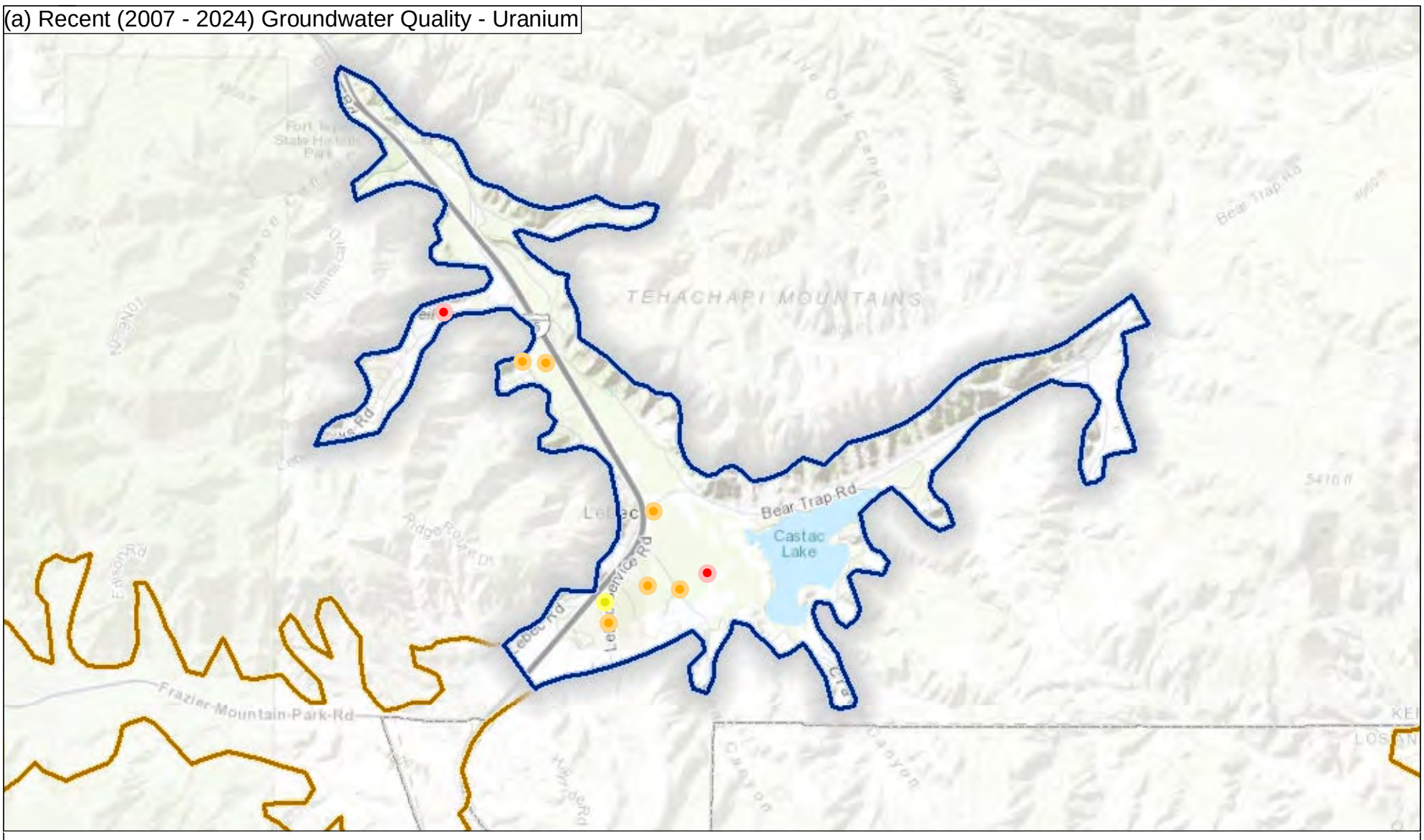
Tejon-Castac Water District
Kern County, California
December 2025
B80048.00

Figure GWC-9

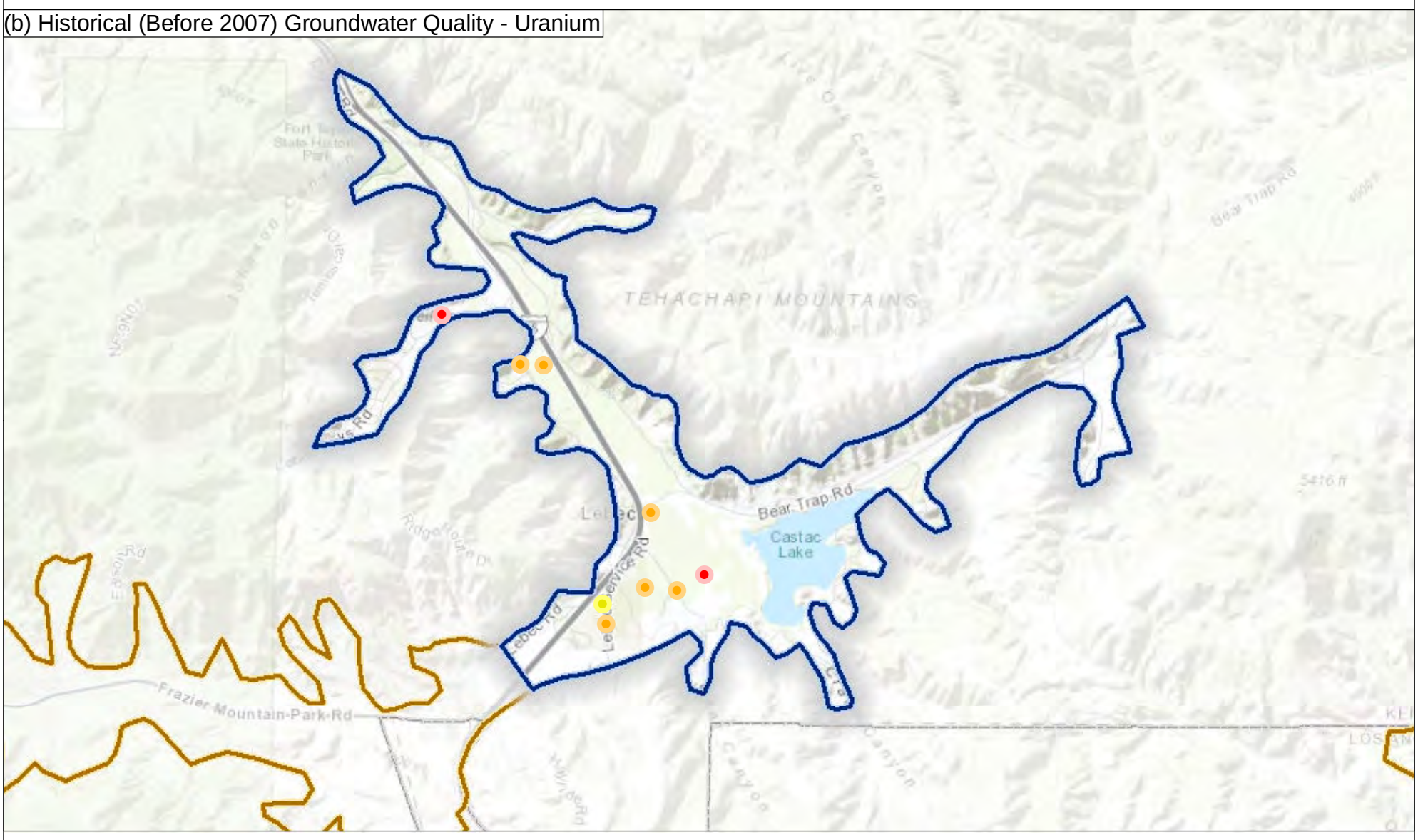
eki environment & water

Path: X:\B80048\Maps\2025\12\Fig_GWC-9_WQ_Fluoride_Current_Historical.mxd

(a) Recent (2007 - 2024) Groundwater Quality - Uranium



(b) Historical (Before 2007) Groundwater Quality - Uranium



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Uranium Concentration (mg/L)

- < 0.01
- 0.01 - 0.02
- 0.02 - 0.03
- > 0.03 (Exceeding MCL)

N

0 2,500 5,000

Feet

Abbreviations

DWR = California Department of Water Resources
MCL = Maximum Concentration Level
mg/L = miligrams per liter

Notes

1. All locations are approximate.
2. Constituent concentration is the maximum observed for each well between 2007 and 2024 (Figure GWC-11(a)) and before 2007 (Figure GWC-11(b)).
3. Uranium has an MCL of 0.03 mg/L

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.

Groundwater Quality – Recent (2007 - 2024) and Historical (Before 2007) Uranium Concentrations

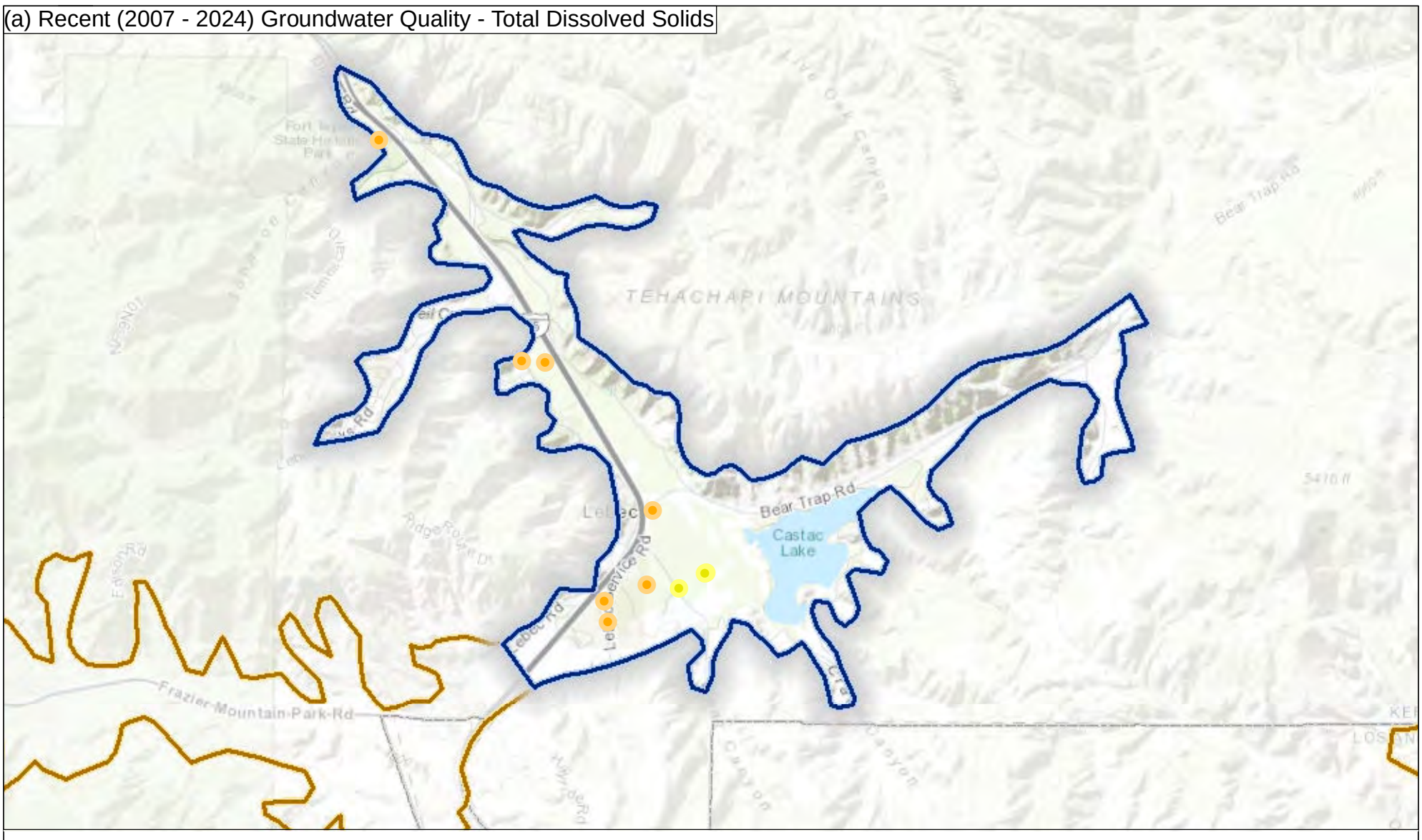
Tejon-Castac Water District
Kern County, California
December 2025
B80048.00

Figure GWC-10

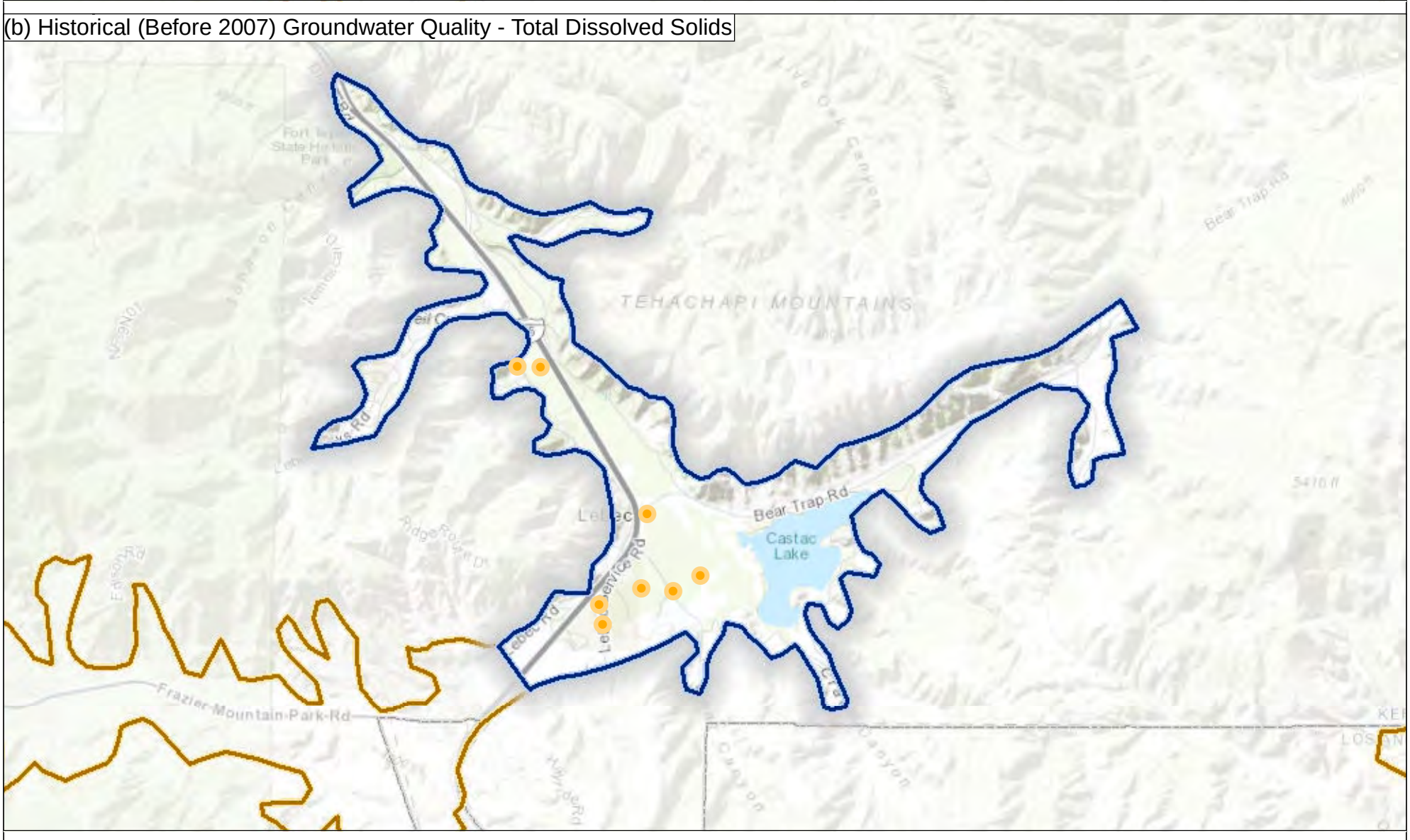
eki environment & water

Path: X:\B80048\Maps\2025\12\Fig_GWC-10_WQ_Uranium_Current_Historical.mxd

(a) Recent (2007 - 2024) Groundwater Quality - Total Dissolved Solids



(b) Historical (Before 2007) Groundwater Quality - Total Dissolved Solids



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

TDS Concentration (mg/L)

- < 400
- 400 - 500
- 500 - 1,000 (Exceeding MCL)
- > 1,000 (Exceeding MCL)

Abbreviations

DWR = California Department of Water Resources
MCL = Maximum Concentration Level
mg/L = miligrams per liter
TDS = Total Dissolved Solids

Notes

1. All locations are approximate.
2. Constituent concentration is the maximum observed for each well between 2007 and 2024 (Figure GWC-12(a)) and before 2007 (Figure GWC-12(b)).
3. TDS has a secondary MCL of 500 mg/L.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.

N

0 2,500 5,000
Feet

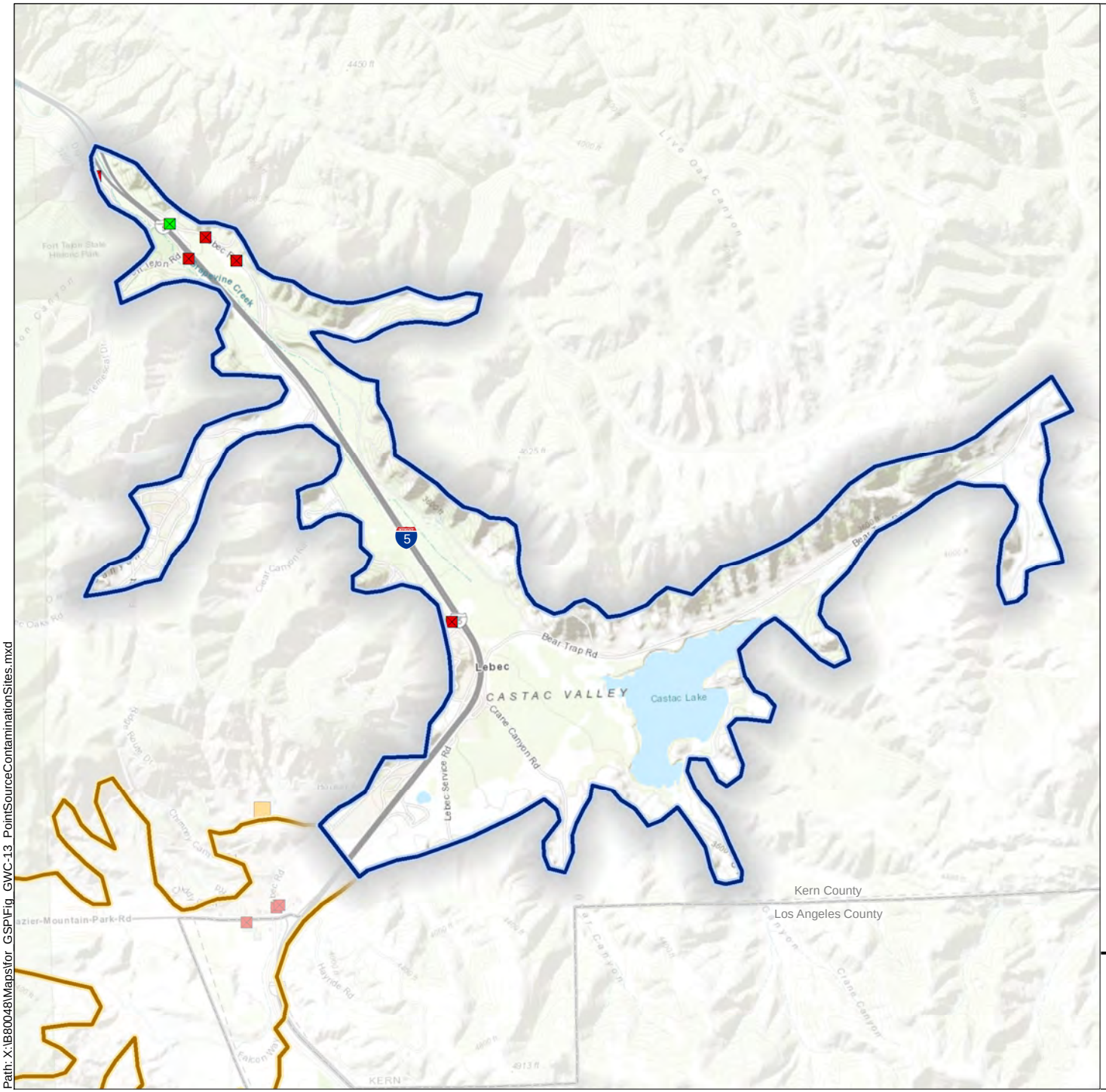
Groundwater Quality – Recent (2007 - 2024) and Historical (Before 2007) TDS Concentrations

Tejon-Castac Water District
Kern County, California
December 2025
B80048.00

Figure GWC-11

eki environment & water

Path: X:\B80048\Maps\2025\12\Fig_GWC-11_WQ_TDS_Current_Historical.mxd



Legend

GeoTracker Sites

- LUST Cleanup Site, Closed
- Cleaup Program Site, Closed
- Land Disposal Site, Closed with Monitoring
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency
LUST = Leaking Underground Storage Tank
SWRCB = State Water Resources Control Board

Notes

1. All locations are approximate.
2. Some GeoTracker sites overlap at the scale shown.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Locations of contamination sites from SWRCB GeoTracker website (http://geotracker.waterboards.ca.gov/datadownload) accessed 5 November 2018.

N

0 0.5 1

Miles

Known Point-Source Contamination Sites

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure GWC-12

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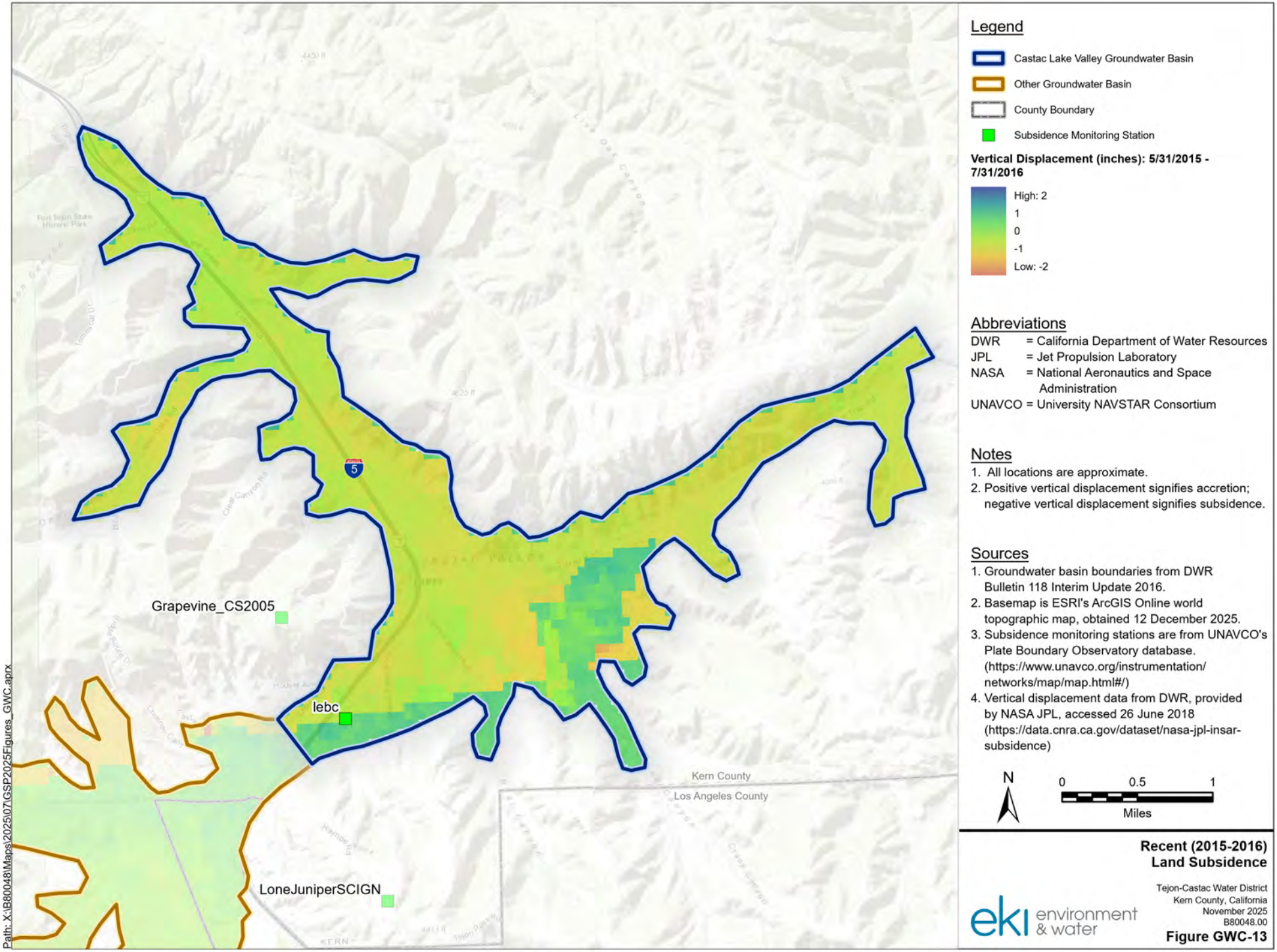
Path: X:\B80048\Mapsfor GSP\Fig GWC-13 PointSourceContaminationSites.mxd



Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- Subsidence Monitoring Station

Vertical Displacement (inches): 5/31/2015 - 7/31/2016

High: 2
1
0
-1
Low: -2

Abbreviations

DWR = California Department of Water Resources
JPL = Jet Propulsion Laboratory
NASA = National Aeronautics and Space Administration
UNAVCO = University NAVSTAR Consortium

Notes

1. All locations are approximate.
2. Positive vertical displacement signifies accretion; negative vertical displacement signifies subsidence.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.
3. Subsidence monitoring stations are from UNAVCO's Plate Boundary Observatory database. (https://www.unavco.org/instrumentation/networks/map/map.html#/)
4. Vertical displacement data from DWR, provided by NASA JPL, accessed 26 June 2018 (https://data.cnra.ca.gov/dataset/nasa-jpl-insar-subsidence)

N

0 0.5 1
Miles

Recent (2015-2016) Land Subsidence

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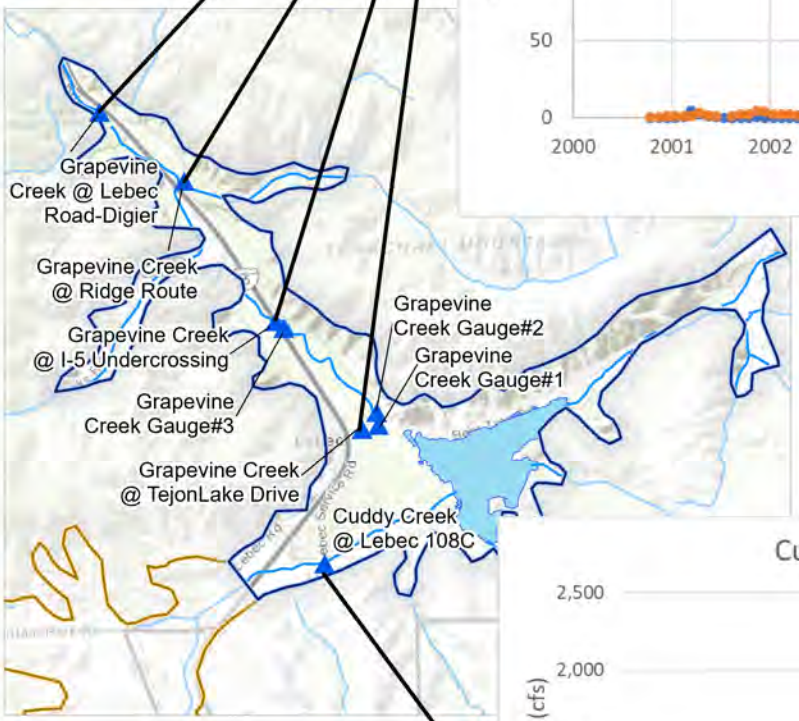
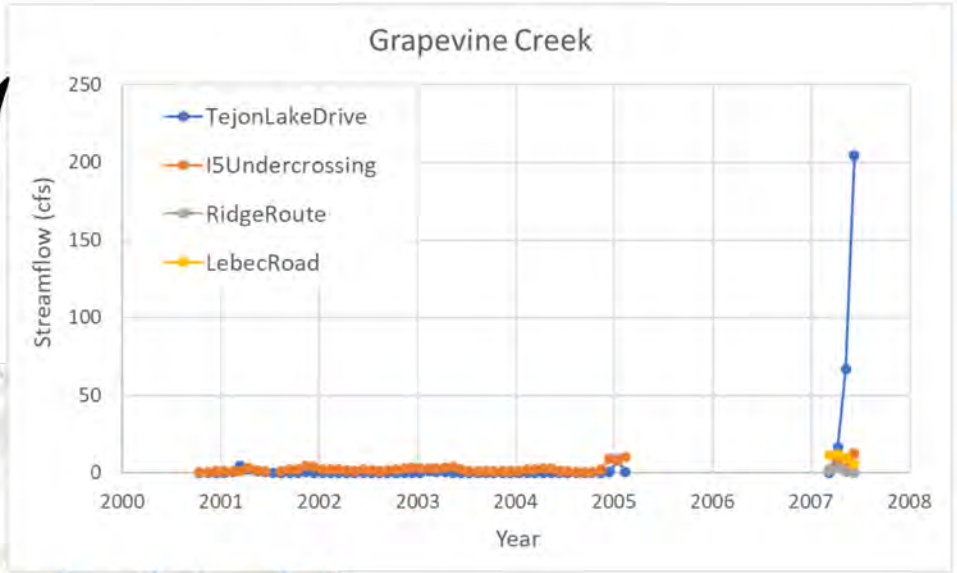
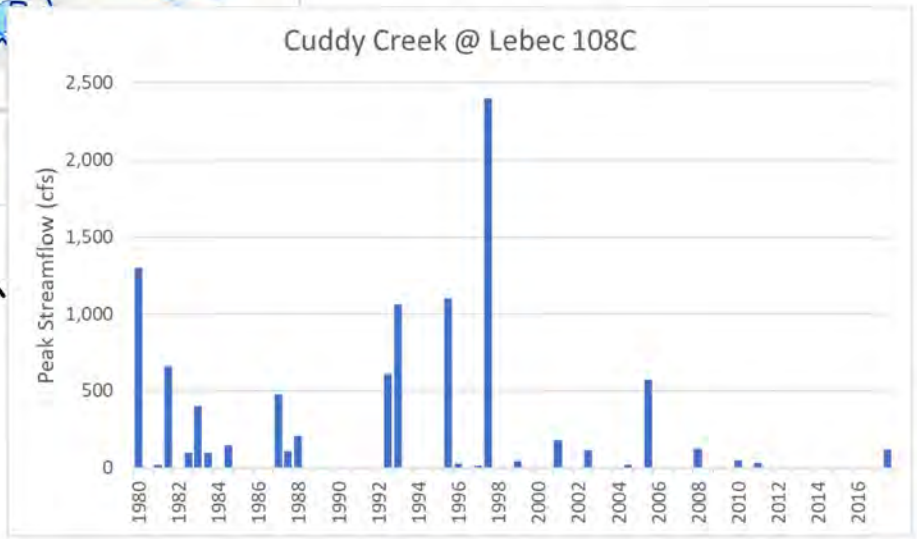
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00
Figure GWC-13

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx







Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- Castac Lake
- Stream/River
- Surface Water Gauge

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.

N

0 1 2

Miles

Surface Water Features

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Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure GWC-14

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx

Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- Castac Lake
- NCCAG Vegetation
- NCCAG Wetland
- Stream/River
- Potential GDE-Monitoring Well(s)
- Monitoring Zone for Perennial GDEs
- Monitoring Zone for Ephemeral Potential GDEs

Spring 2015 Depth to Water (ft bgs)

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- > 60

Abbreviations

DWR	= California Department of Water Resources
GDE	= Groundwater Dependent Ecosystem
ft bgs	= feet below ground surface
NCCAG	= Natural Communities Commonly Associated with Groundwater

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Vegetation and wetland areas obtained from the NCCAG dataset, August 2025.
3. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 December 2025.
4. Perennial GDEs are present at the northern end of the Basin and are ephemeral in other Basin areas.

N

0 0.5 1

Miles

Natural Communities Commonly Associated with Groundwater

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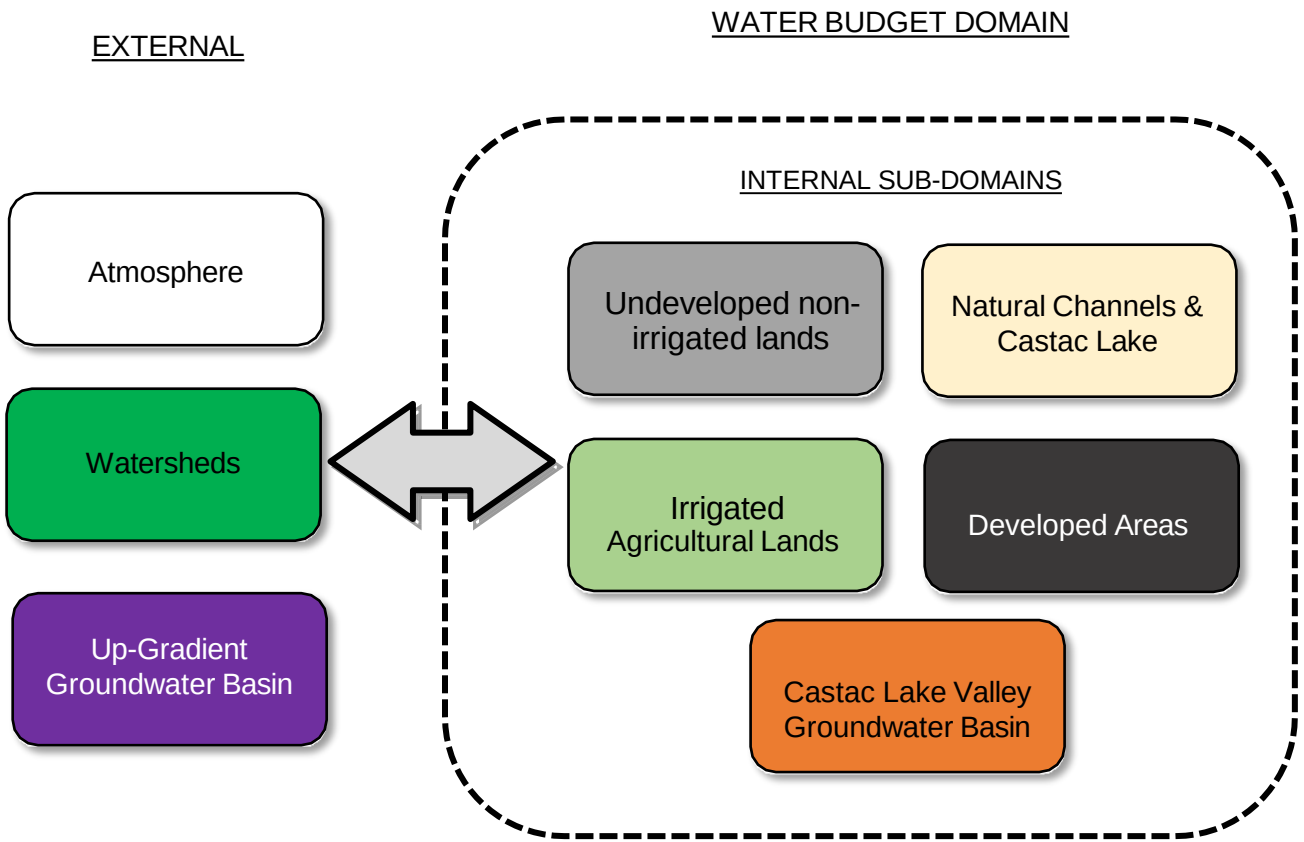
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure GWC-15

Path: X:\B80048\Maps\2025\07\GSP2025Figures_GWC.aprx



Conceptual Water Budget Domains and Subdomains

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

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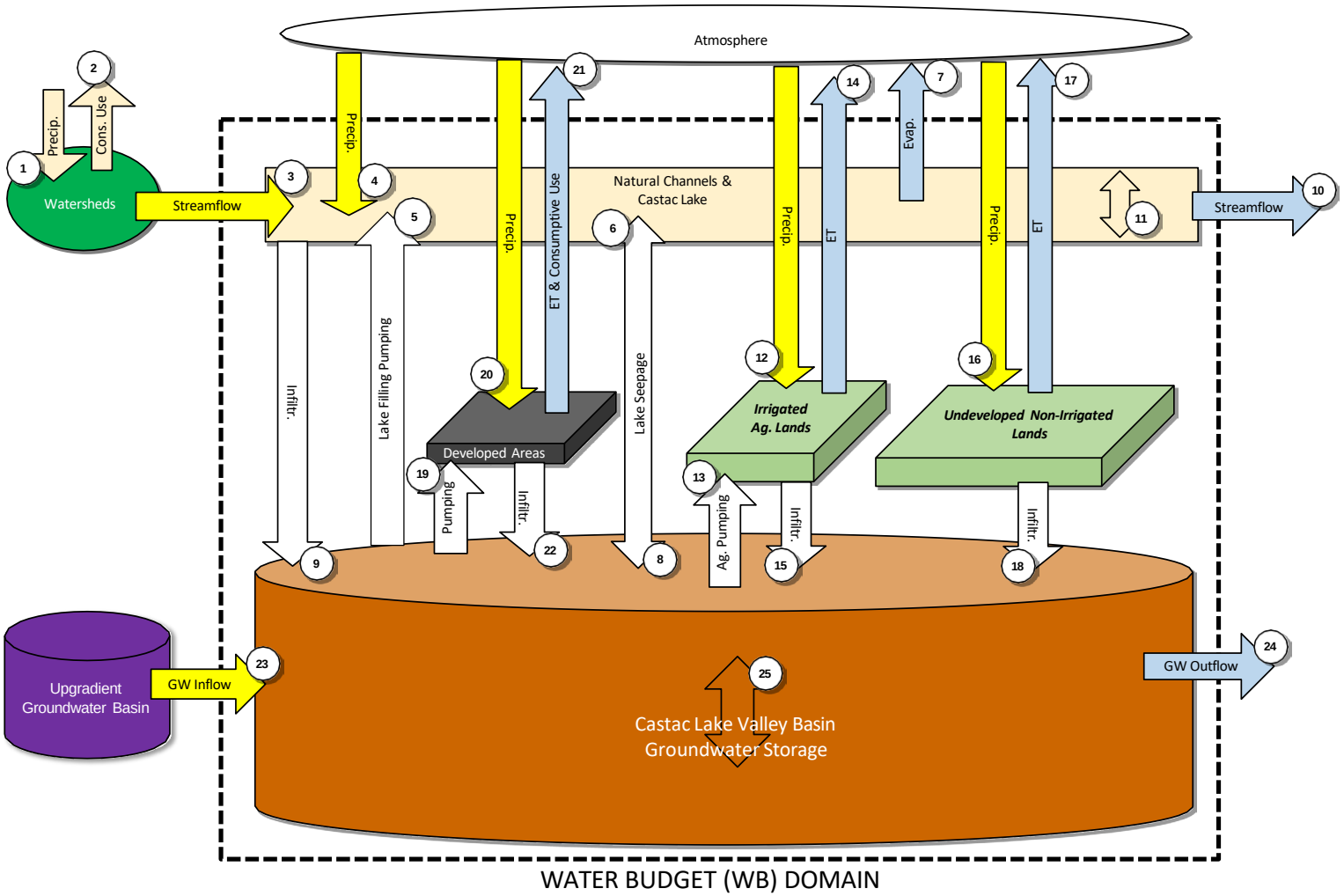
Figure WB-1



Legend:

- External
- Inflow to WB Domain
- Internal
- Outflow from WB Domain

Abbreviations:

Ag	= agricultural
Cons.	= Consumptive
Evap.	= evaporation
ET	= evapotranspiration
GW	= groundwater
Infiltr.	= infiltration
Precip.	= precipitation
WB	= water budget

Notes:

1. Component numbers correspond to columns contained in the spreadsheet water budget model.
2. See Appendix A for details on the calculation for each water budget flow component.

Conceptual Water Budget Flow Components/Linkages

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

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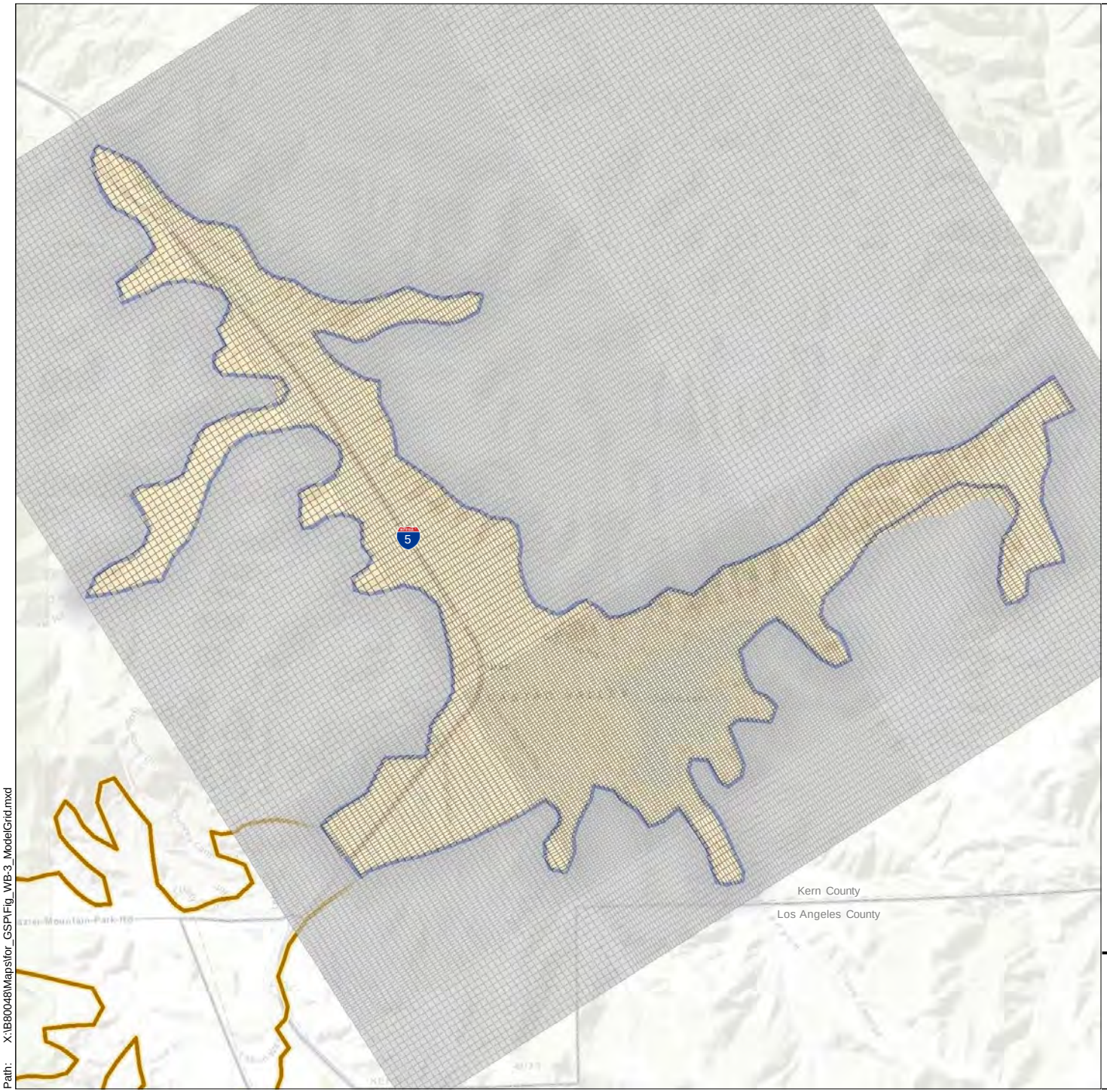
Figure WB-2



Legend

Castac Basin Model Grid

- Active Model Cell
- Inactive Model Cell
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.
2. Active model cells are extended beyond the DWR basin boundary in one area of Dryfield Canyon, based on local topography and interpreted geology.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 10 October 2019.

N

0 0.5 1

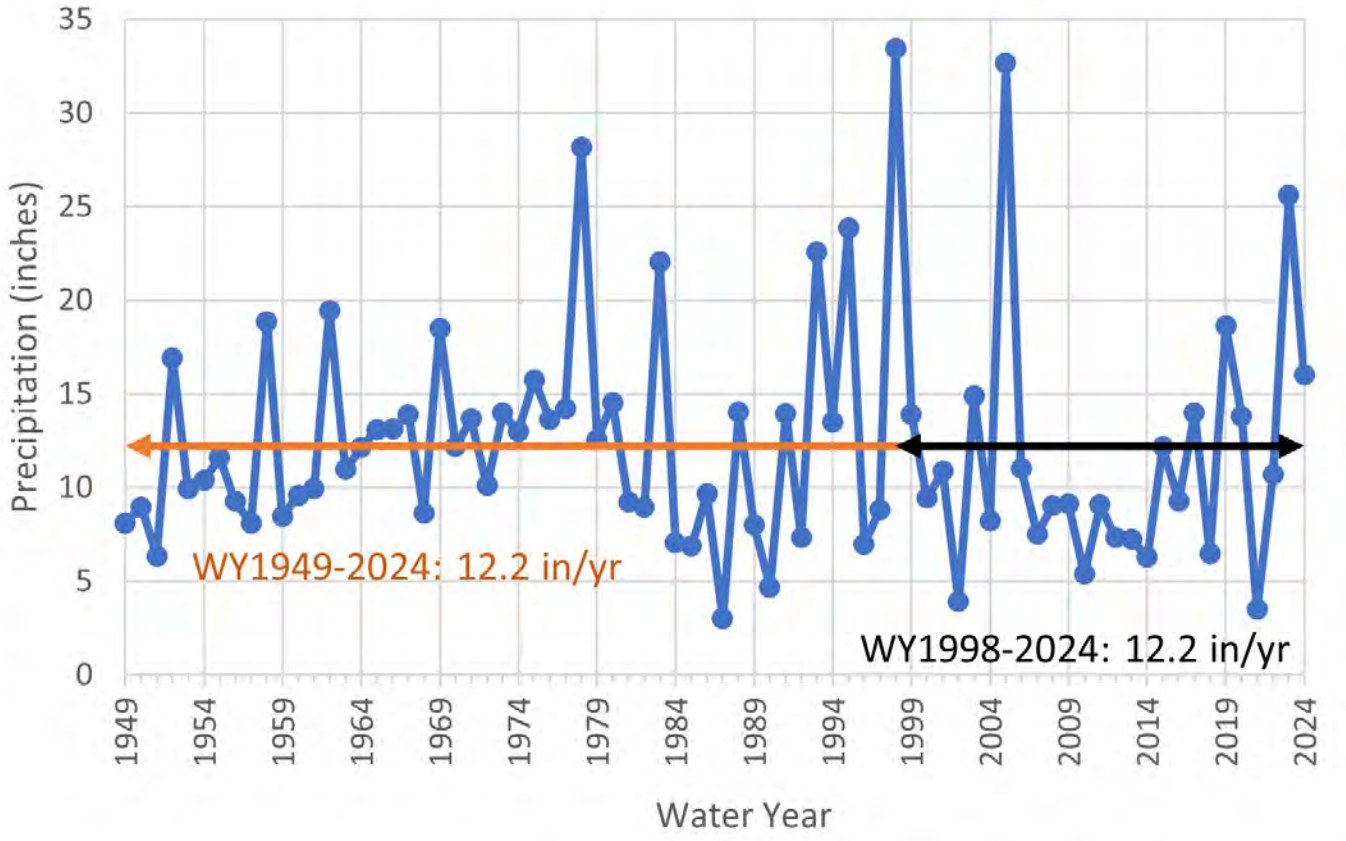
Miles

Castac Basin Numerical Model Grid

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure WB-3

Path: X:\B80048\Maps\for_GSP\Fig_WB-3_ModelGrid.mxd



Legend

- Annual Precipitation
- Long-Term Average Rainfall (WY 1949-2024)
- Average Rainfall (WY 1998-2024)

Abbreviations

in/yr	= inches per year
NOAA	= National Oceanic and Atmospheric Administration
WY	= Water Year

Notes

1. Water Year is defined as the October of the previous year through September of the current year.

Sources

1. NOAA Lebec climate station Coop ID #44863. www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4863

Long-Term Precipitation Record

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

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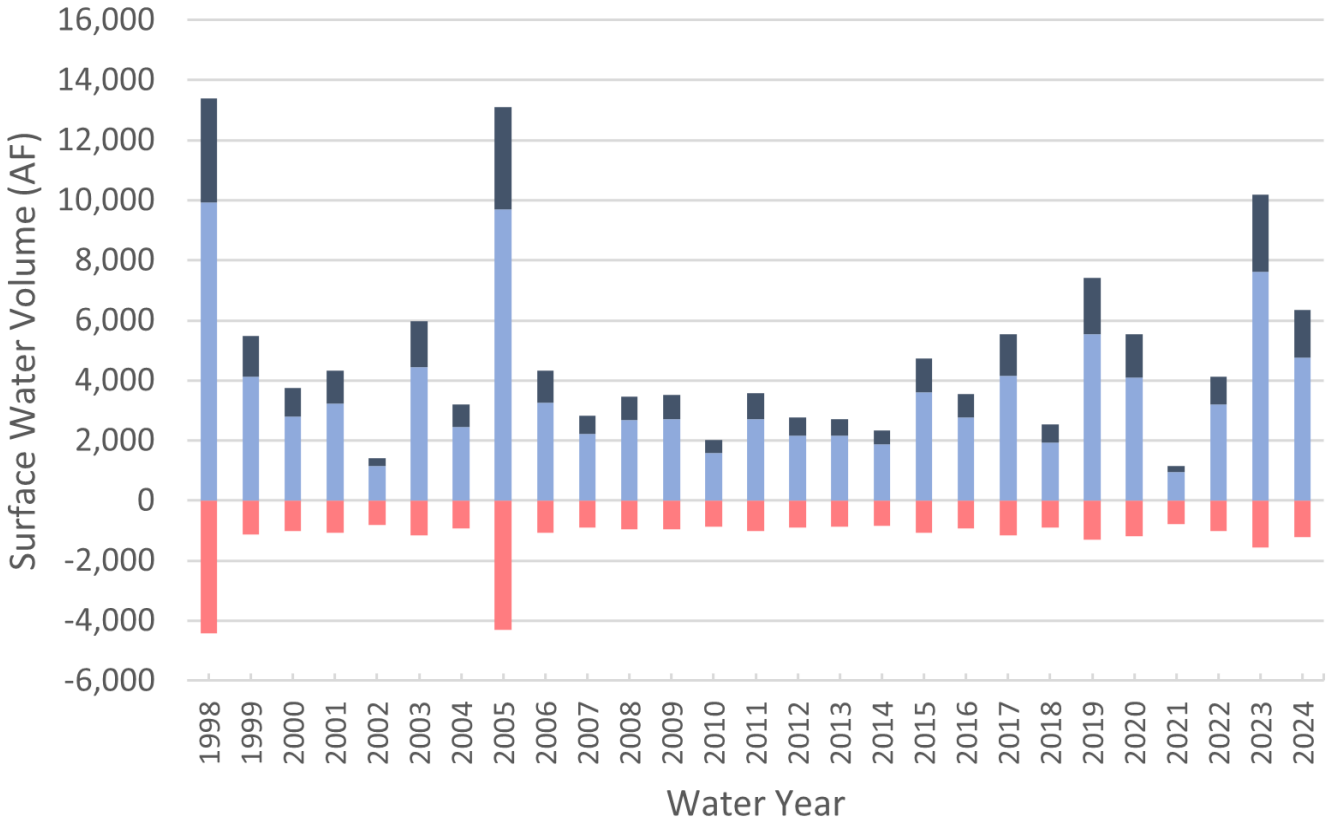
Figure WB-4



Legend

Surface Water Inflows

Streamflow

Precipitation

Surface Water Outflows

Streamflow

Abbreviations

AF = acre-feet

Notes

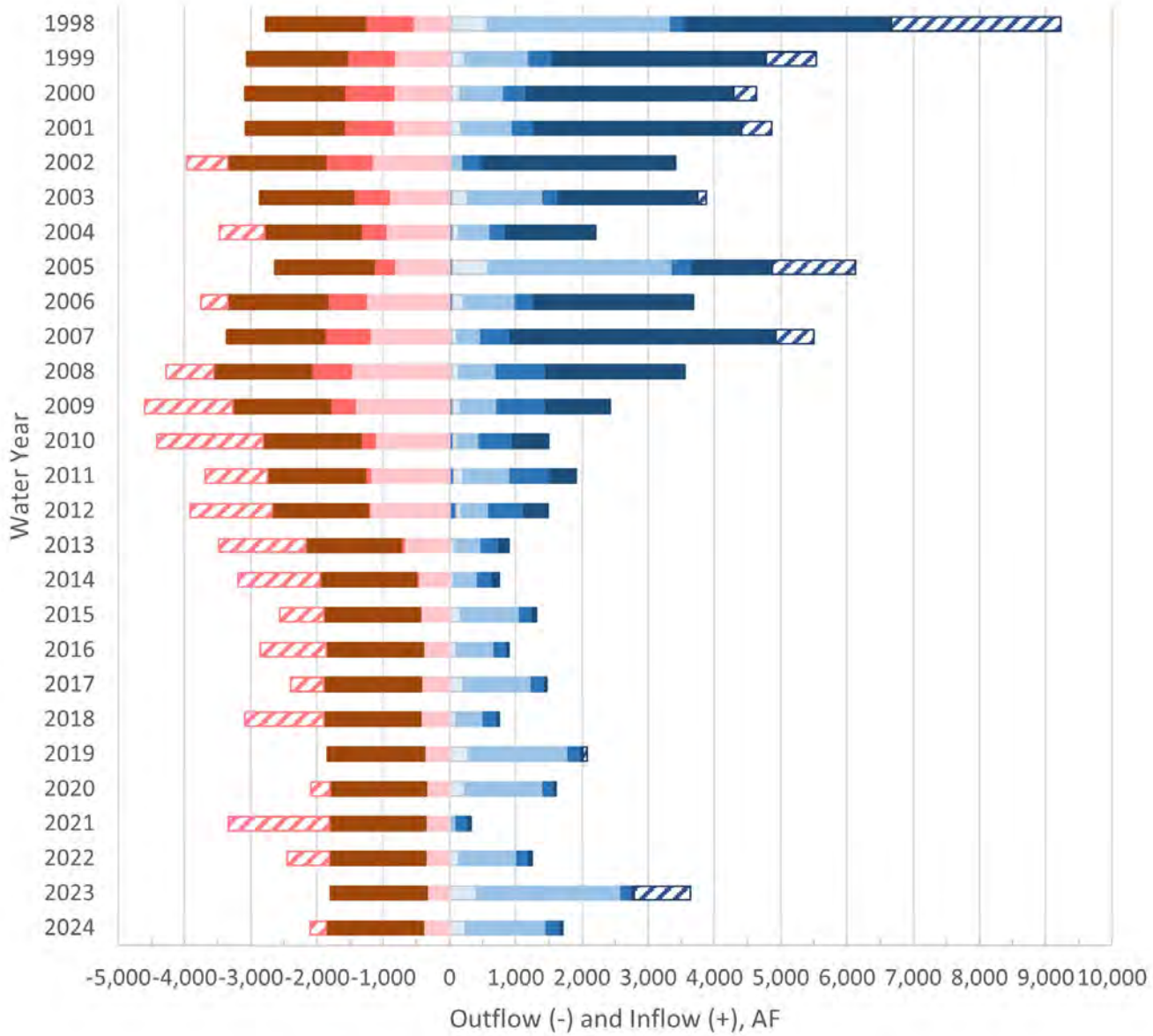
1. Water Year is defined as the October of the previous year through September of the current year.
2. A positive volume corresponds to a surface water inflow and a negative volume corresponds to a surface water outflow.

Annual Surface Water Inflows and Outflows by Source

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

eki environment & water

Figure WB-5



Legend

Groundwater Inflows

- Seepage From Lake
- Seepage from Streams
- Infiltration from Precipitation
- Infiltration from Return Flows
- Subsurface GW Inflow

Groundwater Outflows

- Groundwater Extractions
- Seepage to Lake
- Subsurface GW Outflow

Change in Groundwater Storage

- Gain in GW Storage
- Reduction in GW Storage

Abbreviations

AF = acre-feet
GW = groundwater

Notes

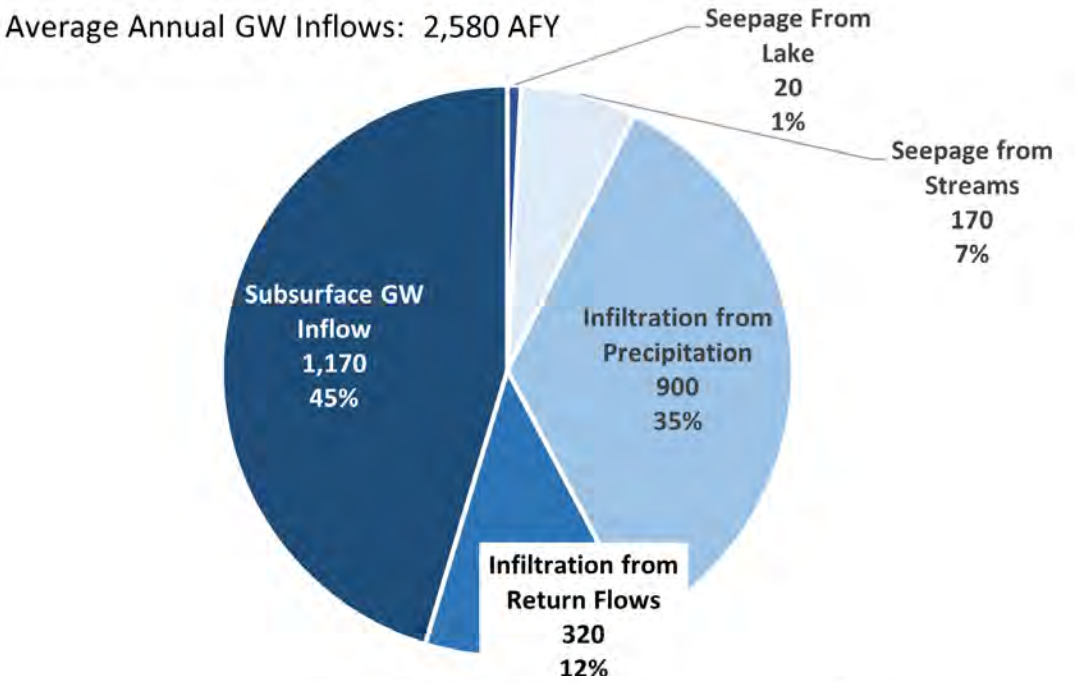
1. Water Year is defined as the October of the previous year through September of the current year.
2. A positive volume corresponds to a groundwater inflow and a negative volume corresponds to a groundwater outflow.

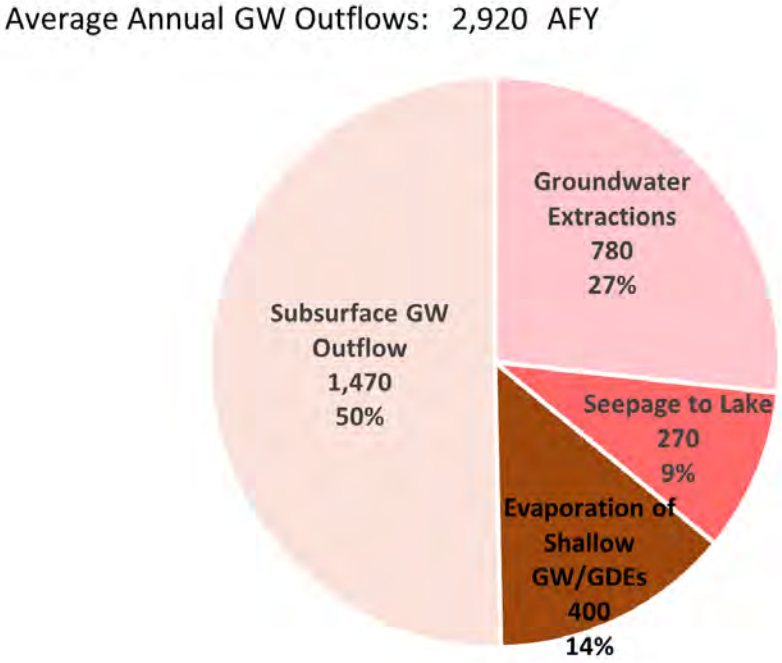
Annual Groundwater Inflows and Outflows

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

eki environment & water

Figure WB-6





Abbreviations

AFY = acre-feet per year
GW = groundwater
WY = Water Year

Notes

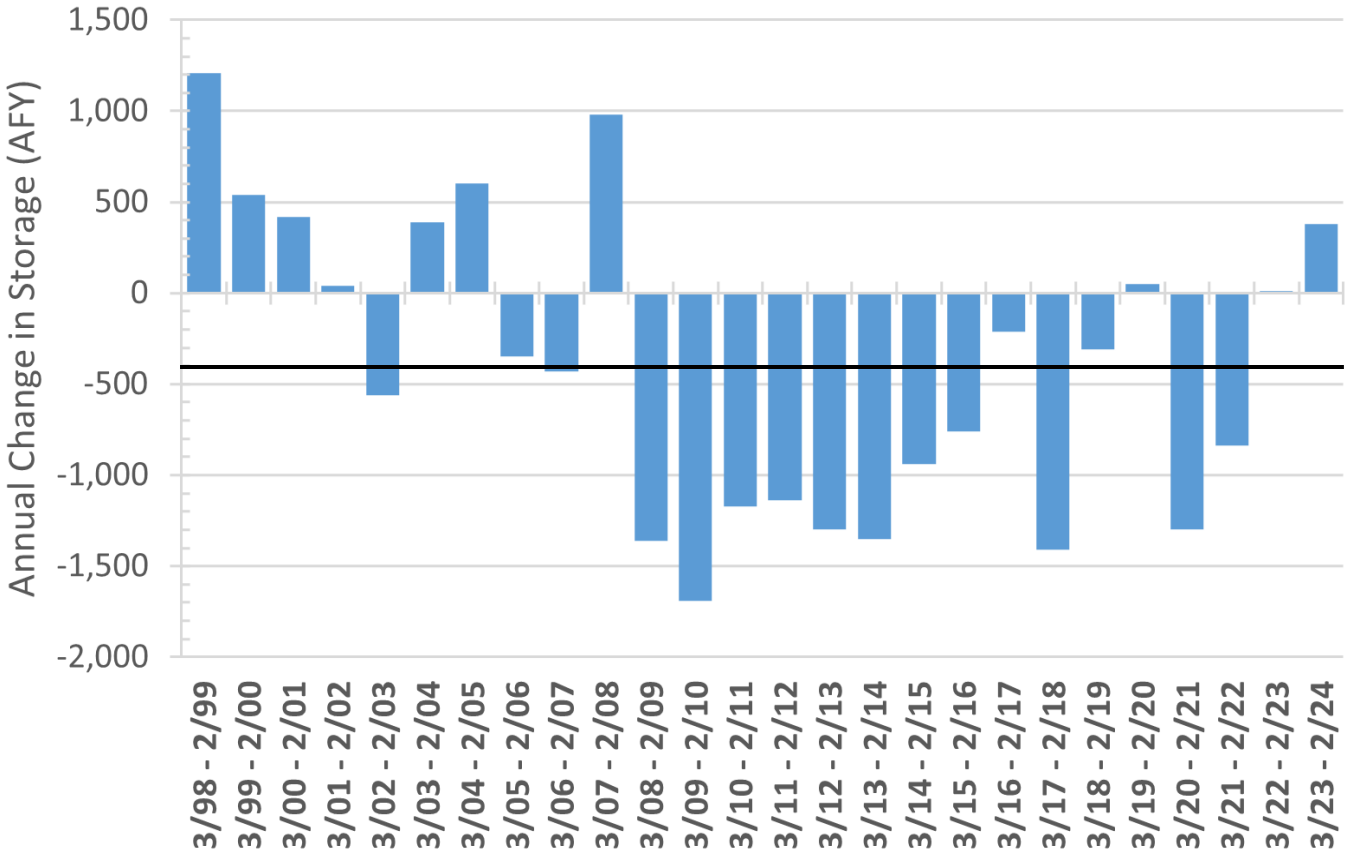
1. Average values for the 27-year historical water budget period (WY 1998-2024).
2. All values are reported in AFY.

Summary of Historical Groundwater Inflows and Outflows, WY 1998-2024

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

eki environment & water

Figure WB-7



Legend

Annual Change in Storage between Seasonal Highs (Mar - Feb)

Average Annual Change in Storage, March 1998 - February 2024

Abbreviations

AFY = acre-feet per year

Notes

1. "Seasonal high" is defined as March of the current year through February of the following year.

Annual Change in Storage between Seasonal Highs

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

eki environment & water

Figure WB-8

Legend

Cumulative Change in Storage

Abbreviations

AF = acre-feet

Notes

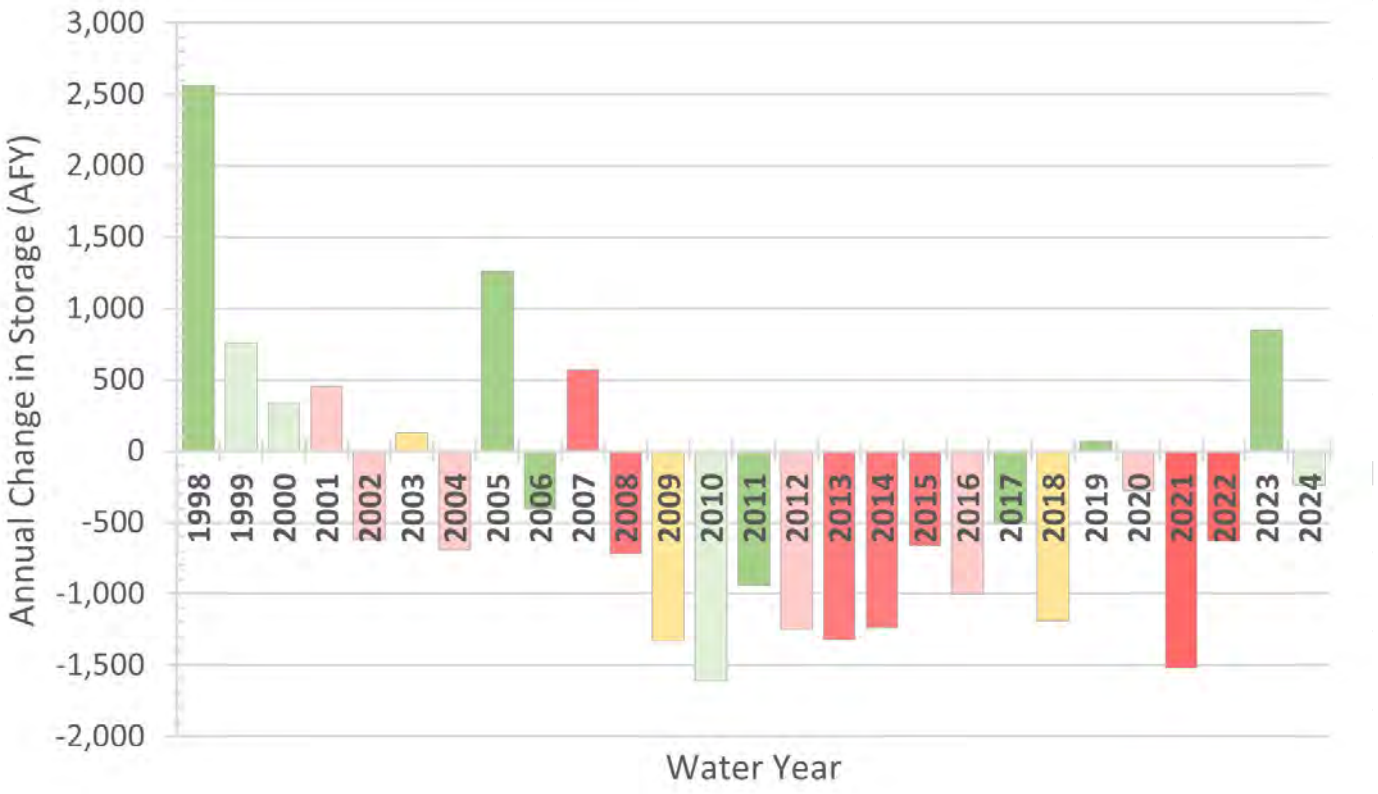
1. Values represent cumulative change in storage since the first "seasonal high" of the water budget period (March 1998).
2. "Seasonal high" is defined as March of the current year through February of the following year.

Cumulative Change in Storage, March 1998 - February 2024

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

eki environment & water

Figure WB-9



Legend

DWR Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

Abbreviations

AFY = acre-feet per year
DWR = California Department of Water Resources

Notes

1. Water Year is defined as the October of the previous year through September of the current year.

Sources

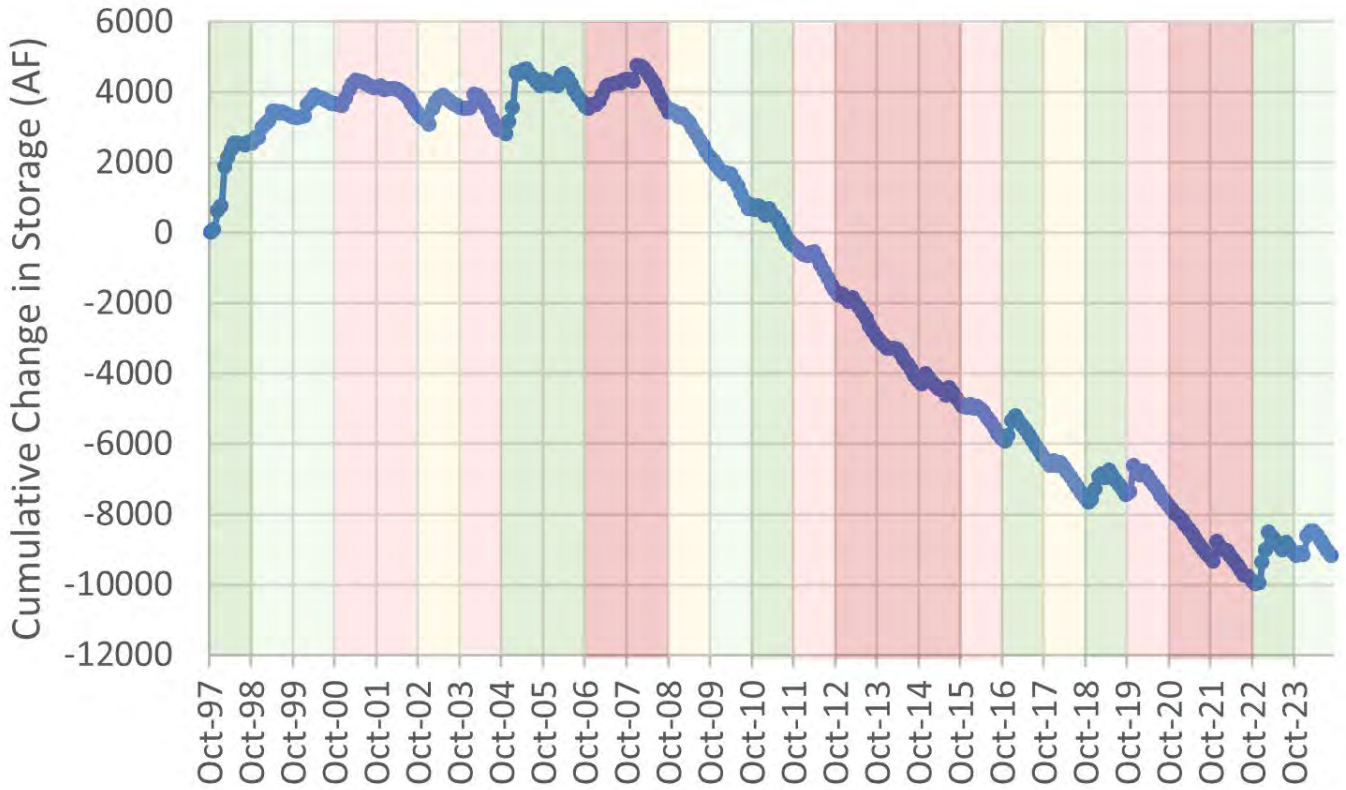
1. DWR Water Year type is from DWR's Water Year Hydrologic Classification Indices for the San Joaquin Valley (http://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST)

Annual Change in Storage vs. DWR Water Year Type

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

eki environment & water

Figure WB-10



Legend

DWR Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

Abbreviations

AF = acre-feet
DWR = California Department of Water Resources

Notes

1. Water Year is defined as the October of the previous year through September of the current year.

Sources

1. DWR Water Year type is from DWR's Water Year Hydrologic Classification Indices for the San Joaquin Valley (http://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST)

Cumulative Change in Storage vs. DWR Water Year Type

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

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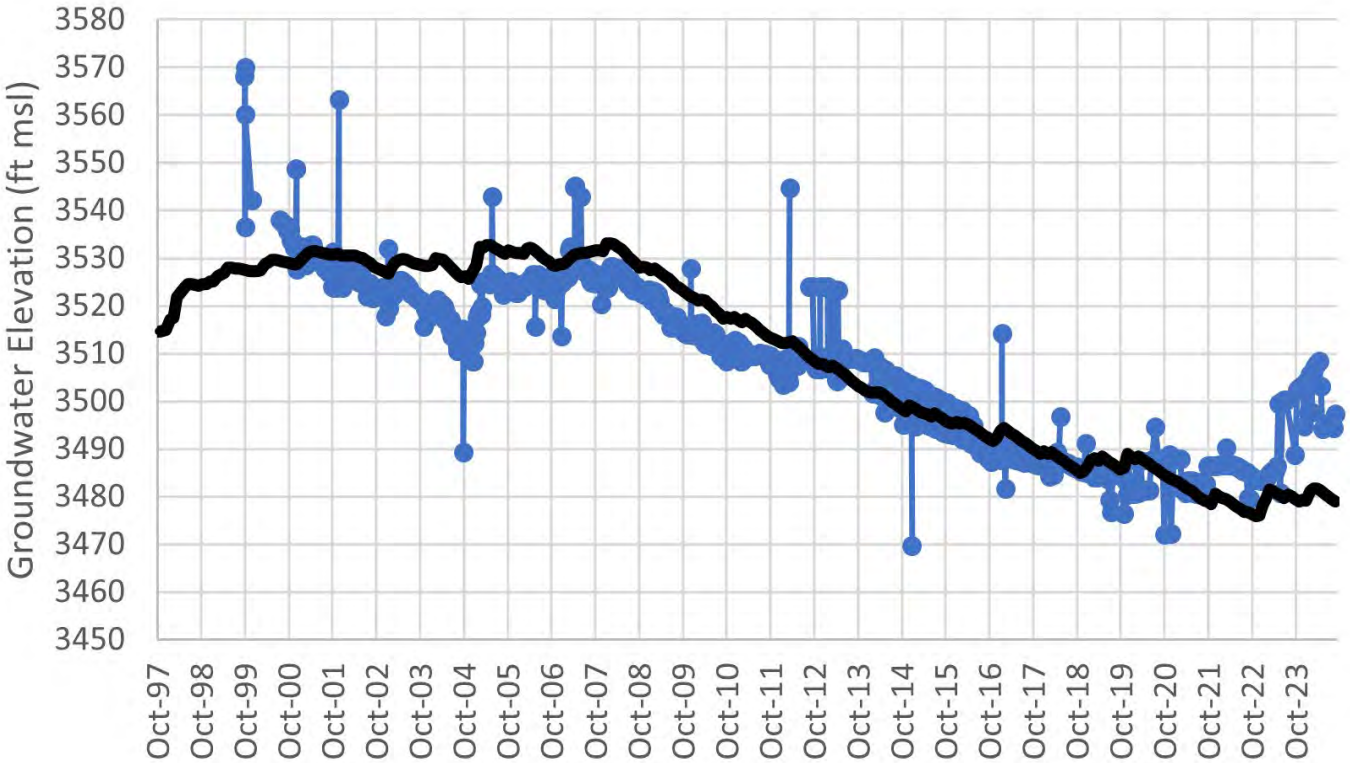
Figure WB-11



Legend

Average Measured Water Level

Water Budget Spreadsheet Model-Calculated Water Level

Abbreviations

ft msl = feet above mean sea level

Notes

1. Average water level is calculated from wells with water level measurements located within the Castac Lake and Dryfield Canyon portions of the Basin, excluding flowing and dry measurements.
2. Model-calculated water levels calculated based on a specific yield value of 0.1, assuming the storage change occurs in the Castac Lake and Dryfield Canyon portions of the Basin.

Comparison of Model-Calculated Water Levels and Average Measured Water Levels

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

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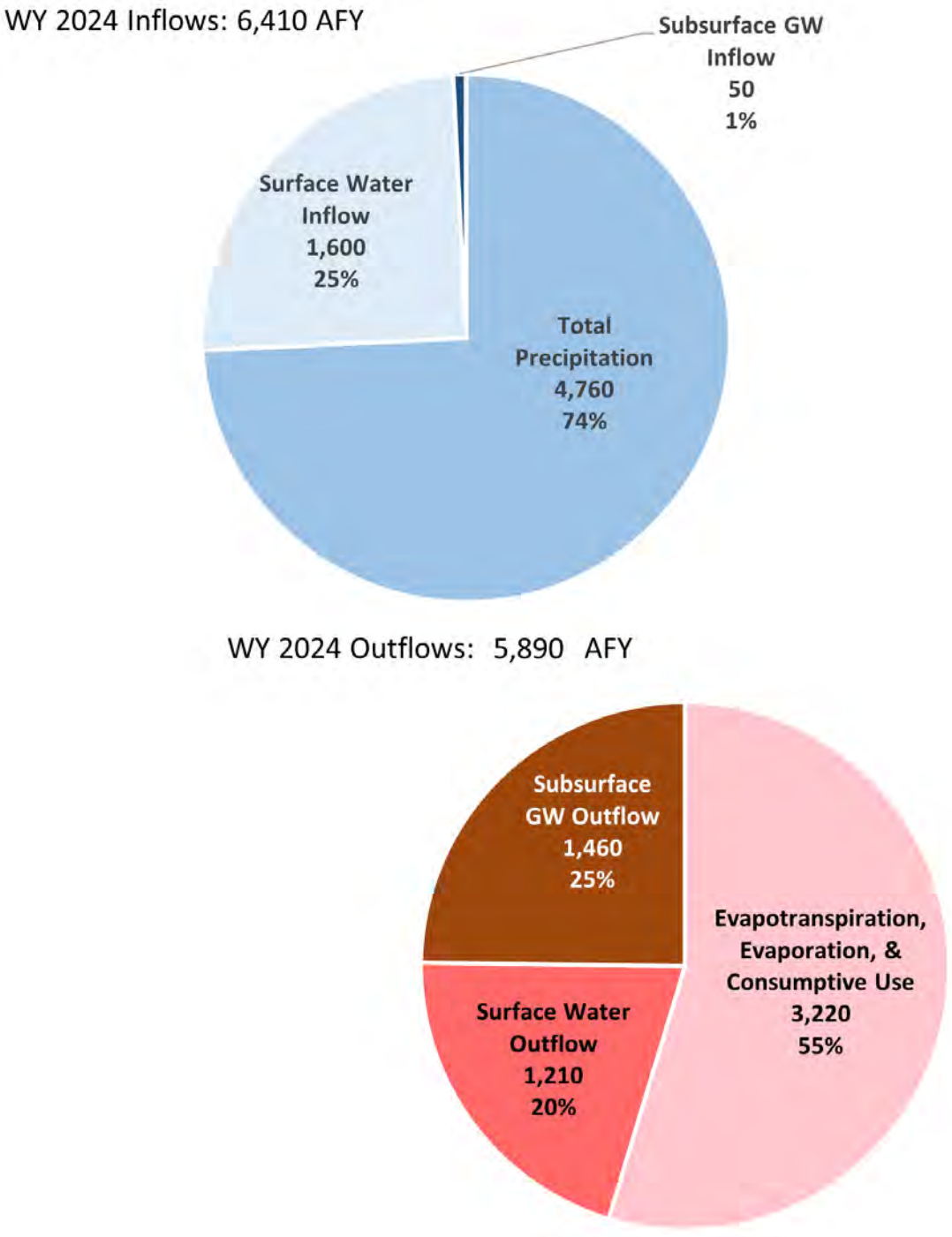
Figure WB-12



Abbreviations
AFY = acre-feet per year
GW = groundwater

Notes
1. All values are reported in AFY.

Summary of Current Surface Water and Groundwater Inflows and Outflows to the Water Budget Domain, WY 2024

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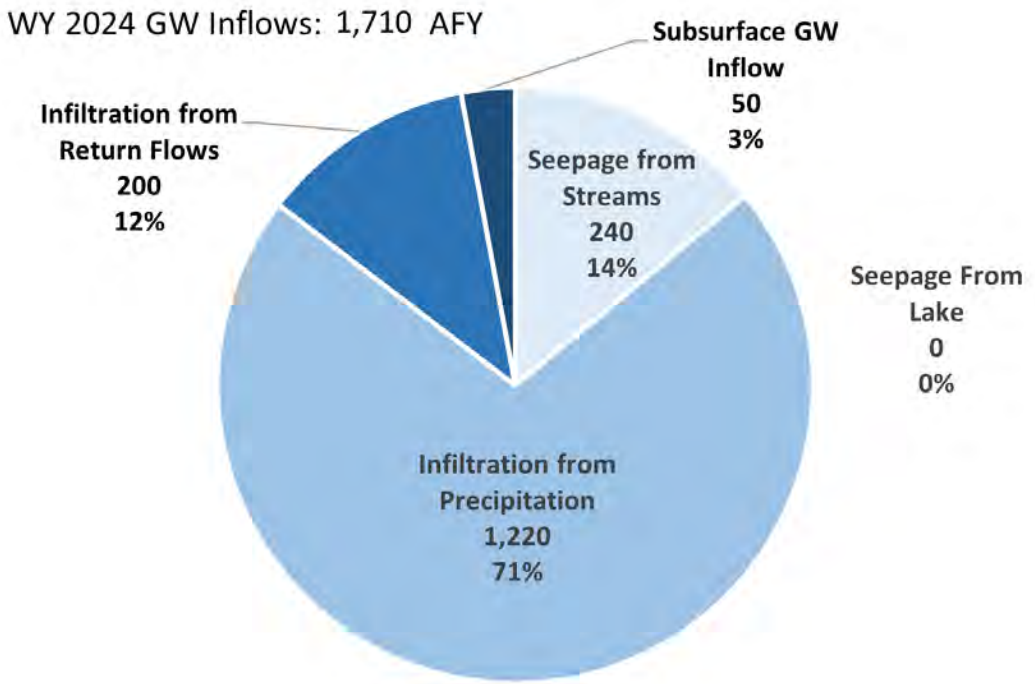
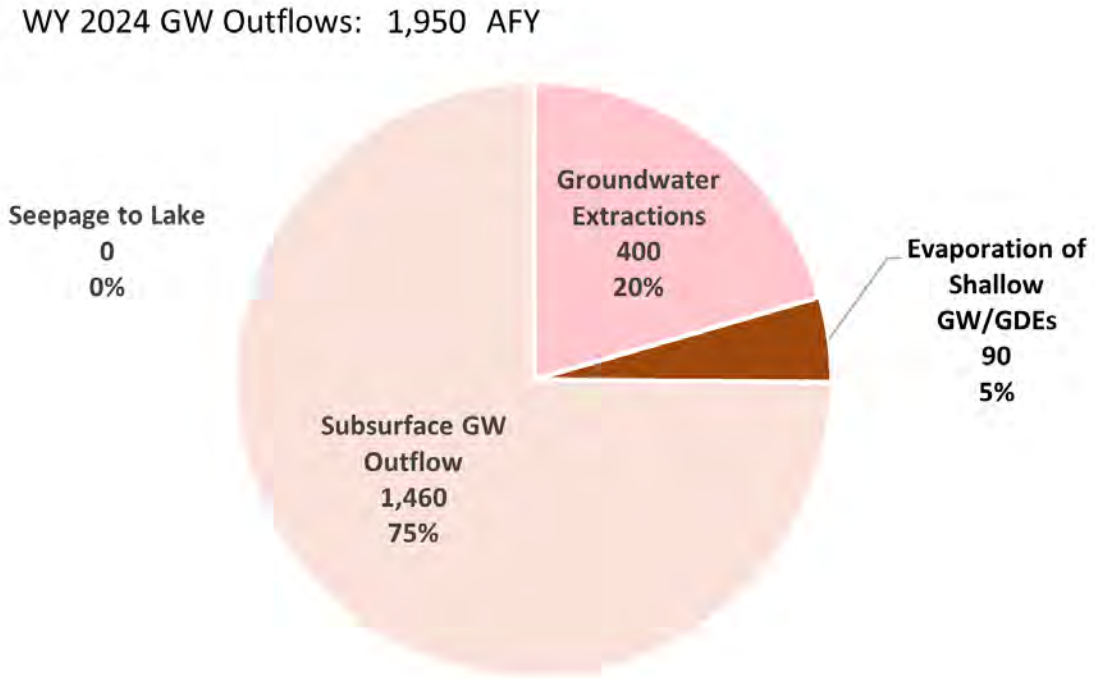
Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

Figure WB-13





Abbreviations
AFY = acre-feet per year
GW = groundwater

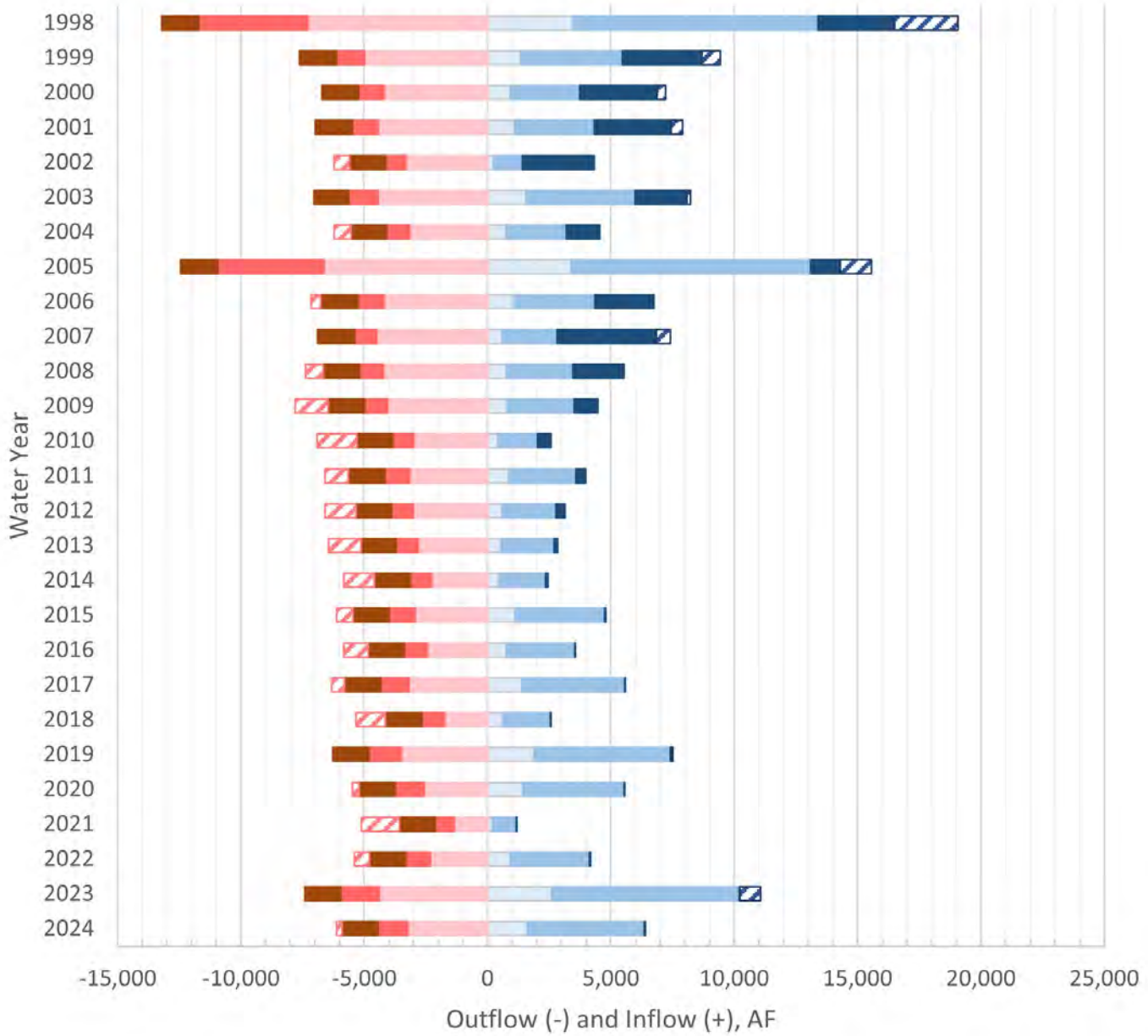
Notes
1. All values are reported in AFY.

Summary of Current Groundwater Inflows and Outflows, WY 2024

eki environment & water

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

Figure WB-14



Legend

Inflows

- Surface Water Inflow
- Precipitation
- Subsurface GW Inflow

Outflows

- Evapotranspiration, Evaporation, & Consumptive Use
- Surface Water Outflow
- Subsurface GW Outflow

Change in Groundwater Storage

- Gain in GW Storage
- Reduction in GW Storage

Abbreviations

AF = acre-feet
GW = groundwater

Notes

1. Water Year is defined as the October of the previous year through September of the current year.
2. A positive volume corresponds to an inflow and a negative volume corresponds to an outflow.

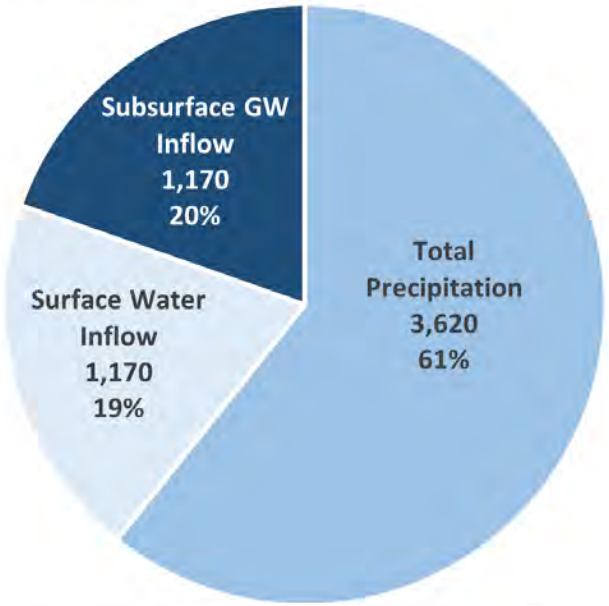
Annual Surface Water and Groundwater Inflows and Outflows to the Water Budget Domain

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

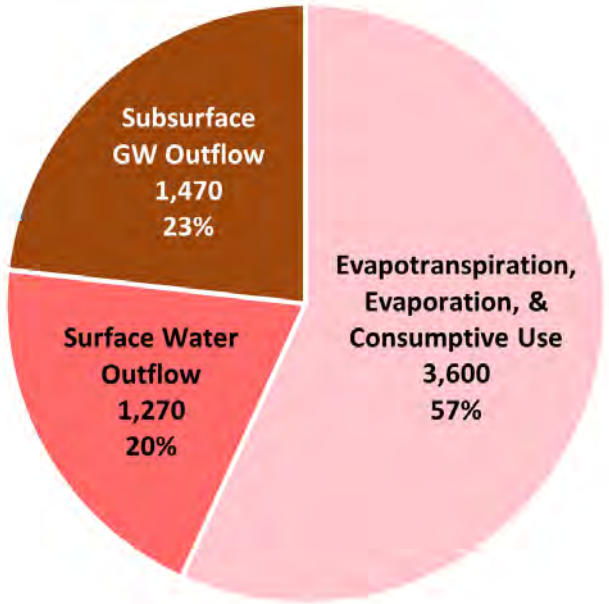
eki environment & water

Figure WB-15

Average Annual Inflows: 5,960 AFY



Average Annual Outflows: 6,340 AFY



Abbreviations

AFY = acre-feet per year
GW = groundwater

Notes

1. All values are reported in AFY.

Summary of Historical Surface Water and Groundwater Inflows and Outflows to the Water Budget Domain, WY 1998-2024

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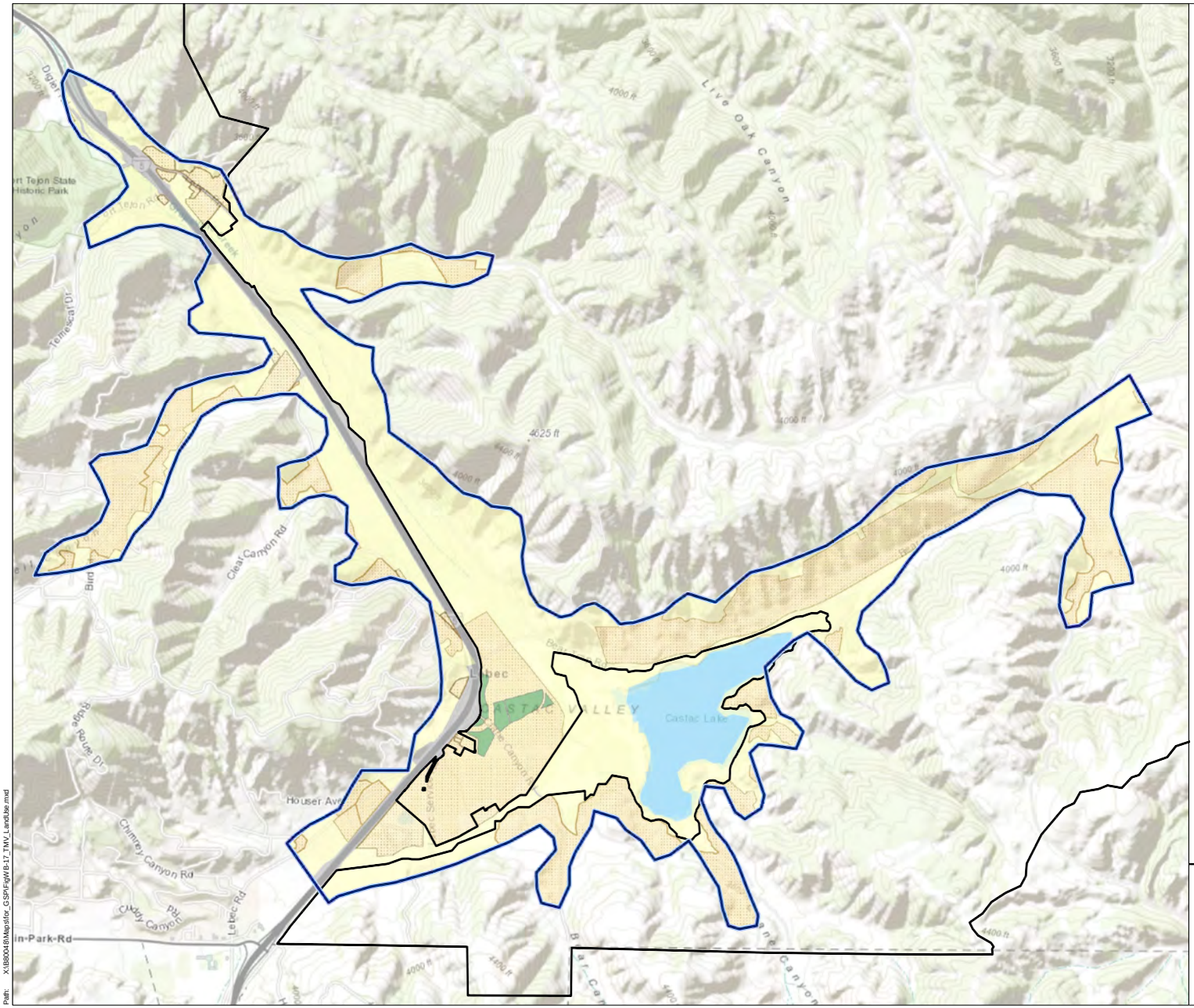
Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

Figure WB-16



Legend

- Castac Lake Valley Groundwater Basin
- TMV Boundary

Future Land Use

- Roads
- Lake
- Residential & Commercial
- Range/ Undeveloped Land
- Irrigated Land

Abbreviations

DWR = Castac Basin Groundwater Flow Model
TMV =Tejon Mountain Village

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2020.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 14 September 2020.
3. Future land use data from TCWD, obtained 14 June 2019.

N

0 0.5 1

(Scale in Miles)

Projected Land Use for TMV Development Scenario

Tejon-Castac Water District
Kern County, CA
November 2025
B80048.00

Figure WB-17

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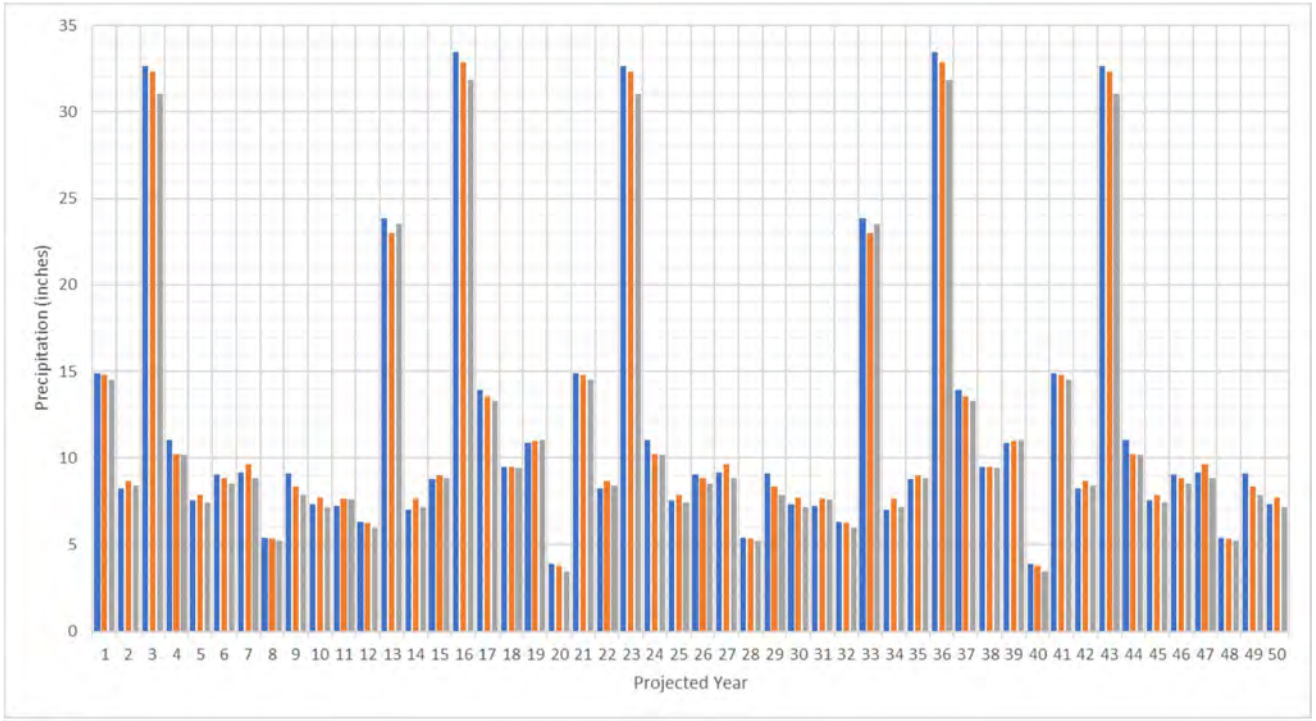
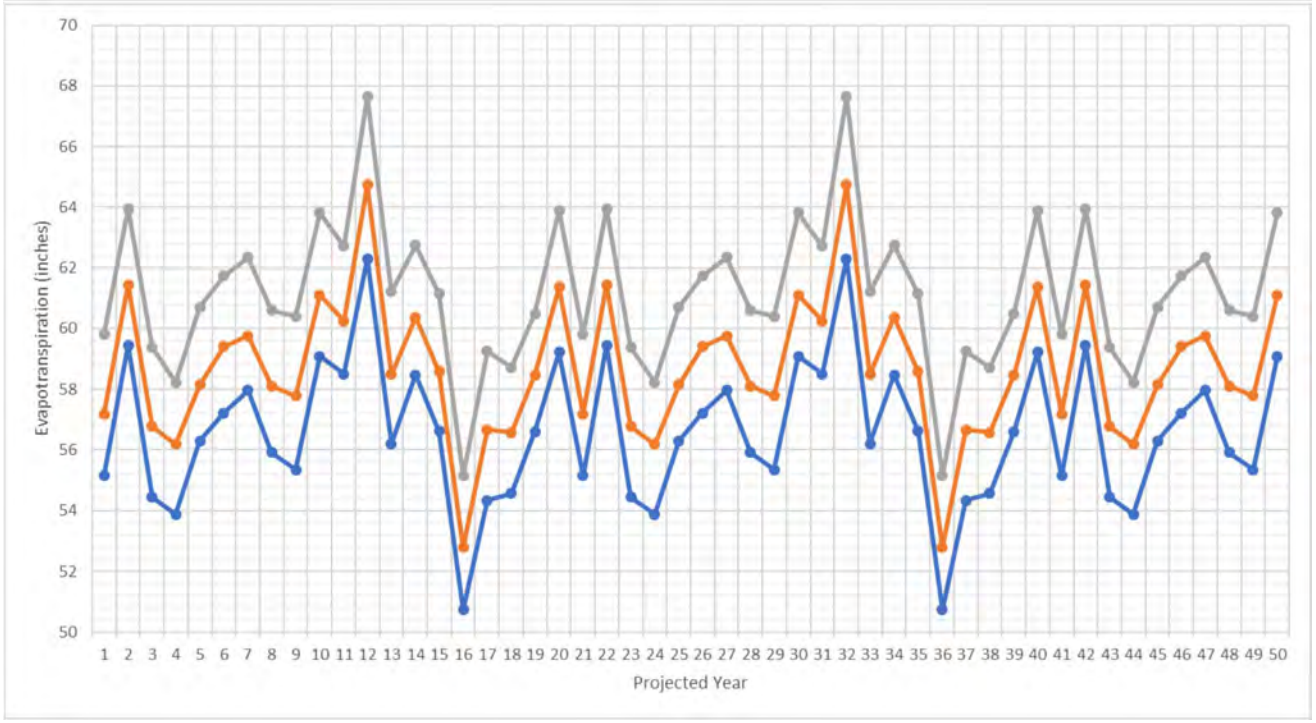
Path: X:\B80048\Maps\for_GSP\Fig\WB-17_TMV_Landuse.mxd





Legend

Projected Scenario

- Baseline
- 2030 Climate Change
- 2070 Climate Change

Notes

1. Precipitation and evapotranspiration were scaled using climate change factors provided by the California Department of Water Resources.

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Precipitation and Evapotranspiration Inputs for Project Scenarios

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure WB-18

Legend

- Supply
- Storage Change
- Demand

Abbreviations

TMV = Tejon Mountain Village
WY = Water Year

Notes

1. Historical water budget values presented are from the Castac Basin Numerical Model for consistency with Projected water budget values. The period shown (i.e., WYs 1999-2024) is different than the historical water budget period presented in Section 9.3.2 Historical Water Budget (i.e., WYs 1998-2024).

Projected Water Budget Supplies and Demands

Tejon-Castac Water District
Kern County, California
November 2025
B800048.00

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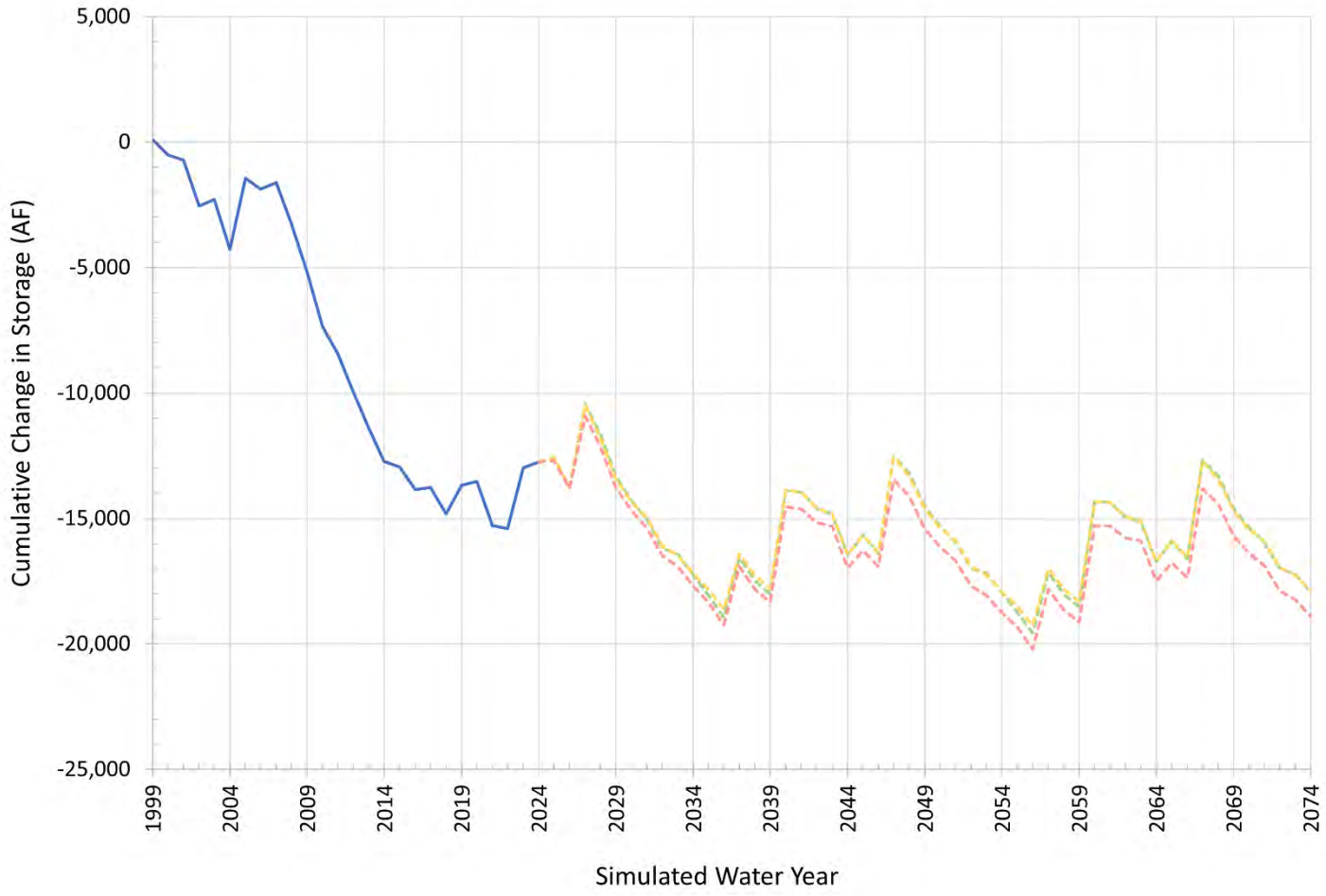
Figure WB-19



Legend

= Historical Simulation

= Baseline Scenario

= 2030 Climate Change Scenario

= 2070 Climate Change Scenario

Abbreviations

AF = acre-feet

TMV = Tejon Mountain Village

Notes

1. Scenarios shown represent Baseline (i.e., historical) land use under various climate change conditions

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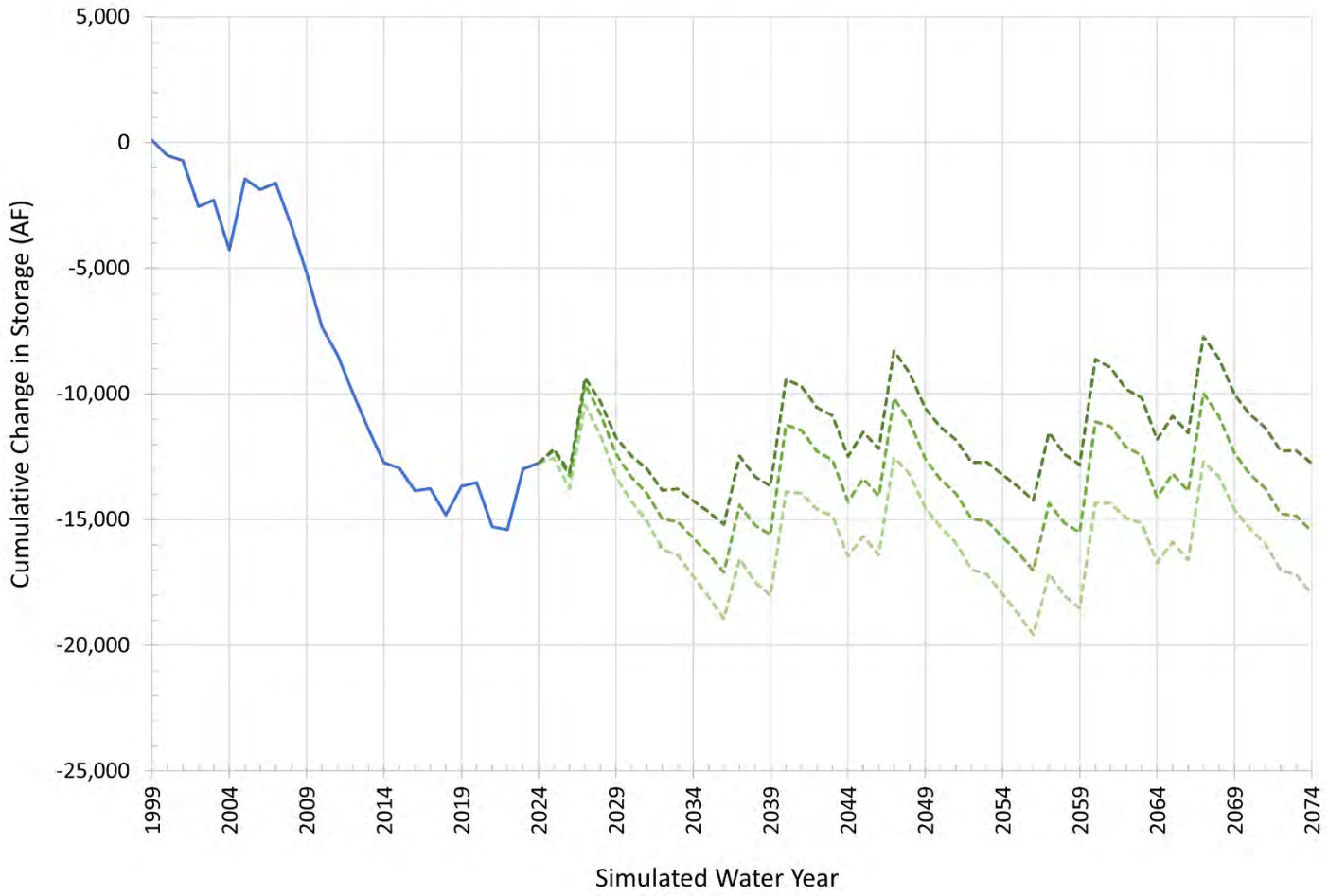
Projected Change in Groundwater Storage for Baseline, 2030 Climate, and 2070 Climate Scenarios

Tejon-Castac Water District
Kern County, California
November 2025
EKI B80048.00

Figure WB-20



Legend

= Historical Simulation

= Baseline Scenario

= TMV Development Scenario

= TMV Development with Aquifer Replenishment Scenario

Abbreviations

AF = acre-feet

TMV = Tejon Mountain Village

Notes

1. Scenarios shown represent various future development scenarios under Baseline climate conditions.

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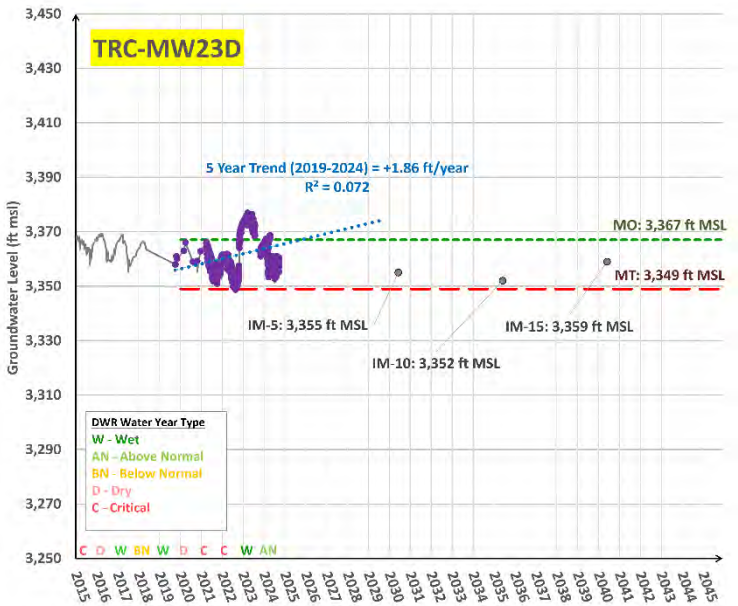
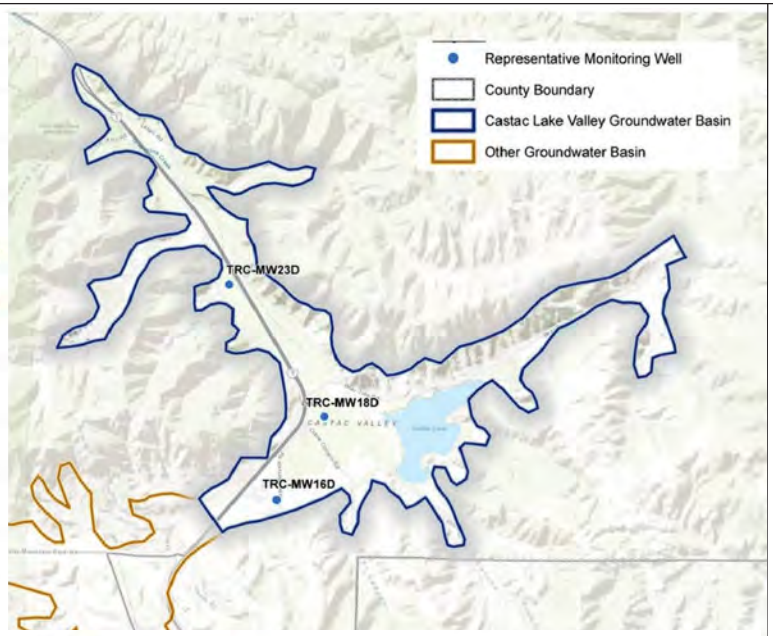
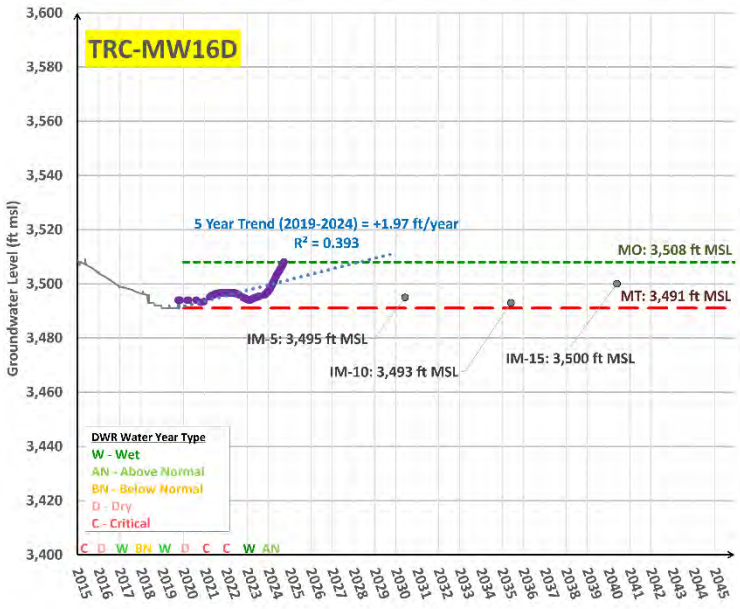
Projected Change in Groundwater Storage for Baseline, TMV Development, and TMV Development with Aquifer Replenishment Scenarios

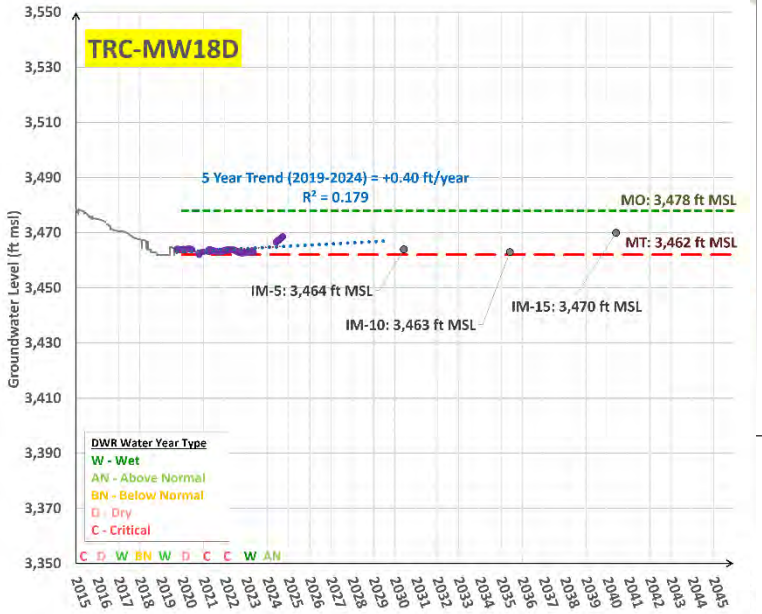
Tejon-Castac Water District
Kern County, California
November 2025
EKI B80048.00

Figure WB-21









Legend

- Water Level Measurement
- Water Level Measurement (used in trend)
- MO
- MT
- IM
- Linear (Trend Period)

Abbreviation

DWR = California Department of Water Resources
ft msl = feet above mean sea level
IM = Interim Milestone
MO = Measurable Objective
MT = Minimum Threshold

Notes

1. All locations are approximate.
2. TRC-MW16D top of casing is 3,642.41 ft MSL; top and bottom of the screened interval are approximately 3,490 and 3,290 ft MSL respectively.
3. TRC-MW18D top of casing is 3,533.31 ft MSL; top and bottom of the screened interval are approximately 3,331 and 3,131 ft MSL respectively.
4. TRC-MW23D top of casing is 3,378.31 ft MSL; top and bottom of the screened interval are approximately 3,236 and 3,036 ft MSL respectively.

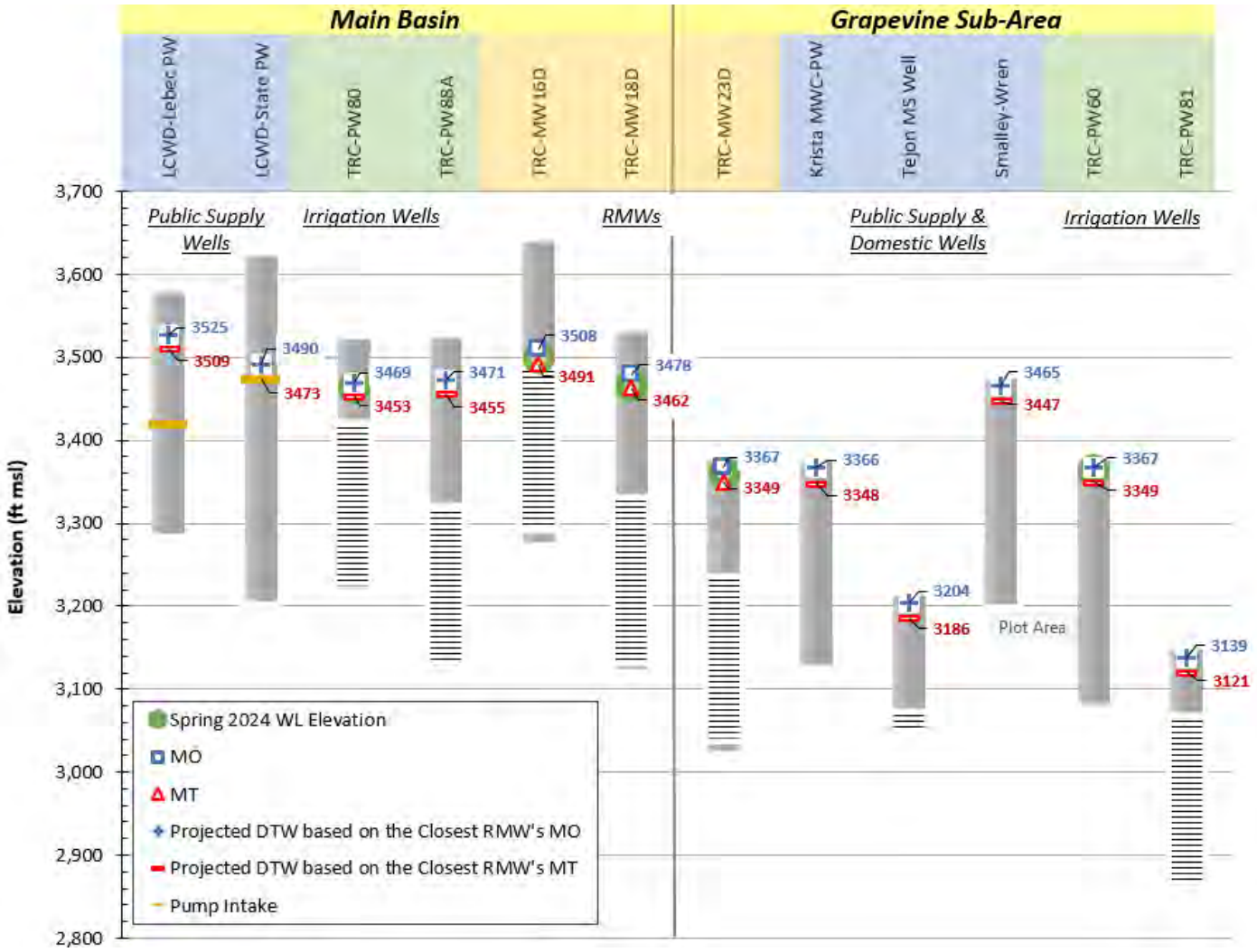
Source

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 March 2020.

Representative Monitoring Well Hydrographs

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure SMC-1



Fraction of Wells Affected by Water Levels Declining to Sustainable Management Criteria	Top of Screen Dewatered	Bottom of Screen Dewatered
Measurable Objective (MO)	**0%**	**0%**
Minimum Threshold (MT)	**44%**	**0%**

Legend

Blank Casing (or Well with Unknown Screened Interval)

Well Screen Interval

Abbreviations

DTW = depth to water
ft msl = feet above mean sea level
RMWs = Representative Monitoring Wells

Notes

1. The fraction of wells affected shown in the table does not include wells without available screen depth (or pump intake) information.
2. Wells that used RMW TRC-MW18D's SMC information include LCWD-Lebec PW, TRC-PW80, and TRC-PW88A; Well that used RMW TRC-MW16D's SMC information include LCWD-State PW; Wells that used RMW TRC-MW23D's SMC information include Krista MWC-PW, Tejon MS Well, Smalley-Wren, TRC-PW60, and TRC-PW81.

Sources

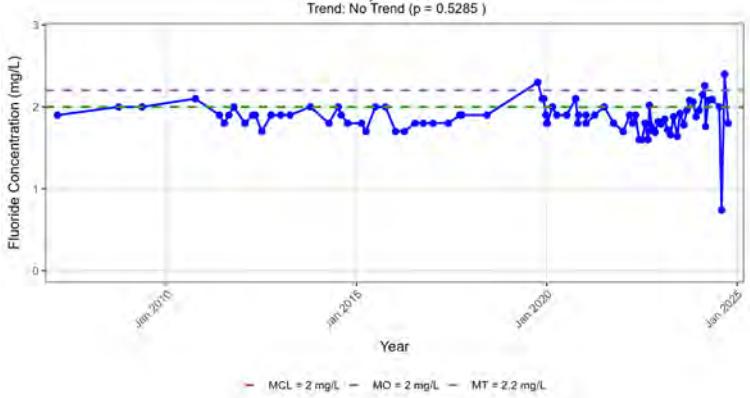
1. Well information obtained from the Stakeholder Surveys distributed by the Castac Basin GSA in 2018-2019.

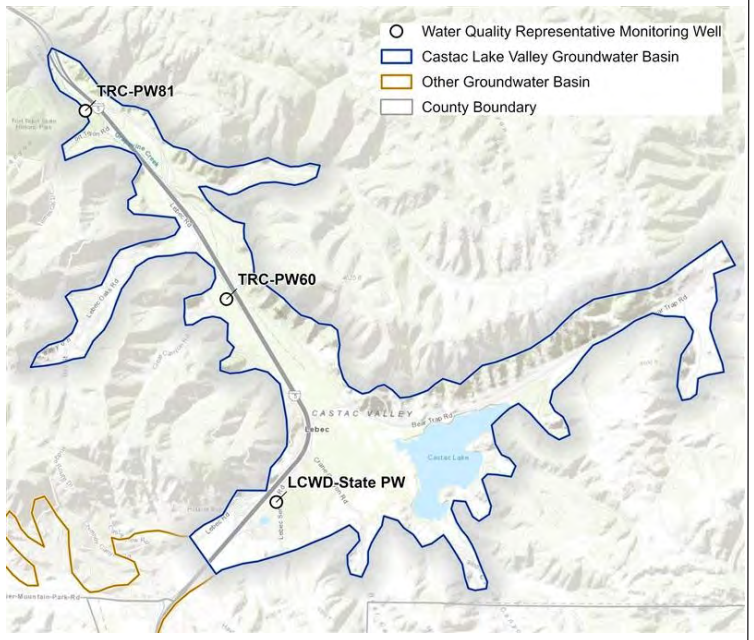
Well Construction Schematic and Sustainable Management Criteria

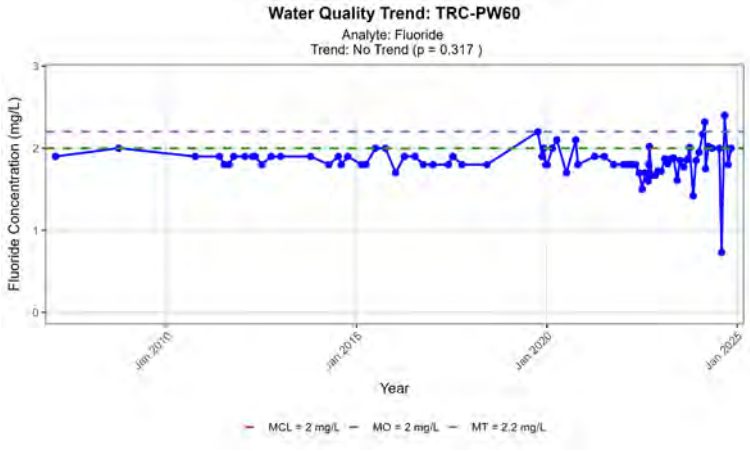
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

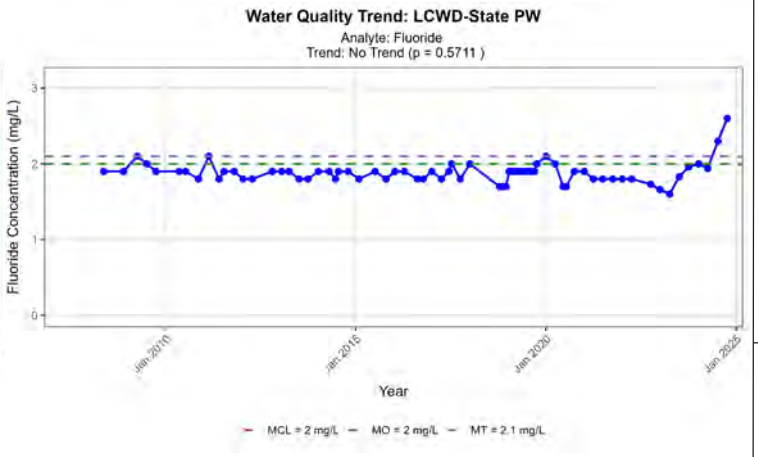
eki environment & water

Figure SMC-2









Legend

- Sample concentration
- MCL
- MO
- MT

Abbreviation

DWR = California Department of Water Resources
MCL = Maximum Contaminant Level
mg/L = milligrams per liter
MO = Measurable Objective
MT = Minimum Threshold

Notes

1. All locations are approximate.
2. Interim Milestones equal MTs.

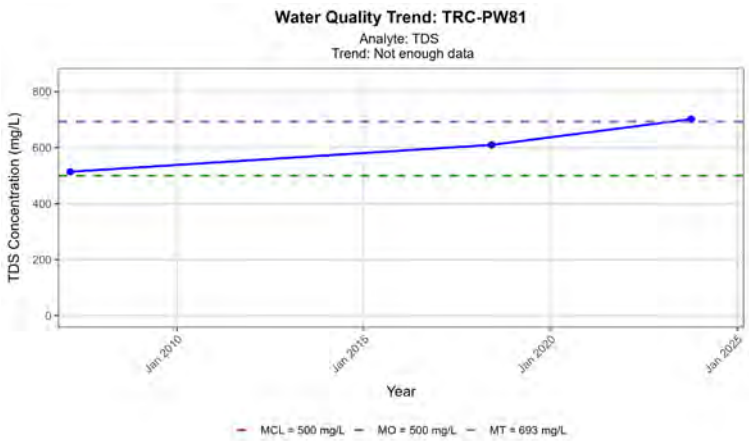
Source

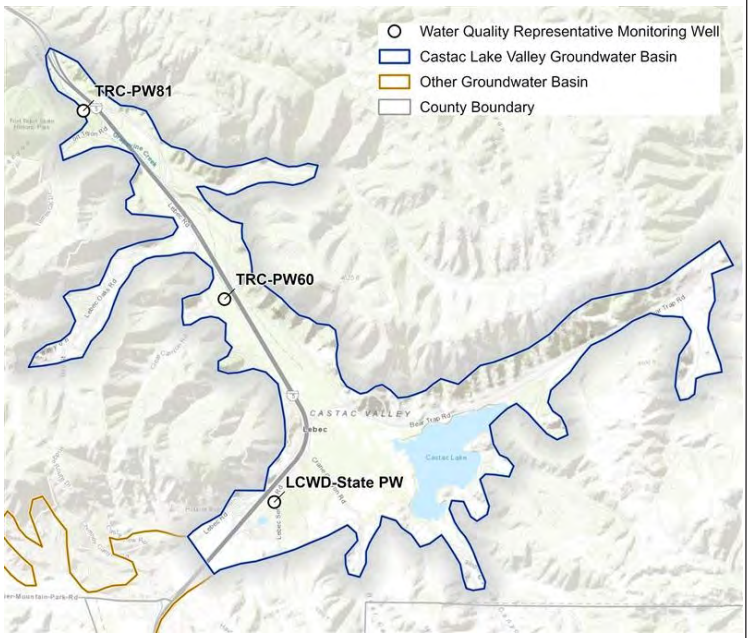
1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 March 2020.

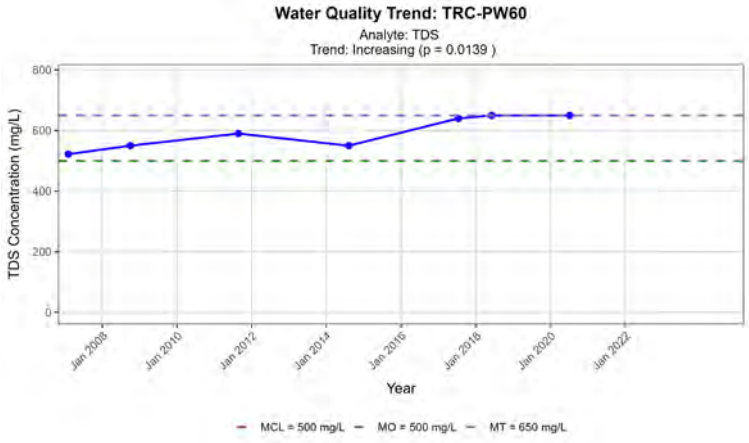
Representative Monitoring Well Chemographs for Fluoride

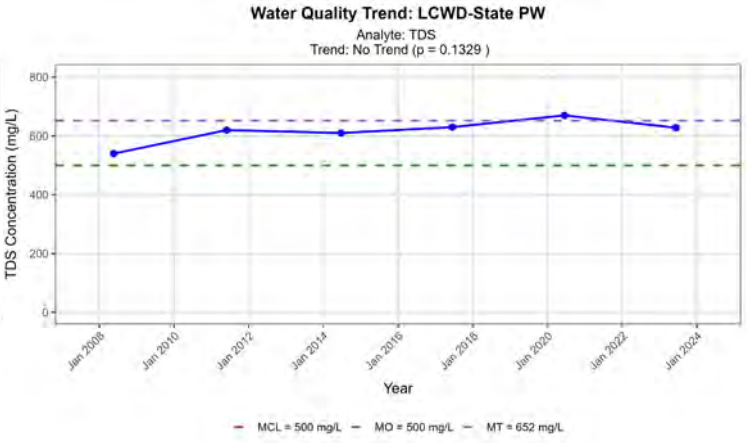
Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure SMC-3









Legend

- Sample concentration
- MCL
- MO
- MT

Abbreviation

DWR = California Department of Water Resources
MCL = Maximum Contaminant Level
mg/L = milligrams per liter
MO = Measurable Objective
MT = Minimum Threshold
TDS = total dissolved solids

Notes

1. All locations are approximate.
2. Interim Milestones equal MTs.

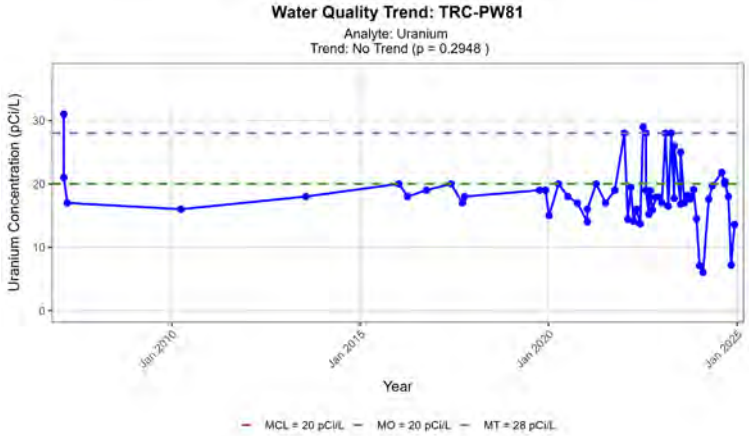
Source

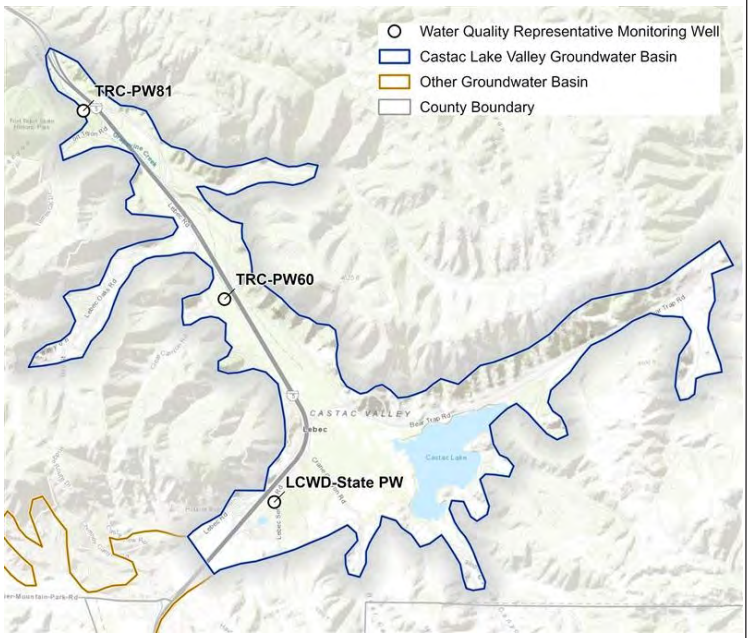
1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 March 2020.

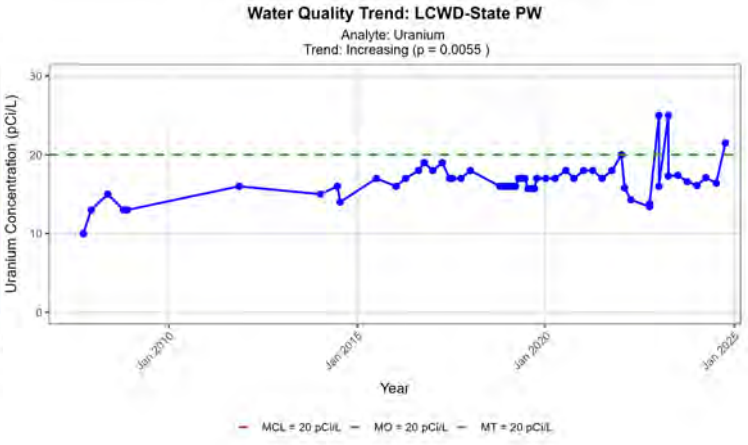
Representative Monitoring Well Chemographs for Total Dissolved Solids

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure SMC-4







Legend

- Sample concentration
- MCL
- MO
- MT

Abbreviation

DWR = California Department of Water Resources
MCL = Maximum Contaminant Level
pCi/L = picocuries per liter
MO = Measurable Objective
MT = Minimum Threshold

Notes

1. All locations are approximate.
2. Interim Milestones equal MTs.

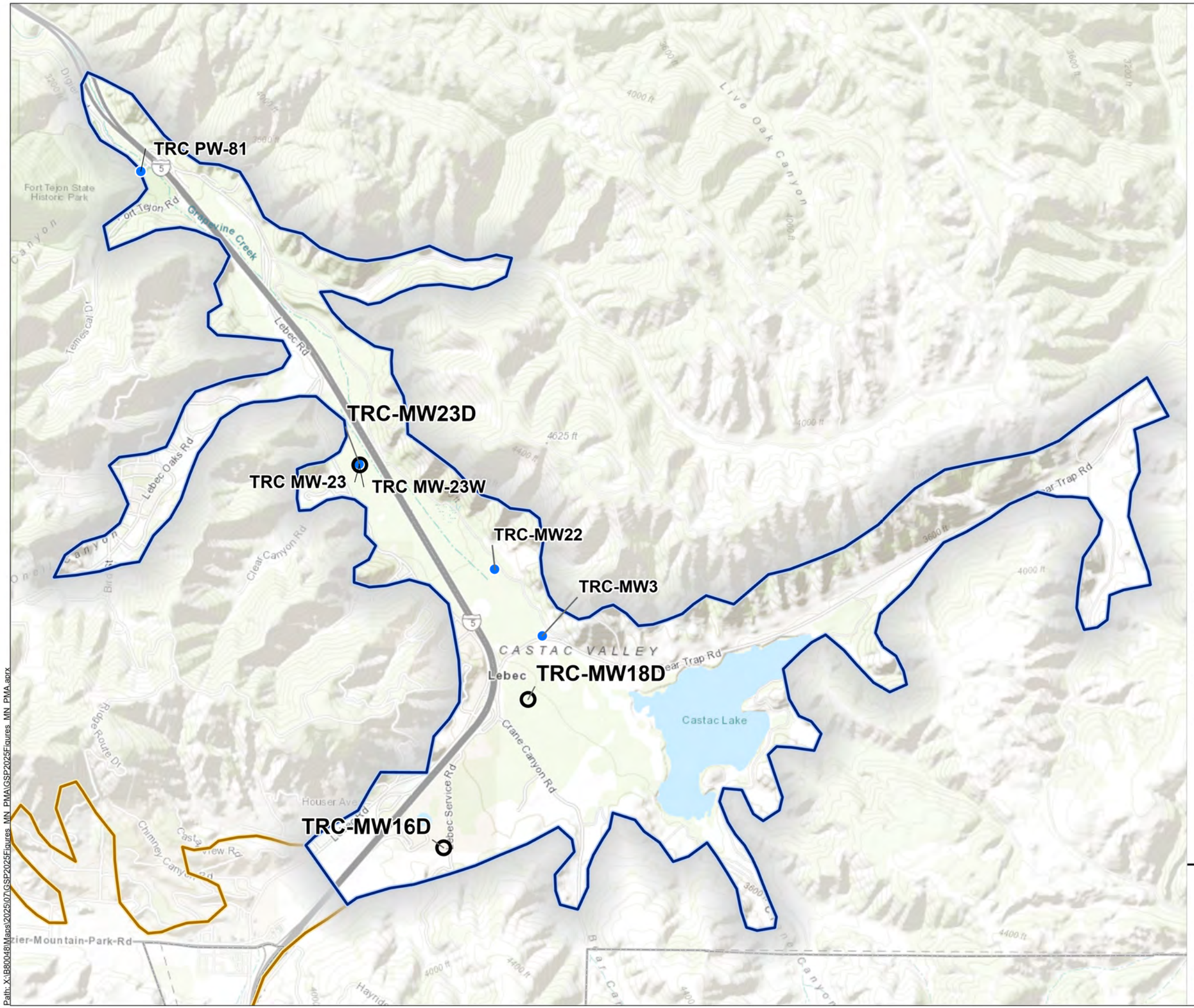
Source

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 March 2020.

Representative Monitoring Well Chemographs for Uranium

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure SMC-5



Legend

- Water Level Representative Monitoring Well
- Water Level Supplemental Monitoring Well
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 December 2025.

N

0 0.5 1

(Scale in Miles)

Water Levels
Monitoring Network Well Locations

Castac Basin GSA
Kern County, California
November 2025
B80048.00
Figure MN-1

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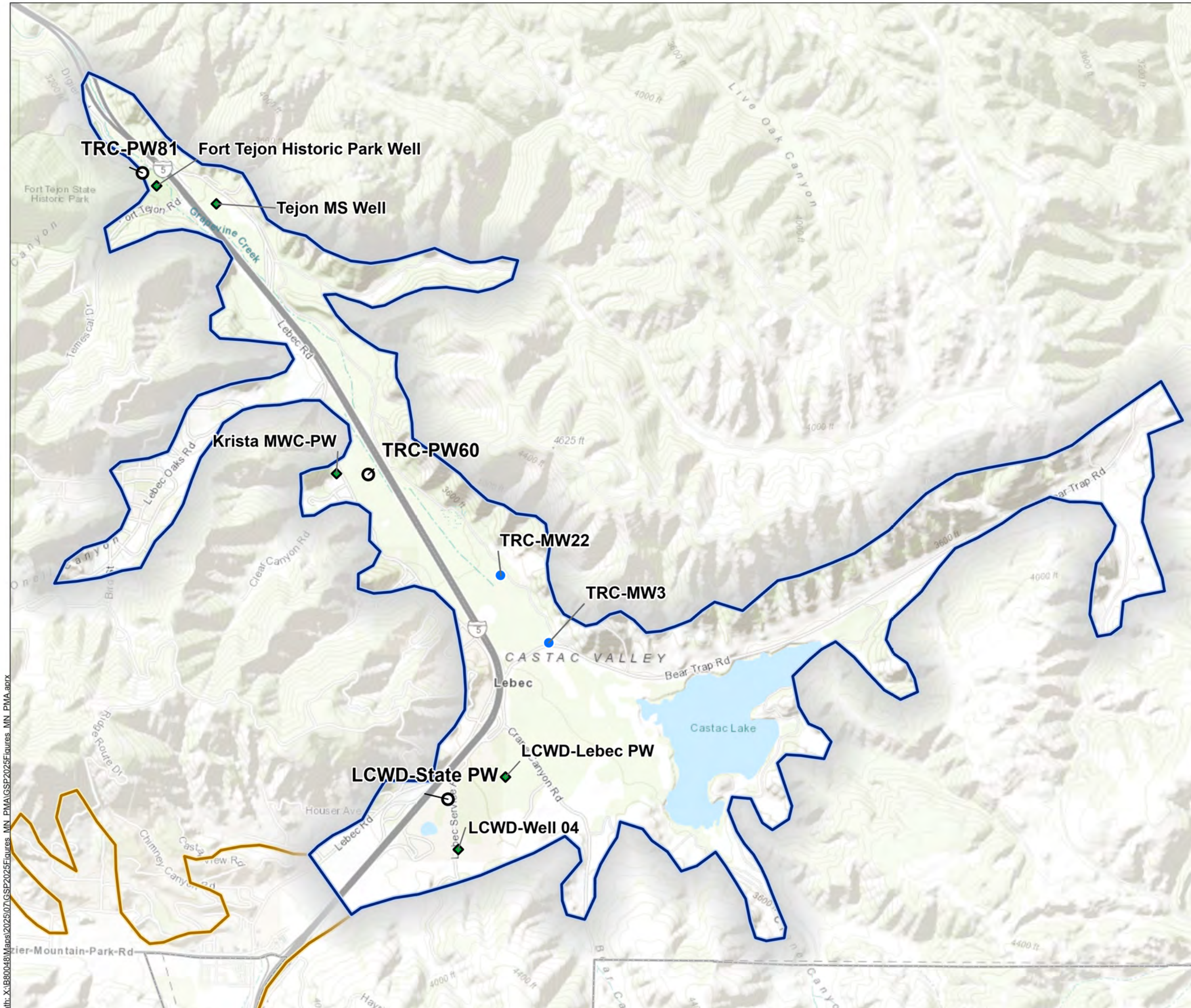

Legend

- Water Quality Representative Monitoring Well
- Water Quality Supplemental Monitoring Well
- Public Supply Well
- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary

Abbreviations

DWR = California Department of Water Resources

Notes

1. All locations are approximate.
2. Water quality data monitored by public supply wells as part of their compliance with the Division of Drinking Water will be compiled to support the water quality data analysis.
3. Supplemental Monitoring Well will be monitored to establish water quality baseline conditions.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 December 2025.

N

0 0.5 1

(Scale in Miles)

Water Quality Monitoring Network Well Locations

Castac Basin GSA
Kern County, California
November 2025
B80048.00
Figure MN-2

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Path: X:\B80048\Maps\2025\07\GSP2025Figures_MN_PMA\GSP2025Figures_MN_PMA.aprx

P&MA #6 (Typical)

P&MA #3

P&MA #4

P&MA #2

P&MA #5

Frazier Mountain
High School

P&MA #1
Castac
Lake

Legend

- Castac Lake Valley Groundwater Basin
- Other Groundwater Basin
- County Boundary
- P&MA #1 Aquifer Replenishment Project
- P&MA #2 New Monitoring Wells
- P&MA #3 Krista Emergency Interconnect with LCWD

P&MA #4 Reclaimed Wastewater

- WRRF Facilities
- Proposed Water Line
- P&MA #5 Frazier Mountain High School Water Project
- P&MA #6 Well Metering and Data Collection

Abbreviations

DWR	= California Department of Water Resources
LCWD	= Lebec County Water District
P&MA	= Projects and Management Actions
WRRF	= Water Resources Recovery Facility

Notes

1. All locations are approximate.
2. For details on each P&MA, see Table PMA-1 and Appendix A - Project / Management Action Information Forms.
3. Some P&MA #6 well locations shown may be de minimis pumpers, who are exempt from well metering requirements under California Water Code Section 10725.8.

Sources

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 11 December 2025.
3. P&MA#3 location from Krista Mutual Water Company Preliminary Engineering Report.
4. WRRF facilities shapefiles provided by Diana Hulburt, on 28 August 2018.
5. P&MA #5 well location provided by LCWD via email on 5 November 2019.
6. P&MA #6 well locations are based on the Castac Basin Data Management System.

N

0 0.6 1.2
(Scale in Miles)

Approximate Locations of Proposed Projects and Management Actions

Castac Basin GSA
Kern County, California
November 2025
B80048.00
Figure PMA-1

eki environment & water

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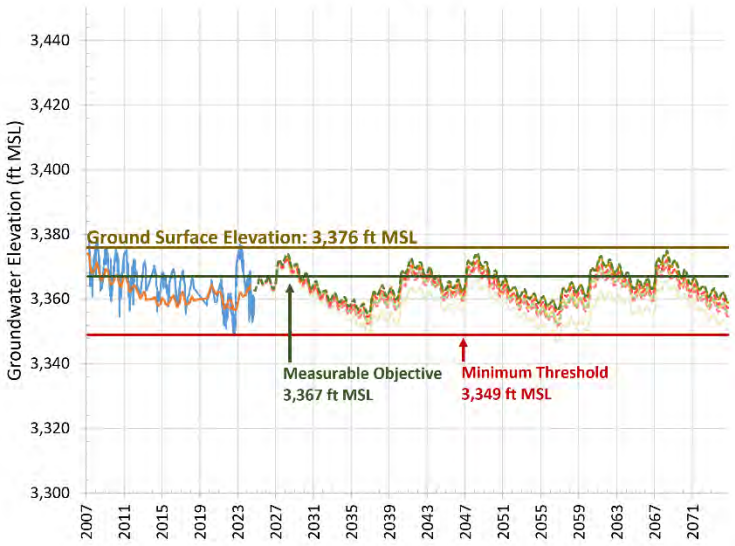

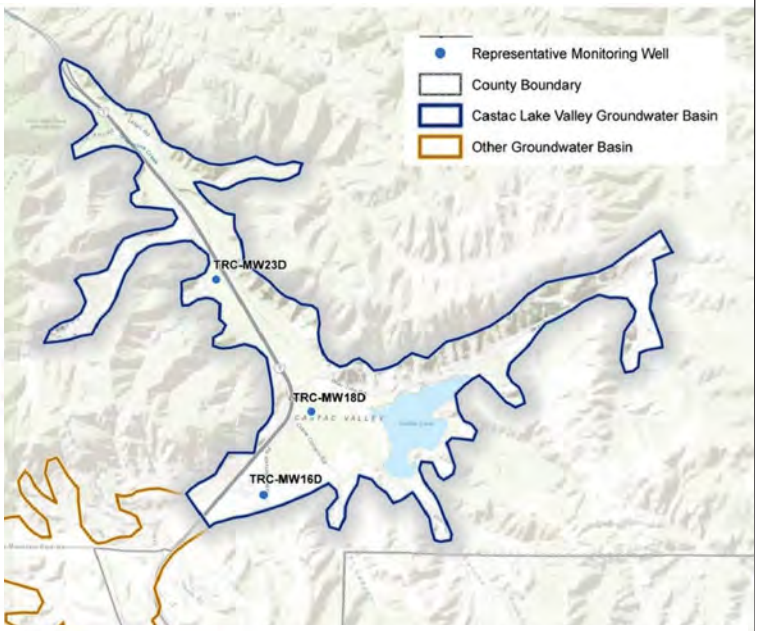

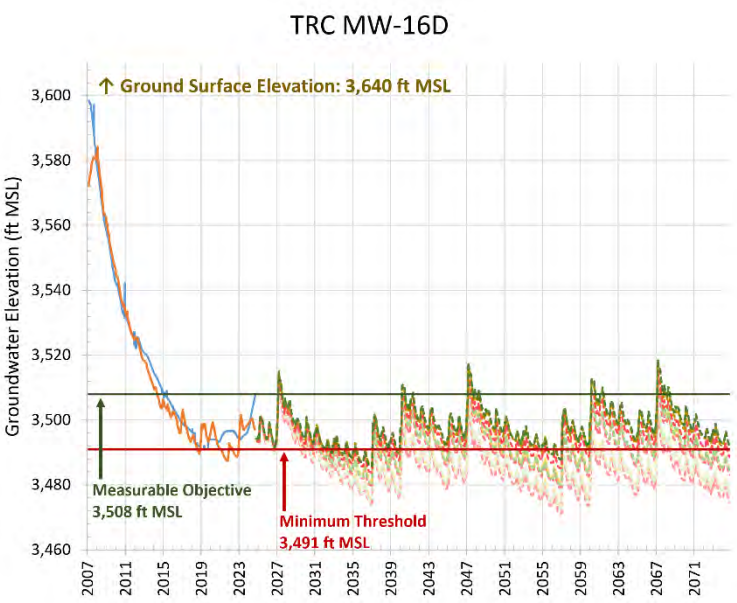

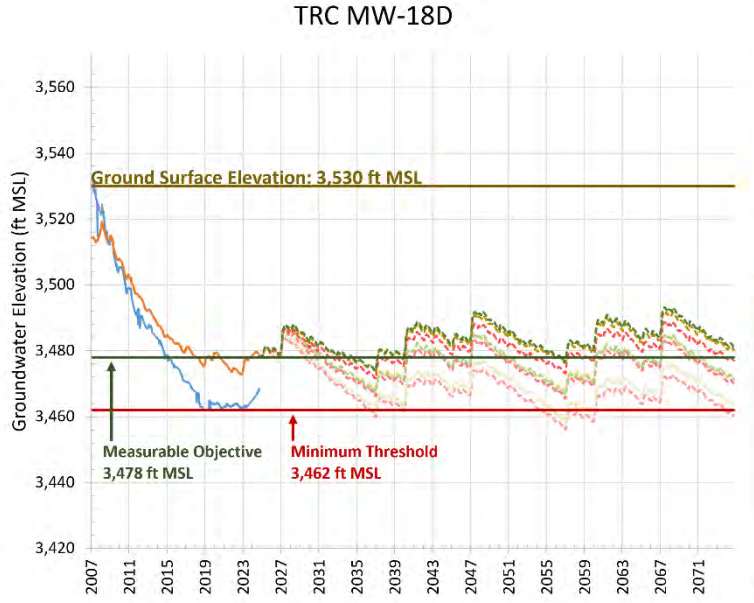

Legend

Groundwater Elevation

- Observed
- Model-calculated (Historical)

Current Land Use

- Projected—Baseline
- Projected—2030 Climate Change
- Projected—2070 Climate Change

Projected Land Use with TMV Development

- Projected—Baseline
- Projected—2030 Climate Change
- Projected—2070 Climate Change

Projected Land Use with TMV Development and Aquifer Replenishment Project Implementation

- Projected—Baseline
- Projected—2030 Climate Change
- Projected—2070 Climate Change
- Minimum Threshold
- Measurable Objective
- Ground Surface Elevation

Abbreviation

DWR = California Department of Water Resources
ft MSL = feet above mean sea level

Notes

1. All locations are approximate.
2. TRC-MW16D top of casing is 3,642.41 ft MSL; top and bottom of the screened interval are approximately 3,490 and 3,290 ft MSL respectively.
3. TRC-MW18D top of casing is 3,533.31 ft MSL; top and bottom of the screened interval are approximately 3,331 and 3,131 ft MSL respectively.
4. TRC-MW23D top of casing is 3,378.31 ft MSL; top and bottom of the screened interval are approximately 3,236 and 3,036 ft MSL respectively.

Source

1. Groundwater basin boundaries from DWR Bulletin 118 Interim Update 2016.
2. Basemap is ESRI's ArcGIS Online world topographic map, obtained 3 March 2020.

Castac Basin Numerical Model Projected Hydrographs with and without Aquifer Replenishment Project Implementation

Tejon-Castac Water District
Kern County, California
November 2025
B80048.00

Figure PMA-2