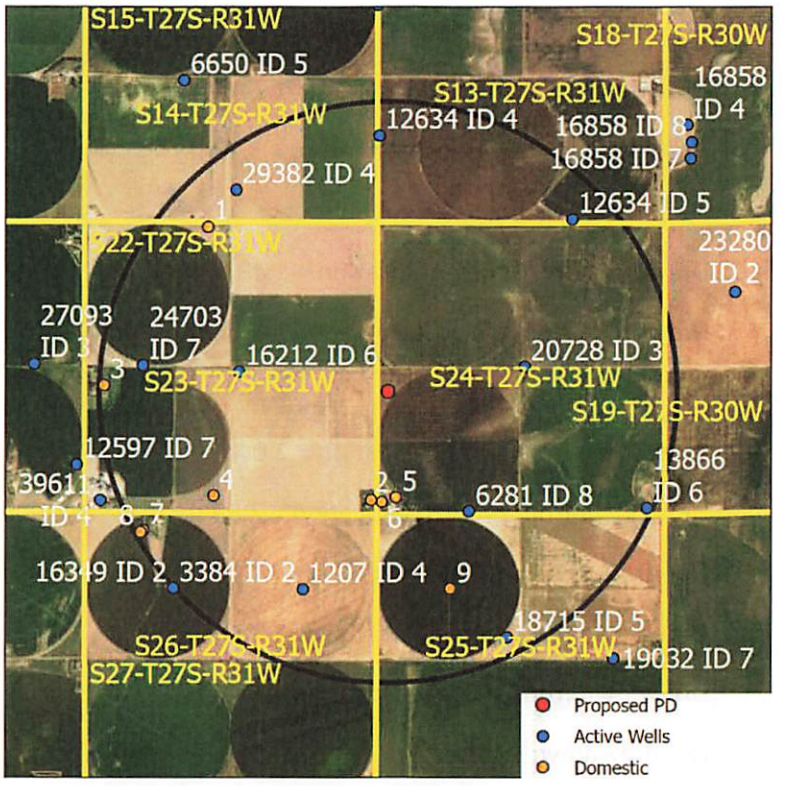
Evaluation of proposed move for Water Right No. 6281

Proposed: Move water right no. 6281 to the northwest 2,624 ft to a new point of diversion.



Wells within 1 mile: 29382, 12634 ID4, 12634 ID5, 24703, 16212, 20728, 1207, 13866, 18715, and nine domestic wells numbered above.

The saturated thickness at the proposed well location is estimated to be 95 ft, based upon the GMD3 model. For saturated thickness between than 75 ft and 100 ft, the drawdown allowance is 2.0 ft.

50 year Theis Analysis: The following values were used to run the analysis:

S = 0.043, T = 3748 ft^2/day, $tp_{current}$ = 132 days, $Q_{current}$ = 150 gpm, $tp_{proposed}$ = 54 days, $Q_{proposed}$ = 1085 gpm

Theis drawdowns were calculated as follows:

29382: Drawdown from current location = 1.16 ft

Drawdown from proposed location = 3.47 ft

Net drawdown = **2.3 ft**

12634 ID4: Drawdown from current location = 1.18 ft

Drawdown from proposed location = 3.56 ft

Net drawdown = **2.37 ft**

12634 ID5:	Drawdown from current location = 1.35 ft
	Drawdown from proposed location = 4.20 ft
	Net drawdown = **2.9 ft**
24703:	Drawdown from current location = 1.24 ft
	Drawdown from proposed location = 3.77 ft
	Net drawdown = **2.5 ft**
16212:	Drawdown from current location = 1.48 ft
	Drawdown from proposed location = 4.61 ft
	Net drawdown = **3.1 ft**
20728:	Drawdown from current location = 2.04 ft
	Drawdown from proposed location = 7.39 ft
	Net drawdown = **5.3 ft**
1207:	Drawdown from current location = 1.85 ft
	Drawdown from proposed location = 6.48 ft
	Net drawdown = **4.6 ft**
13866:	Drawdown from current location = 1.88 ft
	Drawdown from proposed location = 6.62 ft
	Net drawdown = **4.7 ft**
18715:	Drawdown from current location = 2.24 ft
	Drawdown from proposed location = 8.58 ft
	Net drawdown = **6.3 ft**
Domestic 1:	Drawdown from current location = 1.18 ft
	Drawdown from proposed location = 3.55 ft
	Net drawdown = **2.4 ft**
Domestic 2:	Drawdown from current location = 2.52 ft
	Drawdown from proposed location = 10.43 ft
	Net drawdown = **7.9 ft**

Domestic 3:	Drawdown from current location = 1.18 ft
	Drawdown from proposed location = 3.54 ft
	Net drawdown = **2.4 ft**
Domestic 4:	Drawdown from current location = 1.52 ft
	Drawdown from proposed location = 4.83 ft
	Net drawdown = **3.3 ft**
Domestic 5:	Drawdown from current location = 2.92 ft
	Drawdown from proposed location = 13.19 ft
	Net drawdown = **10.3 ft**
Domestic 6:	Drawdown from current location = 2.71 ft
	Drawdown from proposed location = 11.76 ft
	Net drawdown = **9.0 ft**
Domestic 7:	Drawdown from current location = 1.30 ft
	Drawdown from proposed location = 4.03 ft
	Net drawdown = **2.74 ft**
Domestic 8:	Drawdown from current location = 1.29 ft
	Drawdown from proposed location = 4.01 ft
	Net drawdown = **2.7 ft**
Domestic 9:	Drawdown from current location = 2.85 ft
	Drawdown from proposed location = 12.71 ft
	Net drawdown = **9.9 ft**

Net drawdown exceeds the drawdown allowance for all the wells within a mile, critical well analysis was run on each well.

Critical Well Evaluation:

29382:

Water Column = 54 ft

DP = 2.3 ft (Net drawdown from the proposal indicated above)

DE = 51.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 0.0 ft (no reported water use in last ten years)

DT = 53.9 ft

Economic Drawdown Constraint (EDC) = 0.4 * 54 ft = 21.6 ft

Physical Drawdown Constraint (PDC) = 54 ft – 60 ft = -14.0 ft

Total drawdown of 53.9 ft is greater than the EDC and the PDC, so this well **is critical.**

12634 ID4:

Water Column = 36 ft

DP = 2.4 ft (Net drawdown from the proposal indicated above)

DE = 33.5 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 84 ft (S = 0.026, T = 1,040 ft^2/day, Q = 245 gpm, tp = 140 days, efficiency = 70%)

DT = 94.9 ft

Total drawdown of 120 ft exceeds the water column, so this well **is critical.**

12634 ID5:

Water Column = 47 ft

DP = 2.9 ft (Net drawdown from the proposal indicated above)

DE = 43 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 18.6 ft (S = 0.021, T = 2,051 ft^2/day, Q = 100 gpm, tp = 163 days, efficiency = 70%)

DT = 58.9 ft

Total drawdown of 64.5 ft exceeds the water column, so this well **is critical.**

24703:

Water Column = 122 ft

DP = 2.5 ft (Net drawdown from the proposal indicated above)

DE = 79 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 25.4 ft (S = 0.05, T = 6,293 ft^2/day, Q = 430 gpm, tp = 85 days, efficiency = 70%)

DT = 107 ft

Economic Drawdown Constraint (EDC) = 0.4 * 122 ft = 48.8 ft

Physical Drawdown Constraint (PDC) = 122 ft – 60 ft = 62.0 ft

Total drawdown of 107 ft is greater than the EDC and the PDC, so this well **is critical.**

16212:

Water Column = 122 ft

DP = 3.1 ft (Net drawdown from the proposal indicated above)

DE = 79 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 0.0 ft (no pumping since 2016)

DT = 82.1 ft

Economic Drawdown Constraint (EDC) = 0.4 * 122 ft = 48.8 ft

Physical Drawdown Constraint (PDC) = 122 ft – 60 ft = 62.0 ft

Total drawdown of 82.1 ft is greater than the EDC and the PDC, so this well **is critical.**

20728:

Water Column = 91 ft

DP = 5.3 ft (Net drawdown from the proposal indicated above)

DE = 67 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 18.6 ft (S = 0.029, T = 3,253 ft^2/day, Q = 161 gpm, tp = 107 days, efficiency = 70%)

DT = 90.6 ft

Economic Drawdown Constraint (EDC) = 0.4 * 91 ft = 36.4 ft

Physical Drawdown Constraint (PDC) = 91 ft – 60 ft = 31.0 ft

Total drawdown of 90.6 ft is greater than the EDC and the PDC, so this well **is critical.**

1207:

Water Column = 101 ft

DP = 4.6 ft (Net drawdown from the proposal indicated above)

DE = 84.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 28.3 ft (S = 0.042, T = 4,118 ft^2/day, Q = 318 gpm, tp = 100 days, efficiency = 70%)

DT = 117.5 ft

Economic Drawdown Constraint (EDC) = 0.4 * 101 ft = 40.4 ft

Physical Drawdown Constraint (PDC) = 101 ft – 60 ft = 41.0 ft

Total drawdown of 117.5 ft is greater than the EDC and the PDC, so this well **is critical.**

13866:

Water Column = 93 ft

DP = 4.7 ft (Net drawdown from the proposal indicated above)

DE = 74.2 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 5.4 ft (S = 0.019, T = 3,992 ft^2/day, Q = 43 gpm, tp = 302 days, efficiency = 70%)

DT = 84.3 ft

Economic Drawdown Constraint (EDC) = 0.4 * 93 ft = 37.2 ft

Physical Drawdown Constraint (PDC) = 93 ft – 60 ft = 33.0 ft

Total drawdown of 84.3 ft is greater than the EDC and the PDC, so this well **is critical.**

18715:

Water Column = 112 ft

DP = 6.3 ft (Net drawdown from the proposal indicated above)

DE = 93 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 18.3 ft (S = 0.02, T = 4,184 ft^2/day, Q = 195 gpm, tp = 137 days, efficiency = 70%)

DT = 117.6 ft

Economic Drawdown Constraint (EDC) = 0.4 * 112 ft = 44.8 ft

Physical Drawdown Constraint (PDC) = 112 ft – 60 ft = 52.0 ft

Total drawdown of 117.6 ft is greater than the EDC and the PDC, so this well **is critical.**

Domestic 1:

Water Column = 98 ft

DP = 2.7 ft (Net drawdown from the proposal indicated above)

DE = 72.9 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 75.6 ft

Economic Drawdown Constraint (EDC) = 0.4 * 98 ft = 39.2 ft

Physical Drawdown Constraint (PDC) = 98 ft – 20 ft = 78.0 ft

Total drawdown of 75.6 ft greater than the EDC, so this well **is critical.**

Domestic 2:

Water Column = 102 ft

DP = 2.5 ft (Net drawdown from the proposal indicated above)

DE = 85.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 88.1 ft

Economic Drawdown Constraint (EDC) = 0.4 * 102 ft = 40.8 ft

Physical Drawdown Constraint (PDC) = 102 ft – 20 ft = 82 ft

Total drawdown of 88.1 ft is greater than the EDC and PDC, so this well **is critical.**

Domestic 3:

Water Column = 196 ft

DP = 3.3 ft (Net drawdown from the proposal indicated above)

DE = 81.1 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 84.4 ft

Economic Drawdown Constraint (EDC) = 0.4 * 196 ft = 78.4 ft

Physical Drawdown Constraint (PDC) = 196 ft – 20 ft = 176.0 ft

Total drawdown of 84.4 ft is greater than the EDC, so this well **is critical.**

Domestic 4:

Water Column = 106 ft

DP = 3.3 ft (Net drawdown from the proposal indicated above)

DE = 89.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 92.9 ft

Economic Drawdown Constraint (EDC) = 0.4 * 106 ft = 42.4 ft

Physical Drawdown Constraint (PDC) = 106 ft – 20 ft = 86.0 ft

Total drawdown of 92.9 ft is greater than the EDC and PDC, so this well **is critical.**

Domestic 5:

Water Column = 101 ft

DP = 3.0 ft (Net drawdown from the proposal indicated above)

DE = 84.5 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 87.5 ft

Economic Drawdown Constraint (EDC) = 0.4 * 101 ft = 40.4 ft

Physical Drawdown Constraint (PDC) = 101 ft – 20 ft = 81.0 ft

Total drawdown of 87.5 ft is greater than the EDC, so this well **is critical.**

Domestic 6:

Water Column = 101 ft

DP = 3.0 ft (Net drawdown from the proposal indicated above)

DE = 84.5 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 87.5 ft

Economic Drawdown Constraint (EDC) = 0.4 * 101 ft = 40.4 ft

Physical Drawdown Constraint (PDC) = 101 ft – 20 ft = 81.0 ft

Total drawdown of 87.5 ft is greater than the EDC and PDC, so this well **is critical.**

Domestic 7:

Water Column = 106 ft

DP = 3.0 ft (Net drawdown from the proposal indicated above)

DE = 89.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 92.6 ft

Economic Drawdown Constraint (EDC) = 0.4 * 106 ft = 42.4 ft

Physical Drawdown Constraint (PDC) = 106 ft – 20 ft = 86.0 ft

Total drawdown of 92.6 ft is greater than the EDC and PDC, so this well **is critical.**

Domestic 8:

Water Column = 106 ft

DP = 3.0 ft (Net drawdown from the proposal indicated above)

DE = 89.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 92.6 ft

Economic Drawdown Constraint (EDC) = 0.4 * 106 ft = 42.4 ft

Physical Drawdown Constraint (PDC) = 106 ft – 20 ft = 86.0 ft

Total drawdown of 43.0 ft is greater than the EDC and PDC, so this well **is critical.**

Domestic 9:

Water Column = 100 ft

DP = 3.0 ft (Net drawdown from the proposal indicated above)

DE = 78.9 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 81.9 ft

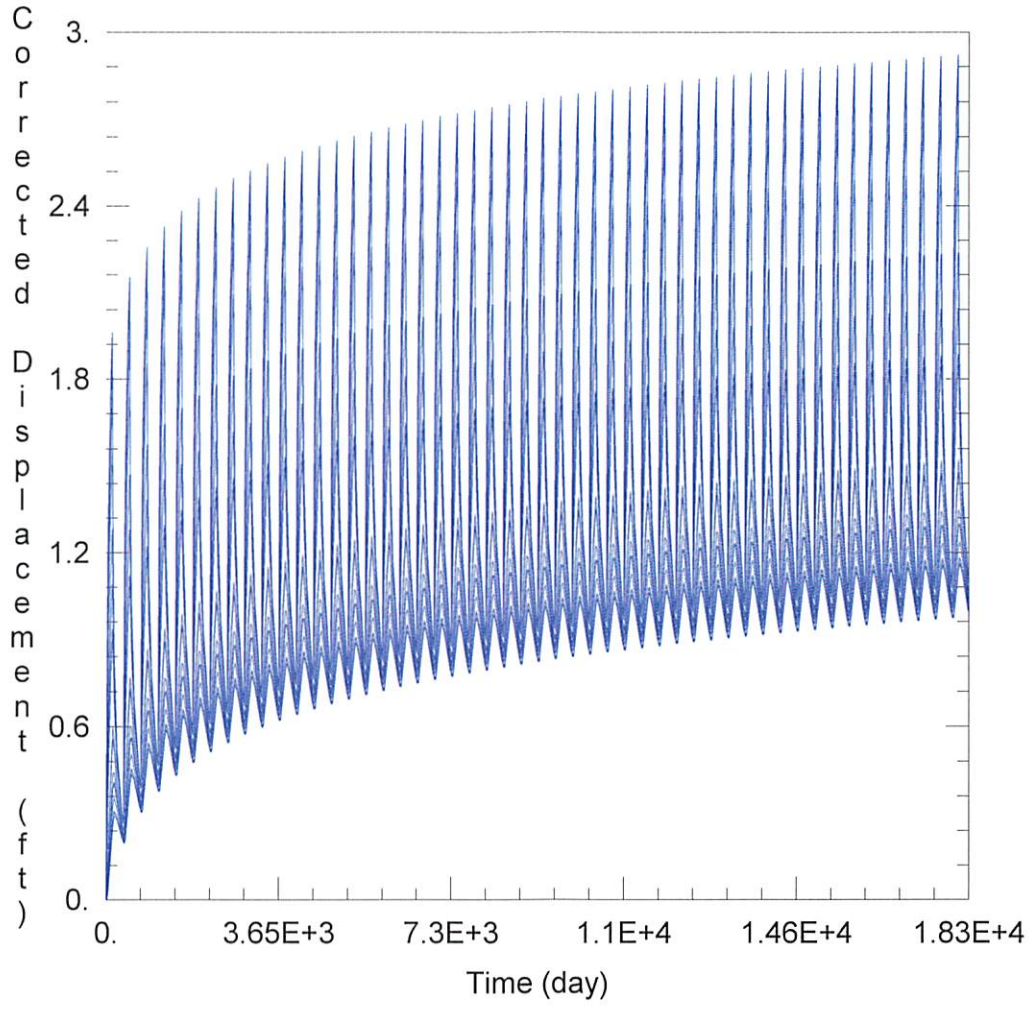
Economic Drawdown Constraint (EDC) = 0.4 * 100 ft = 40.0 ft

Physical Drawdown Constraint (PDC) = 100 ft – 20 ft = 80.0 ft

Total drawdown of 81.9 ft is greater than the EDC and PDC, so this well **is critical.**

Conclusion:

The proposed move is in a depleted aquifer area with about 90 ft of remaining saturated thickness. The analysis shows that net well-to-well effects created by this proposal are likely to be small but noticeable, due to the limited amount of remaining aquifer. Many nearby wells were flagged as critical because projected aquifer declines over the next 25 years amount to more than 40% of the remaining saturated thickness. Concerned neighbors should contact GMD3 at (620) 275-7147 or the Division of Water Resources at (620) 276-2901.



WELL TEST ANALYSIS

Data Set: C:\Users\scanstation\Documents\move requests\6281\6281 current.aqt
Date: 12/30/24 Time: 16:27:36

PROJECT INFORMATION

Test Well: 6281

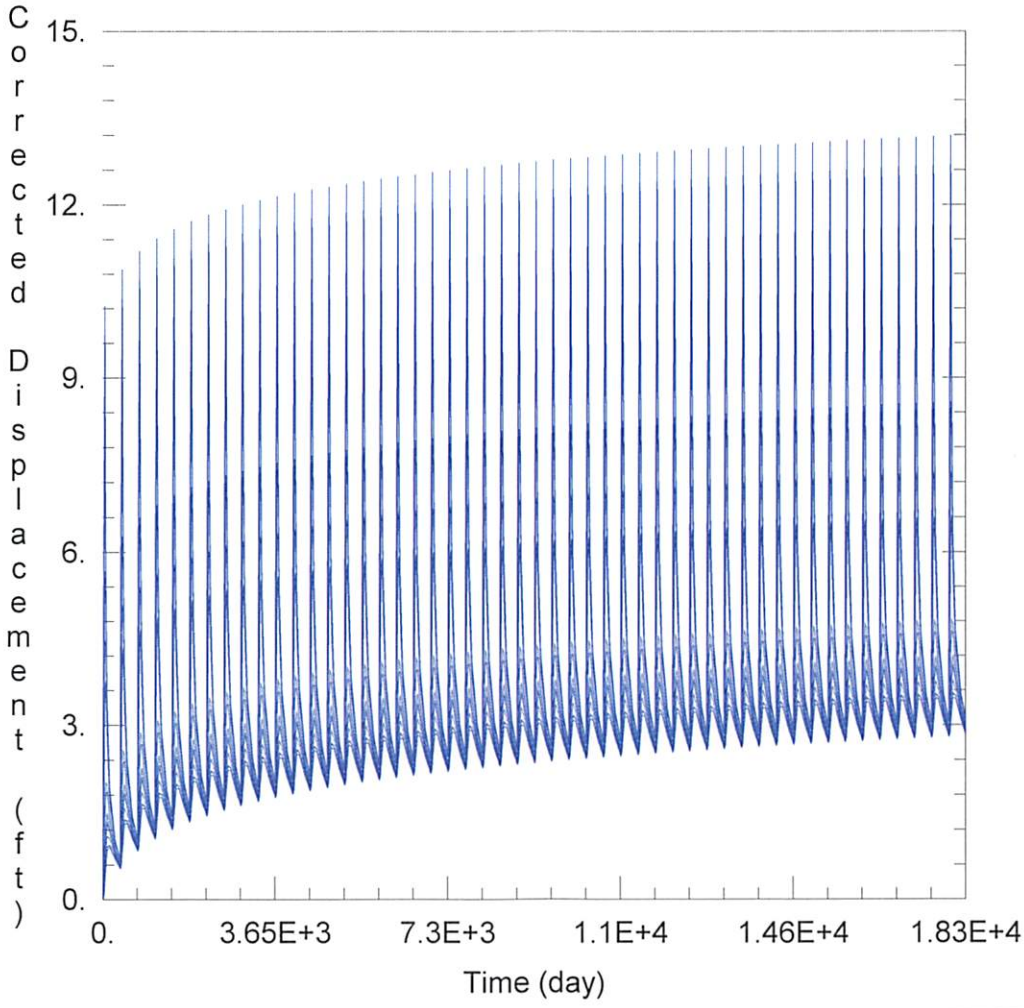
WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
6281	38997	292548

Observation Wells

Well Name	X (ft)	Y (ft)
▫	38997	292548
▫ 29382	34735	298394
▫ 12634 ID4	37338	299377
▫ 12634 ID5	40870	297868
▫ 24703	33032	295195
▫ 16212	34797	295084
▫ 20728	40006	295175
▫ 1207	35960	291142
▫ 13866	42238	292608
▫ 18715	39695	290262
▫ Domestic 1	34215	297729
▫ Domestic 2	37120	292748
▫ Domestic 3	32322	294838
▫ Domestic 4	34321	292832
▫ Domestic 5	37661	292797
▫ Domestic 6	37397	292714



WELL TEST ANALYSIS

Data Set: C:\Users\scanstation\Documents\move requests\6281\6281 proposed.aqt
Date: 12/30/24 Time: 16:27:40

PROJECT INFORMATION

Test Well: 6281

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
6281	38997	292548

Observation Wells

Well Name	X (ft)	Y (ft)
▫	38997	292548
▫ 29382	34735	298394
▫ 12634 ID4	37338	299377
▫ 12634 ID5	40870	297868
▫ 24703	33032	295195
▫ 16212	34797	295084
▫ 20728	40006	295175
▫ 1207	35960	291142
▫ 13866	42238	292608
▫ 18715	39695	290262
▫ Domestic 1	34215	297729
▫ Domestic 2	37120	292748
▫ Domestic 3	32322	294838
▫ Domestic 4	34321	292832
▫ Domestic 5	37661	292797
▫ Domestic 6	37397	292714