

**Basin Management Objective  
Glenn County  
Sub-area 10  
Board of Supervisors District Three  
Private Pumpers  
Revision January 2010**

**Basin Management Objective  
Glenn County  
Sub-area 10  
Board of Supervisors District Three Private Pumpers**

**Calendar Year:** 2010

**Glenn County Water Advisory Committee Representative:** Larry Maben

**Objective:** To maintain the groundwater surface elevation at a level that will assure an adequate and affordable domestic and irrigation water supply. It is the intent of this objective to assure a sustainable water supply now and into the future.

**Location of BMO Key Wells:** See attached map. (Location of Cal Water Well, Willows Station 002-01, approximated.)

- Well # 1 – North of Road 31, West of Highway 99
- Well # 2 – North of Road 33, East of Road P
- Well # 3 – North of Road 33, East of Highway 99 (Discontinued)
- Well # 4 – South of Road 35, West of Road P
- Well # 5 – South of Road 39, West of Road P
- Well # 6 – South of Road 45, East of Road J
- Well # 7 - South of Willow Street, West of Lassen Street

**Groundwater Level Monitoring Network:** Department of Water Resources – Northern District

**Groundwater Level Measurements By:**

Department of Water Resources – Northern District (Wells No. 1 through 6)  
California Water Service Company (Cal Water) (Well No. 7)

**Period of Record:** 1976-2009

**Groundwater Level Monitoring Frequency:**

Semiannual.

- Spring (March-April)
- Fall (October-November)

## Groundwater Well Numbering System:

State (Wells No. 1 through 6)

Other (Well No. 7) – Independent numbering system used by Cal Water

Well Number	Well ID	Method	Ground Surface Elev.	Avg. Water Surface Elev./Depth*	Std Dev / 2 Std Dev	Stage 1 & 2 Elev./Depth*	Stage 3 Elev./Depth*	
1	21N03W33A04M	2	174.0	143.2/30.8	13.0/26.1	130.2/43.8	117.2/56.8	
2	21N02W31M01M	2	161.0	138.1/22.9	7.8/15.7	130.3/30.7	122.4/38.6	
3	20N03W03D02M	2	Discontinued					
4	20N03W12C01M	2	159.0	133.7/25.3	8.0/16.0	125.7/33.3	117.7/41.3	
5	20N03W23G02M	2	146.0	124.3/21.7	6.1/12.3	118.2/27.8	112.0/34.0	
6	20N03W33J01M	2	136.0	126.8/9.2	8.1/16.3	118.6/17.4	110.5/25.5	
7	Cal Water 002-01	2	134.0	121.6/20.0	4.2/8.4	117.4/24.2	113.2/28.4	

\*Elev. = feet above mean sea level, Depth = Ground surface to groundwater surface

## **BMO Alert Stage Method and Definitions:**

### **Method 2 – Standard Deviation**

All existing groundwater level monitoring wells within the BMO area were identified. For all wells with a record dating back to at least 1976<sup>1</sup>, groundwater levels were obtained using the Department of Water Resources' Water Data Library (WDL). The Spring data for groundwater surface elevation (WSE) was further analyzed. The average and standard deviation were then calculated for these data. The Stage 1 & 2 alerts were determined to be the average of the Spring data minus one standard deviation. The State 3 alert was the average minus two standard deviations.

The Glenn County Water Advisory Committee (WAC) upon a recommendation of its Technical Advisory Committee (TAC) shall declare a Stage 1, Stage 2, or Stage 3 Alert based on the technical criteria presented below. The technical criteria for the WAC to rescind the Stage 1, Stage 2, or Stage 3 Alert is also presented.

A Stage 1 Alert will be declared when any measured Spring groundwater surface elevation is below 1 Standard Deviation from the Average of the time of record utilized for the corresponding BMO Key Well.

A Stage 2 Alert will be declared on the second and subsequent sequential years, when any measured Spring groundwater surface elevation is below 1 Standard Deviation from the Average of the time of record utilized for the corresponding BMO Key Well.

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<sup>1</sup> In 1976 the Tehama-Colusa Canal became operational, changing the relative surface water supply and groundwater supply mix in sub-areas served by the canal. The Glenn County Technical Advisory Committee concluded that groundwater levels from this date forward are representative of recent historical conditions and when possible this historical period of record should be used for developing groundwater level BMOs in these sub-areas.

A Stage 3 Alert will be declared when any measured Spring groundwater surface elevation is below 2 Standard Deviations from the Average of the time of record utilized for the corresponding BMO Key Well.

Stage 1, 2, and 3 Alerts shall be rescinded by the WAC when the measured groundwater surface elevations return to an elevation above 1 Standard Deviation for the corresponding BMO Key Wells.

**BMO Compliance Evaluation and Action Procedures:**

Compliance<sup>2</sup> with the BMO will be determined following the Spring groundwater level measurement periods. The groundwater surface elevations at each monitoring well will be compared against the corresponding compliance (condition) graph and stage definition criteria to determine if the groundwater surface elevations are above or below specific alert trigger levels. The TAC will perform this evaluation and report the results of the evaluation to the WAC.

**Groundwater Management Actions**

**Stage 1.** Groundwater management actions to be undertaken following a Stage 1 condition shall be informational to the WAC and by notification to the public.

**Stage 2.** Groundwater management actions to be undertaken following a Stage 2 condition shall be informational and investigational. Upon identification of the Stage 2 condition, the noncompliance will be reported to the WAC and the public. Following review and concurrence, the WAC shall direct the TAC to initiate an investigation to determine the cause(s) of the noncompliance and make recommendations as to the nature of the noncompliance as well as how to address and possibly avoid similar conditions in the future. The TAC shall report their findings and recommendations back to the WAC in a timely manner to adequately reflect on the issue.

**Stage 3.** Groundwater management actions to be undertaken following a Stage 3 condition shall be informational, investigational, and actionable. Upon identification of the Stage 3 condition, the noncompliance will be reported to the WAC and the public. Following review and concurrence, the WAC shall direct the TAC to initiate an investigation to determine the cause(s) of the noncompliance and make recommendations as to the nature of the noncompliance as well as how to address and correct the noncompliance. The TAC shall report their findings and recommendations back to the WAC in a timely manner to adequately take action. The WAC will then work with the local and adjoining sub-areas to implement needed adaptive management activities necessary to correct the problem. Such adaptive management activities shall include, but not limited to, voluntary water conservation measures, redistribution or reduction of groundwater extraction, and/or other measure(s) referred to or identified in Ordinance 1115 as recommended by the WAC and approved by the Board of Supervisors.

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<sup>2</sup> The use of the word “compliance” in County Code 20.03 should be regarded as “in agreement or conforms” with the “condition” that existed on the day groundwater levels were taken and not an exceedance of a regulatory objective.

**Monitoring Recommendations:**

Efforts should be made to identify possible additional wells that could be added to the existing monitoring well network in the northern and southern portions of the sub-area to improve the overall coverage within the region.

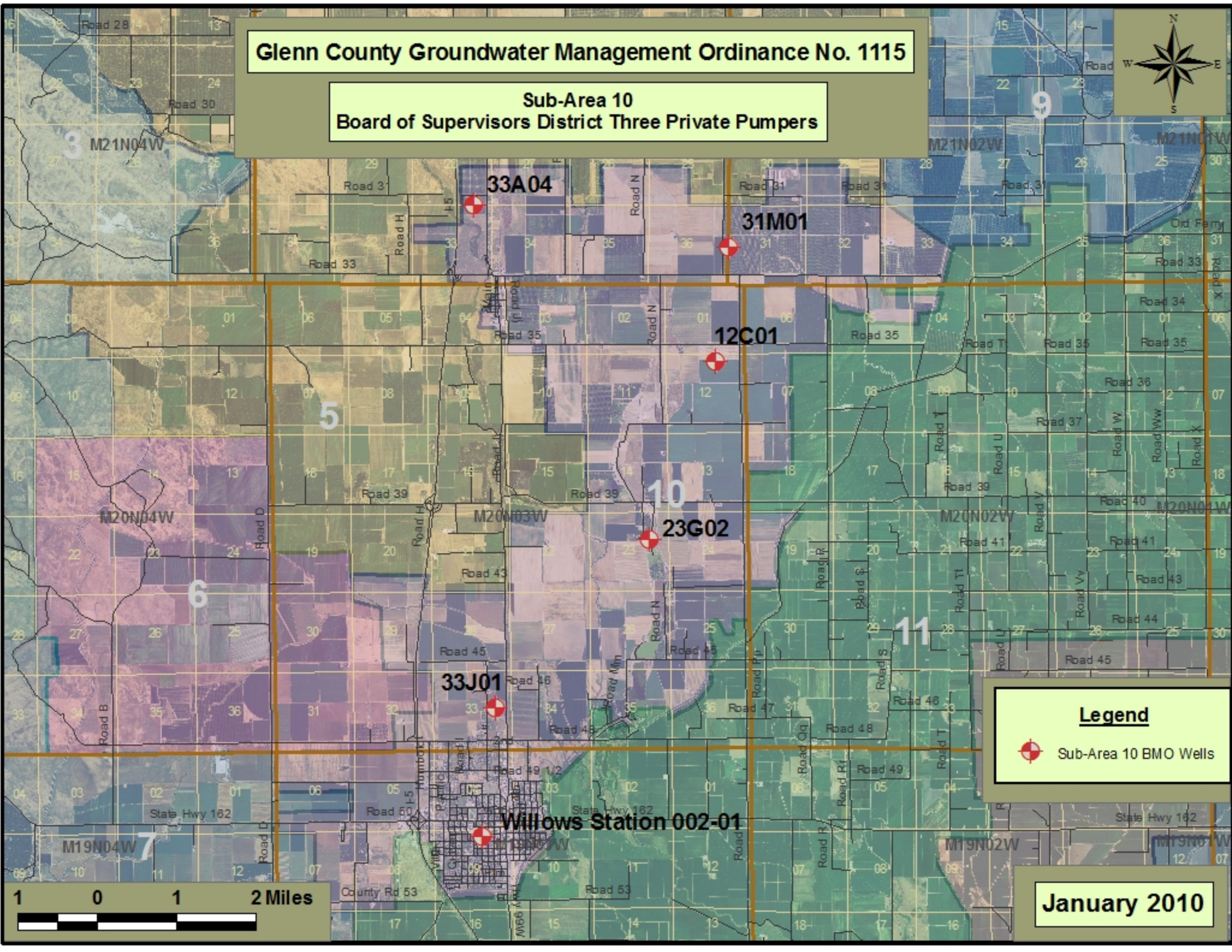
In the summer of 2007 interim summer BMOs for groundwater level were adopted by the Board of Supervisors. These BMOs utilize the existing dedicated monitoring network. In Sub-area 10 there have been four dedicated wells that have been selected to this effort. At a time in the future, more zones of more wells will be added to the network for summer measurements and ultimately will replace the wells originally designated as BMO wells in 2001.

**Attached Supporting Data:** \* - Hydrographs




**Glenn County Groundwater Management Ordinance No. 1115**

**Sub-Area 10  
Board of Supervisors District Three Private Pumps**



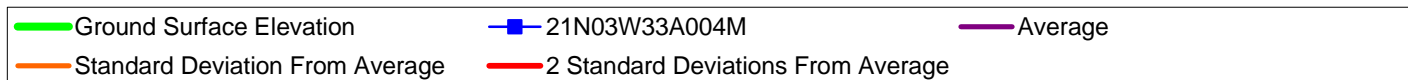
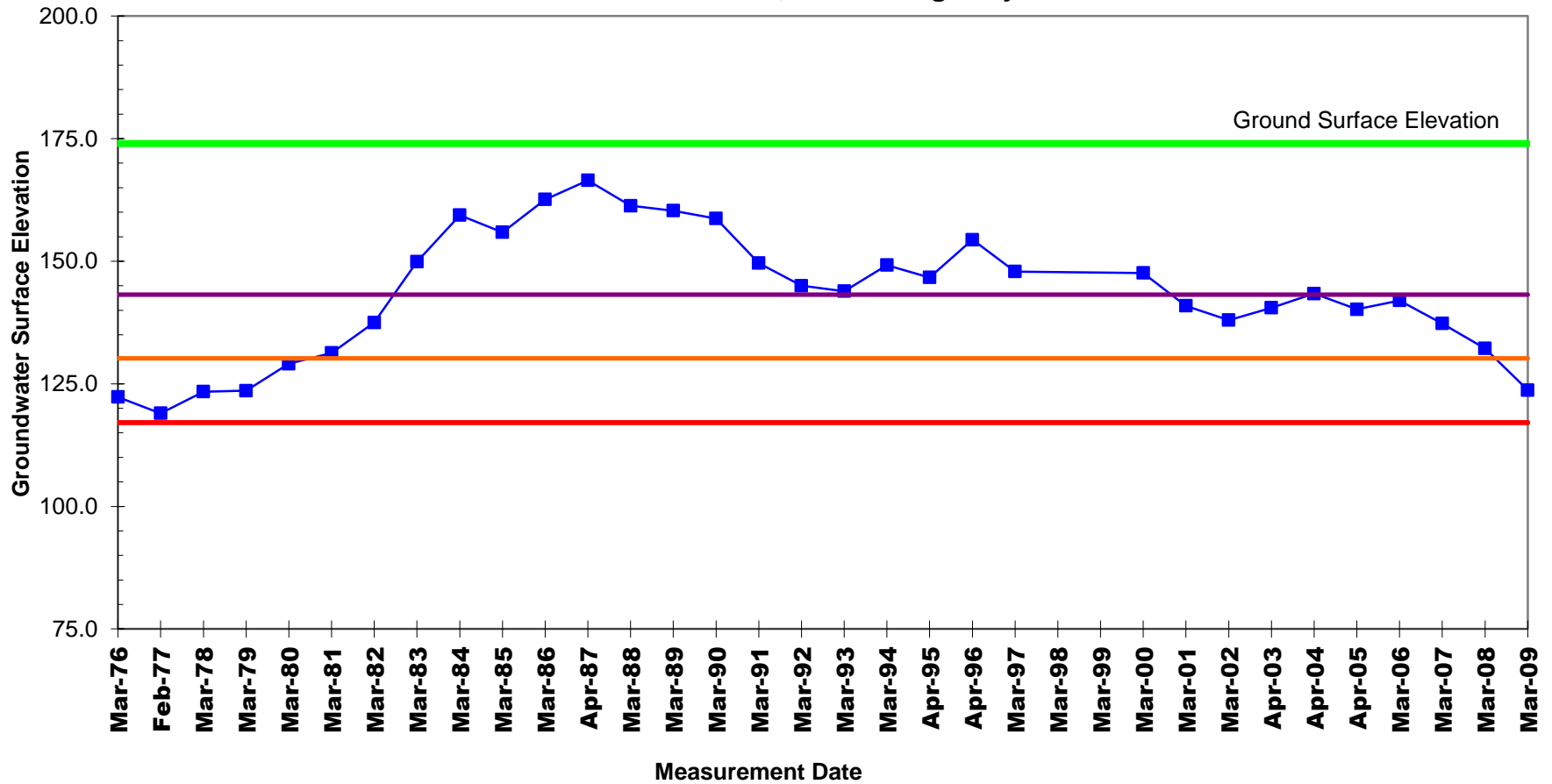
**Legend**

 Sub-Area 10 BMO Wells

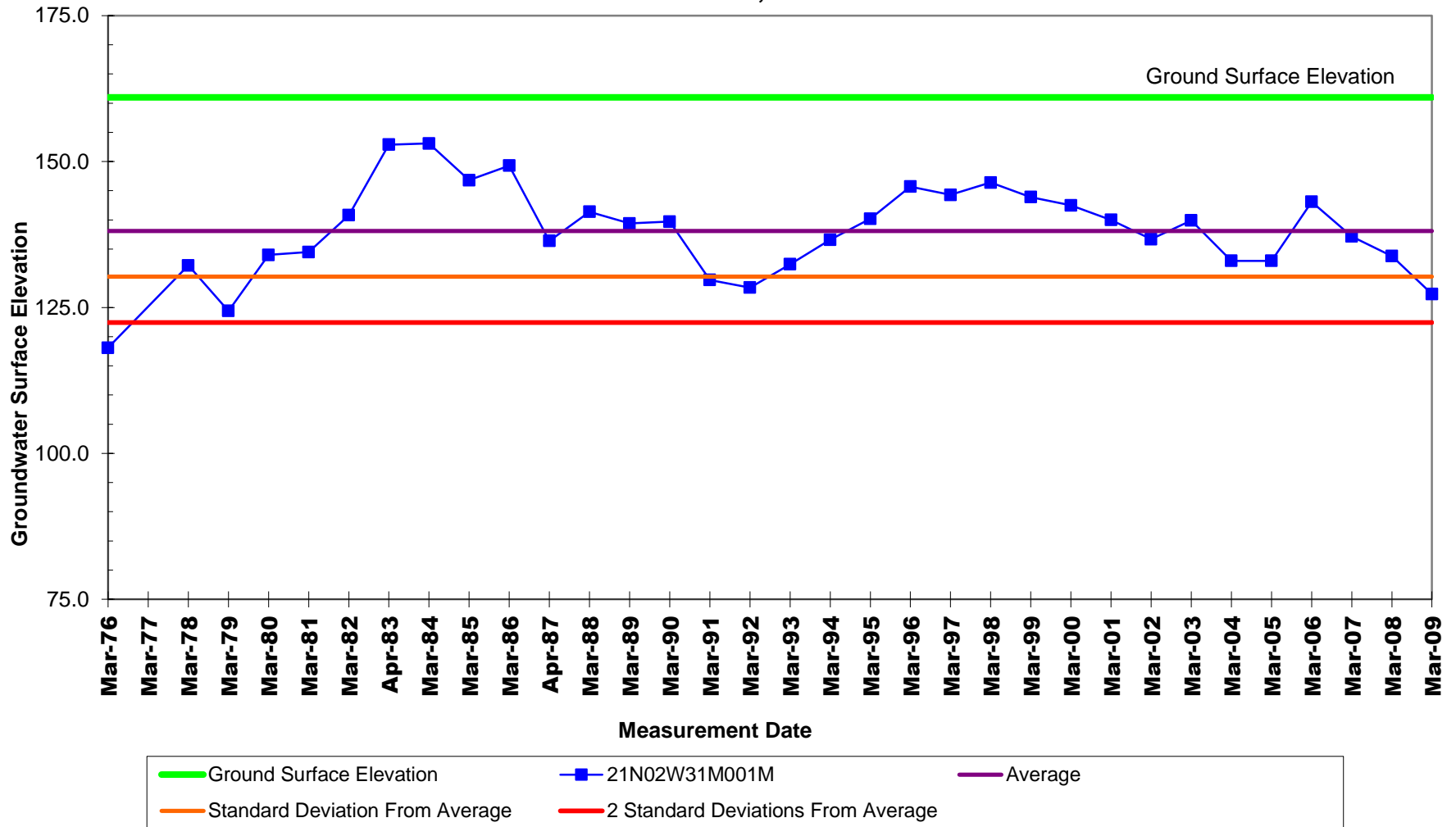
1 0 1 2 Miles

**January 2010**

**Sub-Area 10**  
**Board of Supervisors District Three Private Pumpers**  
**Well #1**  
**21N03W33A004M**  
**North of Road 31, West of Highway 99**

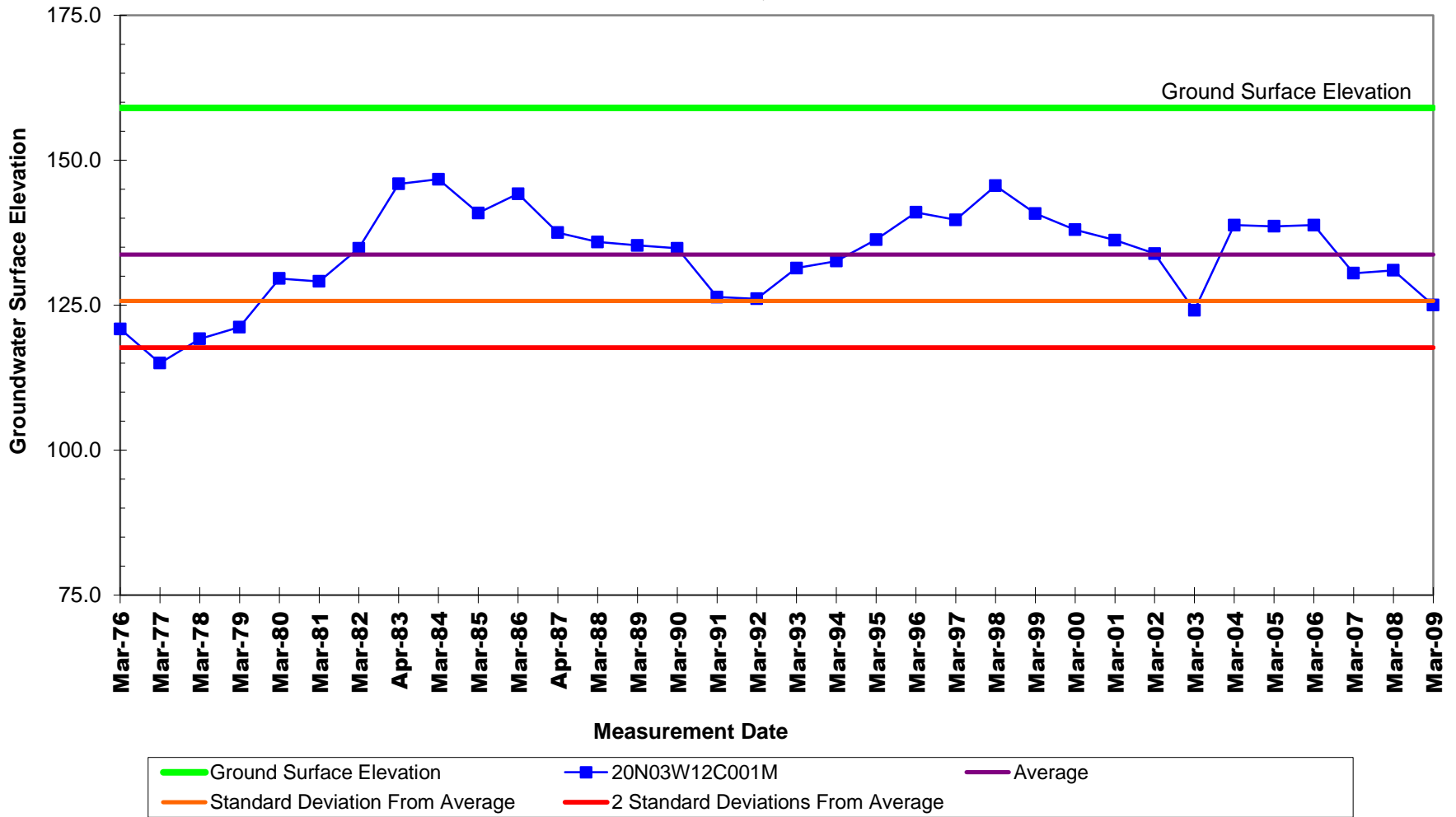


**Sub-Area 10**  
**Board of Supervisors District Three Private Pumpers**  
**Well #2**  
**21N02W31M001M**  
**North of Road 33, East of Road P**

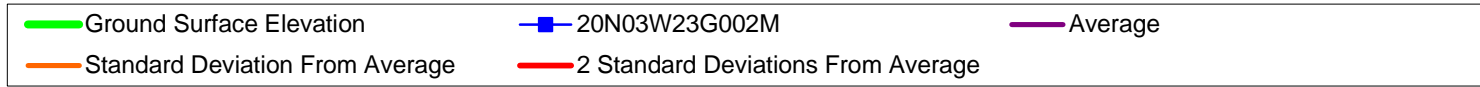
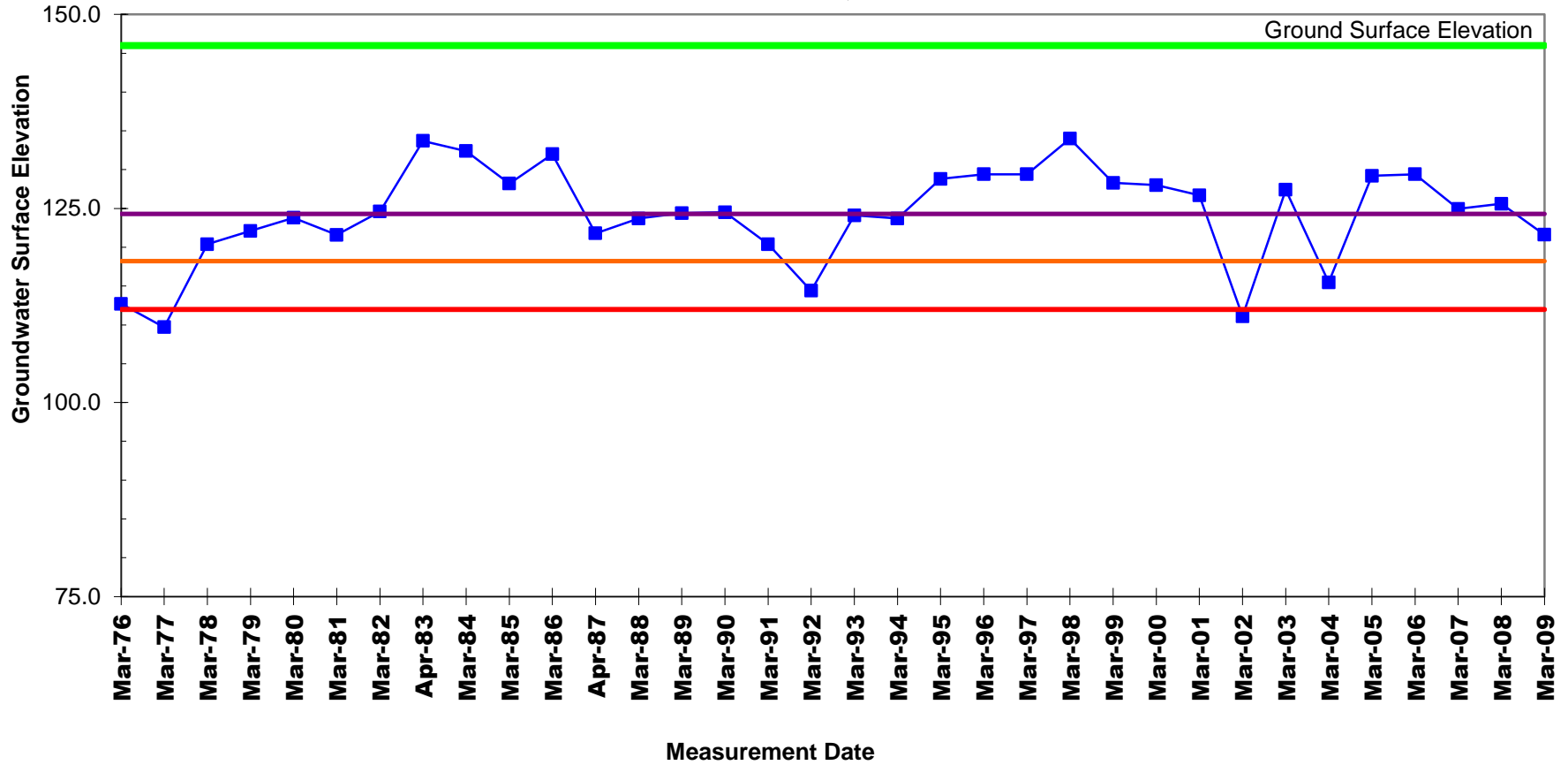




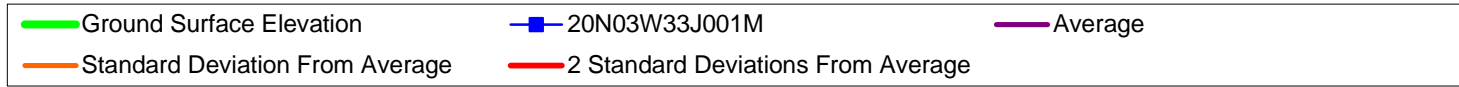
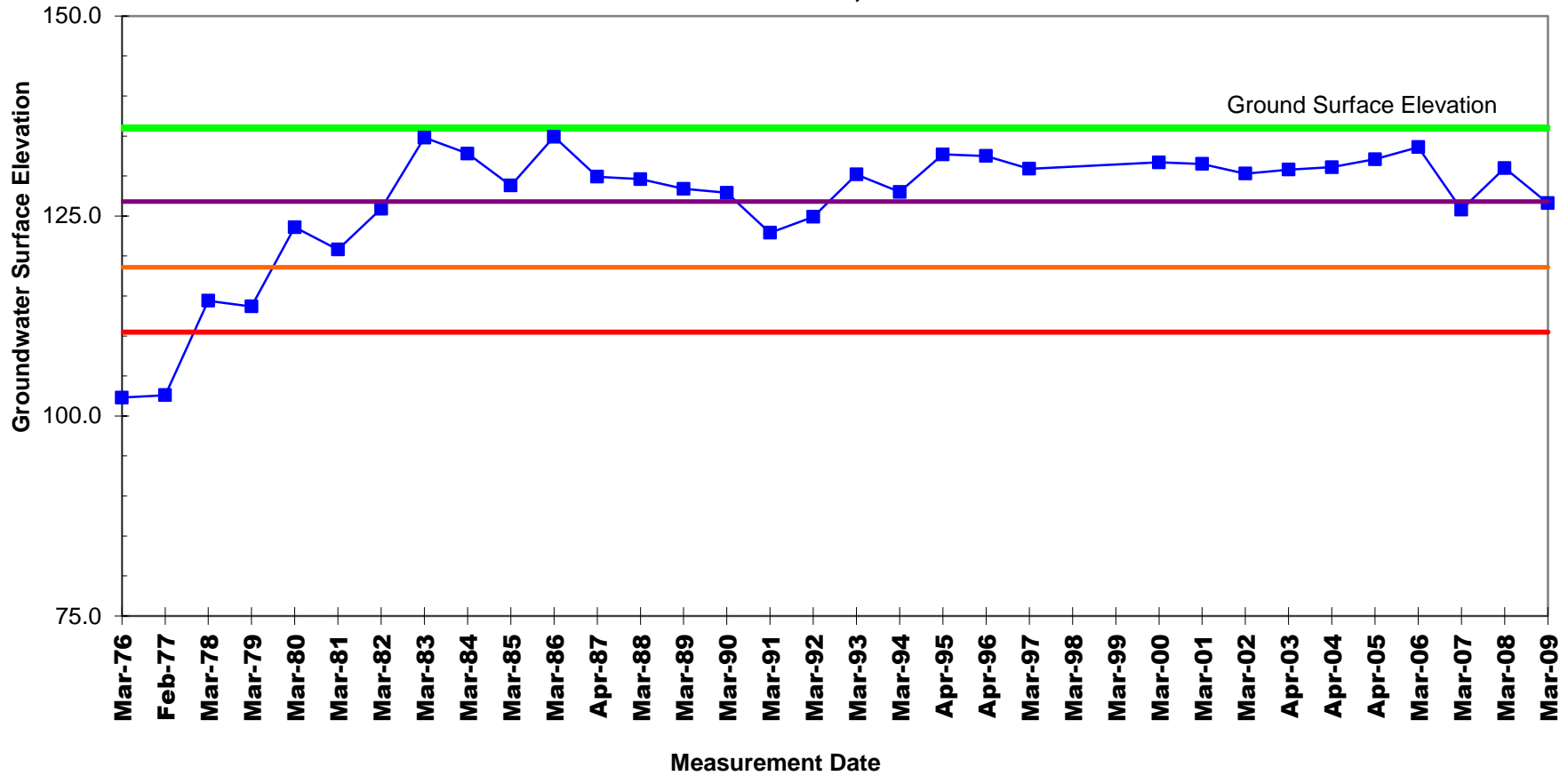
**Sub-Area 10**  
**Board of Supervisors District Three Private Pumpers**  
**Well #4**  
**20N03W12C001M**  
**South of Road 35, West of Road P**



**Sub-Area 10**  
**Board of Supervisors District Three Private Pumpers**  
**Well #5**  
**20N03W23G002M**  
**South of Road 39, West of Road P**



**Sub-Area 10**  
**Board of Supervisors District Three Private Pumpers**  
**Well #6**  
**20N03W33J001M**  
**South of Road 45, East of Road J**



**Sub-Area 10**  
**Board of Supervisors District Three Private Pumpers**  
**Well #7**  
**CAL Water Well, Willows Stat. 002-01**  
**South of Willow Street, West of Lassen Street**

