



Waverly Water Update August 2024

- Well # 7 has been drilled and awaiting finished construction which will increase capacity around another 350 GPM, or up to 500,000 gallons per day if ran 24 hours.
- Test samples, Parameter 13 testing have been done on area domestic wells in the study areas identified by Olsson Engineering with more planned to be drawn from pivot irrigation wells later this summer to acquire additional water quality data within the region around Waverly.
- Test wells identified by the Olsson studies have been proposed to be funded in the 24/25 budget year and once the data from those test wells are completed, then moving forward with addition capacity of production wells can be decided on where, how many, budgeting, engineering, land and ROW access, and construction of additional wells or wellfields can take place.
- The 2023 drought was in comparison to the 1936 drought and is not typical climatological for this region. Waverly was not the only city to see static levels drop in 2023 as region wide static levels dropped as was not unique only to Waverly.
- Currently we are 6.78 inches above in precipitation compared to the same time last year
- Jan – July 2023= 14.48 inches Jan –July 2024 = 21.26 inches

Water use

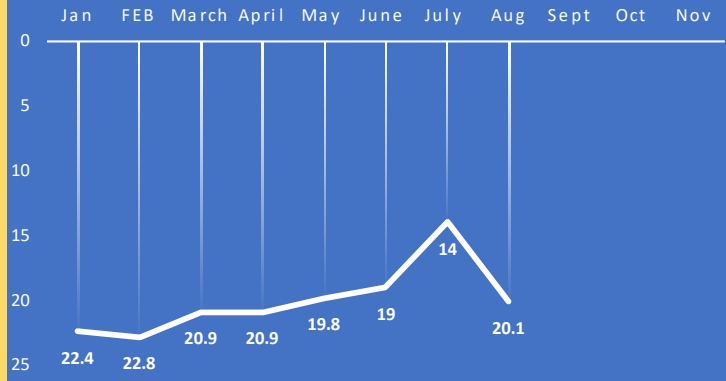
All wells monthly total	12,849,314	11,939,898	13,268,481	18,093,805	30,387,370	34,230,812	20,758,649	
	2023	January	February	March	April	May	June	July
Daily average		414,494	426,425	428,016	603,127	980,238	1,141,027	669,634
All wells monthly total	12,952,242	12,542,549	13,994,744	17,522,752	17,958,629	20,386,191	24,316,242	
	2024	January	February	March	April	May	June	July
Daily average		417,814	432,502	451,443	584,092	579,311	679,540	784,395

2024 we have used 21.8 million gallons less than the same time of 2023.

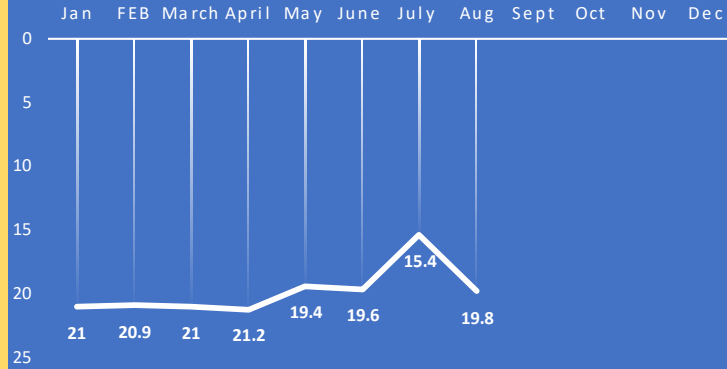
Note: Irrigation pivots surrounding Waverly started running in July and continue to run, drawing water from the same aquifer as our wells. Along with irrigation pivots running throughout the state and regional area.

										as of July 2	as of Aug 11				
Pumping Levels distance from shutoff points (based on the lowest level it reached during the month)															
Well	Speed	Jan	FEB	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec		
4	100%	4.7	5.9	6.8	7.2	5.5	5.5	11	5.7						
5	94%	1.1	1.5	3	3	3	3.2	6.2	2.4						
6	83%	0.8	12.7	10	9.4	9.1	9.4	10.3	9.1						
8	100%	9.2	9.2	9.1	8.8	6.3	8.2	6.8	5						
9	85%	4.1	6.5	7.1	7.1	11.4	14.9	16	14.2						
10	100%	19.7	18.3	18.1	18.2	19.8	17.4	20.1	18.3						
11	85%	22.2	11.5	11.5	11.3	11.4	10.7	11.6	9.9						
Precip. Inches	21.26	0.95	0.51	1.09	3.42	4.78	3.28	7.23							
										as of July 2	as of Aug 11				
Static Levels- Water distance from ground level (based on the lowest level it reached during the month)															
Well		Jan	FEB	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec		
4		22.4	22.8	20.9	20.9	19.8	19	14	20.1						
5		21	20.9	21	21.2	19.4	19.6	15.4	19.8						
6		80	79.9	79.7	81.1	81.2	81.8	81.1	82.5						
8		73.8	74.3	73.3	73.8	73.9	74.4	74.1	75.2						
9		104.8	104.7	102	102	102.8	103.7	102.9	105						
10		85	85.9	85.9	86.2	86.9	87.8	86.2	88.5						
11		98	101.5	98.1	99.3	99.1	99.6	98.9	101						
Precip. Inches	21.26	0.95	0.51	1.09	3.42	4.78	3.28	7.23							

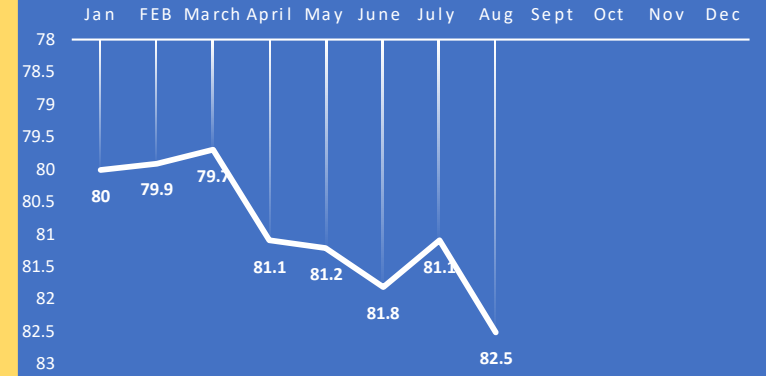
WELL #4 STATIC LEVELS 2024



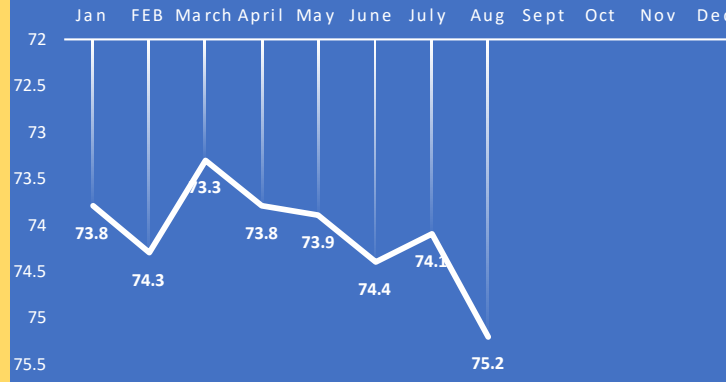
WELL #5 STATIC LEVELS 2024



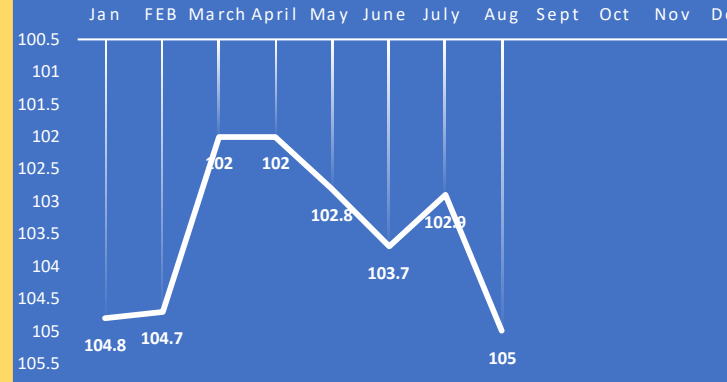
WELL #6 STATIC LEVELS 2024



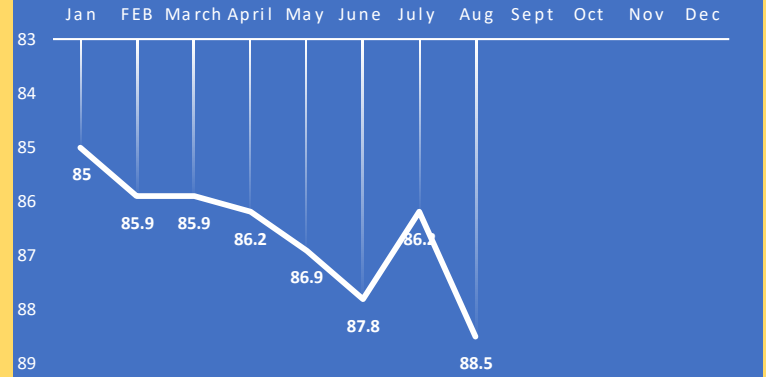
WELL #8 STATIC LEVELS 2024



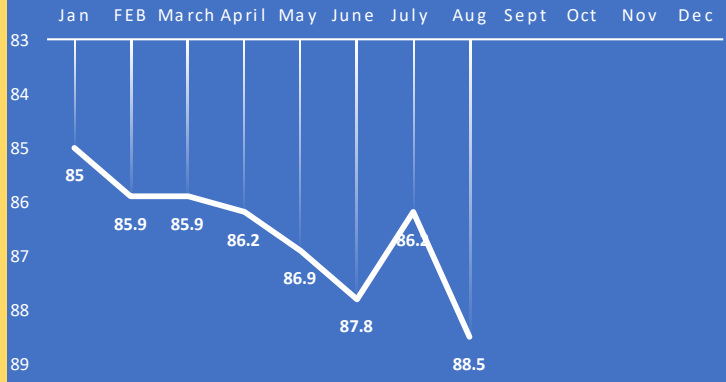
WELL #9 STATIC LEVELS 2024



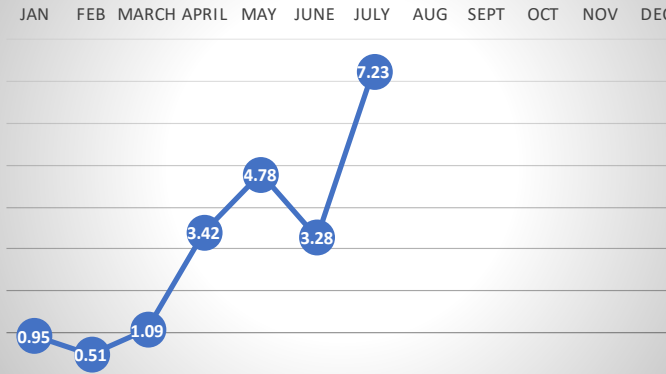
WELL #10 STATIC LEVELS 2024



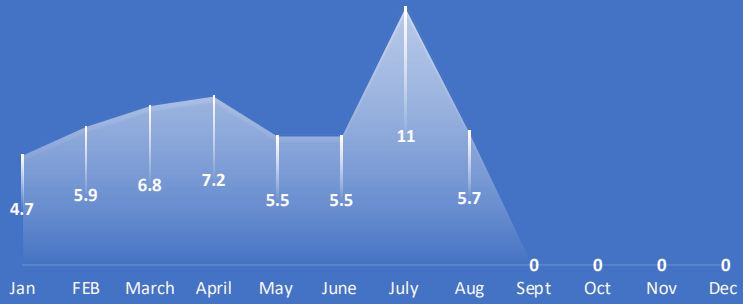
WELL #11 STATIC LEVELS 2024



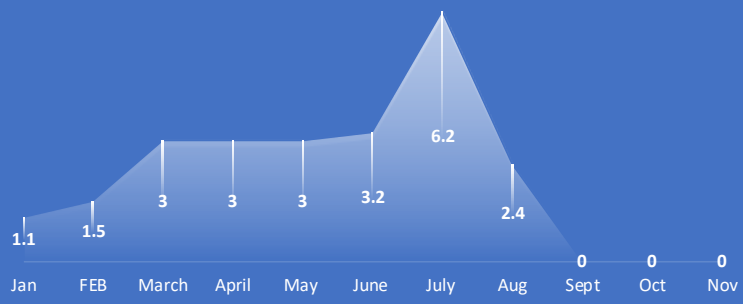
Precipitation 2024



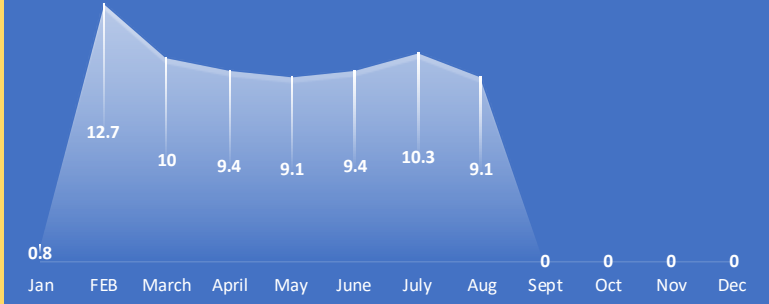
WELL # 4 PUMPING LEVEL TO STUTOFF



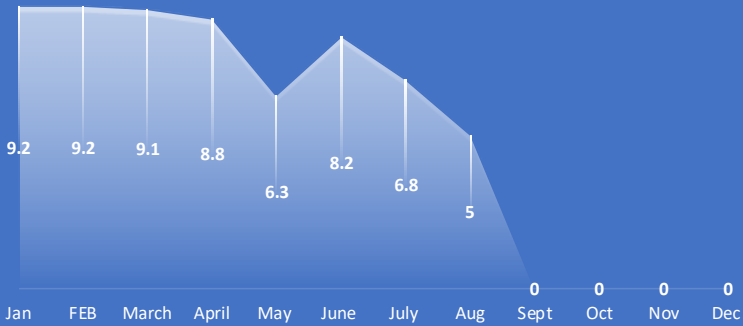
WELL # 5 PUMPING LEVEL TO SHUTOFF



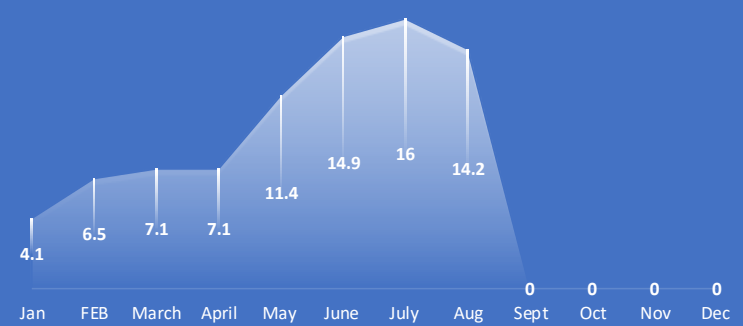
WELL # 6 PUMPING LEVEL TO SHUTOFF



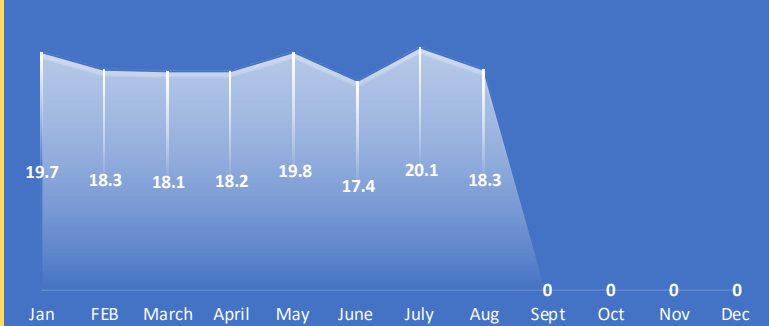
WELL # 8 PUMPING LEVEL TO SHUTOFF



WELL # 9 PUMPING LEVEL TO SHUTOFF



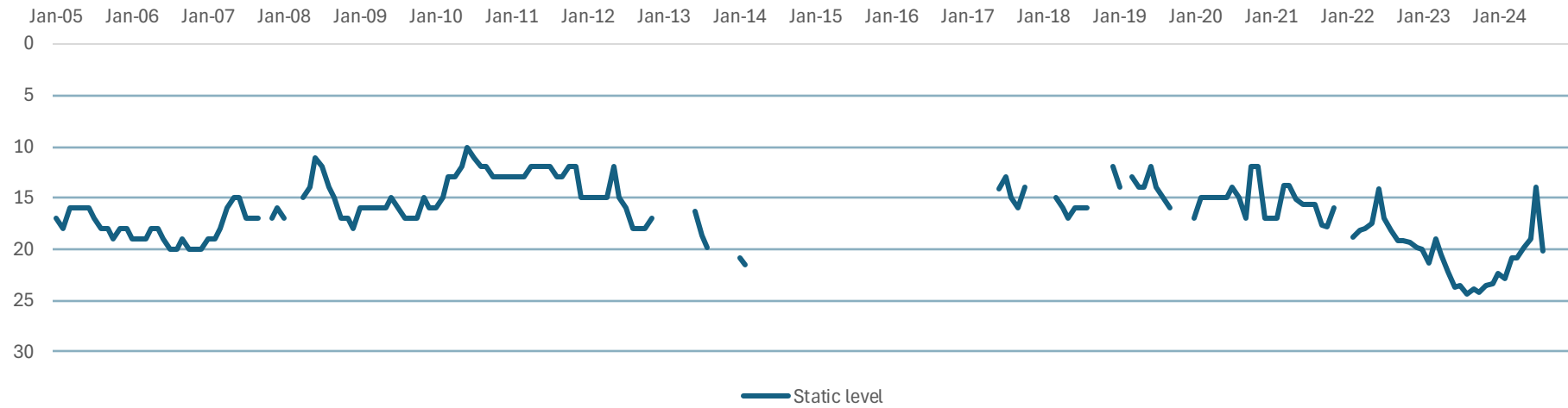
WELL #10 PUMPING LEVEL TO SHUTOFF



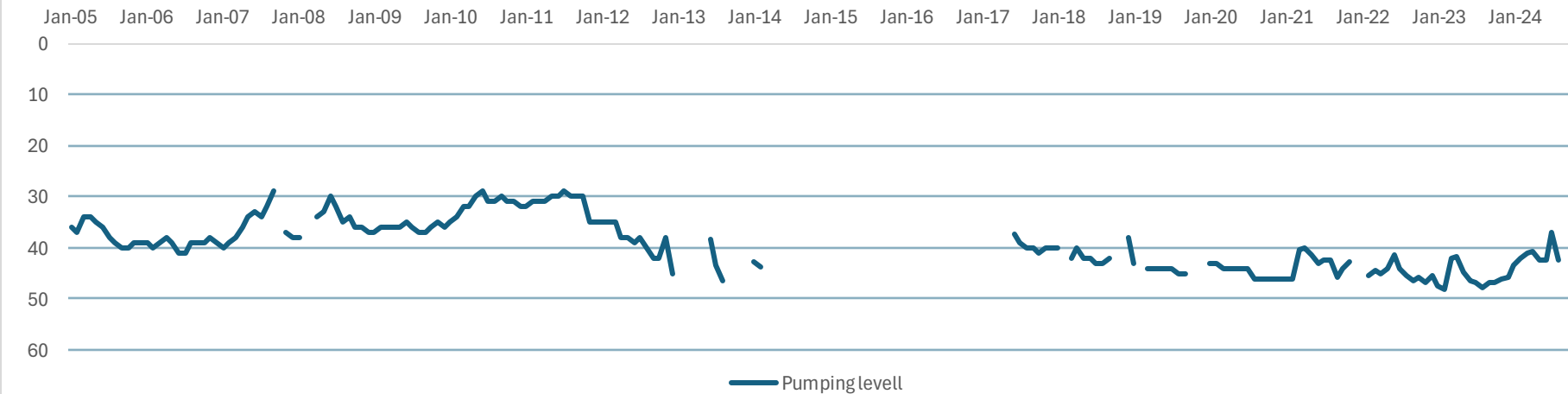
WELL # 11 PUMPING LEVEL TO SHUTOFF



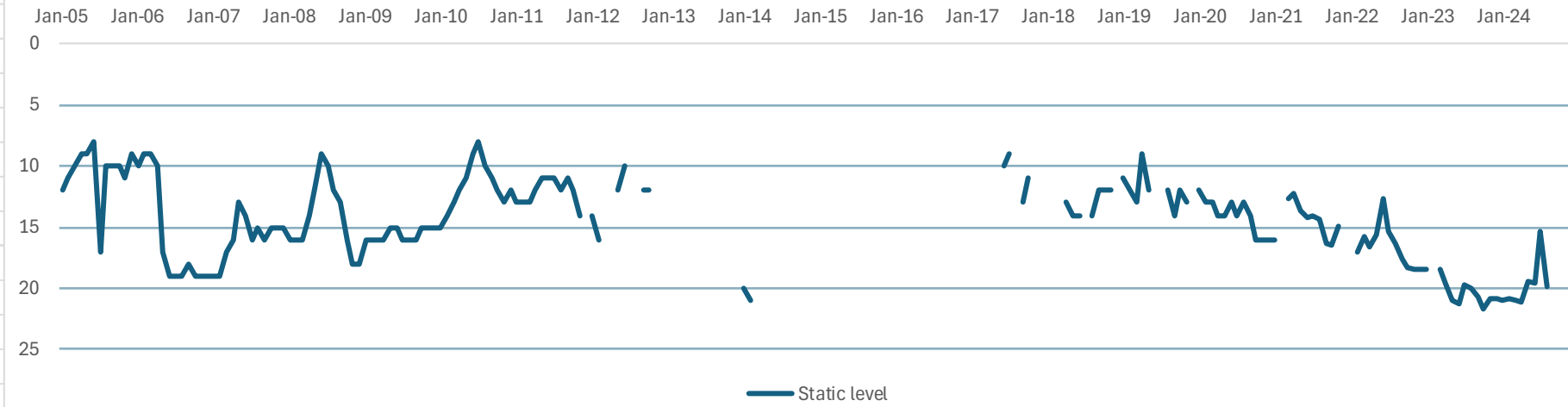
Well # 4 Static level



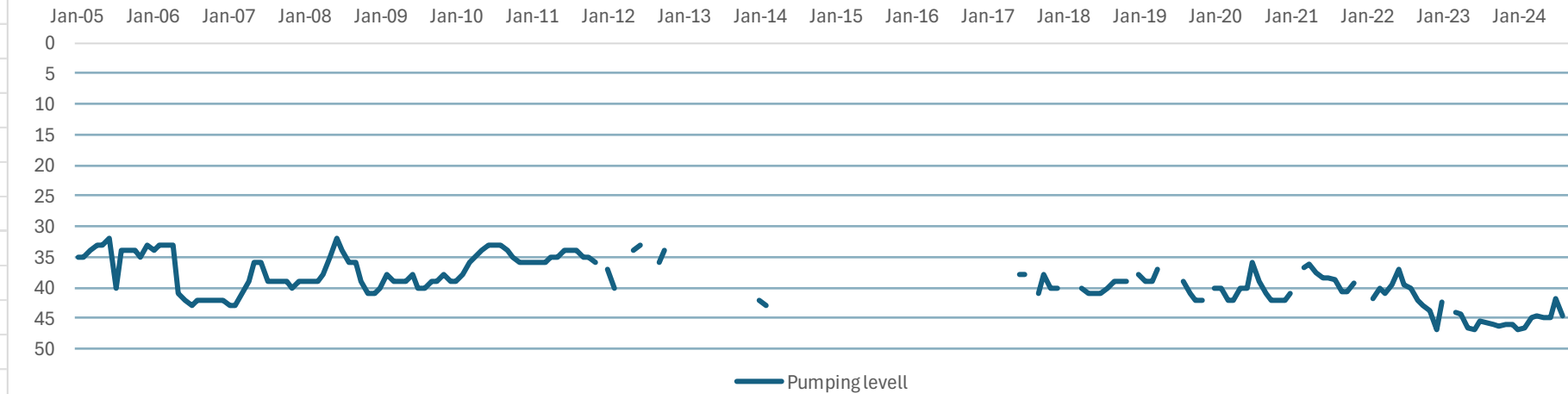
Well # 4 Pumping level



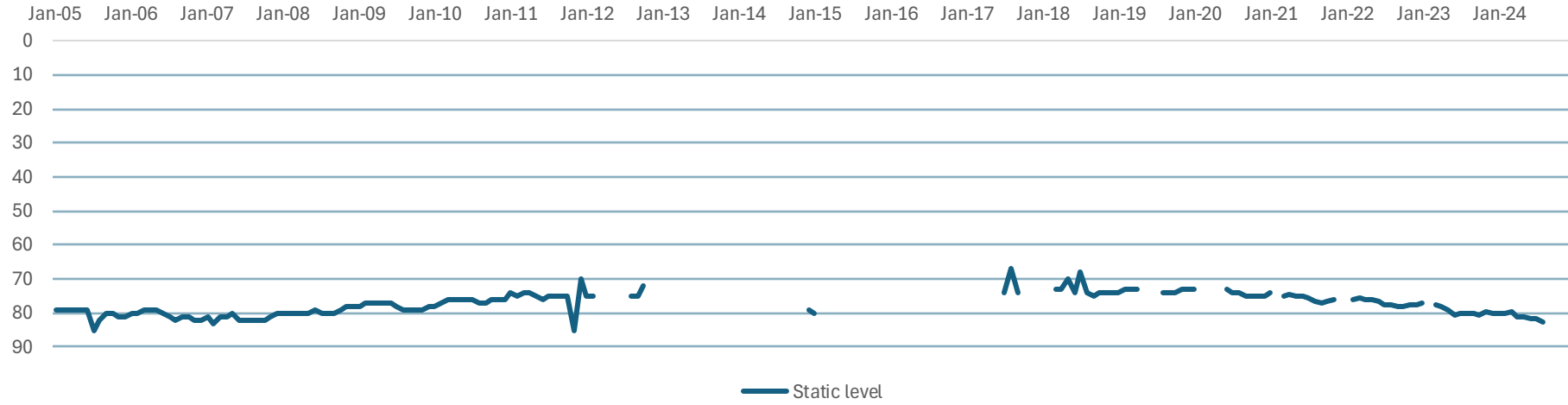
Well # 5 Static level



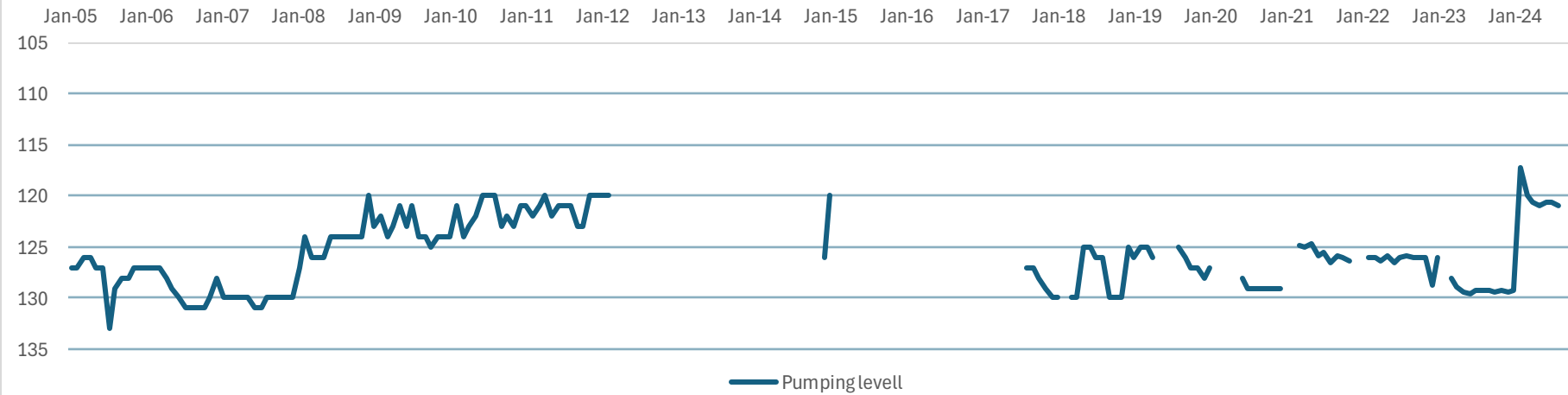
Well # 5 Pumping level



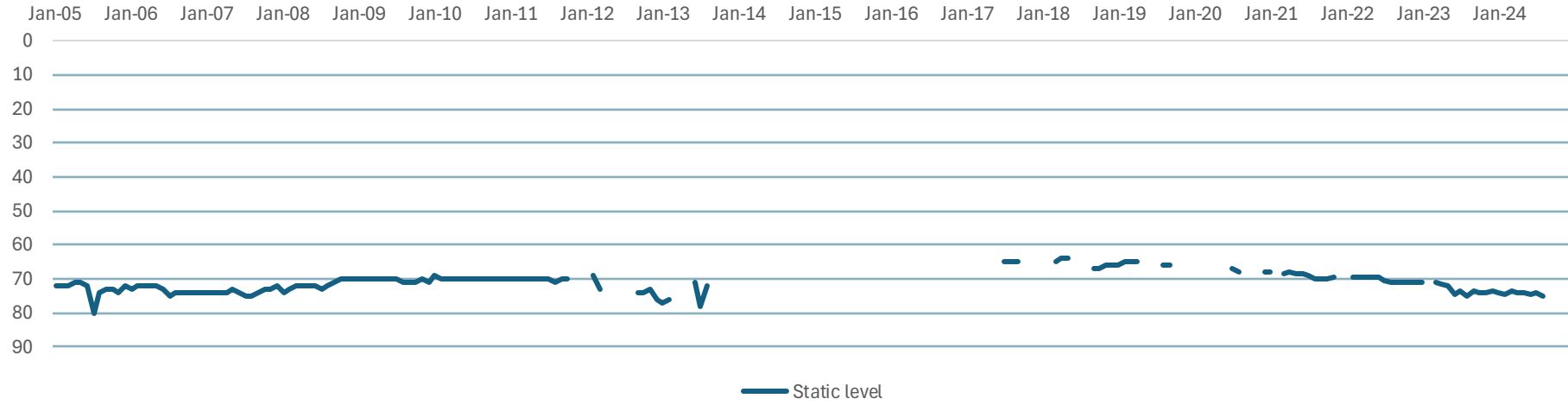
Well # 6 Static level



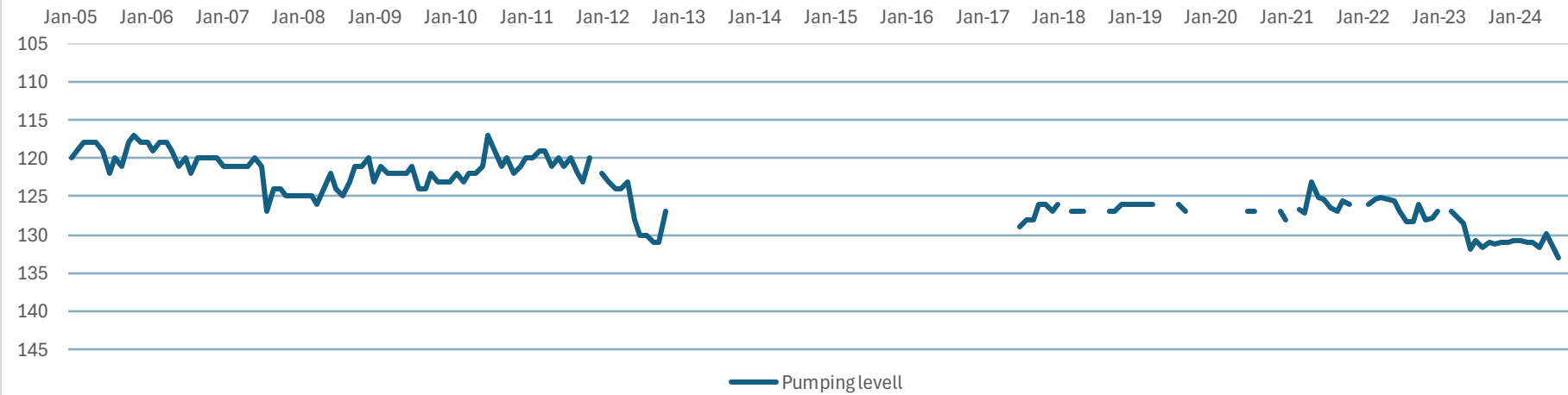
Well # 6 Pumping level



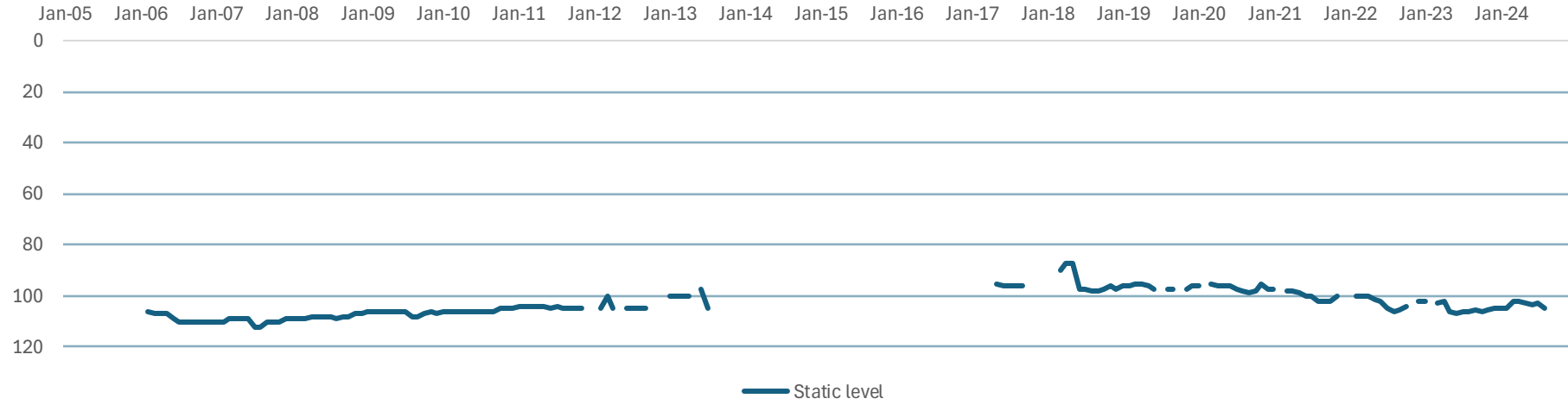
Well # 8 Static level



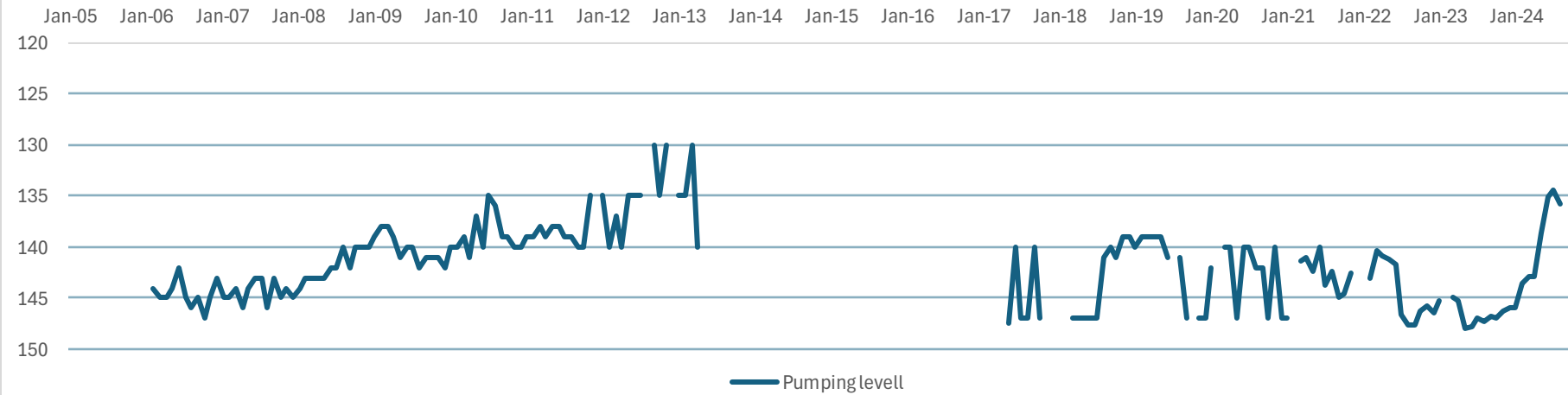
Well # 8 Pumping level



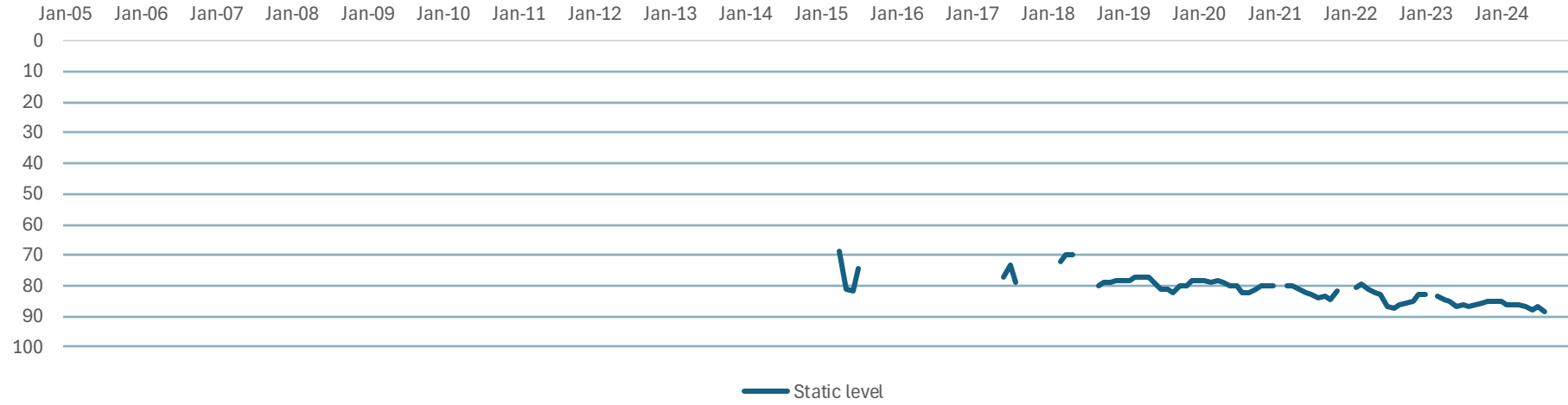
Well # 9 Static level



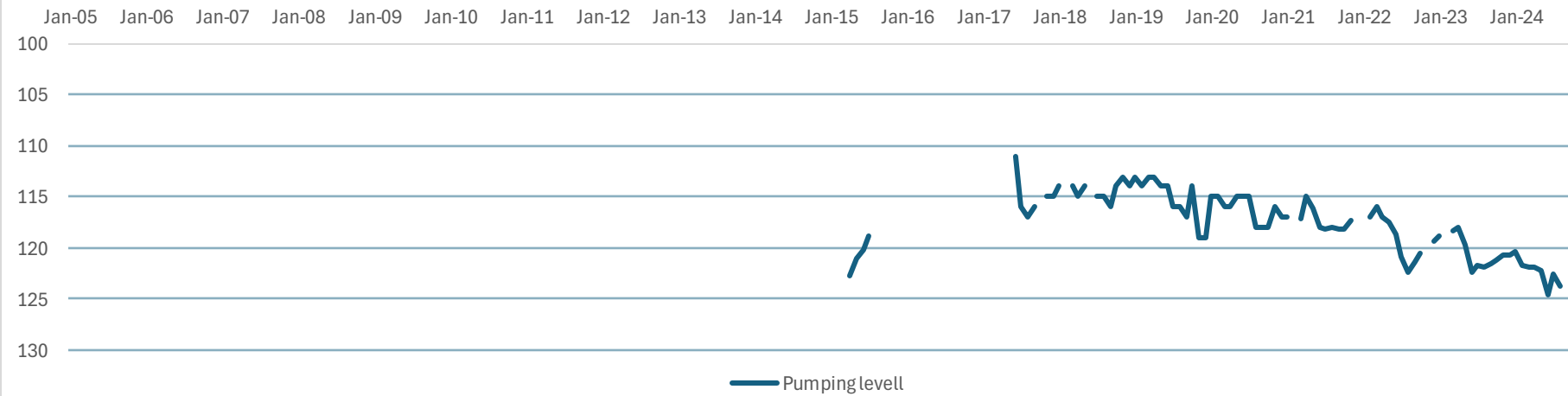
Well # 9 Pumping level



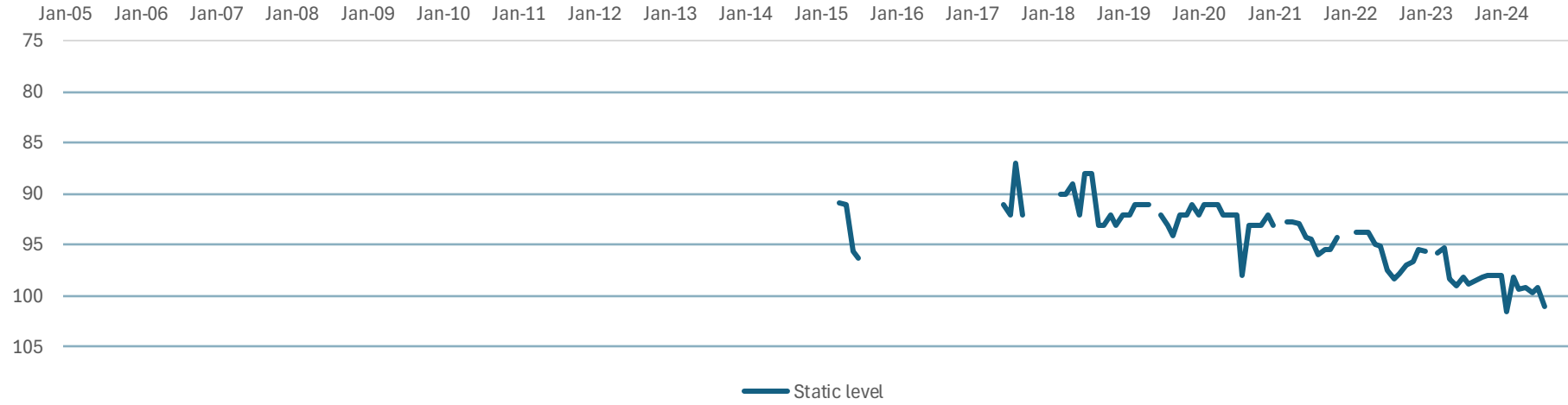
Well # 10 Static level



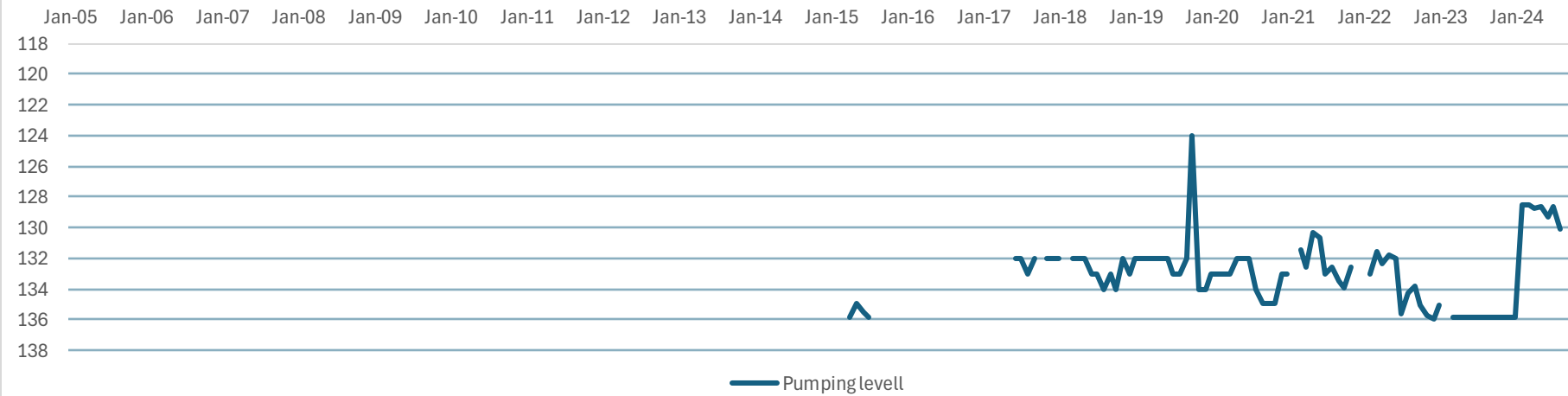
Well # 10 Pumping level



Well # 11 Static level



Well # 11 Pumping level



WELL VOLUME OF WATER AVAILABLE IN GALLONS

$V = \pi r^2 h * Sy$ Colby Osborn formula from Olssons

Where:

V is the volume of the cylinder, adjusted for specific yield

π is the mathematical constant pi

r is the radius of the cylinder,

hh is the height of the cylinder.

Sy is specific yield

$V = 3.14159 * (2640 \text{ ft})^2 * 30 \text{ ft} * 0.15$

$V = 98530398.7 \text{ ft}^3$ or **737,058,567 gallons.**

Well # 4

27.9 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	245,859
100	983,437
200	3,933,748
500	24,585,926
1000	98,343,705
2640 1/2 mile	685,416,287

Well # 5

27.2 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	239,691
100	958,763
200	3,835,052
500	23,969,075
1000	95,876,300
2640 1/2 mile	668,219,462

Well # 6

47.5 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	418,578
100	1,674,310
200	6,697,242
500	41,857,760
1000	167,431,039
2640 1/2 mile	1,166,927,370

Well # 7

0 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	0
100	0
200	0
500	0
1000	0
2640 1/2 mile	0

Well # 8

62.8 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	553,404
100	2,213,615
200	8,854,458
500	55,340,364
1000	221,361,458
2640 1/2 mile	1,542,800,817

Well # 9

45 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	396,547
100	1,586,189
200	6,344,755
500	39,654,720
1000	158,618,879
2640 1/2 mile	1,105,510,140

Well # 10

53.5 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	471,451
100	1,885,802
200	7,543,209
500	47,145,056
1000	188,580,223
2640 1/2 mile	1,314,328,722

Well # 11

39 feet of water from static to maximum pumping level

Radius from well in feet	Gallons available
50	343,674
100	1,374,697
200	5,498,788
500	34,367,424
1000	137,469,695
2640 1/2 mile	958,108,788

Total Water available from all wells

radius	Gallons available
50	2,669,203
100	10,676,813
200	42,707,252
500	266,920,325
1000	1,067,681,300
2640	7,441,311,585