Receive Report on Salinas Valley Water Conditions for the First Quarter of Water Year 2020-2021

SUMMARY/DISCUSSION:
Groundwater level data provides insight on how an aquifer or subarea responds to hydrologic conditions, such as precipitation and reservoir releases, over time. A one-year comparison can show the short-term effects of a single wet or dry year while a long-term comparison will help provide information on general trends in groundwater storage. Subareas or aquifers will respond differently to these hydrologic conditions. For example, groundwater levels in shallower aquifers may respond quicker to a wet season while aquifers that are deeper or more depleted may take longer for groundwater levels to respond and recover.
This report covers the first quarter of Water Year 2020-2021 (WY21), October through December 2020. It provides a brief overview and discussion of hydrologic conditions in the Salinas Valley including precipitation, reservoir storage and groundwater level trends.

Precipitation – Preliminary National Weather Service rainfall data indicates that the first quarter of WY21 brought below normal rainfall to Salinas and King City. Totals for the quarter were 0.94 inches (24% of normal rainfall of 3.91 inches for the quarter) at the Salinas Airport, and 1.1 inches (30% of normal rainfall of 3.72 inches for the quarter) in King City.

Attachment B contains graphs for both stations showing monthly and cumulative precipitation data for the current and a "normal" water year, based on long-term monthly precipitation averages. Attachment B also includes tables showing values for precipitation totals as well as percent of "normal" precipitation.

Reservoirs - The following table compares first quarter storage at Nacimiento and San Antonio reservoirs for the past two years. Storage in Nacimiento Reservoir is 110,445 acre-feet lower than in December 2019, and storage in San Antonio Reservoir is 68,957 acre-feet lower.

Reservoir	**December 31, 2020 (WY21) Storage in acre-feet**	**December 31, 2019 (WY20) Storage in acre-feet**	**Difference in acre-feet**
Nacimiento	83,960	194,405	-110,445
San Antonio	53,268	122,225	-68,957

Graphs showing daily reservoir storage for the last five water years along with 30-year average daily storage for comparison are included as Attachments C and D.

Groundwater Levels – More than 100 wells are measured monthly throughout the Salinas Valley to monitor seasonal groundwater level fluctuations. Data from approximately 50 of these wells are used in the preparation of this report. The measurements are categorized by hydrologic subarea, averaged, and graphed to compare current water levels (WY21) with selected past conditions. Graphs for individual subareas, showing the current year's water level conditions, last year's conditions (WY20) and dry conditions (WY15) are found in Attachments E through I. For

comparison to long term conditions, a curve showing monthly water levels averaged over the most recent 30 years (WY1990-WY2020) is included on each graph. Attachment J is a summary of water level changes for all subareas.

180-Foot Aquifer: Over the last quarter, groundwater levels rose seven feet in the 180-Foot Aquifer. Groundwater levels are down two feet compared to December 2020 levels and down four feet from the 30-year average. Attachment E shows monthly groundwater trends for the 180-Foot Aquifer.

400-Foot Aquifer: Over the last quarter, groundwater elevations increased ten feet in the 400- Foot Aquifer. Groundwater levels are down two feet compared to December 2020 and down one foot from the 30-year average. Attachment F shows monthly groundwater trends for the 400-Foot Aquifer.

East Side Subarea: East Side groundwater levels increased twenty-two feet over the last quarter. Groundwater levels are down four feet from December 2020 levels and down eleven feet from the 30-year average. The East Side is the only subarea whose groundwater levels during the first quarter of WY21 remain below to what they were in WY15 (dry conditions). Attachment G shows monthly groundwater trends for the East Side Subarea.

Forebay Subarea: Over the last quarter, groundwater levels have increased two feet in the Forebay. Groundwater levels are down two feet from December 2020 levels and are less than a foot higher than the 30-year average. Attachment H shows monthly groundwater trends for the Forebay Subarea.

Upper Valley Subarea: Upper Valley groundwater levels have increased one foot over the last quarter. Groundwater levels are down two feet compared to December 2020 and down one foot from the 30-year average. Attachment I shows monthly groundwater trends for the Upper Valley Subarea.

OTHER AGENCY INVOLVEMENT:
None

FINANCING:
Funds 113, 114, 115, 116

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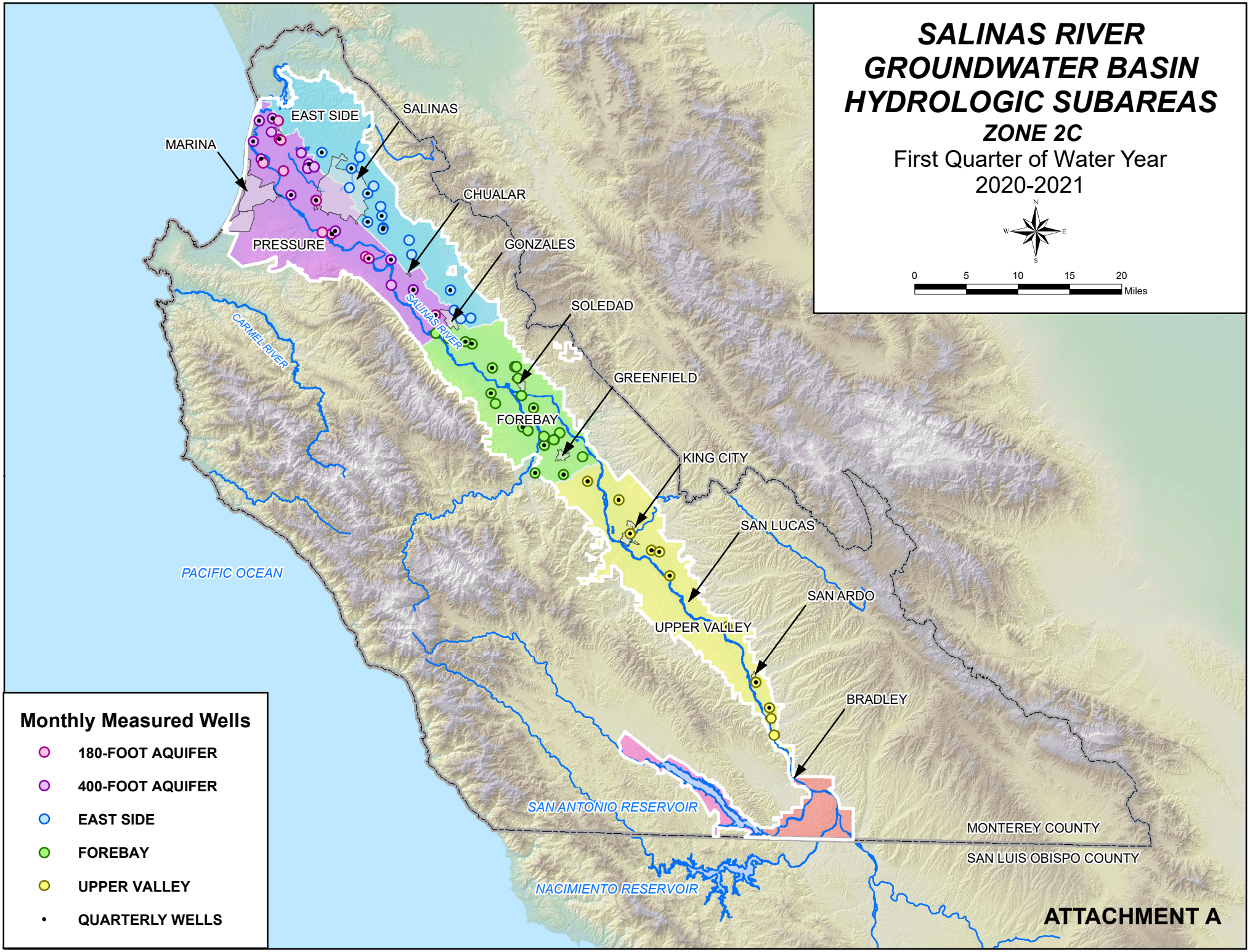
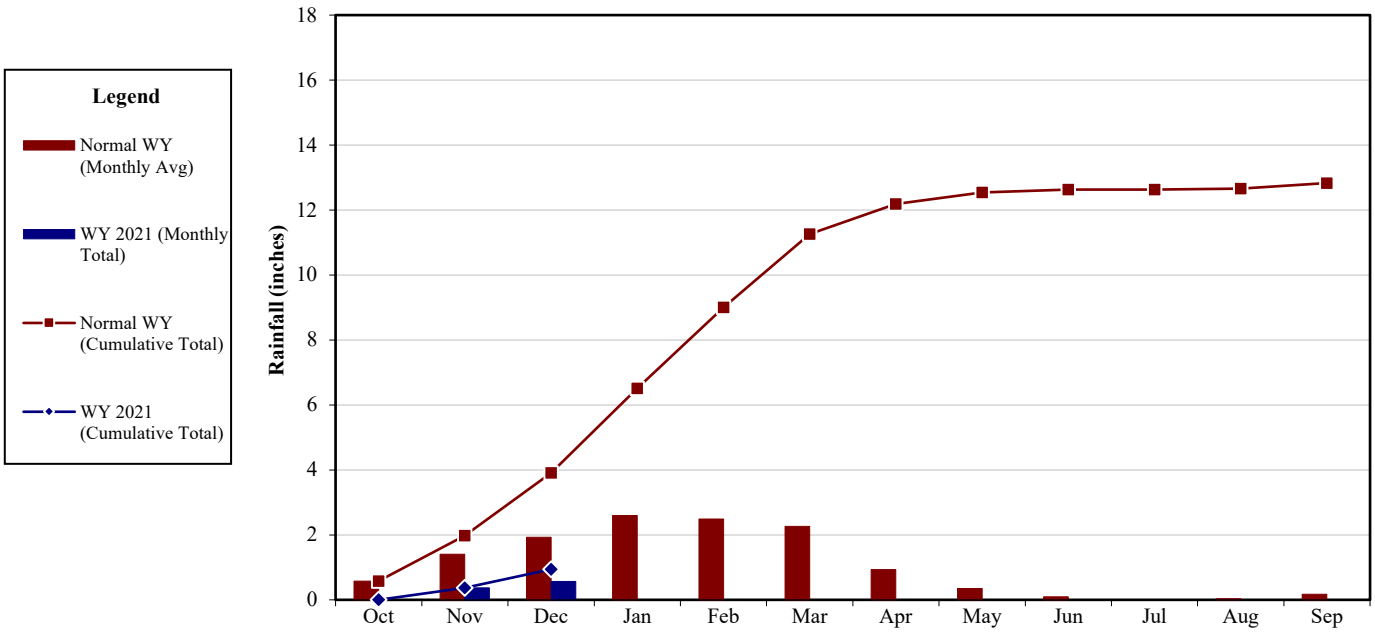
Attachments:

1. Attachment A, Salinas Valley Hydrologic Subareas Map
2. Attachment B, Salinas and King City Precipitation Graphs
3. Attachment C, Nacimiento Reservoir Graph
4. Attachment D, San Antonio Reservoir Graph
5. Attachment E, Groundwater Trends 180-Foot Aquifer
6. Attachment F, Groundwater Trends 400-Foot Aquifer
7. Attachment G, Groundwater Trends East Side Subarea
8. Attachment H, Groundwater Trends Forebay Subarea
9. Attachment I, Groundwater Trends Upper Valley Subarea
10. Attachment J, Groundwater Trends Summary

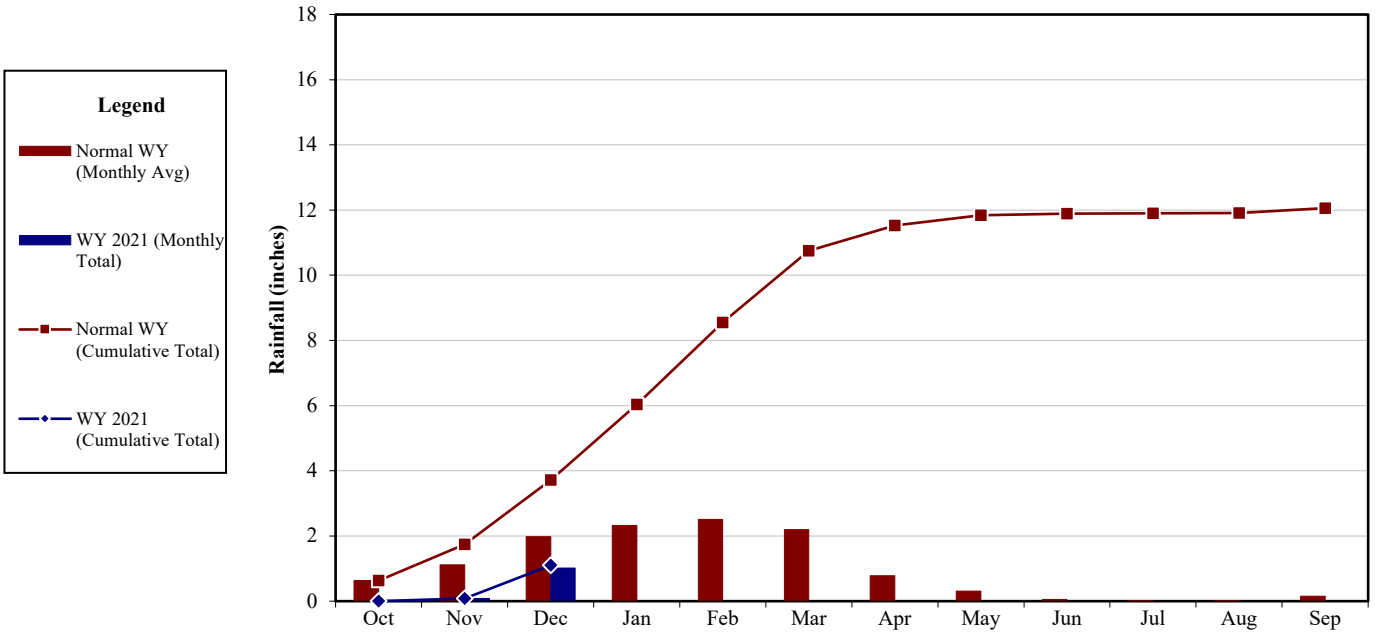

SALINAS RIVER
GROUNDWATER BASIN
HYDROLOGIC SUBAREAS
ZONE 2C
First Quarter of Water Year
2020-2021
N
W
E
S
0
5
10
15
20
Miles
EAST SIDE
SALINAS
MARINA
CHUALAR
PRESSURE
GONZALES
SOLEDAD
SALINAS RIVER
CARMEL RIVER
GREENFIELD
FOREBAY
KING CITY
SAN LUCAS
PACIFIC OCEAN
SAN ARDO
UPPER VALLEY
BRADLEY
SAN ANTONIO RESERVOIR
MONTEREY COUNTY
SAN LUIS OBISPO COUNTY
NACIMIENTO RESERVOIR
Monthly Measured Wells
180-FOOT AQUIFER
400-FOOT AQUIFER
EAST SIDE
FOREBAY
UPPER VALLEY
QUARTERLY WELLS
ATTACHMENT A

SALINAS AIRPORT RAINFALL
WATER YEAR 2021



Monthly Rainfall (WY 2021)	0.00	0.37	0.57									
Monthly Rainfall (Normal WY*)	0.58	1.40	1.93	2.60	2.49	2.26	0.93	0.35	0.09	0.00	0.03	0.17
Percent of Normal for Month	0%	26%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cumulative Rainfall (WY 2021)	0.00	0.37	0.94									
Cumulative Rainfall (Normal WY*)	0.58	1.98	3.91	6.51	9.00	11.26	12.19	12.54	12.63	12.63	12.66	12.83
Percent of Cumulative Normal	0%	19%	24%									

KING CITY RAINFALL
WATER YEAR 2021

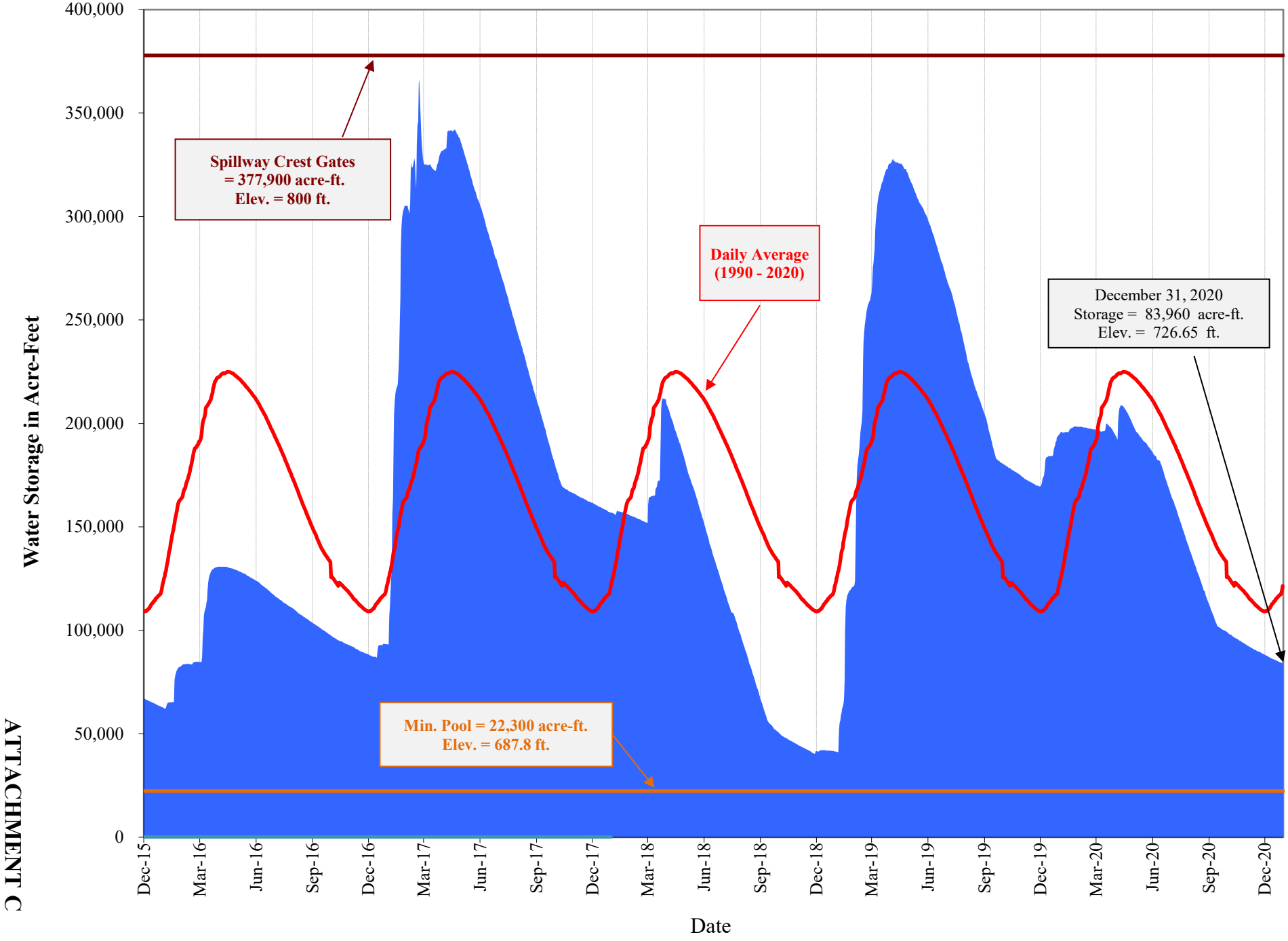


Monthly Rainfall (WY 2021)	0.00	0.08	1.02									
Monthly Rainfall (Normal WY*)	0.63	1.11	1.98	2.32	2.51	2.20	0.78	0.31	0.05	0.01	0.01	0.15
Percent of Normal for Month	0%	7%	52%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cumulative Rainfall (WY 2021)	0.00	0.08	1.10									
Cumulative Rainfall (Normal WY*)	0.63	1.74	3.72	6.04	8.55	10.75	11.53	11.84	11.89	11.90	11.91	12.06
Percent of Cumulative Normal	0%	5%	30%									

*Average precipitation over the most recent 30-year period ending in a decade (1981-2010)

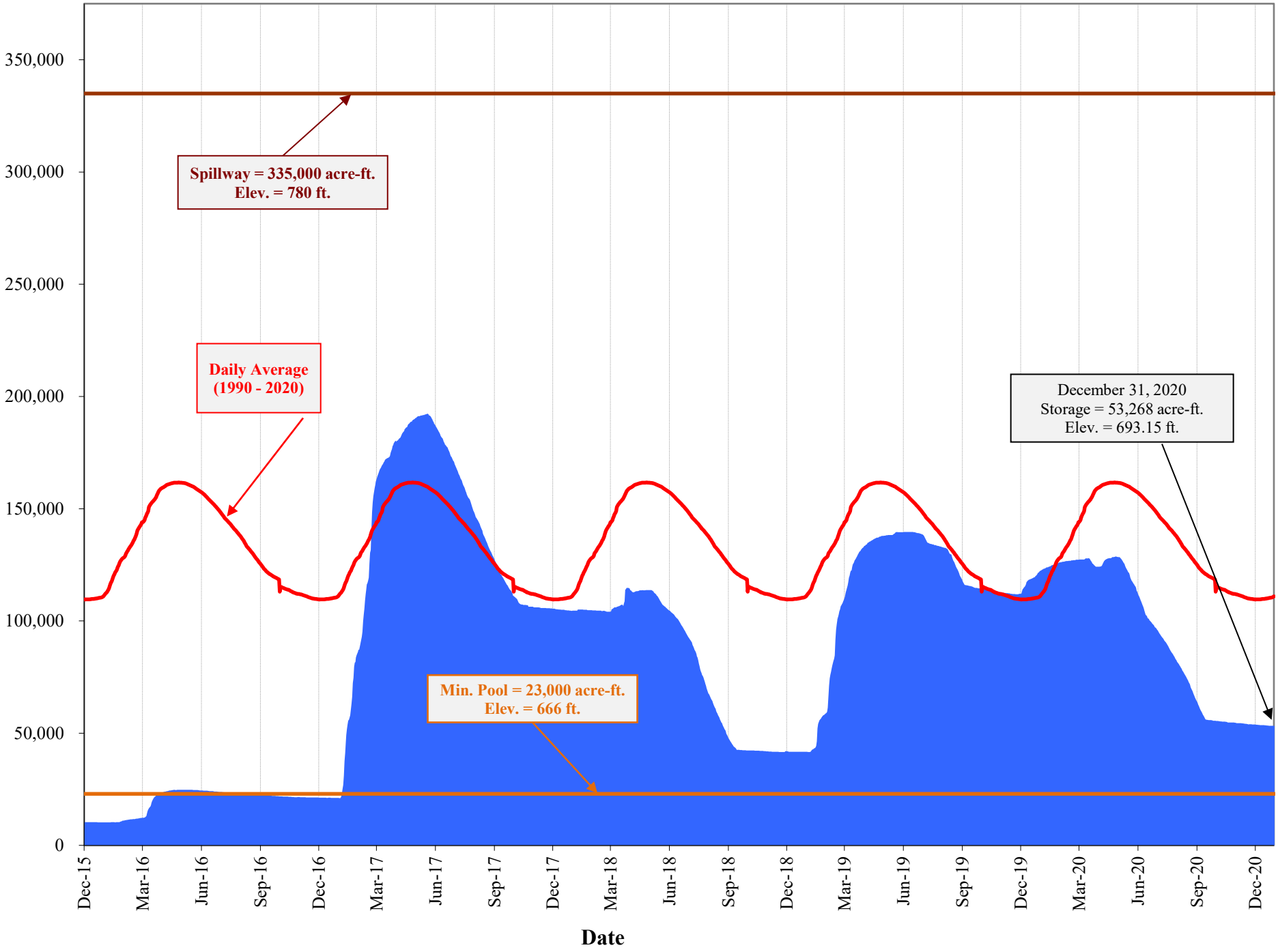
ATTACHMENT B

NACIMIENTO RESERVOIR
DAILY STORAGE



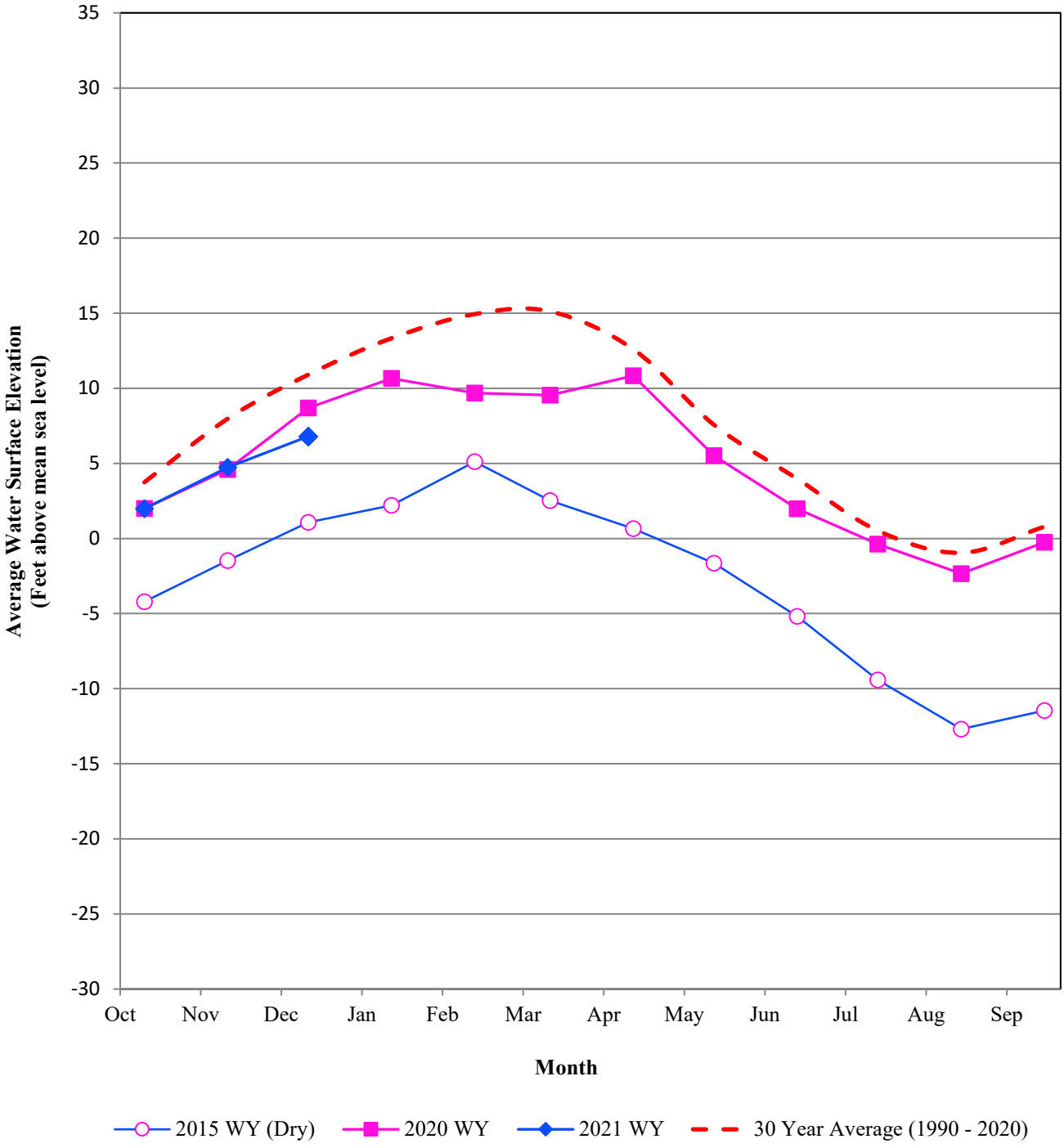
ATTACHMENT C

SAN ANTONIO RESERVOIR
DAILY STORAGE



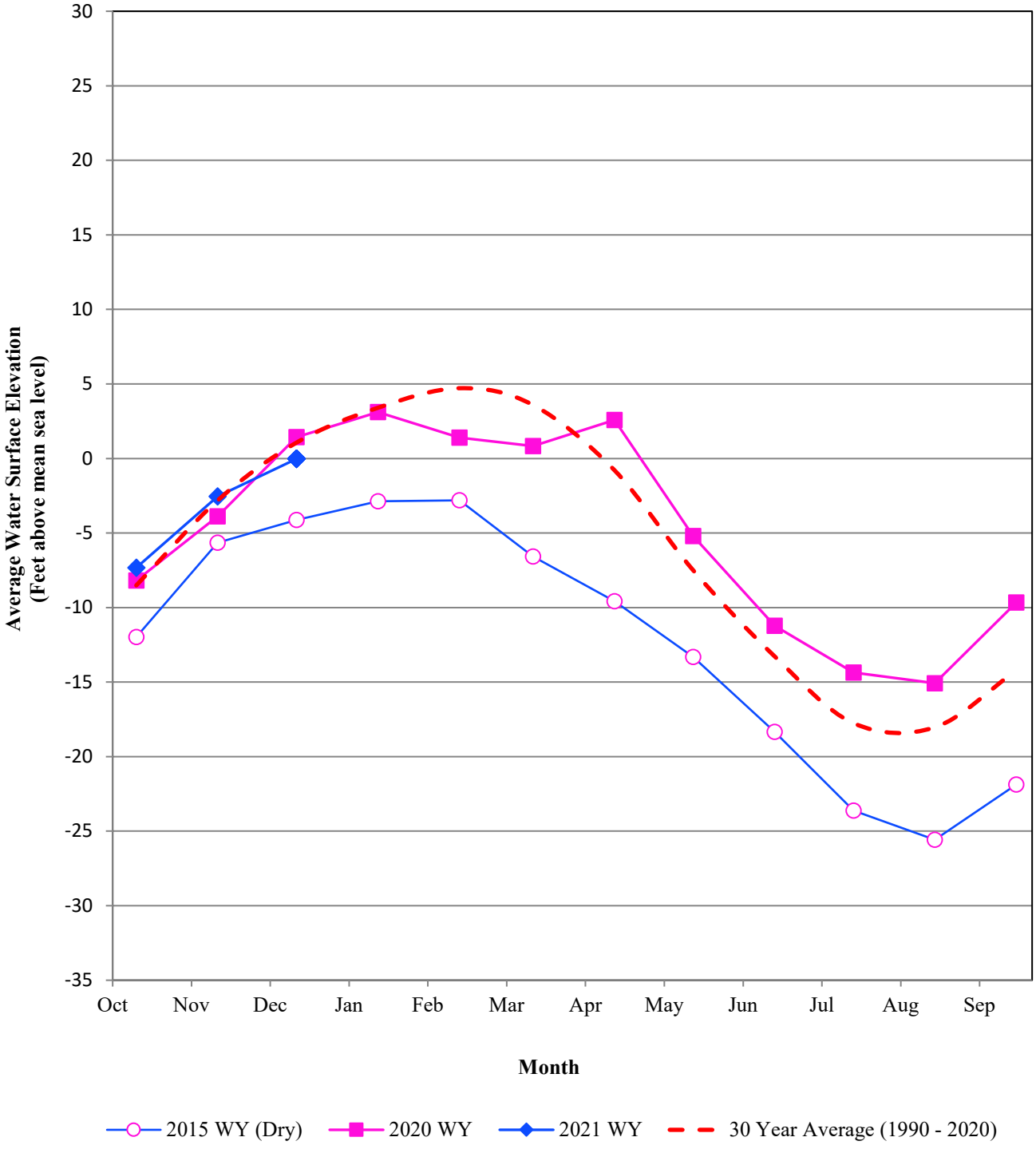
ATTACHMENT D

GROUNDWATER TRENDS
180-FOOT AQUIFER
8 Wells



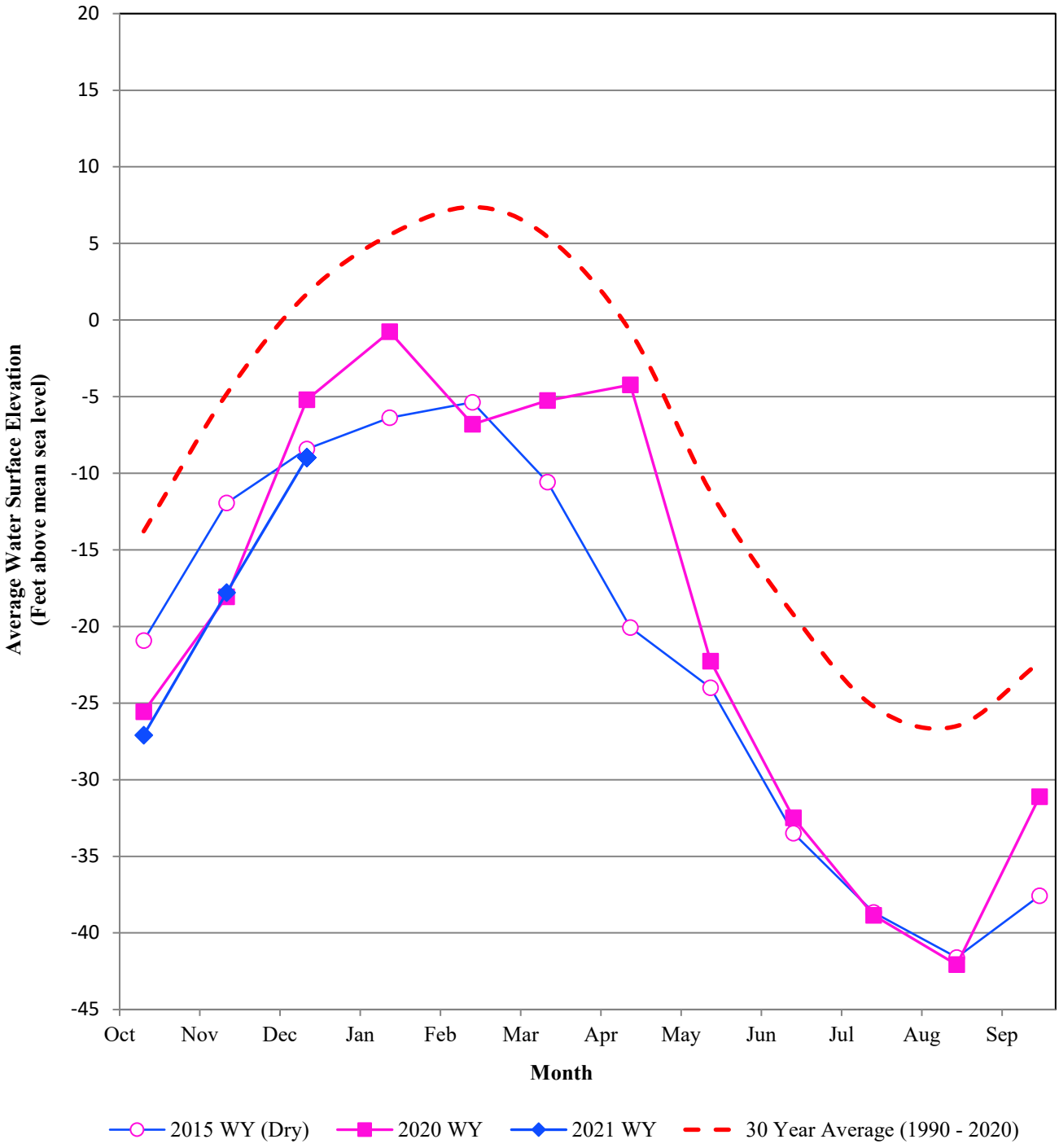
ATTACHMENT E

GROUNDWATER TRENDS
400-FOOT AQUIFER
12 Wells



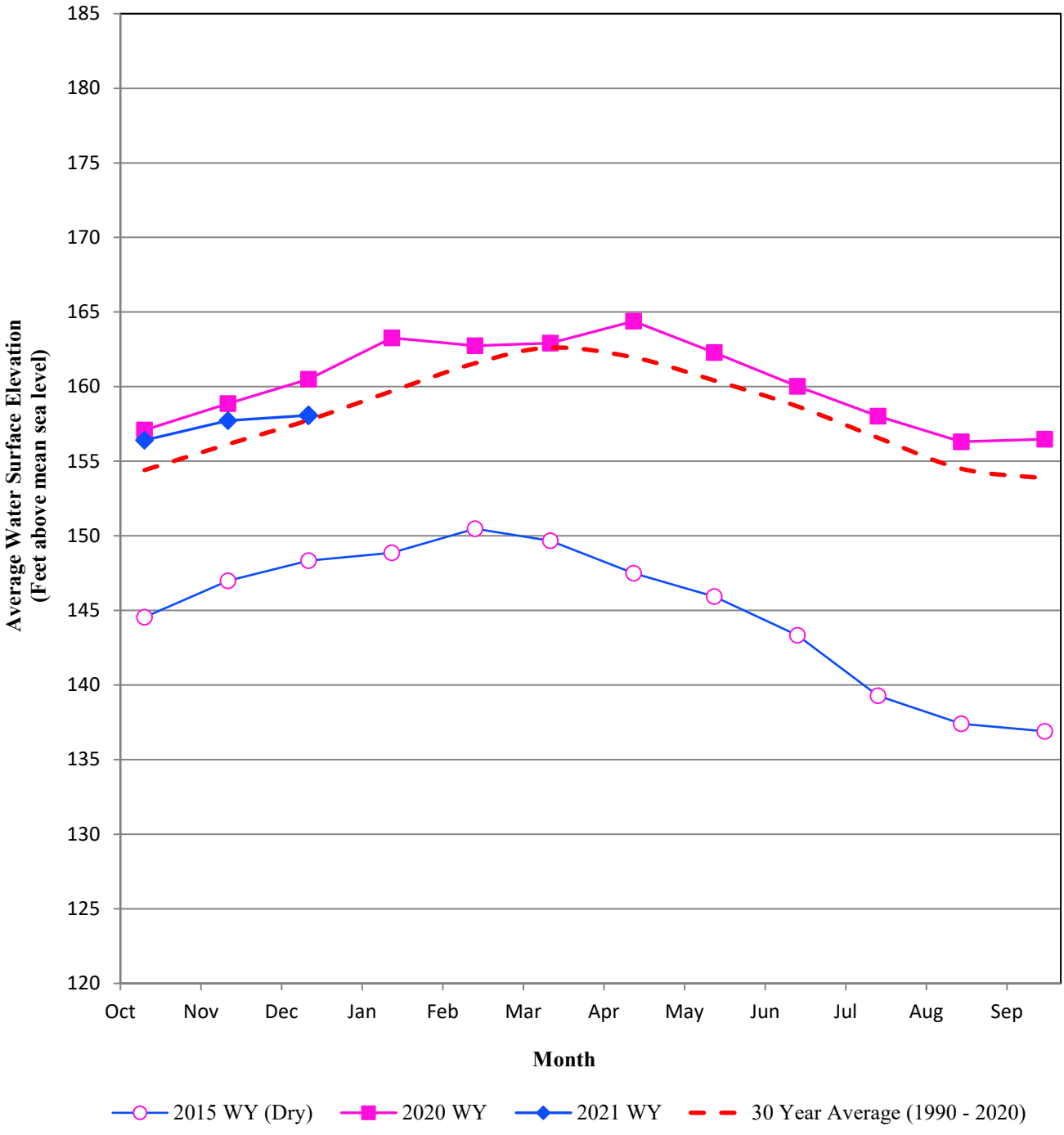
ATTACHMENT F

GROUNDWATER TRENDS
EAST SIDE SUBAREA
12 Wells



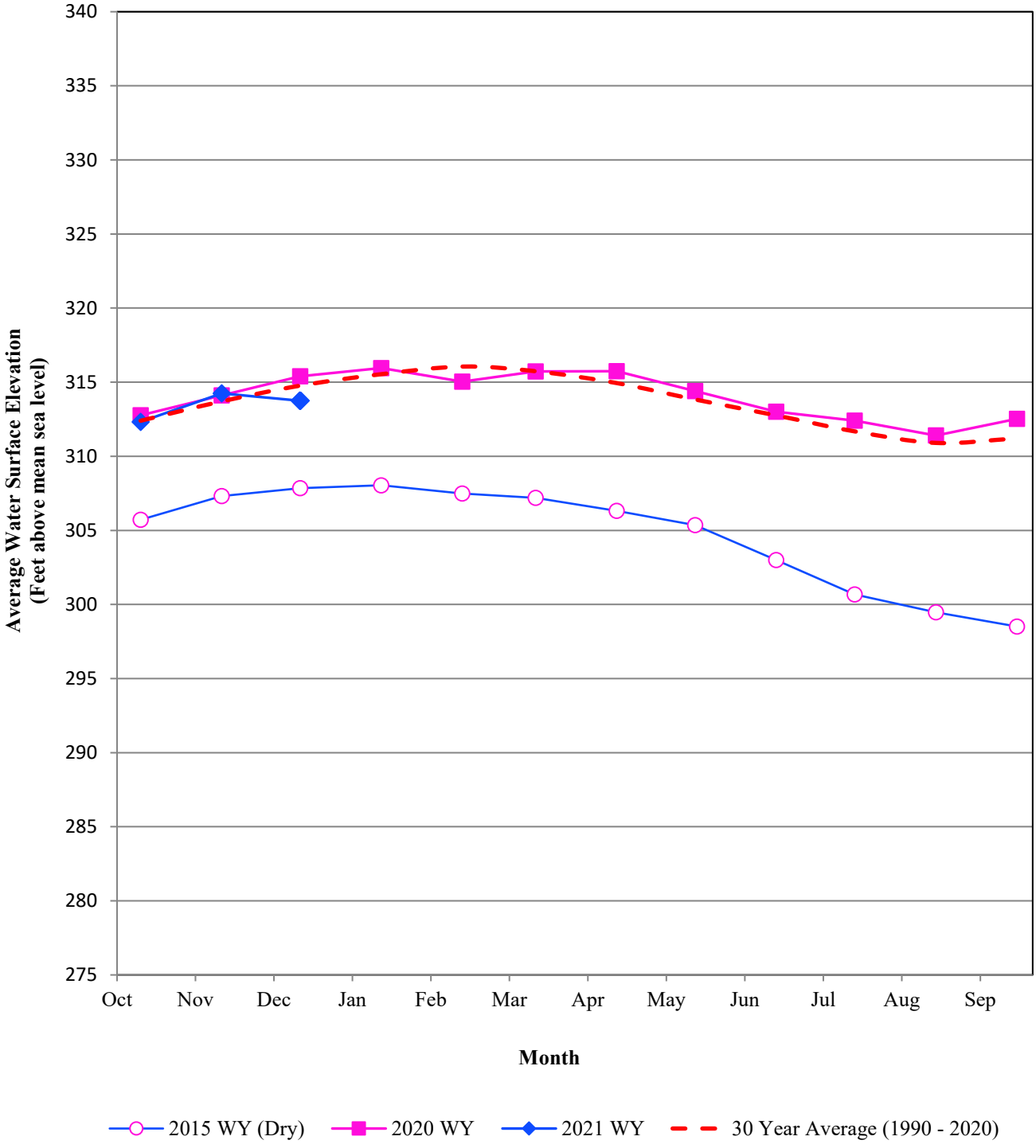
ATTACHMENT G

GROUNDWATER TRENDS
FOREBAY SUBAREA
13 Wells



ATTACHMENT H

GROUNDWATER TRENDS
UPPER VALLEY SUBAREA
9 Wells



ATTACHMENT I

Groundwater Trends Summary
December 2020

Area	December 2020 Groundwater Elevation (ft msl)	Change over First Quarter	1 Year Change	Difference from 30 year Average Elevation
180-Foot Aquifer	7 '	Up 7 '	Down 2 '	Down 4 '
400-Foot Aquifer	0 '	Up 10 '	Down 2 '	Down 1 '
East Side Subarea	-9 '	Up 22 '	Down 4 '	Down 11 '
Forebay Subarea	158 '	Up 2 '	Down 2 '	Up < 1 '
Upper Valley Subarea	314 '	Up 1 '	Down 2 '	Down 1 '

ATTACHMENT J