



October 7, 2014

954.001.03.002

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

**Re: Groundwater Level Data Transmittal
Third 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 third quarter of 2014 (July through September). 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 (July through September) 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 third 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 September 16, 2014. The respective manual groundwater level measurements on September 16, 2014 for Wells #4, #5, #6, #7, and #8 were 91.1, 47.6, 67.2, 83.9, and 253.2 feet below top of casing. Due to malfunctions in the transducers and telemetry software, data was not recorded for six days in late July for Wells #4, #6, #7, and #8, and twelve days in late September (solely missing data for Well #5).

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 0.84 inches of rain were recorded during the subject monitoring period in September 2014, and no measurable precipitation was recorded during July and August 2014.

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 (April through June) is included on Plates 1 through 5. During the subject monitoring period (July through September), observed groundwater levels generally exhibit a slight declining trend or relative stability. These observations appear to correlate with the seasonal decrease in precipitation and associated reduction in 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)		
	Jul-2014	Aug-2014	Sep-2014
1	--	--	--
2	--	--	--
3	--	--	--
4	--	--	T
5	--	T	--
6	--	T	--
7	--	--	--
8	--	--	--
9	--	--	T
10	T	--	--
11	--	--	--
12	--	--	--
13	--	--	--
14	--	--	--
15	--	--	--
16	--	--	--
17	--	--	0.01
18	T	--	0.10
19	--	--	--
20	T	T	--
21	T	--	--
22	T	--	--
23	--	--	0.01
24	--	--	0.05
25	--	T	0.12
26	--	--	0.55
27	--	--	T
28	--	--	--
29	--	--	--
30	--	--	--
31	--	--	na
Total (inches)	0.00	0.00	0.84
Total Precipitation (in inches) for July through September: 0.84			

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

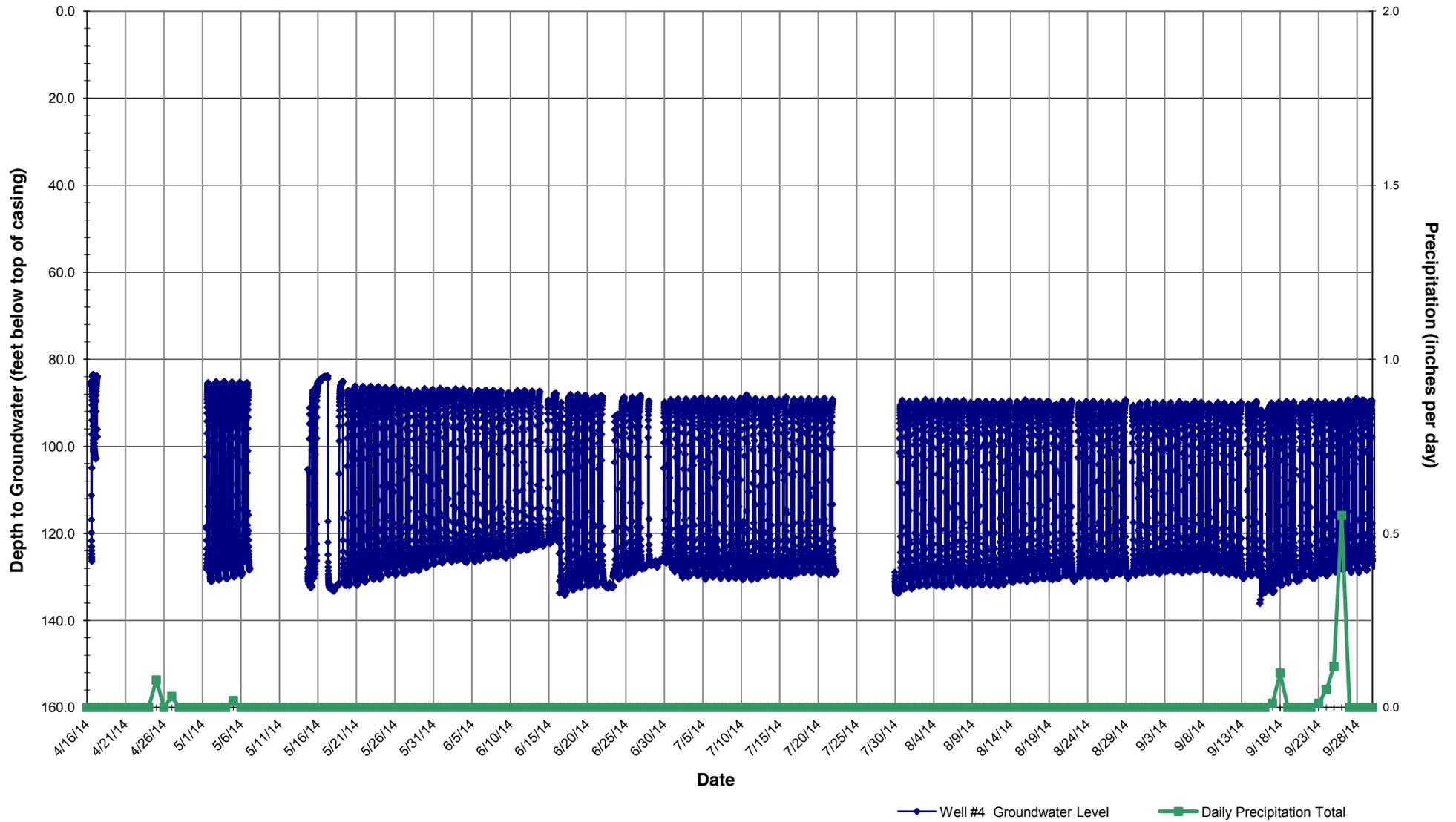


Plate 2
Groundwater Level Hydrograph - Well #5
City of Sebastopol Municipal Wellfield
Sebastopol, California

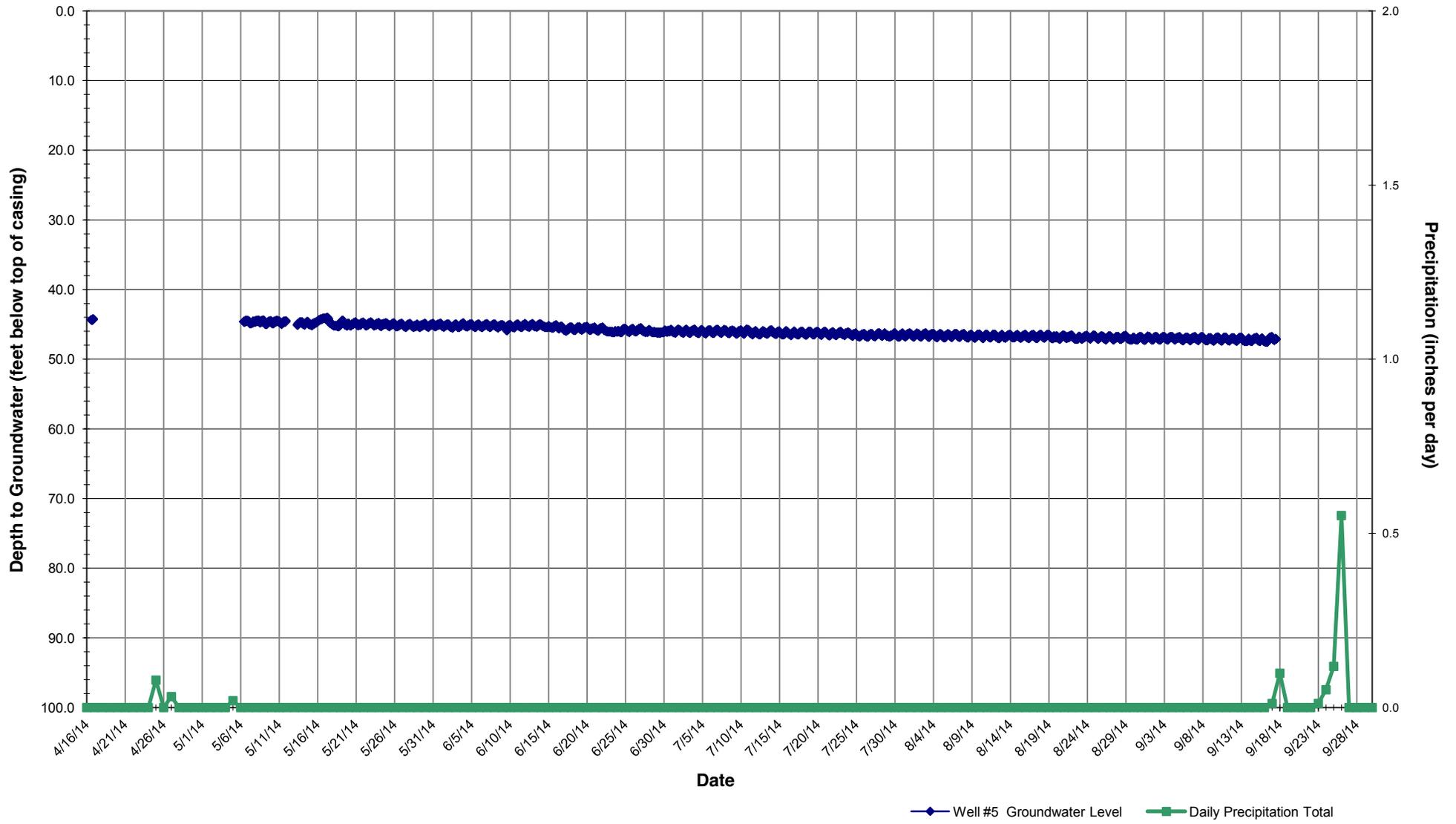


Plate 3
Groundwater Level Hydrograph - Well #6
City of Sebastopol Municipal Wellfield
Sebastopol, California

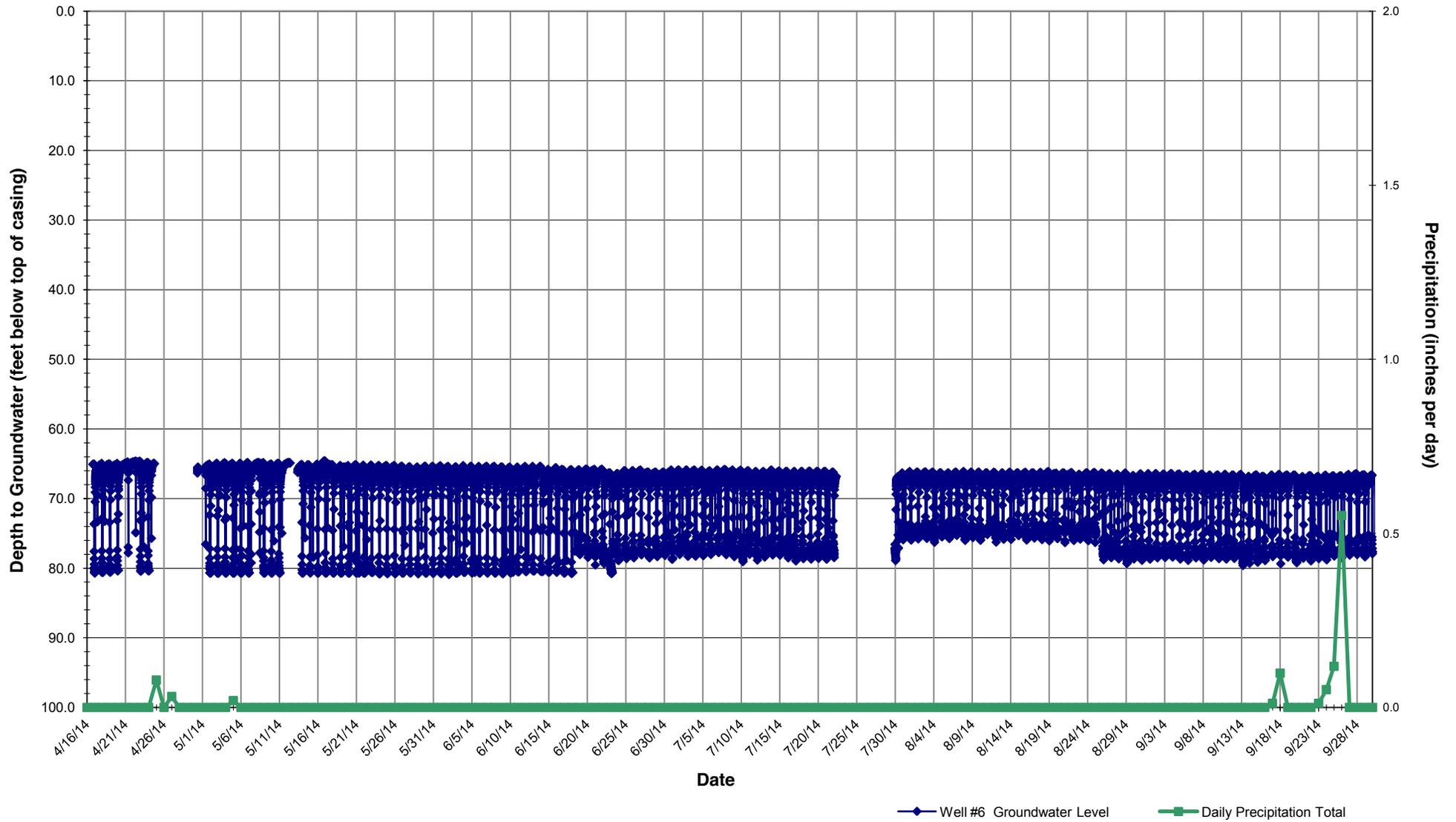


Plate 4
Groundwater Level Hydrograph - Well #7
City of Sebastopol Municipal Wellfield
Sebastopol, California

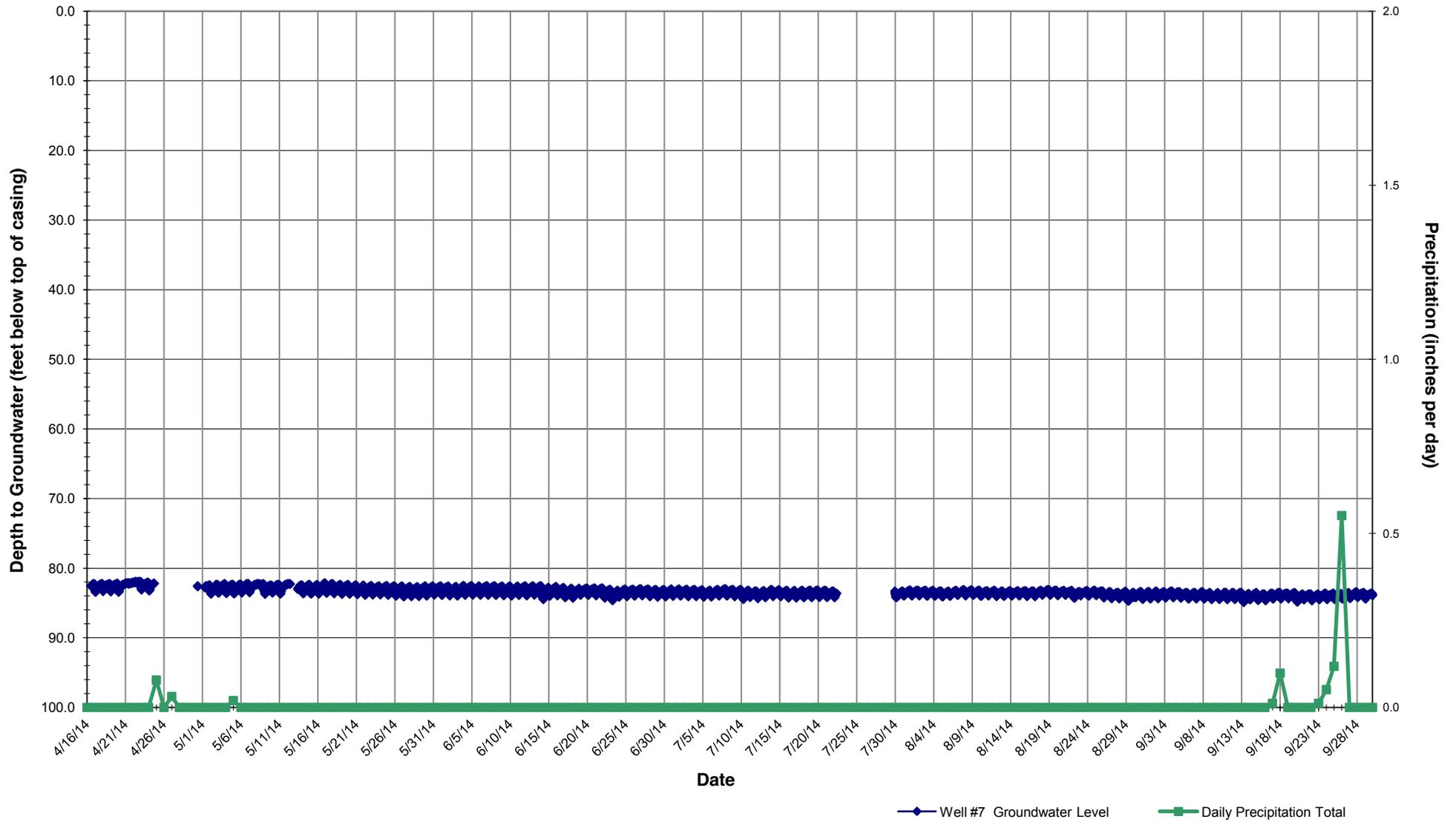


Plate 5
Groundwater Level Hydrograph - Well #8
City of Sebastopol Municipal Wellfield
Sebastopol, California

