

V.C – Spring 2023 Semi-Annual Monitoring Program Report

Recommended Actions:

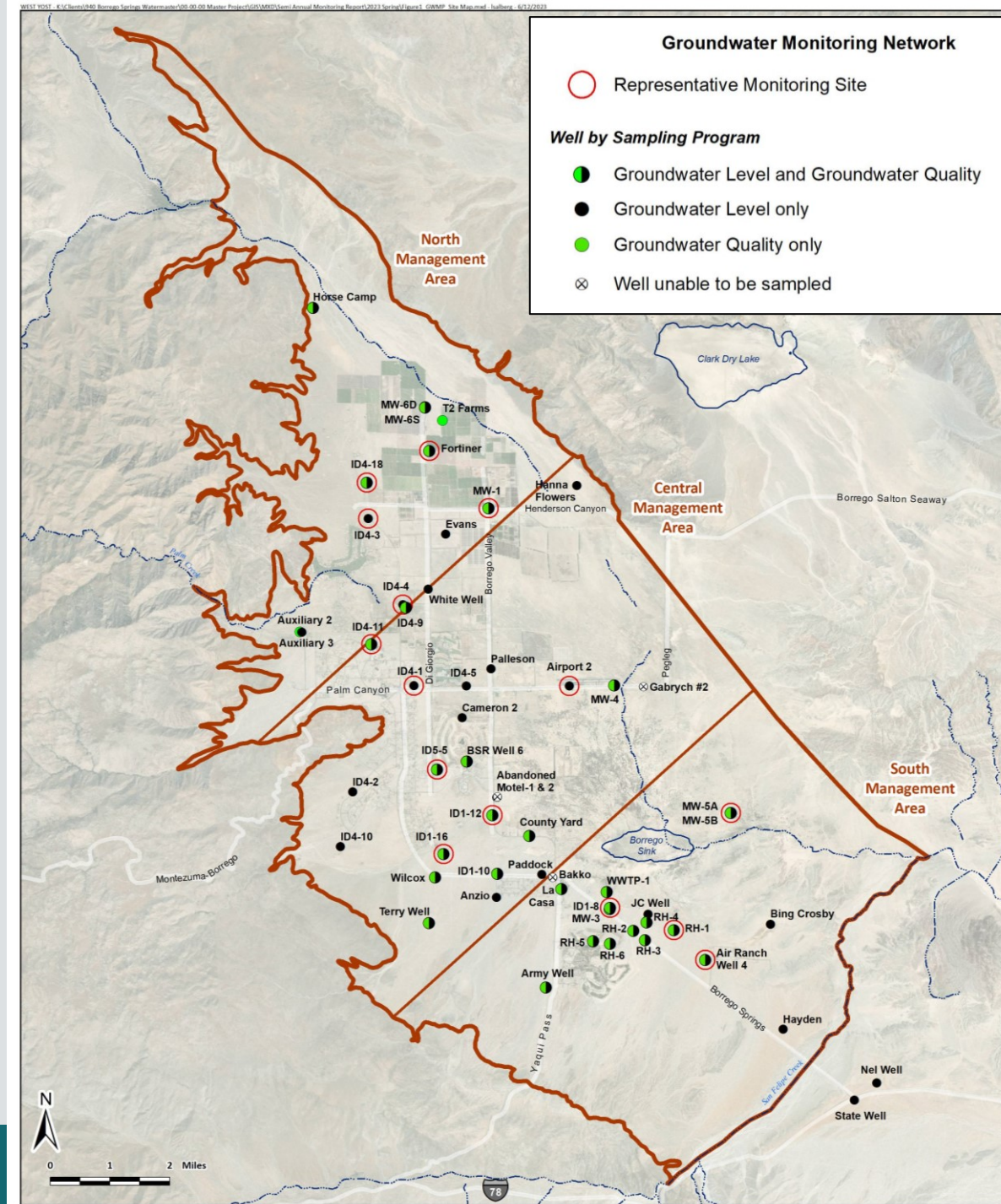
Board discussion.

Fiscal Impact:

None.

Spring 2023 Monitoring Event

- Groundwater levels were measured at **46 of the 50 wells** in the program
 - Manual measurements at 28 wells
 - Measurements via transducers at 18 wells
- Groundwater quality samples were collected at **30 of the 33 wells** in the program
- Reason(s) why wells weren't sampled are documented in Exhibit 1 Wells



Spring 2023 Monitoring Event

• 3 new wells added since the Fall 2022 monitoring event:

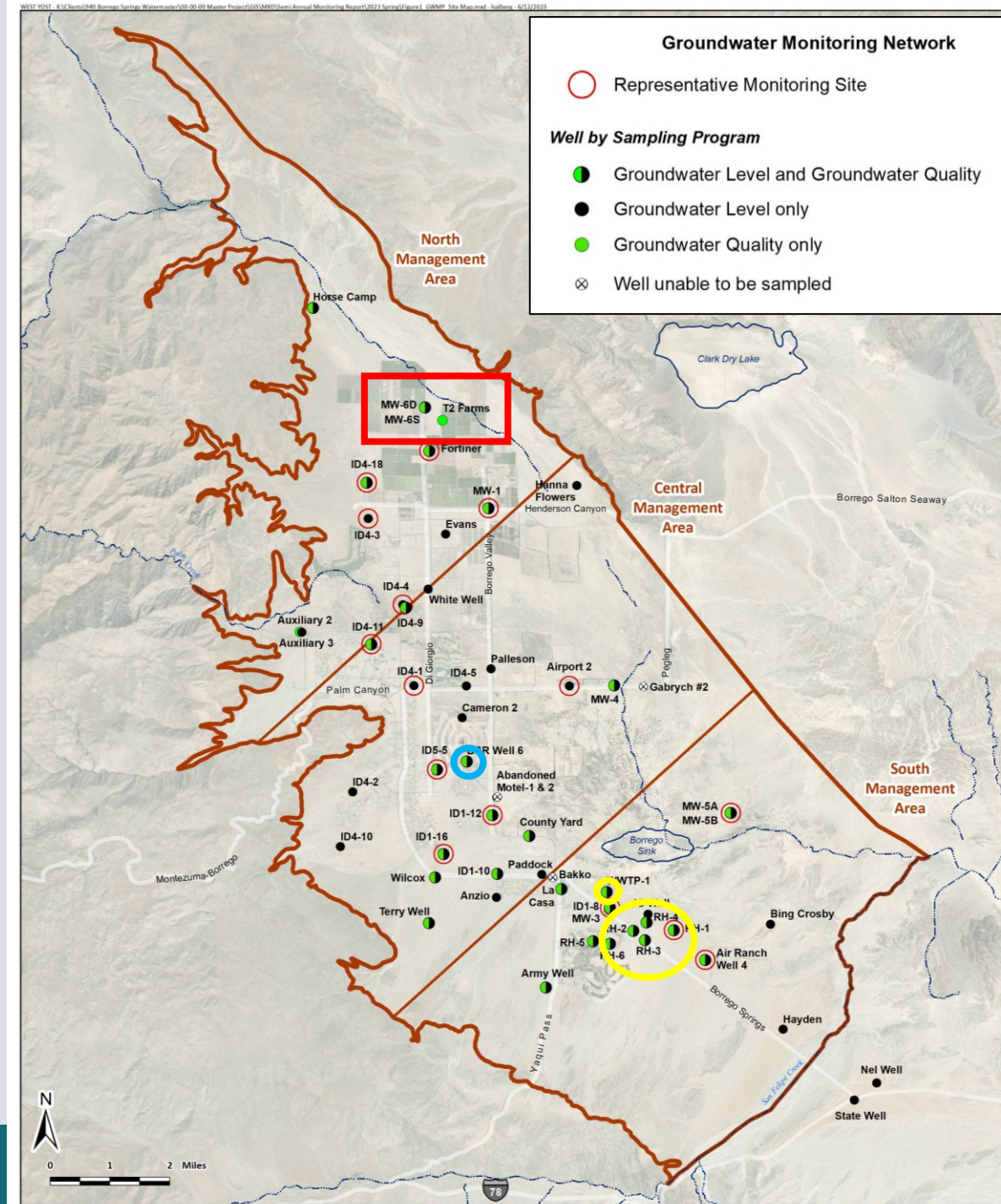
- MW6-S (GWL and GWQ)
- MW6-D (GWL and GWQ)
- T2 Farms (GWQ only)

• Resumed sampling at Fortiner well

• Installed 7 new transducers

• Installed new Barologger

WEST YOST



Spring 2023 Groundwater Levels

- *Exhibit 2 – Historical Water Level Trends at Representative Monitoring Wells over the Physical Solution Implementation Period Compared to Minimum Thresholds (Fall 2019 to Spring 2023).* This exhibit compares minimum thresholds, depth to groundwater in Fall 2019 and Spring 2023, and amount of change in groundwater levels for the 16 Representative Monitoring Wells defined in the GMP.
- *Exhibit 3 – Groundwater Levels in Selected Wells.* This exhibit shows the long-term water level trends at selected wells in each Management Area of the Basin: North, South, and Central.

Spring 2023 Groundwater Levels Compared to Fall 2019

For 16 Representative Monitoring Wells, since fall 2019:

- Groundwater levels increased at two wells by 1.0 – 1.6 ft.
- Groundwater levels decreased at 14 wells, ranging from -0.5 to -12.7 feet
- Groundwater levels are above the Minimum Thresholds at all Representative Monitoring Wells

Exhibit 2. Historical Water Level Trends at Representative Monitoring Wells over the Physical Solution Implementation Period Compared to Minimum Thresholds Fall 2019 to Spring 2023								
Local Well Name	State Well ID	Minimum Threshold: Lowest Allowable Depth to Groundwater from 2020 to 2040 ^(a) (ft below RP)	Fall 2019 Depth to Water ^(b,c) (ft below RP)	Spring 2023 Depth to Water ^(d) (ft below RP)	Difference between Minimum Threshold and Spring 2023 Depth to Water (ft below RP)	Change in Depth to Water since Fall 2019 (ft)	Rate of Change in Depth to Water since Fall 2019 (ft/yr)	Historical Rate of Change in Depth to Water ^(e) (ft/yr)
North Management Area								
MW-1	010S006E21A002S	300.60	261.60	260.0	40.6	1.6	0.5	-2.14
ID4-3	010S006E18R001S	331.20	289.20	292.7	38.5	-3.5	-1.2	-2.09
Fortiner	010S006E09N001S	382.10	336.10	342.1	40.0	-6.0	-2.0	-2.48
ID4-18	010S006E18J001S	360.60	316.60	320.1	40.5	-3.5	-1.2	-2.31
ID4-4	010S006E29K002S	470.56	223.10	224.1	246.5	-1.0	-0.3	-2.73
Central Management Area								
ID4-1	010S006E32R001S	214.10	181.10	182.9	31.2	-1.8	-0.6	-1.39
Airport 2	010S006E35N001S	136.90	111.90	115.1	21.9	-3.1	-1.1	-1.67
ID1-16	011S006E16N001S	264.70	231.70	235.0	29.7	-3.3	-1.1	-0.95
ID4-11	010S006E32D001S	451.00	228.28	241.0	210.0	-12.7	-4.2	-2.29
ID1-12	011S006E16A002S	248.55	147.26	147.8	100.8	-0.5	-0.2	-1.51
ID5-5	011S006E09E001S	400.00	188.83	189.6	210.4	-0.8	-0.3	-0.85
South Management Area								
MW-5A	011S007E07R001S	70.20	56.20	57.7	12.5	-1.5	-0.5	-0.74
MW-5B	011S007E07R002S	70.00	56.00	57.5	12.5	-1.5	-0.5	-0.74
MW-3	011S006E23J002S	85.70	71.70	77.4	8.3	-5.7	-1.9	-5.84
Air Ranch	011S007E30L001S	100.80	91.80	90.8	10.0	1.0	0.3	-0.5
RH-1	011S006E25A001S	68.00	59.00	59.8	8.2	-0.8	-0.3	-0.94

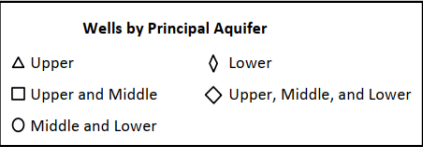
Spring 2023 Groundwater Quality Compared to Drinking Water Standards

- *Exhibit 4 – Water Quality Standard Exceedance Report.* This table lists all water quality sample results that exceeded a California or EPA drinking water standard (e.g. California Maximum Contaminant Level [MCL]) during the spring 2023 monitoring event.
- The water quality standard exceedances are similar to past observations and include:
 - The upper limit of the CA secondary MCL for TDS of 1,000 milligrams per liter (mg/l) was exceeded at 5 wells.
 - The lower limit of the CA secondary MCL for TDS of 500 mg/l was exceeded at 15 wells.
 - The CA and EPA secondary MCL for sulfate of 250 mg/l was exceeded at 9 wells.
 - The EPA secondary MCL for chloride of 250 mg/l was exceeded at 2 wells.
 - The CA and EPA primary MCL for nitrate of 10 mg/l was exceeded at 2 wells.
 - The CA primary MCL for arsenic was exceeded at 3 wells.
 - Other exceedances of manganese, specific conductance, aluminum, and iron at MW6-S and/or MW6-D.

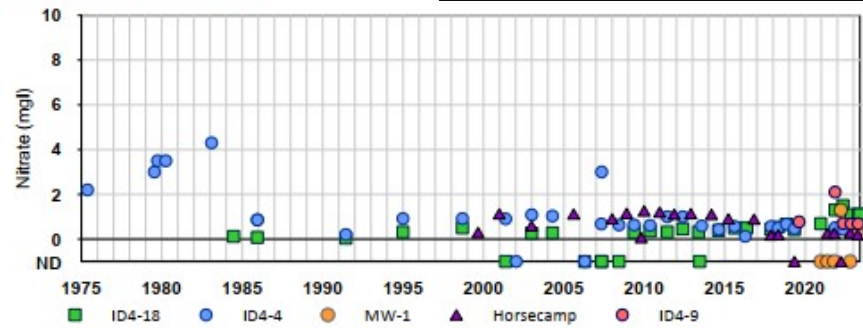
Spring 2023 Groundwater Quality

Exhibits 5 through 9 show:

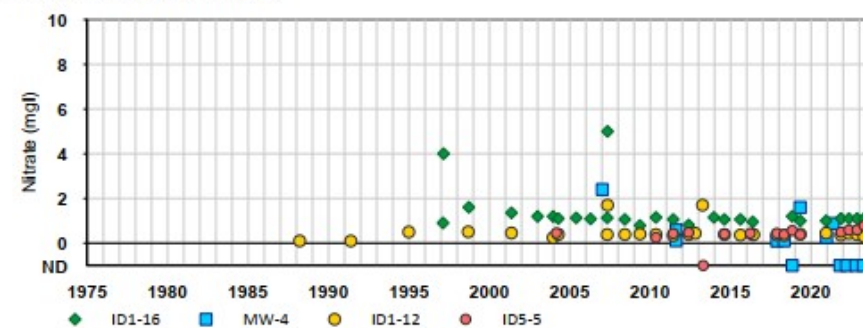
- 1. Map characterizing the spatial distribution of water quality concentrations at all wells sampled in spring 2023
- 2. Time history charts of historical concentration trends at selected wells in each of the Management Areas for the five constituents of concern identified in the GMP (TDS, nitrate, arsenic, sulfate, and fluoride).
- 3. **NEW** – the principal aquifer each well is screened in



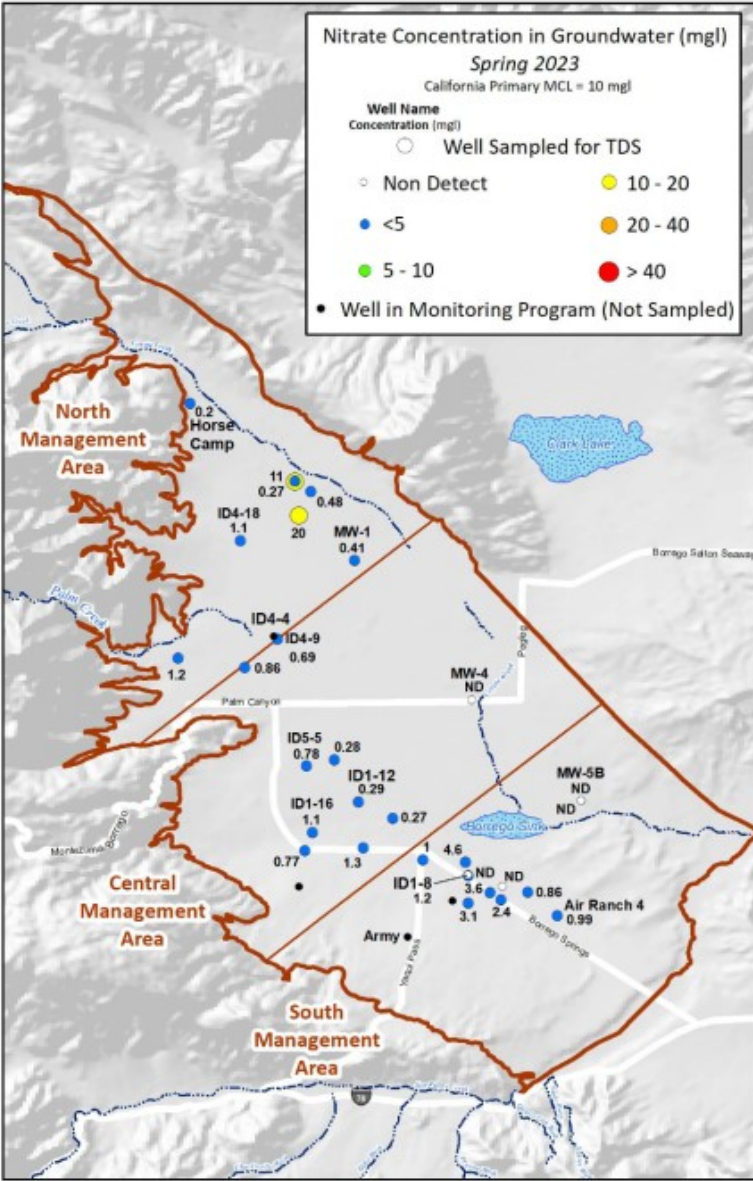
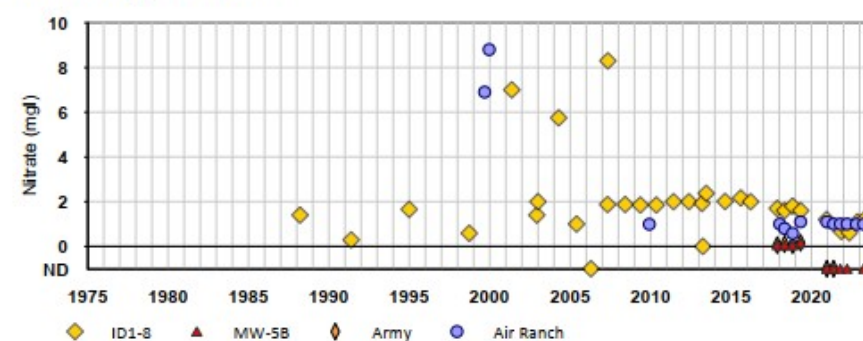
North Management Area



Central Management Area



South Management Area



NEW – Appendix A. Groundwater Quality Time-Series

- Figures showing the historical concentration of the 5 constituents identified in the GMP by well
- Shows location, depth, and screened interval of the well
- Available as a handout on the Watermaster's website

