

Evaluation of proposed move for Water Right No. 21934

Proposed: Move water right no. 21934 a distance of 2,178 ft to the northwest.



Wells within 1 mile: 10398, 29021, 36315 & 40076, and a domestic well in section 6-33-31.

The saturated thickness at the proposed well location is estimated to be 154 ft, based upon the driller's log and an observation well in section 2-33-32. 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:

$$S = 0.2581, T = 6953.9 \text{ ft}^2/\text{day},$$

$t_{p_{\text{current}}} = 158$ days (based on observed rate and reported use), $Q_{\text{current}} = 730$ gpm (based on 2018 inspection), $t_{p_{\text{proposed}}} = 119$ days, $Q_{\text{proposed}} = 1035$ gpm

Theis drawdowns were calculated as follows:

10398:	Drawdown from current location = 2.58 ft
	Drawdown from proposed location = 3.17 ft
	Net drawdown = 0.6 ft
29021:	Drawdown from current location = 2.38 ft
	Drawdown from proposed location = 3.27 ft
	Net drawdown = 0.9 ft

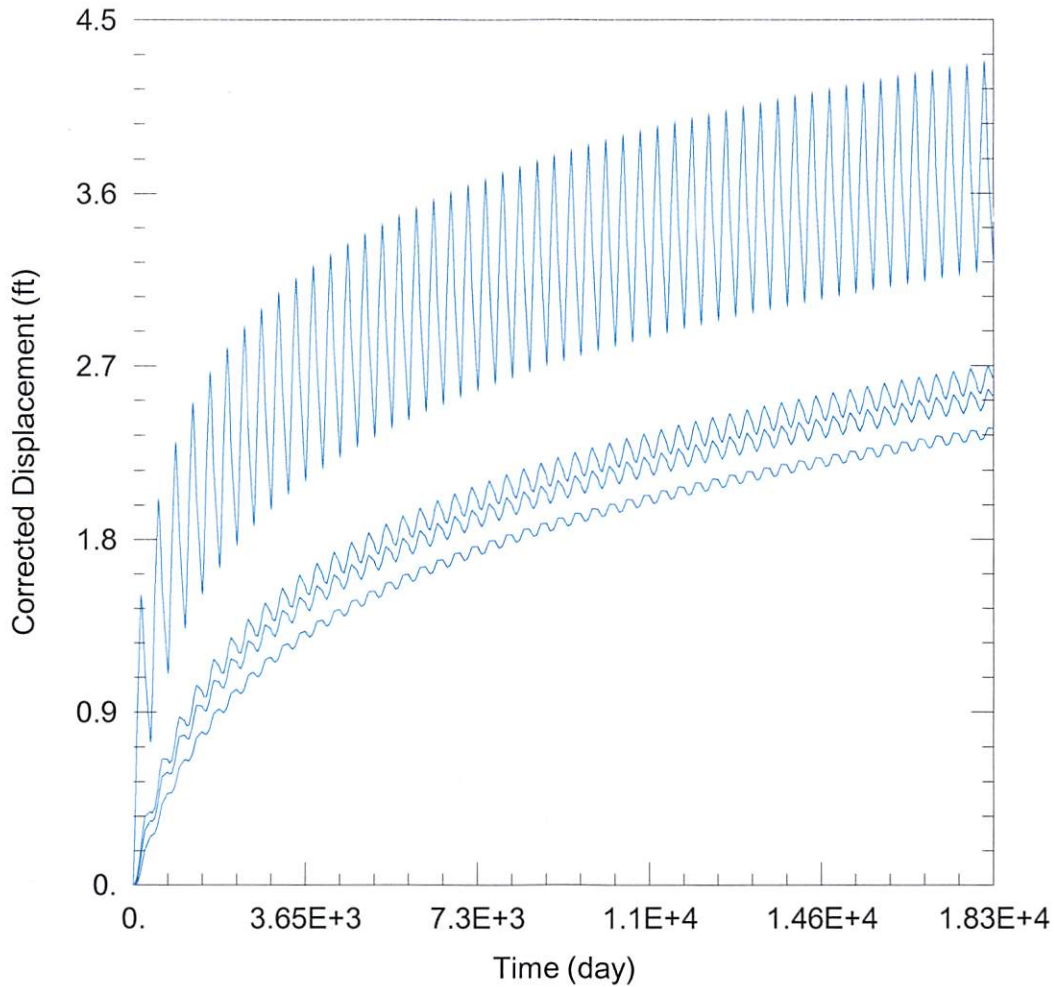
36315 & 40076: Drawdown from current location = 2.70 ft
Drawdown from proposed location = 2.90 ft
Net drawdown = **0.2 ft**

Domestic 6-33-31: Drawdown from current location = 4.29 ft
Drawdown from proposed location = 3.18 ft
Net drawdown = **-1.1 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. It also will reduce drawdown effects by more than 1 ft on a nearby domestic well. GMD3 staff recommends approval of this proposal.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\21934\21934 Current.aqt

Date: 02/10/22

Time: 11:37:59

PROJECT INFORMATION

Company: GMD 3

Project: 21934

Location: Seward County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
21934	15944	120438

Observation Wells

Well Name	X (ft)	Y (ft)
□	15944	120438
□ 10398	14543	125709
□ 29021	9915	121826
□ 36315 & 40076	12713	116547
□ Domestic 6-33-31	17191	118512

SOLUTION

Aquifer Model: Unconfined

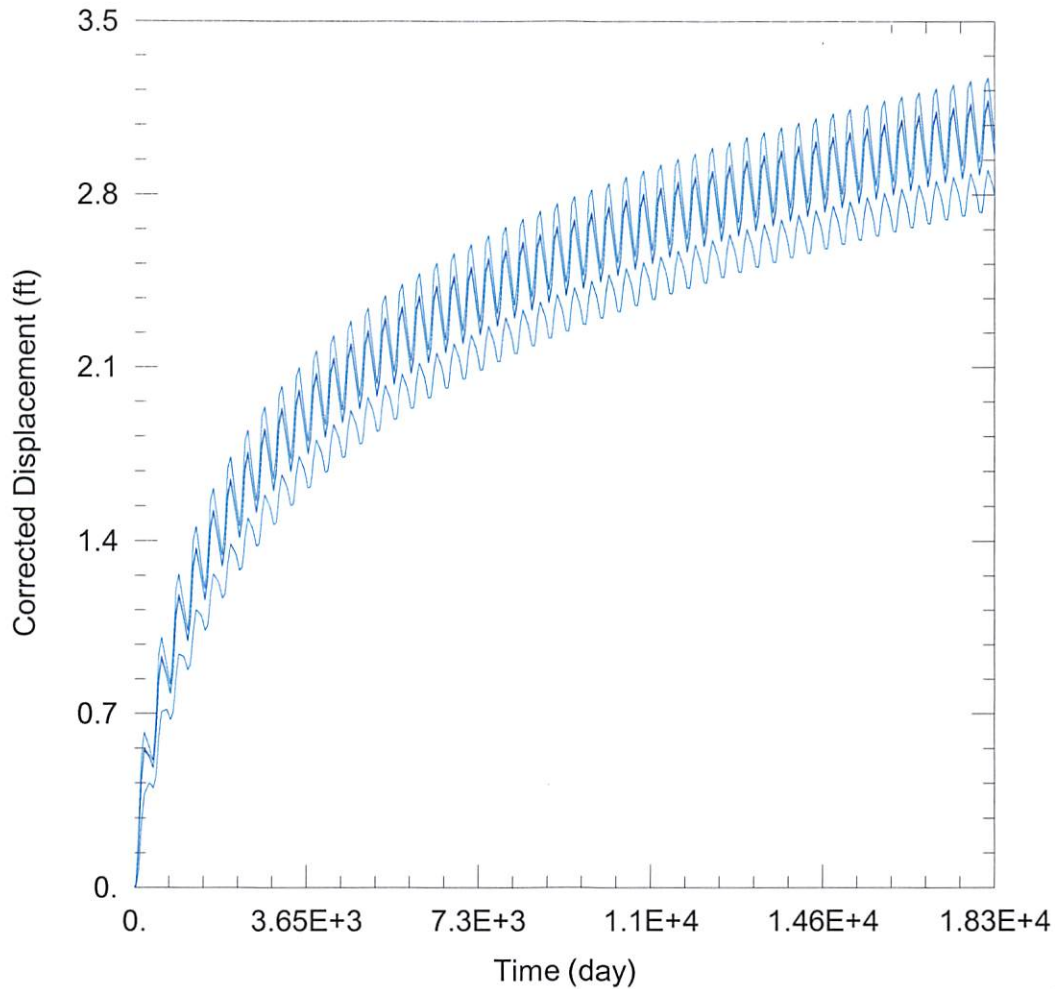
Solution Method: Theis

T = 6953.9 ft²/day

S = 0.2581

Kz/Kr = 1.

b = 154. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\21934\21934 Proposed.aqt

Date: 02/10/22

Time: 11:37:00

PROJECT INFORMATION

Company: GMD 3

Project: 21934

Location: Seward County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
21934	13992	121405

Observation Wells

Well Name	X (ft)	Y (ft)
□	13992	121405
□ <u>10398</u>	14543	125709
□ <u>29021</u>	9915	121826
□ <u>36315 & 40076</u>	12713	116547
□ <u>Domestic 6-33-31</u>	17191	118512

SOLUTION

Aquifer Model: Unconfined

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b = 154. ft