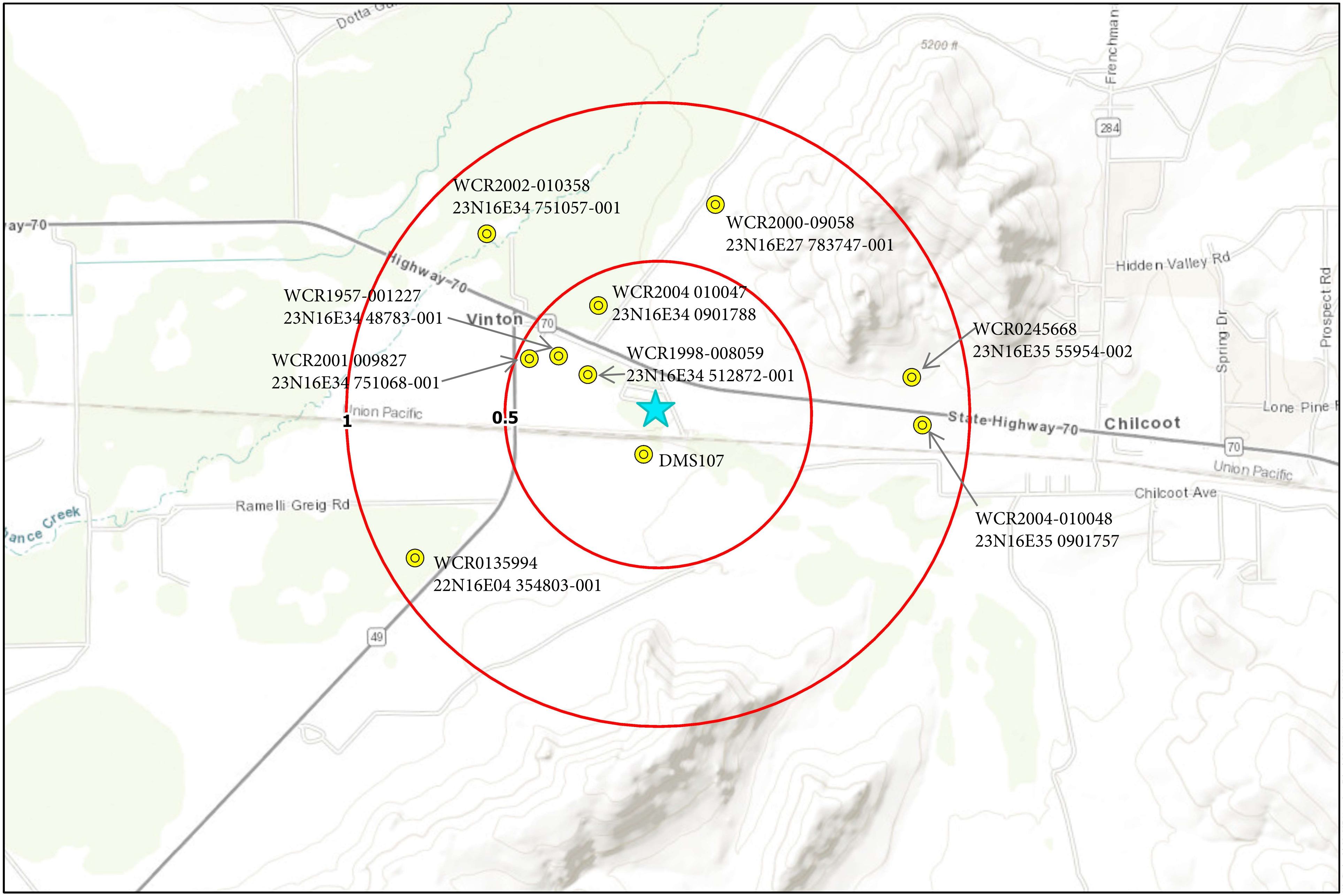


DATA SOURCES: Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

Balance Hydrologics

Project Site Location

Regional Wells

Distance in Miles

N 0 1,000 2,000 3,000 4,000 Feet

DATE: AUGUST 22, 2024 | Scale: 1:30,000

FIGURE 1.0

PN: 224027

Sierra Valley GMD Data for Existing Wells Within 1 Mile of Meadow Edge Park Plumas County, California

Y:_Projects\224027 Meadow Edge\224027 Workmap\224027 Workmap.aprx

DATA SOURCES: Maxar, Microsoft

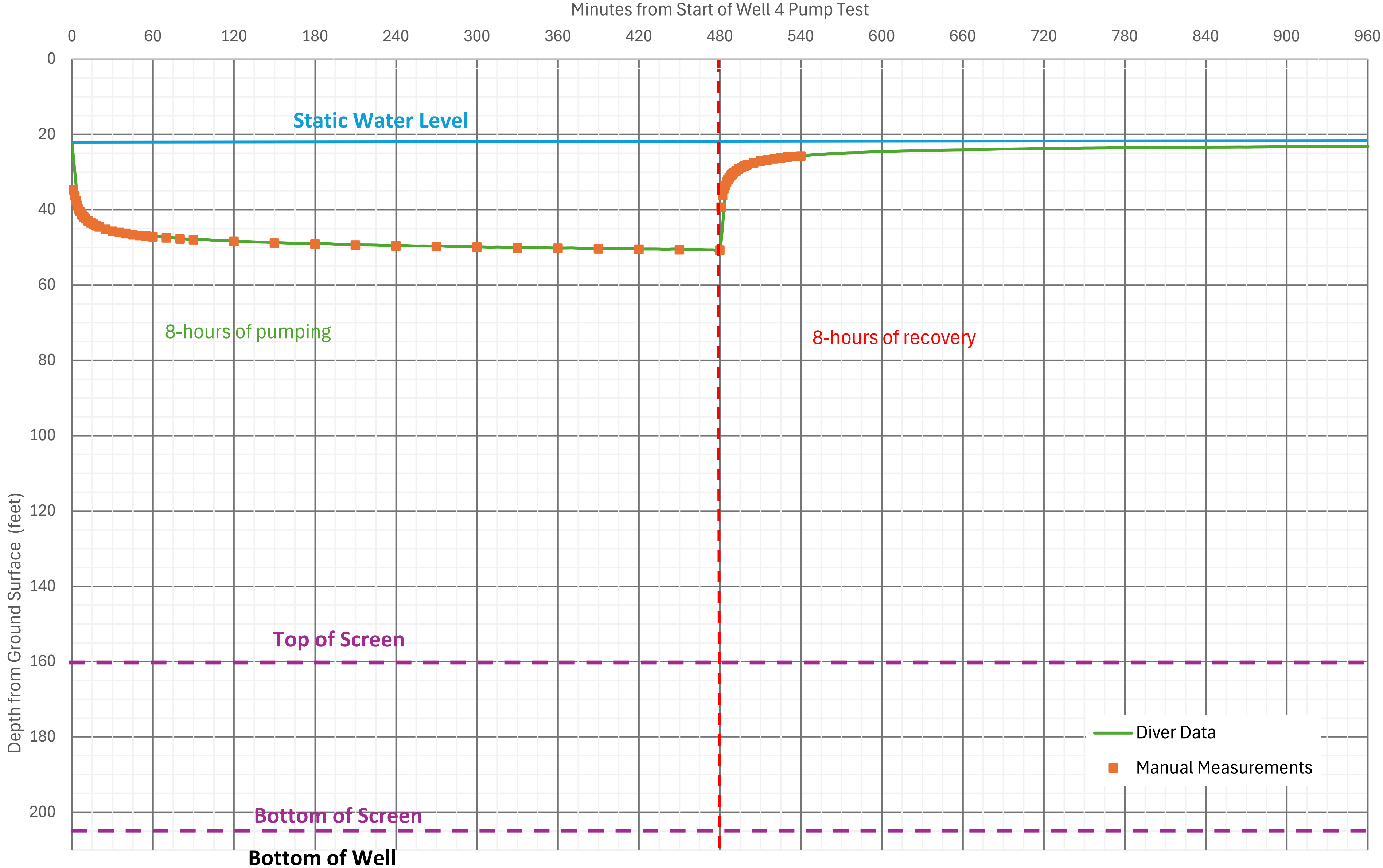
Balance Hydrologics	Meadow Edge Park Well Locations	N 0 100 200 300 Feet	FIGURE 2.0	Water Supply Well Investigation Meadow Edge Park Plumas County, California
		DATE: AUGUST 21, 2024 / Scale: 1:3,000	PN: 224027	

90-minute Preliminary Pump Test
October 11, 2024

MEP Well ID	Well Depth (ft, bgs)	Screen Interval (feet)	Static Water Level (ft, bgs))	Pumping Rate (gpm)	90-minute Drawdown (ft)	Specific Capacity (gpm/ft)
Well 1	200	unknown	6.80	16.7	10.8	1.6
Well 2	205	unknown	24.80	60.0	22.4	2.7
Well 3	203	152-172	+1.00	61.0	33.85	1.8
Well 4	210	160-205	23.75	60.0	25.35	2.4

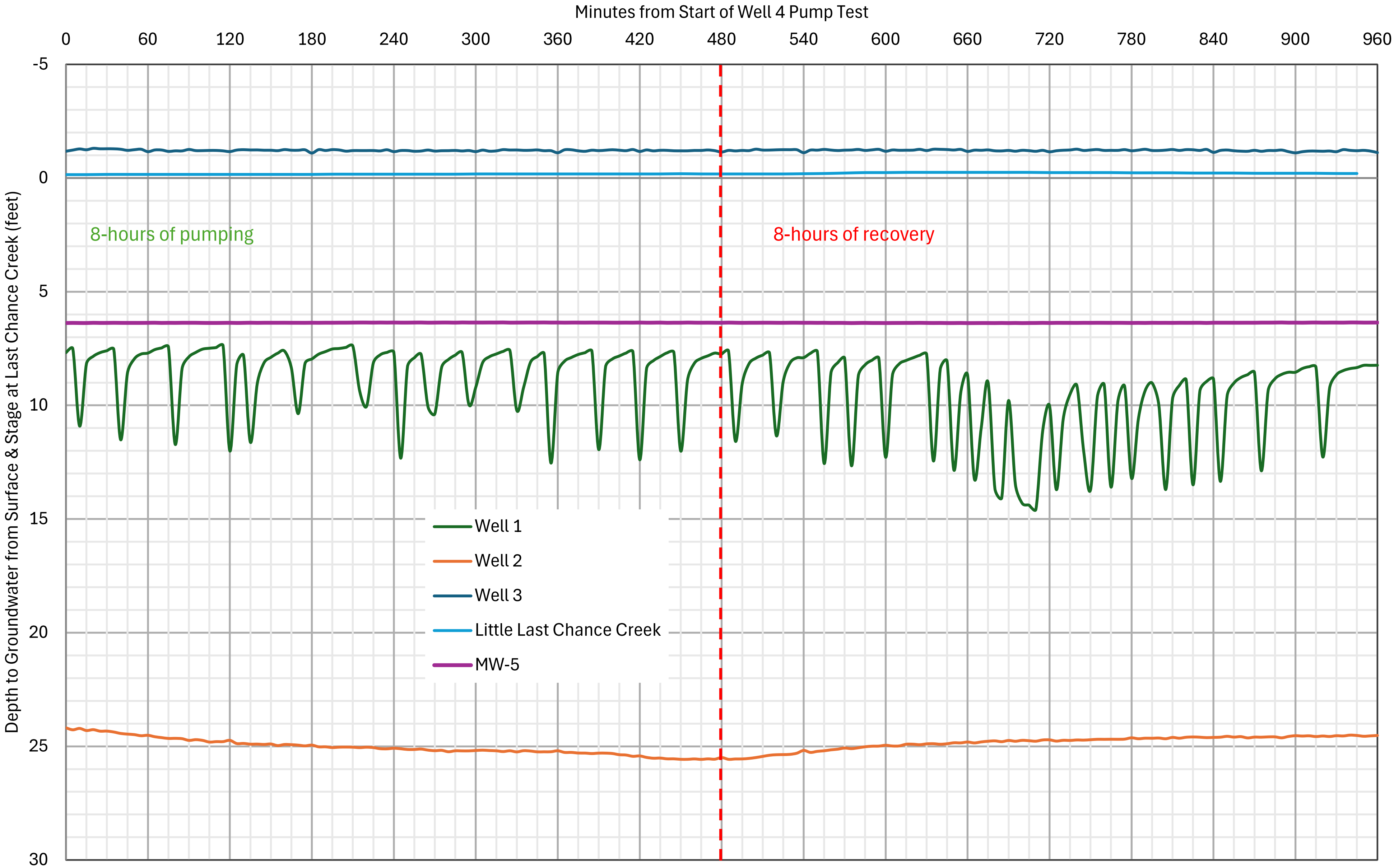
Table 1: Well construction information and 90-minute pump test data summary. (ft=feet; bgs= below ground surface; gpm=gallons per minute; gpd=gallons per day)

8-hour Pump Test
Well 4, October 16, 2024



Balance Hydrologics

Figure 3: 8-hour constant-rate pumping and recovery test of Well 4 on October 16, 2024, Meadow Edge Park, Plumas County, California. Well 4 was not pumped for 24 hours prior to the start of the 8-hour pump test at 54.7 gpm. 8-hour recovery period is shown after 480 minutes.



Balance Hydrologics

Figure 4: Depth to water of on-site observation wells, offsite MW-5 and stage at Little Last Chance Creek gage during the 8-hour pumping and revcovery of Well 4 on October 16, 2024. Well 2 showed drawdown from pumping Well 4. Well 1 was used to supply water to Meadow Edge Park. LLE and MW-5 were not affected.

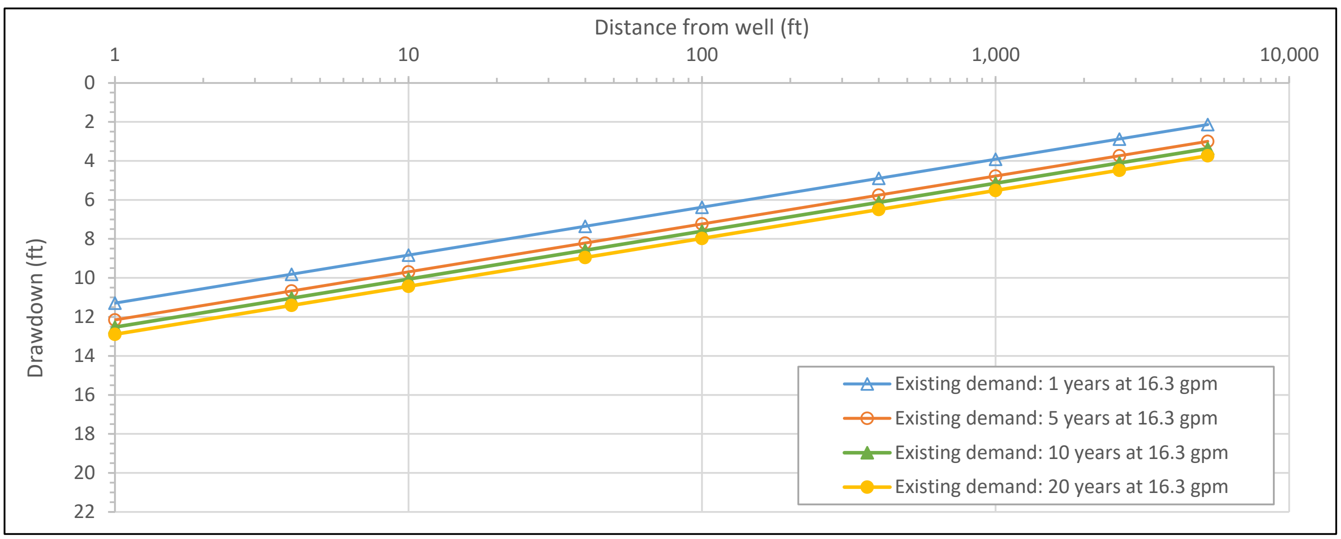
224027 Well 4 pumping tests 10.18.24, Wells 123 plot BH, 10/29/2024

Table 4. Theoretical 'cone-of-depression' drawdown calculations under existing conditions with no recharge, Meadow Edge Park, Plumas County, California

Given specifications:	**1 year**	**5 years**	**10 years**	**20 years**
Hydraulic Conductivity, K=T/b (cm/s)	1.4E+02	1.4E+02	1.4E+02	1.4E+02
Aquifer thickness, b (ft)	25	25	25	25
Transmissivity, T (gpd/ft)	3500	3500	3500	3500
Storativity, S	0.00025	0.00025	0.00025	0.00025
Pumping rate, Q (gpm)	16.3	16.3	16.3	16.3
Pumping duration (years)	1	5	10	20
Pumping duration, t (days)	365.25	1826.25	3652.50	7305.00

Calculate drawdown, s(r,t):

Distance from well, r (ft)	Drawdown, s (ft)	Drawdown, s (ft)	Drawdown, s (ft)	Drawdown, s (ft)
0.1	13.8	14.6	15.0	15.4
1	11.3	12.2	12.5	12.9
4	9.8	10.7	11.0	11.4
10	8.8	9.7	10.1	10.4
40	7.4	8.2	8.6	9.0
100	6.4	7.2	7.6	8.0
400	4.9	5.8	6.1	6.5
1000	3.9	4.8	5.1	5.5
2640	2.9	3.7	4.1	4.5
5280	2.1	3.0	3.4	3.7



Method:

Theoretical drawdown was calculated using Cooper and Jacob modified nonequilibrium Theis equation (Driscoll, F.G., 1986, Groundwater and Wells, 2nd Ed., p. 219).

Theis' nonequilibrium equation is based on the following assumptions:

a) The water-bearing formation is uniform in character and the hydraulic conductivity is the same in all directions.
b) The formation is uniform in thickness and infinite in areal extent.
c) The formation receives no recharge from any source.
d) The pumped well penetrates, and receives water from, the full thickness of the water-bearing formation.
e) The water removed from storage is discharged instantaneously when the head is lowered.
f) The pumping well is 100 percent efficient.
g) All water removed from the well comes from aquifer storage.
f) Laminar flow exists throughout the well and aquifer.
i) The water table or potentiometric surface has no slope.

Notes:

1. In a confined aquifer, the storativity (S) ranges in value from 0.005 to 0.00005. Storage for unconfined aquifers is known as specific yield (Sy) and generally varies between 0.01 and 0.30.

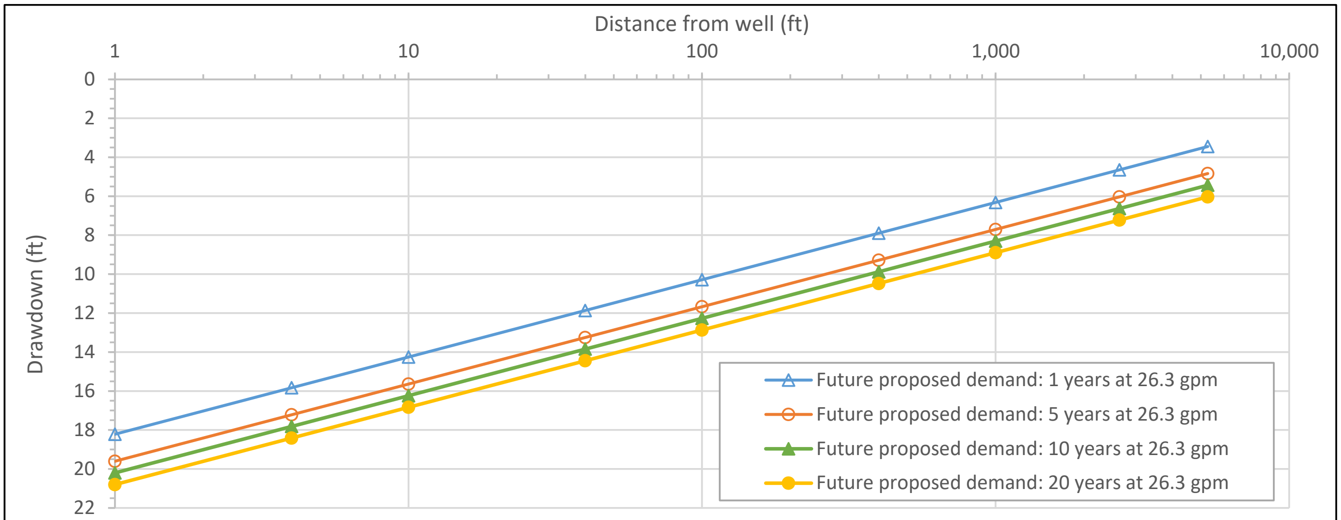
2. The modified nonequilibrium equation is valid for values of u less than about 0.05, otherwise values are approximate.

Table 5. Theoretical 'cone-of-depression' drawdown calculations under proposed conditions with no recharge, Meadow Edge Park, Plumas County, California

Given specifications:	1 year	5 years	10 years	20 years
Hydraulic Conductivity, K=T/b (cm/s)	1.4E+02	1.4E+02	1.4E+02	1.4E+02
Aquifer thickness, b (ft)	25	25	25	25
Transmissivity, T (gpd/ft)	3500	3500	3500	3500
Storativity, S	0.00025	0.00025	0.00025	0.00025
Pumping rate, Q (gpm)	26.3	26.3	26.3	26.3
Pumping duration (years)	1	5	10	20
Pumping duration, t (days)	365.25	1826.25	3652.50	7305.00

Calculate drawdown, s(r,t):

Distance from well, r (ft)	Drawdown, s (ft)	Drawdown, s (ft)	Drawdown, s (ft)	Drawdown, s (ft)
0.1	22.2	23.6	24.2	24.8
1	18.2	19.6	20.2	20.8
4	15.8	17.2	17.8	18.4
10	14.3	15.6	16.2	16.8
40	11.9	13.3	13.9	14.4
100	10.3	11.7	12.3	12.9
400	7.9	9.3	9.9	10.5
1000	6.3	7.7	8.3	8.9
2640	4.6	6.0	6.6	7.2
5280	3.5	4.8	5.4	6.0



Method:

Theoretical drawdown was calculated using Cooper and Jacob modified nonequilibrium Theis equation (Driscoll, F.G., 1986, Groundwater and Wells, 2nd Ed., p. 219).

Theis' nonequilibrium equation is based on the following assumptions:

a) The water-bearing formation is uniform in character and the hydraulic conductivity is the same in all directions.
b) The formation is uniform in thickness and infinite in areal extent.
c) The formation receives no recharge from any source.
d) The pumped well penetrates, and receives water from, the full thickness of the water-bearing formation.
e) The water removed from storage is discharged instantaneously when the head is lowered.
f) The pumping well is 100 percent efficient.
g) All water removed from the well comes from aquifer storage.
f) Laminar flow exists throughout the well and aquifer.
i) The water table or potentiometric surface has no slope.

Notes:

1. In a confined aquifer, the storativity (S) ranges in value from 0.005 to 0.00005. Storage for unconfined aquifers is known as specific yield (Sy) and generally varies between 0.01 and 0.30.

2. The modified nonequilibrium equation is valid for values of u less than about 0.05, otherwise values are approximate.

Table 2. Anticipated Water Demands

Demand	Existing Conditions	Proposed Conditions
Average Day Demand (ADD), with irrigation[2]	23,420 gpd 16.3 gpm	37,920 gpd 26.3 gpm
Max Day Demand (MDD), with irrigation	40,476 gpd 28.1 gpm	73,101 gpd 50.8 gpm
Peak Hour Demand (PHD)	1,919 gph 32.1 gpm	3,959 gph 66.0 gpm

Demand estimates provided by Cranmer Engineering (2024), see **Appendix A**;
gpd = gallons per day; gph = gallons per hour; gpm = gallons per minute