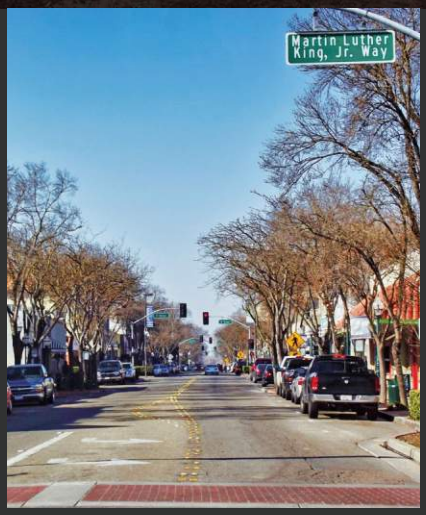
MERCED SGMA

Merced Groundwater Subbasin

GROUNDWATER SUSTAINABILITY PLAN

Water Year 2024 Annual Report

Image courtesy: Veronica Adrover/UC Merced



March 2025

MERCED GROUNDWATER SUBBASIN GROUNDWATER SUSTAINABILITY PLAN:

WATER YEAR 2024 ANNUAL REPORT

March 2025

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS

Acronym	Definition
AEM	airborne electromagnetic
AFY	Acre-Feet per Year
APA	Additional Pumping Allowance
AWMP	Agricultural Water Management Plan
BHMWC	Buchanan Hollow Mutual Water Company
CCR	California Code of Regulations
CDEC	California Data Exchange Center
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CIMIS	California Irrigation Management Information System
CWC	California Water Code
CWD	Chowchilla Water District
DDW	Division of Drinking Water
DOC	California Department of Conservation
DPR	Department of Pesticide Regulation
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
ESJWQC	East San Joaquin Water Quality Coalition
GAMA	Groundwater Ambient Monitoring and Assessment
GAP	groundwater accounting platform
GDE	groundwater dependent ecosystems
GPS	global positioning system
GQTMP	Groundwater Quality Trend Monitoring Program
GRAT	Groundwater Recharge Assessment Tool
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
ILRP	Irrigated Lands Regulatory Program
IQR	interquartile range
IRWM	Integrated Regional Water Management
IWFM	Integrated Water Flow Model
LGAWD	Le Grand Athlone Water District
LIDAR	Light Detection and Ranging
LPMWC	La Paloma Mutual Water Company
MAF	million acre-feet
MAR	managed aquifer recharge
MCL	Maximum Contaminant Level
MCWD	Merquin County Water District
MercedMAR	Merced Subbasin Integrated Managed Aquifer Recharge Evaluation Tool
MID	Merced Irrigation District
MIUGSA	Merced Irrigation-Urban Groundwater Sustainability
MLRP	Multibenefit Land Repurposing Program
MSGSA	Merced Subbasin Groundwater Sustainability Agency
NASA	National Aeronautics and Space Administration

NRCS	National Agricultural Statistics Service
PMA	projects and management actions
PRISM	Precipitation-Elevation Regressions on Independent Slopes Model
PVC	polyvinyl chloride
SAGBI	Soil Agricultural Groundwater Banking Index
SDAC	Severely Disadvantaged Community
SGC	Stakeholder Guidance Committee
SGM	Sustainable Groundwater Management
SGMA	Sustainable Groundwater Management Act
SMC	sustainable management criteria
SMCL	secondary maximum contaminant level
SYNG	Sustainable Yield of Native Groundwater
TAF	thousand acre-feet
TDS	total dissolved solids
TIWD	Turner Island Water District
TIWD GSA-1	Turner Island Water District Groundwater Sustainability Agency #1
tTEM	towed Transient Electromagnetic
USBR	United States Bureau of Reclamation
USGS	United States Geological Survey
WY	water year

EXECUTIVE SUMMARY

The Merced Groundwater Subbasin (Subbasin) Groundwater Sustainability Plan (GSP) was adopted in late 2019 by the three Groundwater Sustainability Agencies (GSAs) that were formed in accordance with the Sustainable Groundwater Management Act (SGMA) to coordinate, develop, and implement a GSP for the Subbasin: Merced Irrigation-Urban Groundwater Sustainability Agency (MIUGSA), Merced Subbasin Groundwater Sustainability Agency (MSGSA), and Turner Island Water District Groundwater Sustainability Agency #1 (TIWD GSA-1) (MIUGSA, MSGSA, & TIWD GSA-1, 2025). The GSP was initially submitted to the California Department of Water Resources (DWR) in January 2020, ahead of the January 31, 2020 regulatory deadline for submission of GSPs for critically overdrafted subbasins.

On January 28, 2022, DWR completed its review and evaluation of the Merced Subbasin GSP and made a determination that it was "incomplete." The three GSAs worked collaboratively to respond to DWR's comments and engage stakeholders and members of the public to address three identified deficiencies from February through June 2022. A revised GSP was adopted and submitted to DWR in July 2022 with updates in key places to address DWR's recommendations. This Annual Report compares recent observations against the published sustainable management criteria (SMC) from the 2022 revised GSP.

On August 4, 2023, DWR formally approved the 2022 revised GSP, but provided a set of recommended corrective actions to further assist the GSAs with implementation of the GSP and achieving Subbasin sustainability goals (DWR, 2023). The GSAs developed an updated 2025 GSP and 2025 Periodic Evaluation which were both submitted to DWR in January 2025 and include responses to the recommended corrective actions. This Annual Report compares recent observations against the published SMC from the 2025 GSP.

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. This is the sixth annual report.

CWC §356.2 requires annual reports to include information about groundwater elevations (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 previous annual report. Table ES-1 provides a summary of the definition of undesirable results and summary of compliance with the SMC.

For WY 2024, the San Joaquin Valley Water Year Type Index was 3.49, classified as an Above Normal year type. The value of 3.49 is 107% of average (DWR, 2025b). Following the heavy storms of prior WY 2023, the Subbasin still experienced above average precipitation within the basin, above average streamflows, more abundant surface water supplies, and lower demands for applied water during periods of precipitation. Together, these factors contributed to improvement in groundwater levels and groundwater storage.

Table ES-1-1: Summary of Sustainable Management Criteria

Sustainability Indicator	Minimum Threshold (MT)	Interim Milestone (IM)	Measurable Objective (MO)	Undesirable Result	WY 2024 Annual Report Status
Groundwater Levels	Fall 2015 groundwater elevation	Based on range of projected values that account for hydrologic uncertainty	November or October 2011 groundwater elevation (measured, or estimation if historical record not available)	Greater than 25% of representative wells fall below MT in 2 consecutive years	6/29 wells (21%) are below MT. 23 of 29 wells are below MO. 28/29 are above 2025 IM. 1 well not measured.
Groundwater Storage	Groundwater levels used as a proxy for this sustainability indicator				
Seawater Intrusion	Not applicable - not present and not likely to occur due to the distance between the Subbasin and the Pacific Ocean (and Sacramento-San Joaquin Delta)				
Degraded Water Quality	1,000 mg/L TDS	1,000 mg/L TDS	500 mg/L TDS	At least 25% representative wells exceed MT for 2 consecutive years	No wells exceeded MT. 3 wells exceeded MO.
Land Subsidence	0 ft/year, subject to uncertainty of +/-0.16 ft/year	2025: -0.75 ft/year 2030: -0.5 ft/year 2035: -0.25 ft/year	0 ft/year	Exceedance of MT at 3 or more representative sites for 2 consecutive years	3/4 sites exceed MT. All sites within IMs.
Depletions of Interconnected Surface Waters	Groundwater levels used as a proxy for this sustainability indicator				

Groundwater Levels

Generally, groundwater level increases were observed in WY 2024. Based on data from 12 monitoring network wells in the Above Corcoran Clay Principal Aquifer, average groundwater level change was +3.7 ft from fall 2023 to fall 2024. Based on data from 14 wells in the Below Corcoran Clay Principal Aquifer, average groundwater level change was -1.9 ft from fall 2023 to fall 2024. Based on data from 16 wells in the Outside Corcoran Clay Principal Aquifer, average groundwater level change was+4.4 ft from fall 2023 to fall 2024. Hydrographs and contour maps of groundwater elevation can be found in **Appendix A** and **Appendix B**, respectively.

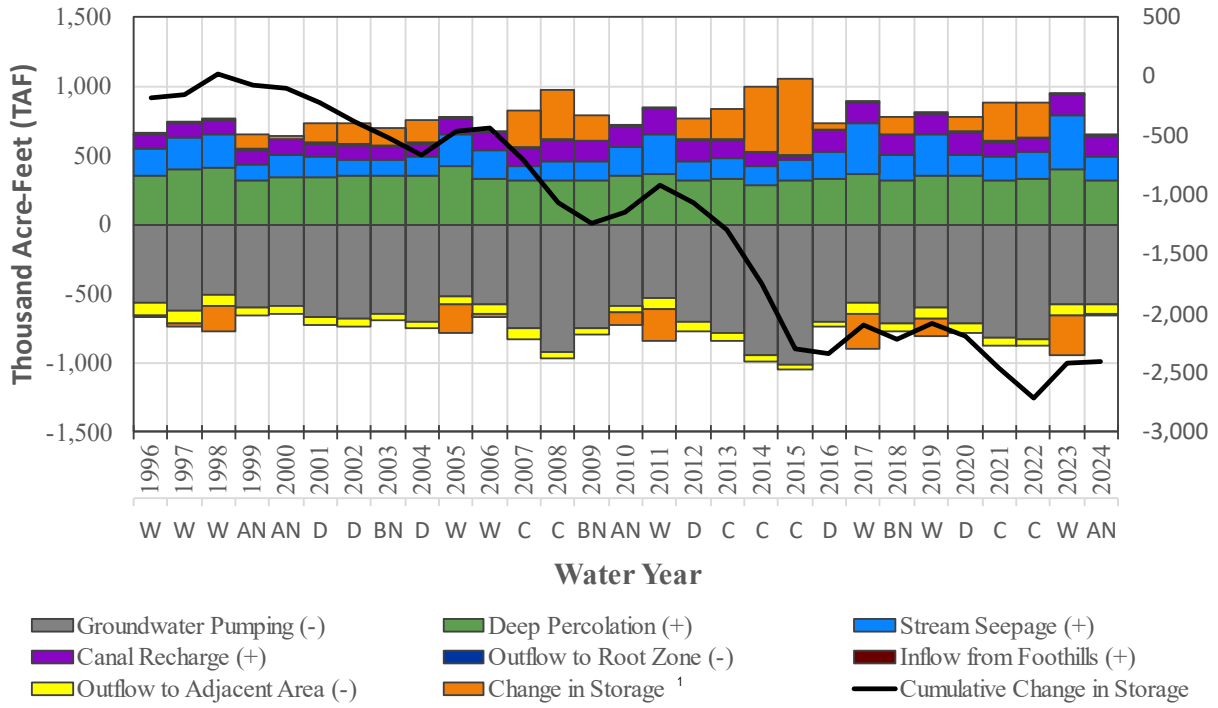
Undesirable results were not observed in WY 2024. 21% of wells were below the MT, while all measured wells remained above their 2025 IM.

Groundwater Storage

The Merced Water Resources Model (MercedWRM) was updated with recent hydrologic and Subbasin operation information from WY 2024 to estimate the change in storage trends in the Merced Subbasin. The cumulative change in storage during water years 2006-2024 was estimated as -1.95 million acre-feet (MAF), or an average reduction of 103 thousand acre-feet (TAF) per year. During WY 2024, the cumulative change in storage was estimated as an increase of 6 TAF. Note that the average annual reduction of 130 TAF per year established in the 2025 GSP using the hydrologically balanced period of WYs 2006-2022 remains the current estimate of long-term overdraft in the Subbasin.

Figure ES-1-1 shows the cumulative change in storage together with annual groundwater uses developed in the water budget and water year type. On the figure, cumulative change in storage (WYs 1996-2024) is shown as a black line with values indicated on the right vertical axis and the annual groundwater budget uses are shown as bar charts with values indicated on the left vertical axis.

Figure ES-1-1: Historical Annual Water Budget and Cumulative Change in Storage



Notes:
"Change in Storage" is placed on the chart to balance the water budget. For instance, if annual outflows (-) are greater than inflows (+), there is a decrease in storage, and this is shown on the positive side of the bar chart to balance out the increased outflows on the negative side of the bar chart.
Water year types based on San Joaquin Valley Water Year Index (DWR, 2025a).

X-Axis Abbreviation	Description
W	Wet year type
AN	Above normal year type
BN	Below normal year type
D	Dry year type
C	Critically dry year type

Land Subsidence

Subsidence remains an ongoing concern in the Subbasin. Subsidence is measured through elevation monitoring at static GPS control points

throughout a portion of the San Joaquin Valley by the United States Bureau of Reclamation (USBR) as part of the San Joaquin River Restoration Program. Measurements have been recorded semiannually in July and December of each year to monitor ongoing subsidence since 2011. The elevation of the representative control points located in the Merced Groundwater Subbasin declined over the past year (December 2023 to December 2024), indicating land subsidence. This trend is consistent with the annual decreases observed from 2015 to 2022, despite a slight rise in land surface elevation following the very wet winter of late 2022 to early 2023.

Subsidence is a gradual, regional process that takes time to develop and time to halt. As a result, some level of future subsidence, likely at rates similar to those experienced 2015 to 2024, is likely to be underway already and will not be able to be prevented.

Groundwater Quality

The GSAs established an MT of 1,000 milligrams per liter (mg/L) of total dissolved solids (TDS) at representative monitoring sites for the degraded water quality sustainability indicator. The MO and all IMs were set at 500 mg/L TDS. The GSAs are using electrical conductivity (EC) to estimate TDS where not sampled. Out of the 14 TDS measurements (direct or estimated) in WY 2024, none exceeded the MT and one exceeded the MO.

In addition to monitoring for TDS, the GSAs are conducting water quality coordination activities for other water quality constituents. These activities include review of monitoring reports published by other monitoring programs as well as compiling data submitted by Department of Pesticide Regulation (DPR), Division of Drinking Water (DDW), and Department of Toxic Substances Control (DTSC) to the Groundwater Ambient Monitoring and Assessment (GAMA) database. The purpose of these reviews is to monitor the status of constituent concentrations throughout the Subbasin with respect to typical indicators such as applicable maximum contaminant level (MCL) or secondary maximum contaminant levels (SMCL). The GSAs have collected information from GAMA and will use this information to document regional groundwater quality and to assess whether there is a need for changing existing SMC or developing additional SMC for water quality as part of the GSP periodic evaluation.

Plan Implementation Progress

The GSAs made meaningful progress in GSP implementation in WY 2024. Throughout the majority of the year, the GSAs were working on developing the 2025 GSP and Periodic Evaluation which were submitted to DWR in January 2025.

Implementation of Projects

GSP projects are included in the Merced Integrated Regional Water Management (MercedIRWM) Opti project tracker, which, along with the GSP, is viewed by the GSAs as a "living" document. The GSAs have added numerous projects to the Opti project tracker in addition to the original 12 priority projects identified in the GSP. Updates to specific projects are described in Section 3.2 of this annual report. Future updates to the Opti project tracker will be incorporated into subsequent annual reports.

Implementation of Management Actions

The 2025 GSP includes five Management Actions. For the **water allocation framework**, an Ad Hoc Working Group was previously established with GSA staff and representatives to conduct discussions on an initial framework. Currently, the GSAs are continuing to work individually within their own jurisdictions to develop GSA-specific demand reduction and water allocation programs. A formal allocation agreement between the GSAs for the Subbasin as a whole has not been developed and is not scheduled for the upcoming water year.

The **MSGSA Demand Reduction Program** has begun implementation and continues to develop in recognition of the need to reduce groundwater pumping in the Subbasin. The MSGSA approved an objective that by WY 2025 the consumption of groundwater within the MSGSA will be reduced by a minimum of 15,000 AF annually, with this minimum to be increased annually thereafter. MSGSA has adopted a Two Phased GSP Implementation Approach, focusing on land repurposing as a near-term option to achieve the WY 2025 objective, combined with importing surface water in the GSA (flood waters or purchased water. MSGSA adopted the Groundwater Allocation Rule on October 10, 2024, which will achieve the significant reduction in the consumptive use of groundwater needed to reach sustainability. The Groundwater Allocation Rule sets the Sustainable Yield of Native Groundwater consumption allocation at 13 inches per acre for all Sustainability Zones within the GSA and an Additional Pumping Allowance starting at 11 inches per acre, declining every year until 2035. The Groundwater Allocation Rules goes into effect January 2026, with the year 2025 being a test-run year for the allocation.

The **MIUGSA Groundwater Allocation** program is underway, with several adopted Rules and Regulations that include an allocation program in addition to establishing a framework for measuring, monitoring, and enforcing the groundwater allocation through well registration and groundwater usage reporting systems. In June 2022, the MIUGSA Board set a groundwater extraction allocation for agricultural parcels of 3.3 AF/ac over three years (1.1 AF/ac/Y on average) starting April 1, 2023 through December 31, 2025 and requires that all wells be registered (MIUGSA, 2023a). Well registration deadlines were set for different well types and uses. By August 2024, effectively all agricultural wells serving greater than 10 acres have been registered with MIUGSA. In June 2024, the MIUGSA Board adopted an allocation for non-agricultural users of 1.4 AF/ac/yr through 2031, followed by an allocation of 1.1 AF/ac per year after 2031 through 2040.

Significant progress was made on the development of the **Domestic Well Mitigation Program** in WY 2024. The GSAs have worked collaboratively to define the various roles and responsibilities of the program. The intent of this program is to respond to adverse impacts experienced by domestic well users where regional overdraft conditions occurring after 2015 are causing declining groundwater levels that interfere with groundwater production or quality. Moreover, the program is solely focused on addressing impacts associated with groundwater level declines and not centered on addressing impacts caused by aging, faulty, or ill-maintained domestic well infrastructure.

The **Above Corcoran Sustainable Management Criteria Adjustment Consideration** management action would consider an adjustment to the groundwater level SMC for all or a portion of the Above Corcoran Clay Principal Aquifer. Monitoring wells installed in WY 2023 and WY 2024 will provide much-needed supporting data for development of this management action. No action has been taken on this management action at this time.

Activities Anticipated for the Coming Year

The three GSAs intend to continue activities necessary to implement the GSP and put the Subbasin on a path toward sustainable management. Activities anticipated for 2025 include continuation of grant-funded projects, implementation of the groundwater accounting platform, continued implementation of the Data Gaps Plan (e.g., incorporating additional wells into the monitoring network), development of the Domestic Well Mitigation Program, making progress on internal GSA-specific plans for pumping reductions and water allocation frameworks, and more.

1. INTRODUCTION

The Merced Groundwater Subbasin (Subbasin) Groundwater Sustainability Plan (GSP) was initially adopted in late 2019 by the three Groundwater Sustainability Agencies (GSAs) that were formed in accordance with the Sustainable Groundwater Management Act (SGMA) to coordinate, develop, and implement the GSP: Merced Irrigation-Urban Groundwater Sustainability Agency (MIUGSA), Merced Subbasin Groundwater Sustainability Agency (MSGSA), and Turner Island Water District Groundwater Sustainability Agency #1 (TIWD GSA-1) (MIUGSA, MSGSA, & TIWD GSA-1, 2025). The GSP was initially submitted to the California Department of Water Resources (DWR) in January 2020, ahead of the January 31, 2020 regulatory deadline for submission of GSPs for critically overdrafted subbasins.

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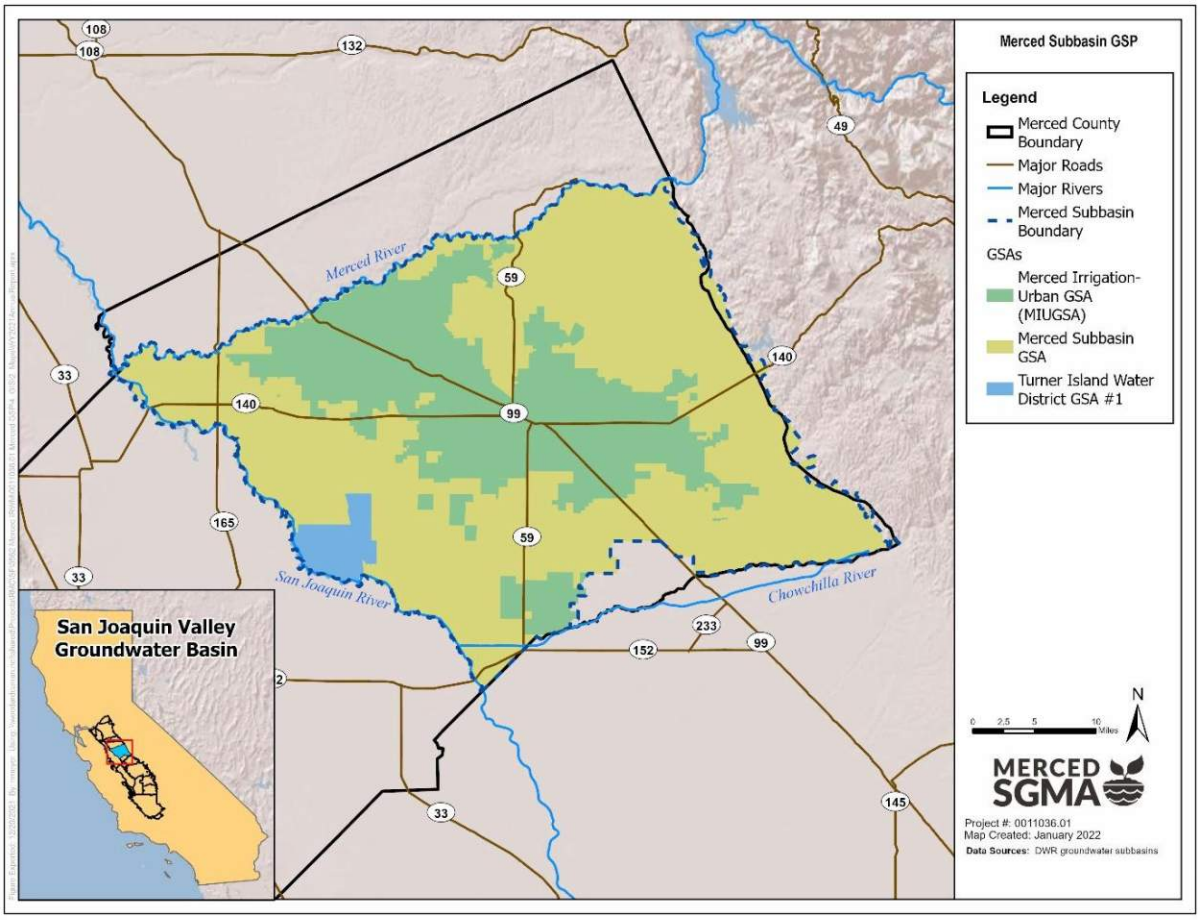
CWC §356.2 requires annual reports to include information about groundwater elevations (contour maps and hydrographs), groundwater extraction, surface water supply, changes in groundwater storage, and a description of progress towards implementation of the GSP since the previous annual report.

The annual report is organized into two primary sections: Basin Settings and Plan Implementation. The Basin Settings section provides updates to water budgets and other Subbasin-wide information for WY 2024. The Plan Implementation section discusses progress on implementation of the GSP since the last Annual Report was submitted.

Figure 1-1 shows a map of the Merced Subbasin and the extent of the three GSAs. An inset map shows the location of the Merced Subbasin within the larger San Joaquin Valley Groundwater Basin located in the Central Valley of California. A more detailed description of the Merced Subbasin can be found in the GSP's Section 1.2 (Plan Area) and Section 2.1 (Hydrogeologic Conceptual Model).

Figure 1-1: Location Map



2. BASIN SETTING

2.1 Hydrology

While groundwater management is critical for long-term sustainability, hydrology remains a critical driver on shorter time frames, such as WY 2024 covered by this annual report.

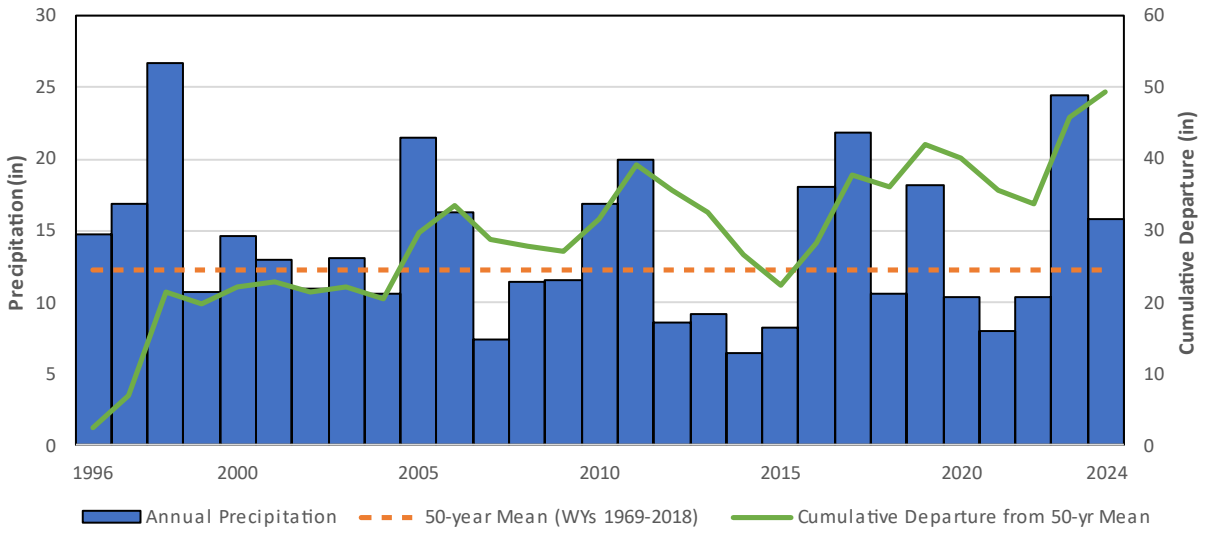
WY 2024 has been classified by DWR's San Joaquin Valley Water Year Index as an "above normal" year (DWR, 2025a). This contrasts with prior WY 2023 (wet) and the previous two water years, 2021 and 2022, which were both classified as critically dry years, the driest of the year type classifications. Figure 2-1 shows the annual precipitation and cumulative departure from mean precipitation[1] for WY 1996 through WY 2024, showing that the WY 2024 precipitation was lower than the prior wet year, but still higher than the long-term average. In addition to precipitation, streamflow, driven substantially by winter snowpack, is also important to shorter-term groundwater conditions. Streamflow in the Merced River in WY 2024 averaged 575 cubic feet per second (cfs), which is lower than the 1,881 cfs of prior "wet" WY 2023.[2]

These hydrologic trends should be considered when reviewing trends in sustainability indicators and using those trends to assess the effectiveness of overall groundwater management.

[1] Under this method, the long-term average precipitation is subtracted from annual precipitation within each water year to develop the departure from mean precipitation for each water year. Wet years have a positive departure and dry years have a negative departure; a year with exactly average precipitation would have zero departure. Starting at the first year analyzed, the departures are added cumulatively for each year. So, if the departure for Year 1 is 5 inches and the departure for Year 2 is -2 inches, the cumulative departure would be 5 inches for Year 1 and 3 inches (5 plus -2) for Year 2. A chart is used to graphically illustrate the cumulative departure from mean precipitation. The chart includes bars displaying annual precipitation for each water year starting in 1996, with a horizontal line representing the mean precipitation of 12.3 inches (1969-2018, from GSP). The cumulative departure from mean precipitation is displayed as a line that starts at zero and highlights wet periods with upward slopes and dry periods with downward slopes. More severe events are shown by steeper slopes and greater changes. Thus, the period from 2012 to 2015 illustrates a short period with dry conditions (16.8-inch decline in cumulative departure over 4 years).

[2] Source: CDEC for Station ID MBN (MERCED R AT SHAFFER BRIDGE NR CRESSY).

Figure 2-1: Cumulative Departure from Mean Precipitation, Merced, California



2.2 Groundwater Elevations

Groundwater levels generally increased during WY 2024 for wells in the Above and Outside Corcoran Clay Principal Aquifers, while results were more mixed (both increases and decreases) in the Below Corcoran Clay Principal Aquifer. Out of 29 representative monitoring wells, 6 had October/November 2024 elevations below the minimum threshold (MT), 23 had October/November 2024 elevations below the measurable objective (MO), and 1 well was not measured. The 2025 GSP defines undesirable results as "during GSP implementation when November groundwater levels at greater than 25 percent of representative monitoring wells (at least 8 of 29) fall below their minimum thresholds for two consecutive years" (MIUGSA, MSGSA, & TIWD GSA-1, 2025). Approximately 21% of wells had groundwater levels below the MT. All measured wells were above their 2025 interim milestone (IM).

Based on data from 12 monitoring network wells in the Above Corcoran Clay Principal Aquifer, average groundwater level change was +3.7 ft from fall 2023 to fall 2024. Based on data from 14 wells in the Below Corcoran Clay Principal Aquifer, average groundwater level change was -1.9 ft from fall 2023 to fall 2024 (there was an approximately equal split between increasing and decreasing levels). Based on data from 16 wells in the Outside Corcoran Clay Principal Aquifer, average groundwater level change was +4.4 ft from fall 2023 to fall 2024. These values do not consider that monitoring wells are not evenly distributed throughout the Subbasin, but the overall values still function to provide an overview of trends based on available data. Figure 2-2 shows the location of the wells in the Merced Subbasin GSP monitoring network for groundwater levels.

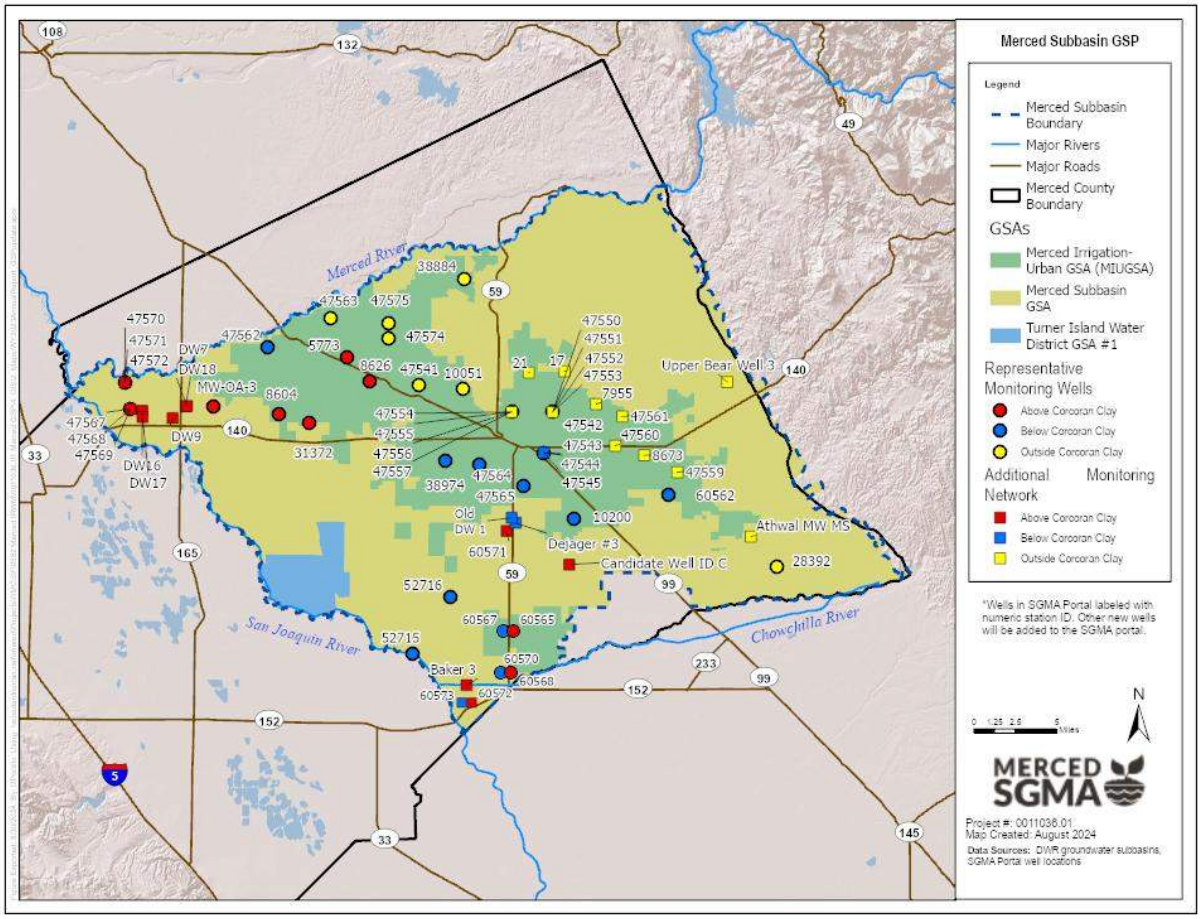
Individual hydrographs for these wells can be found in **Appendix A**. All available data are shown, except for measurements flagged for quality control reasons. Hydrographs for representative monitoring wells also display the MT, MO, and 2025 IM, as defined in Chapter 3 (Sustainability Indicators) of the GSP, as updated in 2025. The hydrographs also show a water year type indicator according to the San Joaquin Valley Water Year Hydrologic Classification Index. As previously stated, WY 2024 has been categorized as an "above

normal" water year (DWR, 2025b). Monitoring network data have been uploaded to the SGMA Portal and are displayed in the Merced Opti data management system (https://opti.woodardcurran.com/merced).

As of the WY 2021 report, the following wells located in TIWD GSA-1 were anticipated to be added to the groundwater level monitoring network, pending site visit reviews to confirm well accessibility for ongoing future monitoring. At the time of publishing, their status remains the same while TIWD GSA-1 continues to evaluate these wells.

- Well "R", located in the northern portion of TIWD GSA-1 and completed within the Below Corcoran Clay Principal Aquifer.
- Well "I", located along the southern edge of TIWD GSA-1 and completed within the Below Corcoran Clay Principal Aquifer.
- Well "L", located along the southern edge of TIWD GSA-1 and completed within the Above Corcoran Clay Principal Aquifer.

Figure 2-2: Groundwater Level Monitoring Network



Source: 2025 GSP

Appendix B shows contour maps of seasonal high (spring) and seasonal low (fall) groundwater elevations for each of the three principal aquifers for fall 2023, spring 2024, and fall 2024. Groundwater level data were obtained from the SGMA Data Viewer and the GSP monitoring network for groundwater levels[3]. Groundwater levels reported by both monitoring network wells and other voluntary and representative wells in the Merced, Turlock, Delta-Mendota, Chowchilla, and Madera Subbasins were used to develop contours. Measurements from neighboring subbasins were included to provide spatial coverage for contoured groundwater levels along the edges of the Merced Subbasin. The contour maps for the Above Corcoran Clay and Outside Corcoran Clay Principal Aquifers show hatched areas labeled "Area of increased uncertainty due to data limitations" which indicate regions with a relatively lower density of monitoring wells. Contours were developed based on available surrounding data, but the change in groundwater levels are considered to have a higher level of uncertainty in this area due to the data limitations. The GSP identifies this as a data gap and the GSAs are in the process of implementing recommendations from a recently completed Data Gaps Plan to address critical data gaps in the Subbasin.

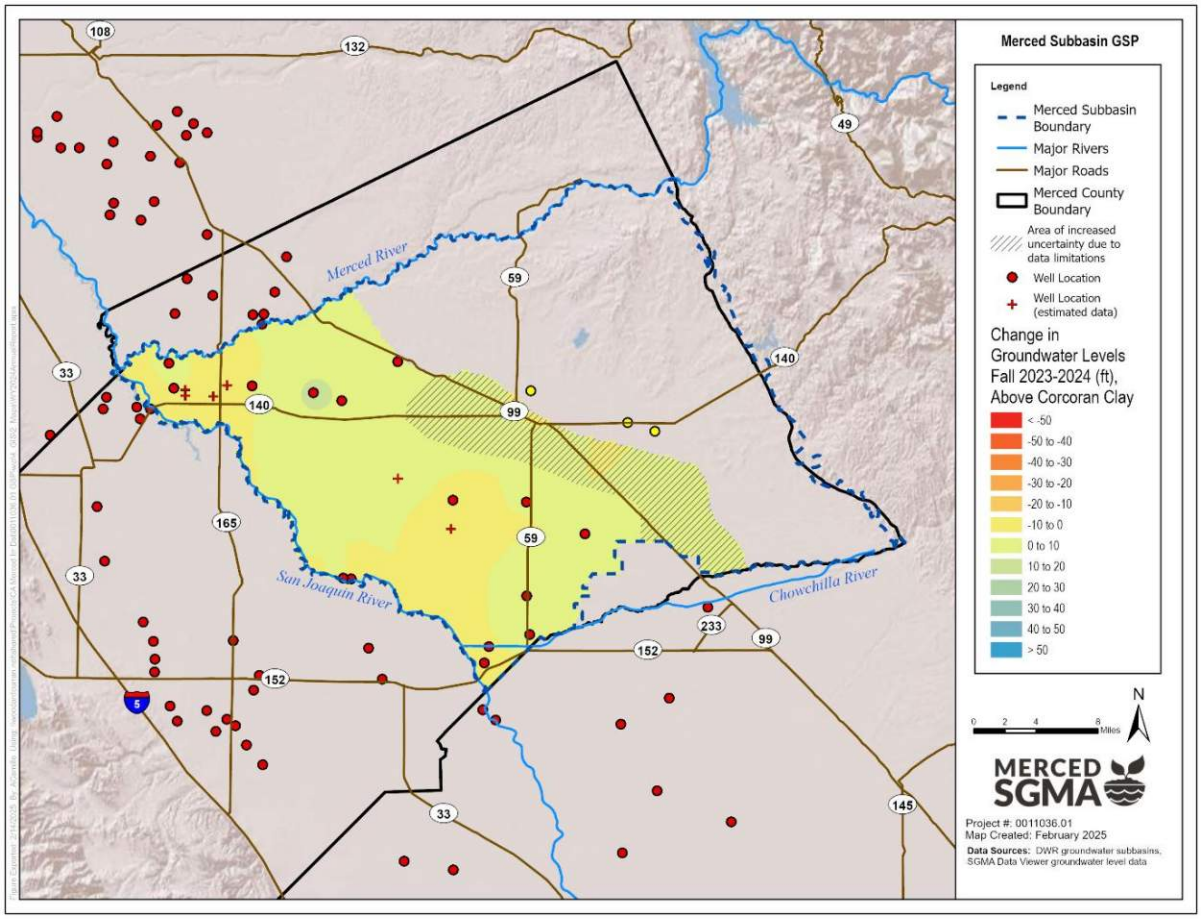
Groundwater level contours at 20-foot intervals were developed using the inverse distance weighting interpolation method, with local averaging performed to generate smoother contour lines. Groundwater level measurements were classified as spring if they were recorded in the month of March (± 5 days) and classified as fall if they were recorded in the month of November, or October if November not available (± 5 days). Contour maps for each season and principal aquifer can be found in **Appendix B**.

Many voluntary wells do not consistently report groundwater elevations each spring and fall. In some cases, measurements for monitoring network wells were not used in contouring due to nearby pumping or other data quality flags. A multiple linear regression tool was applied to estimate groundwater elevations for wells with missing seasonal data located within the Merced Subbasin. The estimate is necessary to provide consistent results between time periods, despite variability in available data. The multiple linear regression was applied separately at each well for fall and spring measurements where there were several years of historical data for each respective season. The multiple linear regression methodology makes use of historical observed data at the well being analyzed, and other observations such as water storage changes from the NASA Gravity Recovery and Climate Experiment, soil moisture from the Global Land Data Assimilation System, or the Palmer Hydrologic Drought Index, based on the methodology developed by the BYU Hydroinformatics Laboratory (n.d.). The methodology also uses inputs from up to five best correlated wells located within the same aquifer. Wells at which groundwater elevations were estimated for the purpose of developing contours are identified in the contour maps in **Appendix B**. All other data points use observed data.

Figure 2-3 through Figure 2-5 show the total change in groundwater levels between fall 2023 and fall 2024 for each principal aquifer, based on comparing the interpolated groundwater level surfaces. The Above Corcoran Clay Principal Aquifer generally shows a slight net increase in groundwater levels throughout most of the aquifer, with pockets of slight decrease. In the Below Corcoran Clay and Outside Corcoran Clay Principal Aquifers, groundwater levels were found to increase across most of the aquifer, with pockets of decrease.

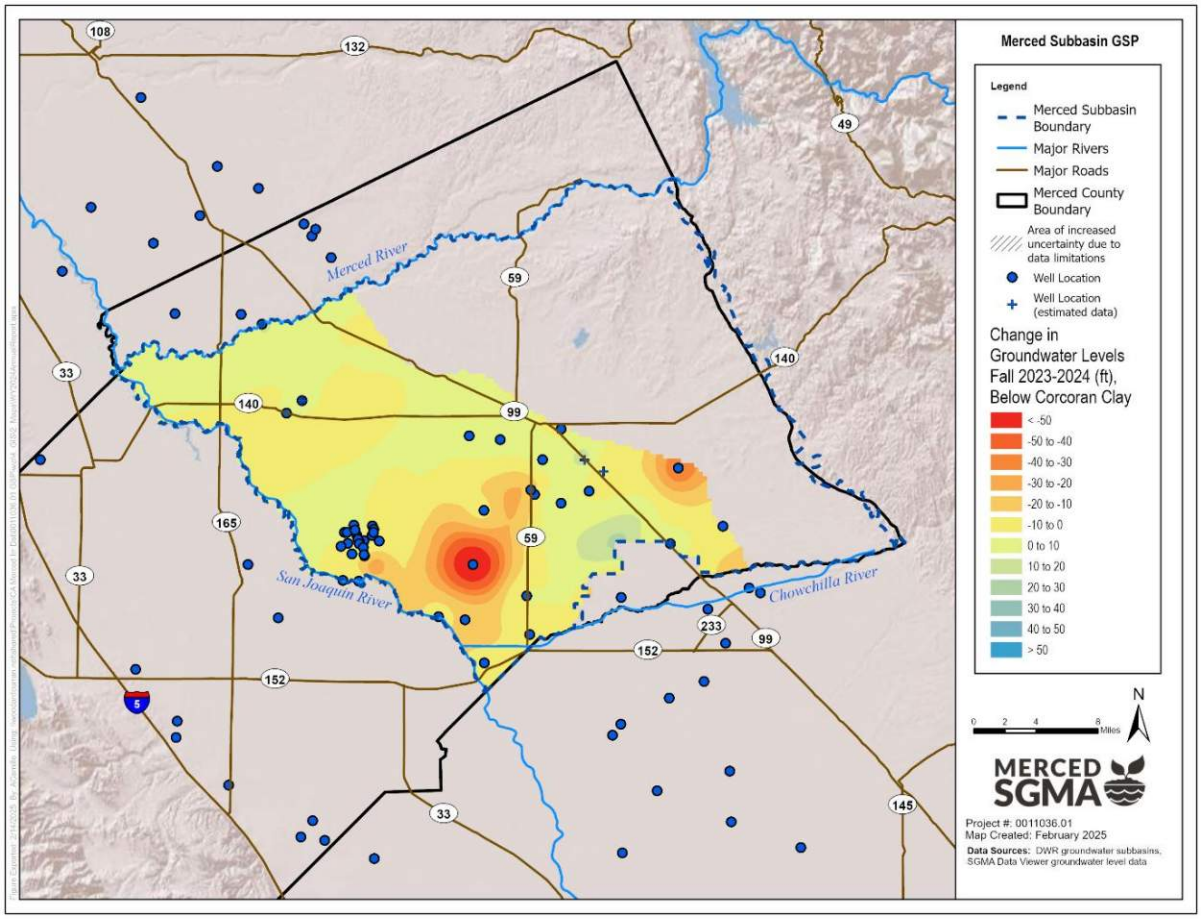
[3] TIWD GSA-1 also provided additional static water level measurements for wells within the GSA boundary that are not part of the SGMA Data Viewer system. Other monitoring wells without a numeric station ID in the network map and contour maps are considered provisionally part of the network and are not yet reported to the SGMA Data Viewer system.

Figure 2-3: Total Change in Groundwater Levels Fall 2023 to Fall 2024, Above Corcoran Clay



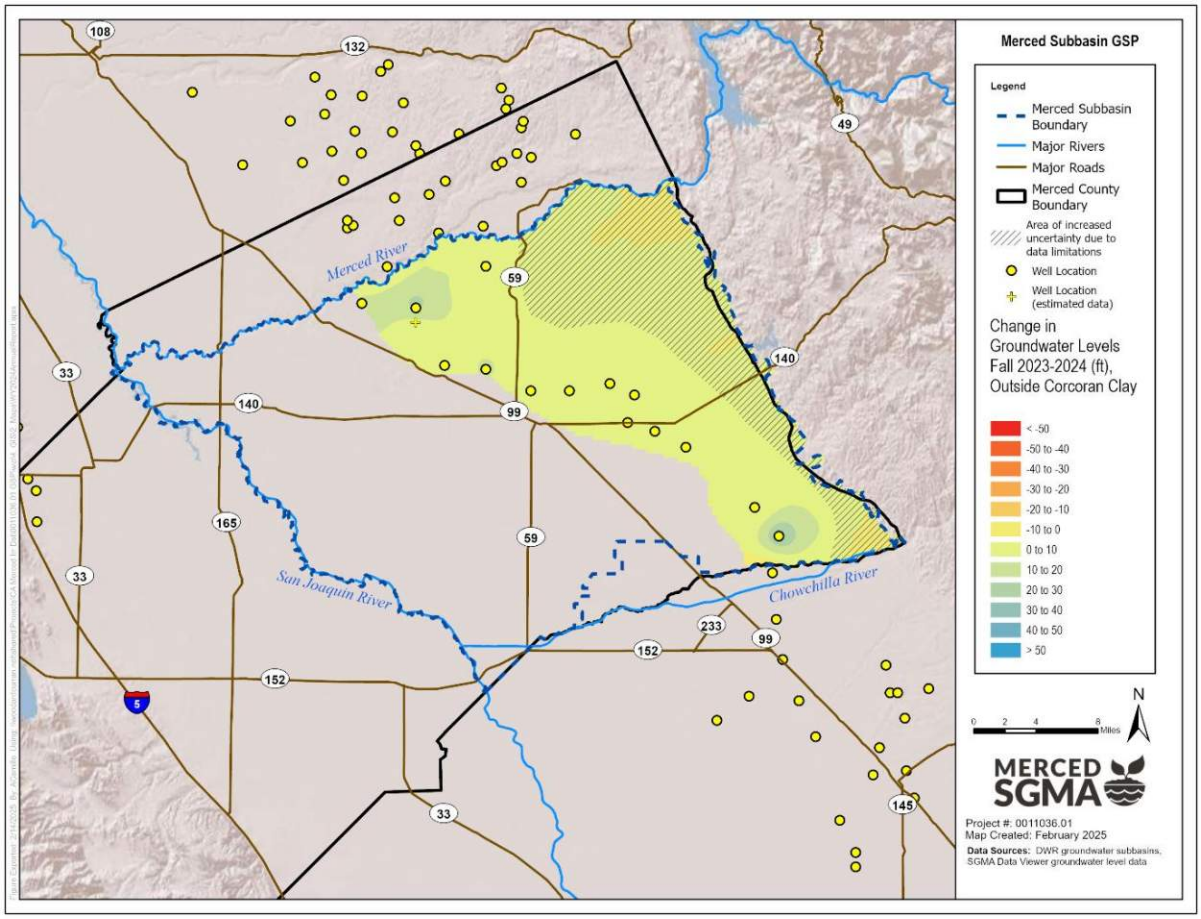
1. *For additional details on change in groundwater levels in specific areas, please refer to contour maps for each season developed in* ***Appendix B****.*
2. *The hatched area labeled "Area of increased uncertainty due to data limitations" indicates a region with a relatively lower density of monitoring wells. Contours were developed based on available surrounding data, but the change in groundwater levels are considered to have a higher level of uncertainty in this area due to the data limitations. The GSP identifies this as a data gap; the GSAs developed a Data Gaps Plan in 2021 and are in the process of implementing the plan. In WY 2024, this area reduced in size slightly with the addition of a new monitoring well in the eastern edge of the aquifer.*
3. *Note that three Outside Corcoran Clay wells are shown in this figure. These have screened interval depths that are similar to or shallower than the depth of the eastern lateral extent of the Corcoran Clay. Groundwater levels at these wells were used to inform the contour map development.*

Figure 2-4: Total Change in Groundwater Levels Fall 2023 to Fall 2024, Below Corcoran Clay



1. *For additional details on change in groundwater levels in specific areas, please refer to contour maps for each season developed in **Appendix B**.*
2. *The red bullseye in the southern end of the subbasin is caused by a large groundwater decline observed between fall 2023-2024 at Station ID 52716. Measurements at this location have varied from approximately -115 ft mean sea level (summer 2021) to approximately 80 ft above mean sea level (fall 2023). The fall 2024 measurement of -25 ft above mean sea level is close to average, but appears as a large decline due to the shallow measurement observed in fall 2023. The shallow fall 2023 conditions may not have been representative in this area and are actively being reviewed by the GSAs.*

Figure 2-5: Total Change in Groundwater Levels Fall 2024 to Fall 2024, Outside Corcoran Clay



1. *For additional details on change in groundwater levels in specific areas, please refer to contour maps for each season developed in* ***Appendix B****.*
2. *The hatched area labeled "Area of increased uncertainty due to data limitations" indicates a region with a relatively lower density of monitoring wells. Contours were developed based on available surrounding data, but the change in groundwater levels are considered to have a higher level of uncertainty in this area due to the data limitations. The GSP identifies this as a data gap; the GSAs developed a Data Gaps Plan in 2021 and are in the process of implementing the plan. In WY 2024, this area reduced in size slightly with the addition of an additional monitoring well in the eastern edge of the aquifer.*

Table 2-1 lists the representative monitoring wells for the chronic lowering of groundwater levels sustainability indicator, comparing fall 2024 groundwater elevations with MT, MO, and 2025 IM elevations. The SMC are updated based on the 2025 GSP.

Table 2-1: Groundwater Elevation at Representative Monitoring Wells

State Well ID	Site Code	Station ID	Principal Aquifer	Fall 2024 GW Elevation[1]	Minimum Threshold Elevation[1]	Measurable Objective Elevation[1]	Interim Milestone 2025[1]
06S12E33D001M	373732N1206679W001	5773	Above	55.5	46.5	73.8	26.8
07S11E15H001M	373243N1207424W001	8604	Above	68.7	59.0	67.0	55.9
07S12E03F001M	373532N1206432W001	8626	Above	54.0	48.9	78.0	15.5
07S11E24A001M	373166N1207091W001	31372	Above	58.7	50.8	75.6	33.9
07S10E17D003M	373278N1209054W002	47569	Above	70.6	61.2	68.2	59.4
07S10E06K002M	373510N1209113W001	47571	Above	68.7	56.8	66.3	53.8
08S14E15R002M	372335N1204199W001	10200	Below	65.2	67.2	145.2	11.5
07S13E32H001M	372838N1205602W001	38974	Below	102.6	73.9	104.4	61.8
07S14E35E001M	372904N1204207W001	47542	Below	63.9	73.7	112.6	38.3
06S11E27F001M	373821N1207551W001	47562	Below	77.1[2]	58.8	75.3	48.8
07S13E34G001M	372806N1205241W001	47564	Below	91.2	70.2	108.7	53.5
08S14E06G001M	372617N1204747W001	47565	Below	67.9	55.9	100.9	28.5
07S13E09A001M	373457N1205429W001	10051	Outside	68.6[2]	73.7	92.6	48.1
08S16E34J001M	371902N1201985W001	28392	Outside	-58.3	-94.5	47.5	-169.7
06S13E04H001M	374421N1205407W001	38884	Outside	71.4	70.7	100.4	40.4
07S12E07C001M	373496N1205890W001	47541	Outside	34.1	56.1	66.4	29.9
07S14E16F004M	373260N1204432W004	47553	Outside	72.5	87.4	118.1	56.8
07S13E13H004M	373260N1204880W004	47557	Outside	62.3	62.4	102.1	37.4
06S12E17M001M	374074N1206859W001	47563	Outside	63.5[2]	50.5	81.0	33.1
06S12E23P001M	370000N1200000W001	47574	Outside	N/A[3]	56.0	80.0	40.0
06S12E23C001M	370000N1200000W002	47575	Outside	107.2	45.0	89.0	26.1
-	371153N1205958W002	52715	Below	-7.7	-142.7	1.5	-133.7
-	371640N1205556W002	52716	Below	-24.3	-79.6	-15.2	-75.6
-	370985N1204894W001	60568	Above	45.6	32.7	57.6	32.8
-	370985N1204895W001	60570	Below	-28.6	-47.6	4.5	-44.3
-	371347N1204928W001	60565	Above	69.0	44.8	92.3	41.0
-	371347N1204928W003	60567	Below	-12.6	-47.0	17.7	-43.2
-	372538N1203160W001	60562	Below	37.0	28.3	71.4	1.7
-	-	MW-OA-3	Above	71.4	62.7	76.1	63.5

1. *All elevations reported in feet above sea level, datum NAVD88.*
2. *In previous years, Station IDs 47562, 10051, and 47563 have had a QA flag of "Oil or foreign substance in casing". While they were not flagged for this issue this year, it is likely the issue persists. Oil layer depths were not measured and thus an adjusted water surface elevation cannot be estimated.*
3. *Station ID 47574 was visited in October 2024, but could not be measured due to QA flag of 'Tape hung up'.*

2.3 Groundwater Extractions

Table 2-2 summarizes monthly groundwater extractions for WY 2024 by water use sector and method of measurement. An annual comparison of groundwater pumping by sector for Water Years 2016-2024 (the period of time over which annual reports have been developed) is shown in Table 2-3. Groundwater extraction data were requested from groundwater-related entities located in the Merced Subbasin, listed below:

- City of Atwater
- City of Livingston
- City of Merced
- Merced Irrigation District (MID)
- Turner Island Water District GSA #1
- Stevinson Water District
- Merquin County Water District
- Planada Community Services District
- Lone Tree Mutual Water Company
- California American Water, Meadowbrook
- Winton Water and Sanitary District
- Le Grand Community Services District
- Merced National Wildlife Refuge

All reported values from these entities were directly measured. Data are a mixture of metered data and some data from pump tests using run time data. Quantitative estimates of accuracy of measurement (e.g., by percentage or +/- AF) were requested from each agency but not provided by all. Directly measured data are expected to have a qualitative high level of accuracy.

Groundwater extractions from private irrigators and domestic wells are estimated by the Merced Water Resources Model (MercedWRM) based on factors including land use, evapotranspiration, and population. Details about the MercedWRM can be found in the GSP, while recent updates to the model can be found in Section 3.4.1 of this annual report. A map illustrating the general location and volume of groundwater extractions as estimated by the MercedWRM for WY 2024 can be found in Figure 2-6. These estimated data are expected to have a qualitative medium level of accuracy.

Table 2-2: Monthly Groundwater Extractions (in AF), Water Year 2024

Month	Sector						Total
	Agriculture		Urban		Habitat[4]		
	Entity Pumping[1]	Private Pumping[2]	Entity Pumping[1]	Private Pumping[3]	Direct[4]	Estimated[4]	
Oct-2023	1,118	22,844	3,301	804	1,844	0	**29,912**
Nov-2023	1,168	4,995	2,492	605	1,768	0	**11,029**
Dec-2023	58	832	2,187	513	2,042	0	**5,632**
Jan-2024	101	0	2,031	479	1,619	0	**4,231**
Feb-2024	66	406	1,917	456	647	400	**3,892**
Mar-2024	1,152	34,713	2,166	484	480	150	**39,145**
Apr-2024	2,237	41,099	2,509	555	652	319	**47,371**
May-2024	4,102	90,605	3,538	781	560	0	**99,585**
Jun-2024	5,882	72,793	4,360	988	388	0	**84,412**
Jul-2024	6,765	76,537	4,777	1,110	876	0	**90,065**
Aug-2024	5,925	76,455	4,339	1,011	659	0	**88,389**
Sep-2024	4,074	56,855	3,995	959	254	0	**66,136**
TOTAL	**32,649**	**478,133**	**37,614**	**8,744**	**11,789**	**869**	**569,798**

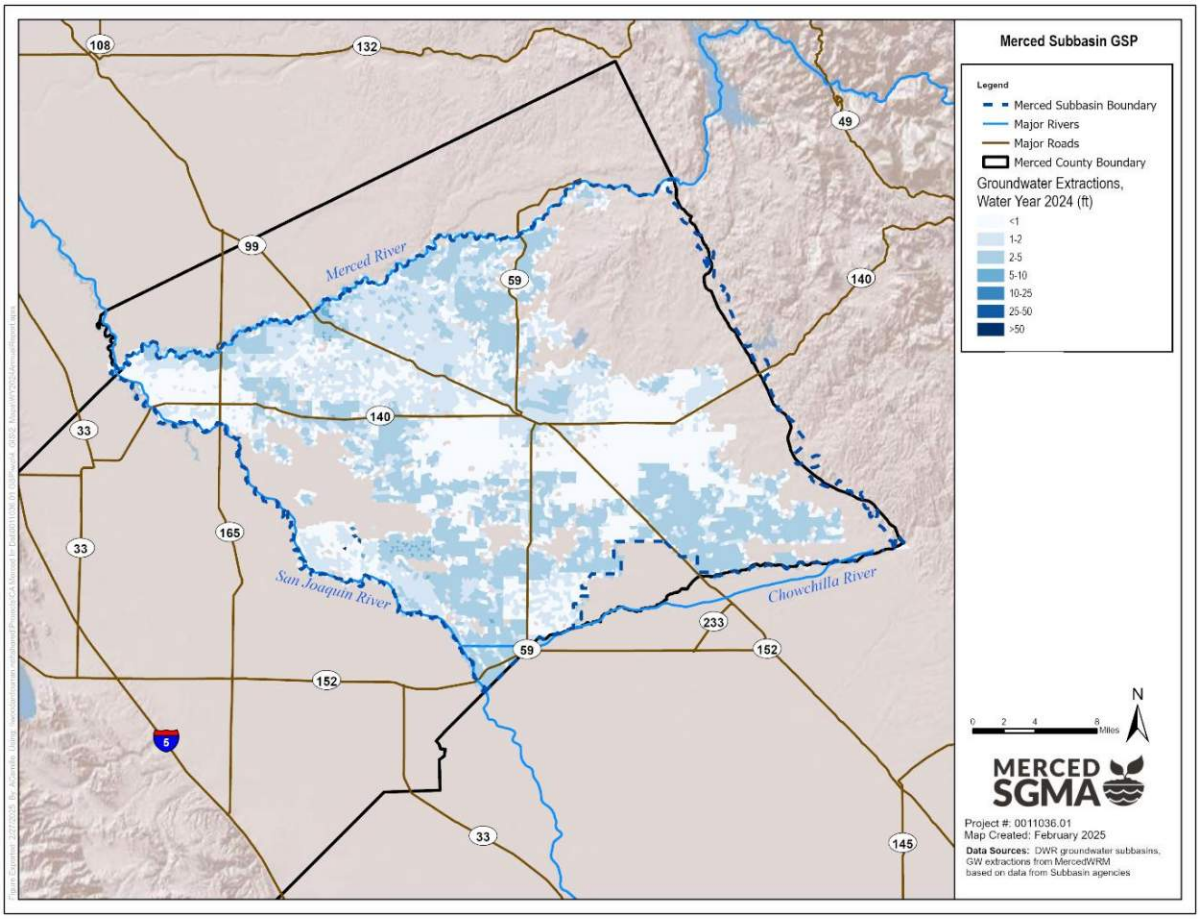
1. *"Entity Pumping" indicates direct measurements of volumes of pumped groundwater reported by agricultural purveyors and urban water suppliers. Directly measured data are expected to have a qualitative high level of accuracy.*
2. *"Private Pumping" for the agricultural sector is estimated by the MercedWRM based on land use and evapotranspiration data. See Section 3.4.2 - MercedWRM Update (Water Year 2024). These estimated data are expected to have a qualitative medium level of accuracy.*
3. *"Private Pumping" for the urban sector (primarily from domestic wells in rural regions) is estimated by the MercedWRM based on census data for population multiplied by a volumetric water use factor averaged from the urban regions. See Section 3.4.2 - MercedWRM Update (Water Year 2024). These estimated data are expected to have a qualitative medium level of accuracy.*
4. *The "Habitat" sector includes directly measured volumes of groundwater extractions at Merced National Wildlife Refuge within the Merced Unit of the refuge. Directly measured data are expected to have a qualitative high level of accuracy. The Merced National Wildlife Refuge also provided some estimated groundwater extractions from the Arena Plains and Snowbird Units of the refuge. These estimated data are expected to have a qualitative medium level of accuracy. Groundwater pumping for other wetland/habitat areas are included in the "Agriculture" sector due to a lack of information for demands from these wetlands/habitat areas. Demands were estimated based on DWR land use categorizations of native vegetation or agricultural land.*

Table 2-3: Annual Groundwater Extractions (in AF), Water Years 2016-2024

Water Year	Sector						Total
	Agriculture		Urban		Habitat[4]		
	Entity Pumping[1]	Private Pumping[2]	Entity Pumping[1]	Private Pumping[3]	Direct[4]	Estimated[4]	
2016	23,310	580,083	33,364	10,661	9,060	0	656,477
2017	15,215	516,103	33,441	11,072	7,611	0	583,442
2018	25,994	611,986	33,528	15,057	12,065	0	698,630
2019	17,321	559,521	34,313	14,154	12,495	0	637,804
2020	59,505	575,499	41,074	10,422	14,891	0	701,391
2021	88,937	645,337	41,491	9,172	13,290	2,527	800,754
2022	105,225	715,297	38,189	13,389	7,773	2,527	882,399[5]
2023	16,444	638,370	36,347	8,496	5,921	1,139	706,717
2024	32,649	478,133	37,614	8,744	11,789	869	569,798

1. *"Entity Pumping" indicates direct measurements of volumes of pumped groundwater reported by agricultural purveyors and urban water suppliers. Directly measured data are expected to have a qualitative high level of accuracy.*
2. *"Private Pumping" for the agricultural sector is estimated by the MercedWRM based on land use and evapotranspiration data. These estimated data are expected to have a qualitative medium level of accuracy.*
3. *"Private Pumping" for the urban sector (primarily from domestic wells in rural regions) is estimated by the MercedWRM based on census data for population multiplied by a volumetric water use factor averaged from the urban regions. These estimated data are expected to have a qualitative medium level of accuracy.*
4. *The "Habitat" sector includes directly measured volumes of groundwater extractions at Merced National Wildlife Refuge within the Merced Unit of the refuge. Directly measured data are expected to have a qualitative high level of accuracy. The Merced National Wildlife Refuge also provides some estimated groundwater extractions which are expected to have a qualitative medium level of accuracy. Groundwater pumping for other wetland/habitat areas are included in the "Agriculture" sector due to a lack of information for demands from these wetlands/habitat areas. Demands were estimated based on DWR land use categorizations of native vegetation or agricultural land.*

Figure 2-6: Map of Groundwater Extractions (Water Year 2024)



2.4 Surface Water Supply

SGMA requires that the GSP annual report tabulate "*Surface water supply used or available for use…*" (emphasis added, CCR §356.2 [b] [3]). Table 2-4 summarizes total monthly surface water available for use for WY 2024, broken down by method of measurement. These tables report total surface water diversions and not surface water used, which is difficult to parse out by sector. Direct measurements were provided by MID, Stevinson Water District, TIWD, and Lone Tree Mutual Water Company. Directly measured data are expected to have a qualitative high level of accuracy. Note that MID diversions include surface water ultimately used by Stevinson Water District, Merquin County Water District, Merced National Wildlife Refuge, Le Grand-Athlone Water District, and Lone Tree Mutual Water Company, which fall under both the agricultural and habitat sectors. Diversions made by Lone Tree Mutual Water Company are exclusively flood flow diversions.

Note also that there are several riparian diverters in the Subbasin whose diversions have not been captured for the purpose of the annual report. It is anticipated that some of these data will be incorporated into future reports, as data will become available as a result of implementation of Senate Bill 88 (2015).

Table 2-4: Monthly Surface Water Available for Use (in AF), Water Year 2024

Month	Method of Measurement[1]	Total
	Direct	
Oct-2023	46,801	46,801
Nov-2023	2,511	2,511
Dec-2023	2,099	2,099
Jan-2024	2,543	2,543
Feb-2024	2,857	2,857
Mar-2024	12,591	12,591
Apr-2024	23,689	23,689
May-2024	63,822	63,822
Jun-2024	92,274	92,274
Jul-2024	108,761	108,761
Aug-2024	87,854	87,854
Sep-2024	53,389	53,389
TOTAL	**499,191**	**499,191**

1. *This table reports total surface water diversions and not surface water used due to data limitations. Both surface diversions and surface water used are difficult to parse out by sector as well. Note that MID diversions include surface water ultimately used by Stevinson Water District, Merquin County Water District, Merced National Wildlife Refuge, Le Grand-Athlone Water District, and Lone Tree Mutual Water Company, which fall under the agriculture and habitat sectors.*

2.5 Total Water Use

Per SGMA requirement, Table 2-5 summarizes monthly combined groundwater use (Table 2-2) and surface water available for use (Table 2-4) for WY 2024 by water use sector and method of measurement. The same qualifications for method of measurement and sector of use apply from Table 2-2 and Table 2-4.

Table 2-5: Monthly Total Water Use, Water Year 2024

Month	Sector						Total
	Agriculture		Urban		Habitat		
	Direct[1]	Estimate[2]	Direct	Estimate[2]	Direct	Estimate	
Oct-2023	47,920	22,844	3,301	804	1,844	0	76,713
Nov-2023	3,679	4,995	2,492	605	1,768	0	13,540
Dec-2023	2,157	832	2,187	513	2,042	0	7,730
Jan-2024	2,645	0	2,031	479	1,619	0	6,774
Feb-2024	2,923	406	1,917	456	647	400	6,749
Mar-2024	13,743	34,713	2,166	484	480	150	51,736
Apr-2024	25,925	41,099	2,509	555	652	319	71,060
May-2024	67,924	90,605	3,538	781	560	0	163,407
Jun-2024	98,157	72,793	4,360	988	388	0	176,686
Jul-2024	115,526	76,537	4,777	1,110	876	0	198,826
Aug-2024	93,780	76,455	4,339	1,011	659	0	176,244
Sep-2024	57,463	56,855	3,995	959	254	0	119,525
TOTAL	**531,840**	**478,133**	**37,614**	**8,744**	**11,789**	**869**	**1,068,989**

1. *Surface water diversions have been reported under the category of Agriculture, Direct. As described in Table 2-4, this includes total surface water diversions and not surface water used, and cannot be accurately measured between the agriculture and habitat sectors. Surface water diversions account for approximately 94% of this column.*
2. *See Table 2-2 for more detailed notes on groundwater pumping estimates.*

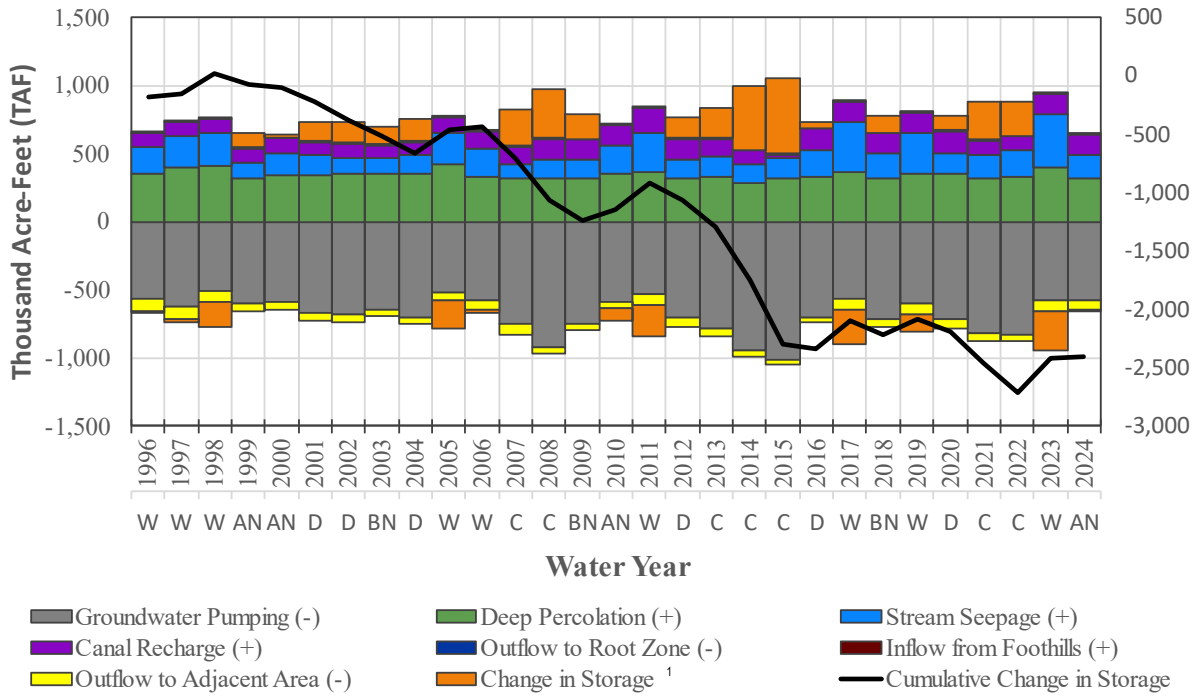
2.6 Change in Groundwater Storage

The MercedWRM was used to estimate historical change in groundwater storage in the Merced Subbasin from water years 1996-2021 for the Merced GSP and subsequent annual reports and then extended through WY 2024 to support quantification of storage change for this annual report. See Section 3.4.1 for more information about the recent model update for this annual report. Note that the time period of 2006-2022 was originally selected as the historical water budget time period reported in the Merced 2025 GSP as representative of average precipitation and capturing recent Subbasin operations.

After extending the historical water budget through WY 2024, the current (2024) total fresh groundwater storage was estimated as 46.0 million acre-feet (MAF) and the cumulative change in storage from WYs 2006-2024 was estimated as -1.95 MAF, or an average reduction of 103 thousand acre-feet (TAF) per year. During WY 2024, the change in storage was estimated as an increase of 6 TAF. Note that the average annual reduction of 130 TAF per year established in the 2025 GSP using the hydrologically balanced period of WYs 2006-2022 remains the current estimate of long-term overdraft in the Subbasin.

Figure 2-7 shows the cumulative change in storage for WYs 1996-2024 against groundwater uses developed in the water budget and water year type.

Figure 2-7: Historical Annual Water Budget – Groundwater System, Merced Subbasin



1. *"Change in Storage" is placed on the chart to balance the water budget. For example, if annual outflows (-) are greater than inflows (+), there is a decrease in storage, and this is shown on the positive side of the bar chart to balance out the increased outflows on the negative side of the bar chart.*
Source: Water year types based on San Joaquin Valley Water Year Index (DWR, 2025a).

X-Axis Abbreviation	Description
W	Wet year type
AN	Above normal year type
BN	Below normal year type
D	Dry year type
C	Critically dry year type

For SMC, the 2025 GSP established groundwater levels as a proxy for groundwater levels. Groundwater level SMC are reported in Table 2-1.

Figure 2-8 through Figure 2-10 show the total change in groundwater storage by principal aquifer for WY 2024 in a spatial format as estimated by outputs from the MercedWRM. The change in storage is shown in units of feet. The MercedWRM calculates a change in volume per area of each model element. Since the model elements vary in size, visually displaying a map of volume change per model element is not spatially intuitive, so the results have been normalized to show change in units of feet by dividing the volume by area per model element.

Change in groundwater storage is a function of changes in groundwater levels and physical properties of the aquifer. As such, it would be expected that areas with increases in groundwater storage would also have increases in groundwater levels in Figures 2-2 through 2-4 and that areas with decreases in groundwater storage would also have decreases in groundwater levels. While this is true in many cases, it is not true in all cases due to uncertainties in the underlying data. Uncertainties in the change in groundwater storage are associated with the MercedWRM, while uncertainties in the change in groundwater levels are associated with limited data points and individual data points that may be impacted by nearby pumping, screen depths, or otherwise provide non-representative values. It is useful to look at these figures together to better understand patterns of change in groundwater levels and storage.

Net overall Subbasin storage remained approximately the same during WY 2024, but the figures below show a mixture of areas of relative increase in storage (associated with increasing groundwater levels; shown in blue shades) and relative decrease in storage (primarily along streams due to increased losses to streams after higher groundwater levels in the prior WY 2023; shown in green shades). The Above Corcoran Clay shows an area of moderate increase in storage, decreases along some surface water channels, and remaining areas primarily showing little change. The eastern portion of the Below Corcoran Clay shows some increase in storage, with the remainder showing negligible change or a slight decrease. The Outside Corcoran Clay shows some declines along portions of the Merced River and the eastern edge of the aquifer, some increases in storage in the western portion of aquifer, and negligible change throughout the remainder.

Figure 2-8: Change in Storage Water Year 2024 (feet), Above Corcoran Clay

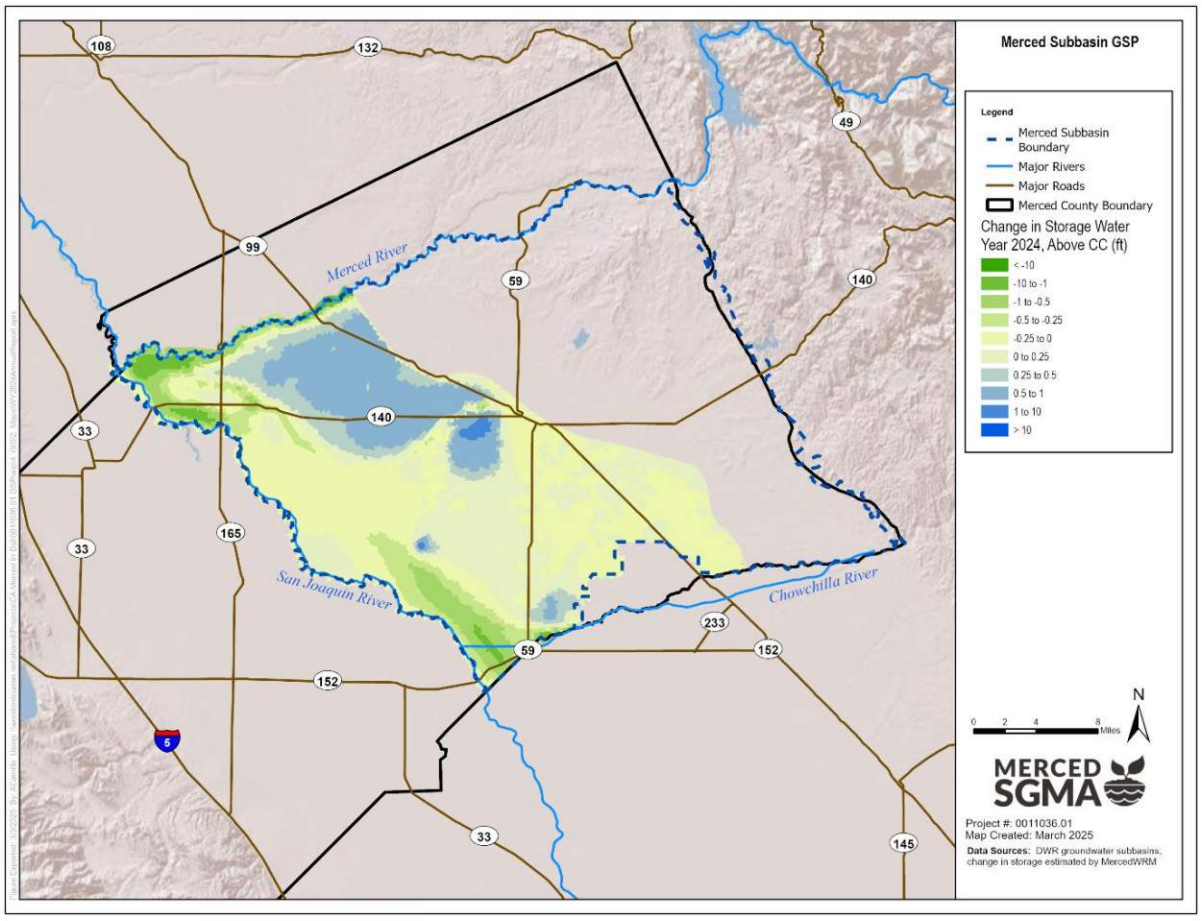


Figure 2-9: Change in Storage Water Year 2024 (feet), Below Corcoran Clay

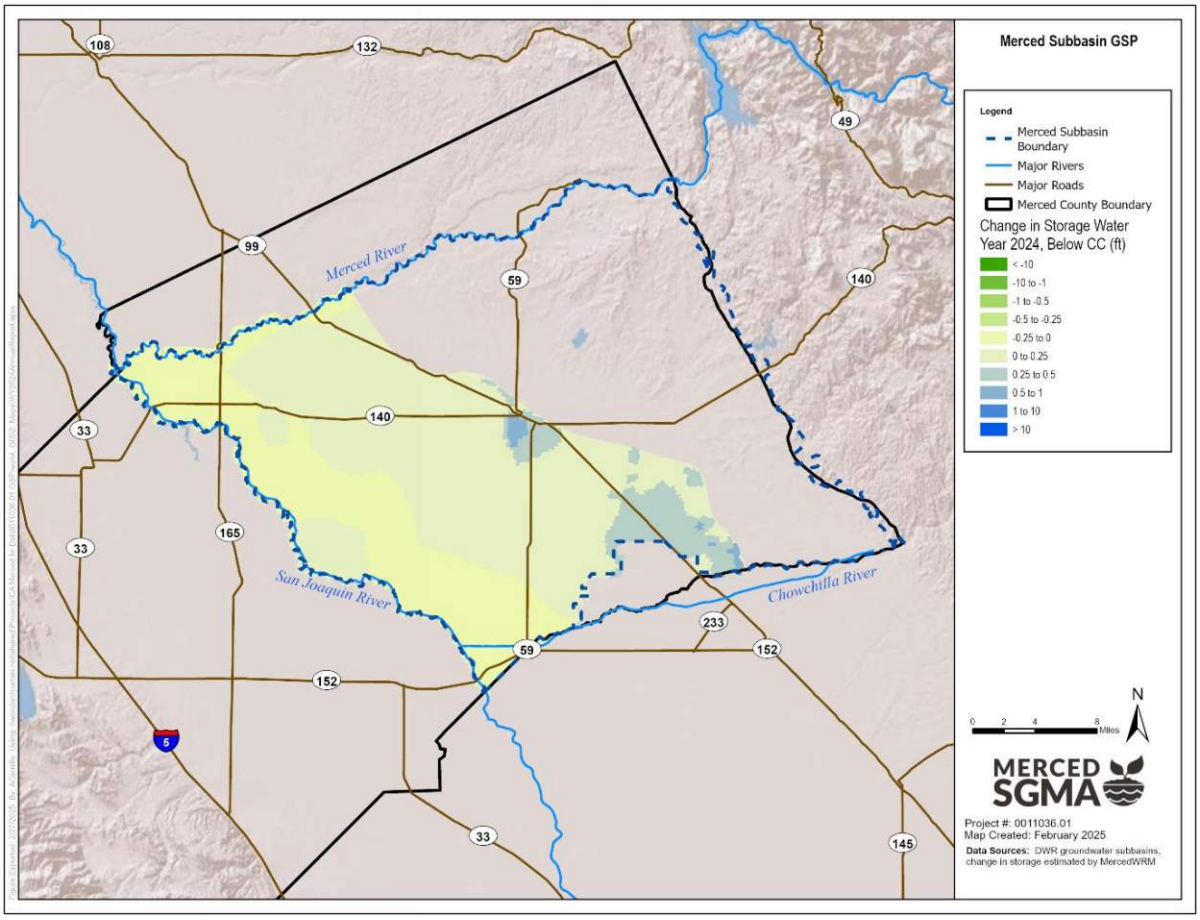
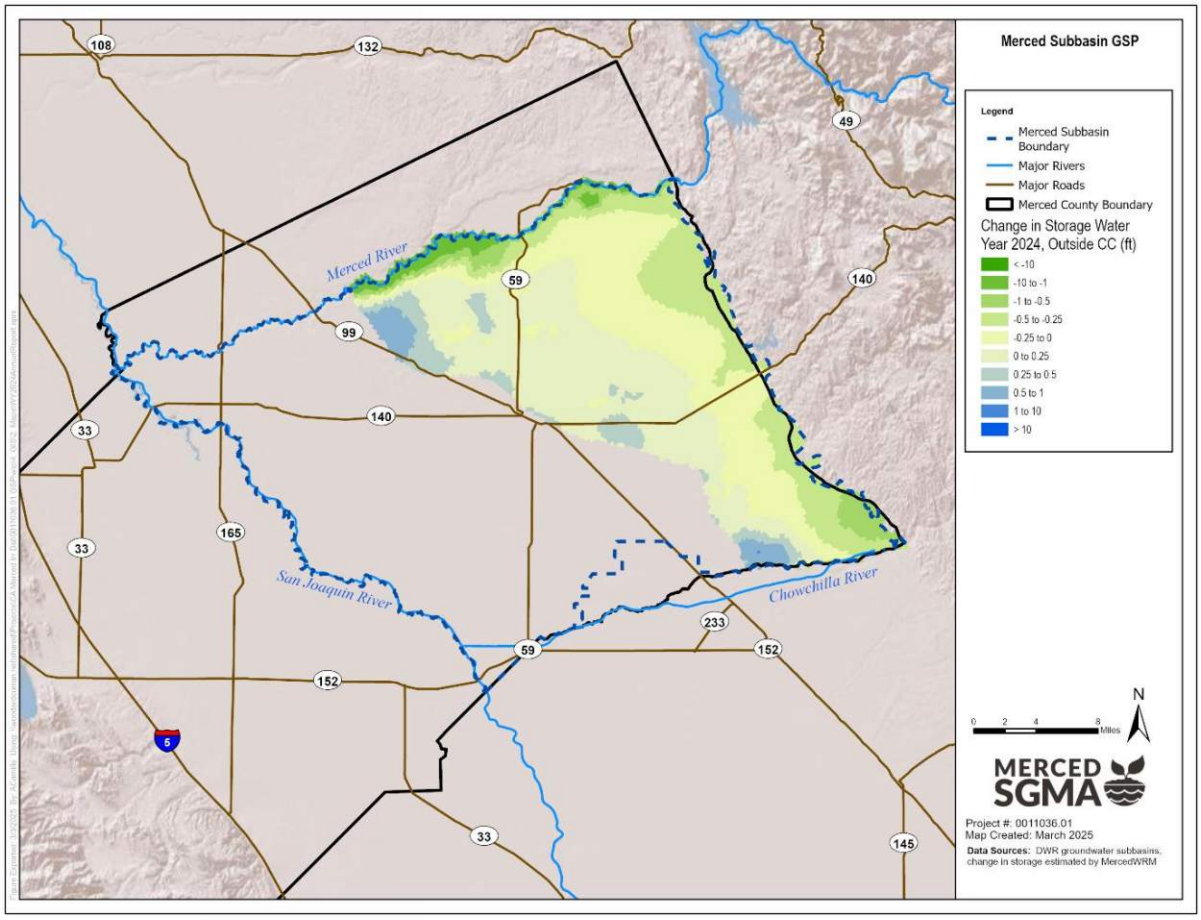


Figure 2-10: Change in Storage Water Year 2024 (feet), Outside Corcoran Clay

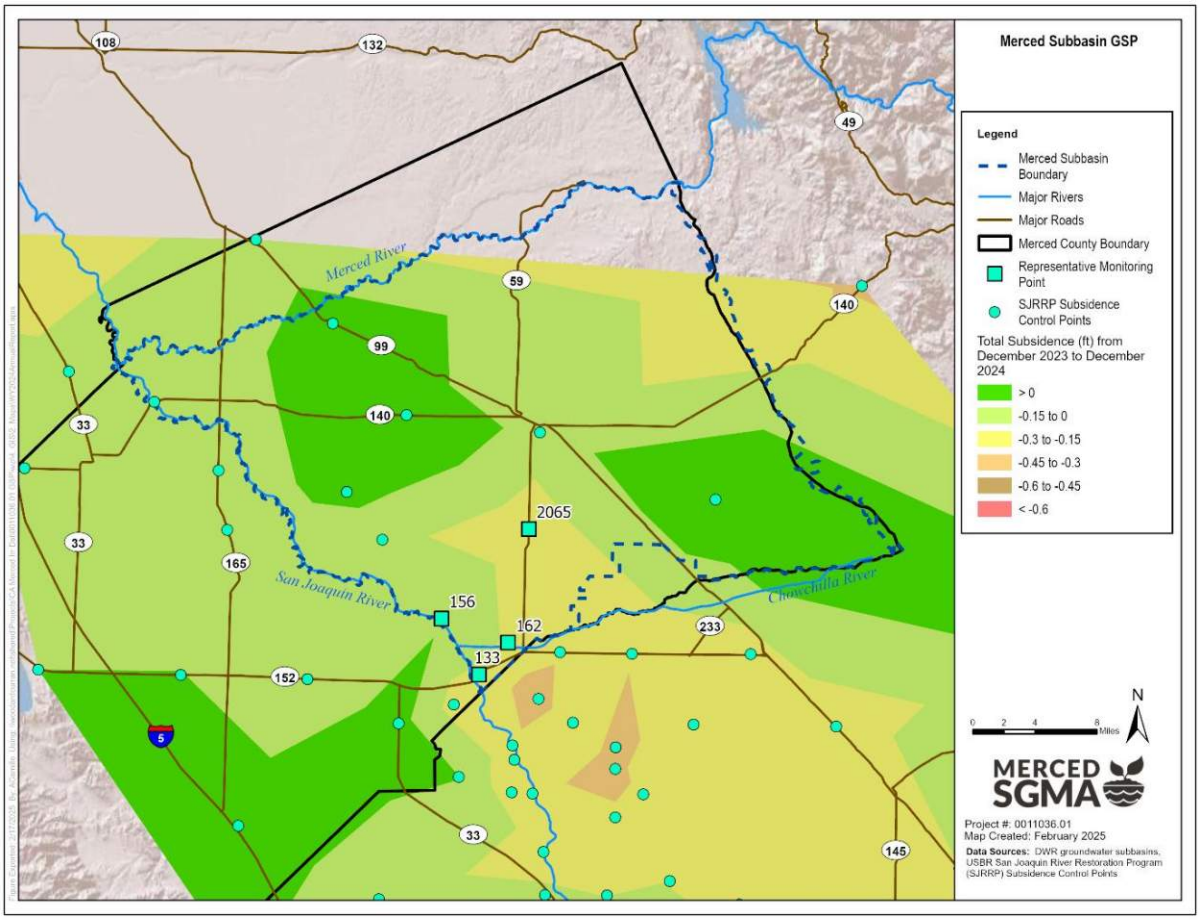


1. *The eastern portion of the Outside Corcoran Clay Principal Aquifer is a region with a relatively lower density of monitoring wells and thus higher level of uncertainty due to the data limitations. The GSP identifies this as a data gap; the GSAs developed a Data Gaps Plan in 2021 and are in the process of implementing the plan.*

2.7 Land Subsidence

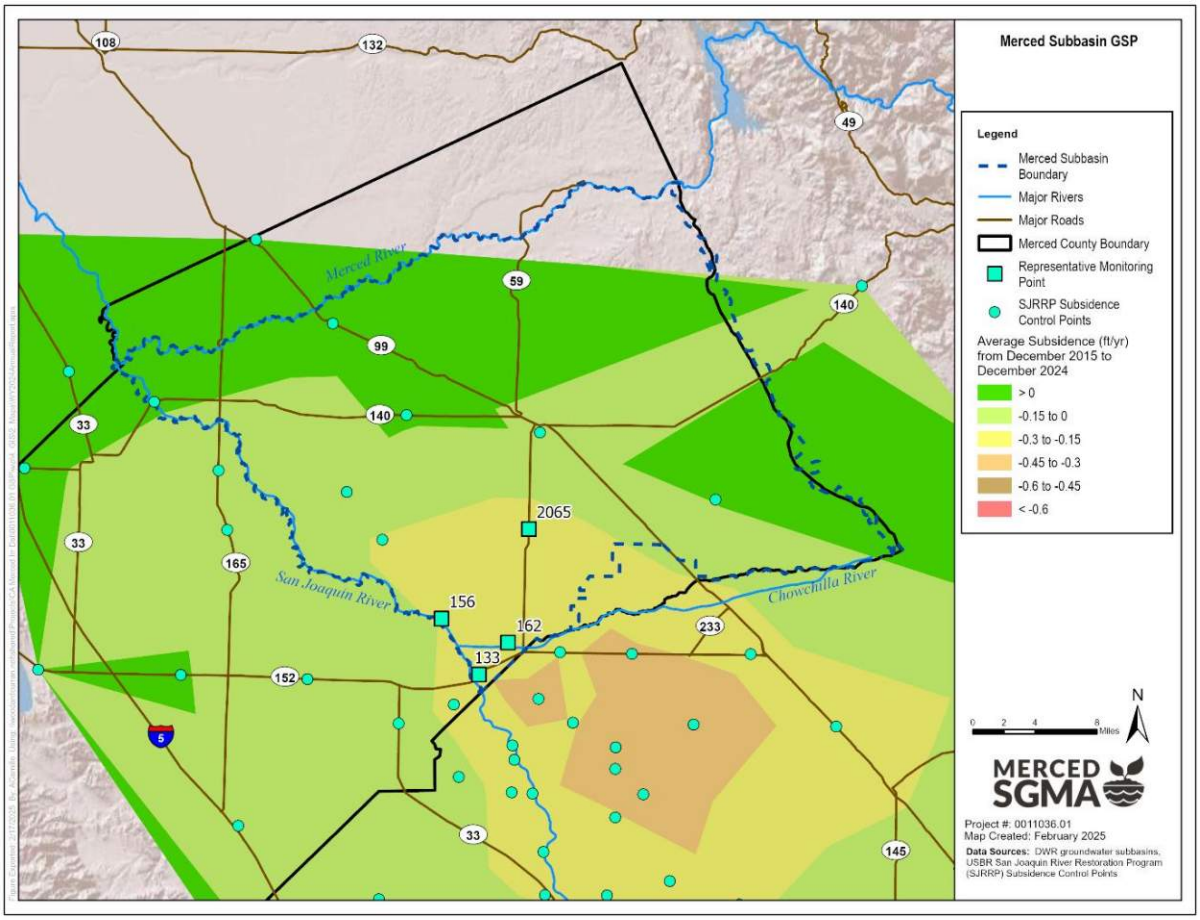
This section provides maps of the most recent subsidence measurements taken in and around the Subbasin and compares them to the GSP's SMC. Subsidence is measured through elevation monitoring at static GPS control points throughout a portion of the San Joaquin Valley by the US Bureau of Reclamation (USBR) as part of the San Joaquin River Restoration Program. Measurements have been recorded semiannually in July and December of each year to monitor ongoing subsidence since 2011. Figure 2-11 shows the total subsidence occurring from December 2023 to December 2024. Figure 2-12 shows the average subsidence occurring from December 2015 through December 2024.

Figure 2-11: Total Subsidence December 2023 to December 2024



Note: Negative values on the map represent lowered ground surface elevations (subsidence)

Figure 2-12: Average Subsidence Rate December 2015 to December 2024



In the 2022 revised GSP, the GSAs established a MT of 0 ft/year (subject to uncertainty of ±0.16 ft/year) at four representative monitoring stations. In the 2025 GSP, the GSAs added a metric of calculating subsidence over a five-year period to demonstrate that inclusion of the annual uncertainty of ±0.16 ft/year will not have a measurable impact on long-term compliance with the SMC. The MO is also 0 ft/year, with IMs of -0.75 ft/year (2025), -0.50 ft/year (2030), and -0.25 ft/year (2035) of subsidence. The GSP identifies undesirable results for subsidence as "exceedances of minimum threshold rates of land subsidence at three or more monitoring sites out of four for two consecutive years" (MIUGSA, MSGSA, & TIWD GSA-1, 2025).

As shown in Table 2-6, a decrease in the elevation of control points has consistently been observed (i.e., subsidence with a greater magnitude than the MT and MO of 0 ft/yr) at the representative monitoring sites from 2015 to 2024. Through that period, the rate of subsidence has consistently been less than the 2025 IM of 0.75 ft/yr. Note that land surface elevation change between December 2022 – December 2023 was positive, potentially due to the impact of a very wet winter in late 2022/early 2023 resulting in rebounding from elastic subsidence. At 3 out of 4 sites, subsidence from December 2023 – December 2024 resumed at rates more similar to prior years.

Work is currently underway to better understand how to stabilize subsidence in the Subbasin. Subsidence is a regional, gradual process that takes time to develop and time to halt. As a result, some level of future subsidence, likely at rates similar to those experienced 2015 to 2024, is likely to be underway already and will not be able to be prevented.

Table 2-6: Subsidence at Representative Monitoring Stations

	Point ID	133	162	2065	156	Units
	Station Name	H 1235 RESET	RBF 1057	W 938 RESET	W 990 CADWR	
Subsidence	Dec 2015-Dec 2016	-0.44	-0.25	-0.16	-0.29	ft
	Dec 2016-Dec 2017	-0.18	-0.07	-0.16	0.01	ft
	Dec 2017-Dec 2018	-0.30	-0.17	-0.17	-0.32	ft
	Dec 2018-Dec 2019	-0.24	-0.10	-0.14	-0.07	ft
	Dec 2019-Dec 2020	-0.39	-0.26	-0.30	-0.28	ft
	Dec 2020-Dec 2021	-0.33	-0.19	-0.35	-0.23	ft
	Dec 2021-Dec 2022	-0.46	-0.34	-0.52	-0.35	ft
	Dec 2022-Dec 2023	+0.02	+0.13	+0.08	+0.16	ft
	Dec 2023-Dec 2024	-0.17	-0.17	-0.24	-0.01	ft
Minimum Threshold		0 ± 0.16	0 ± 0.16	0 ± 0.16	0 ± 0.16	ft/yr
Measurable Objective		0	0	0	0	ft/yr
2025 Interim Milestone		-0.75	-0.75	-0.75	-0.75	ft/yr
Total 5-Year Subsidence Dec 2019-Dec 2024[1]		-1.33	-0.83	-1.32	-0.72	ft

1. *In the 2025 GSP, the GSAs added a metric of calculating subsidence over a five-year period to demonstrate that inclusion of the annual uncertainty of ±0.16 ft/year will not have a measurable impact on long-term compliance with the SMC. This value currently appears relatively large since it indicates displacement over a 5-year period while subsidence is still in progress, well before the sustainability goal target of 2040.*

2.8 Groundwater Quality

In addition to comparing water quality monitoring to the GSP's IMs and other SMC, this section provides a summary of ongoing water quality coordination activities being conducted by the GSAs.

2.8.1 Representative Monitoring

In the GSP, the GSAs established an MT of 1,000 mg/L of Total Dissolved Solids (TDS) at representative monitoring sites for the degraded water quality sustainability indicator. The MO and all IMs were set at 500 mg/L TDS. Undesirable results are defined in the 2025 GSP as "during GSP implementation when at least 25% of representative monitoring wells (11 of 44 sites) exceed the minimum threshold for degraded water quality for two consecutive years" (MIUGSA, MSGSA, & TIWD GSA-1, 2025).[4] No representative monitoring wells exceeded the MT in WY 2024.

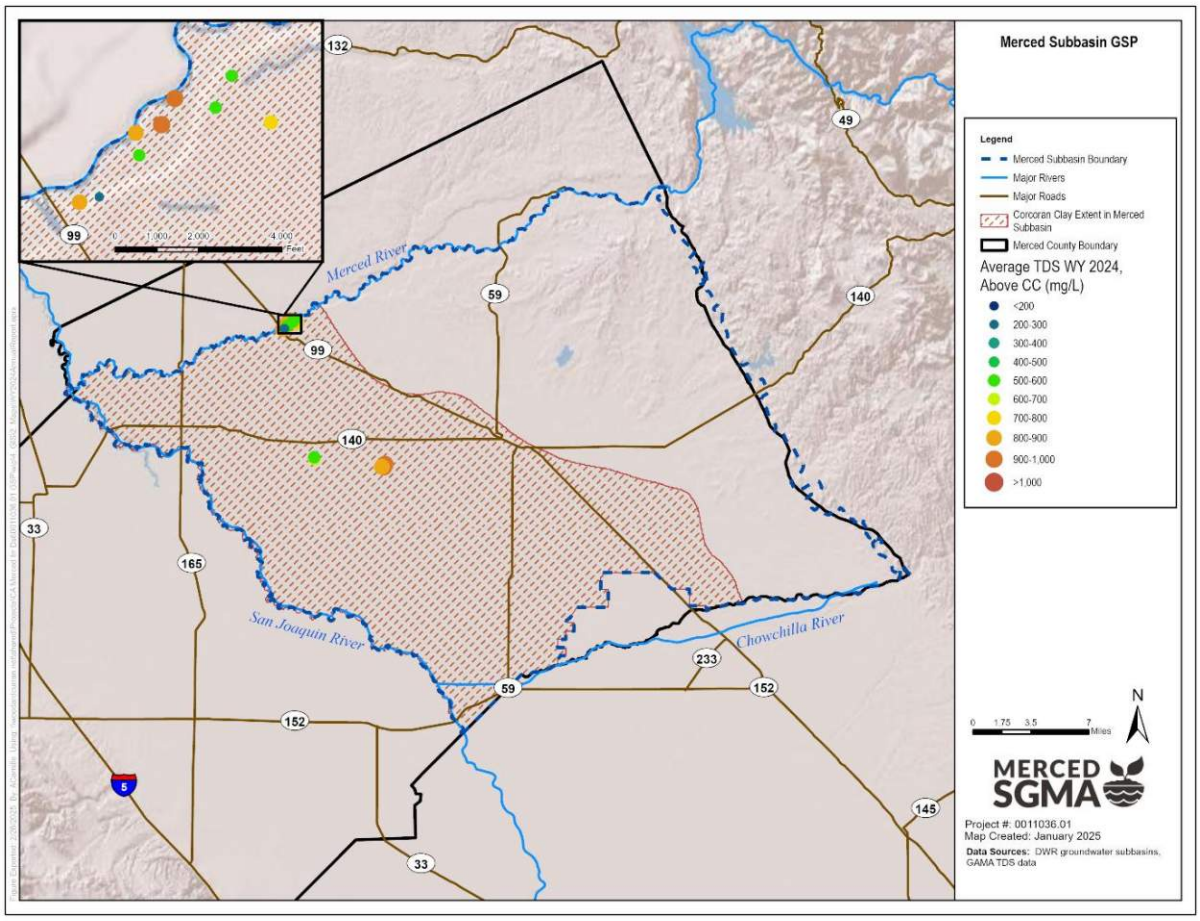
Figure 2-13 through Figure 2-15 show the spatial distribution of TDS concentration measurements in the three principal aquifers based on TDS and electrical conductivity (EC) data reported in the Groundwater Ambient Monitoring & Assessment (GAMA) database within WY 2024 for wells in the Merced Subbasin monitoring network (including more than just representative wells).[5] EC measurements were converted to estimates of TDS concentrations only if TDS samples were not measured directly during WY 2024. Figure 2-16 shows concentrations for which the principal aquifer is unknown due to a lack of well construction data (e.g., lacking total well depth or screened interval). The GSP monitoring network includes both designated representative wells as well as any public water supply wells that report data to the Division of Drinking Water (DDW).

While elevated TDS (sampled and/or estimated from EC) concentrations (greater than 1,000 mg/L) were observed in monitoring data for WY 2024, they were confirmed to be at 19 locations, none of which are representative monitoring sites, where samples were collected at environmental monitoring wells monitored by regulated facilities. The Merced GSP describes that there are pockets of the Subbasin known to have such elevated concentrations and water use behaviors have already shifted to accommodate these concentrations. For example, agriculture has focused on more salt-tolerant crops, and more saline water supplies are blended with less saline water supplies. As a result, TDS concentrations in excess of 1,000 mg/L where currently experienced are not unexpected. There is, however, a desire on the part of Subbasin stakeholders to limit increases in salinity in parts of the Subbasin where TDS is below 1,000 mg/L to prevent undesirable results such as requirements to change cropping, blending supplies, etc.

[4] Note that one of the 44 sites (GAMA ID T10000004224-071415) was added in the 2025 GSP, but later determined to be part of the Water Board Cleanup dataset in GAMA, and thus unsuitable for being a representative monitoring well. As of this annual report, it is being moved from being a "complementary" well to a "supplementary" well. Thus, there are only 43 remaining representative monitoring sites.

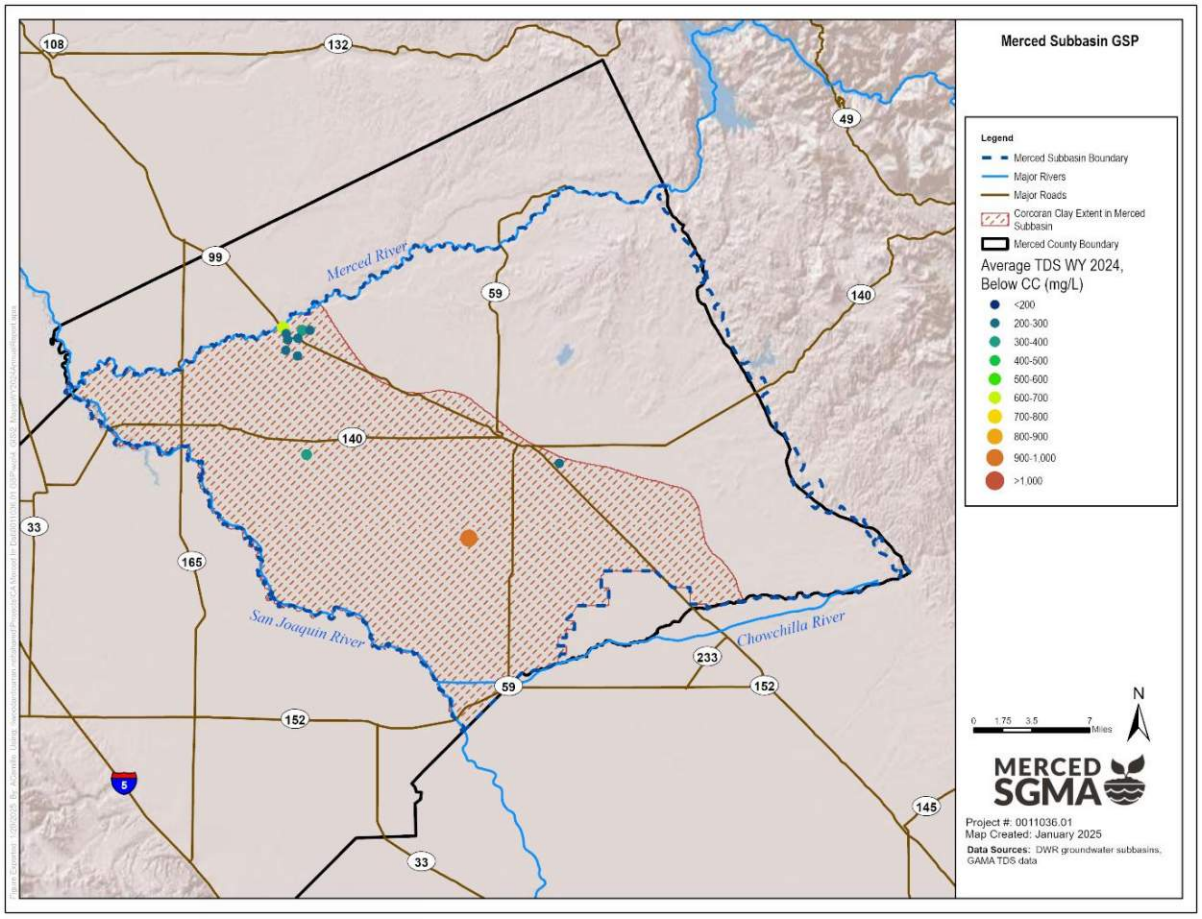
[5] TDS concentration was estimated using the estimation formula of TDS (mg/L) ≈ EC (µS/cm) * 0.640, described later in this section.

Figure 2-13: Average TDS Concentration Water Year 2024, Above Corcoran Clay Principal Aquifer



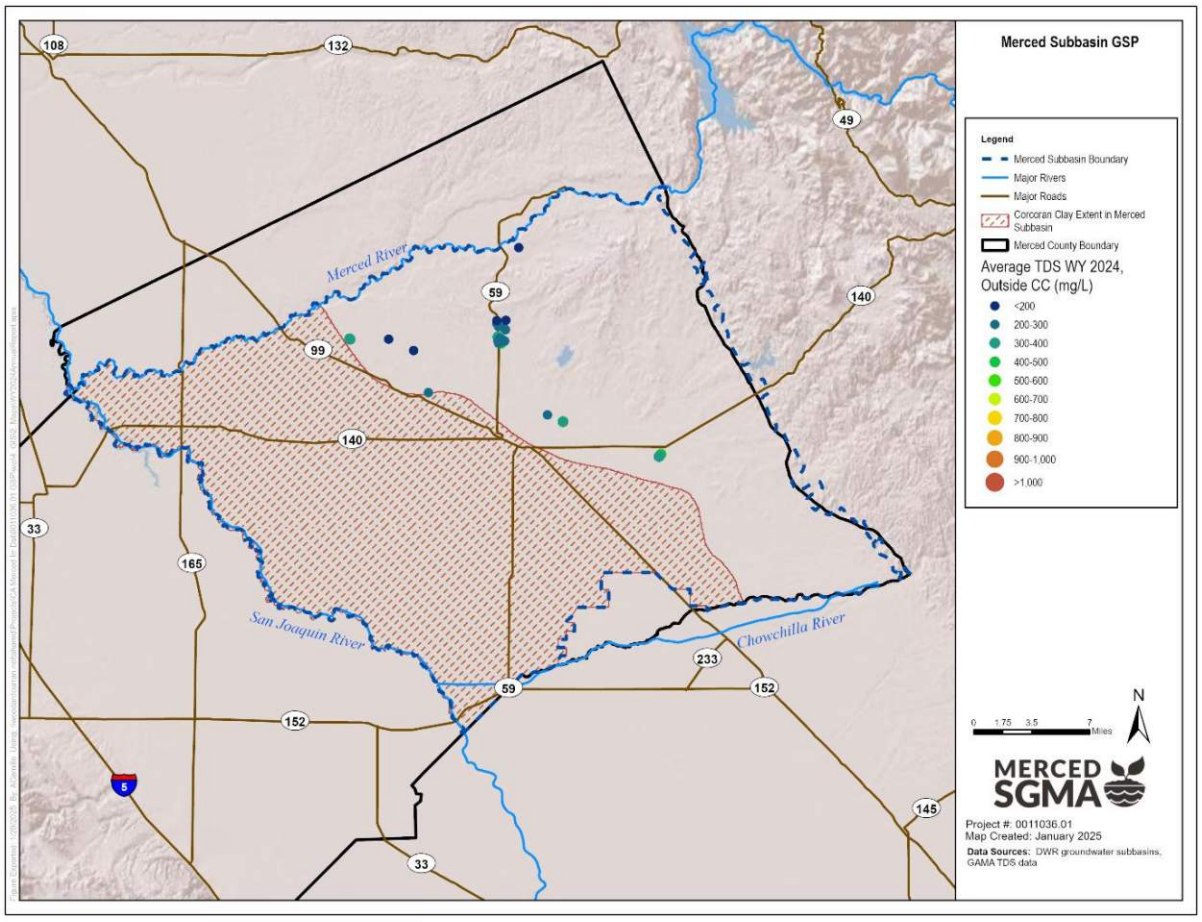
1. *Some TDS concentrations are estimated based on EC measurements.*

Figure 2-14: Average TDS Concentration Water Year 2024, Below Corcoran Clay Principal Aquifer



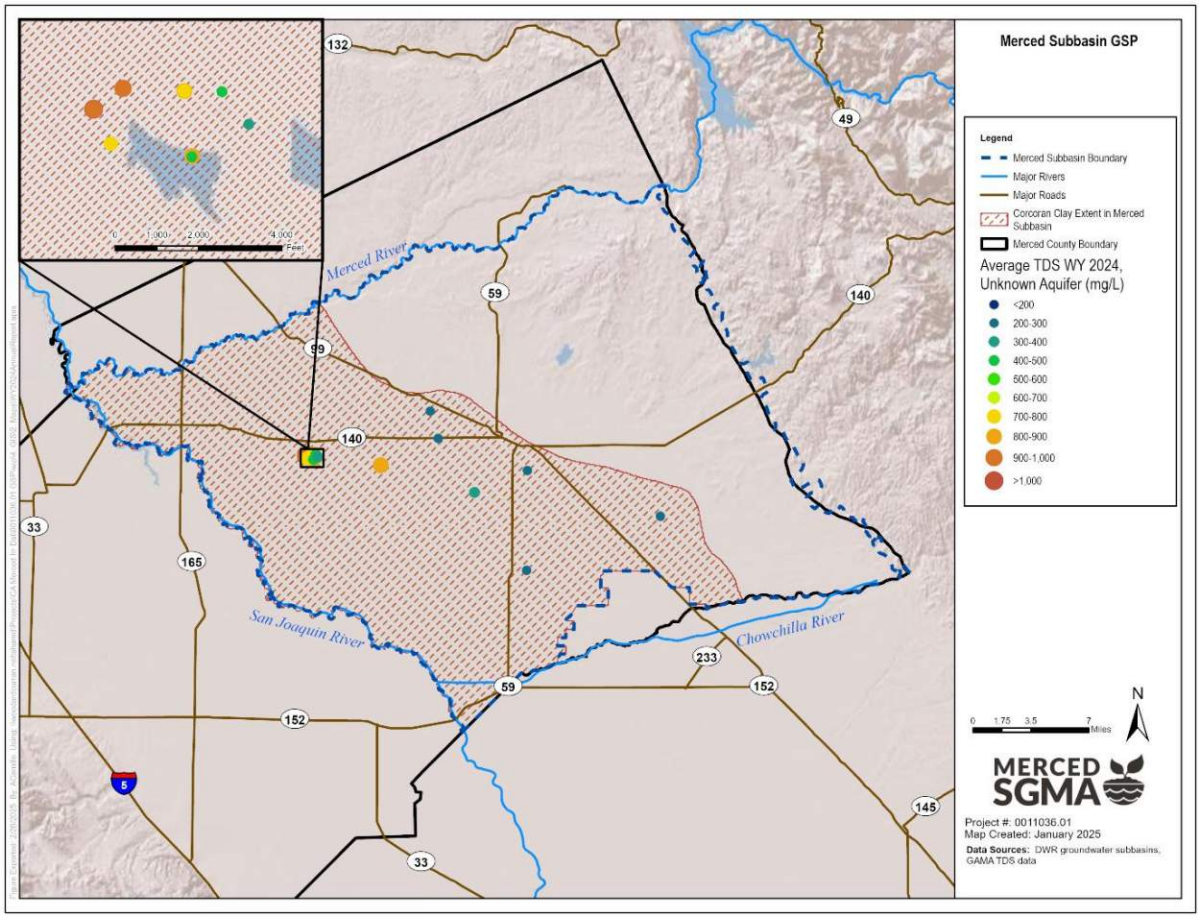
1. *Some TDS concentrations are estimated based on EC measurements.*

Figure 2-15: Average TDS Concentration Water Year 2024, Outside Corcoran Clay Principal Aquifer



1. Some TDS concentrations are estimated based on EC measurements.

Figure 2-16: Average TDS Concentration Water Year 2024, Unknown Principal Aquifer



1. *Some TDS concentrations are estimated based on EC measurements.*

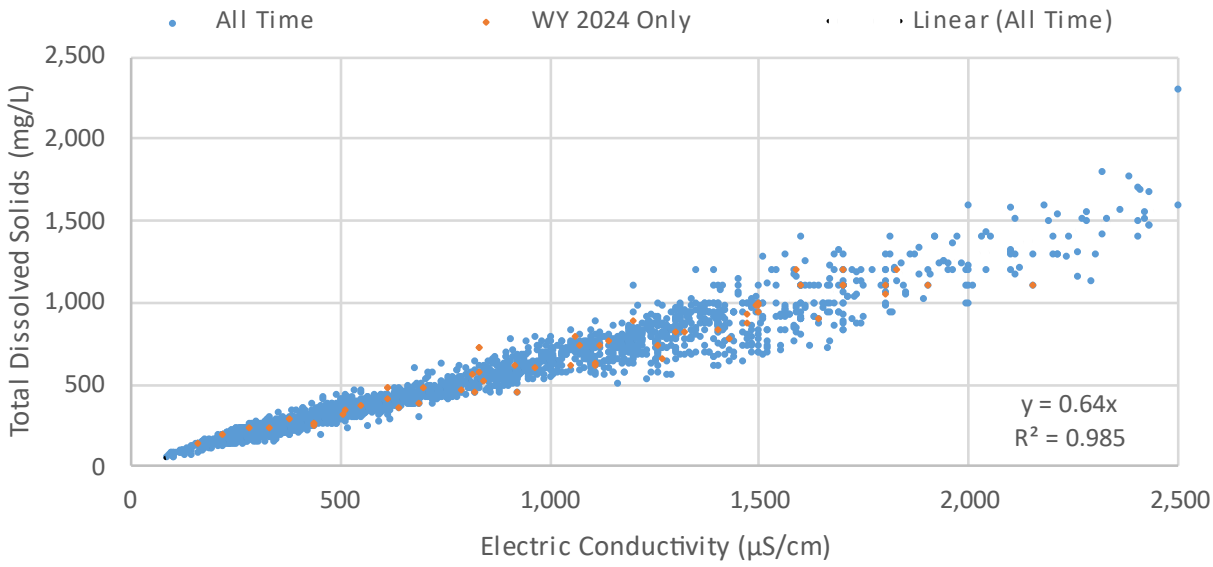
The East San Joaquin Water Quality Coalition (ESJWQC) is a group of agricultural interests and growers formed to represent dischargers who own or operate irrigated lands east of the San Joaquin River within Madera, Merced, Stanislaus, Tuolumne, and Mariposa Counties, as well as portions of Calaveras County. The ESJWQC has developed a Groundwater Quality Trend Monitoring Program (GQTMP) as part of the Irrigated Lands Regulatory Program (ILRP), which includes a targeted set of domestic wells (denoted as principal wells) supplemented by public water system wells (denoted as complementary wells) (ESJWQC, 2018). There are currently nine principal wells and 34 complementary wells in the Merced Subbasin that are designated as representative monitoring wells in the Merced GSP at which SMC are established for groundwater quality (shown in Table 2-7). ESJWQC submits their collected data to GAMA annually.

ESJWQC monitors EC, pH, dissolved oxygen, temperature, and nitrate as nitrogen (as N) annually. TDS and other constituents are monitored every five years. Wells are on a five-year cycle for direct measurement of TDS, with most having been last recorded directly in 2022. The most recent EC field measurements collected by the ESJWQC were used to estimate TDS. The most recent TDS observations (whether direct or estimated) for Merced GSP representative wells are summarized in Table 2-7. None of the wells with reported data have sampled or estimated TDS concentrations above the MT. Three wells show a TDS concentration that

is above the MO and IM. Note that for the 34 complementary wells (identified with GAMA Well ID beginning with "CA"), 12 had TDS or EC data reported in GAMA for the reporting period.

There is a relationship between EC and TDS (SWRCB, 2004), with a typical acceptable ratio of TDS to EC ranging from 0.55 to 0.7 (American Public Health Association, American Water Works Association, and Water Environment Foundation, 1999). TDS is measured by ESJWQC every five years, though the definition of undesirable results in the Merced GSP is based on the assumption that measurements will be recorded annually. Because ESJWQC is already measuring EC annually, the GSAs use EC measurements to estimate TDS in years where TDS is not sampled. The ratio used for conversion is 0.64 (where TDS [mg/L] ≈ EC [µS/cm] * 0.64). This is based on an analysis of paired EC and TDS measurements recorded in Merced County, as shown in Figure 2-17. Each paired EC/TDS measurement was recorded on the same day at the same site. The line of best fit has a slope of 0.64 (the ratio), with a strong level of correlation based on the coefficient of determination (R^2) value of 0.985 out of 1.

Figure 2-17: Relationship Between Electrical Conductivity & Total Dissolved Solids



a. This graph is based on 2,832 measurements of EC and TDS recorded on the same day at monitoring sites throughout Merced County from 1925-2024.

*b. Outliers were identified by calculating the interquartile (IQR) range of EC measurements (75th percentile value minus 25th percentile value). Measurement pairs (EC with TDS) were flagged as outliers and excluded from the analysis if they had an EC measurement that was higher than: (75th percentile EC value) + 1.5 * IQR, or 2,504 µS/cm. A second-step outlier analysis using the same methodology was performed on a small handful of remaining measurement pairs where the ratio between TDS and EC was outside of the range 0.43 – 0.93 ([25th percentile ratio – 1.5 IQR] to [75th percentile ratio + 1.5 IQR]). Overall, 219 outliers were excluded out of 3,051 measurement pairs.*

Table 2-7: TDS Concentrations at Representative Monitoring Wells

GQTMP Well ID	GAMA Well ID	EC (µS/cm)	TDS (mg/L)	Date of Measurement [b]	Minimum Threshold (mg/L TDS)	Measurable Objective and Interim Milestones (mg/L TDS)	Principal Aquifer
P06	AGC100012331-ESJQC00006	307	196 [a]	8/5/2020	1,000	500	Outside
P07	AGC100012331-ESJQC00007	297	190 [a]	7/25/2023	1,000	500	Below
P08	AGC100012331-ESJQC00008	465	297 [a]	8/26/2024	1,000	500	Outside
P09	AGC100012331-ESJQC00009	645	413 [a]	7/25/2023	1,000	500	Below
P10	AGC100012331-ESJQC00010	1,344	860 [a]	8/26/2024	1,000	500	Below
ESJQC00019	AGC100012331-ESJQC00019	1,146	733 [a]	7/25/2023	1,000	500	Below
ESJQC00022	AGC100012331-ESJQC00022	849	543 [a]	7/24/2023	1,000	500	Above
ESJQC00030	AGC100012331-ESJQC00030	769	492 [a]	7/27/2021	1,000	500	Below
ESJQC00043	AGC100012331-ESJQC00043		333	7/25/2023	1,000	500	Outside
C35	CA2400172_001_001		362	1/22/2009	1,000	500	Above
C41	CA2400220_001_001	710	454 [a]	5/5/2016	1,000	500	Above
C45	CA2400089_001_001		[c]		1,000	500	Above
C38	CA2410004_011_011	400	256 [a]	2/29/2024	1,000	500	Below
C44	CA2400218_001_001	460	294 [a]	6/19/2024	1,000	500	Below
C40	CA2410001_006_006		290	3/16/2006	1,000	500	Outside
C42	CA2400046_002_002		320	8/11/2022	1,000	500	Outside
C43	CA2410007_005_005	420	269 [a]	5/2/2023	1,000	500	Outside
C46	CA2410007_002_002		209	1/31/1991	1,000	500	Outside
C47	CA2400194_001_001		[c]		1,000	500	Outside
C39	CA2400119_001_001		[c]		1,000	500	Outside
C48	CA2410011_005_005		220	10/18/2022	1,000	500	Outside
C49	CA2400172_012_012		300	12/16/2020	1,000	500	Unknown
C50	CA2400079_001_001	320	205 [a]	11/2/2020	1,000	500	Unknown
2400134-003	CA2400134_003_003	320	205 [a]	6/11/2024	1,000	500	Unknown
2400172-002	CA2400172_002_002		480	3/22/2023	1,000	500	Above
2410004-008	CA2410004_008_008	560	358 [a]	2/29/2024	1,000	500	Below
2410004-009	CA2410004_009_009	400	256 [a]	2/29/2024	1,000	500	Below
2410004-012	CA2410004_012_012	390	250 [a]	2/29/2024	1,000	500	Below
2410004-013	CA2410004_013_013	390	250 [a]	2/29/2024	1,000	500	Below
2410004-025	CA2410004_025_025	360	230 [a]	2/29/2024	1,000	500	Below
2410004-028	CA2410004_028_028		250	9/5/2023	1,000	500	Unknown
2410007-001	CA2410007_001_001	590	378 [a]	10/31/2023	1,000	500	Outside
2410007-004	CA2410007_004_004	460	294 [a]	7/12/2022	1,000	500	Outside
2410007-006	CA2410007_006_006	490	314 [a]	7/18/2023	1,000	500	Outside
2410007-007	CA2410007_007_007	420	269 [a]	7/30/2024	1,000	500	Outside
2410007-014	CA2410007_014_014	520	333 [a]	5/23/2023	1,000	500	Outside
2410008-004	CA2410008_004_004		340	6/20/2023	1,000	500	Unknown

GQTMP Well ID	GAMA Well ID	EC (µS/cm)	TDS (mg/L)	Date of Measurement [b]	Minimum Threshold (mg/L TDS)	Measurable Objective and Interim Milestones (mg/L TDS)	Principal Aquifer
2410008-005	CA2410008_005_005		230	6/20/2023	1,000	500	Below
2410008-010	CA2410008_010_010		430	4/20/2023	1,000	500	Unknown
2410009-057	CA2410009_057_057		230	10/31/2023	1,000	500	Unknown
2410010-014	CA2410010_014_014		220	5/11/2023	1,000	500	Outside
2410010-019	CA2410010_019_019		220	5/11/2023	1,000	500	Outside
5000433-008	CA5000433_008_008		140	11/13/2023	1,000	500	Outside

*a. TDS concentration was estimated using the formula TDS (mg/L) ≈ EC (µS/cm) * 0.640.*

b. All WY 2024 data are shown. If no data for WY 2024 are available, the most recent measurement of TDS (or TDS estimated from EC) is shown.

c. No data reported for EC or TDS in GAMA.

2.8.2 Water Quality Coordination Activities

In addition to monitoring for TDS (see Section 2.8.1 - Representative Monitoring), the GSAs are conducting water quality coordination activities to address other water quality constituents. These activities include review of monitoring reports published by other monitoring programs as well as compiling data submitted by the Department of Pesticide Regulation (DPR), Division of Drinking Water (DDW), and Department of Toxic Substances Control (DTSC) to the GAMA database. The purpose of these reviews is to evaluate the status of constituent concentrations throughout the Subbasin with respect to typical indicators such as applicable maximum contaminant level (MCL)[6] or secondary maximum contaminant levels (SMCL)[7] associated with drinking water.

Established in 2000, the GAMA Program monitors groundwater quality throughout California. GAMA is intended to create a comprehensive groundwater monitoring program throughout the state and increase public availability and access to groundwater quality and contamination information. Agencies submit data from monitoring wells for 244 constituents. GAMA data for the Merced Subbasin contains wells monitored or regulated by the DDW, DPR, DWR, United States Geological Survey (USGS), and environmental monitoring wells monitored by regulated facilities. The GSAs have collected information from GAMA and use this information to document regional groundwater quality and to assess whether there is a need for changes to existing SMC or developing additional SMC for water quality as part of GSP updates.

[6] MCLs are drinking water standards that are adopted as regulations and describe the highest level of a contaminant allowed in drinking water, based on health risks and also detectability, treatability, as well as the costs of treatment.

[7] Secondary MCLs are established by the USEPA and then adopted by the State Water Resources Control Board. The secondary MCL is a Secondary Drinking Water Standard that is established for aesthetic reasons such as taste, odor, and color and is not based on public health concerns.

3. PLAN IMPLEMENTATION PROGRESS

This section of the Annual Report provides updates on:

- Interim Milestones (Section 3.1)
- Projects (Section 3.2)
- Management actions (Section 3.3)
- Progress made on addressing recommended corrective actions (Section 3.4)
- Other implementation support activities (Section 3.4)
- Anticipated upcoming activities (Section 3.5)

This Annual Report provides a snapshot of projects and management actions (PMAs) and their respective implementation status. The PMAs are also included in the Merced Integrated Regional Water Management (MercedIRWM) Opti project tracker (https://opti.woodardcurran.com/irwm/merced/), which, along with the GSP, is viewed by the Merced Subbasin GSAs as a "living" document. The list of PMAs maintained in the MercedIRWM Opti system will be revised periodically and reflects, at any time in the future, the list of PMAs associated with the GSP. When revised, the PMA list will be approved by the Merced Subbasin Coordination Committee or other body, as appropriate, following updating, and will be made available via the MercedIRWM Opti system. As such, the list of PMAs maintained in the MercedIRWM Opti system is considered to be the official Merced Subbasin GSP PMA list; no formal GSP adoption will be required for PMA list updating.

3.1 Interim Milestones

IMs were identified in Chapter 3 (Sustainable Management Criteria) of the GSP for all Sustainability Indicators and provided in tabular form for Groundwater Elevations and Groundwater Quality Sustainability Indicators (see Tables 3-1 and 3-2 in GSP). These IMs 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 an Agency as part of a Plan" [CCR Title 23, Division 2, §351(q)]. Progress toward achieving IMs since submitting the original 2019 and revised 2022 and 2025 GSPs are provided in Sections 2.2 (Groundwater Elevations), 2.7 (Land Subsidence), 2.8 and (Groundwater Quality). Groundwater elevations are used a proxy for groundwater storage and interconnected surface waters.

3.2 Implementation of Projects

Since the initial publishing of the GSP in 2020, various projects have been started, completed, and new projects have been added. The different sources of projects are described in the subsections below, after which Table 3-1 describes completed projects and Table 3-2 describes projects in progress.

Original GSP Projects

The original GSP (2019) identified twelve priority projects. These projects were selected for inclusion in the original GSP based on their ability to address a list of priorities identified by the Stakeholder Advisory

Committee and Coordination Committee members and the public. Eight of the twelve priority projects are considered complete (see Table 3-1). Table 3-2 provides a summary of updated project information for the four ongoing priority projects since the previous annual report, as provided by project proponents.

Proposition 68 SGM Grant Program Planning Grant

The Merced Subbasin was awarded a Proposition 68 SGM Grant Program Planning Grant which was formalized through an agreement with DWR in May 2020. The grant funded a GSP Development Project for Addressing Critical Data Gaps which consisted of developing a Data Gaps Plan, upgrading & incorporating existing wells into the monitoring network, installing new well(s) in critical locations, and stakeholder outreach. It also funded the development of a remote-sensing decision support tool. These projects are shown in Table 3-2 under Project Source "Proposition 68 SGM Grant Program Planning Grant".

Proposition 68 SGM Grant Program Implementation Grant

The Merced Subbasin received a Proposition 68 SGM Grant Program Implementation Grant in 2021 for two projects described in Table 3-2 under Project Source "Proposition 68 SGM Grant Program Implementation Grant".

Round 1 Sustainable Groundwater Management Implementation Planning and Projects Grant

At the end of February 2022, the GSAs submitted an application and spending plan to DWR for a total of approximately $13.7 million of grant funding for 18 projects and received $7.6 million of funding for 15 of those projects. These projects are shown in Table 3-2 as Project Source "Projects Funded by the SGM Implementation Grant Round 1".

Round 2 Sustainable Groundwater Management Implementation Planning and Projects Grant

In December 2022, the GSAs submitted an application and spending plan to DWR for a total of approximately $18.4 million of grant funding for 7 projects and received $3.4 million of funding for 2 of those projects. These projects are shown in Table 3-2 as Project Source "Projects Funded by the SGM Implementation Grant Found 2".

Table 3-1: Completed Projects

Project Name	Project Update Description
Project 1: Planada Groundwater Recharge Basin Pilot Project	Cone Penetration Tests did not show favorable geologic conditions for a recharge basin; a dry well recharge facility was installed as an alternative to a traditional recharge basin. Pre-filtration methods designed for the pilot were insufficient; alternative approaches to filtration are being considered and evaluated. Proposed permanent monitoring well installed in September 2020. This well has been added to the Merced Subbasin's Monitoring Network.
Project 2: El Nido Groundwater Monitoring Wells	All planned well site installations have been completed. These wells have been added to the Merced Subbasin's Monitoring Network.
Project 3: Meadowbrook Water System Intertie Feasibility Study	Study completed in January 2021.
Project 5: Merced Irrigation District to Lone Tree Mutual Water Company Conveyance Canal	Completed fall 2022 and currently in operation.
Project 8: Merced Groundwater Subbasin LIDAR	Funding for this project was awarded under the Proposition 1 Round 1 IRWM Implementation Grant in 2020. LIDAR data was collected in December 2020 and is currently utilized with weather forecast data to predict local stormflows from rainfall events.
Project 9: Study for Potential Water System Intertie Facilities from MID to Le Grand-Athlone Water District (LGAWD) and Chowchilla Water District	The study has been completed. The GSAs received Proposition 68 Implementation Grant funding for the phase 1 portion of this work in 2021. An additional, separate phase 2 of work has been funded as part of the SGM Implementation Grant Round 1. Further, LGAWD has adopted an assessment with the intention of fully funding the remaining portion of the cost estimate, which is approximately $25,000,000.
Project 11: Mini-Big Conveyance Project	Completed in the fact that it was combined with Project 9 above due to substantial overlap in scope.
Project 12: Streamlining Permitting for Replacing SubCorcoran Wells	The study has been completed and has been used by Merced County to support well permitting from below to above the Corcoran Clay in the subsidence area.
Merced Subbasin GSP Development Project for Addressing Critical Data Gaps	The Remote Sensing Decision Support Tool for the Subbasin was completed in spring 2023.
El Nido Conveyance System Improvements Project	Provides conveyance improvements at four existing siphons/pipelines in MID's El Nido Conveyance System to allow more surface water to be diverted from the Mariposa Creek to the El Nido area, an Underrepresented Community[1] suffering from declining groundwater

[1] Underrepresented Communities are defined by the SGM Grant Program as a DAC, SDAC, or EDA; Tribal Lands/Tribes; California Communities Environmental Health Screening Tool Classified DACs (EnvDACs); and Fringe Communities.

Project Name	Project Update Description
	levels and subsidence. Construction concluded in March 2022. Funded via Proposition 68 SGM Grant Program Implementation Grant.
Project 10: Vander Woude Dairy Offstream Temporary Storage; also known as Vander Woude Storage Reservoir	Original GSP Project 10 was approved for funding in May 2022 as part of the Round 1 Sustainable Groundwater Management Implementation Planning and Projects Grant ("Vander Woude Storage Reservoir") and reflects some minor modifications to what was initially proposed in the GSP. Construction completed in 2024 and the project is operating. The project built a 30-acre storage reservoir with a capacity of 250 AF and diverts flood water from Mariposa and Owens Creeks and stores it for later use to meet crop demand. The estimated yield is 750 AFY. In addition, the project also permanently fallowed 30-acres of productive farmland that had a crop demand of 150 AFY. The total project yield is 900 AFY.
Vander Dussen Subsidence Priority Area Flood-MAR Project	Construction is complete. The project involved building a 1.25 mile earthen canal from Merced Irrigation District's El Nido Canal to 685-acres of agricultural fields, of which approximately 325-acres are located within Sandy Mush Mutual Water Company and 333-acres in the Madera County GSA. With 90 days of flood flows, the 20 cfs canal will yield ~3,600 AF of recharge.
Buchanan Hollow Mutual Water Company Floodwater Recharge Project	The Groundwater Recharge Feasibility Study was completed in fall 2024. The three tested sites were found to be poorly to moderately suitable for groundwater recharge. At the best of the three sites, the small acreage means that the volume of potential recharge is still minimal.
Amsterdam Water District Surface Water Conveyance and Recharge Project	The Groundwater Recharge Feasibility Study was completed in fall 2024. For the first of two sites (flat pasture), the results of the investigation stated that a full-scale project is not recommended for this site due to the generally low permeability of the soils near the surface. At the second of two sites (almond orchard), the soils below 5-10 feet deep were found to be suitable for recharge.
LeGrand-Athlone Water District Intertie and Recharge Project (Phase 1)	The Intertie project includes an approximately 2-mile canal to connect MID's Booster Lateral 3 to Dutchman Creek. Phase 1 construction was completed in February 2025. Note that Phase 2 of the project is described in the next table (construction begins May 2025).
Merced Subbasin GSP Development Project for Addressing Critical Data Gaps	The "Addressing GSP Gaps" component has multiple sub-components: • The Data Gaps Plan document was completed in July 2021 and provides tools to prioritize filling the data gaps and identifies implementation procedures necessary to fill such gaps. The Data Gaps Plan does not attempt to completely fill all identified gaps, but rather acts as a starting point and guidance framework for ongoing efforts to do so. • Upgrade and Incorporate Existing Wells into Monitoring Network – MIUGSA and MSGSA have identified existing candidate wells for potential incorporation into the monitoring network and instrumented several of those wells for monitoring.

Project Name	Project Update Description
	In early 2024, the GSAs completed remaining work to investigate wells through video logs, site visits, and well completion reports. Suitable wells were then instrumented and incorporated. Ultimately, 12 wells were identified as additional wells for potential incorporation into the monitoring network. • Install New Monitoring Well(s) in Critical Locations – a dual completion (2 casings) monitoring well was installed in the southwest corner of the Subbasin in spring 2023.

1. *The following projects were reported previously but are no longer being pursued:*
    a. *GSP Project 4: "Merquin County Water District (MCWD) Recharge Basin" because MCWD is not currently pursuing this project.*
    b. *"MCWD Sustainable Yield Management Plan and Plan Implementation" because MCWD has withdrawn this project from the SGM Implementation Grant Round 1 grant agreement.*

Table 3-2: Description of Project Implementation Updates

Project Source	Project Name	Project Update Description
Original GSP Project	Project 6: Merced IRWM Region Climate Change Modeling	No update of information in 2025 GSP to report at this time.
	Project 7: Merced Region Water Use Efficiency Program	No update of information in 2025 GSP to report at this time.
Projects Funded by the SGM Implementation Grant Round 1[1]	LeGrand-Athlone Water District Intertie Canal (Phase 2)	The design of Phase 2 is complete, and the environmental review and easement acquisition are underway. Construction is expected to begin in May 2025.
	Merced Subbasin Integrated Managed Aquifer Recharge Evaluation Tool (MercedMAR)	The project began in mid-2023 and is ongoing.
	Filling Data Gaps Identified in Data Gaps Plan	Planning work is ongoing. MIUGSA has identified and finalized locations for four proposed monitoring well locations. MIUGSA is coordinating with consultants to finalize design and is preparing to publish bid documents for construction of the new monitoring wells.
	GSP Project 31: Crocker Dam Modification	Project Planning and Design is fully funded and underway.
	G Ranch Groundwater Recharge, Habitat Enhancement & Floodplain Expansion Project – Planning	Planning is complete. See project update in row below.
	G Ranch Groundwater Recharge, Habitat Enhancement & Floodplain Expansion Project - Implementation	La Paloma Mutual Water Company has partnered with River Partners and Ducks Unlimited for this project which will provide both wildlife and groundwater recharge benefits by re-establishing flood plains. Construction is expected to begin in July 2025.
	Turner Island Water District (TIWD) Water Conservation	Project is funded and is ongoing. Initial studies have been completed to determine which projects are feasible (per Engineering Study completed Aug 2024). CEQA was approved fall 2024. Construction is slated for fall 2025 or early 2026.
	TIWD Shallow Well Drilling	Project is funded and is ongoing. A hydrogeologic study was completed to determine the best locations for future wells, along with CEQA approval, in fall 2024. A vendor was selected

Project Source	Project Name	Project Update Description
		and the contract is being finalized. Two shallow wells are anticipated to be drilled in mid-April 2025.
Projects Funded by the SGM Implementation Grant Found 2[2]	La Paloma Mutual Water Company G Ranch Groundwater Recharge, Habitat Enhancement, and Floodplain Expansion – Phase II (Construction)	See earlier rows for "G Ranch Groundwater Recharge, Habitat Enhancement & Floodplain Expansion Project". Separate line items were entered for grant funding purposes, but together comprise the same project.
	La Paloma Mutual Water Company Bear Creek Ranch Groundwater Recharge, Habitat Enhancement, and Floodplain Expansion – Phase I (Planning)	A towed Transient Electromagnetic (tTEM) survey was conducted in November 2024 to help map soil resistivity. Cone penetration test sites for further investigation have been identified. Biology work, topographic surveying, and other design work are ongoing.

Notes:

1. *See notes below:*
    a. *Three projects from the SGM Implementation Grant Round 1 were not funded:*
        1 *MIUGSA Groundwater Extraction Measurement Program*
        2 *Deadman Creek Canal Off Stream Storage and Recharge*
        3 *Tri City's Water Recharge/Underground Storage Feasibility*
    b. *The following two originally funded projects have not proceeded due to a policy conflict that has rendered the project infeasible for the applicant to pursue:*
        1 *Purdy Project (E. Purdy, W. Purdy, and Kevin Recharge Basins) (Project No. 38)*
        2 *Purdy Project (East Pike Recharge Basin) (Project No. 37)*
2. *Several additional projects from the SGM Implementation Grant Round 2 (not listed) were not funded. The application process was particularly competitive, with over $780 million in grant funds available and $187 million awarded.*

3.3 Implementation of Management Actions

The 2025 Merced Subbasin GSP includes five Management Actions:

- Integrated Groundwater Allocation Framework
- MSGSA Demand Reduction Program
- MIUGSA Groundwater Allocation
- Domestic Well Mitigation Program
- Above Corcoran Sustainable Management Criteria Adjustment Consideration

Integrated Groundwater Allocation Framework: An Ad Hoc Coordination Committee Working Group, supported by GSA staff, was previously established to conduct discussions on an initial framework. Currently, the GSAs are working individually within their own jurisdictions to develop GSA-specific demand reduction and water allocation programs, described immediately below for MSGSA and MIUGSA. A formal allocation agreement between the GSAs for the Subbasin as a whole has not been developed and is not scheduled for the upcoming water year.

MSGSA Demand Reduction Program: The MSGSA has initiated a demand reduction program in recognition of the need to reduce groundwater pumping in the subbasin. On July 8, 2021, the MSGSA Board approved Resolution 2021-01 which described an objective that by WY 2025 the consumptive use of groundwater within the MSGSA will be reduced by a minimum of 15,000 AF annually, with this minimum to be increased annually thereafter.

The MSGSA has adopted a Two Phased GSP Implementation Approach, with Phase 1 focusing on land repurposing as a near-term option to achieve the WY 2025 objective, combined with importing surface water in the GSA (flood waters or purchased water). Phase 2 will involve increasing to substantially greater reductions by 2040.

Phase 1's voluntary land repurposing program was designed and launched in WY 2022 to encourage landowner participation through the use of an incentive payment system driven by landowner applications. Three rounds of applications have been solicited and completed in WYs 2022-2024. Program metrics are summarized in the bullets below:

- First round of applications accepted in November 2022 and the MSGSA approved 16 applications, totaling 2,353 acres, in December 2022, which will begin land repurposing in WY 2023. These efforts are anticipated to reduce consumptive use of groundwater by 3,755 AF annually for 3 to 5 years.
- Second round of applications accepted in July 2023, and the MSGSA approved four applications, totaling 1,622 acres, in August 2023, which will begin land repurposing in WY 2024. These efforts are anticipated to reduce consumptive use of groundwater by 2,713 AF annually for 3 to 4 years.

A third and final round of applications were accepted in August 2024. The MSGSA approved two final applications totaling 139 acres which are anticipated to reduce consumptive use of groundwater by 281 AF annually for 3 years.

Phase 2, set to begin in 2026, focuses on implementing the Groundwater Allocation Rule adopted on October 10, 2024 ("Rule"), which will achieve the significant reduction in the consumptive use of groundwater needed to reach sustainability. The Rule will allow the MSGSA to accomplish the 2040 objective by the end of WY 2035. The Rule establishes an allocation of groundwater for each agricultural parcel of land within the MSGSA's boundary. The allocation includes, at a minimum, Sustainable Yield of Native Groundwater (SYNG) and, for some parcels, a temporary Additional Pumping Allowance (APA). To address spatial variability in hydrogeologic conditions in the MSGSA and allow for adaptive management in 2030-2040, 8 Sustainability Zones were established. Eligible parcels within each Sustainability Zone are allocated a consumptive use of 13 inches of SYNG. Beginning in 2026, eligible parcels within each Sustainability Zone will receive an APA of an additional 11 inches of Native Groundwater consumption. The APA will decline by 10% per year over a 10 year period (2026-2035) until it reaches a value of zero by 2036. In 2030 and 2035, additional data and improved understanding of groundwater level responses to the Rule in each Sustainability Zone will allow the SYNG to be adjusted higher or lower, and the APA to be reduced more quickly or slowly, further assuring sustainability objectives will be achieved. Finally, a five-year rolling bucket concept is intended to provide flexibility for growers to manage change across time. The Groundwater Allocation Rule identified additional elements of the Rule, including monitoring details and alternative sources of water to be drafted by April 1, 2025.

The year 2025 will be a "test-run" for the MSGSA Groundwater Allocation Rule and use of the Groundwater Accounting Platform (GAP). MSGSA participates in a pilot program of the GAP, developed by the California Water Data Consortium and Environmental Defense Fund and funded by DWR and USBR. In 2025, growers subject to the Groundwater Allocation Rule will be able to log onto the GAP to monitor their consumption against the groundwater allocation prior to the allocation enforcement being in effect in 2026.

In addition to reducing demand through the Groundwater Allocation Rule, the MSGSA will reduce demand through multibenefit land repurposing. The MSGSA was awarded a Multibenefit Land Repurposing Program (MLRP) grant from the California Department of Conservation (DOC) in the amount of $8.9 million in fall 2023. The MLRP will work with stakeholders to identify, prioritize, develop, and implement land repurposing projects that are targeted to provide the greatest meaningful impact on groundwater sustainability, while providing additional benefits such as soil health, air quality, and habitat connectivity. Through this effort, MSGSA has partnerships with East Merced Resource Conservation District, River Partners, United States Fish and Wildlife Service, SocioEnvironmental and Educational Development Strategies, Sandy Mush Mutual Water Company, and La Paloma Mutual Water Company. MSGSA released a project solicitation, open to all landowners in the Merced Subbasin, in November 2024 to identify and select implementation projects to fund under MLRP.

MIUGSA Groundwater Allocation: In 2023, MIUGSA adopted Rules and Regulations that include an allocation program in addition to establishing a framework for measuring, monitoring, and enforcing the groundwater allocation through well registration and groundwater usage reporting systems. In June 2022, the MIUGSA Board set a groundwater extraction allocation for agricultural parcels of 3.3 AF/ac over three years (1.1 AF/ac/Y on average) starting April 1, 2023 through December 31, 2025 and will require that all wells be registered (MIUGSA, 2023a). In June 2024, the MIUGSA Board adopted an allocation for non-agricultural users of 1.4 AF/ac/Y through 2031, followed by an allocation of 1.1 AF/ac per year after 2031 through 2040. The adopted allocation values were considered consistent with the GSP's sustainable yield of native groundwater at the time. MIUGSA has incorporated flexibility and tools into the rules and policies that will allow users to comply with the allocation. These include combining allocated water over multiple

parcels, allowing carry-over of recharged water and any unused water to future years, and accounting for developed supply from an agricultural user's water provider (MIUGSA, 2023b).

On October 12, 2022, a well registration requirement was also adopted, with a goal of establishing an online platform and procedure to register all wells in the GSA prior to December 31, 2025. Significant progress has been made through the time of publishing to register wells. As of July 2024, effectively all agricultural wells serving greater than 10 acres were registered with MIUGSA.

MIUGSA participates in a pilot program of the Groundwater Accounting Platform developed by the California Water Data Consortium, and Environmental Defense Fund, funded by DWR and USBR, to provide MIUGSA staff the ability to monitor and enforce groundwater extraction within MIUGSA and landowners with groundwater accounts providing details related to available groundwater supply, use, and remaining balance. MIUGSA has begun rolling out the Groundwater Accounting Platform and is actively providing Groundwater Account Statements to landowners.

Domestic Well Mitigation Program: Significant progress was made on this management action in WY 2024. The GSAs have worked collaboratively to define the various roles and responsibilities of a Domestic Well Mitigation Program. The intent of this program is to respond to adverse impacts experienced by domestic well users where regional overdraft conditions occurring after 2015 are causing declining groundwater levels that interfere with groundwater production or quality. Moreover, the program is solely focused on addressing impacts associated with groundwater level declines and not centered on addressing impacts caused by aging, faulty, or ill-maintained domestic well infrastructure.

Based upon the modeling analysis using the determined MTs, there currently is no indication that a domestic well mitigation program would be necessary in the Merced Subbasin. However, as recommended in DWR's Approval Determination of the Revised 2022 Merced Subbasin GSP dated August 4, 2023, the IMs below historical lows and MTs identified in the GSP warrant the need for a domestic well mitigation program to be in place and initiated prior to a demonstrated need. Given this, the GSAs have formed a Merced Subbasin Domestic Well Mitigation Program Ad Hoc Committee to facilitate the development and implementation of a Domestic Well Mitigation Program (Program). Further, the MSGSA has spearheaded development of the Program by establishing a funding source through a successful Proposition 218 election which occurred on July 19, 2022.

Collectively, the GSAs are undertaking the following actions to be completed by the submission of the WY 2025 GSP Annual Report:

Item 1: Expand historical and existing services within Merced County, which include water quality testing, bottled water, hauled water, lowering of the drop pipe, or drilling a new domestic well, by coordinating outreach efforts regarding available services and programs as well as exploring opportunities to provide additional funding to expand their existing efforts. Additionally, the Merced Subbasin GSAs will work collaboratively with the Merced County Drought Working Group, which has been active since 2015, to facilitate drought and water shortage preparedness for state small water systems and individual domestic wells within the County's jurisdiction. Merced County received a technical assistance grant from the Department of Water Resources on March 5, 2024 to help prepare a drought resilience plan as required by SB 552 and anticipates completing the plan by the end of 2025. Collaboration with these established partners will ensure that the Domestic Well Mitigation program complements rather than duplicates existing efforts thus ensuring that users in need are efficiently identified and assisted.

Item 2: Undertake a comprehensive modeling analysis using the determined interim milestones to identify potential impacts to domestic well users within the Merced Subbasin.

Item 3: Finalize the Domestic Well Mitigation Program Implementation Roadmap and adopt the Domestic Well Mitigation Program based upon the following estimated timeline:

1. September 2024 to February 2025, develop the Program Eligibility Criteria, which defines the domestic well impacts eligible for mitigation.
2. March 2025 and May 2025, establish Domestic Well Assessment criteria and protocols.
3. June 2025 to August 2025, develop an Appeal Process for property owners who do not meet the Program Eligibility Criteria.

The program is expected to be finalized and adopted by September 2025. Throughout the entire process, ongoing public and stakeholder engagement will be maintained to ensure transparency and inclusivity in the program's development and implementation. Recommendations from Self-Help Enterprises, Leadership Counsel for Justice and Accountability, and the Community Water Center in their publication titled "Framework for a Drinking Water Well Impact Mitigation Program" will be considered during development.

Above Corcoran Sustainable Management Criteria Adjustment Consideration: This management action which would consider an adjustment to the groundwater level SMC for all or a portion of the Above Corcoran Clay Principal Aquifer. The Above Corcoran Clay Principal Aquifer has traditionally seen lower levels of use for water supply. As a result, MTs in this area are likely to be relatively high, as they are based on fall 2015 levels. A large component of the selection of fall 2015 as the MT was to limit impacts to domestic well users and to limit impacts of subsidence. Much of the Above Corcoran Clay Principal Aquifer has few domestic wells, and the Above Corcoran Clay Principal Aquifer is not thought to contribute to subsidence.

No action has been taken since the prior WY 2023 on this management action.

3.4 Additional Implementation Support Activities

Additional activities have taken place within or just after the Annual Reporting period that contribute to the overall GSP implementation progress. These are described below in Section 3.4.1, while Section 3.4.2 includes the MercedWRM update for WY 2024.

3.4.1 Other Implementation Activities

Interbasin Coordination: Agencies from each GSA continued to participate in the GSP processes of neighboring Subbasins, including MID and Merced County in Turlock to the north, Merced County and TIWD in Delta-Mendota to the west, and Merced County in Chowchilla to the south. The Chowchilla GSP was updated and submitted to DWR in 2025. The Delta-Mendota GSP was last revised in July 2024 to consolidate the prior six GSPs into a single GSP. The Turlock GSP was last updated and submitted to DWR in early 2024 and approved in March 2025.

3.4.2 MercedWRM Update (Water Year 2024)

The MercedWRM was originally developed and calibrated to model historical groundwater storage from WY 1996-2015, updated with WY 2015-2020 data in the 2020 annual report, and updated yearly for annual reports in WY 2021-2023. In addition to the updates for WY 2024 associated with this annual report, significant refinements were made the MercedWRM in the 2025 GSP, as summarized below:

- Land Surface System – Land Use – updated using DWR's Statewide Crop Mapping from 2014 through 2022. Data prior to 2014 was obtained from DWR's decadal County Land Use Surveys and interpolated between existing datasets.
- Land Surface System – Evapotranspiration – updated to use OpenET and validated with California Irrigation Management Information System (CIMIS) data.
- Land Surface System – Soil Parameters – updated soil textures and parameters, as well as curve number, using United States Department of Agriculture information.
- Groundwater System – Model Layering - refined based on the latest airborne electromagnetic (AEM) survey from DWR.
- Groundwater System – Aquifer Parameters – estimated using the texture data provided by the latest AEM survey and calibrated against groundwater level and streamflow observations between 1994 and 2023.

The 2025 GSP version of the model was updated for this annual report to reflect more recent data. Data from WY 2024 were collected from the same public and private sources that had provided the historical data used in the GSP and previous annual reports. The historical water budget was extended through WY 2024, including an updated estimate of the change in groundwater storage reflecting the latest data.

The WY 2024 continuation of the historical water budget is intended to further evaluate the aquifer system under a variety of hydrological and anthropogenic conditions. The full annual groundwater budget for WY 1996-2024 is shown earlier in Figure 2-7.

Data Sources

Data were requested and received from the following entities in the Subbasin to complete the MercedWRM update:

Agricultural and Environmental Water Purveyors

- Merced Irrigation District
- Stevinson Water District
- Merquin County Water District
- Turner Island Water District
- Lone Tree Mutual Water Company
- Merced National Wildlife Refuge

Urban Water Purveyors

- City of Merced

- City of Atwater
- City of Livingston
- Le Grand Community Services District
- Planada Community Services District
- Winton Water and Sanitary District
- California American Water, Meadowbrook

Additional publicly available data were downloaded to complete the MercedWRM update:

State

- DWR SGMA Data Viewer
- DWR California Data Exchange Center (CDEC)

Federal

- United States Department of Agriculture, Natural Resources Conservation Service, National Agricultural Statistics Service (NRCS) CropScape
- USGS National Water Information System
- United States Census Bureau

Other

- Precipitation-Elevation Regressions on Independent Slopes Model (PRISM) Climate Group, Oregon State University

Updated Components

The above data sources provided the necessary data to allow the historical model run to reflect the most recent conditions. The following components of the model were updated for the annual report.

Surface Water Diversions and Deliveries: Monthly surface water diversions and deliveries were provided for October 2023 through September 2024 by MID, TIWD, Stevinson Water District, Merquin County Water District, and Lone Tree Mutual Water Company. MID deliveries were aggregated at the subregional level for both in- and out-of-district sales, whereas the other water agencies were summarized within their boundaries.

Groundwater Pumping: Groundwater extractions from October 2023 to September 2024 were provided by all agricultural and urban water purveyors listed in Section 2.3. Agency pumping by MID and TIWD were simulated using measured data at each production well whereas other entities have pumping distributed evenly across their institutional boundaries based on aggregate reported data. Pumping estimates were made for private agriculture and domestic wells based on land use type, climatic data, and population.

Population: The City of Merced's population was based on a summary generated by the city based on California Department of Finance data. For the City of Atwater and the City of Livingston, populations were updated based on data publicly available from the California Department of Finance population estimates for 2024. Rural population updates for previous model updates have typically been extracted from census block data. However, at the time of the model update these had not yet been updated based on the most recent 2020 census data, thus populations were projected based on historical trends.

Land Use: Each element within the MercedWRM is comprised of some fraction of 27 land uses, including 24 agricultural crop categories, native vegetation, riparian vegetation, and urban. For the WY 2024 update, the model utilizes the most recently available annual data based on DWR's Statewide Crop Mapping for 2023, which provides land use categories on a field scale based on remotely sensed satellite imagery with ground reference/truth data. Note that the 2025 GSP updated the water budget through WY 2023 using the most recently available land use data at the time which was for 2022. For consistency with the 2025 GSP, no changes were made to the previous WY 2023 land use assumptions. The typical one-year lag in land use data is adjusted in the GSP 5-year updates.

Precipitation: Monthly precipitation in the Subbasin and its watersheds was derived on a four-kilometer grid using the Precipitation-Elevation Regressions on Independent Slopes Model (PRISM) dataset available online from Oregon State University through a partnership the NRCS National Water and Climate Center.

Evapotranspiration: The MercedWRM uses OpenET data to define evapotranspiration on a high-resolution basis throughout the Subbasin. At the time of the model update for this annual report, OpenET data was only available through 2021. Reference evapotranspiration reported by Merced's CIMIS station was used as a factor to extend the OpenET data through WY 2024. However, the CIMIS station was decommissioned by DWR in early 2024 and data were only available through March 2024. For April through September 2024, Reference evapotranspiration was estimated by averaging all observed values for the same month and water year type in the historical record (e.g. all previous April months in above normal water year types, then all May months, etc.).

Streamflow: Monthly inflow to the Merced Subbasin was downloaded for the San Joaquin River from the USGS and from CDEC for Merced River, Bear Creek, Owens Creek, and Mariposa Creek. Chowchilla River flows were estimated based on similar months and water year types from historical USGS gauge data. Non-gauged tributaries into the Subbasin were estimated internally by the model using the Integrated Water Flow Model (IWFM) small-watershed package.

Boundary Conditions: Groundwater elevation contours were downloaded from DWR's SGMA Data Viewer for fall 2023 and used to validate the assumed groundwater elevation boundary conditions in the model. Data was not yet available for spring 2024, so values set for spring 2023 were assumed for spring 2024. As groundwater level contours are only available in semiannual intervals, intermediary months were estimated though linear interpolation. No updates to boundary conditions were needed based on the check against groundwater elevation contours.

Canal Recharge: The MercedWRM estimates MID canal recharge based on historical monthly diversions and the water year index. An in-depth analysis of MID operational water budgets was developed as part of MID's 2020 Agricultural Water Management Plan (AWMP) (MID, 2021). Stevinson Water District and TIWD have also estimated seepage from unlined canals due to their conveyance of developed supply as described in the GSP Section 6.2.1.

Interbasin Flows: The MercedWRM simulates groundwater flow between the Merced Subbasin and the neighboring subbasins to the north (Turlock), west (Delta-Mendota) and south (Chowchilla). The rate and direction of this interbasin subsurface flow depends on the groundwater operations and levels during the historical and projected periods on both sides of the boundary. The MercedWRM has been calibrated using limited available data for areas in the vicinity of the boundaries in neighboring subbasins. During the development of the original Merced Subbasin GSP, there was no information on the projected conditions

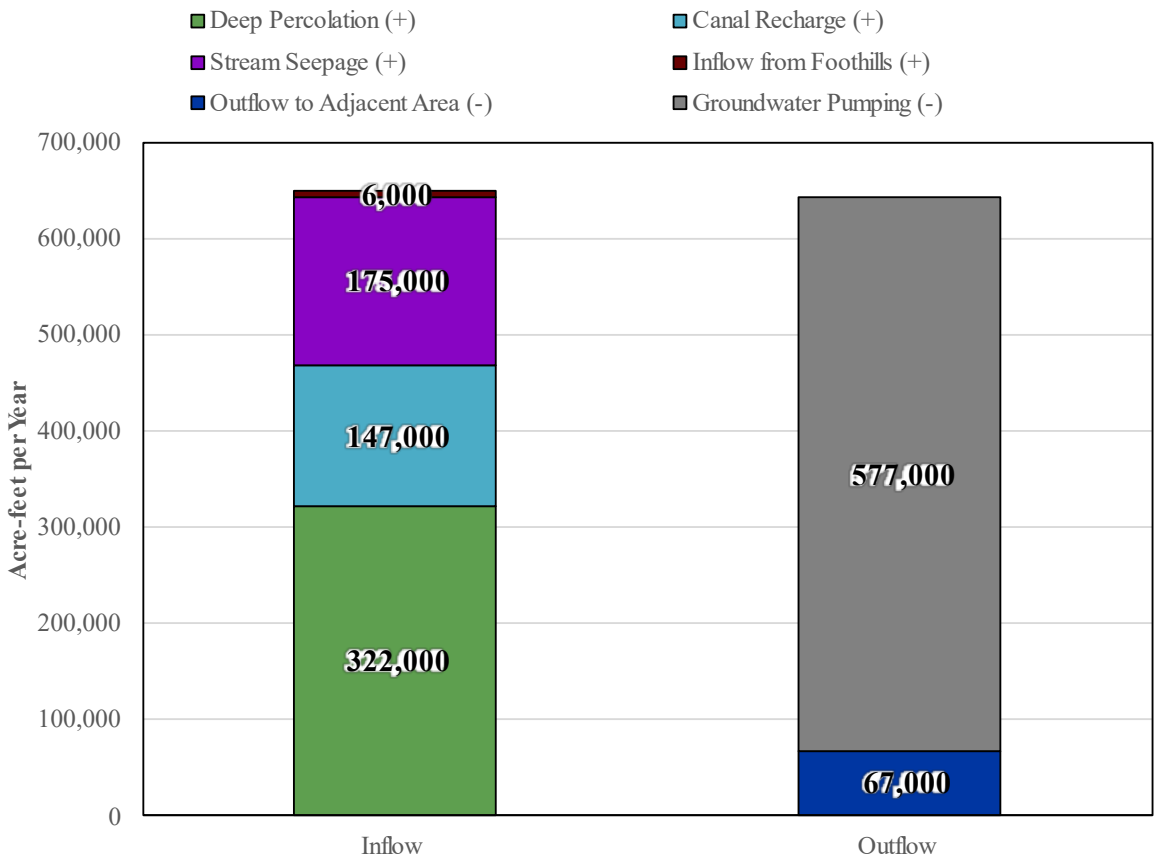
from the neighboring subbasins. Modeling for the Merced GSP shows net flows from the Merced Subbasin to the Turlock Subbasin.

All neighboring subbasins have now completed their GSP(s). Additional data and/or assumptions on neighboring operations (e.g. groundwater pumping and surface water diversions) have not yet been incorporated into the MercedWRM, but may be useful inputs to future updates of the model and assessments of the Merced Subbasin sustainability conditions. Interbasin coordination meetings have been held with all three surrounding subbasins, and coordination agreements have been put in place with the Turlock and Chowchilla Subbasins to facilitate such exchange of data and information. Additionally, the GSAs have received grant funding (from the Round 1 Sustainable Groundwater Management Implementation Planning and Projects Grant) for a Merced Subbasin Integrated Managed Aquifer Recharge (MAR) Evaluation Tool (MercedMAR) which will involve MercedWRM enhancements that update subsurface flows to/from Turlock, Delta Mendota, and Chowchilla subbasins. Work began in 2023 and is scheduled to be completed by late 2025.

Results

Evaluation of WY 2024 (Figure 3-1) shows that the Merced Subbasin experienced net 650,000 AF of inflows and 644,000 AF of outflow, resulting in a total increase in groundwater in storage of 6,000 AF. Net-recharge from the stream and canal systems (322,000 AFY = 175,000 AFY streams + 147,000 AFY canals) is a large contributor of groundwater inflow, as well as deep percolation from rainfall and irrigation applied water (322,000 AFY) and net-subsurface inflows from local subbasins and the Sierra Nevada foothills (6,000 AFY). Groundwater production (577,000 AFY) accounts for the greatest outflow from the Merced Subbasin, followed by outflow to adjacent areas (67,000 AFY).

Figure 3-1: Annual Estimated Groundwater Budget 2024, Merced Subbasin



3.5 Activities Anticipated for the Coming Year

The Merced GSAs intend to continue activities necessary to implement the GSP and keep the Subbasin on a path toward sustainable management through the activities described in the subsections below.

Project Implementation

Implementation continues for various grant-funded activities described in more detail in Section 3.2, including numerous projects to increase recharge and to improve the understanding of the groundwater system.

Management Actions

As described in Section 3.3, the GSAs plan to make significant progress in developing the Domestic Well Mitigation program in WY 2025, including finalizing the Domestic Well Mitigation Program Implementation Roadmap and adopting the Domestic Well Mitigation Program.

All three GSAs plan to continue making progress on internal GSA plans for pumping reductions and GSA-specific water allocation frameworks.

The MSGSA will continue developing the Demand Reduction Program, by conducting analyses, developing additional policies, adopting procedures, establishing monitoring and reporting tools, and conducting outreach. The MSGSA will focus on implementing the Two Phased GSP Implementation Approach which was adopted via resolution in November 2021. Phase 1 activities include the continued implementation of the Land Repurposing Program and making parcel-based water budgets available to growers through the Groundwater Accounting Platform, and using available surface water in place of groundwater use. Phase 2's Groundwater Allocation Policy was adopted October 2024, with certain remailing elements identified to be drafted by April 1, 2025. Adoption of fees and penalties are anticipated to be completed in 2025 in order to fully implement and enforce a Groundwater Allocation Policy in 2026. Additionally, MSGSA will continue to implement land repurposing through the recently awarded $8.89 million MLRP grant from the California DOC. The project solicitation for implementation projects closed in March 2025 and MSGSA will identify selected projects to submit to DOC for approval and funding in 2025. Project implementation is anticipated to start after DOC approval. Additionally, the Multibenefit Agricultural Land Repurposing Plan is currently being developed for the Merced Subbasin.

It is anticipated that MIUGSA will actively monitor and enforce the allocation and registration policies that were adopted in WY 2022 and will continue to develop and adopt additional Rules and Regulations, and various policies for implementation of the Merced GSP within MIUGSA's boundaries during WY 2025. MIUGSA will continue to manage parcel-based groundwater allocations at the sustainable yield of the Merced Groundwater Subbasin. To improve monitoring of groundwater conditions, MIUGSA will continue working with its constituents to install additional groundwater level monitoring equipment, enhance groundwater extraction and use tracking through improved evapotranspiration measurement methods, and refine local environmental data collection, such as precipitation.

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APPENDIX A: HYDROGRAPHS

Appendix A - Hydrographs WY 2024

The hydrographs proceed in this order:

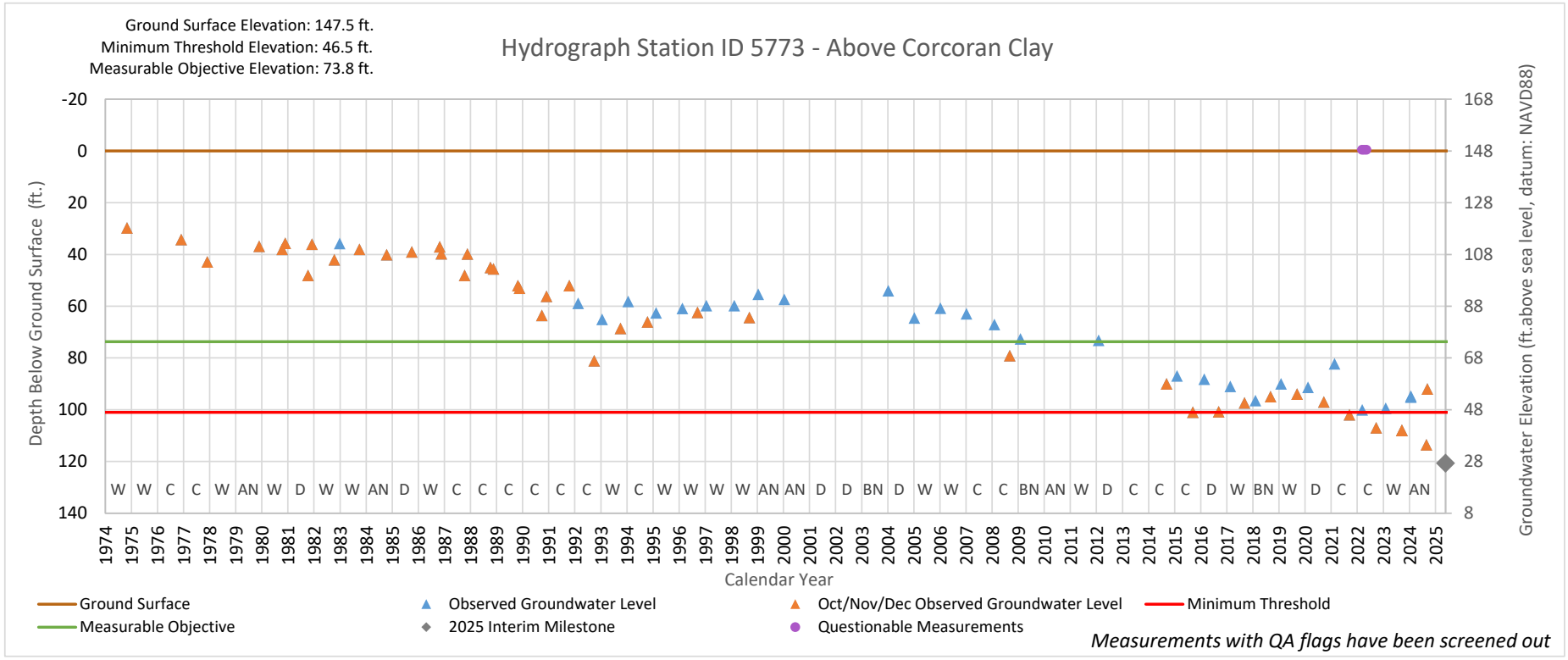
Section 1 - Time period 1974-2025

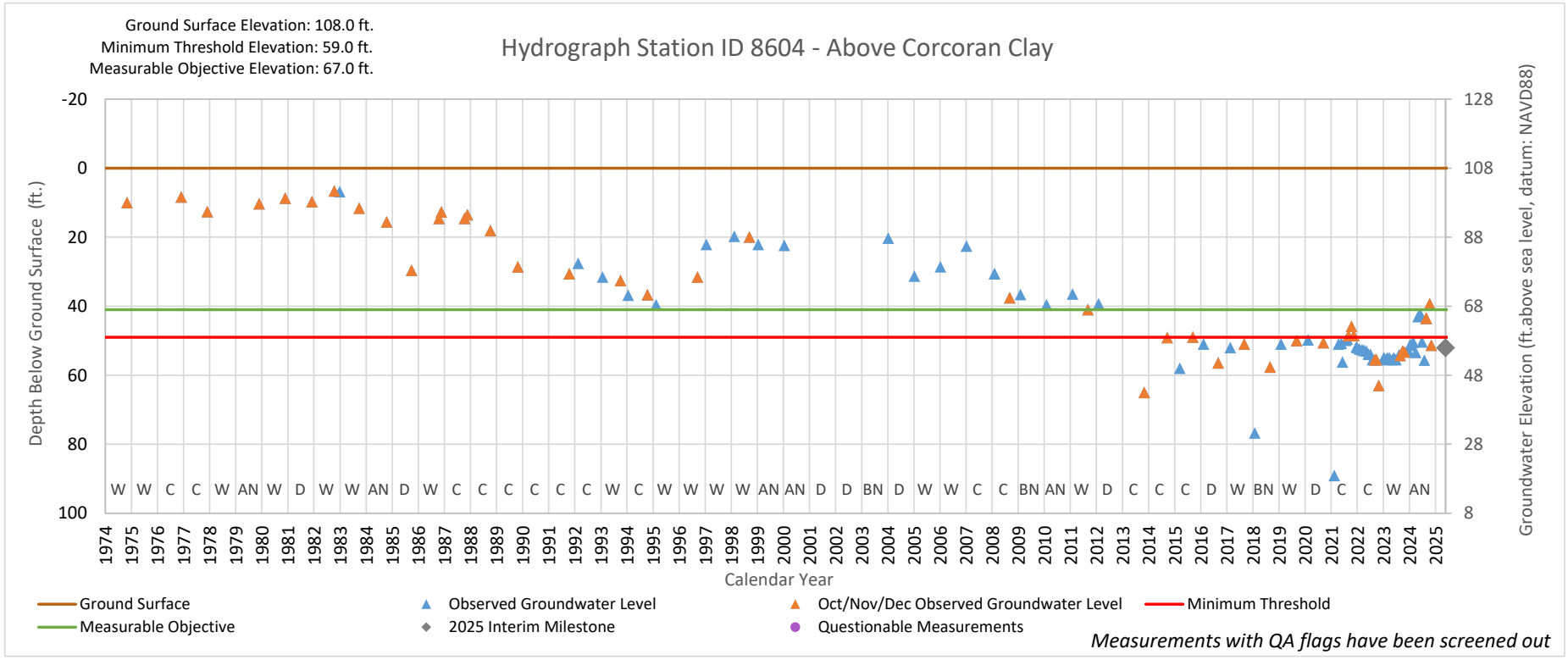
- >Representative wells
- >Other monitoring wells

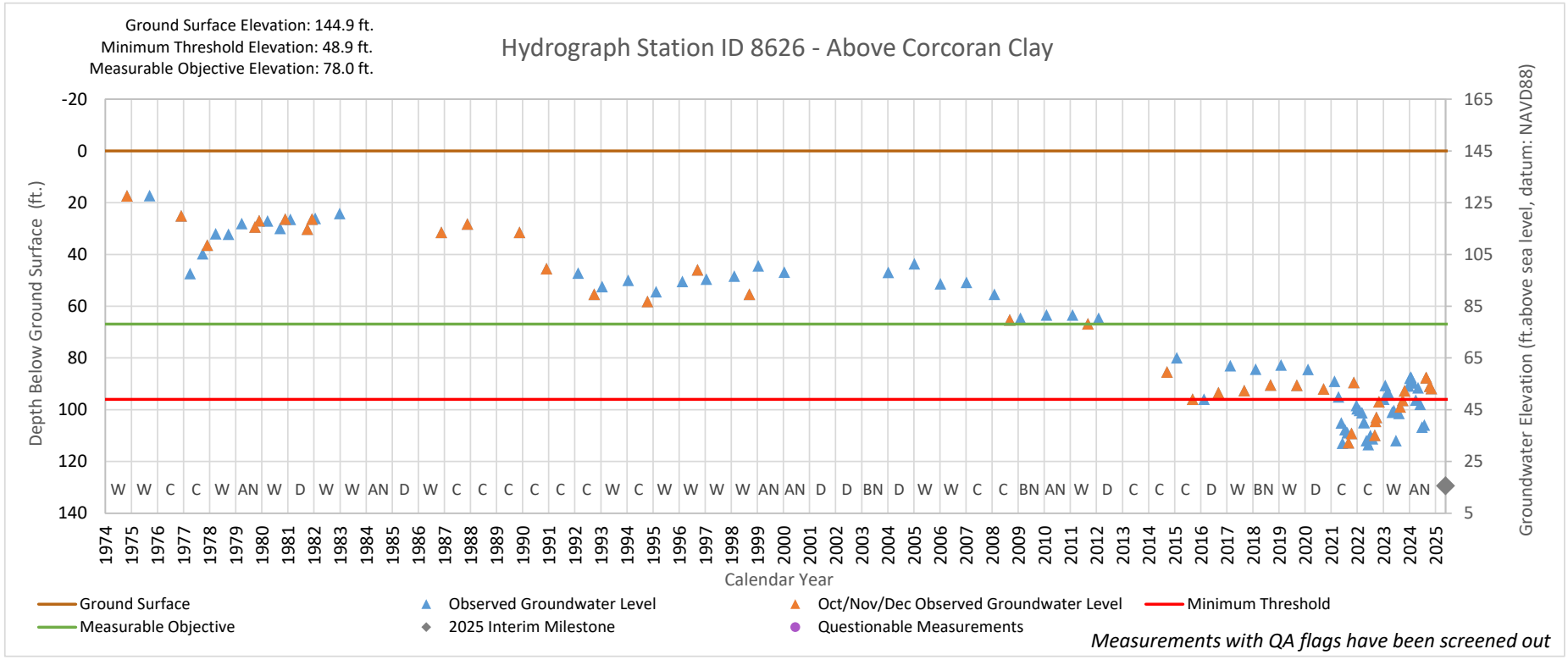
Section 2 - Time Period last 10 years (2015-2025)

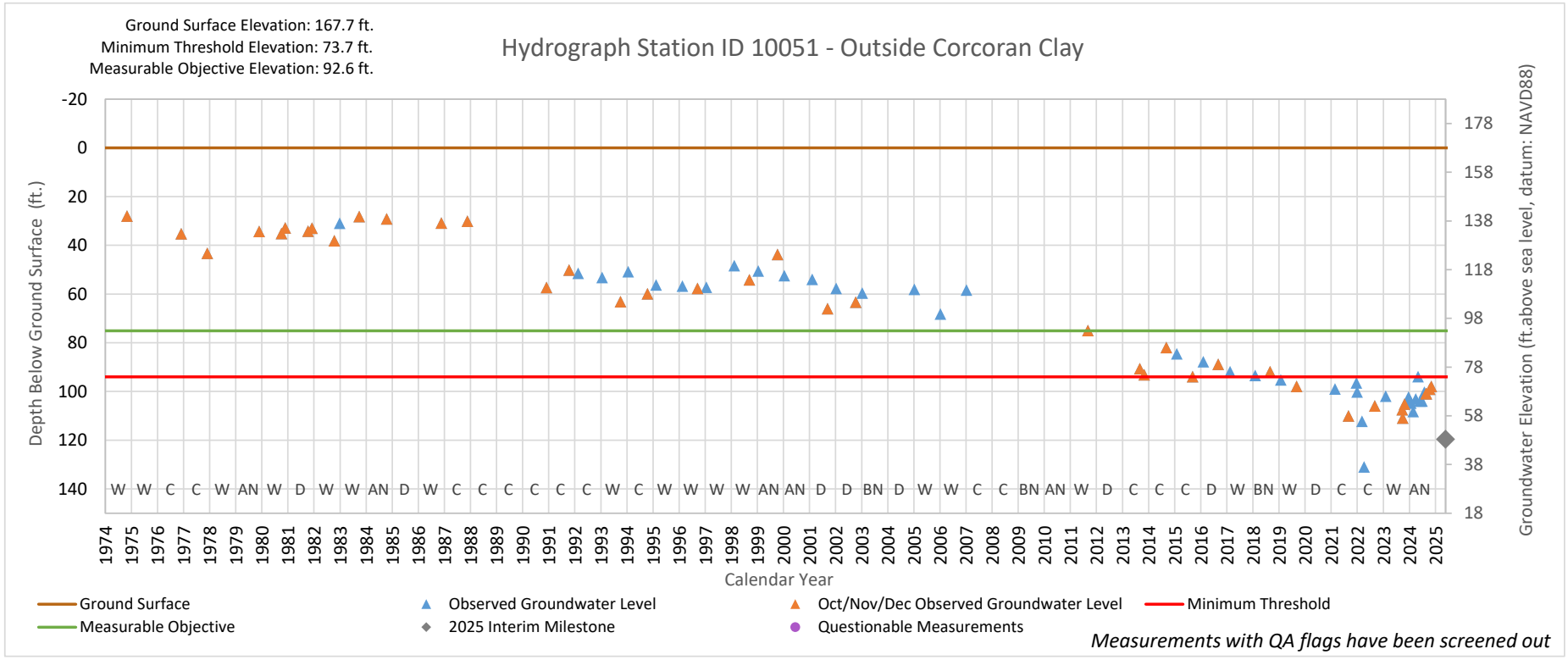
- >Representative wells
- >Other monitoring wells

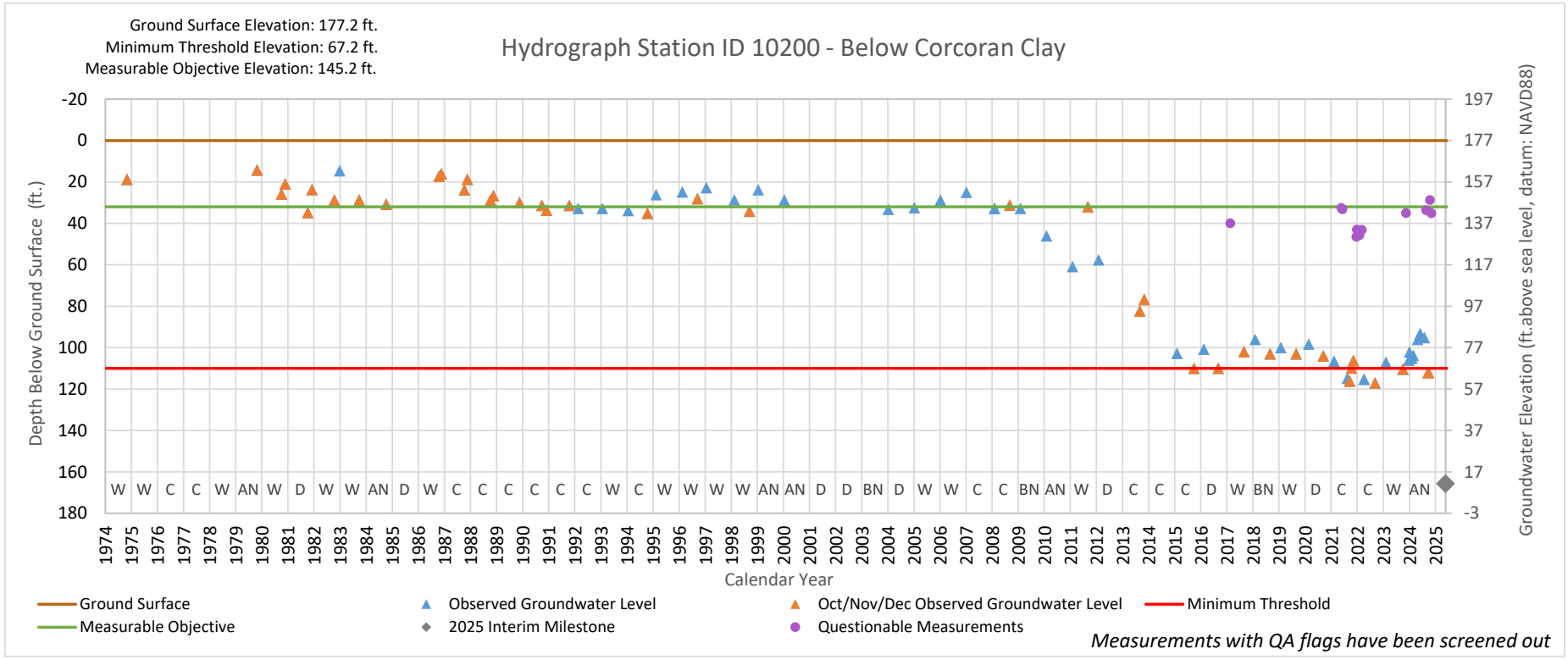
Section 1 - Time period 1974-2025

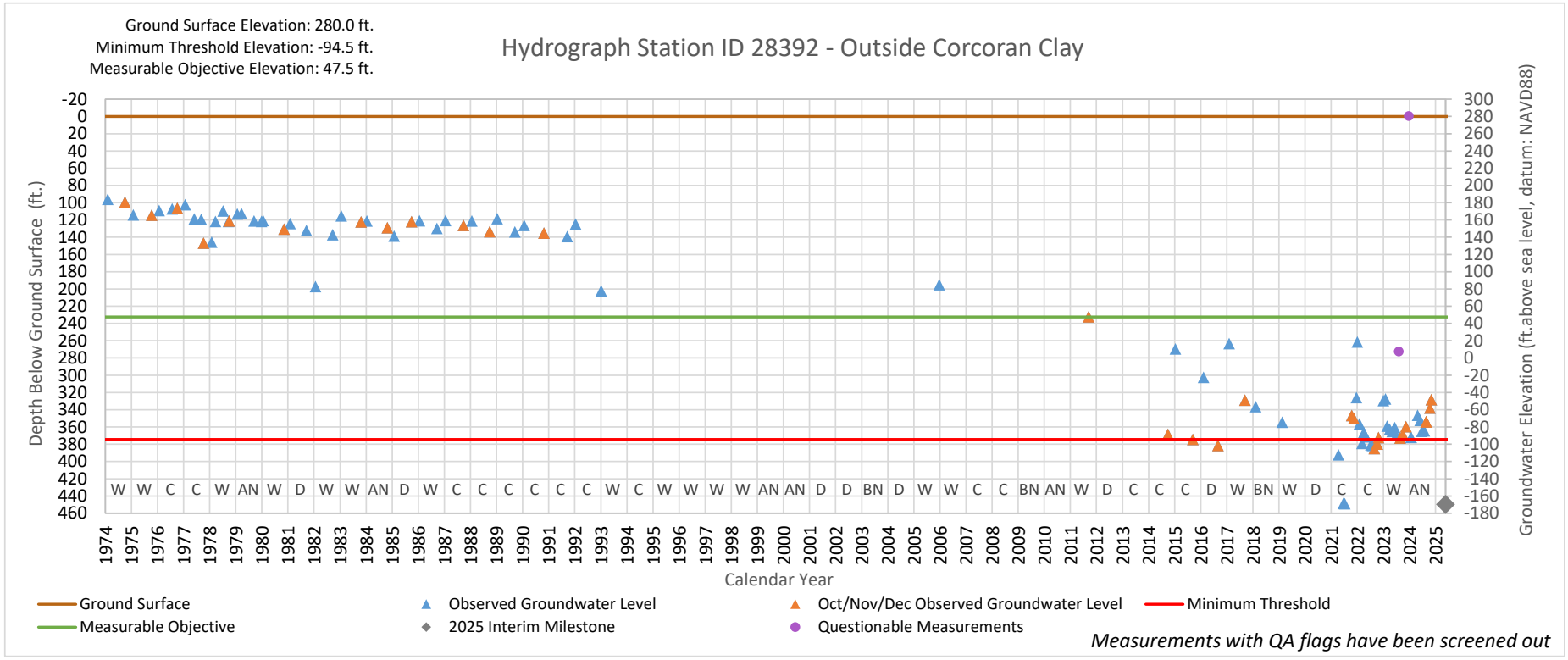

Ground Surface Elevation: 147.5 ft.
Minimum Threshold Elevation: 46.5 ft.
Measurable Objective Elevation: 73.8 ft.
Hydrograph Station ID 5773 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

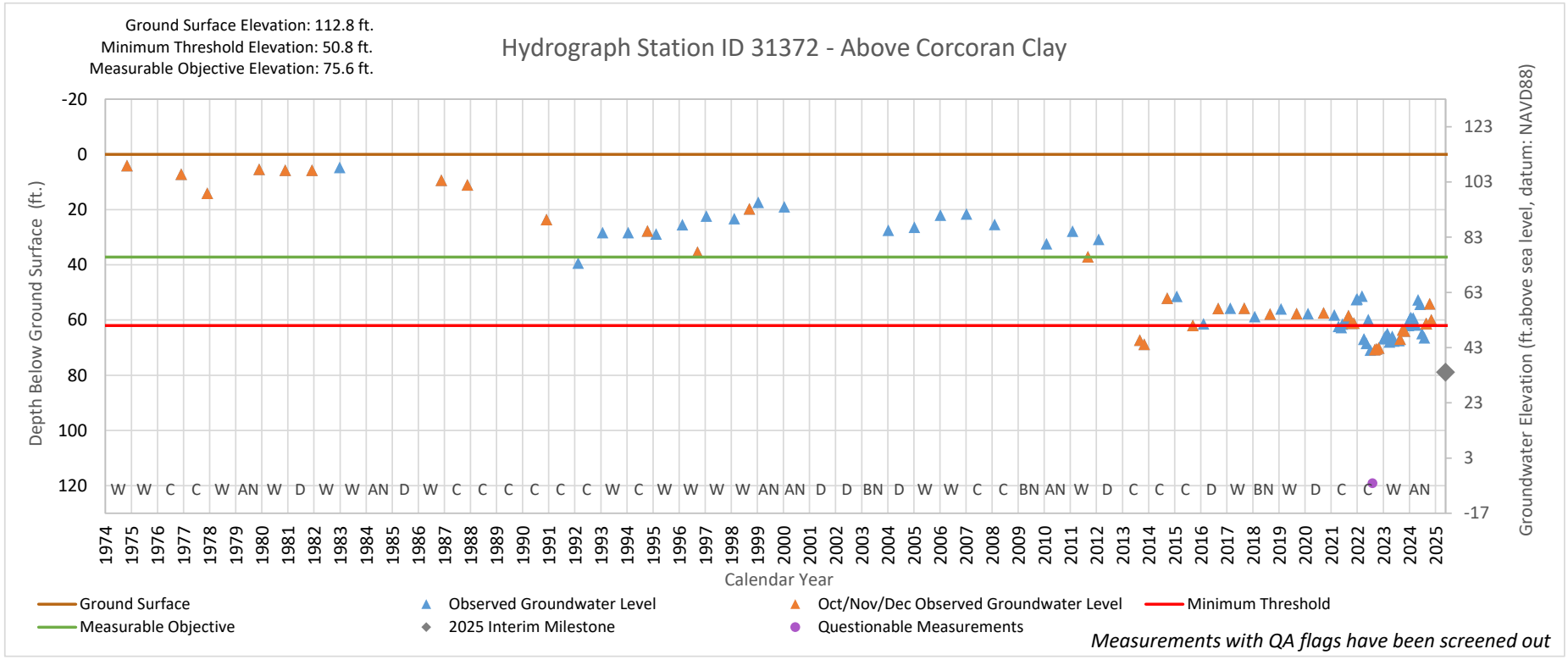

Ground Surface Elevation: 108.0 ft.
Minimum Threshold Elevation: 59.0 ft.
Measurable Objective Elevation: 67.0 ft.
Hydrograph Station ID 8604 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
128
108
88
68
48
28
8
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

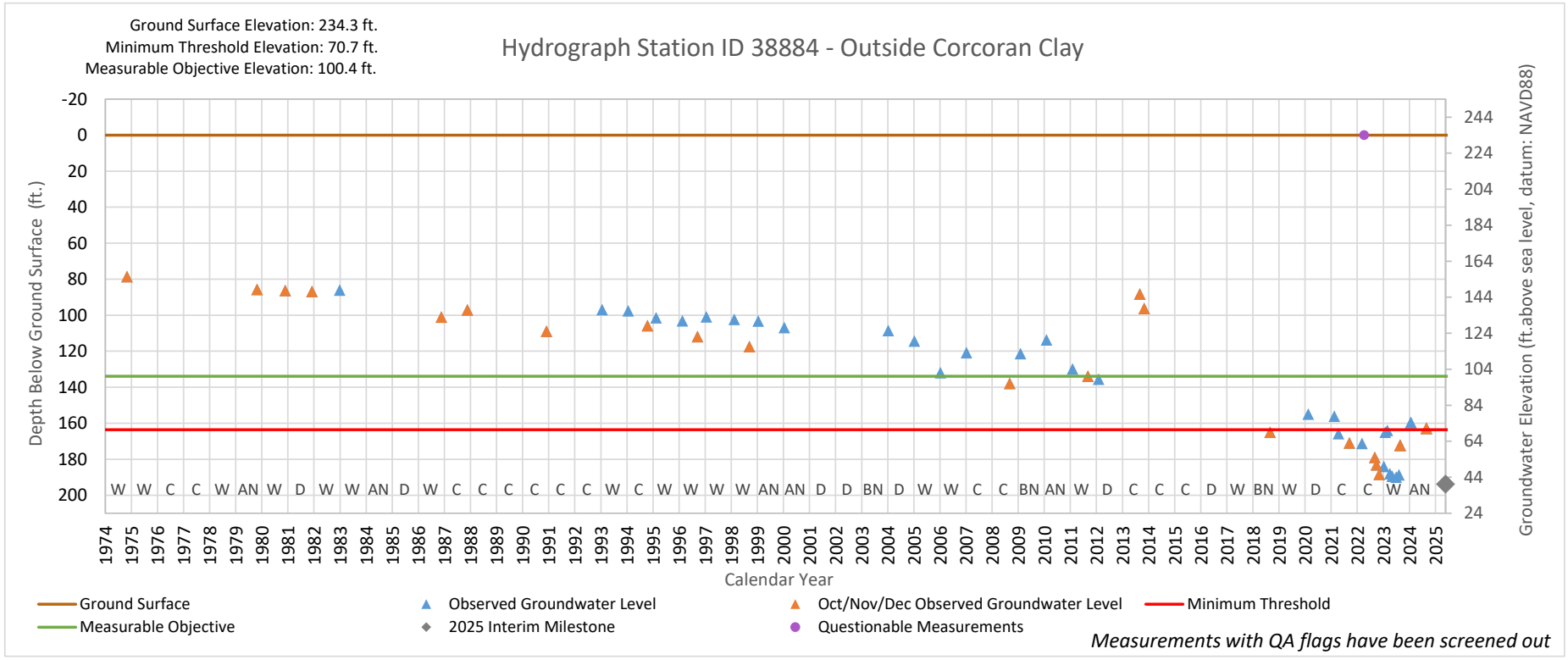

Ground Surface Elevation: 144.9 ft.
Minimum Threshold Elevation: 48.9 ft.
Measurable Objective Elevation: 78.0 ft.
Hydrograph Station ID 8626 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

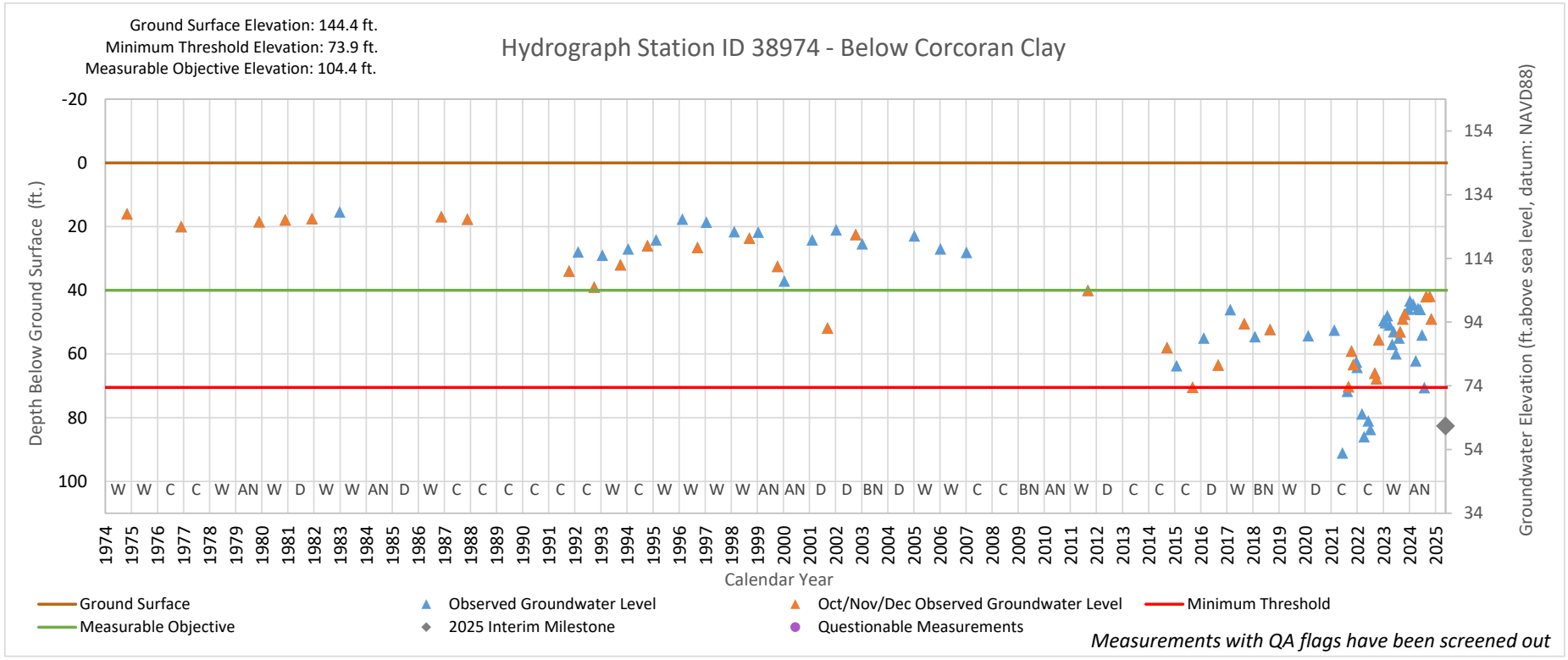

Ground Surface Elevation: 167.7 ft.
Minimum Threshold Elevation: 73.7 ft.
Measurable Objective Elevation: 92.6 ft.
Hydrograph Station ID 10051 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

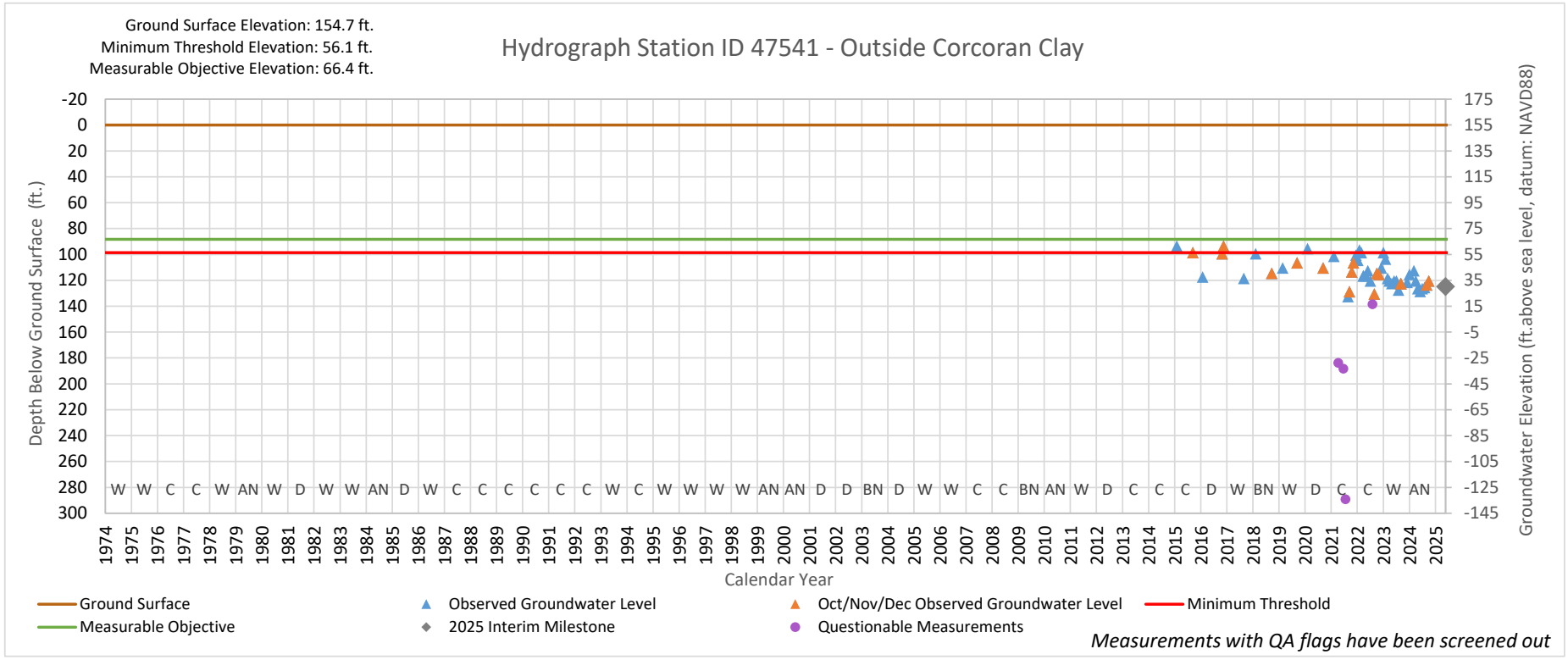

Ground Surface Elevation: 177.2 ft.
Minimum Threshold Elevation: 67.2 ft.
Measurable Objective Elevation: 145.2 ft.
Hydrograph Station ID 10200 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

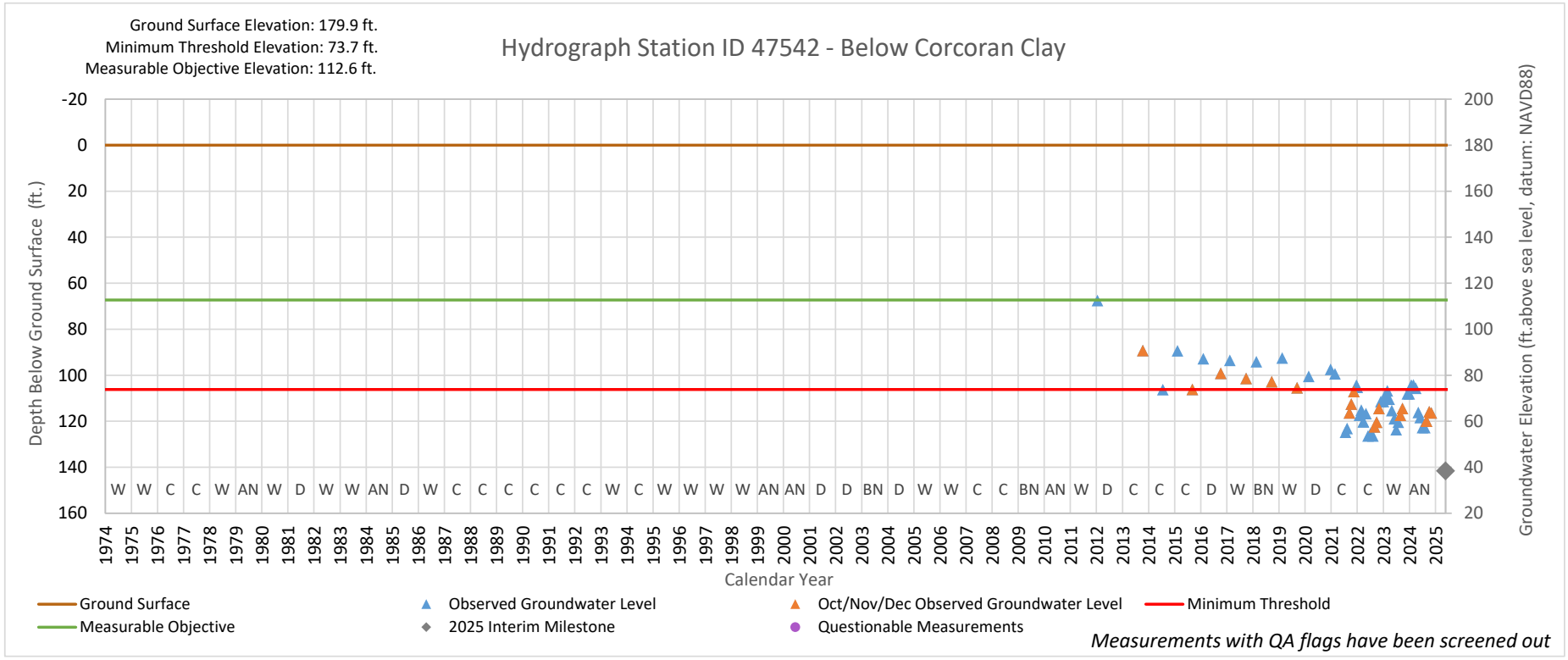

Ground Surface Elevation: 280.0 ft.
Minimum Threshold Elevation: -94.5 ft.
Measurable Objective Elevation: 47.5 ft.
Hydrograph Station ID 28392 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

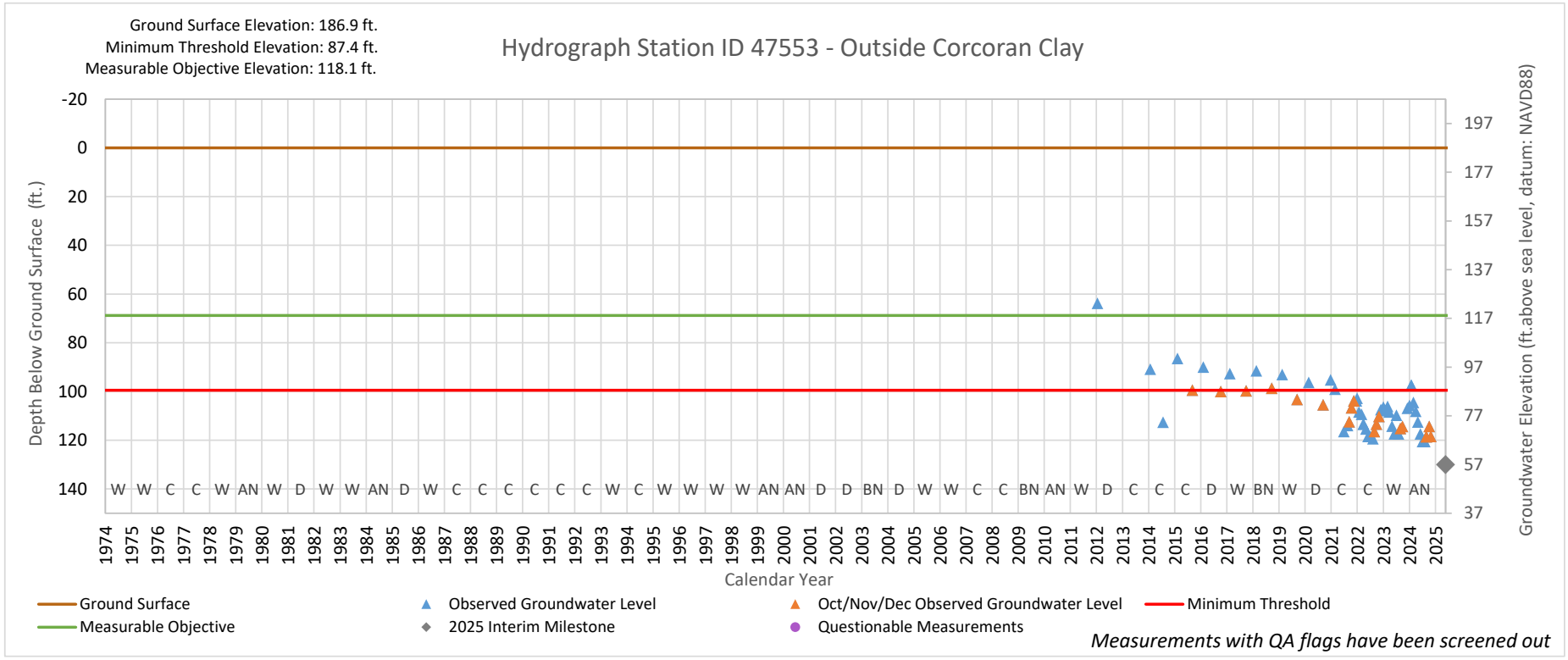

Ground Surface Elevation: 112.8 ft.
Minimum Threshold Elevation: 50.8 ft.
Measurable Objective Elevation: 75.6 ft.
Hydrograph Station ID 31372 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
-20
0
20
40
60
80
100
120
123
103
83
63
43
23
3
-17
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

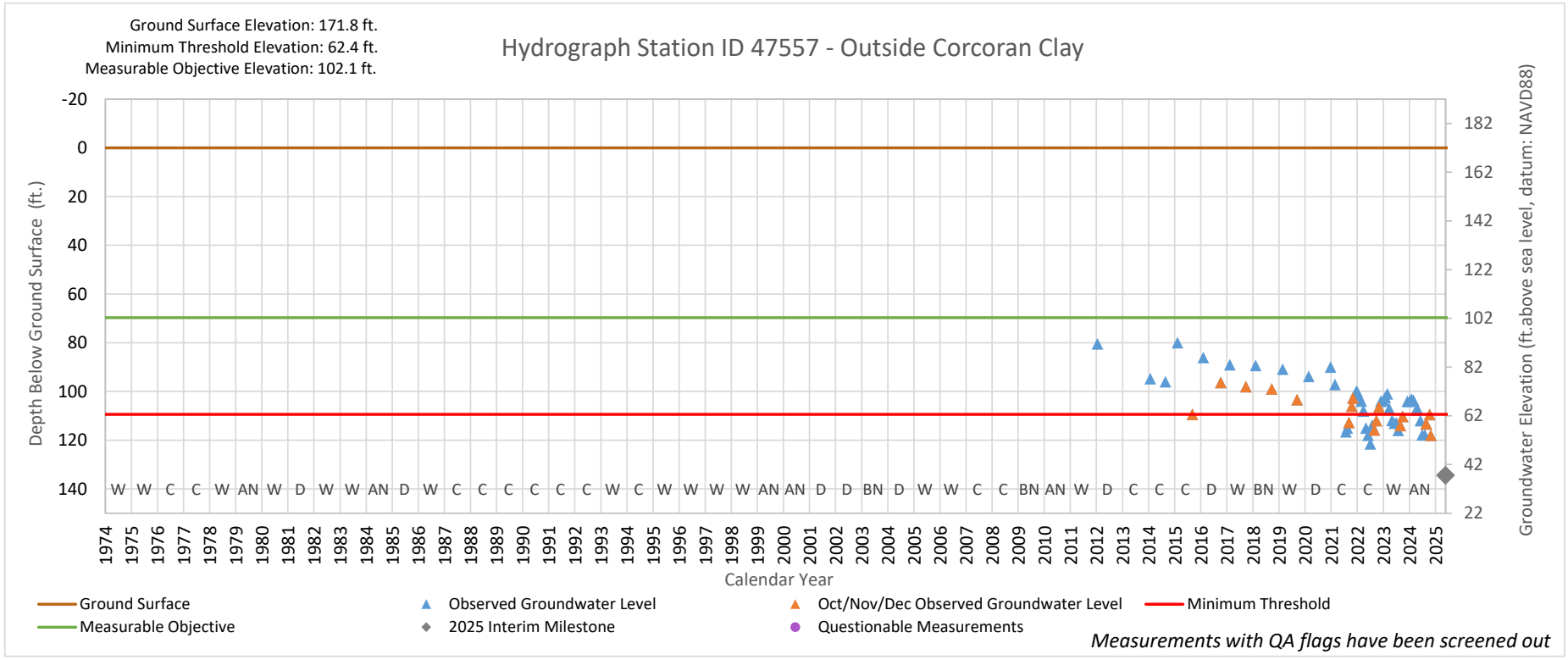

Ground Surface Elevation: 234.3 ft.
Minimum Threshold Elevation: 70.7 ft.
Measurable Objective Elevation: 100.4 ft.
Hydrograph Station ID 38884 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

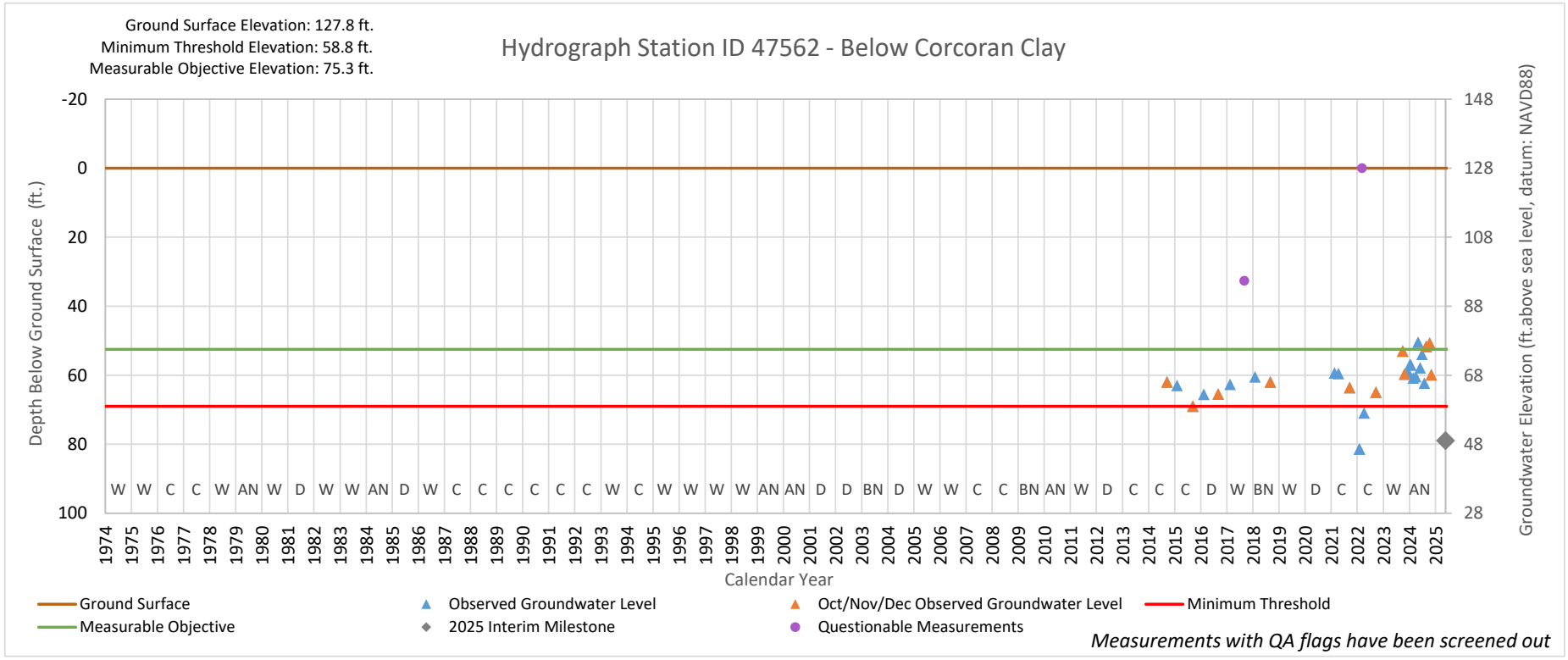

Ground Surface Elevation: 144.4 ft.
Minimum Threshold Elevation: 73.9 ft.
Measurable Objective Elevation: 104.4 ft.
Hydrograph Station ID 38974 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
Groundwater Elevation (ft.above sea level, datum: NAVD88)
154
134
114
94
74
54
34
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Minimum Threshold
Measurable Objective
2025 Interim Milestone
Questionable Measurements
Measurements with QA flags have been screened out

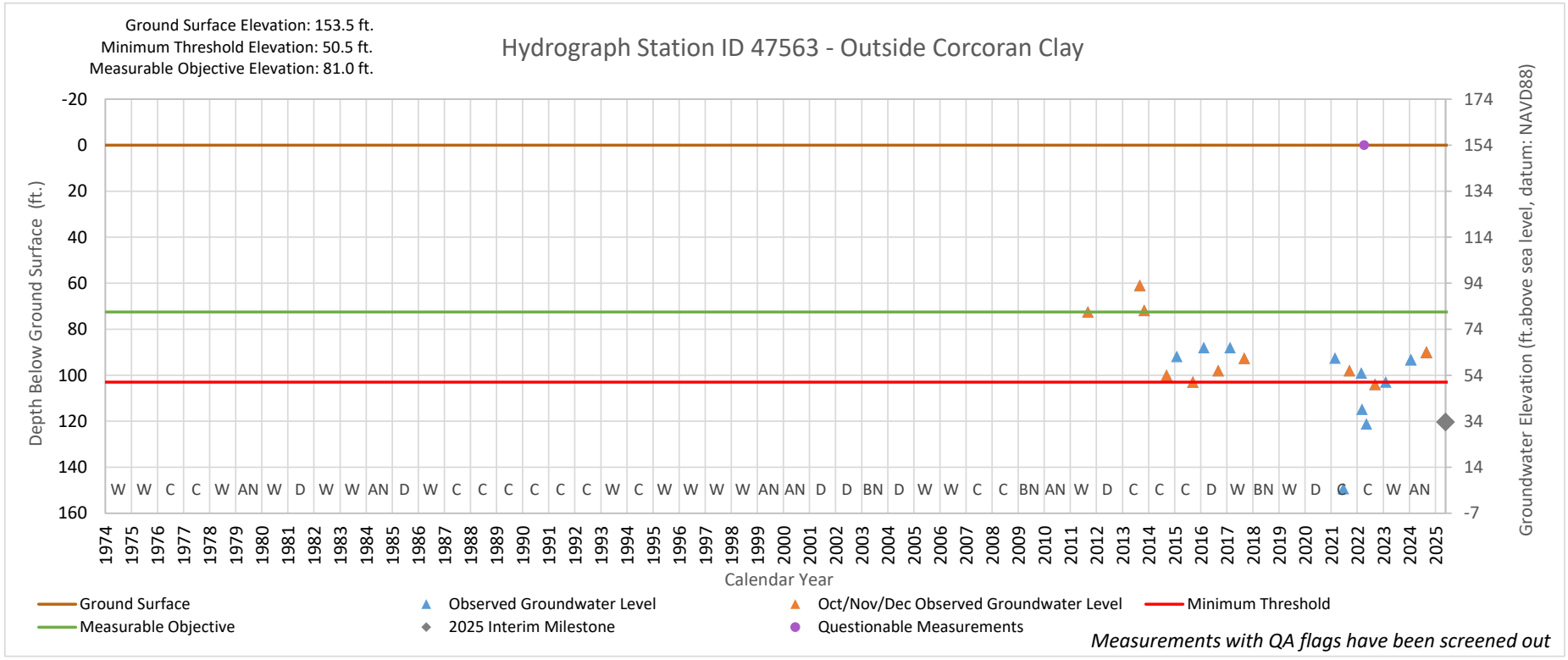

Ground Surface Elevation: 154.7 ft.
Minimum Threshold Elevation: 56.1 ft.
Measurable Objective Elevation: 66.4 ft.
Hydrograph Station ID 47541 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

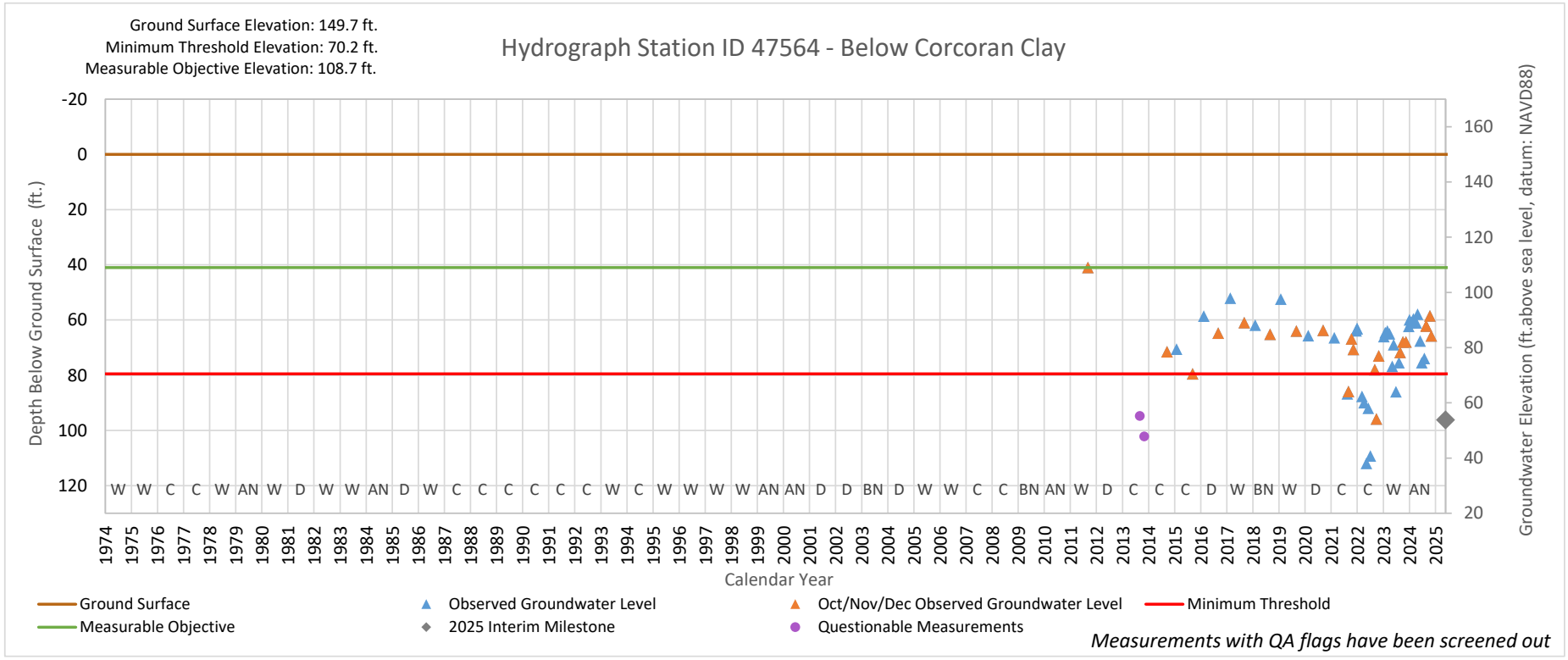

Ground Surface Elevation: 179.9 ft.
Minimum Threshold Elevation: 73.7 ft.
Measurable Objective Elevation: 112.6 ft.
Hydrograph Station ID 47542 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
200
180
160
140
120
100
80
60
40
20
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

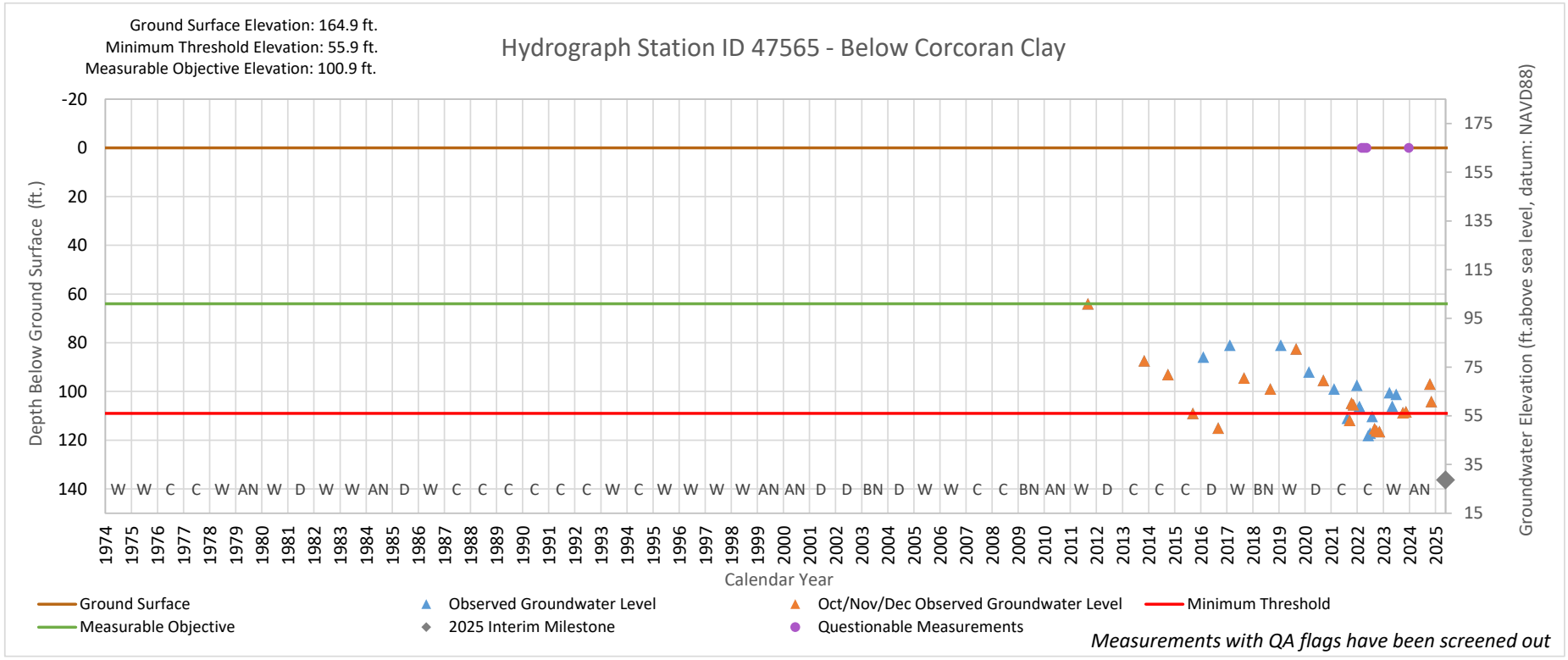

Ground Surface Elevation: 186.9 ft.
Minimum Threshold Elevation: 87.4 ft.
Measurable Objective Elevation: 118.1 ft.
Hydrograph Station ID 47553 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
197
177
157
137
117
97
77
57
37
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

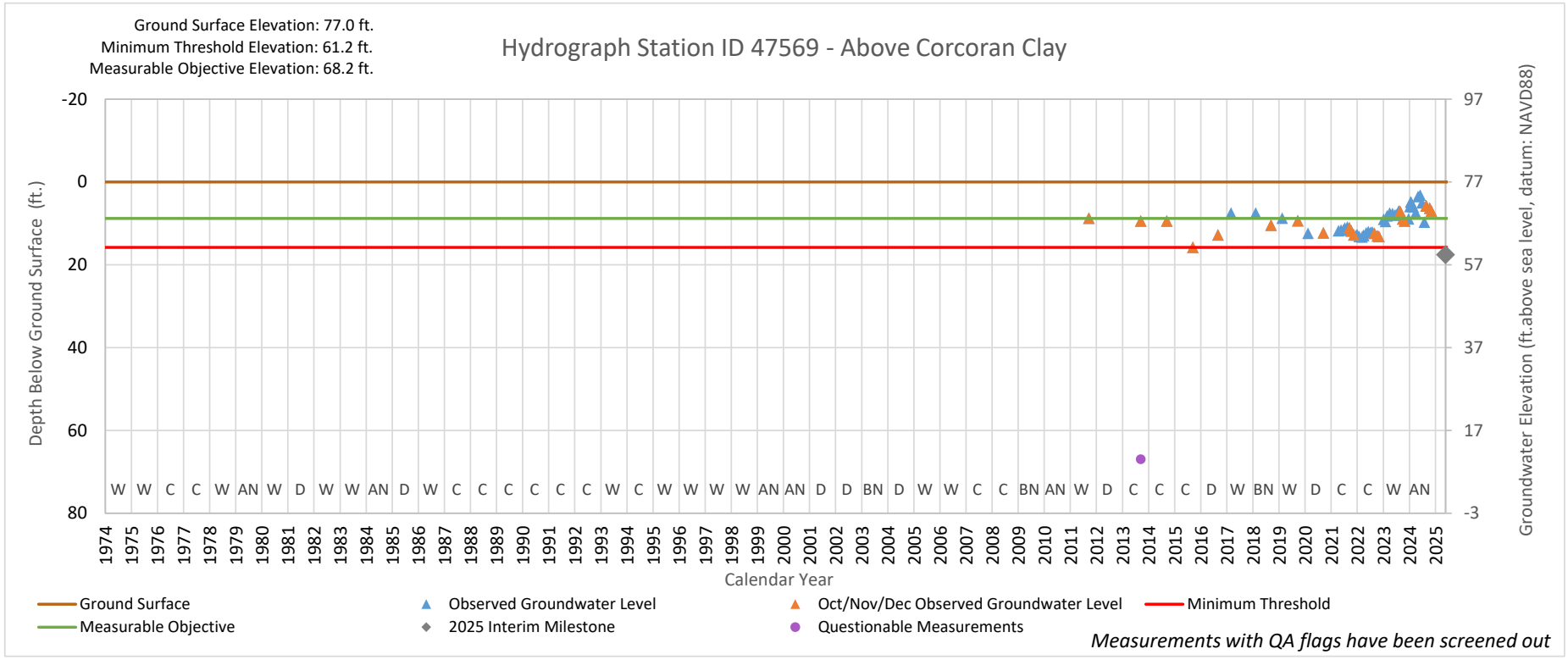

Ground Surface Elevation: 171.8 ft.
Minimum Threshold Elevation: 62.4 ft.
Measurable Objective Elevation: 102.1 ft.
Hydrograph Station ID 47557 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

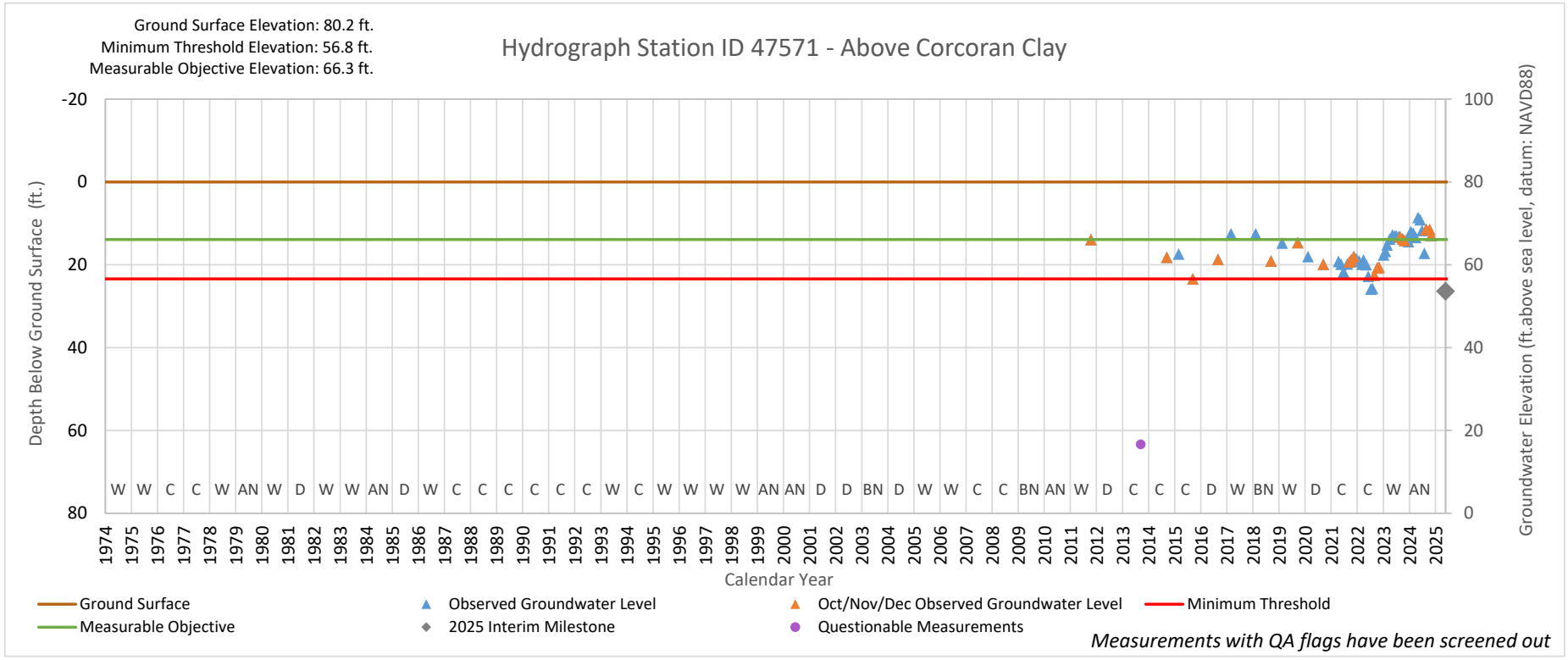

Ground Surface Elevation: 127.8 ft.
Minimum Threshold Elevation: 58.8 ft.
Measurable Objective Elevation: 75.3 ft.
Hydrograph Station ID 47562 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
148
128
108
88
68
48
28
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

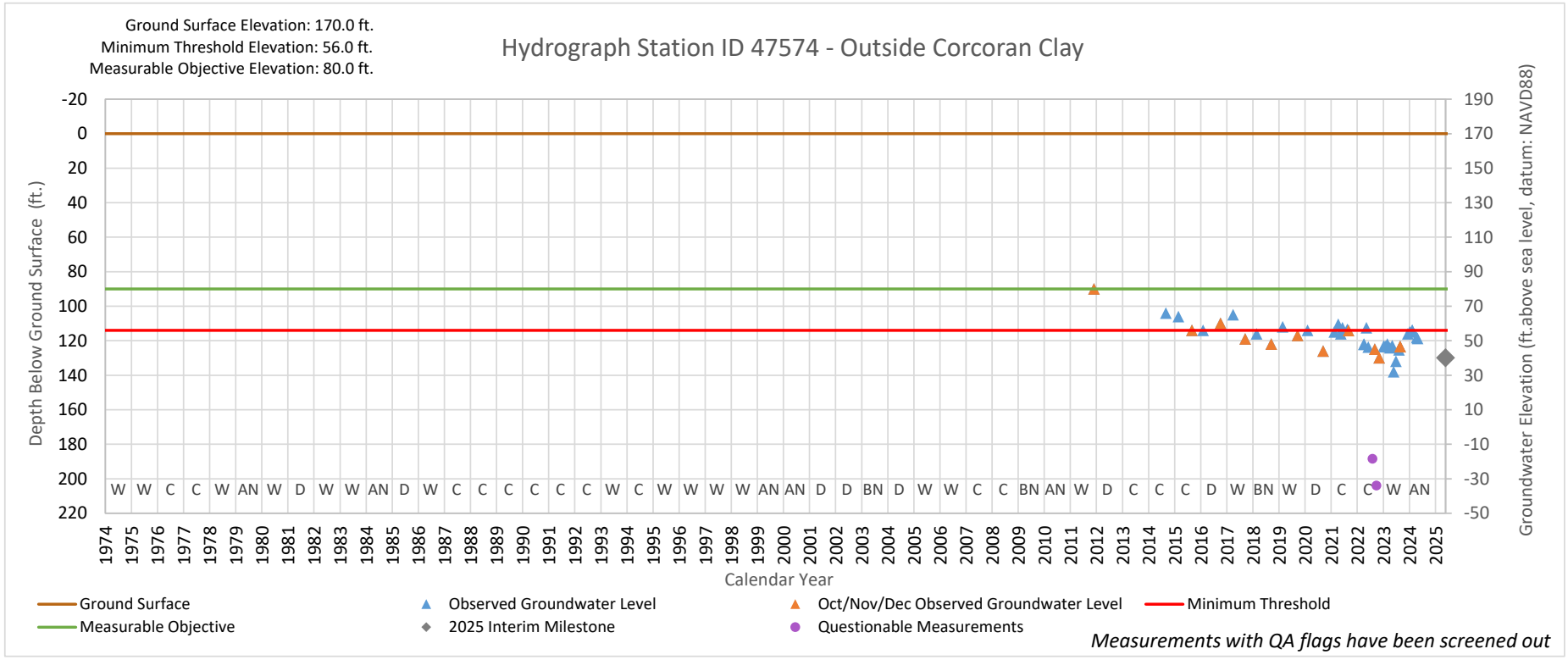

Ground Surface Elevation: 153.5 ft.
Minimum Threshold Elevation: 50.5 ft.
Measurable Objective Elevation: 81.0 ft.
Hydrograph Station ID 47563 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

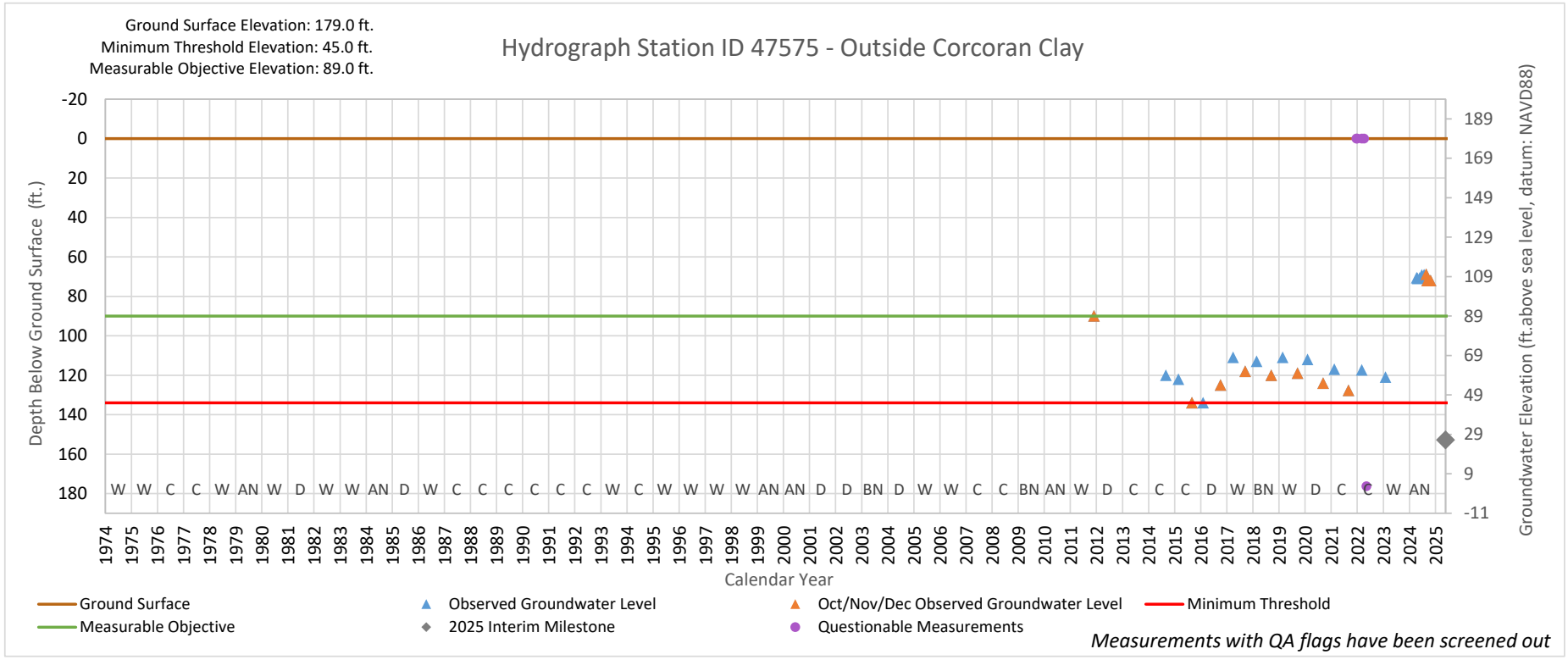

Ground Surface Elevation: 149.7 ft.
Minimum Threshold Elevation: 70.2 ft.
Measurable Objective Elevation: 108.7 ft.
Hydrograph Station ID 47564 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

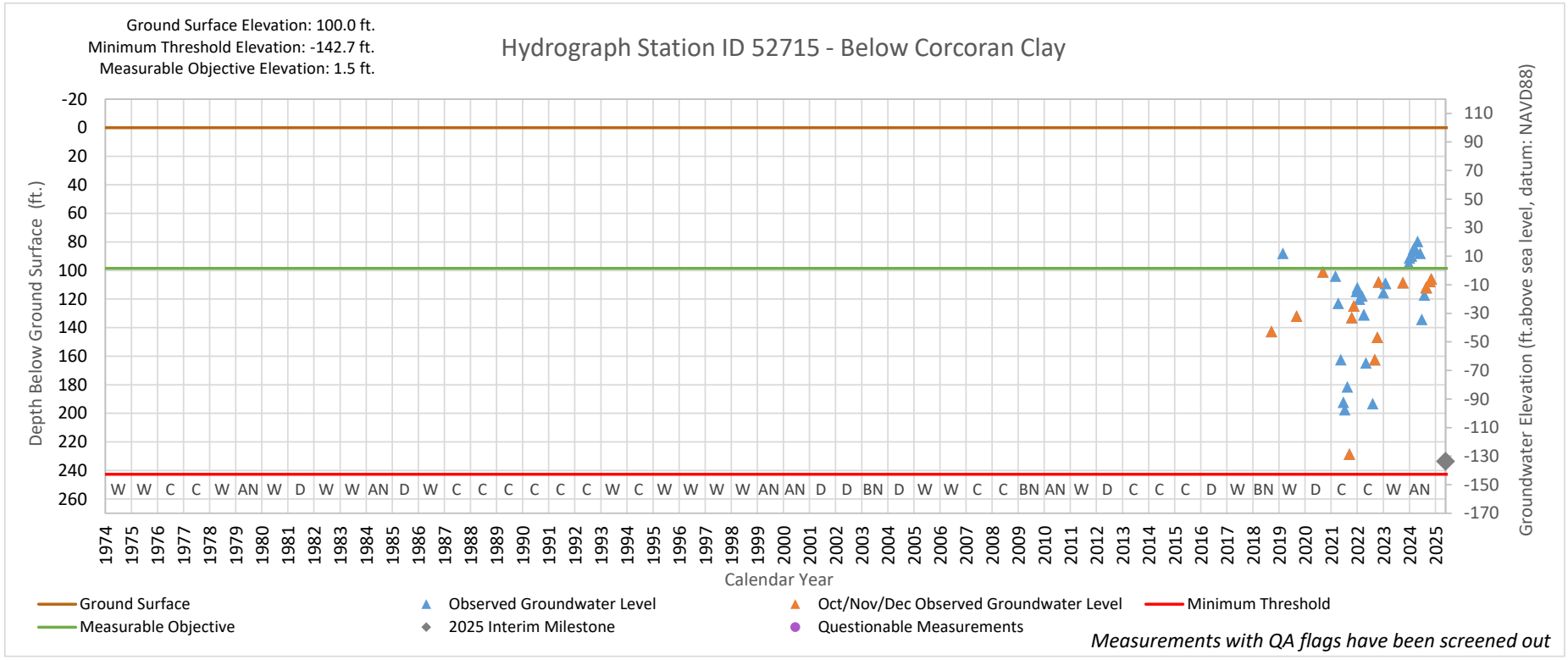

Ground Surface Elevation: 164.9 ft.
Minimum Threshold Elevation: 55.9 ft.
Measurable Objective Elevation: 100.9 ft.
Hydrograph Station ID 47565 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

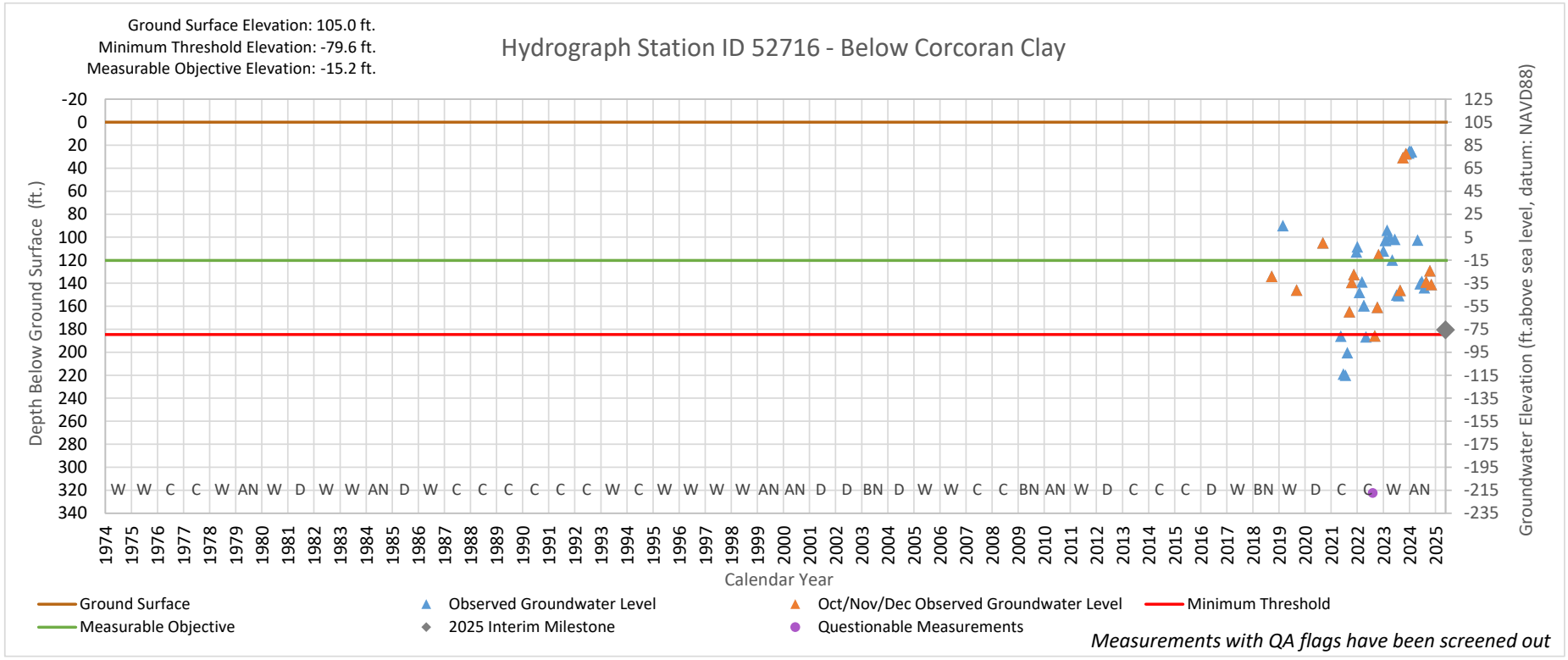

Ground Surface Elevation: 77.0 ft.
Minimum Threshold Elevation: 61.2 ft.
Measurable Objective Elevation: 68.2 ft.
Hydrograph Station ID 47569 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
97
77
57
37
17
-3
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

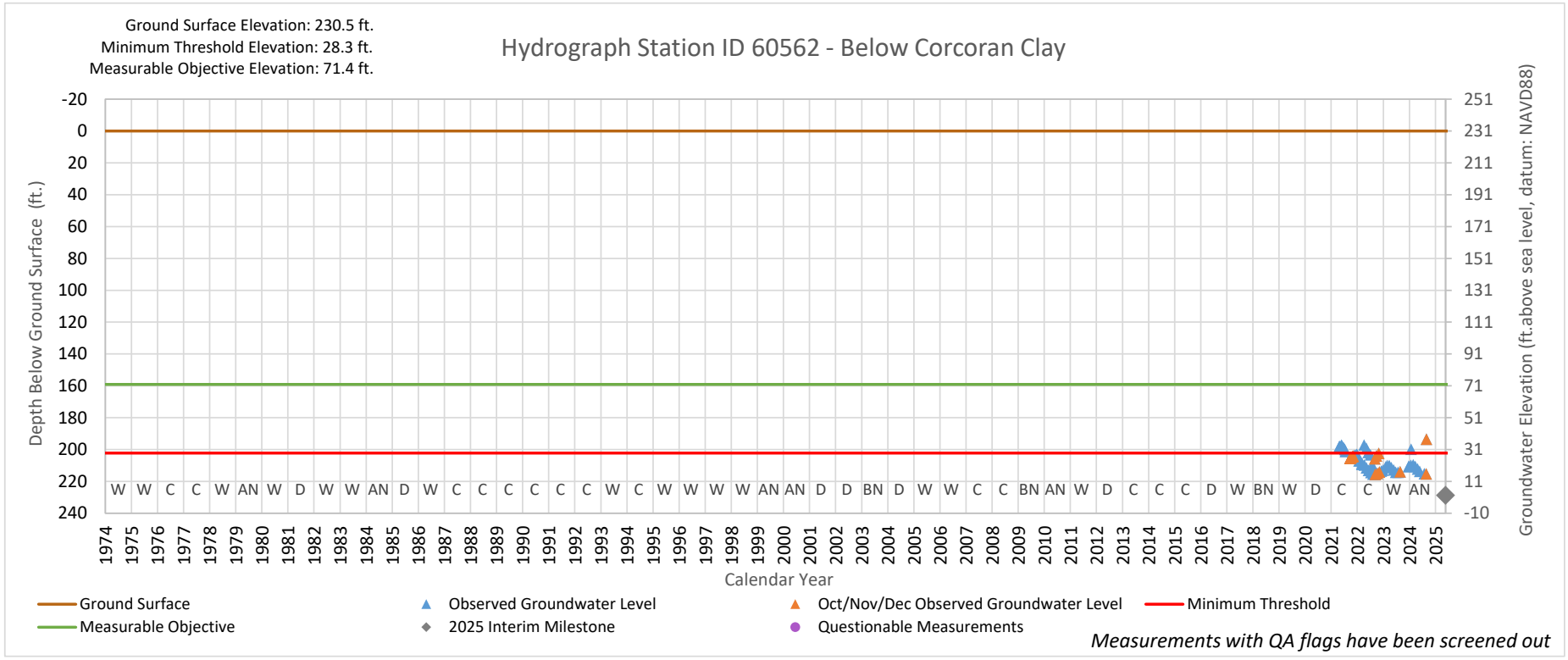

Ground Surface Elevation: 80.2 ft.
Minimum Threshold Elevation: 56.8 ft.
Measurable Objective Elevation: 66.3 ft.
Hydrograph Station ID 47571 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
80
60
40
20
0
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

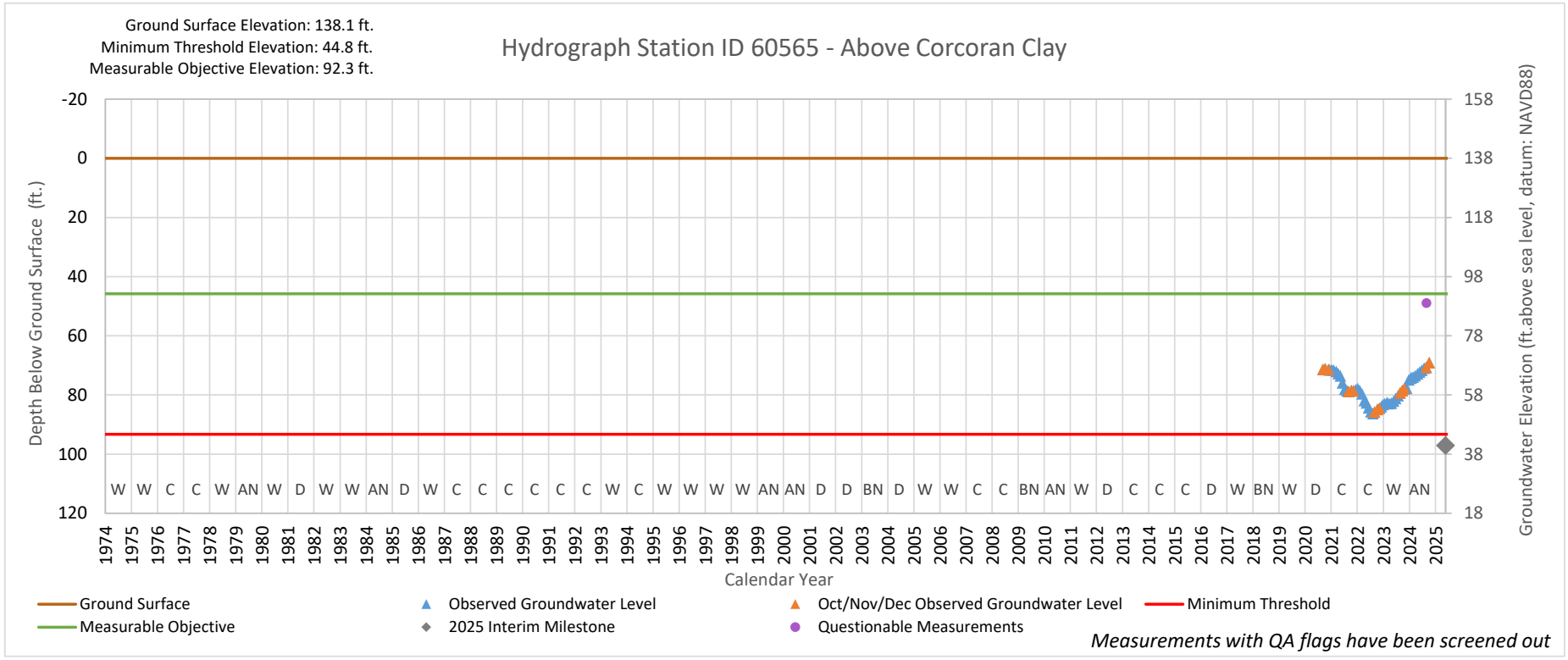

Ground Surface Elevation: 170.0 ft.
Minimum Threshold Elevation: 56.0 ft.
Measurable Objective Elevation: 80.0 ft.
Hydrograph Station ID 47574 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
190
170
150
130
110
90
70
50
30
10
-10
-30
-50
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

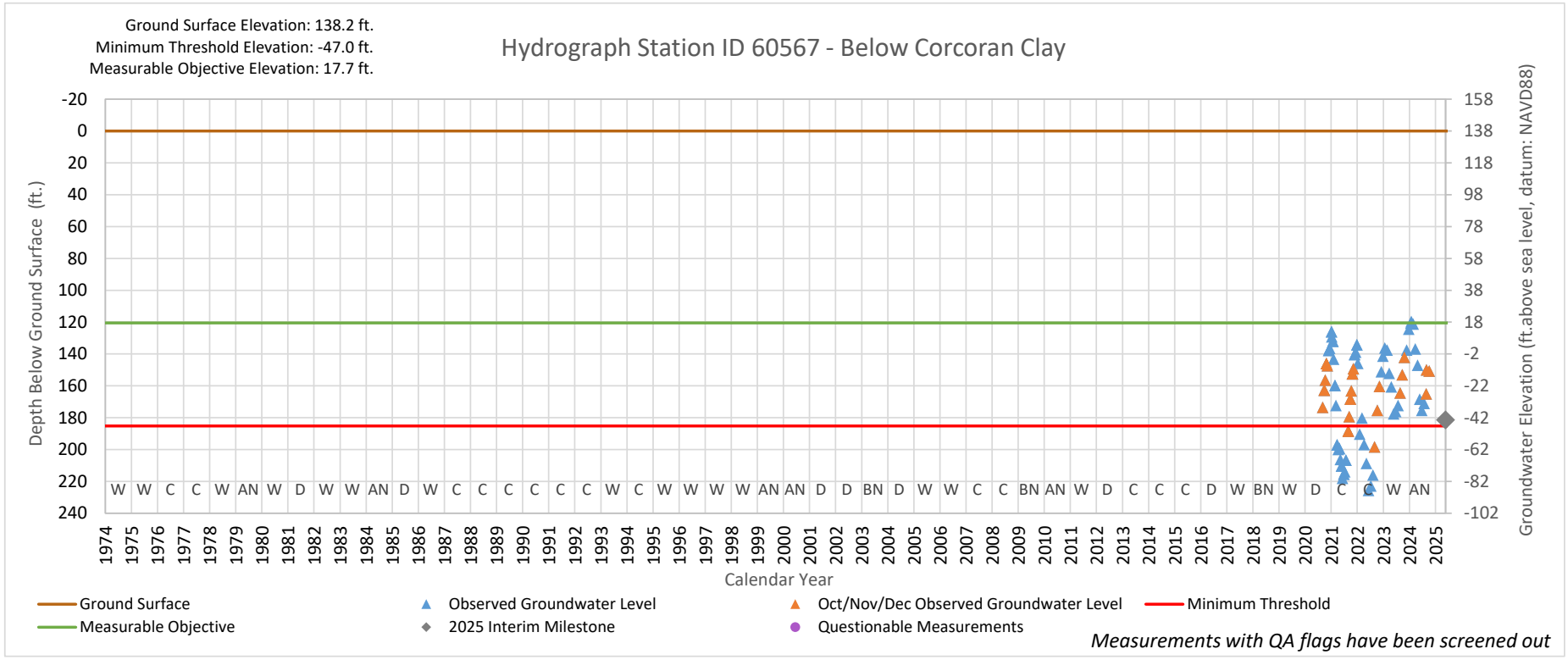

Ground Surface Elevation: 179.0 ft.
Minimum Threshold Elevation: 45.0 ft.
Measurable Objective Elevation: 89.0 ft.
Hydrograph Station ID 47575 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
180
Groundwater Elevation (ft.above sea level, datum: NAVD88)
189
169
149
129
109
89
69
49
29
9
-11
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Minimum Threshold
Measurable Objective
2025 Interim Milestone
Questionable Measurements
Measurements with QA flags have been screened out

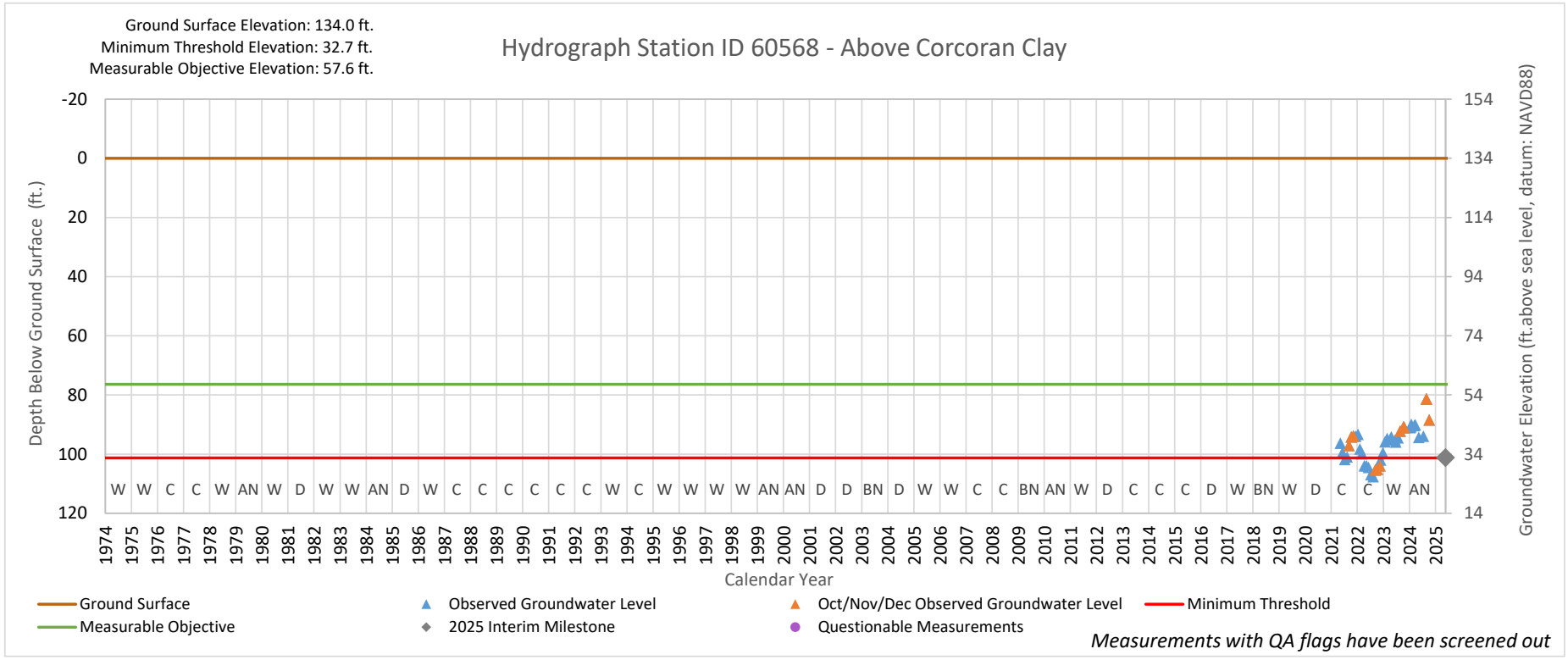

Ground Surface Elevation: 100.0 ft.
Minimum Threshold Elevation: -142.7 ft.
Measurable Objective Elevation: 1.5 ft.
Hydrograph Station ID 52715 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

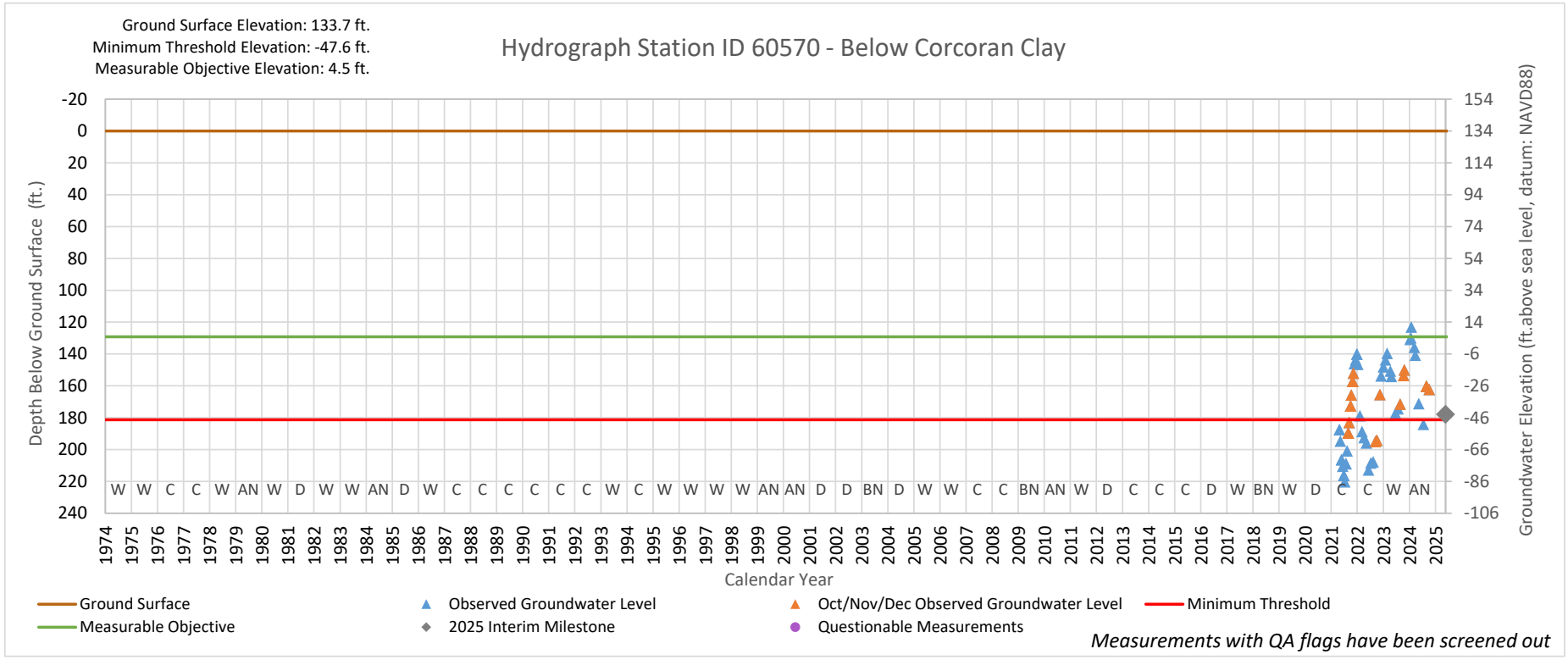

Ground Surface Elevation: 105.0 ft.
Minimum Threshold Elevation: -79.6 ft.
Measurable Objective Elevation: -15.2 ft.
Hydrograph Station ID 52716 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

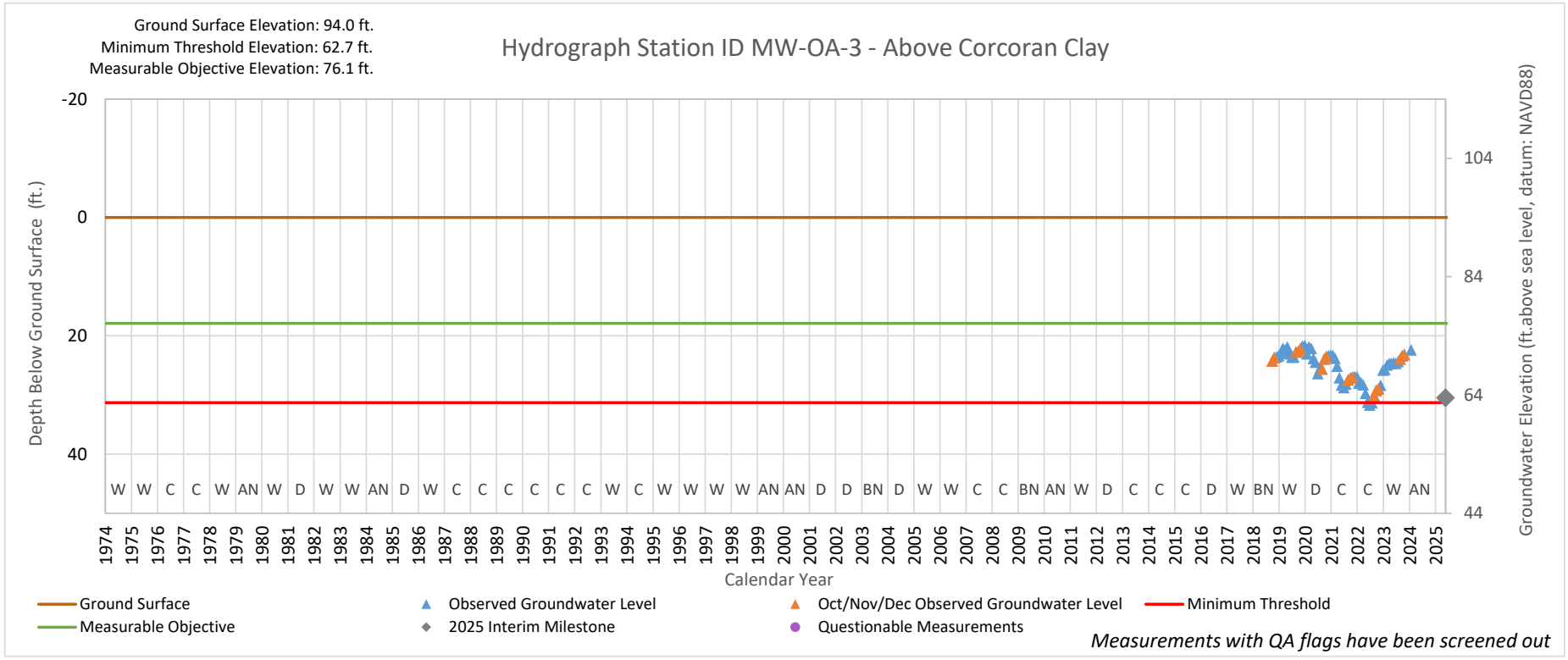

Ground Surface Elevation: 230.5 ft.
Minimum Threshold Elevation: 28.3 ft.
Measurable Objective Elevation: 71.4 ft.
Hydrograph Station ID 60562 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
251
231
211
191
171
151
131
111
91
71
51
31
11
-10
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Minimum Threshold
Measurable Objective
2025 Interim Milestone
Questionable Measurements
Measurements with QA flags have been screened out

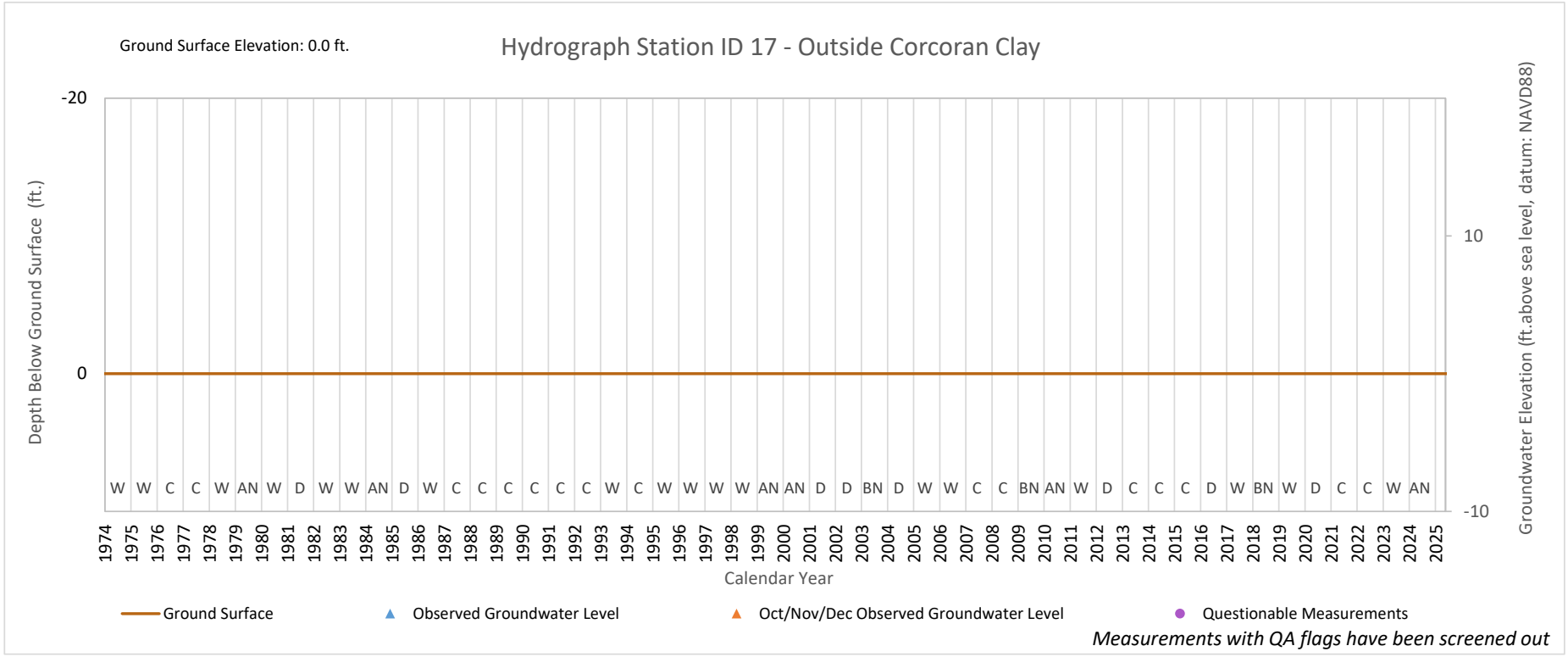

Ground Surface Elevation: 138.1 ft.
Minimum Threshold Elevation: 44.8 ft.
Measurable Objective Elevation: 92.3 ft.
Hydrograph Station ID 60565 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
158
138
118
98
78
58
38
18
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Minimum Threshold
Measurable Objective
2025 Interim Milestone
Questionable Measurements
Measurements with QA flags have been screened out

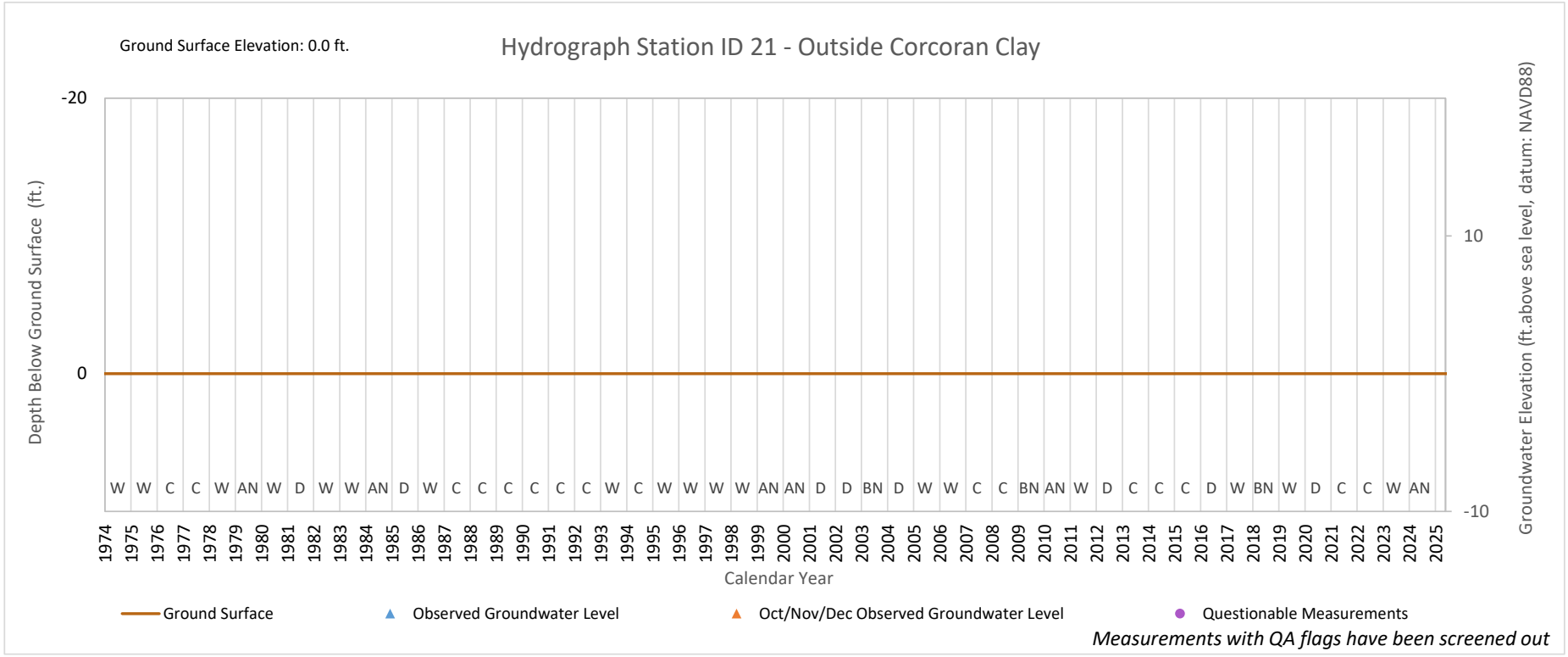

Ground Surface Elevation: 138.2 ft.
Minimum Threshold Elevation: -47.0 ft.
Measurable Objective Elevation: 17.7 ft.
Hydrograph Station ID 60567 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20 0 20 40 60 80 100 120 140 160 180 200 220 240
158 138 118 98 78 58 38 18 -2 -22 -42 -62 -82 -102
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

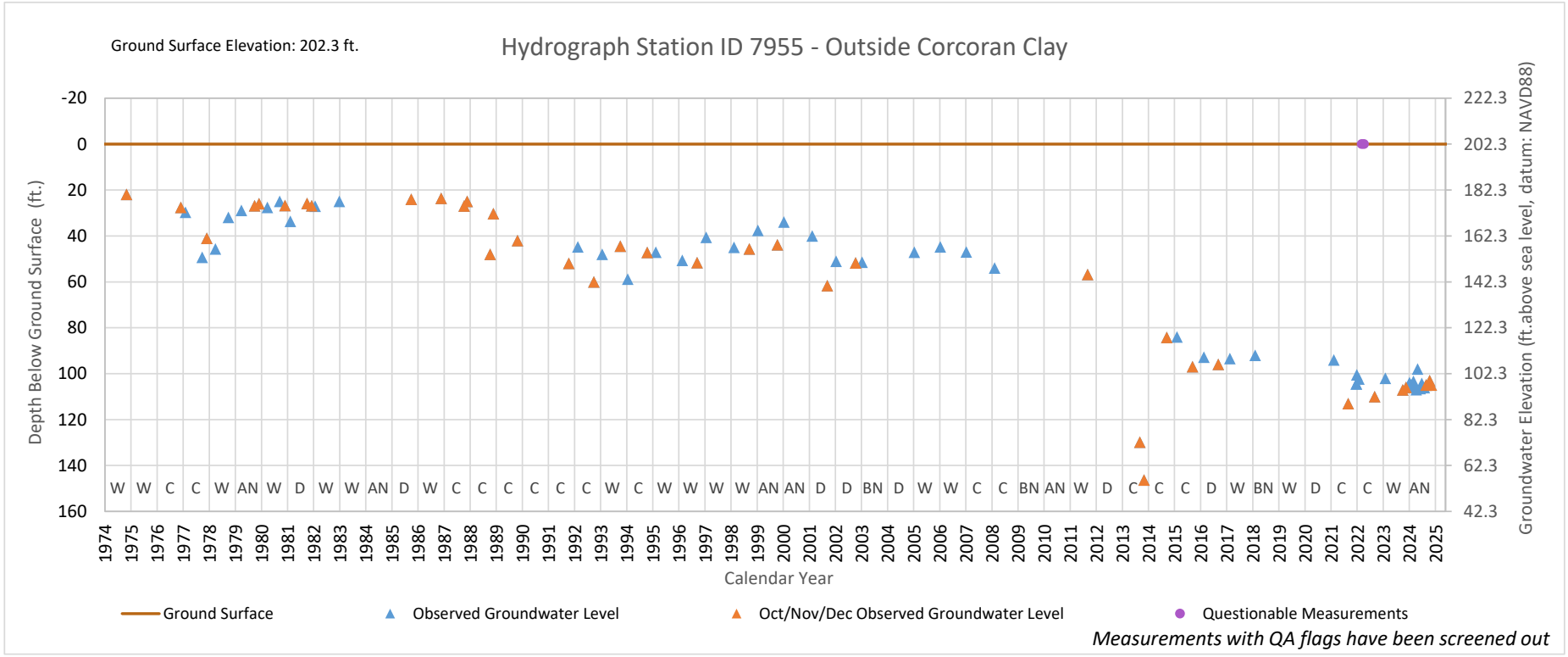

Ground Surface Elevation: 134.0 ft.
Minimum Threshold Elevation: 32.7 ft.
Measurable Objective Elevation: 57.6 ft.
Hydrograph Station ID 60568 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
154
134
114
94
74
54
34
14
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out


Ground Surface Elevation: 133.7 ft.
Minimum Threshold Elevation: -47.6 ft.
Measurable Objective Elevation: 4.5 ft.
Hydrograph Station ID 60570 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

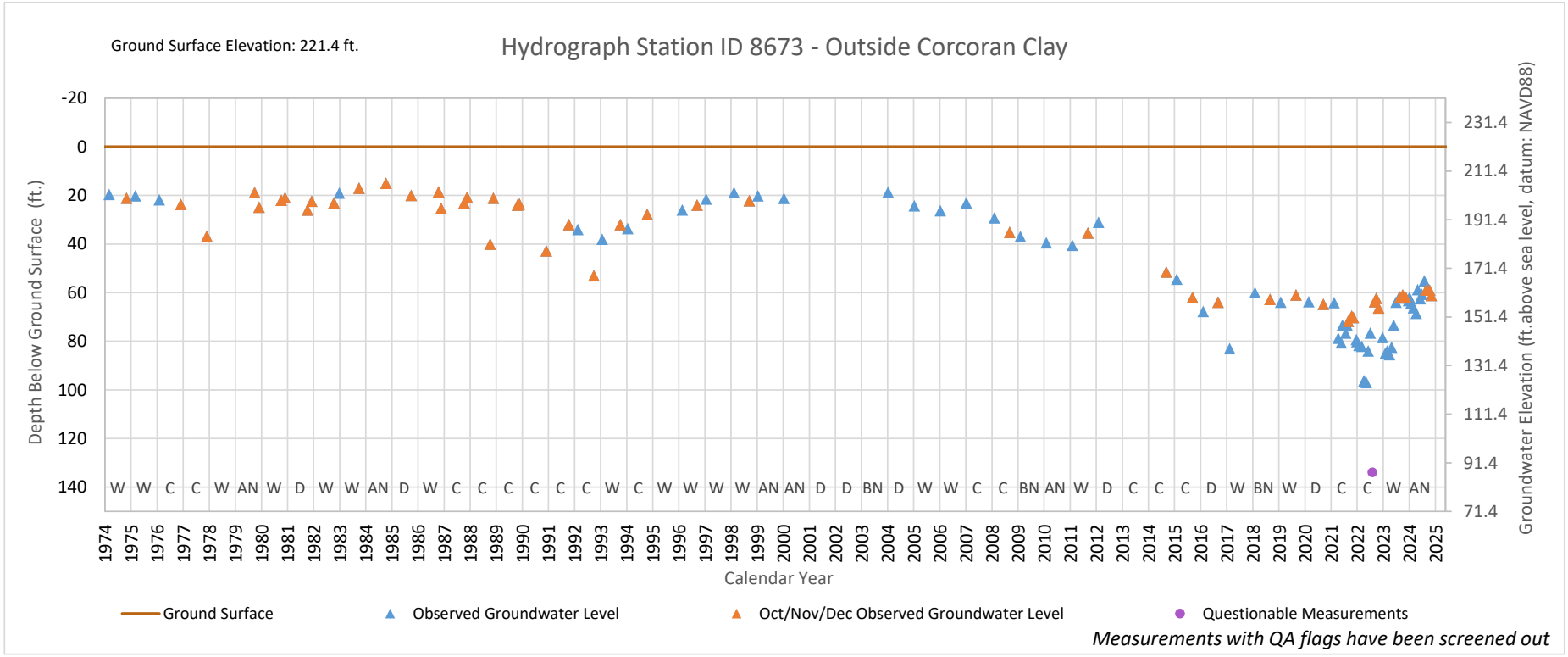

Ground Surface Elevation: 94.0 ft.
Minimum Threshold Elevation: 62.7 ft.
Measurable Objective Elevation: 76.1 ft.
Hydrograph Station ID MW-OA-3 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
Groundwater Elevation (ft.above sea level, datum: NAVD88)
104
84
64
44
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out


Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID 17 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
Groundwater Elevation (ft.above sea level, datum: NAVD88)
10
-10
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

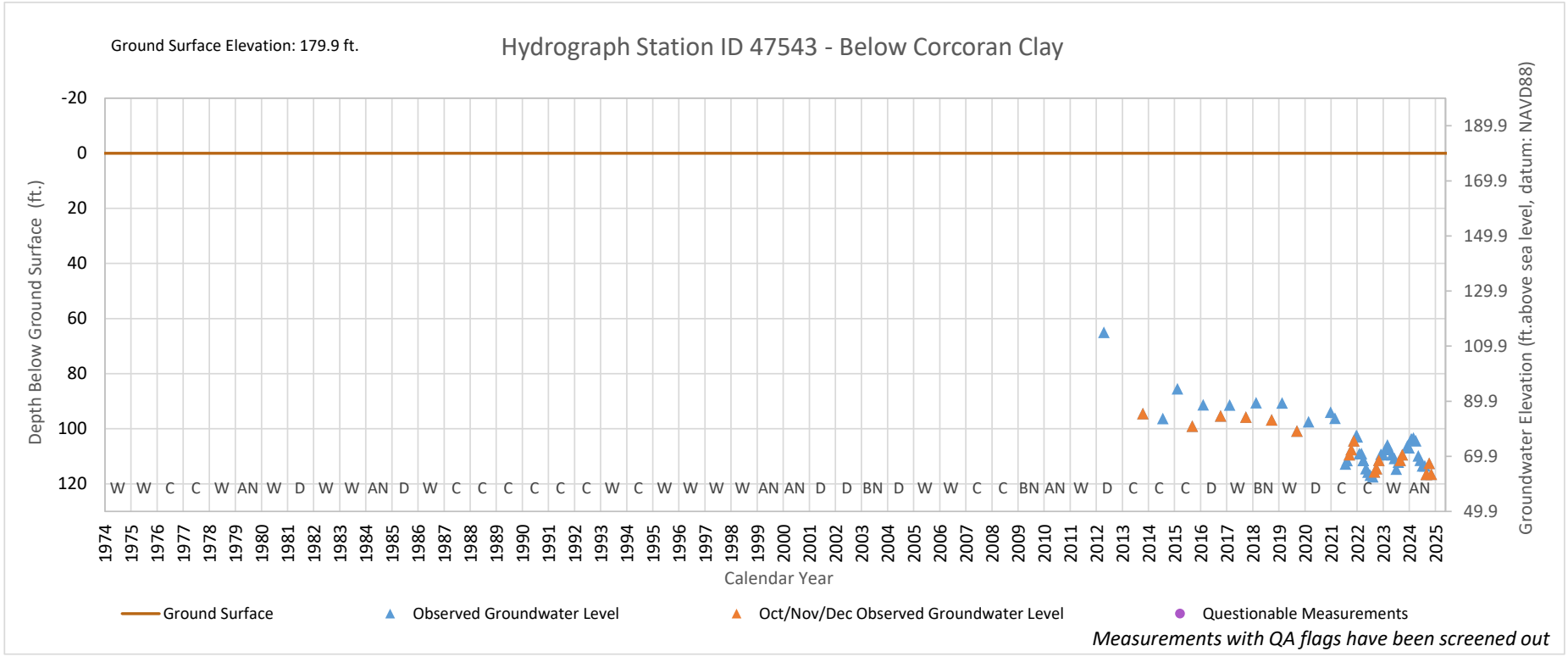

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID 21 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
Groundwater Elevation (ft.above sea level, datum: NAVD88)
10
-10
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

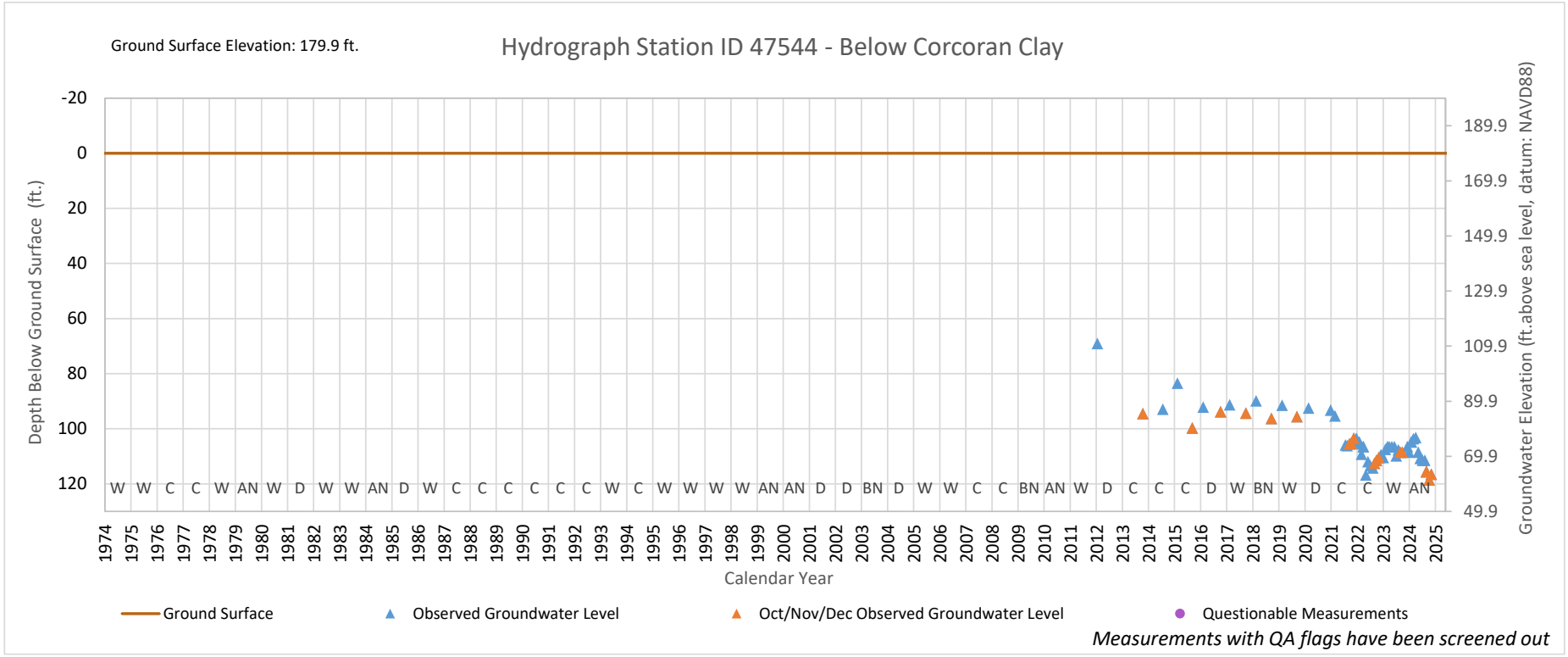


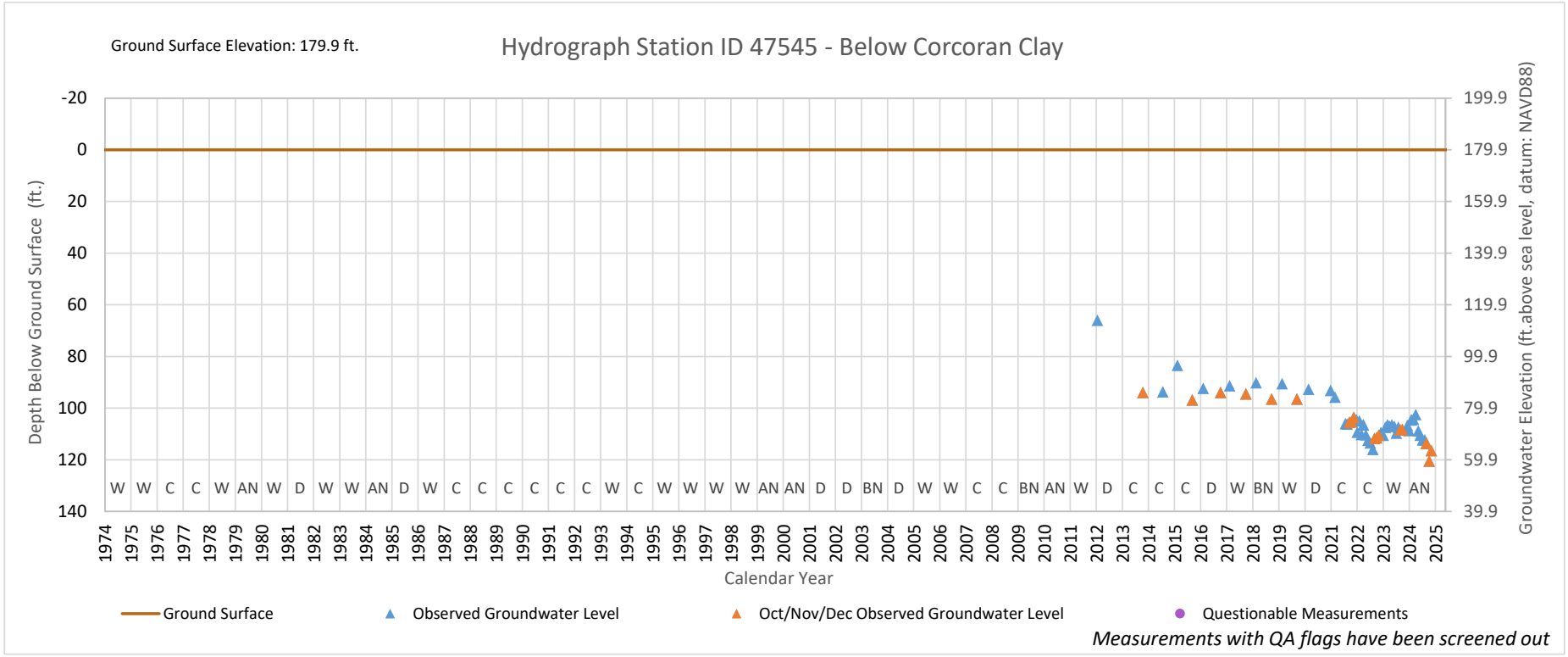
Measurements with QA flags have been screened out

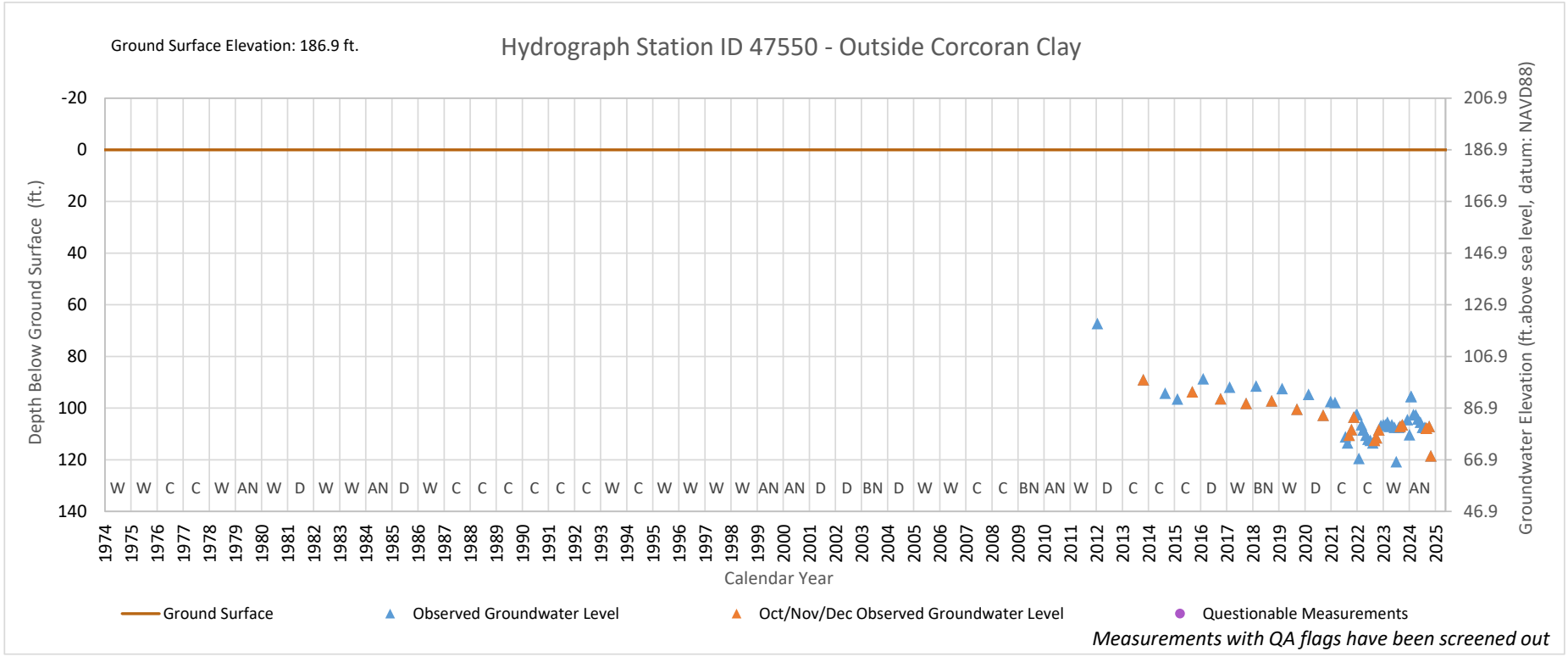


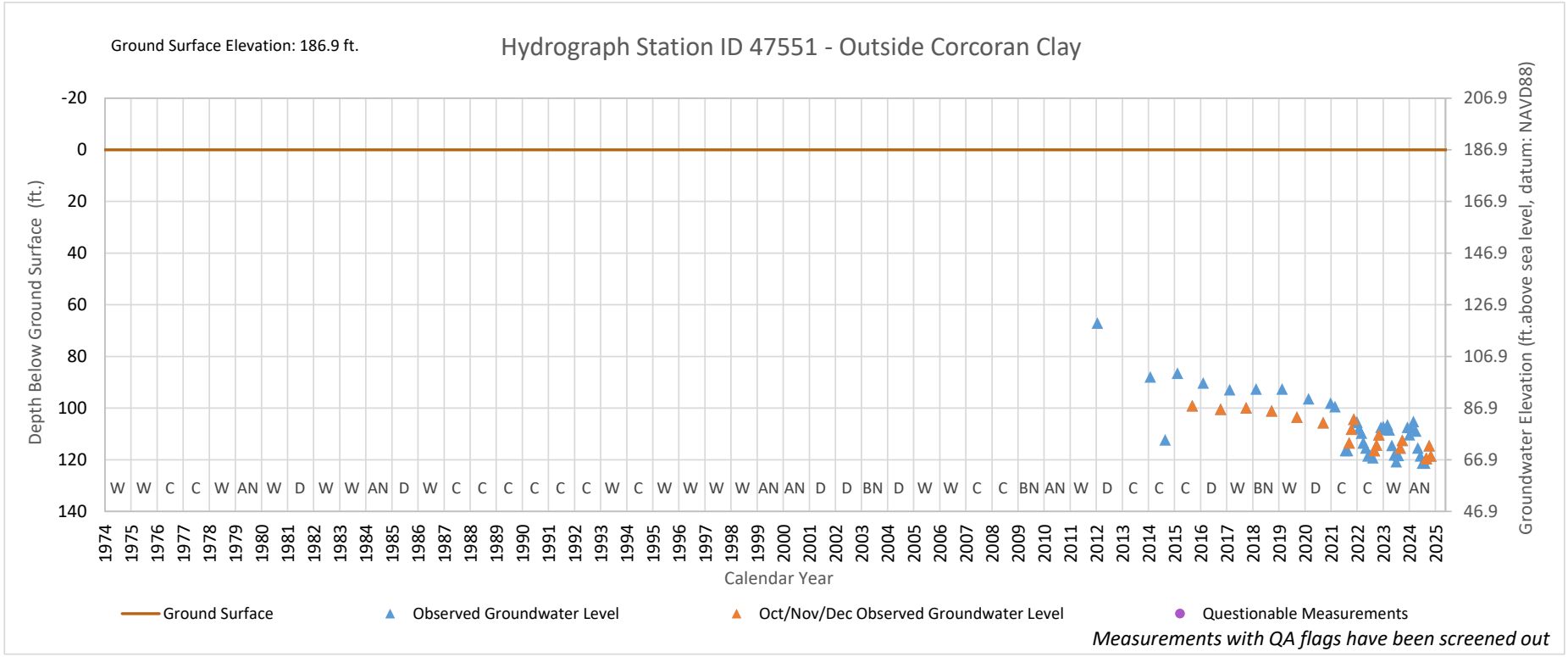
Measurements with QA flags have been screened out

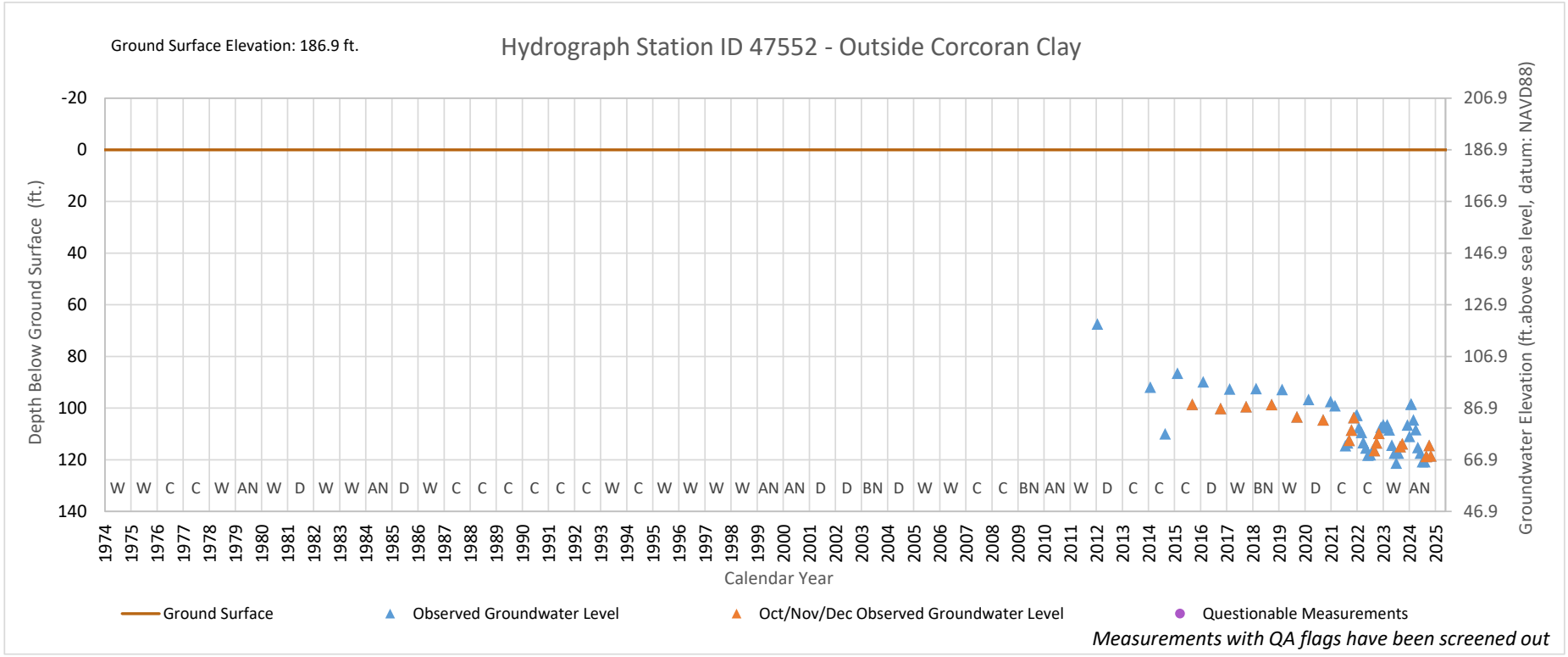

Ground Surface Elevation: 179.9 ft.
Hydrograph Station ID 47543 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
189.9
169.9
149.9
129.9
109.9
89.9
69.9
49.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

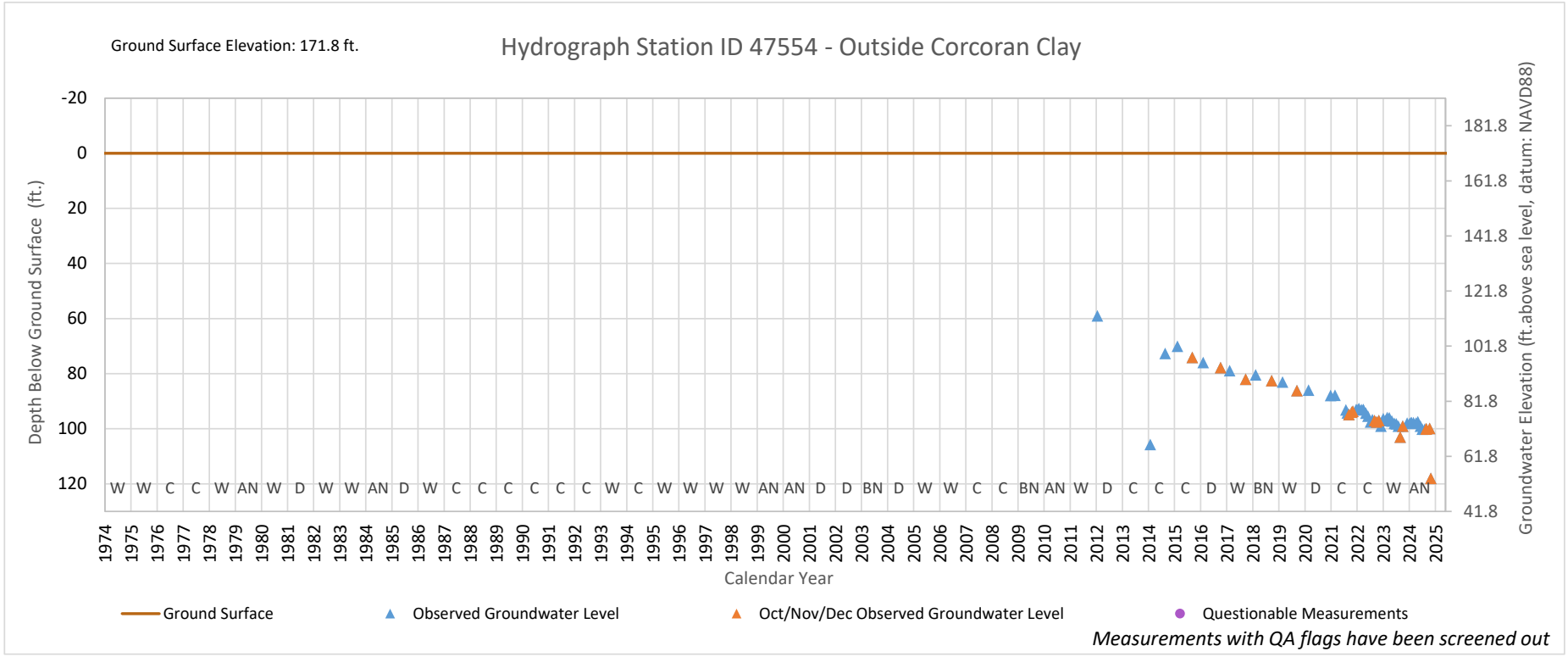

Ground Surface Elevation: 179.9 ft.
Hydrograph Station ID 47544 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
189.9
169.9
149.9
129.9
109.9
89.9
69.9
49.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

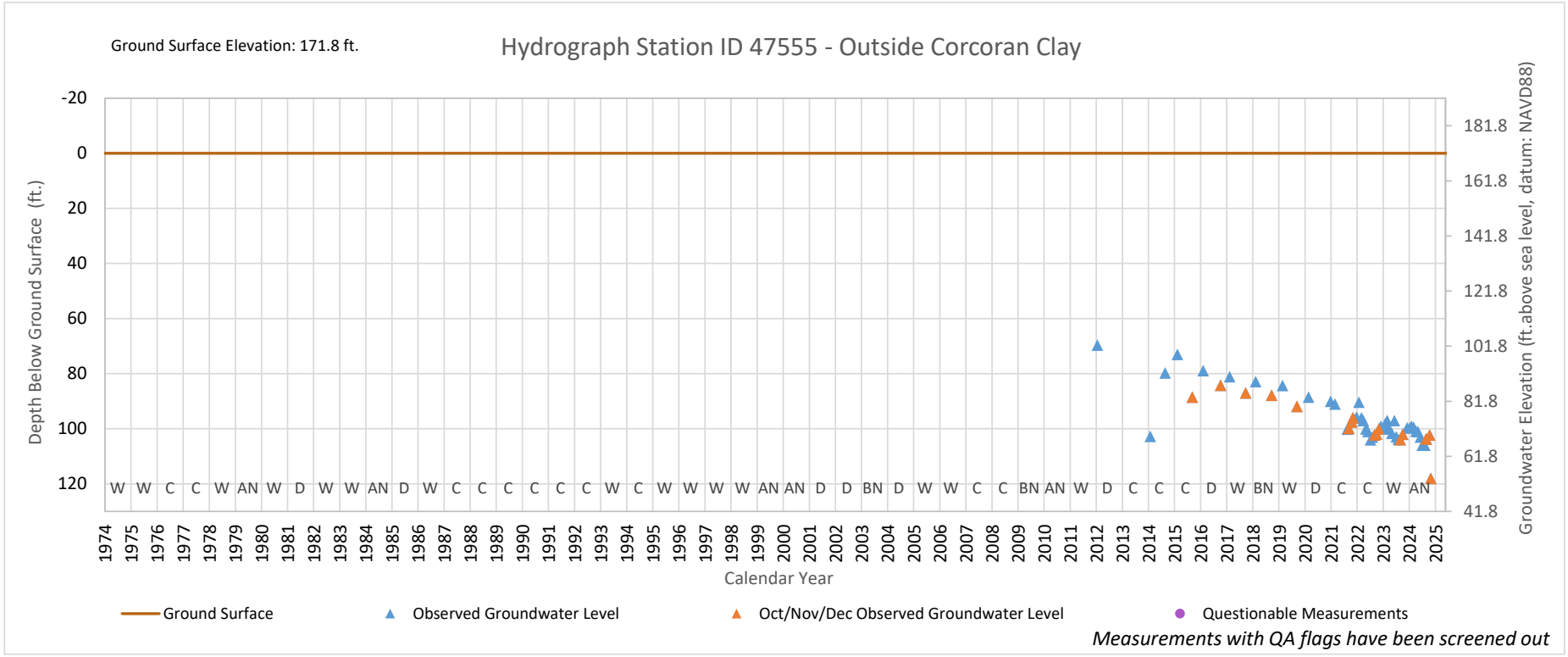

Ground Surface Elevation: 179.9 ft.
Hydrograph Station ID 47545 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
199.9
179.9
159.9
139.9
119.9
99.9
79.9
59.9
39.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

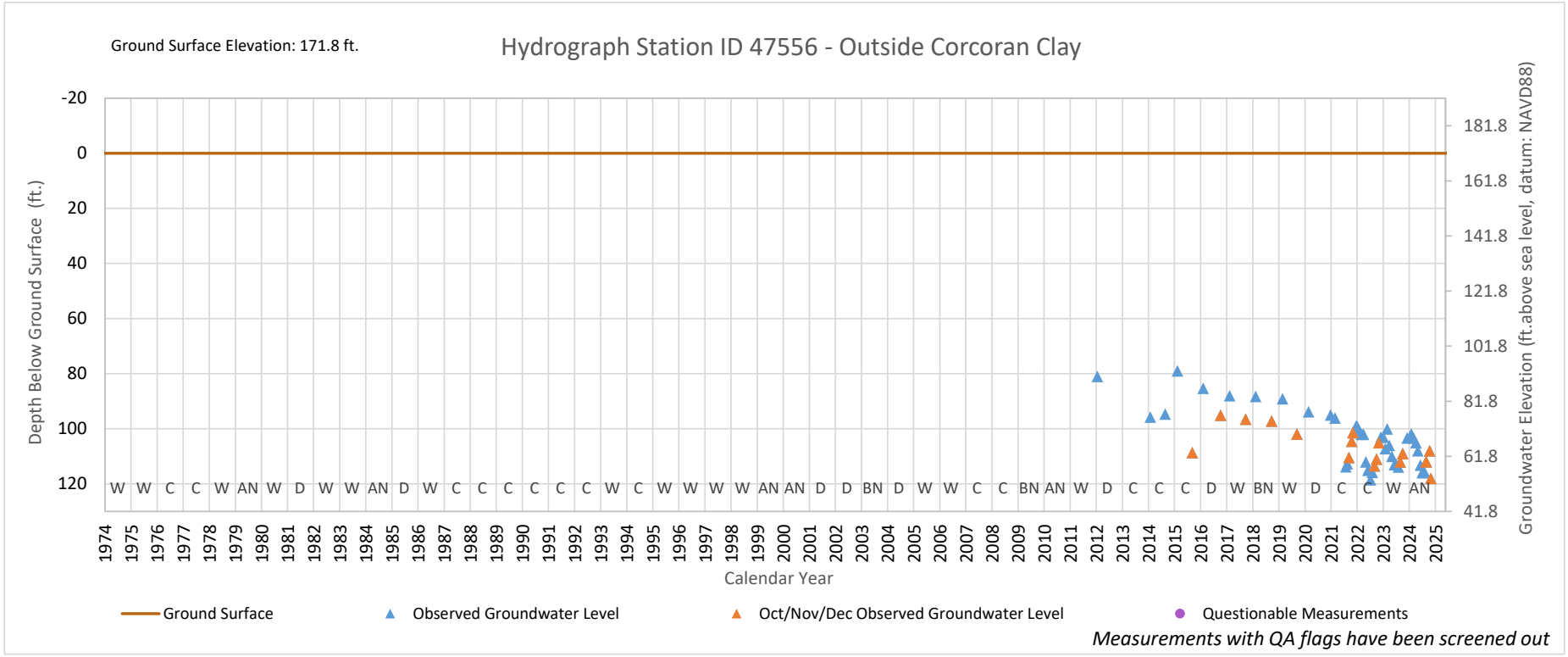

Ground Surface Elevation: 186.9 ft.
Hydrograph Station ID 47550 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
206.9
186.9
166.9
146.9
126.9
106.9
86.9
66.9
46.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

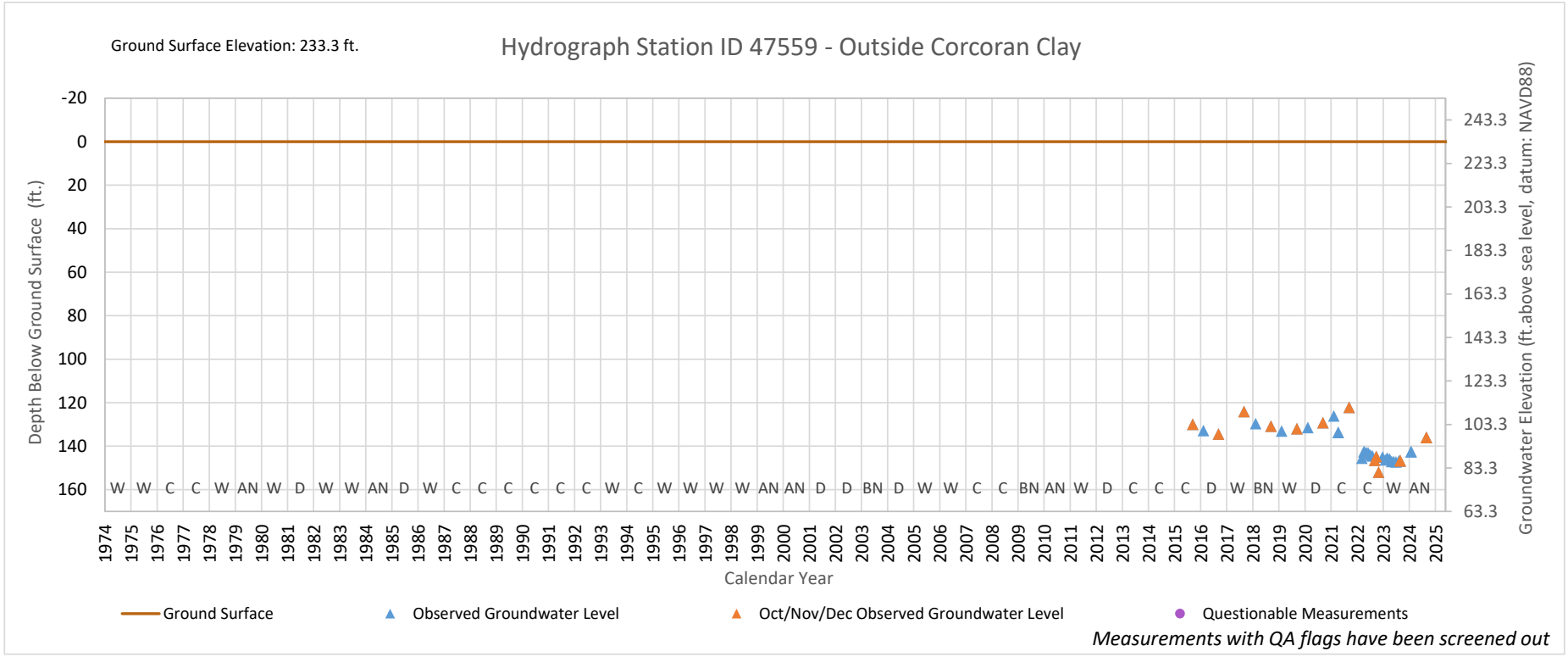

Ground Surface Elevation: 186.9 ft.
Hydrograph Station ID 47551 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
206.9
186.9
166.9
146.9
126.9
106.9
86.9
66.9
46.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

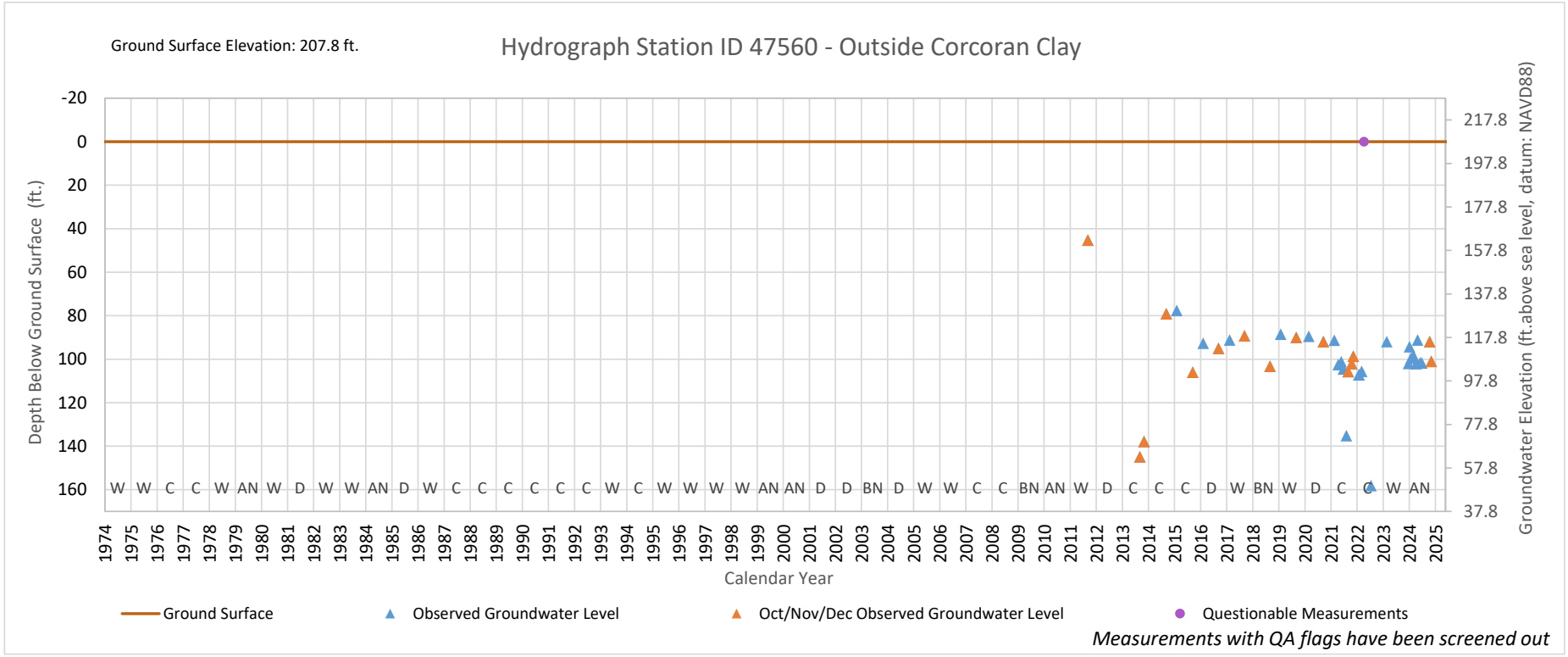

Ground Surface Elevation: 186.9 ft.
Hydrograph Station ID 47552 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
206.9
186.9
166.9
146.9
126.9
106.9
86.9
66.9
46.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out


Ground Surface Elevation: 171.8 ft.
Hydrograph Station ID 47554 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
181.8
161.8
141.8
121.8
101.8
81.8
61.8
41.8
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

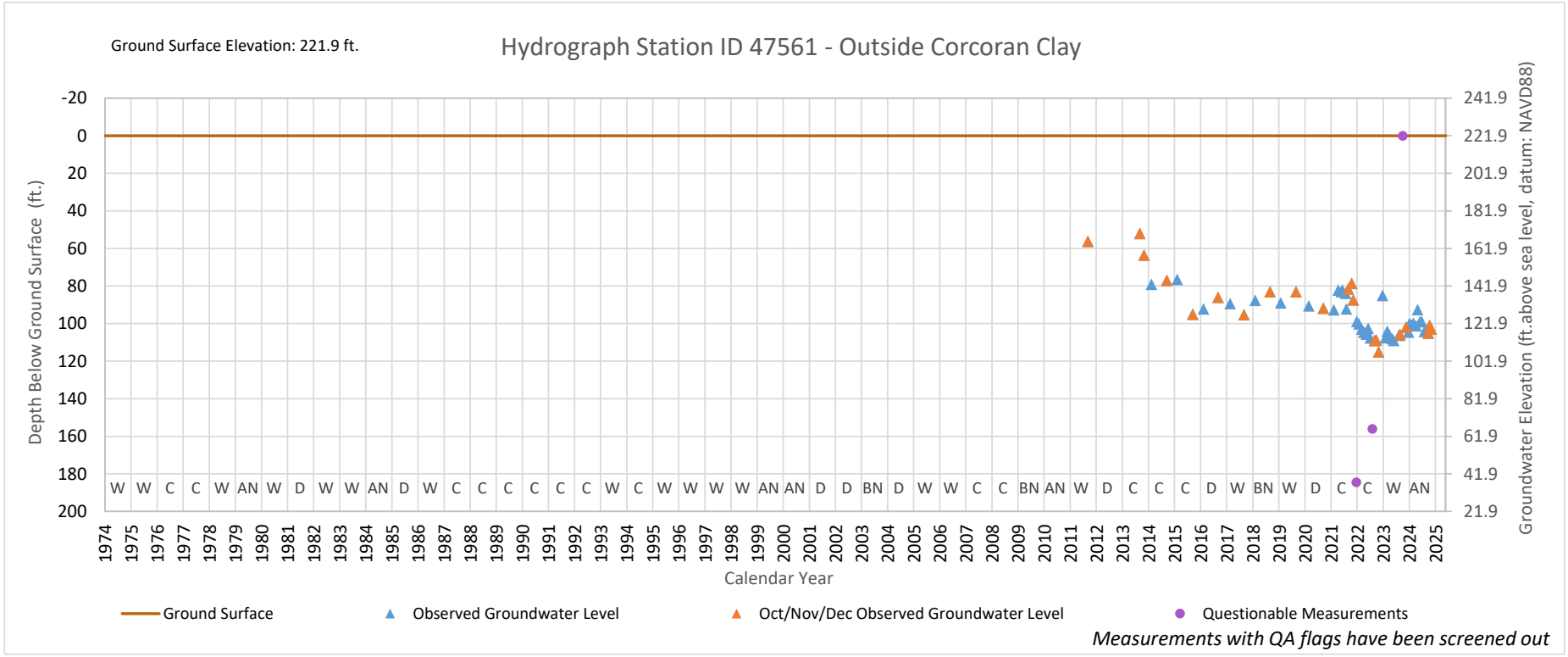

Ground Surface Elevation: 171.8 ft.
Hydrograph Station ID 47555 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
181.8
161.8
141.8
121.8
101.8
81.8
61.8
41.8
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

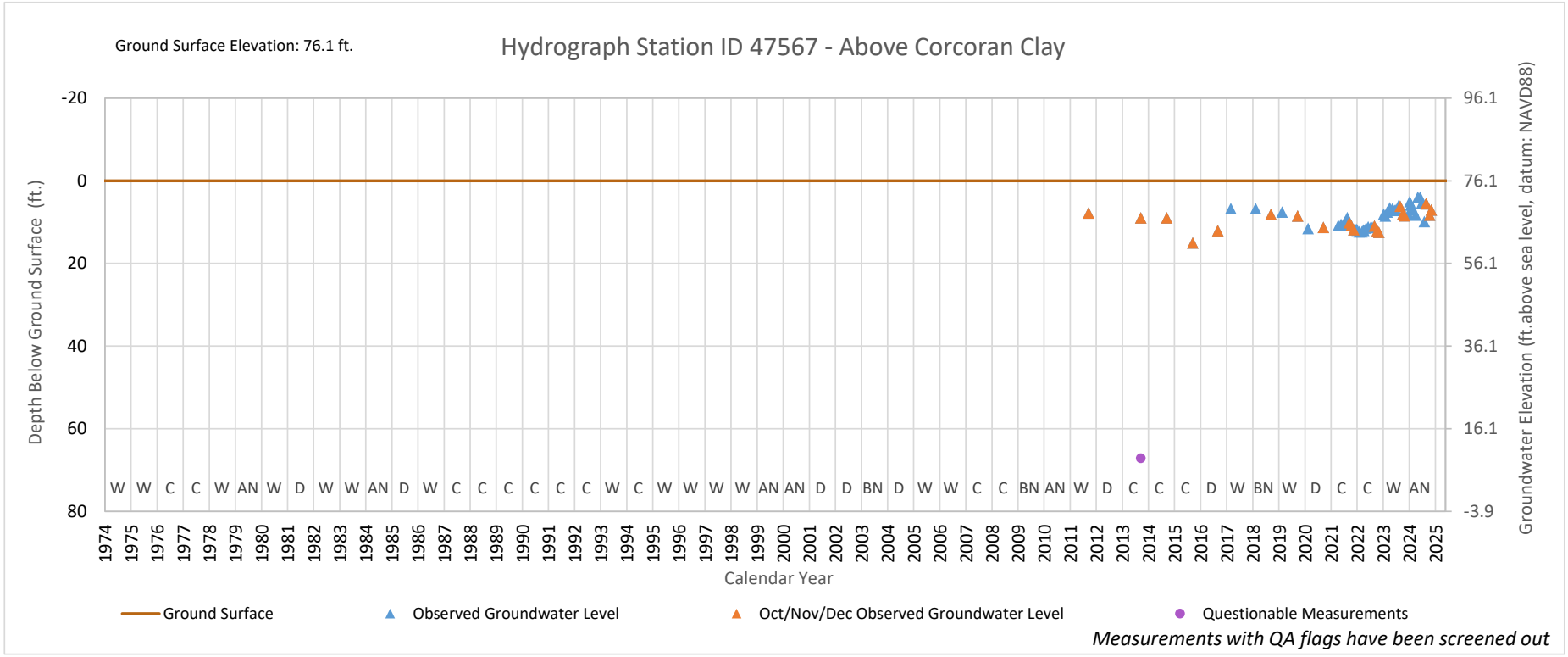

Ground Surface Elevation: 171.8 ft.
Hydrograph Station ID 47556 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
181.8
161.8
141.8
121.8
101.8
81.8
61.8
41.8
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

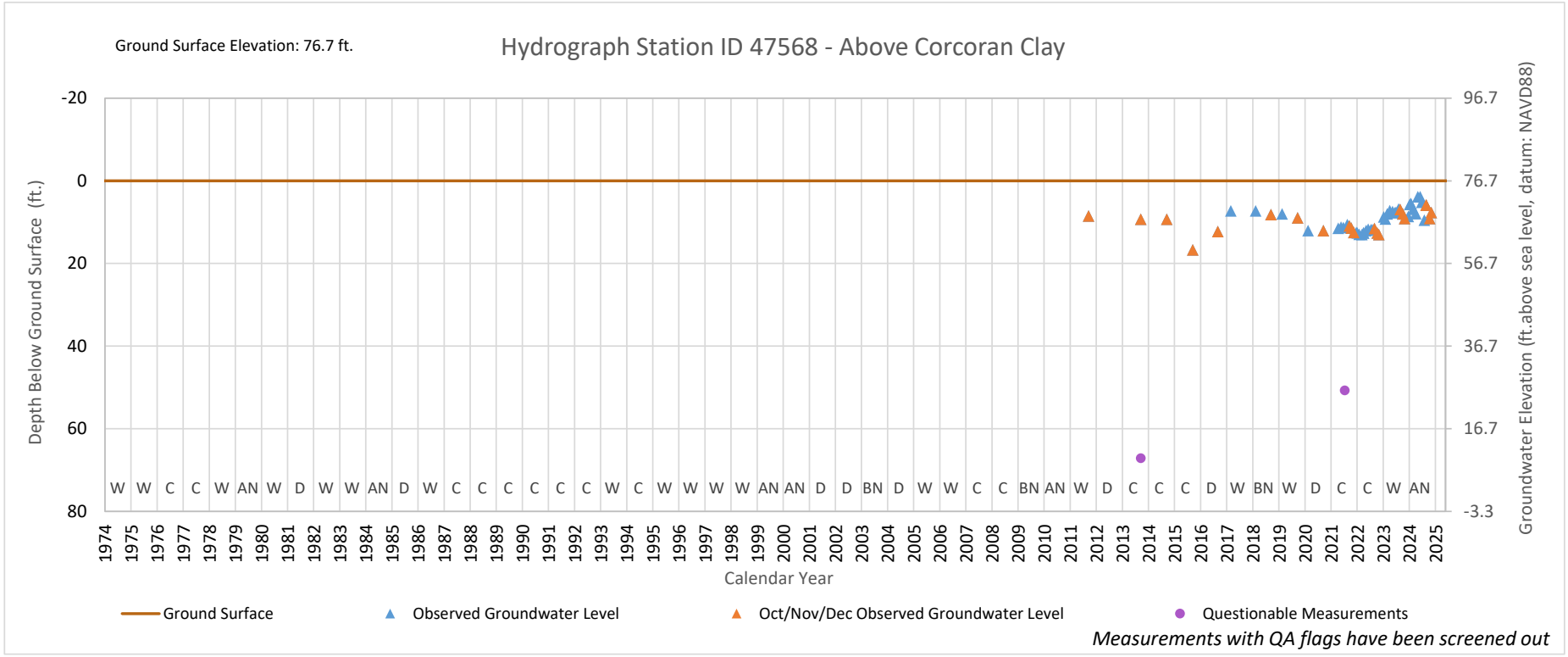

Ground Surface Elevation: 233.3 ft.
Hydrograph Station ID 47559 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
Groundwater Elevation (ft.above sea level, datum: NAVD88)
243.3
223.3
203.3
183.3
163.3
143.3
123.3
103.3
83.3
63.3
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out



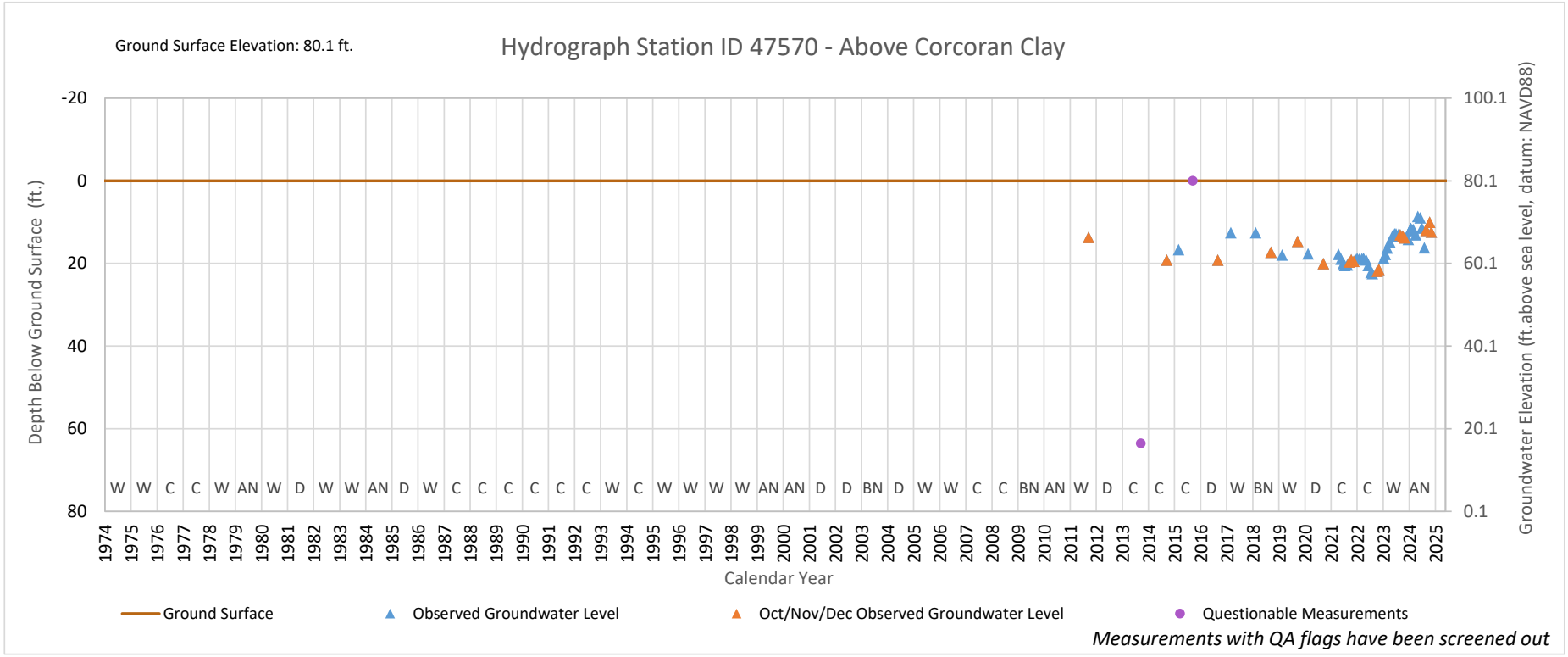
Measurements with QA flags have been screened out


Ground Surface Elevation: 221.9 ft.
Hydrograph Station ID 47561 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
180
200
Groundwater Elevation (ft.above sea level, datum: NAVD88)
241.9
221.9
201.9
181.9
161.9
141.9
121.9
101.9
81.9
61.9
41.9
21.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

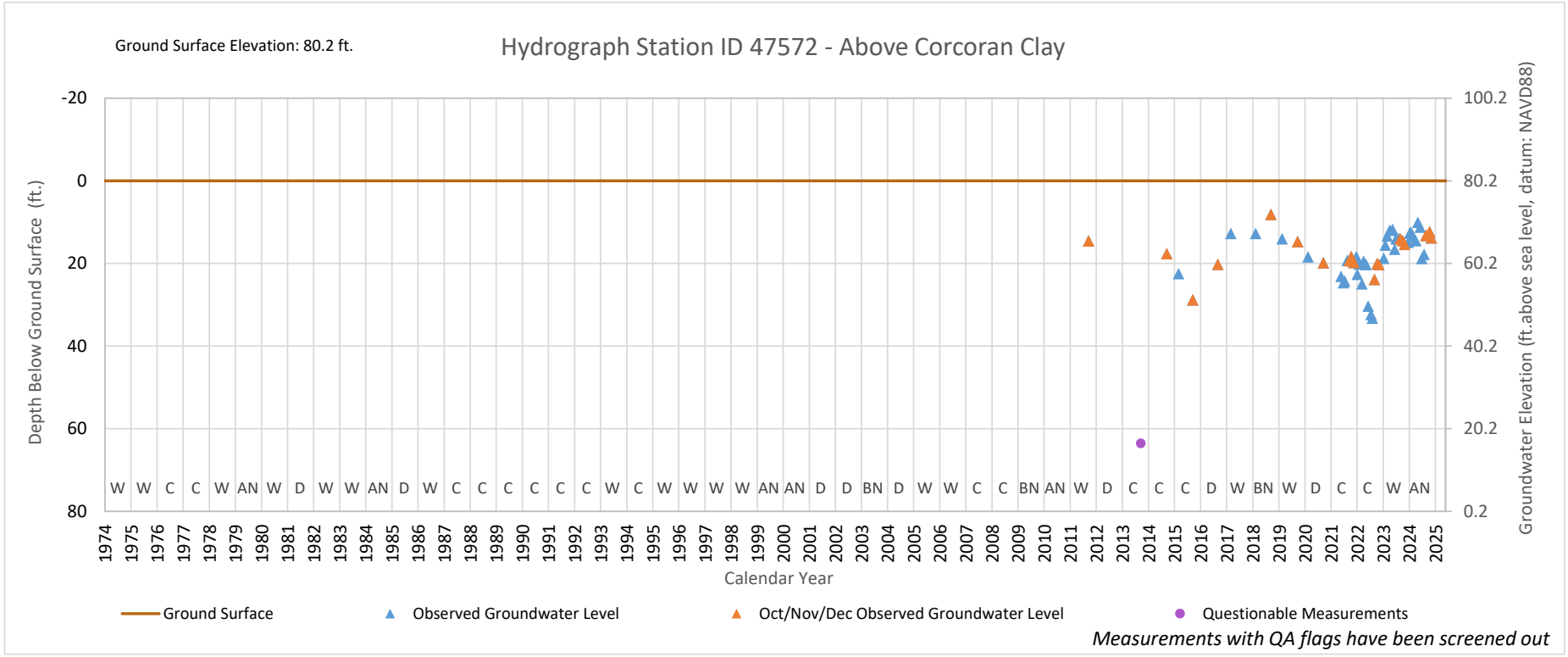

Ground Surface Elevation: 76.1 ft.
Hydrograph Station ID 47567 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
96.1
76.1
56.1
36.1
16.1
-3.9
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out



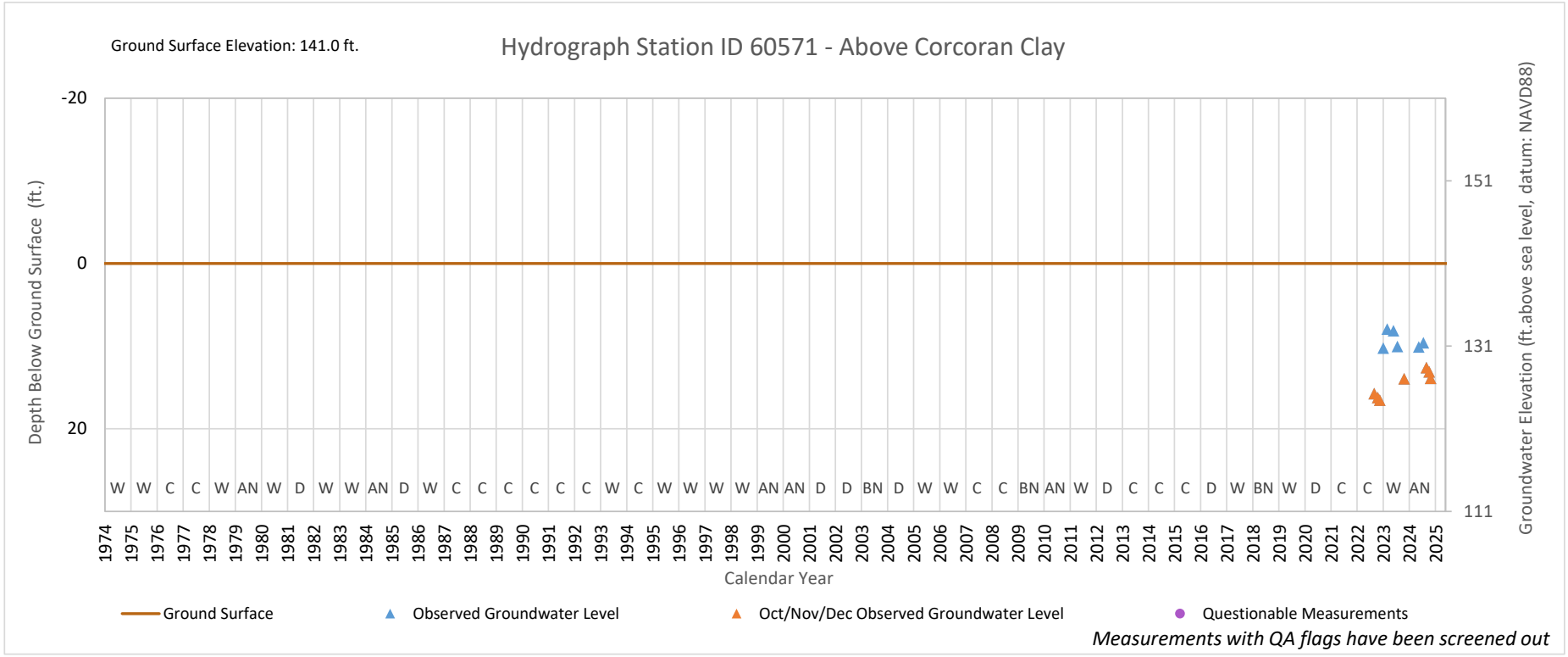
Measurements with QA flags have been screened out

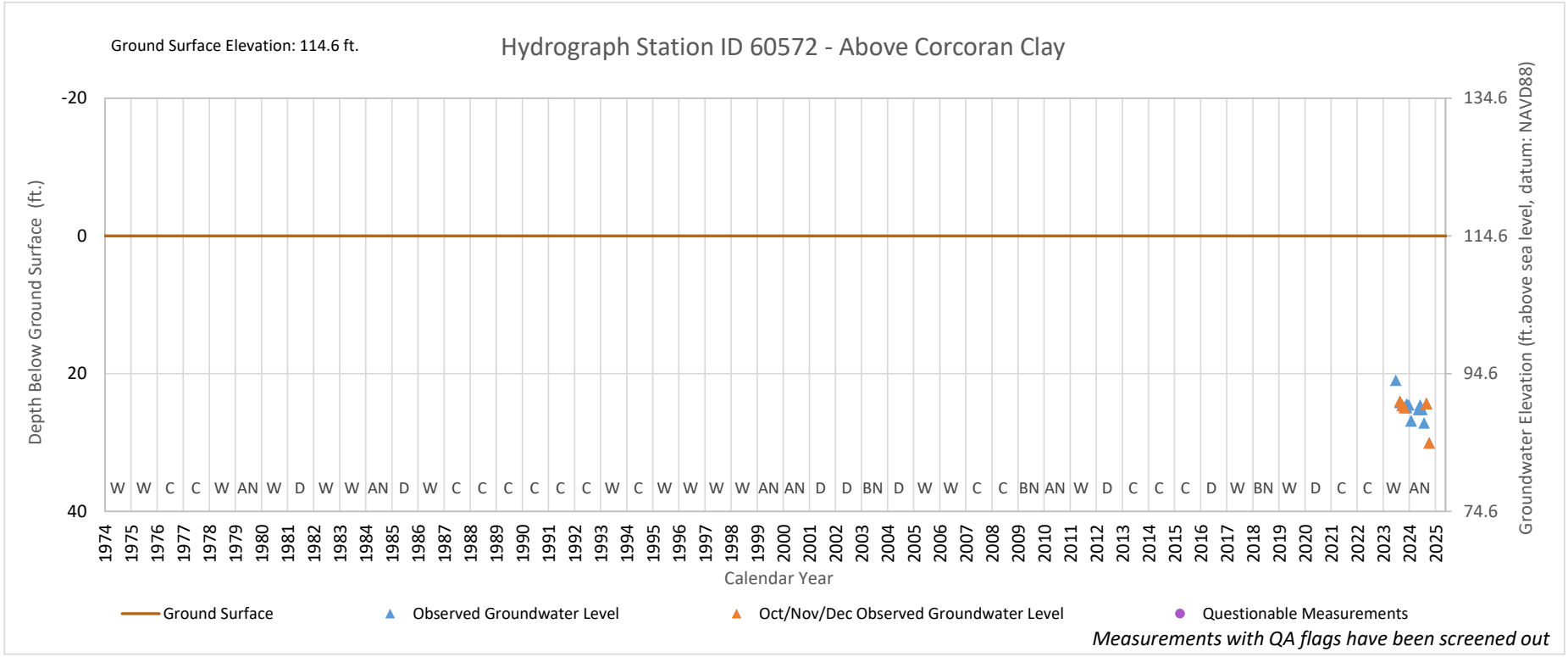


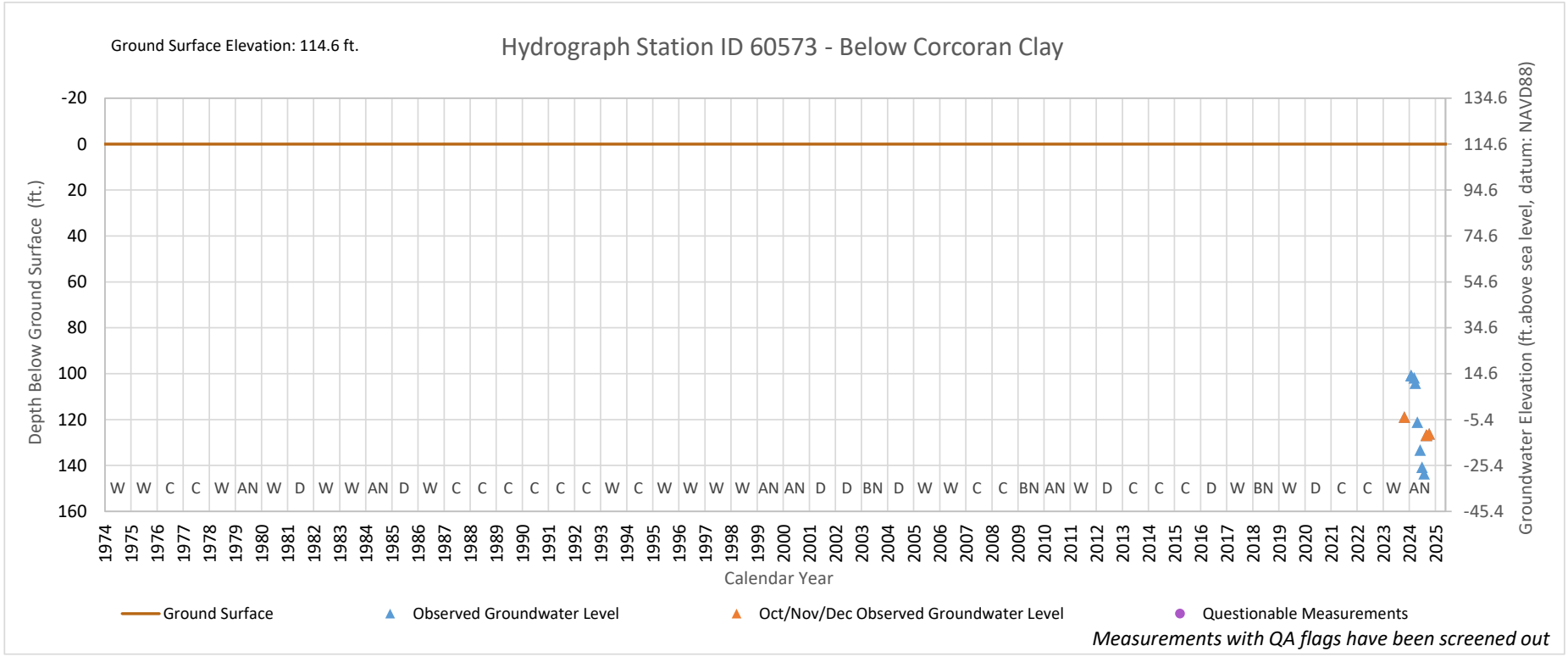
Measurements with QA flags have been screened out



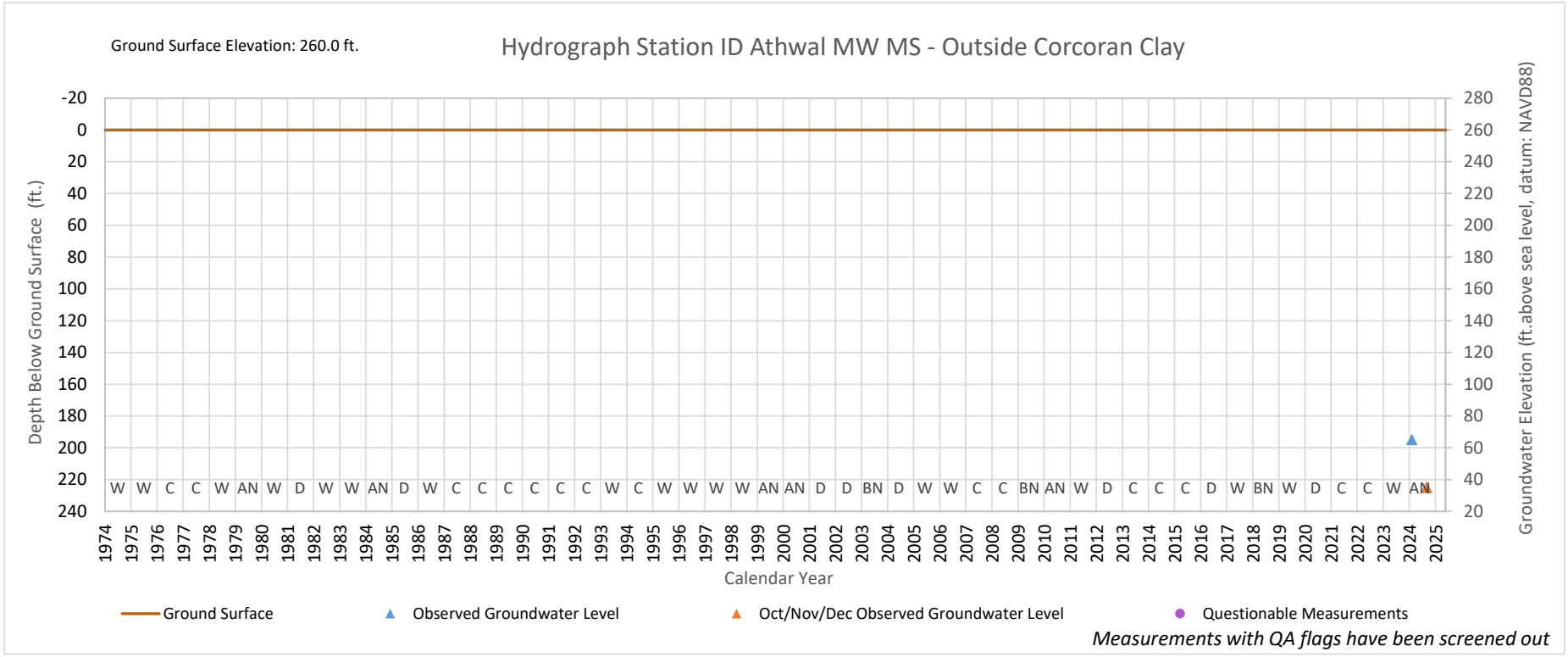
Measurements with QA flags have been screened out

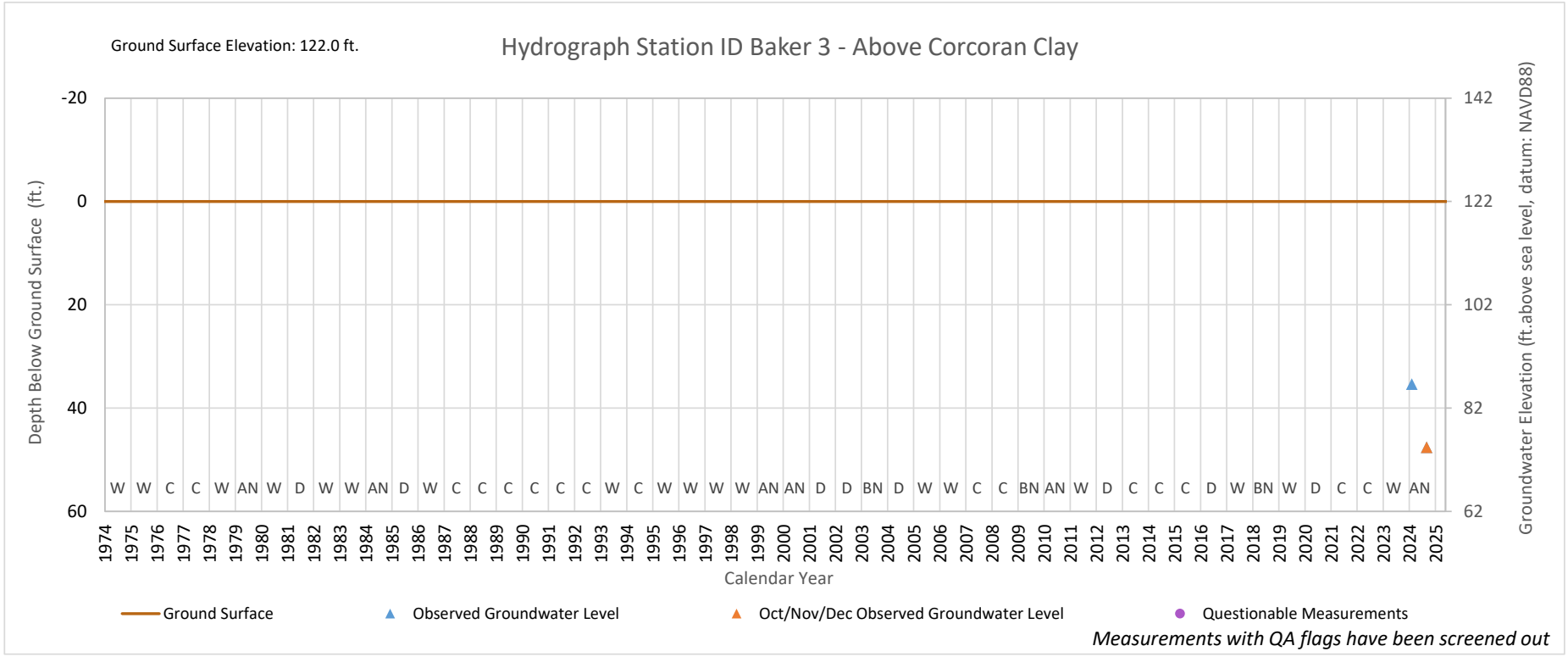

Ground Surface Elevation: 141.0 ft.
Hydrograph Station ID 60571 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
Groundwater Elevation (ft.above sea level, datum: NAVD88)
151
131
111
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

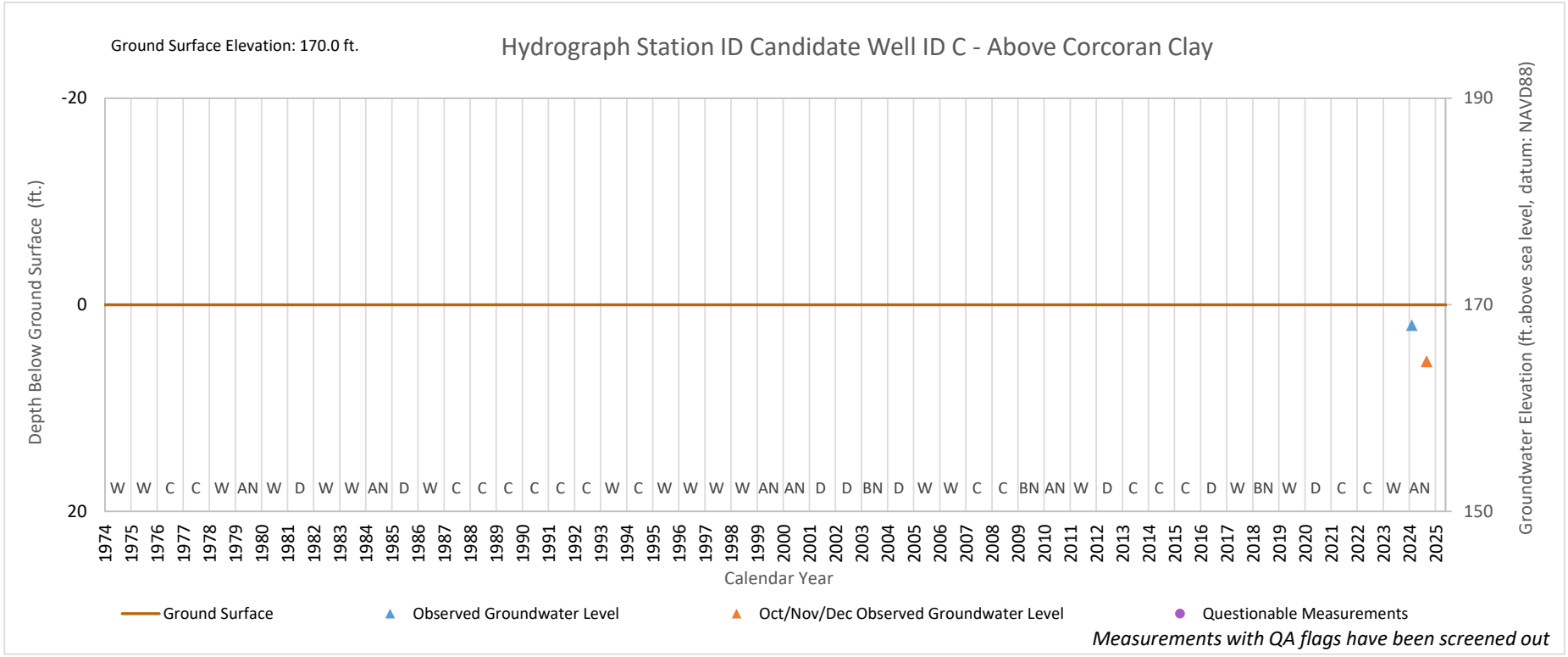

Ground Surface Elevation: 114.6 ft.
Hydrograph Station ID 60572 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
134.6
114.6
94.6
74.6
Groundwater Elevation (ft.above sea level, datum: NAVD88)
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

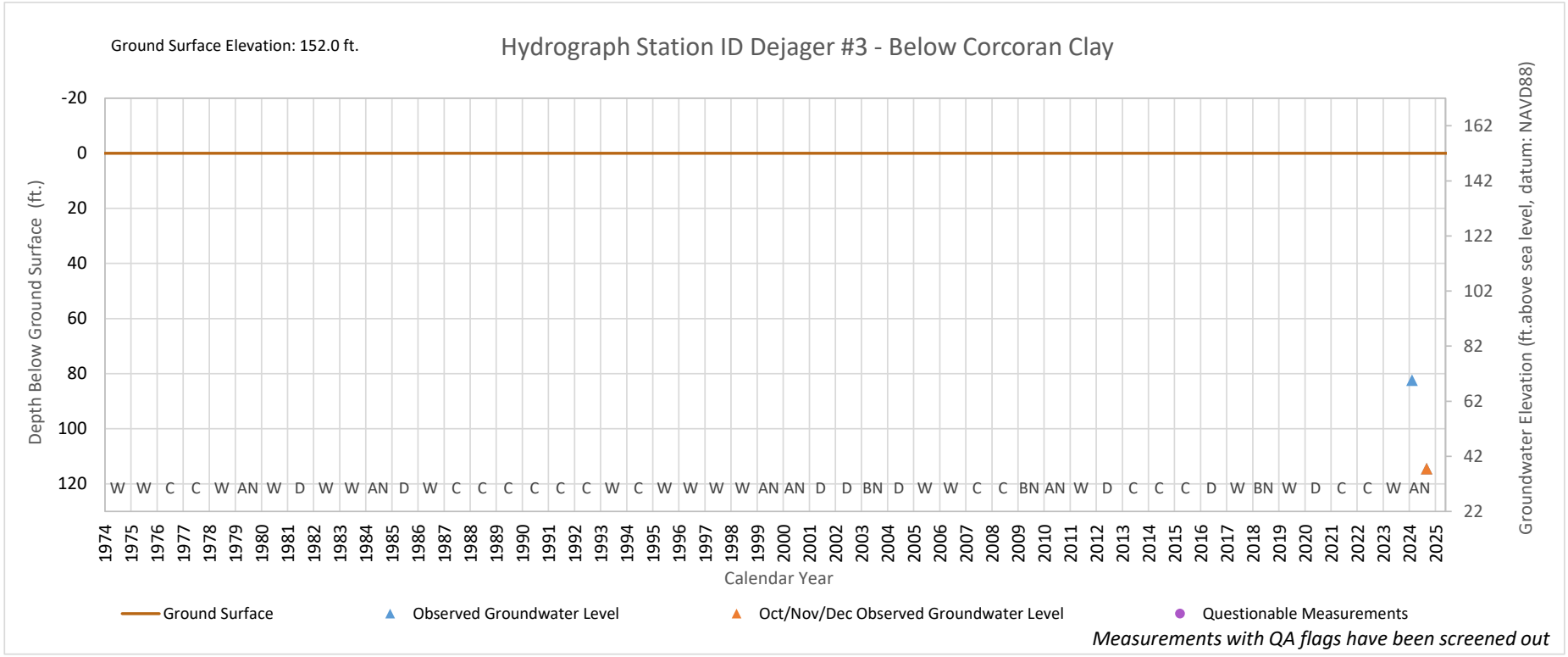


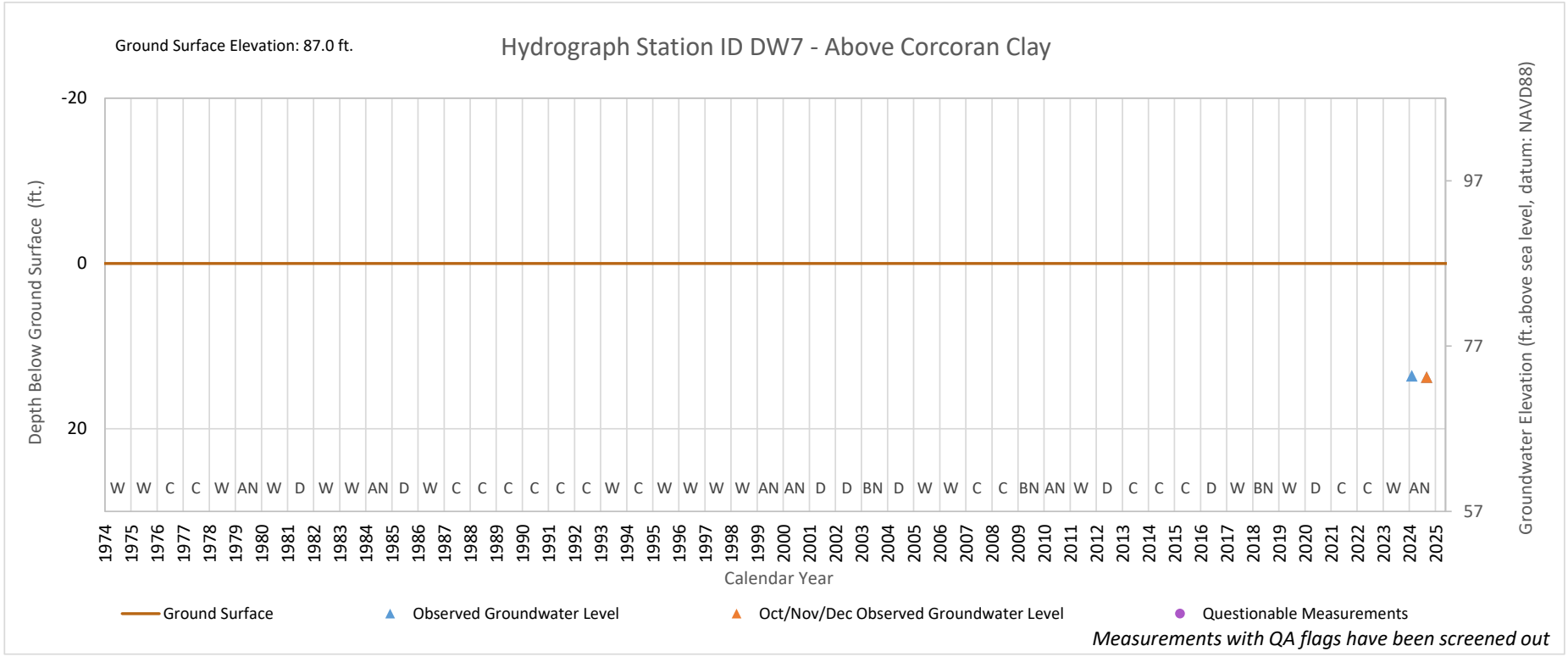
Measurements with QA flags have been screened out

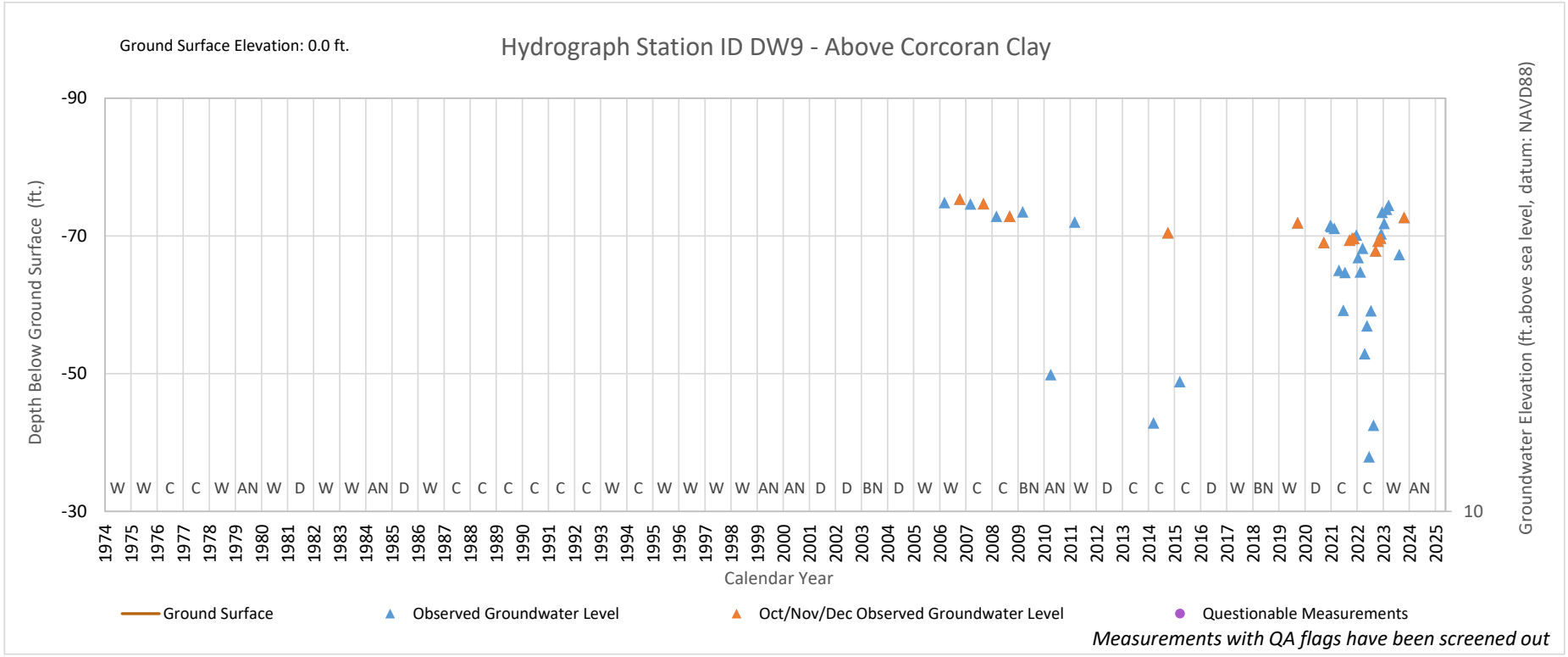

Ground Surface Elevation: 260.0 ft.
Hydrograph Station ID Athwal MW MS - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
280
260
240
220
200
180
160
140
120
100
80
60
40
20
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

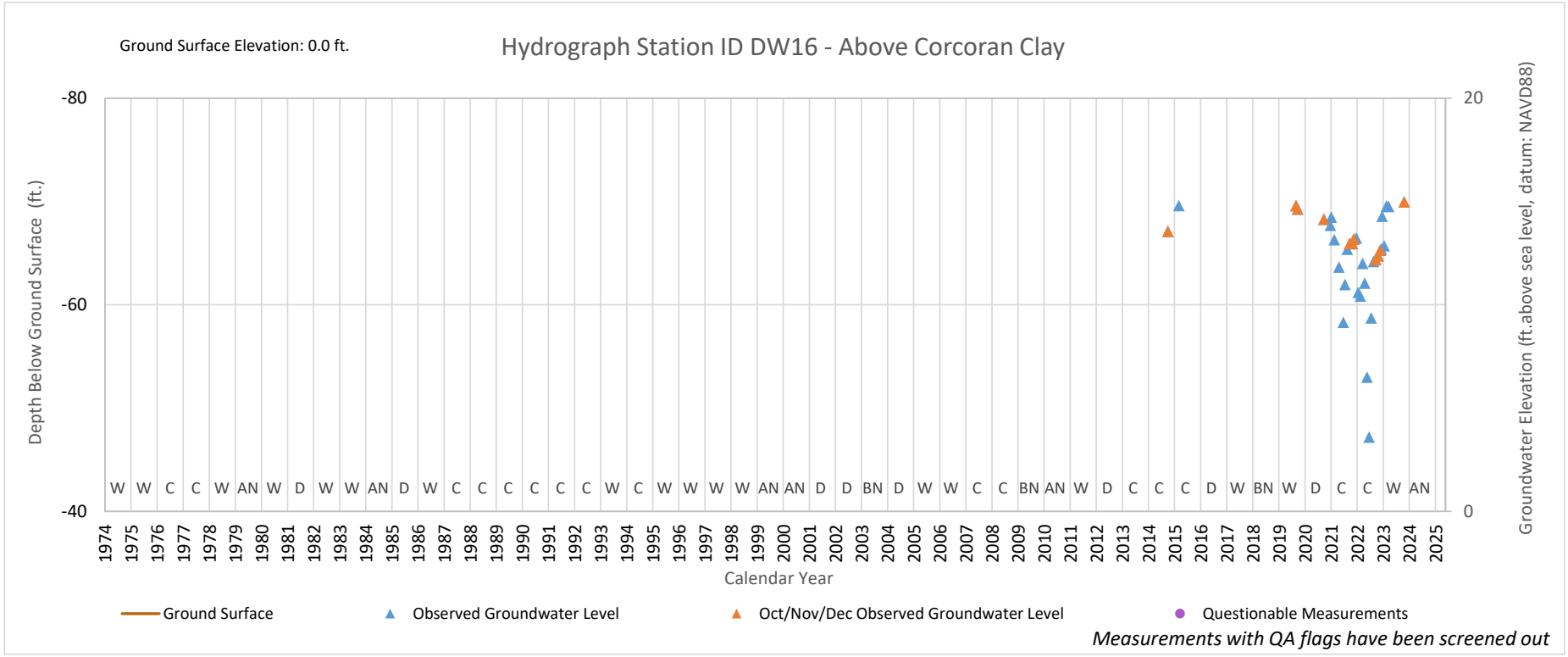

Ground Surface Elevation: 122.0 ft.
Hydrograph Station ID Baker 3 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
Groundwater Elevation (ft.above sea level, datum: NAVD88)
142
122
102
82
62
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

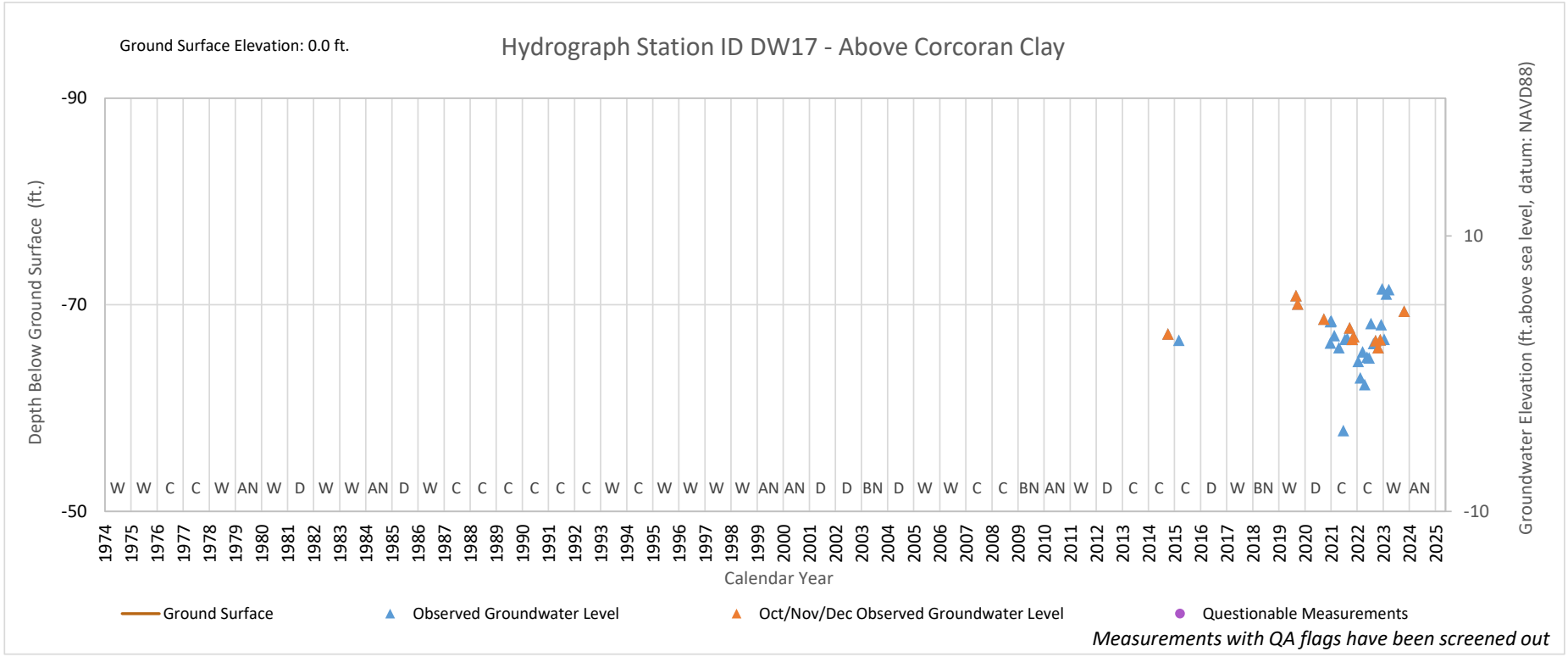

Ground Surface Elevation: 170.0 ft.
Hydrograph Station ID Candidate Well ID C - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
190
170
150
Groundwater Elevation (ft.above sea level, datum: NAVD88)
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

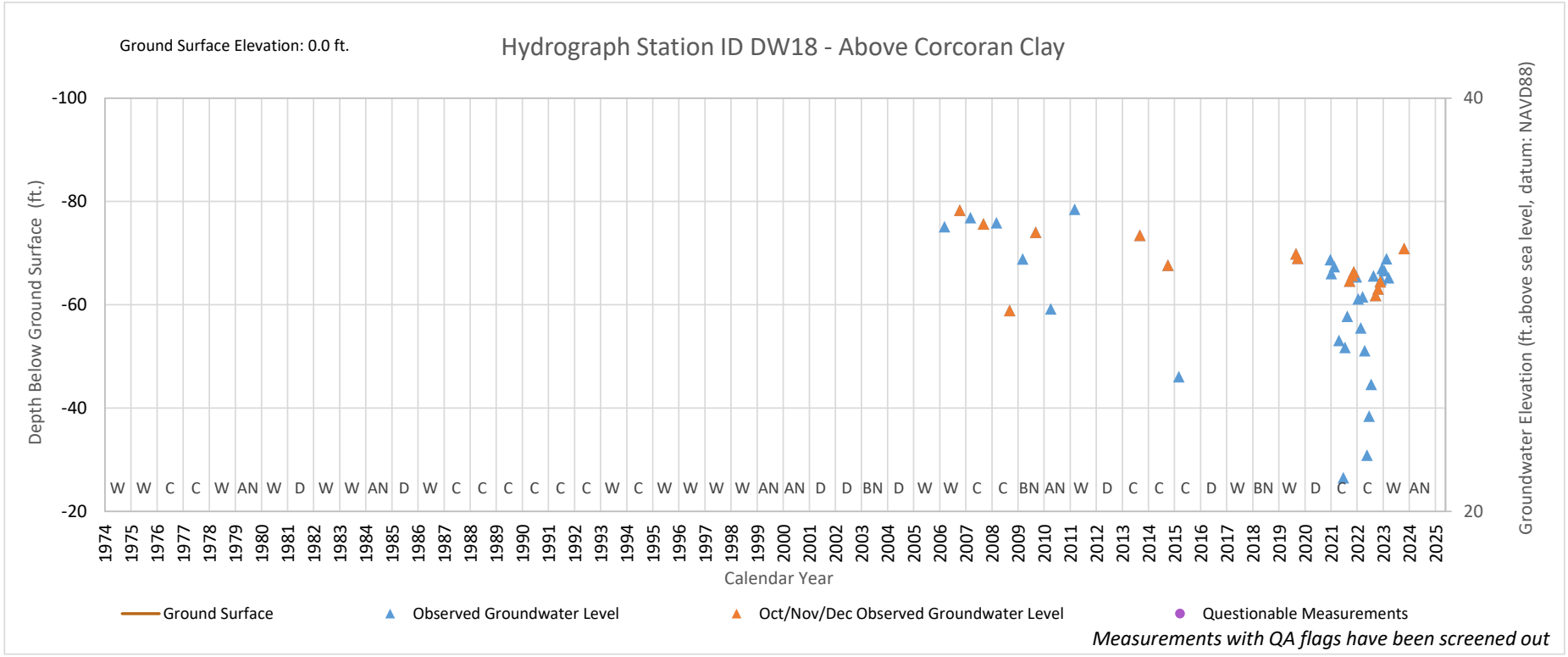

Ground Surface Elevation: 152.0 ft.
Hydrograph Station ID Dejager #3 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
162
142
122
102
82
62
42
22
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

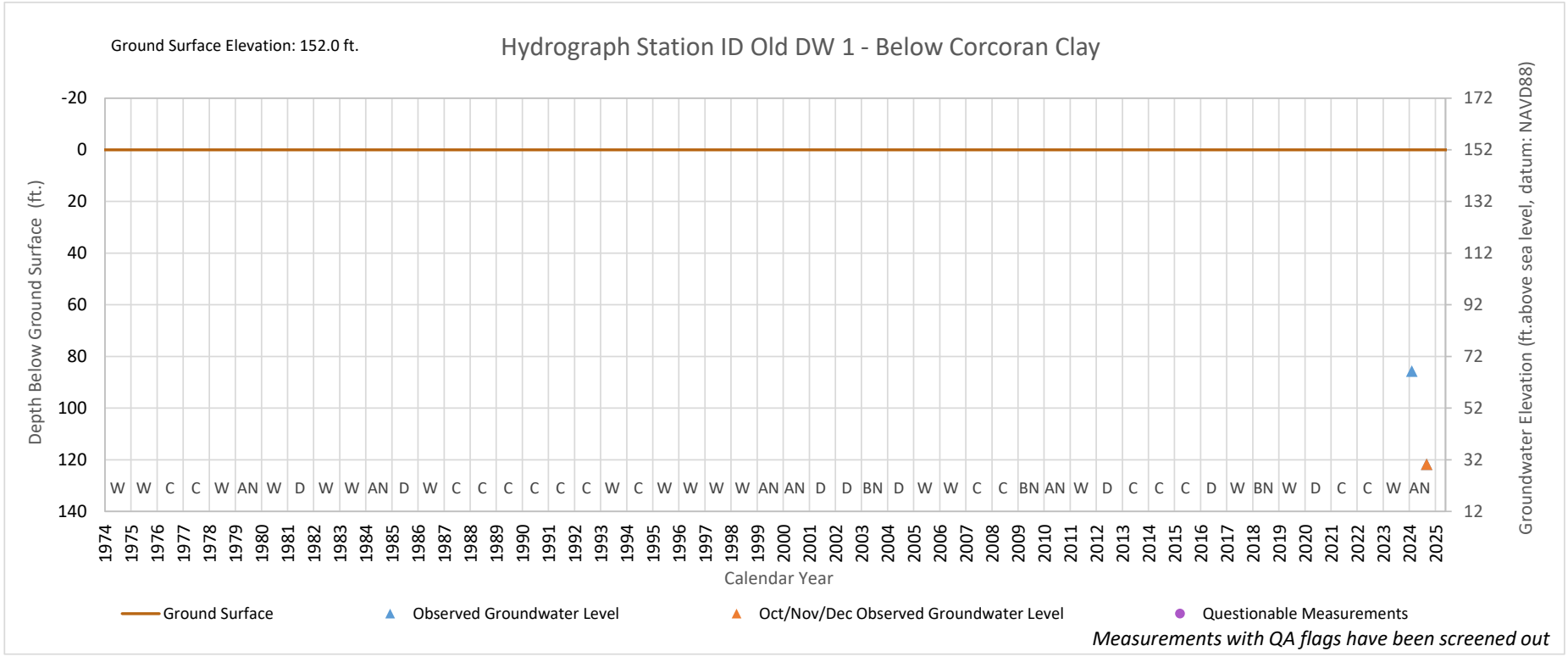

Ground Surface Elevation: 87.0 ft.
Hydrograph Station ID DW7 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
Groundwater Elevation (ft.above sea level, datum: NAVD88)
97
77
57
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

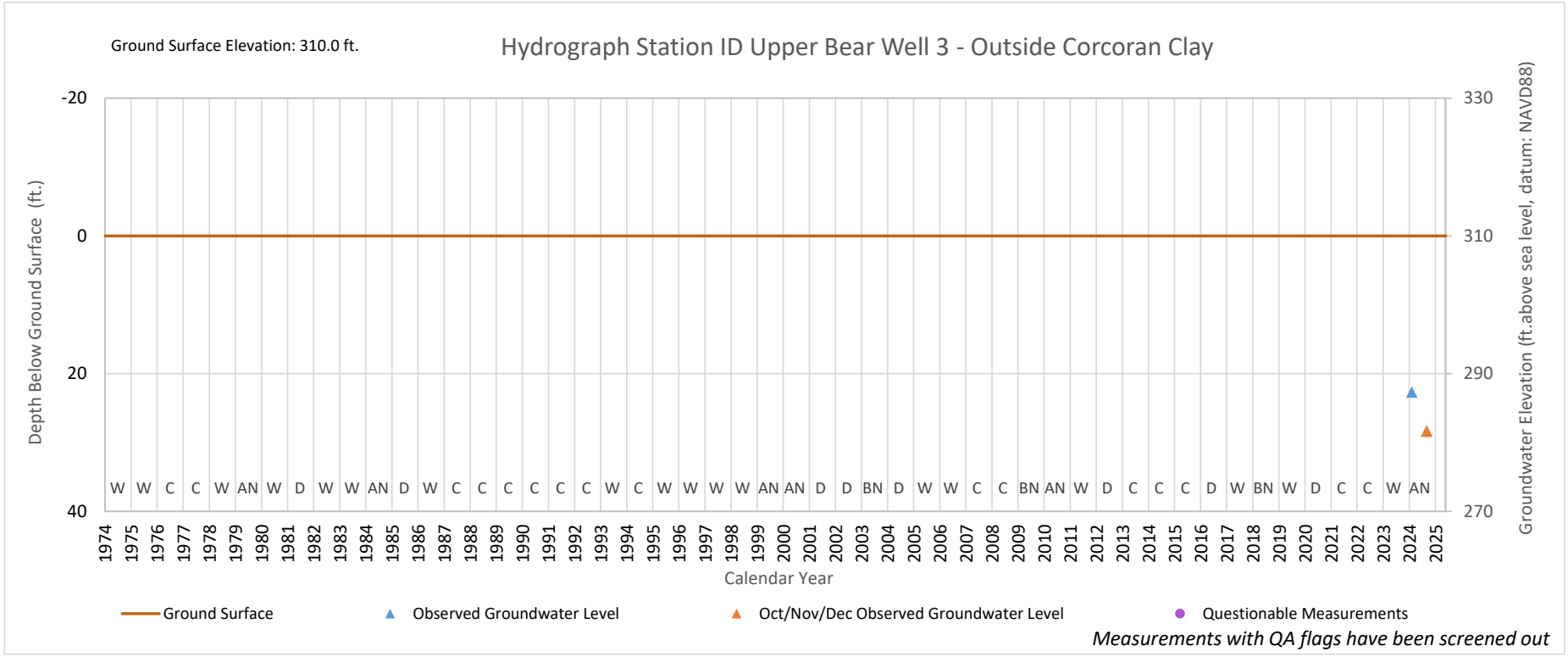

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW9 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-90
-70
-50
-30
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
10
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out


Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW16 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-80
-60
-40
20
0
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

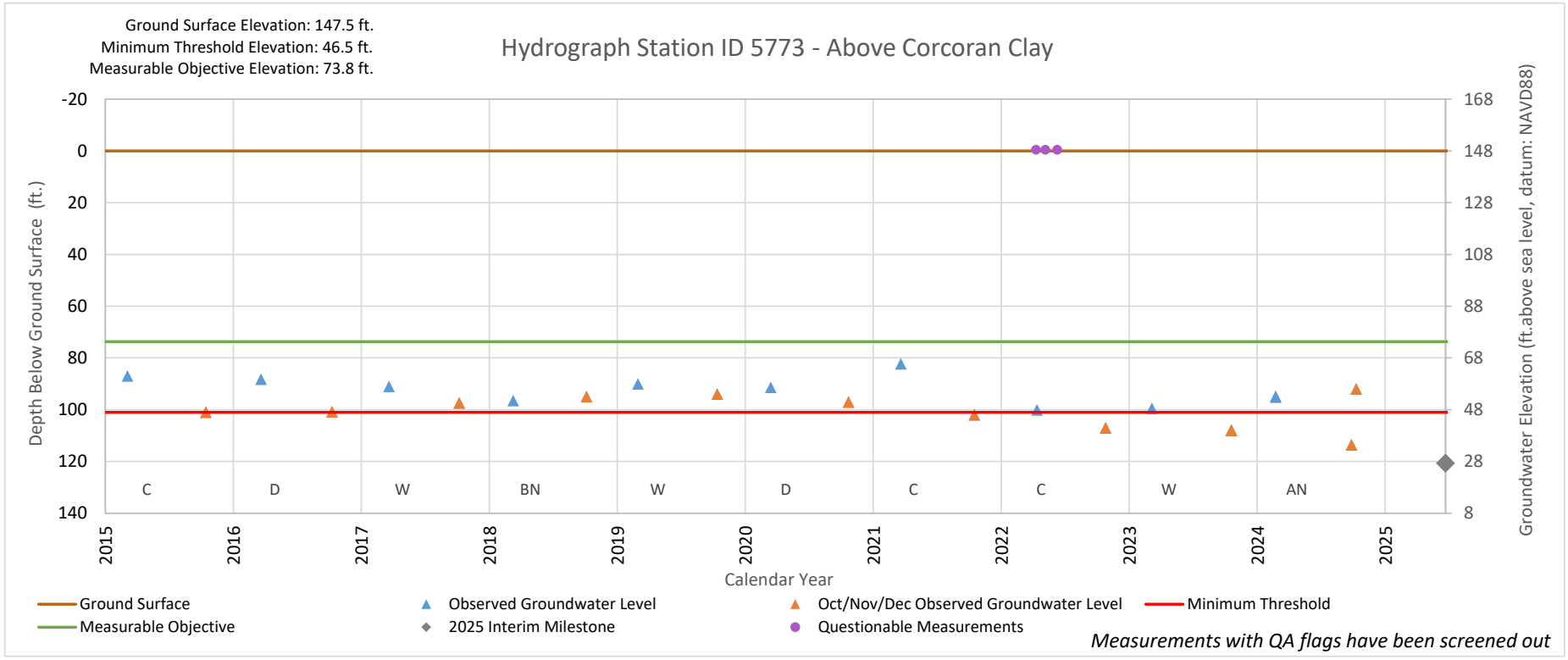

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW17 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-90
-70
-50
10
-10
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

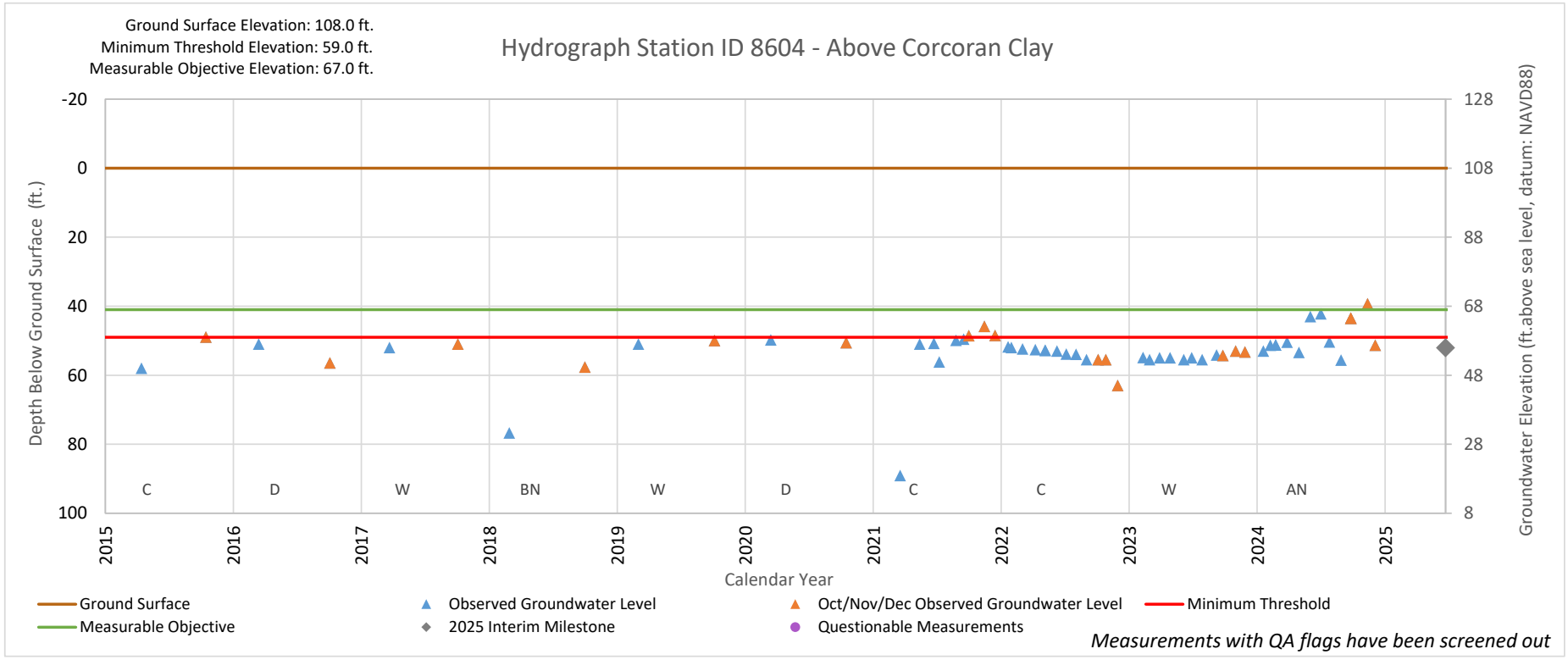

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW18 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-100
-80
-60
-40
-20
40
20
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

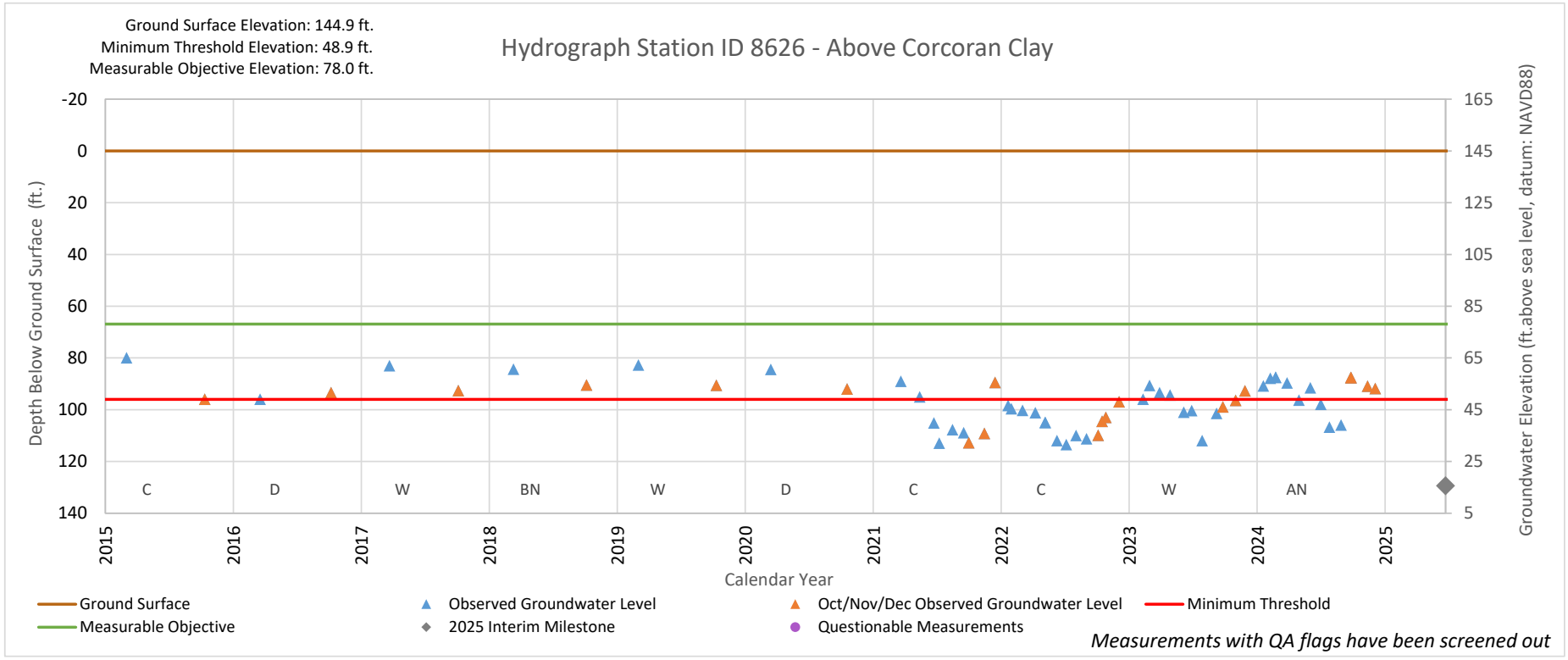

Ground Surface Elevation: 152.0 ft.
Hydrograph Station ID Old DW 1 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
172
152
132
112
92
72
52
32
12
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

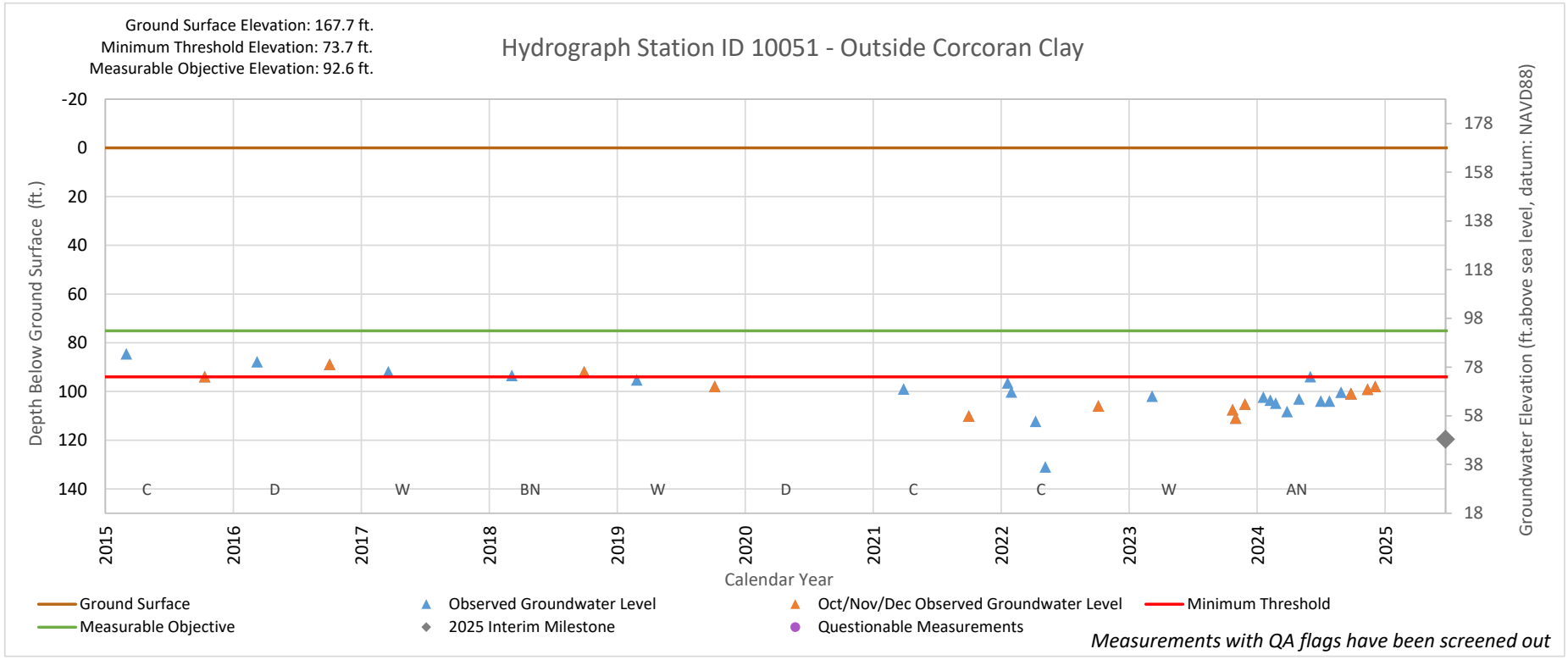

Ground Surface Elevation: 310.0 ft.
Hydrograph Station ID Upper Bear Well 3 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
Groundwater Elevation (ft.above sea level, datum: NAVD88)
330
310
290
270
W W C C W AN W D W W AN D W C C C C C W C W W W W AN AN D D BN D W W C C BN AN W D C C C D W BN W D C C W AN
1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

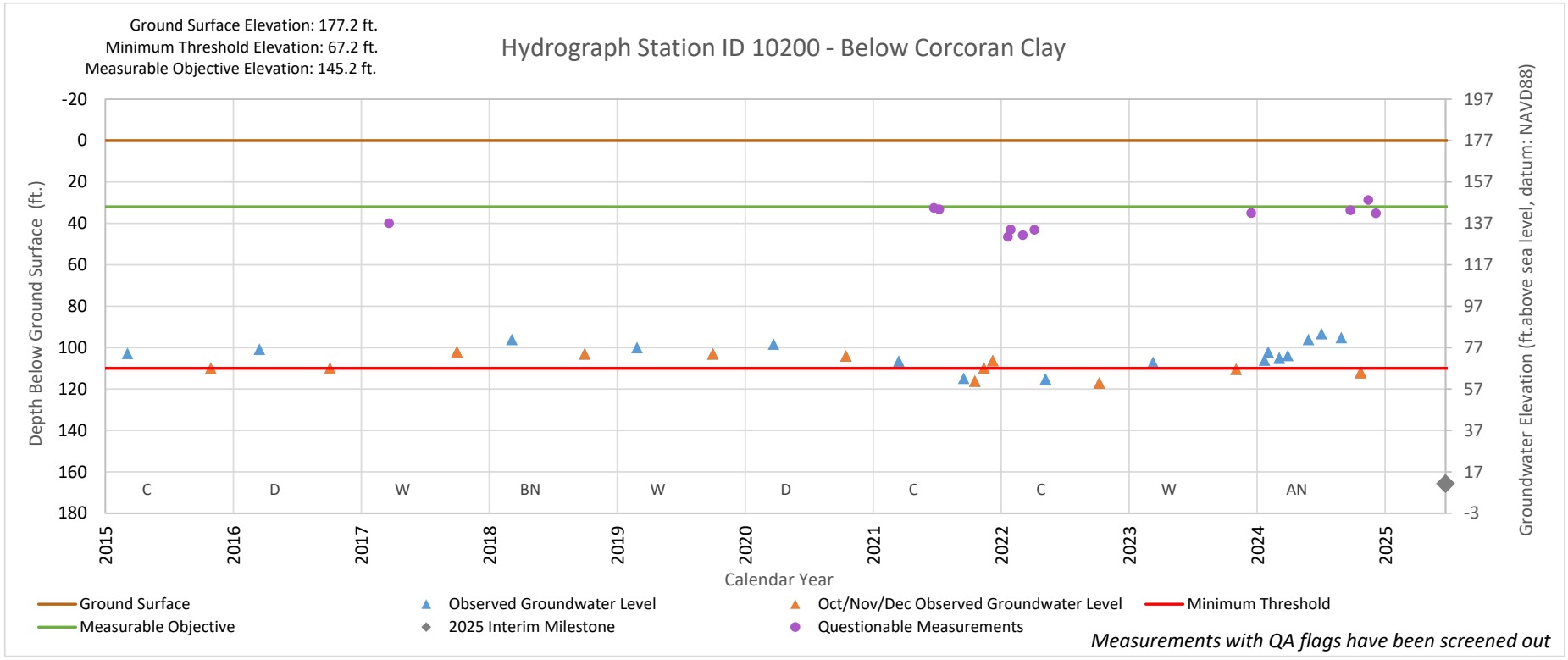
Section 2 - Time period last 10 years (2015-2025)

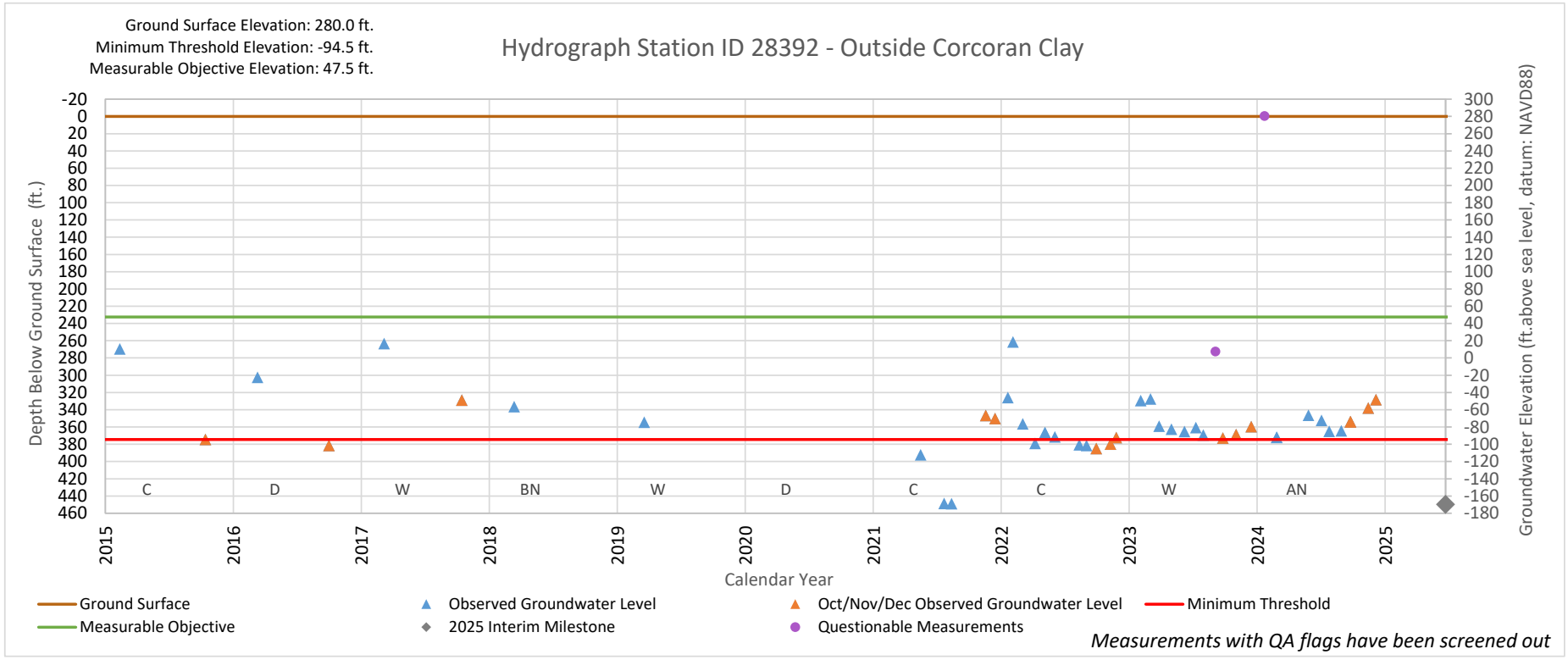

Ground Surface Elevation: 147.5 ft.
Minimum Threshold Elevation: 46.5 ft.
Measurable Objective Elevation: 73.8 ft.
Hydrograph Station ID 5773 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
168
148
128
108
88
68
48
28
8
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

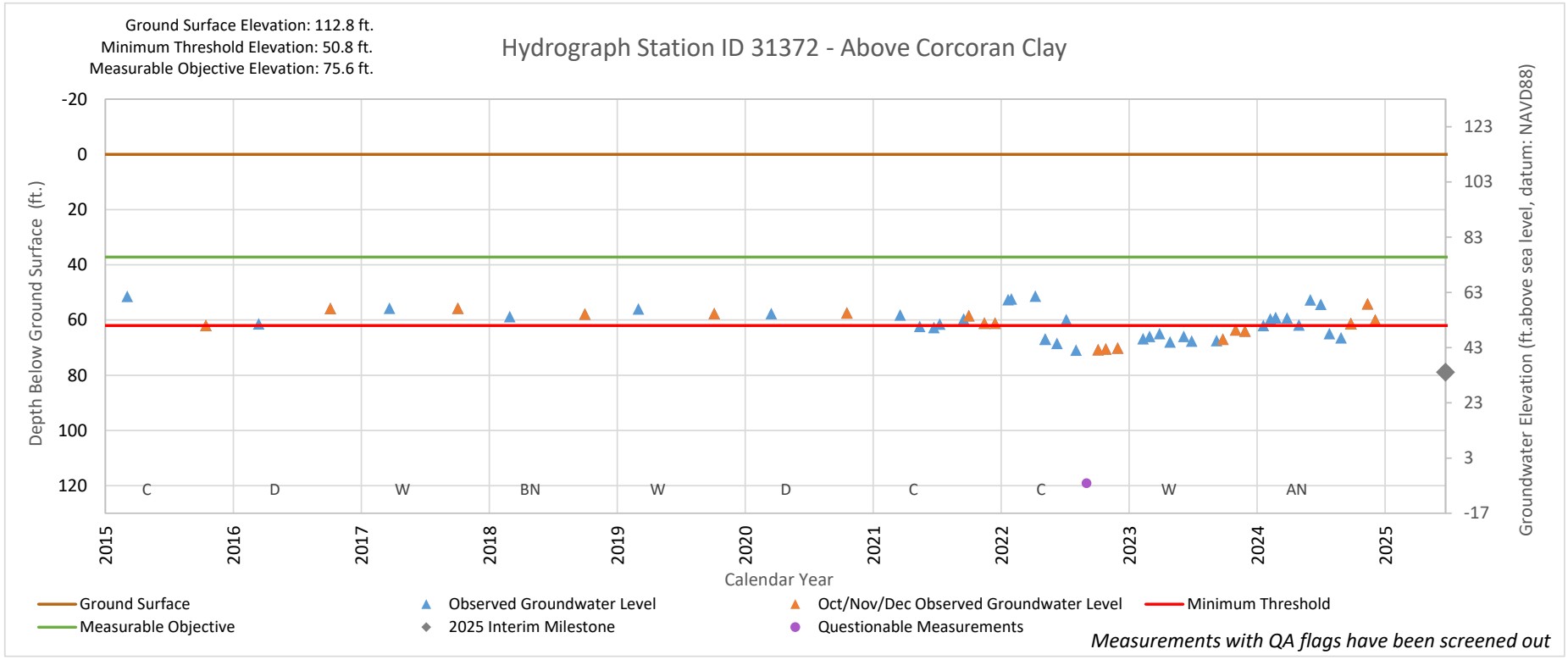

Ground Surface Elevation: 108.0 ft.
Minimum Threshold Elevation: 59.0 ft.
Measurable Objective Elevation: 67.0 ft.
Hydrograph Station ID 8604 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
128
108
88
68
48
28
8
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

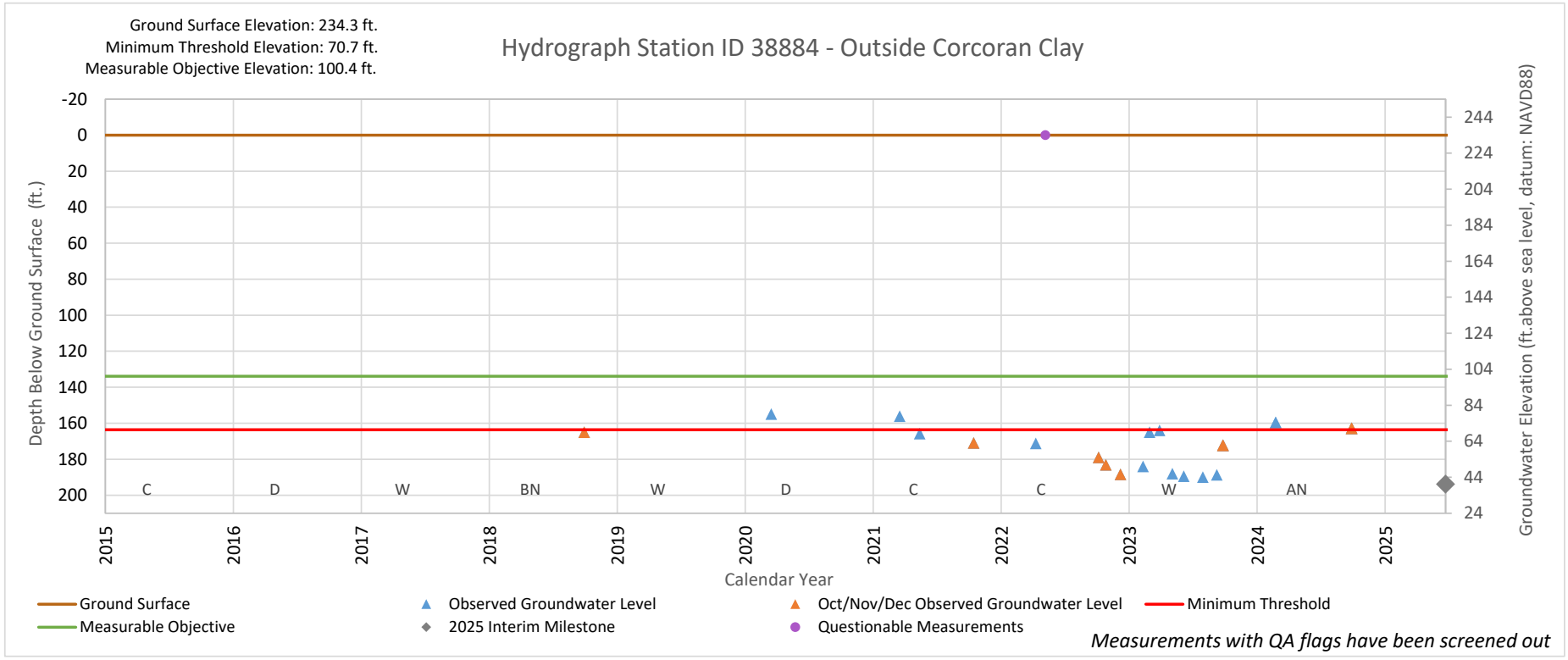

Ground Surface Elevation: 144.9 ft.
Minimum Threshold Elevation: 48.9 ft.
Measurable Objective Elevation: 78.0 ft.
Hydrograph Station ID 8626 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
165
145
125
105
85
65
45
25
5
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

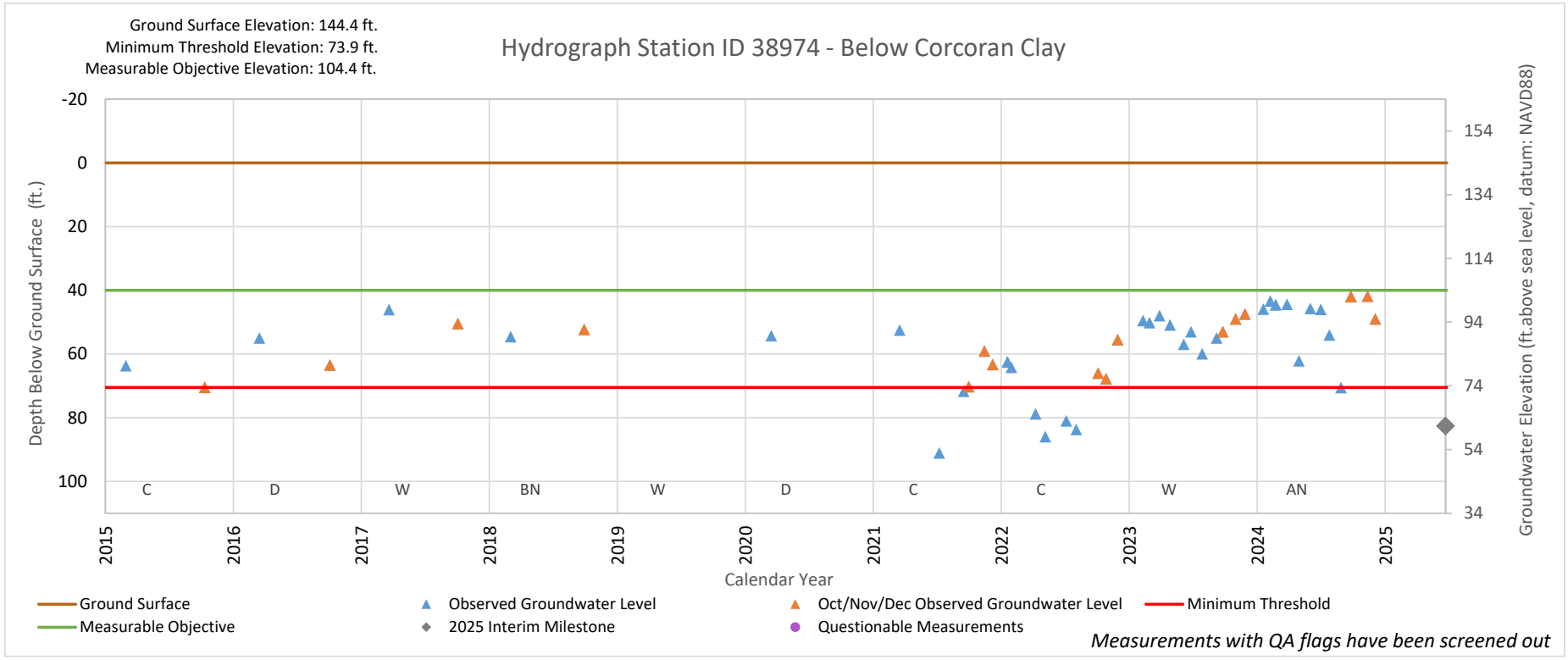

Ground Surface Elevation: 167.7 ft.
Minimum Threshold Elevation: 73.7 ft.
Measurable Objective Elevation: 92.6 ft.
Hydrograph Station ID 10051 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
178
158
138
118
98
78
58
38
18
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

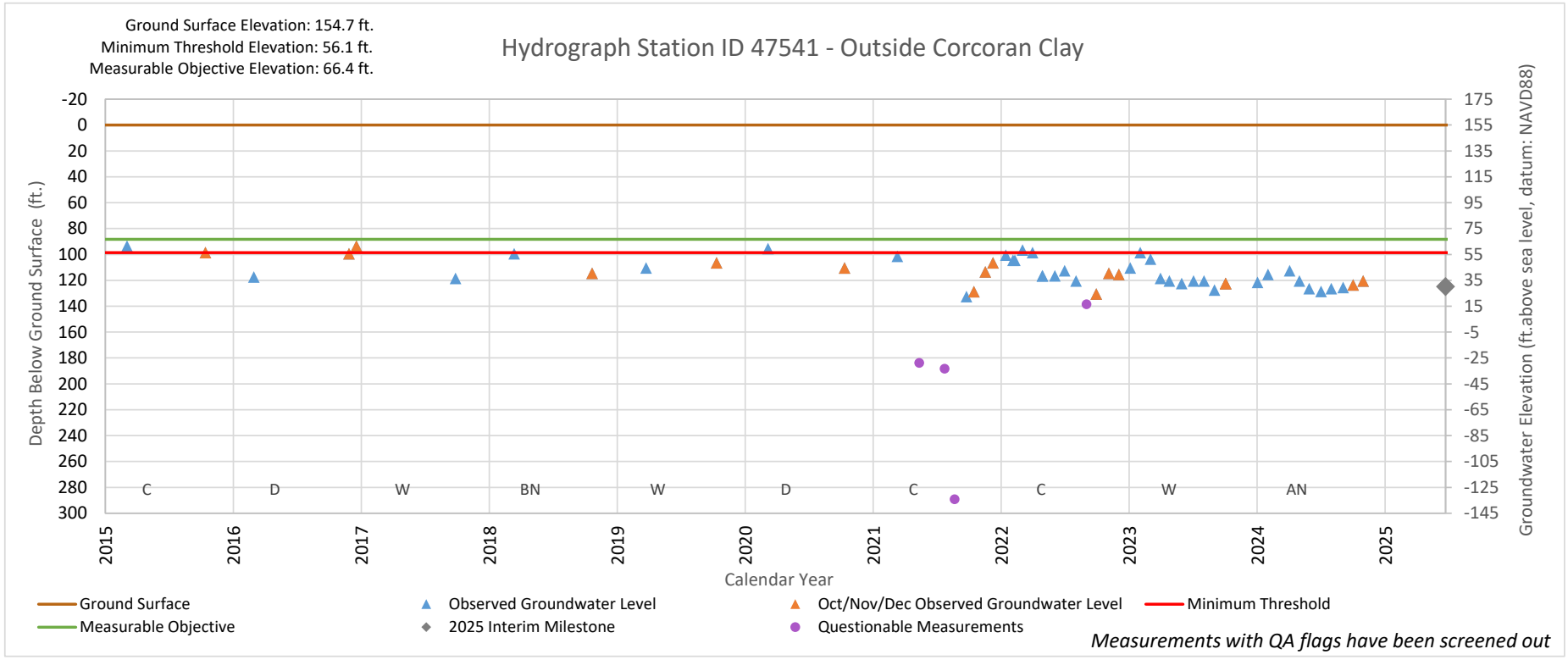

Ground Surface Elevation: 177.2 ft.
Minimum Threshold Elevation: 67.2 ft.
Measurable Objective Elevation: 145.2 ft.
Hydrograph Station ID 10200 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
197
177
157
137
117
97
77
57
37
17
-3
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

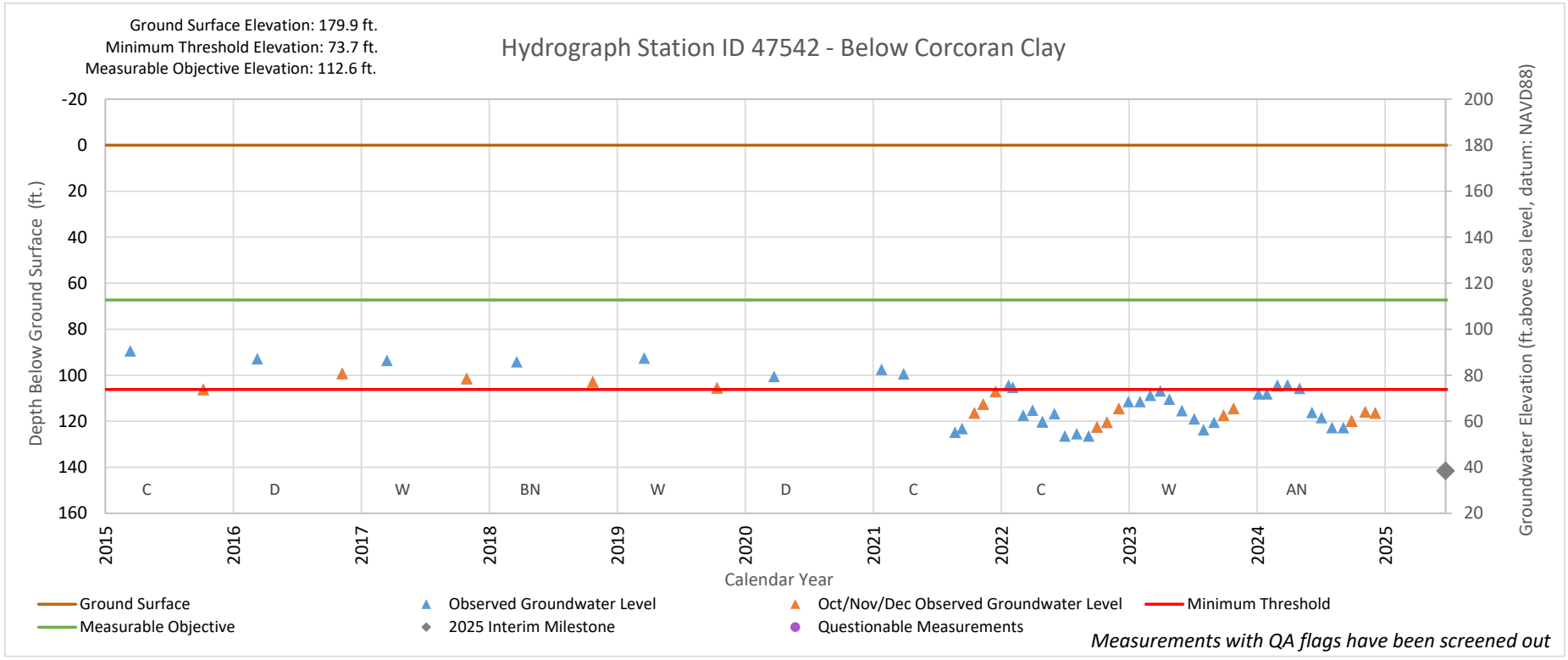

Ground Surface Elevation: 280.0 ft.
Minimum Threshold Elevation: -94.5 ft.
Measurable Objective Elevation: 47.5 ft.
Hydrograph Station ID 28392 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460
300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 -20 -40 -60 -80 -100 -120 -140 -160 -180
C D W BN W D C C W AN
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

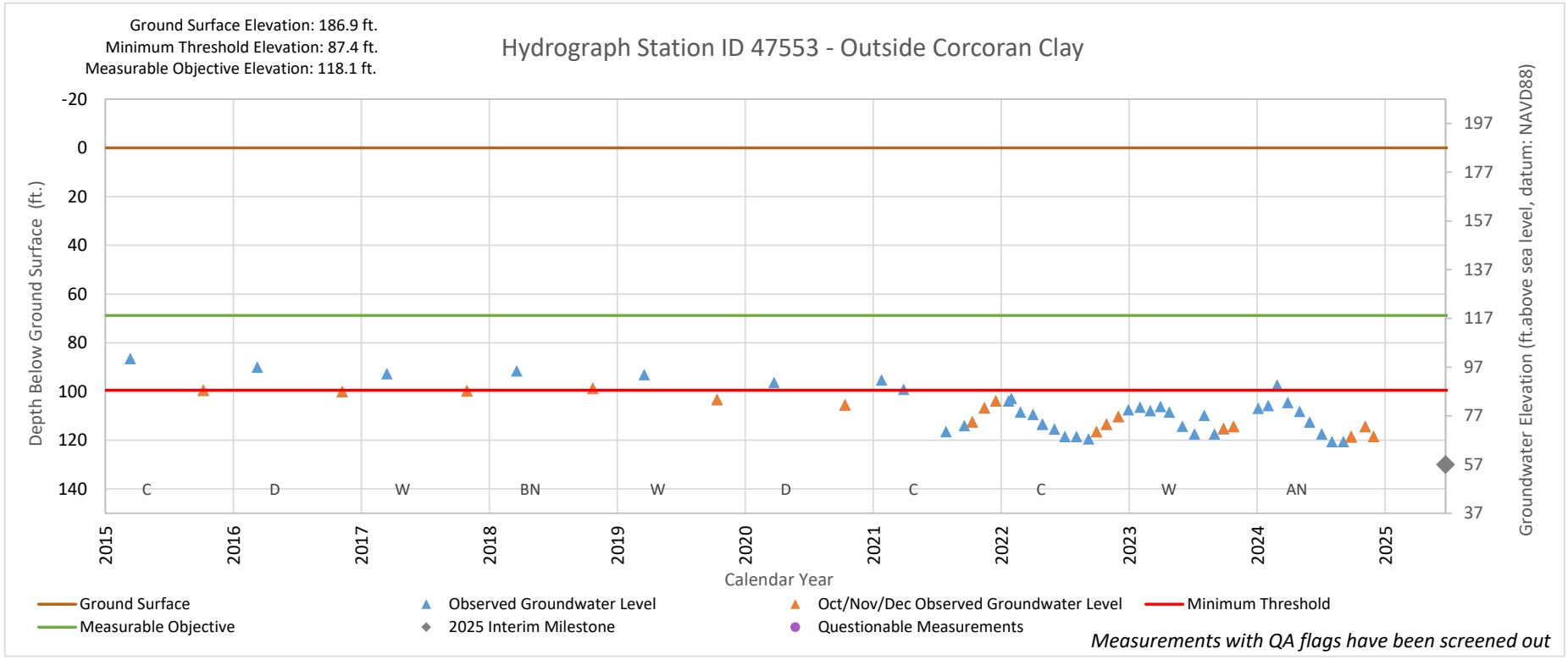

Ground Surface Elevation: 112.8 ft.
Minimum Threshold Elevation: 50.8 ft.
Measurable Objective Elevation: 75.6 ft.
Hydrograph Station ID 31372 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
123
103
83
63
43
23
3
-17
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

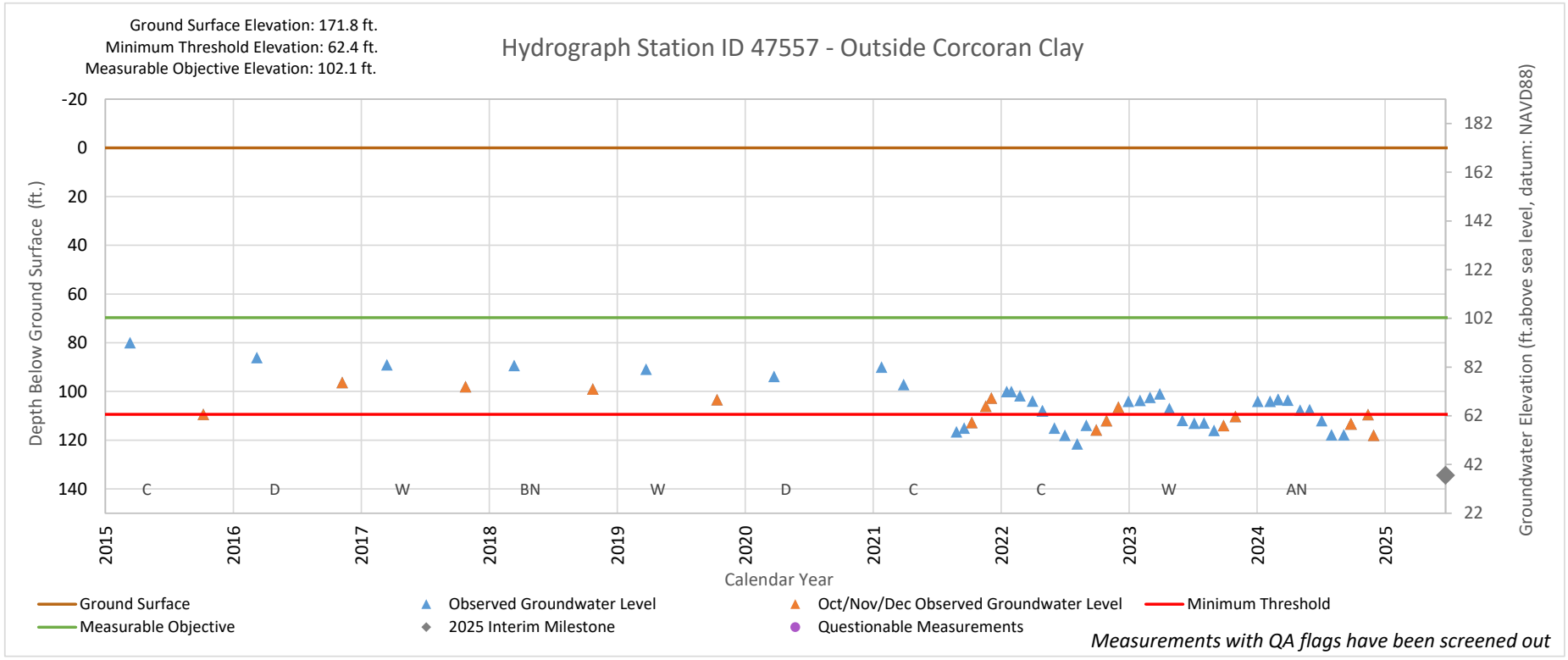

Ground Surface Elevation: 234.3 ft.
Minimum Threshold Elevation: 70.7 ft.
Measurable Objective Elevation: 100.4 ft.
Hydrograph Station ID 38884 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
180
200
Groundwater Elevation (ft.above sea level, datum: NAVD88)
244
224
204
184
164
144
124
104
84
64
44
24
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

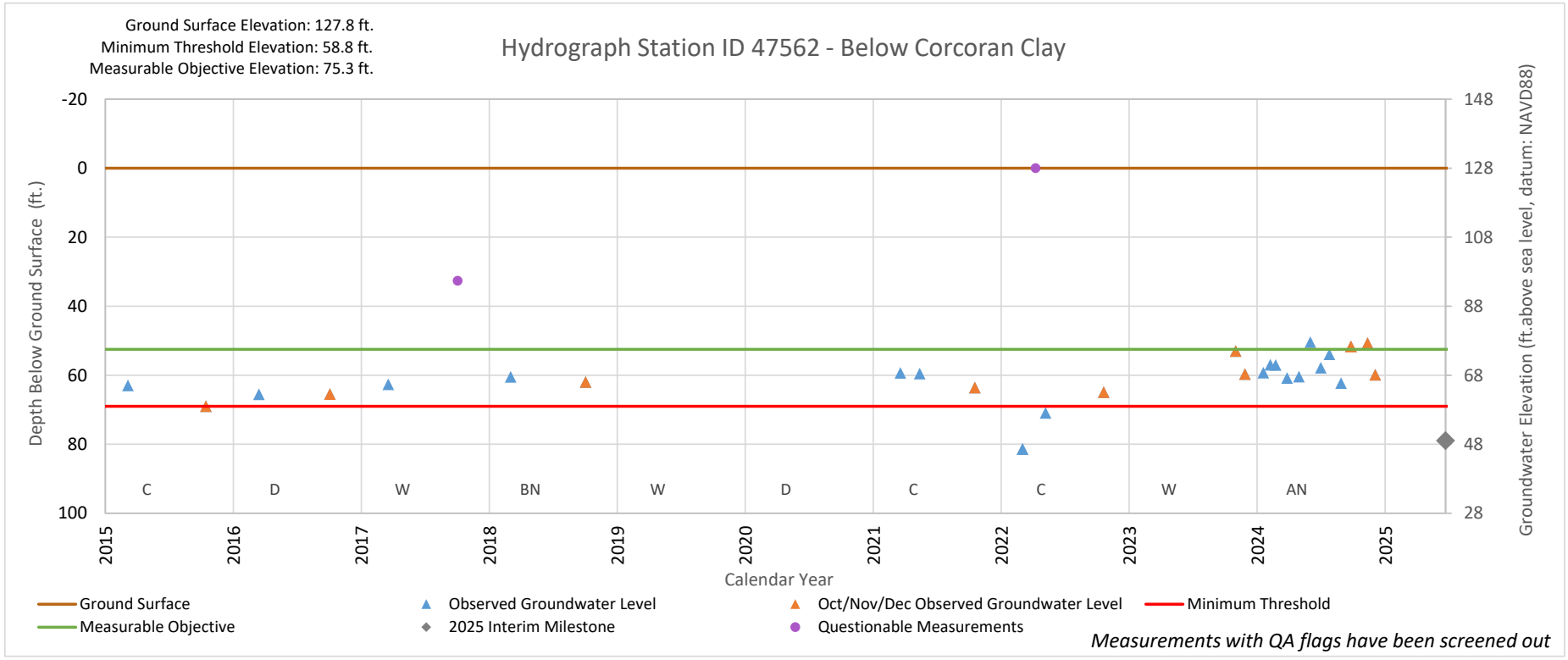

Ground Surface Elevation: 144.4 ft.
Minimum Threshold Elevation: 73.9 ft.
Measurable Objective Elevation: 104.4 ft.
Hydrograph Station ID 38974 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
Groundwater Elevation (ft.above sea level, datum: NAVD88)
154
134
114
94
74
54
34
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

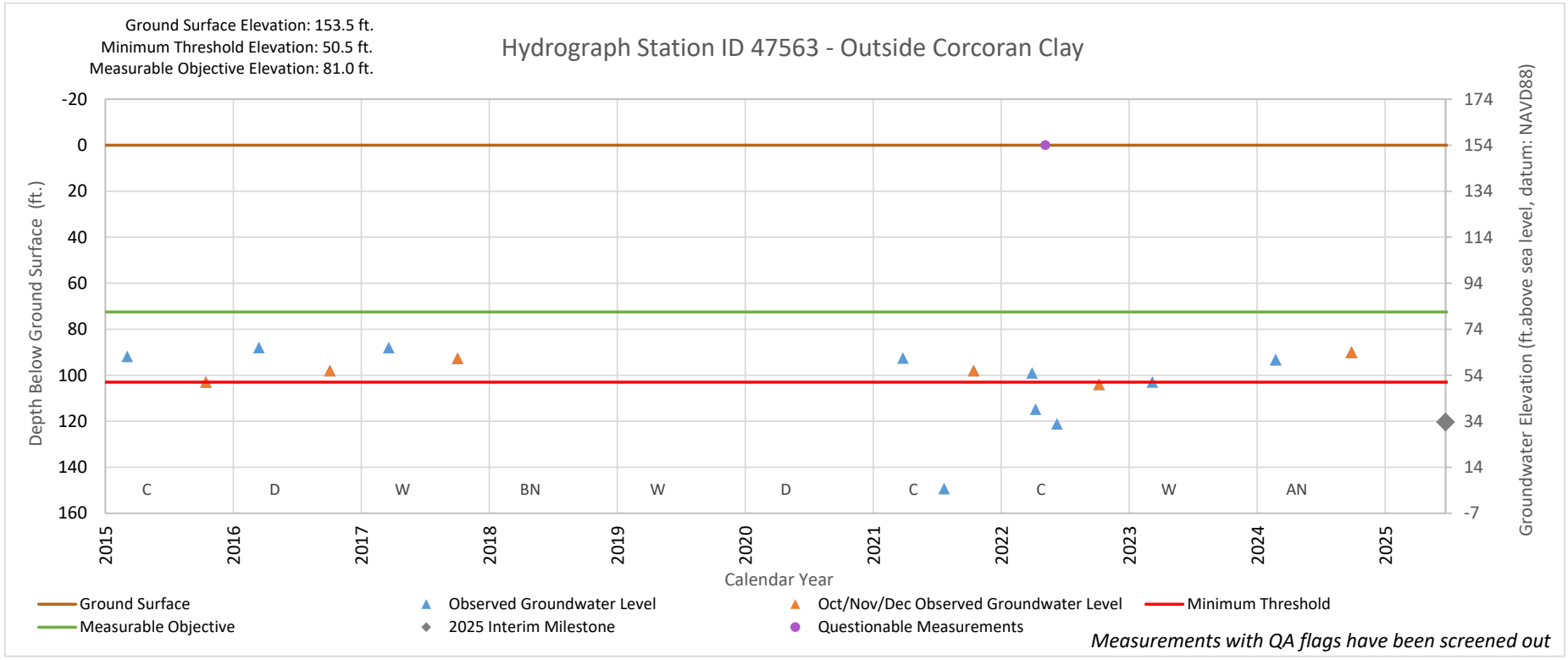

Ground Surface Elevation: 154.7 ft.
Minimum Threshold Elevation: 56.1 ft.
Measurable Objective Elevation: 66.4 ft.
Hydrograph Station ID 47541 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
175
155
135
115
95
75
55
35
15
-5
-25
-45
-65
-85
-105
-125
-145
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

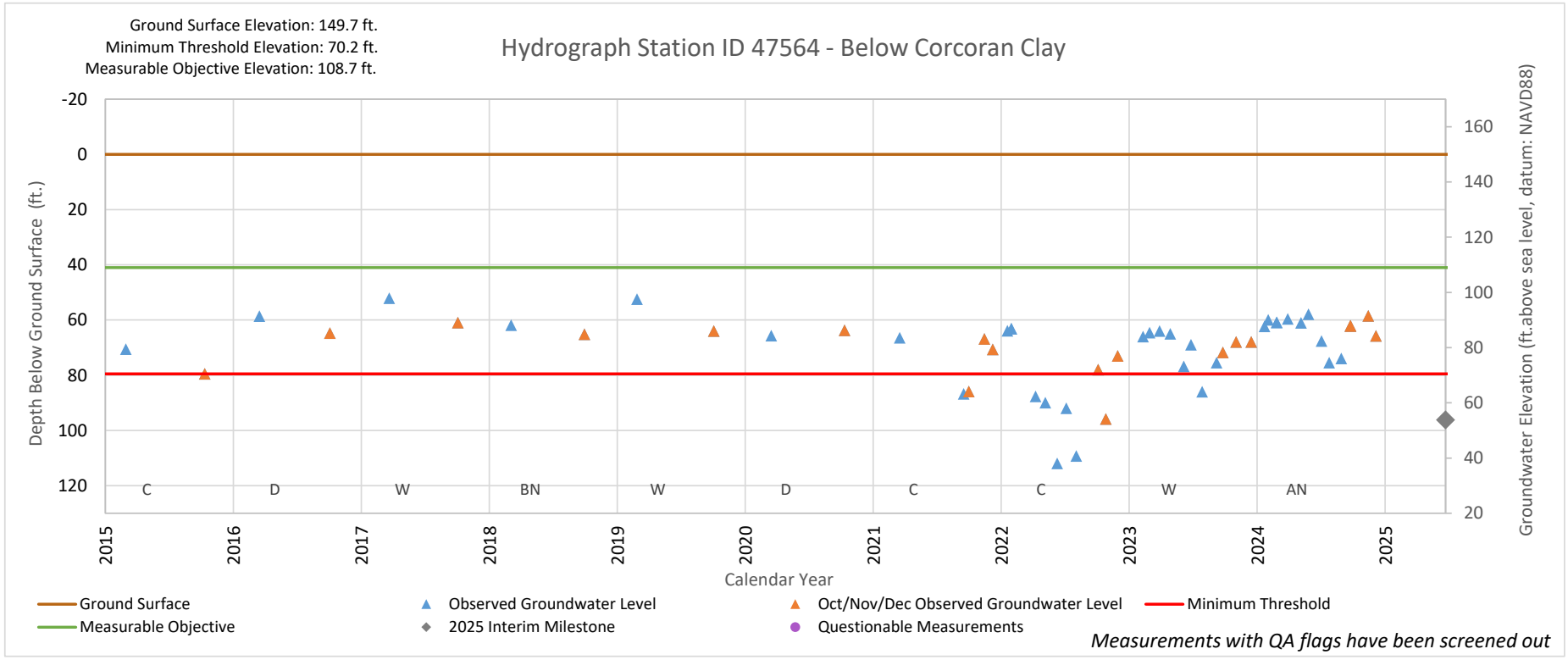

Ground Surface Elevation: 179.9 ft.
Minimum Threshold Elevation: 73.7 ft.
Measurable Objective Elevation: 112.6 ft.
Hydrograph Station ID 47542 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
200
180
160
140
120
100
80
60
40
20
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

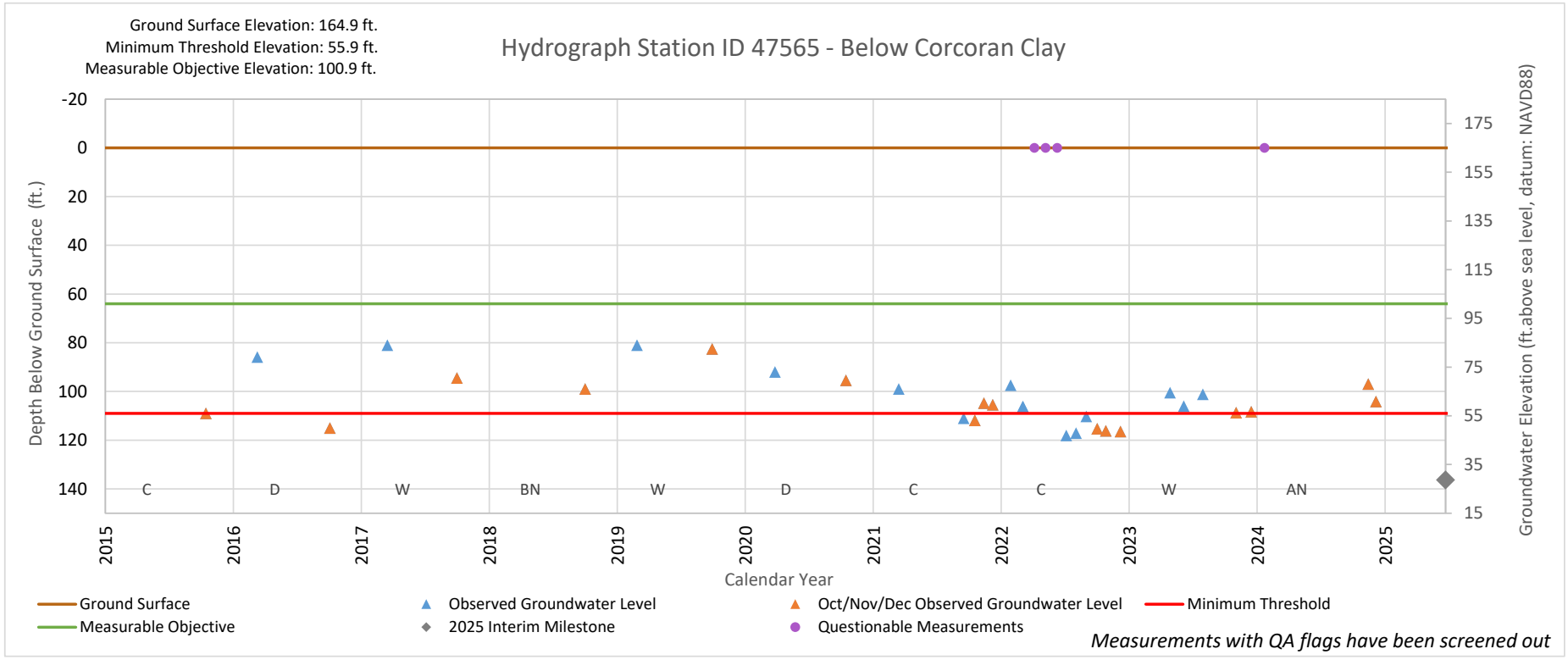

Ground Surface Elevation: 186.9 ft.
Minimum Threshold Elevation: 87.4 ft.
Measurable Objective Elevation: 118.1 ft.
Hydrograph Station ID 47553 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
197
177
157
137
117
97
77
57
37
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

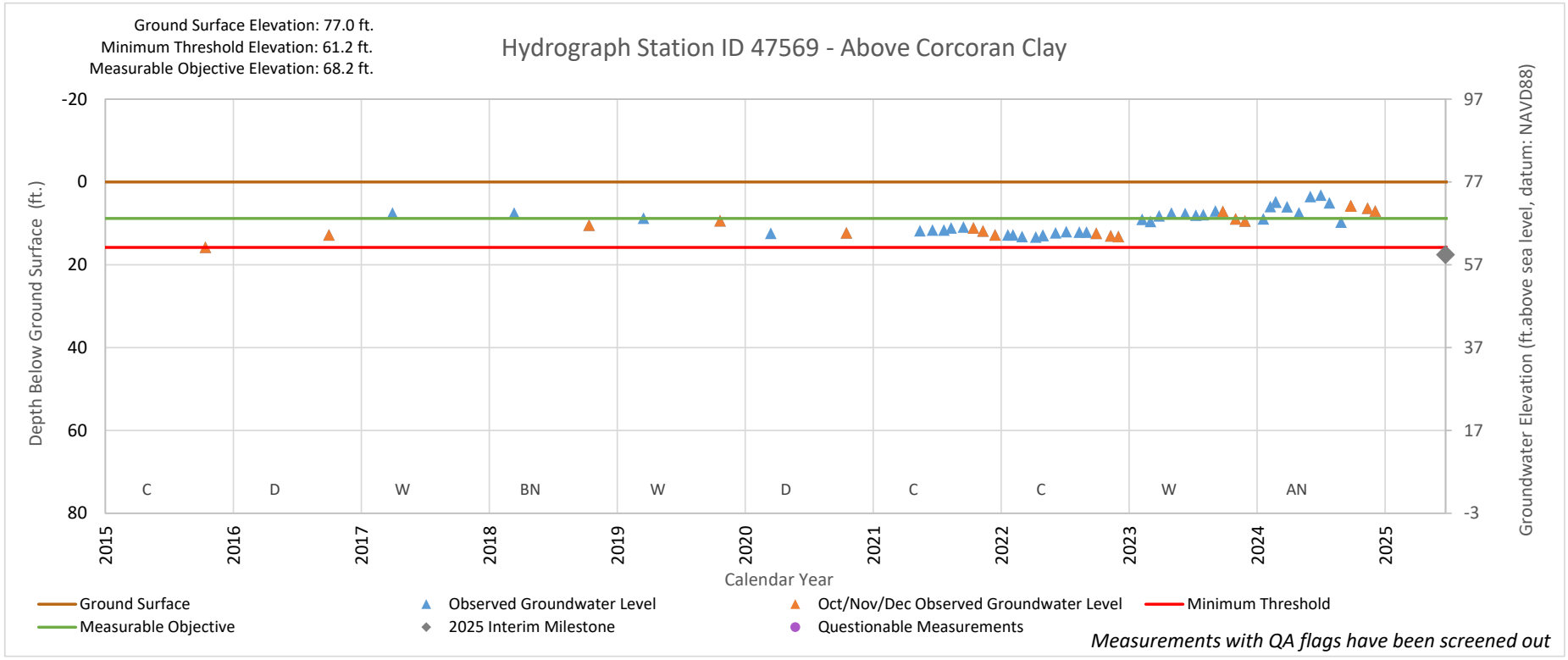

Ground Surface Elevation: 171.8 ft.
Minimum Threshold Elevation: 62.4 ft.
Measurable Objective Elevation: 102.1 ft.
Hydrograph Station ID 47557 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
182
162
142
122
102
82
62
42
22
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

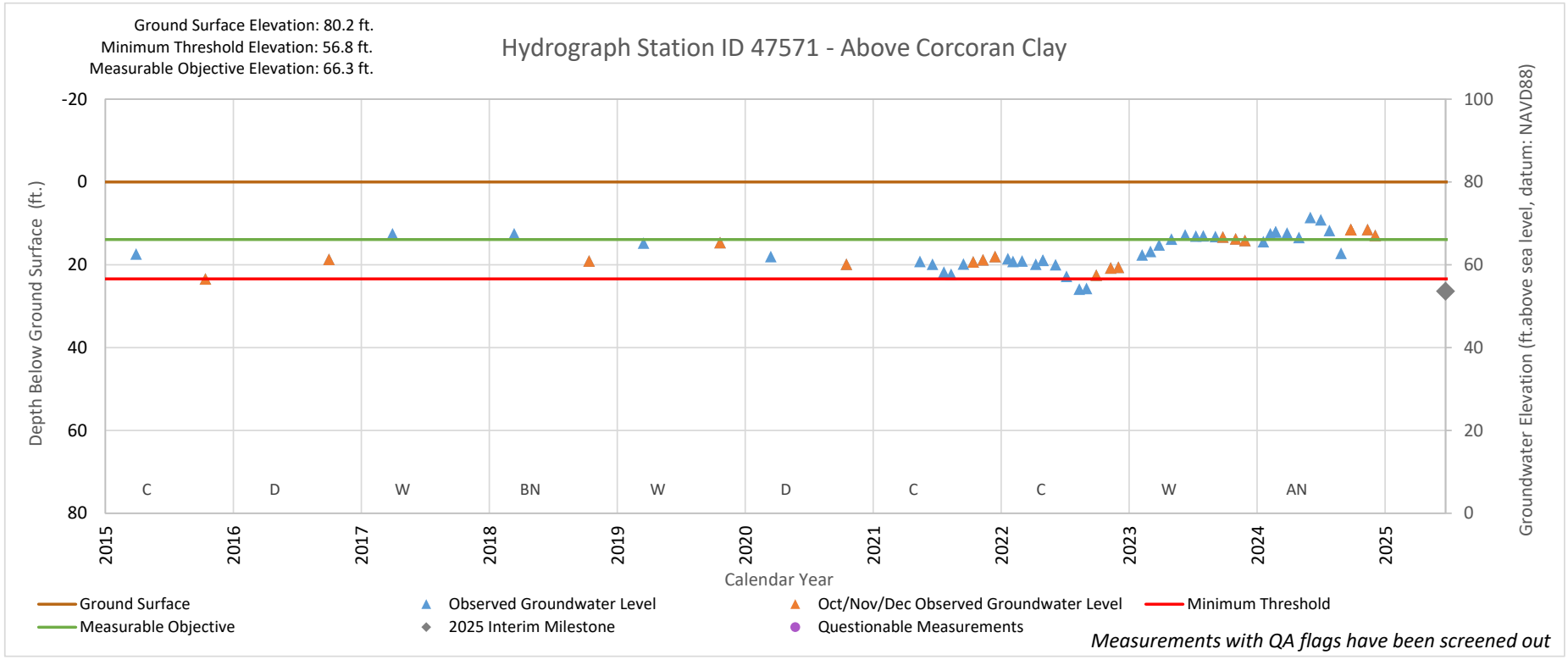

Ground Surface Elevation: 127.8 ft.
Minimum Threshold Elevation: 58.8 ft.
Measurable Objective Elevation: 75.3 ft.
Hydrograph Station ID 47562 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
Groundwater Elevation (ft.above sea level, datum: NAVD88)
148
128
108
88
68
48
28
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

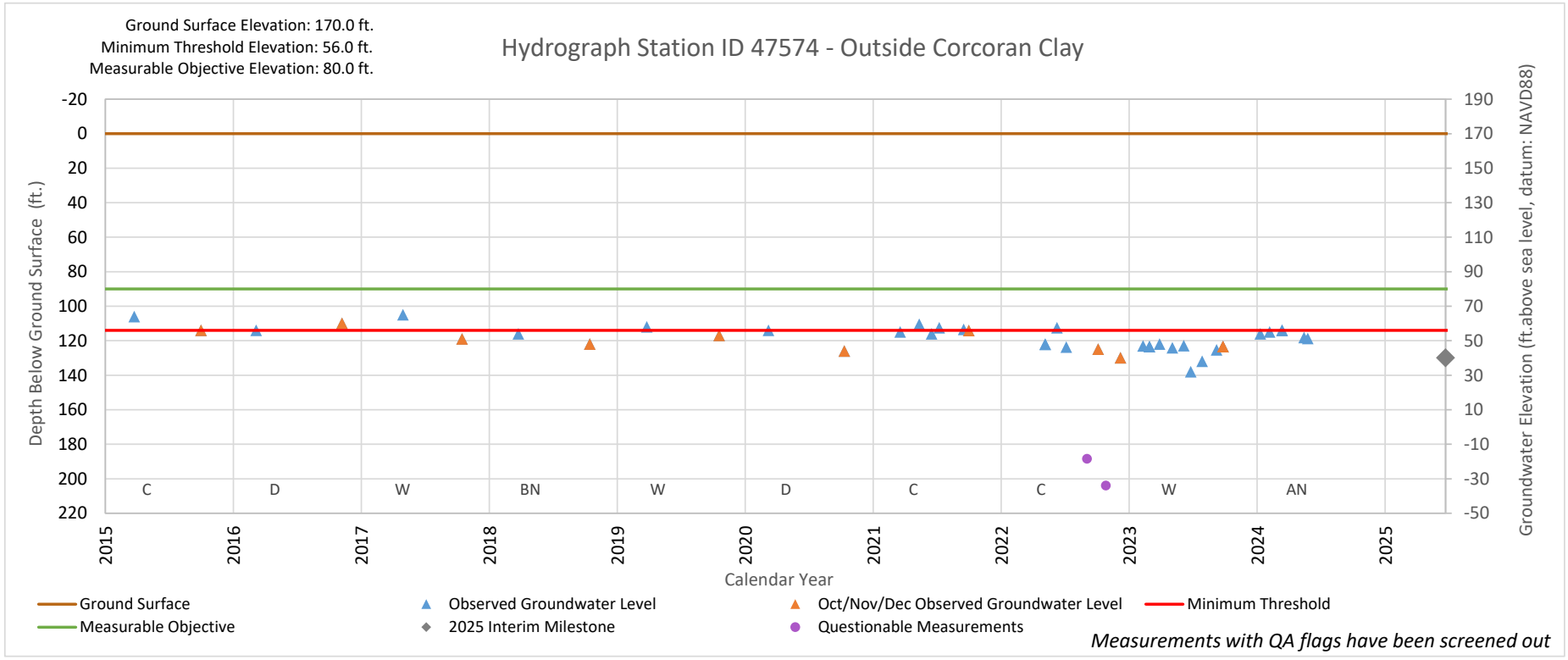

Ground Surface Elevation: 153.5 ft.
Minimum Threshold Elevation: 50.5 ft.
Measurable Objective Elevation: 81.0 ft.
Hydrograph Station ID 47563 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
174
154
134
114
94
74
54
34
14
-7
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

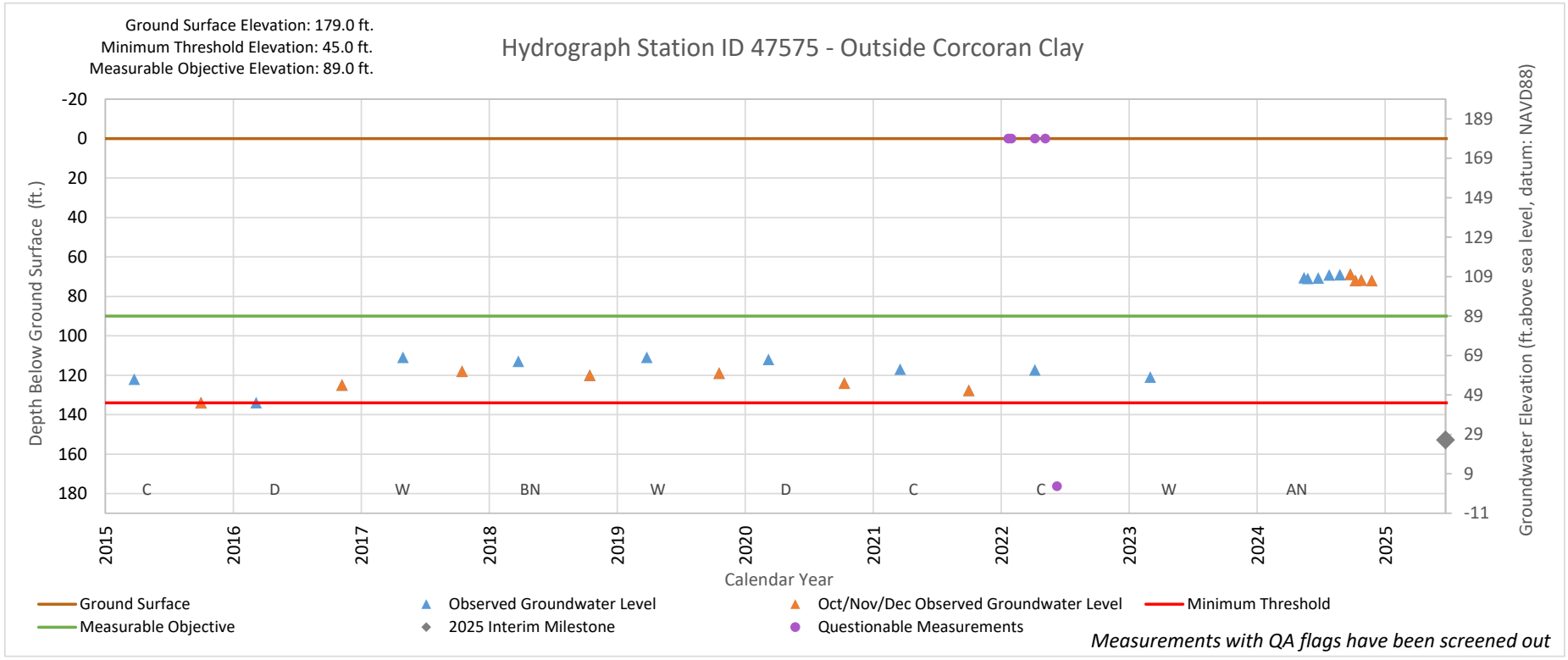

Ground Surface Elevation: 149.7 ft.
Minimum Threshold Elevation: 70.2 ft.
Measurable Objective Elevation: 108.7 ft.
Hydrograph Station ID 47564 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
160
140
120
100
80
60
40
20
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

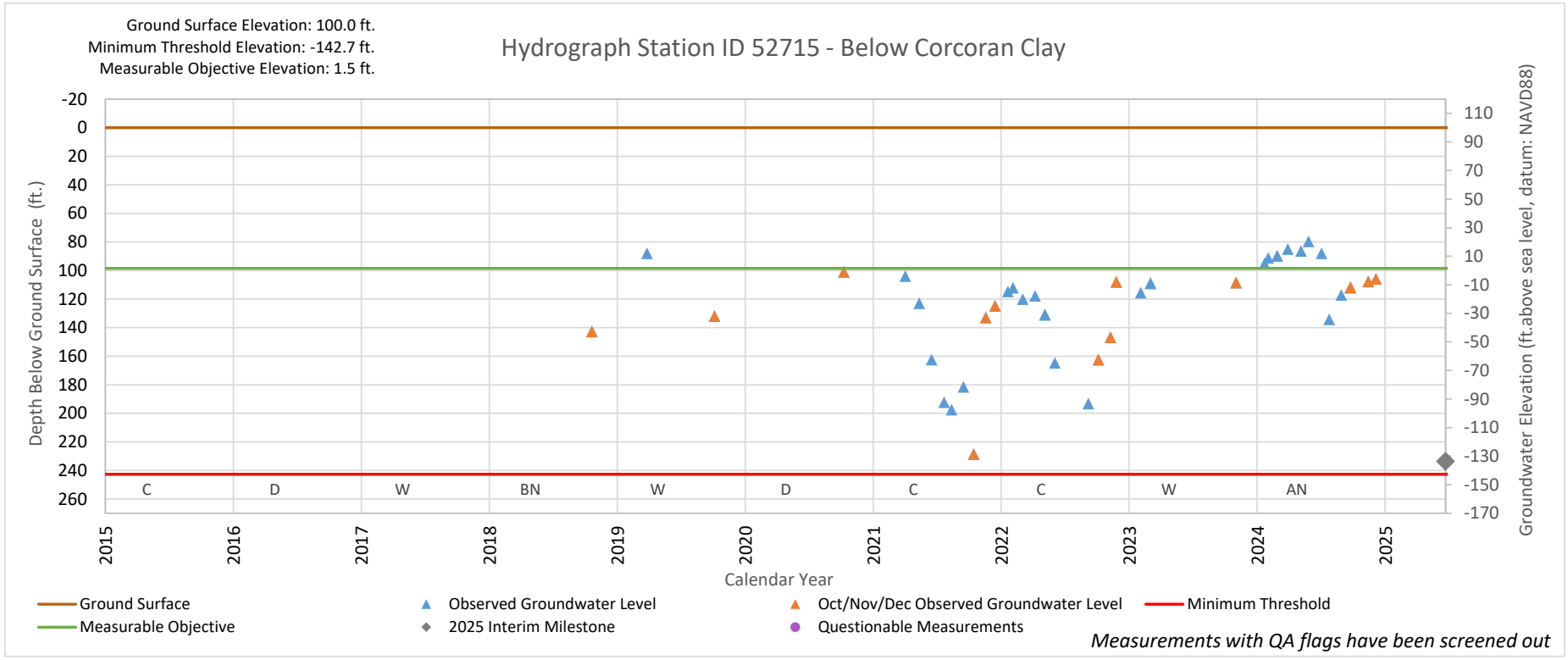

Ground Surface Elevation: 164.9 ft.
Minimum Threshold Elevation: 55.9 ft.
Measurable Objective Elevation: 100.9 ft.
Hydrograph Station ID 47565 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
175
155
135
115
95
75
55
35
15
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

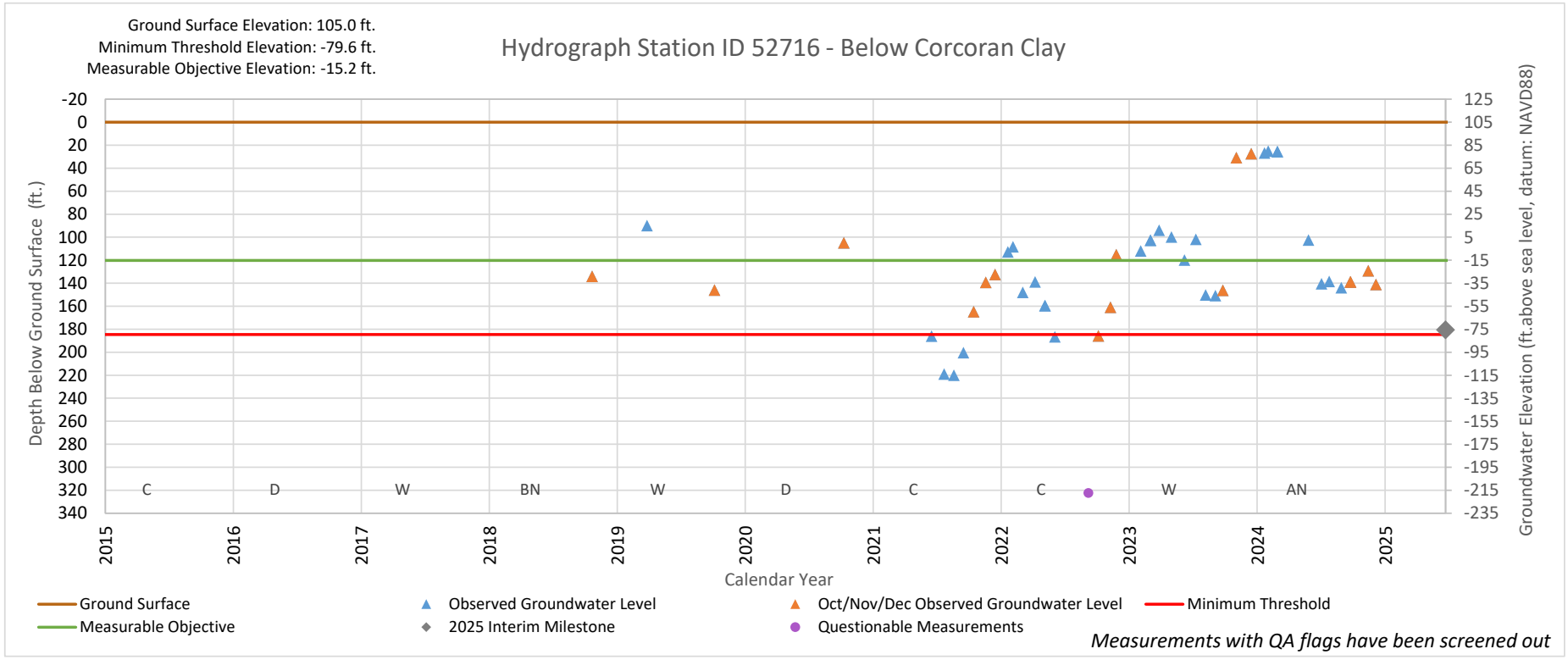

Ground Surface Elevation: 77.0 ft.
Minimum Threshold Elevation: 61.2 ft.
Measurable Objective Elevation: 68.2 ft.
Hydrograph Station ID 47569 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
97
77
57
37
17
-3
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

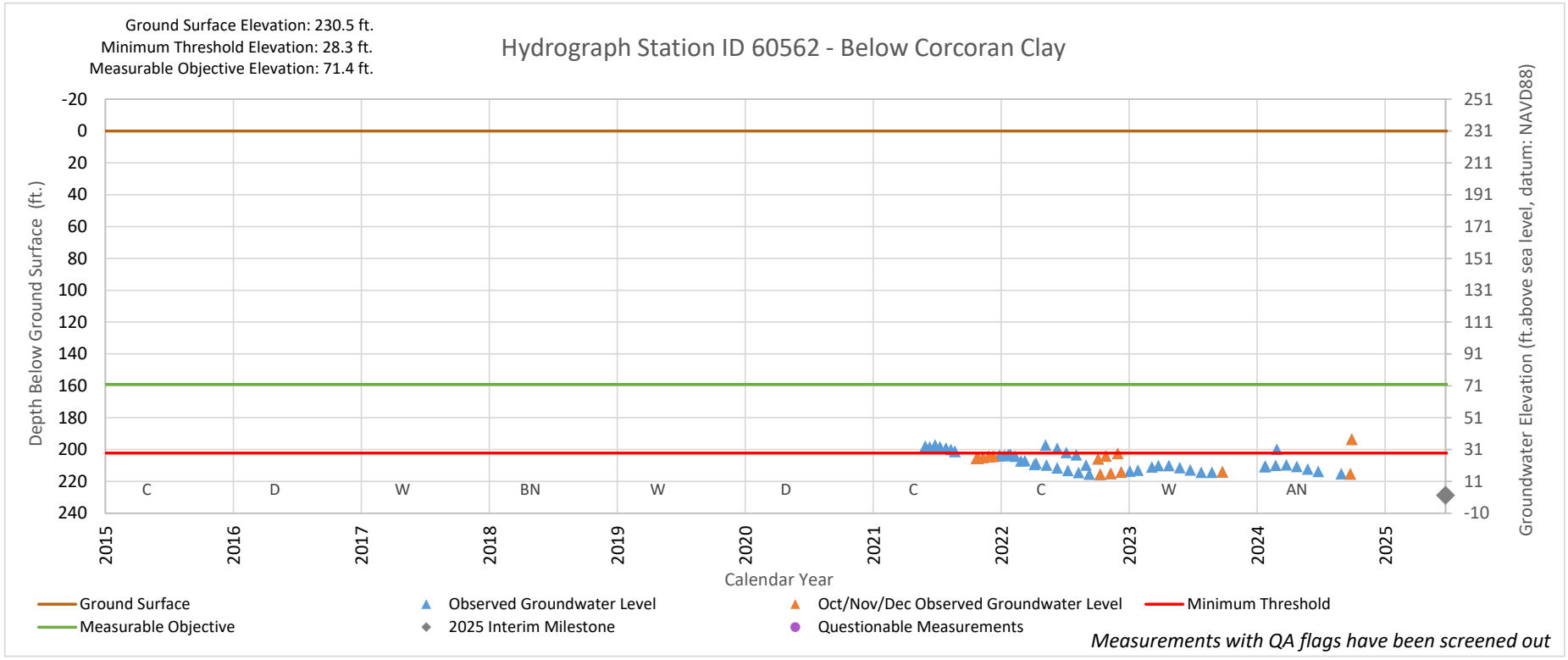

Ground Surface Elevation: 80.2 ft.
Minimum Threshold Elevation: 56.8 ft.
Measurable Objective Elevation: 66.3 ft.
Hydrograph Station ID 47571 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
80
60
40
20
0
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

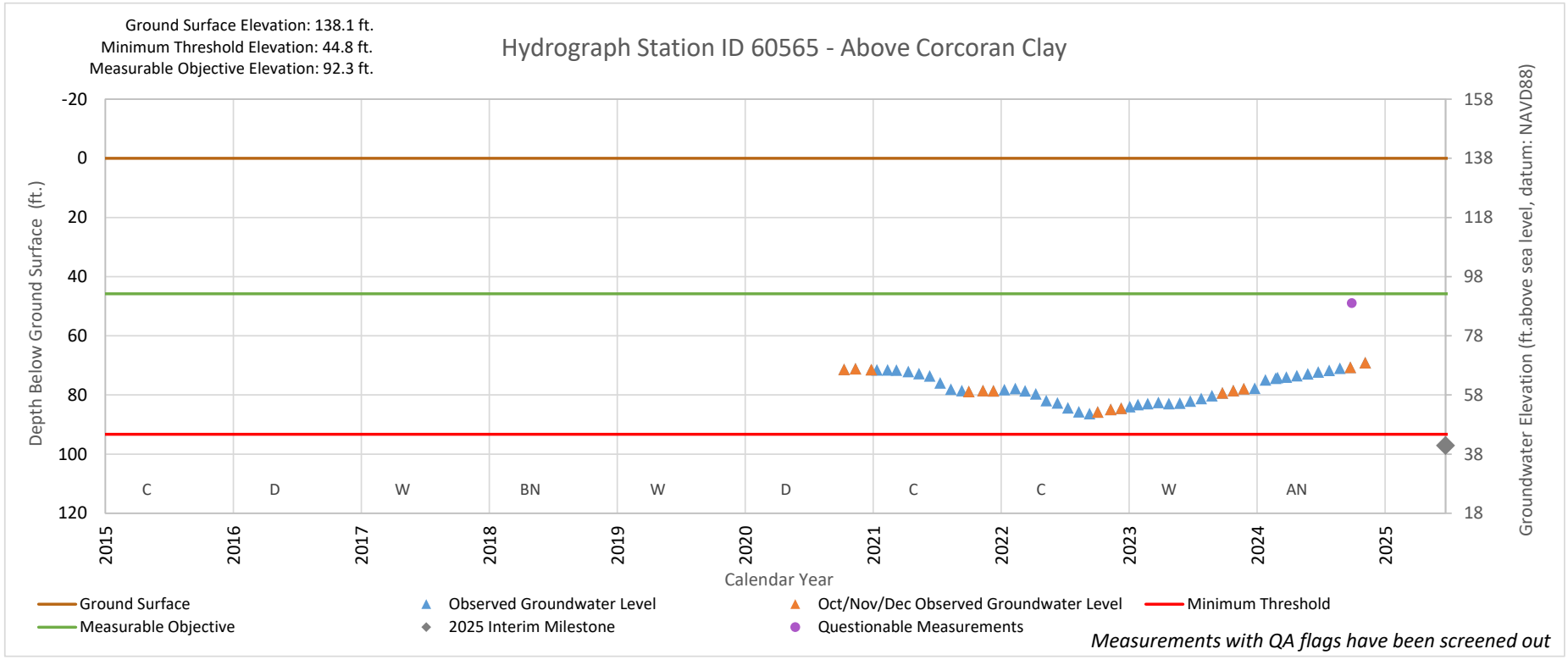

Ground Surface Elevation: 170.0 ft.
Minimum Threshold Elevation: 56.0 ft.
Measurable Objective Elevation: 80.0 ft.
Hydrograph Station ID 47574 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
190
170
150
130
110
90
70
50
30
10
-10
-30
-50
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

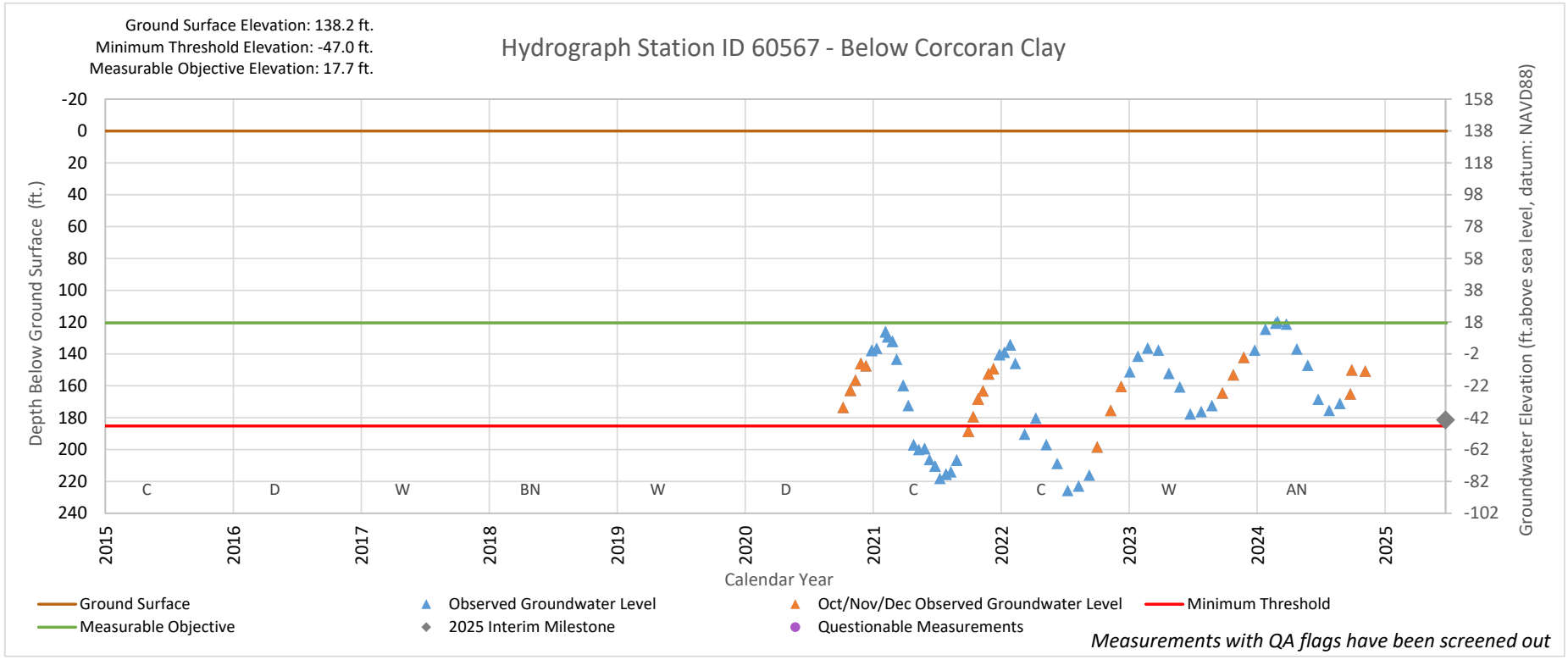

Ground Surface Elevation: 179.0 ft.
Minimum Threshold Elevation: 45.0 ft.
Measurable Objective Elevation: 89.0 ft.
Hydrograph Station ID 47575 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
180
Groundwater Elevation (ft.above sea level, datum: NAVD88)
189
169
149
129
109
89
69
49
29
9
-11
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

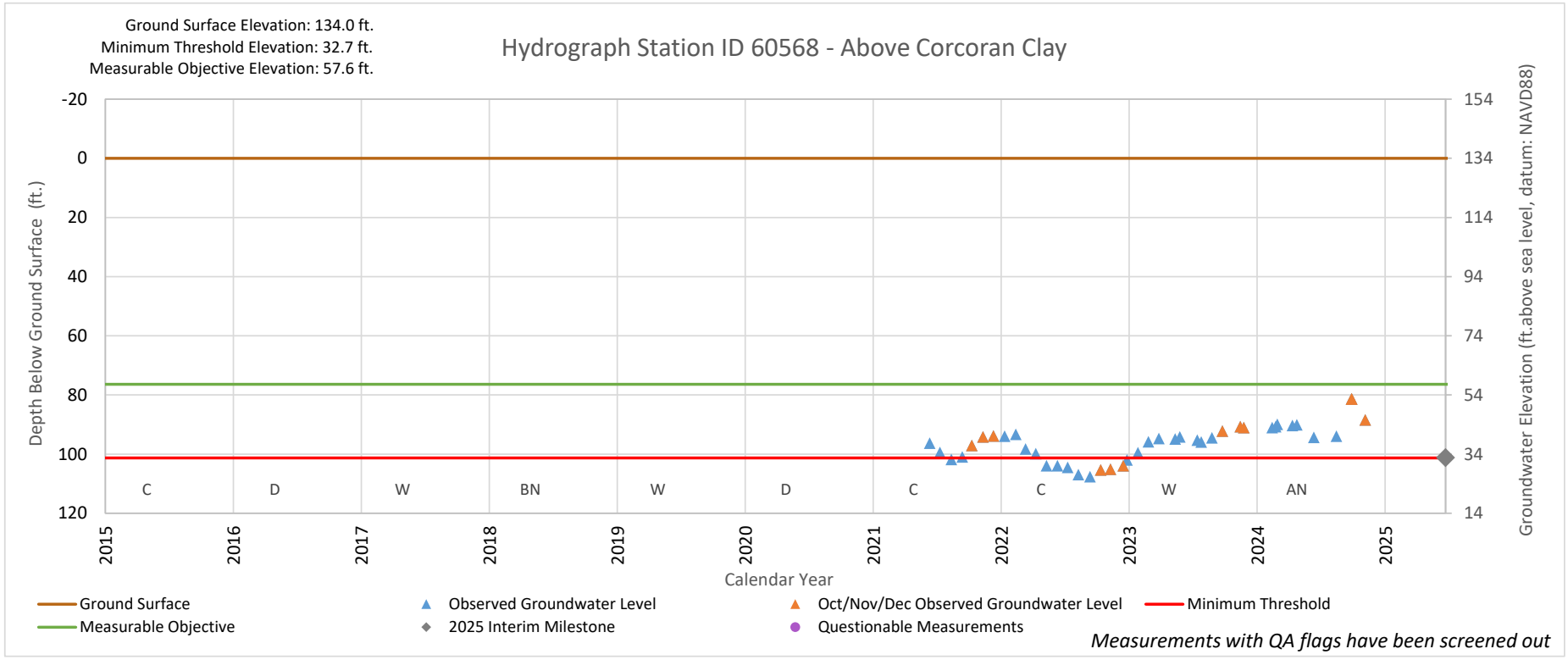

Ground Surface Elevation: 100.0 ft.
Minimum Threshold Elevation: -142.7 ft.
Measurable Objective Elevation: 1.5 ft.
Hydrograph Station ID 52715 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
260
110
90
70
50
30
10
-10
-30
-50
-70
-90
-110
-130
-150
-170
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

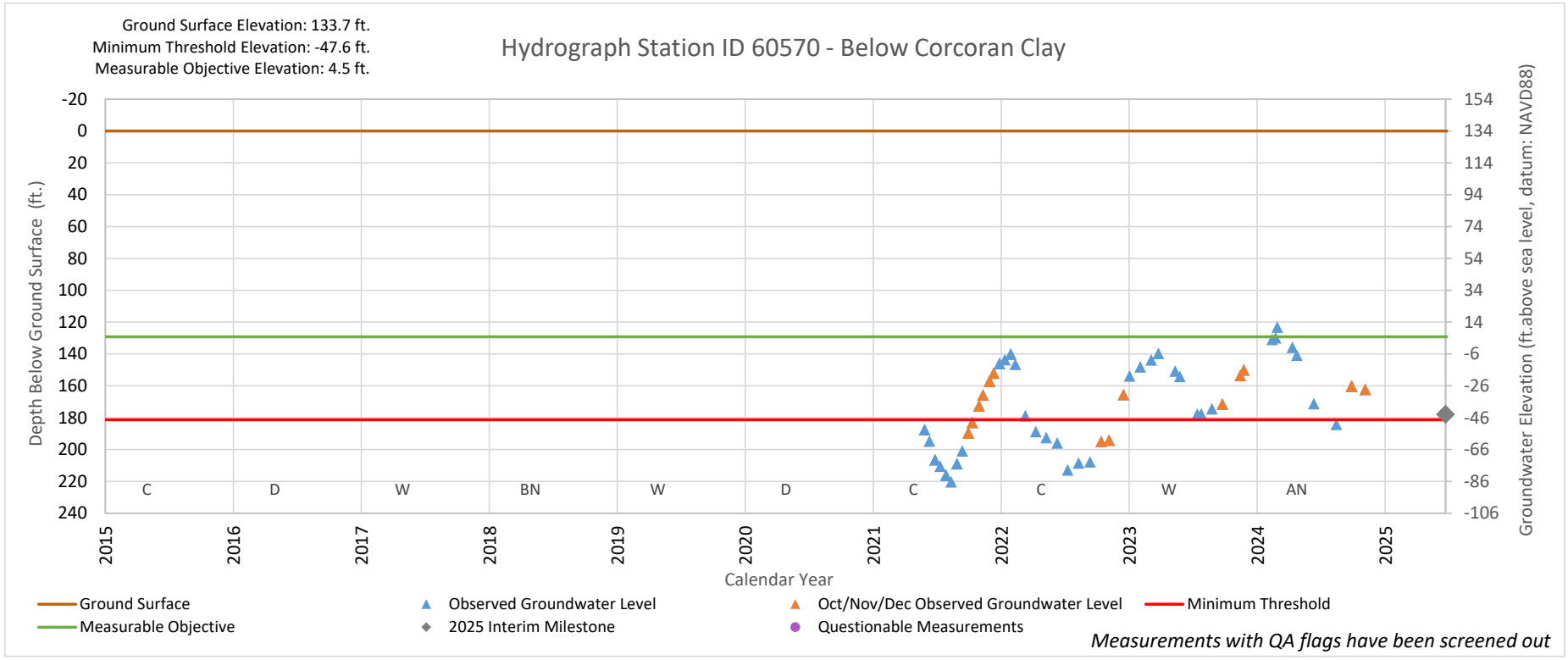

Ground Surface Elevation: 105.0 ft.
Minimum Threshold Elevation: -79.6 ft.
Measurable Objective Elevation: -15.2 ft.
Hydrograph Station ID 52716 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
125
105
85
65
45
25
5
-15
-35
-55
-75
-95
-115
-135
-155
-175
-195
-215
-235
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

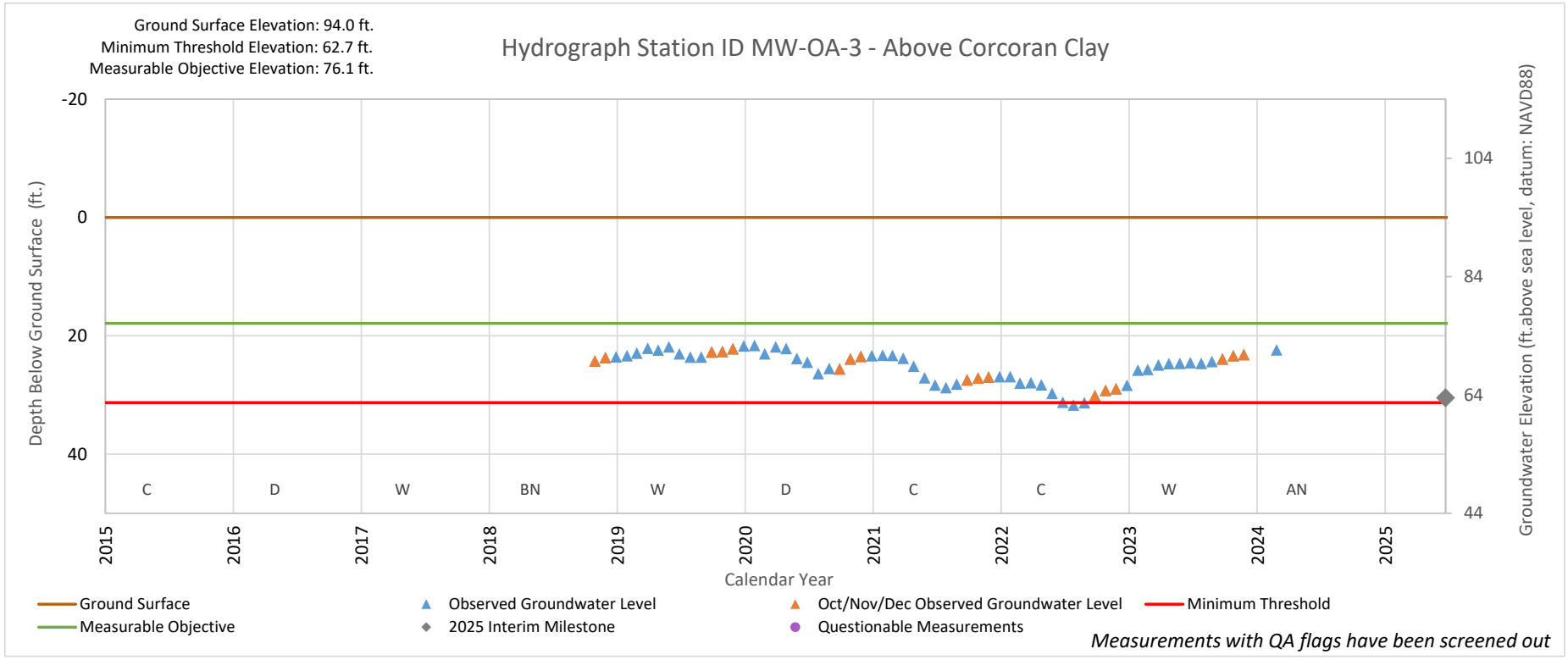

Ground Surface Elevation: 230.5 ft.
Minimum Threshold Elevation: 28.3 ft.
Measurable Objective Elevation: 71.4 ft.
Hydrograph Station ID 60562 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
251
231
211
191
171
151
131
111
91
71
51
31
11
-10
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

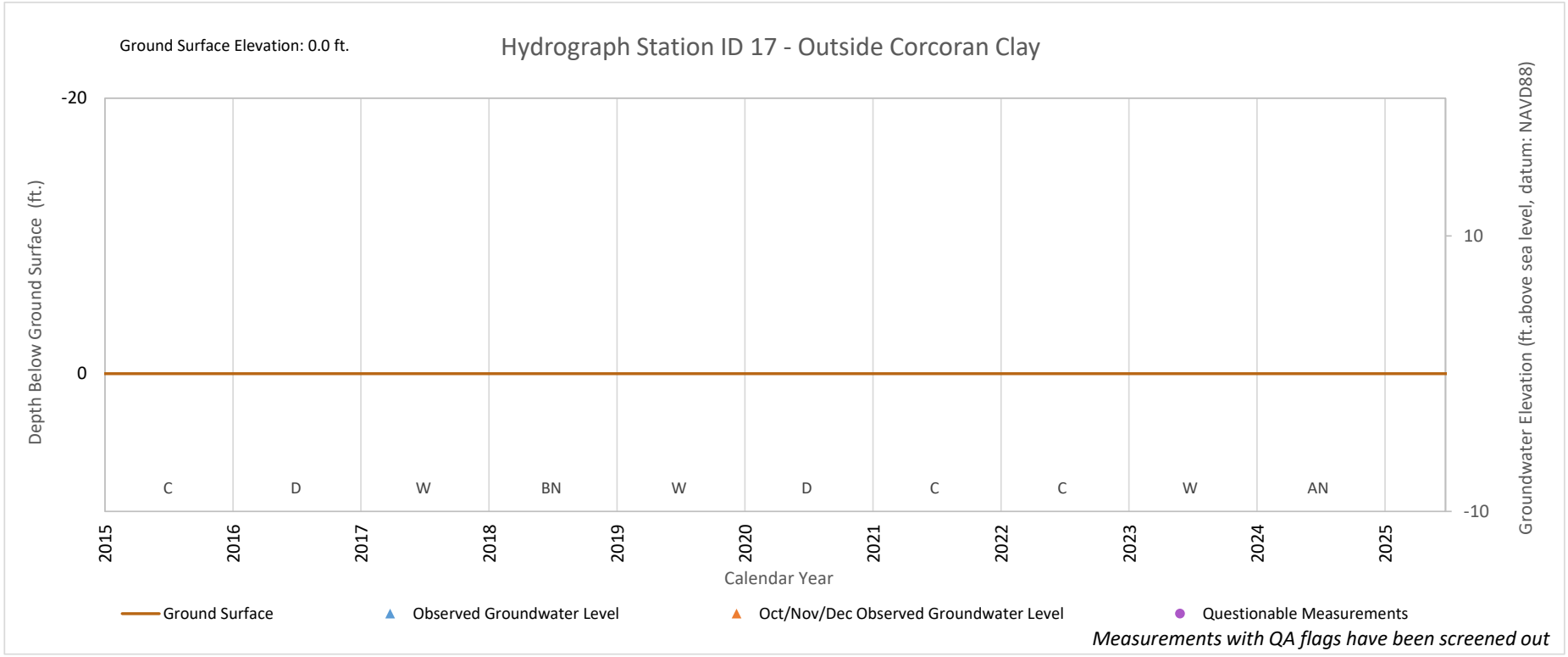

Ground Surface Elevation: 138.1 ft.
Minimum Threshold Elevation: 44.8 ft.
Measurable Objective Elevation: 92.3 ft.
Hydrograph Station ID 60565 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
158
138
118
98
78
58
38
18
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

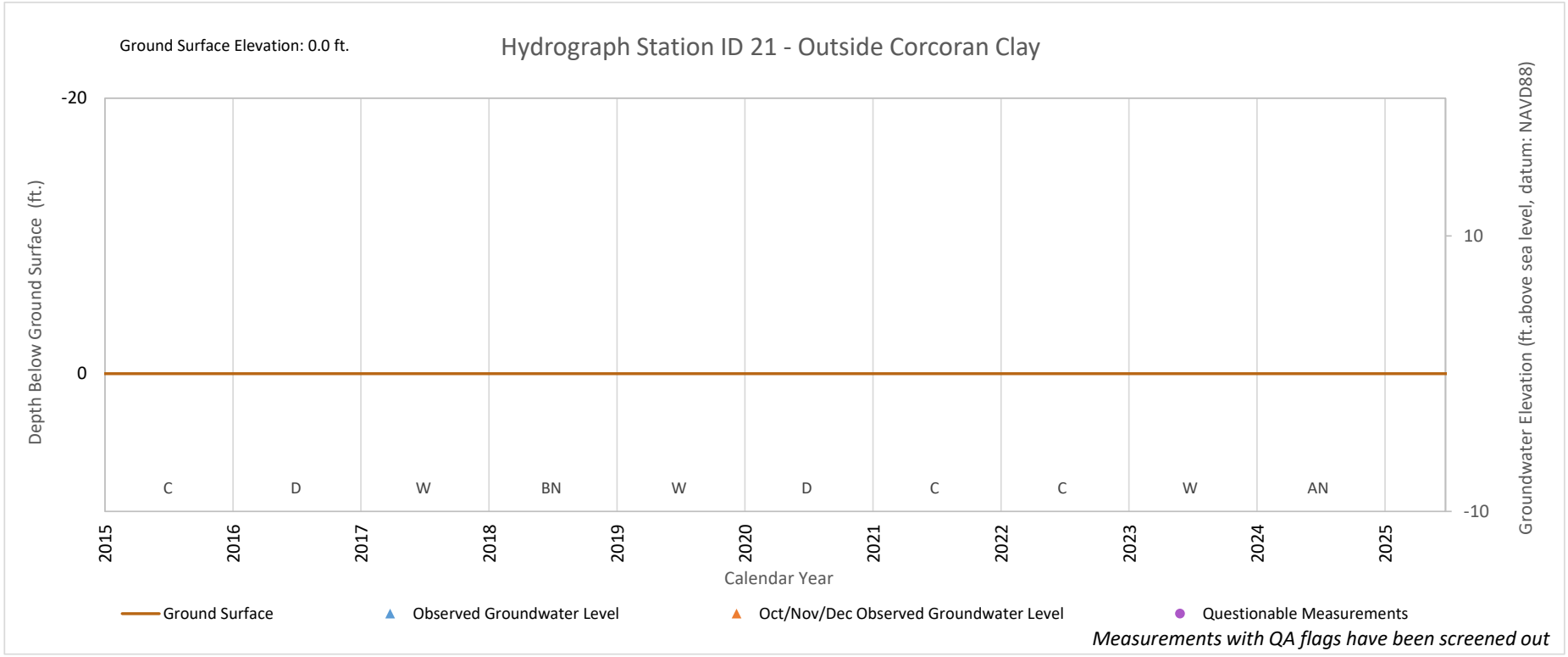

Ground Surface Elevation: 138.2 ft.
Minimum Threshold Elevation: -47.0 ft.
Measurable Objective Elevation: 17.7 ft.
Hydrograph Station ID 60567 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
158
138
118
98
78
58
38
18
-2
-22
-42
-62
-82
-102
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

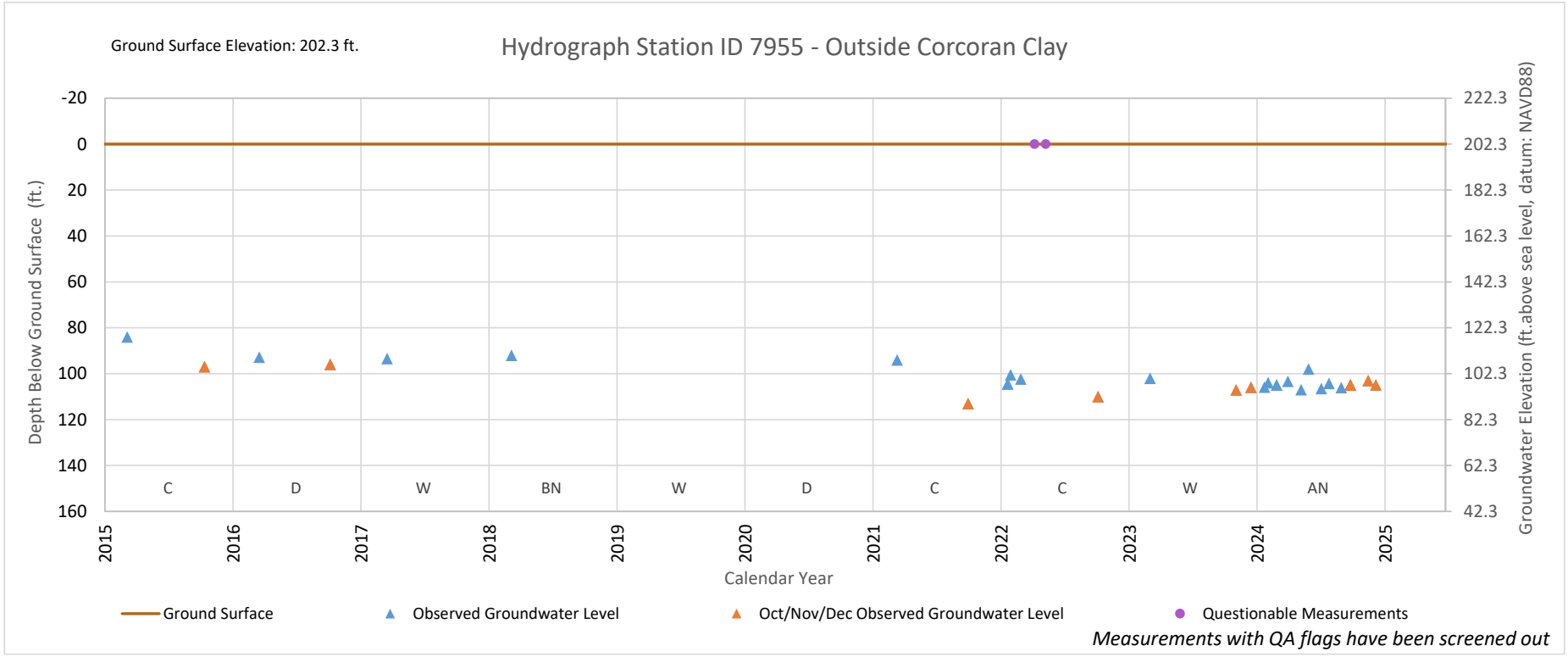

Ground Surface Elevation: 134.0 ft.
Minimum Threshold Elevation: 32.7 ft.
Measurable Objective Elevation: 57.6 ft.
Hydrograph Station ID 60568 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
154
134
114
94
74
54
34
14
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

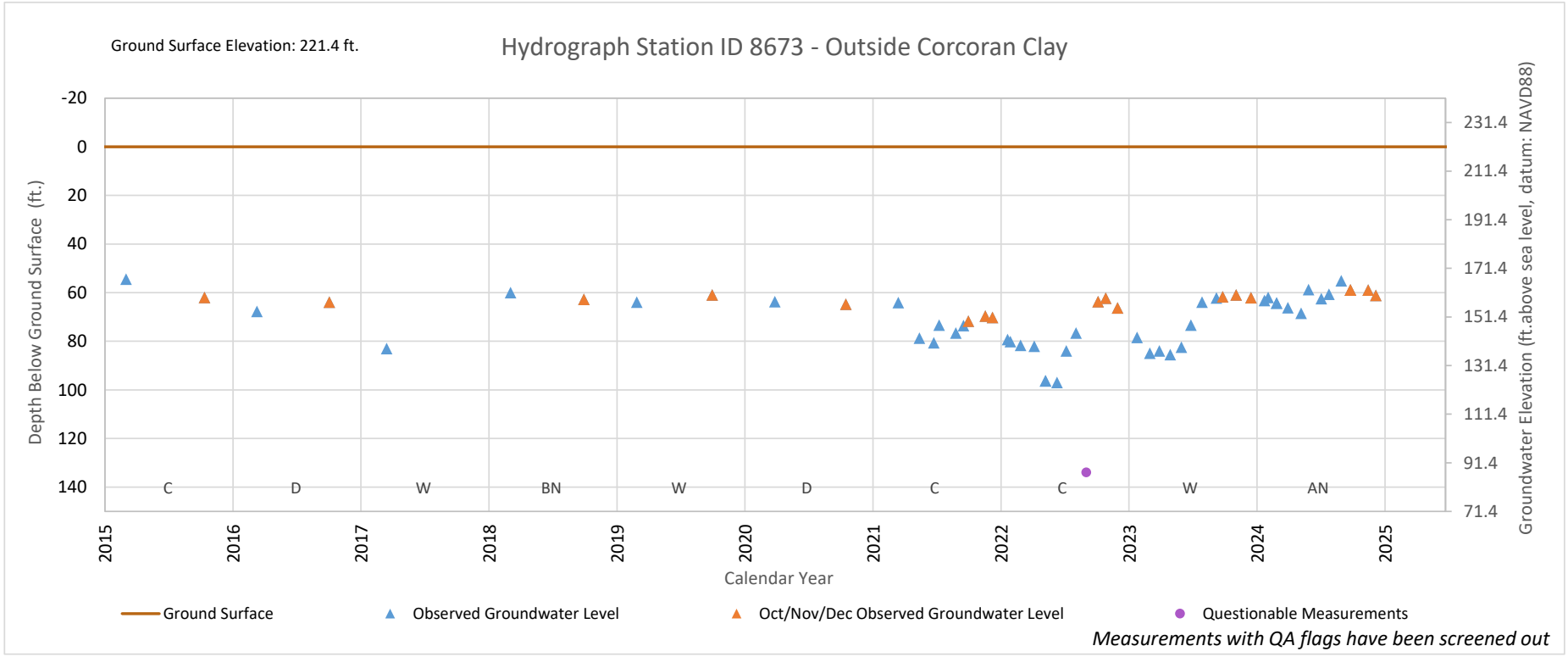

Ground Surface Elevation: 133.7 ft.
Minimum Threshold Elevation: -47.6 ft.
Measurable Objective Elevation: 4.5 ft.
Hydrograph Station ID 60570 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
Groundwater Elevation (ft.above sea level, datum: NAVD88)
154
134
114
94
74
54
34
14
-6
-26
-46
-66
-86
-106
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

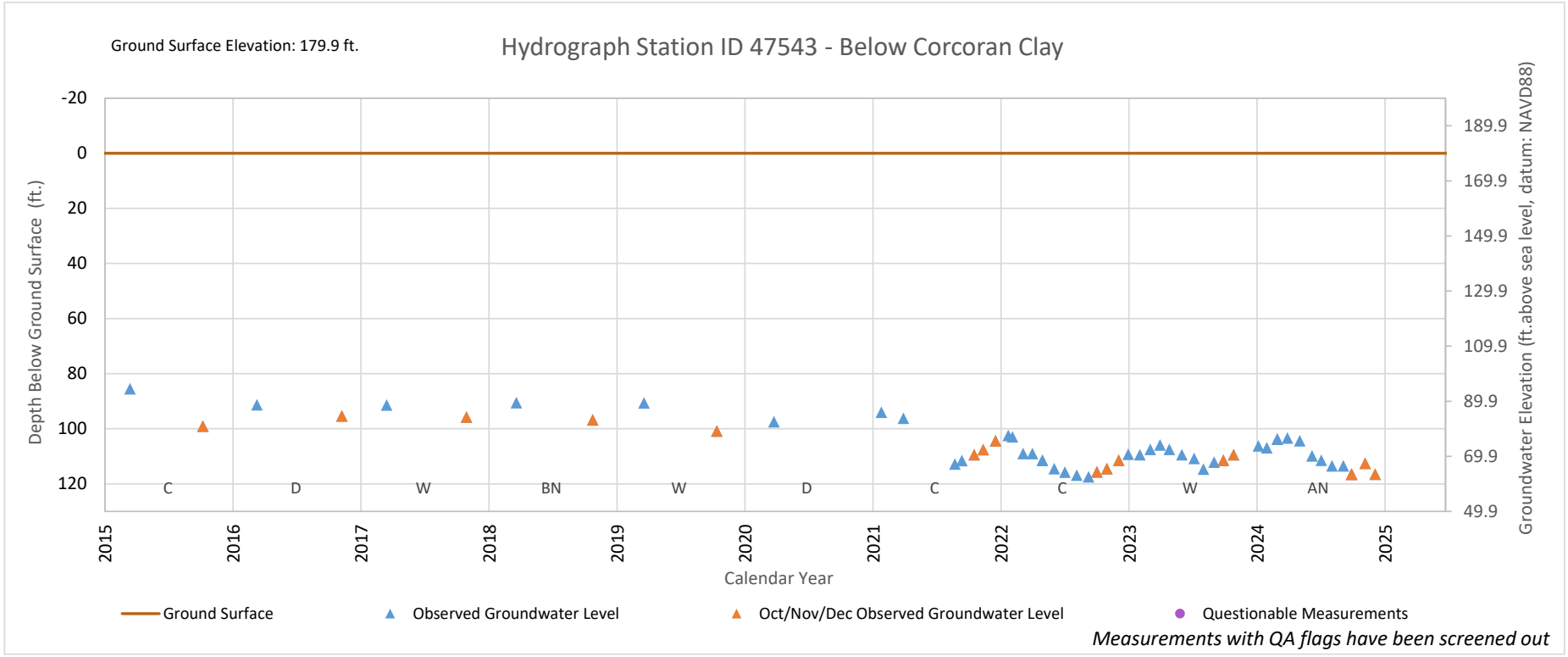

Ground Surface Elevation: 94.0 ft.
Minimum Threshold Elevation: 62.7 ft.
Measurable Objective Elevation: 76.1 ft.
Hydrograph Station ID MW-OA-3 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
104
84
64
44
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Measurable Objective
Observed Groundwater Level
2025 Interim Milestone
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Minimum Threshold
Measurements with QA flags have been screened out

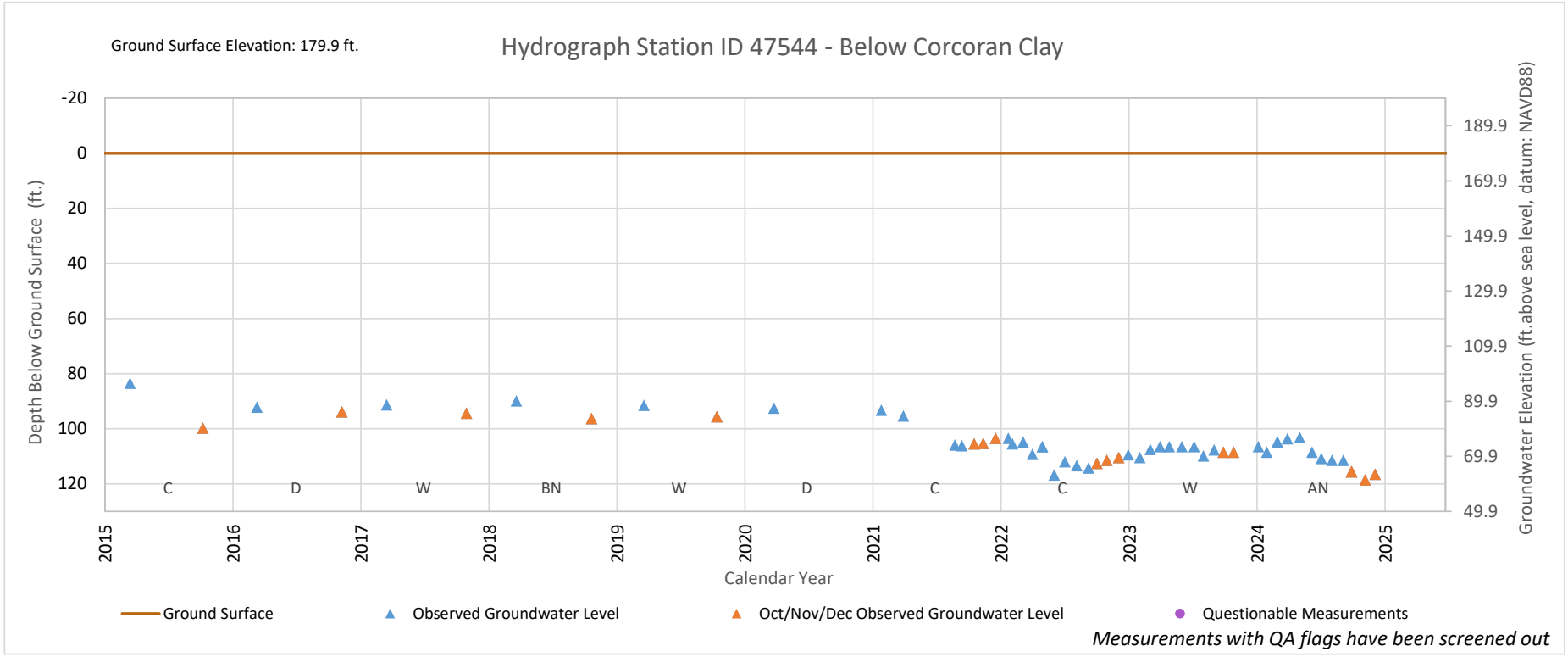

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID 17 - Outside Corcoran Clay
-20
0
Depth Below Ground Surface (ft.)
10
-10
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

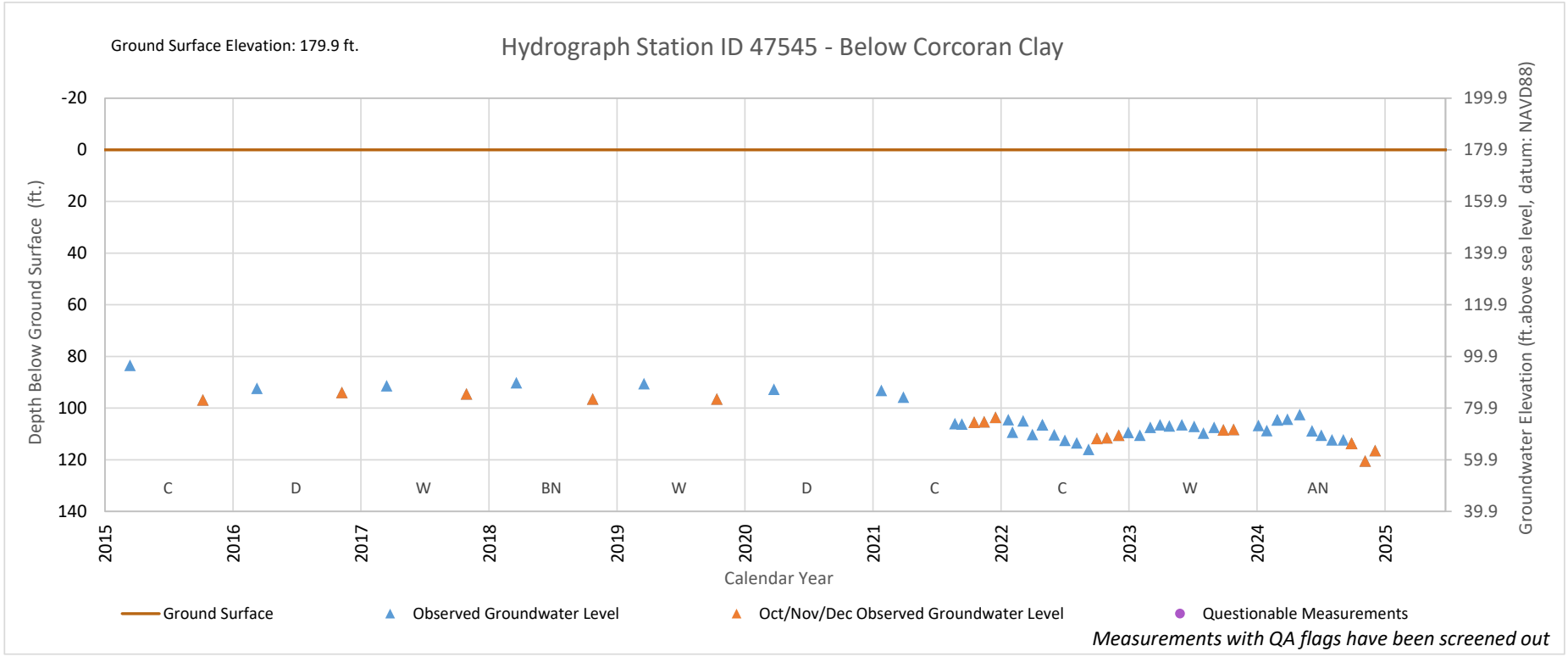

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID 21 - Outside Corcoran Clay
-20
0
Depth Below Ground Surface (ft.)
10
-10
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

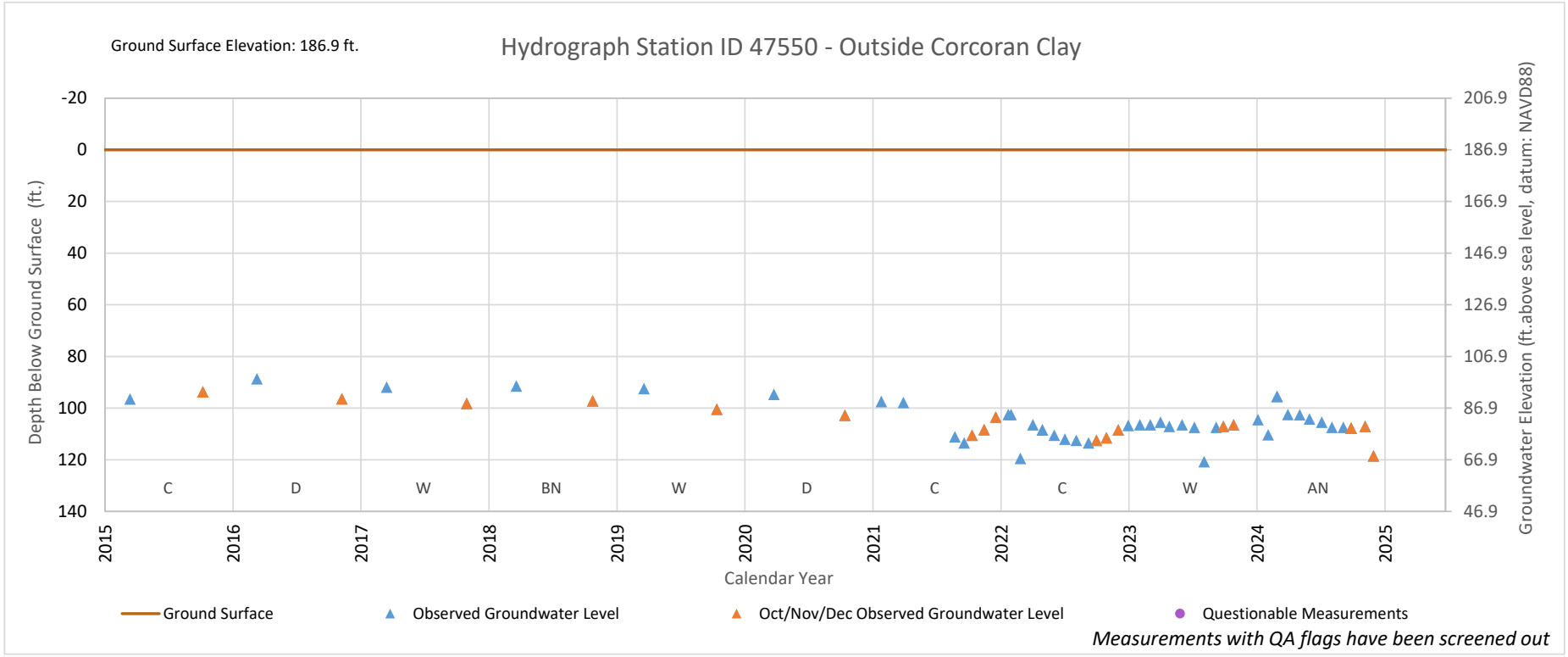

Ground Surface Elevation: 202.3 ft.
Hydrograph Station ID 7955 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
222.3
202.3
182.3
162.3
142.3
122.3
102.3
82.3
62.3
42.3
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

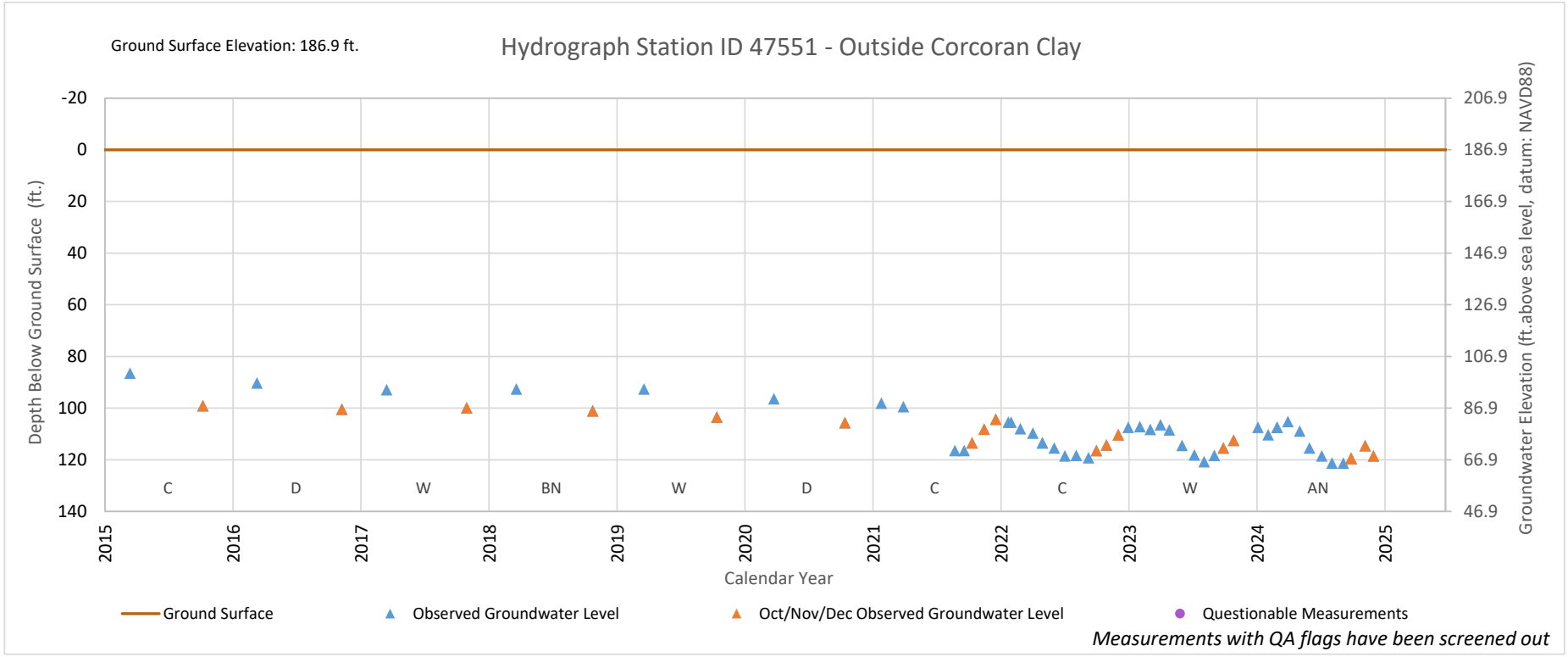

Ground Surface Elevation: 221.4 ft.
Hydrograph Station ID 8673 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
231.4
211.4
191.4
171.4
151.4
131.4
111.4
91.4
71.4
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

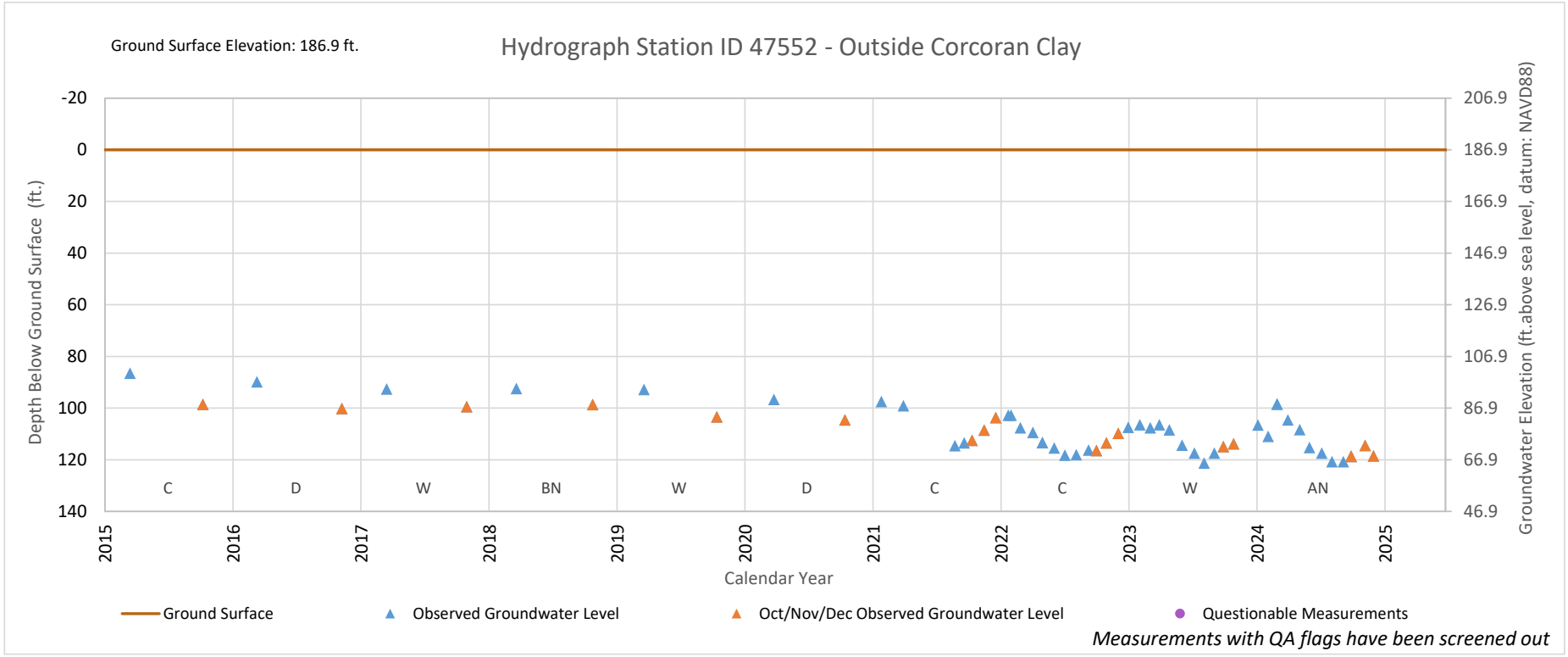

Ground Surface Elevation: 179.9 ft.
Hydrograph Station ID 47543 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
189.9
169.9
149.9
129.9
109.9
89.9
69.9
49.9
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

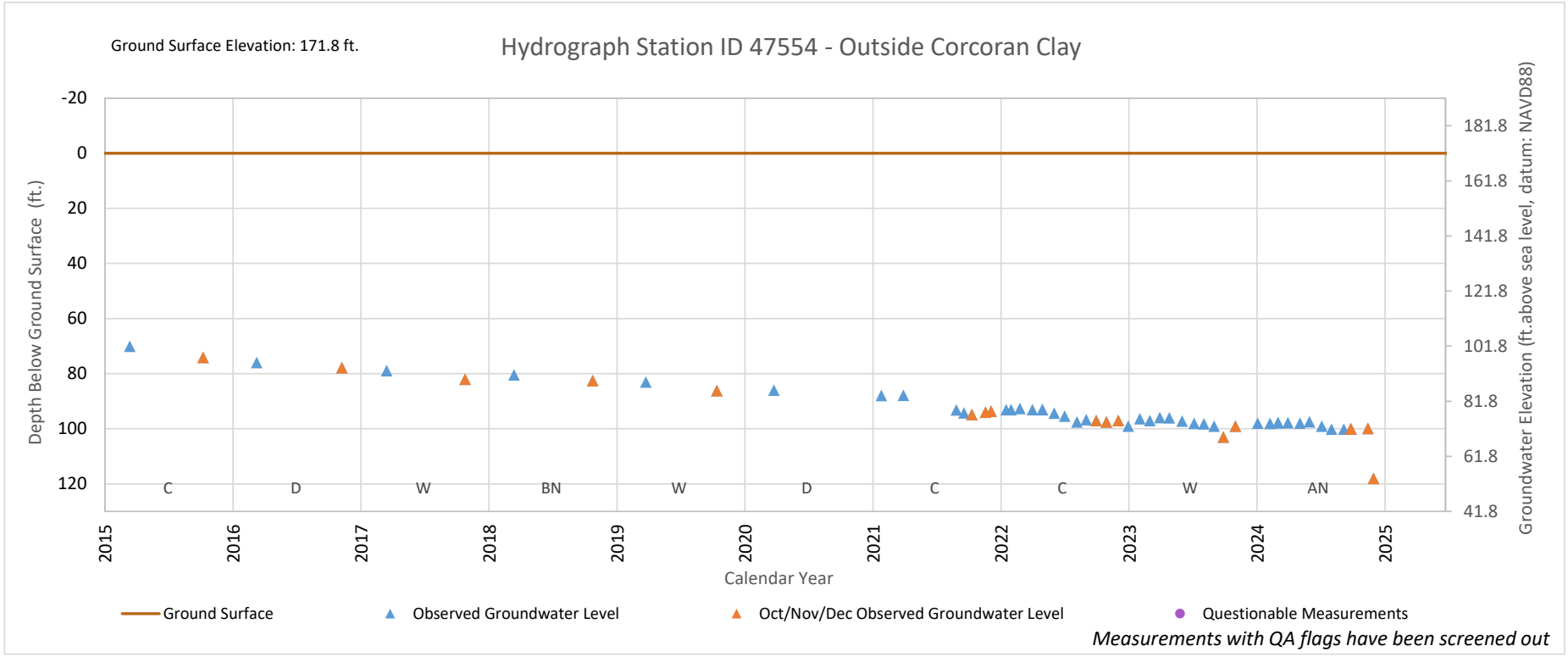

Ground Surface Elevation: 179.9 ft.
Hydrograph Station ID 47544 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Groundwater Elevation (ft.above sea level, datum: NAVD88)
189.9
169.9
149.9
129.9
109.9
89.9
69.9
49.9
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

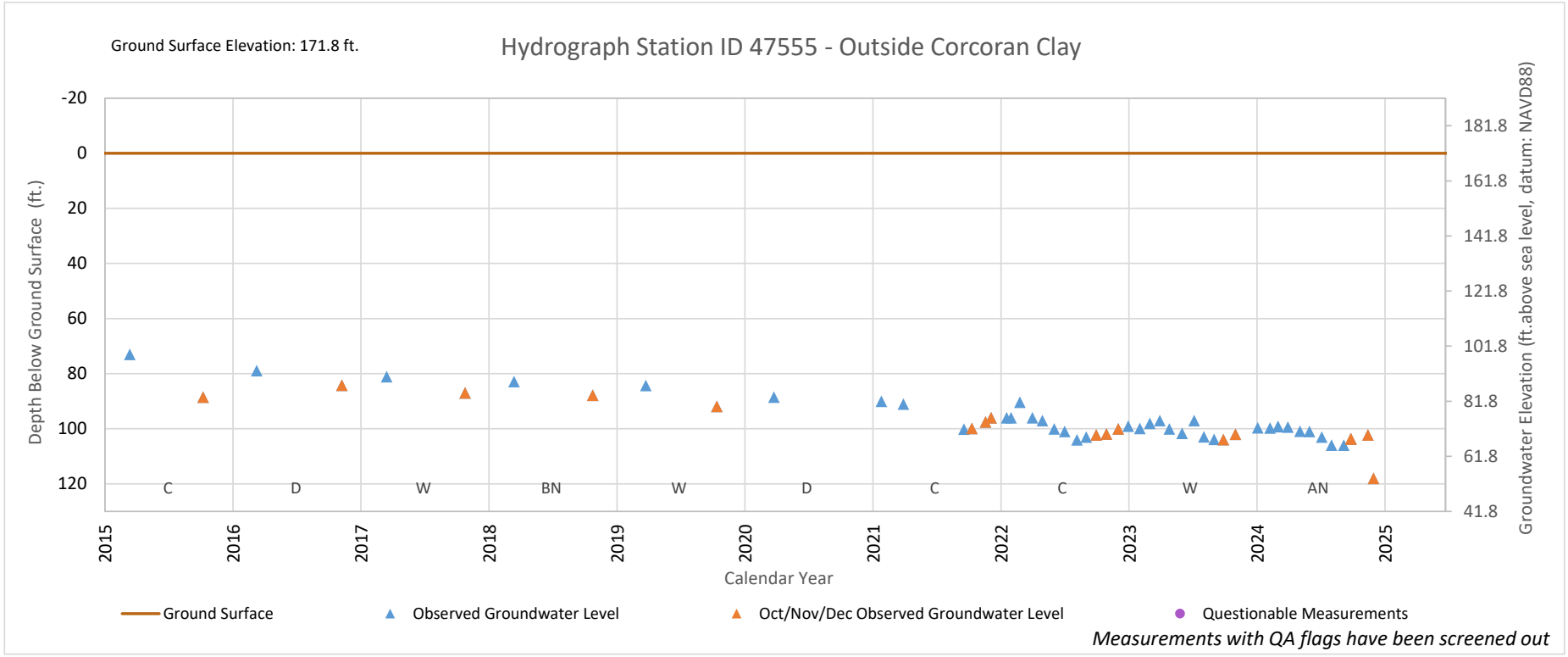

Ground Surface Elevation: 179.9 ft.
Hydrograph Station ID 47545 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
199.9
179.9
159.9
139.9
119.9
99.9
79.9
59.9
39.9
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

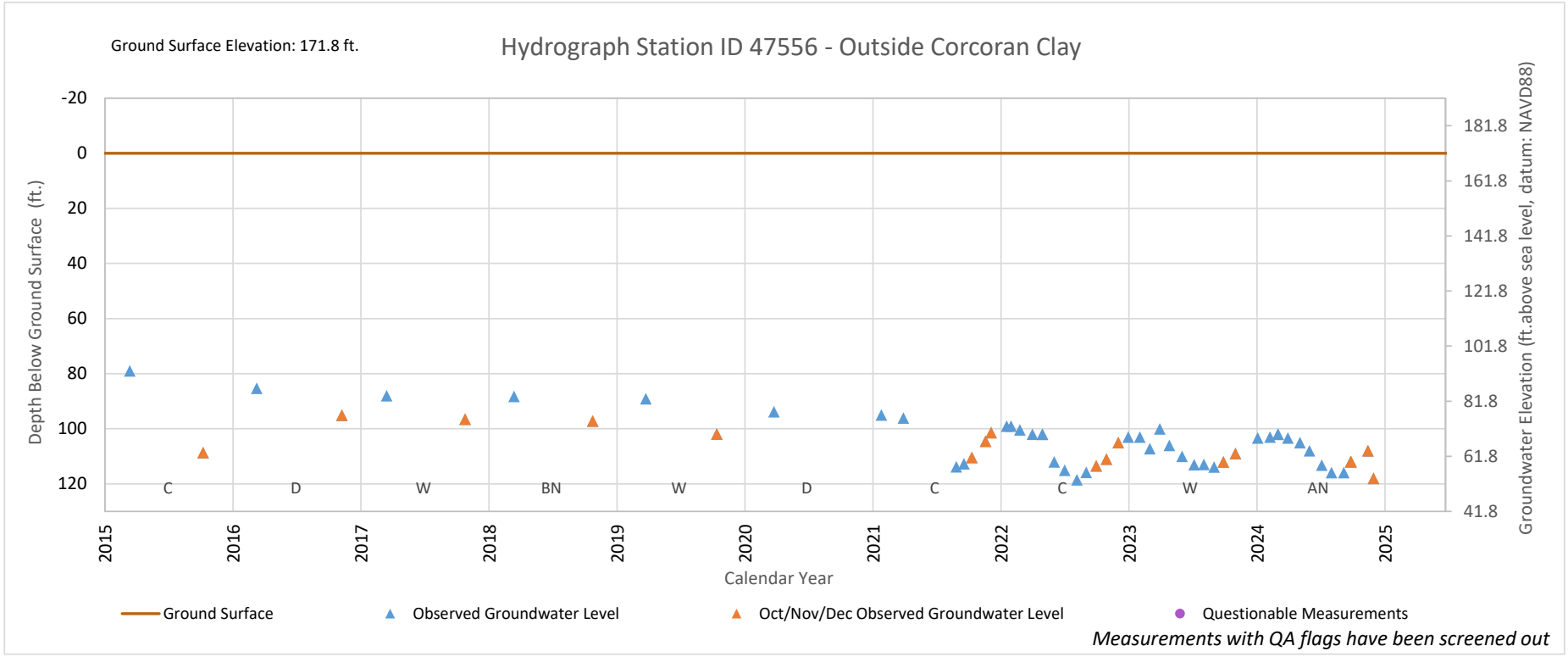

Ground Surface Elevation: 186.9 ft.
Hydrograph Station ID 47550 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
206.9
186.9
166.9
146.9
126.9
106.9
86.9
66.9
46.9
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

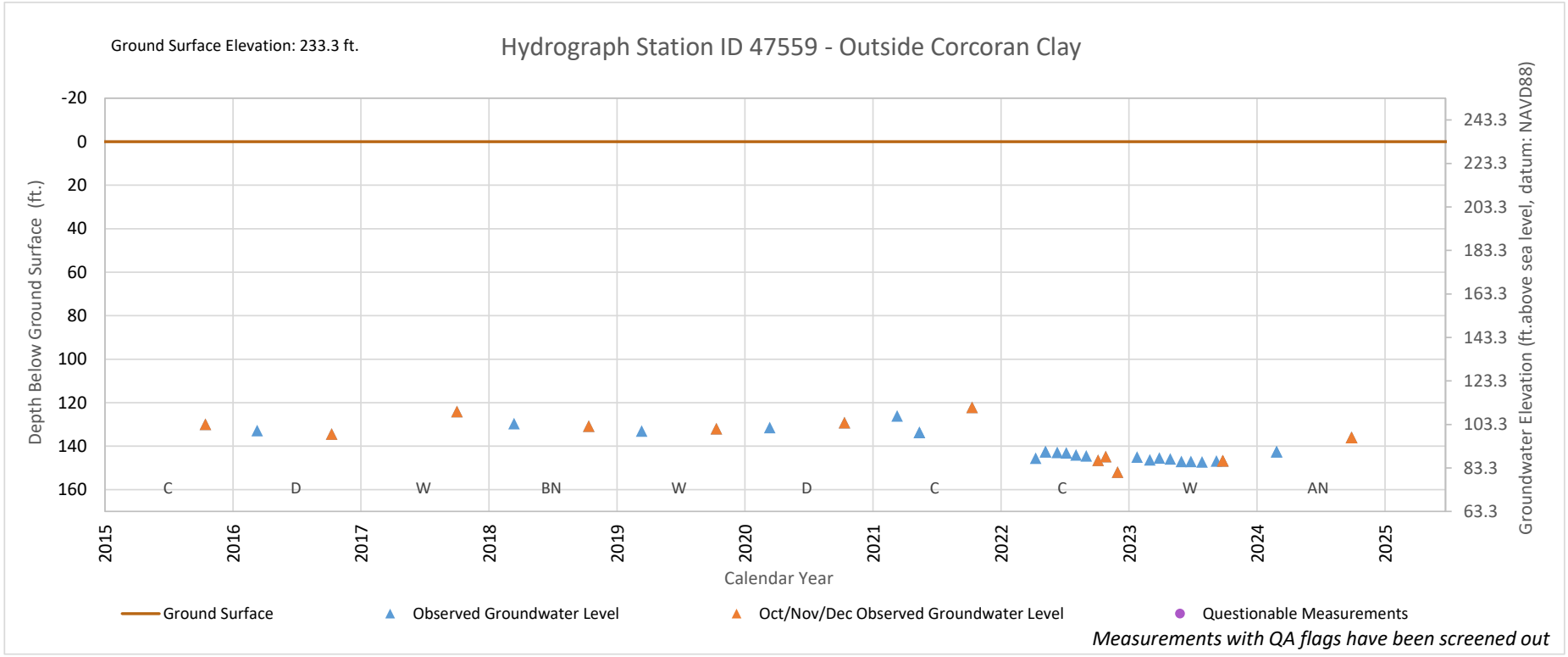

Ground Surface Elevation: 186.9 ft.
Hydrograph Station ID 47551 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
206.9
186.9
166.9
146.9
126.9
106.9
86.9
66.9
46.9
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

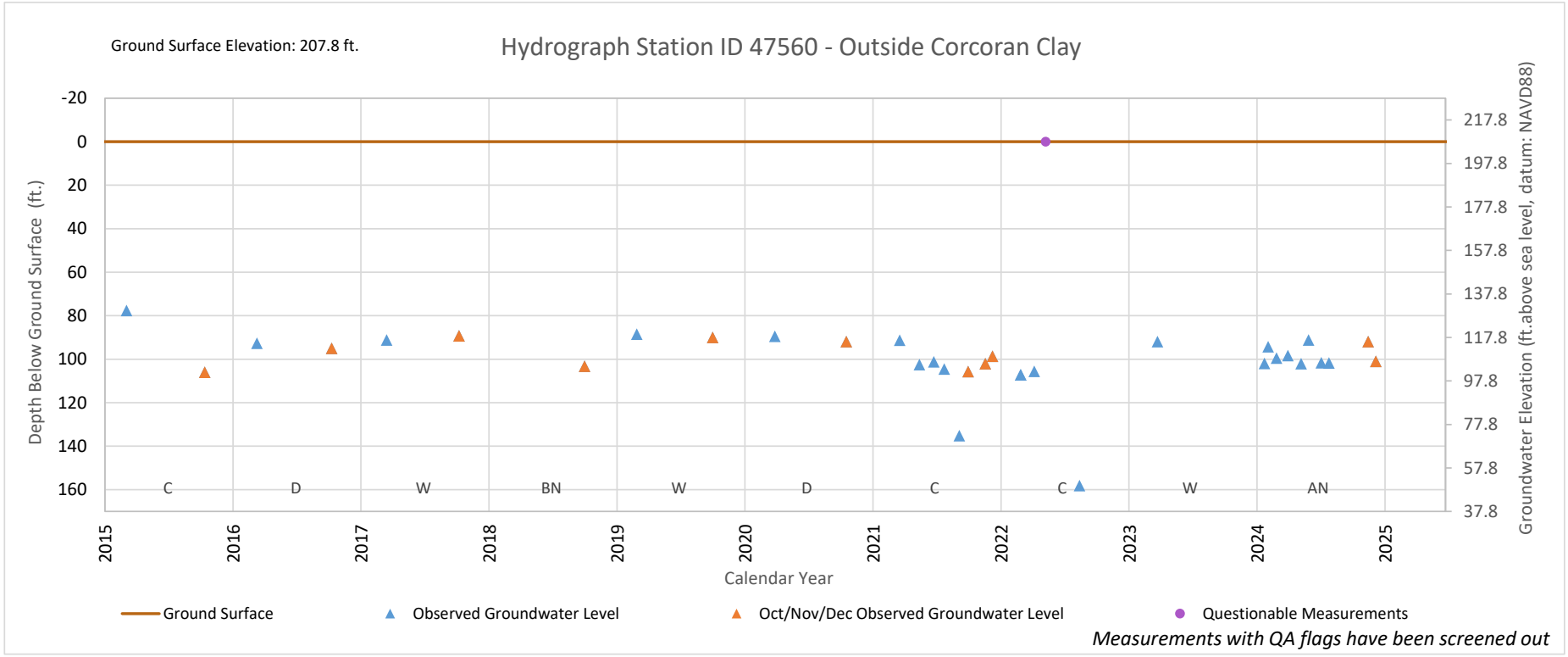

Ground Surface Elevation: 186.9 ft.
Hydrograph Station ID 47552 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
206.9
186.9
166.9
146.9
126.9
106.9
86.9
66.9
46.9
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

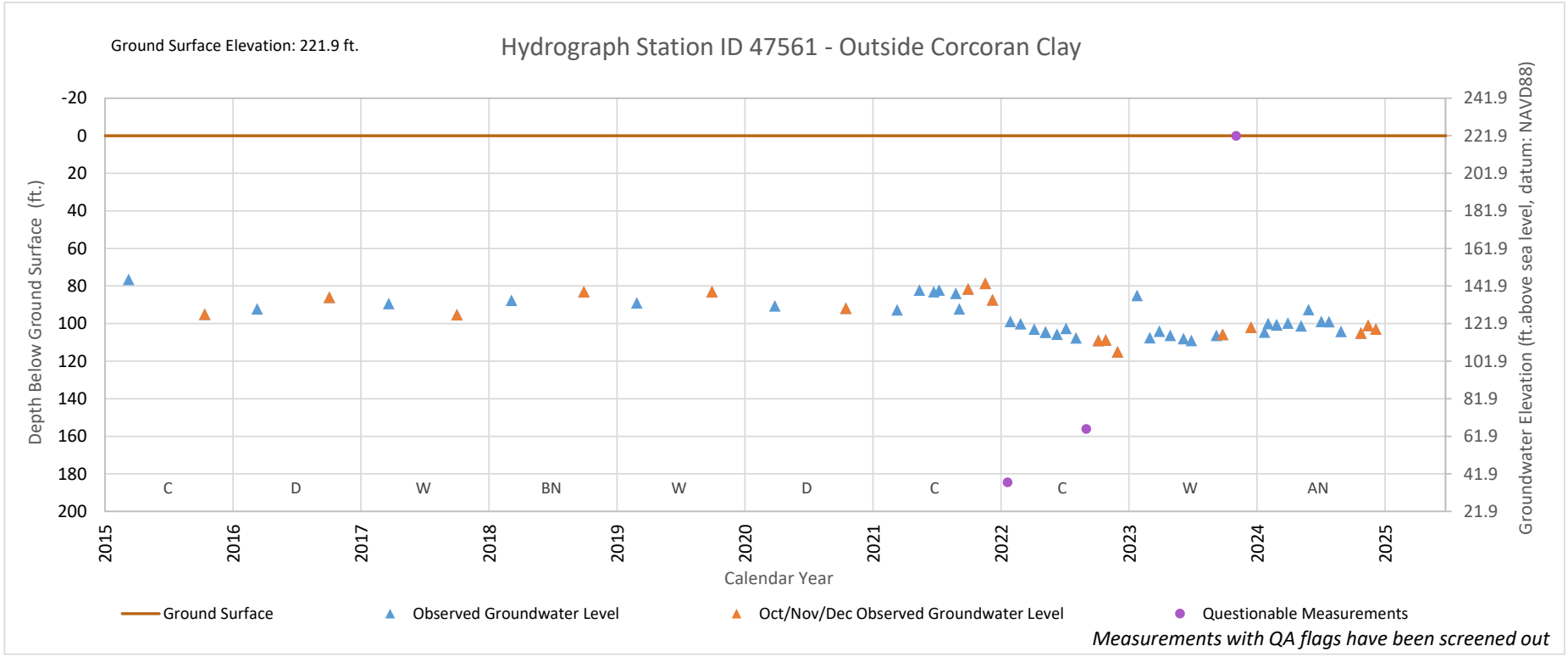

Ground Surface Elevation: 171.8 ft.
Hydrograph Station ID 47554 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
181.8
161.8
141.8
121.8
101.8
81.8
61.8
41.8
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

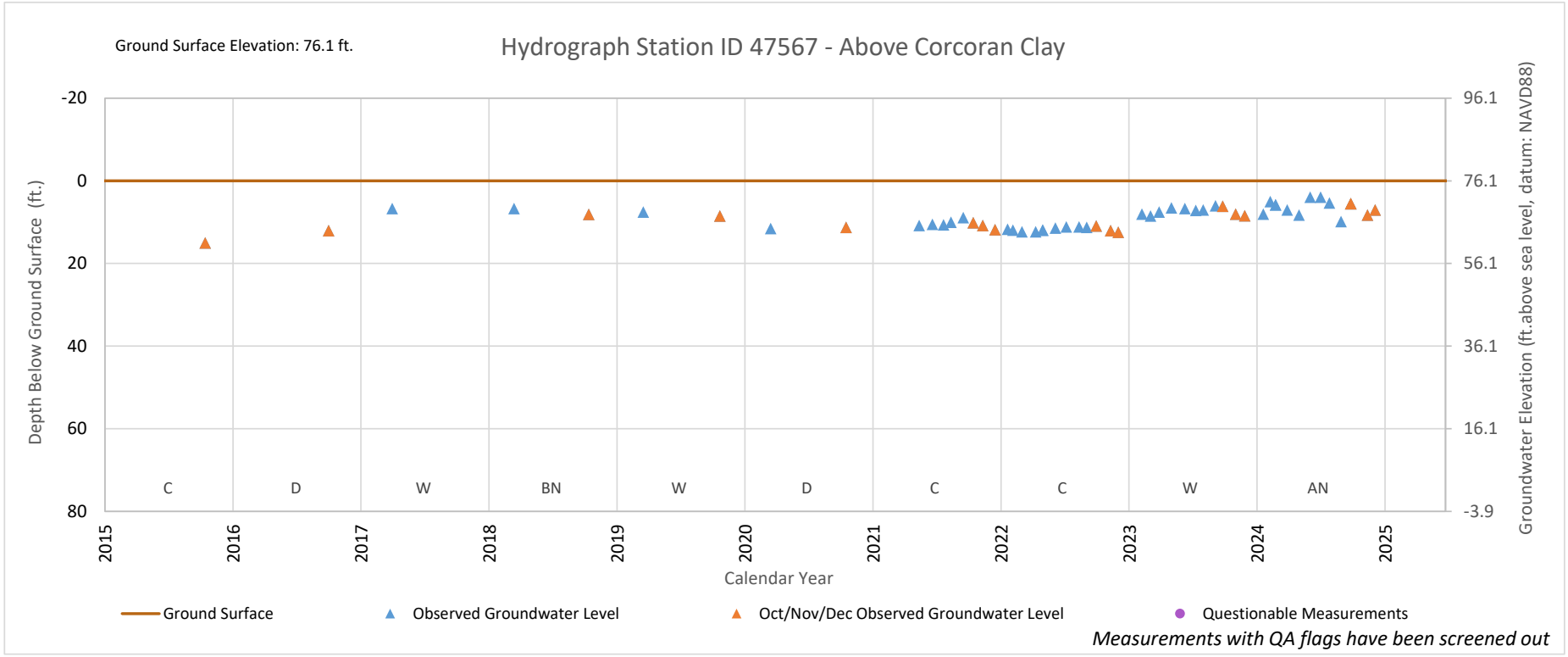

Ground Surface Elevation: 171.8 ft.
Hydrograph Station ID 47555 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
181.8
161.8
141.8
121.8
101.8
81.8
61.8
41.8
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

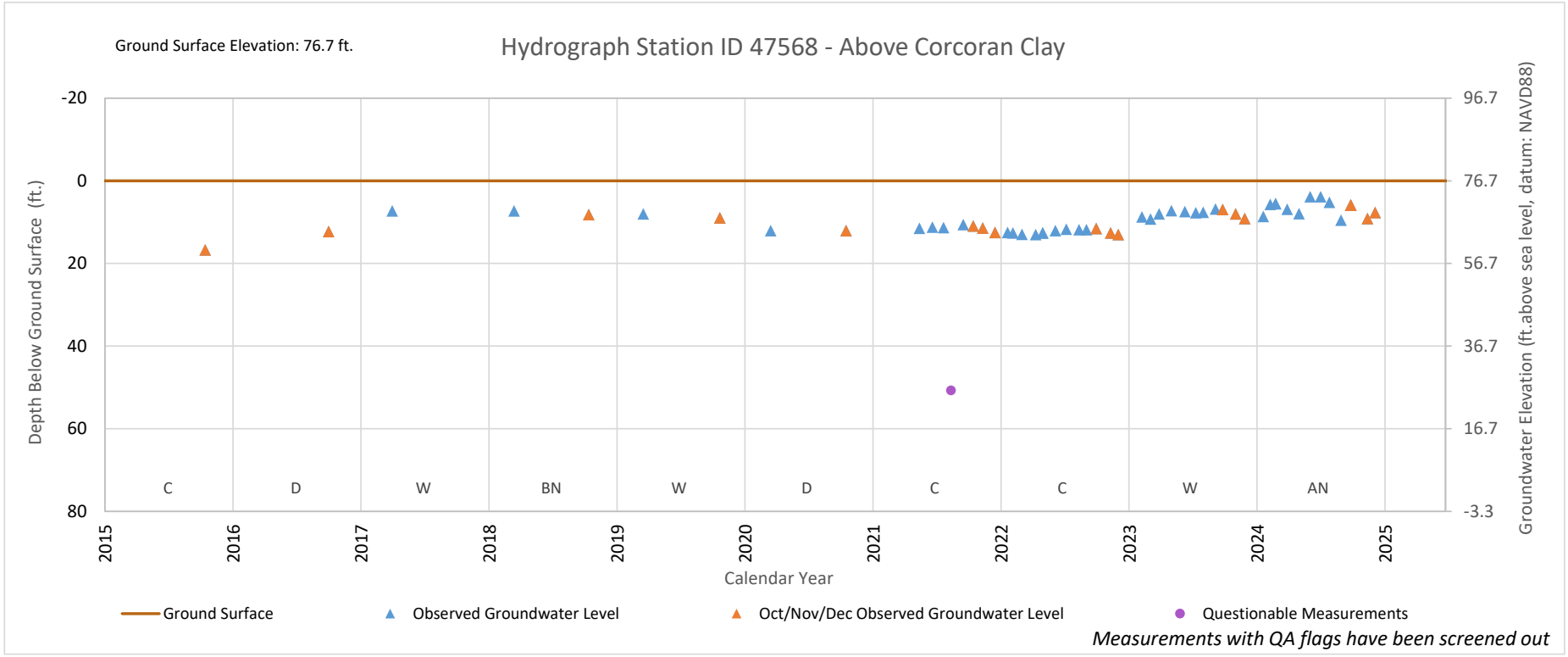

Ground Surface Elevation: 171.8 ft.
Hydrograph Station ID 47556 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
181.8
161.8
141.8
121.8
101.8
81.8
61.8
41.8
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

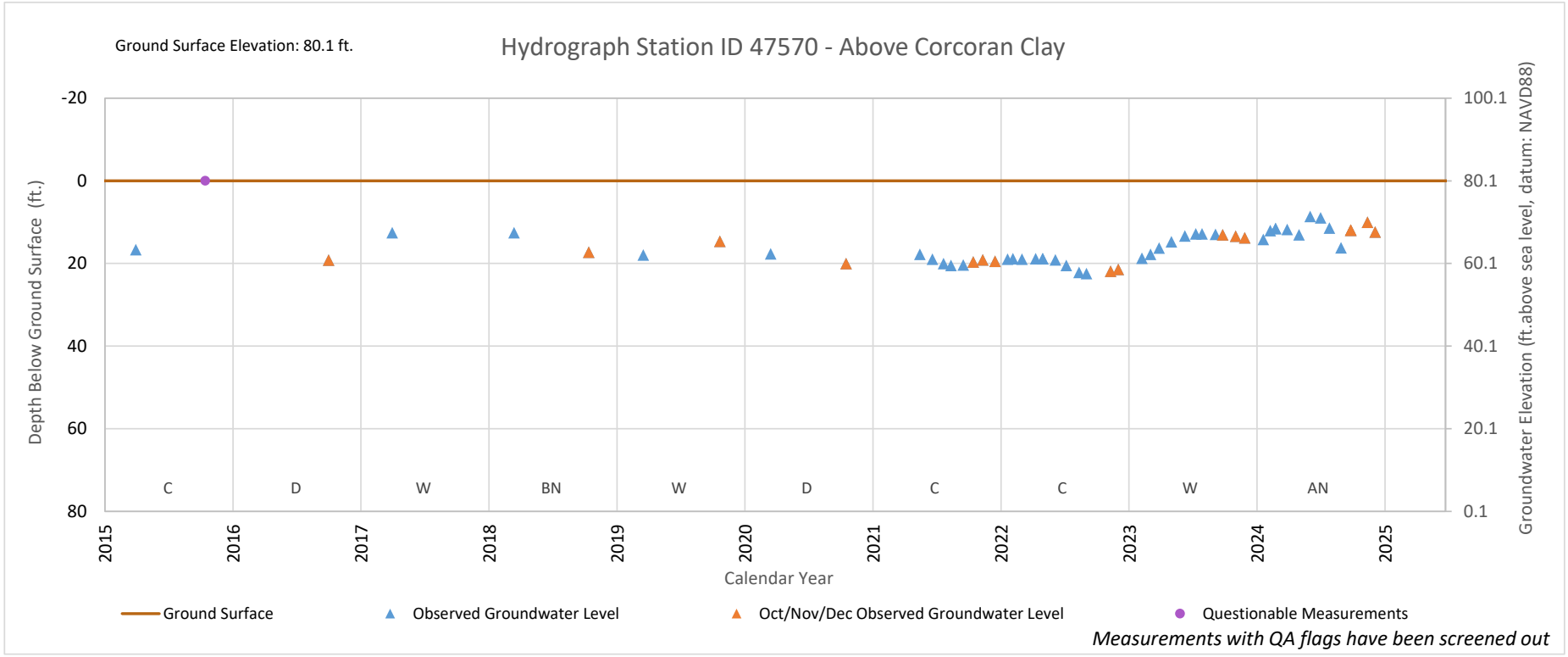

Ground Surface Elevation: 233.3 ft.
Hydrograph Station ID 47559 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
Groundwater Elevation (ft.above sea level, datum: NAVD88)
243.3
223.3
203.3
183.3
163.3
143.3
123.3
103.3
83.3
63.3
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

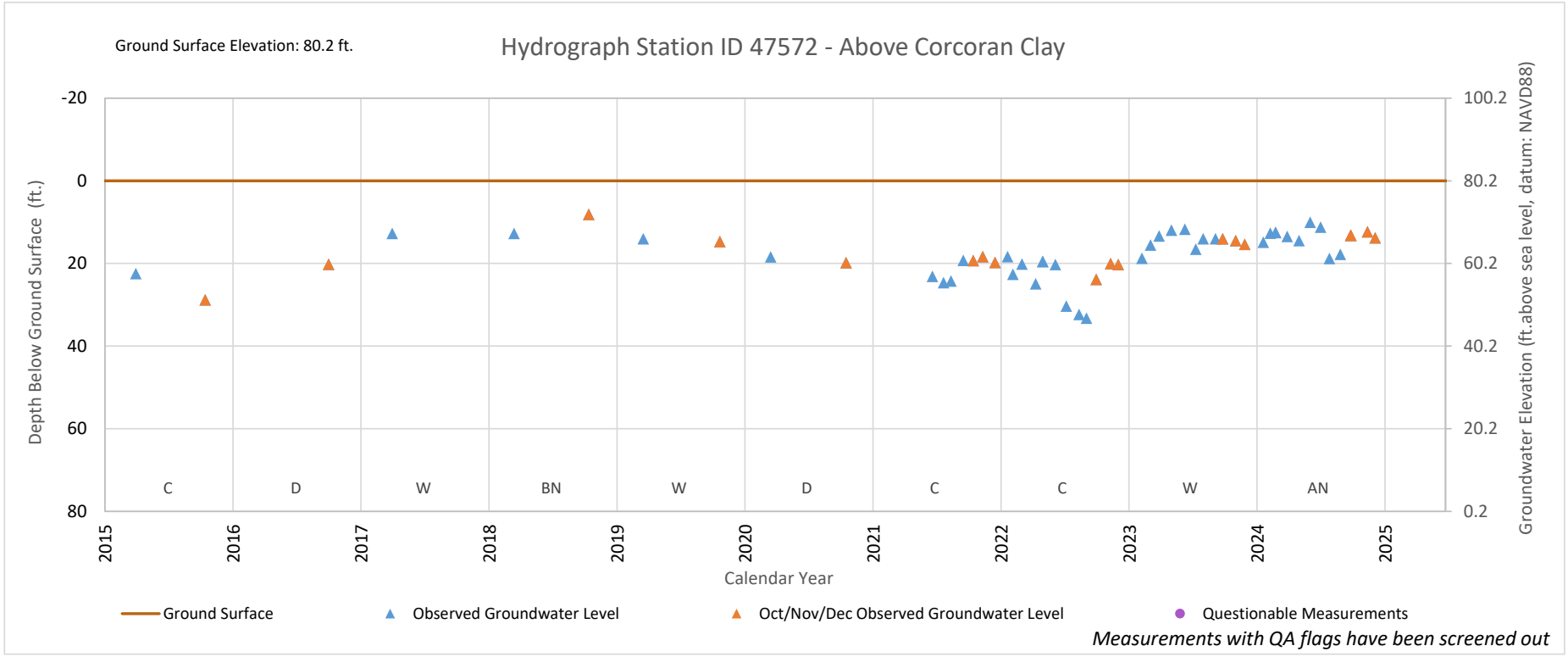

Ground Surface Elevation: 207.8 ft.
Hydrograph Station ID 47560 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
Groundwater Elevation (ft.above sea level, datum: NAVD88)
217.8
197.8
177.8
157.8
137.8
117.8
97.8
77.8
57.8
37.8
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

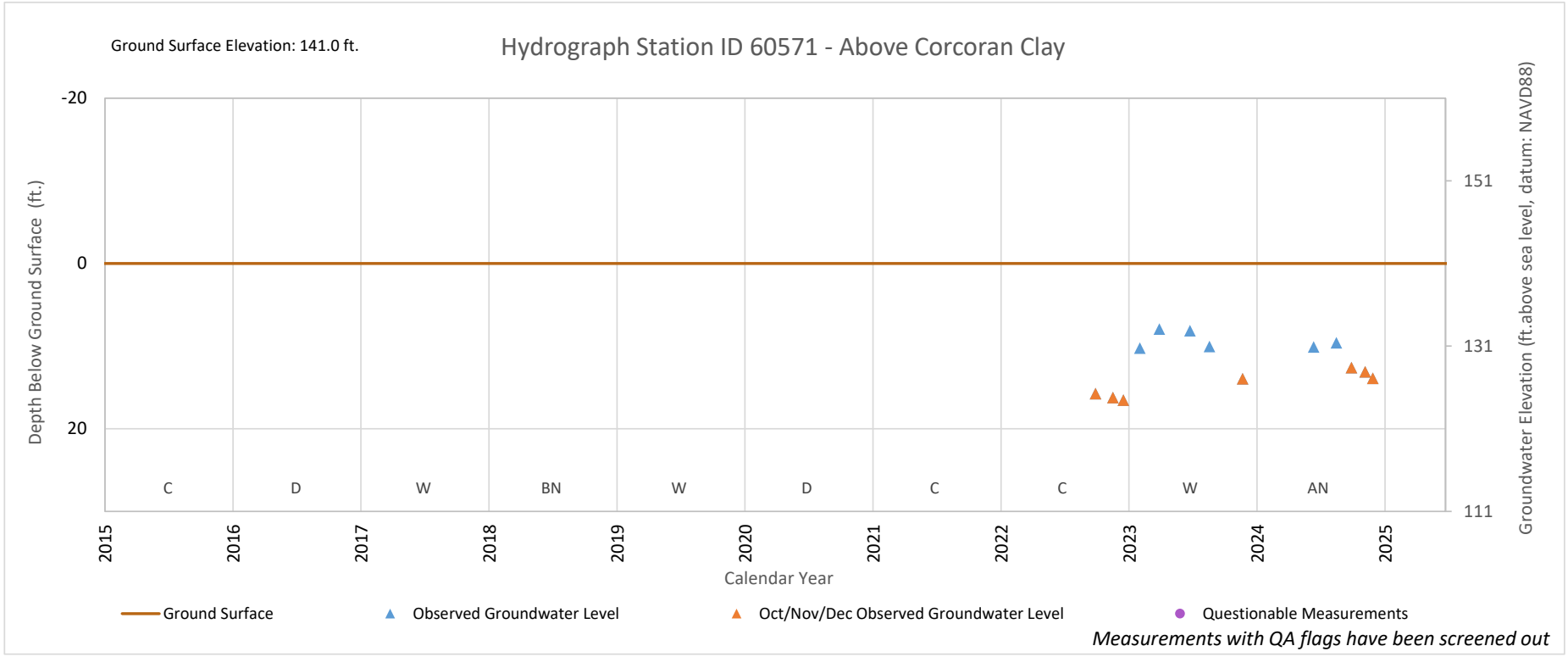

Ground Surface Elevation: 221.9 ft.
Hydrograph Station ID 47561 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
241.9
221.9
201.9
181.9
161.9
141.9
121.9
101.9
81.9
61.9
41.9
21.9
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

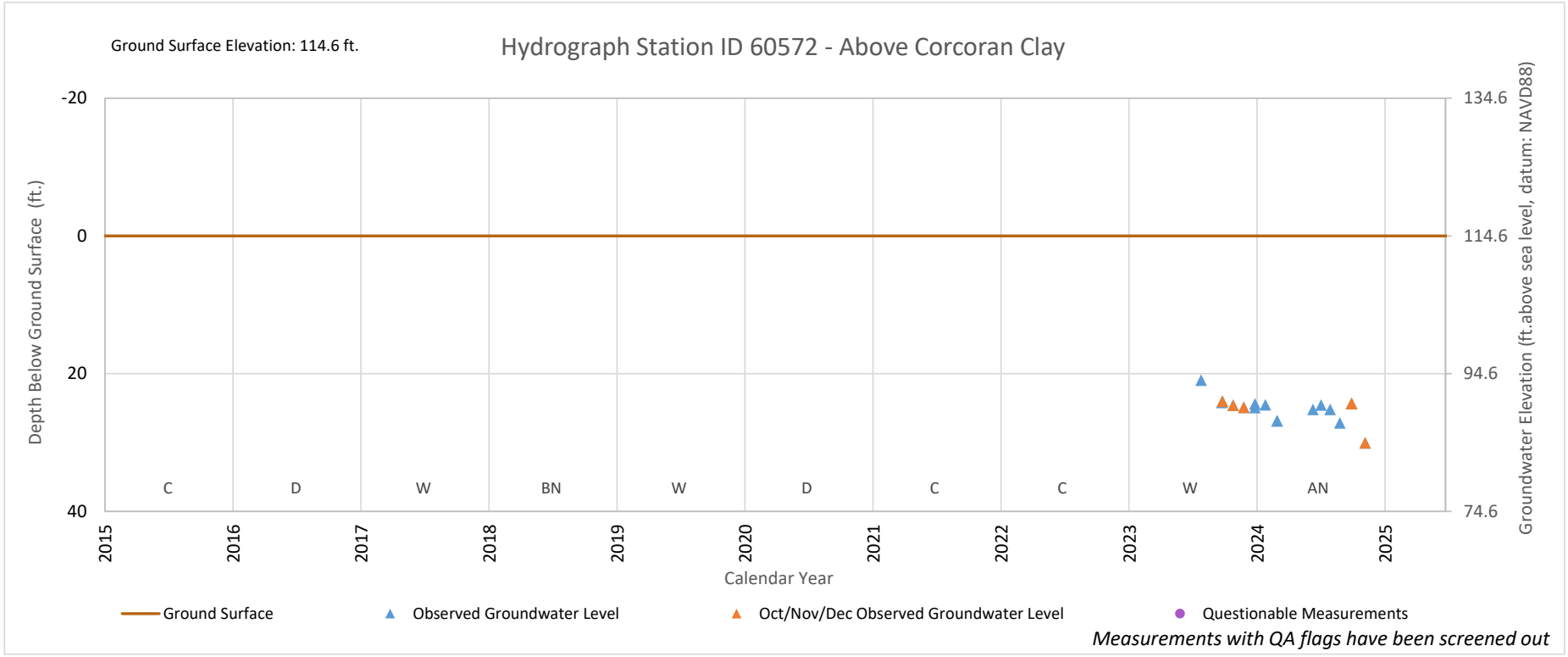

Ground Surface Elevation: 76.1 ft.
Hydrograph Station ID 47567 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
96.1
76.1
56.1
36.1
16.1
-3.9
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

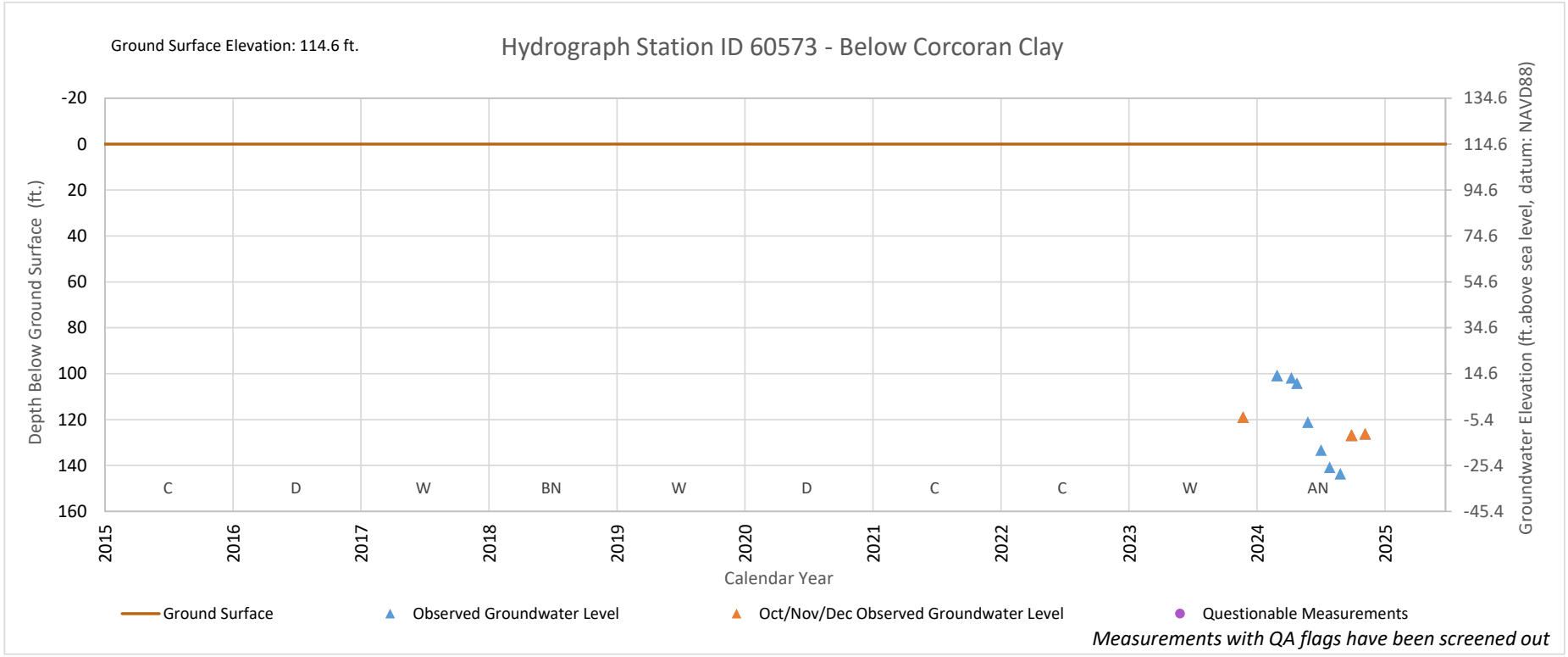

Ground Surface Elevation: 76.7 ft.
Hydrograph Station ID 47568 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
96.7
76.7
56.7
36.7
16.7
-3.3
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

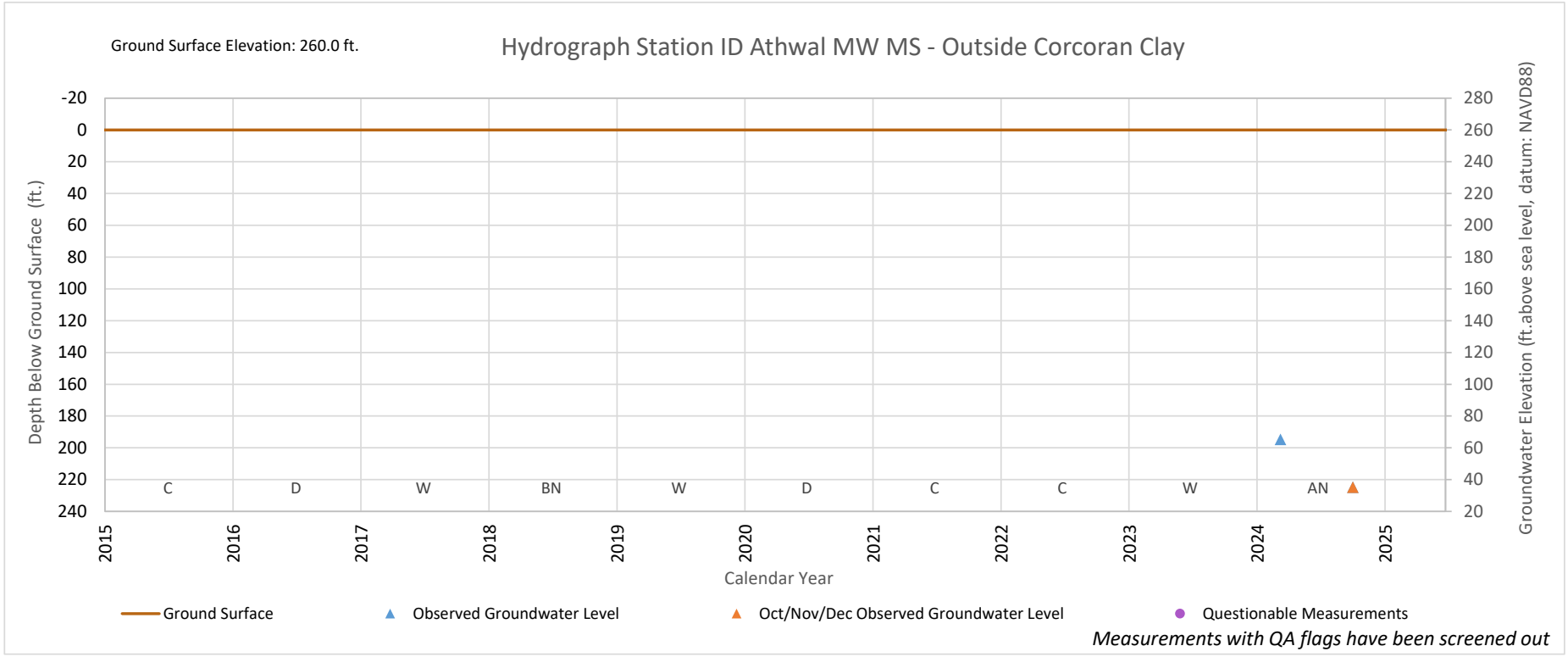

Ground Surface Elevation: 80.1 ft.
Hydrograph Station ID 47570 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100.1
80.1
60.1
40.1
20.1
0.1
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

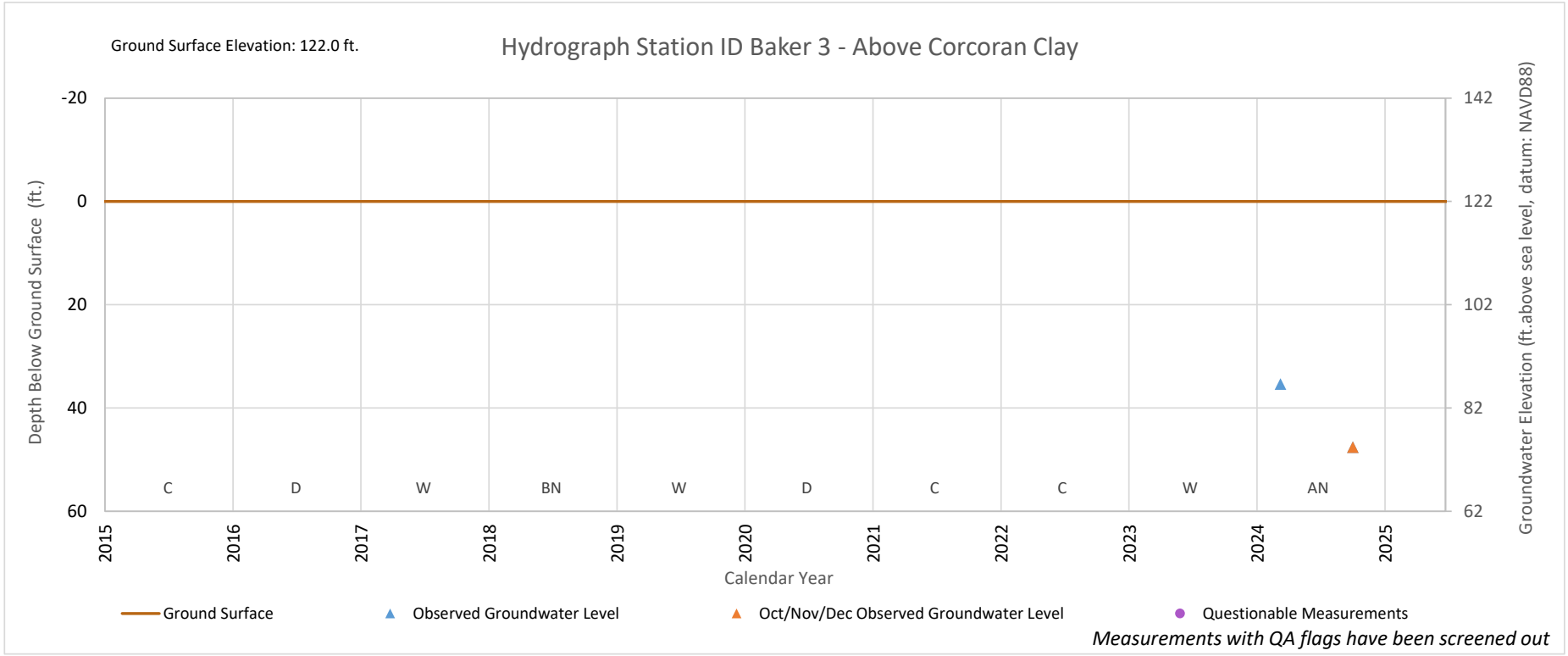

Ground Surface Elevation: 80.2 ft.
Hydrograph Station ID 47572 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100.2
80.2
60.2
40.2
20.2
0.2
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

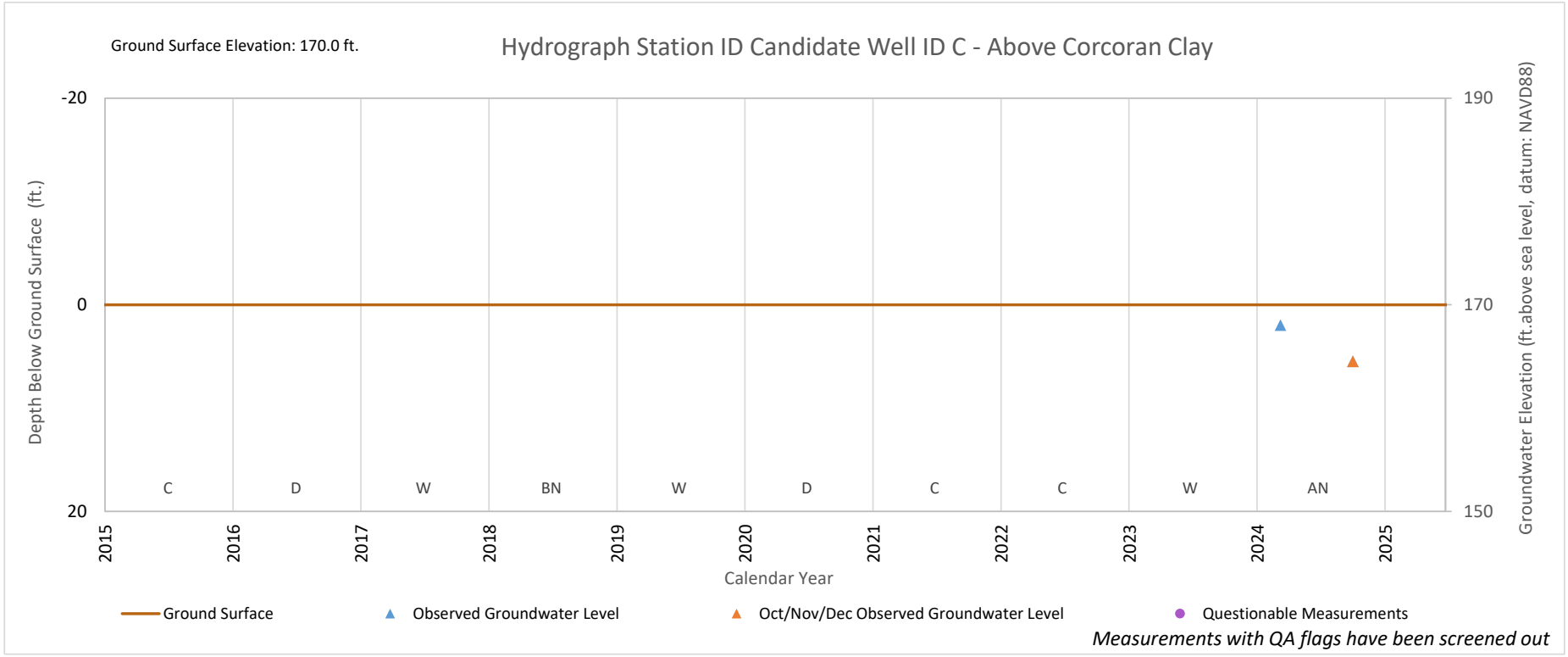

Ground Surface Elevation: 141.0 ft.
Hydrograph Station ID 60571 - Above Corcoran Clay
-20
0
20
Depth Below Ground Surface (ft.)
151
131
111
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

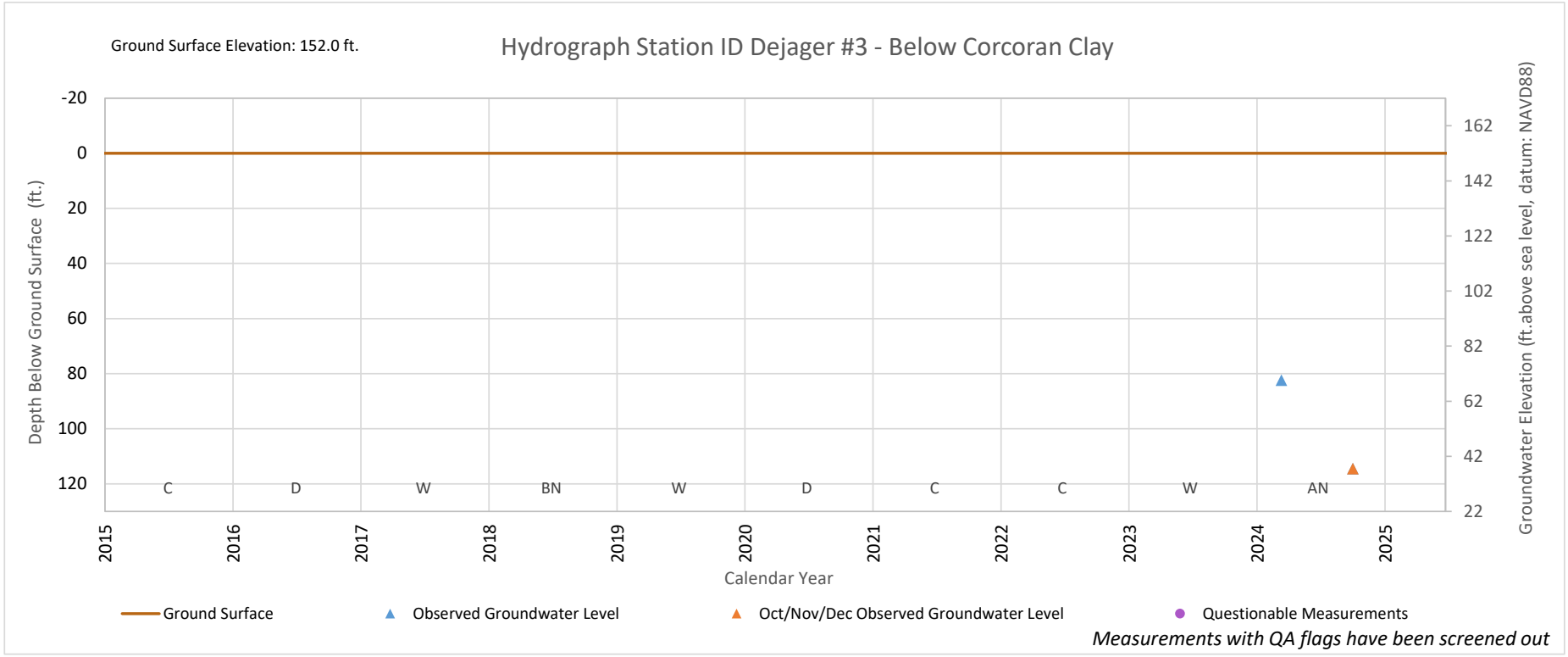

Ground Surface Elevation: 114.6 ft.
Hydrograph Station ID 60572 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
134.6
114.6
94.6
74.6
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

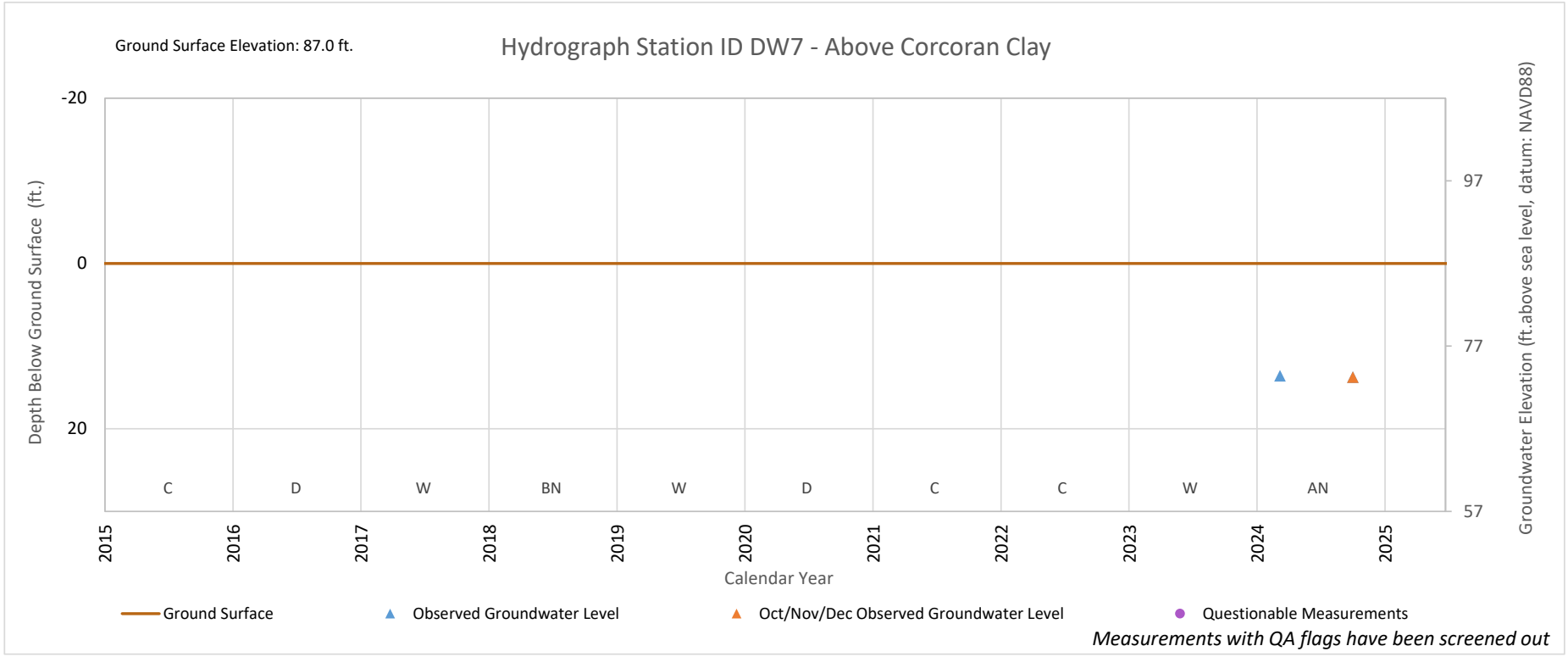

Ground Surface Elevation: 114.6 ft.
Hydrograph Station ID 60573 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
160
134.6
114.6
94.6
74.6
54.6
34.6
14.6
-5.4
-25.4
-45.4
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

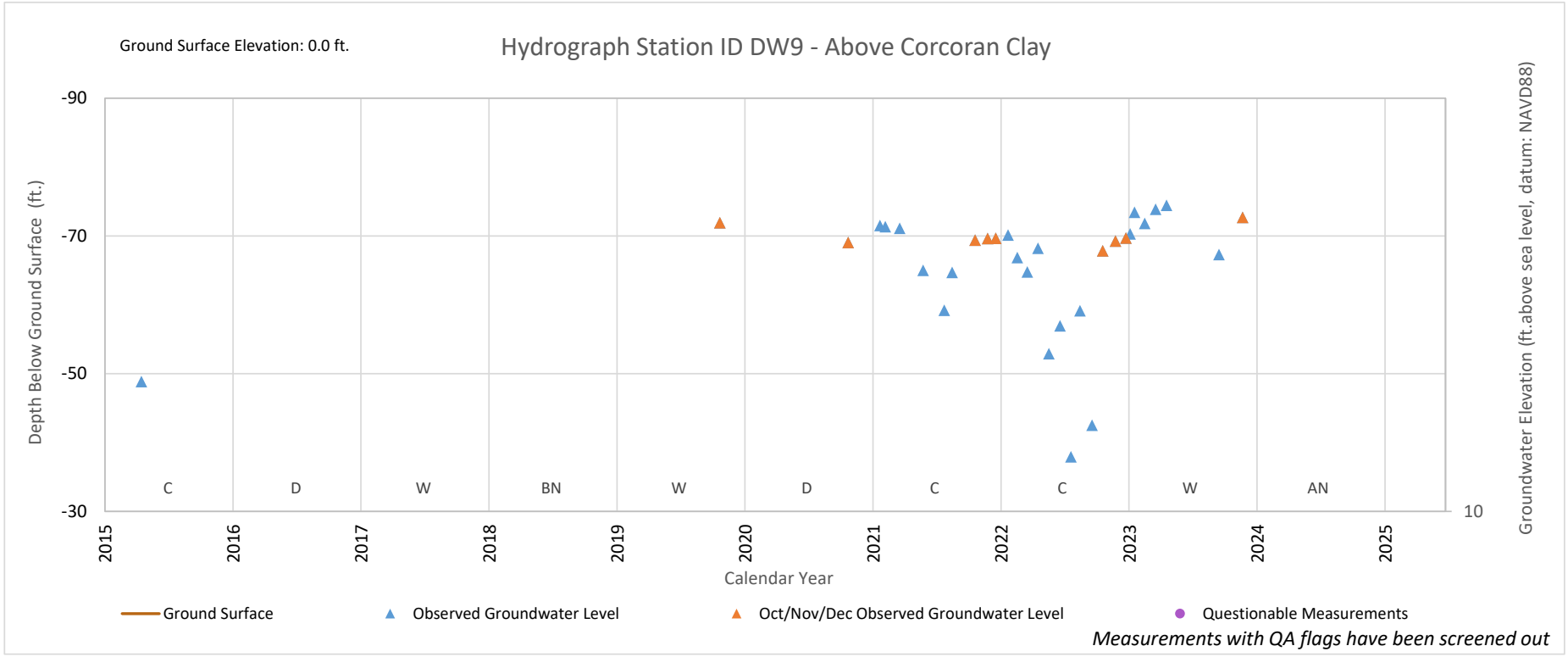

Ground Surface Elevation: 260.0 ft.
Hydrograph Station ID Athwal MW MS - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
280
260
240
220
200
180
160
140
120
100
80
60
40
20
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

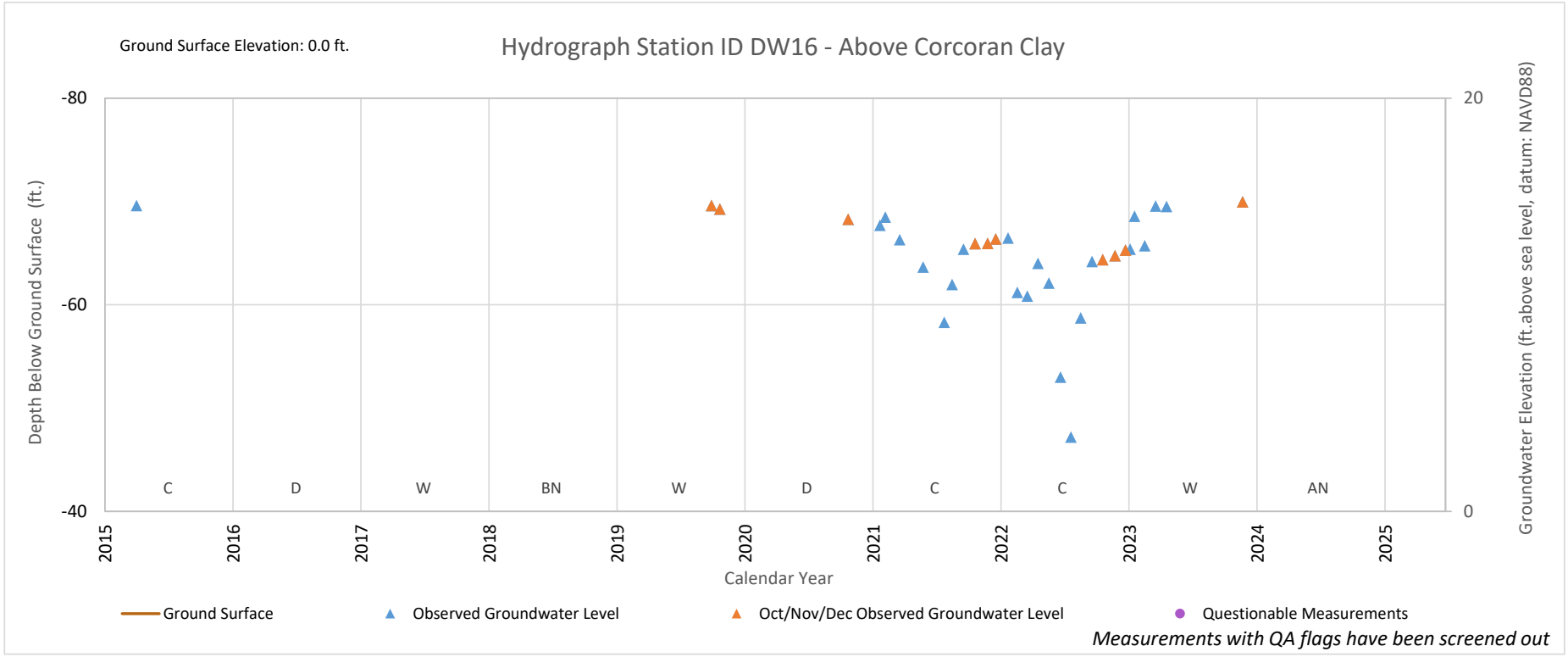

Ground Surface Elevation: 122.0 ft.
Hydrograph Station ID Baker 3 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
142
122
102
82
62
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

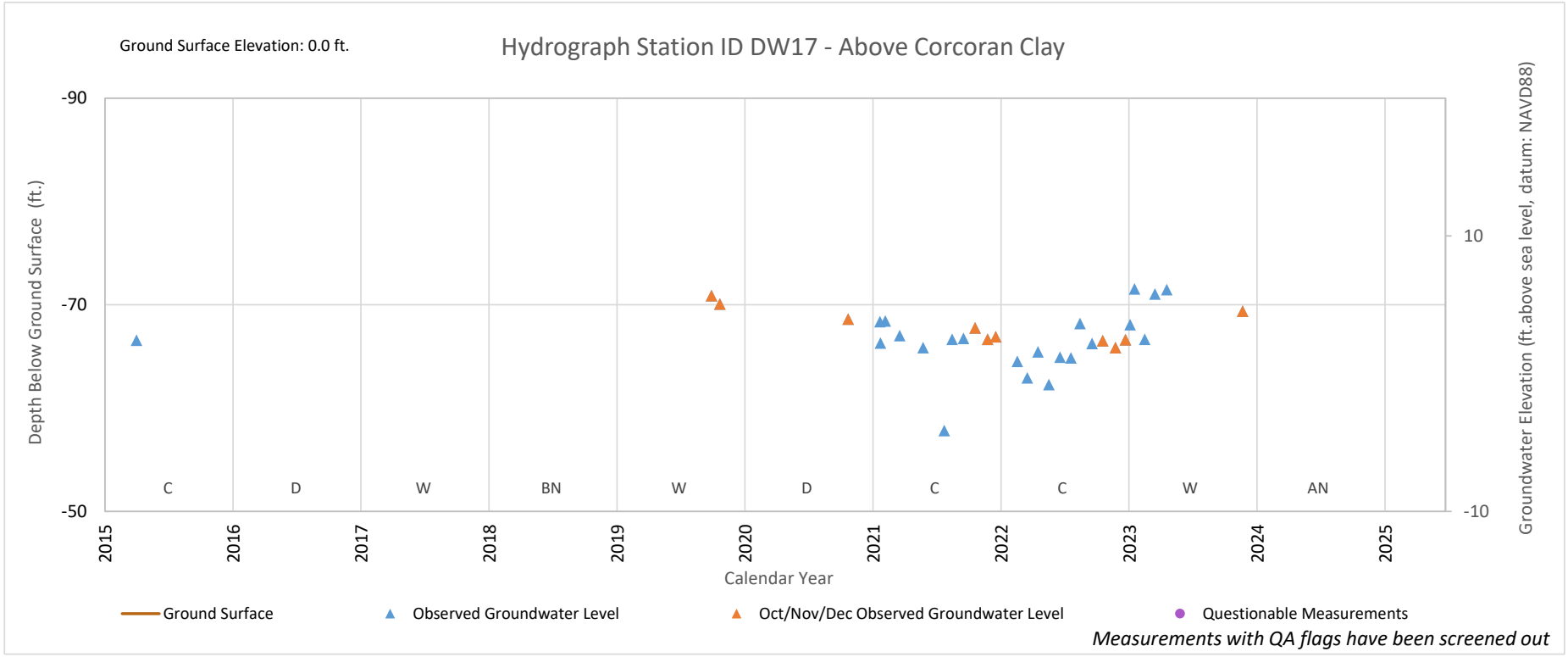

Ground Surface Elevation: 170.0 ft.
Hydrograph Station ID Candidate Well ID C - Above Corcoran Clay
-20
0
20
190
170
150
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

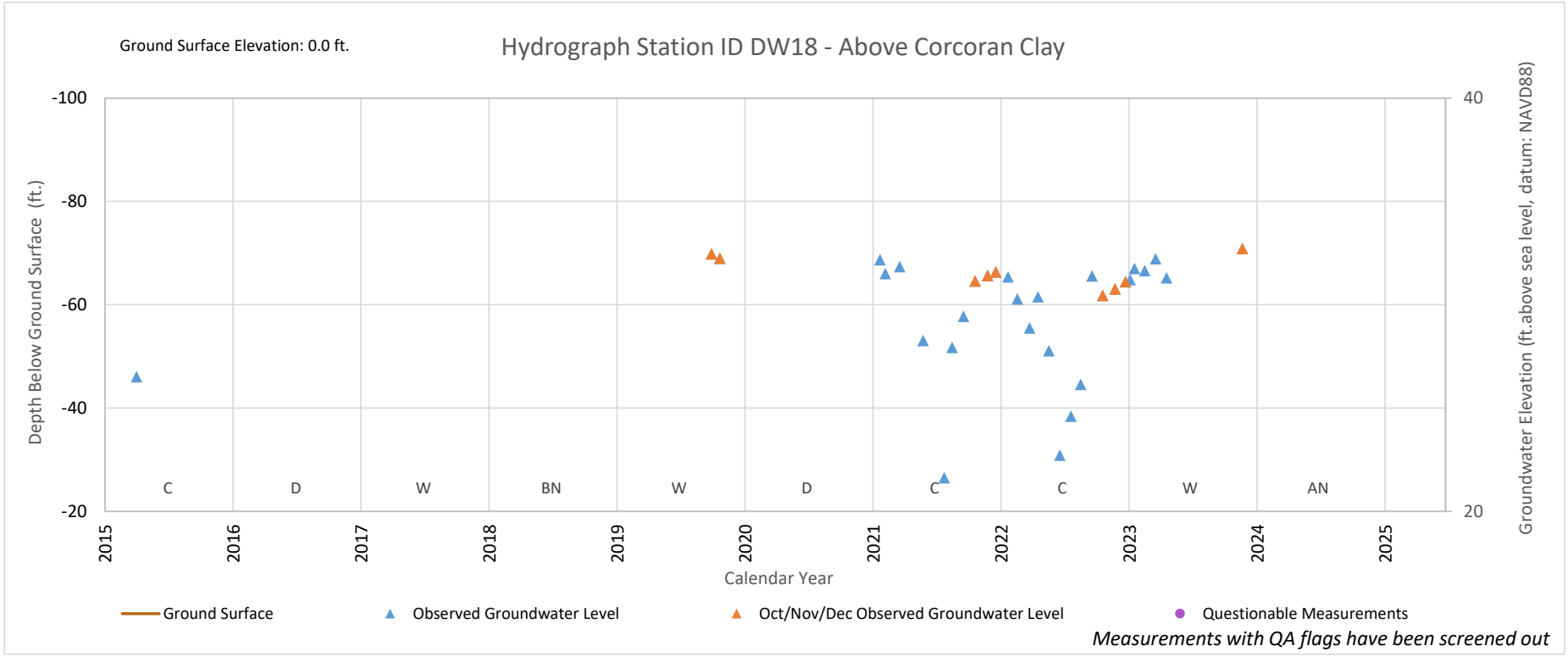

Ground Surface Elevation: 152.0 ft.
Hydrograph Station ID Dejager #3 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
Groundwater Elevation (ft.above sea level, datum: NAVD88)
162
142
122
102
82
62
42
22
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

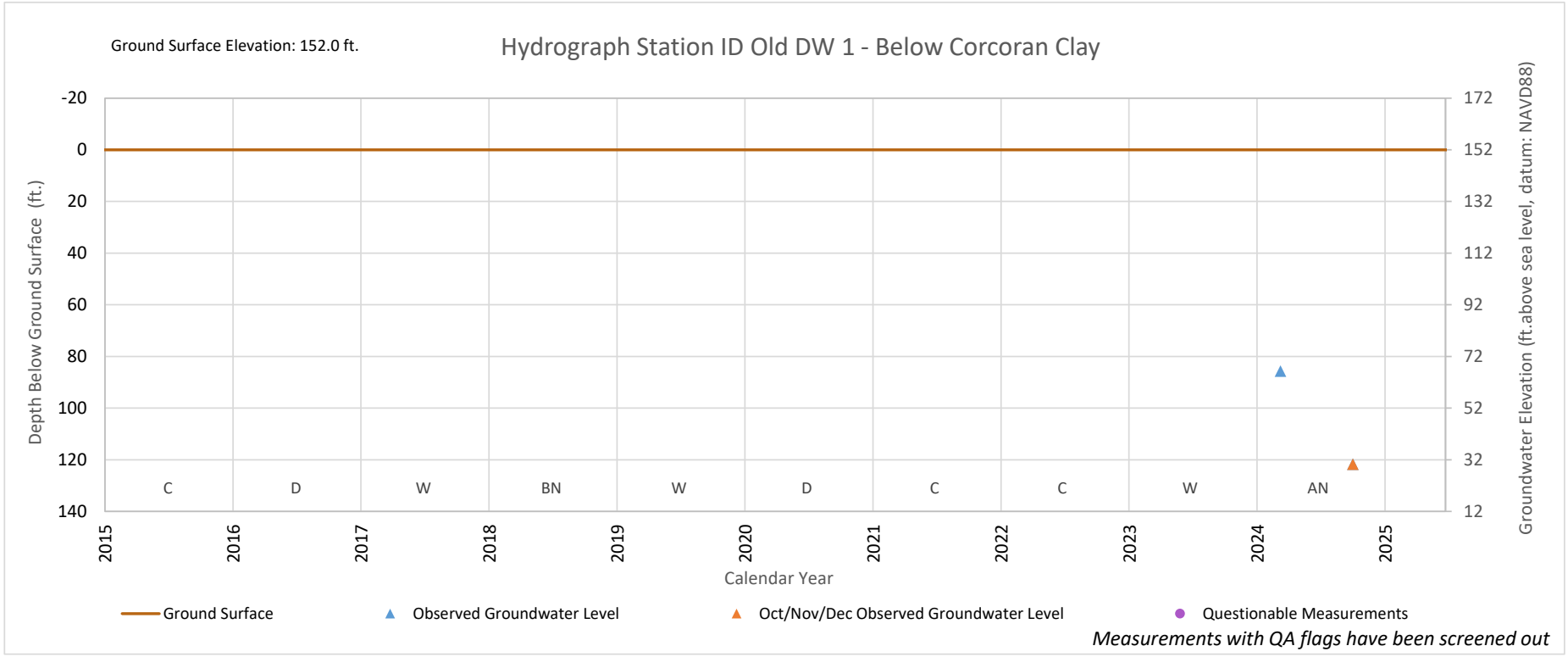

Ground Surface Elevation: 87.0 ft.
Hydrograph Station ID DW7 - Above Corcoran Clay
-20
0
20
Depth Below Ground Surface (ft.)
97
77
57
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

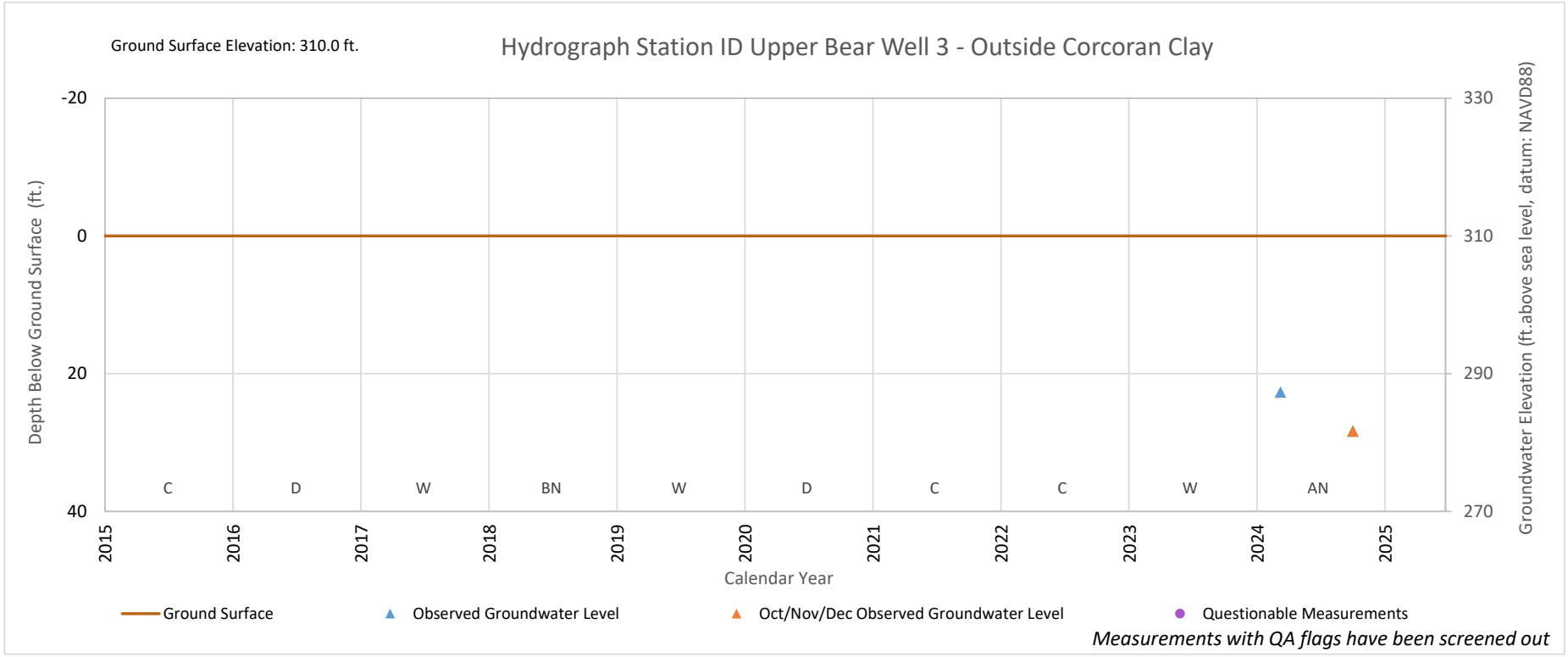

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW9 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
-90
-70
-50
-30
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
10
Groundwater Elevation (ft.above sea level, datum: NAVD88)
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out


Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW16 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-80
-60
-40
20
0
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

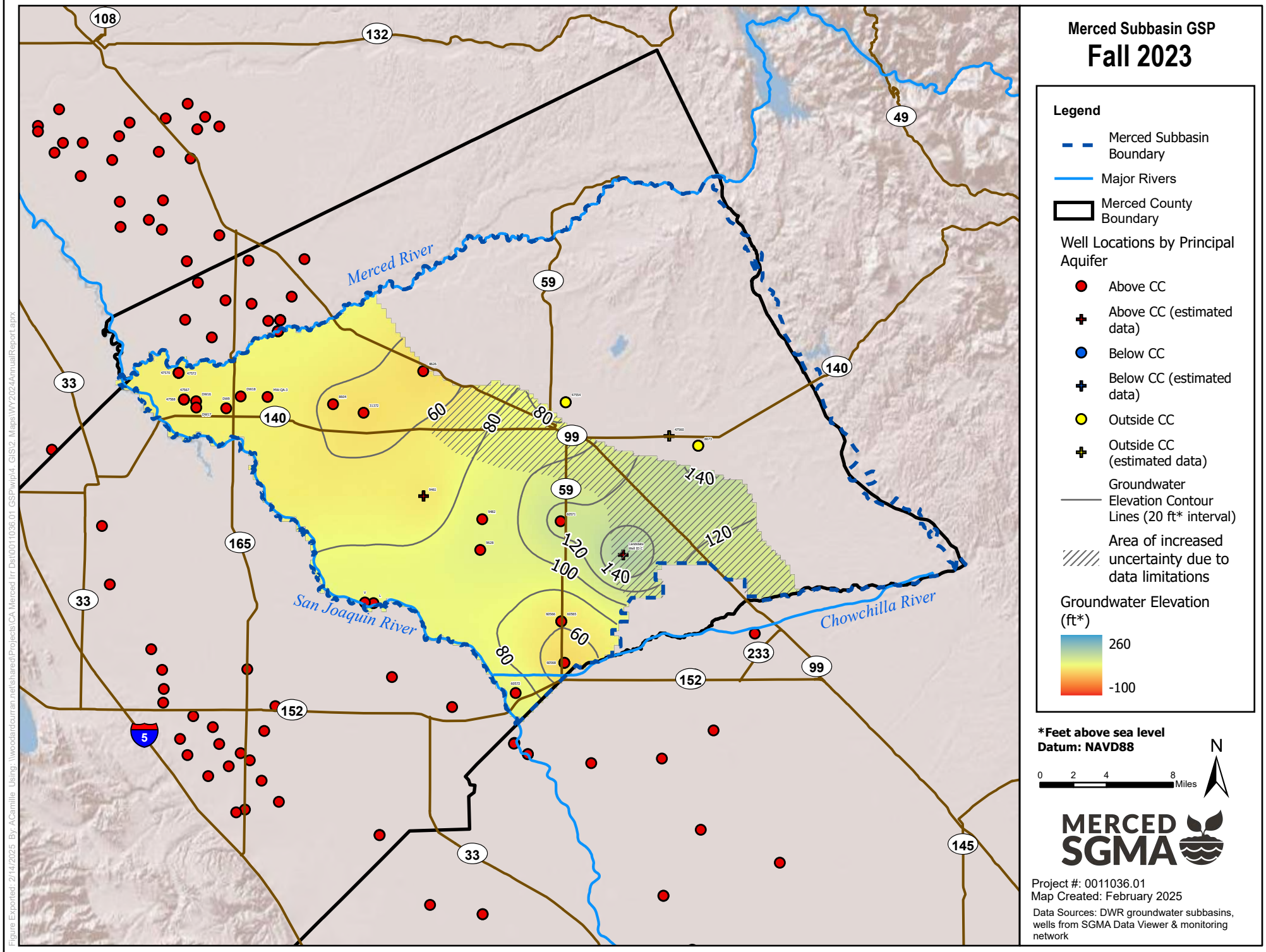

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW17 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-90
-70
-50
10
-10
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

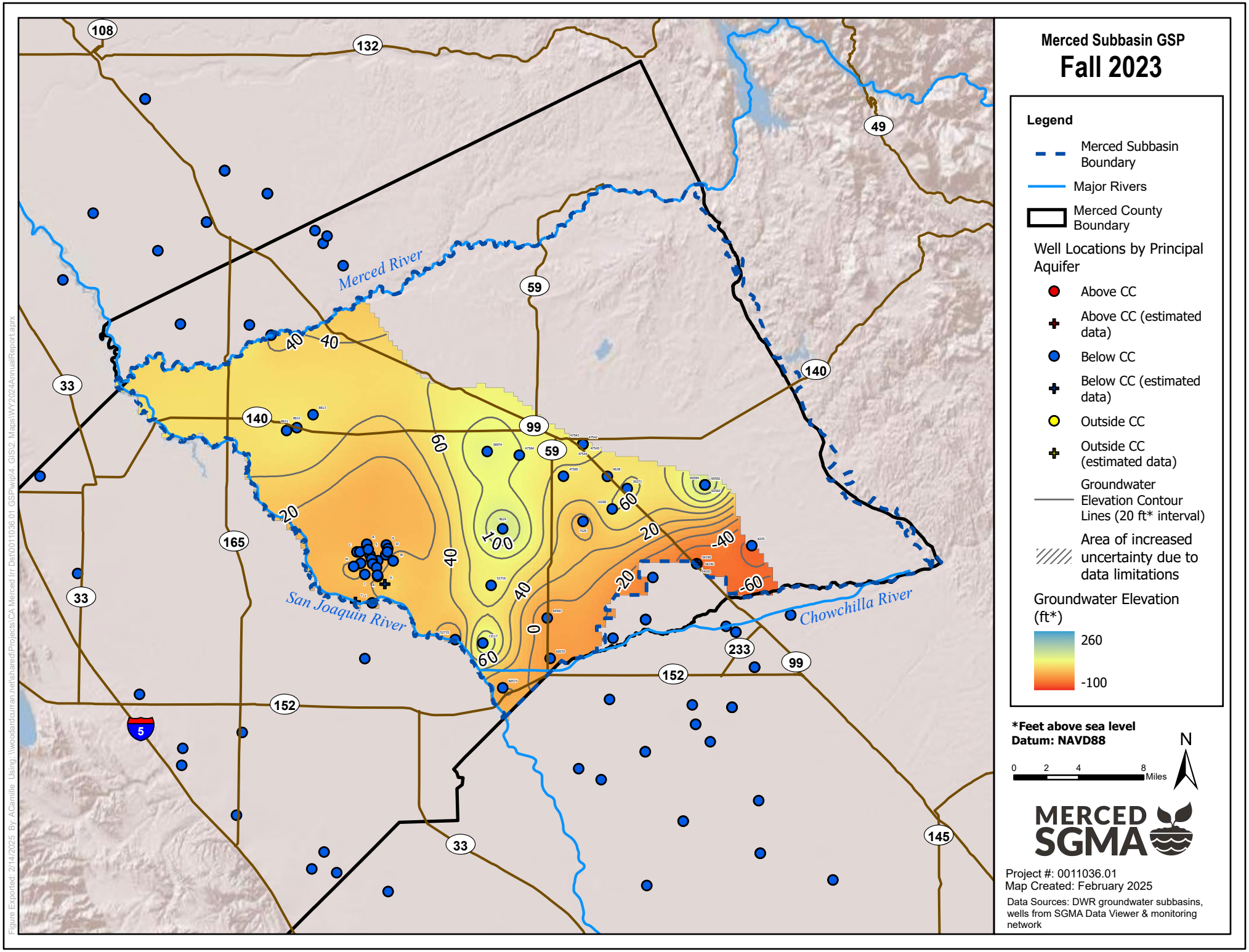

Ground Surface Elevation: 0.0 ft.
Hydrograph Station ID DW18 - Above Corcoran Clay
Depth Below Ground Surface (ft.)
Groundwater Elevation (ft.above sea level, datum: NAVD88)
-100
-80
-60
-40
-20
40
20
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

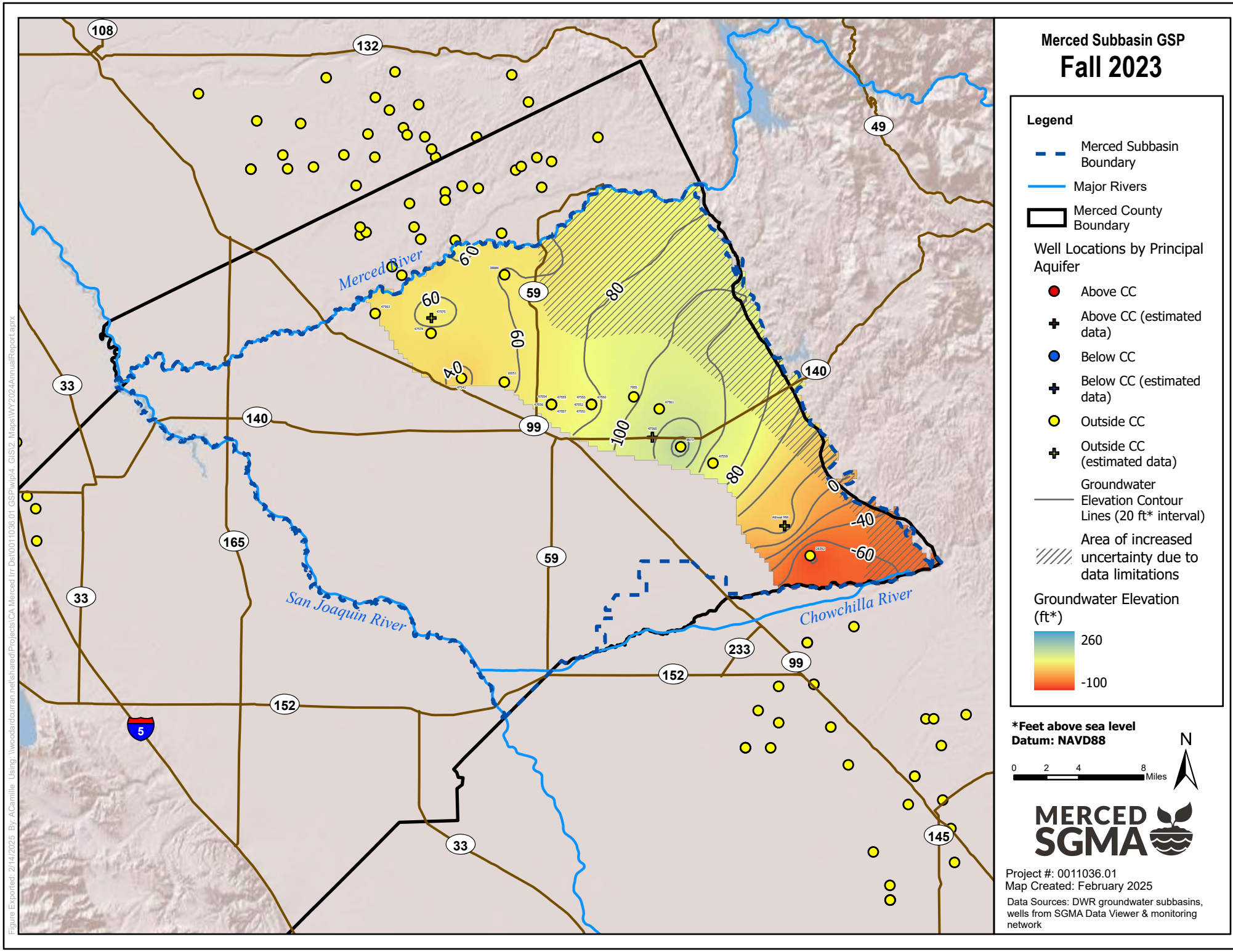

Ground Surface Elevation: 152.0 ft.
Hydrograph Station ID Old DW 1 - Below Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
60
80
100
120
140
Groundwater Elevation (ft.above sea level, datum: NAVD88)
172
152
132
112
92
72
52
32
12
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

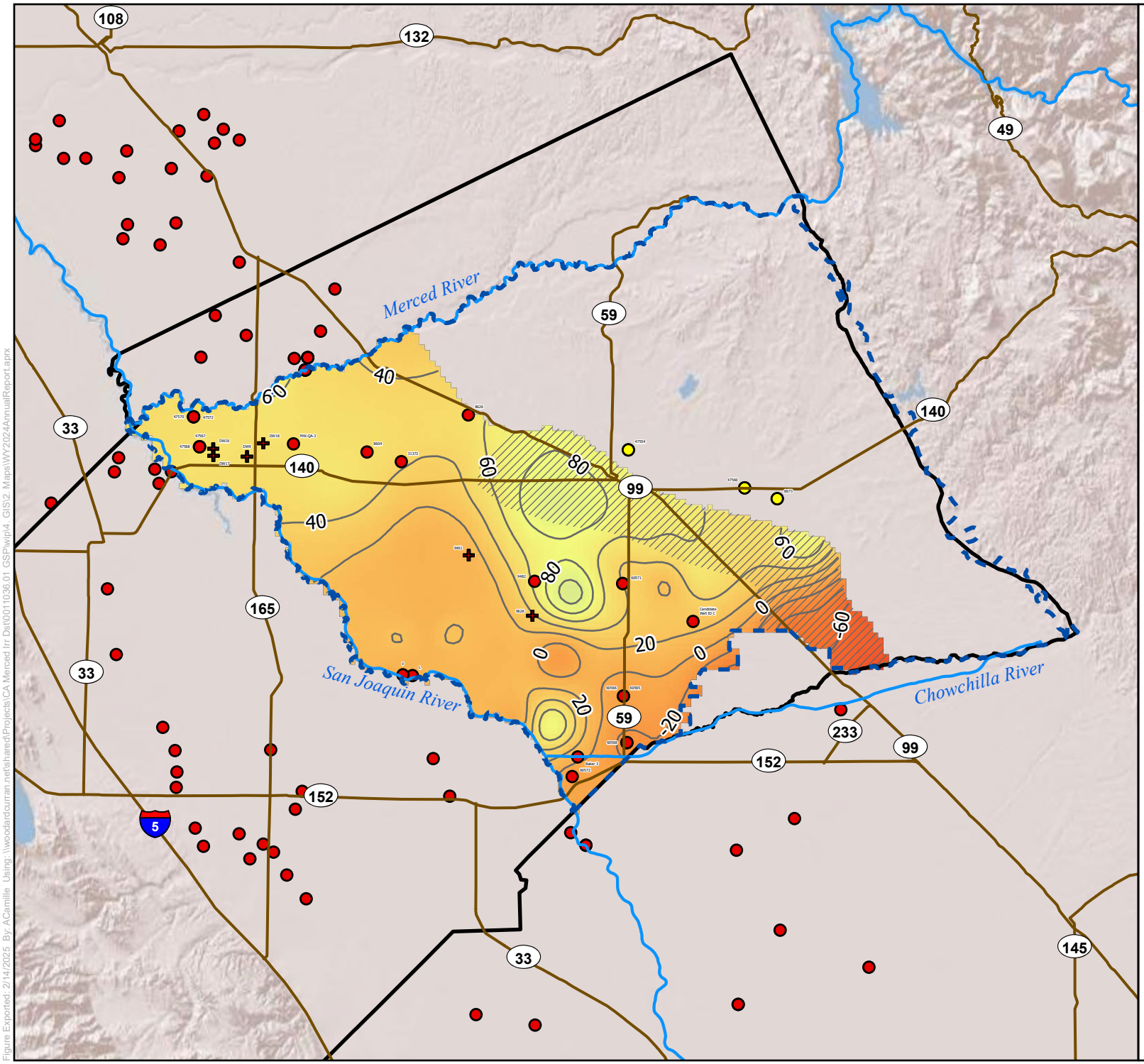

Ground Surface Elevation: 310.0 ft.
Hydrograph Station ID Upper Bear Well 3 - Outside Corcoran Clay
Depth Below Ground Surface (ft.)
-20
0
20
40
330
310
290
270
Groundwater Elevation (ft.above sea level, datum: NAVD88)
C
D
W
BN
W
D
C
C
W
AN
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Calendar Year
Ground Surface
Observed Groundwater Level
Oct/Nov/Dec Observed Groundwater Level
Questionable Measurements
Measurements with QA flags have been screened out

APPENDIX B: GROUNDWATER LEVEL CONTOUR MAPS


Merced Subbasin GSP
Fall 2023
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
60
80
100
120
140
108
132
49
59
140
33
99
165
152
233
145
5


Merced Subbasin GSP
Fall 2023
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
Figure Exported: 2/14/2025 By: ACamille Using: \\woodardcurran.net\shared\Projects\CA Merced Irr Dst\0011036.01 GSP\wip\4. GIS\2. Maps\WY2024AnnualReport.aprx


Merced Subbasin GSP
Fall 2023
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
108
132
49
140
33
99
59
165
152
233
145
5
60
40
80
100
0
-40
-60



Merced Subbasin GSP

Fall 2024

Legend

- Merced Subbasin Boundary
- Major Rivers
- Merced County Boundary

Well Locations by Principal Aquifer

- Above CC
- Above CC (estimated data)
- Below CC
- Below CC (estimated data)
- Outside CC
- Outside CC (estimated data)

- Groundwater Elevation Contour Lines (20 ft* interval)
- Area of increased uncertainty due to data limitations

Groundwater Elevation (ft*)

260

-100

***Feet above sea level**
Datum: NAVD88

N

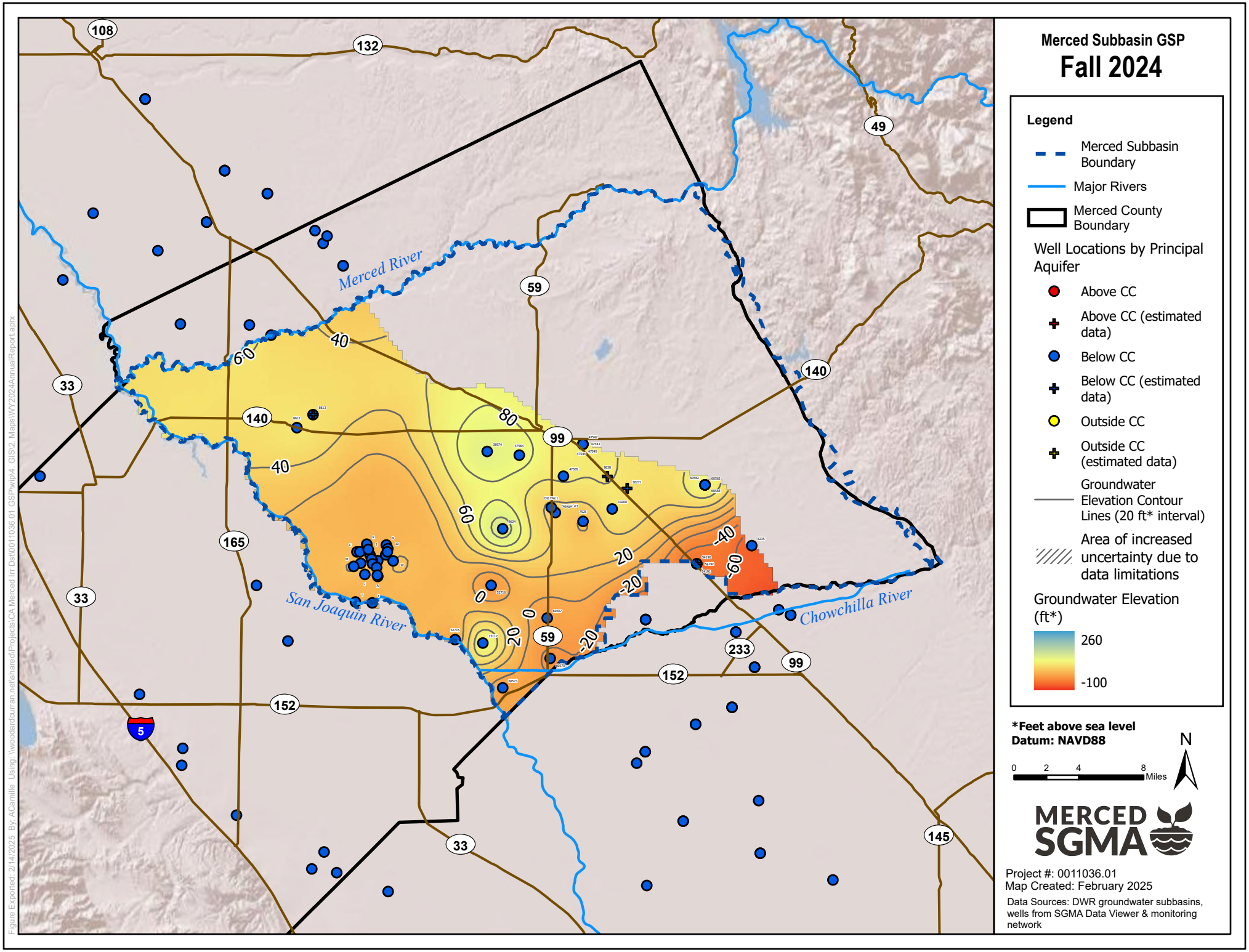
0 2 4 8 Miles

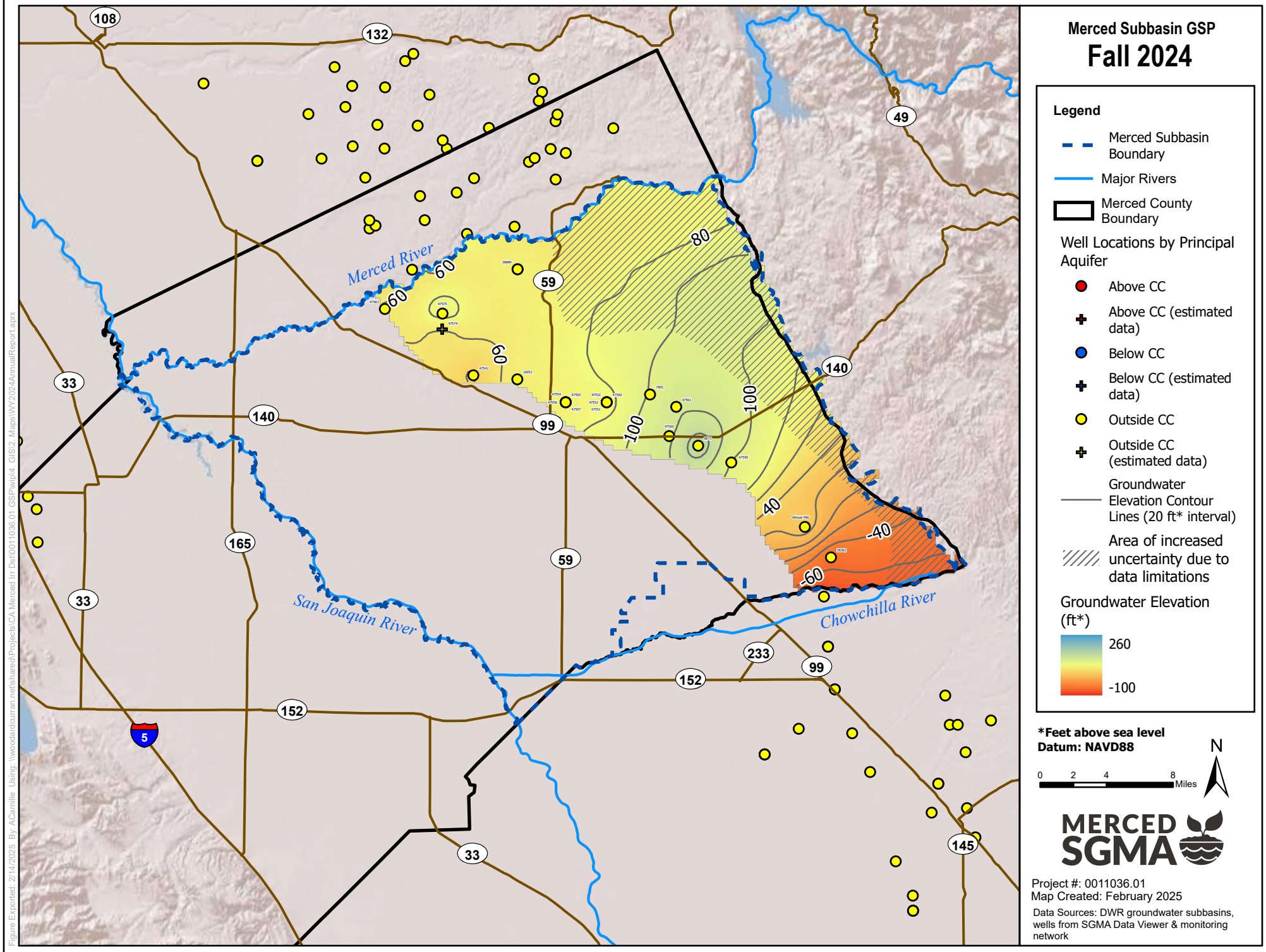
MERCED SGMA

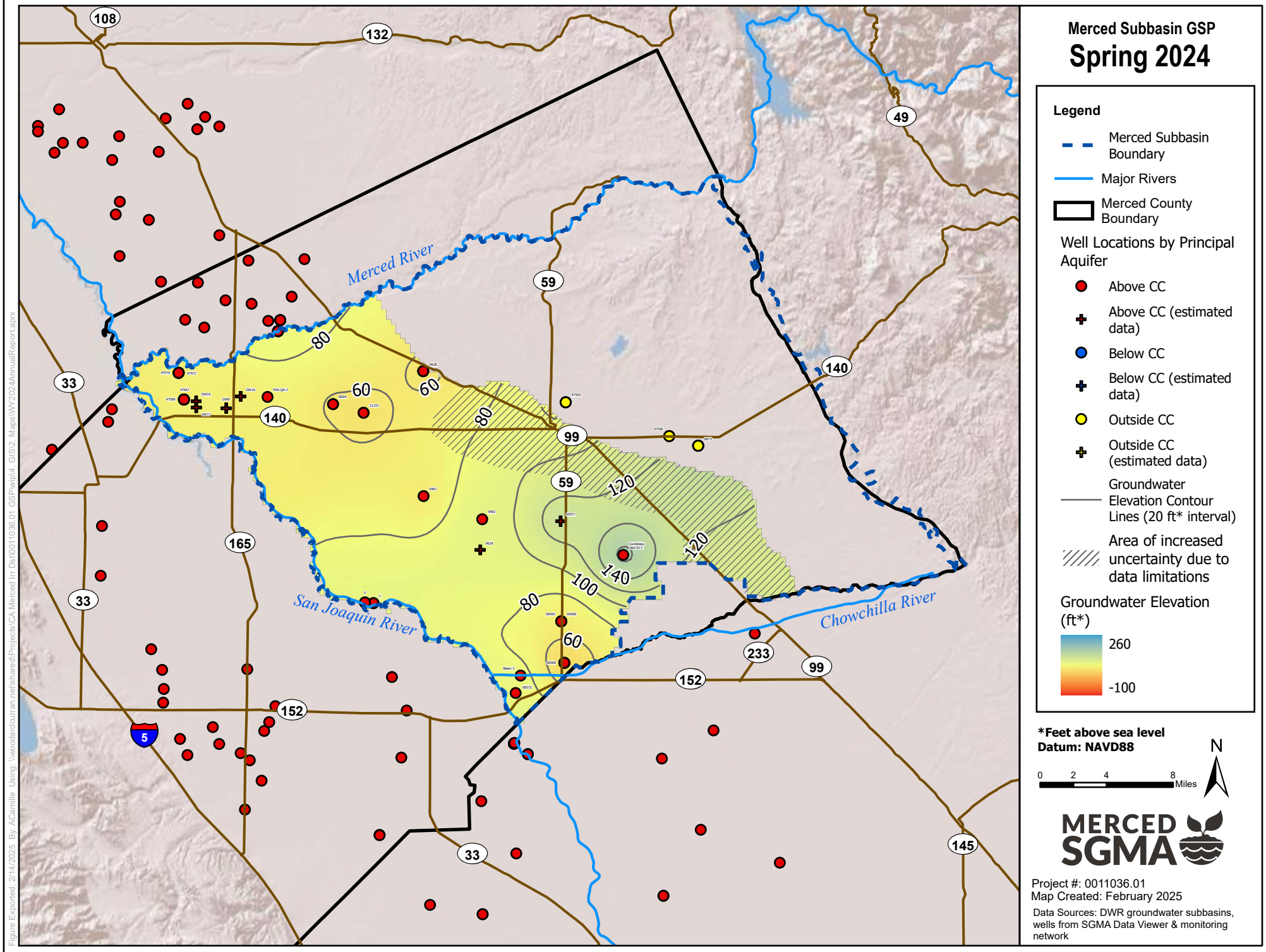
Project #: 0011036.01
Map Created: February 2025

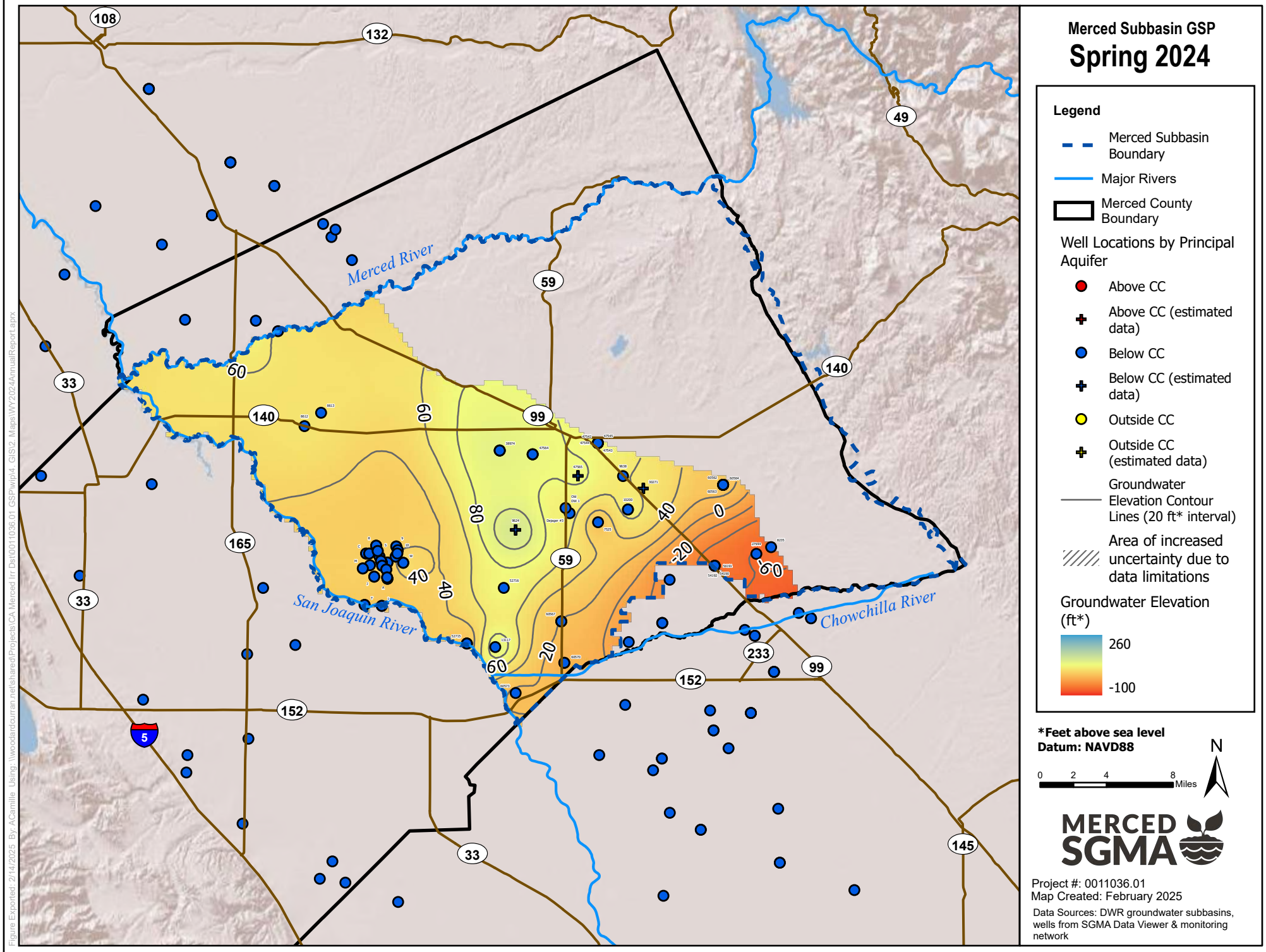
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network

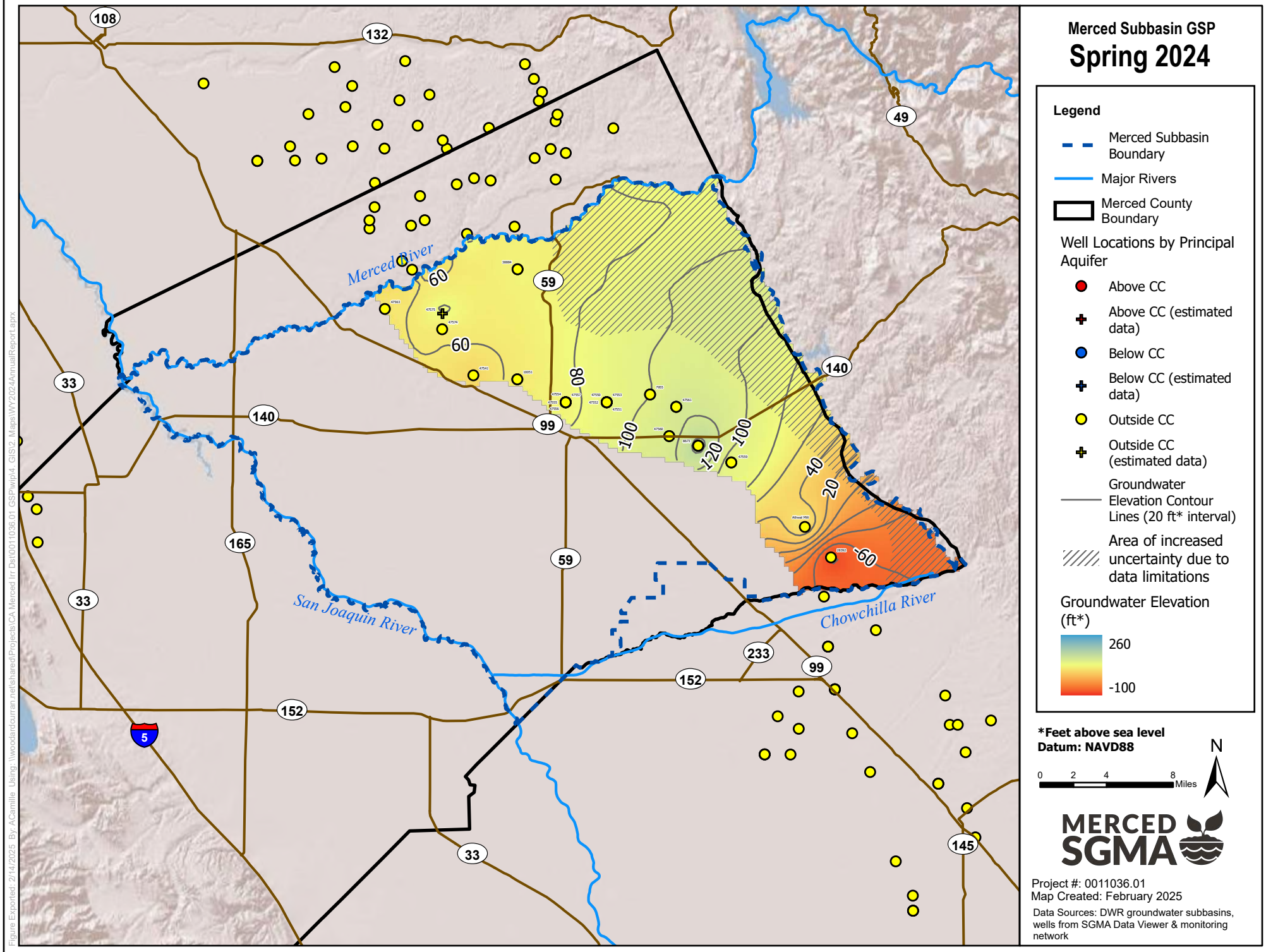
Figure Exported: 2/14/2025 By: ACamille Using: \\woodardcurran.net\shared\Projects\CA Merced Irr Dst\0011036.01 GSP\wip\4. GIS\2. Maps\WY2024AnnualReport.aprx


Merced Subbasin GSP
Fall 2024
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
Figure Exported: 2/14/2025 By: ACamille Using: \\woodardcurran.net\shared\Projects\CA Merced Irr Dst\0011036.01 GSP\wip\4. GIS\2. Maps\WY2024AnnualReport.aprx


Merced Subbasin GSP
Fall 2024
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
80
60
60
60
100
100
40
-40
-60
108
132
49
140
33
140
99
165
59
33
59
233
99
152
152
5
33
145




Merced Subbasin GSP
Spring 2024
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
60
80
40
0
-20
20
108
132
49
59
140
99
33
165
152
233
145
5
Figure Exported: 2/14/2025 By: ACamille Using: \\woodardcurran.net\shared\Projects\CA Merced Irr Dst\0011036.01 GSP\wip\4. GIS\2. Maps\WY2024AnnualReport.aprx


Merced Subbasin GSP
Spring 2024
Legend
Merced Subbasin Boundary
Major Rivers
Merced County Boundary
Well Locations by Principal Aquifer
Above CC
Above CC (estimated data)
Below CC
Below CC (estimated data)
Outside CC
Outside CC (estimated data)
Groundwater Elevation Contour Lines (20 ft* interval)
Area of increased uncertainty due to data limitations
Groundwater Elevation (ft*)
260
-100
*Feet above sea level
Datum: NAVD88
N
0 2 4 8 Miles
MERCED SGMA
Project #: 0011036.01
Map Created: February 2025
Data Sources: DWR groundwater subbasins, wells from SGMA Data Viewer & monitoring network
Merced River
San Joaquin River
Chowchilla River
60
80
100
120
40
20
-60
108
132
49
140
33
99
59
165
152
233
5
145

Woodard & Curran

woodardcurran.com

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Image courtesy: Veronica Adrover/UC Merced