

3920: Drawdown from current location = 4.10 ft
Drawdown from proposed location = 6.09 ft
Net drawdown = **2.0 ft**

23744: Drawdown from current location = 2.38 ft
Drawdown from proposed location = 4.48 ft
Net drawdown = **2.1 ft**

15351: Drawdown from current location = 2.04 ft
Drawdown from proposed location = 4.50 ft
Net drawdown = **2.5 ft**

Domestic 1-29-39 Drawdown from current location = 2.25 ft
Drawdown from proposed location = 4.89 ft
Net drawdown = **2.6 ft**

Net drawdown exceeds the drawdown allowance of 4.0 ft for water right no. 18227. Critical well analysis is necessary for that well.

Critical Well Evaluation:

18227:

Water Column = 233 ft

DP = 4.1 ft (Net drawdown from the proposal indicated above)

DE = 57.2 ft (Water level decline from 2021 through 2046 based upon GMD3 model)

DD = 40.3 ft (S = 0.1007, T = 33,745 gpd/ft, Q = 501 gpm, tp = 155 days, efficiency = 70%)

DT = 101.6 ft

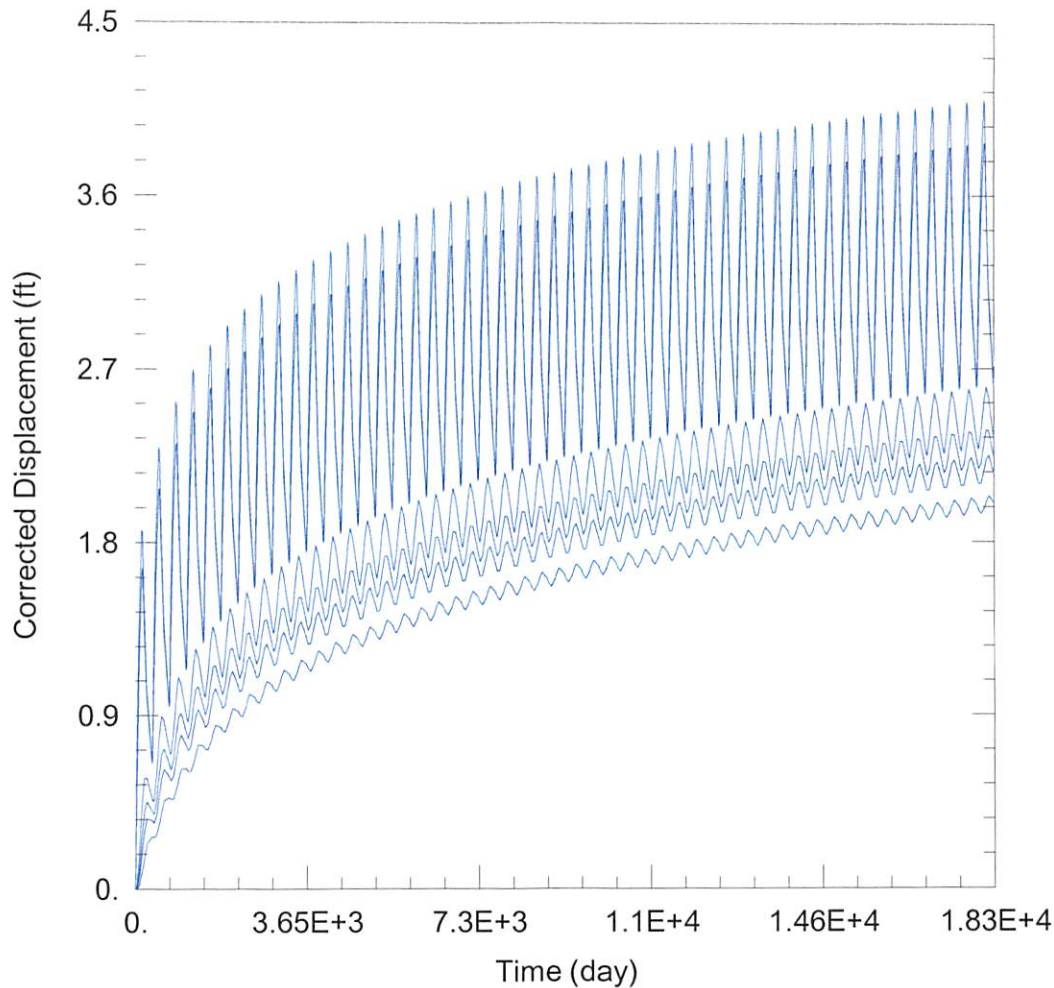
Economic Drawdown Constraint (EDC) = $0.4 * 233 \text{ ft} = 93.2 \text{ ft}$

Physical Drawdown Constraint (PDC) = $233 \text{ ft} - 60 \text{ ft} = 173 \text{ ft}$

Total drawdown of 101.6 ft is greater than the EDC, so this well is **critical**.

Conclusion:

The proposed move is located in an area with a lot of saturated thickness, but the geologic formation appears to have somewhat low storage coefficient (S) and transmissivity (T). This creates a condition where wells create a deeper cone of depression when operating and are less productive than in areas with higher S and T in local aquifer formation. GMD3 staff recommends a rate limitation of 1250 gpm at the proposed new well location. This rate limitation would reduce the net effect on neighboring water right number 18227 to 3.9 ft.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2021_Moves\4365\4365 Current.aqt

Date: 03/29/21

Time: 16:45:51

PROJECT INFORMATION

Company: GMD 3

Project: 4365

Location: Grant County

Test Well: 4365

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
4365	-206140	242918

Observation Wells

Well Name	X (ft)	Y (ft)
□	-206140	242918
□ <u>18227</u>	-206939	240812
□ <u>14904</u>	-210500	241561
□ <u>3920</u>	-205080	241192
□ <u>23744</u>	-207281	237752
□ <u>15351</u>	-213066	243358
□ <u>Domestic 1-29-39</u>	-211065	246130

SOLUTION

Aquifer Model: Unconfined

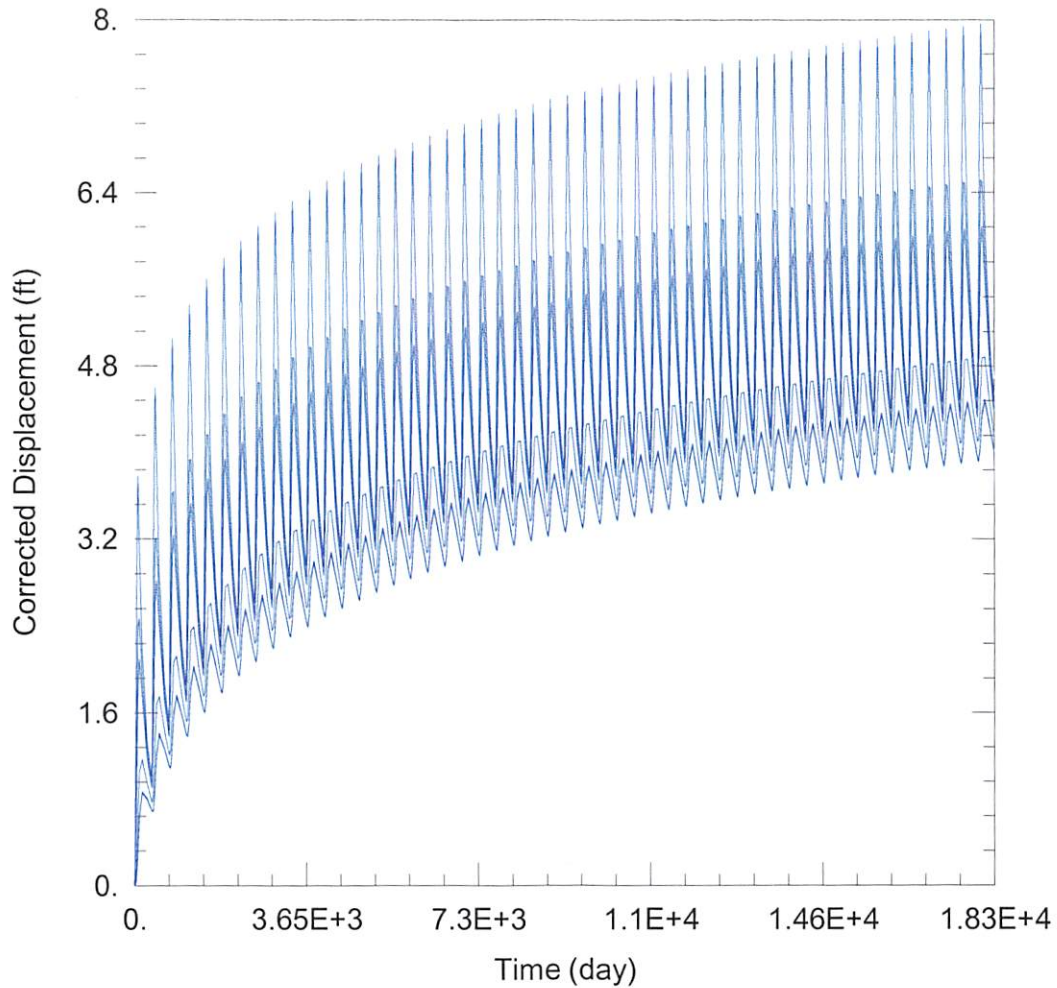
Solution Method: Theis

T = 4511.4 ft²/day

S = 0.1007

Kz/Kr = 1.

b = 233. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2021_Moves\4365\4365 Proposed.aqt

Date: 03/29/21

Time: 16:46:17

PROJECT INFORMATION

Company: GMD 3

Project: 4365

Location: Grant County

Test Well: 4365

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
4365	-207876	242964

Observation Wells

Well Name	X (ft)	Y (ft)
□	-207876	242964
□ 18227	-206939	240812
□ 14904	-210500	241561
□ 3920	-205080	241192
□ 23744	-207281	237752
□ 15351	-213066	243358
□ Domestic 1-29-39	-211065	246130

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 4511.4 ft²/day

S = 0.1007

Kz/Kr = 1.

b = 233. ft