

22848 ID4: Drawdown from current location = 1.82 ft
Drawdown from proposed location = 6.00 ft
Net drawdown = 4.2 ft

13517: Drawdown from current location = 2.17 ft
Drawdown from proposed location = 4.67 ft
Net drawdown = 4.7 ft

Domestic 33-31-30: Drawdown from current location = 3.33 ft
Drawdown from proposed location = 5.50 ft
Net drawdown = 2.2 ft

Domestic 4-32-30: Drawdown from current location = 2.55 ft
Drawdown from proposed location = 8.93 ft
Net drawdown = 6.4 ft

Net drawdown exceeds the drawdown allowance of 4.0 ft for water right numbers 12297, 22848 ID4, 13517, and the domestic well in section 4-32-30. Critical well analysis was conducted for those wells.

Critical Well Evaluation:

12297:

Water Column = 221 ft

DP = 4.3 ft (Net drawdown from the proposal indicated above)

DE = 40.3 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 93.3 ft (S = 0.2058, T = 24,385 gpd/ft, Q = 931 gpm, tp = 85 days, efficiency = 70%)

DT = 137.9 ft

Economic Drawdown Constraint (EDC) = $0.4 * 221 \text{ ft} = 88.4 \text{ ft}$

Physical Drawdown Constraint (PDC) = $221 \text{ ft} - 60 \text{ ft} = 161 \text{ ft}$

Total drawdown of 137.9 ft is greater than the EDC, so this well is **critical**.

22848 ID4:

Water Column = 213 ft

DP = 4.2 ft (Net drawdown from the proposal indicated above)

DE = 27.2 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 68.0 ft (S = 0.2058, T = 24,385 gpd/ft, Q = 670 gpm, tp = 102 days, efficiency = 70%)

DT = 99.4 ft

Economic Drawdown Constraint (EDC) = $0.4 * 213 \text{ ft} = 85.2 \text{ ft}$

Physical Drawdown Constraint (PDC) = $213 \text{ ft} - 60 \text{ ft} = 153 \text{ ft}$

Total drawdown of 99.4 ft is greater than the EDC, so this well is **critical**.

13517:

Water Column = 209 ft

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

DE = 39.3 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DD = 56.9 ft (S = 0.2058, T = 24,385 gpd/ft, Q = 569 gpm, tp = 82 days, efficiency = 70%)

DT = 100.9 ft

Economic Drawdown Constraint (EDC) = $0.4 * 209 \text{ ft} = 83.6 \text{ ft}$

Physical Drawdown Constraint (PDC) = $209 \text{ ft} - 60 \text{ ft} = 149 \text{ ft}$

Total drawdown of 100.9 ft is greater than the EDC, so this well is **critical**.

Domestic 4-32-30:

Water Column = 209 ft

DP = 6.4 ft (Net drawdown from the proposal indicated above)

DE = 39.3 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DT = 45.7 ft

Economic Drawdown Constraint (EDC) = $0.4 * 209 \text{ ft} = 83.6 \text{ ft}$

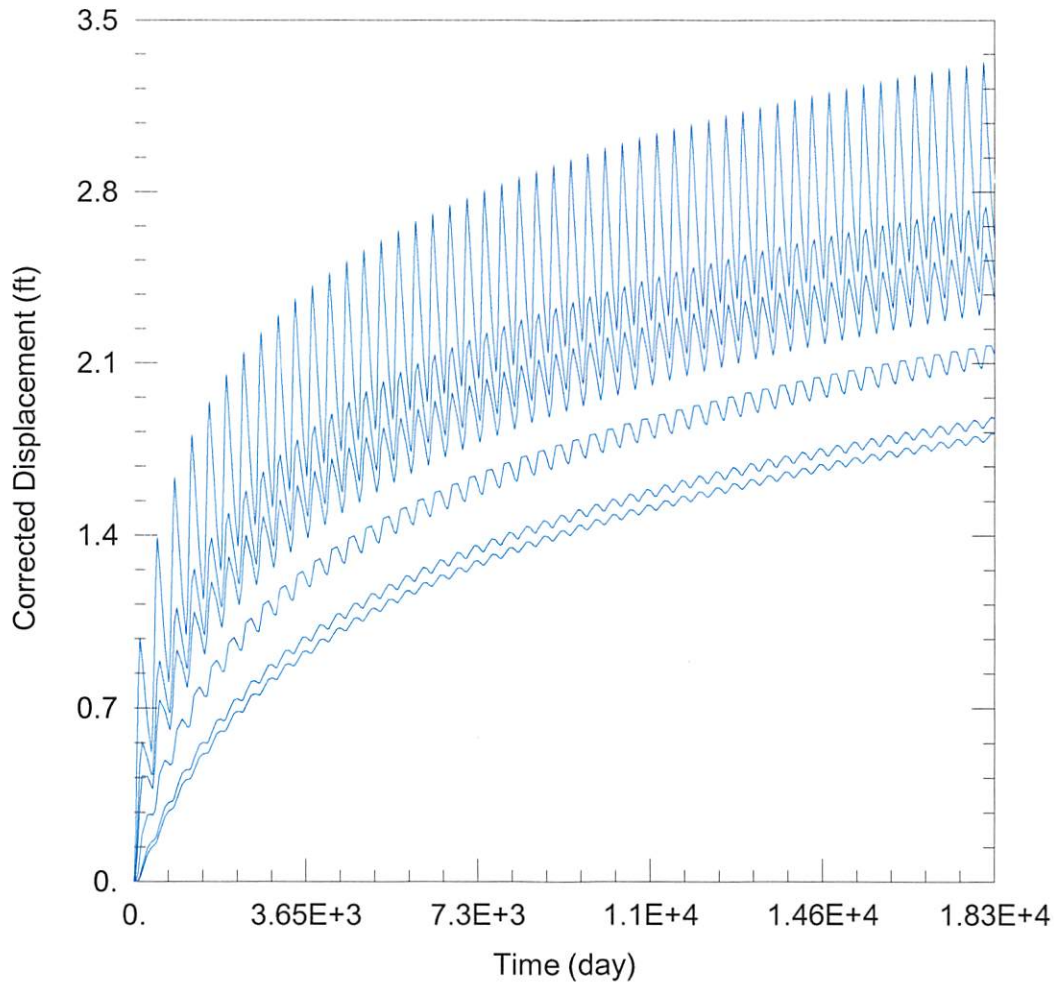
Physical Drawdown Constraint (PDC) = $209 \text{ ft} - 20 \text{ ft} = 189 \text{ ft}$

Total drawdown of 61.0 ft is less than the EDC and PDC, so this well is **not critical**.

Conclusion:

The proposed move is in an area with more than 200 ft saturated thickness, with observed pumping rates ranging between 500 gpm and 1000 gpm. Model data and estimates for transmissivity using the driller's log at the proposed location indicate that the well drawdown effects necessary to produce those rates are considerably larger than they would be in other areas with more transmissive soils. The GMD3 model shows that the estimated usable portion of the remaining aquifer, after accounting for drawdown effects, will deplete by more than 40% over the next 25 years at multiple neighboring well locations. It is likely that wells will become less productive as these depletions occur. GMD3 critical well guidelines identify a well-to-well effect of less than 4.0 ft in aquifers with more than 200 ft of thickness as "de minimis," meaning that they would likely be small enough to go unnoticed. If the proposed well is operated at its fully authorized rate and quantity, effects on some neighboring wells would exceed this standard.

The GMD3 guideline is not currently codified in rules and regulation, so this application does not require any waiver of rules. Any concerned neighbors can contact either GMD3 at (620) 275-7147, or the Division of Water Resources at (620) 276-2901 to have those concerns considered.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\16589\16589 Current.aqt
 Date: 03/22/22 Time: 15:37:54

PROJECT INFORMATION

Company: GMD 3
 Project: 16589
 Location: Meade County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
16589	60891	156311

Observation Wells

Well Name	X (ft)	Y (ft)
□	60891	156311
□ 12297	62310	158929
□ 22848 ID3	64701	160223
□ 22848 ID4	66364	158101
□ 13517	63633	152986
□ Domestic 33-31-30	58700	155959
□ Domestic 4-32-30	63313	153978

SOLUTION

Aquifer Model: Unconfined

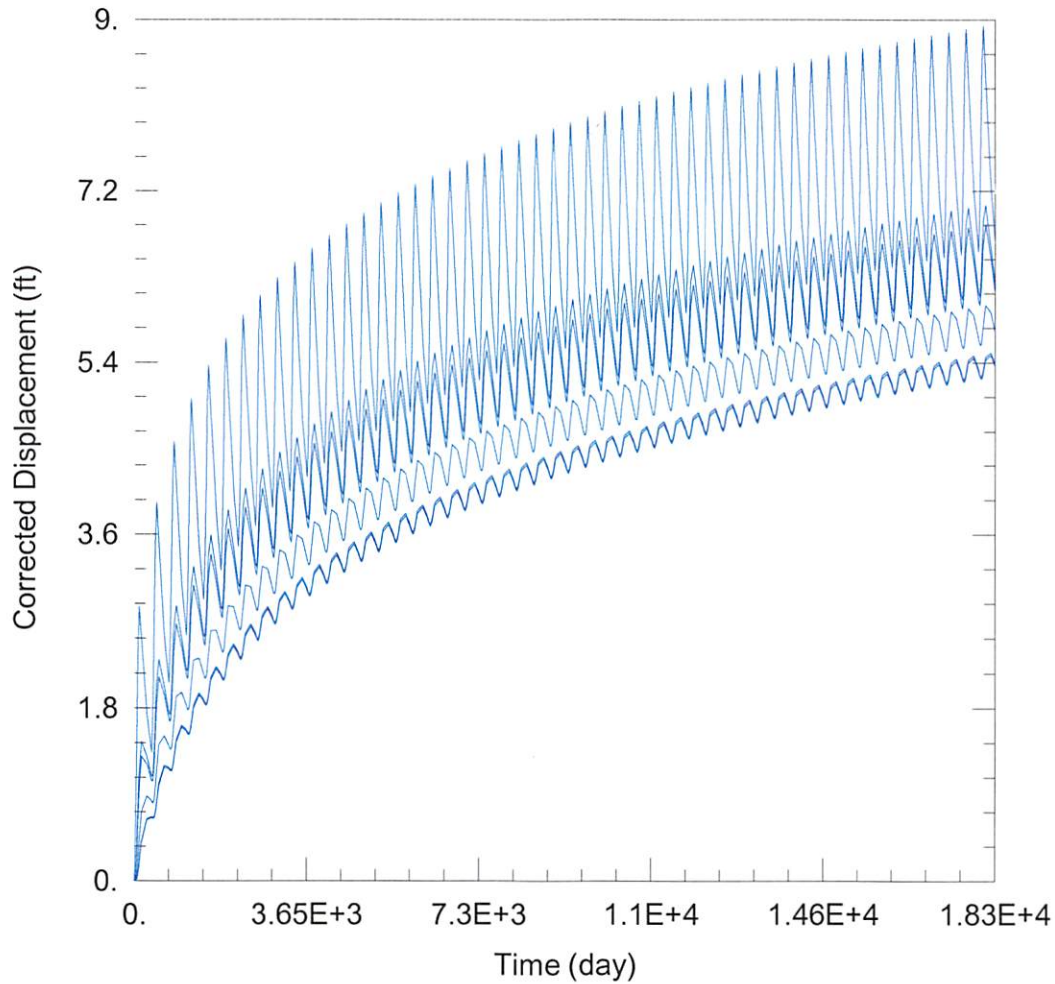
Solution Method: Theis

T = 3260. ft²/day

S = 0.2068

Kz/Kr = 1.

b = 221. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\16589\16589 Proposed.aqt
 Date: 03/22/22 Time: 15:38:45

PROJECT INFORMATION

Company: GMD 3
 Project: 16589
 Location: Meade County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
16589	63111	156067

Observation Wells

Well Name	X (ft)	Y (ft)
□	63111	156067
□ 12297	62310	158929
□ 22848 ID3	64701	160223
□ 22848 ID4	66364	158101
□ 13517	63633	152986
□ Domestic 33-31-30	58700	155959
□ Domestic 4-32-30	63313	153978

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 3260. ft²/day

S = 0.2068

Kz/Kr = 1.

b = 221. ft