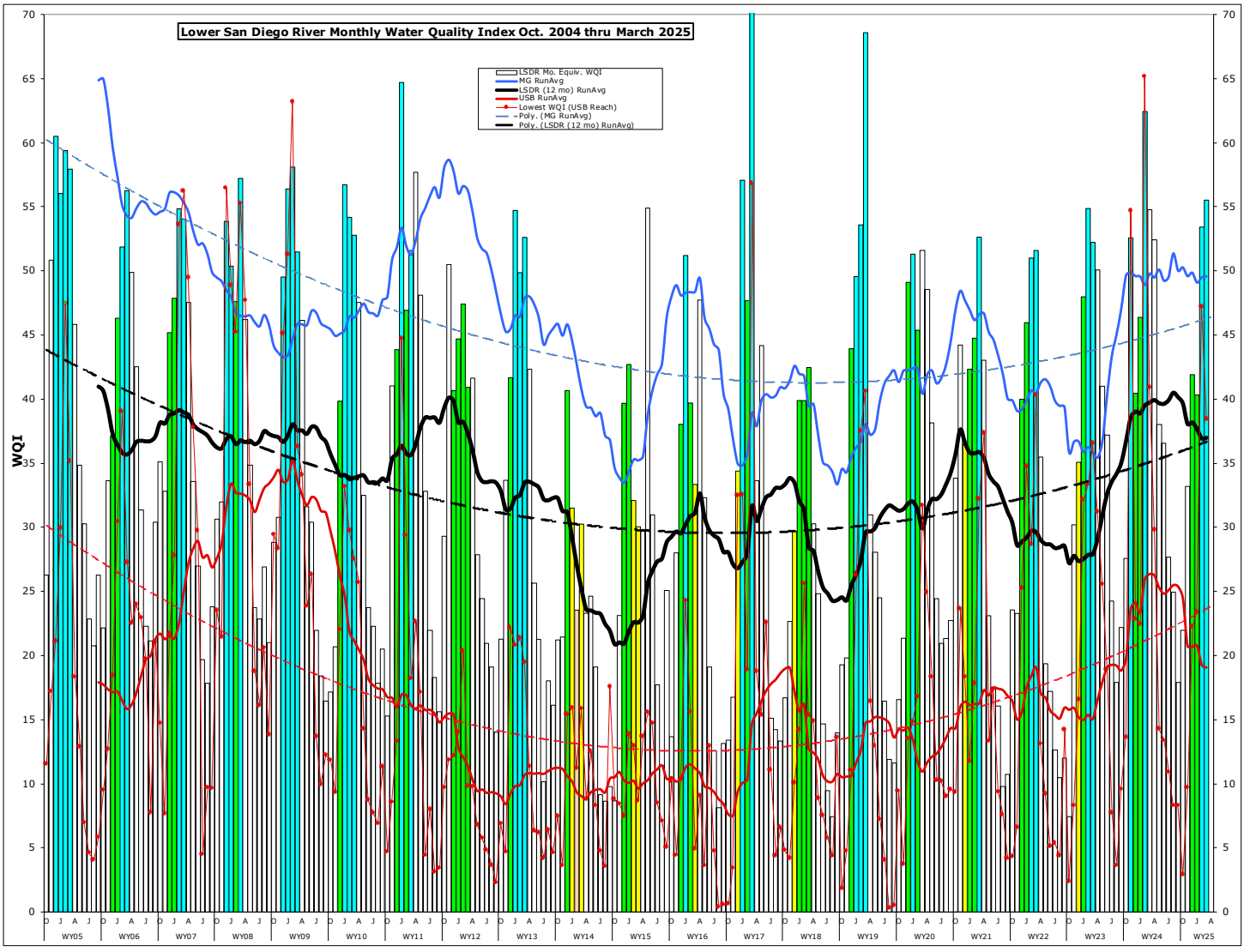
Monthly WQM Report

Lower San Diego River - March 2025



Lower SDR Water Quality Monitoring Data Summary

Table 1 presents a summary of water quality data monitored by the SDRPF RiverWatch Team within the Lower San Diego River (LSDR) watershed over the last two months. This month's overall index of (B) is up 3 points from last month, at one point above a year ago and five points (8%) greater the 21-yr March norm of 51.

Table 1 - March'25/Feb.'25 WQM Data Summary							
	West - MV	Mid - MG	East - SB	LSDR	Variance From		
[Site #s]	[1-7] Mar/Feb	[8-10] Mar/Feb	[11-15] Mar/Feb	[1-15] Mar/Feb	Last Mo. (2/'25)	Last Yr. (3/'24)	21-yr Avg. (March)
Temperature, oC	15.8/15.1	13.3/13.4	15.2/14.8	15.0/14.6	3%	-10%	-8%
Sp.Cond., mS/cm	1.26/1.38	1.15/1.53	1.43/1.71	1.38/1.65	-16%	3%	-9%
DO, mg/L	7.51/6.35	9.48/9.67	7.07/7.92	7.51/7.42	1%	8%	8%
DO, % of Sat.	76/63	91/93	71/79	75/73			
pH	7.62/7.52	8.03/8.09	7.58/7.79	7.60/7.63	-1.2%	-3.9%	-1.9%
3-day ADF, cfs	57/46	17/16	10/10	30/26	18%	-4%	-8%
WQ Index	59/49	68/68	46/50	56/53	4%	1%	8%
Jan/Dec	B/C+	B/B	C/B-	B/B-			
Jan/Dec	Good/ Fair	Good/ Good	Fair/ Good	Good/ Good	**Index up 3 points from last month**		

Negative variance (declines from norms) and DO deficits (DO < 5.0 mg/L or 50% of Sat) expressed in red.

LSDR **water temperatures** rose just 0.4oC (3%) from last month to 1.6oC below last March and 1.3oC less than the 21-yr norm of 16.3oC. The overall **specific conductance** of 1.38 mS/cm is 16% under last month, remaining 3% greater than last March at 9% below the 21-yr norm of 1.52 mS/cm. The overall **dissolved oxygen** level of 7.51 mg/L (75%Sat.) is 1% greater than last month and 8% more than last March and the 21-yr norm of 6.92 mg/L (70%Sat). **Streamflow** over the antecedent 3-days of 30 cfs is 18% more than last month but remaining 4% less than a year ago and 8% below the 21-yr norm of 33 cfs. This month's overall LSDR **water quality index** (WQI) of 56 (B) is 4% greater than last month, 1 point above last March and 5 points above the 21-yr norm of 51 (B-).

Monthly WQI values occurring over the past two years of RiverWatch record for the three main sections of the lower river system, the overall LSDR average, plus 30-day antecedent average daily streamflow (ADF) and total monthly rainfall (MRF) values, are expressed in **Table 2** on the next page.

Table 2 - WQI Values, Average Daily Flow and Monthly Rainfall (Feb. '23 - March '25)							
	Mission Valley	Mission Gorge	Santee Basin	LSDR		ADF,cfs	TMRF,in
Feb. 23	56 (B)	71 (B)	47 (C)	55 (B)	WW	36	2.76
March	**58 (B)**	**57 (B)**	**52 (B-)**	**55 (B)**	**WW**	**132**	**4.86**
April	52 (B-)	65 (B)	43 (C)	50 (B-)	WW	77	0.54
May	40 (C)	47 (C+)	39 (C)	41 (C)	T	19	0.12
June	33 (D)	59 (B)	33 (D)	37 (D+)	T	18	0.03
July	19 (E)	39 (C-)	23 (E)	24 (E+)	DW	4.9	0.00
Aug	20 (E)	22 (E)	15 (E)	18 (E)	DW	3.1	0.10
Sept.	17 (E)	35 (D)	22 (E)	22 (E)	T	26	1.75
Oct.	31(D)	34 (D)	21 (E)	28 (D)	DW	4.2	0.01
Nov.	49 (C+)	59 (B)	51 (B-)	53 (B-)	T	28	0.15
Dec.	45 (C)	50 (B-)	31 (D)	40 (C)	T	15	0.46
Jan.'24	50(B-)	58 (B)	36 (D)	46 (C)	WW	13	2.07
Feb. 24	58(B)	64(B)	65(B)	62(B)	WW	202	6.12
March	**55(B)**	**67(B)**	**48(C+)**	**55(B)**	**WW**	**46**	**1.62**
April	60(B)	61(B)	40(C)	52(B)	WW	62	1.92
May	40 (C)	54 (B-)	31 (D)	38 (C-)	T	16	0.03
June	40 (C)	51 (B-)	30 (D)	38 (C-)	DW	7.6	0.01
July	27 (D)	43 (C)	25 (D)	28 (D)	DW	3.8	0.00
Aug.	22 (E)	44 (C)	22 (E)	25 (E+)	DW	2.9	0.00
Sept.	18 (E)	19 (E)	20 (E)	18 (E)	DW	1.6	0.01
Oct.	17 (E)	42 (C)	24 (E+)	25 (D-)	DW	1.2	0.01
Nov.	34 (D)	49 (C+)	23 (E+)	33 (D)	T	2.2	0.08
Dec.	45 (C)	53(B-)	33 (D)	42 (C)	DW	3.7	0.05
Jan.25	44 (C)	49 (C+)	32 (D)	41 (C)	DW	3.8	0.00
Feb. 25	49 (C+)	68 (B)	50 (B-)	53 (B-)	WW	28	1.00
March	**59 (B)**	**68 (B)**	**46 (C)**	**56 (B)**	**WW**	**60**	**2.40**

The **cover page** of this report presents monthly WQI values and range (high/low) for the Lower San Diego River watershed over the past 20+ years. Each year's values are expressed as color-shaded bars; blue (50 or >) A-B/Good, green (38-49) C/Fair, yellow (25-37) D/Marginal, brown (13-24) E/Poor, and pink (12 or <) F/Very Poor. Running average index values for the LSDR (distance weighted averages of all sites) are shown as a heavy black line. Running averages for the consistently highest (best) quality section of the river (Mission Gorge) are shown as a 'blue' line while the consistently lowest (poorest) reach (Upper Santee Basin) is shown in 'red'. The dashed lines represent overall (21-yr) trends. This month's value of 56 is the 15th time over the last two decades that the index attained the grade level B (Good).

WQI values extending from Sept.'04 thru March '25 are presented in **Chart 1** (next page) together with 12-mo. running averages for each of the five reaches and overall (i.e., LSDR) for the entire lower river watershed. The current running average WQI of 37 is 12% above the long-range norm of 33. The running average low for March of 23 (32% below norm) occured in 2015. The previous highest running average WQI for the month of 38 (14% above norm) occured in 2009. Two out of the three main sections of the lower river showed improvements in water quality this month compared to last while slight declines in index values were found at sites in the Santee section.

Monthly and 12-mo. running average WQI values for the 'poorest" (Upper Santee Basin) and "best" (Mission Gorge) reaches of the lower watershed are presented in **Chart 2**. Although water quality has measurably improved during much of this past year, resurgent growth of aquatic plants and subsequent decomposition associated with accrual of organics, especially in deeper ponded portions of the river, are considered basic natural causes of localized poor water quality. The greatest downward trends (red-dashed line) over time have been associated with the lowest quality reach (Upper Santee Basin) encompasing Mast Park East (#13E) and Magnolia Ave.(#14) sites. The Mission Gorge (blue line) section extending from Old Mission Dam through Mission Trails continues to demonstrate the least flux in index values over the entire monitoring period.

Spatial WQI values determined over the last three months, expressed in order of location upstream, are shown in **Charts 3, 4 and 5** on page 6. This month's results (color bars w/values in black shown on Chart 5) are greater than last month at 9 out of 16 sites. This month two sites are Marginal(D), one Poor (E), 11 Good(B) and two Very Good (A). Last month two were Marginal, six Fair and eight Good. The Jan. index values were similar to last month's results. The greatest increase in index values for March are found in the Mission Valley section.

Index values during the next of month are expected to remain in the same general range of Fair (C) to Good (B) based on stable streamflows, DO levels, water temps and Specific Conductance values. However, April values are commonly observed slightly lower than those in March. Streamflow can be expeced to continue declining with forecasted dry weather, although should April experience considerable rainfall, river water quality could remain near common Winter season highs.

(JCK) 3/22/25

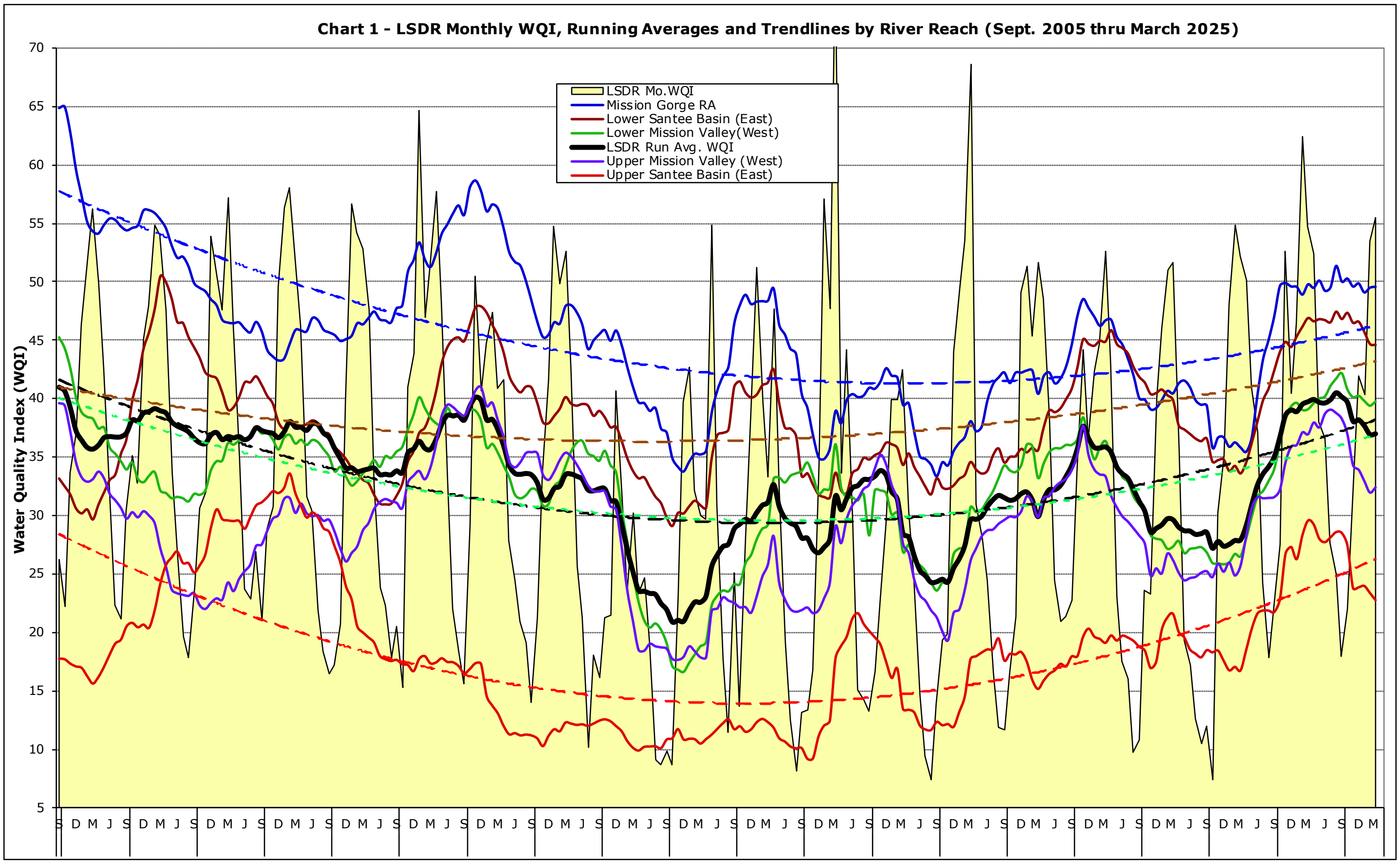


Chart 1 - LSDR Monthly WQI, Running Averages and Trendlines by River Reach (Sept. 2005 thru March 2025)
LSDR Mo.WQI
Mission Gorge RA
Lower Santee Basin (East)
Lower Mission Valley(West)
LSDR Run Avg. WQI
Upper Mission Valley (West)
Upper Santee Basin (East)
Water Quality Index (WQI)

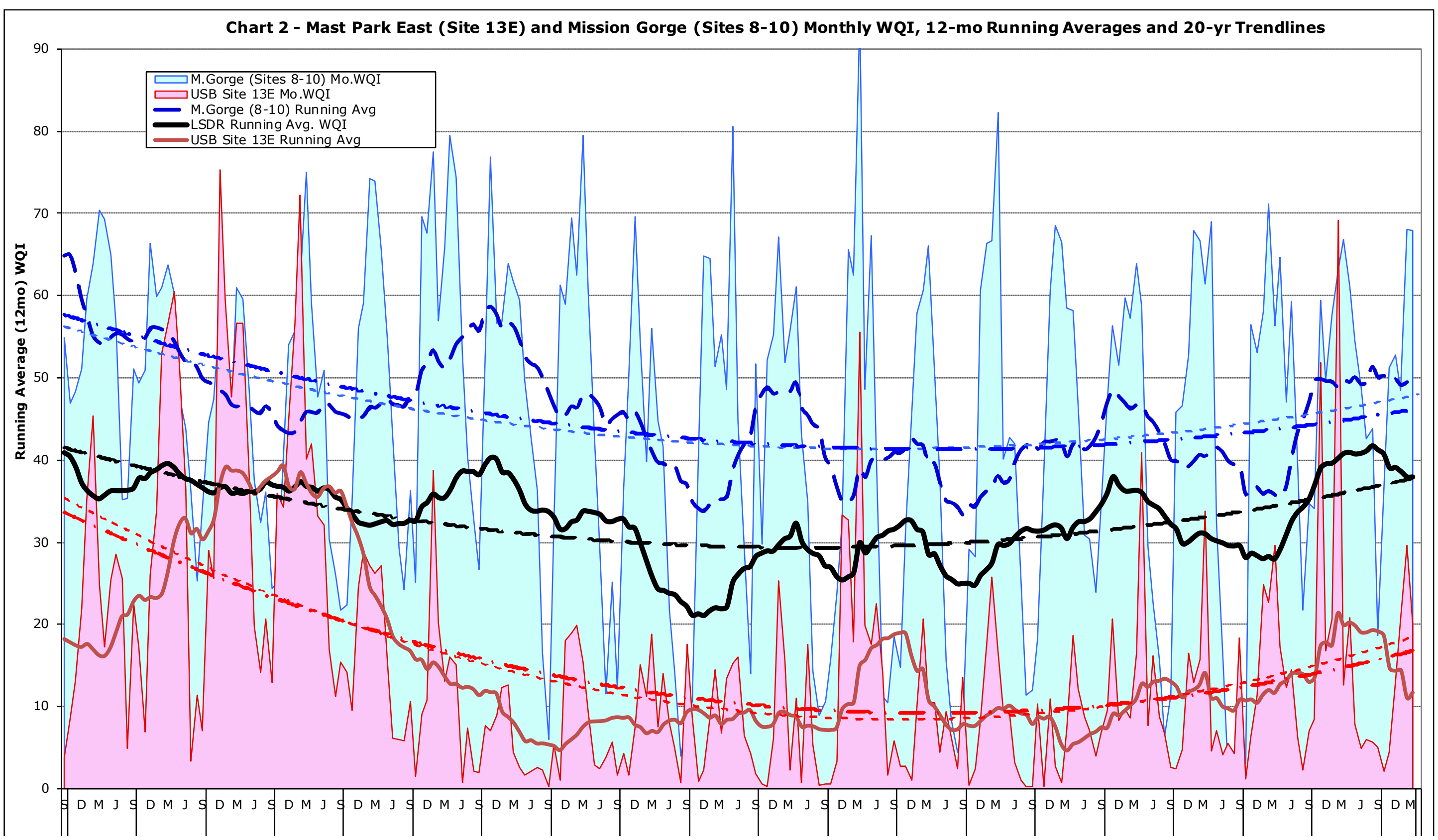


Chart 2 - Mast Park East (Site 13E) and Mission Gorge (Sites 8-10) Monthly WQI, 12-mo Running Averages and 20-yr Trendlines
M.Gorge (Sites 8-10) Mo.WQI
USB Site 13E Mo.WQI
M.Gorge (8-10) Running Avg
LSDR Running Avg. WQI
USB Site 13E Running Avg
Running Average (12mo) WQI

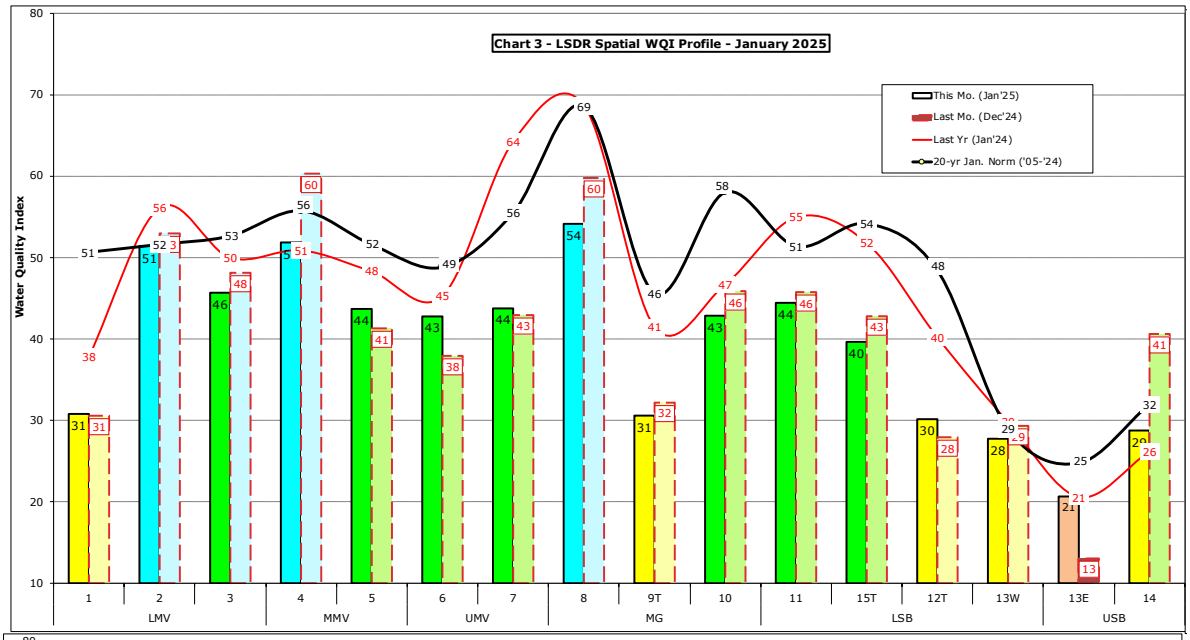


Chart 3 - LSDR Spatial WQI Profile - January 2025
This Mo. (Jan'25)
Last Mo. (Dec'24)
Last Yr (Jan'24)
20-yr Jan. Norm ('05-'24)
Water Quality Index
LMV
MMV
UMV
MG
LSB
USB

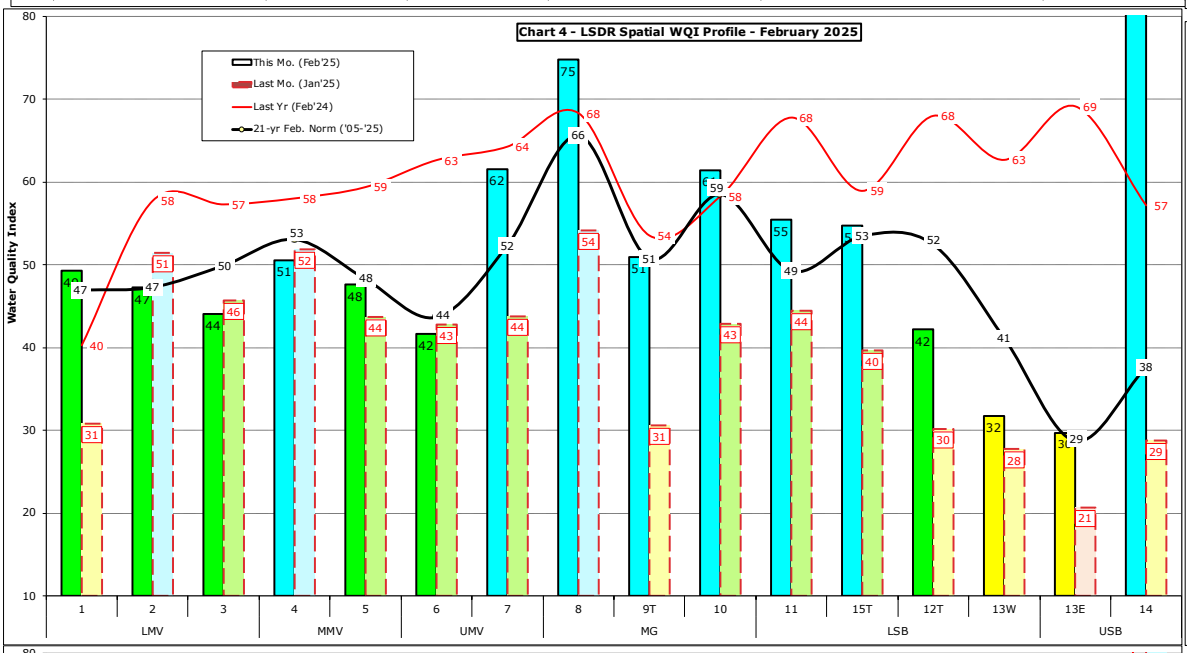


Chart 4 - LSDR Spatial WQI Profile - February 2025
This Mo. (Feb'25)
Last Mo. (Jan'25)
Last Yr (Feb'24)
21-yr Feb. Norm ('05-'25)
Water Quality Index
LMV
MMV
UMV
MG
LSB
USB

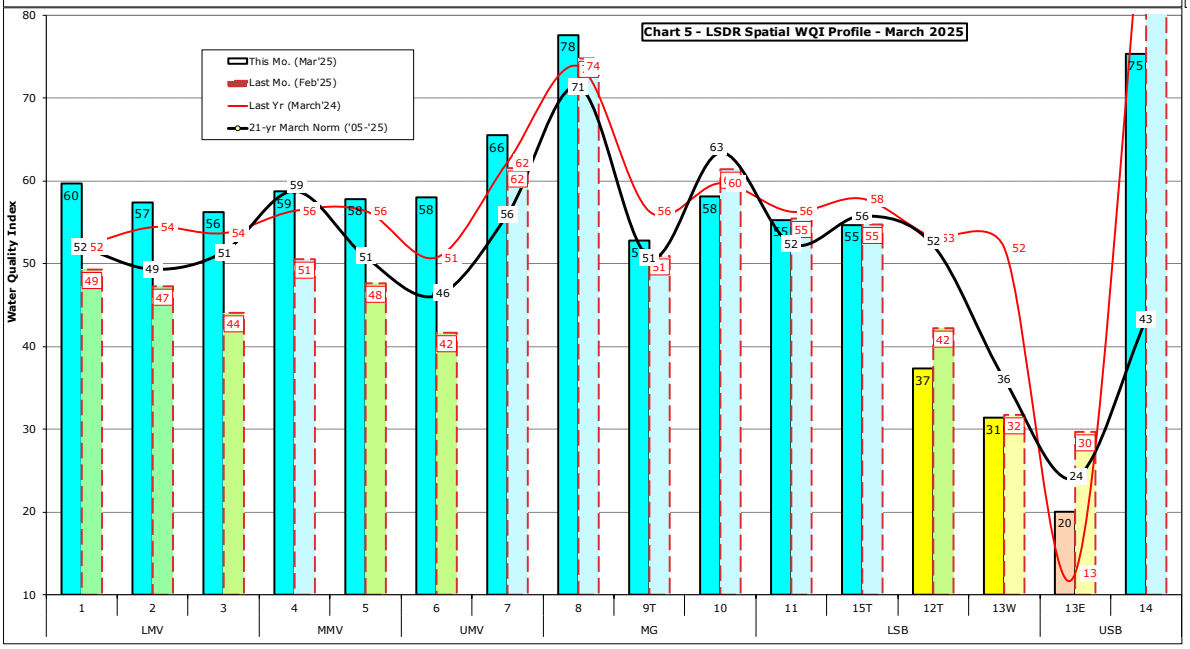


Chart 5 - LSDR Spatial WQI Profile - March 2025
This Mo. (Mar'25)
Last Mo. (Feb'25)
Last Yr (March'24)
21-yr March Norm ('05-'25)
Water Quality Index
LMV
MMV
UMV
MG
LSB
USB