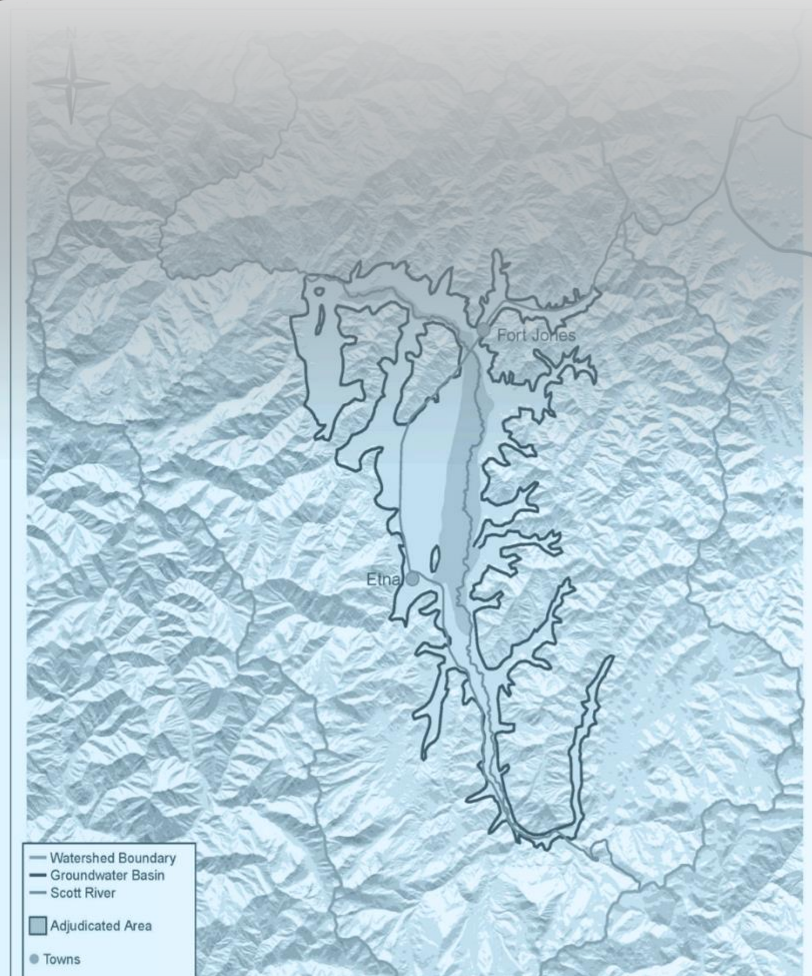
APRIL 2024

SISKIYOU COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

Scott Valley Groundwater Sustainability Plan WY 2023 Annual Report



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Executive Summary

The Scott Valley Groundwater Sustainability Plan (GSP) was adopted in December 2021 by the Siskiyou County Flood Control and Water Conservation District, the Groundwater Sustainability Agency (GSA) for the Scott Valley groundwater basin (Basin; see Figure 1). The GSA formed in accordance with the Sustainable Groundwater Management Act (SGMA) of 2014 to coordinate, develop, and implement a GSP for the Basin (DWR Basin No. 1-005). The GSP was submitted to the California Department of Water Resources (DWR) in January 2022, ahead of the January 31, 2022 deadline for high and medium priority basins.

California Water Code (CWC) §356.2 requires the submission of an annual report to DWR by April 1 of each year following the adoption of the GSP. The annual report includes information for the preceding water year. This report is the third annual report submitted to DWR and provides an update on Basin conditions and GSP implementation progress within the Basin for water year (WY) 2023 (October 1, 2022 to September 30, 2023). It also includes changes in conditions that have occurred between the baseline year assessed in the GSP and the conditions in WY 2023. CWC §356.2 requires annual reports to include general information about the Basin and GSP, groundwater elevation data (contour maps and hydrographs), groundwater extraction, surface water supply, changes in groundwater storage, and a description of progress towards implementation of the GSP since the adoption of the previous annual report. Table 1 provides a summary of the definition of undesirable results included in Chapter 3 of the GSP.

In WY 2023 the Scott Valley continued to experience drought, but the condition has improved from last year. For WY 2023, the Fort Jones CEDEC station has shown a precipitation record slightly lower than its long-term mean (WY 1936-2023), and has shown increased precipitation compared to WY 2022. The State Water Resources Control Board issued a drought emergency regulation in the Shasta and Scott River Watersheds[1].

Groundwater Levels

This section describes general observations of groundwater level declines or increases in the reporting water year. This summary includes quantified changes observed during the water year and includes hydrographs and contour maps of groundwater elevation. Additional hydrographs are included in Appendix A.

[1] https://www.waterboards.ca.gov/drought/scott_shasta_rivers/

Groundwater Storage

This section provides quantified changes observed in groundwater storage based on groundwater levels and aquifer properties (i.e., specific yield) in the reporting water year. This summary includes a map of change in groundwater level between the current and previous WY and a time series plot of change in groundwater storage by water year.

Land Subsidence

This section describes the status of land subsidence for the reporting year. This summary includes available subsidence values from InSAR data for the entire Basin during the water year 2023.

Groundwater Quality

This section evaluates water quality samples collected in the Basin, and evaluates compliance with the sustainable management criteria defined in the GSP.

Plan Implementation Progress

This section describes progress made in the implementation of the GSP, including implementation of projects and management actions, and any additional implementation support actions. This section also includes an overview of plan implementation activities anticipated for the coming year.

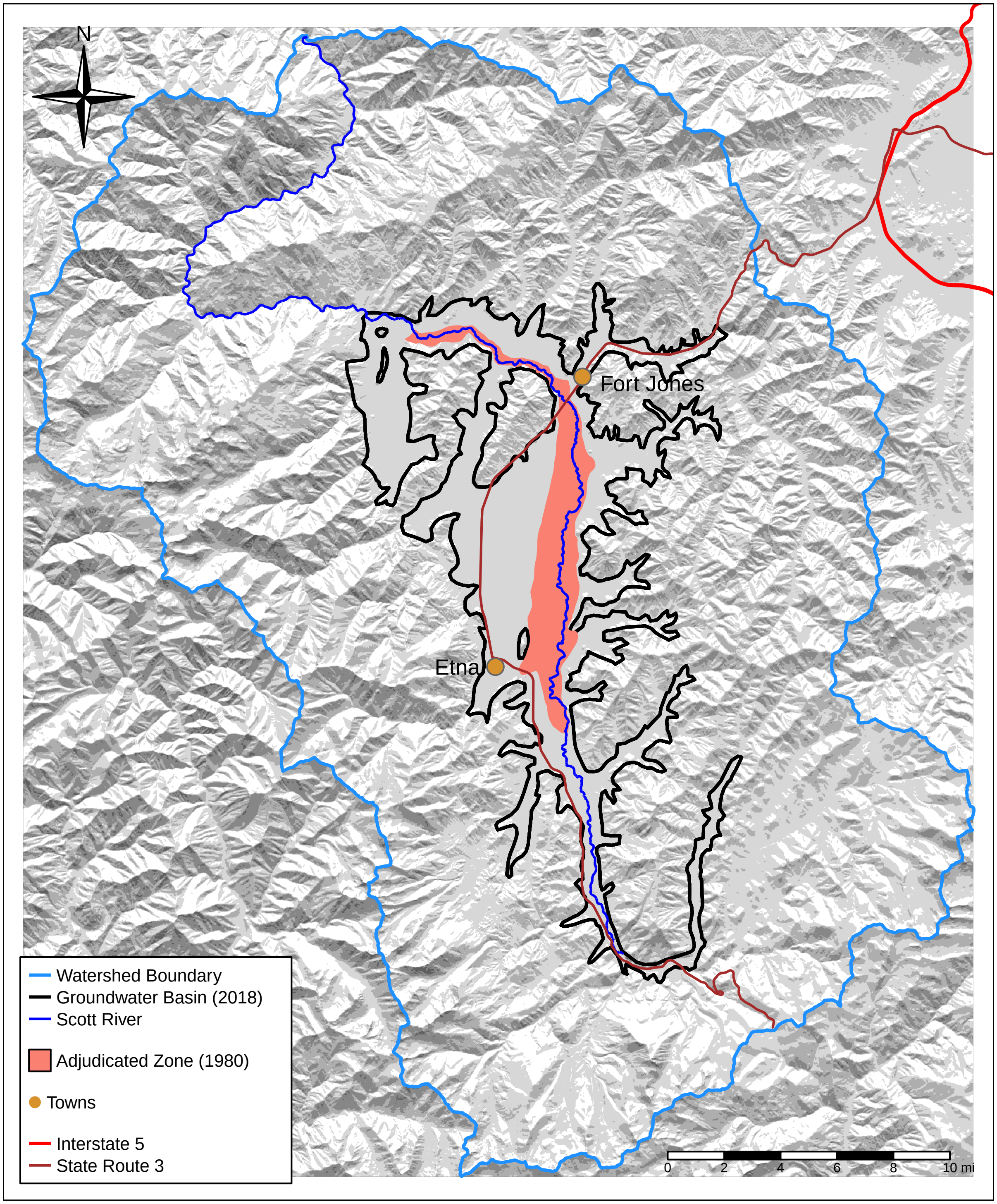


Figure 1: Scott Valley Bulletin 118 basin boundary (DWR 2018) and area subject to the 1980 Scott River Adjudication Decree (Superior Court of Siskiyou County 1980).

Table 1: Summary of Sustainable Management Criteria.

Sustainability Indicator	Minimum/ Maximum Threshold (MT)	Measurable Objective (MO)	Undesirable Result Defined	WY 2023 Annual Report Status
Chronic Lowering of Groundwater Levels	Historic maximum depth to water measurement prior to 2015 with a buffer of 10% of historic max depth or 10 feet, whichever is smaller.	75th percentile of the fall measurement range (i.e., water levels > 25% of historic record).	The fall low water level observation in any of the representative monitoring sites in the Basin falls below the respective minimum threshold for 2 consecutive years.	No occurrence of undesirable results.
Reduction of Groundwater Storage	Groundwater levels used as a proxy for this sustainability indicator.	Groundwater levels used as a proxy for this sustainability indicator.	Same as ”Chronic Lowering of Groundwater Levels.”	No occurrence of undesirable results.
Degraded Water Quality	Nitrate = 10 mg/L, Specific Conductivity = 900 umhos/cm	More than 90% of wells monitored for water quality maintain their range of water quality measurements measured during 1990 to 2020.	More than 25% of groundwater quality wells exceed the maximum threshold for concentration and/or concentrations in over 25% of groundwater quality wells increase by more than 15% per year, on average over ten years.	No occurrence of undesirable results.

Table 1: Summary of Sustainable Management Criteria. *(continued)*

Sustainability Indicator	Minimum/ Maximum Threshold (MT)	Measurable Objective (MO)	Undesirable Result Defined	WY 2023 Annual Report Status
Depletions of Interconnected Surface Water	Average 15% stream depletion reversal caused by groundwater pumping from outside the adjudicated zone in 2042 and thereafter.	Average relative stream depletion reversal of 20% or above in 2042 and thereafter.	Ecological stress from <15% average stream depletion reversal of the depletion caused by groundwater pumping outside of the adjudicated zone in 2042 and later, as defined by specific reference scenarios with SVIHM.	Below the MT and experiencing undesirable results.
Seawater Intrusion	This sustainability indicator is not applicable in the Subbasin.		Not applicable for the Basin.	
Land Subsidence	<0.1 ft of subsidence in any one year.	Maintain current ground surface elevations.	Groundwater pumping induced subsidence is greater than the minimum threshold of 0.1 ft (0.03 m) in any single year;	No occurrence of undesirable results.

Chapter 1

Introduction

1.1 Purpose

Annual reports will be completed throughout the course of GSP implementation. The purpose of these reports is to provide periodic updates on the progress towards Basin sustainability, current Basin conditions, and any improvements and/or additions to the monitoring networks. Changes in land ownership, well status, monitoring personnel availability, or monitoring program participation may limit data collected at the representative monitoring sites, as identified in the GSP. As changes to monitoring site status occur, the monitoring network is reevaluated to ensure adequate measurement density and spatial coverage of the Basin.

1.2 Scott Valley GSA

The Siskiyou County Flood Control and Water Conservation District is the sole GSA for the Basin. The Siskiyou County Flood Control and Water Conservation District Act (Cal Uncod. Water Deer, Act 1240 §§ 1-38) was adopted by the State Legislature in 1959. This Act established a special district of the same name, and of limited powers that could provide flood protection, water conservation, recreation and aesthetic enhancement within its boundaries. At the time of its creation, the jurisdictional boundaries of the Flood District were smaller than those of the County. In 1983, following County of Siskiyou Local Agency Formation Commission (LAFCO) action, the balance of the County was annexed into the District, making its jurisdictional boundaries coincide with the County. The District is governed by a Board of Directors that is composed of the Board of Supervisors; however, the District is a separate legal entity from the County, with independent rights and limited powers set forth in its originating act. The District's purpose is the conservation and control of storm, flood, and other waters and ensuring beneficial use thereof.

The Siskiyou County Flood Control and Water Conservation District approved the GSP for Basin in December 2021 and submitted the GSP to DWR in January 2022. The GSA will submit an annual report to DWR documenting the progress in achieving groundwater sustainability, by April 1st, for each preceding water year. The monitoring data for the preceding water year will be compiled to present the most current groundwater conditions to identify whether the Sustainable Management Criteria (SMCs) were met. Additionally, all progress in project management action implementation will be presented.

1.3 Basin Description

The Scott Valley Groundwater Basin ("Basin") is located in the Scott River watershed ("Watershed"), part of the larger Klamath River watershed which spans sections of Northern California and Southern Oregon. The Basin covers 100 sq mi (259 sq km) while the Watershed is much larger, encompassing 814 square miles (2,108 square km). Under the 2019 basin prioritization conducted by the California Department of Water Resources (DWR), the Basin (DWR Basin 1-005) was designated as medium priority (DWR 2019).

Scott Valley is encircled by mountain ranges with the Scott Bar, Marble, Salmon, and Scott Mountains to the north, west, southwest, and south, respectively, and hills and ridges east of the Scott Valley that divide the Scott and Shasta watersheds. The Scott River is the main water feature in the Basin, and is one of the major undammed streams in California. Within the Basin boundary, the Scott River flows south to north until it turns westward near Fort Jones. The Scott River flows northwest out of the Basin, traveling around the Scott Bar Mountains through a steep canyon to join the Klamath River at River Mile 143 (Harter and Hines 2008). The Basin includes two areas not required to form GSA or develop GSPs under SGMA: the interconnected zone covered by a groundwater adjudication (Figure 1) and the Quartz Valley Indian Reservation (Figure 1.1). While outside the jurisdiction of the GSA, these portions of the Basin are considered by the GSP as they are within or adjacent to the GSA area. In 1980, the Scott River and some of the surrounding interconnected groundwater were adjudicated by decree No. 30662 (Superior Court of Siskiyou County 1980).

The Basin boundary encompasses the incorporated communities of Etna and Fort Jones; the unincorporated communities of Callahan, Greenview, and Quartz Valley/Mugginsville; and the QVIR on tribal trust lands. The population of Scott Valley was estimated at 8,000 (SRWC 2005), including the populations of the two incorporated towns. In the 2010 Census, the number of residents of Fort Jones and Etna was estimated at 839 and 737, respectively (U.S. Census Bureau 2012). Fort Jones relies on groundwater as a municipal water source, while Etna is reliant on surface water. A water district, the Scott Valley Irrigation District (SVID) serves water to users east of the Scott River (Figure 1.1). The Scott Valley and Shasta Valley Watermaster District, which manages the diversion of surface water in accordance with court adjudications or agreements, is operational in the Basin for French and Wildcat Creeks.

The majority of land within the Scott River watershed is under private ownership (two-thirds of the total area) with the remaining area managed by QVIR, the United States (U.S.) Department of the Interior Bureau of Land Management (BLM) and U.S. Forest Service (USFS) (Harter and Hines 2008). Much of the watershed surrounding Scott Valley is National Forest land. According to land use surveys conducted by DWR (DWR 2017), half of the Basin area is covered by agriculture, with most of that split approximately evenly between pasture and an alfalfa/grain rotation.

In May 2021, Governor Gavin Newsom declared a drought emergency for 41 counties in California, including Siskiyou County. In August 2021, the State Water Resources Control Board (SWRCB) adopted drought Emergency Regulations, regarding the Scott and Shasta Rivers which were readopted, with amendments, in July 2022[1]. These Emergency Regulations authorized curtailments of surface water diversions when flows did not meet SWRCB approved drought emergency minimum monthly flow targets. On March 24, 2023, Governor Newsom signed an executive order removing emergency drought provisions in select watersheds. In the winter of 2022 and 2023, the Scott

[1] https://www.waterboards.ca.gov/drought/scott_shasta_rivers/

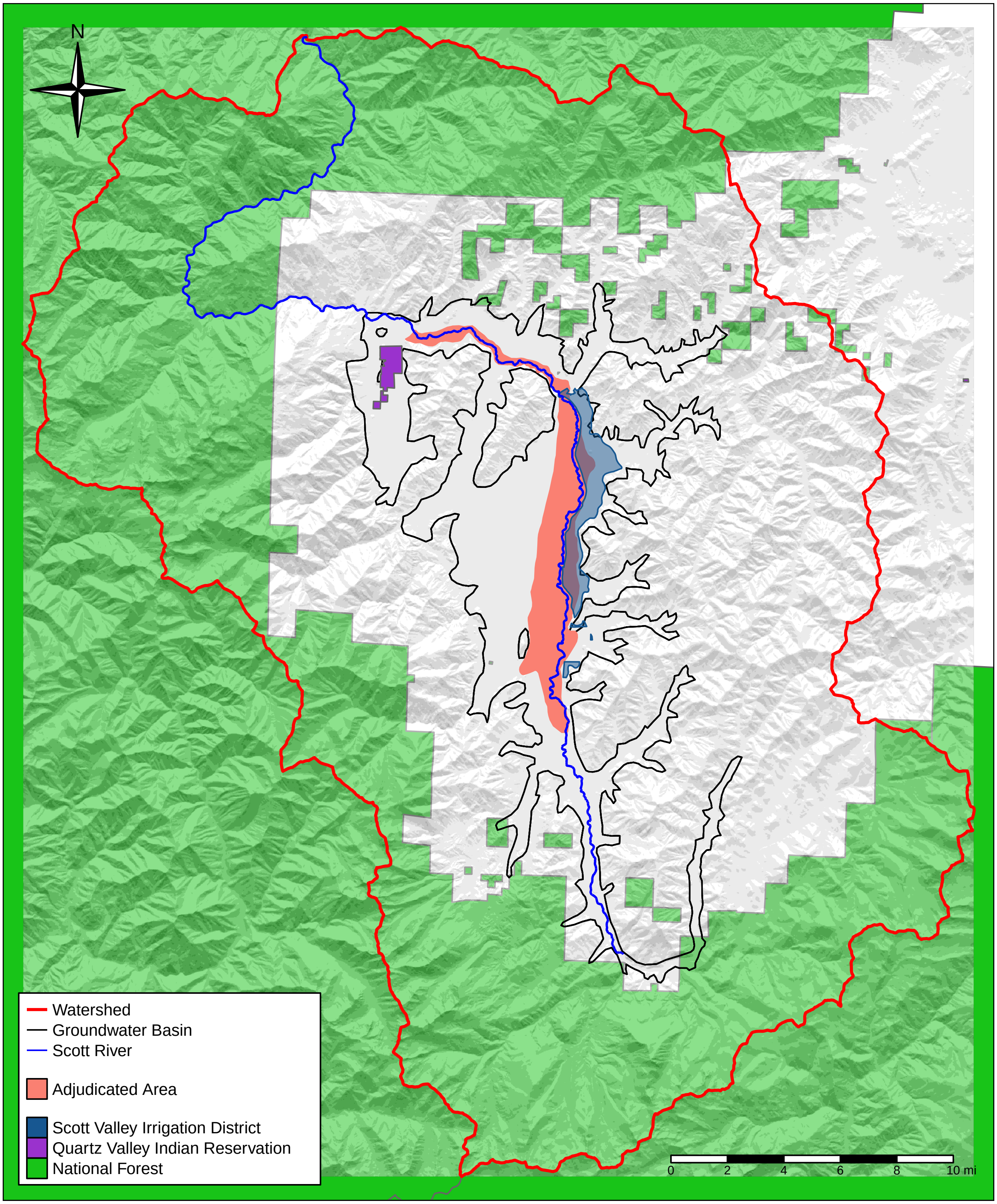


Figure 1.1: Jurisdictional areas within Scott Valley.

River (Scott) and Shasta River (Shasta) watersheds did not receive receive heavier than normal precipitation as did many other parts of the state. The Klamath River watershed was not included in this order and is still subject to the 2021 drought proclamation and emergency provisions.

On May 23, 2023, the Karuk Tribe of California, Environmental Law Foundation, Pacific Coast Federation of Fishermen's Associations, and Institute for Fisheries Resources submitted a petition for rulemaking to the State Water Board requesting a permanent regulation establishing minimum flows in the Scott. After an August 15, 2023 hearing on the petition, the State Water Board directed Division of Water Rights staff to:

- Move forward with an emergency regulation.
- Identify the scientific work needed to pursue long-term flows in the Scott River and Shasta River watersheds, and update the Board on that work.

It is unknown at this time the impacts curtailment of surface water diversions had on the underlying aquifer and impacts to rural residential and groundwater dependent ecosystem (GDE) water use are still being evaluated.

Scott Valley has two major geologic components, the alluvial deposits in the valley and the underlying bedrock, which also forms the surrounding mountains.The Basin boundary generally corresponds to the area covered by valley alluvium, bounded by the contact between the alluvium and older bedrock. The complex geology of Scott Valley has previously been simplified by grouping geologic units into four main categories: Quaternary deposits, granitic bedrock, mafic and ultramafic bedrock, and sedimentary bedrock (NCRWQCB 2005) . Generally, Quaternary deposits are composed of unconsolidated gravel sand and soils and make up the low gradient valley floor, extending up some tributary valleys. The granitic bedrock is in the mountains to the west of the Valley, ranging in composition from granite to granodiorite (NCRWQCB 2005; Mack 1958). Mafic and ultramafic bedrock is largely altered to serpentine and is found in the Marble Mountains in the northeast part of the Watershed and the Scott Mountains in the southeast part of the Watershed. Mafic and ultramafic bedrock also form a discontinuous band, extending from the southeast to northeast regions of the Watershed.

Folding, faulting, and shearing have caused deformation which has, in the last 1–2 million years, caused subsidence of the valley floor and uplift of the mountains (NCRWQCB 2005). In the Quaternary and late Tertiary, faulting resulted in a depression in the middle portion of Scott Valley, which lies several hundred feet lower than the bedrock in the northern part of the valley. Streams have deposited sediment throughout this area, resulting in the alluvial fill that comprises the main water bearing units today. The Basin underlying the alluvial floodplain is the primary groundwater feature in the area. Valley alluvium is mostly Recent in age with a few isolated Pleistocene sections along the edges of the Valley. As defined by DWR (2004), the Basin is 28 mi (45km) in length, 0.5 to 4 mi (0.8 to 6 km) in width and covers a surface area of 100 sq mi (259 sq km). The predominant water-bearing units in Scott Valley are Quaternary stream channel, floodplain, and alluvial fan deposits (DWR 2004). The combined thickness of the water-bearing units is somewhat irregular, with the greatest thicknesses (estimated at 200 feet in Tolley, Foglia, and Harter 2019), located in central-western region of the Basin, and thinning out towards the Basin boundary.

1.3.1 Climate

Scott Valley has a Mediterranean climate with distinctive seasons of cool, wet winters and warm, dry summers. The orographic effect of the mountains to the west and south of the Valley creates a rain-shadow in eastern areas of the Valley. The higher elevation areas to the west and south of the Valley historically receive greater annual precipitation than the east side of the Valley. At elevations below 4,000 ft (1219 m), precipitation mostly occurs as rainfall, as is the case on the valley floor. Precipitation accumulates as snow in the surrounding mountains, with a rain-snow transition zone between 4,000 and 5,000 ft (1219 and 1524 m) (McInnis and Williams 2012).

The long-term historical precipitation record indicates that recent average precipitation and snowfall are lower than levels recorded in the middle of the 20th century. Over the past 15 years, the 10-year rolling average precipitation has been consistently below the long-term average of 20.9 inches and has shown a decreasing trend. Additionally, average snow depth at snow measurement stations near the western boundary of the Watershed has gradually decreased over time. Although, the snow depths have remained relatively stable at three stations near the southern boundary of the Watershed. There has also been a decrease in the percentage of precipitation falling as snow on a regional scale over the past 70 years, as noted by Lynn et. al (2020). As shown in Figure 1.3, precipitation in WY 2023 was close to the long-term average.

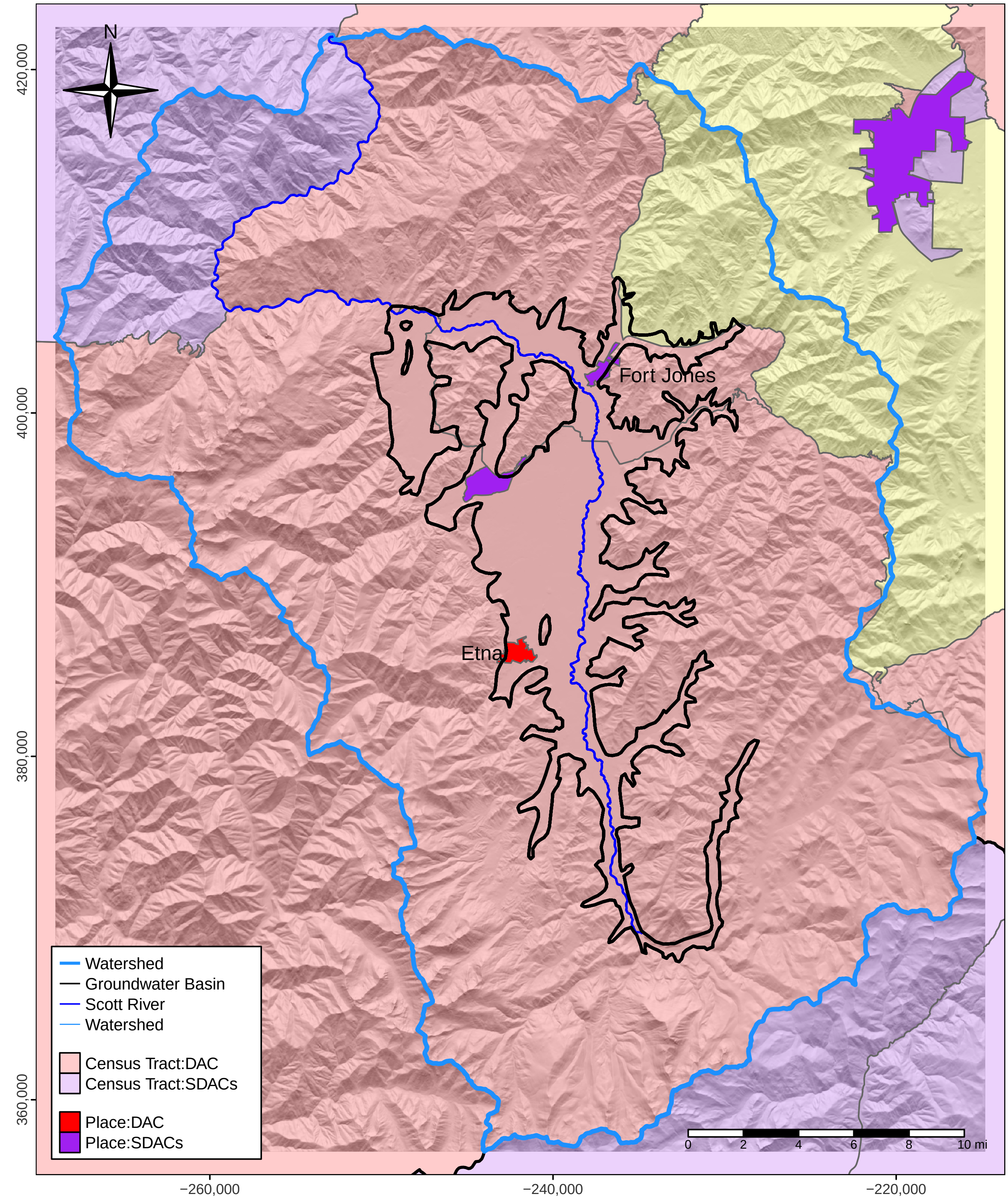


Figure 1.2: Based on the 2016 U.S. Census, place and tract boundaries of Disadvantaged Communities (DACs: $42,737 <= MHI < $56,982) and Severely Disadvantaged Communities (SDACs: MHI < $42,737) in the Scott Valley watershed, using data from the DWR DAC Mapping Tool (DWR 2016b).

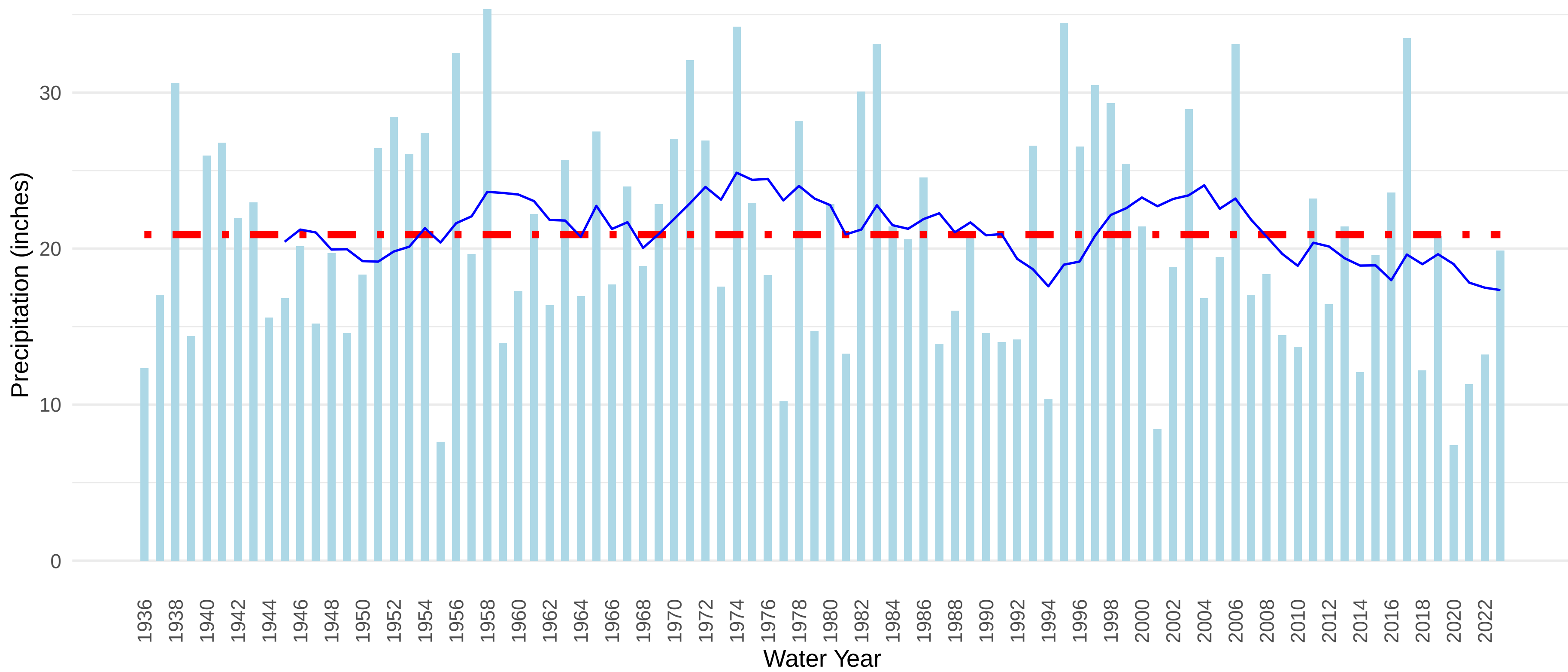


Figure 1.3: Fort Jones annual precipitation, water year 1936 to 2023, according to CDEC data. The long-term mean is shown as a red dashed line, and the ten year rolling mean is the blue trendline.

Chapter 2

Groundwater Basin Conditions

2.1 Groundwater Elevations

This section describes the change in groundwater elevations in WY 2023 and general observations of groundwater level declines or increases in WY 2023. This summary includes quantified changes observed during the water year, hydrographs and contour maps of groundwater elevation. The contour maps and hydrographs below include available data that has undergone quality assurance and quality control processes. As such, coverage is limited and only part of the Basin is represented. Additional hydrographs can be found in **Appendix A**.

The groundwater level network consists of twenty-nine representative monitoring point (RMP) wells in the Basin. The distribution of monitoring wells is shown in Figure 2.1. However eleven wells were removed from the RMP network as requested by the land owner (Table 2.1).

The RMPs and associated minimum thresholds (MTs) and measurable objectives (MOs) are shown in Table 2.1. The minimum MO is set as the 75th percentile of the fall measurement range - i.e., the measurement at which 25 percent of groundwater elevation measurements fall below it. The primary trigger (PT) is set at the historic low groundwater elevation measurement. The MT is set at the historic low plus a buffer. The buffer is either 10 percent of the historic low, or 10 feet, whichever is smaller. The GSP determined that no interim milestones are necessary for this sustainability indicator.

The status of water levels measured at RMPs in comparison to their SMCs is shown in Figure 2.2. Of the 14 RMPs monitored in fall 2023, none were below the established MTs, one was above the PT and below the MO, and the remaining 13 were above the established MOs. Fifteen of the twenty-nine RMPs did not have fall 2023 measurements. Three of these fifteen RMPs were not monitored due to access difficulties. Twelve RMPs were not monitored due to the landowner requesting that their well be removed from the RMP network. If issues with well access or measurements continue, appropriate steps will be taken to determine if wells with poor access should be removed from the network, or if future replacement wells are needed. An additional option the GSA is considering is the installation of a sensor for continuous measurements at wells. Updates on the status of the water level monitoring network will be provided in following Annual Reports.

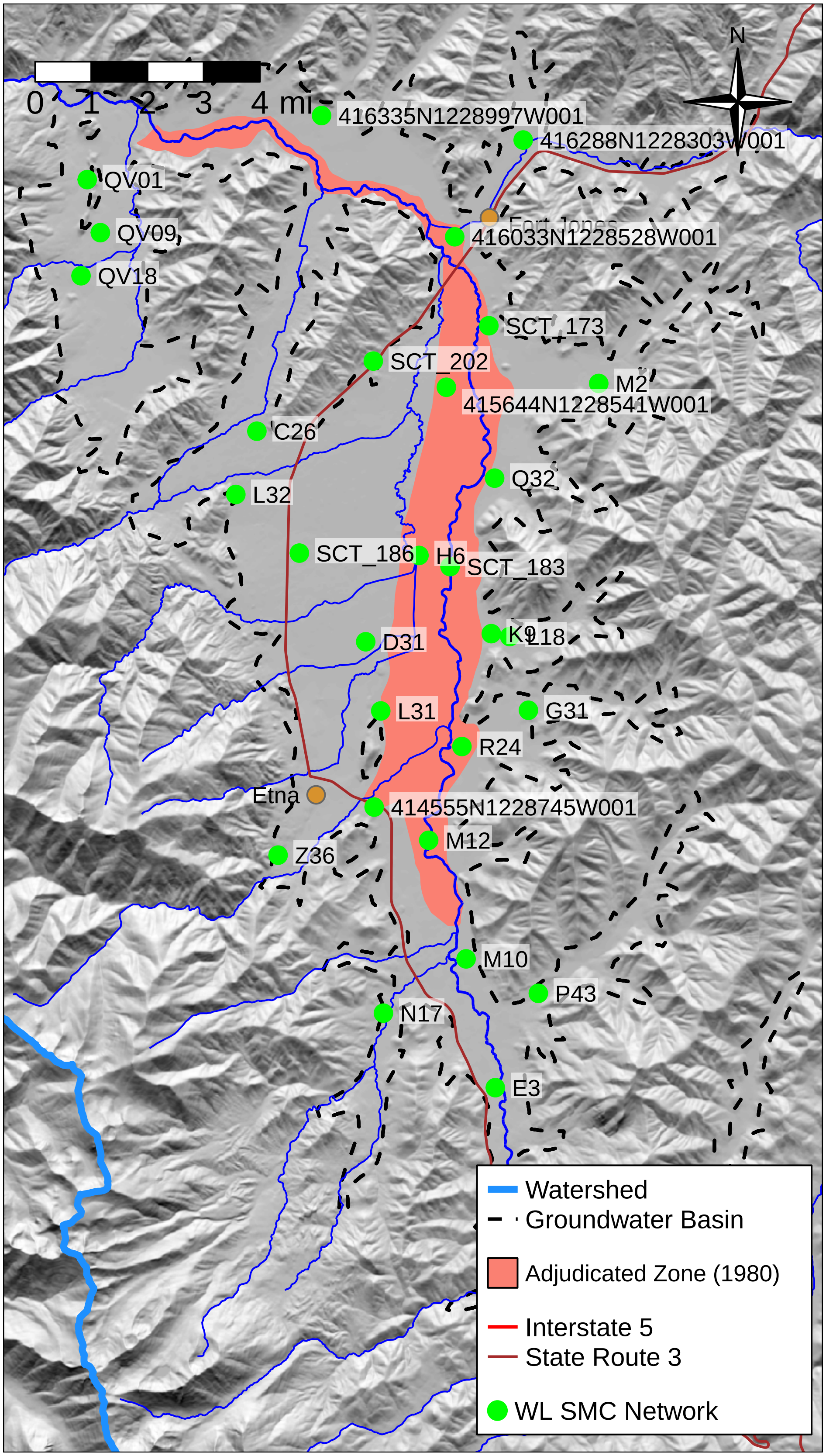


Figure 2.1: RMP Wells in the Water Level Monitoring Network.

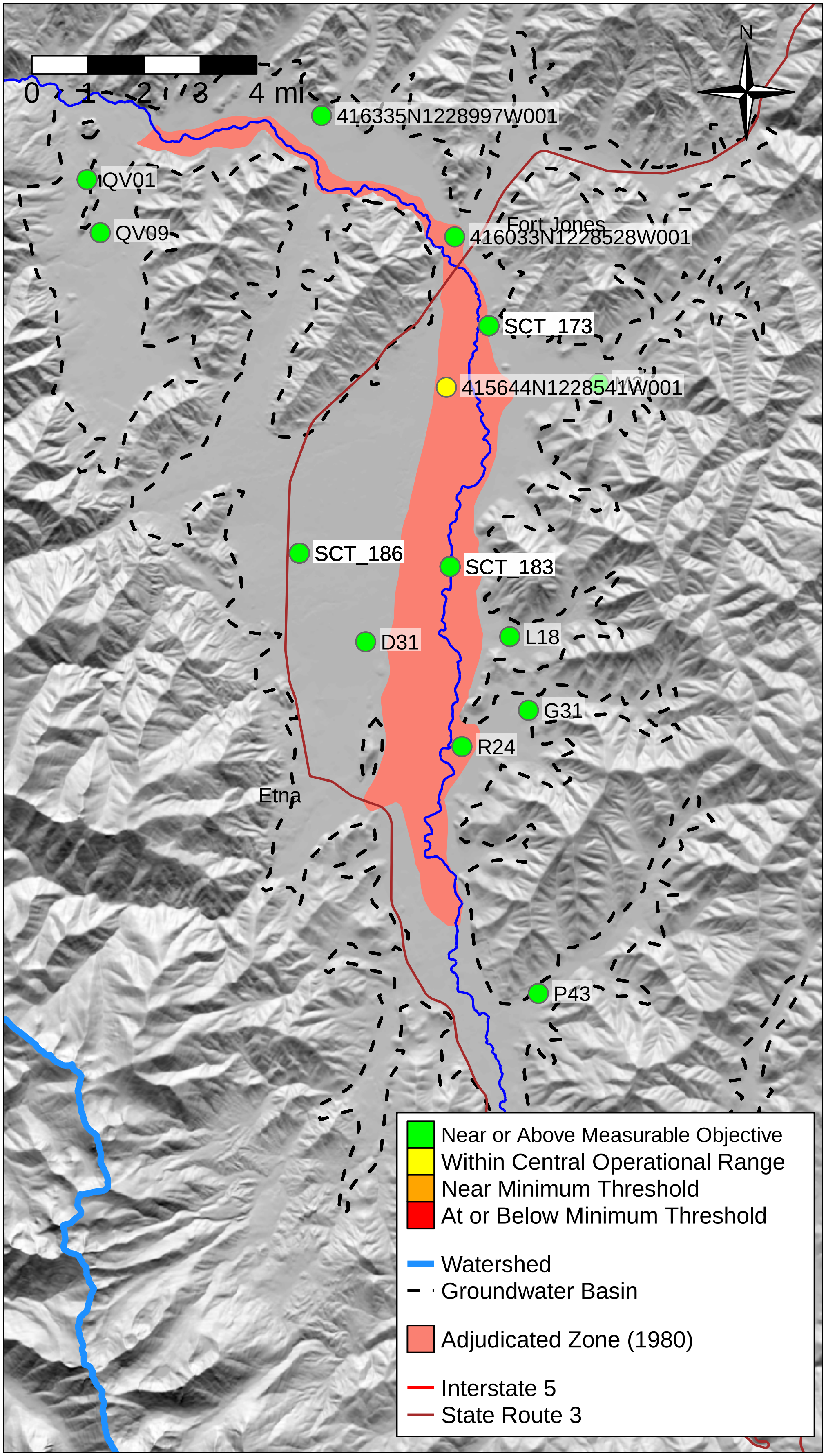


Figure 2.2: Status of the groundwater level RMP network for Fall 2023.

Table 2.1: Comparison of Fall 2023 groundwater measurements to SMC values. Measurements represent depth to groundwater and fall low is defined as the maximum depth to groundwater during the period September 15 - October 31, 2023.

Well Code	**Well Name**	**MT (ft bgs)**	**PT (ft bgs)**	**MO (ft bgs)**	**2023 Fall Low (ft bgs)**	**Status**
414555N1228745W001(1)	42N09W27N002M	25.9	23.5	18.2	NA	No measurement
415644N1228541W001	43N09W23F001M	14.5	13.2	8.5	10.5	Above PT, below MO
416033N1228528W001	43N09W02P002M	29.7	27.0	20.1	17.7	Above MO
416288N1228303W001(2)	44N09W25R001M	24.4	22.2	17.8	NA	No measurement
416335N1228997W001	44N09W29J001M	49.2	44.7	40.6	39.3	Above MO
C26*	C26*	22.2	20.2	14.3	NA	No measurement
E3*	E3*	11.4	10.3	7.4	NA	No measurement
H6*	H6*	10.7	9.8	6.9	NA	No measurement
K9*	K9*	45.3	41.2	37.1	NA	No measurement
L31*	L31*	26.0	23.6	19.6	NA	No measurement
L32*	L32*	68.4	62.2	48.7	NA	No measurement
M10*	M10*	8.2	7.4	6.5	NA	No measurement
M12*	M12*	18.7	17.0	16.6	NA	No measurement
M2	M2	83.3	75.8	67.4	65	Above MO
N17*	N17*	40.4	36.7	24.2	NA	No measurement
P43	P43	21.3	19.4	14.1	11.2	Above MO
Q32(1)	Q32(1)	14.4	13.1	9.7	NA	No measurement
R24	R24	17.8	16.2	13.8	11.9	Above MO
SCT_173	SCT_173	18.5	16.9	16.3	14.3	Above MO
SCT_186	SCT_186	38.5	35.0	34.5	29	Above MO
QV09	QV09	45.1	41.0	39.8	30.5	Above MO
D31	D31	11.6	10.5	7.8	6.2	Above MO
G31	G31	89.4	81.3	77.0	70.7	Above MO
L18	L18	78.6	71.4	67.3	63.2	Above MO
Z36*	Z36*	50.1	45.5	33.9	NA	No measurement
SCT_202*	SCT_202*	150.0	140.0	140.0	NA	No measurement
QV18(1)	QV18(1)	74.9	68.1	65.4	NA	No measurement
QV01	QV01	17.8	16.2	14.7	12.4	Above MO
SCT_183	SCT_183	20.9	19.0	18.7	14	Above MO

Note:
(*) Wells removed from the RMP network as requested by the land owner.
(1) Fall lows were not available at 414555N1228745W001, Q32 and QV18 due to access difficulty.
(2) 416288N1228303W001 will be removed from the RMP network as requested by the land owner.

Figure 2.3 shows groundwater elevation timeseries for select wells in each hydrogeologic zone to illustrate the historical record of these wells. **Appendix A** shows hydrographs of the SMC network, showing measurable objectives, management triggers, and minimum thresholds along with hydrographs of other wells in the Basin that are not included in the SMC network.

Figure 2.4 and Figure 2.5 show groundwater elevation contours for the seasonal high and low groundwater conditions, typically observed in March and October, respectively. Both Figure 2.4 and Figure 2.5 show characteristically lower groundwater elevations in the northeast portion of the basin (near Fort Jones) that are increased towards the Basin's western, southern, and southeastern boundaries. Regions of highest elevation are the in the northwest arm of the Basin near Quartz Valley and the Basin's southern valley at the confluence of French Creek and the Scott River. Figure 2.5 shows groundwater conditions in Fall 2023, marking conditions at the end of WY 2023.

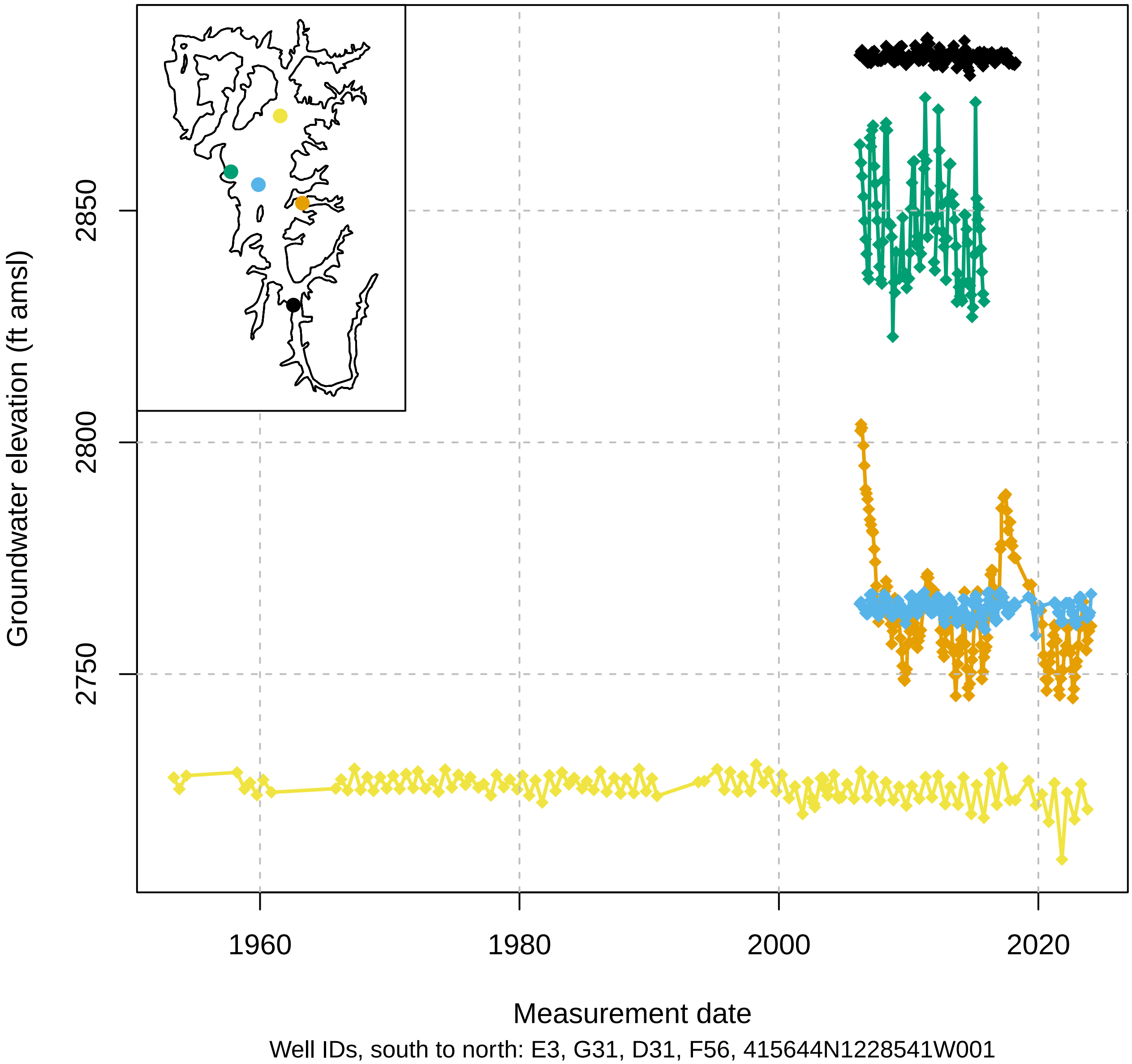


Figure 2.3: Select long-term groundwater elevation measurements in five wells, one located in each hydrogeologic zone of the Scott Valley Groundwater Basin.

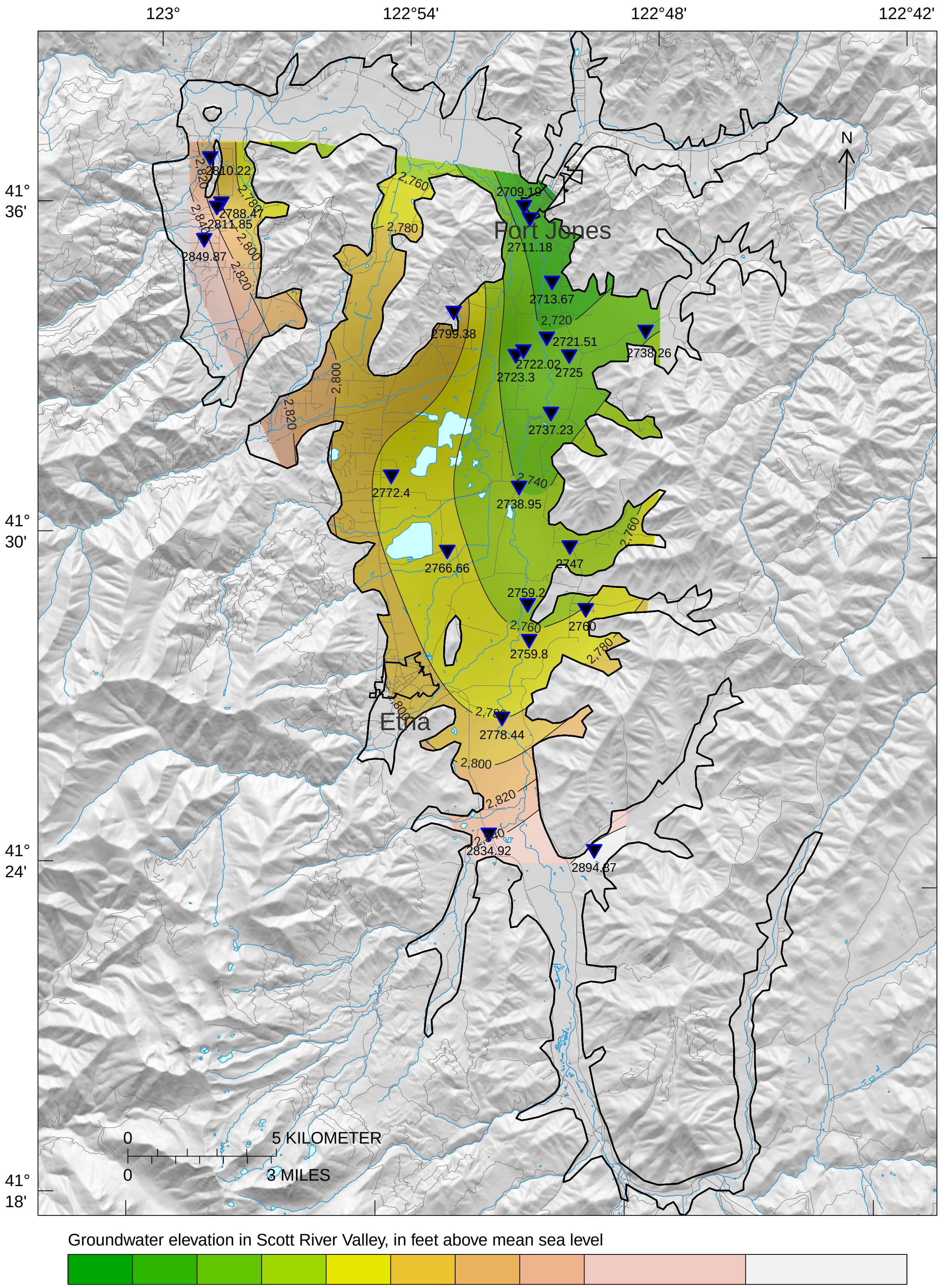


Figure 2.4: Scott Valley Groundwater Elevations, Spring 2023.

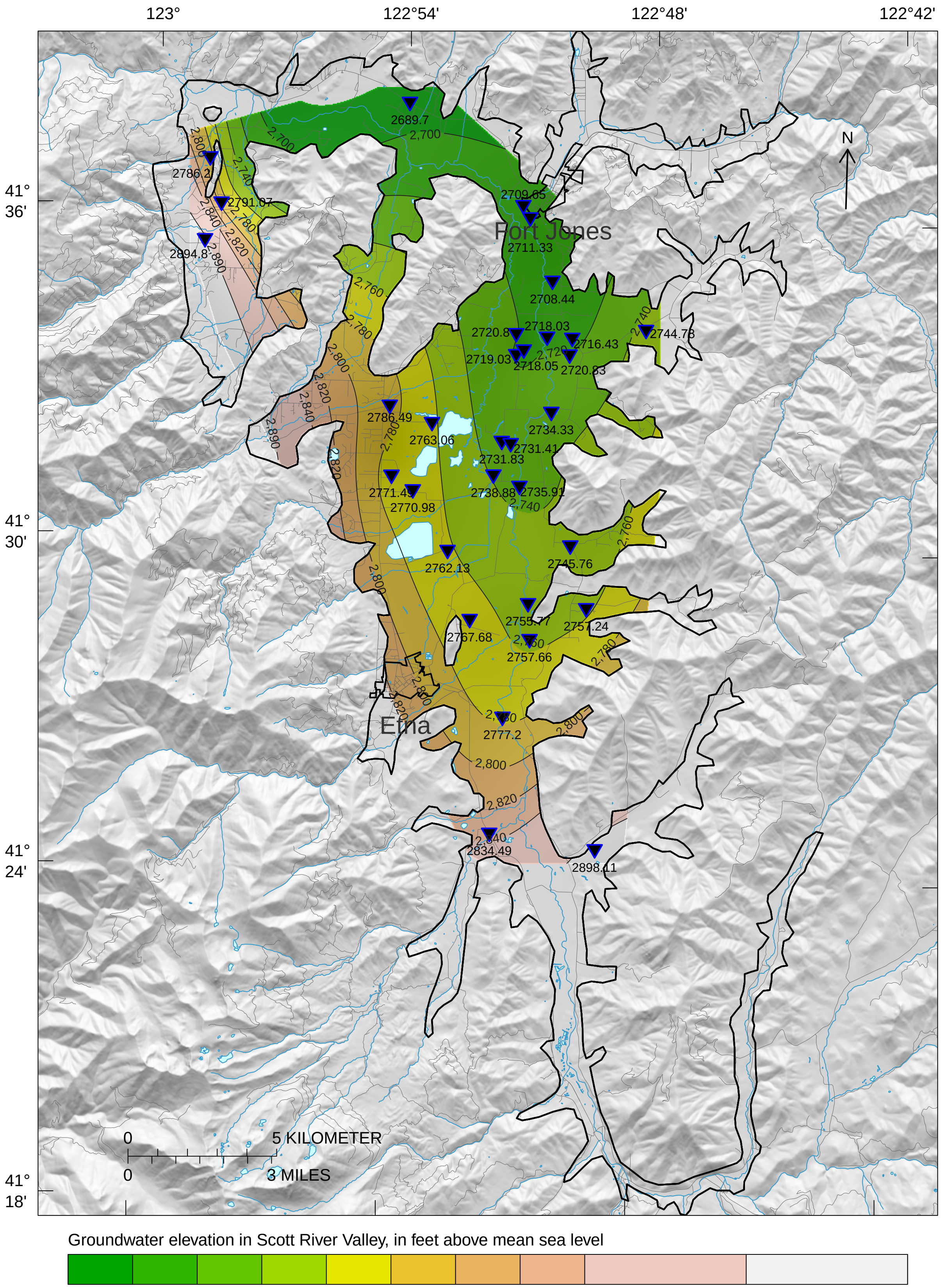


Figure 2.5: Scott Valley Groundwater Elevations, Fall 2023.

2.2 Groundwater Extractions

This section summarizes monthly groundwater extractions for water year 2023 with the data available and defines the method of measurement by water use sector. The best method available to estimate groundwater extraction in Scott Valley is through estimation with the Scott Valley Intergrated Hydrologic Model (SVIHM). Values are based on the SVIHM with a 30% reduction in groundwater pumping due to local cooperative solutions (LCS) developed under the State Water Resources Control Board (SWRCB's) Drought Emergency Order for Scott Valley. The general location and volume of groundwater extraction is provided in Figure 2.6 (Foglia et al. 2013). As shown, the highest levels of pumping occur in the northern portion of the Basin near Fort Jones and also along the Scott River beginning near the confluence of French Creek.

Groundwater extraction, as estimated by SVIHM for WY 2023, is 36,000 acre-feet (AF). There is an additional 1,000 AF of groundwater extraction based on population data and municipal water use estimates[1].

2.3 Surface Water Supply Used for Groundwater Recharge or In-Lieu Use

SGMA requires that the GSP annual report tabulate "Surface water supply used or available for use" (CCR §356.2 [b] [3]). For WY 2023 surface water supply was estimated by the SVIHM as 26,000 AF. A drought emergency curtailment order went into effect for the growing season of 2023, but this curtailment is not considered to have significantly reduced the amount of surface water use compared to the full allocation of previous years.

Surface water supply was used for groundwater recharge in WY 2023, with 816 AF diverted for recharge. As discussed in the later section covering projects and management actions, flows in the Scott River met or surpassed the threshold in the temporary permit, thereby enabling meaningful groundwater recharge. The impact of the groundwater recharge is currently being evaluated with SVIHM.

2.4 Total Water Use

This section summarizes groundwater use and surface water available for use for the reporting period. Total water use is estimated by summing surface water supply data and estimated groundwater extraction. For WY 2023 total water use is estimated to be 63,000 AF.

2.5 Change in Groundwater Storage

The change in groundwater storage for the Basin was estimated based on the SVIHM. The change in groundwater storage for WY 2023 is estimated as -1,900 AF. For SMCs, groundwater levels are

[1] Estimate assumes 1 AF per 3.5 persons/year and population of 3,520 people (population based on estimate in 2019 Basin Prioritization).

used a proxy for groundwater storage. The MT, MO, and IM are identical to those defined for groundwater levels.

Figure 2.7 depicts water year type and annual change in groundwater storage, cumulative change in groundwater storage for the Basin based on historical data to the extent available, including from January 1, 2015 to the current reporting year. Figure 2.8 shows the difference in groundwater level between fall low measurements in WY 2022 and WY2023 and represents where groundwater storage changes are occurring.

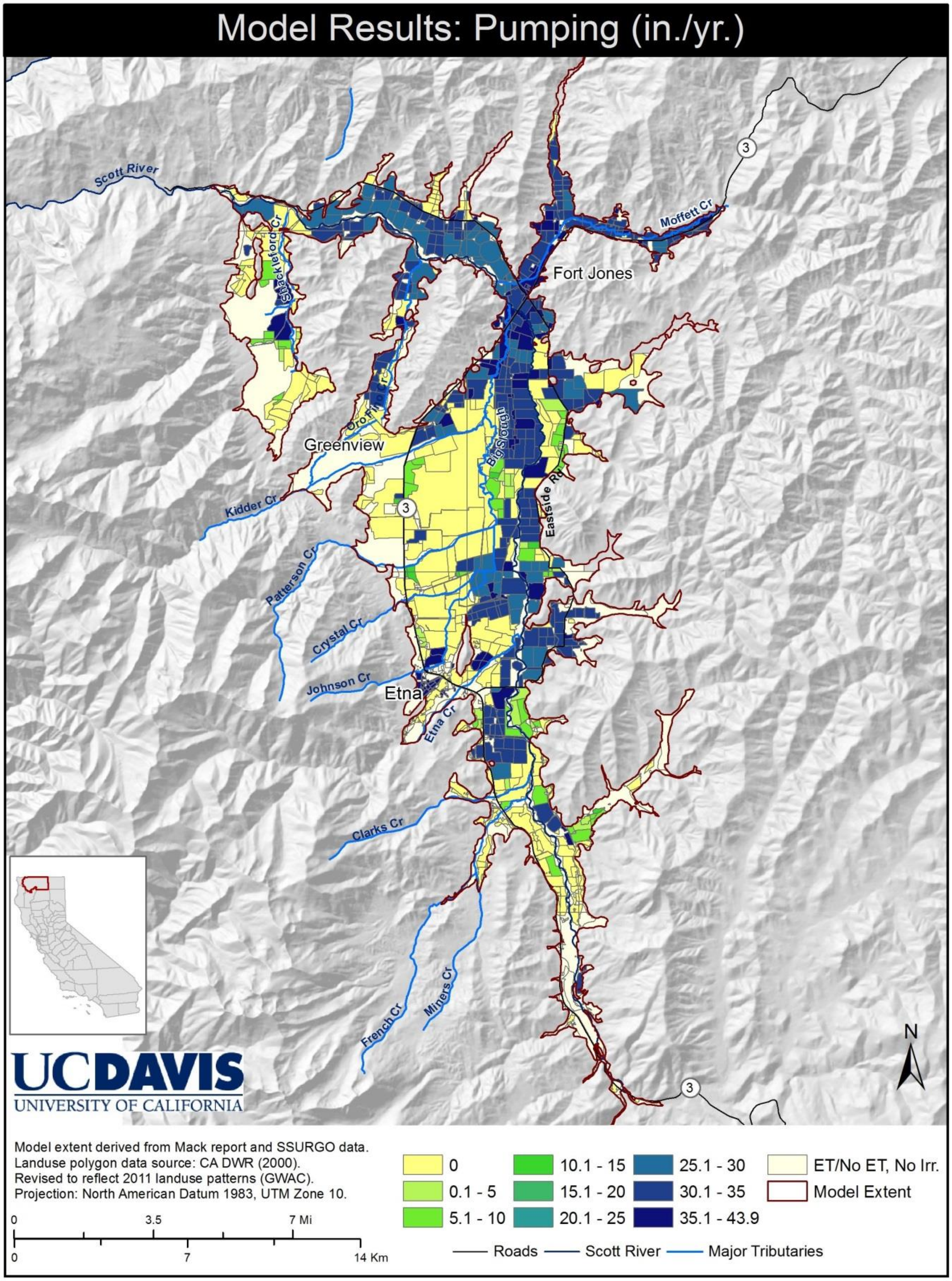


Figure 2.6: Map of land use polygon specific average annual pumping rates (inches/year) between October 1990 and September 2011. This map provides an approximate spatial distribution of average groundwater extraction estimates that is still applicable to the current SVIHM.

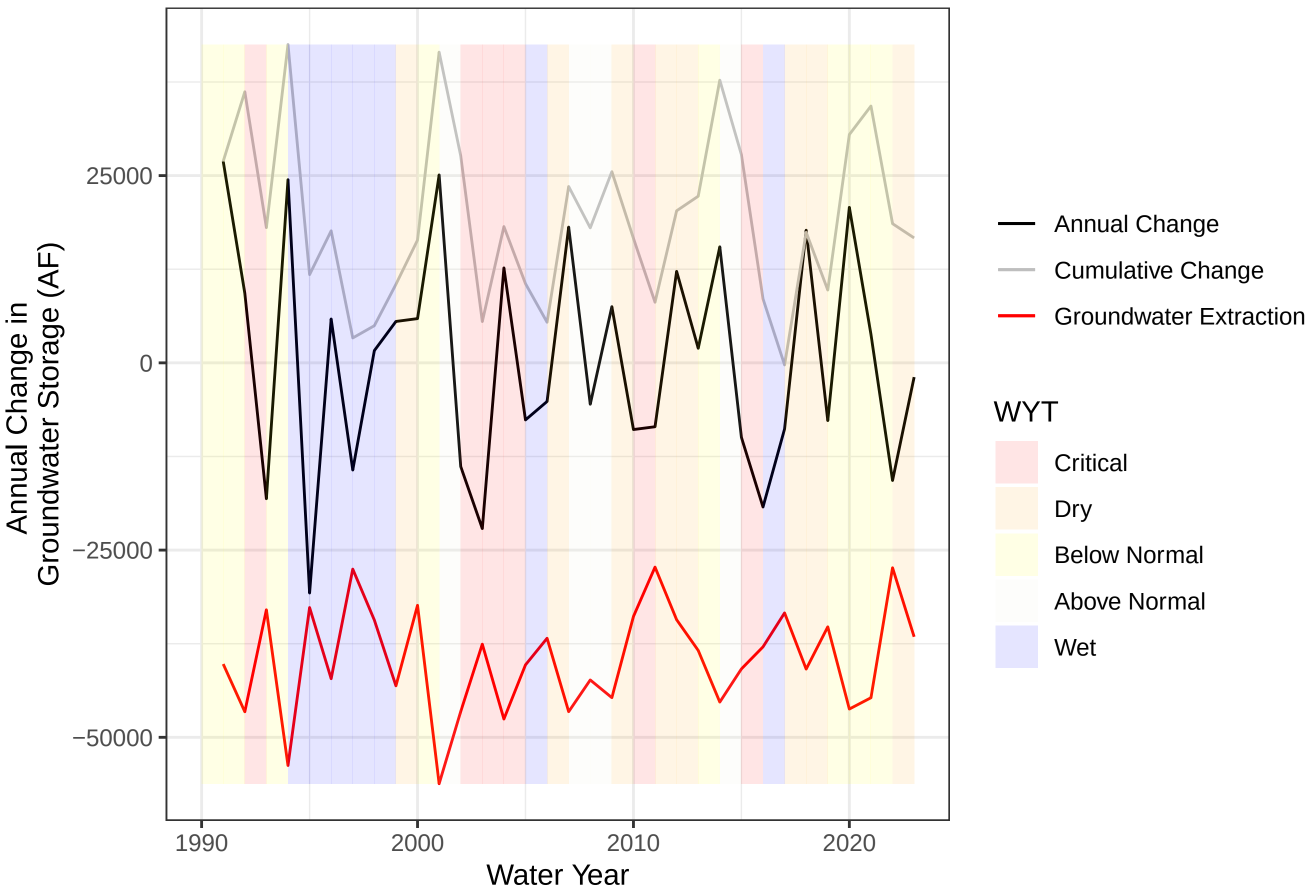


Figure 2.7: Groundwater storage change based on difference in fall groundwater contours between years as estimated by the SVIHM.

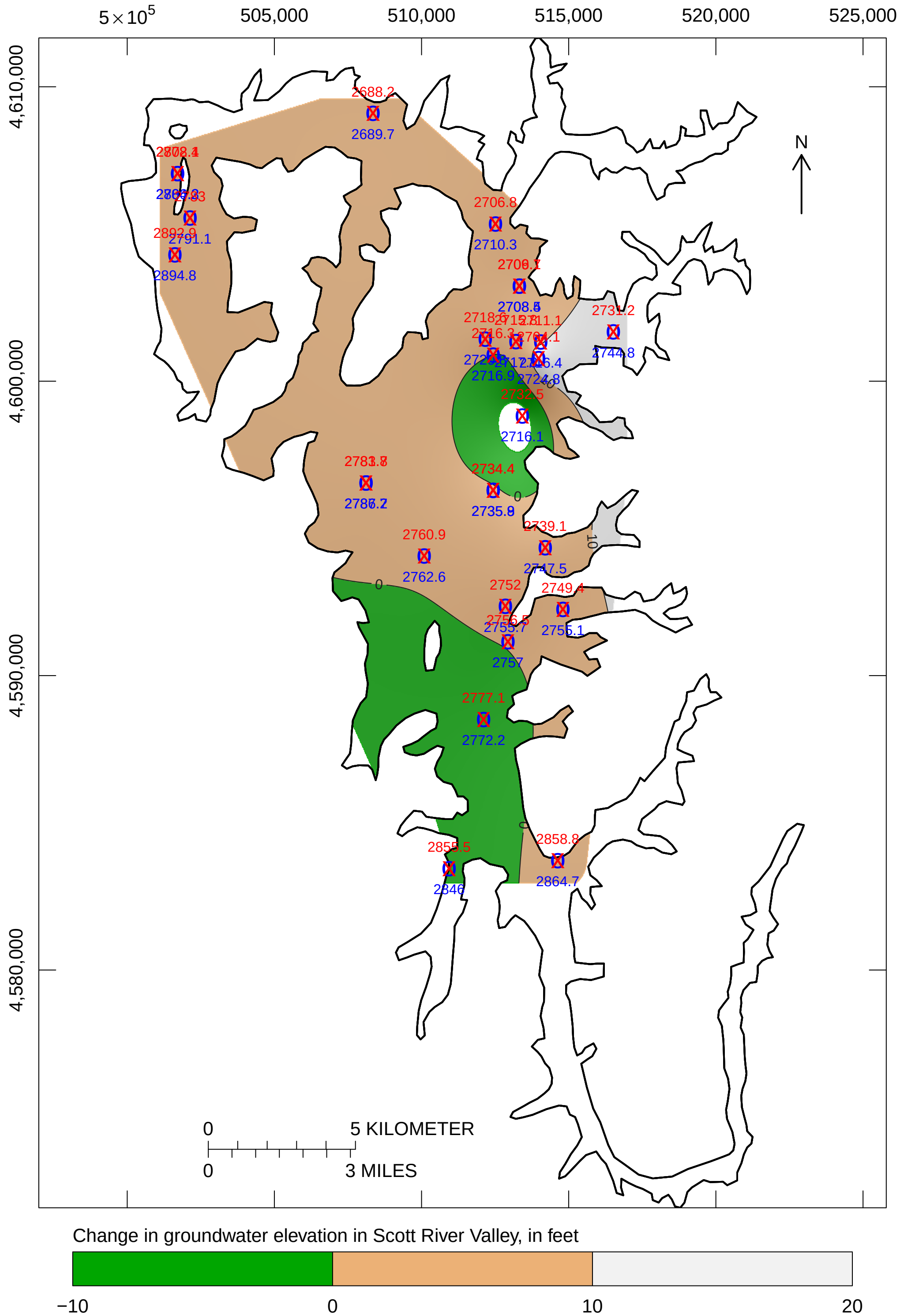


Figure 2.8: Groundwater elevation change between water years 2022 and 2023. Elevations represent the fall low water level. WY 2023 is represented with blue text and WY 2022 is red.

2.6 Seawater Intrusion

This sustainability indicator is not applicable in this Basin.

2.7 Groundwater Quality

This section compares groundwater quality monitoring to the GSP's sustainable management criteria and provides a summary of ongoing water quality coordination activities conducted by the GSA. Groundwater quality data for the evaluation is obtained from the Groundwater Ambient Monitoring and Assessment (GAMA) Groundwater Information System.

Existing wells used for monitoring groundwater quality in the Basin include public water supply wells and monitoring wells, which are shown in Figure 2.9. Initially, the groundwater quality monitoring network is based on wells that are regularly sampled as part of existing monitoring programs for the constituents for which SMCs are set: nitrate and specific conductivity. Efforts are currently underway to identify additional wells for inclusion in the water quality network.

The maximum concentration of nitrate as N and specific conductivity sampled from the groundwater quality RMP network in WY 2023 is shown in Table 2.2. Data sampled for constituents without SMCs but monitored by the GSA is shown in Table 2.3. The results are compared to the MT and MO for each of the 3 groundwater quality RMPs in the network. The MT for nitrate as N is 10 mg/L (the Title 22 Primary Maximum Contaminant Level, or MCL), and the MT for specific conductivity is 900 micromhos/cm (Title 22 Recommended Secondary Maximum Contaminant Level, or SMCL). The MO is achieved when more than 90% of wells monitored for water quality maintain their range of water quality measurements measured during 1990 to 2020. Interim milestones are set equivalent to the MO of each RMP well.

One RMP had water quality data for WY 2023. Well CA4710003_003_003, located at the southwest of Fort Jones, had a nitrate measurement on April 3, 2023 of 2.16 mg/L. This concentration is below the MT of 10 mg/L and below the MO (Table 2.2).

To ensure that current water quality data is available for future annual reports, efforts will be made to contact the monitoring entities of the wells with missing measurements to facilitate continued data collection. If this communication is not successful, a process to plan for the continued collection of representative water quality data will be developed. Options may include planning alternate monitoring entities for the wells, or inclusion of different wells in the network

As per the GSP, SMC are not defined for benzene; however, data is provided and evaluated to track potential mobilization, or exceedances of the primary MCL (1 μg/L) in Table 4. It is noted that the well series beginning with T0609300118 is at a Leaking Underground Storage Tank (LUST) clean-up site and is expected to have high concentrations until cleanup is complete.

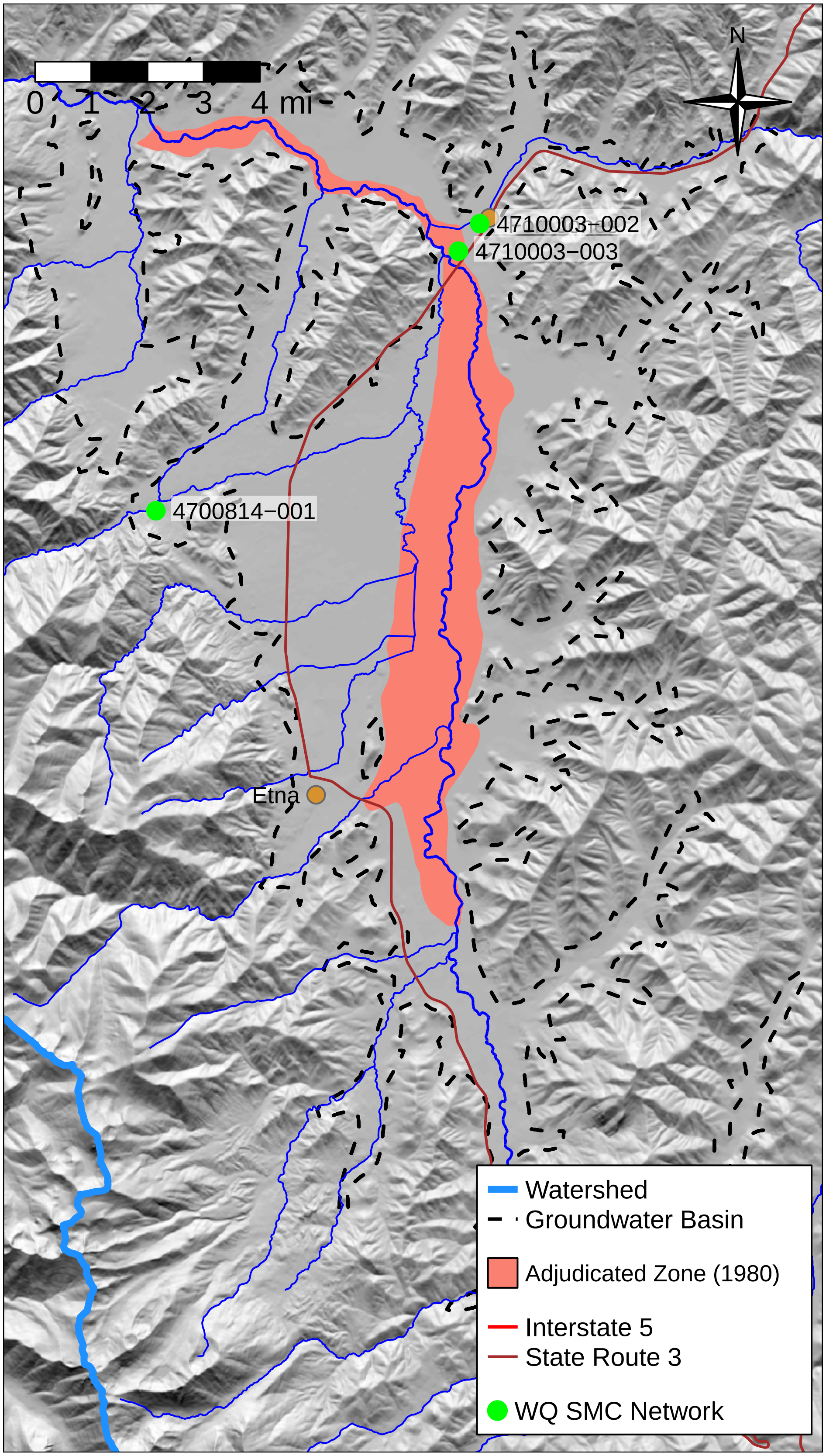


Figure 2.9: RMP wells in the Water Quality Monitoring Network.

Table 2.2: Water quality data from WY2023 in the RMP network (Nitrate MT is 10 mg/L; Specific Conductance MT is 900 micromhos/cm).

Well ID	GSP ID	Nitrate MO (mg/L)	Nitrate WY 2023 Max Measurement (mg/L)	Nitrate Status	SC MO (micromhos/cm)	SC WY 2023 Max Measurement (micromhos/cm)	SC Status
CA4700814_001_001	4700814-001	1.02	NA	No measurement	NA	NA	No measurement
CA4710003_002_002	4710003-002	4.28	NA	No measurement	526	NA	No measurement
CA4710003_003_003	4710003-003	2.83	2.16	Below MT	448	NA	No measurement

Note:
(*) MOs with NAs indicate that the analyte is not historically monitored at the well. Measurements equal to NA indicate that well was not monitored for the analyte in WY2023.

Table 2.3: Water quality data from WY2023 for benzene.

Well ID	Analyte	Date	Result	Units	MCL
T0609300022-MW-1	Benzene	2022-12-06	3.4	ug/L	1
T0609300022-MW-1	Benzene	2023-04-18	2.9	ug/L	1
T0609300022-MW-2	Benzene	2022-12-06	1200	ug/L	1
T0609300022-MW-2	Benzene	2023-04-18	350	ug/L	1
T0609300022-MW-3	Benzene	2022-12-06	1.8	ug/L	1
T0609300022-MW-3	Benzene	2023-04-18	<0.22	ug/L	1
T0609300022-MW-4A	Benzene	2022-12-06	<0.083	ug/L	1
T0609300022-MW-4A	Benzene	2023-04-18	<0.083	ug/L	1
T0609300022-MW-5	Benzene	2022-12-06	770	ug/L	1
T0609300022-MW-5	Benzene	2023-04-18	390	ug/L	1
T0609300022-MW-6	Benzene	2022-12-06	1100	ug/L	1
T0609300022-MW-6	Benzene	2023-04-18	1.4	ug/L	1
T0609300022-MW-7	Benzene	2022-12-06	37	ug/L	1

Table 2.3: Water quality data from WY2023 for benzene. *(continued)*

Well ID	**Analyte**	**Date**	**Result**	**Units**	**MCL**
T0609300022-MW-7	Benzene	2023-04-18	<0.083	ug/L	1
T0609300022-MW-8	Benzene	2022-12-06	34	ug/L	1
T0609300022-MW-8	Benzene	2023-04-18	35	ug/L	1
T0609300118-MW-4S	Benzene	2022-12-15	<0.083	ug/L	1
T0609300118-MW-5S	Benzene	2022-12-15	<0.083	ug/L	1
T0609300118-MW-5S	Benzene	2023-03-23	<0.083	ug/L	1
T0609300118-MW-5S	Benzene	2023-06-20	<0.083	ug/L	1
T0609300118-MW-6S	Benzene	2022-12-15	<0.42	ug/L	1
T0609300118-MW-6S	Benzene	2023-03-23	<0.42	ug/L	1
T0609300118-MW-6S	Benzene	2023-06-20	2.2	ug/L	1
T0609300118-MW-7S	Benzene	2022-12-15	9.2	ug/L	1
T0609300118-MW-7S	Benzene	2023-03-23	14	ug/L	1
T0609300118-MW-7S	Benzene	2023-06-20	140	ug/L	1
T0609300118-MW-8AS	Benzene	2022-12-15	<0.083	ug/L	1
T0609300118-MW-9S	Benzene	2022-12-15	1.6	ug/L	1
T0609300118-MW-9S	Benzene	2023-03-23	<0.39	ug/L	1
T0609300118-MW-9S	Benzene	2023-06-20	<0.083	ug/L	1

2.8 Subsidence

To monitor subsidence, the Basin relies on data provided by DWR based on Interferometric Synthetic Aperture Radar (InSAR), a satellite-based remote sensing technique that measures vertical ground surface displacement changes at high degrees of measurement resolution and spatial detail. This data is made available through the DWR SGMA Data Viewer [2] and shows overall subsidence less than 0.1 feet for the entire Basin during the water year 2023 (Figure 2.10). This avoids the occurrence of undesirable results as defined by the GSP.

2.9 Interconnected Surface Water

Interconnected surface waters in the Basin are not determined for WY 2023 because the updated method using the SVIHM will be ready following additional model calibration and updates in 2024. In future water years the SVIHM will be used to determine the location, timing and rate of interconnected surface waters in the Basin. However at the time of GSP submittal, it was determined that the basin conditions are below the MT and that the basin is experiencing undesirable results. These conditions likely continue in WY2023.

The MT is defined as an average 15% stream depletion reversal caused by groundwater pumping from outside the adjudicated zone in 2042 and thereafter. The next interim milestone will be fulfilled by 2027, where PMAs have been implemented so that the yield average relative stream depletion reversal is at least 5%. The Scott Valley Irrigation District's groundwater recharge project is one of the PMAs that was implemented in WY 2023 to contribute to the 15% stream depletion reversal. The stream depletion reversal achieved through this implementation is being evaluated using SVIHM and, while results are not available for this annual report, they will be completed by summer 2024.

[2] https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#currentconditions

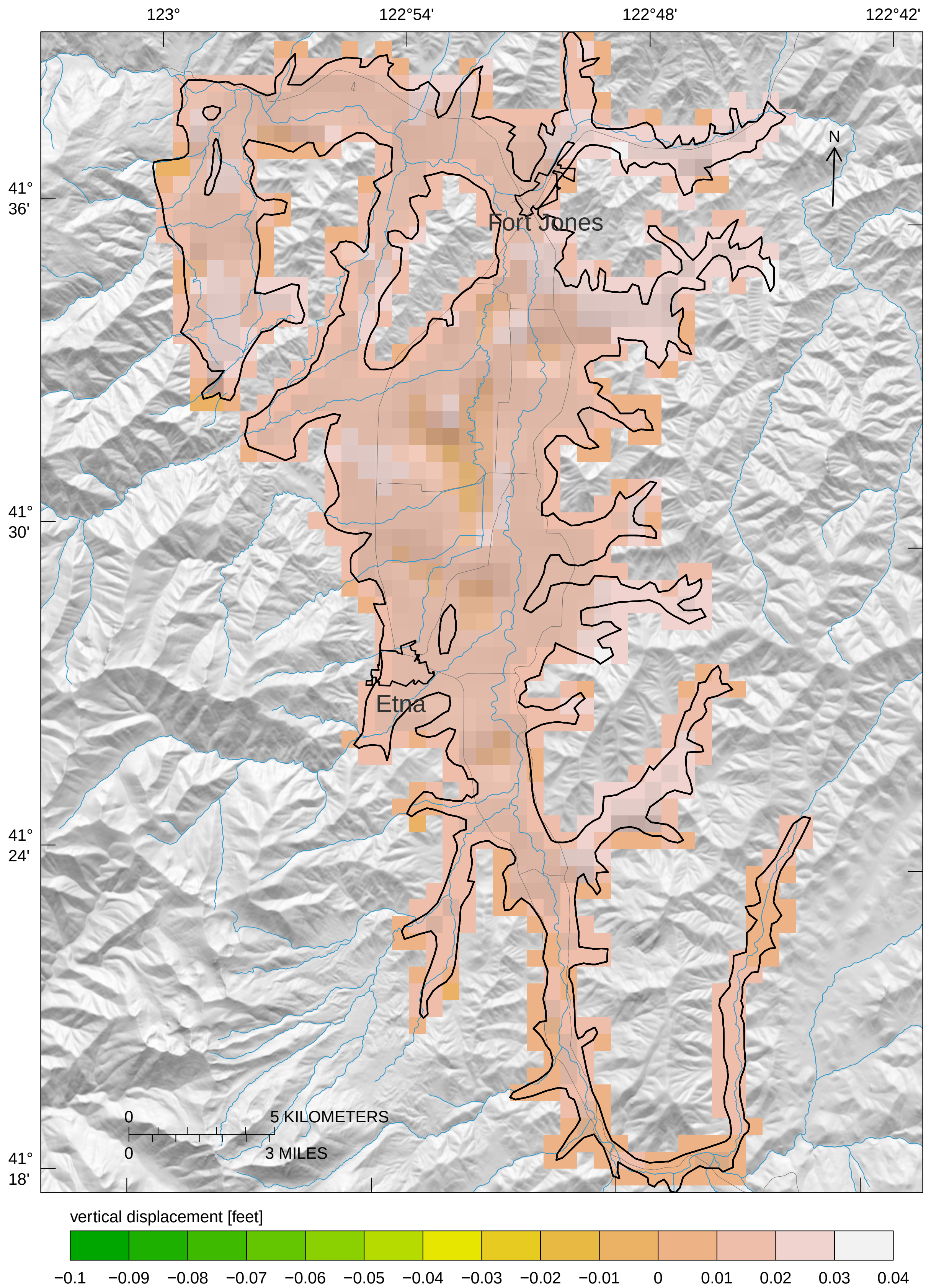


Figure 2.10: InSAR satellite measured total vertical subsidence (feet) in WY 2023. Note that the processed InSAR instrument and GIS conversion error is roughly +/-0.1 feet (https://gis.water.ca.gov/arcgisimg/rest/services/SAR).

Chapter 3

Progress Toward Implementing the Plan

This section provides updates on progress towards implementing the GSP, including implementation of projects and management actions since adoption of the GSP and the most recent annual report. This section also describes projects and management actions that the GSA is coordinating with other agencies, as well as regulatory issues that impact groundwater management or water resources in the Basin.

The GSA continued activities (e.g. RMP data collection) necessary to implement the GSP and put the Basin on a path toward sustainable management and has made progress towards implementation of the project and management actions outlined in the GSP.

3.1 Interim Milestones

Interim Milestones are anticipated to be achieved over the course of GSP implementation in increments of five years, pursuant to the CCR definition “Target values representing measurable groundwater conditions, in increments of five years, set by Agency as part of a Plan” [CCR Title 23, Division 2 §351(q)]. Progress toward achieving Interim Milestones since submitting the GSP are provided in the AR Section “Groundwater Basin Conditions”. Further updates are expected in the first Five Year Assessment for the GSP, with status checks provided in future annual reporting.

3.2 Implementation of Projects and Management Actions, Water Year 2023

The GSA continued activities (e.g. RMP data collection) necessary to implement the GSP and put the Basin on a path toward sustainable management. In late summer 2023, the GSA was awarded a grant from DWR’s *Sustainable Groundwater Management (SGM) SGMA Implementation Program (SGM Implementation Grant Program)*, which includes components to conduct a well inventory, groundwater recharge projects, and upland management. Planning and submittal of the grant application was a significant effort and members of the Advisory Committee met throughout the fall of 2022 to develop the specific scopes for projects included in the grant application.

The progress of specific PMAs is described below:

SVID Recharge Project- Flows were above the minimum flow thresholds set in the temporary permit to divert and use water from the Scott river during the latter part of the January through March recharge period. Diversions for recharge commenced on March 13, 2023 and ended on March 31, 2023. A total of 816 AF was diverted for recharge. Of the total water diverted, 51.7 AF was applied to three fields (totaling 15 acres) for recharge; due to initial dry conditions in the SVID ditch, the majority of water diverted for recharge infiltrated through the ditch. An expansion of this recharge project was conducted in WY 2023, including an enhanced monitoring network and expanded area of fields available for recharge. Additionally, an investigation into recharge opportunities on the westside of Scott Valley was initiated.

Well Drilling Permits - The GSA is continuing to work with the Siskiyou County Environmental Health Department's well permitting staff to develop a new "Well Permitting Guidance Document" that will update the County well permitting policies and comply with the Governors Executive Order (N-7-22, which language specific to well permitting is now under EO N-3-23). The County presented information related to the well permitting process at the Advisory Committee meetings, and input was received and incorporated into the draft process. Information included updated definitions of replacement wells and well deepening projects, clarification on well types, and how impacts to nearby wells will be evaluated.

Data Gaps and Data Collection – Steps were taken to reduce data gaps in the Basin including the installation of continuous groundwater level and surface water monitoring sites to monitor and support the implementation of planned projects and management actions. During the August 2023 Advisory Committee meeting an ad hoc group was formed with members of the public to address data gaps in the Basin. In the fall of 2023 the group met to identify and prioritize the Basin's existing data gaps and provided input on how to fill the gaps. Data gaps discussed by the ad hoc group include the groundwater quality and level monitoring network, tributary flow monitoring as related to interconnected surface water, and the need to identify groundwater dependent ecosystems. Lack of groundwater extraction data was also discussed.

SVIHM Model Update –The streamflow and recharge components of the Scott Valley Precipitation Runoff Modeling System (PRMS) model were updated. The PRMS model was updated with data from local monitoring stations (precipitation, temperature, and snowpack) and was extended to water year 2023.

Upland Management – To address the impact of upland management projects in the Basin, during the August 2023 Advisory Committee meeting an ad hoc group was formed. The group includes members of the public who will meet with the GSA and the technical team to discuss opportunities to monitor and study the effects of existing upland management projects on surface and groundwater resources.

Public Outreach - The GSA has continued public outreach by visiting local well owners who report concerns about groundwater levels in their wells and also worked to develop opportunities to improve monitoring and data collection to aid the GSA in characterizing and improving groundwater reliability. Quarterly Advisory Committee meetings, open to the public, were also conducted.

3.2.1 Project and Implementation Actions Anticipated for Water Year 2024

Data Gaps and Data Collection - The GSA plans to continue the installation of continuous groundwater level and surface water monitoring sites to support the implementation of planned projects and management actions. These new monitoring sites will be used to track benefits from implementation projects. Current areas that have been identified for new groundwater level monitoring sites include transects near the Scott Valley Irrigation District recharge project and locations on the westside of the Valley to support ditch infiltration studies. Expansion of the water quality monitoring network is planned to occur, with the addition of representative monitoring points.

Interconnected Surface Waters - Groundwater-surface water connectivity will continue to be evaluated in the Basin. The installation of stream gages to measure surface flows will occur at multiple sites as part of the implementation of specific projects, including in Scott River, irrigation ditches, and tributaries. Additionally, geochemical sampling will be used to further understand interaction between surface and groundwater in the Basin, and spatial and temporal variations.

Irrigation Efficiency Improvements – In early 2024 workshops on efficient water management for forage crops will be held in coordination with the University of California Cooperative Extension and the Tehama Resource Conservation District. The Workshop will provide information on a Mobile Irrigation Lab that can provide on-site evaluations of irrigation systems and provide comprehensive reports to producers that detail how their irrigation system is performing, including tips, suggestions, and recommendations based on data collected during the inspection.

Well Inventory Program – During the upcoming water year the GSA is initiating the Well Inventory Program. The Program will utilize datasets from the County and Department of Water Resources to identify wells in the Basin and create a database to store relevant data related to the inventory. Information from the Well Inventory will be incorporated into the model and also be used to inform an upcoming Fee Study that will be conducted to identify options to fund groundwater management in the Basin.

Upland Management – Existing upland management projects will be identified to monitor and study the benefits to groundwater or surface water supplies from existing upland management projects. The objective of this effort is to use existing watershed projects to evaluate potential benefits, particularly from removal of Western juniper. In fall 2023 an ad hoc group was formed with members of the public. During the upcoming water year the group will meet to discuss upland management opportunities and help inform the GSA and technical team of these opportunities.

Public Outreach – The GSA will continue public outreach by working with the public to develop opportunities to improve monitoring and data collection. Quarterly Advisory Committee Meetings, open to the public, will also be conducted.

3.3 Coordination

State Water Resources Control Board – GSA staff meets biweekly with SWRCB staff to discuss updates and activities related to SWRCB's Emergency Regulation Curtailments. The two parties discuss updates to curtailment actions in place, including Local Cooperative Extensions (LCS) and activities that may have impacts on groundwater management.

Karuk Tribe – During water year 2023 the GSA worked to finalize the Memorandum of Understanding (MOU) with the Karuk Tribe regarding coordinating on aspects of the GSP implementation in the Scott and Shasta basins, and the Final MOU was signed on May 3, 2023. A staff-to-staff meeting between the GSA and the Karuk Tribe was held on July 26, 2023 with the purpose of debriefing the SGM implementation grant proposal development process and brainstorming ways to improve transparency in the Advisory Committee process and in providing draft proposals further in advance to allow time for review. In the coming water year, a call is tentatively planned for February 2024 between the GSA and the Karuk Tribe to share plans related to implementing the SGM Grants and identify opportunities for coordination at a staff-to-staff level.

3.4 Other Activities

3.4.1 Regulatory Coordination: Instream Flow Requirements

In May 2023, a petition for rulemaking was submitted to the State Water Board by the Karuk Tribe of California, Environmental Law Foundation, Pacific Coast Federation of Fishermen's Associations, and Institute for Fisheries Resources. This petition requested permanent regulation establishing minimum flows in the Scott River. A subsequent hearing on August 15, 2023 resulted in a decision to move forward with an emergency regulation and investigate the scientific work required to establish long-term flow requirements in both Scott and Shasta River Watersheds. The State Water Board adopted a new emergency regulation for the Scott and Shasta River Watersheds on December 19, 2023 and the Office of Administrative Law approved the emergency regulation on February 1, 2024. This regulation is in effect for one year, unless re-adopted or rescinded. [1].

[1] https://www.waterboards.ca.gov/drought/scott_shasta_rivers/

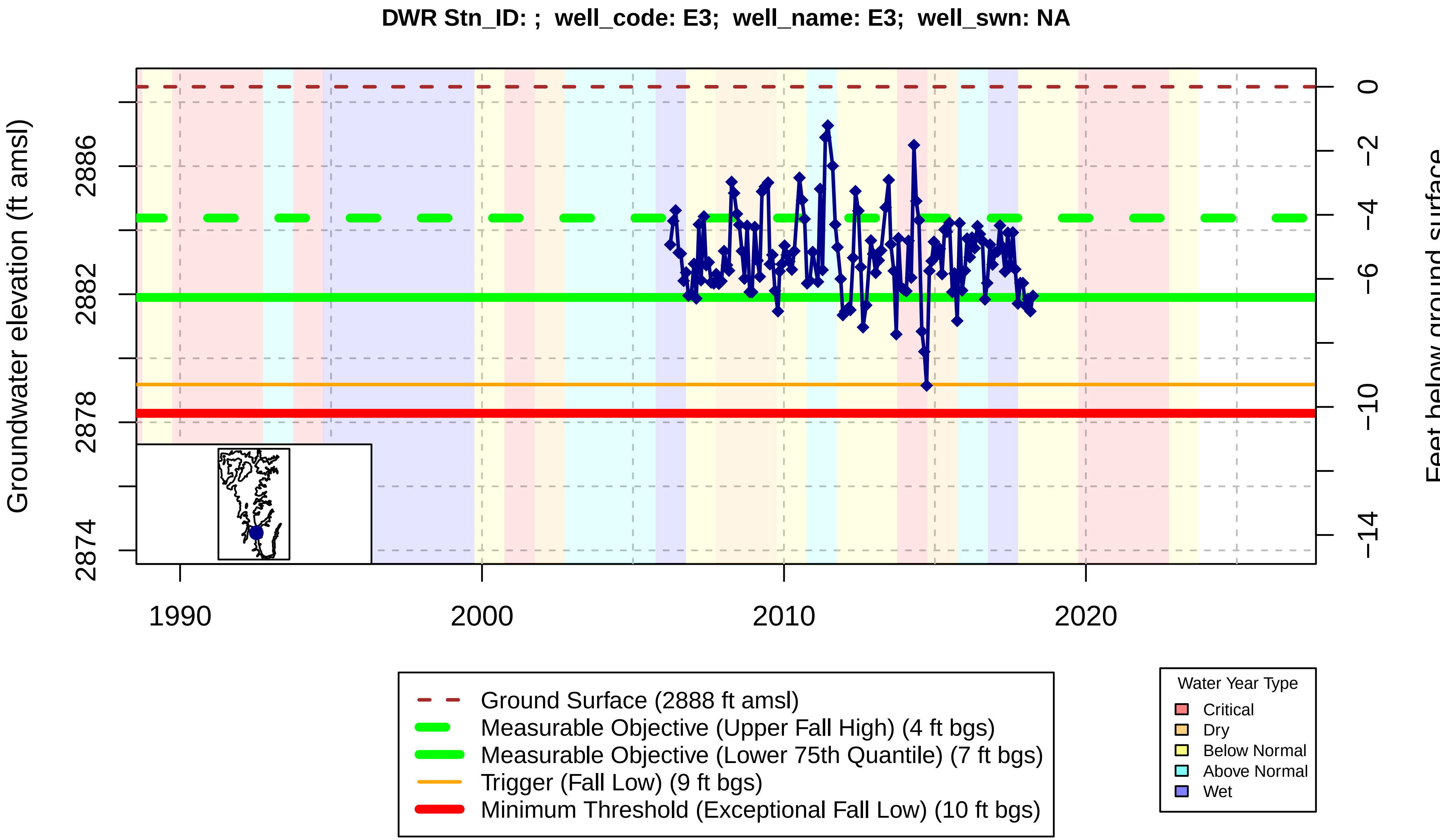
Appendix A - Groundwater Level Hydrographs

The hydrographs used to set the minimum thresholds (MT) and measurable objectives (MO) for each representative monitoring point are shown in the following figures (Appendix A.1). Data points used to cal- culate the MTs and MOs are marked with a red dot. The groundwater level data used in the regression to calculate minimum thresholds have gone through a quality assurance and quality control (QAQC) process that removes data from the analysis for the following reasons:

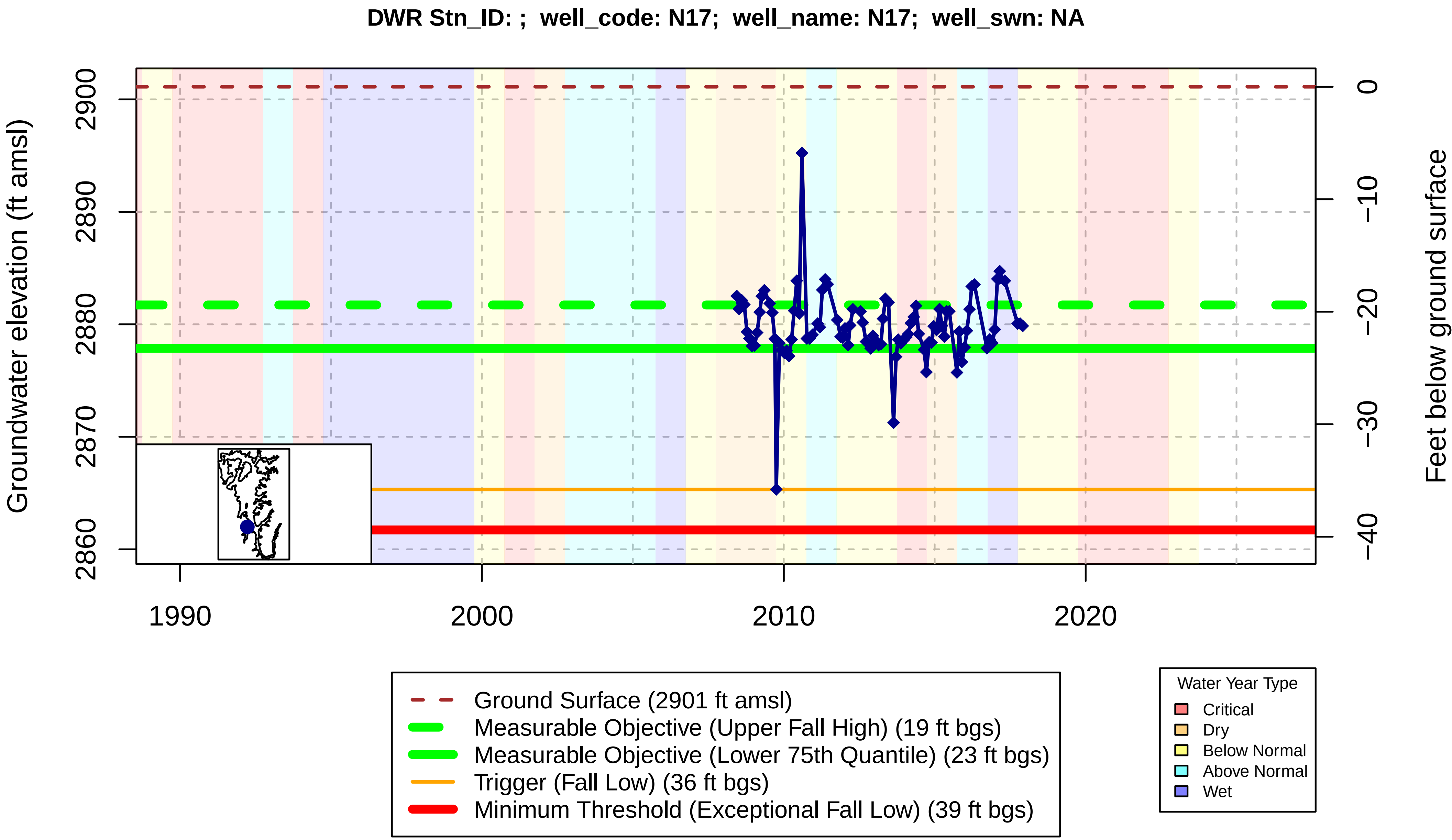
- Oil or other foreign substances were floating at the groundwater surface inside the well and the data had high uncertainty as a result.
- The well was pumped recently.
- During the minimum threshold process and generation of a regression equation, a data point was deemed an outlier, which may result from the interference of drawdown from nearby wells.

Appendix A.2 shows general hydrographs for the larger GSP monitoring network, including wells for which SMCs were not defined. Water Year Types from WY 2019−2023 have been updated in hydrographs below. Note that these are preliminary results calculated based on SGMA Water Year Type Dataset Development Report. The results will be finalized once DWR updates the water year type dataset for these years.

Appendix A.1 - Groundwater Elevation Hydrographs for the RMP Network.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
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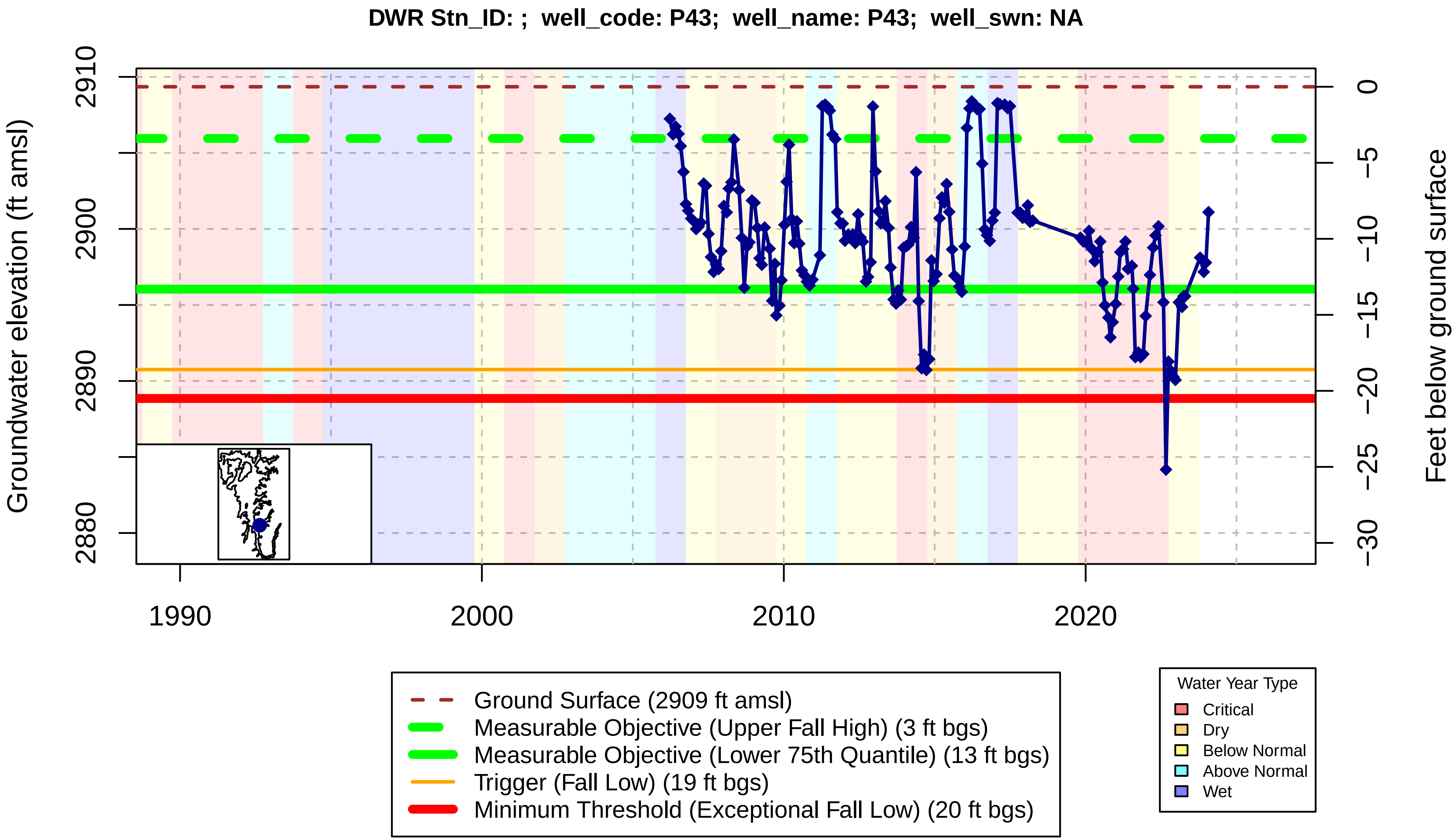

Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
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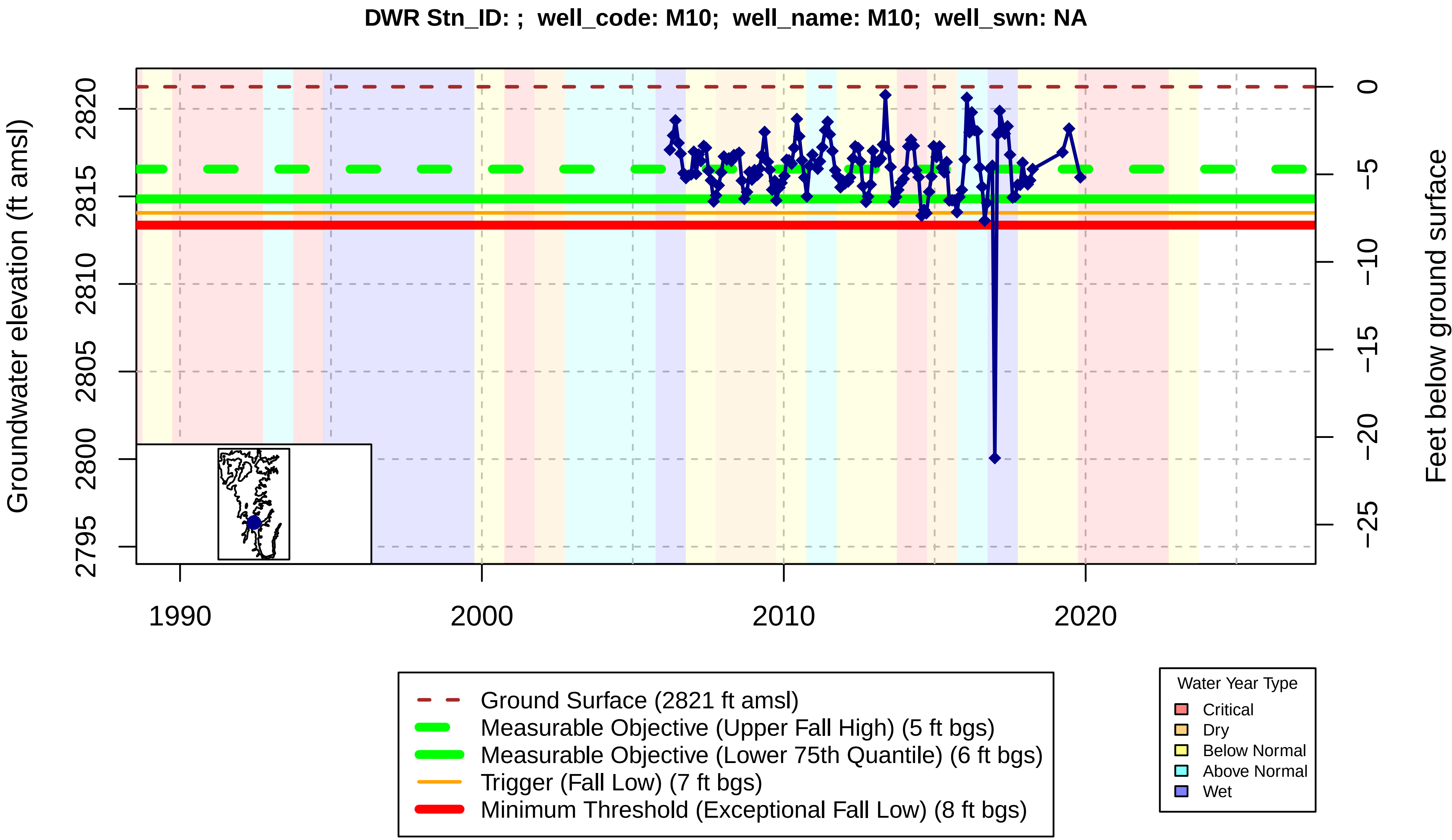
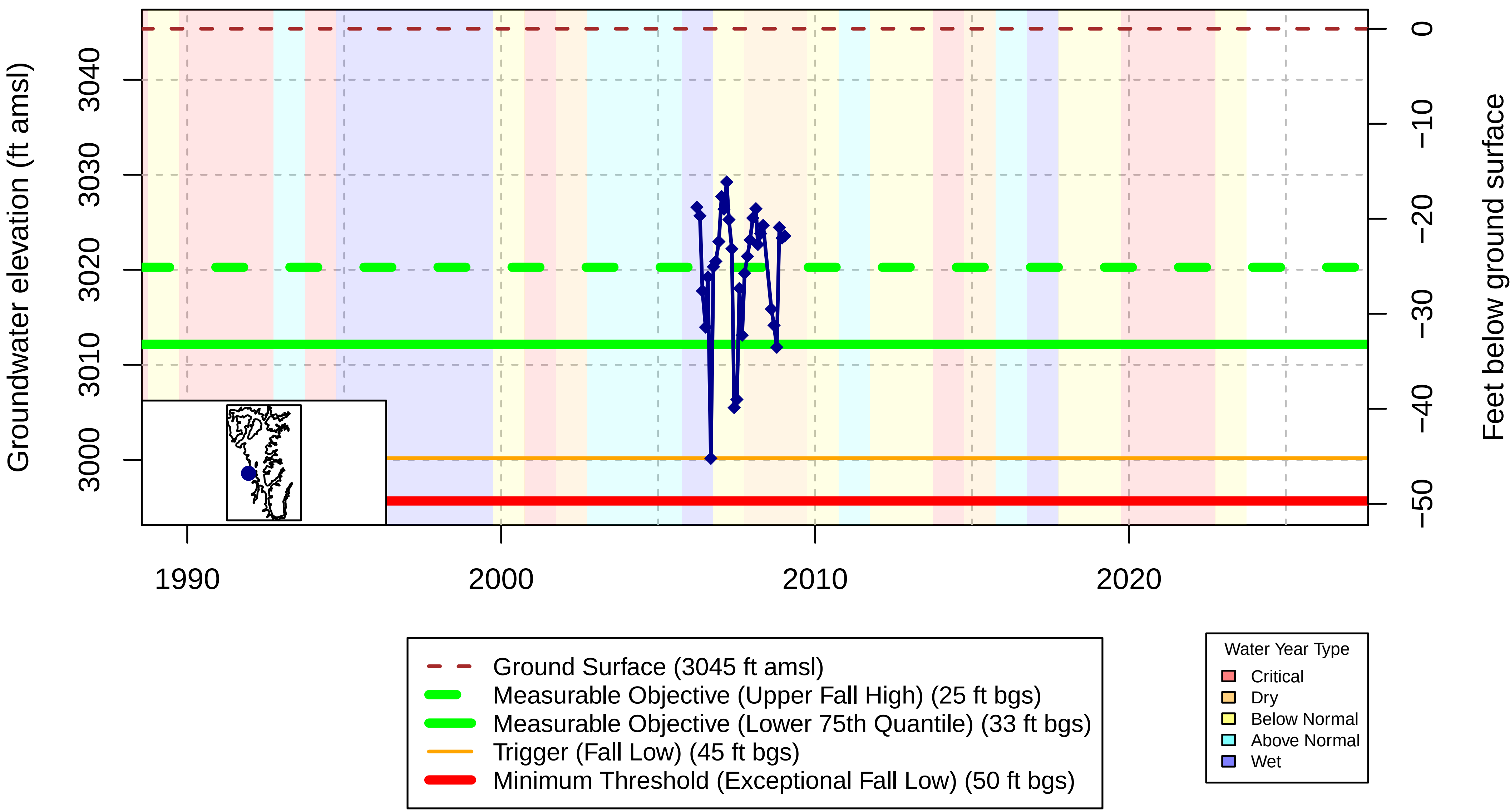
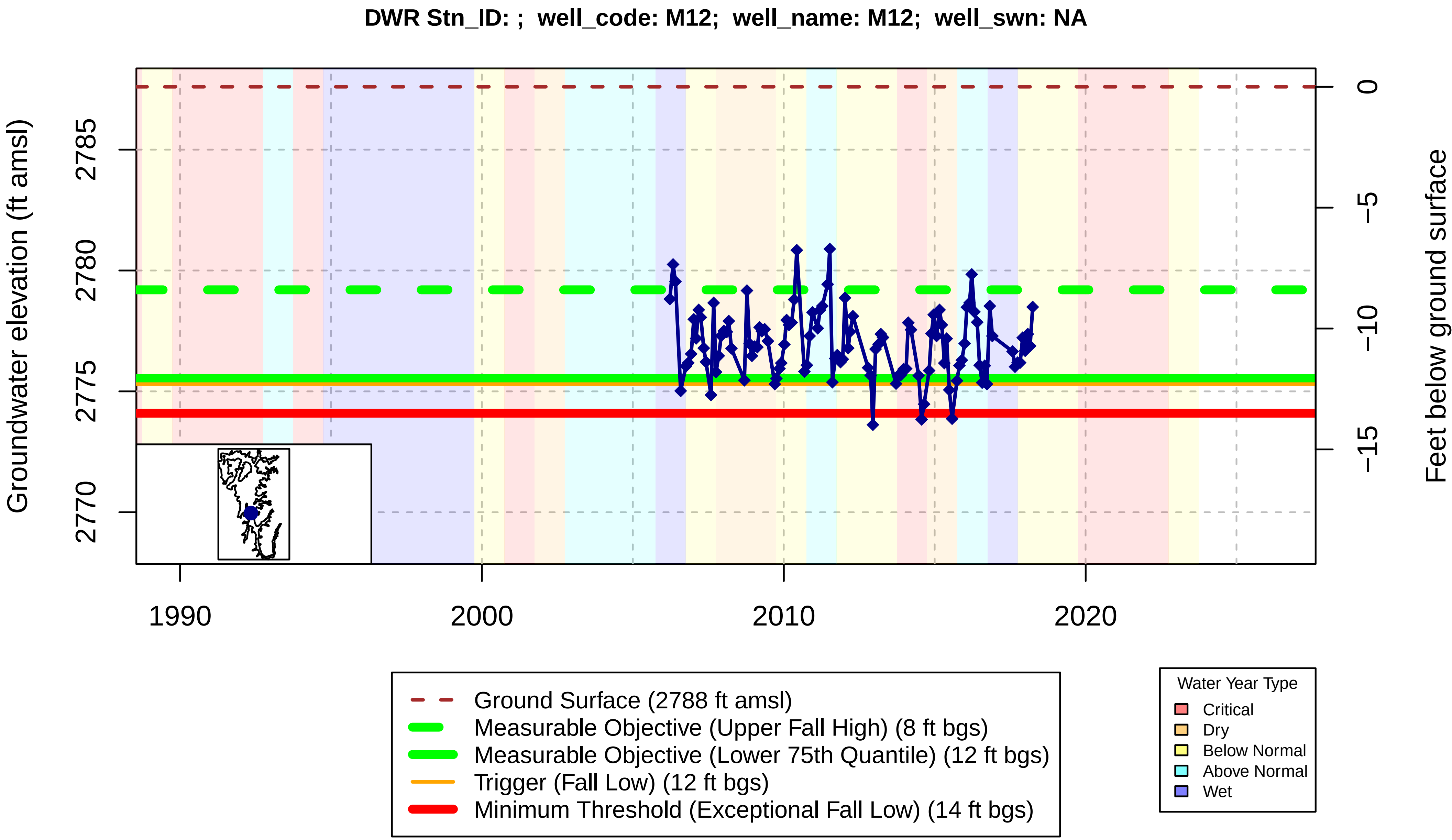


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report. The results will be finalized once DWR updates the water year type dataset for these years.

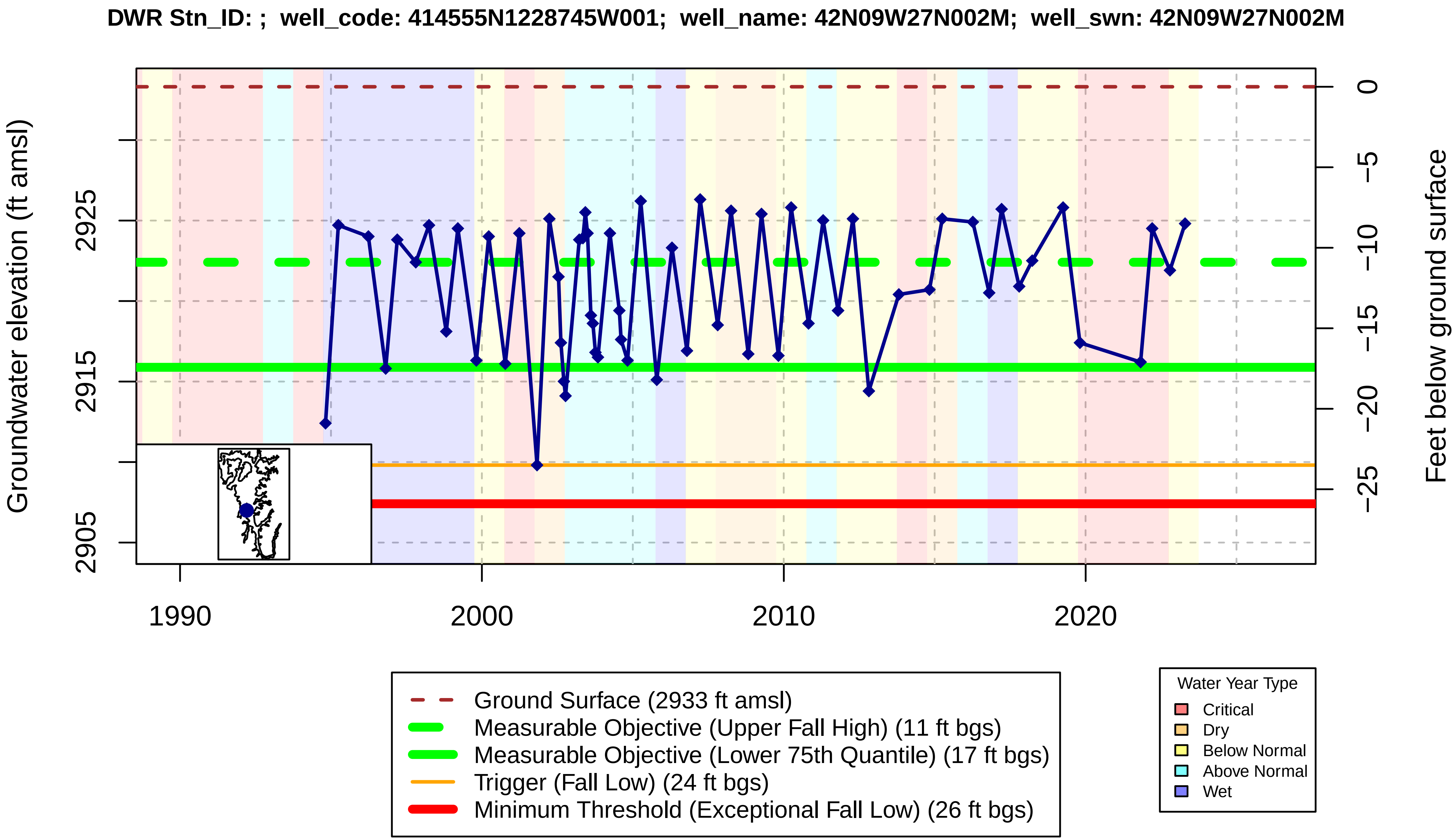
DWR Stn_ID: ; well_code: Z36; well_name: Z36; well_swn: NA



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

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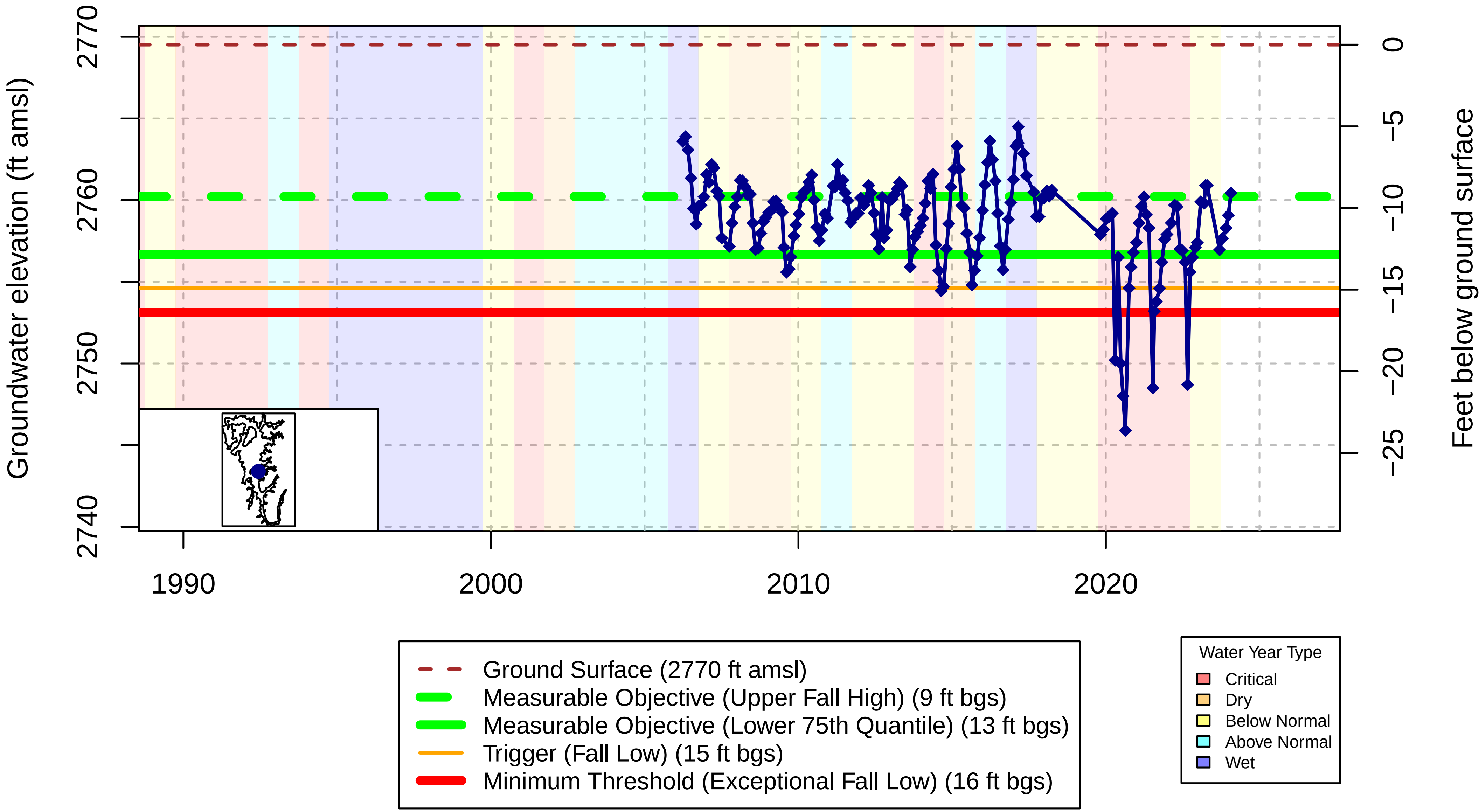
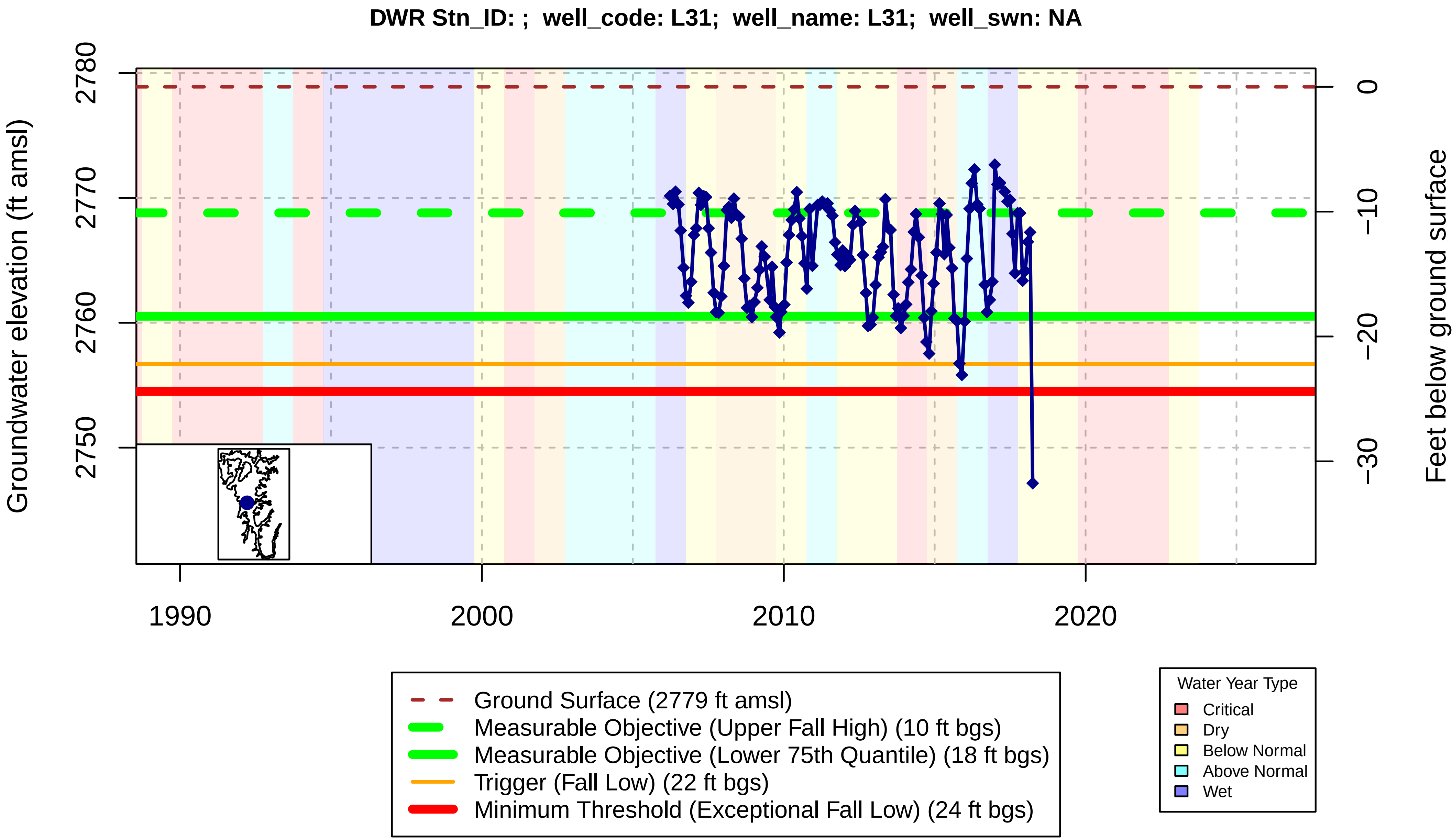
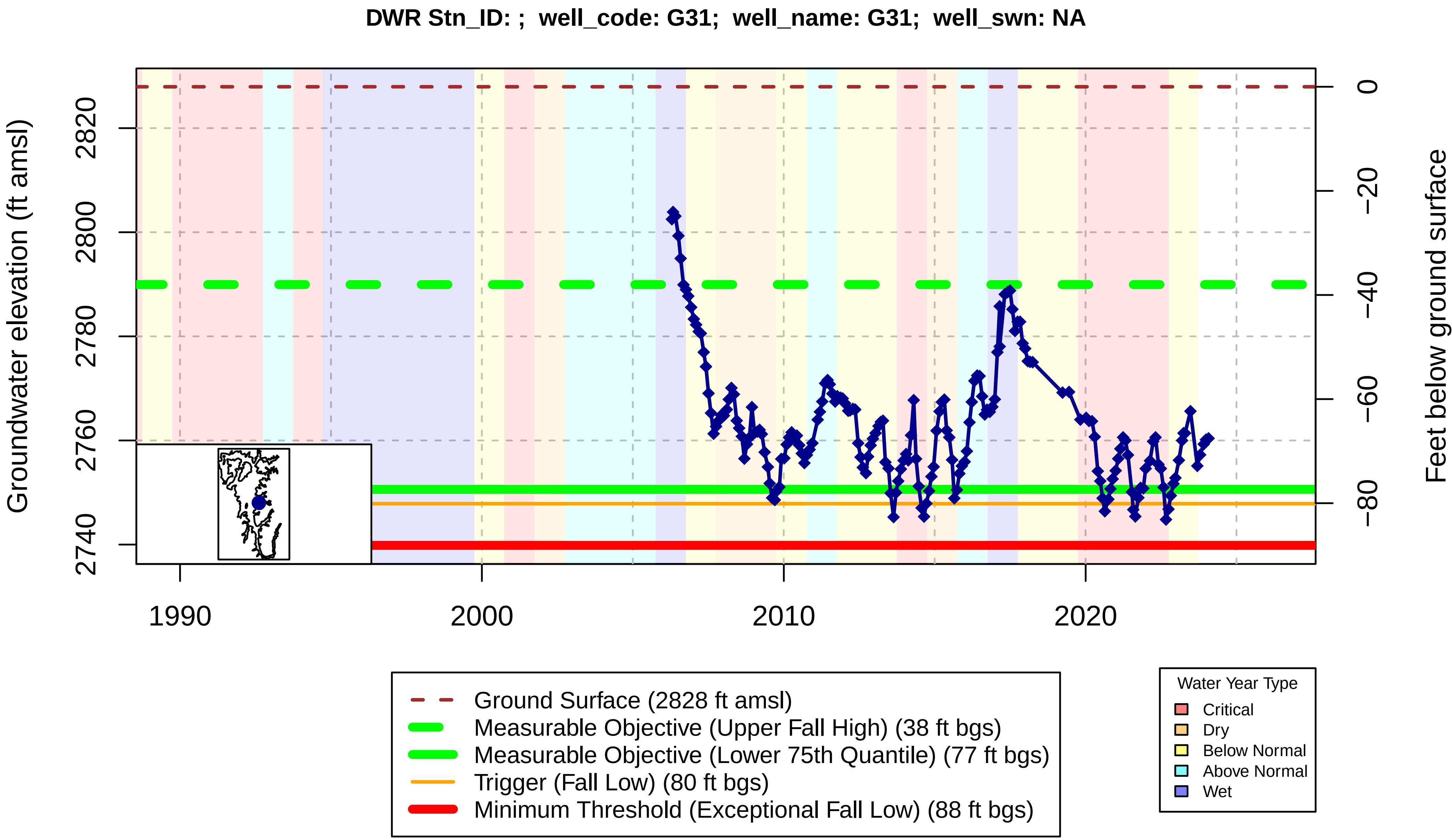


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

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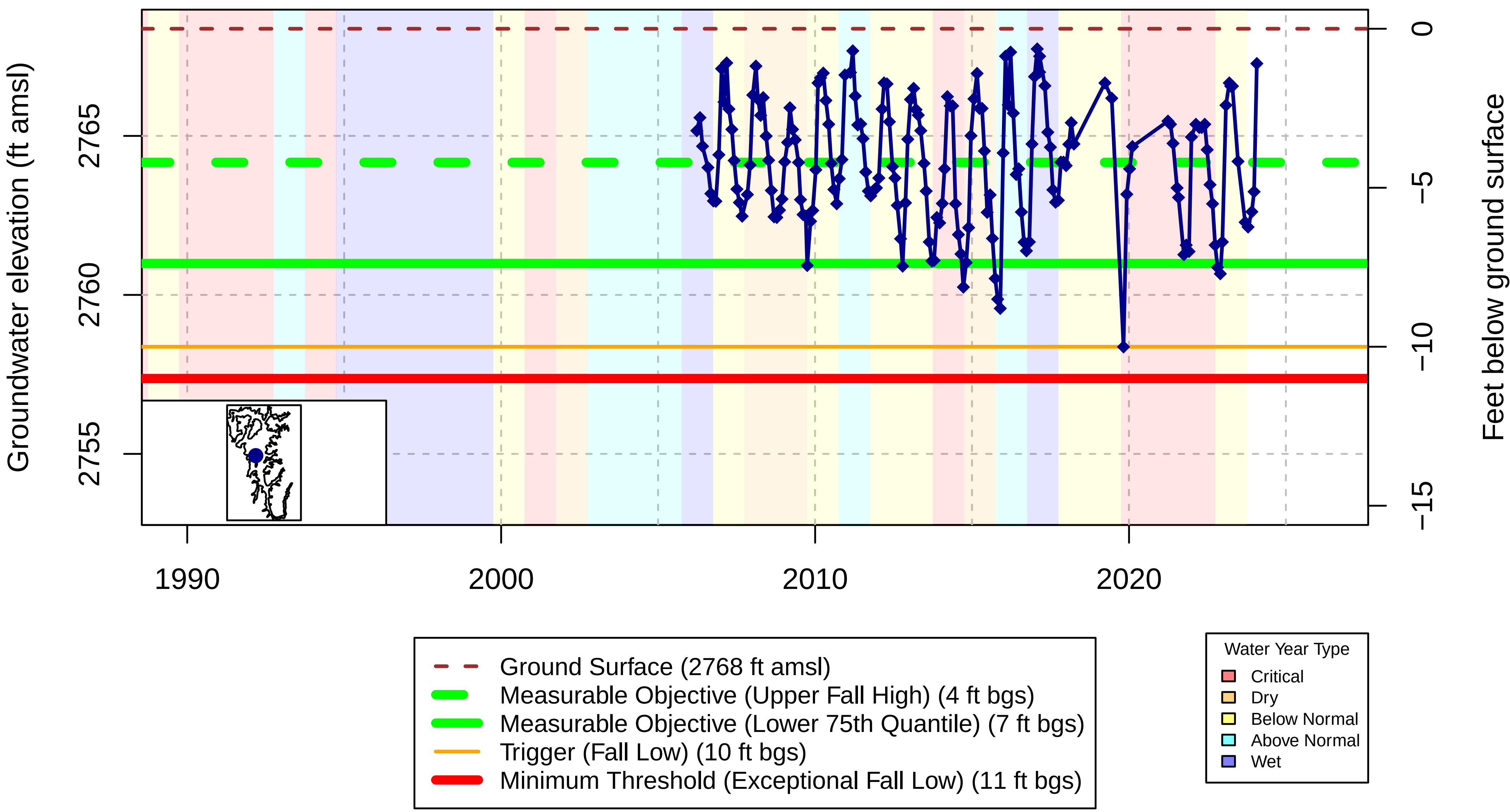
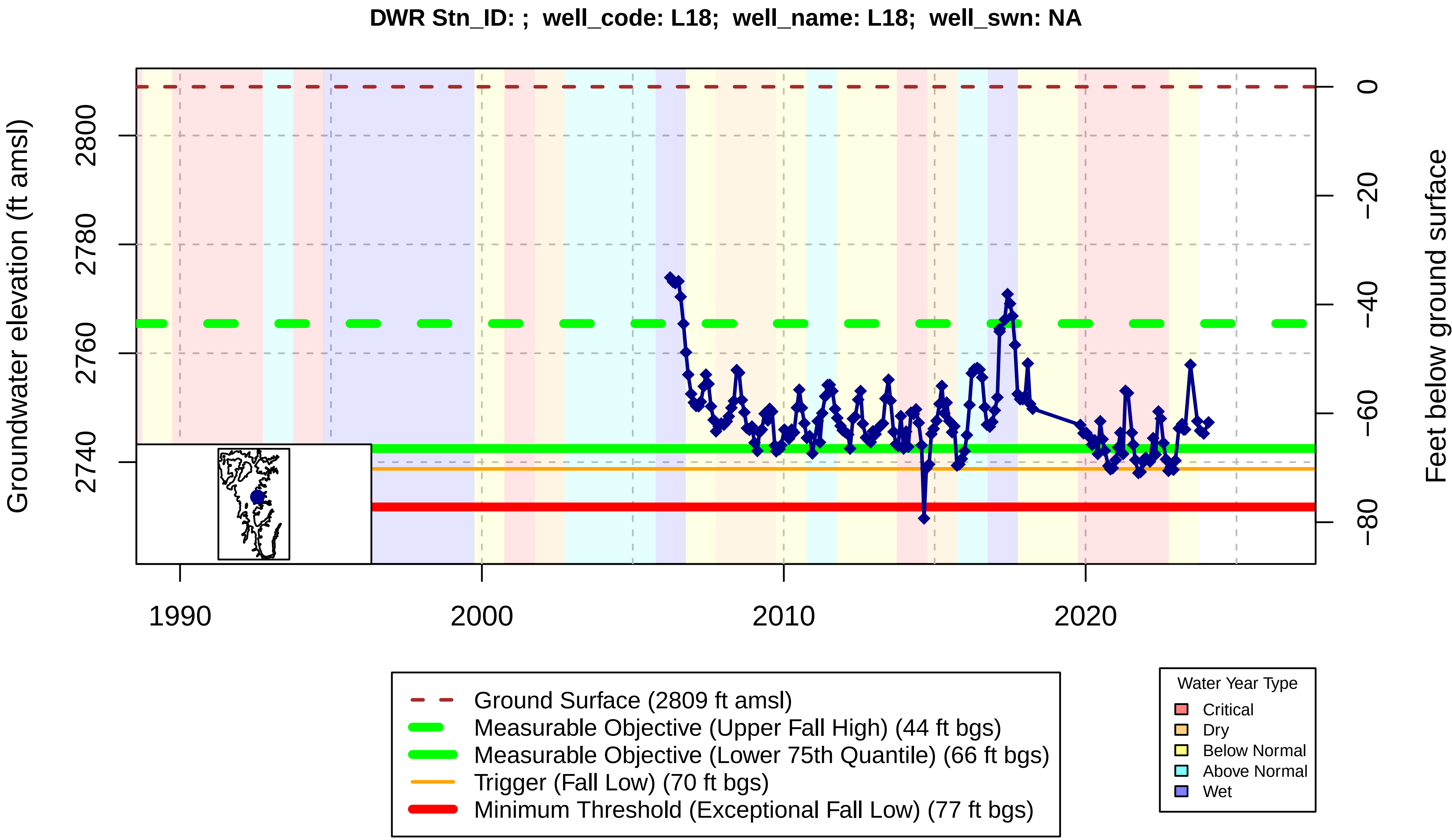
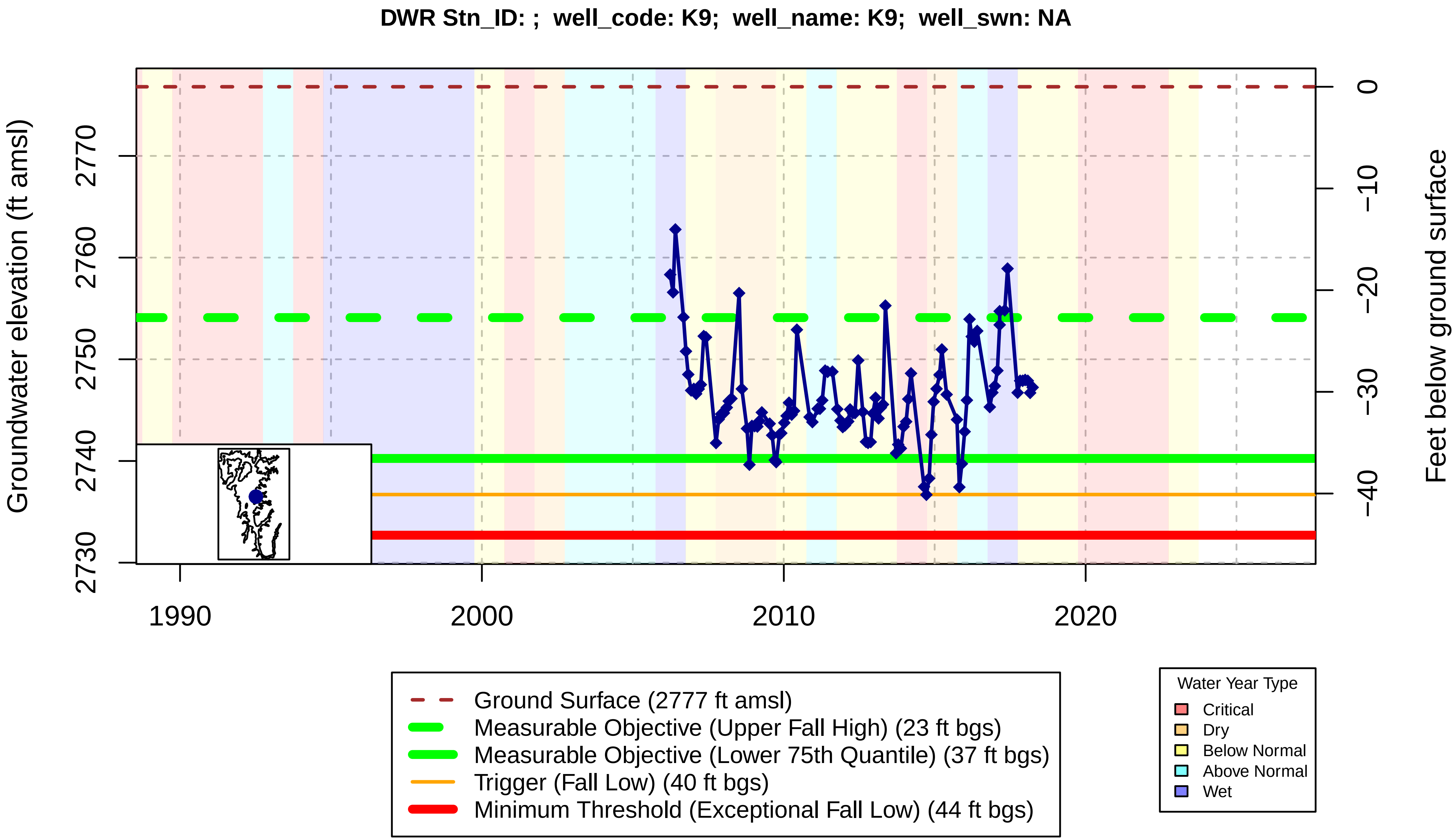


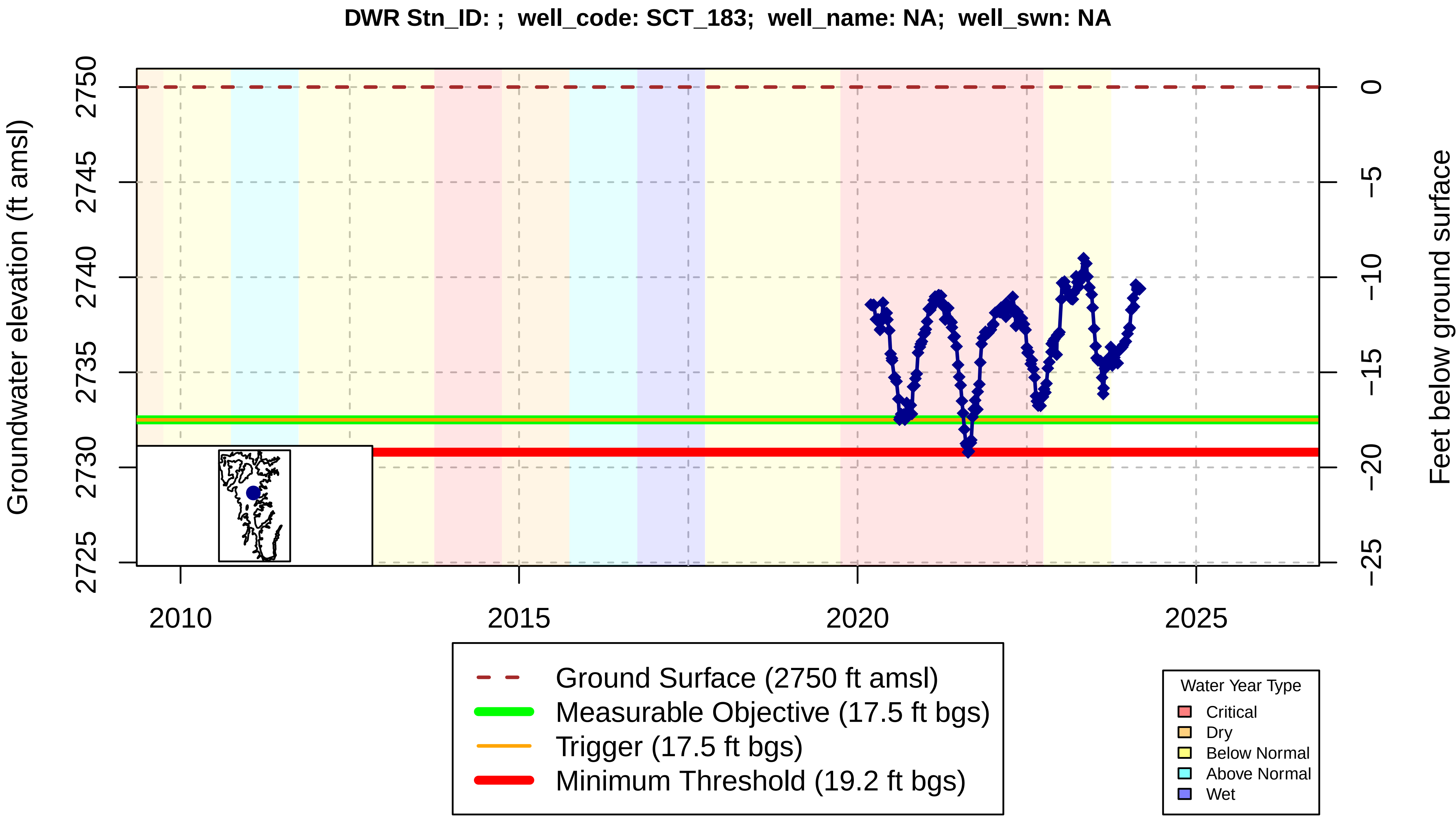
Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

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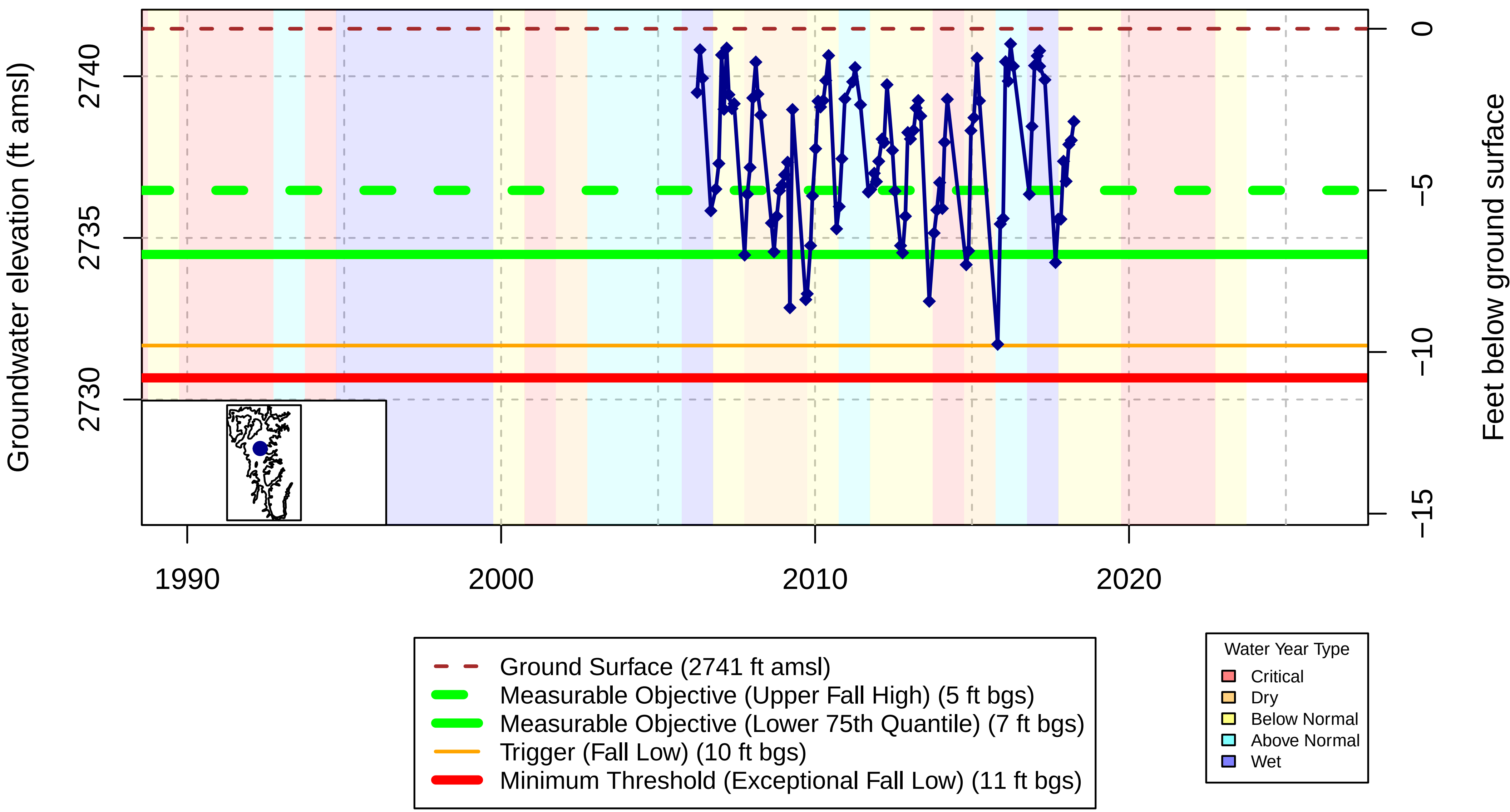

Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

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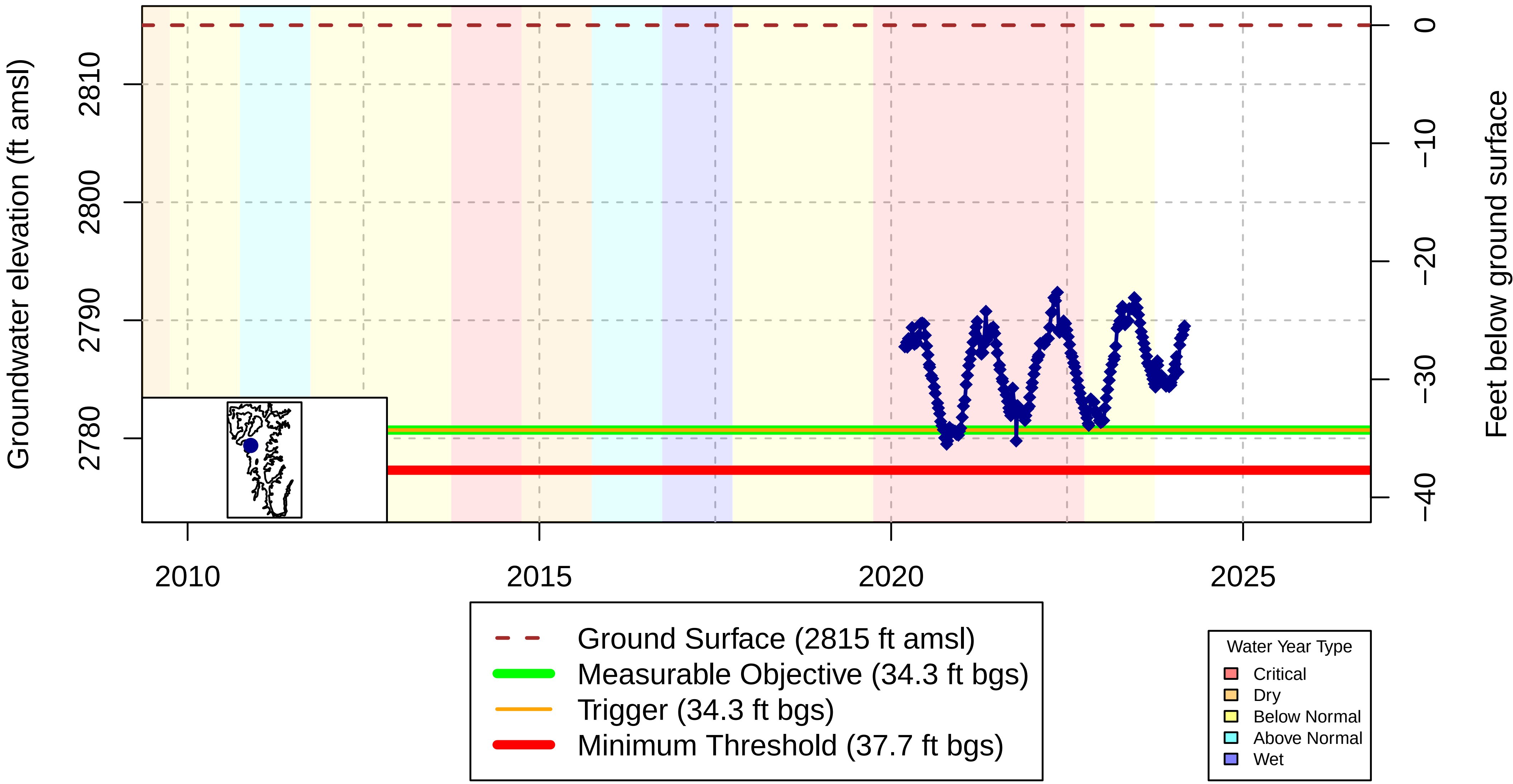

Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

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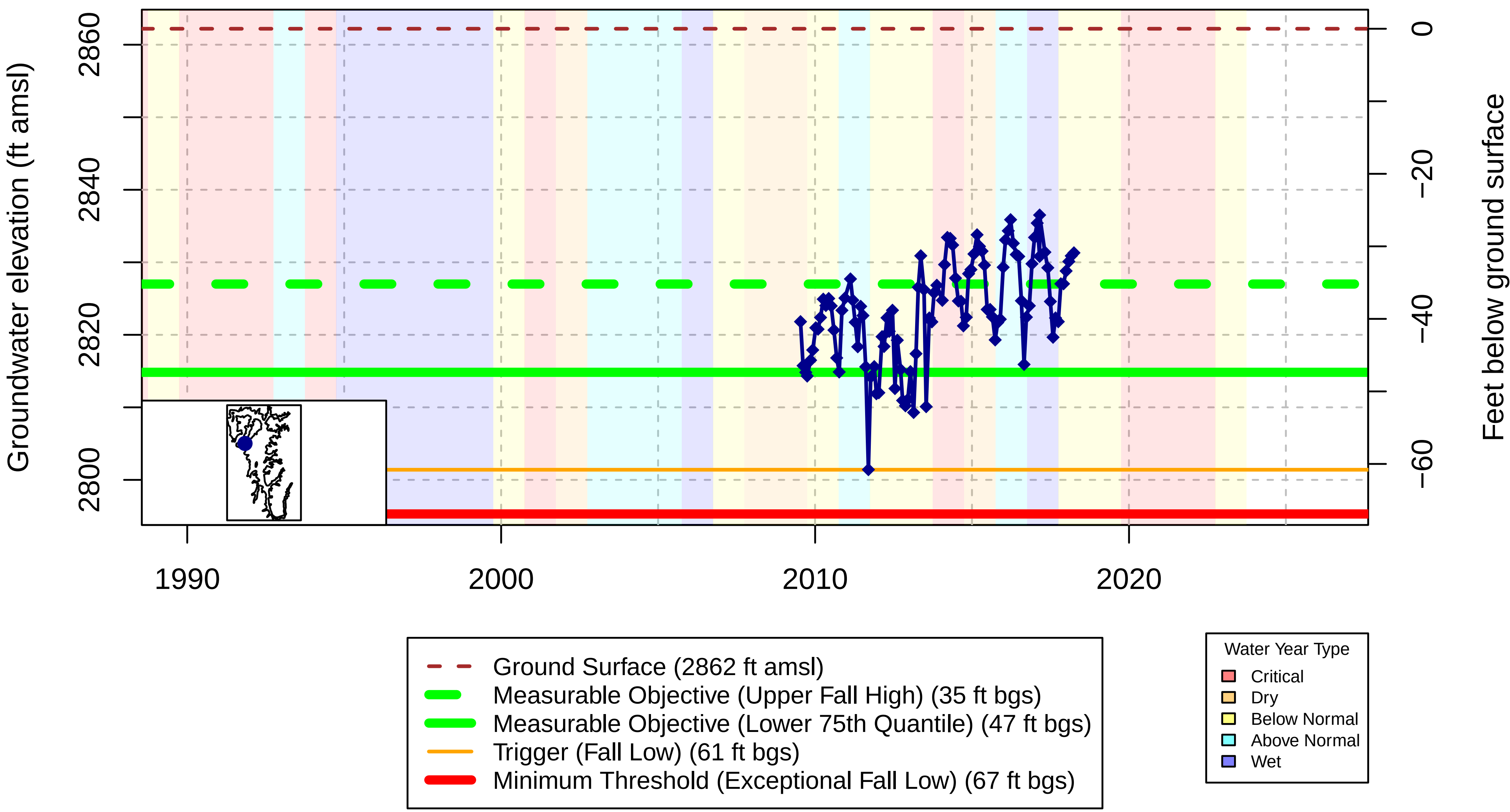
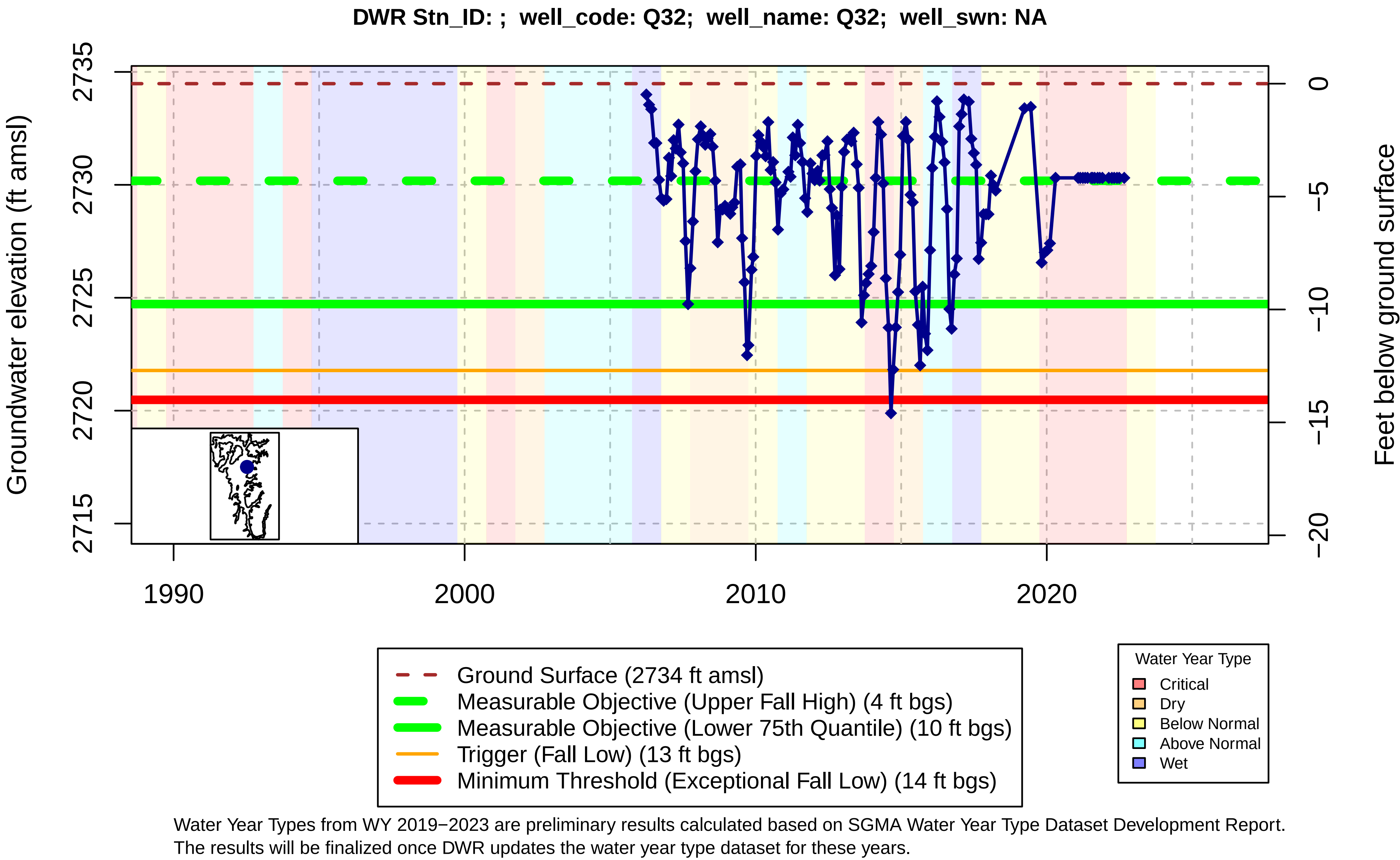
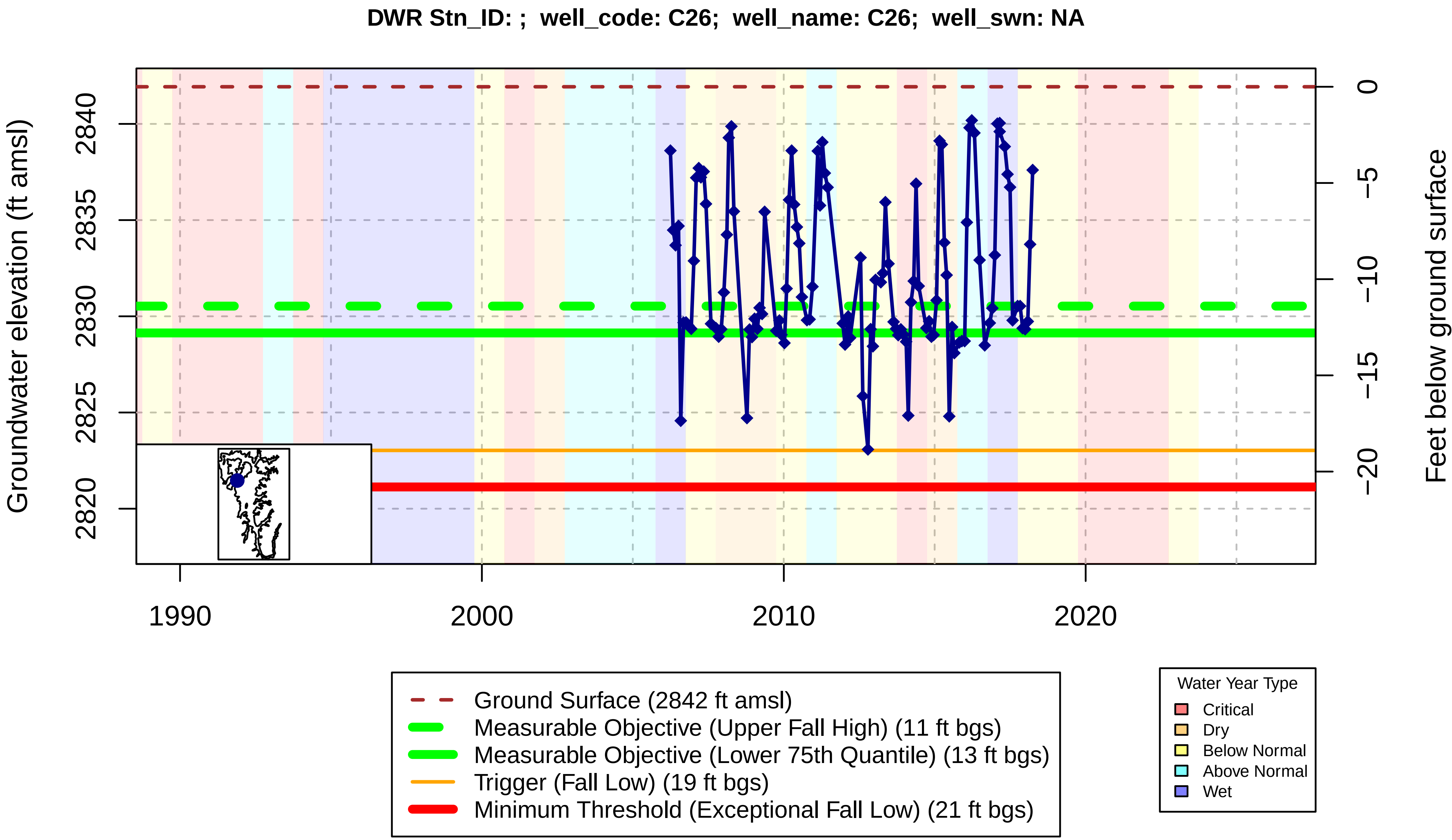


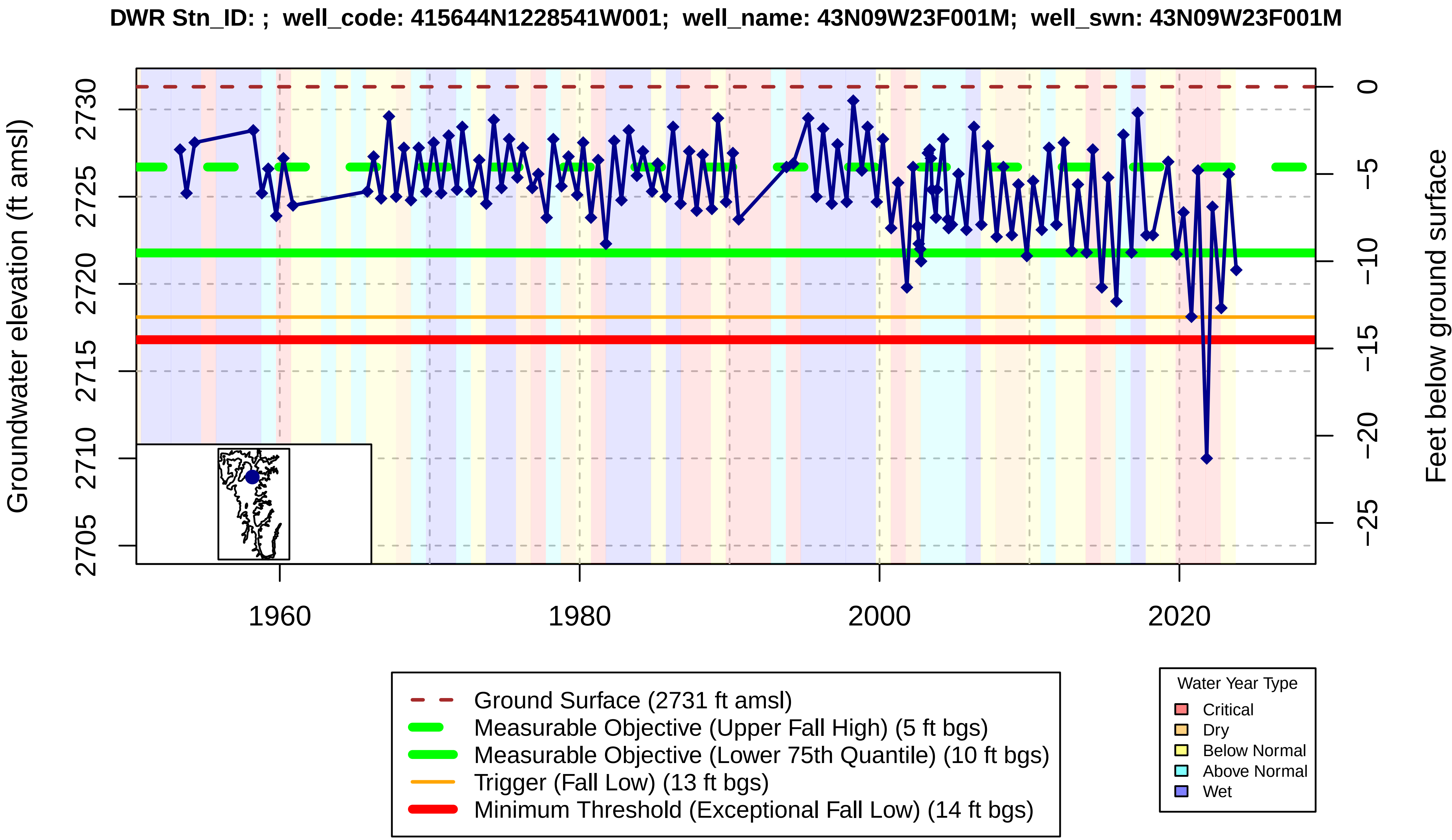
Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



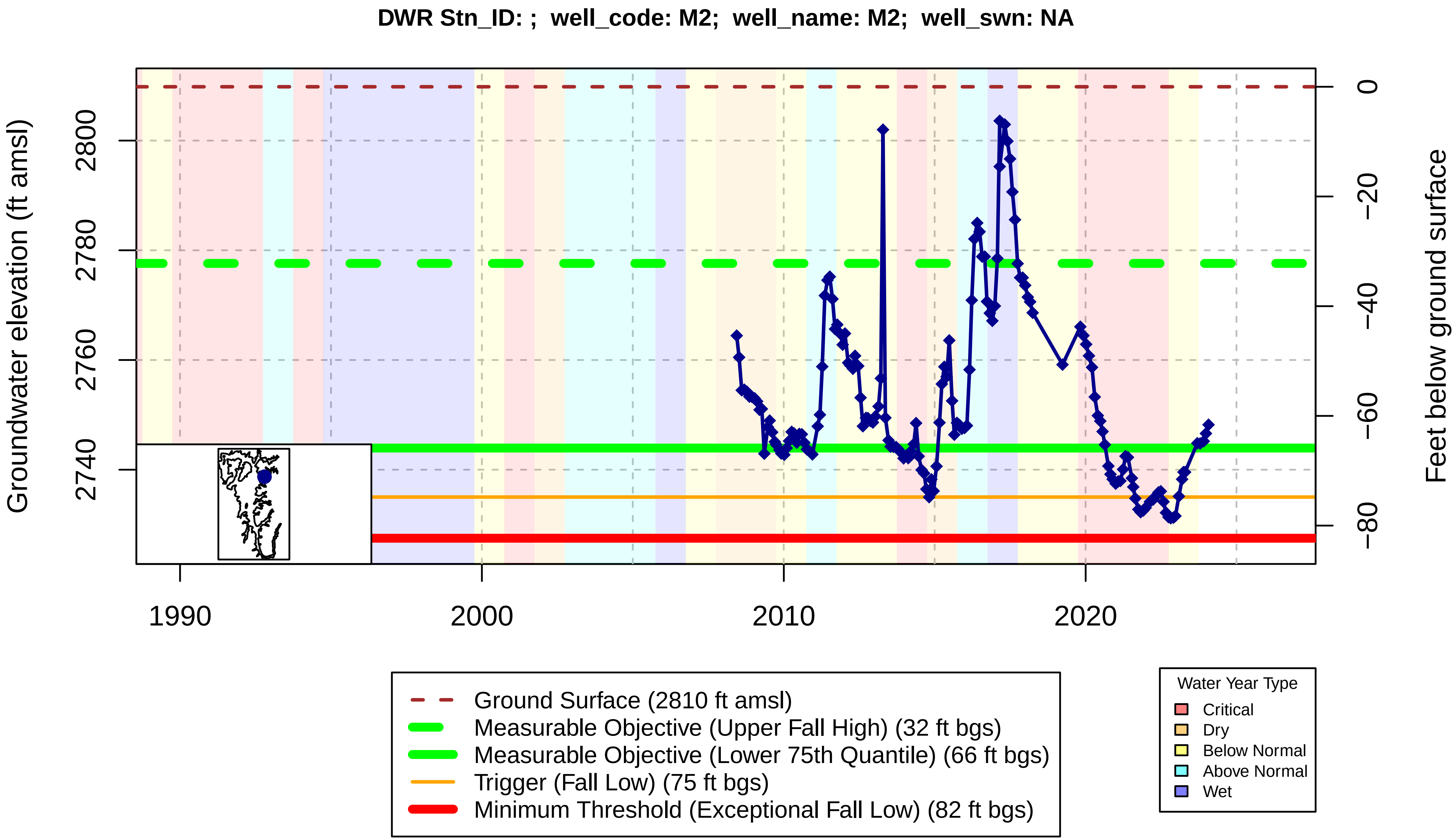
DWR Stn_ID: ; well_code: Q32; well_name: Q32; well_swn: NA
Groundwater elevation (ft amsl)
Feet below ground surface
2735
2730
2725
2720
2715
0
−5
−10
−15
−20
1990
2000
2010
2020
Ground Surface (2734 ft amsl)
Measurable Objective (Upper Fall High) (4 ft bgs)
Measurable Objective (Lower 75th Quantile) (10 ft bgs)
Trigger (Fall Low) (13 ft bgs)
Minimum Threshold (Exceptional Fall Low) (14 ft bgs)
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



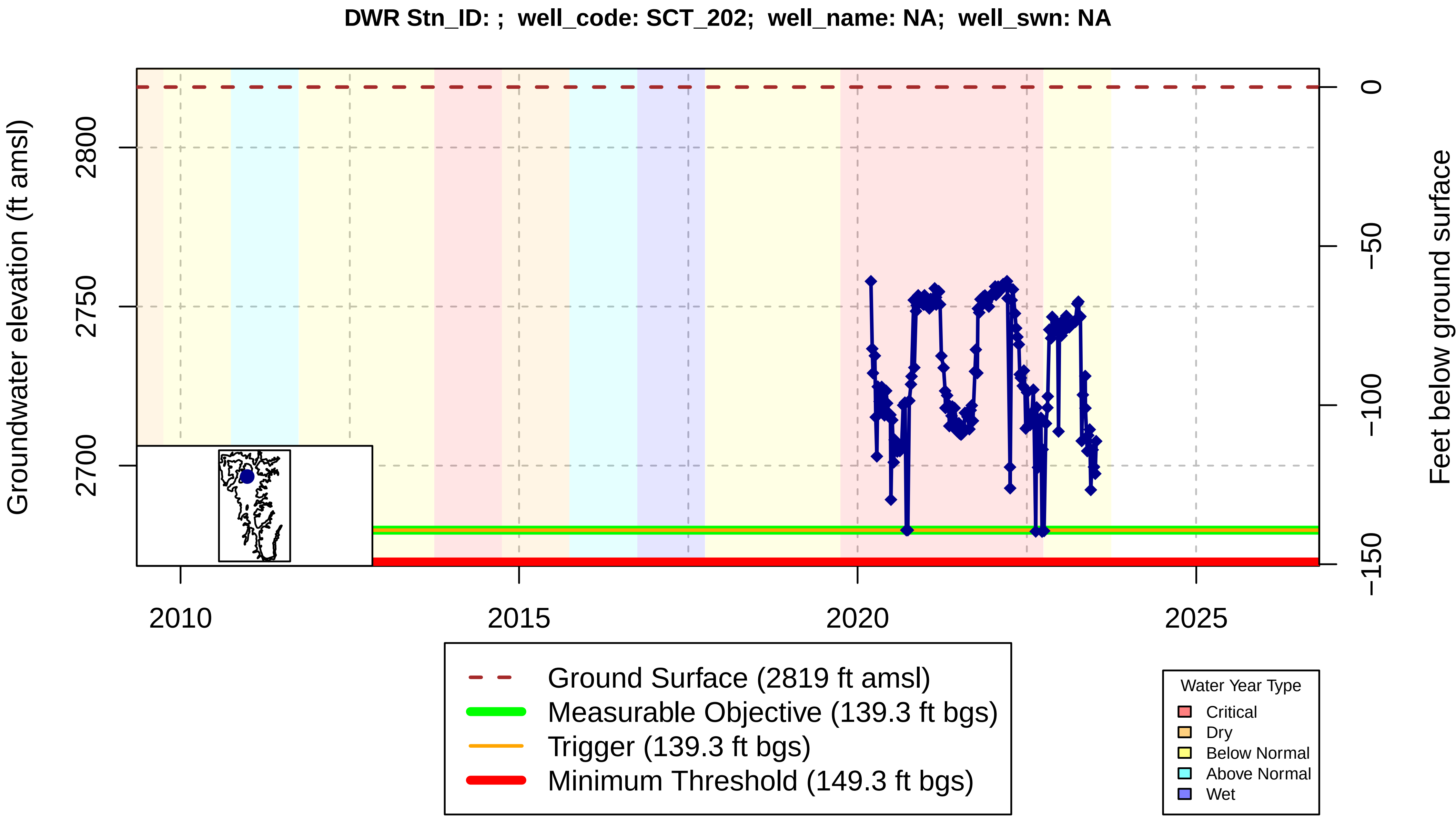
Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report. The results will be finalized once DWR updates the water year type dataset for these years.



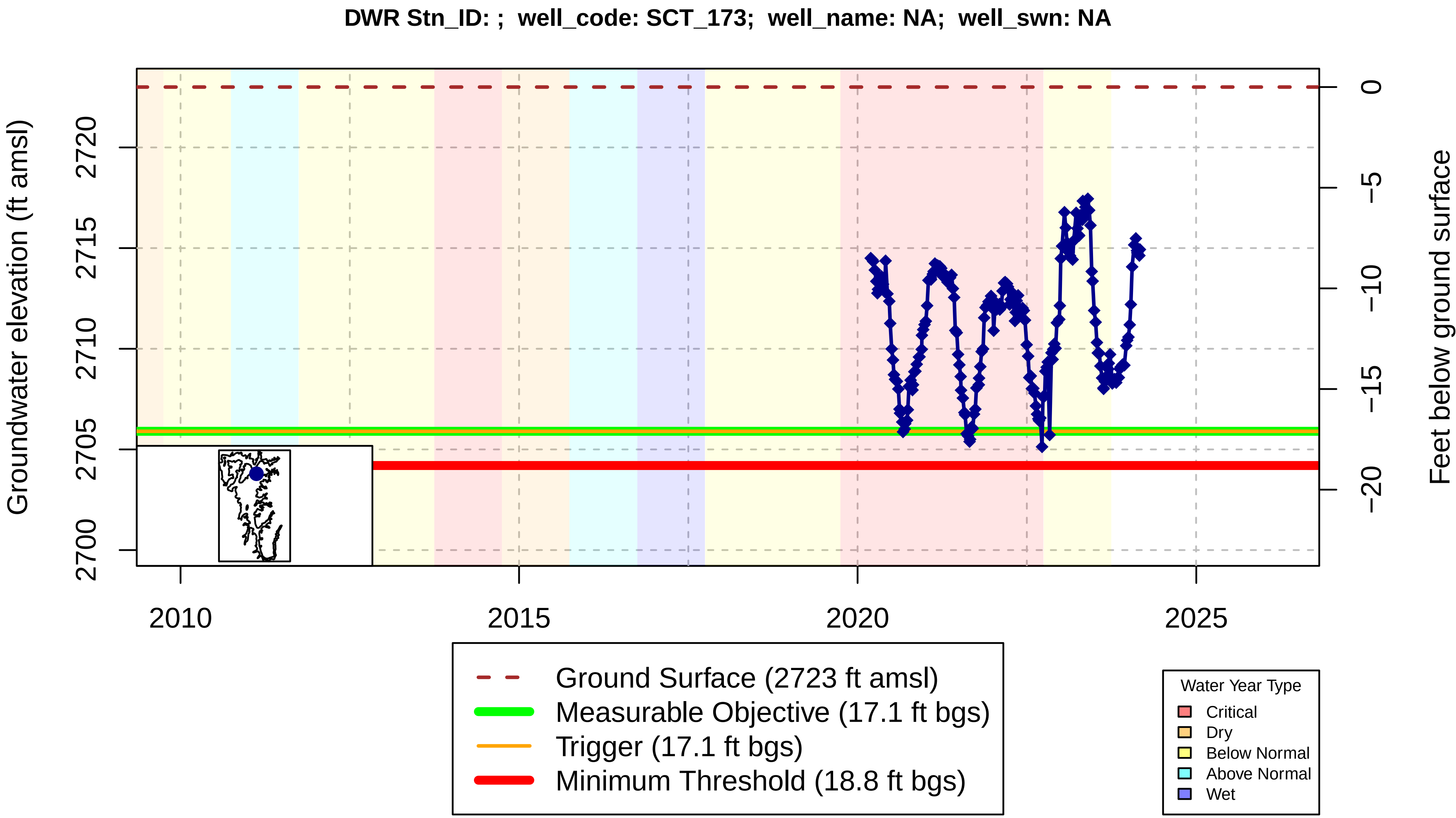
Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.



Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report. The results will be finalized once DWR updates the water year type dataset for these years.

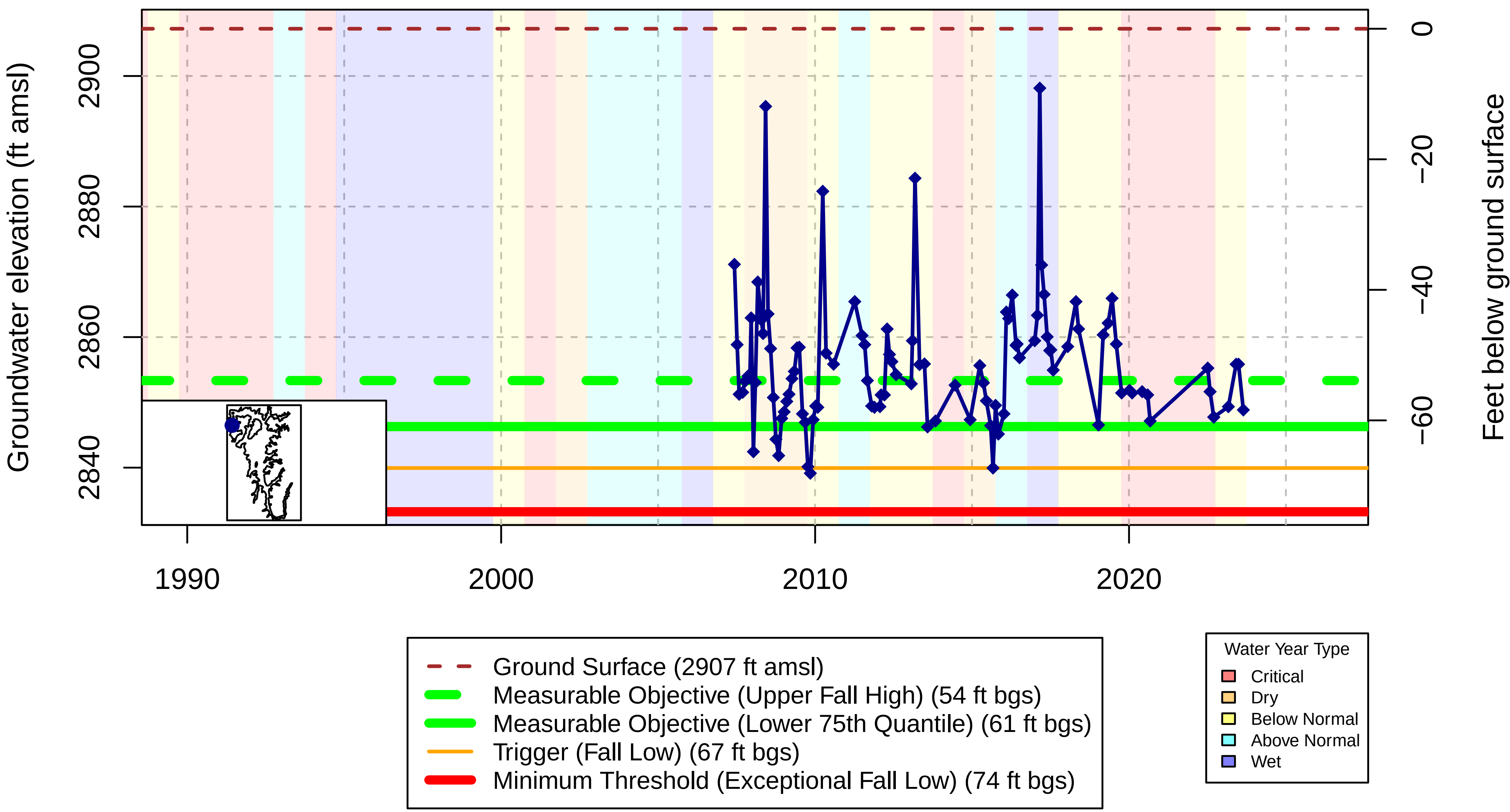


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

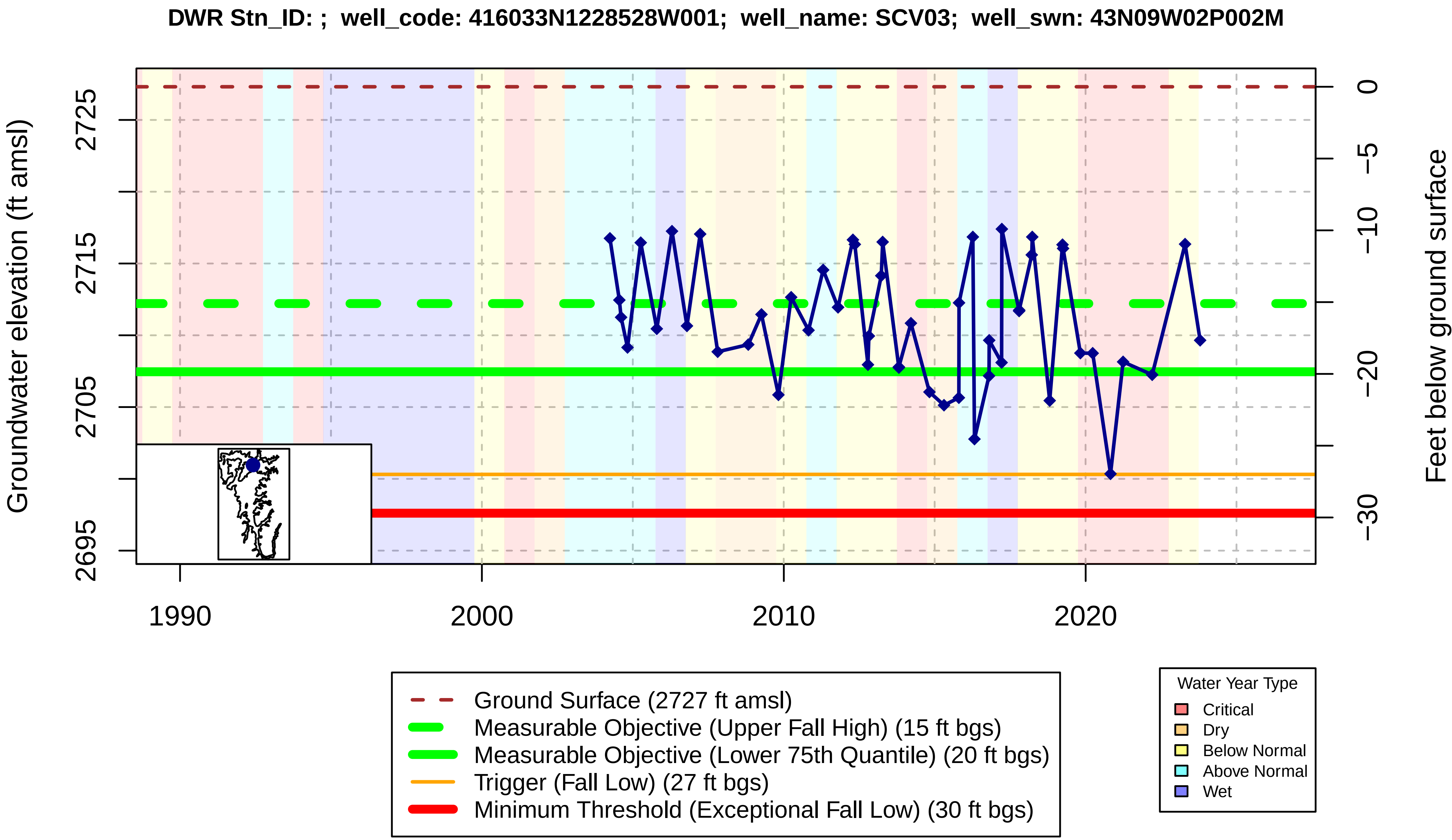


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

DWR Stn_ID: ; well_code: QV18; well_name: 12912_Yamitch; well_swn: NA

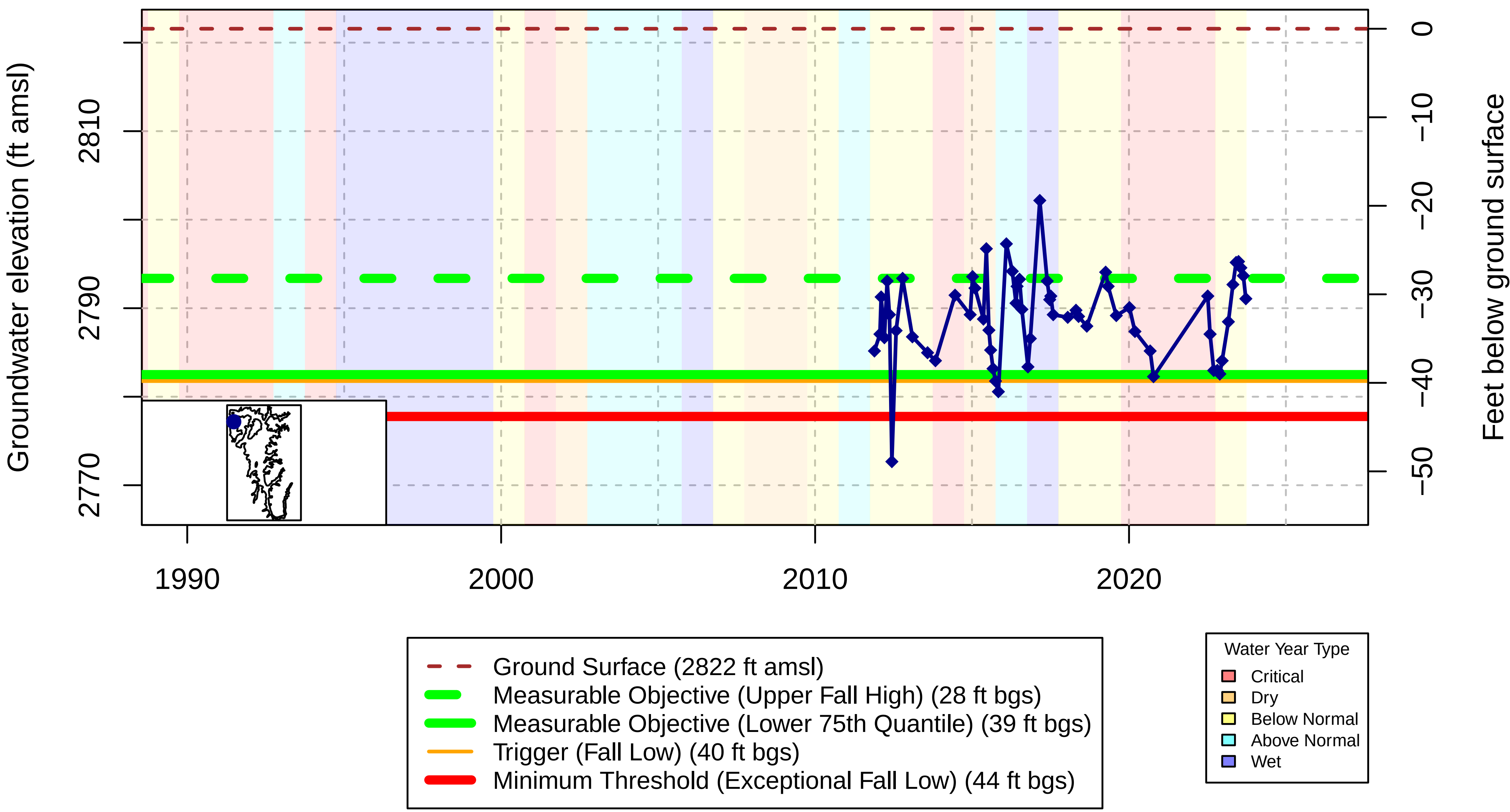


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

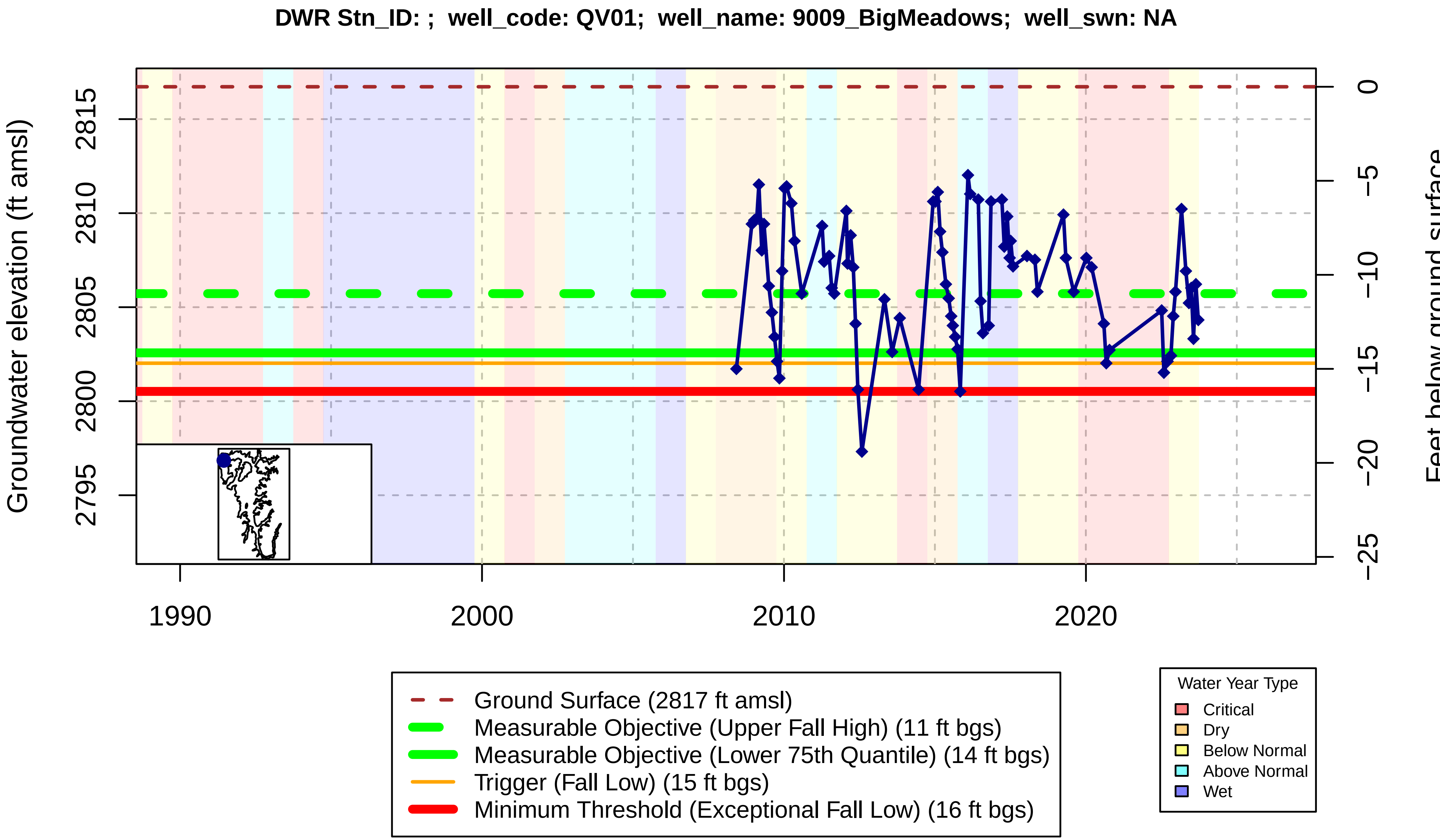


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

DWR Stn_ID: ; well_code: QV09; well_name: 13616_QuartzValleyRd; well_swn: NA

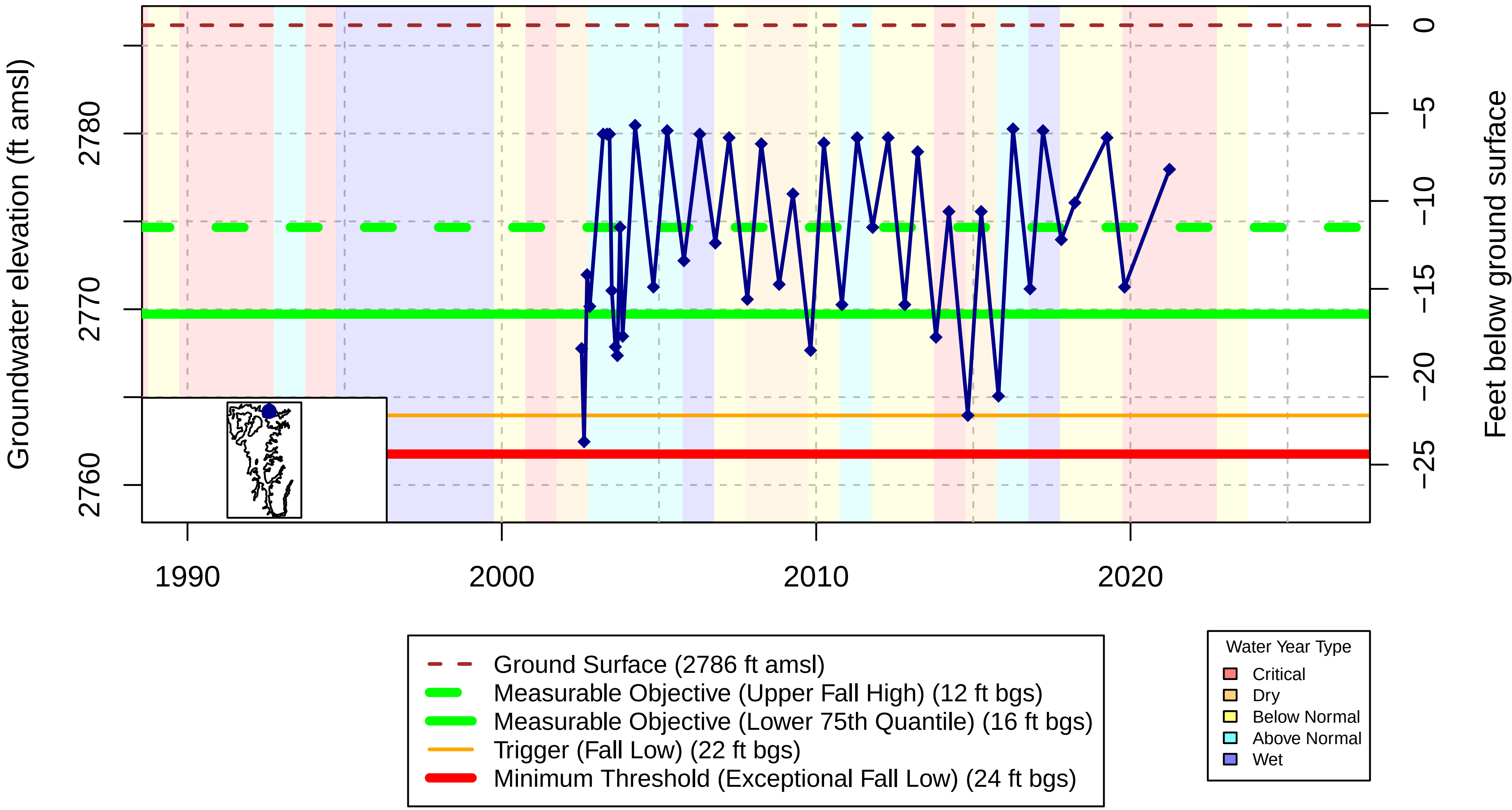


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

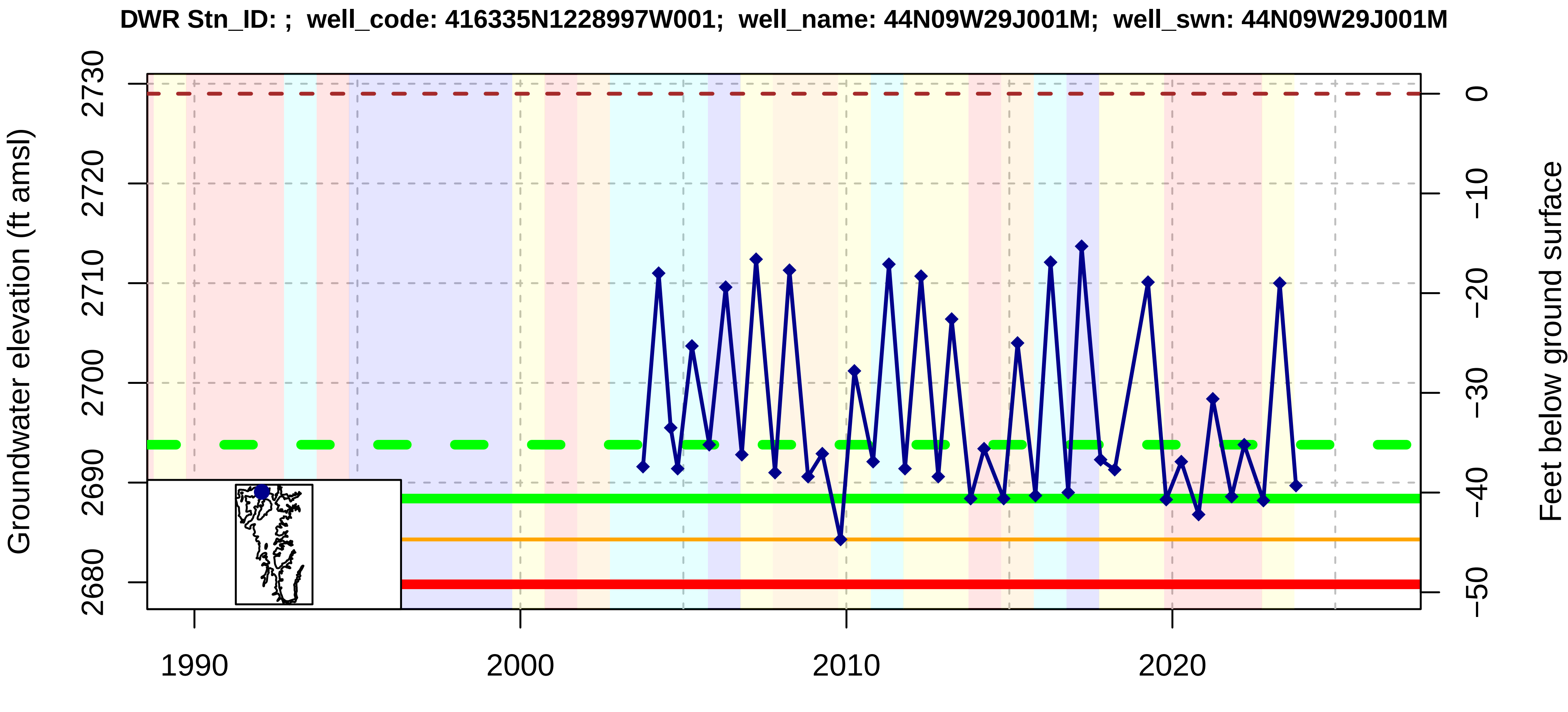


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

DWR Stn_ID: ; well_code: 416288N1228303W001; well_name: 44N09W25R001M; well_swn: 44N09W25R001M

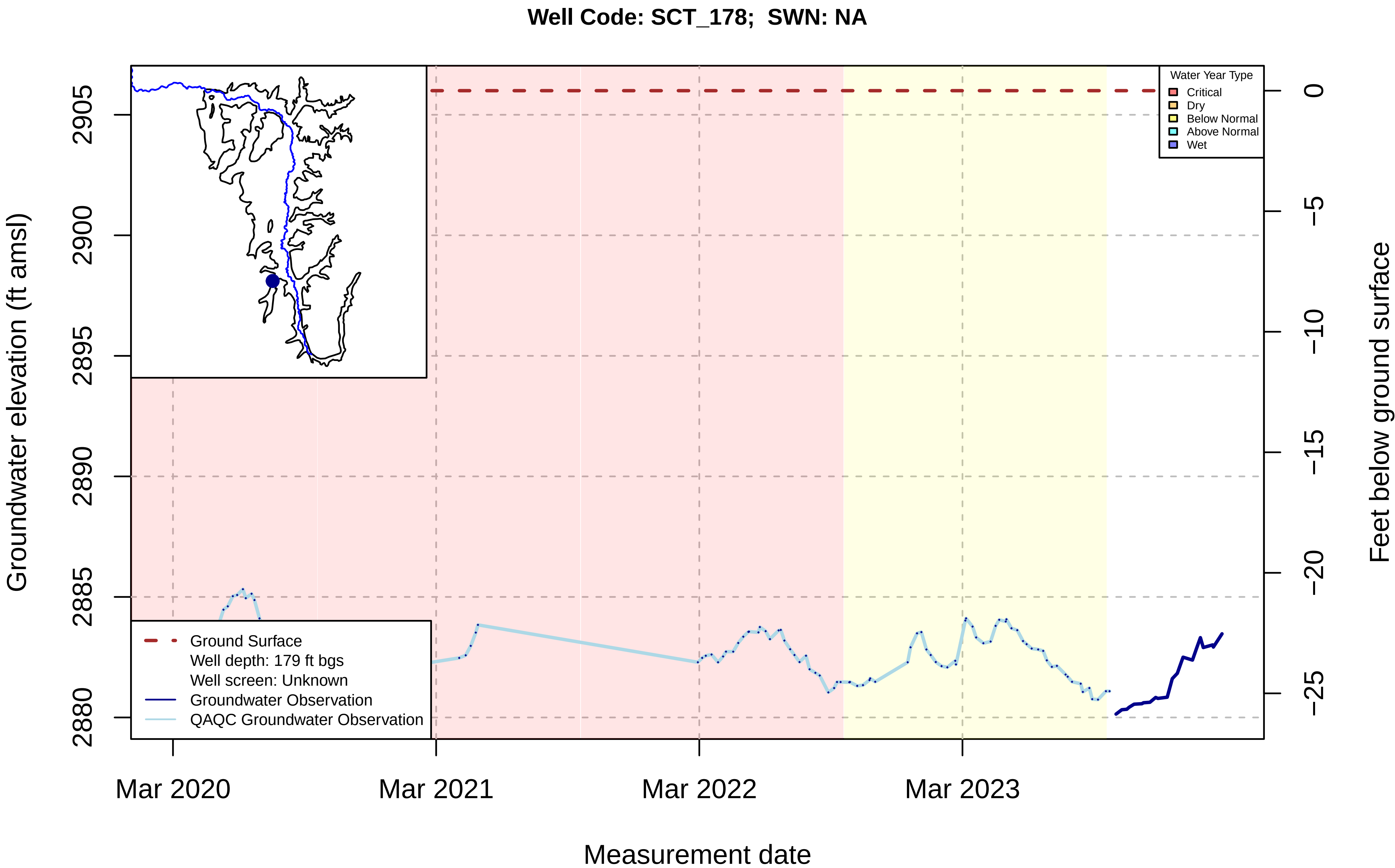


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

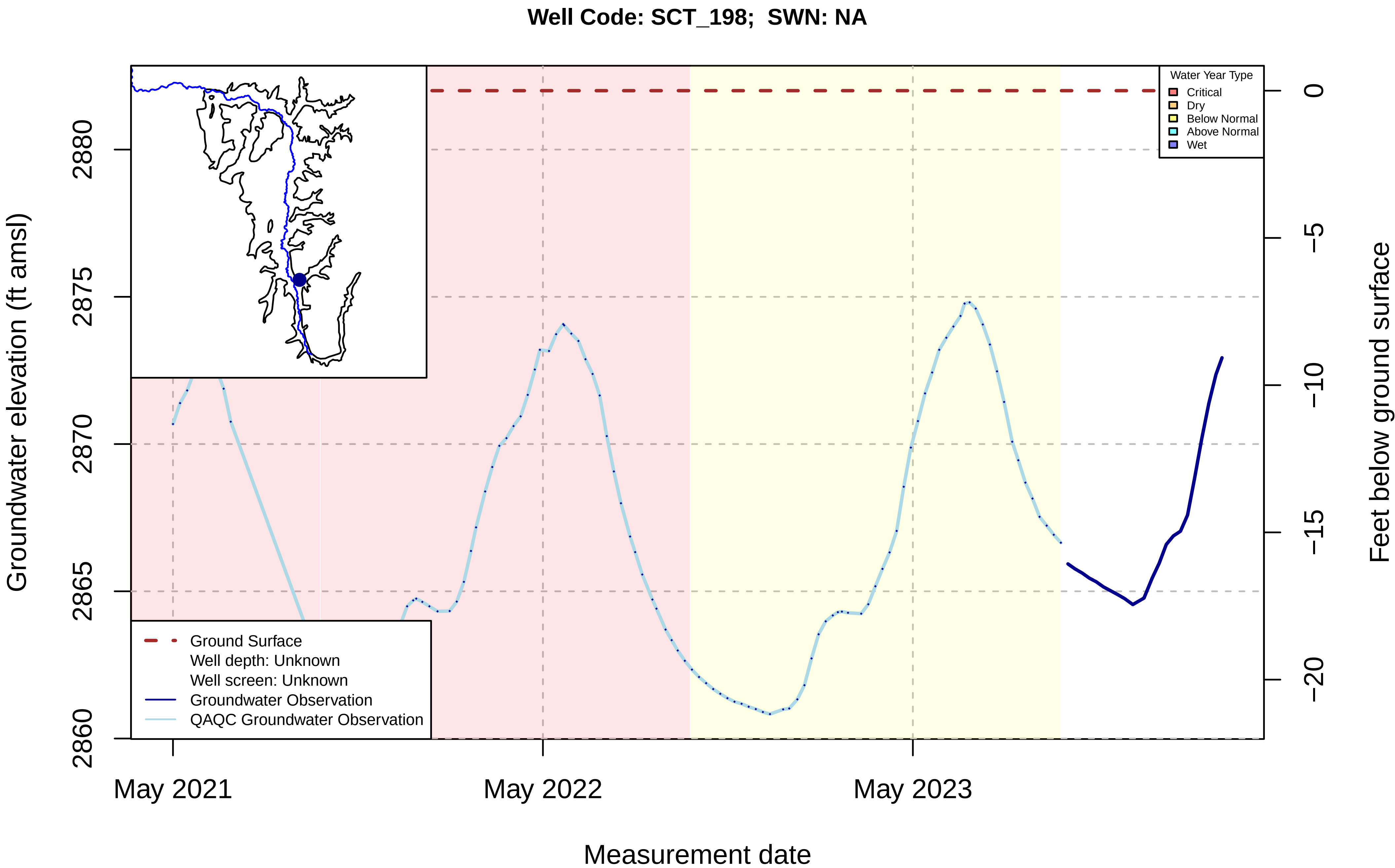


Water Year Types from WY 2019−2023 are preliminary results calculated based on SGMA Water Year Type Dataset Development Report.
The results will be finalized once DWR updates the water year type dataset for these years.

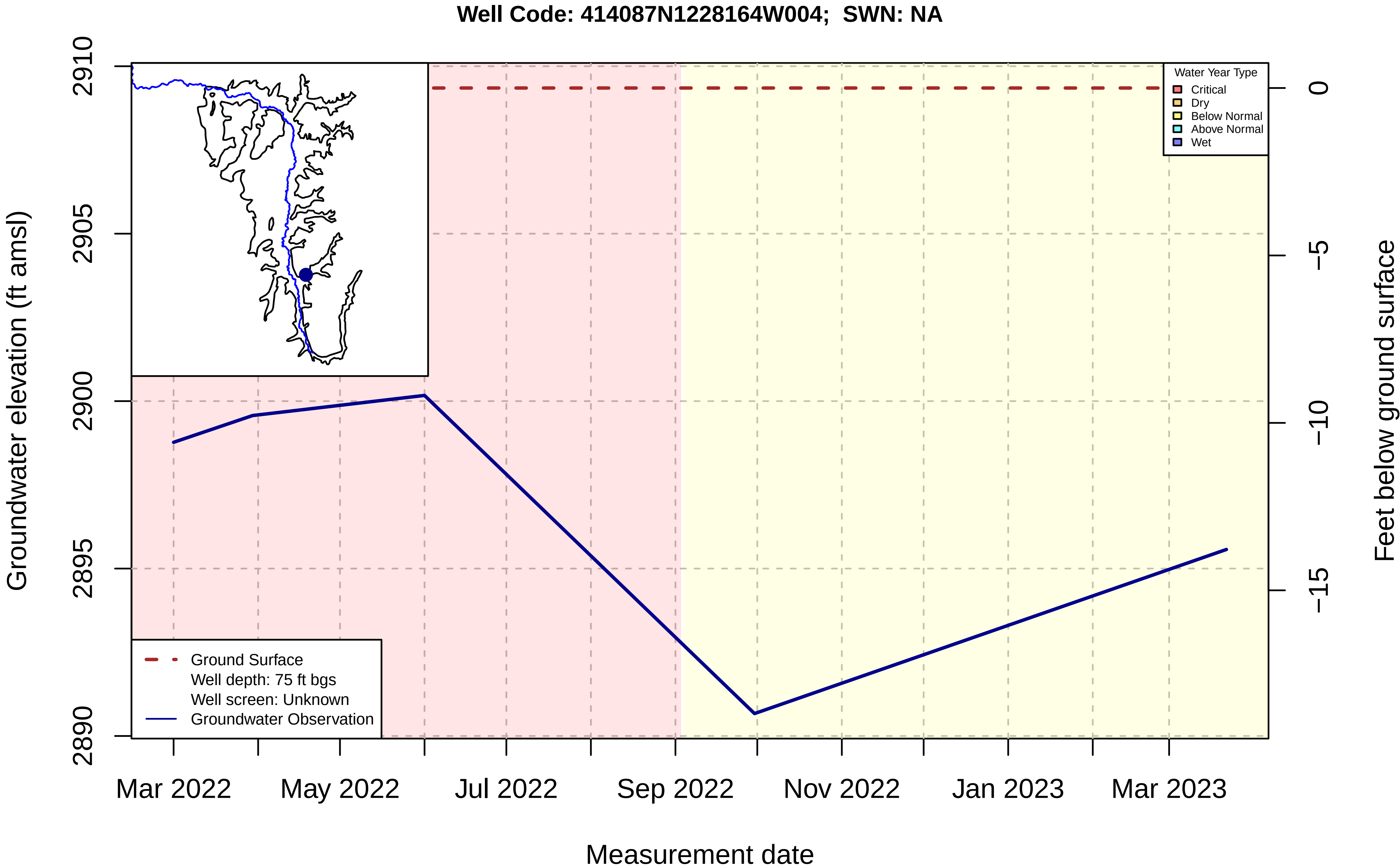
Appendix A.2 - Additional Groundwater Elevation Hydrographs



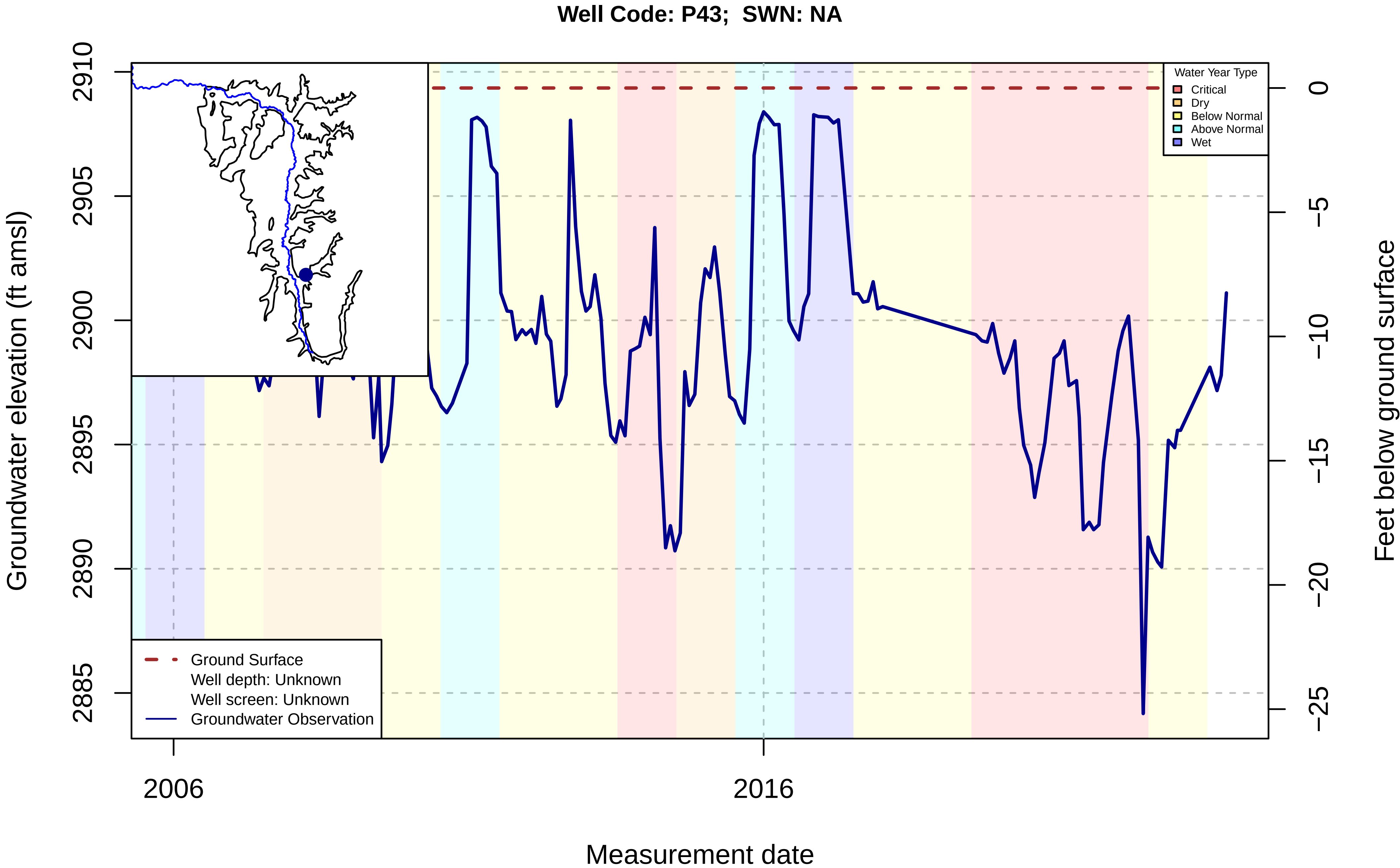
Well Code: SCT_178; SWN: NA
Groundwater elevation (ft amsl)
2880
2885
2890
2895
2900
2905
Feet below ground surface
0
−5
−10
−15
−20
−25
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 179 ft bgs
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



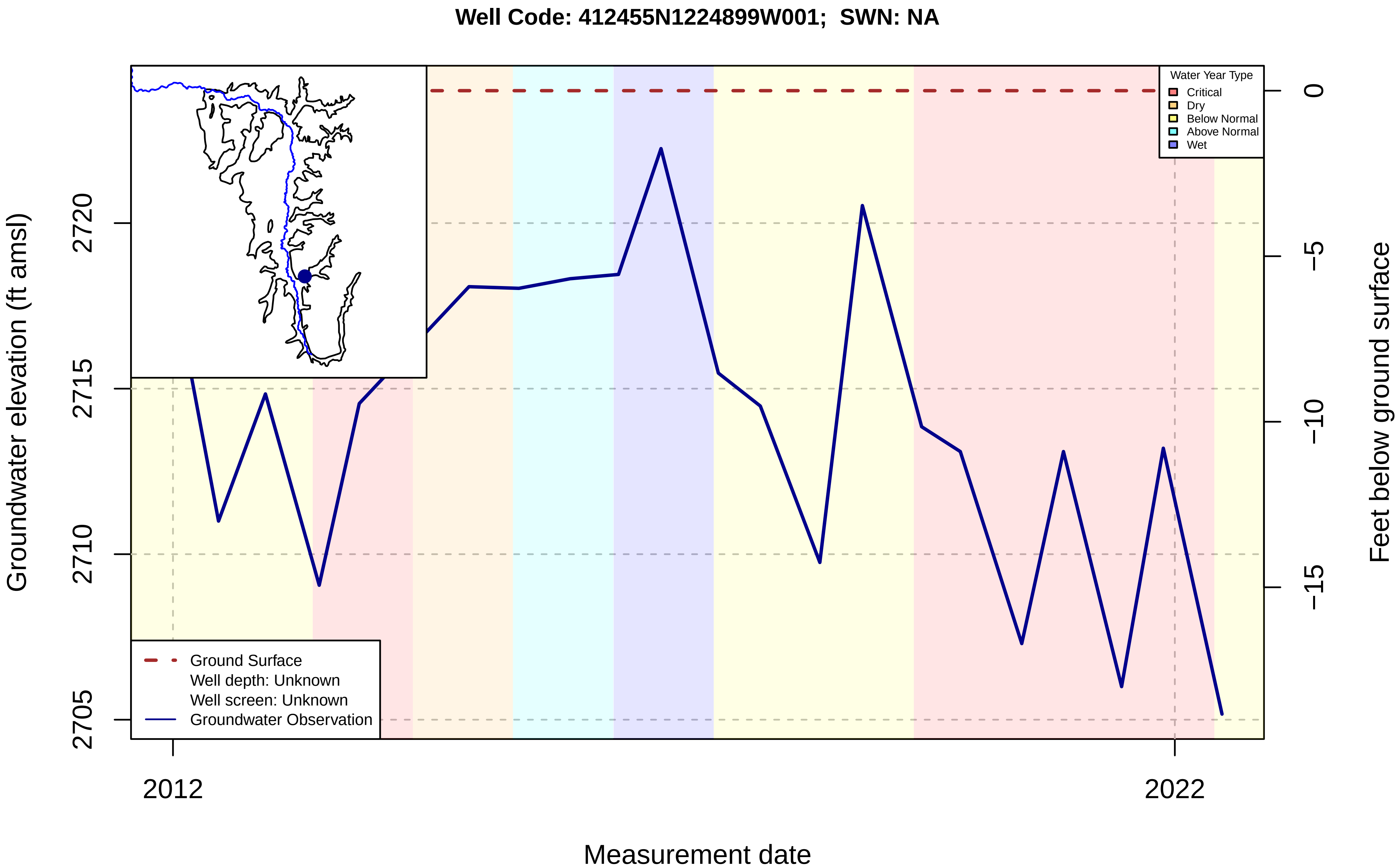
Well Code: SCT_198; SWN: NA
Groundwater elevation (ft amsl)
2860
2865
2870
2875
2880
Feet below ground surface
0
−5
−10
−15
−20
May 2021
May 2022
May 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



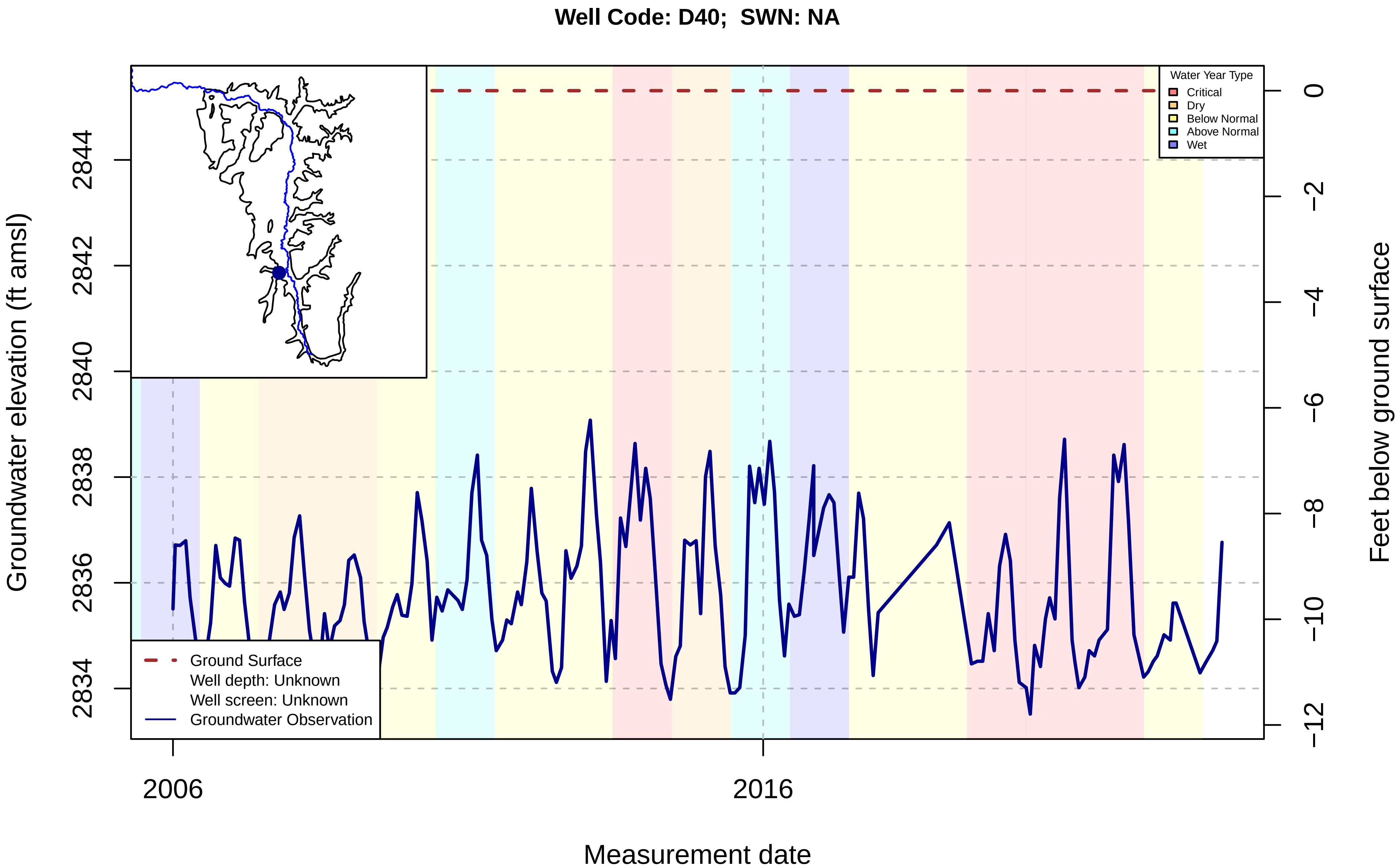
Well Code: 414087N1228164W004; SWN: NA
Groundwater elevation (ft amsl)
2910
2905
2900
2895
2890
Feet below ground surface
0
−5
−10
−15
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 75 ft bgs
Well screen: Unknown
Groundwater Observation
Mar 2022
May 2022
Jul 2022
Sep 2022
Nov 2022
Jan 2023
Mar 2023
Measurement date



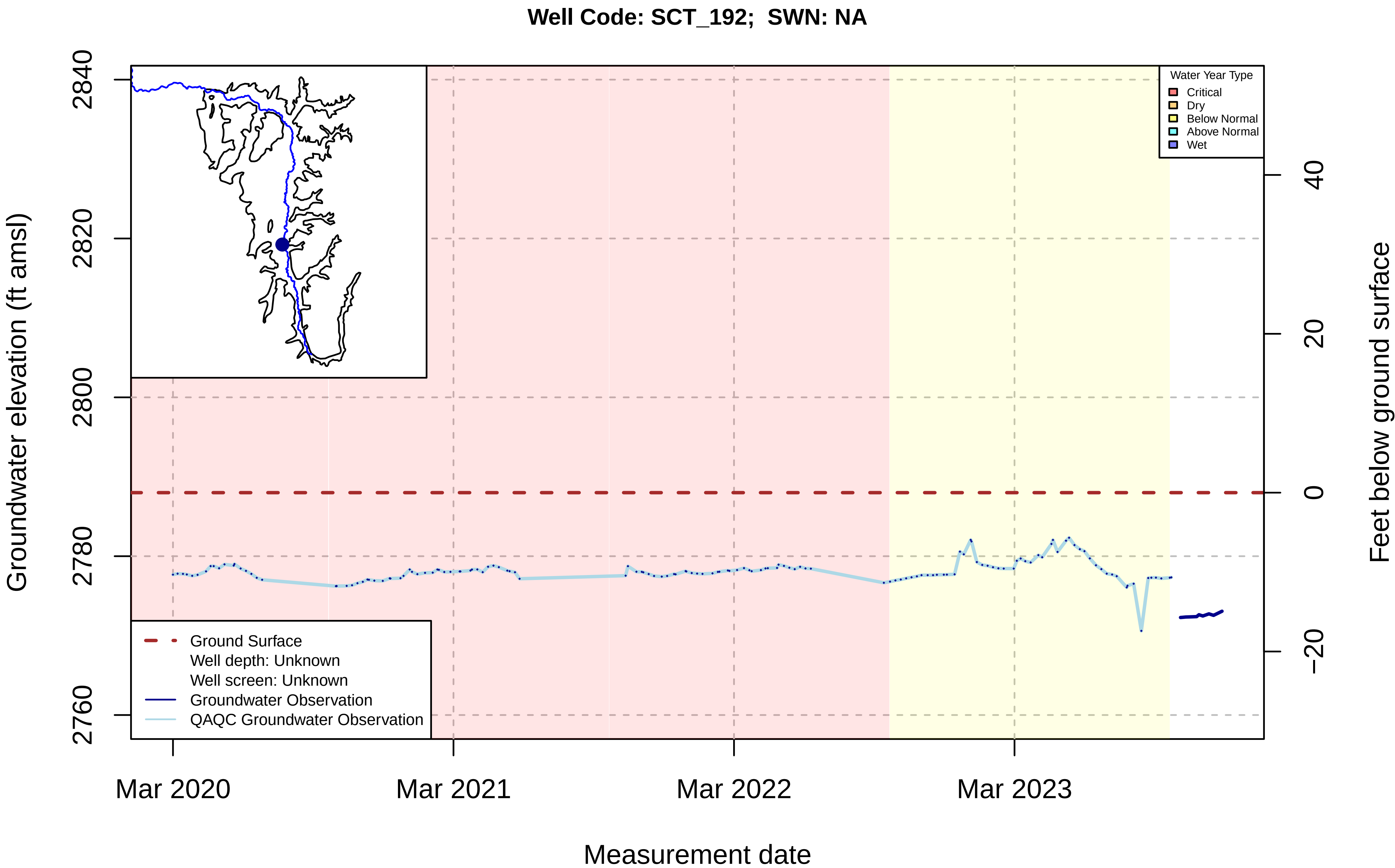
Well Code: P43; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2006
2016
2885
2890
2895
2900
2905
2910
0
−5
−10
−15
−20
−25
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



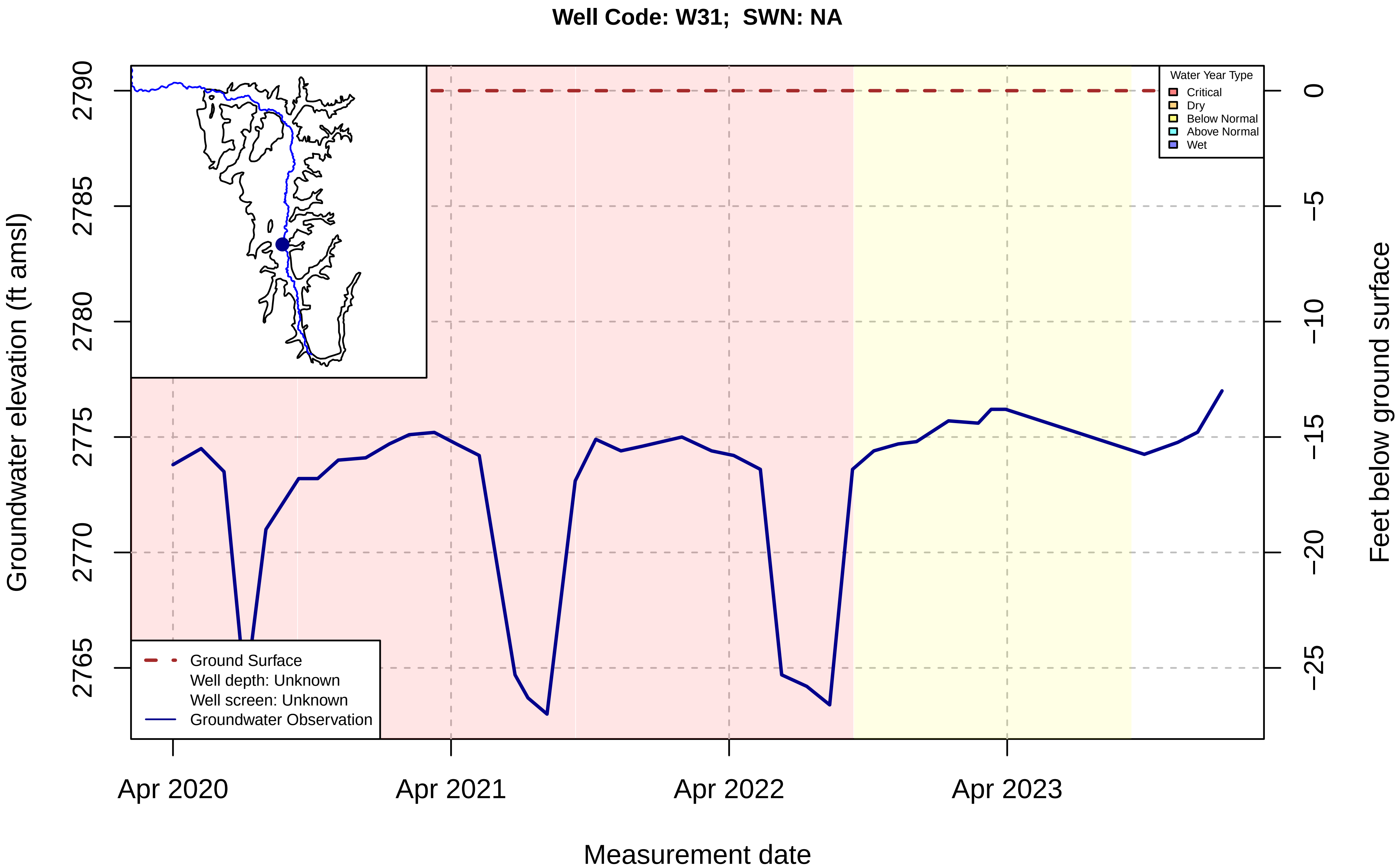
Well Code: 412455N1224899W001; SWN: NA
Groundwater elevation (ft amsl)
2705
2710
2715
2720
Feet below ground surface
0
−5
−10
−15
2012
2022
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



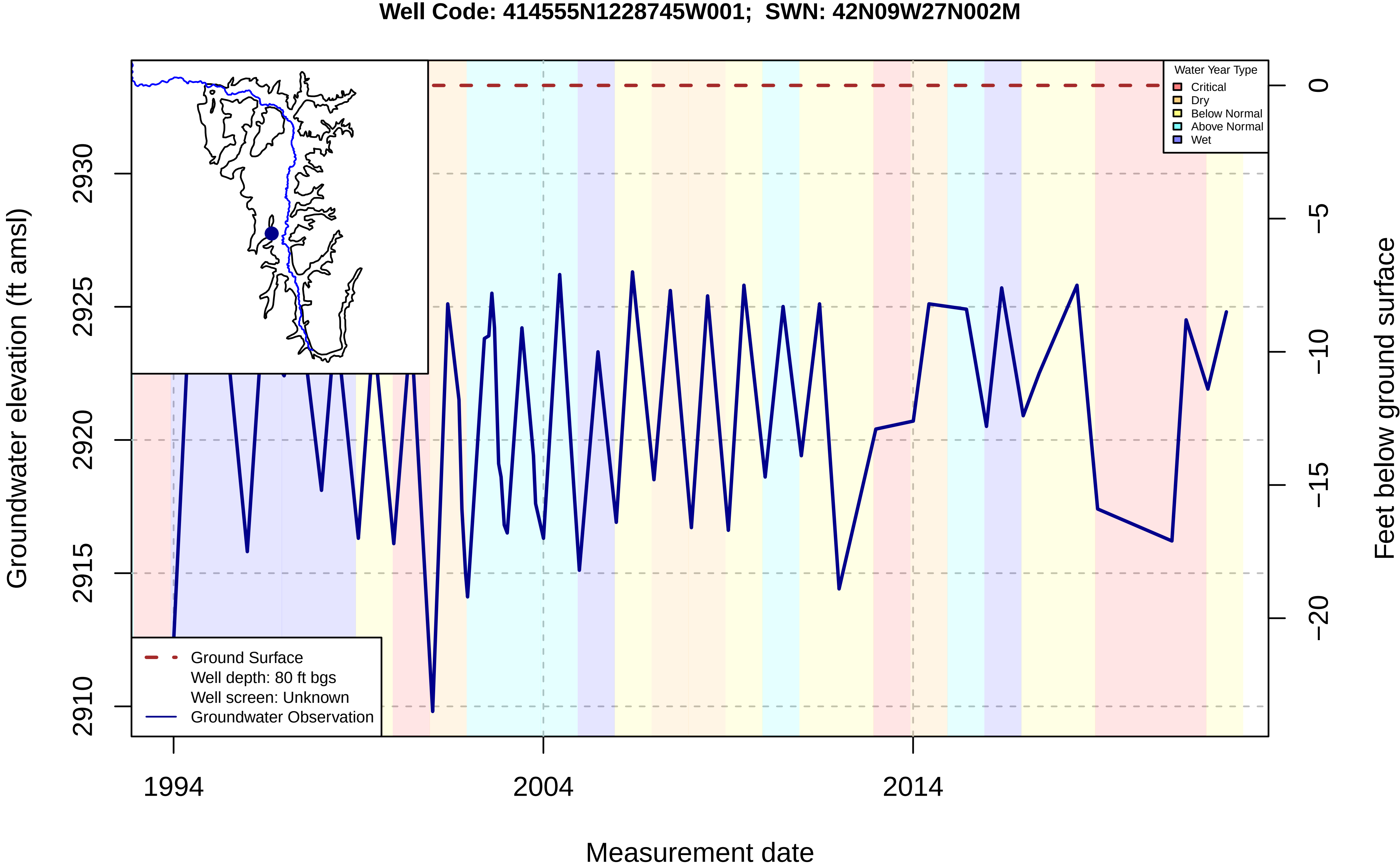
Well Code: D40; SWN: NA
Groundwater elevation (ft amsl)
2834
2836
2838
2840
2842
2844
Feet below ground surface
0
−2
−4
−6
−8
−10
−12
2006
2016
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

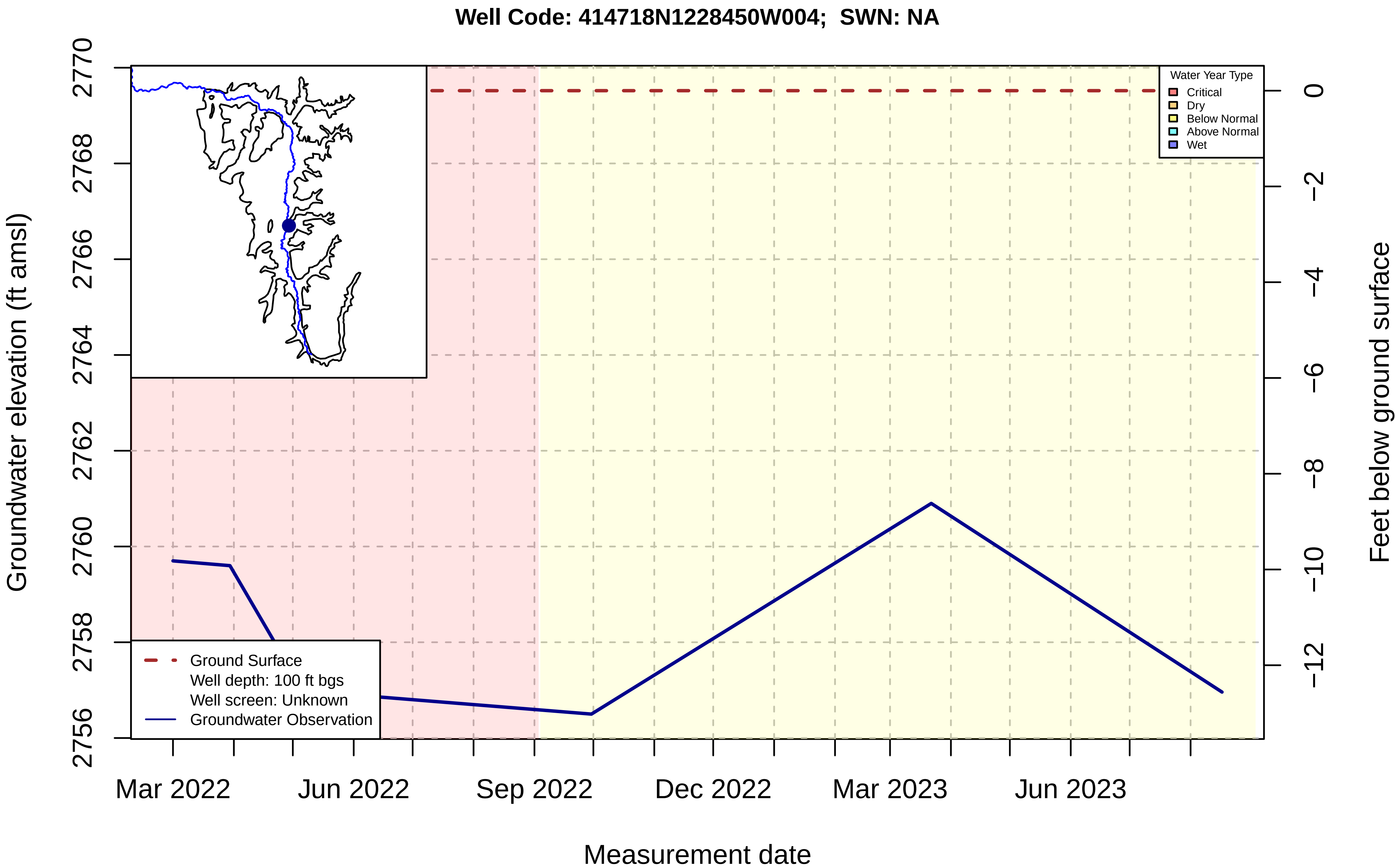


Well Code: SCT_192; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2760
2780
2800
2820
2840
−20
0
20
40
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation

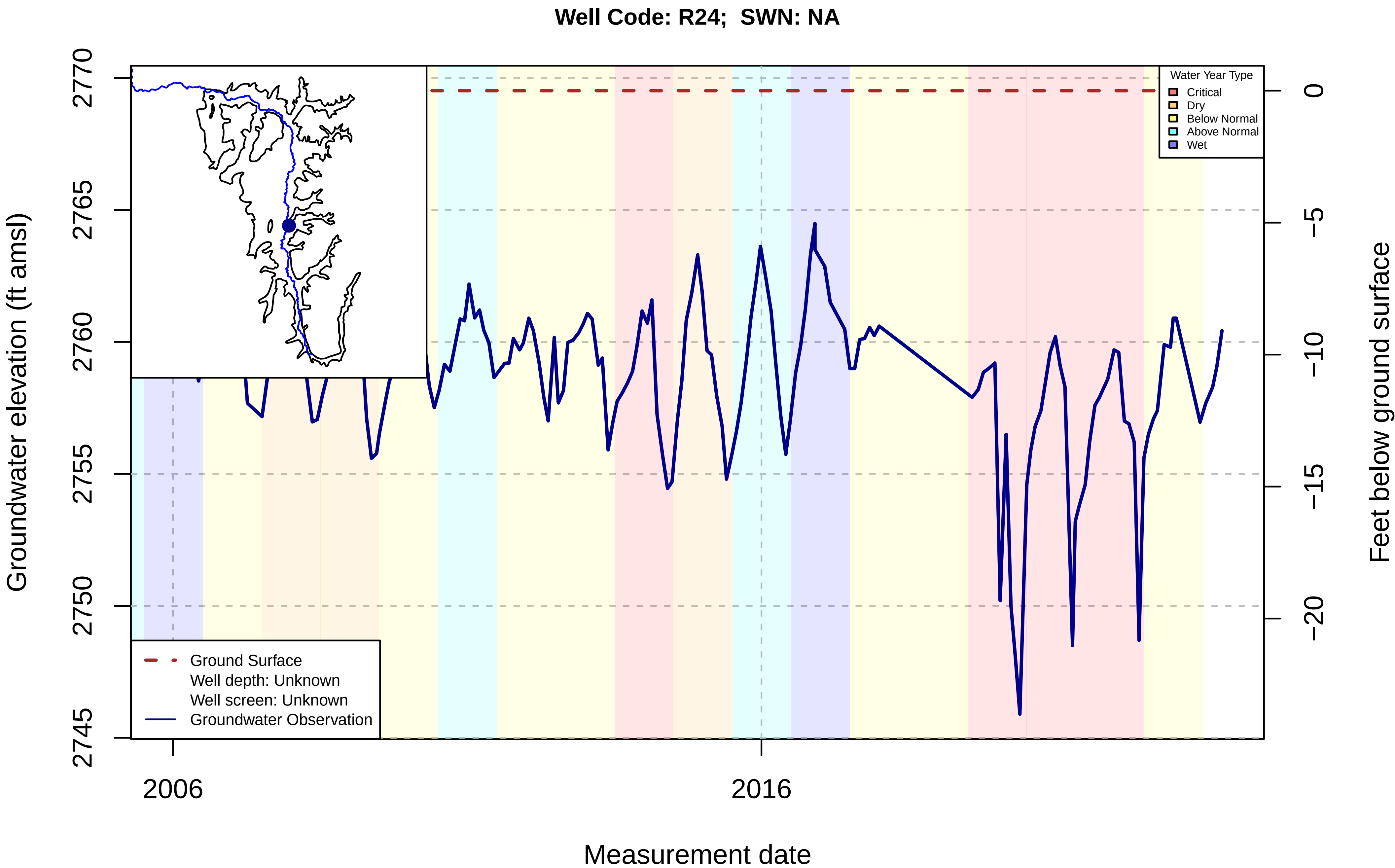


Well Code: W31; SWN: NA
Groundwater elevation (ft amsl)
2790
2785
2780
2775
2770
2765
Feet below ground surface
0
−5
−10
−15
−20
−25
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
Apr 2020
Apr 2021
Apr 2022
Apr 2023
Measurement date

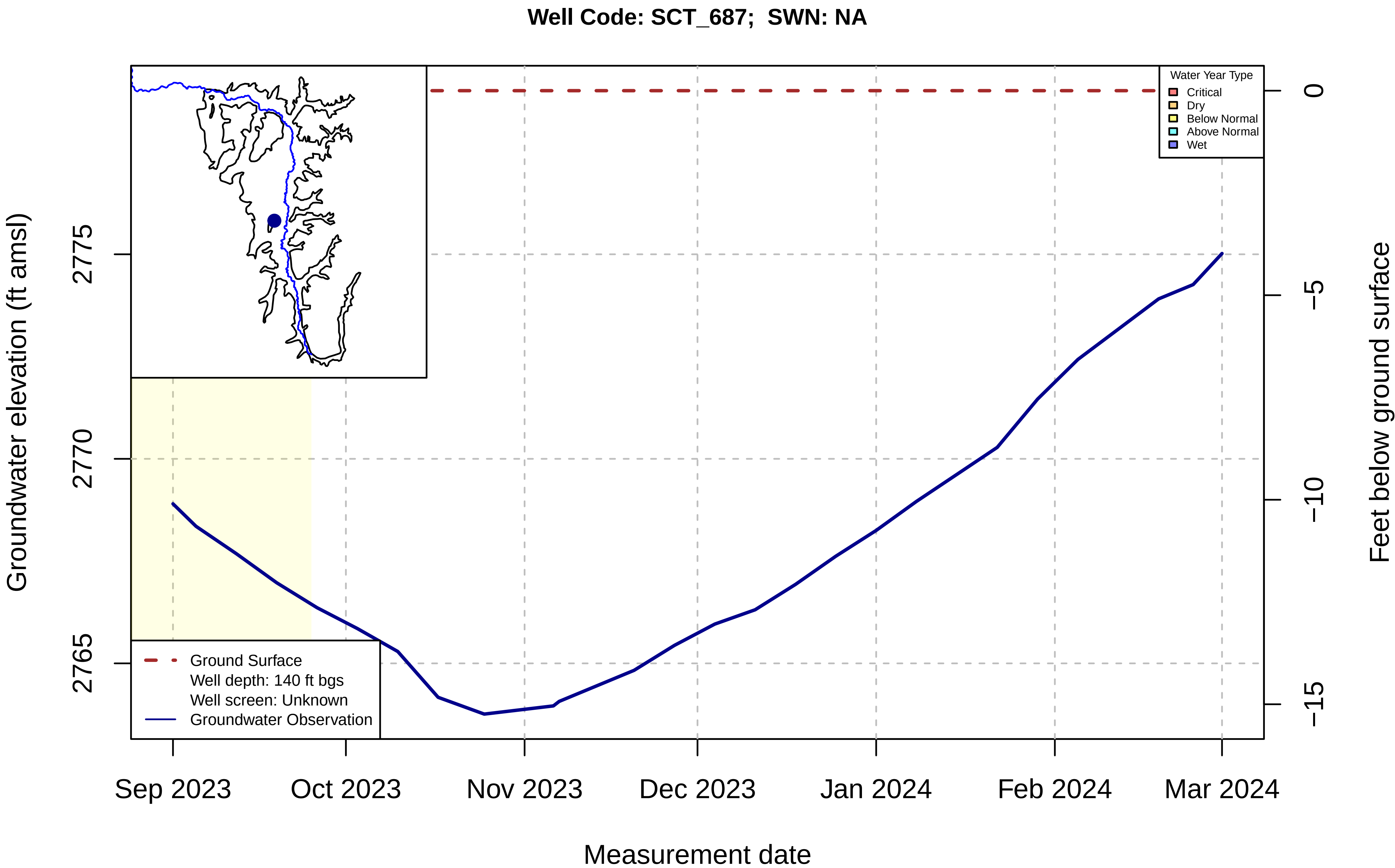

Well Code: 414555N1228745W001; SWN: 42N09W27N002M
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
1994
2004
2014
2910
2915
2920
2925
2930
0
−5
−10
−15
−20
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 80 ft bgs
Well screen: Unknown
Groundwater Observation



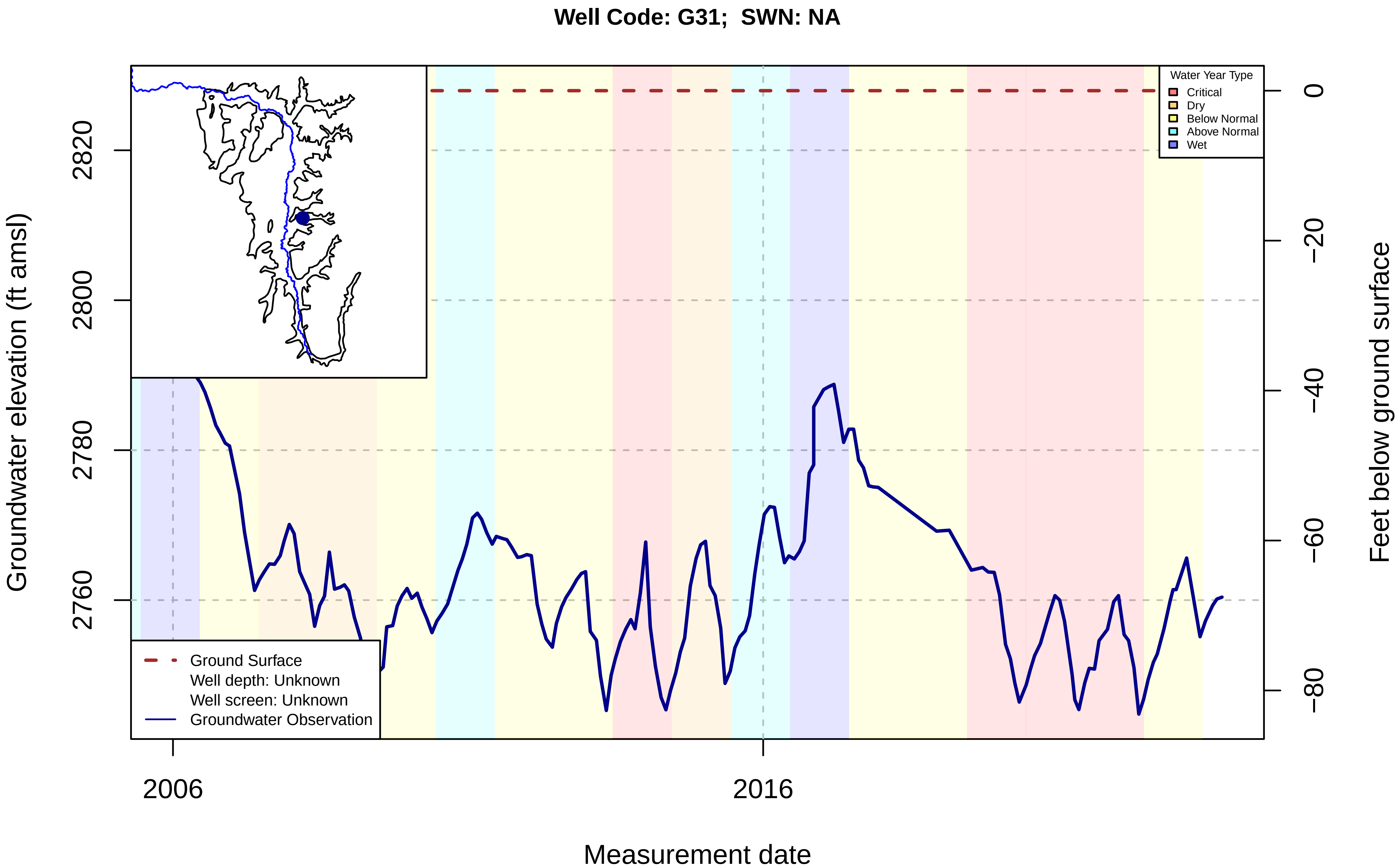
Well Code: 414718N1228450W004; SWN: NA
Groundwater elevation (ft amsl)
2756
2758
2760
2762
2764
2766
2768
2770
Feet below ground surface
0
−2
−4
−6
−8
−10
−12
Mar 2022
Jun 2022
Sep 2022
Dec 2022
Mar 2023
Jun 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 100 ft bgs
Well screen: Unknown
Groundwater Observation



Well Code: R24; SWN: NA
Groundwater elevation (ft amsl)
2745
2750
2755
2760
2765
2770
Feet below ground surface
0
−5
−10
−15
−20
2006
2016
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

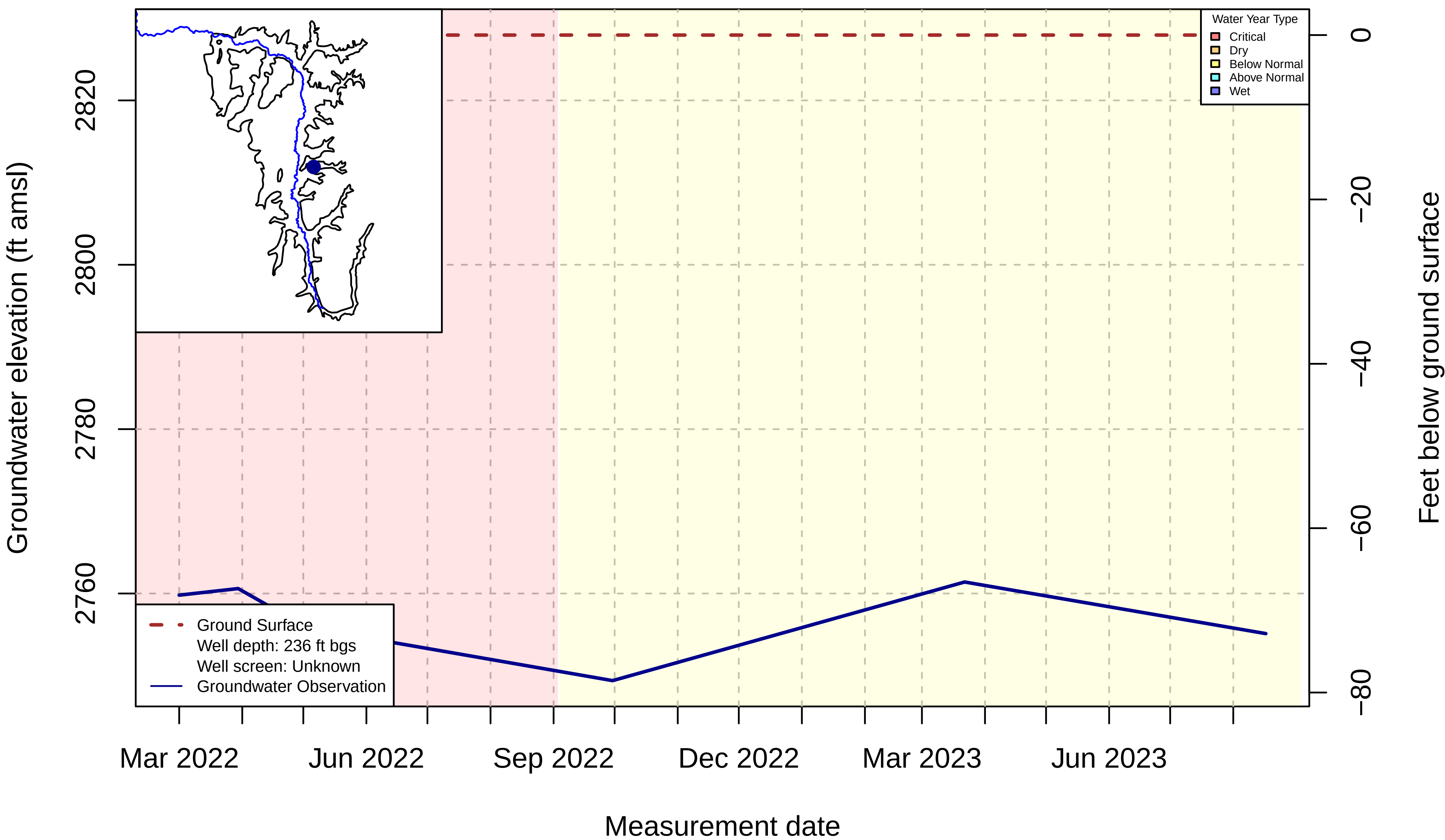


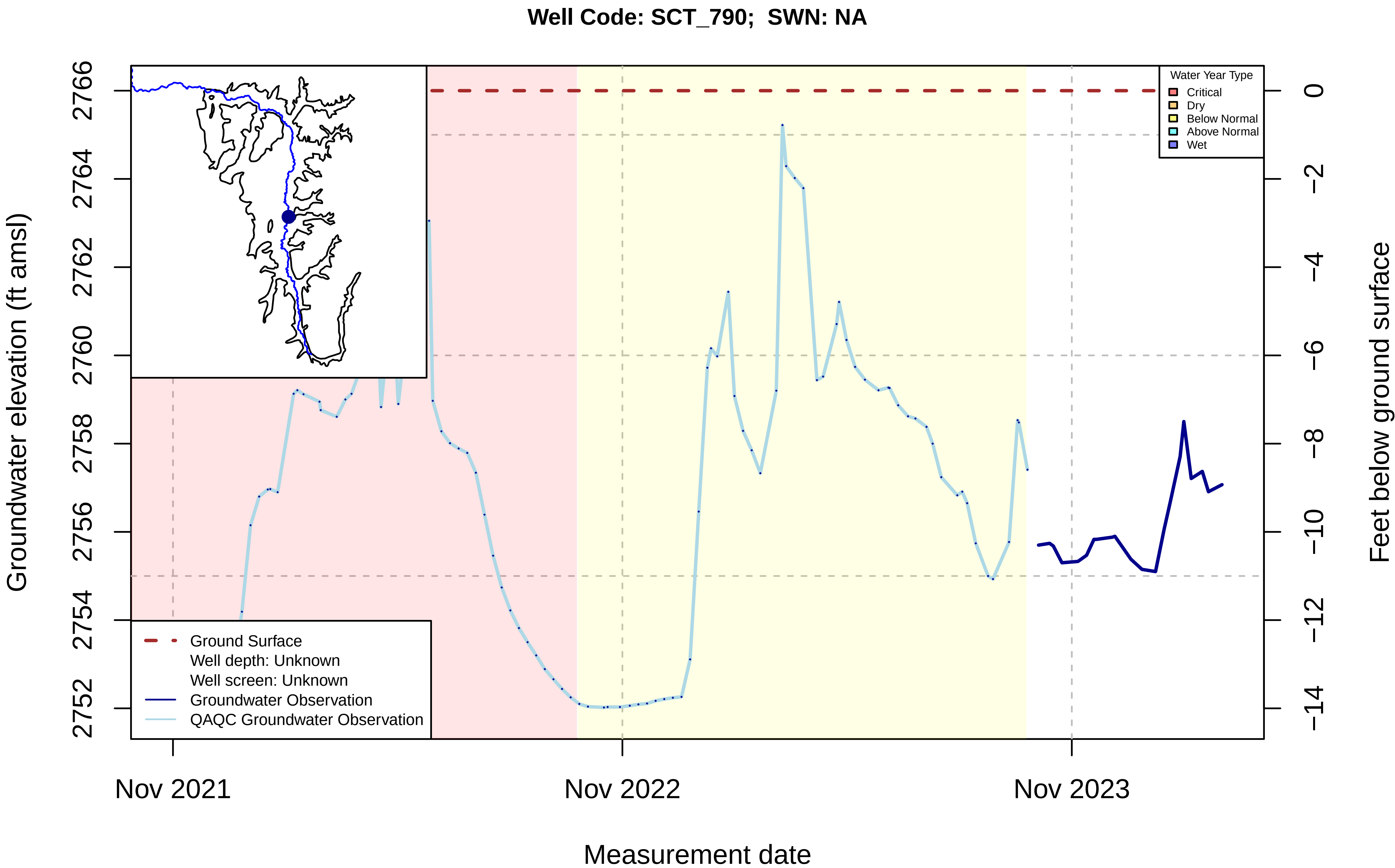
Well Code: SCT_687; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
2765
2770
2775
0
−5
−10
−15
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Mar 2024
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 140 ft bgs
Well screen: Unknown
Groundwater Observation



Well Code: G31; SWN: NA
Groundwater elevation (ft amsl)
2760
2780
2800
2820
Feet below ground surface
0
−20
−40
−60
−80
2006
2016
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

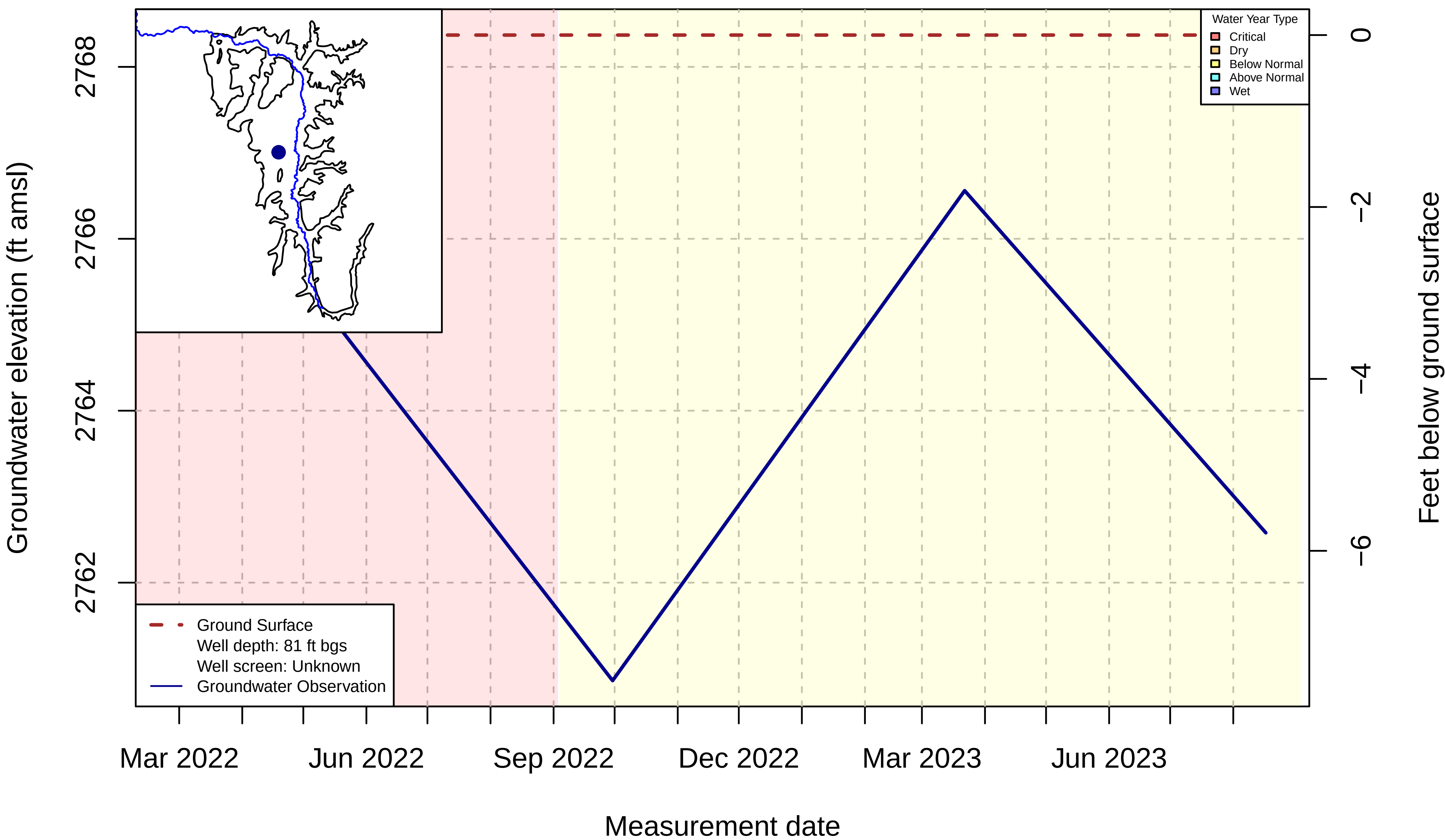
Well Code: 414816N1228226W001; SWN: NA



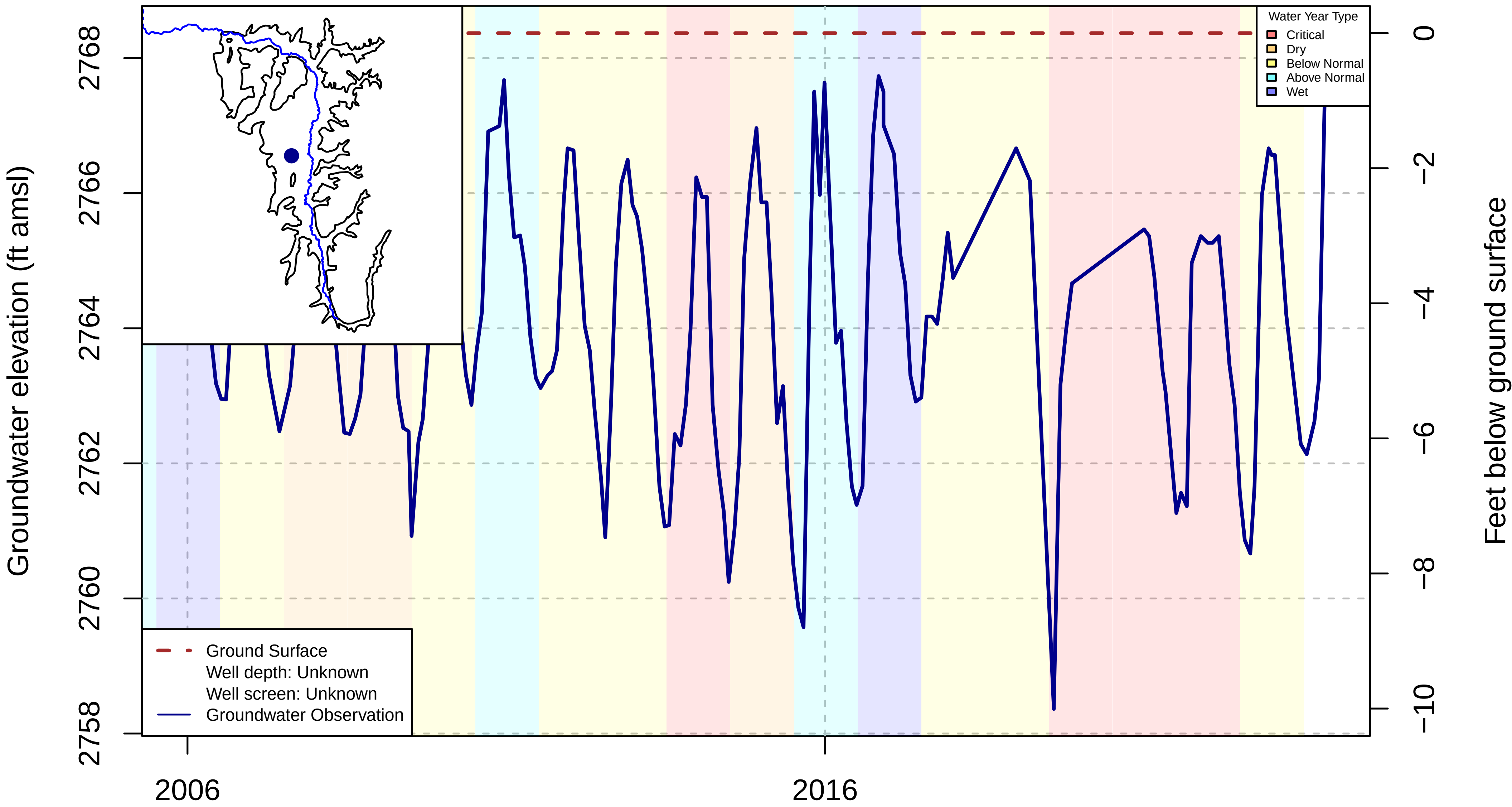


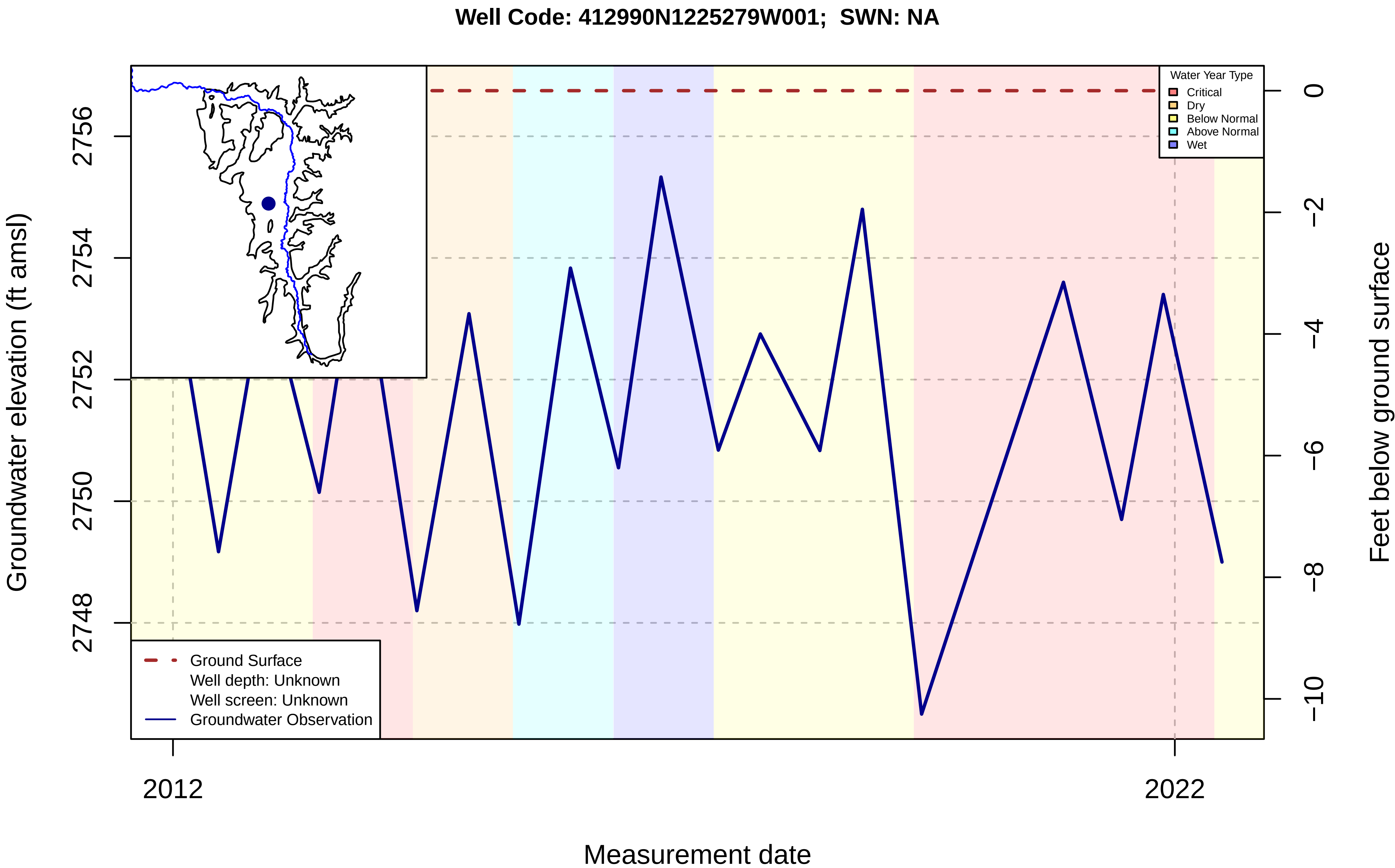
Well Code: SCT_790; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2766
2764
2762
2760
2758
2756
2754
2752
0
−2
−4
−6
−8
−10
−12
−14
Nov 2021
Nov 2022
Nov 2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation

Well Code: 414980N1228791W001; SWN: NA

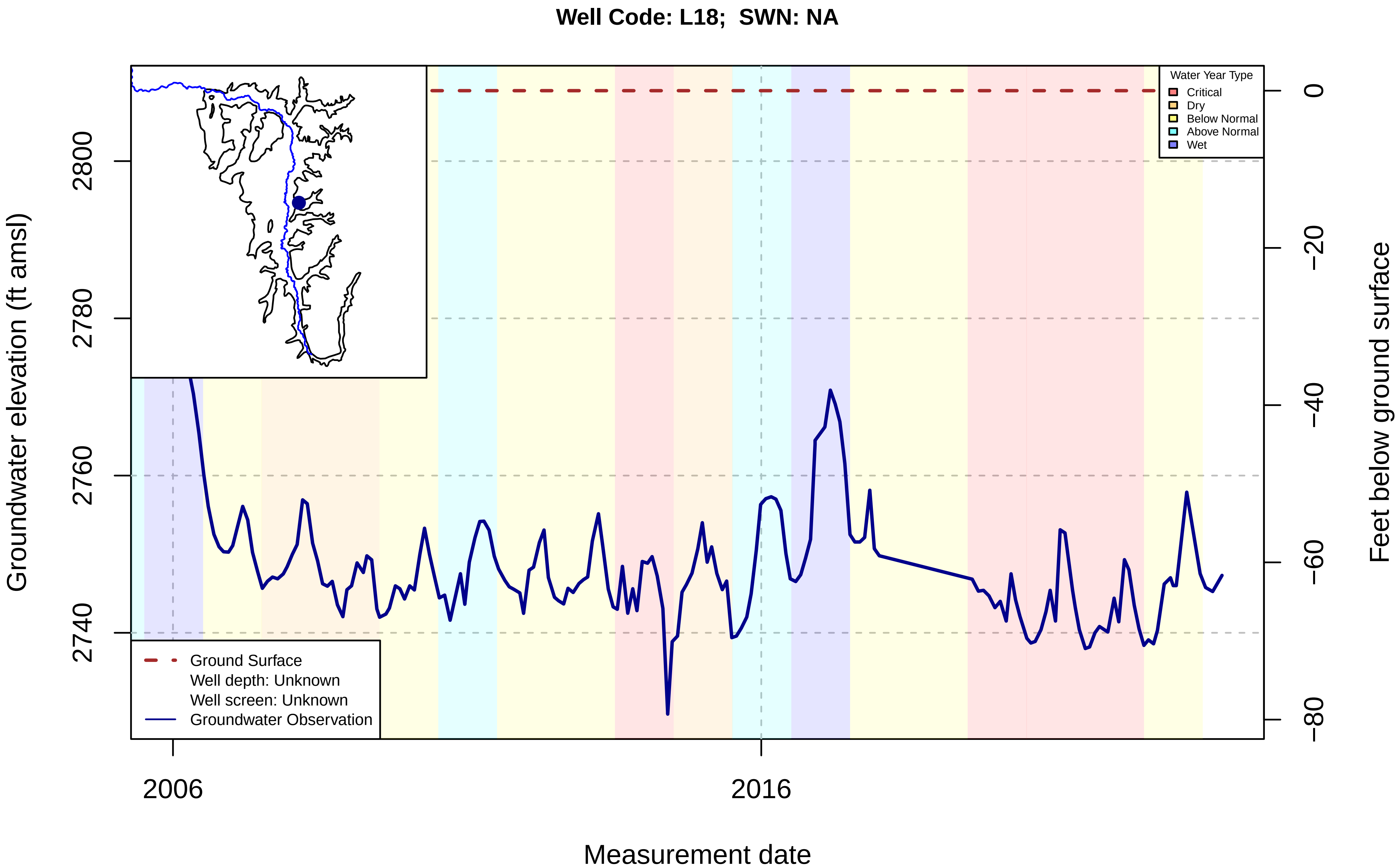


Well Code: D31; SWN: NA

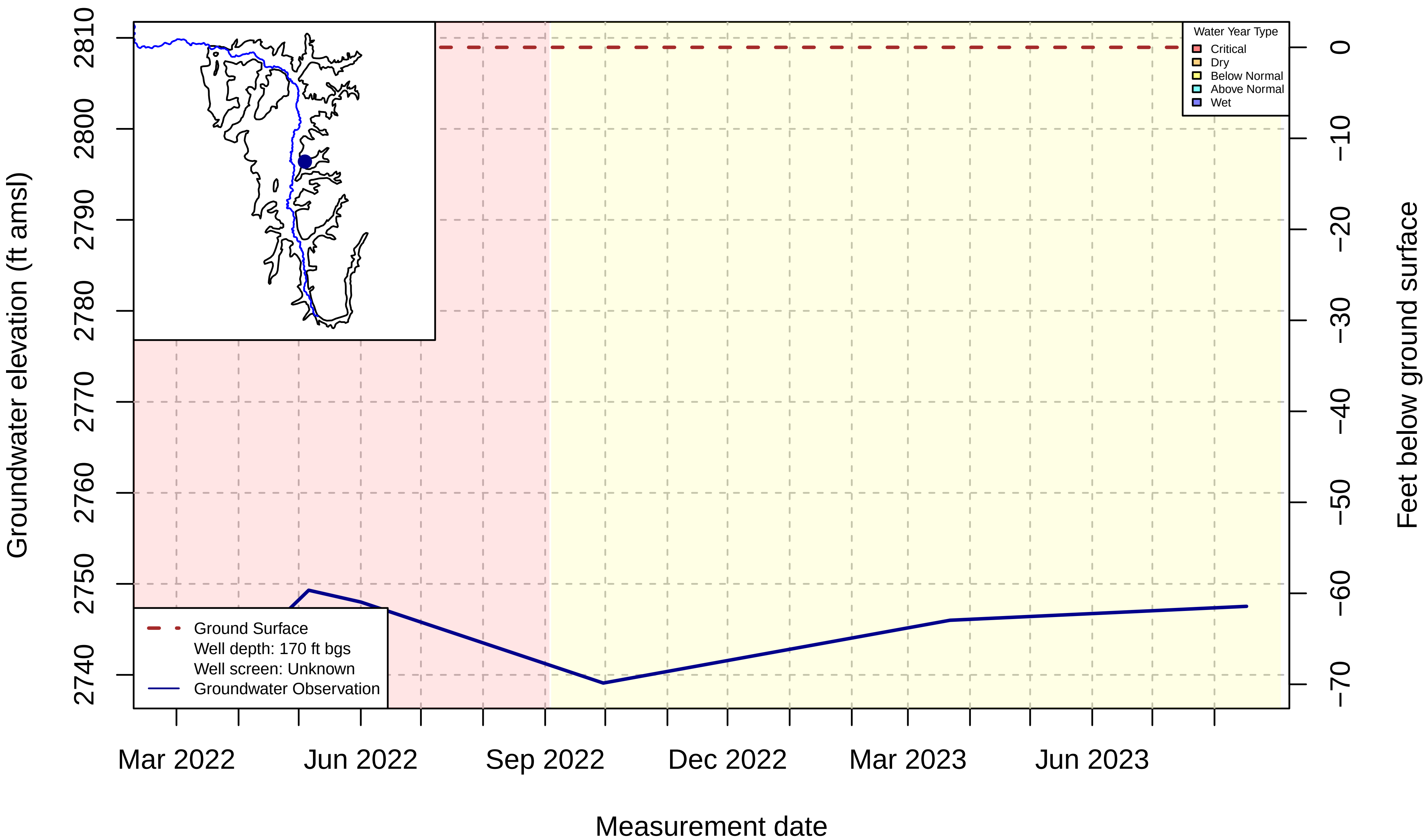


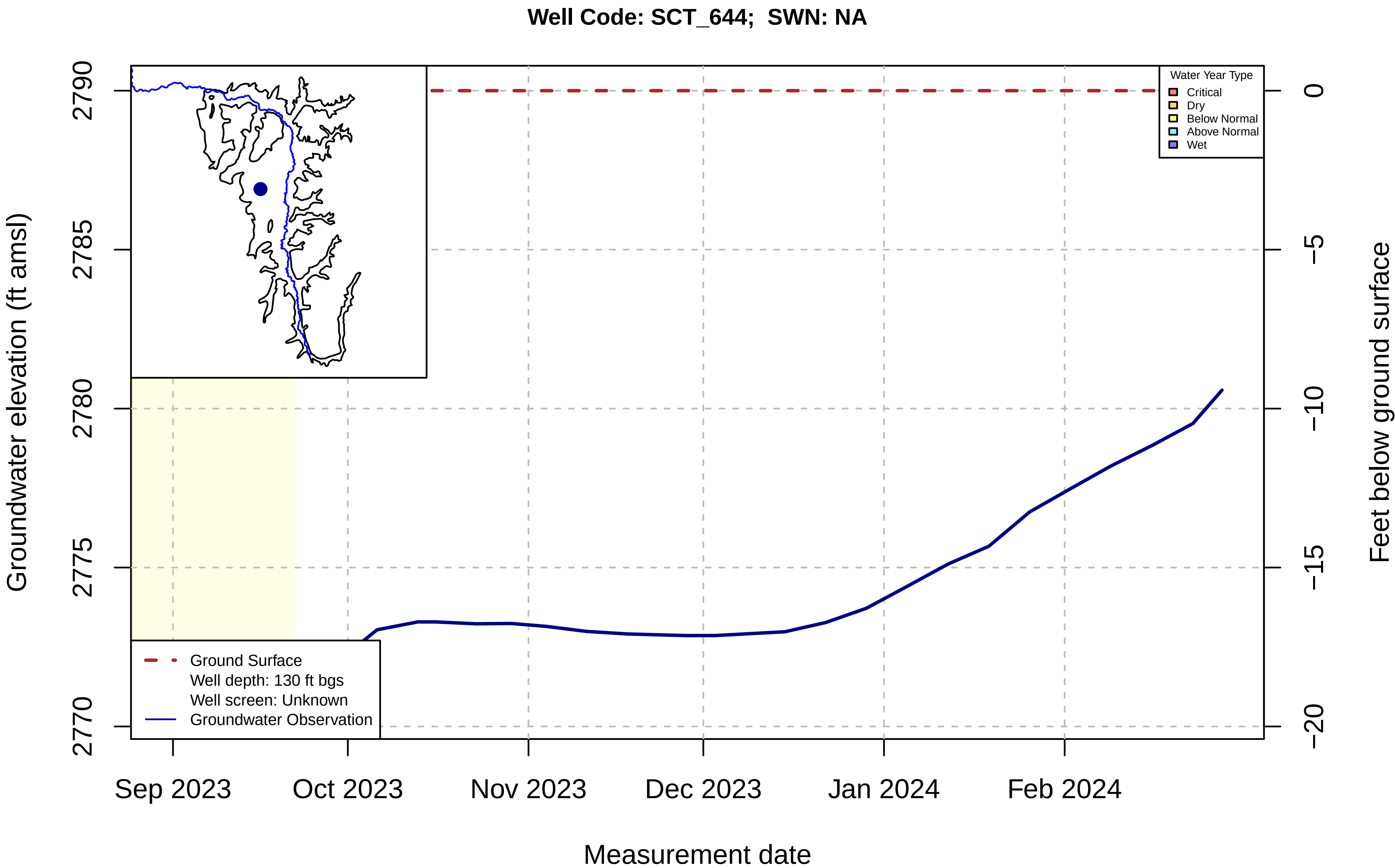


Well Code: 412990N1225279W001; SWN: NA
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2748
2750
2752
2754
2756
0
−2
−4
−6
−8
−10
2012
2022

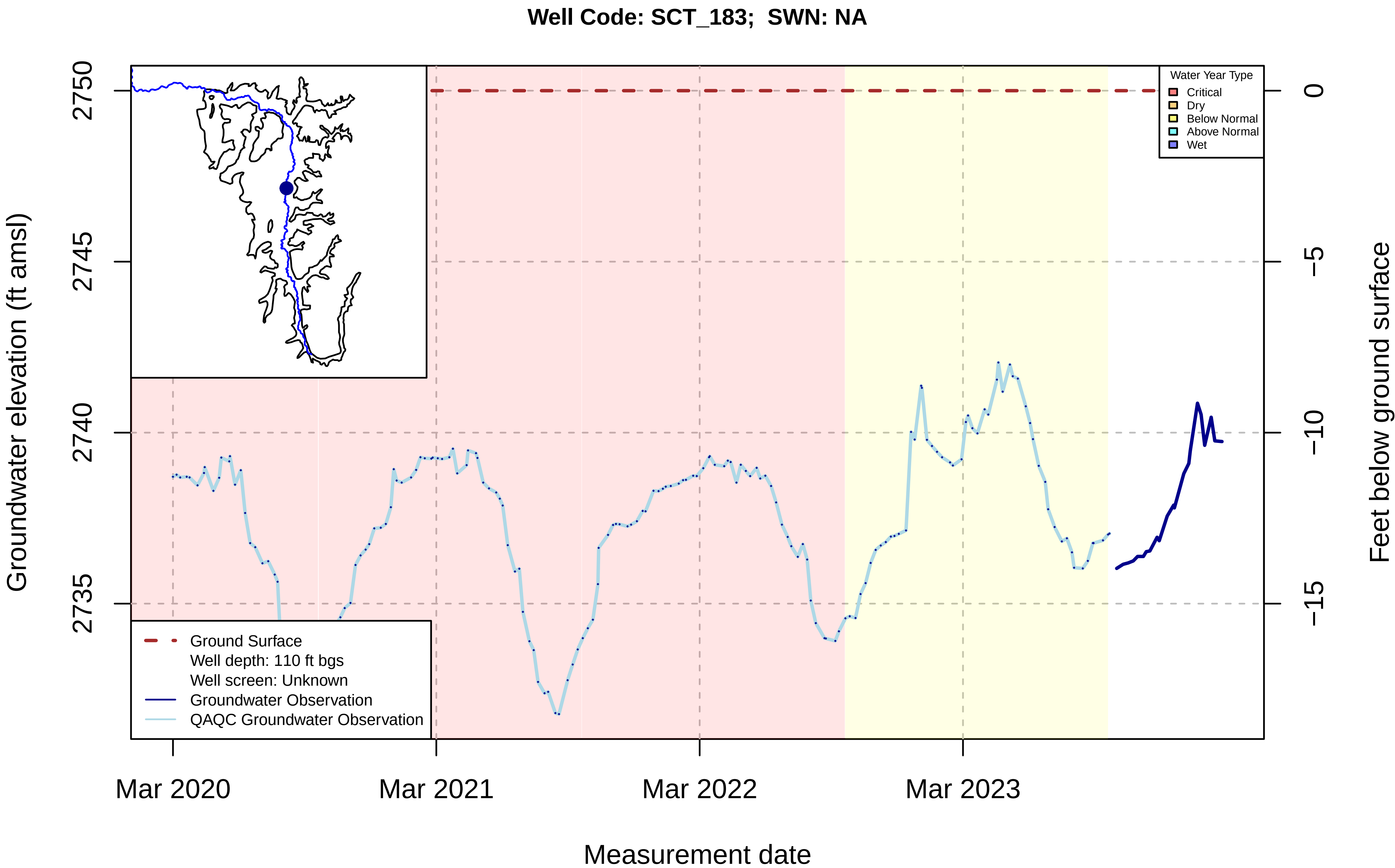

Well Code: L18; SWN: NA
Groundwater elevation (ft amsl)
2740
2760
2780
2800
Feet below ground surface
0
−20
−40
−60
−80
2006
2016
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

Well Code: 415005N1228298W001; SWN: NA

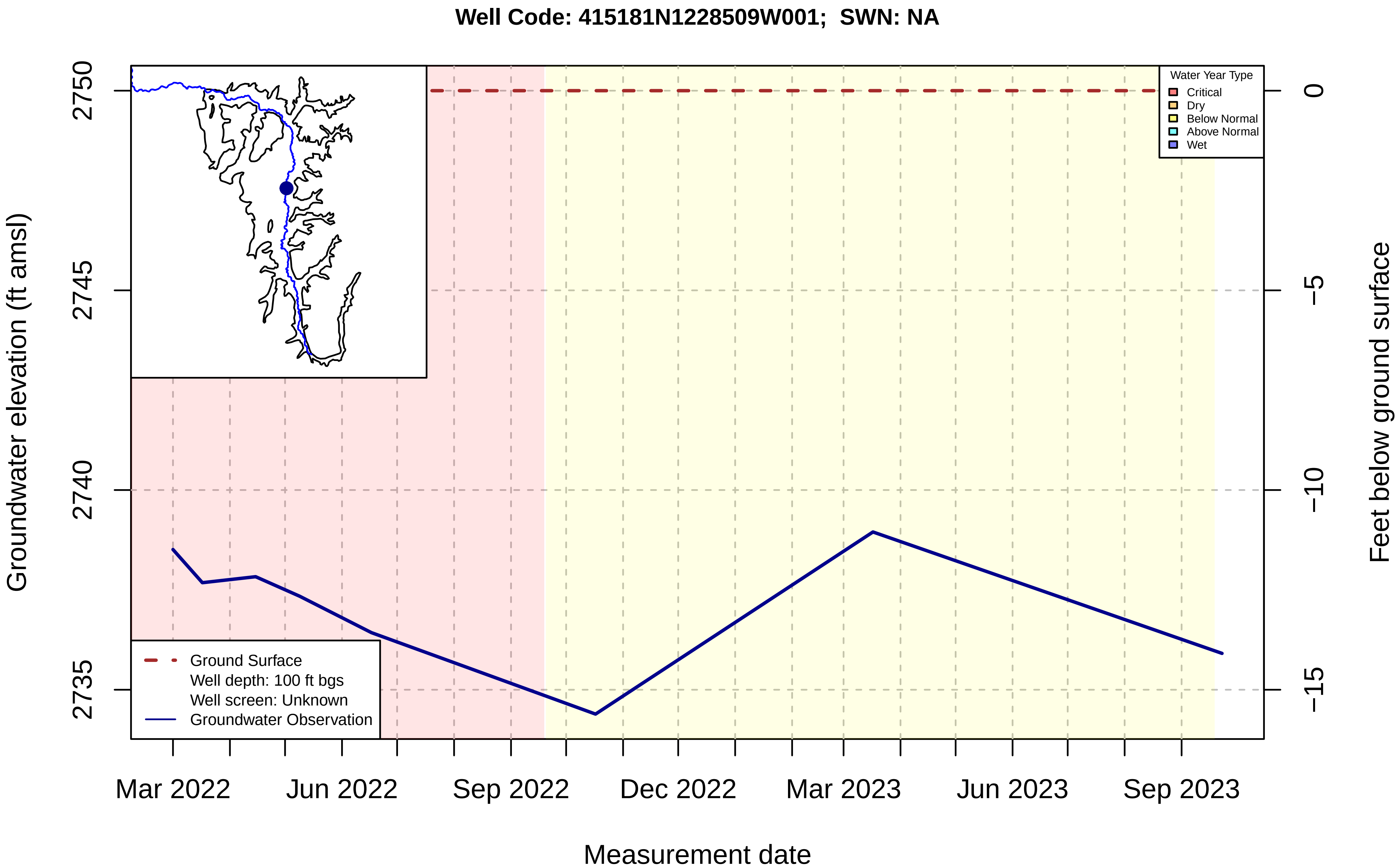




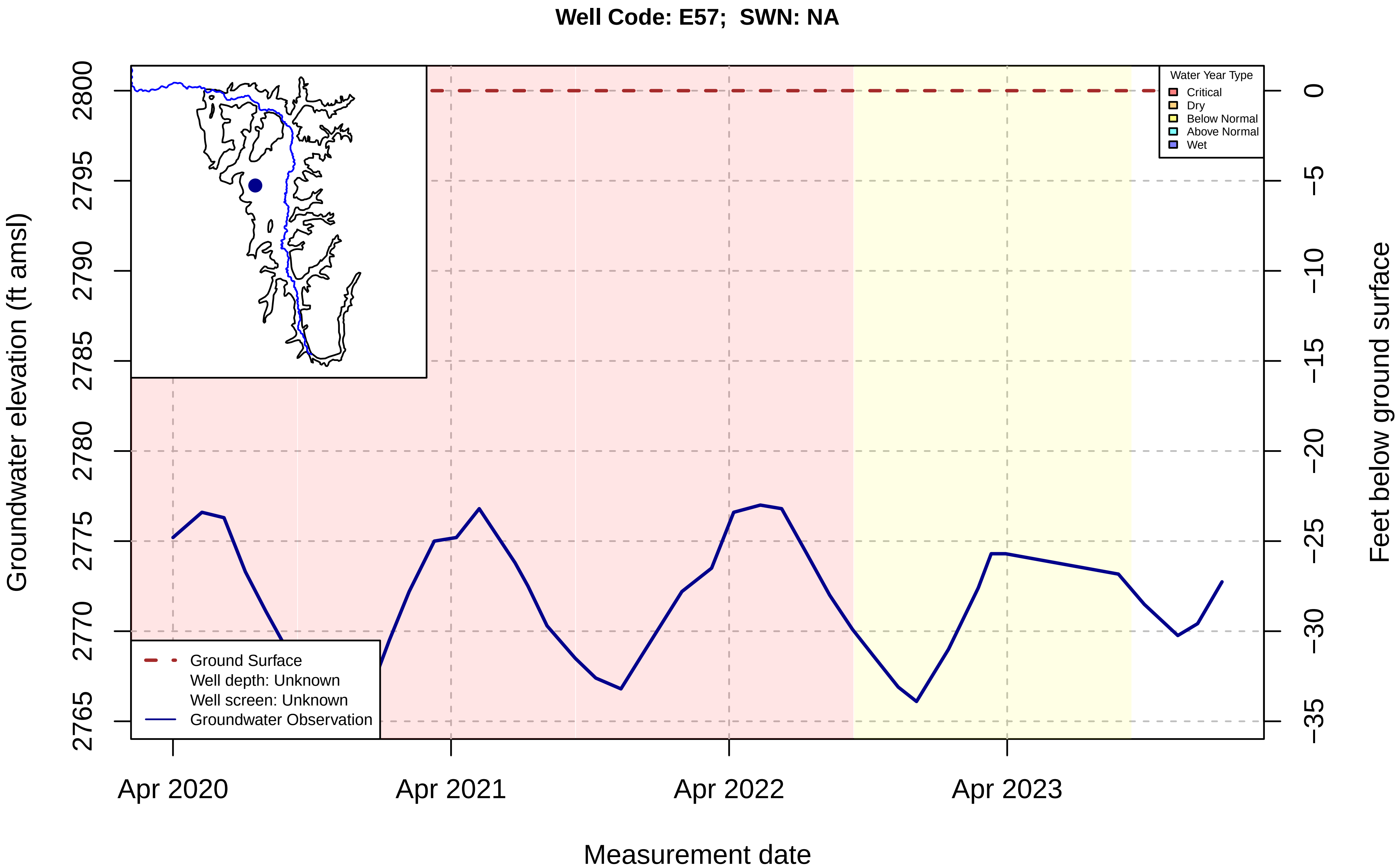
Well Code: SCT_644; SWN: NA
Groundwater elevation (ft amsl)
2790
2785
2780
2775
2770
Feet below ground surface
0
−5
−10
−15
−20
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 130 ft bgs
Well screen: Unknown
Groundwater Observation



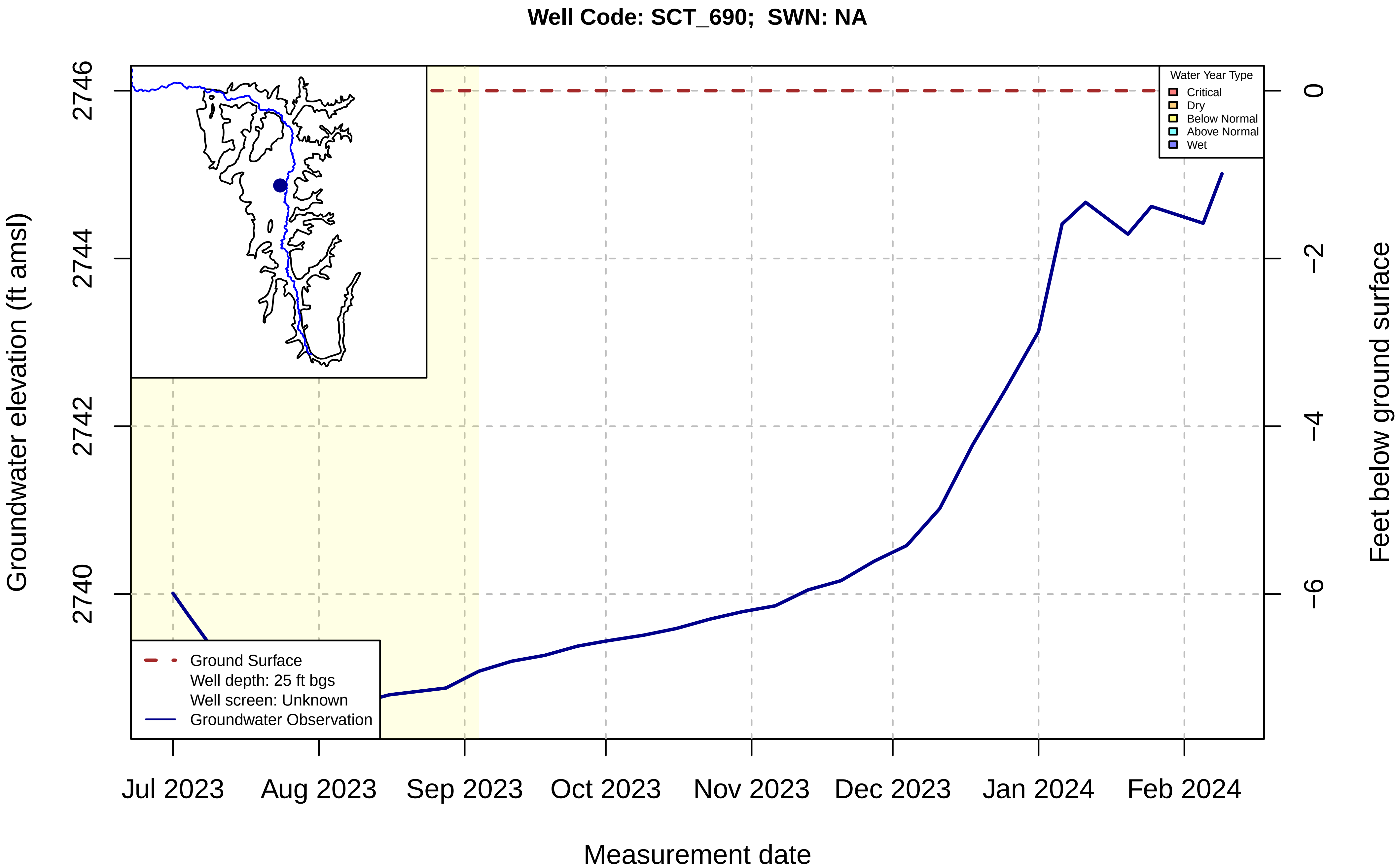
Well Code: SCT_183; SWN: NA
Groundwater elevation (ft amsl)
2750
2745
2740
2735
Feet below ground surface
0
−5
−10
−15
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 110 ft bgs
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



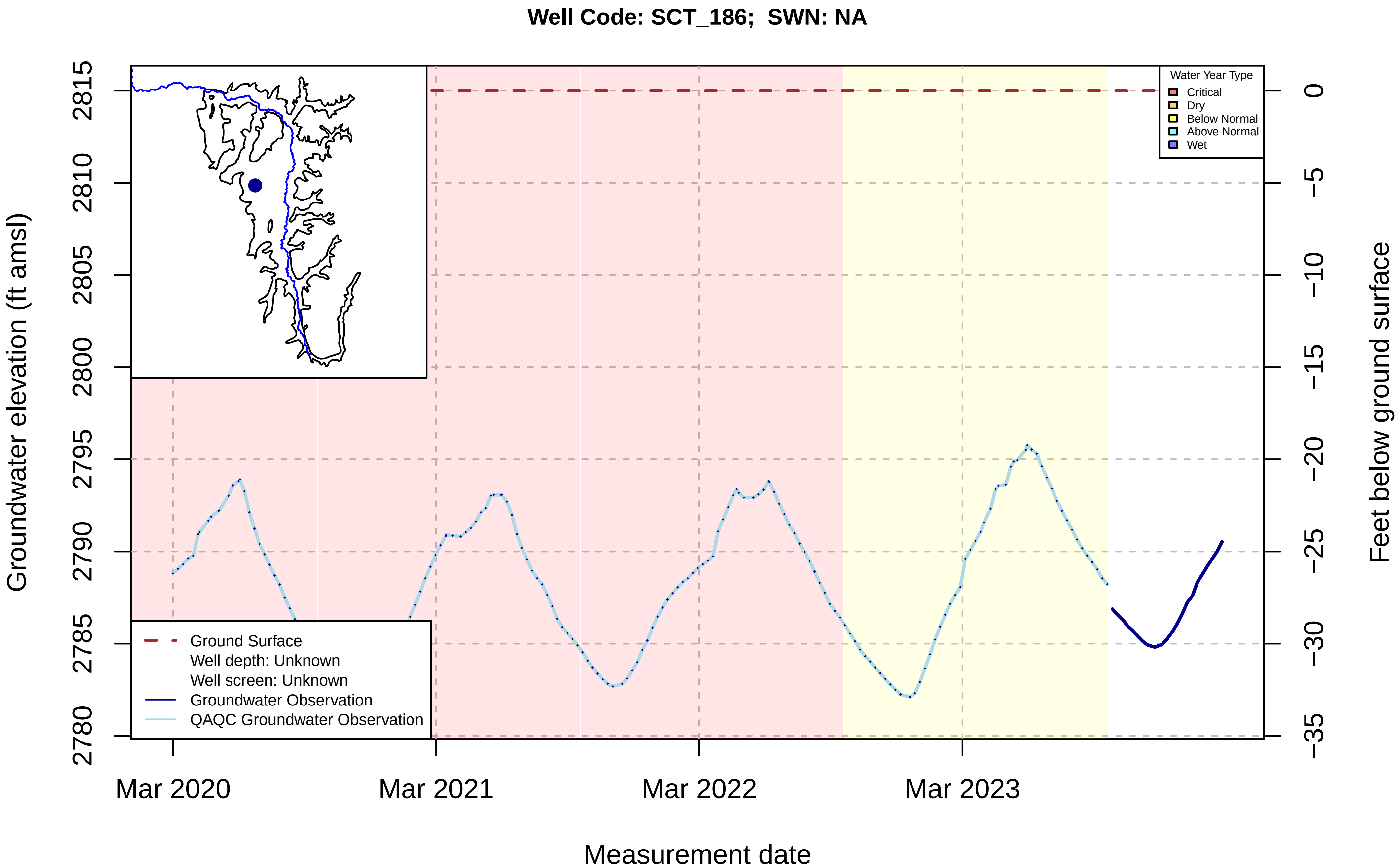
Well Code: 415181N1228509W001; SWN: NA
Groundwater elevation (ft amsl)
2750
2745
2740
2735
Feet below ground surface
0
−5
−10
−15
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 100 ft bgs
Well screen: Unknown
Groundwater Observation
Mar 2022
Jun 2022
Sep 2022
Dec 2022
Mar 2023
Jun 2023
Sep 2023
Measurement date



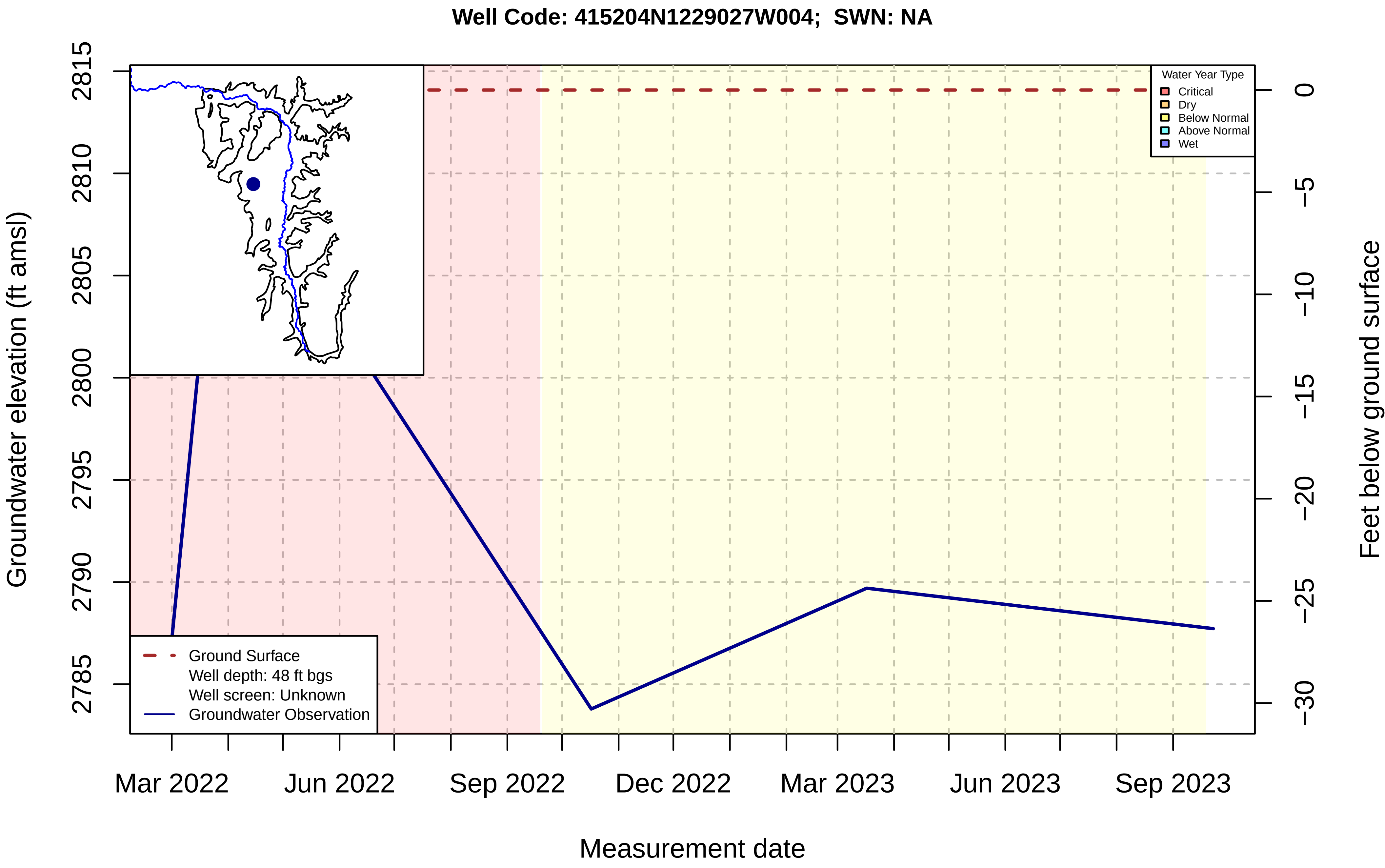
Well Code: E57; SWN: NA
Groundwater elevation (ft amsl)
2765
2770
2775
2780
2785
2790
2795
2800
Feet below ground surface
0
−5
−10
−15
−20
−25
−30
−35
Apr 2020
Apr 2021
Apr 2022
Apr 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



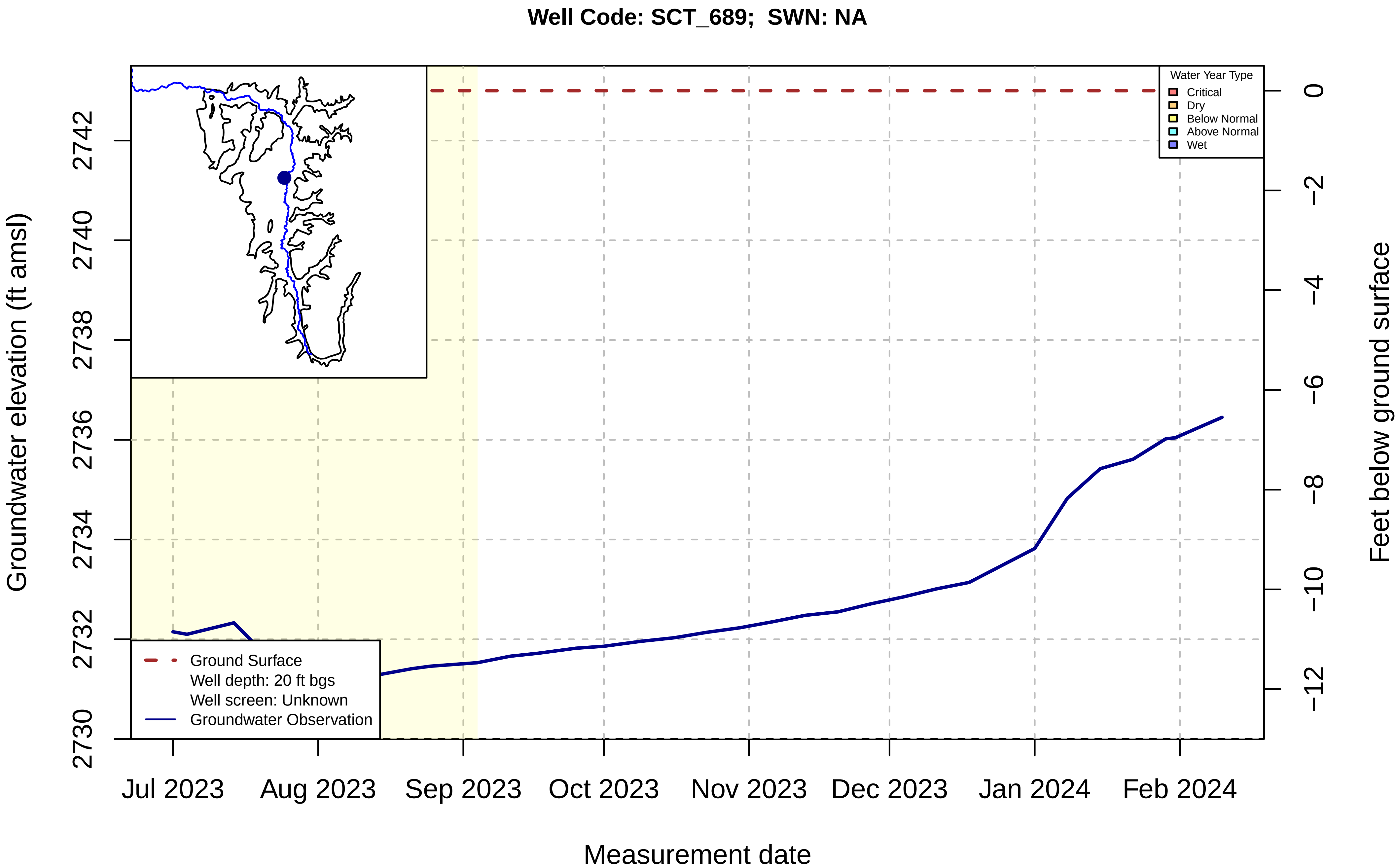
Well Code: SCT_690; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2740
2742
2744
2746
0
−2
−4
−6
Jul 2023
Aug 2023
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 25 ft bgs
Well screen: Unknown
Groundwater Observation



Well Code: SCT_186; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2815
2810
2805
2800
2795
2790
2785
2780
0
−5
−10
−15
−20
−25
−30
−35
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation

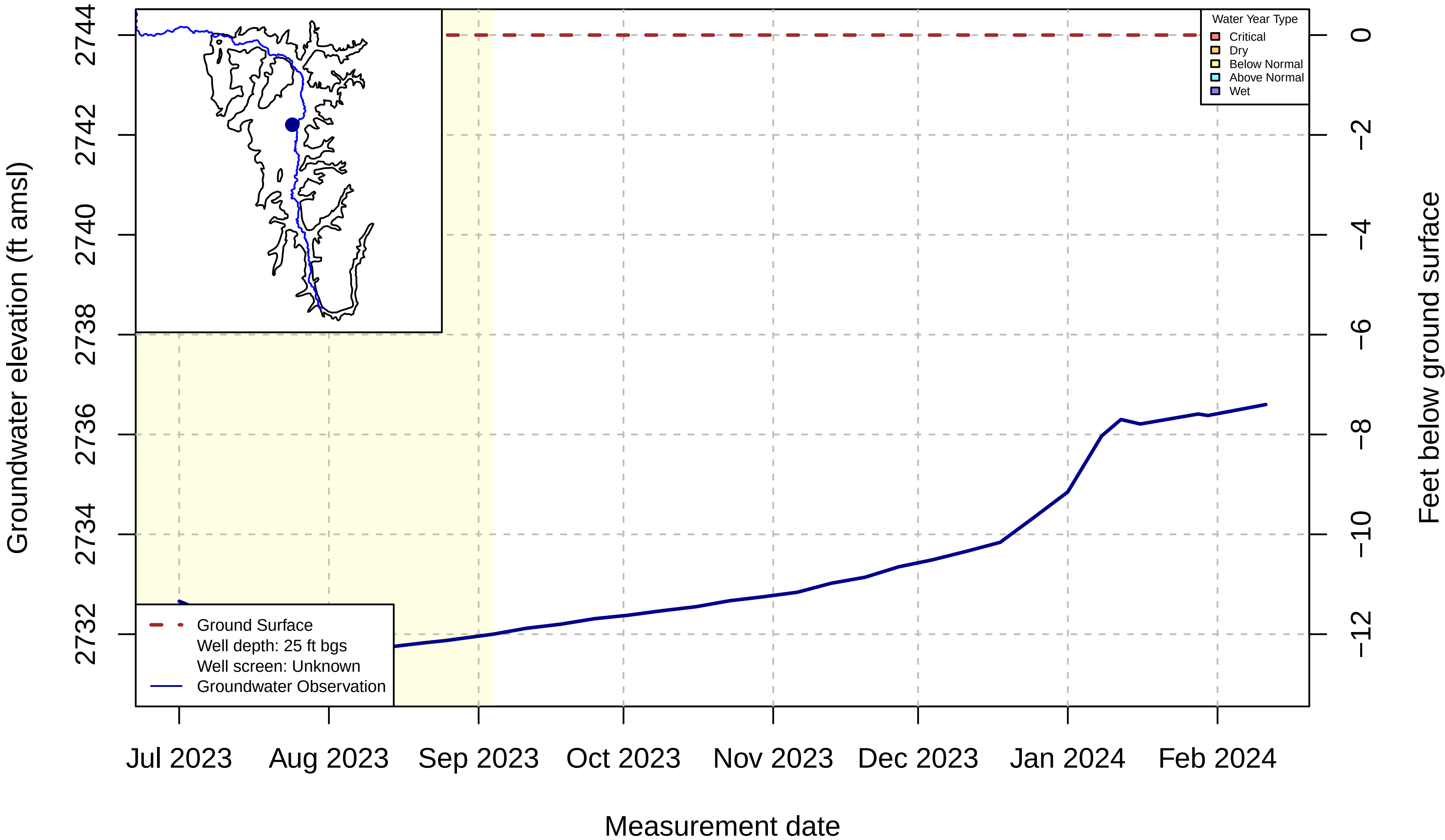


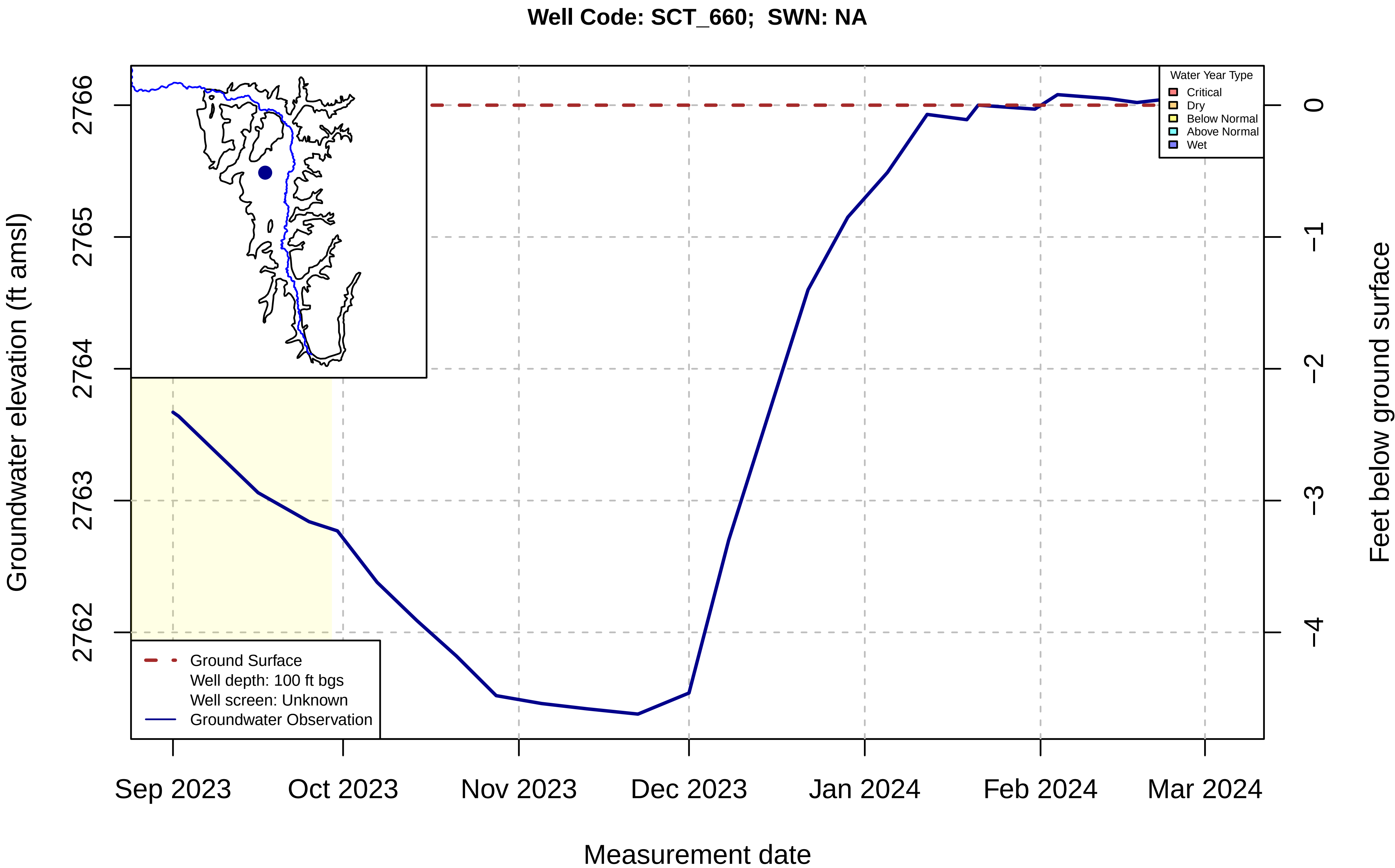
Well Code: 415204N1229027W004; SWN: NA
Groundwater elevation (ft amsl)
2815
2810
2805
2800
2795
2790
2785
Feet below ground surface
0
−5
−10
−15
−20
−25
−30
Mar 2022
Jun 2022
Sep 2022
Dec 2022
Mar 2023
Jun 2023
Sep 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 48 ft bgs
Well screen: Unknown
Groundwater Observation



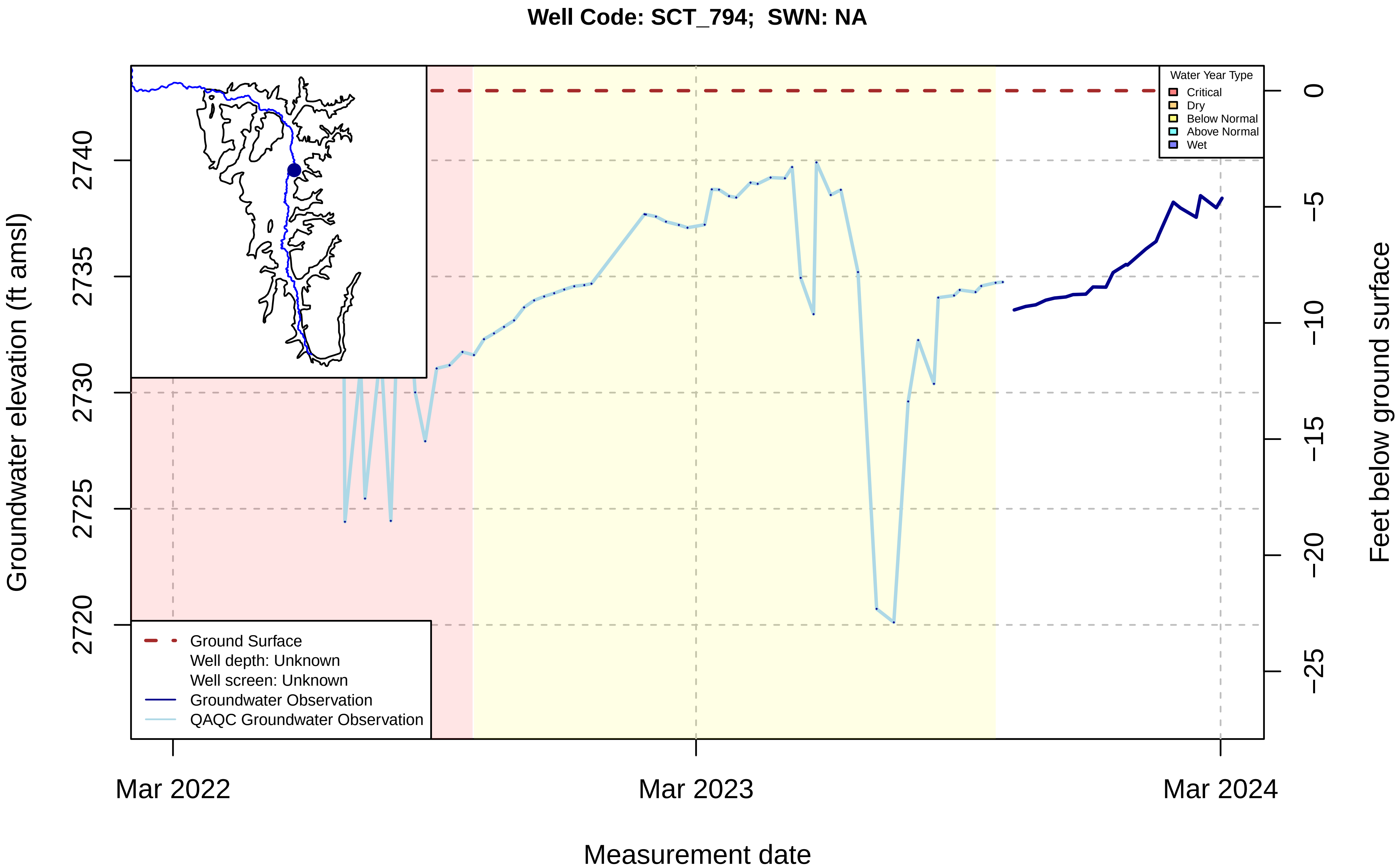
Well Code: SCT_689; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
Jul 2023
Aug 2023
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
2730
2732
2734
2736
2738
2740
2742
0
−2
−4
−6
−8
−10
−12
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 20 ft bgs
Well screen: Unknown
Groundwater Observation

Well Code: SCT_661; SWN: NA

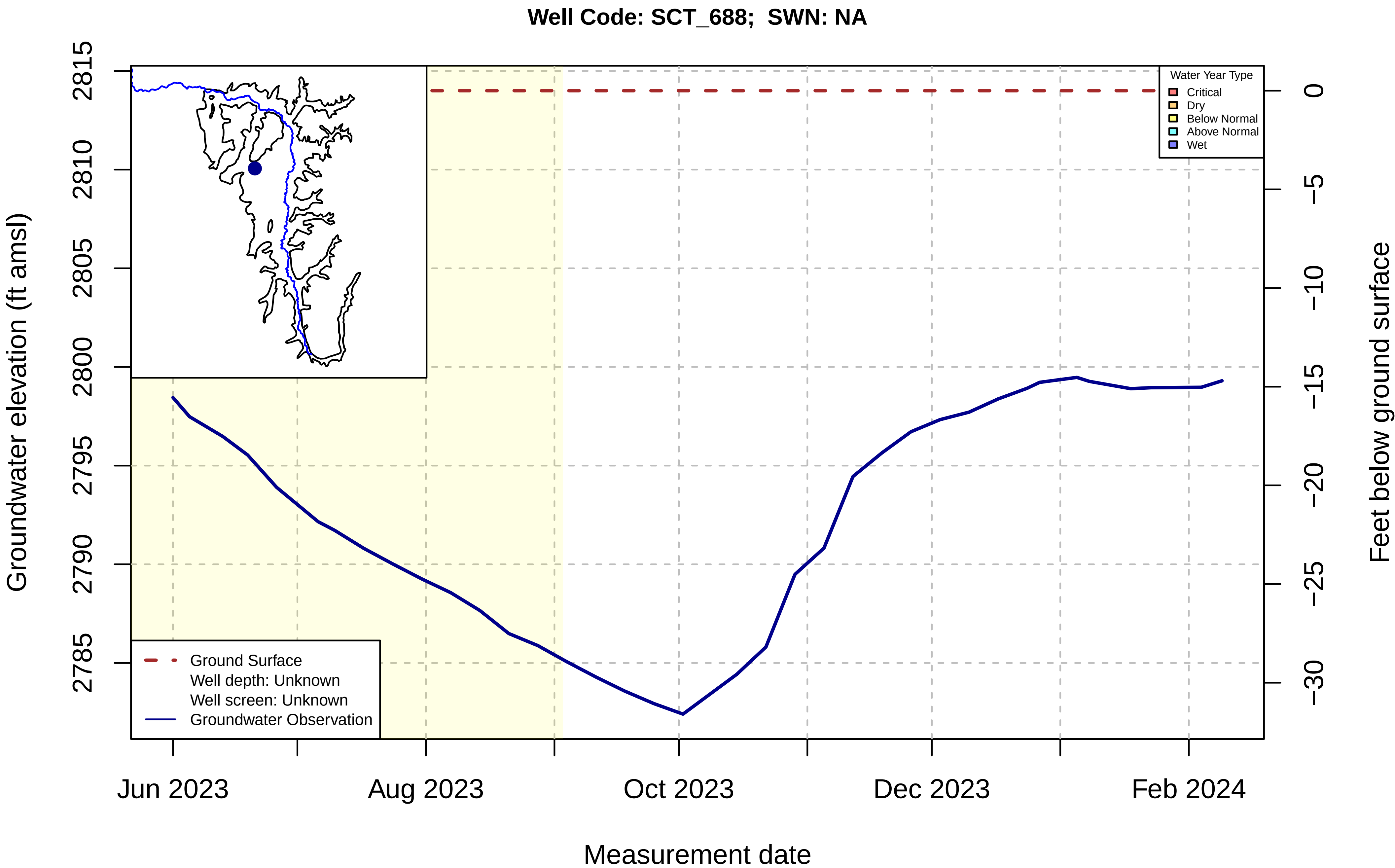




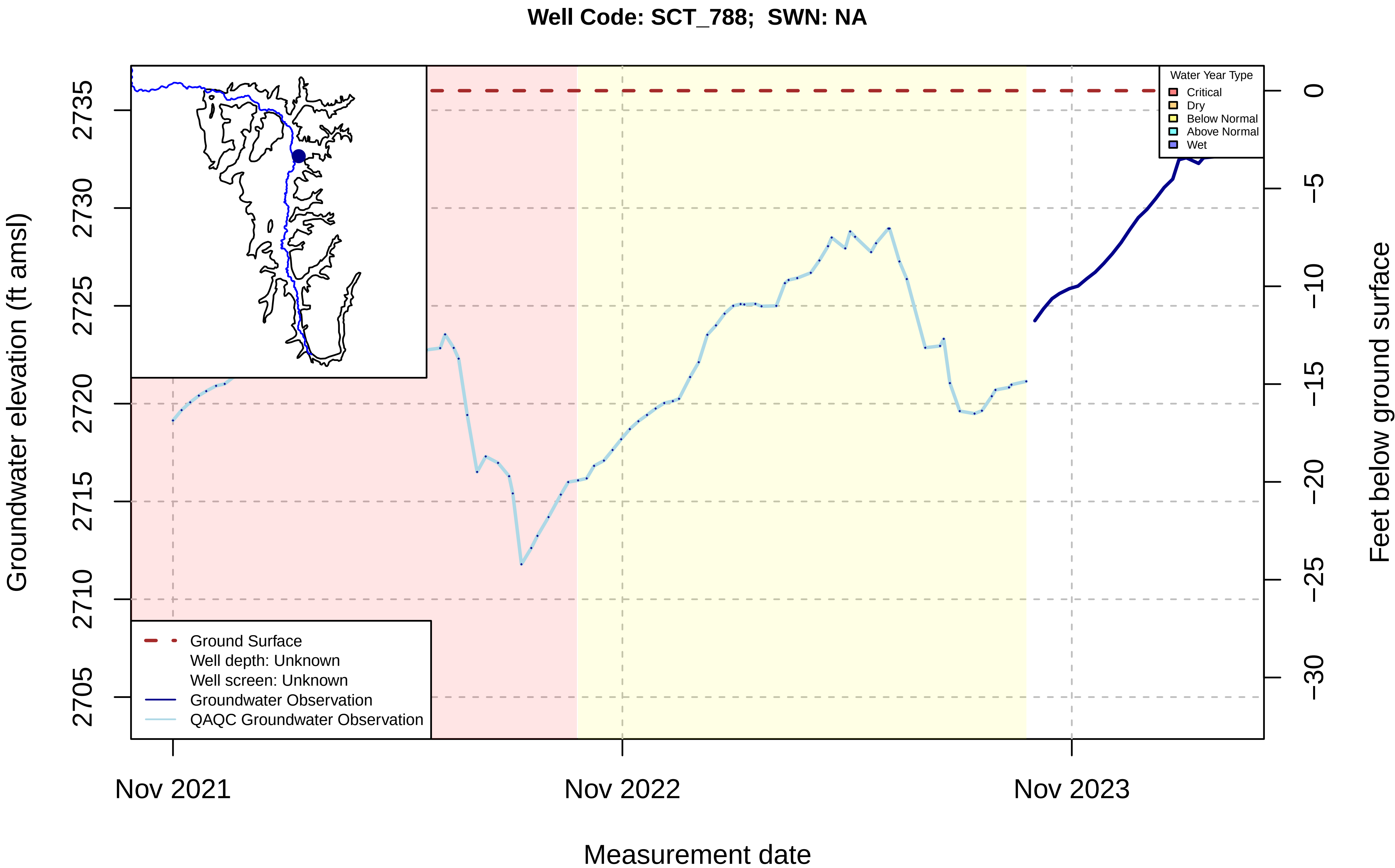
Well Code: SCT_660; SWN: NA
Groundwater elevation (ft amsl)
2766
2765
2764
2763
2762
Feet below ground surface
0
−1
−2
−3
−4
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 100 ft bgs
Well screen: Unknown
Groundwater Observation
Sep 2023
Oct 2023
Nov 2023
Dec 2023
Jan 2024
Feb 2024
Mar 2024
Measurement date



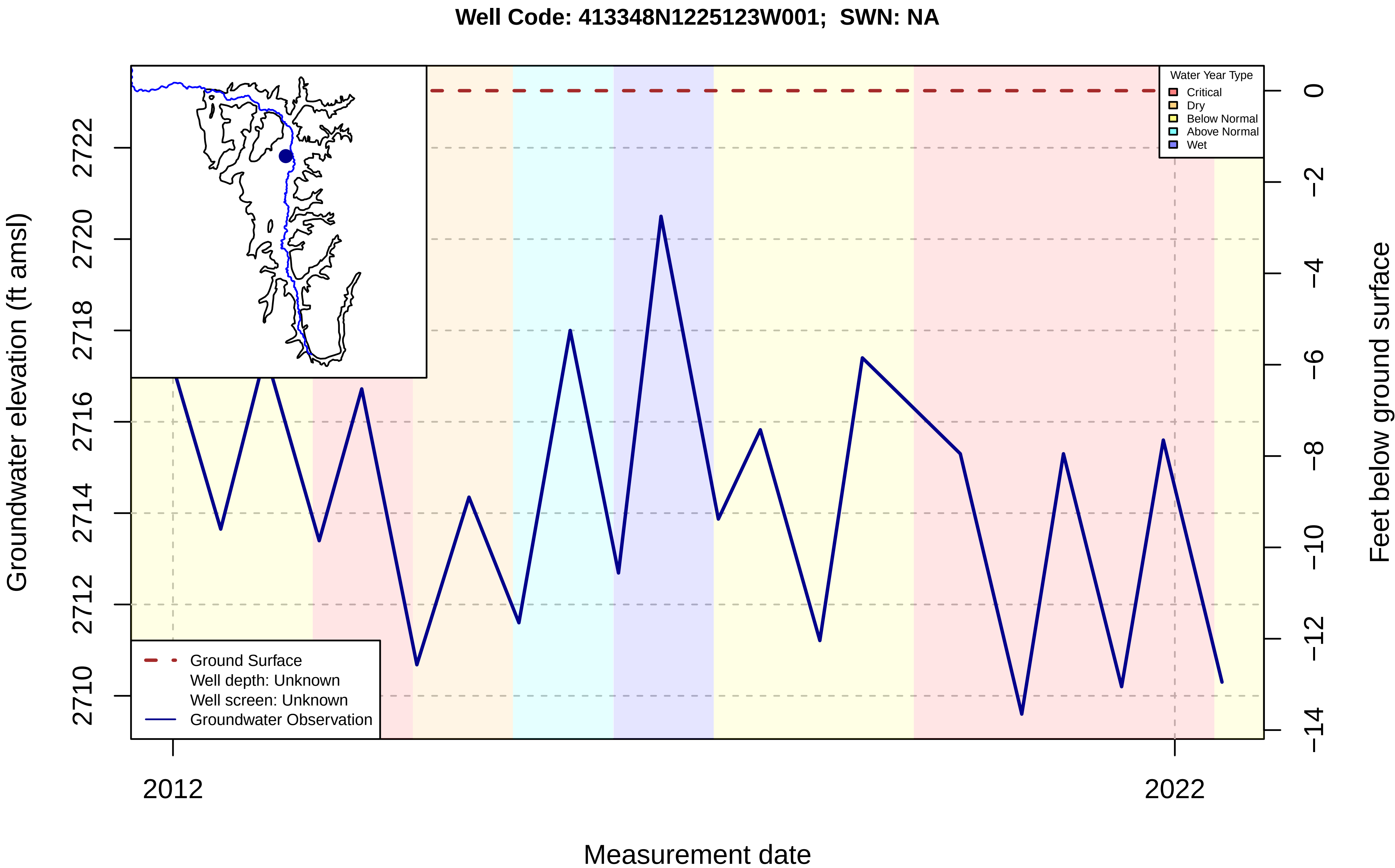
Well Code: SCT_794; SWN: NA
Groundwater elevation (ft amsl)
2720
2725
2730
2735
2740
Feet below ground surface
0
−5
−10
−15
−20
−25
Mar 2022
Mar 2023
Mar 2024
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



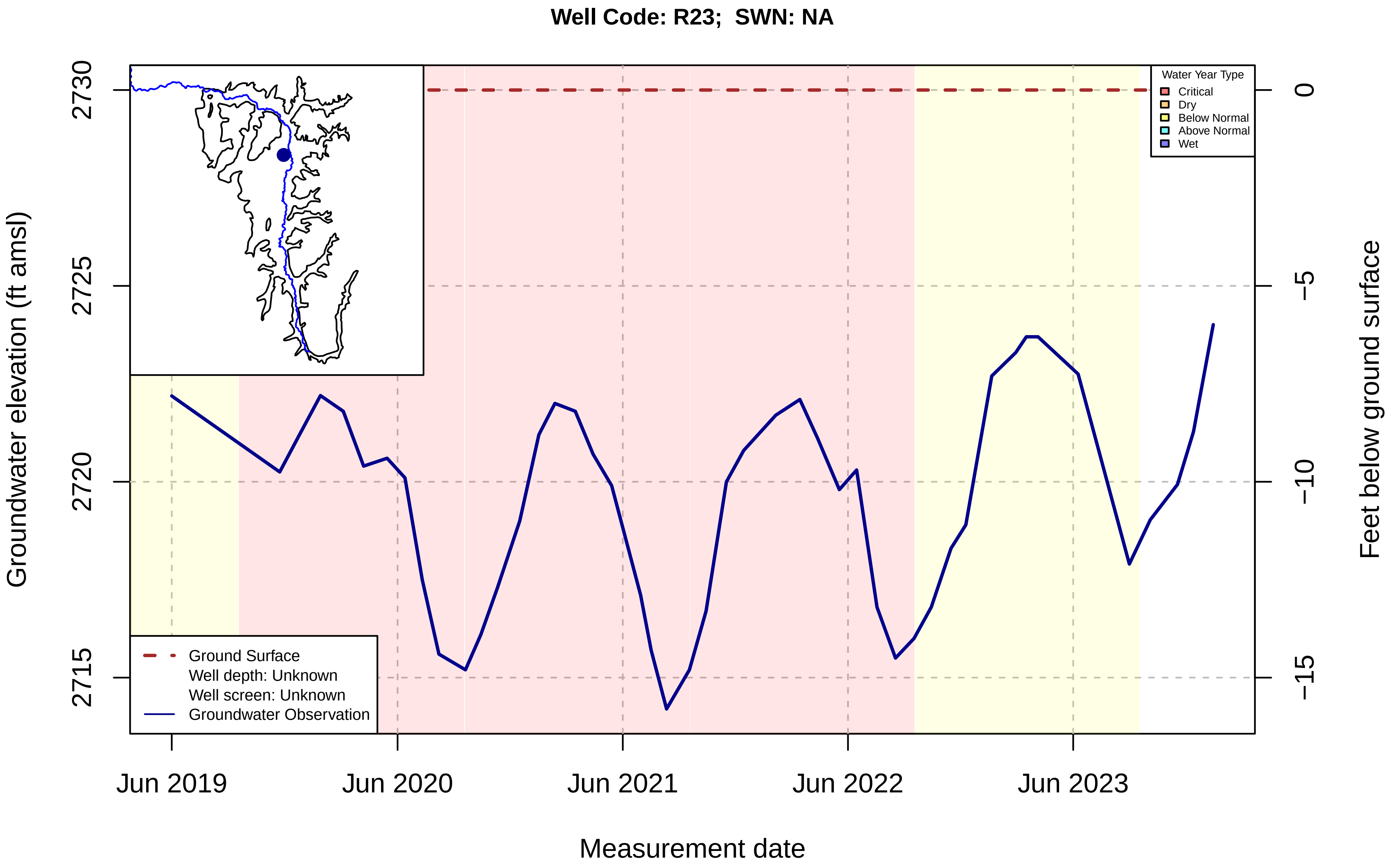
Well Code: SCT_688; SWN: NA
Groundwater elevation (ft amsl)
2815
2810
2805
2800
2795
2790
2785
Feet below ground surface
0
−5
−10
−15
−20
−25
−30
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
Jun 2023
Aug 2023
Oct 2023
Dec 2023
Feb 2024
Measurement date



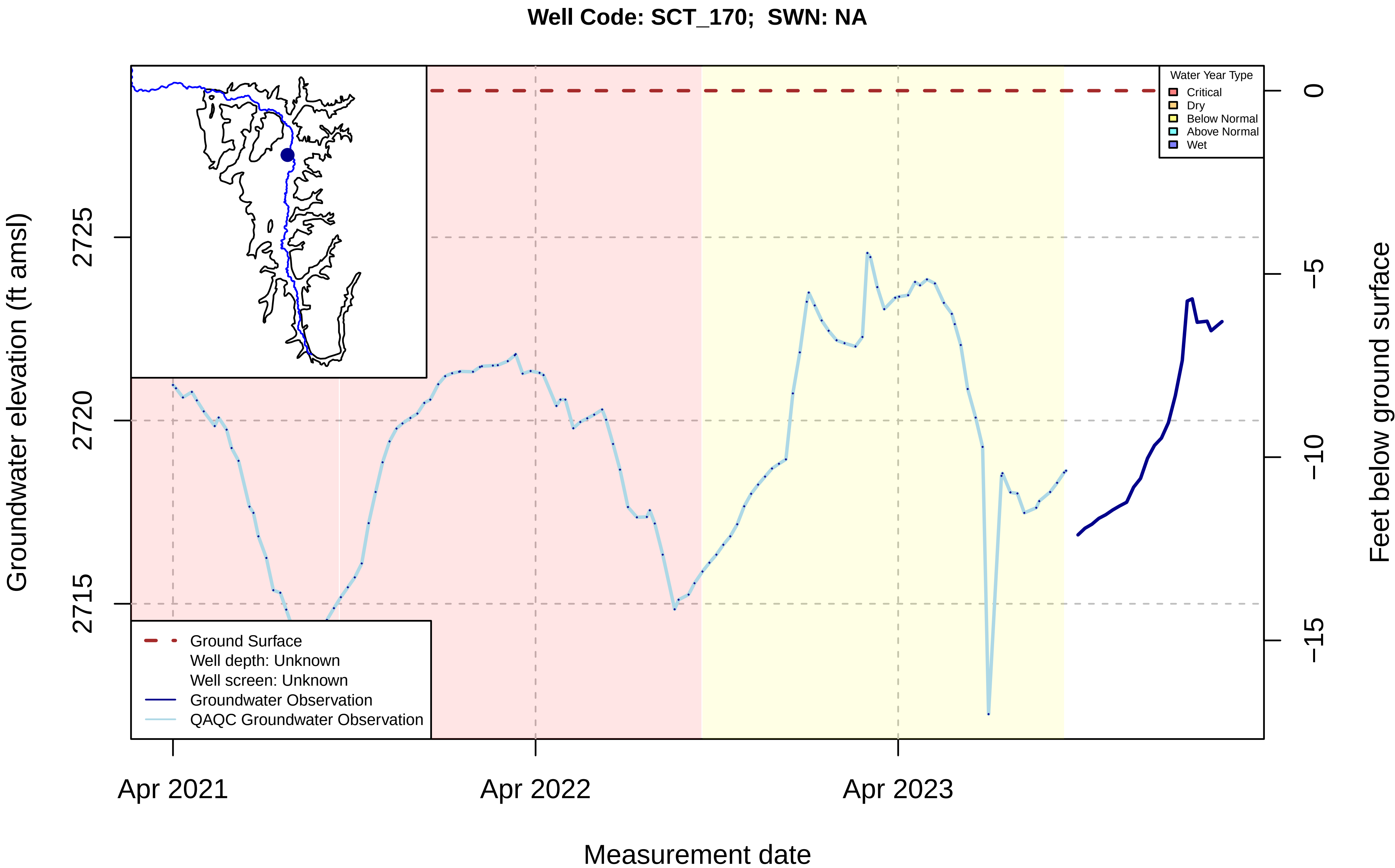
Well Code: SCT_788; SWN: NA
Groundwater elevation (ft amsl)
2705
2710
2715
2720
2725
2730
2735
Feet below ground surface
0
−5
−10
−15
−20
−25
−30
Nov 2021
Nov 2022
Nov 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



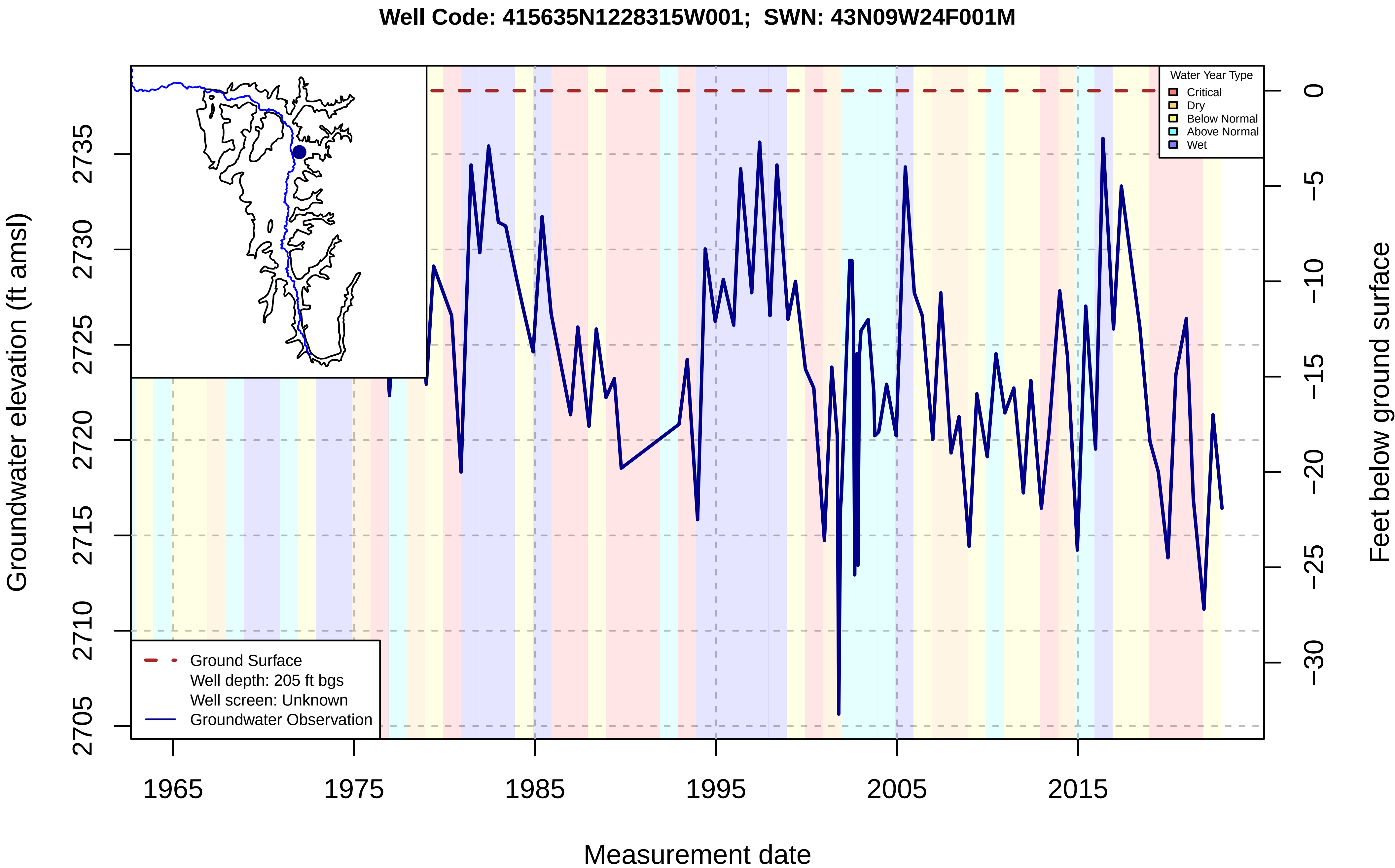
Well Code: 413348N1225123W001; SWN: NA
Groundwater elevation (ft amsl)
2710
2712
2714
2716
2718
2720
2722
Feet below ground surface
0
−2
−4
−6
−8
−10
−12
−14
2012
2022
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

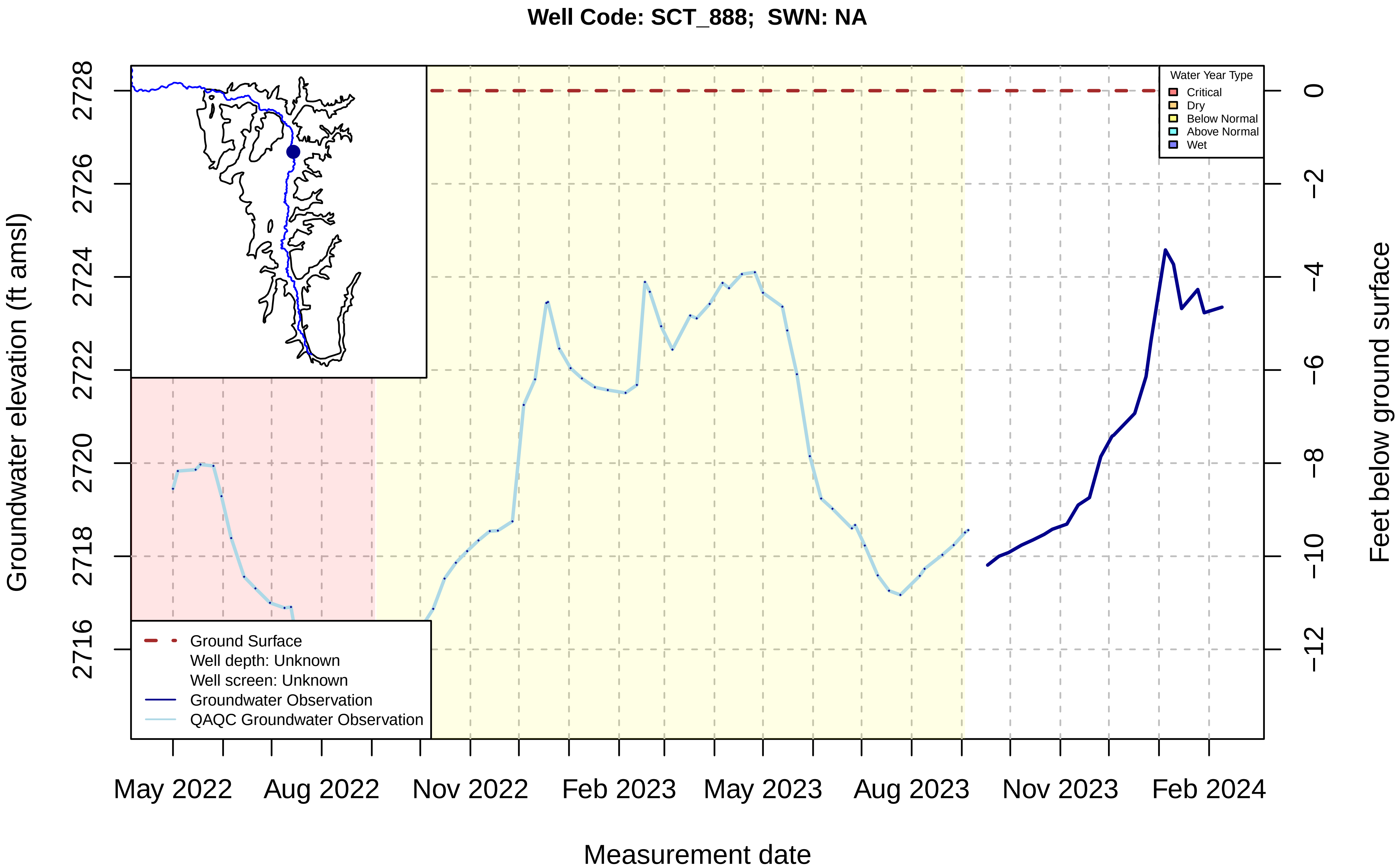


Well Code: R23; SWN: NA
Groundwater elevation (ft amsl)
2730
2725
2720
2715
Feet below ground surface
0
−5
−10
−15
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
Jun 2019
Jun 2020
Jun 2021
Jun 2022
Jun 2023
Measurement date

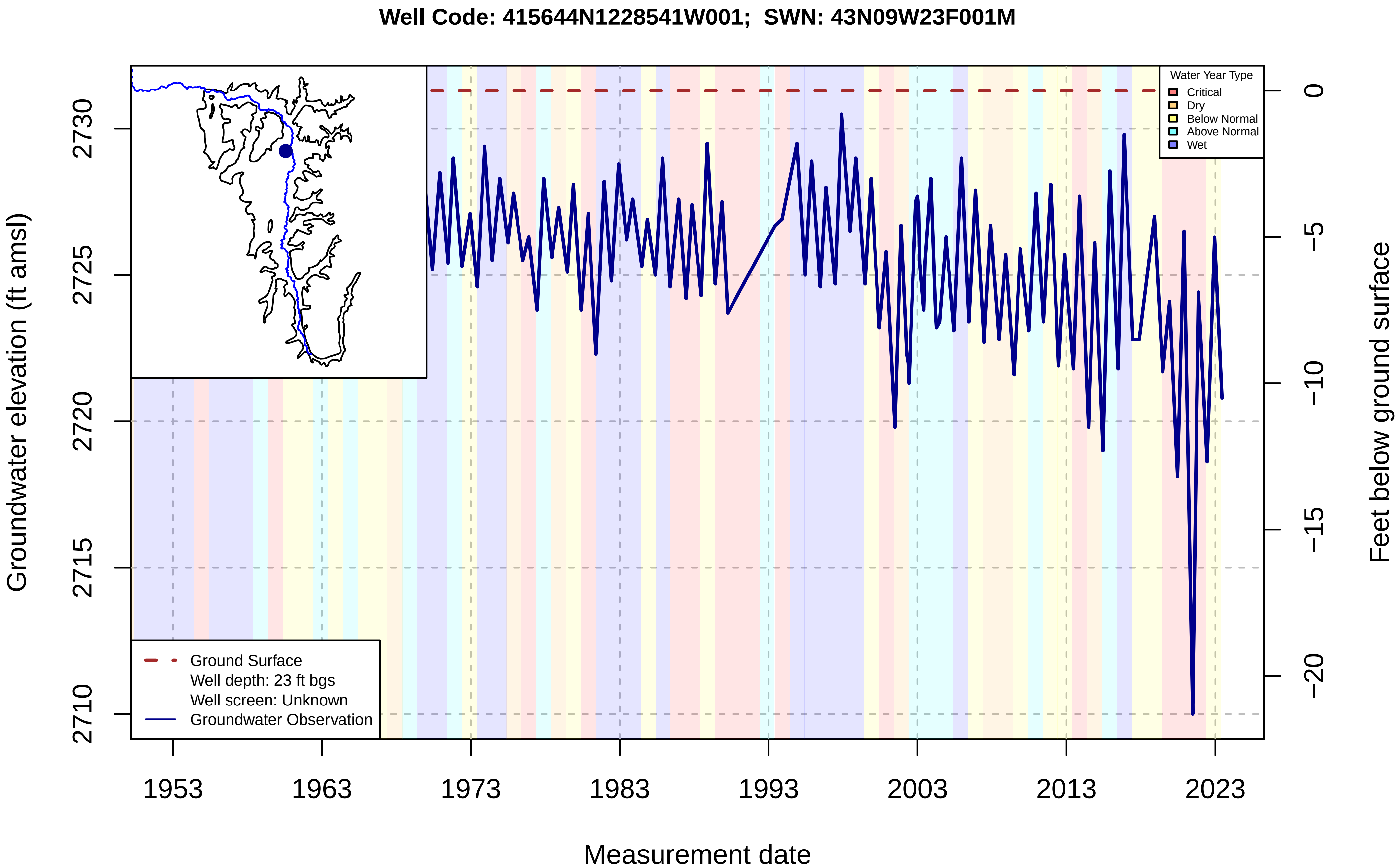


Well Code: SCT_170; SWN: NA
Groundwater elevation (ft amsl)
2715
2720
2725
Feet below ground surface
0
−5
−10
−15
Apr 2021
Apr 2022
Apr 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation

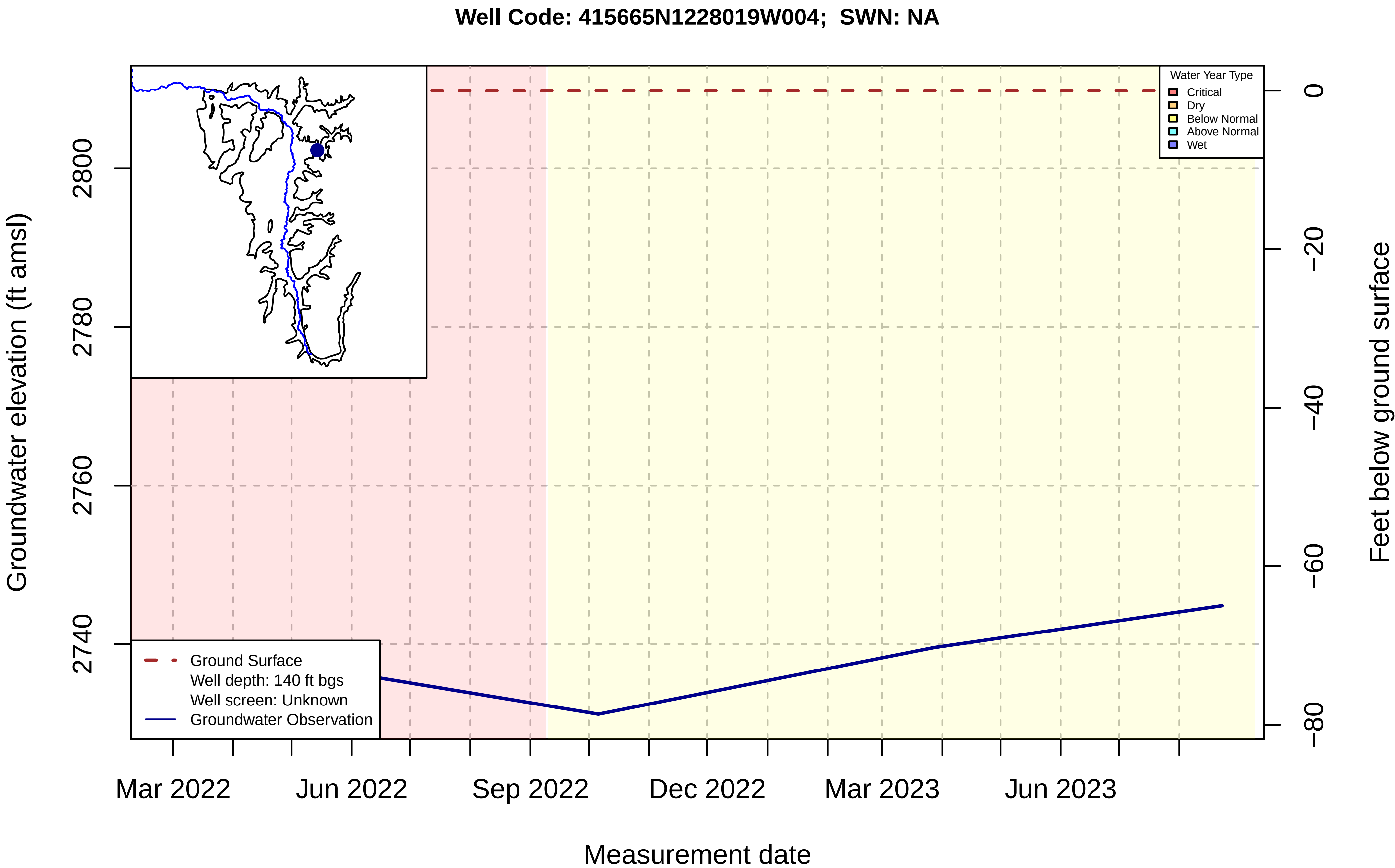

Well Code: 415635N1228315W001; SWN: 43N09W24F001M
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2705
2710
2715
2720
2725
2730
2735
0
−5
−10
−15
−20
−25
−30
1965
1975
1985
1995
2005
2015
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 205 ft bgs
Well screen: Unknown
Groundwater Observation

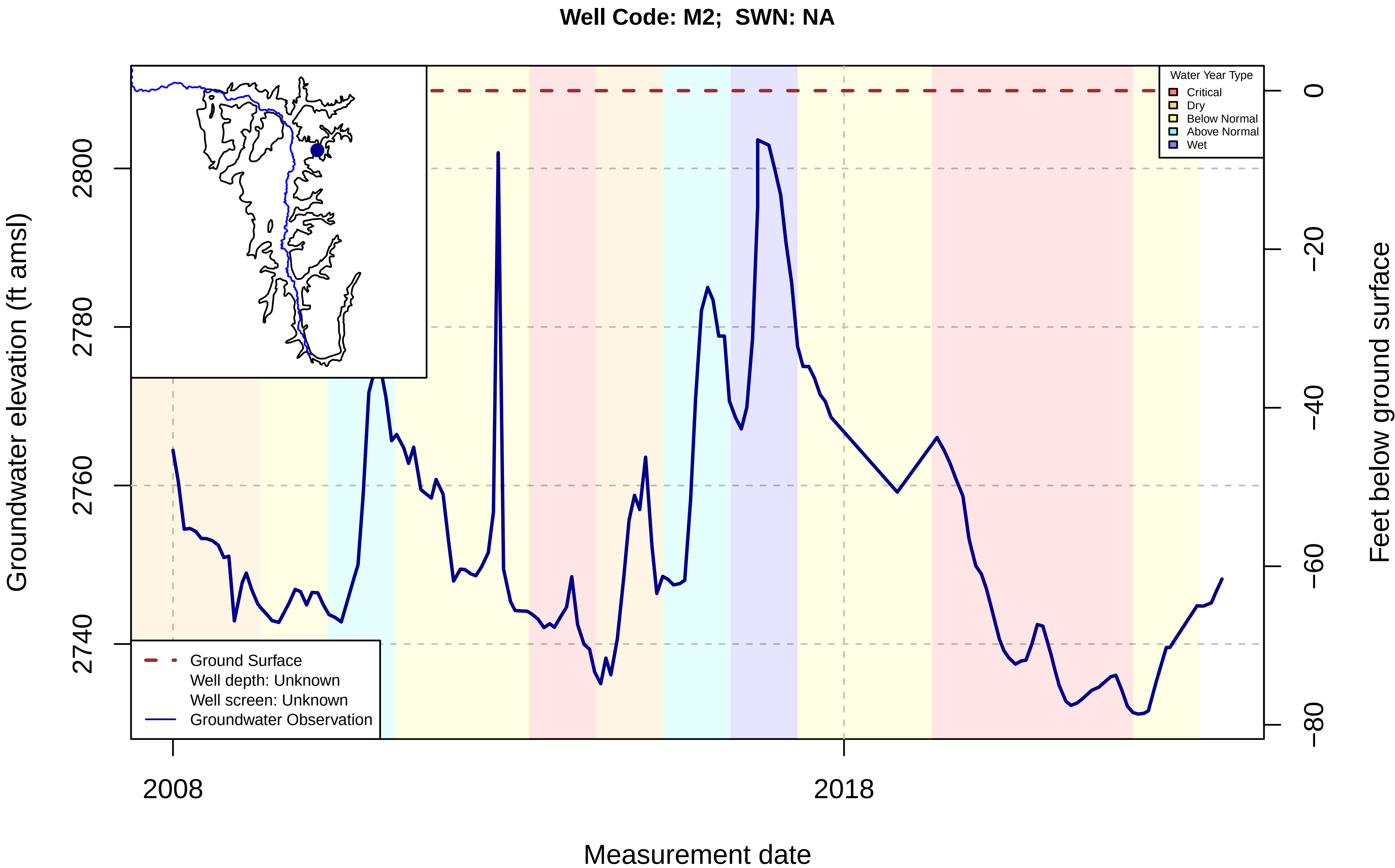


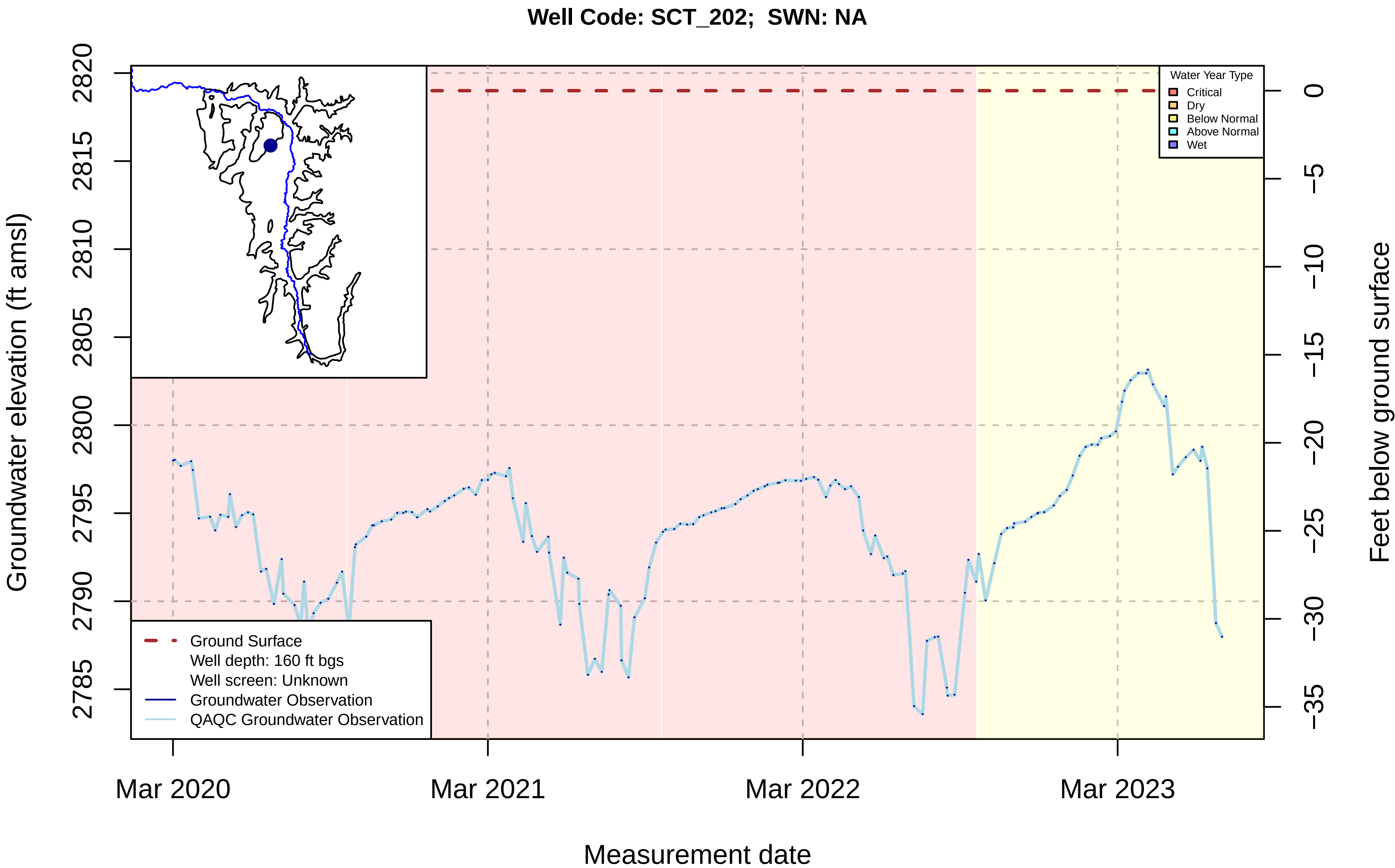
Well Code: SCT_888; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2716
2718
2720
2722
2724
2726
2728
0
−2
−4
−6
−8
−10
−12
May 2022
Aug 2022
Nov 2022
Feb 2023
May 2023
Aug 2023
Nov 2023
Feb 2024
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



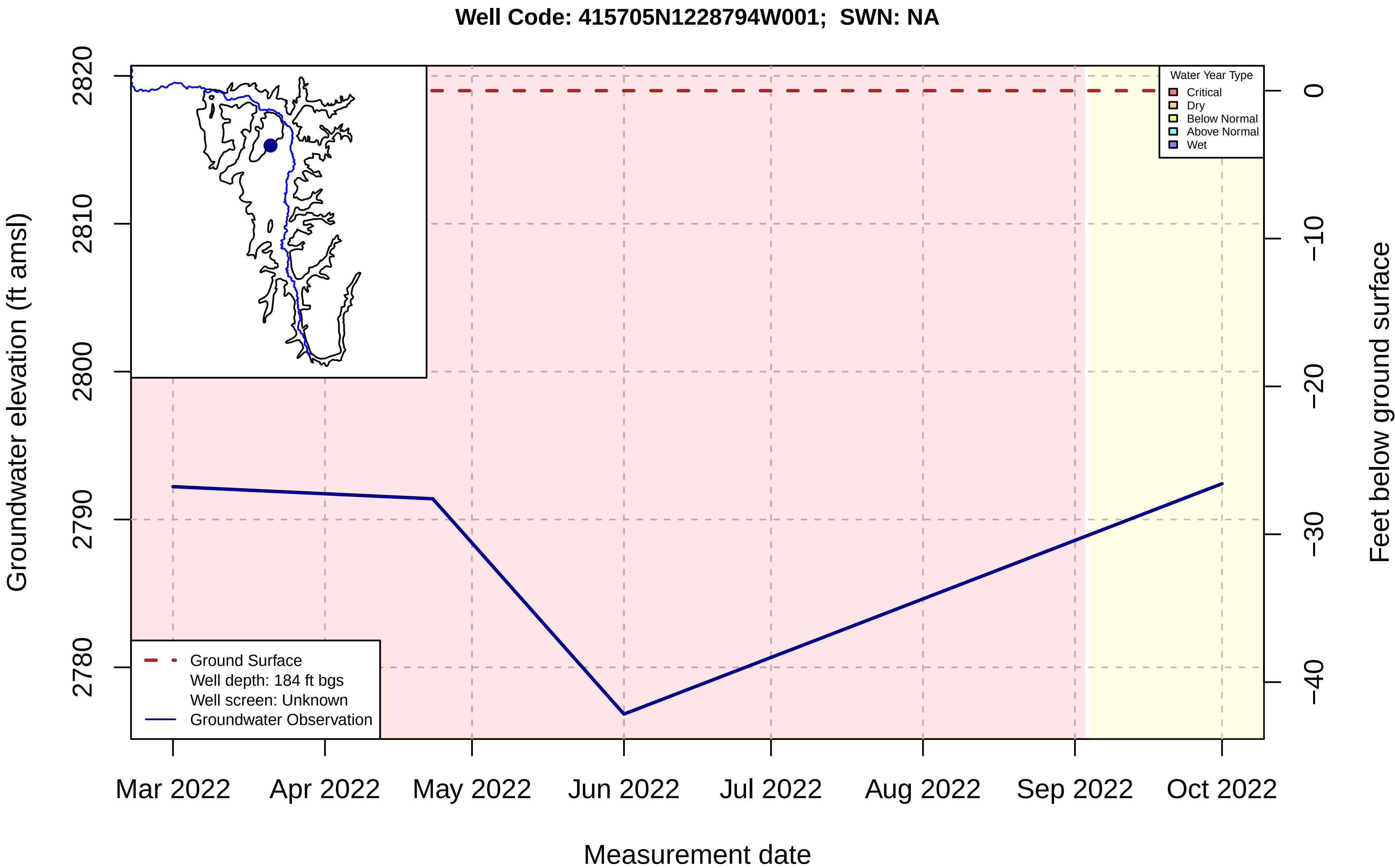
Well Code: 415644N1228541W001; SWN: 43N09W23F001M
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2710
2715
2720
2725
2730
0
−5
−10
−15
−20
1953
1963
1973
1983
1993
2003
2013
2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 23 ft bgs
Well screen: Unknown
Groundwater Observation


Well Code: 415665N1228019W004; SWN: NA
Groundwater elevation (ft amsl)
2800
2780
2760
2740
Feet below ground surface
0
−20
−40
−60
−80
Mar 2022
Jun 2022
Sep 2022
Dec 2022
Mar 2023
Jun 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 140 ft bgs
Well screen: Unknown
Groundwater Observation

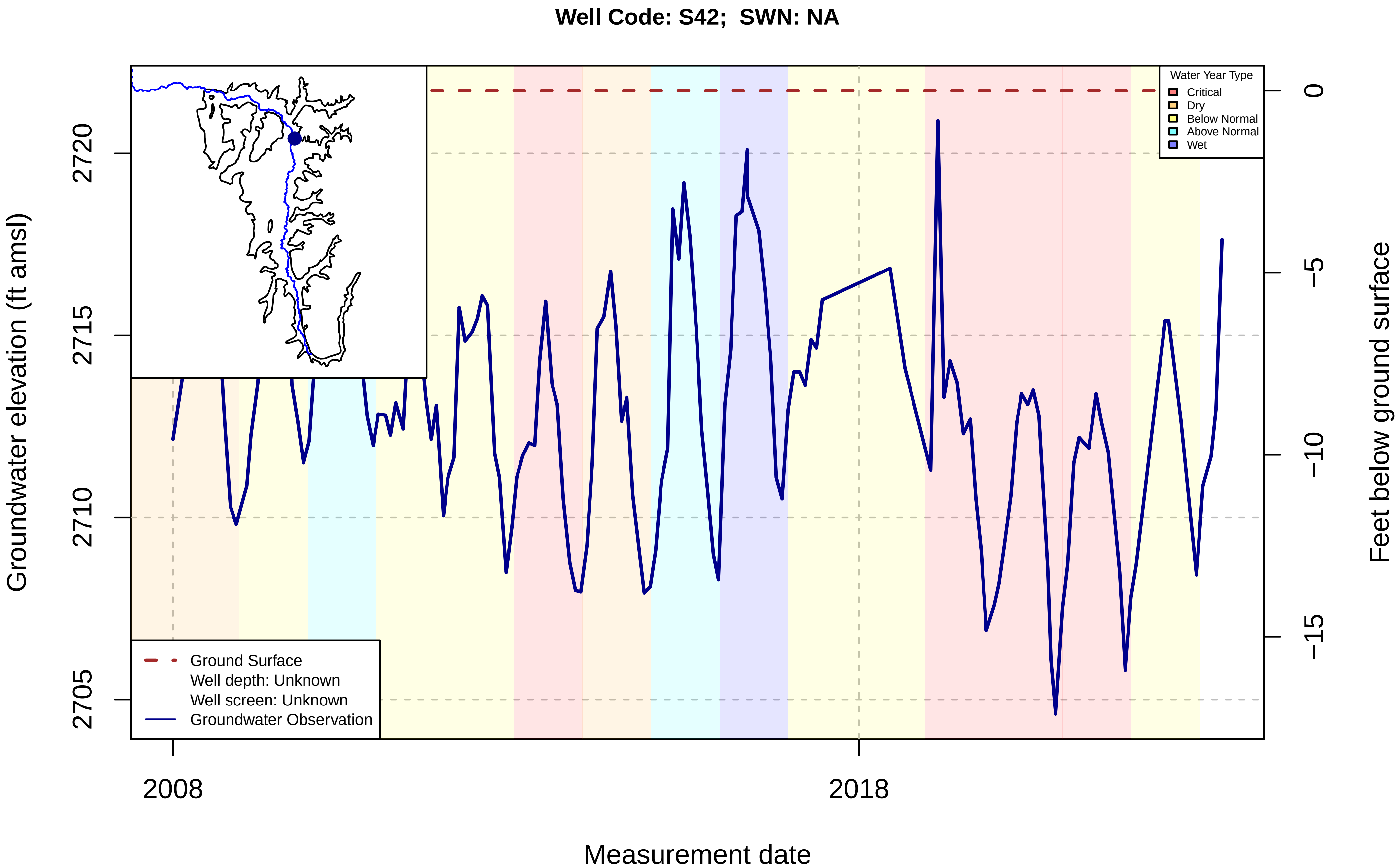

Well Code: M2; SWN: NA
Groundwater elevation (ft amsl)
2740
2760
2780
2800
Feet below ground surface
0
−20
−40
−60
−80
2008
2018
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



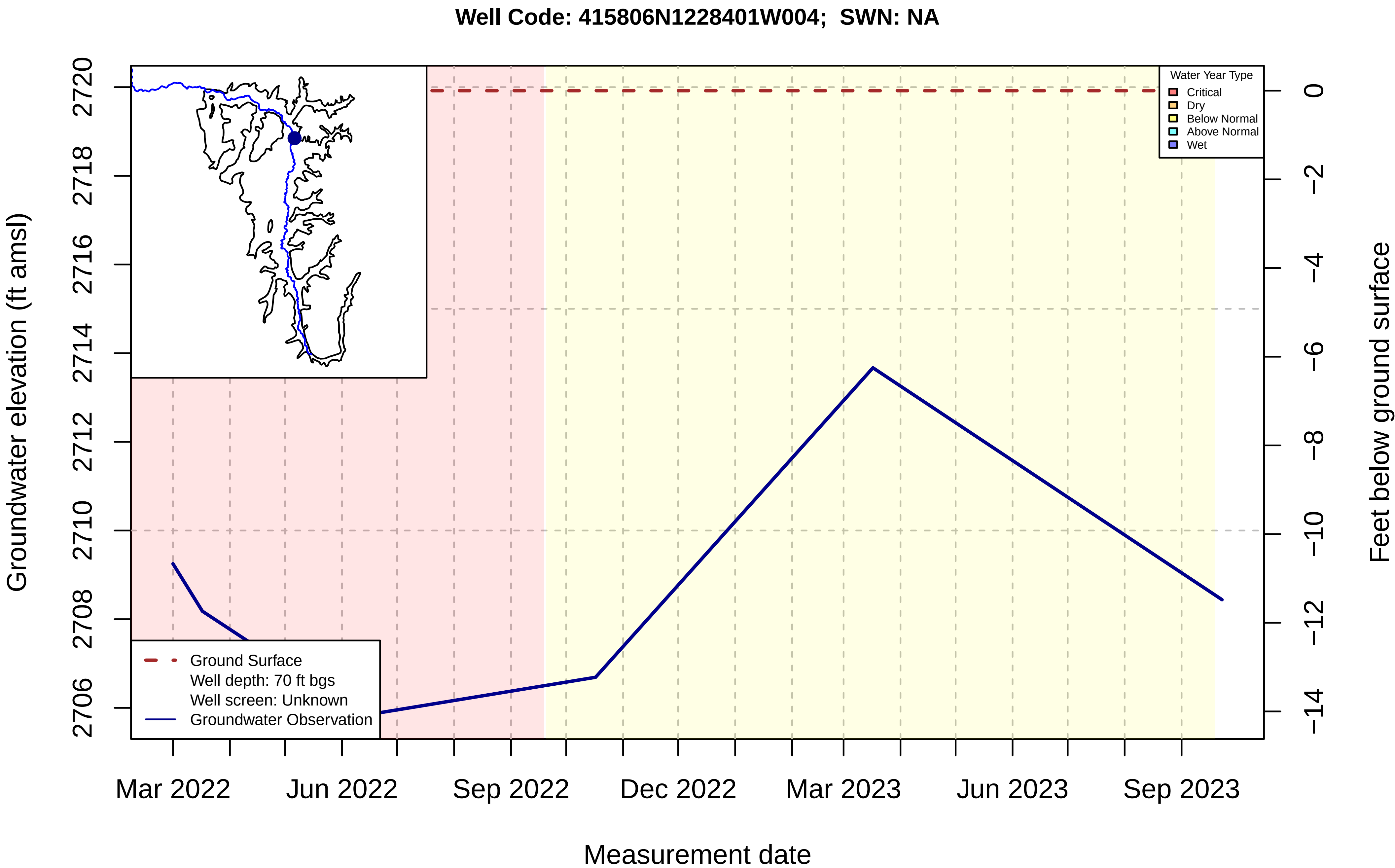
Well Code: SCT_202; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2820
2815
2810
2805
2800
2795
2790
2785
0
−5
−10
−15
−20
−25
−30
−35
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 160 ft bgs
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



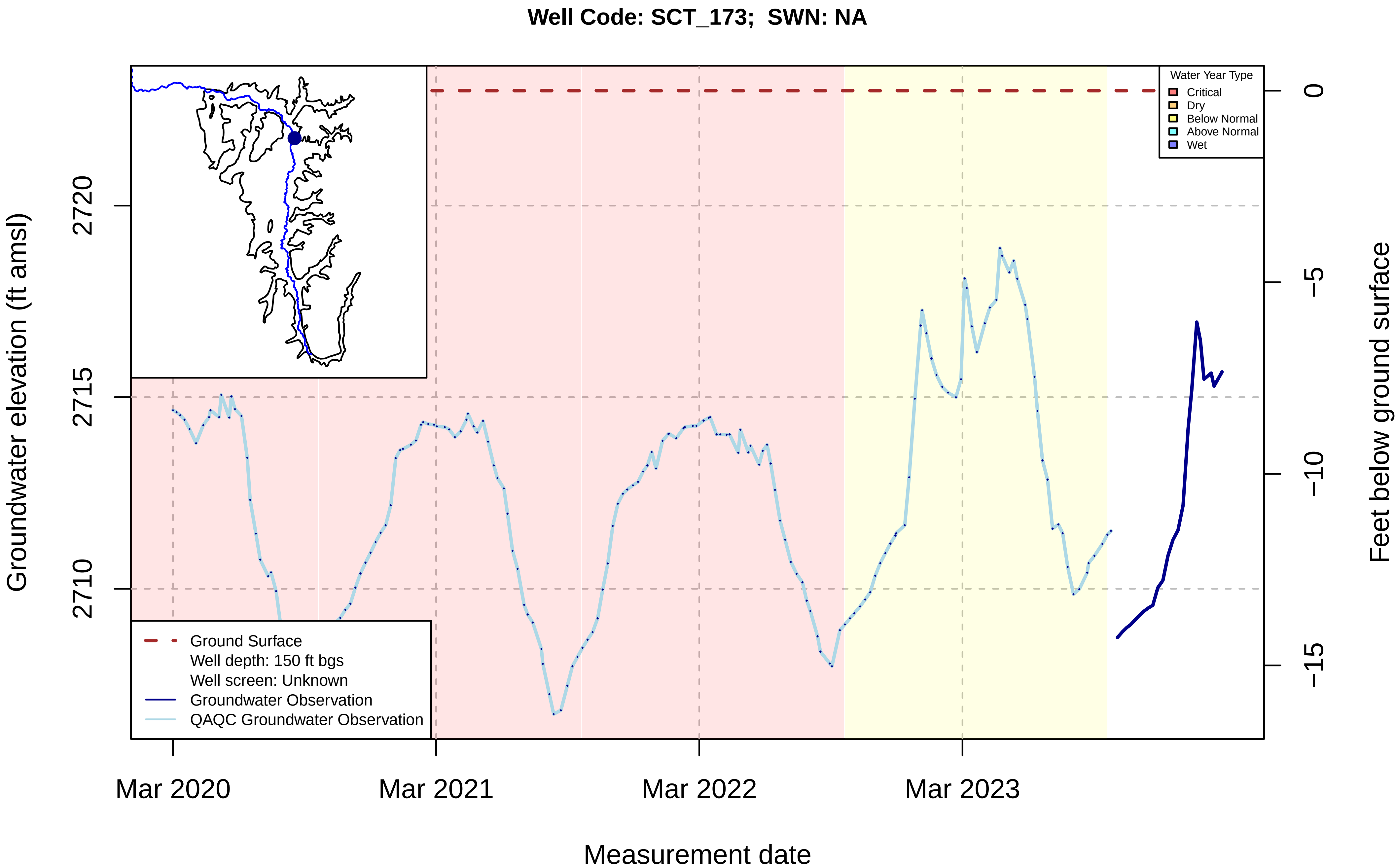
Well Code: 415705N1228794W001; SWN: NA
Groundwater elevation (ft amsl)
2820
2810
2800
2790
2780
Feet below ground surface
0
−10
−20
−30
−40
Mar 2022
Apr 2022
May 2022
Jun 2022
Jul 2022
Aug 2022
Sep 2022
Oct 2022
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 184 ft bgs
Well screen: Unknown
Groundwater Observation



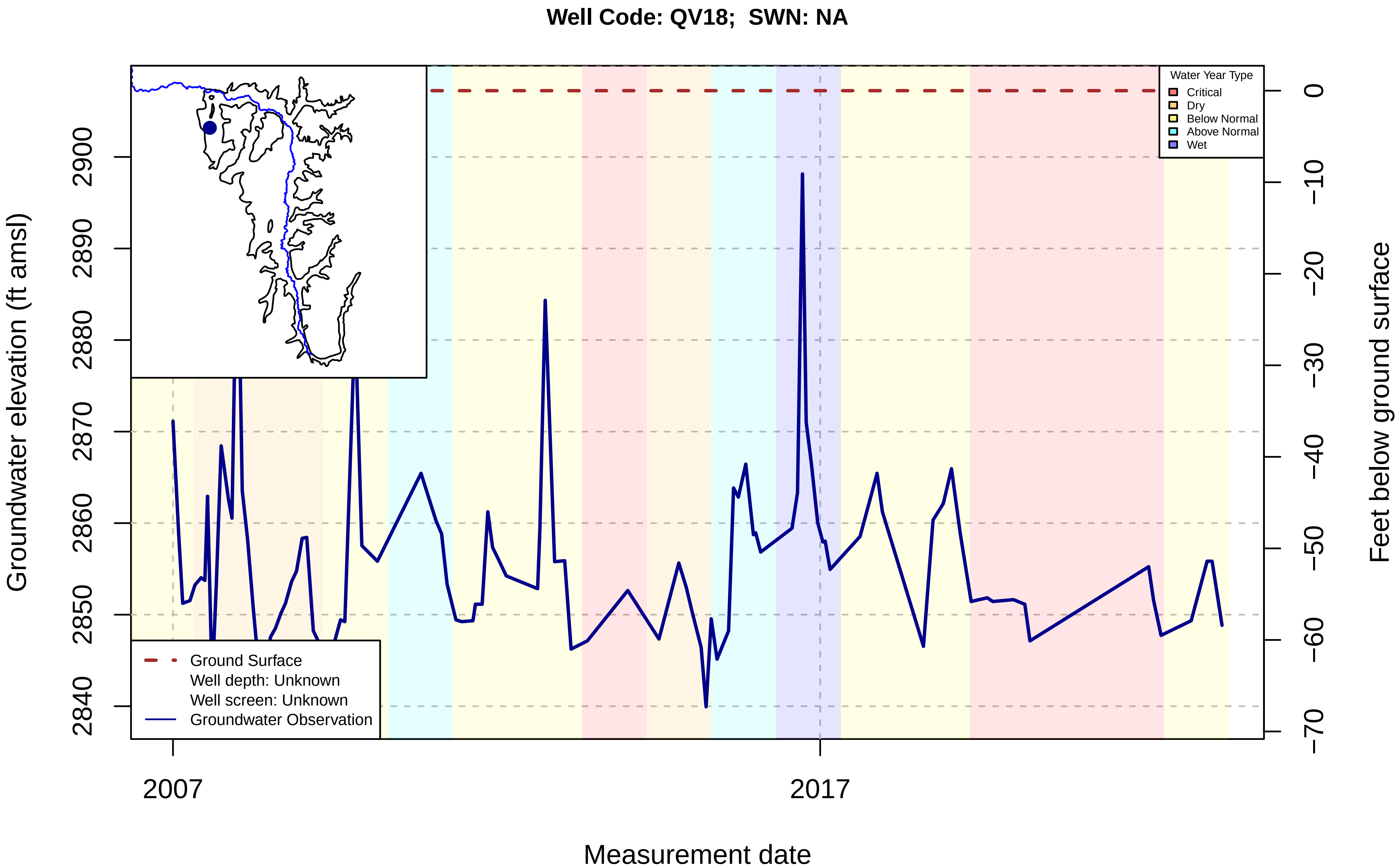
Well Code: S42; SWN: NA
Groundwater elevation (ft amsl)
2705
2710
2715
2720
Feet below ground surface
0
−5
−10
−15
2008
2018
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



Well Code: 415806N1228401W004; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2706
2708
2710
2712
2714
2716
2718
2720
0
−2
−4
−6
−8
−10
−12
−14
Mar 2022
Jun 2022
Sep 2022
Dec 2022
Mar 2023
Jun 2023
Sep 2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 70 ft bgs
Well screen: Unknown
Groundwater Observation

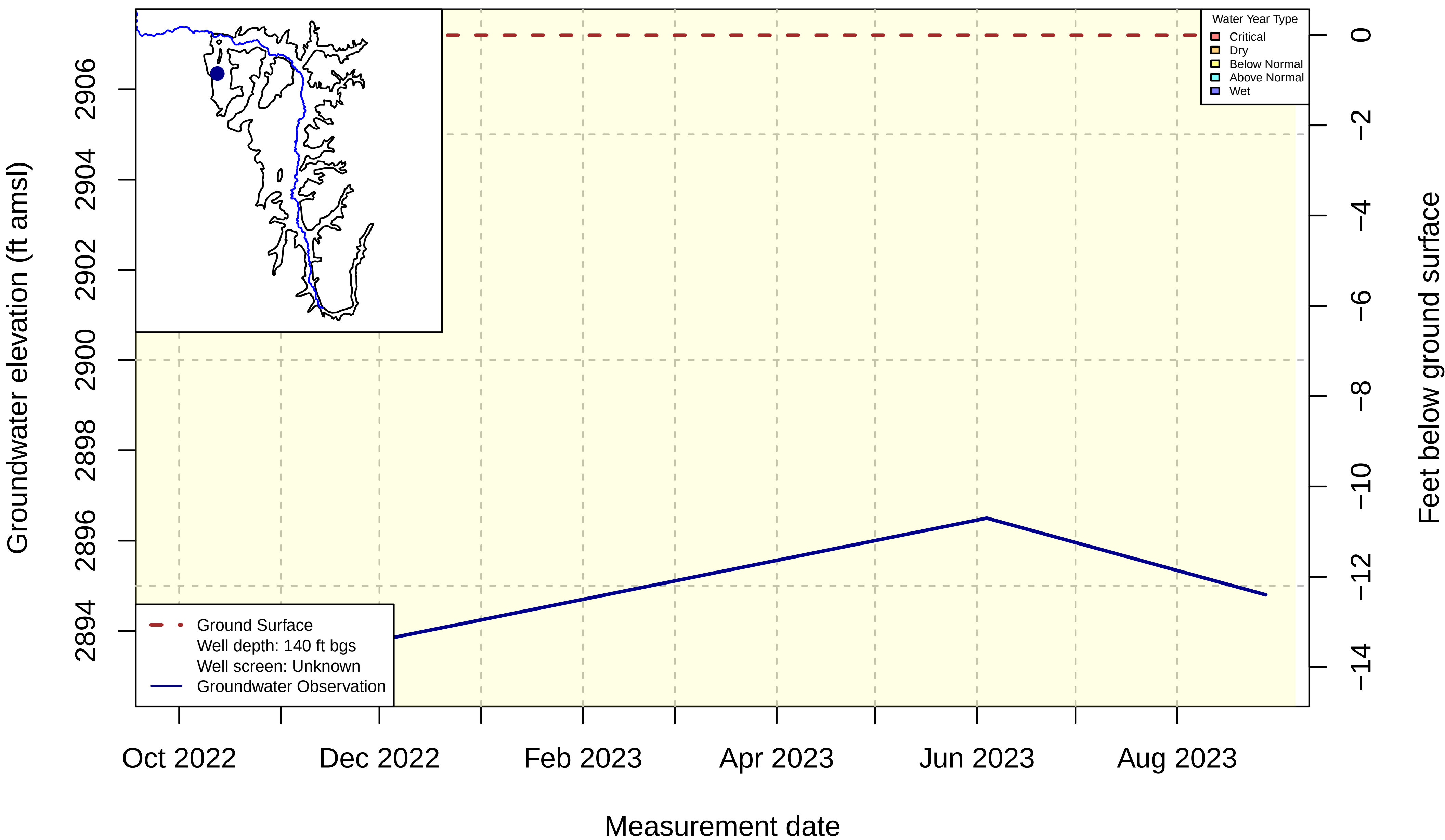


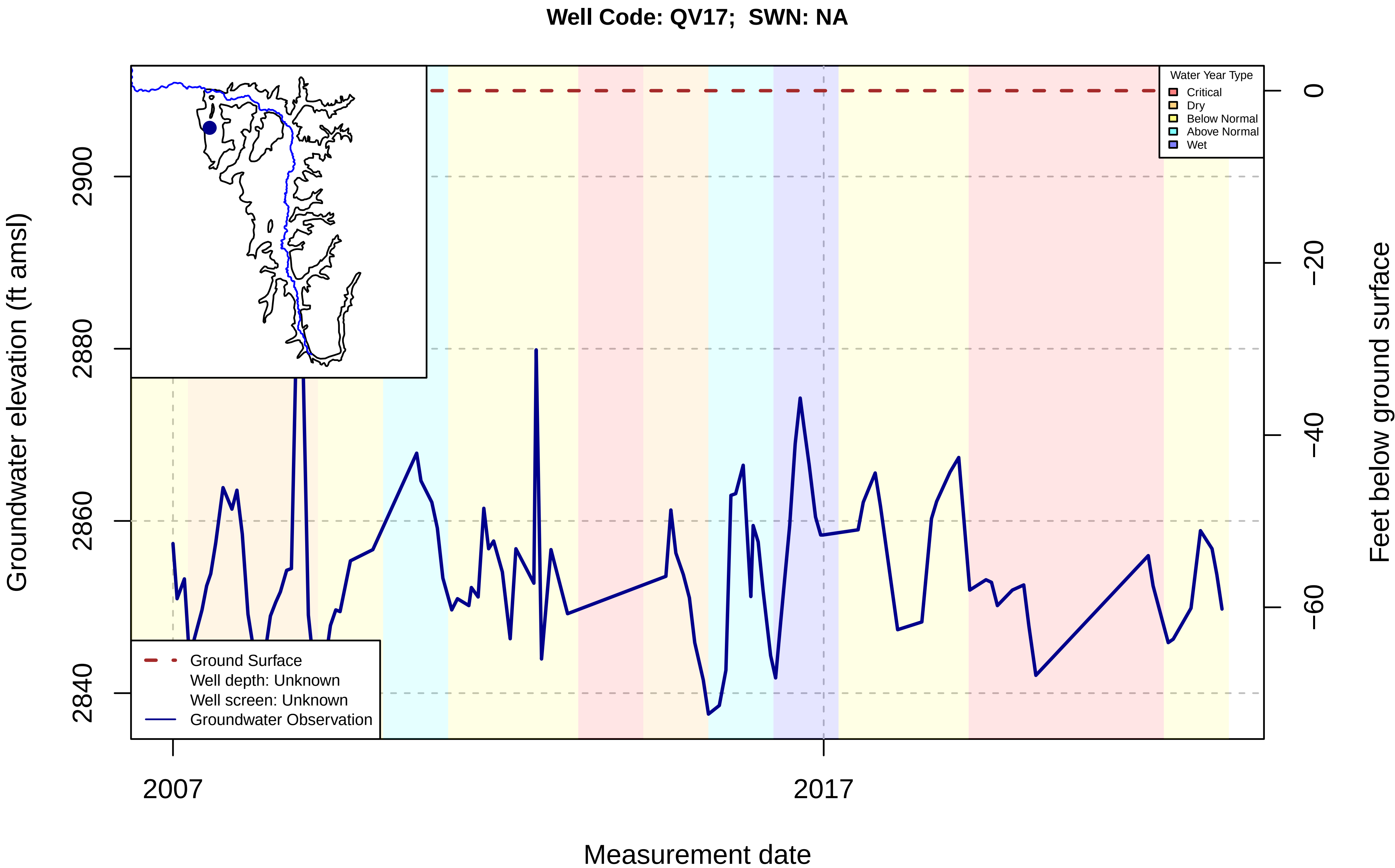
Well Code: SCT_173; SWN: NA
Groundwater elevation (ft amsl)
2710
2715
2720
Feet below ground surface
0
−5
−10
−15
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 150 ft bgs
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



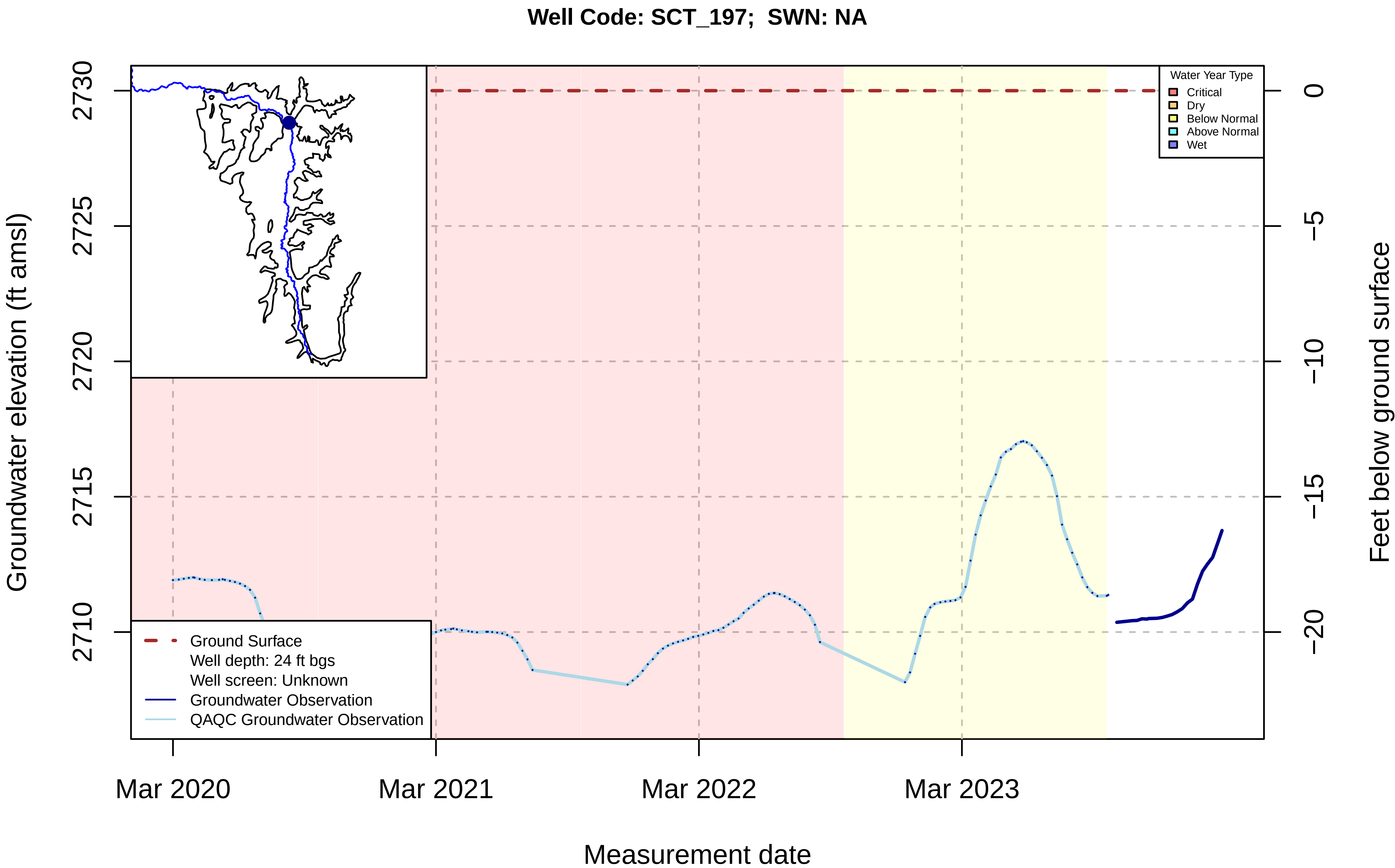
Well Code: QV18; SWN: NA
Groundwater elevation (ft amsl)
2840
2850
2860
2870
2880
2890
2900
Feet below ground surface
0
−10
−20
−30
−40
−50
−60
−70
2007
2017
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

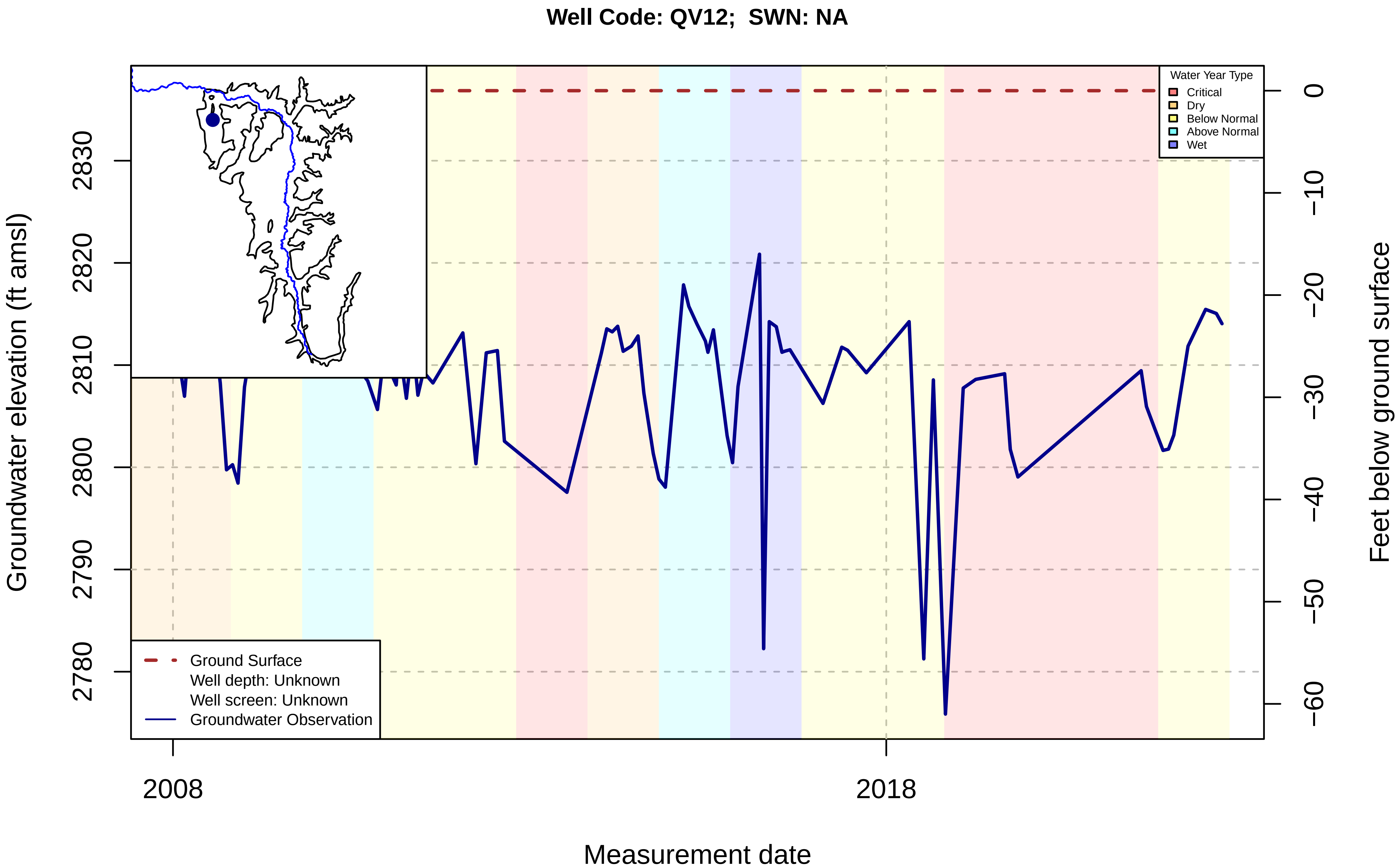
Well Code: 415902N1229805W001; SWN: NA



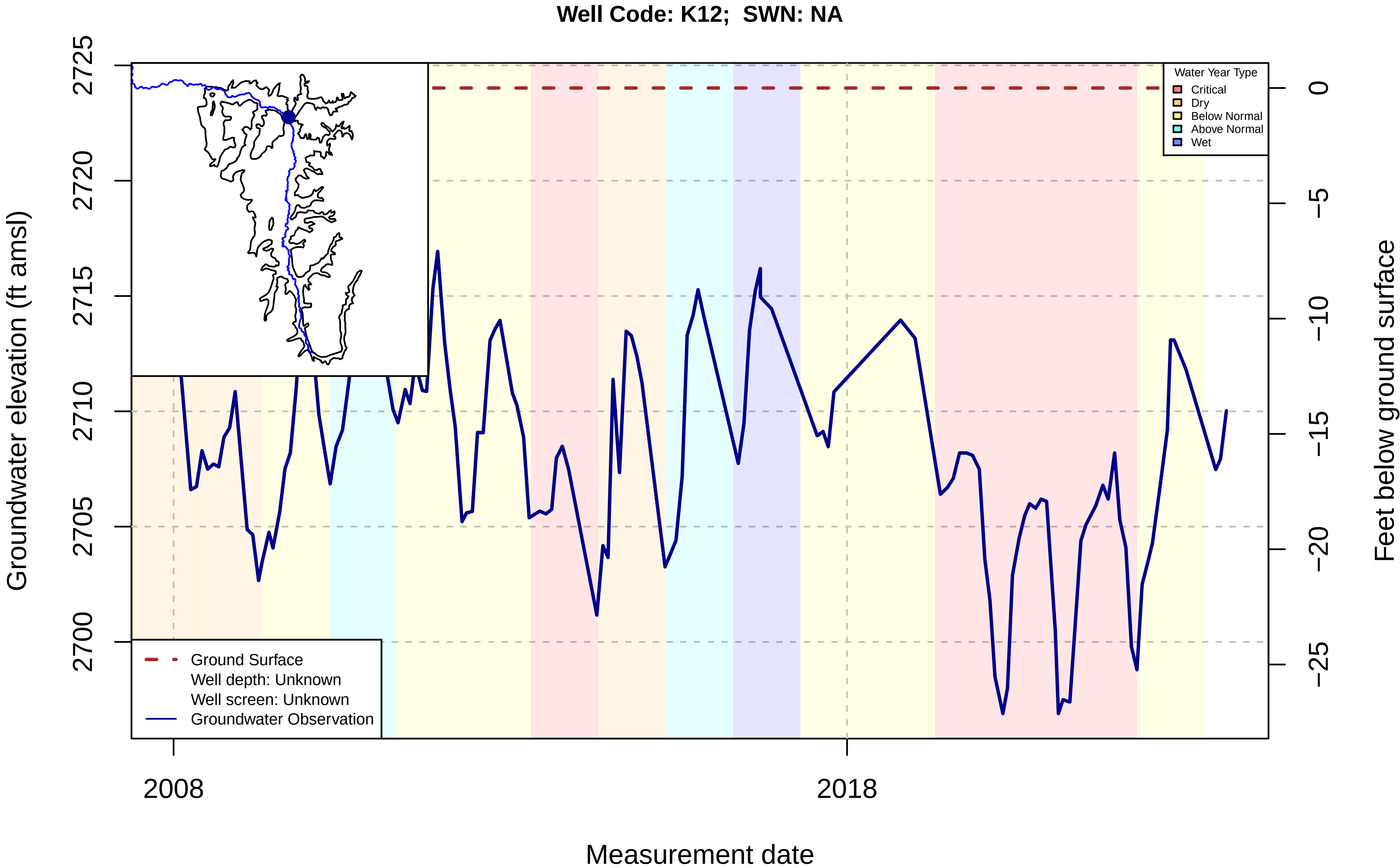


Well Code: QV17; SWN: NA
Groundwater elevation (ft amsl)
2840
2860
2880
2900
Feet below ground surface
0
−20
−40
−60
2007
2017
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation

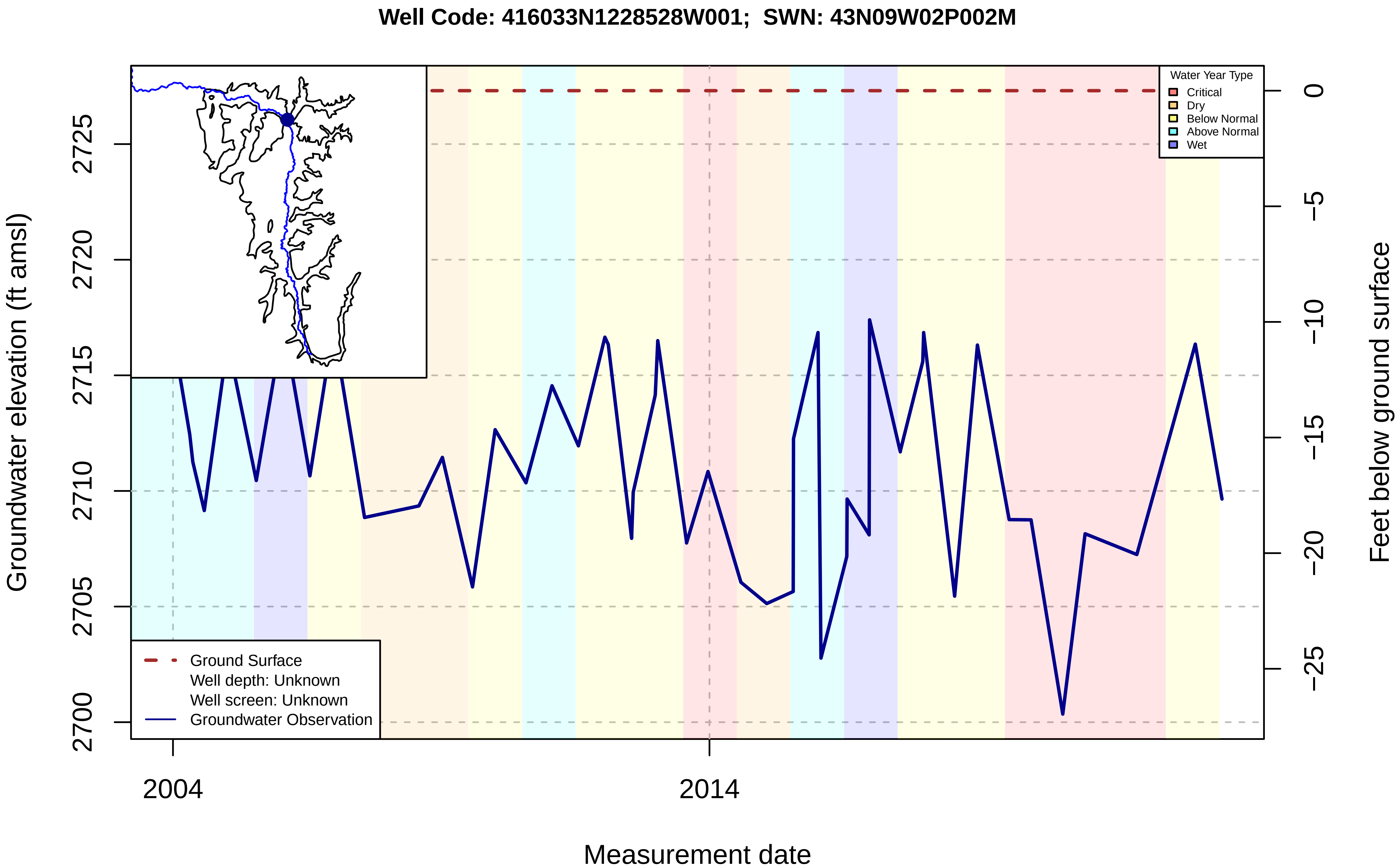

Well Code: SCT_197; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2730
2725
2720
2715
2710
0
−5
−10
−15
−20
Mar 2020
Mar 2021
Mar 2022
Mar 2023
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 24 ft bgs
Well screen: Unknown
Groundwater Observation
QAQC Groundwater Observation



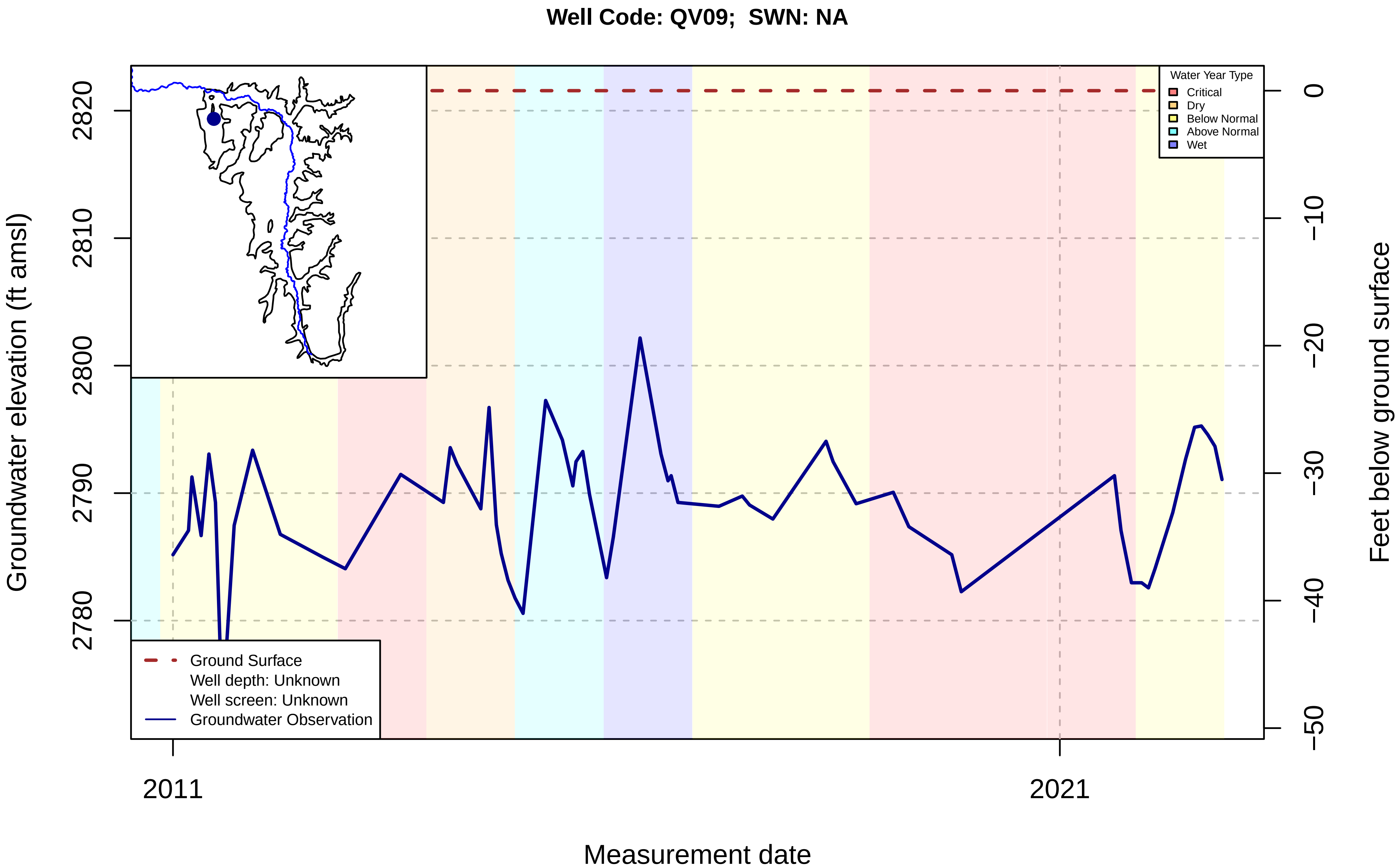
Well Code: QV12; SWN: NA
Groundwater elevation (ft amsl)
2780
2790
2800
2810
2820
2830
Feet below ground surface
0
−10
−20
−30
−40
−50
−60
2008
2018
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



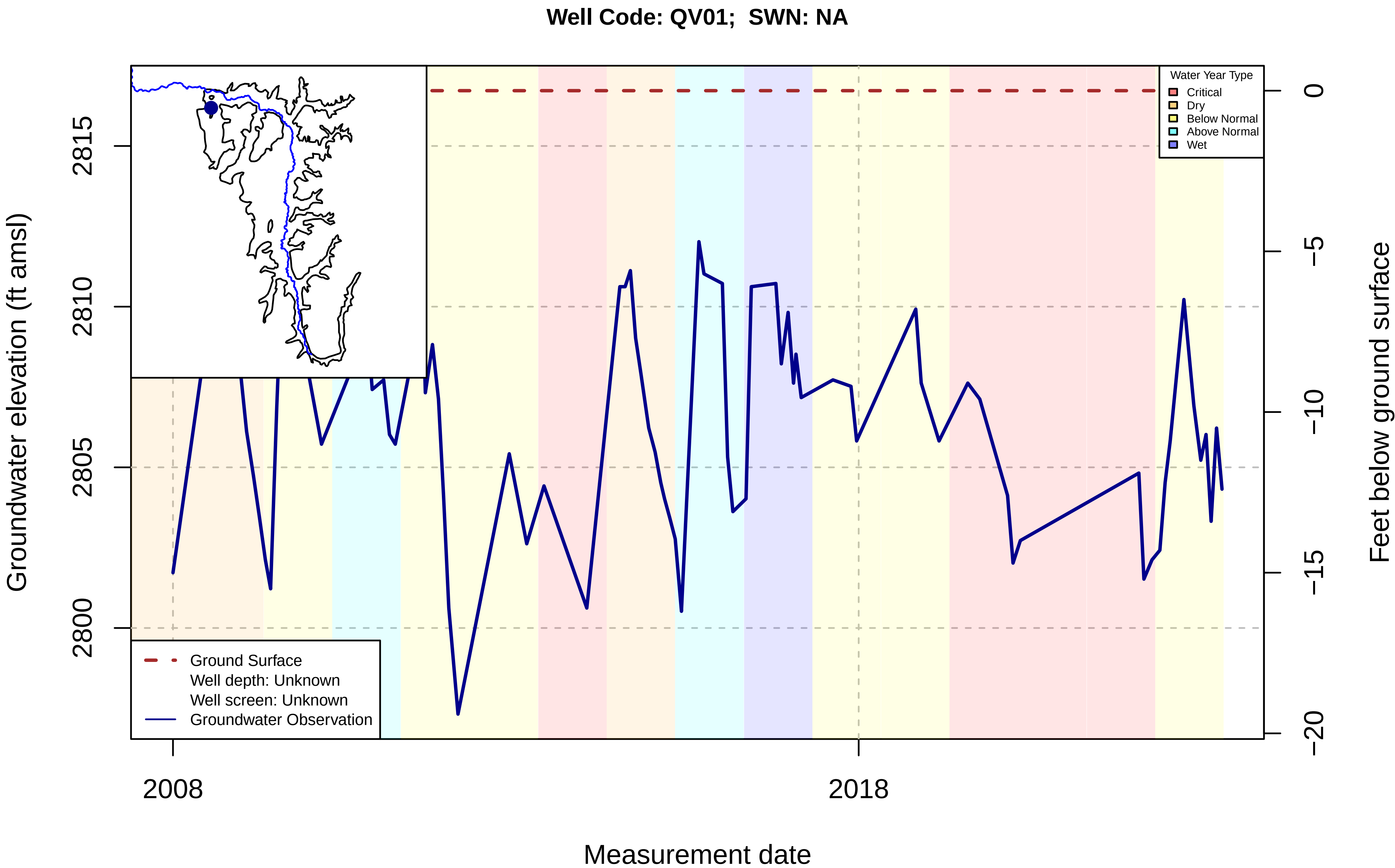
Well Code: K12; SWN: NA
Groundwater elevation (ft amsl)
2725
2720
2715
2710
2705
2700
Feet below ground surface
0
−5
−10
−15
−20
−25
2008
2018
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



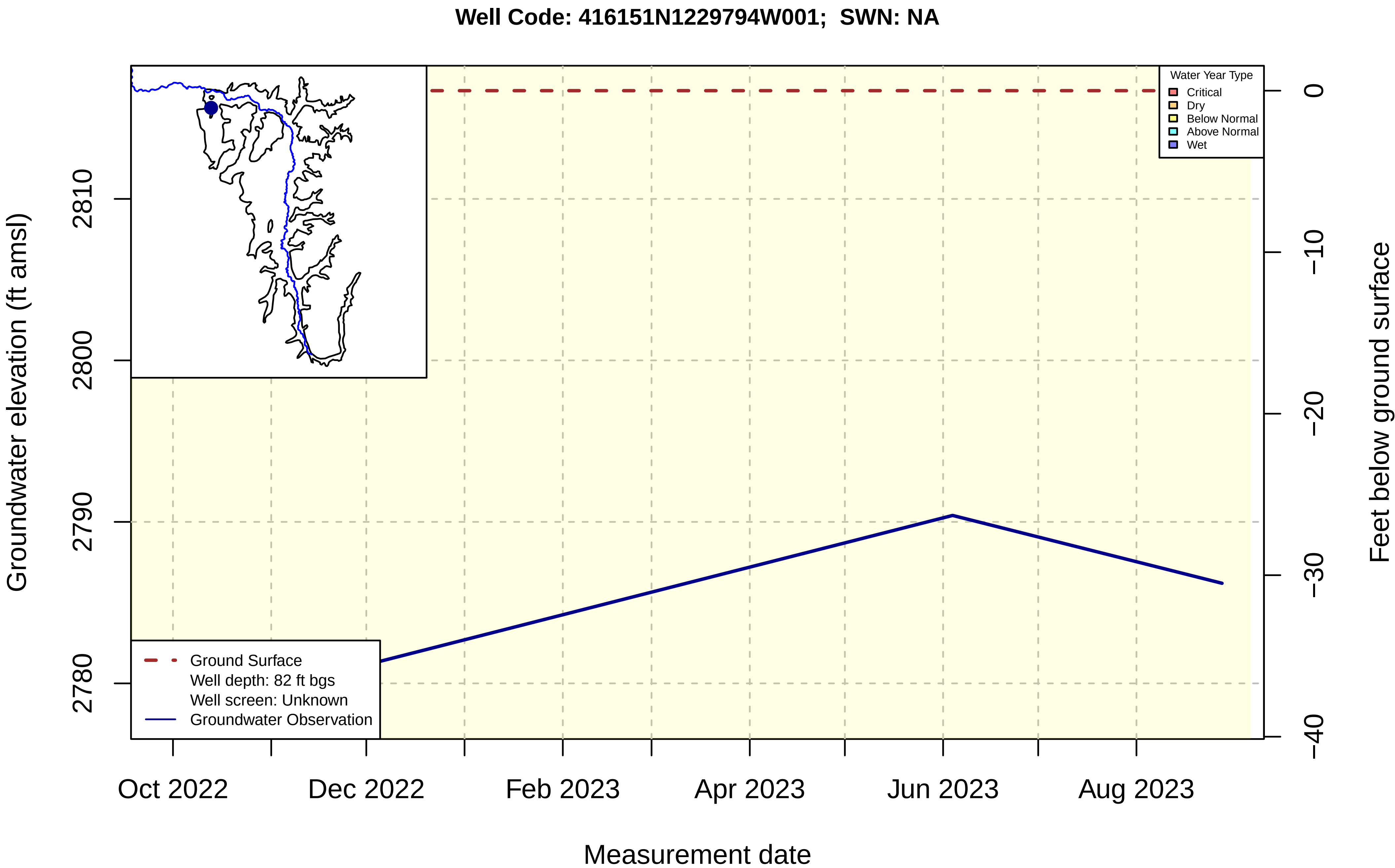
Well Code: 416033N1228528W001; SWN: 43N09W02P002M
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2700
2705
2710
2715
2720
2725
0
−5
−10
−15
−20
−25
2004
2014
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



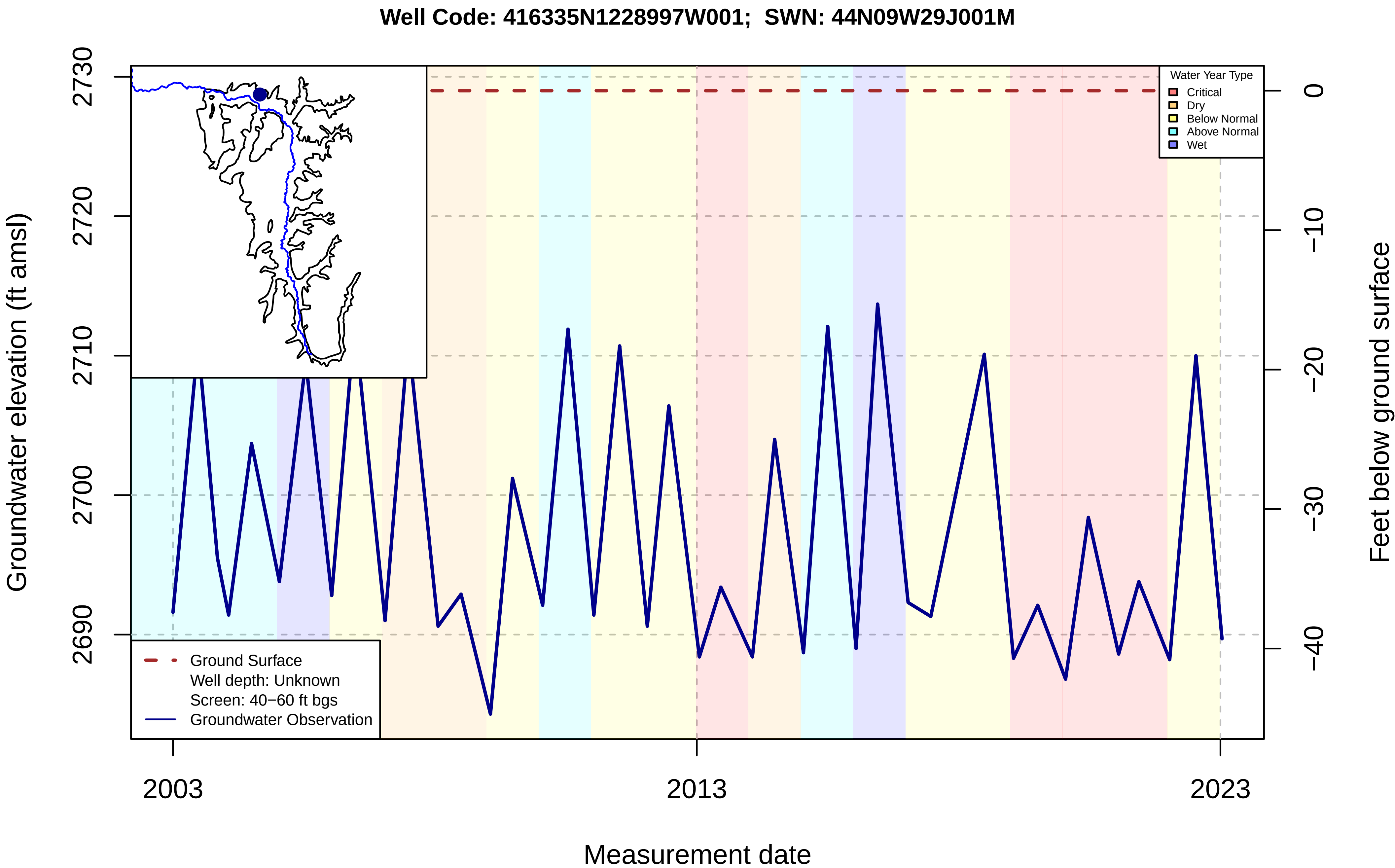
Well Code: QV09; SWN: NA
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2780
2790
2800
2810
2820
0
−10
−20
−30
−40
−50
2011
2021
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation



Well Code: QV01; SWN: NA
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Well screen: Unknown
Groundwater Observation
Groundwater elevation (ft amsl)
Feet below ground surface
Measurement date
2800
2805
2810
2815
0
−5
−10
−15
−20
2008
2018



Well Code: 416151N1229794W001; SWN: NA
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: 82 ft bgs
Well screen: Unknown
Groundwater Observation
Groundwater elevation (ft amsl)
2780
2790
2800
2810
Feet below ground surface
0
−10
−20
−30
−40
Oct 2022
Dec 2022
Feb 2023
Apr 2023
Jun 2023
Aug 2023
Measurement date



Well Code: 416335N1228997W001; SWN: 44N09W29J001M
Groundwater elevation (ft amsl)
2690
2700
2710
2720
2730
Feet below ground surface
0
−10
−20
−30
−40
2003
2013
2023
Measurement date
Water Year Type
Critical
Dry
Below Normal
Above Normal
Wet
Ground Surface
Well depth: Unknown
Screen: 40−60 ft bgs
Groundwater Observation

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