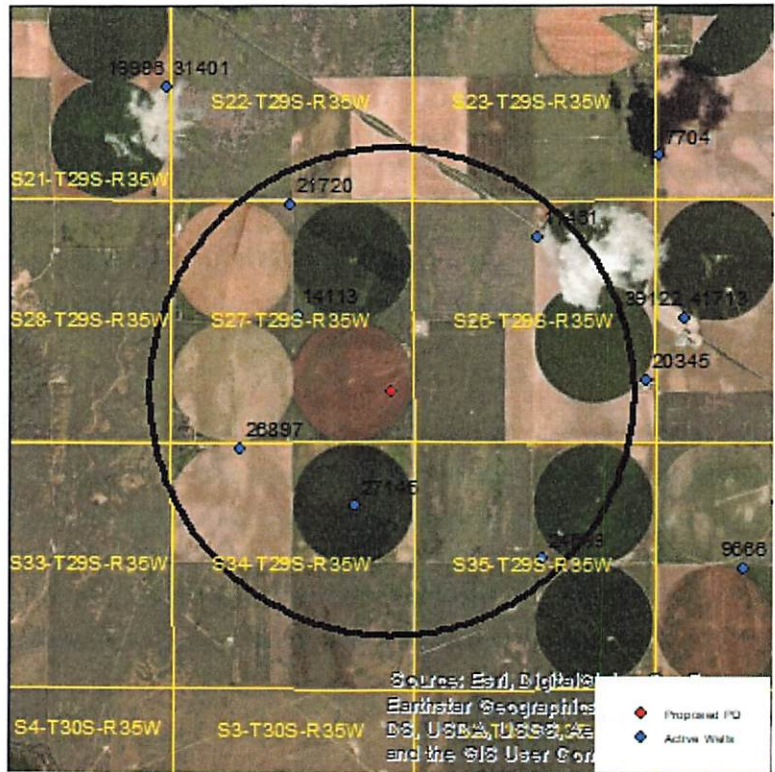


Evaluation of proposed move for Water Right No. 14113

Proposed: Move water right no. 14113 to a new location 2,634 ft to the southeast.



Wells within 1 mile: 21720, 26897, 27145, 11461, and 24599.

The saturated thickness at the proposed well location is estimated to be 262 ft, based upon the GMD3 model. For saturated thickness greater than 200 ft, the drawdown allowance is 4.0 ft.

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

$S = 0.1193$, $T = 9553.4 \text{ ft}^2/\text{day}$, $t_{p\text{current}} = 129 \text{ days}$, $Q_{\text{current}} = 343 \text{ gpm}$, $t_{p\text{proposed}} = 129 \text{ days}$, $Q_{\text{proposed}} = 1140 \text{ gpm}$

Theis drawdowns were calculated as follows:

- 21720:
 - Drawdown from current location = 1.66 ft
 - Drawdown from proposed location = 3.68 ft
 - Net drawdown = **2.0 ft**
- 26897:
 - Drawdown from current location = 1.41 ft
 - Drawdown from proposed location = 4.39 ft
 - Net drawdown = **3.0 ft**

27145: Drawdown from current location = 1.15 ft
Drawdown from proposed location = 5.20 ft
Net drawdown = **4.1 ft**

11461: Drawdown from current location = 1.00 ft
Drawdown from proposed location = 3.67 ft
Net drawdown = **2.7 ft**

24599: Drawdown from current location = 0.83 ft
Drawdown from proposed location = 3.56 ft
Net drawdown = **2.7 ft**

Net drawdown exceeds the drawdown allowance of 4.0 ft for water right number 27145. Critical well analysis was performed for that well.

Critical Well Evaluation:

27145:

Water Column = 236 ft

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

DE = 53.3 ft (Water level decline from 2021 through 2046 based upon GMD3 model)

DD = 13.3 ft (S = 0.1735, T = 126,582.2 gpd/ft, Q = 625 gpm, tp = 67 days, efficiency = 70%)

DT = 70.7 ft

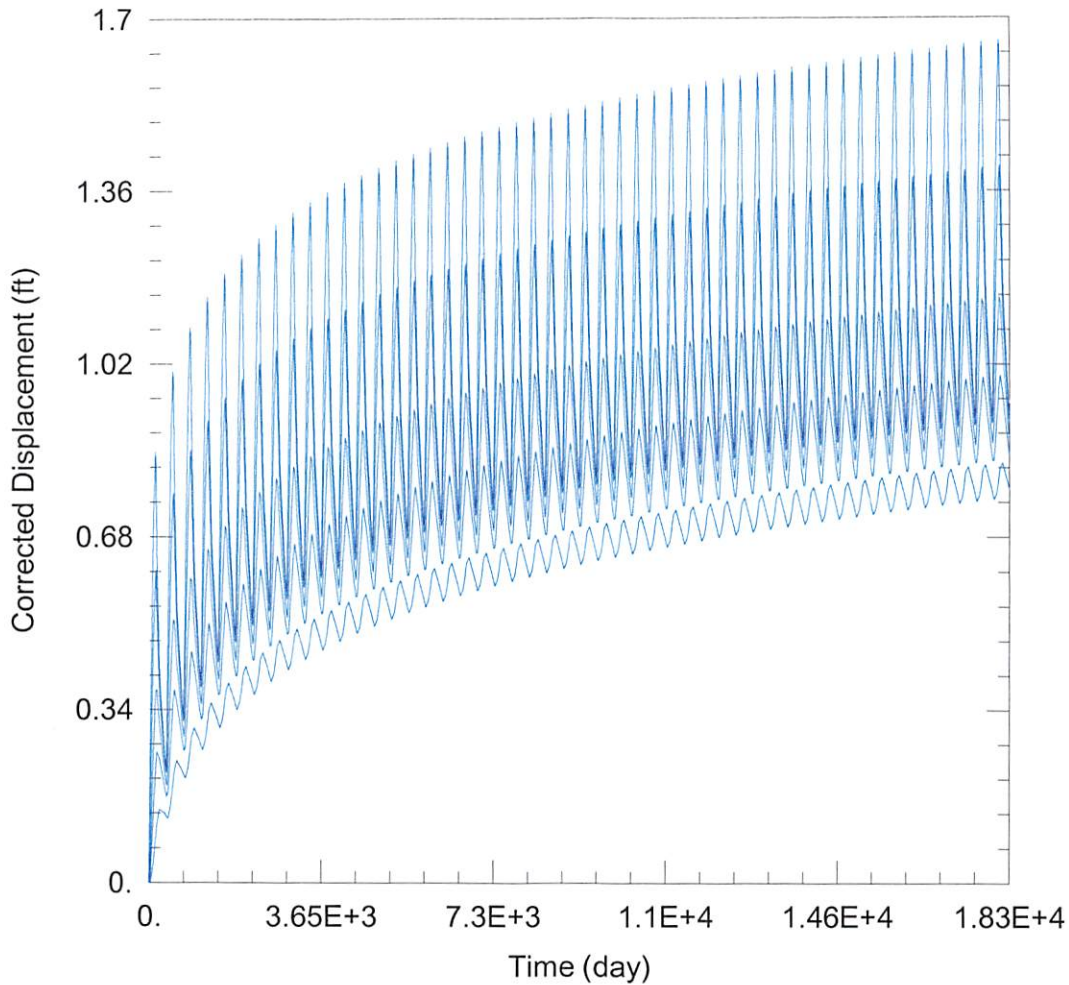
Economic Drawdown Constraint (EDC) = $0.4 * 236 \text{ ft} = 94.4 \text{ ft}$

Physical Drawdown Constraint (PDC) = $236 \text{ ft} - 60 \text{ ft} = 176 \text{ ft}$

Total drawdown of 70.7 ft is less than the EDC and PDC, so this well is **not critical**.

Conclusion:

The proposal is unlikely to cause noticeable effects on most neighboring wells. There is potential for one neighboring well, 27145, to experience well to well interaction effects slightly exceeding 4 ft, but based on modeled aquifer characteristics, this well is not critical and is unlikely to be unreasonably impaired. GMD3 staff recommends approval of this application.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2021_Moves\14113\14113 Current.aqt

Date: 11/30/21

Time: 16:37:29

PROJECT INFORMATION

Company: GMD 3

Project: 14113

Location: Grant County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
14113	-97263	226646

Observation Wells

Well Name	X (ft)	Y (ft)
□	-97263	226646
□ <u>21720</u>	-97429	229025
□ <u>26897</u>	-98492	223738
□ <u>27145</u>	-96001	222505
□ <u>11461</u>	-92035	228350
□ <u>24599</u>	-91914	221380

SOLUTION

Aquifer Model: Unconfined

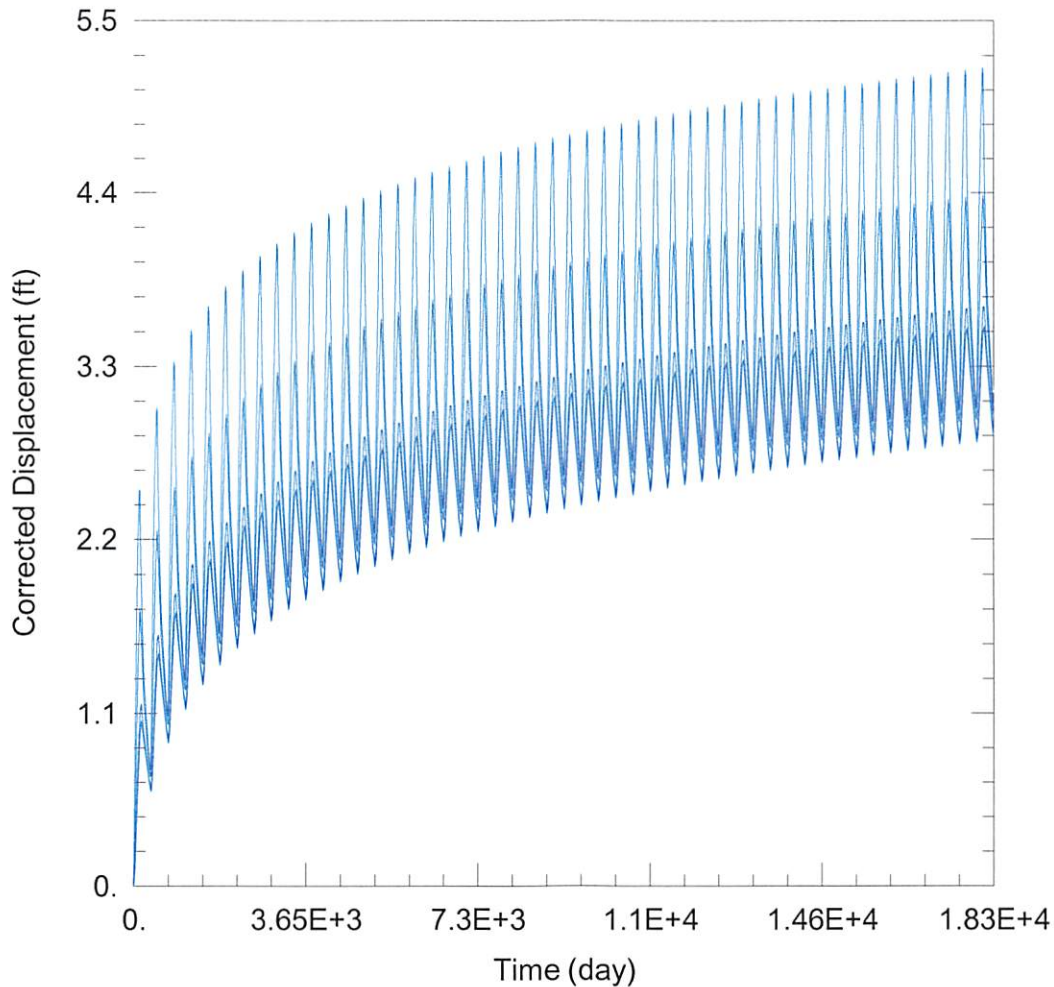
Solution Method: Theis

T = 9553.4 ft²/day

S = 0.1193

Kz/Kr = 1.

b = 262. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2021_Moves\14113\14113 Proposed.aqt

Date: 11/30/21

Time: 16:37:17

PROJECT INFORMATION

Company: GMD 3

Project: 14113

Location: Grant County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
14113	-95206	225001

Observation Wells

Well Name	X (ft)	Y (ft)
□	-95206	225001
□ <u>21720</u>	-97429	229025
□ <u>26897</u>	-98492	223738
□ <u>27145</u>	-96001	222505
□ <u>11461</u>	-92035	228350
□ <u>24599</u>	-91914	221380

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 9553.4 ft²/day

S = 0.1193

Kz/Kr = 1.

b = 262. ft