



January 15, 2015

**954.001.03.002**

Richard Emig  
City of Sebastopol  
Public Works Department  
714 Johnson Street  
Sebastopol, California 95472

**Re: Groundwater Level Data Transmittal  
Fourth Quarter 2014  
City of Sebastopol  
Sebastopol, California**

Dear Mr. Emig:

This data transmittal has been prepared by PES Environmental, Inc. (PES) on behalf of the City of Sebastopol (City) to summarize the results of the groundwater level monitoring program performed in the fourth quarter of 2014 (October through December). The following sections of this transmittal summarize the activities performed and data collected for the subject monitoring period.

## **GROUNDWATER LEVEL MONITORING PROGRAM**

The activities performed for the monitoring period (October through December) included: (1) recording groundwater levels in five City production wells; (2) summarizing regional precipitation data; (3) performing a site inspection with manual depth-to-water measurements; and (4) preparing groundwater level hydrographs.

### **Groundwater Level Measurements**

Groundwater level data collected for the fourth quarter included groundwater elevations from five City monitoring: inactive municipal Wells #5 and #7, and active municipal Wells #4, #6, and #8. These wells are equipped with Solinst Inc., electronic submersible “LT Edge Levellogger” absolute (i.e., un-vented) pressure transducers and data logger systems. Additionally, a Solinst Inc., “LT Edge Barologger” is installed within Well #4 to provide baseline data for barometric compensation. The pressure transducers/data loggers were

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programmed to record pressure-head measurements at 15-minute intervals. Pressure-head measurements stored in each data logger were transmitted to PES' office via telemetry stations installed within the respective pump houses. The pressure-head measurements were then barometrically compensated and correlated to manual groundwater level measurements that were obtained via an electronic water level sounder on November 18, 2014. The respective manual groundwater level measurements on November 18, 2014 for Wells #4, #5, #6, #7, and #8 were 90.5, 55.7, 66.2, 83.5, and 35.3 feet below top of casing. Due to malfunctions in two transducers, pressure-head data is not available for certain dates at Well #5 (October 11 through November 17, 2014) and Well #7 (November 7 through 17, 2014).

### **Precipitation Data**

Daily precipitation records maintained by the National Oceanic and Atmospheric Administration are summarized on Table 1. The precipitation data (reported in total inches per day) were measured at the Sonoma County Airport, Santa Rosa, California (Station ID: USW00023213). As indicated in Table 1, a total of 18.21 inches of rain were recorded during the subject monitoring period, comprising of 0.50 inches, 3.20 inches, and 14.51 inches in October, November, and December, respectively.

### **Groundwater Level Hydrographs**

Following conversion of the pressure-head measurements to depth-to-groundwater levels, groundwater level hydrographs were prepared for each of the five City wells (Plates 1 through 5). To facilitate groundwater trend analysis, groundwater data from the previous quarter (July through September) is included on Plates 1 through 5. During the subject monitoring period (October through December), observed groundwater levels generally exhibit a trend of recovery or relative stability. These observations appear to correlate with the seasonal increase in precipitation and associated groundwater recharge during the monitoring period.

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**CLOSURE**

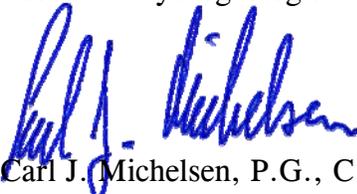
PES appreciates the opportunity to be of service to the City and in providing assistance with the subject Groundwater Level Monitoring Program. Should you have any questions regarding this information, please call PES at (415) 899-1600.

Yours very truly,

**PES ENVIRONMENTAL, INC.**



Peter D. Gorman, P.G., C.HG.  
Associate Hydrogeologist



Carl J. Michelsen, P.G., C.HG.  
Principal Geochemist

cc: Susan Kelly – City of Sebastopol  
Dante Del Prete – City of Sebastopol

Attachments: Table 1 – Summary of Precipitation Totals  
Plate 1 – Groundwater Level Hydrograph, Municipal Well #4  
Plate 2 – Groundwater Level Hydrograph, Municipal Well #5  
Plate 3 – Groundwater Level Hydrograph, Municipal Well #6  
Plate 4 – Groundwater Level Hydrograph, Municipal Well #7  
Plate 5 – Groundwater Level Hydrograph, Municipal Well #8

**TABLES**

**Table 1  
Summary of Precipitation Totals  
Sonoma County Airport  
Santa Rosa, California**

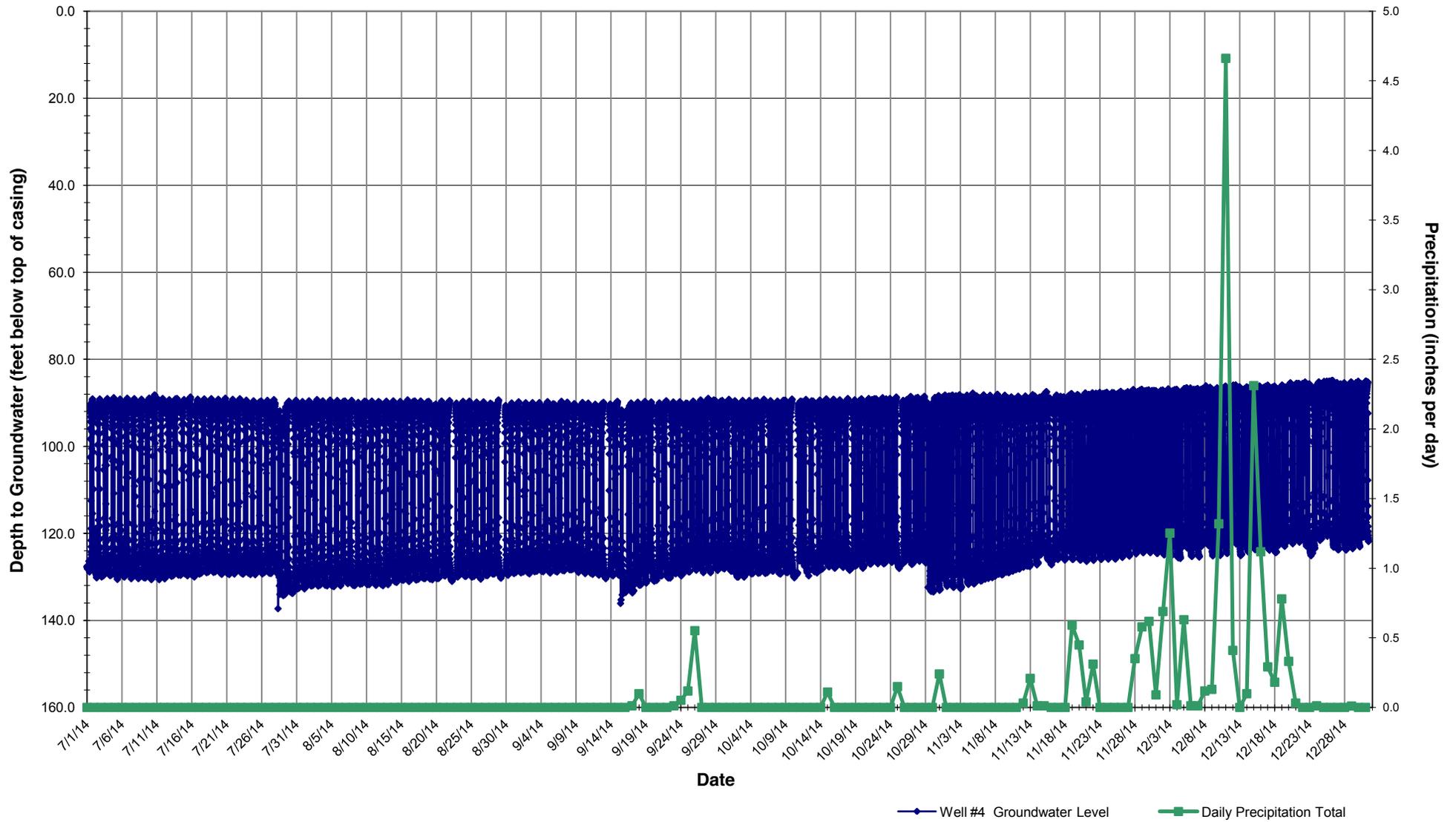
Day	Daily Precipitation Totals (inches)		
	Oct-2014	Nov-2014	Dec-2014
1	--	--	0.09
2	--	--	0.69
3	--	--	1.25
4	--	--	0.02
5	--	--	0.63
6	--	--	0.01
7	--	--	0.01
8	--	--	0.12
9	--	--	0.13
10	--	--	1.32
11	--	--	4.66
12	--	0.03	0.41
13	--	0.21	--
14	T	0.01	0.10
15	0.11	0.01	2.31
16	--	--	1.12
17	T	--	0.29
18	--	--	0.18
19	--	0.59	0.78
20	T	0.45	0.33
21	--	0.04	0.03
22	--	0.31	--
23	--	--	--
24	T	--	0.01
25	0.15	--	--
26	--	--	--
27	--	--	--
28	--	0.35	--
29	--	0.58	0.01
30	T	0.62	--
31	0.24	na	--
<b>Total (inches)</b>	<b>0.50</b>	<b>3.20</b>	<b>14.51</b>
<b>Total Precipitation (in inches) for October through December: 18.21</b>			

**Notes:**

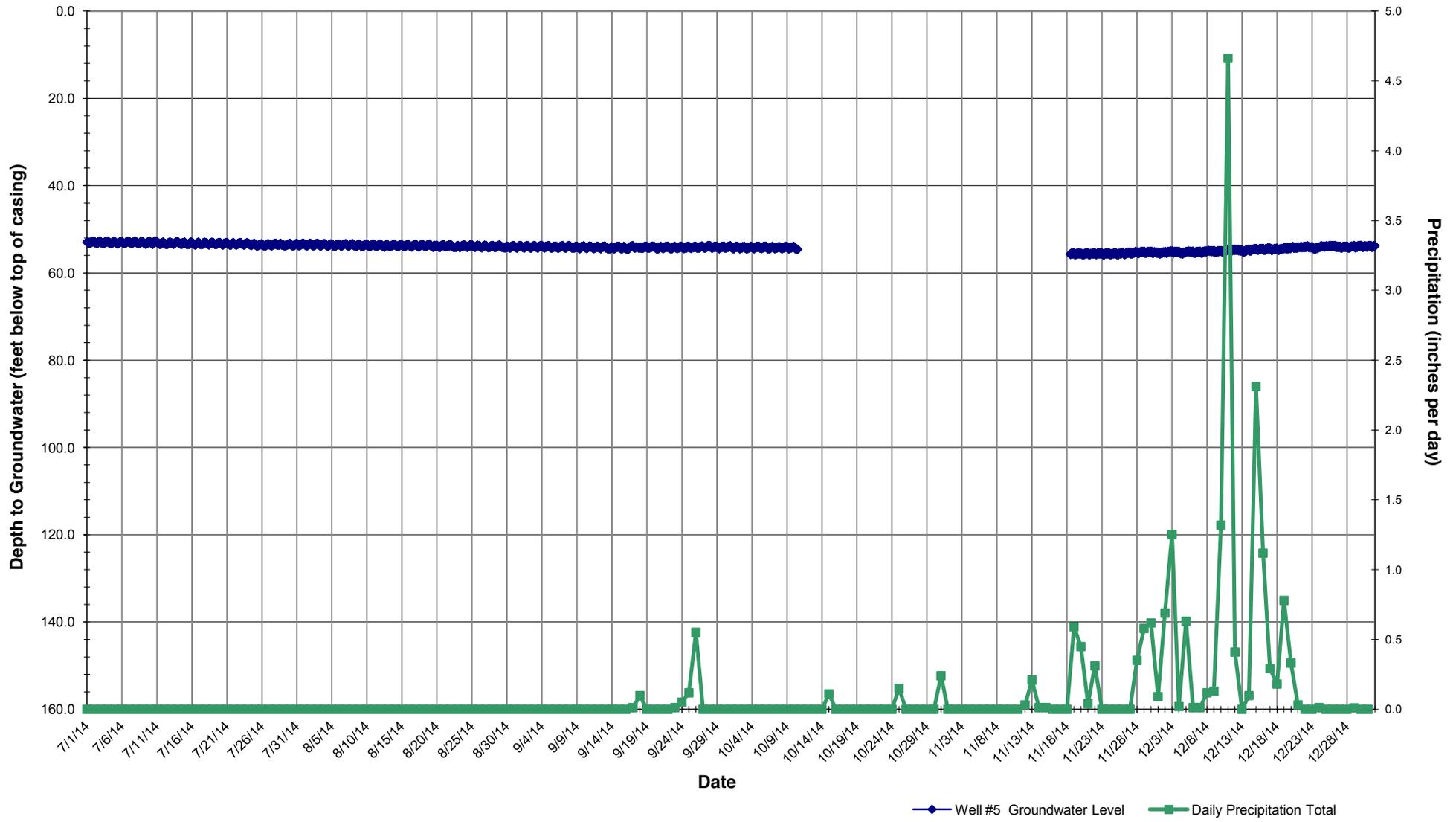
Source of Data: National Oceanic and Atmospheric Administration (NOAA)  
 Preliminary Record of Climatological Observations for Sonoma County  
 Airport - Cooperative Station Network (Station ID: USW00023213)  
 -- = No measureable/reported precipitation  
 T = Trace precipitation event  
 na = Not Applicable

**PLATES**

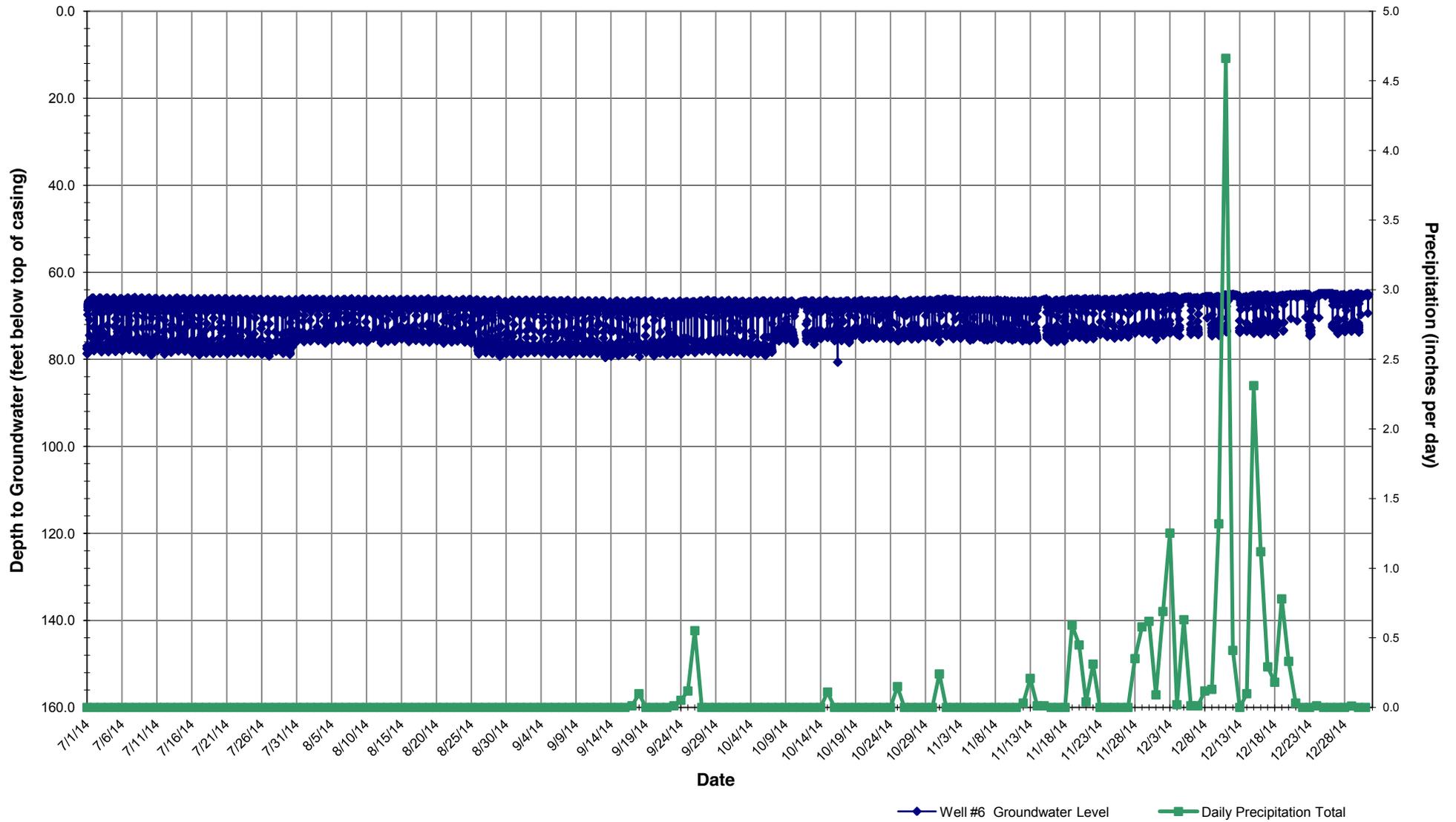
**Plate 1**  
**Groundwater Level Hydrograph - Well #4**  
**City of Sebastopol Municipal Wellfield**  
**Sebastopol, California**



**Plate 2**  
**Groundwater Level Hydrograph - Well #5**  
**City of Sebastopol Municipal Wellfield**  
**Sebastopol, California**



**Plate 3**  
**Groundwater Level Hydrograph - Well #6**  
**City of Sebastopol Municipal Wellfield**  
**Sebastopol, California**



**Plate 4**  
**Groundwater Level Hydrograph - Well #7**  
**City of Sebastopol Municipal Wellfield**  
**Sebastopol, California**

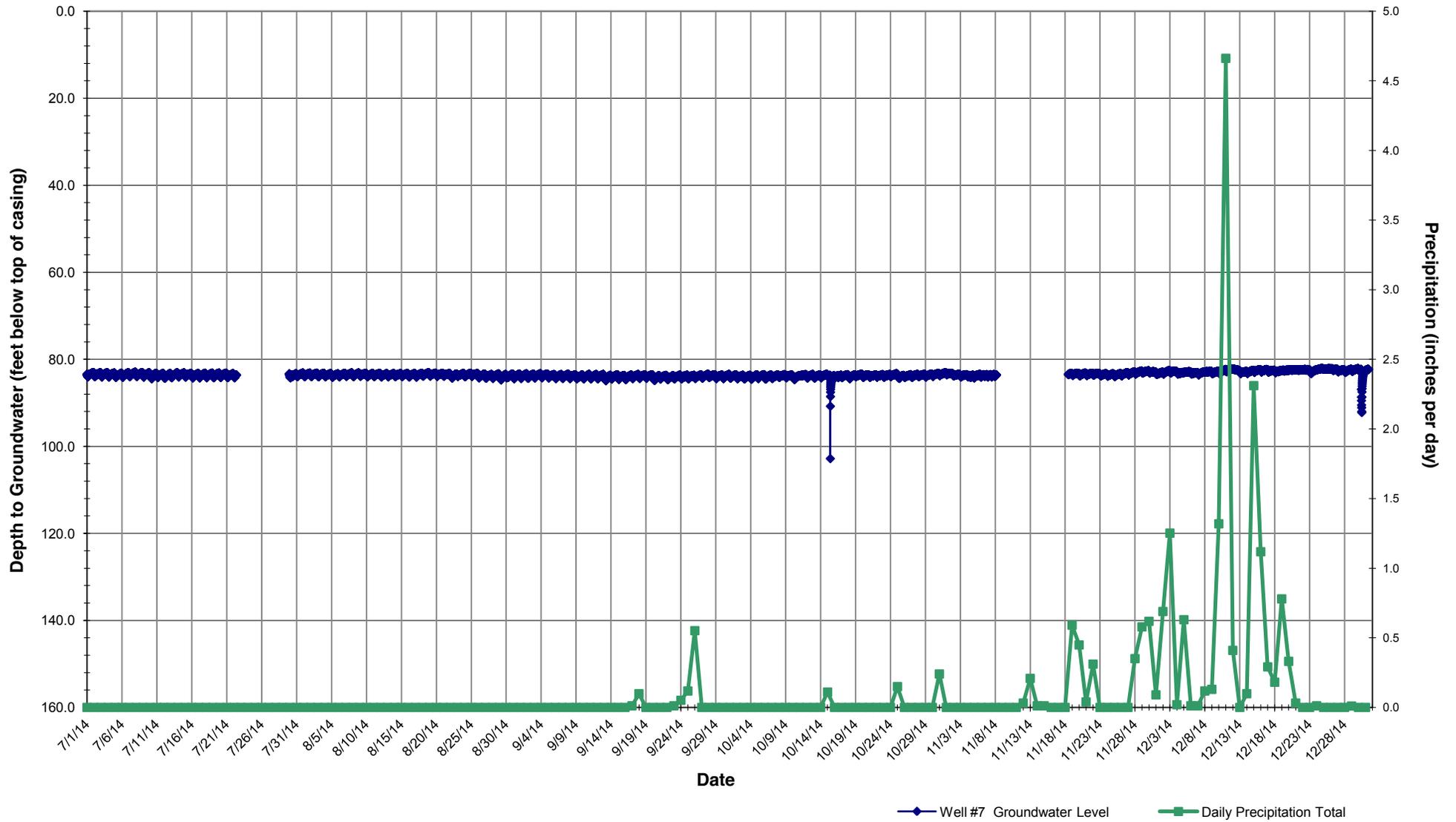


Plate 5  
Groundwater Level Hydrograph - Well #8  
City of Sebastopol Municipal Wellfield  
Sebastopol, California

