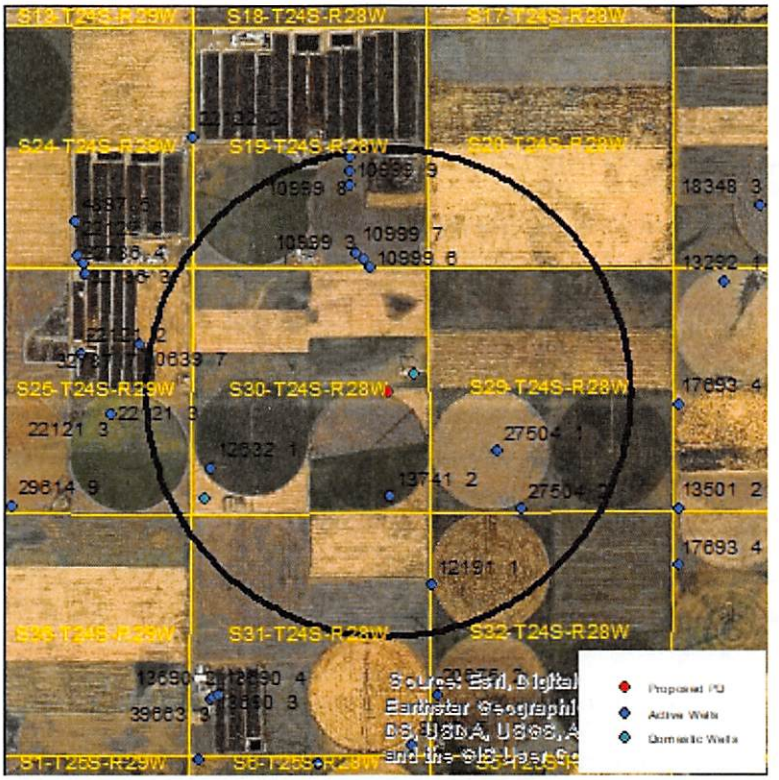
Evaluation of proposed move for Water Right No 13741

Proposed: Reallocate the rate and quantity authorized under water right no. 13741. Authorized quantity on the well currently authorized under water right number 13471 will be reduced from 261 AF to 231 AF. Authorized rate will be reduced from 700 gpm to 214 gpm. Authorized quantity on the well currently authorized under water right number 28264 will be increased from 59 AF to 80 AF. Authorized rate will be increased from 300 gpm to 313 gpm.



Wells within 1 mile: 13741, 12632, 10999 south battery, 10999 north battery, 27504 ID1, 27504 ID2, 12191, and two domestic wells in section 30-24-28.

The saturated thickness at the proposed well location is estimated to be 68 ft, based upon the driller's log and an average water table elevation from observation wells in sections 21-24-28 and 28-24-28. For saturated thickness between 50 ft and 75 ft, the drawdown allowance is 1.5 ft.

50 year Theis Analysis: The average water use over the last 10 years on water right number 13741 is less than the proposed authority, so it was presumed that well will continue to operate under status quo. The following values for the well under water right number 28264 were used to run the analysis:

S = 0.1731, T = 4267 ft^2/day, $tp_{current}$ = 69 days (based upon average use and observed rate), $Q_{current}$ = 167 gpm (based upon 2017 field inspection), $tp_{proposed}$ = 108 days, $Q_{proposed}$ = 167 gpm

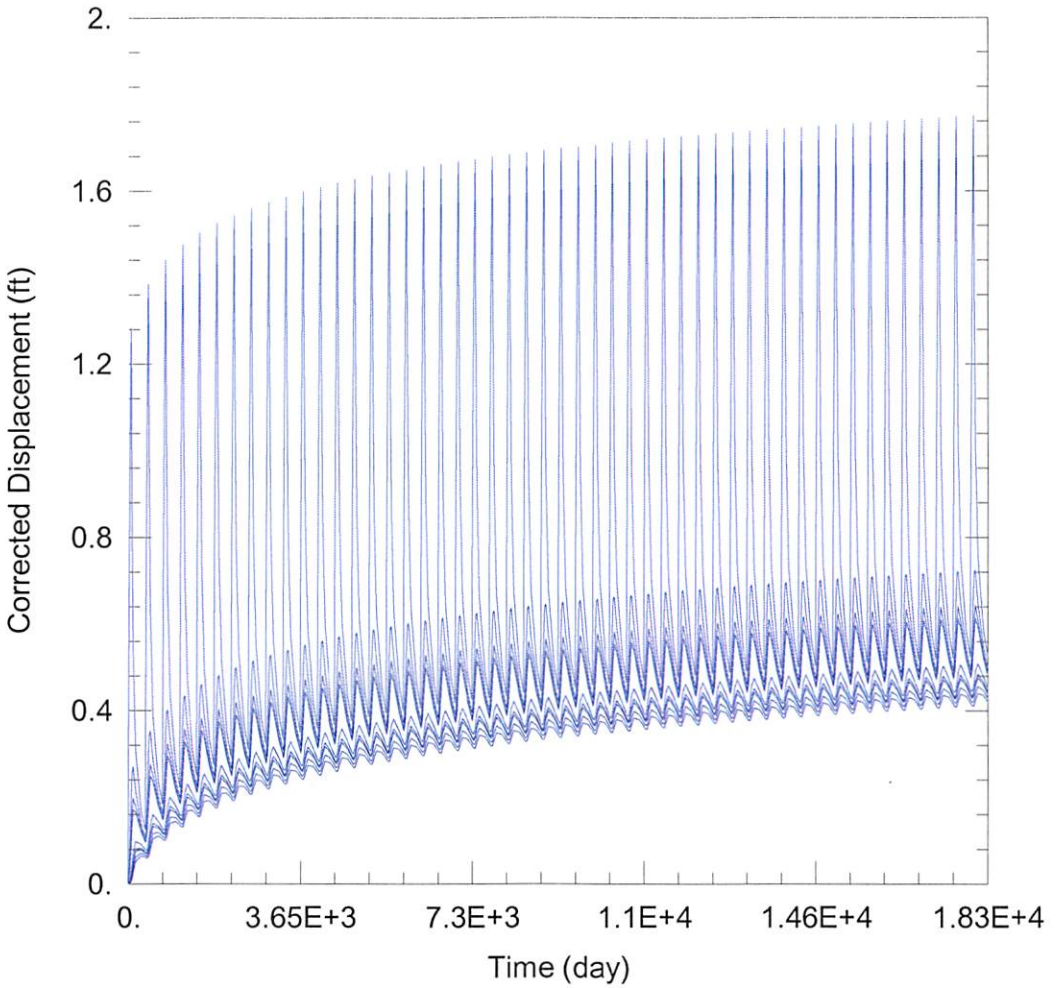
Theis drawdowns were calculated as follows:

13741:	Drawdown from current location = 0.72 ft
	Drawdown from proposed location = 1.11 ft
	Net drawdown = **0.4 ft**
12632:	Drawdown from current location = 0.48 ft
	Drawdown from proposed location = 0.75 ft
	Net drawdown = **0.3 ft**
10999 South Battery:	Drawdown from current location = 0.61 ft
	Drawdown from proposed location = 0.95 ft
	Net drawdown = **0.3 ft**
10999 North Battery:	Drawdown from current location = 0.44 ft
	Drawdown from proposed location = 0.69 ft
	Net drawdown = **0.2 ft**
27504 ID1:	Drawdown from current location = 0.64 ft
	Drawdown from proposed location = 0.99 ft
	Net drawdown = **0.3 ft**
27504 ID2:	Drawdown from current location = 0.51 ft
	Drawdown from proposed location = 0.79 ft
	Net drawdown = **0.3 ft**
12191:	Drawdown from current location = 0.48 ft
	Drawdown from proposed location = 0.74 ft
	Net drawdown = **0.3 ft**
Domestic SW 30-24-28:	Drawdown from current location = 0.46 ft
	Drawdown from proposed location = 0.71 ft
	Net drawdown = **0.3 ft**
Domestic NE 30-24-28:	Drawdown from current location = 1.77 ft
	Drawdown from proposed location = 2.29 ft
	Net drawdown = **0.5 ft**

Net drawdown does not exceed the drawdown allowance of 1.5 ft for any wells within 1 mile of the proposed point of diversion, so critical well analysis is not necessary.

Conclusion:

The proposed change should result in minimal effects on neighboring wells and is unlikely to create an impairment situation. GMD3 staff recommends approval of the application.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2020_moves\13741\13741 Current.aqt
Date: 01/21/20 Time: 11:23:55

PROJECT INFORMATION

Company: GMD 3
Project: 13741
Location: Gray County
Test Well: 13741

WELL DATA

Pumping Wells

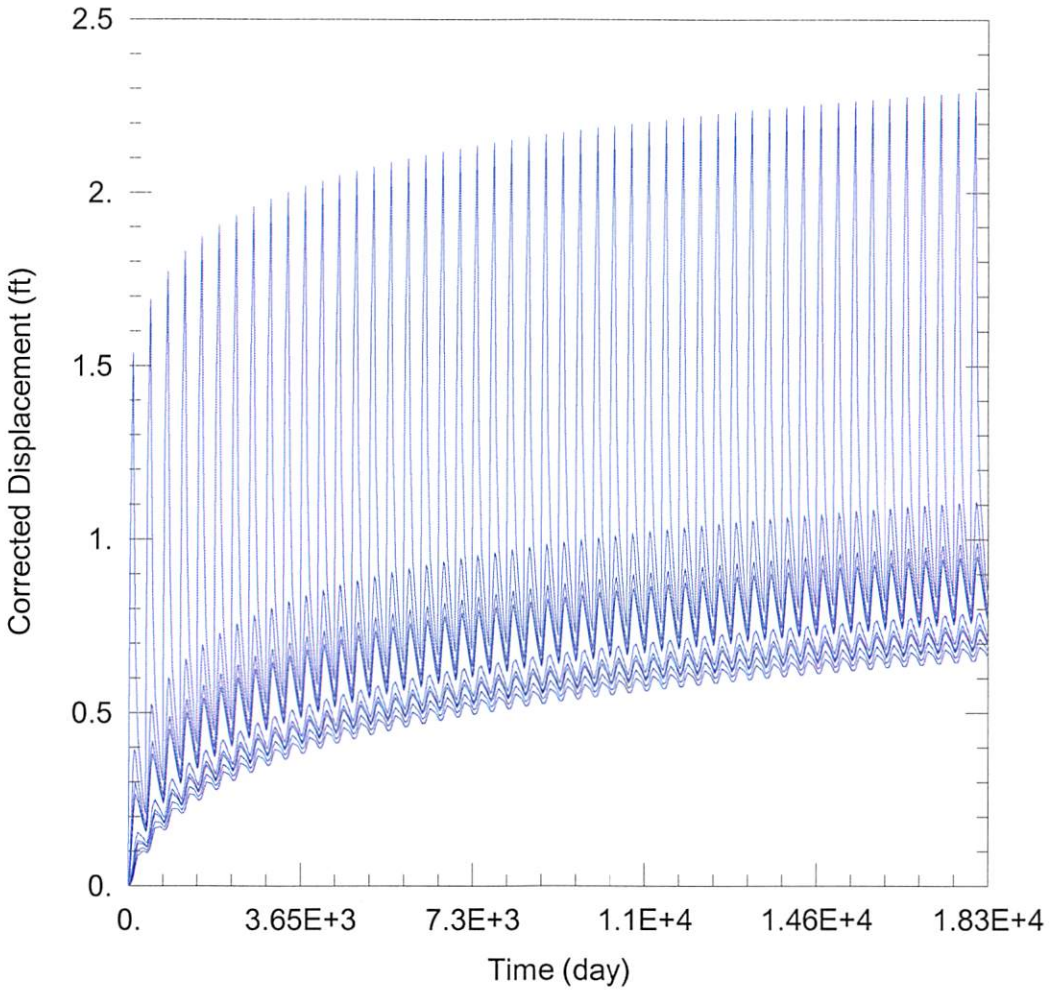
Well Name	X (ft)	Y (ft)
28264	106147	386464

Observation Wells

Well Name	X (ft)	Y (ft)
▫	106147	386464
▫ 13741	106201	384193
▫ 12632	102308	384814
▫ 10999 South Battery	105623	389311
▫ 10999 North Battery	105321	391233
▫ 27504	108540	385180
▫ 27504	109078	383932
▫ 12191	107100	382274
▫ Domestic SW 30-24-28	102180	384158
▫ Domestic NE 30-24-28	106729	386842

SOLUTION

Aquifer Model: Unconfined Solution Method: Theis



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2020_moves\13741\13741 Proposed.aqt
Date: 01/21/20 Time: 11:23:38

PROJECT INFORMATION

Company: GMD 3
Project: 13741
Location: Gray County
Test Well: 13741

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
28264	106147	386464

Observation Wells

Well Name	X (ft)	Y (ft)
▫	106147	386464
▫ 13741	106201	384193
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SOLUTION

Aquifer Model: Unconfined Solution Method: Theis