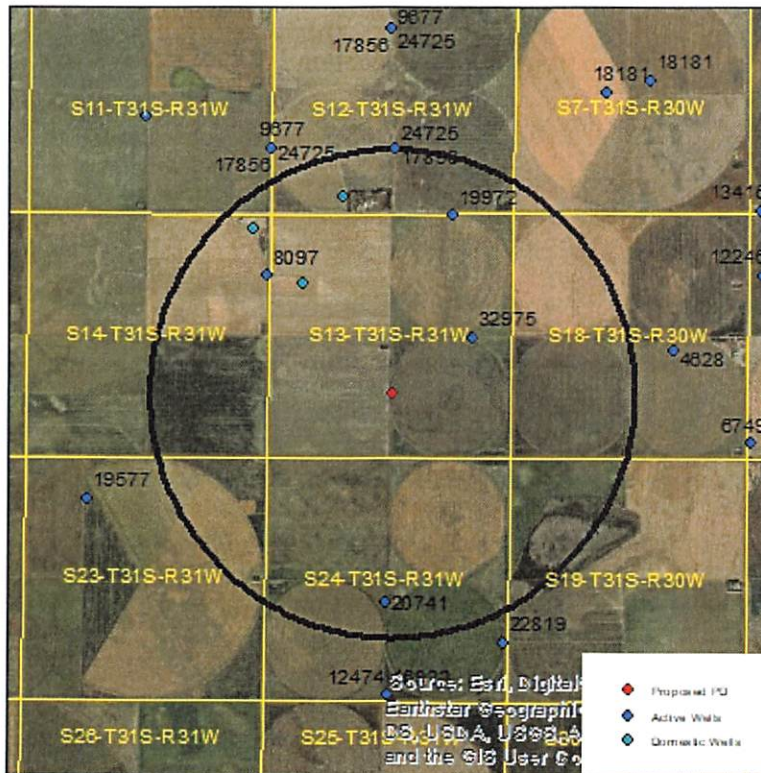## Evaluation of proposed move for Water Right No. 32975

Proposed: Add an additional well to water right no. 32975 a distance of 2,122 ft to the southwest of the current well location. This is the well location previously authorized under water right no. 32975 prior to a change in point of diversion in 2020.

Wells within 1 mile: 8097, 19972, 20741, a domestic well in section 14-31-31, a domestic well in section 13-31-31, and a domestic well in section 12-31-31.

The saturated thickness at the proposed well location is estimated to be 160 ft, based upon the GMD3 model. For saturated thickness between 150 ft and 200 ft, the drawdown allowance is 3.5 ft.

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

$S = 0.1069$, $T = 3639.7$ ft^2/day,

$tp_{current}$ = 123 days (based upon average use and observed rate), $Q_{current}$ = 367 gpm (based upon 2016 field inspection)

southwest location: $tp_{proposed}$ = 106 days, $Q_{proposed}$ = 175 gpm

northeast location: $tp_{proposed}$ = 106 days, $Q_{proposed}$ = 375 gpm

Theis drawdowns were calculated as follows:

8097: Drawdown from current location = 2.62 ft

Drawdown from proposed location = 3.07 ft

Net drawdown = **0.4 ft**

19972: Drawdown from current location = 2.48 ft

Drawdown from proposed location = 3.85 ft

Net drawdown = **1.4 ft**

20741: Drawdown from current location = 2.31 ft

Drawdown from proposed location = 2.66 ft

Net drawdown = **0.4 ft**

Domestic 14-31-31: Drawdown from current location = 2.27 ft

Drawdown from proposed location = 2.79 ft

Net drawdown = **0.5 ft**

Domestic 13-31-31: Drawdown from current location = 2.93 ft

Drawdown from proposed location = 3.47 ft

Net drawdown = **0.5 ft**

Domestic 12-31-31: Drawdown from current location = 2.35 ft

Drawdown from proposed location = 3.12 ft

Net drawdown = **0.8 ft**

Net drawdown does not exceed the drawdown allowance of 3.5 ft for any well within 1 mile of the proposed location. Therefore, critical well analysis is not necessary.

Conclusion:

The proposed move is likely to create minimal effects on neighboring wells and is unlikely to cause impairment. GMD3 staff recommends approval of this proposal.
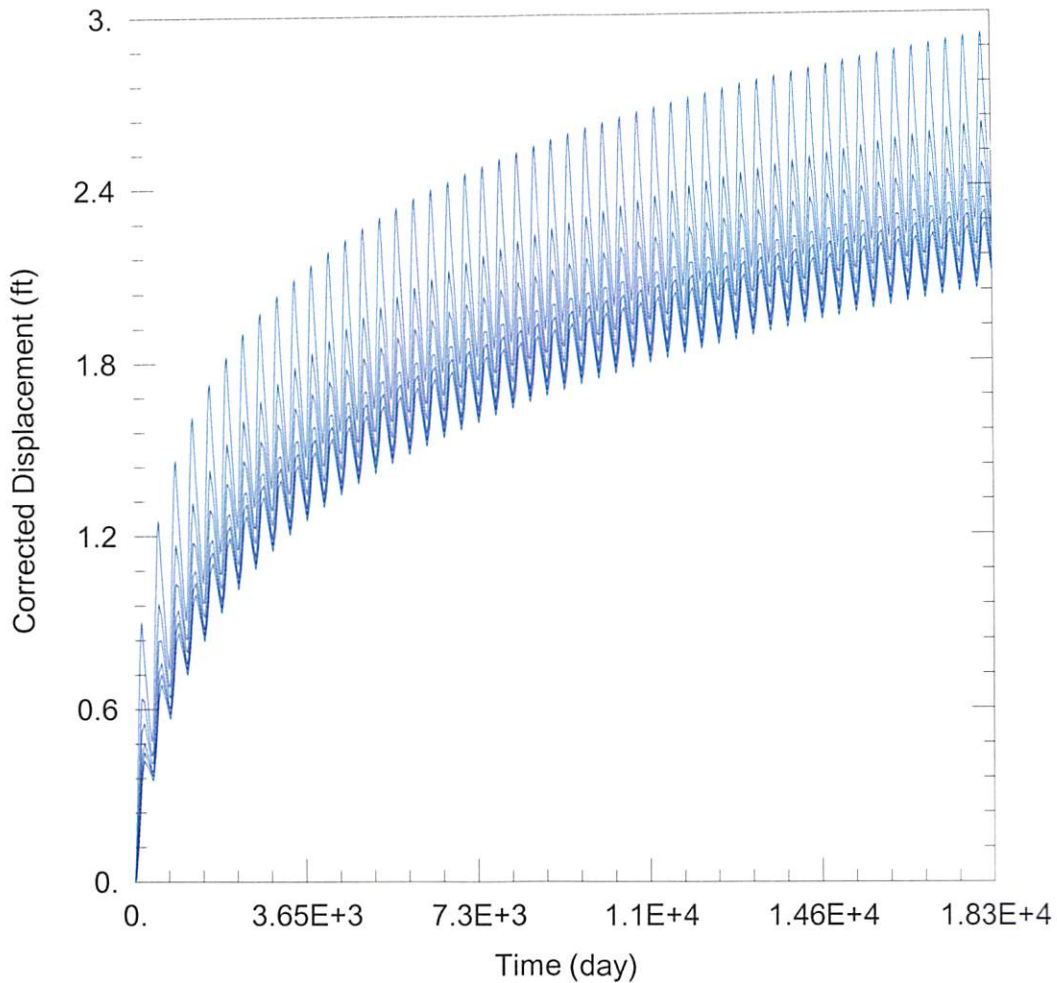
WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2021_Moves\32975\32975 Current.aqt
Date: 04/21/21   Time: 16:48:46

PROJECT INFORMATION

Company: GMD 3
Project: 32975
Location: Seward County
Test Well: 32975

WELL DATA

Pumping Wells		
Well Name	X (ft)	Y (ft)
Add. Well	45370	172211

Observation Wells		
Well Name	X (ft)	Y (ft)
□	45370	172211
□ 8097	42654	174749
□ 19972	46663	176051
□ 20741	45226	167678
□ Domestic 14-31-31	42323	175778
□ Domestic 13-31-31	43423	174609
□ Domestic 12-31-31	44307	176452

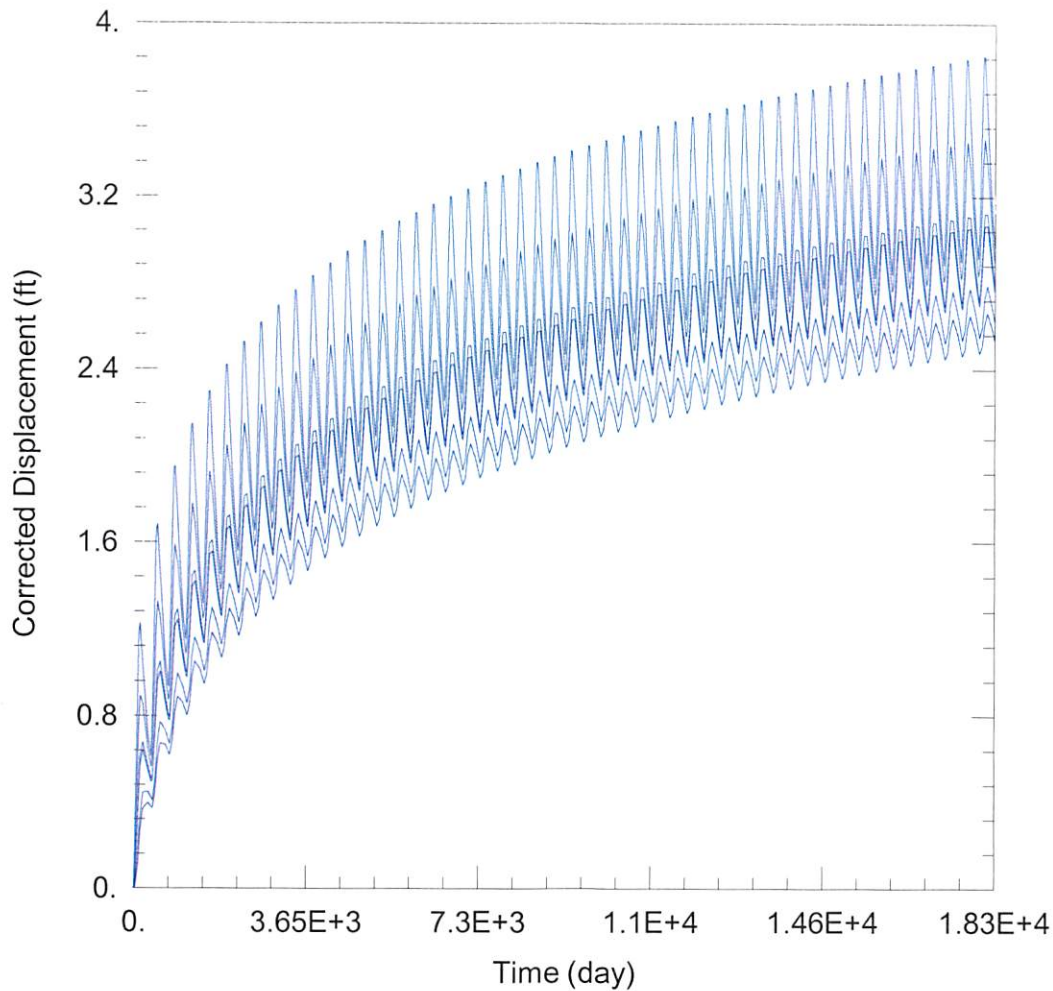## SOLUTION

Aquifer Model: Unconfined   Solution Method: Theis

T = 3639.7 ft^2/day
Kz/Kr = 1.

S = 0.1069
b = 160. ft

WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2021_Moves\32975\32975 Proposed.aqt
Date: 04/21/21   Time: 16:48:38

PROJECT INFORMATION

Company: GMD 3
Project: 32975
Location: Seward County
Test Well: 32975

WELL DATA

Pumping Wells				Observation Wells		
Well Name	X (ft)	Y (ft)		Well Name	X (ft)	Y (ft)
	45370	172211		□	45370	172211
	47109	173427		□	47109	173427
				□ 8097	42654	174749
				□ 19972	46663	176051
				□ 20741	45226	167678
				□ Domestic 14-31-31	42323	175778
				□ Domestic 13-31-31	43423	174609
				□ Domestic 12-31-31	44307	176452

SOLUTION

Aquifer Model: Unconfined   Solution Method: Theis

T = 3639.7 ft^2/day S = 0.1069